

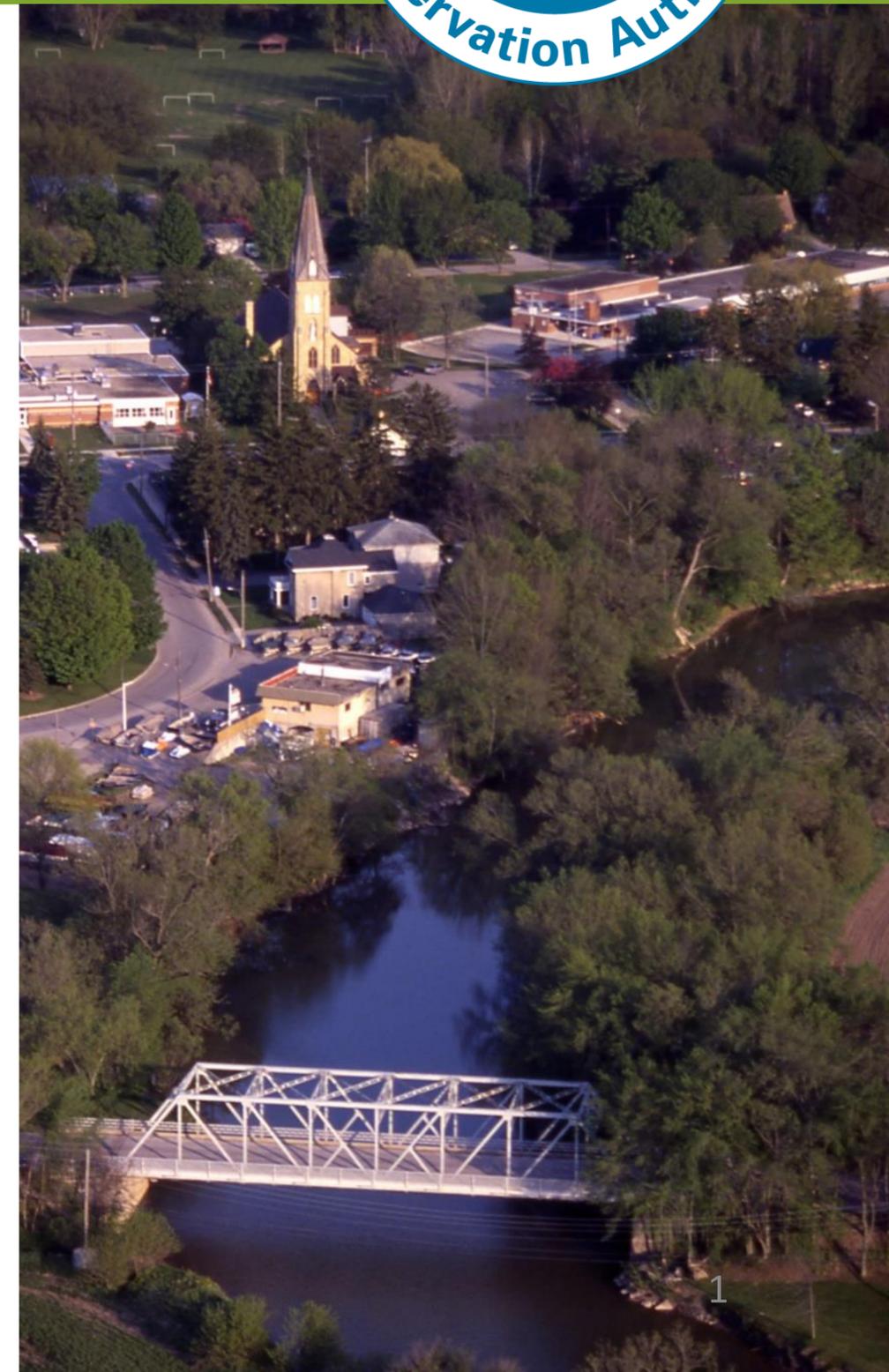
# New Hamburg

## Flood Mitigation Study



### Welcome to the Public Information Centre

- Please sign in and join our project email list
- Review the posters and displays
- You are encouraged to share your experiences and fill out a comment sheet
- GRCA staff are here to listen and answer your questions about this study



