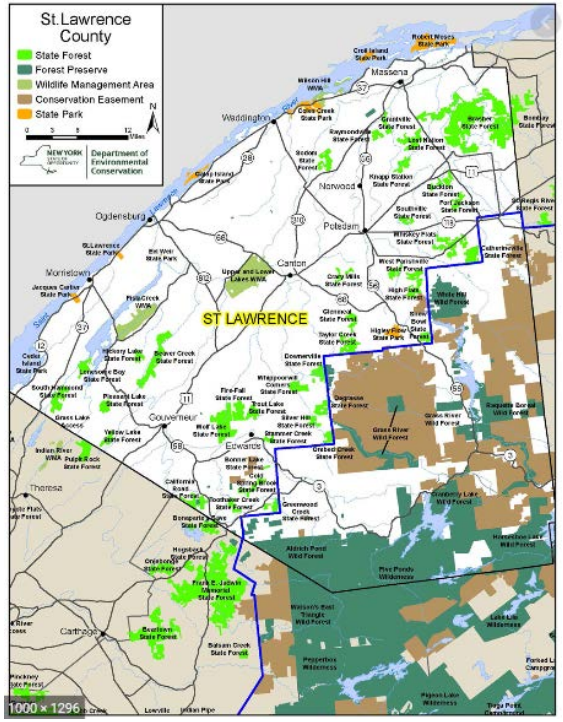
RiskMAP
Increasing Resilience Together

Flood Risk Project

St. Lawrence County, NY
Project Kick Off Meeting

February 11, 2021



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Please Introduce Yourself (…in the chat!)

- **Name**
- **Role**
- **Organization**

As partners with FEMA, it's important we create dialogue about your needs for flood risk information.

Also, what do St. Lawrence communities aspire to accomplish using today's meeting?

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Today's Goals

1	2	3
The value of updated flood hazard information	Recap of Flood Risk Study history, including Discovery and North Country Watersheds BLE	Review county-wide study scope, products and outreach process

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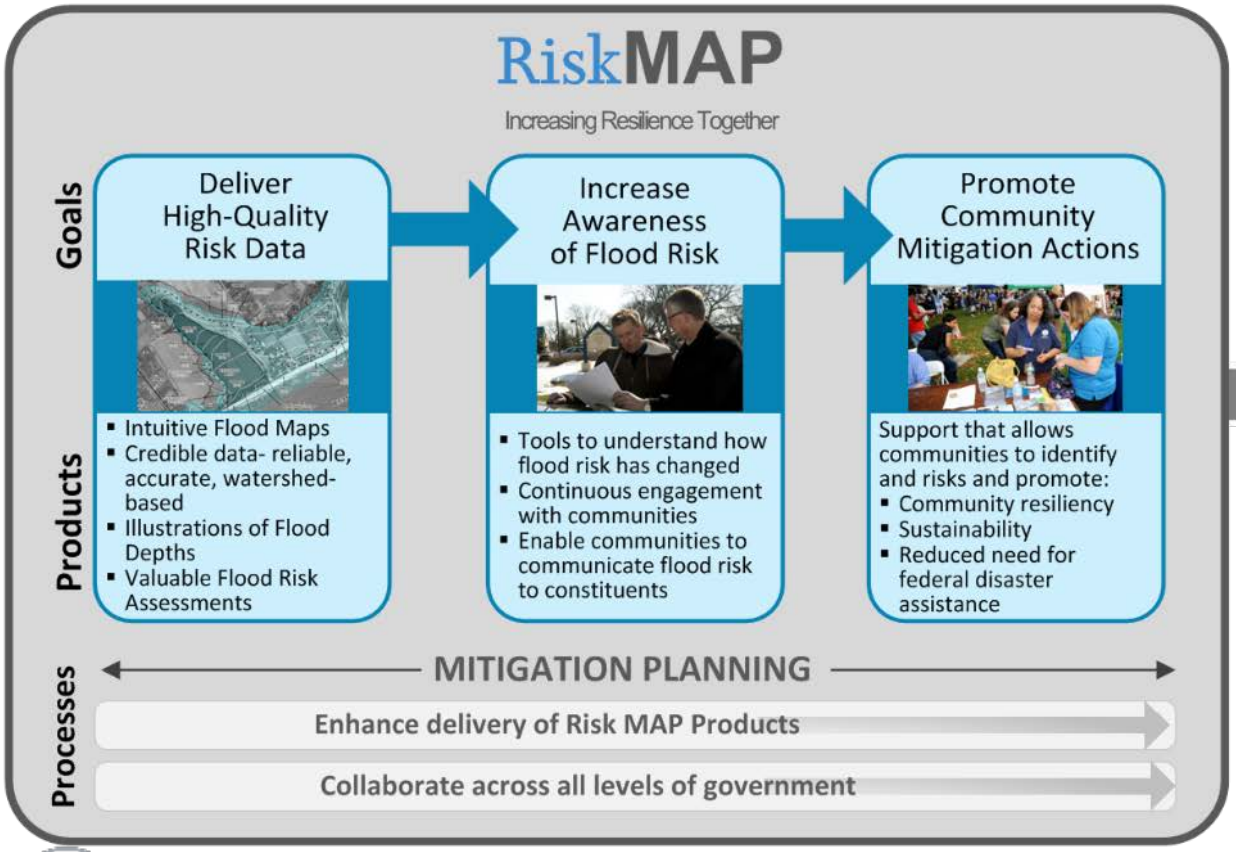
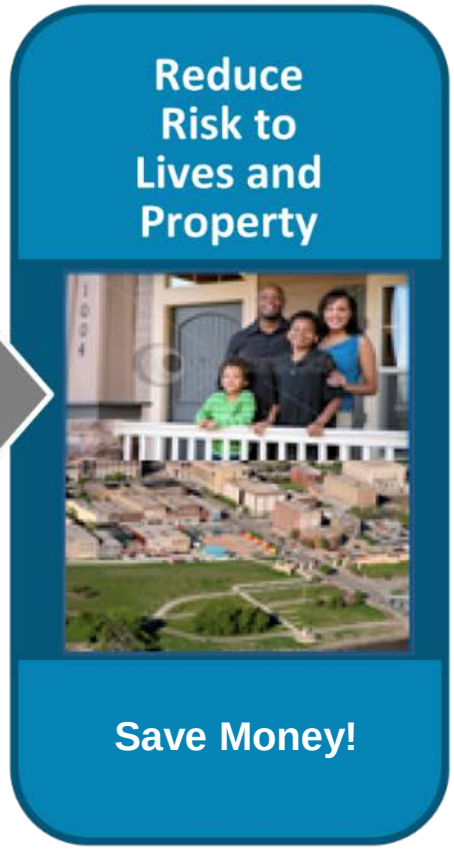
FEMA Mitigation Division

