

**From:** Phil Beard  
**To:** [Annilene McRobb](#)  
**Cc:** [Dave Turton](#); [Stephen Jackson](#); [Pettapiece-co. Randy](#); [John.Nater.A3@parl.gc.ca](#)  
**Subject:** RE: Town of Minto Council Correspondence Maitland Valley Conservation Authority Draft Cost Sharing Proposal  
**Date:** October 1, 2018 3:46:47 PM  
**Attachments:** [BOD-48-18.pdf](#)

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Hi Annilene: With respect to Council's question about the future cost sharing would apply any projects undertaken to mitigate flooding in Harriston. At the present time the Provincial Water And Erosion Control Infrastructure Program does not apply to new flood control projects. The only funding program that MVCA is aware of that may apply is the National Disaster Mitigation and Adaptation Fund that the Federal Government established this year. However John Nater has advised us that they fund will only apply to projects that are \$20 million dollars and up. It will only provide 40% funding to municipalities. The deadline for applications to be submitted was July 2018. See attached report on the National Disaster Mitigation and Adaptation Fund.

MVCA is trying to get a meeting with Randy Pettapiece, MPP for Perth Wellington to discuss the shortfall in funding for the Provincial Water and Erosion Control Program and the need for funding for new flood control projects.

We would encourage council to advise both Mr. Nater and Mr. Pettapiece that there is an urgent need for such a program to be established to help small rural municipalities. MVCA has recommended that if such a program is established that rural municipalities be eligible for up to a 85% grant from senior levels of government.

If you have any further questions please feel free to contact Dave or I.

Phil

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**From:** Annilene McRobb [mailto:[annilene@town.minto.on.ca](mailto:annilene@town.minto.on.ca)]  
**Sent:** September-06-18 2:48 PM  
**To:** [pbeard@mvca.on.ca](mailto:pbeard@mvca.on.ca)  
**Subject:** FW: Town of Minto Council Meeting Tuesday September 4, 2018 Item 12 c) Correspondence Maitland Valley Conservation Authority Draft Cost Sharing Proposal

Good Afternoon:

The Council of the Town of Minto met on September 4 to consider the above noted and passed the following motion:

**MOTION: COW 2018-201**

**Moved By: Councillor Turton; Seconded By: Councillor Elliott**

**That Town of Minto Council receives correspondence from Maitland Valley Conservation Authority regarding Draft Cost Sharing Proposal, and advises the Town has no objection to cost sharing as outlined, that the Federal and Provincial Government be called upon to increase funding so they are partners in maintaining water and erosion control infrastructure, and that the Conservation Authority clarify how cost sharing might apply to installing and maintaining new water and erosion control infrastructure that may be needed upstream, downstream and within Harriston to help mitigate flooding.**

Attached is the correspondence the Town of Minto received and considered.

I look forward to hearing back from you in regards to the clarification the Town of Minto is requesting.

Annilene McRobb, Dipl. M.M., CMO

Deputy Clerk

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## **BOARD OF DIRECTORS REPORT #48/18**

**TO:** Directors, Maitland Valley Conservation Authority  
**FROM:** Phil Beard, General Manager/Secretary-Treasurer  
**DATE:** August 27, 2018 (to be presented September 19, 2018)

**SUBJECT: Improving the National Disaster Mitigation and Adaptation Fund**

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### **PURPOSE:**

- To provide an overview of the National Disaster Mitigation and Adaptation Fund
- To identify the improvements needed to this program so that rural flood/erosion prone municipalities can obtain assistance from this program.
- To summarize the follow up actions recommended by John Nater, MP for Perth-Wellington Riding.

### **BACKGROUND:**

On August 13, 2018 the Chair and two Vice Chairs, Kriss Snell, CAO from the Municipality of North Perth met with John Nater, MP for Perth Wellington, his Communications Assistant and a representative from Ben Lobb's office (MP for Huron Bruce). The purpose of the meeting was to identify ways to improve the National Disaster Mitigation and Adaptation Fund.