# New Hamburg

## Flood Mitigation Study



### Purpose of the PIC

Meet the Grand River Conservation Authority's Project Team and learn more about:

- Flooding in New Hamburg
- The Flood Mitigation Study
- Next steps and opportunities for your participation



# New Hamburg

## Flood Mitigation Study



## Background

- New Hamburg is one of 17 Flood Damage Centres in the Grand River watershed
- Flooding in February 2018 was caused by snowmelt and rainfall and reached levels not seen since 2008
- In September 2018, GRCA applied for funding under the federal National Disaster Mitigation Program (NDMP) to undertake the New Hamburg Flood Mitigation Study
- GRCA's funding application was approved in Spring 2019



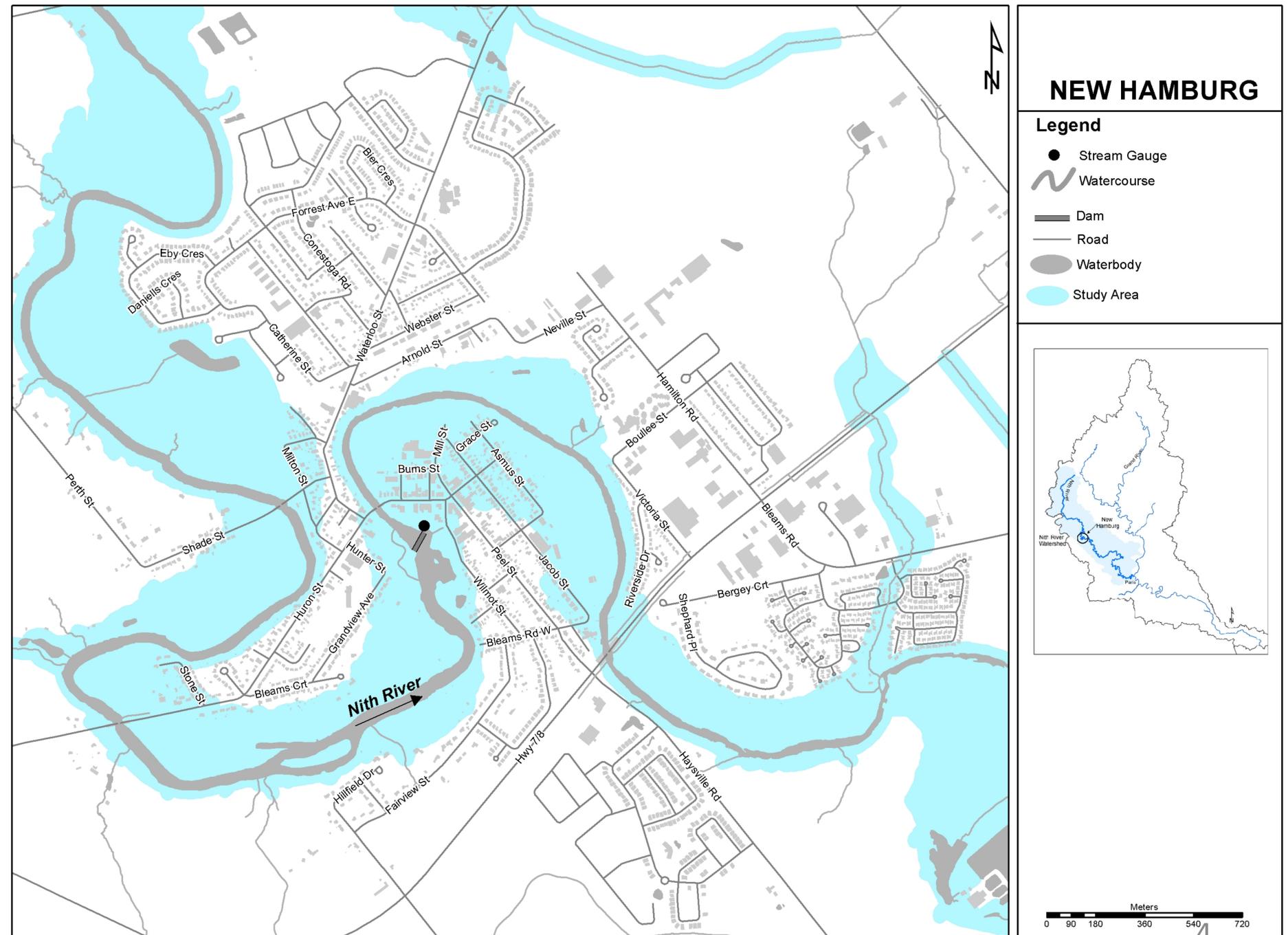
# New Hamburg

## Flood Mitigation Study



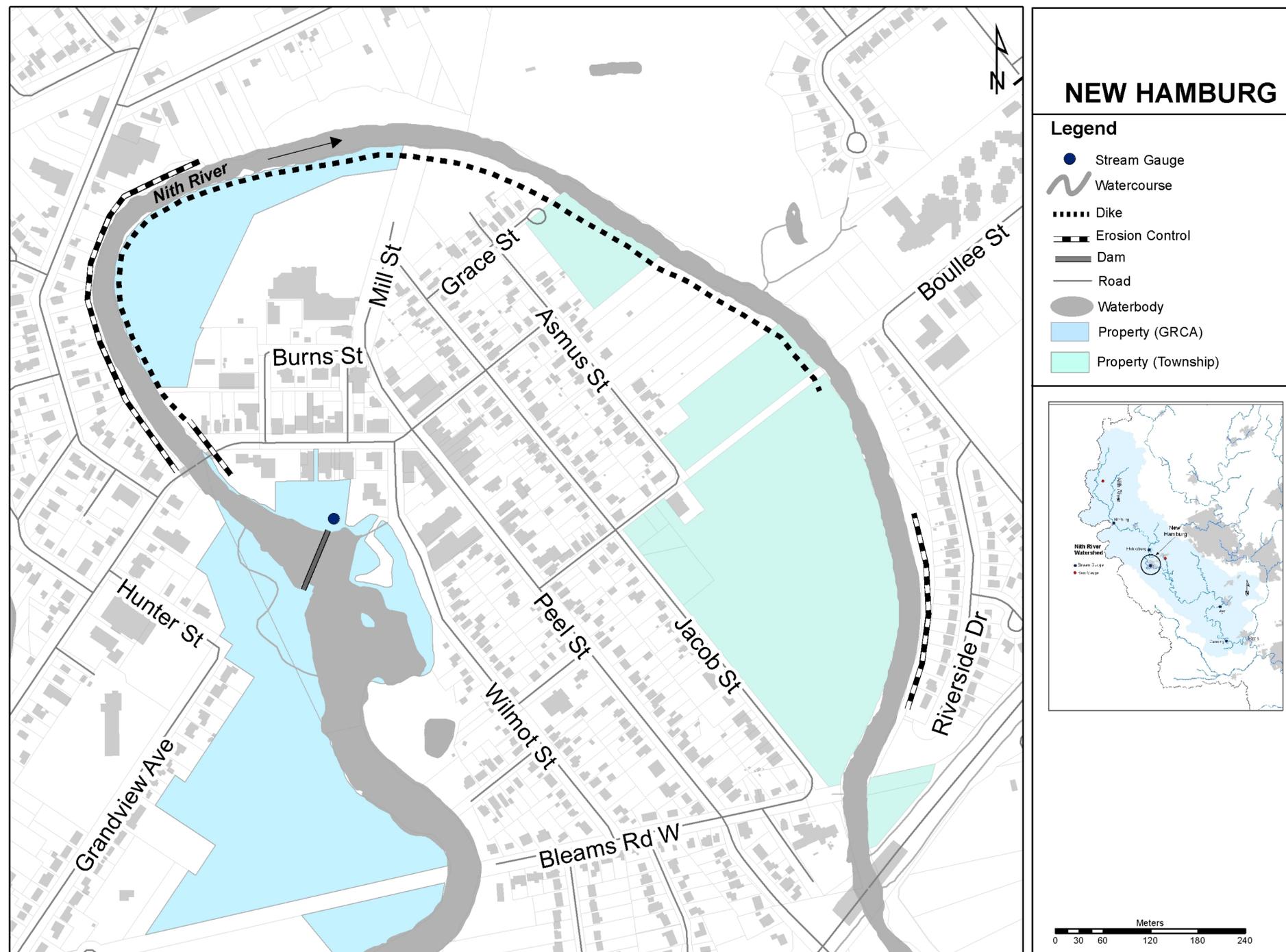
### Study Area

- Annual average flood damages will be assessed for areas at risk of flooding in New Hamburg
- Potential mitigation options and impacts considered by the study may be located within New Hamburg or the broader Nith River watershed



