

# **PENNOCK CREEK FLOODPLAIN MAPPING UPDATE STUDY**

**Please review the storyboards and the draft floodplain maps.**

**We are happy to answer your questions.**

**Please fill in a Comment Sheet if you would like to provide comments in writing.**

**Thank you for your Participation.**

# PROJECT BACKGROUND & OBJECTIVES

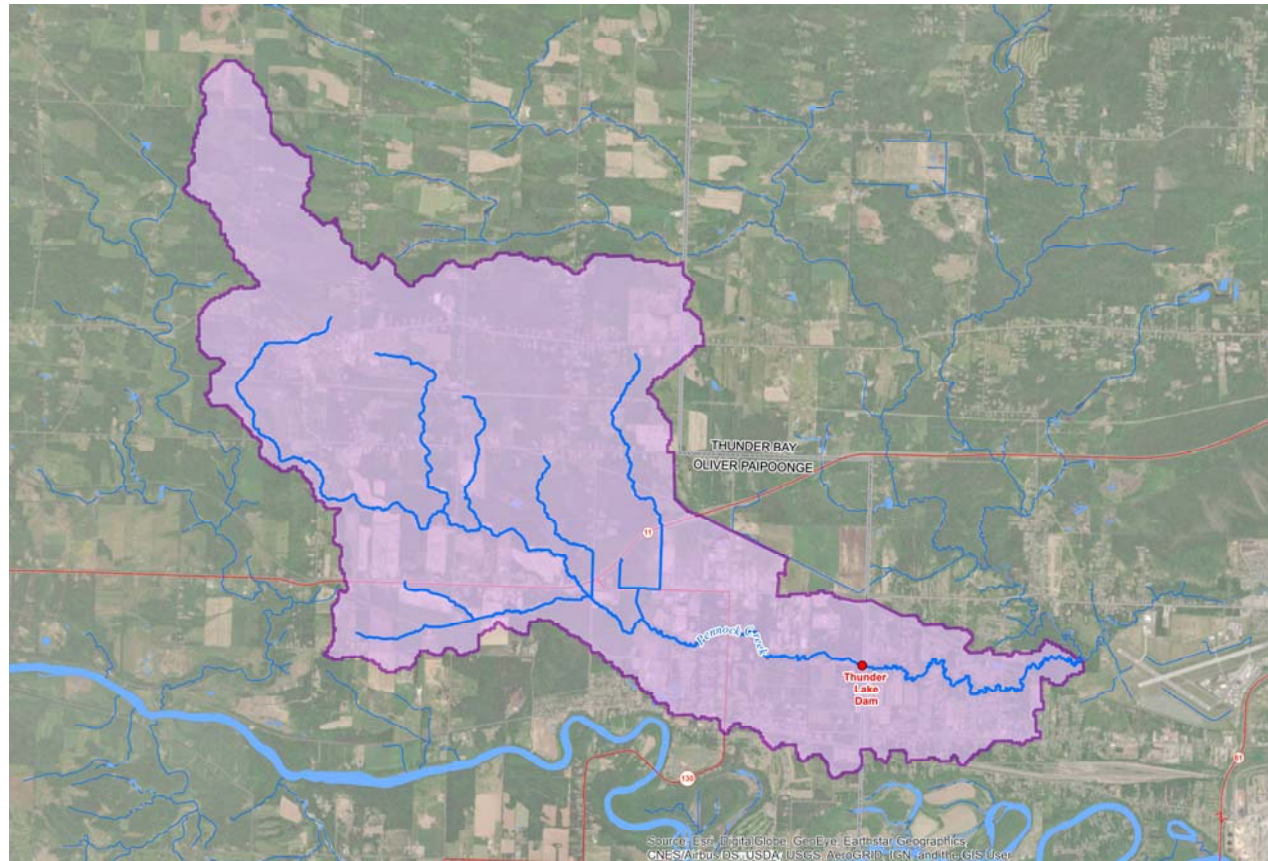
## STUDY BACKGROUND

The LRCA is currently undergoing the process of updating its floodplain mapping inventory. The third watershed to be updated is the Pennock Creek watershed, which was most previously mapped in 1982. These maps will assist the LRCA in identifying locations where the channel may overtop its banks as well as to identify flood vulnerable infrastructure.