### **National Disaster Mitigation and Adaption Fund**

The National Disaster Mitigation and Adaptation Fund will support large scale infrastructure projects with a minimum cost of \$20 million.

These projects will safeguard public health and safety, protect people's homes, make sure access to essential services is not interrupted and help communities protect their residents way of life.

Funding Available: \$2 billion dollars over 10 years.

Cost Share Limits: Municipalities/Regional Government up to 40%  
Provinces up to 50%

Eligible Projects: New construction of public infrastructure, including natural infrastructure; modification and/or reinforcement of existing public infrastructure including natural infrastructure.

Conditions: Must meet at least one national significance criterion, including reducing impacts on:

Critical infrastructure and essential services  
Health and safety of Canadians  
Significant Disruptions on economic activity  
Costs of recovery and replacement  
Vulnerable regions

Project completion by 2027-2028

Timelines: Expression of Interest: May-July 2018

Full Application: Sept-Dec. 2018

Contribution Agreement: March 2019.

According to Mr. Nater, Infrastructure Canada is only planning on accepting one intake of applications, a second may be considered if the funding is not all committed from the first intake of applications.

MVCA representatives and representative from North Perth expressed the concern that this Fund will not help rural municipalities. Mr. Nater agreed with this concern.

The meeting then turned to how this Fund could be improved so that rural flood/erosion prone municipalities could obtain assistance to develop appropriate and affordable flood/erosion control projects.

### **Improving the National Disaster Mitigation and Adaptation Fund**

MVCA representatives made a presentation that outlined how this fund could be improved:

A copy of that presentation is attached to this report. A summary of our recommendations is outlined below:

1. Update flood standards for riverine and Great Lake Flood potential in accordance with the recommendations contained in the National Flood Plain Mapping Assessment undertaken by Public Safety Canada in 2014.  
We need appropriate standards and updated mapping in order to be able to design appropriate flood control projects for municipalities.  
Also need to review and update erosion risk standards and associated mapping for the Great Lakes shoreline.
2. Identify the risks associated with non-riverine flooding. Severe rainfall/snowmelt events associated with our changing climate are causing inland areas to flood. These risks should also be identified so that municipalities can update land use plans and develop appropriate storm water management infrastructure.

3. Need for NDMAF funding to be allocated for rural municipalities that provides smaller projects (less than \$20million dollars) to be considered
  - Provides a higher grant rate to municipalities (75-85% grant)
  - Provides a longer time period to design and complete projects (15-20 years)
  - Allows land acquisition to be considered as a component of structural projects
  - Broaden the program to support flood forecasting, flood progression mapping, emergency preparedness and response
4. Other Recommendations: Need the Province to become a partner in terms of funding new and existing flood/erosion control projects.

### **FOLLOW UP ACTIONS:**

Mr. Nater indicated that he would take our recommendations and contact the appropriate Federal Ministers and ask their consideration for changes to the National Disaster Mitigation and Adaptation Fund (Infrastructure Canada); Public Safety Canada and Environment Canada.

Mr. Nater recommended that MVCA consider sending a letter to the appropriate Federal Departments with our recommendations.

He also recommended that MVCA consider meeting with the Minister of Infrastructure for Ontario, Monte McNaughton, MPP for Lambton, Kent, Middlesex to ask the Provincial Government to consider developing a Provincial Flood/Erosion Control Infrastructure Program in partnership with the Federal Government.

### **CONSIDERATIONS:**

One of Conservation Ontario's responsibilities is to lobby the Provincial and Federal Governments on behalf of conservation authorities.

Should we contact Conservation Ontario to determine if they share our concern and discuss it with the rest of the conservation authorities before we undertake any follow up to this meeting?

The next meeting of Conservation Ontario Council is scheduled for September 25, 2018. Conservation Ontario Council also meets on December 10, 2018.