# New Hamburg

## Water Management Infrastructure



# New Hamburg

## Flood Mitigation Study



## Study Objectives

- Update flood mapping
- Estimate annual average flood damage costs
- Identify potential options for flood damage reduction, assess technical aspects, complete preliminary cost-benefit analysis

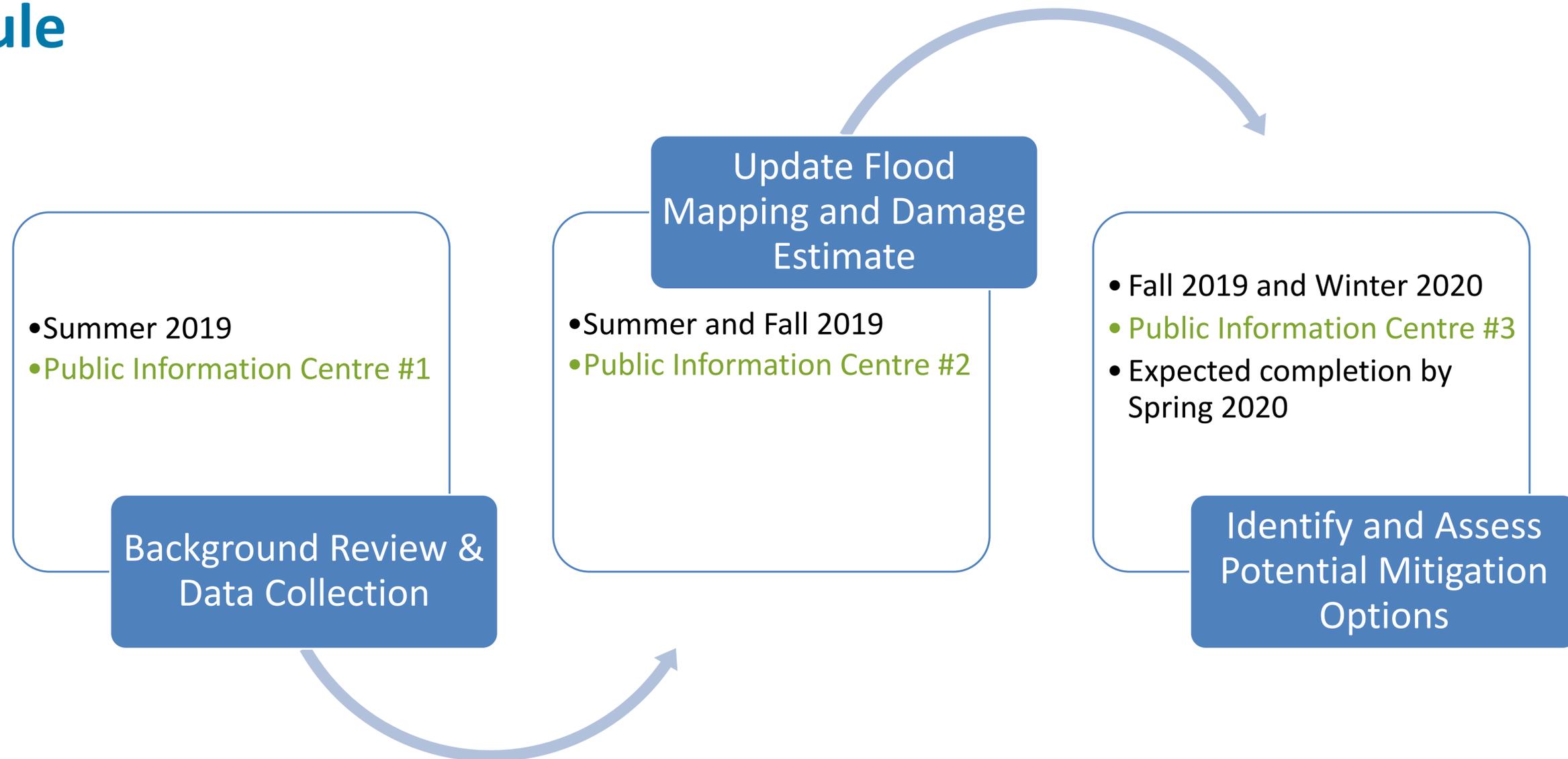


# New Hamburg

## Flood Mitigation Study



### Schedule



# New Hamburg

## Flood Mitigation Study



## Background Review & Data Collection

- Surveys of Nith River bed (bathymetry) and structures (e.g., bridges)
- Surveys of known high-water marks from flood events, understand on-the-ground impacts
- Update mapping of land surface (topography)
- Create mapping and database of existing structures at risk of flooding and their characteristics (e.g., building type, lowest point of water entry)



# New Hamburg

## Flood Mitigation Study



## Update Flood Mapping & Damage Estimates

- Update hydraulic modelling
- Update mapping of water depth and extent (inundation) for storm events of varying size
- Update mapping of water depth and extent (inundation) for flood warning zones
- Update flood damage curves and estimate current Annual Average Flood Damages

