Working with Municipal Emergency Responders

Different Floods, Different Responses

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Provincial Flood Forecasting and Warning Workshop
Wednesday, September 18, 2019

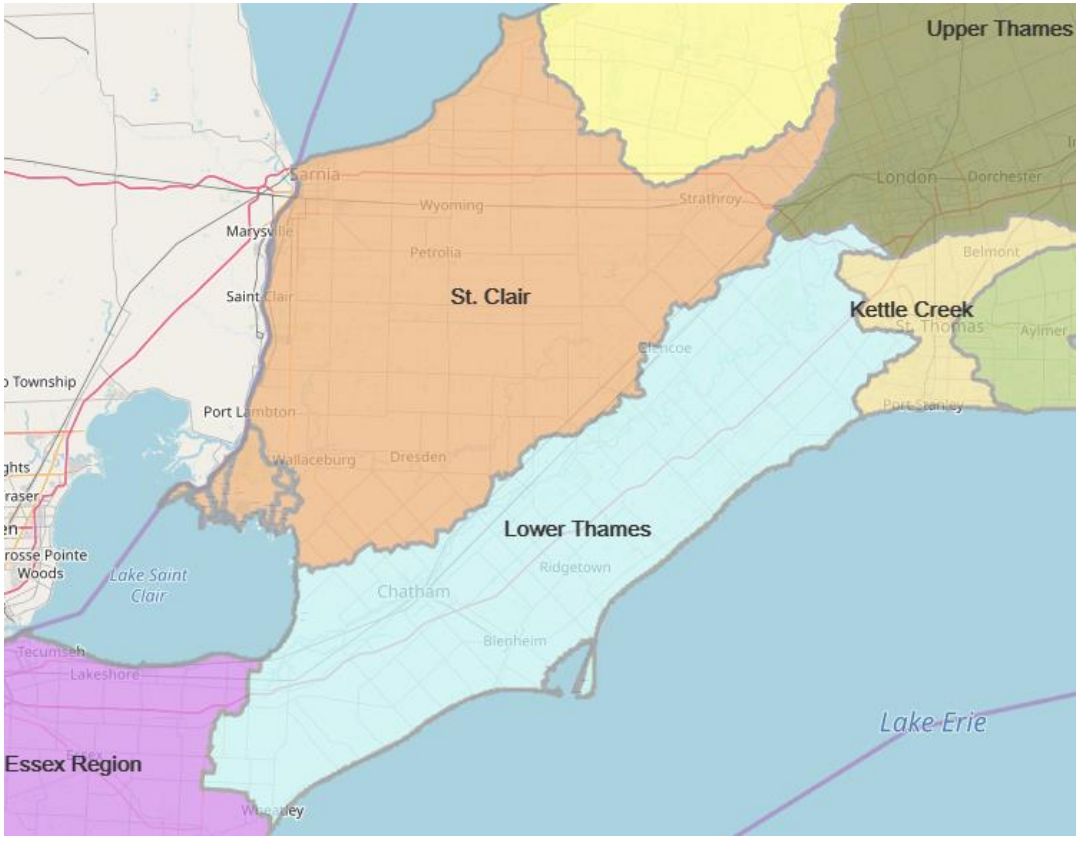
Lower Thames Conservation

Outline

- LTVCA
- Chatham-Kent
  - Corporate Structure, Executive Management Team
- February 2018 Flood (free flow)
  - What happened, damage, event management
- February 2019 Ice Jam Flood
  - What happened, damage, event management
- August 2019 Shoreline Flooding (Erie Shore Dr.)
  - What happened, damages, event management
- Final thoughts

LTVCA

- Smaller C.A.
- 3275 km^2
- About 30 staff total
- Flood Program Staff
  - One Dept. Manager / Flood Forecaster
  - One Dam Tech / Conservation Areas
  - Two Planning and Regulations staff
  - C.A.O.
  - Recently hired an assistant for Regulations



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Chatham-Kent

- Population: 102,000
- Land Area: 2471 km^2
- Two Conservation Authorities
  - LTVCA / SCRCA
- Length of Thames River:
  83 km
- Length of Shoreline
  - 90 km on Lake Erie
  - 25 km on Lake St. Clair
- Flood Prone Areas in LTVCA:
  270 km^2