### **RECOMMENDATIONS:**

**To be developed at the meeting.**

# Improving the Effectiveness of Canada's Disaster Mitigation & Adaptation Fund

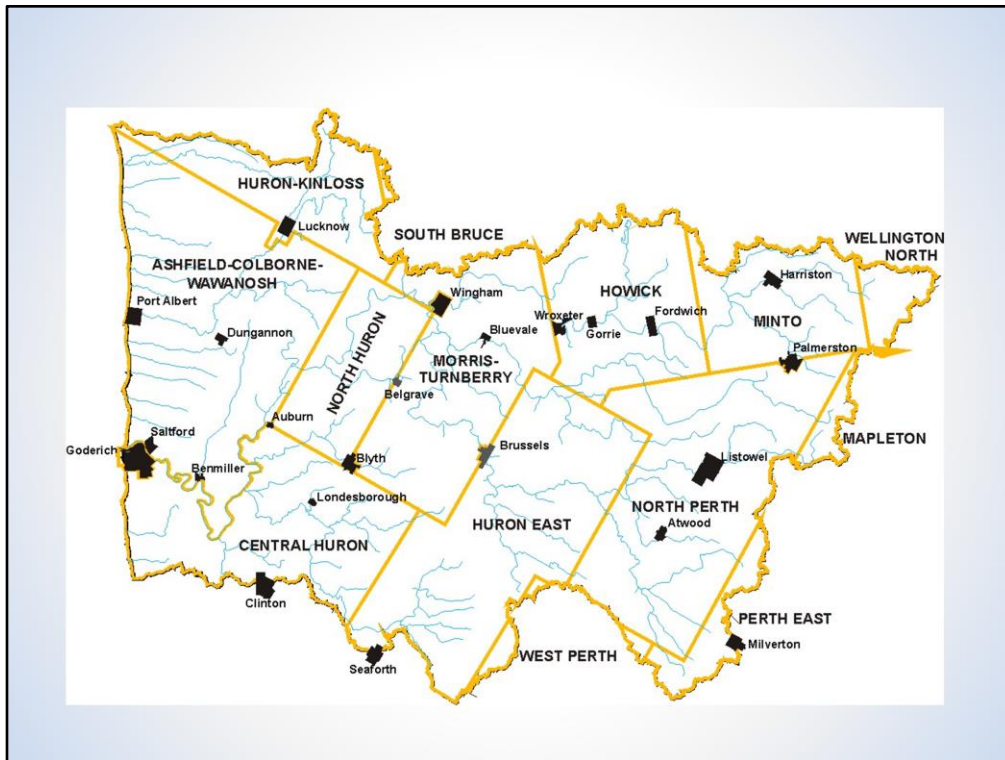


Will cover background on the Maitland watershed and the areas at risk from flooding/erosion

Climate Trends/Severe weather events in Maitland watershed.

Listowel Flood Control Project: Lessons learned

Ideas for changing the Disaster Mitigation and Adaptation Fund so that Rural municipalities can obtain support for flood/erosion control projects.



Background: Maitland Valley Conservation Authority is owned, governed and mainly financed by the 15 municipalities in the Maitland/Nine Mile Watersheds. We were established by the Province at the request of the municipalities in the watershed to help them work together to develop programs for dealing with water and land related issues such as flooding, erosion and water quality. We are one of 36 conservation authorities in Ontario.

[illegible]

Estimates based on flood and erosion risk standards developed in the 1970's! Out of date. Due to our rapidly changing climate first thing we need is updated flood/erosion risk standards and associated mapping of areas that are at risk of flooding/erosion.