Risk Analysis Branch

Goal: Stronger and Safer Communities





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The Value of Updated Flood Maps for Local Communities

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Flood Maps Promote Progress By:

Identifying and Assessing Flood Risk

Informing Flood Insurance Rates

Advising Local Land Use

Guiding Engineers and Developers

Equipping Emergency Managers

Why we are here

We want to help communities understand flood risk and take action to reduce it because…

Risk changes over time

- All floods are different. Nature and communities change.

Flooding happens

- Communities may face flooding. Is your community proactive or reactive to flood risk?.

Mitigation is Possible

- Proactive communities plan to reduce flood impacts and other hazards.

Why Update Flood Maps?

The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program (NFIP)

NFIP Policies for St. Lawrence communities	NFIP Claims since 1978 for affected communities	FEMA Insurance Claims Paid in affected communities	Hazard Mitigation Plan Status
170	118	$845,225	Expired

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How Did We Get Here?
Review past activities

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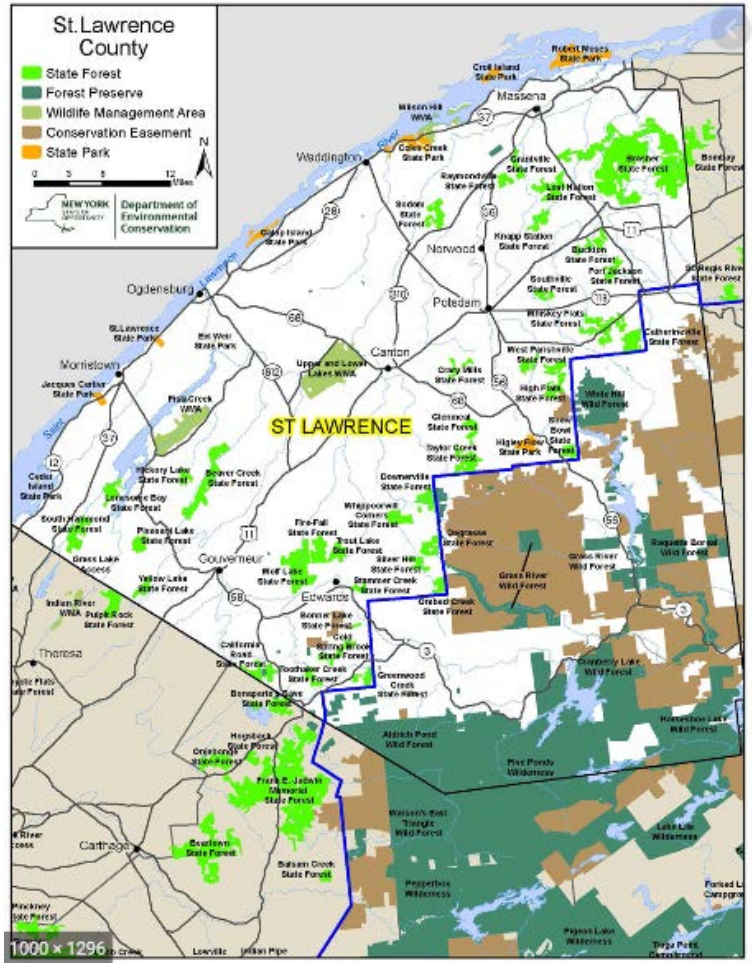
Discovery / Post-Discovery Progress *Recap*

North Country Watersheds

- Meetings held in September 2019
- Discovery project completed in March 2020
- Community input guided FEMA priorities
- St. Lawrence County's Highest Priorities included:
  - St. Lawrence River
  - Raquette River
  - St. Regis River
  - Black Lake
  - Oswegatchie River
  - Grass River