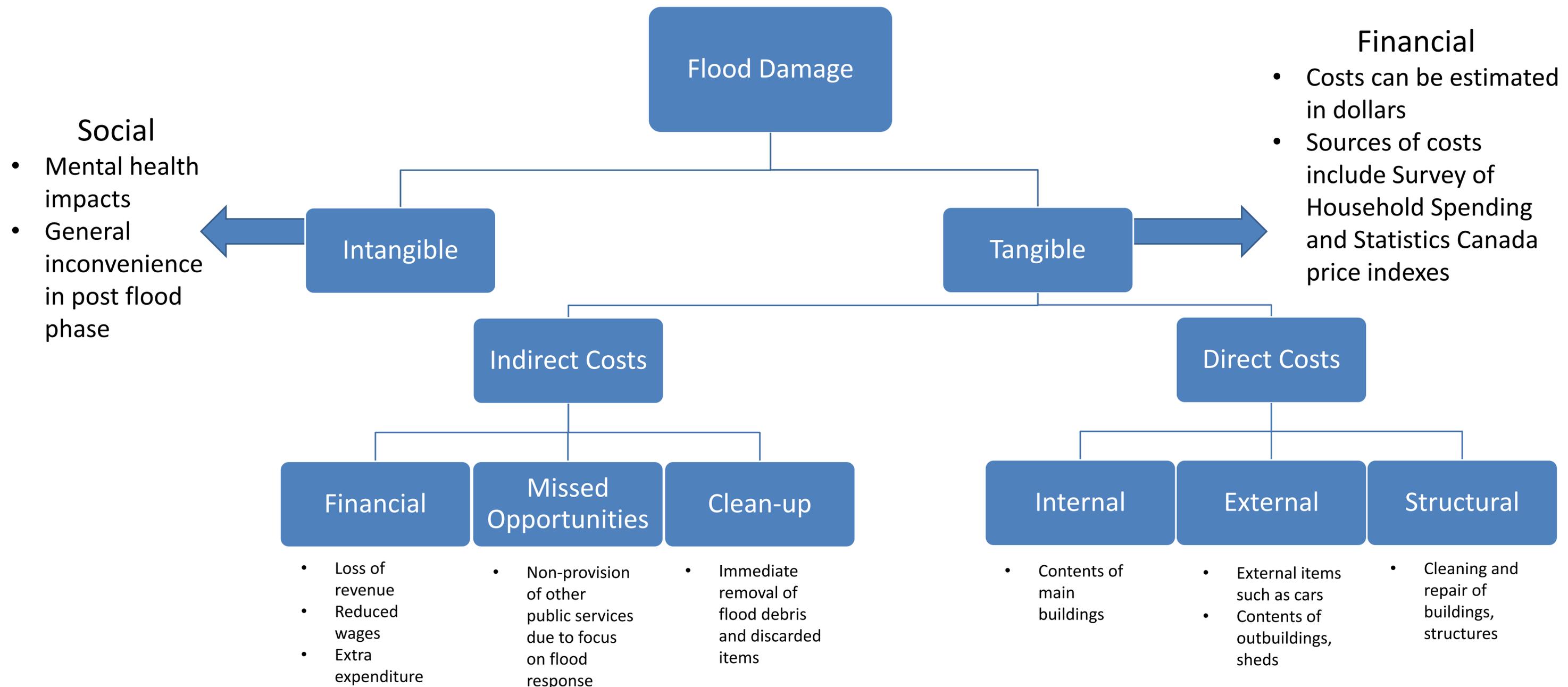


# New Hamburg

## Flood Mitigation Study



### Potential Considerations for Flood Damage Estimation



# New Hamburg

## Flood Mitigation Study



## Identify & Assess Flood Mitigation Options

- Identify potential options for reducing (mitigating) flood damages and their costs
- Estimate reduction in annual average flood damages for each potential mitigation option
- Assess costs and benefits of investing in potential mitigation options
- Document project findings and recommendations



# New Hamburg

## Flood Mitigation Study



## How You Can be Involved

- Attend the Public Information Centres for project updates and findings
- Fill out and submit a comment sheet:
  - Have you documented flood levels on your property? GRCA staff may request permission to survey past flood levels or water entry points on some properties.
  - Share flood damages and costs you've experienced. All information provided will be kept confidential and will provide broad context for the study.
- Visit our project webpage: [www.grandriver.ca/NHFloodStudy](http://www.grandriver.ca/NHFloodStudy)

To comment or request information, please call or email us at:

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Email [jivey@grandriver.ca](mailto:jivey@grandriver.ca)

# New Hamburg

## History of Studies and Works



- 1962 Grand River Hydraulics Report
- 1966 GRCA acquires New Hamburg dam
- 1970 New Hamburg dike built
- 1978 Preliminary Engineering Study –  
Nith River at New Hamburg
- 1978-1982 Nith River Erosion Protection Works
- 1983 Grand River Basin Water Management Study –  
Flood Damages Report
- 1985 Nith River Flood Line Mapping Study
- 1989 New Hamburg dam rebuilt
- 2017 New Hamburg dike maintenance  
(tree and brush removal)