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CK Corporate Structure

- Corporate Services
- Community Development
  - Fire and Paramedic
  - Planning Services
  - Building Development Services
- Finance, Budget and IT
  - Includes GIS
- Community Human Services
  - Public Health
- Infrastructure and Engineering Services
  - Engineering and Transportation
  - Public Works
  - Drainage, Waste and Asset Management
    - 5 Drainage Superintendents, 4 Drainage Analysts

CK Executive Management Team

- Made up of managers from the departments
- Becomes the “Emergency Management Team”
- Other relevant staff or agencies join when required
  - Lower level managers
  - Police, Fire
  - Conservation Authorities
  - Politicians
  - PUC, Entegrus (electricity), Enbridge (gas)
- This is where status updates are provided, decisions get made, people get organized, etc.
- Generally meets daily during an event

Thames River Flooding (Feb. 2018)

Thamesville, Feb. 24 2018

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Thames River Flooding (Feb. 2018)

- This was a very large flow event caused by a winter rain on snow.
- Fortunately, it did not trigger an ice jam
- Highest flows ever recorded in St. Mary's
- Sixth highest flows on record at Thamesville.
- Highest water levels in Chatham since the ice jam of 1985 and the highest associated with a "free flow" event since 1947.

Thames River Flooding (Feb. 2018)

St. Mary's, Feb. 20 2018
Photo: UTRCA

Melbourne Rd., Feb. 24 2018

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Thamesville (Feb. 2018)

- On the 23rd “forward operations centre” opened
- Evacuated the town (Pop 900), including 2 long term care facilities
- Started the day before so they wouldn’t have to evacuate overnight
- 22 buildings without power, 495 without gas
- Did not get as bad as predicted

Feb. 24 2018

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Chatham (Feb. 2018)

- Operation of LTVCA's 6th St. Backwater Dam and Pumping station protected many properties in south Chatham.
- 52 homes without gas
- Twelve people evacuated by EMS
- Only 5 staying at an evacuation centre
- By the 26th, moving into recovery phase

Feb. 24 2018

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Event Management (Feb. 2018)

- Primary LTVCA Contact was the Community Emergency Management Coordinator (CEMC)
  - Requests made by directly by the CEMC to the LTVCA and municipal staff
- Every morning at 8:30 a.m. the E.M.T. met.
  - Emergency Services
  - LTVCA / MNRF
  - Neighbouring municipalities
- Emergency Services played the leading role due to the large number of evacuations
- LTVCA did Forecasting, Dam operations and Flood Watch

Members of the Chatham-Kent Fire Department bring Siskind Court residents to safety as evacuation continues on Saturday, Feb. 24, 2015. (Facebook / Barbara Burrell-Hutchins)

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Thames River Ice Jam (Feb. 2019)

Rene Lapointe, Feb. 10 2019

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Thames River Ice Jam (Feb. 2019)

- Strange event from a forecasting perspective
- Based on previous ice jams events and studies, there was neither enough ice, nor enough flow in the river, to cause a jam.
  - High lake levels may have contributed
- Ice jam formed ~10 km upstream on Feb 6th
- Feb 7th it moved to the mouth (Lighthouse Cove)
- Impacts from the first jam extended 30 km upstream into the city of Chatham

Thames River Ice Jam (Feb. 2019)

- LTVCA again needed to operate the 6th St. Backwater Dam.
- In the city of Chatham, many of the same homes flooded the previous year were impacted again
- Multiple contractors were called in working late into the night to patch holes in the flood protection works

