MOSQUITO 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 fifth watershed to be updated is the Mosquito Creek watershed, which was most previously mapped in 1984. 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 Mosquito Creek System
- ❑ Hydraulic analysis & modeling to estimate water levels on Mosquito Creek System
- ❑ Prepare updated floodplain maps

PROJECT STUDY AREA
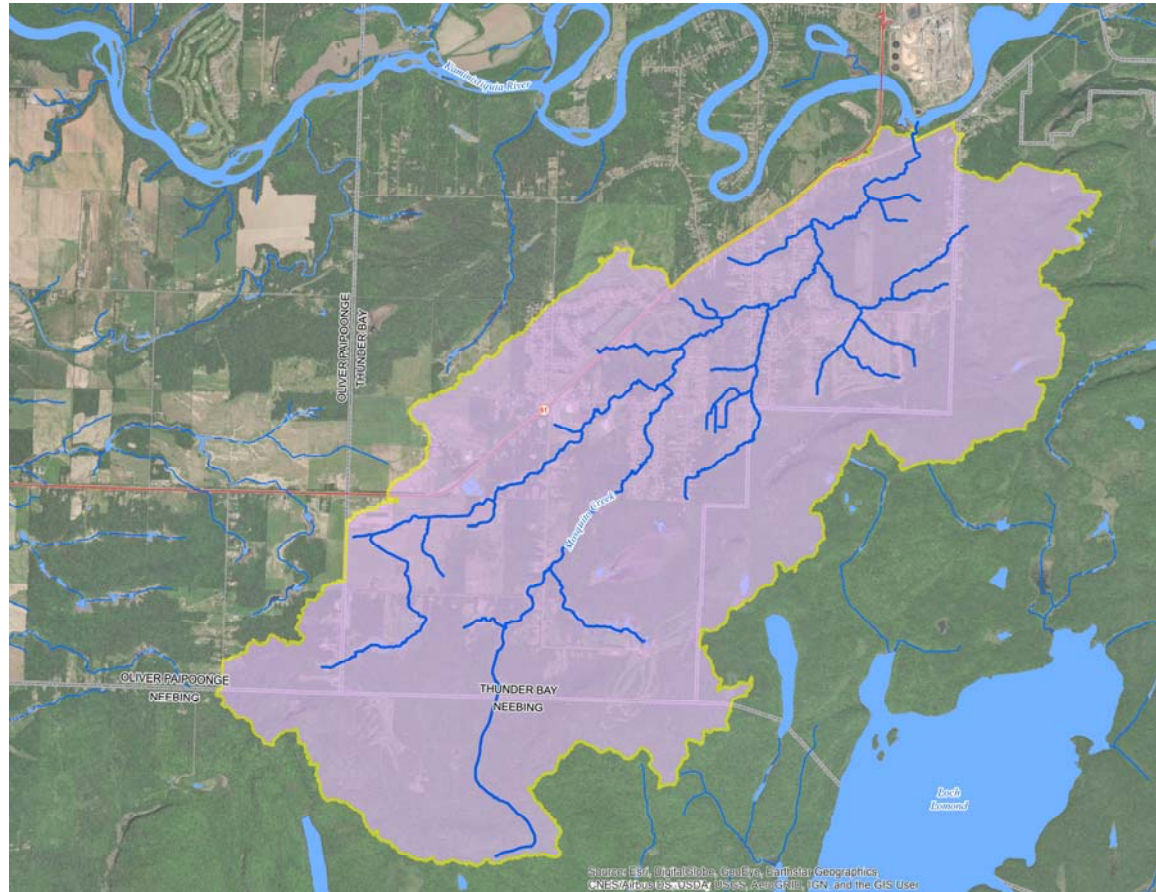
❑ Water flows north-east and into Kaministiquia River

❑ Drainage area includes the main branch of the Mosquito 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 summer of 2019 to supplement the LiDAR**

   o **River bed and floodway channel bottom**

   o **Crossing details**

   o **Road elevations**

❑ **A Digital Elevation Model (DEM) of the river and overbank was developed from the data collected**