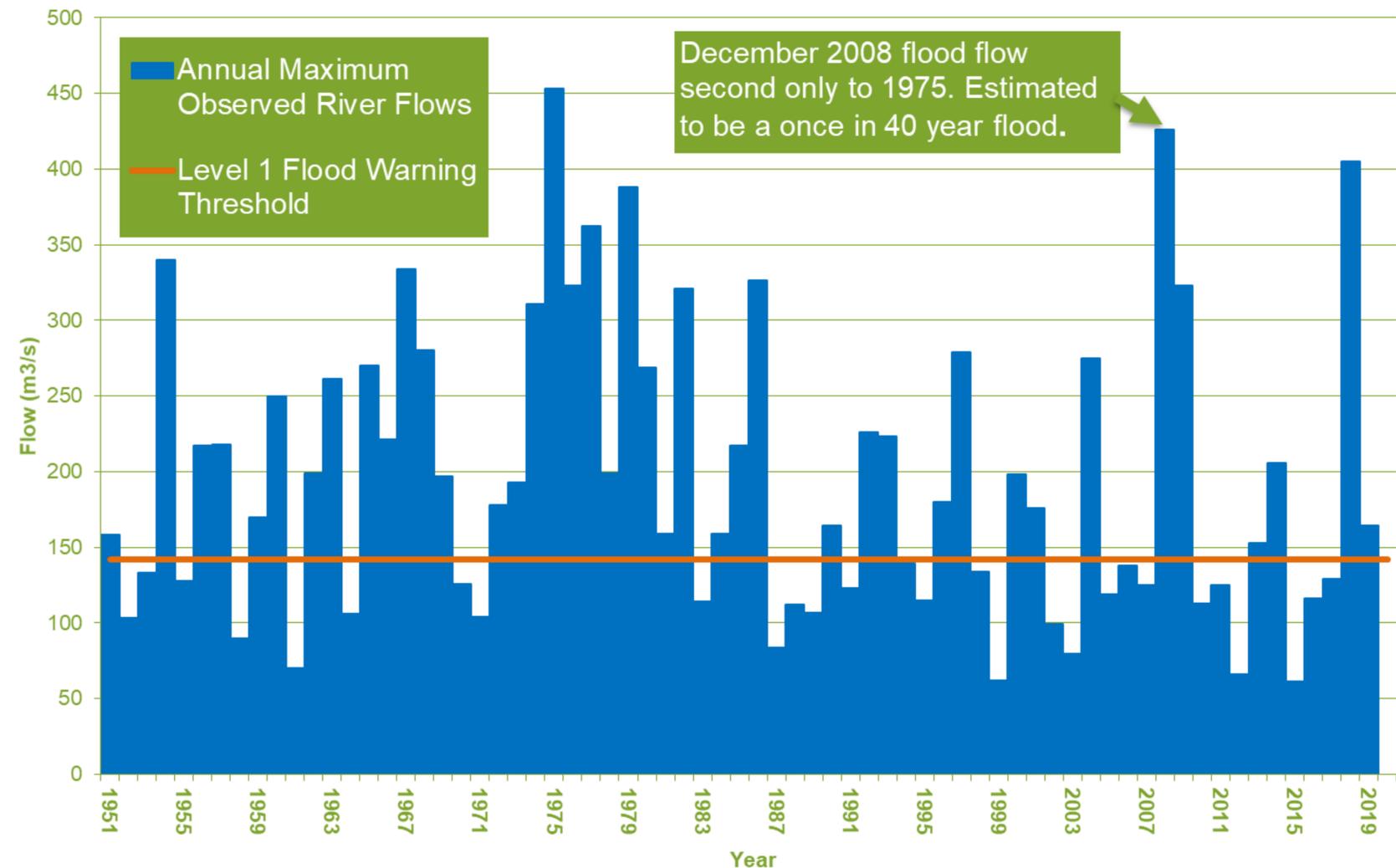
# Nith River

## Flooding History



- Highest flood flows on record in 1975
- Other notable floods – December 2008, February 2018
- Floods can occur during any season
- Larger floods have resulted from combined snowmelt and rainfall
- The highest annual flows are trending earlier in the year

Maximum Annual Instantaneous Flow  
Nith River at New Hamburg 1951 to 2018



# GRCA Roles in Managing Floods



## Flood Response



1. Monitor watershed and weather conditions to predict flooding.
2. Operate dams and reservoirs to reduce the effects of flooding.
3. Issue flood warning messages to municipal flood coordinators.

# GRCA Roles in Managing Floods



## Regulation of Development in Floodplains

- Flooding can threaten lives and cause property damage
- Floodplains are areas near rivers and streams that are subject to flooding
- Under the Conservation Authorities Act and Ontario Regulation 150/06, development within floodplains and other hazard lands requires a permit from GRCA
- The regulated floodplain (or riverine flooding hazard) is the land that would be inundated under a flood resulting from the rainfall experienced during Hurricane Hazel (1954)
- Floodplain mapping is created using river flows (from hydrologic models), flood elevations (from hydraulic models), and land surface mapping
- Updates to modeling and mapping undertaken for the New Hamburg Flood Mitigation Study may result in future amendments to GRCA's regulated area mapping