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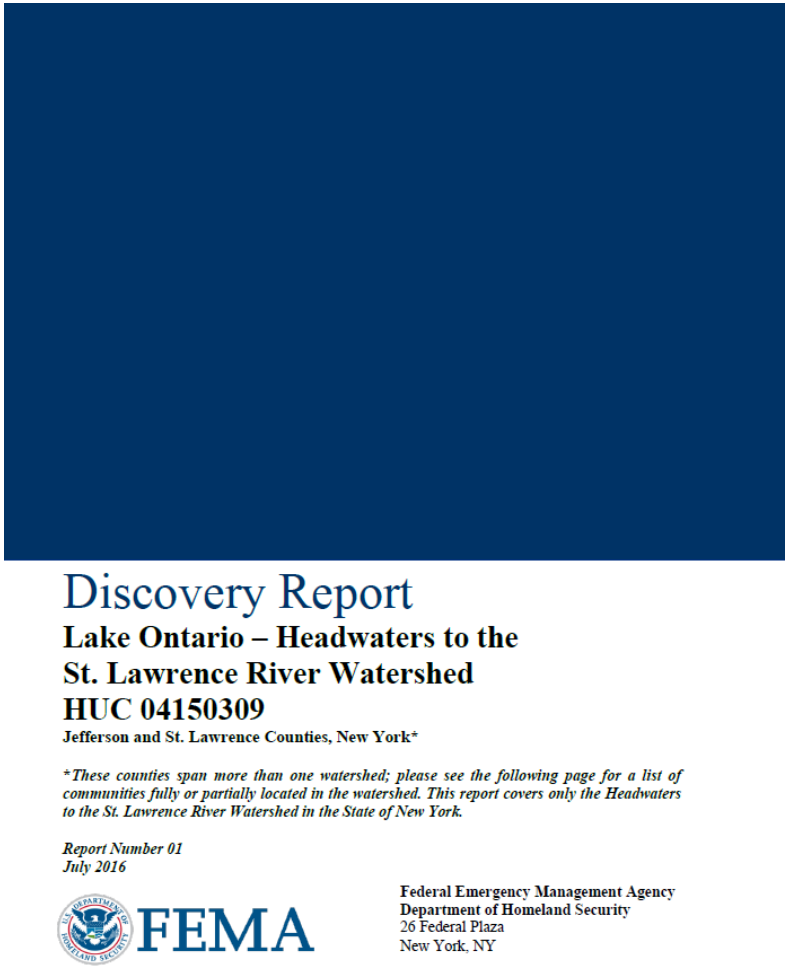
Discovery / Post-Discovery Progress *Recap*

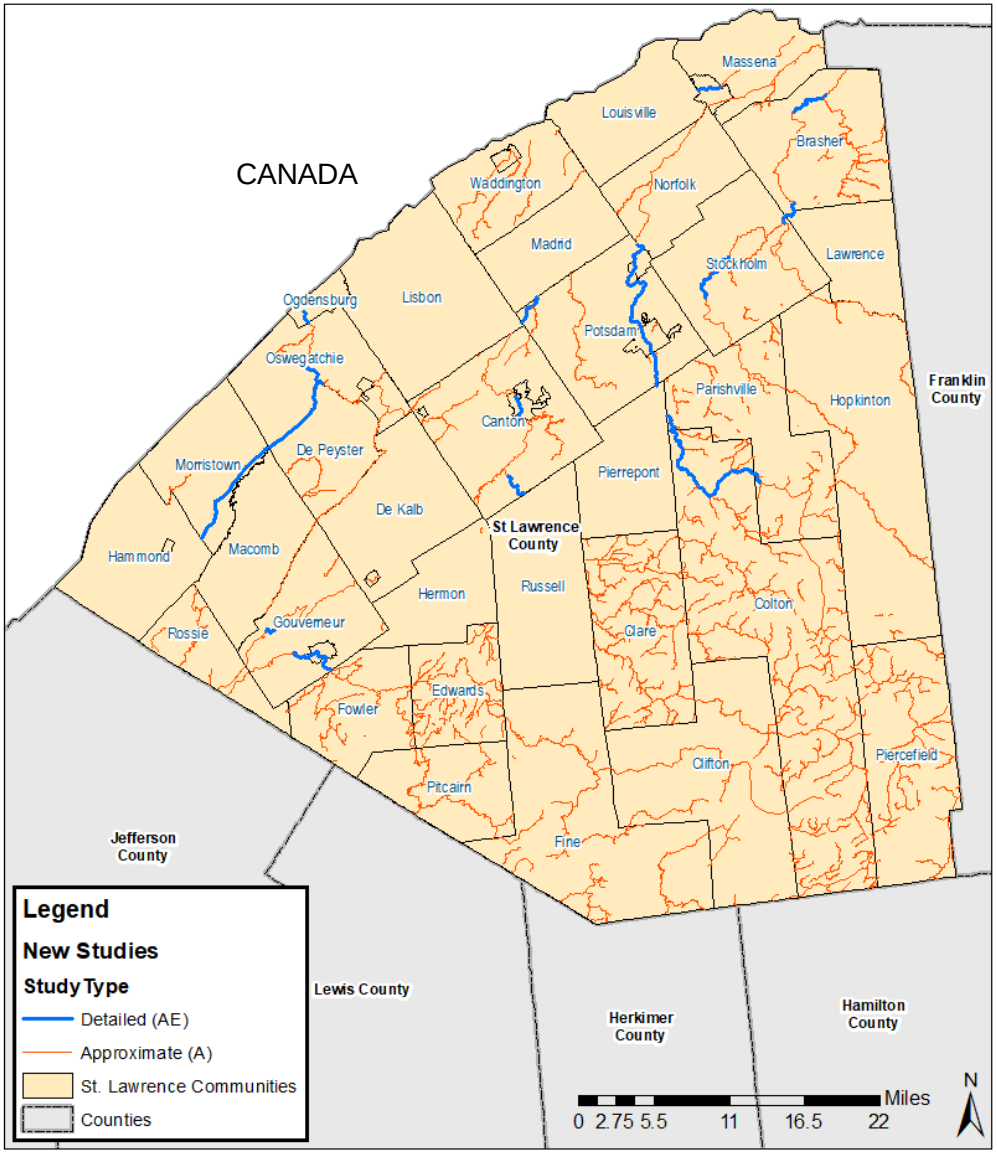
Headwaters to the St. Lawrence River Watershed

- Meetings held in November 2013
- Discovery project completed in July 2016
- Community input guided FEMA priorities
- St. Lawrence County's Highest Priority included:
  - Detailed study for the St. Lawrence River, including Alexandria Bay for a distance of 68.3 miles.