## Climate trends in the Maitland Adding more energy to the atmosphere

- Warmer air, more water vapour in suspension
- Warmer/wetter winters on average
- Hotter, drier summers, interspersed with more localized intense rainfall events, more water vapor in atmosphere
- Longer periods where the weather stays the same due to weakening of the jet stream
- More severe weather events over last 10 years, three major flood events all in different months of the year(December 2008; June 2017; February 2018); three Ice storms; three tornadoes and several smaller wind storms
- Increased variability in terms of precipitation from year to year and season to season.
  - 2013 wettest year in 40 years
  - 2012 driest year in 30 years
  - 2015 dry spring followed by 2 ½ months worth of rain in 2 weeks
  - June 23<sup>rd</sup> storm resulted in highest summer flows in 48 years of records on the Maitland

# Update Flood Standards



Need to update flood standards for riverine and Great Lakes Flooding.  
Study by Public Safety Canada completed several years ago. No action taken with respect to recommendations for changes to flood standards.  
Need to know what standards should be used to map flood risks across Canada.  
Then we need to update flood risk mapping.

# Non Riverine Flooding



Picture of Hwy 21 North of Goderich flooded by rainfall event on June 23<sup>rd</sup> 2017. Often when we talk about flooding, we are talking about flooding caused by rivers. However, general overland flooding is still a major issue. What will be flooded before the water even gets to the river? This is known as overland flooding or non-riverine flooding. Similar to the work that has been done in the United Kingdom, we are also recommend mapping overland flooding.

In this case, water overtopped road and flowed into a different watershed causing damage to a shoreline road and property.

Overland flood mapping is particularly useful when doing emergency planning and determining flood risk for insurance. Wouldn't you want to know if a field is susceptible to flooding from rainfall so you know it is safe to build or grow a crop there?

Study of flooding risks in Canada did not address issue of non riverine flood risks.



This slide illustrates the land that is and will be affected by gully erosion if no storm water management system is put in place. Red lines show development at risk from shoreline/bluff collapse.

There are 66 large gully watersheds along the Lake Huron Shoreline and 64 smaller gullies that are not large enough to show up on our maps. \$366 million dollars worth of land/development located in areas at risk from shoreline erosion, bluff collapse, gully erosion along 50km stretch of shoreline within MVCA's area of jurisdiction.

## Mid Huron Beach



Picture of some of the damage caused by the runoff from the June 23<sup>rd</sup> storm event because of flow of water from outside gully watershed.