Feb. 7, 2019

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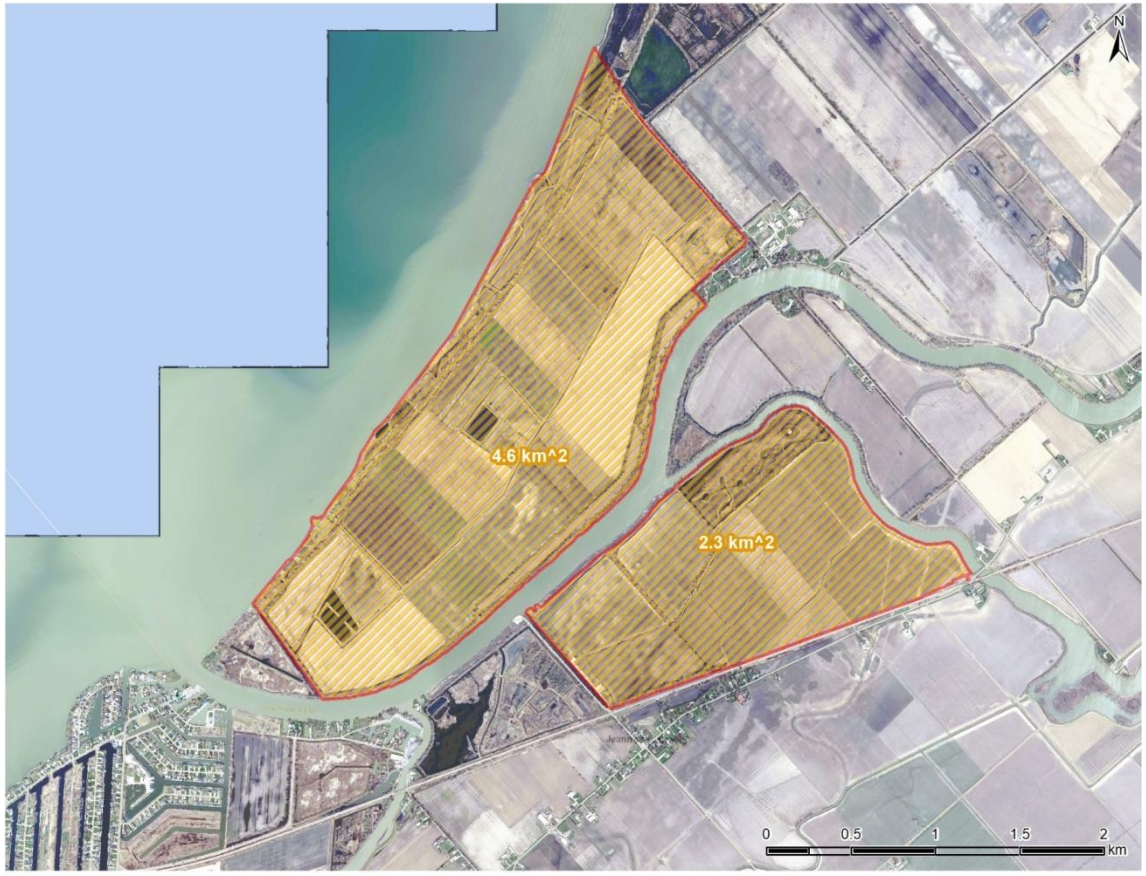
Thames River Ice Jam (Feb. 2019)

- Flood protection works failed at Jeanettes Creek and Bradleyville flooding 6.9 km^2.
- Fortunately, its was only agricultural land. There was only 1 home in the flooded area.
- CK spent $350k due to the failing flood protection works



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Event Management (Feb. 2019)

- Primary LTVCA Contact was the General Manager, Infrastructure and Engineering Services
  - Significant additional contacts with his Directors and Drainage Superintendents
- Fewer E.M.T. meetings
- IES and Drainage Superintendents played a much bigger role since it was more managing contractors and repairs, less about evacuations.
- LTVCA did Forecasting, Dam operations and Flood Watch

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Shoreline Flooding (LTVCA-CK)

Erie Shore Dr., Aug. 27, 2019

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Shoreline Flooding (LTVCA-CK)

- LTVCA has issued 107 flood messages for the shoreline between 2017 and today.
- Any winds reaching 40 km/hr currently cause flooding somewhere on the shoreline
- Erie Shore Drive starts flooding with winds of 30 km/hr from the south