HYDROLOGIC ANALYSES

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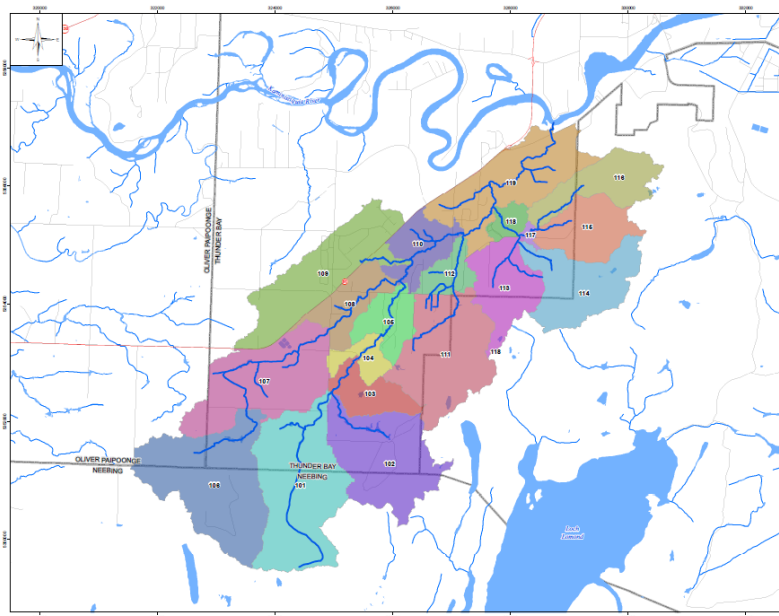

Mosquito Creek Sub-Catchments

❑ 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^3/s)						
2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	Regional Storm
5.4	9.5	12.5	16.4	19.7	23.2	46.3

HYDRAULIC ANALYSES

Hydraulic analyses are used to estimate water levels in rivers and streams based on inflows from rainfall.

- ❑ A computer model (HEC-RAS) of the river system was developed

- ❑ The model included the main branches of the Mosquito Creek and its significant tributaries