# Need for Rural Component

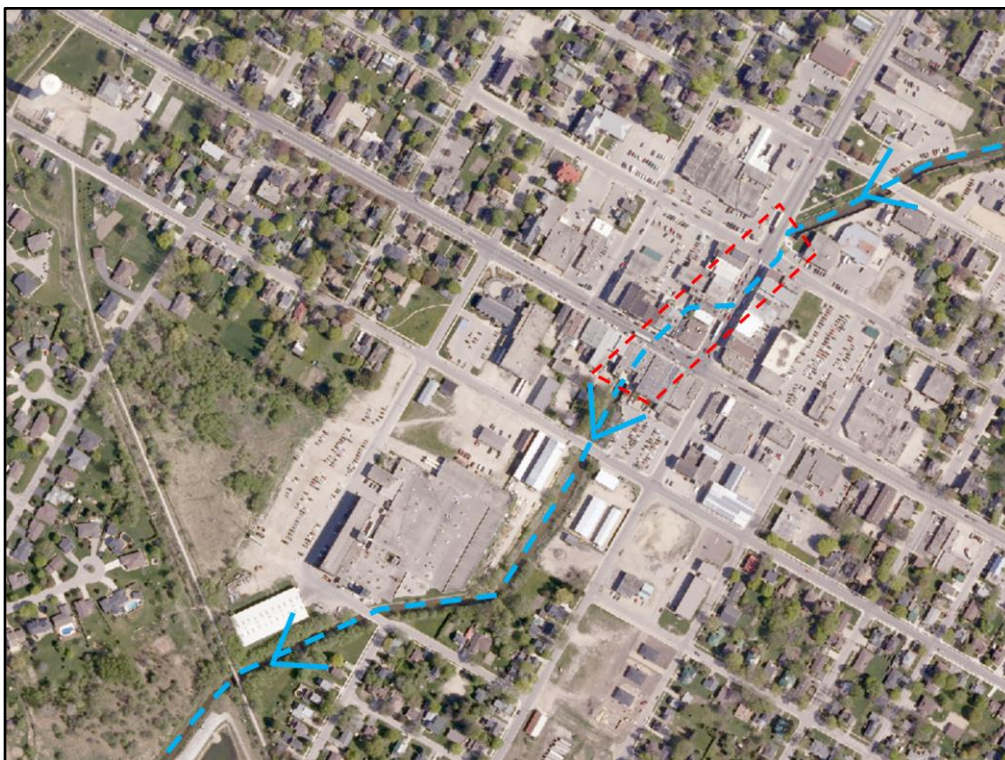


Although urban areas have a greater density of people who are at risk, all Ontarians/Canadians deserve to know their flood risk and have it mitigated where it is feasible to do so; resources need to be allocated so that rural Ontario is included. Given the difficulty of comparing flood mitigation projects in the city to the country, it is important that rural communities across Canada can participate in the program.

# Learning from Success: Listowel Flood Damage Reduction Project



The Listowel Flood Control Project: The project was completed with 85% grant dollars from the Provincial government in. This project started in the late 1970's and wasn't completed until the early 1990's.



Listowel literally settled “on top” of the river. The red dotted lines show where the river used to flow prior to settlement. In the current aerial photograph, you can’t see the river as it is buried under the town.



Over the years many schemes had been suggested to reduce the level of flooding. Both the 1954 and 1967 Maitland Valley conservation reports recommended that the Listowel conduit be reconstructed. In 1973, the Maitland Valley conservation authority undertook a study of flood control possibilities for the town of Listowel. The report was completed 2 years later.



Many different options were considered to reduce the flood threat in Listowel. The planning process occurred in a similar fashion to the current day “Environmental Assessment Process”. There needed to be a balance between the local economy, impacted residents, risk reduction and overall cost. The replacement of the conduit was recommended because it involved the least cost and it would include structural repair of the conduit to allow economic development to continue in the downtown core.



In 1977, four years after the study began, construction started on the first phase.

In the top of this photo you can see the channelization work that was done on the downstream side of Listowel to allow flood waters to quickly “get away” from the urban core. Often we talk about the need to slow water down to reduce flooding, but in this case it is important to quickly and safely move water through Listowel.



Buildings over the conduit were removed and the conduit was reconstructed to handle the 100 year flood. This meant that the flood risk went from a 15% chance of it happening in any year to a 1% chance.

The added bonus was that some of the existing buildings were heavily deteriorated due to water damage; the reconstruction was a revitalization of the urban core.



The removal and replacement of existing buildings during construction added to the overall length of the project. The legal and procedural process cannot be rushed. It is expected that any similar project in an urban area would also have the same time constraint issues.



The construction was done in 8 phases and it was finished in 1991. Construction took 12 years to complete. From the launch of the major planning stage, it took 18 years to complete. By their very nature, projects like this cannot be done quickly.



As a result of the mitigation works, a storm that use to cause this.....



Now would look like this.....no flooding on the streets.

The original construction cost of the Listowel Conduit was \$10 million and it has a replacement value of about \$30 million in today's dollars. However, it serves to protect about \$30 million dollars worth of assessed land. You also need to including the value of small businesses that can now operate in the urban core without a constant flood threat.

It is a great success story of dramatically reducing the annual flood risk while allowing economic prosperity to continue in a small town.



The benefit of the Listowel conduit can be demonstrated in this photo.

Imagine 4 feet 6 inches of flood water in the main street, like in the 1948 flood, before the conduit was improved.