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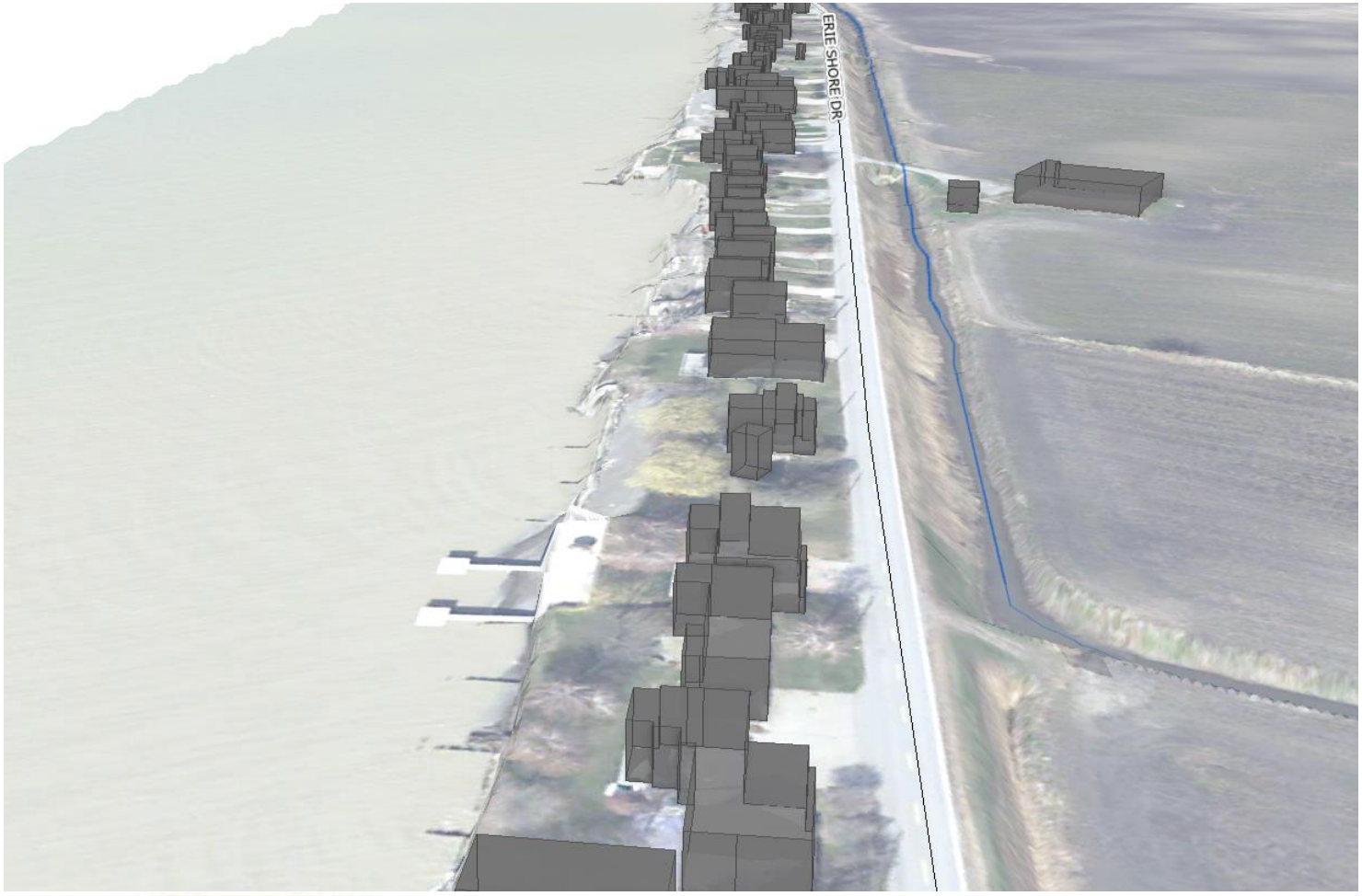
Understanding Erie Shore Dr.



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Erie Shore Dr. August 27, 2019

- On Aug 26th at around 10:00 pm winds at Erie Shore Drive reached 35 km/hr. They stayed between 25 and 35 km/hr until 8:00 am. Gust were recorded up to 46 km/hr.
- Public Works staff reported that at one point overnight there was over well over 50 cm flowing over the road in places.

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Erie Shore Dr. August 27, 2019

- Significant damage occurred to 12 homes, the roadway, the supporting slope, the municipal drain and 3 breakwalls
- Residents were asked to evacuate 50 homes
- Roadway closed to all traffic
- $300k already invested to stabilize the roadway structure and manage water flow over the road.

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Event Management (Aug. 27, 2019)

- Primary LTVCA Contact was the General Manager, Infrastructure and Engineering Services
  - Significant additional contacts with his Directors and Drainage Superintendents
- One E.M.T. meeting
- IES and Public Works played the biggest role since the C.A.O was on vacation and much of the work was keeping the road from failing.
  - Fire and Police managed evacuations.
- LTVCA did Forecasting, and Flood Watch

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Final Thoughts

- Residents do not inform the Conservation Authority when its flooding. Often they don't tell the municipality either
- Residents don't report damages to the Conservation Authority or the municipality either.
- Some will put it on social media

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Final Thoughts

- Municipality is going to tap the best people to get the job done.
  - That means you may not be dealing with their Flood Coordinator or Emergency Management Coordinator
  - If it has to do with managing infrastructure, the staff most responsible for those works are going to take charge
- Municipal staff get burnt out. They really appreciated having C.A. staff out there driving the roads on flood watch so that their own staff could take a break.
  - Do your municipalities know that you are out there?

Thank you

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