Leveraged Data
Recap

- Regression Hydrology from North Country Watersheds studies
- BLE studies for detailed – 71.3 miles
  - Black Lake
  - Five Falls Lake
  - Grass River
  - Oswegatchie River
  - Raquette River
  - Saint Regis River
  - West Branch Saint Regis River
- Approximate – 1212.9 miles
- **Any local flood studies that FEMA should be aware of?**



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What Is Being Studied Now?
Discuss scope of new study

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St. Lawrence County, Countywide Flood Risk Study Scope

- **First time digital maps**
- **Additional flooding sources analyzed**
  - Detailed riverine studies (AE Zone) 6 – streams, 59.2 miles
  - Detailed lake studies (AE) – 3 lakes, 91.2 miles
  - Approximate (A) studies – multiple streams, 2450.6 miles
- **45 updated communities**
- **402 map panels**
- **Review meetings**
  - Hydrology Meeting
  - Hydraulics Meeting
  - Flood Risk Review Meeting

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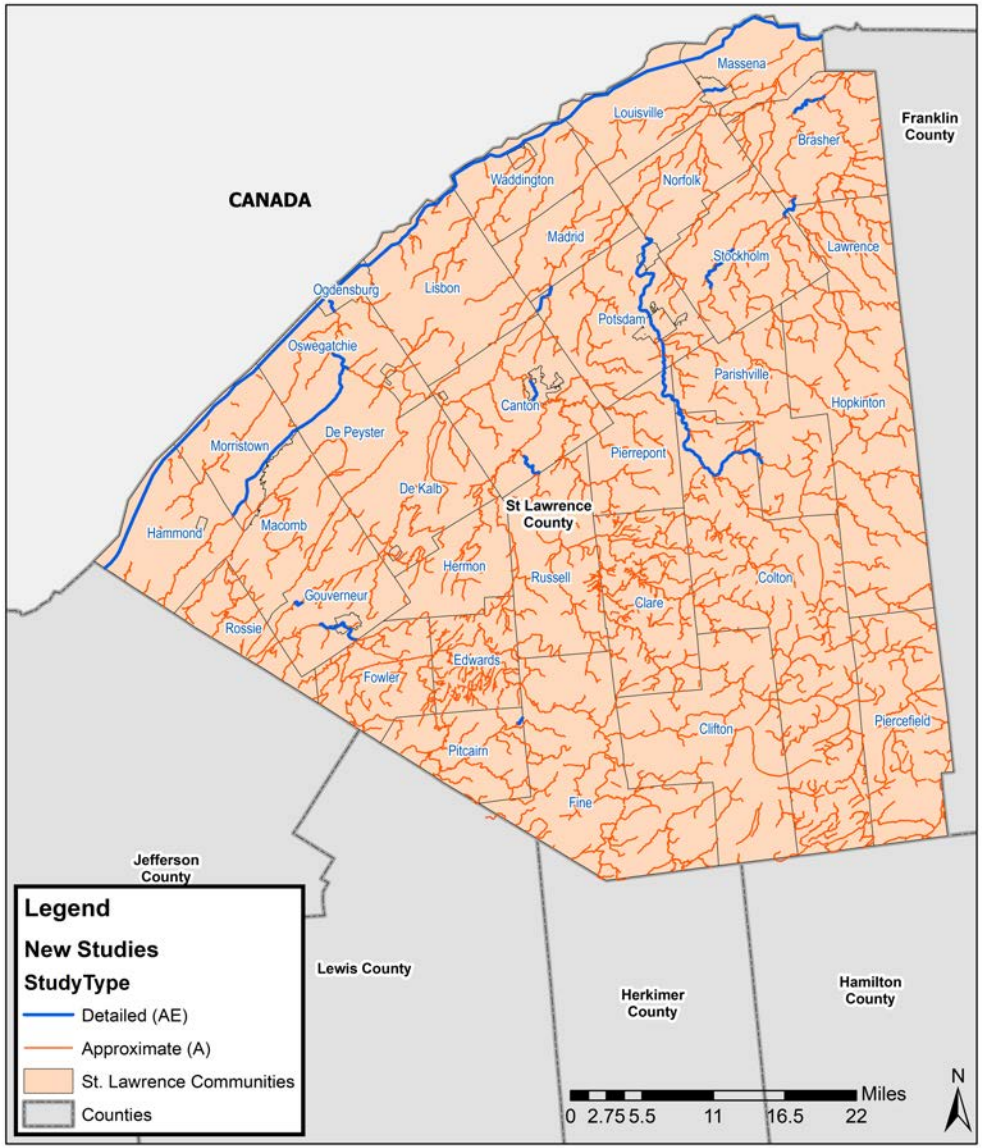
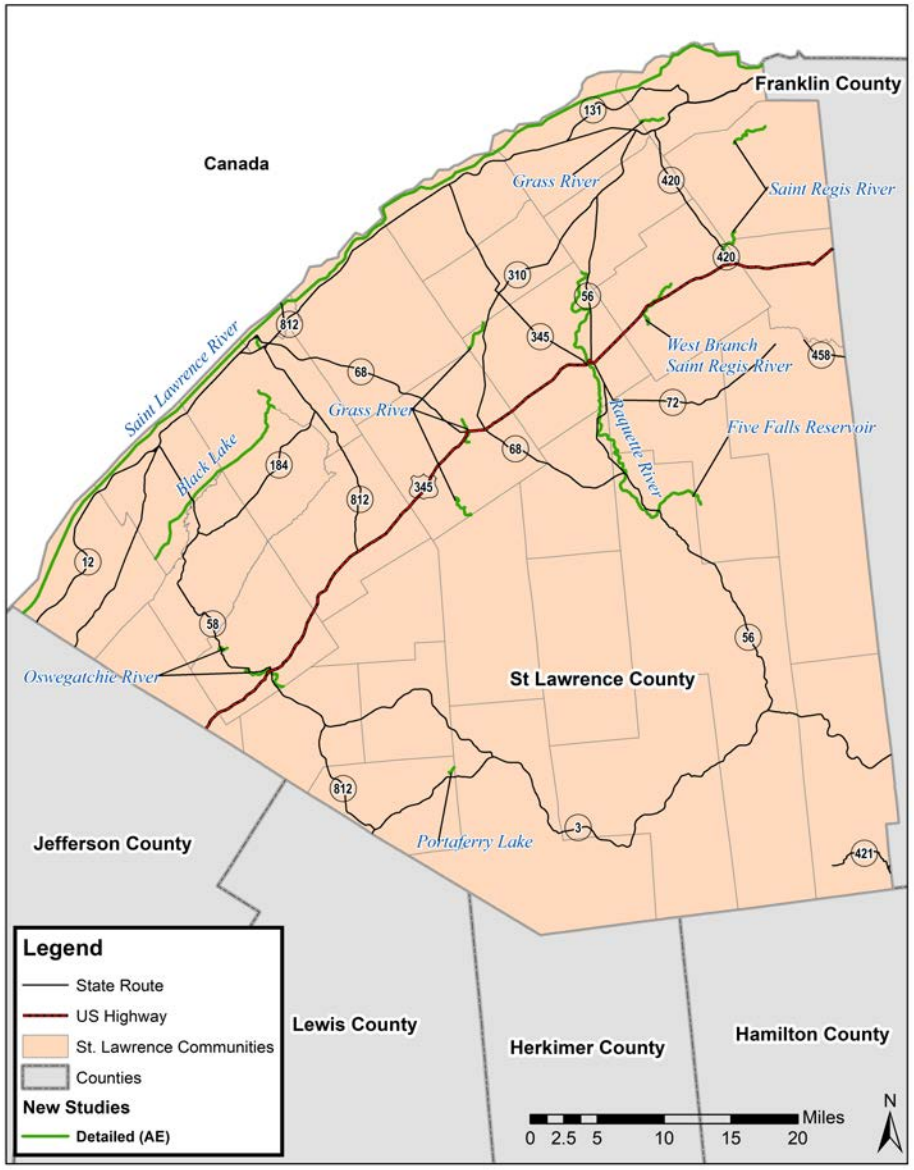