The smaller cars would be covered and the larger cars would only have 6 inches to 12 inches visible. The water would be above the counter tops in all the shops and virtually all the merchandise would be destroyed. The interiors of all the buildings would need to be gutted, dried out, and redone to prevent mold and mildew growth. The interiors would also likely be contaminated with sewage. All the furnaces, hot water heaters and many electric components would also need to be replaced. In short, the entire downtown core would be crippled. There is not just the damage to the building and contents, but the damage to the small businesses that may be out of operation for several months or even years.

Although it is possible that there will be a flood that will exceed the capacity of improved conduit, it dramatically reduces the flood risk to the town.

# Ideas for Improvement

- Eliminate or reduce cap on project size
- Increase grant rate (75-85%)
- Lengthen Program: 15-20 years
- Allow Land Acquisition as part of structural projects

Support projects that are smaller than \$20million

Increase the grant rate so that rural communities can afford to participate

Lengthen the program: Projects can take a long time to evaluate the risks, select the best option, design and implement.

Allow land acquisition for structural projects. Sometimes need to purchase land/homes to build dikes/widen channels or build bigger bridges. Rebuilding on top of the river is not always the best option.

# Additions to Program

- Finalize flood risk standards for riverine areas
- Develop flood risk standards for non riverine areas that are susceptible to flooding
- Update standards for erosion risks along the Great Lakes shoreline
- Support updated flood/erosion risk mapping

# Additional Support

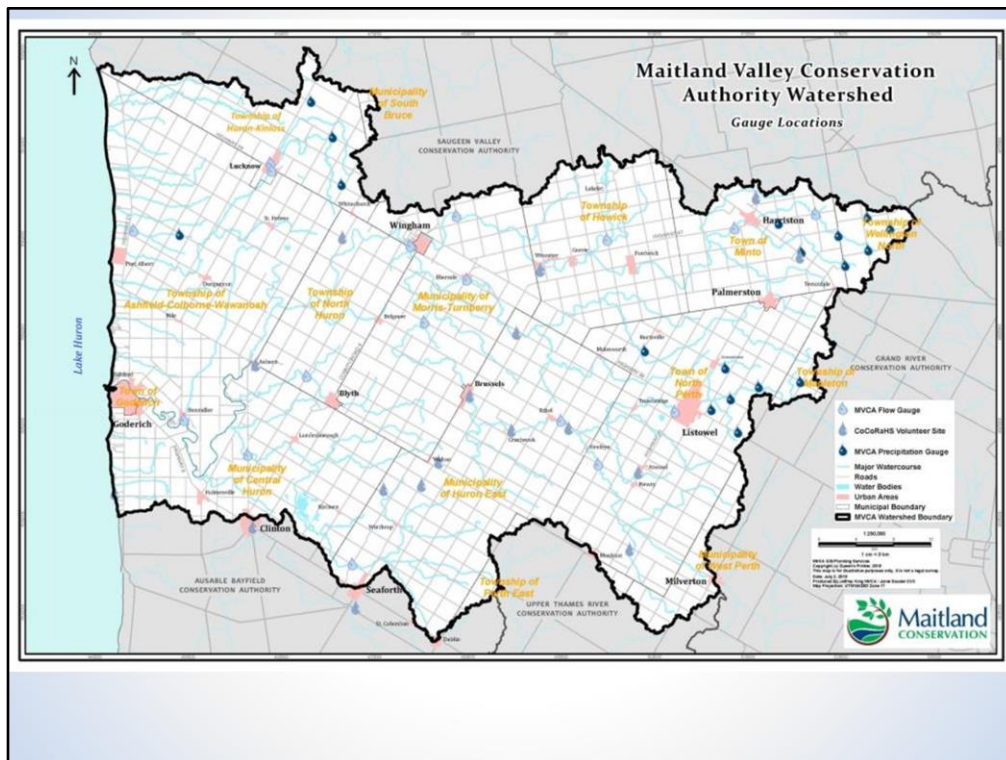
- Need for Province to be a partner in funding
- Broaden Program to Support Flood Forecasting, Flood/Erosion Emergency Preparedness and Response

Need the Province to be a partner in any program as they have responsibilities as well.