## STUDY OBJECTIVES

- Acquire detailed topography using LiDAR technology
- Acquire high resolution aerial imagery
- Hydrologic analysis & modeling to estimate flood events on Pennock Creek System
- Hydraulic analysis & modeling to estimate water levels on Pennock Creek System
- Prepare updated floodplain maps

## PROJECT STUDY AREA



- Water flows south-east and into the Neening River
- Drainage area includes the main branch of the Pennock Creek and its tributaries

# DATA COLLECTION

## LiDAR & TOPOGRAPHIC INFORMATION

- ❑ LiDAR data and aerial imagery acquisition was completed in the spring of 2019
- ❑ Topographic and bathymetric data was collected in the fall of 2018 and summer of 2019 to supplement the LiDAR
  - River bed and floodway channel bottom
  - Crossing details
  - Road elevations
- ❑ A Digital Elevation Model (DEM) of the river and overbank was developed from the data collected

Structure ID: C-013-P\_05

River: Pennock Creek

Street: Fraser Road

Station: N/A

Cross Type: Culvert

# of Pipes: 2

Map Sheet No: 1934

UTM Grid: CSRS Zone 18

Northing: 5382439

Easting: 317085

Upstream Channel Elevation: 234.424

Downstream Channel Elevation: 234.408

**BRIDGE**

Material: N/A

Deck Width: N/A

Total Span: N/A

Number of Spans: N/A

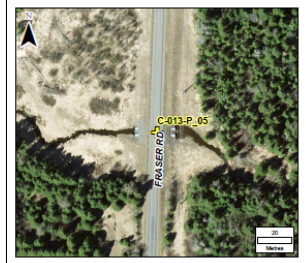
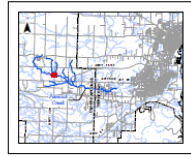
Top Deck Elevation: N/A

Bottom Deck Elevation: N/A

**CULVERT**

	us	PIPE.1	DS	us	PIPE.2	DS	us	PIPE.3	DS	us	PIPE.4	DS
Invert Elevations (m):	234.217		233.925	234.081		233.825						
Obvert Elevations (m):	236.477		236.292	236.278		236.036						
Pipe Dimensions (m):	V: 2.40		H: 2.40	V: 2.25		H: 2.25						
Material:	Corrugated Steel Pipe		Corrugated Steel Pipe		Corrugated Steel Pipe		Corrugated Steel Pipe		Corrugated Steel Pipe		Corrugated Steel Pipe	
Length (m):	24.0		24.0		24.0		24.0		24.0		24.0	
Gated/Trash Rack:	No No		No No		No No		No No		No No		No No	
Total Cover (m):	2.813		2.889		2.889		2.889		2.889		2.889	
Top of Road Elevation (m):	238.905		238.905		238.905		238.905		238.905		238.905	

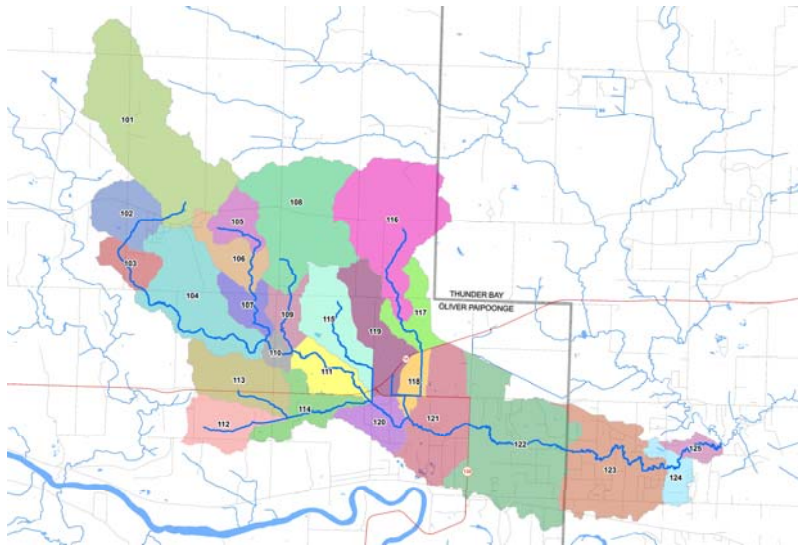
Additional Information: N/A

USPS: Elevations are in metres and in metres unless otherwise specified. Transverse Mercator Projection, NAD 1983, CSRS Zone 18. Elevations are in metres above sea level (MSL). Canadian Geospatial Vertical Datum 1929 (CGVD29).