Detailed (AE Zone) Study Scope

- **6 Studied Streams – 59.2 miles total**
  - Five Falls Reservoir – 0.9 miles
  - Grass River – 9.1 miles
  - Oswegatchie River – 8.6 miles
  - Raquette River– 30.6 miles
  - Saint Regis River – 5.5 miles
  - West Branch Saint Regis River – 4.5 miles

- **3 Studied Lakes – 91.2 miles**
  - Black Lake – 15.3 miles
  - Portaferry Lake – 0.7 miles
  - Saint Lawrence River – 75.2 miles



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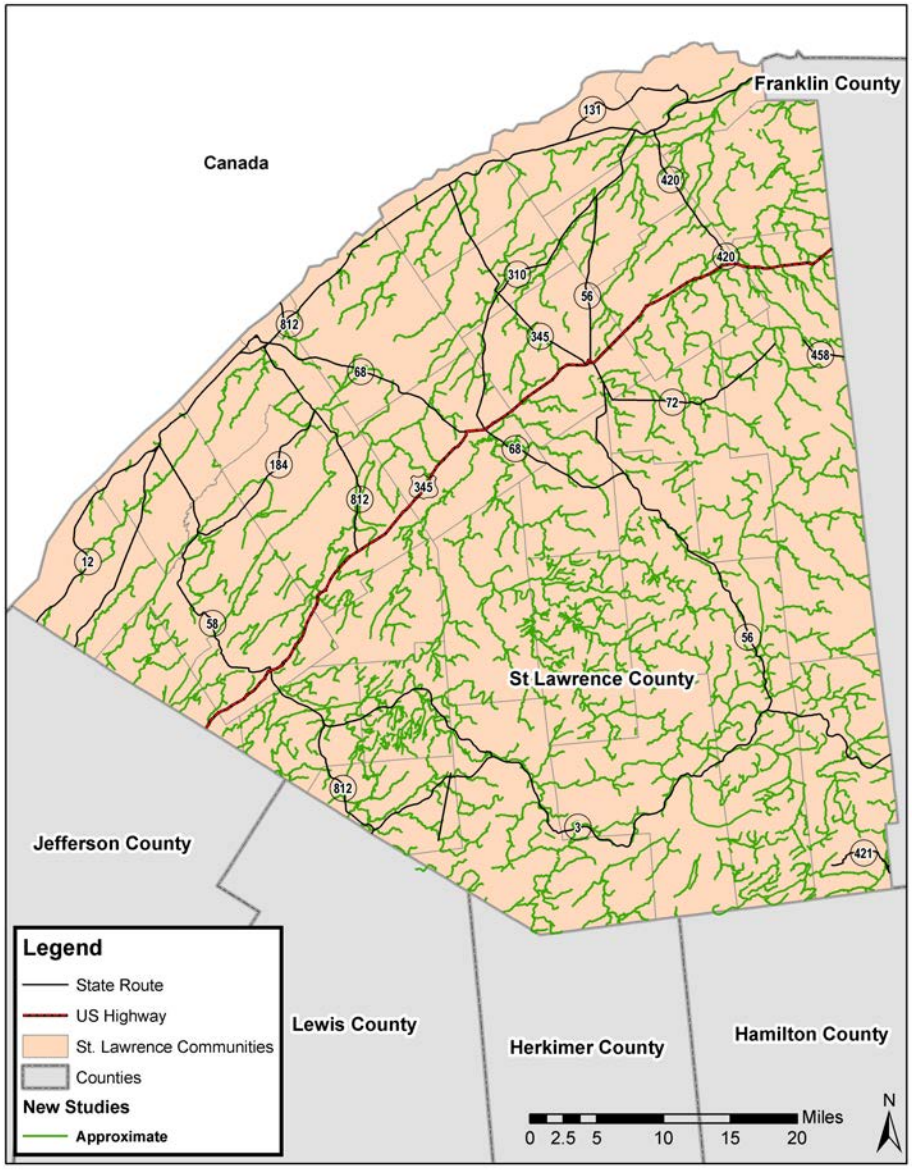
Approximate (A Zone) Study Scope