# Municipal Roles in Managing Floods



## Flood Response

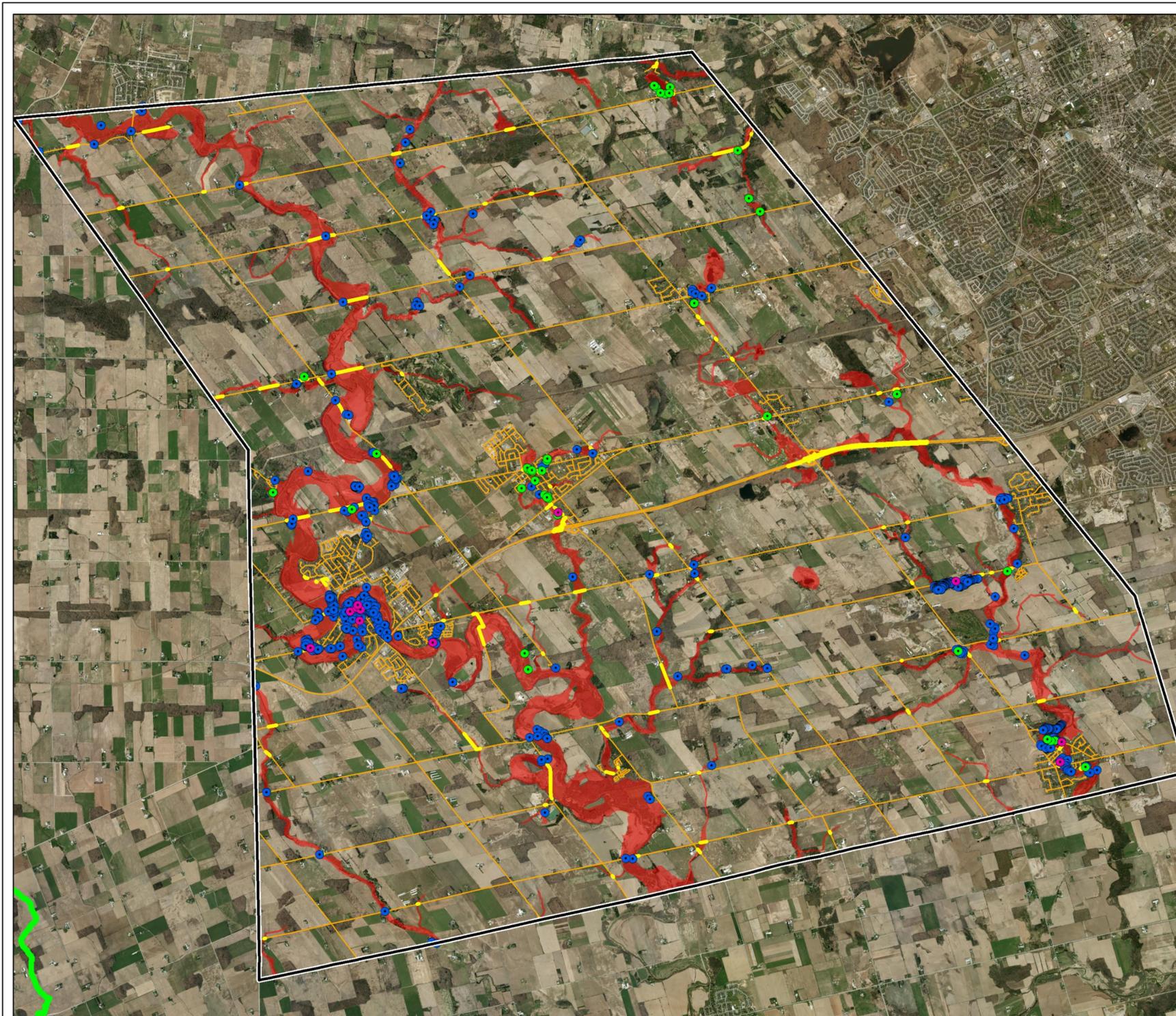


Upon receipt of a Flood Message, Municipal Officials:

1. Warn staff, affected citizens, businesses, and the general public in the forecast flood hazard area.
2. Coordinate and enact Municipal Emergency Flood Response Plans.
3. Monitor the flood situation and liaise with GRCA Flood Coordinators.

# Nith River

## Wilmot Township Flood Preparedness Mapping



Grand River  
Conservation Authority



### Flood Emergency Map Township of Wilmot

#### Legend

- Critical Infrastructure
- Buildings in Floodplain
- Footprints in Floodplain
- Roads in Floodplain
- Roads
- Floodplain
- ▭ Township of Wilmot
- ▭ Watershed Boundary

#### Overview Statistics

Count of features in the floodplain:  
Buildings in Floodplain: 41  
Footprints in Floodplain: 753  
Critical Infrastructure: 12  
Roads in Floodplain (seg): 213  
Roads in Floodplain (km): 32.4  
Surface area of Floodplain: 26.23 sq km  
Proportion Floodplain of Study: 9.9%



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