- ❑ The model was based on the DEM

- ❑ Water surface profiles were estimated for all flood events
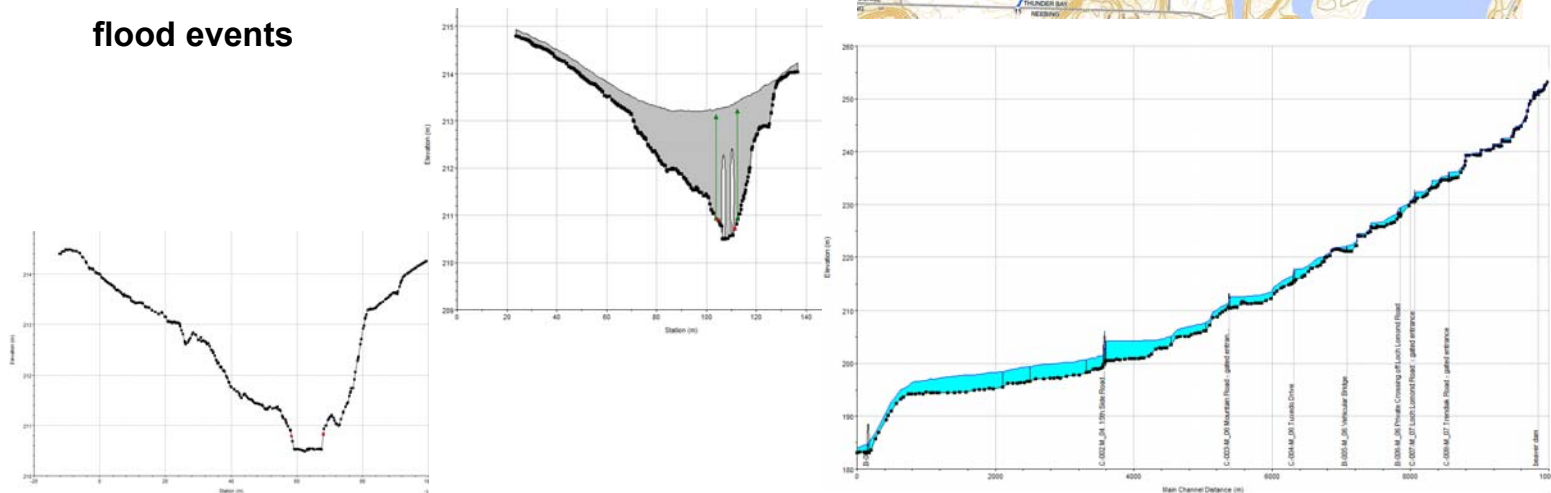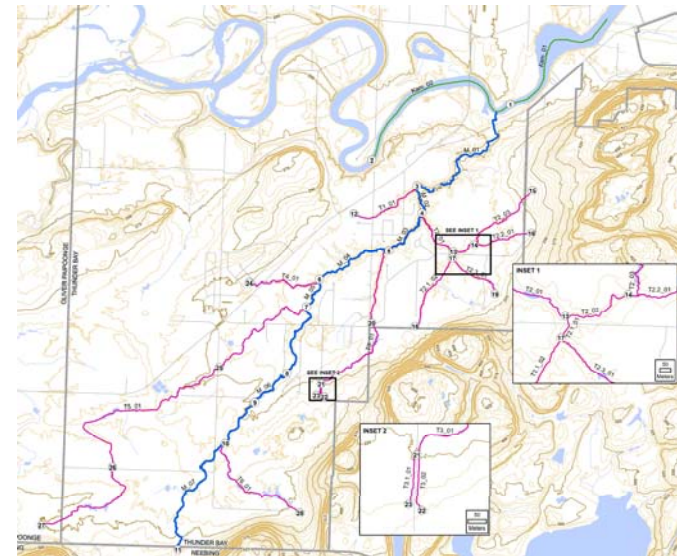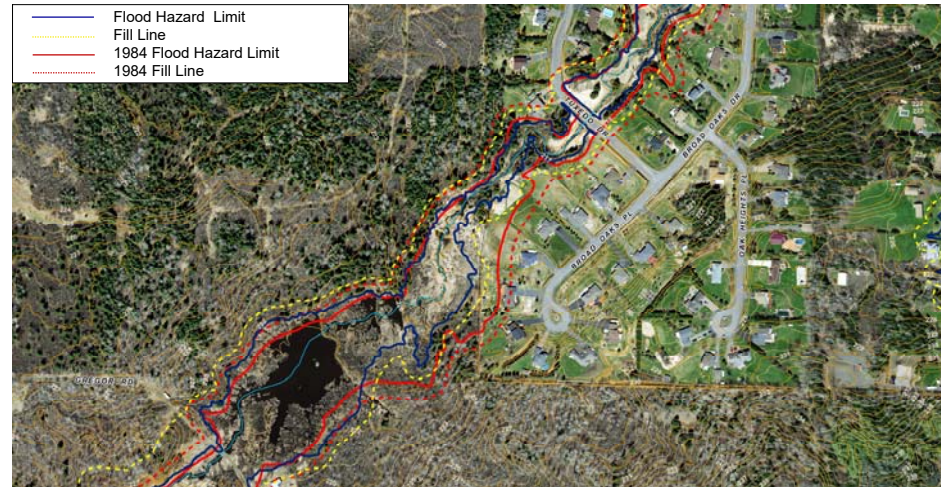
FLOODPLAIN MAPPING
GENERATION OF FLOOD HAZARD AND FILL LINES