- **Completes countywide stream coverage**

- **Approximate Streams – 2,450.6 miles**
  - Notable streams include:
    - Oswegatchie River – 101.2 miles
    - Raquette River – 59.5 miles
    - West Branch St Regis River – 43.6 miles
    - South Branch Grass River – 38.2 miles
    - Little River – 33.0 miles
    - Dead Creek – 30.0 miles
    - Saint Regis River – 28.9 miles
    - Trout Brook – 27.4 miles
    - Grass River – 25.6 miles
    - North Branch Grass River – 25.4 miles



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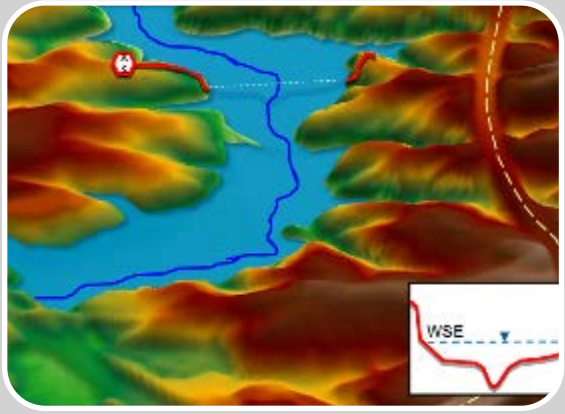
Flood Hazard Analysis



Hydrology

Volume of water?

Peak Flows?

When will storm water or runoff make it to the stream?

Hydraulics

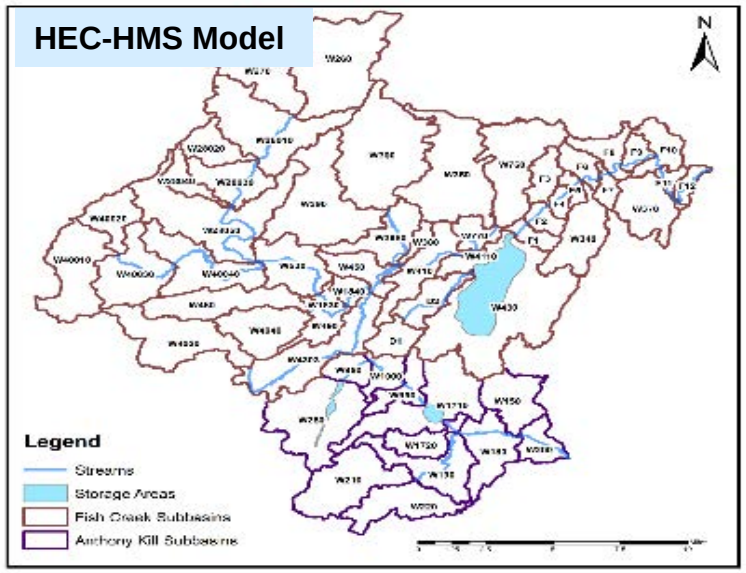
Will the stream in question be able to convey all storm water or runoff that arrives?

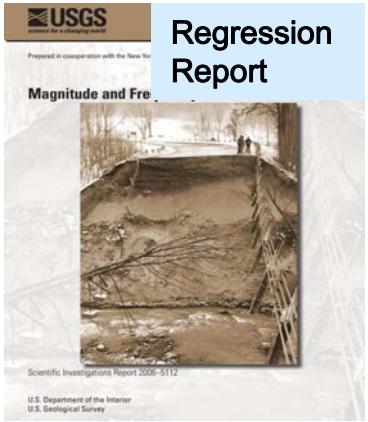
Floodplain Mapping

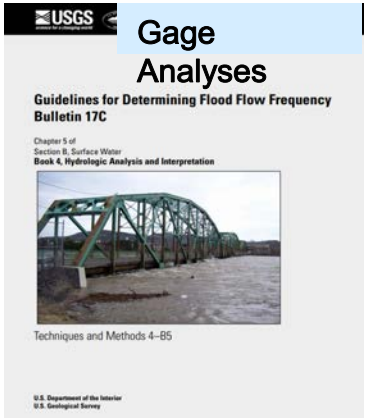
What areas of a community will be inundated based on engineering analysis?