# HYDROLOGIC ANALYSES

*Hydrologic analyses are used to estimate runoff into rivers and streams from rainfall and / or snowmelt.*



**Pennock Creek Sub-Catchments**

- ❑ A computer model (OTTHYMO) of the watershed was developed
- ❑ The model was used to estimate peak flows from the Regional Storm (i.e. Timmins Storm)
- ❑ Flood frequency analyses were completed to estimate peak flows for 1 in 2 year to 1 in 100 year flood events

Estimated Peak Flow (m <sup>3</sup> /s)						
2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	Regional Storm
8.2	14.4	19.0	24.9	29.5	34.1	52.4

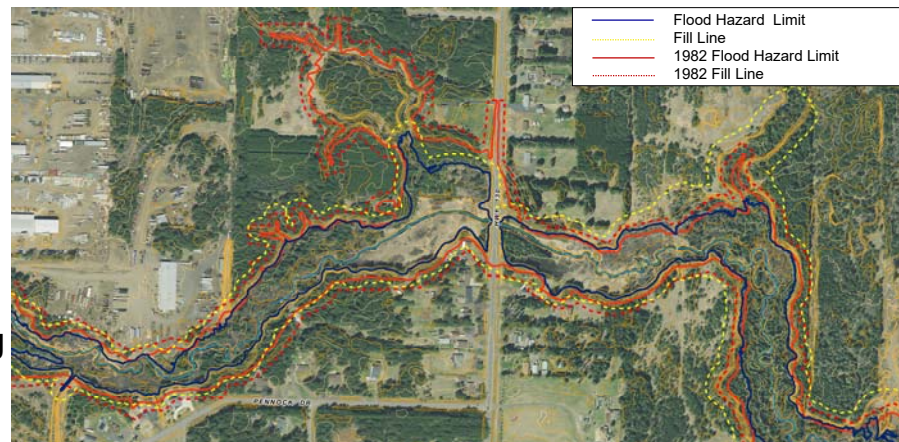
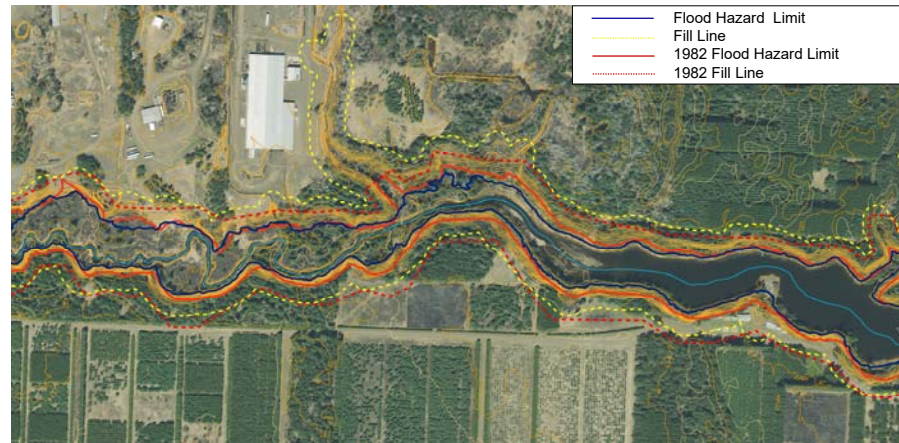