❑ **Floodplain maps were produced for the entire watershed**

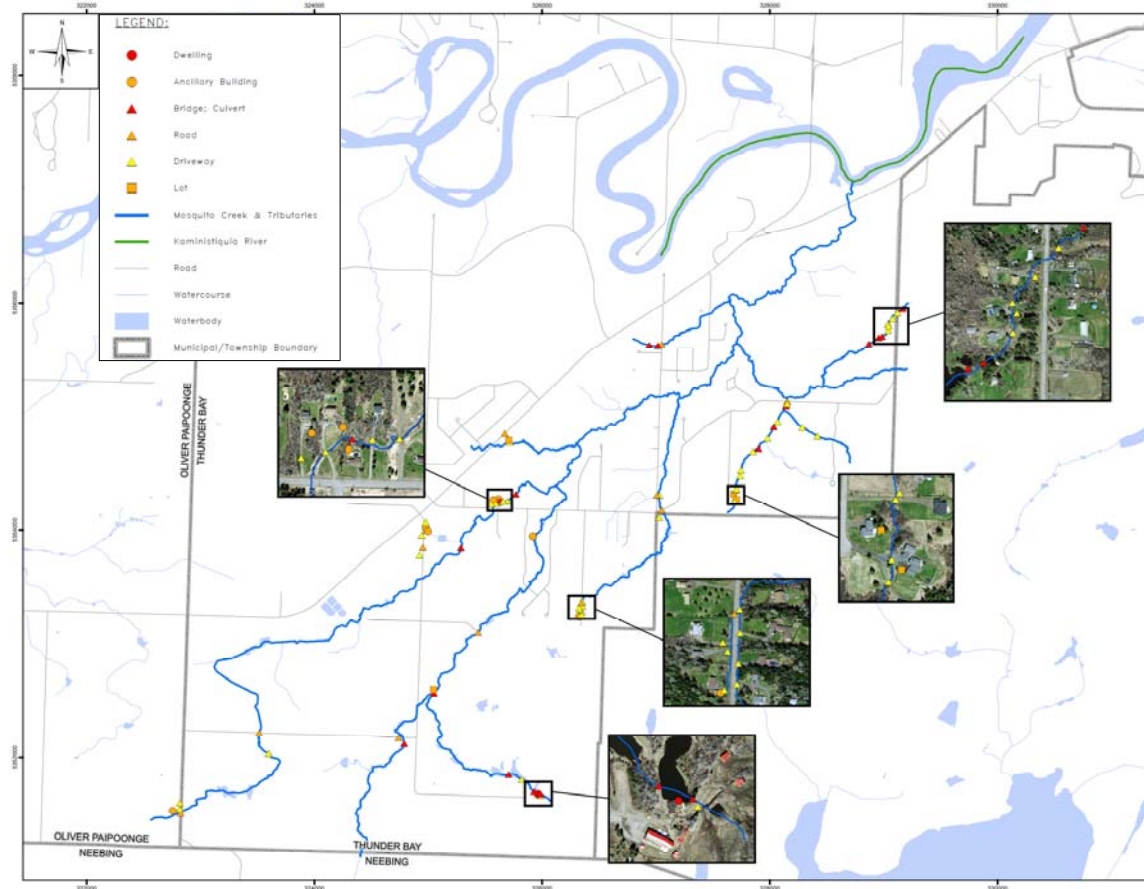❑ **The flood hazard limit line represents the extents of flooding resulting from the Regional Storm (i.e. Timmins Storm)**

❑ **The maps were used to identify locations of channel overtopping and flood affected infrastructure**
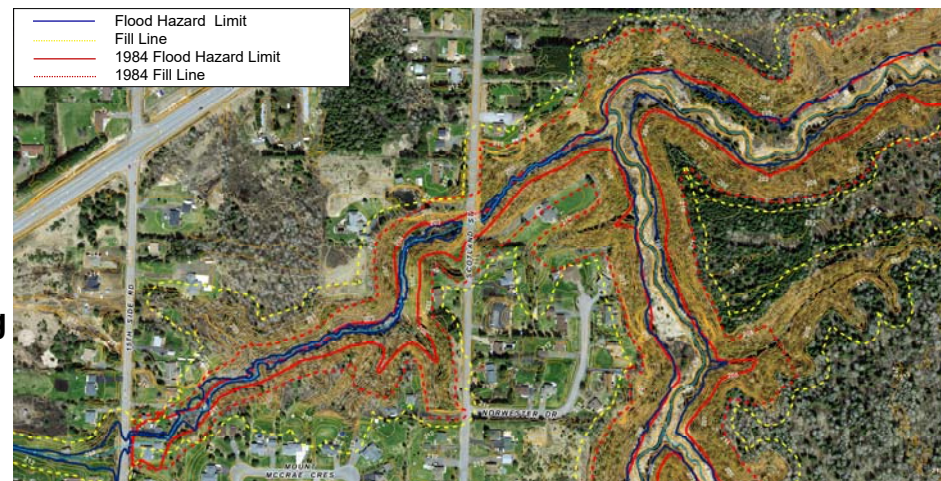
FLOODPLAIN MAPPING
FLOOD AFFECTED INFRASTRUCTURE

		Flood Magnitude						
		2 Year	**5 Year**	**10 Year**	**25 Year**	**50 Year**	**100 Year**	**Regional Storm**
Quantity of Affected Infrastructure	**Dwelling**	0	1	1	1	1	1	1
	Ancillary Building	1	2	2	2	2	2	7
	Bridge/Culvert	7	13	14	14	15	16	17
	Driveway	5	12	15	18	22	24	39
	Road	1	3	4	4	5	5	11
	Lot	1	2	2	2	4	4	6

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 9th, 2020**.