Engineering Methods - Hydrologic Analysis

- **Typical Methods FEMA utilizes**
  - Statistical Gage Analyses
  - Regression Analyses
  - Rainfall Runoff Modeling
- **Gage/Regression are based on availability stream gage data**
- **Rainfall-Runoff physical modeling chosen due to limited gage data**
  - Using HEC-HMS models
- **Discharges developed for**
  - 10%, 4%, 2%, 1%, 1%+, 1%-, 0.2%
  - Inputs for hydraulic analyses

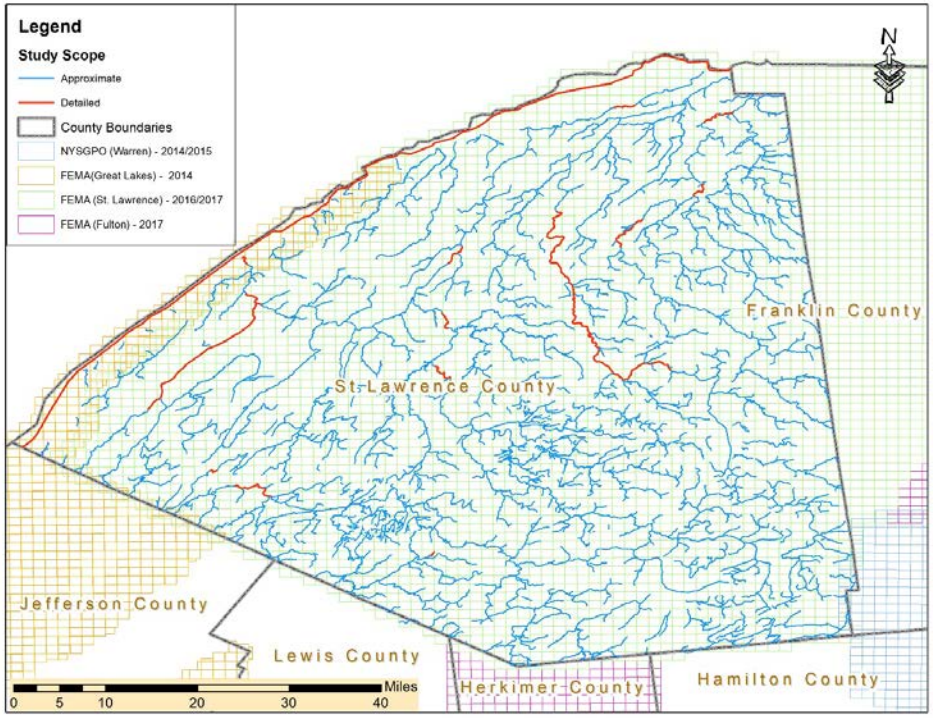






Engineering Methods - Hydraulic Analysis

- **Modeling developed using USACE's HEC-RAS Program**
  - One Dimensional (1D) Steady State
- **Terrain Data**
  - Provides topographic elevation information
  - Supplemented by field survey
  - Data Sources:
    - 2016/2017 FEMA LiDAR for Franklin and St. Lawrence
    - 2014 FEMA LiDAR for Great Lakes Area
    - 2014/2015 NYSGPO LiDAR for Warren, Washington and Essex Counties
    - 2017 FEMA LiDAR for Fulton, Saratoga, Herkimer, and Franklin Counties
- **Field Survey for Detailed only**
  - Collection underway: 55 structures and 589 under water channel sections