Broaden Program: Won't be able to mitigate all flood prone areas. So need to invest in improving forecasting, emergency preparedness and response.

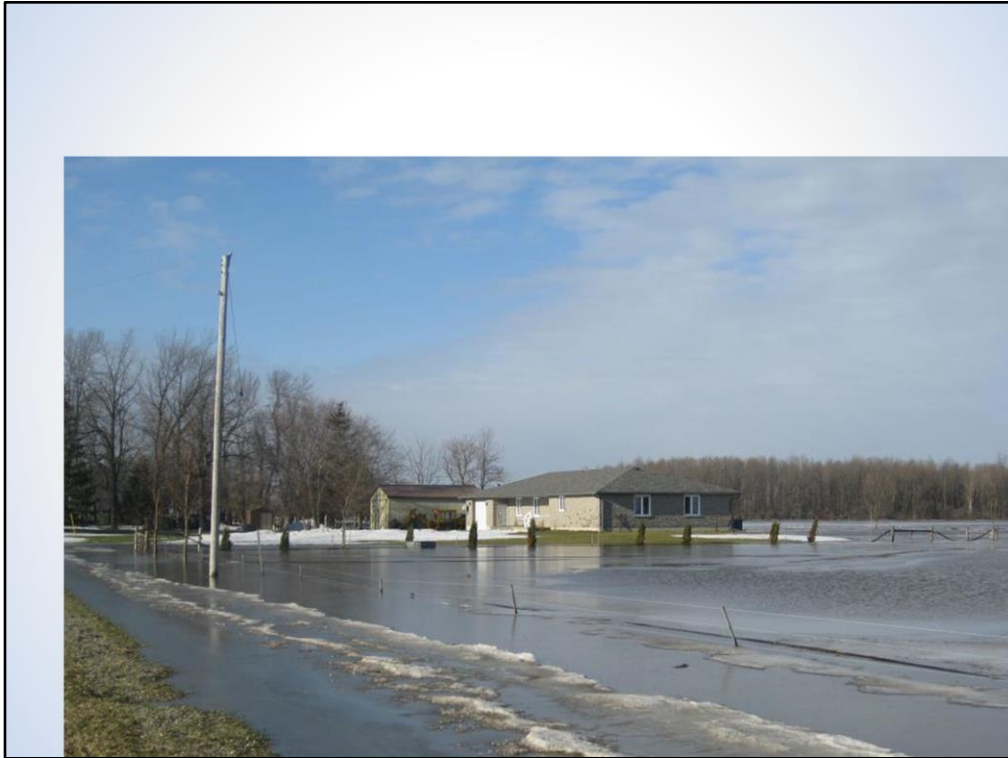
The Federal Government, Province and conservation authorities have a partnership with Environment Canada to install equipment, develop rating curves monitor stream flows, access weather information and utilize NOAA satellites to obtain data.

However our flood forecasting system also needs up to date flood plain mapping in order to develop accurate flood progression mapping for municipalities to use to develop emergency response plans.



Maitland Valley uses data from 16 stream gauges and 32 rain gauges to provide emergency responders with technical information about the timing and magnitude of expected flooding. All told, there is \$500,000 worth of flood forecasting equipment and software to maintain.

Our records show that flooding can occur at any time of year. Often people think of flooding as a spring phenomena, however, intense thunderstorms can result in rapid and devastating flooding in the middle of the summer. Our flood forecast system is operated 24 hours a day 365 days a year to help keep residents and visitors safe.



In rural areas we are not going to be able to mitigate all flooding especially to roads. So providing warning to municipalities will allow them to notify residents and barricade roads to reduce the risk of loss of life is essential.

# Where do we go from Here?

- Follow up Actions that we should take