# FLOODPLAIN MAPPING

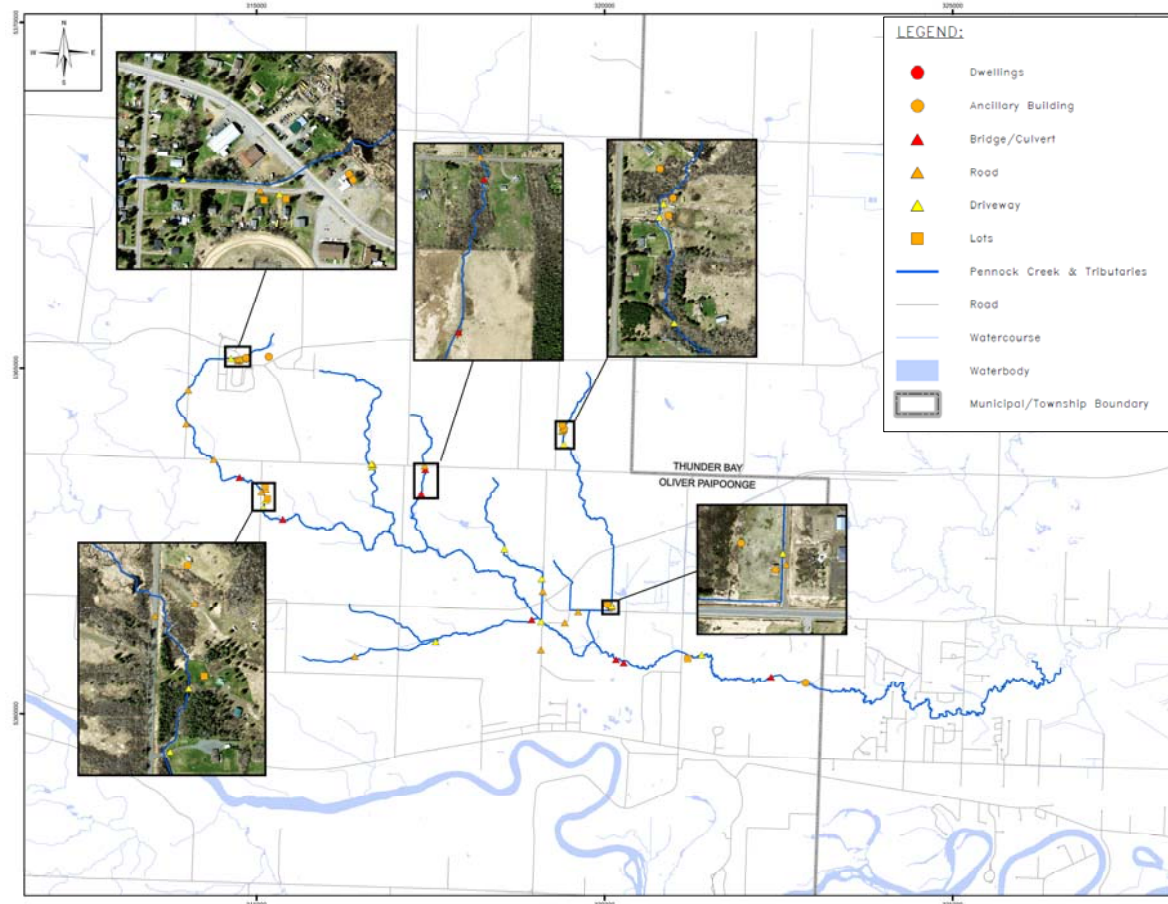
## GENERATION OF FLOOD HAZARD AND FILL LINES

- ❑ Floodplain maps were produced for the entire watershed
- ❑ The flood hazard limit line represents the extents of flooding resulting from the Regional Storm (i.e. Timmins Storm)
- ❑ The maps were used to identify locations of channel overtopping and flood affected infrastructure



# FLOODPLAIN MAPPING

## FLOOD AFFECTED INFRASTRUCTURE



		Flood Magnitude						
		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	Regional Storm
Quantity of Affected Infrastructure	Dwelling	0	0	0	0	0	0	0
	Ancillary Building	0	0	1	3	4	4	9
	Bridge/Culvert	0	1	1	1	1	2	5
	Driveway	1	5	5	8	10	10	10
	Road	1	1	3	4	8	9	14
	Lot	0	1	6	7	8	11	14



# THANK YOU

**We sincerely appreciate your participation at this Open House.**

**Share your Comments:**

**Please fill in a Comment Sheet and leave it with us today or deliver it to the  
Lakehead Region Conservation Authority Office by **April 9<sup>th</sup>, 2020.****