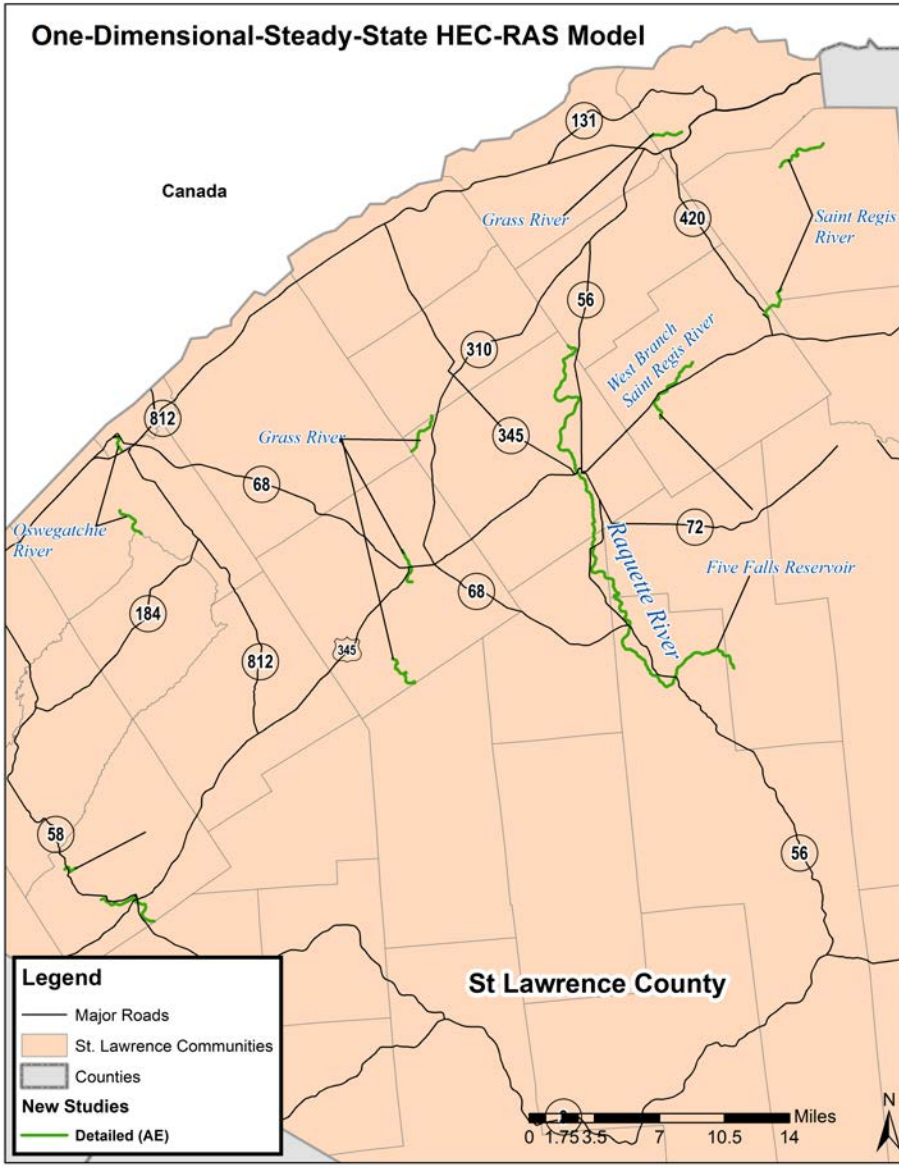


- **Flood Hazard Data Generated**
  - Elevations: 10%, 4%, 2%, 1%, 1%+, 1%-, 0.2%
  - Floodplain extents: 10%, 1%, 0.2%, Floodway

Engineering Methods - Detailed Streams

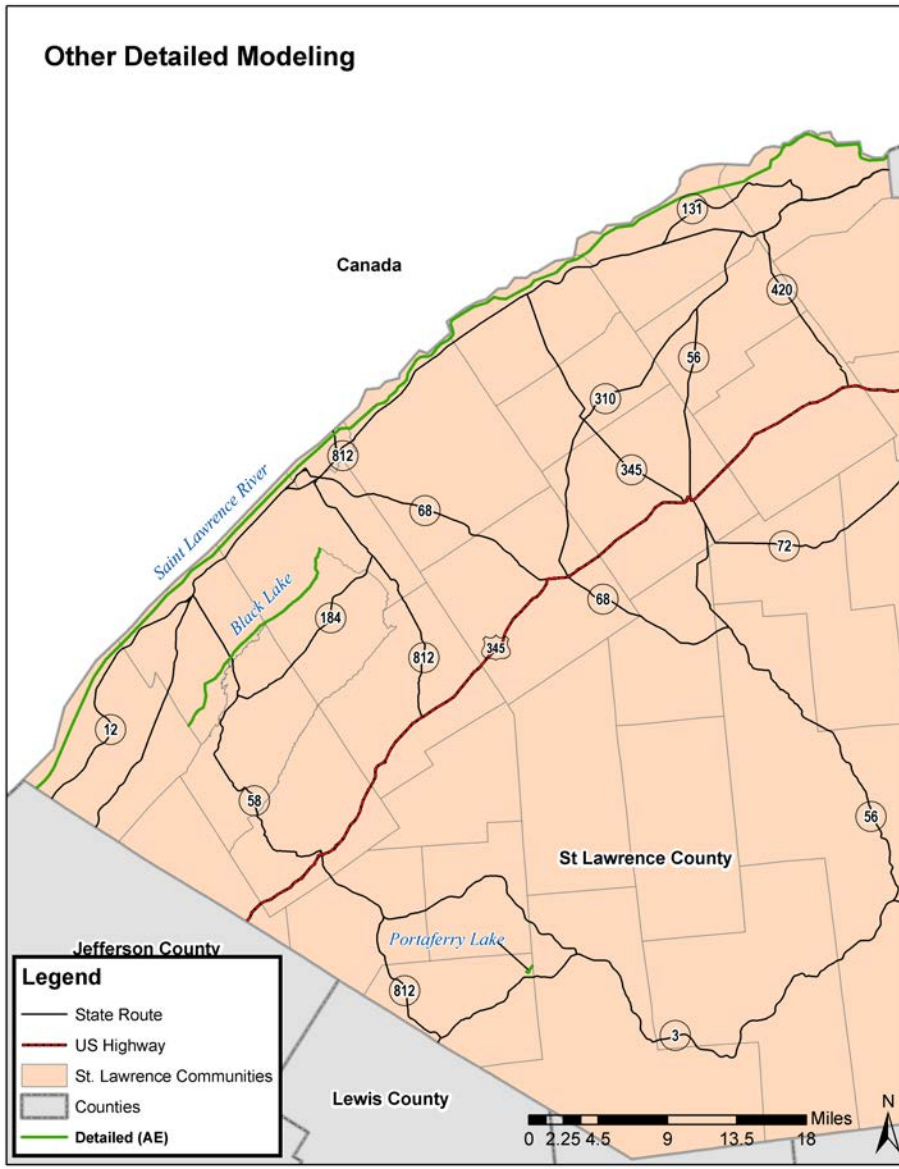
- **Hydrologic Method: USGS Regression Equations**
  - Grass River
  - Five Falls Reservoir
  - Oswegatchie River
  - Grass River
  - Raquette River
  - St. Regis River

- **Hydraulic Method: HEC-RAS, 1D steady state hydraulic model**
  - Five Falls Reservoir – 0.9 miles
  - Grass River –9.1 miles
  - Oswegatchie River – 8.6 miles
  - Raquette River – 30.6 miles
  - St. Regis River – 5.5 miles
  - West Branch St. Regis River – 4.5 miles



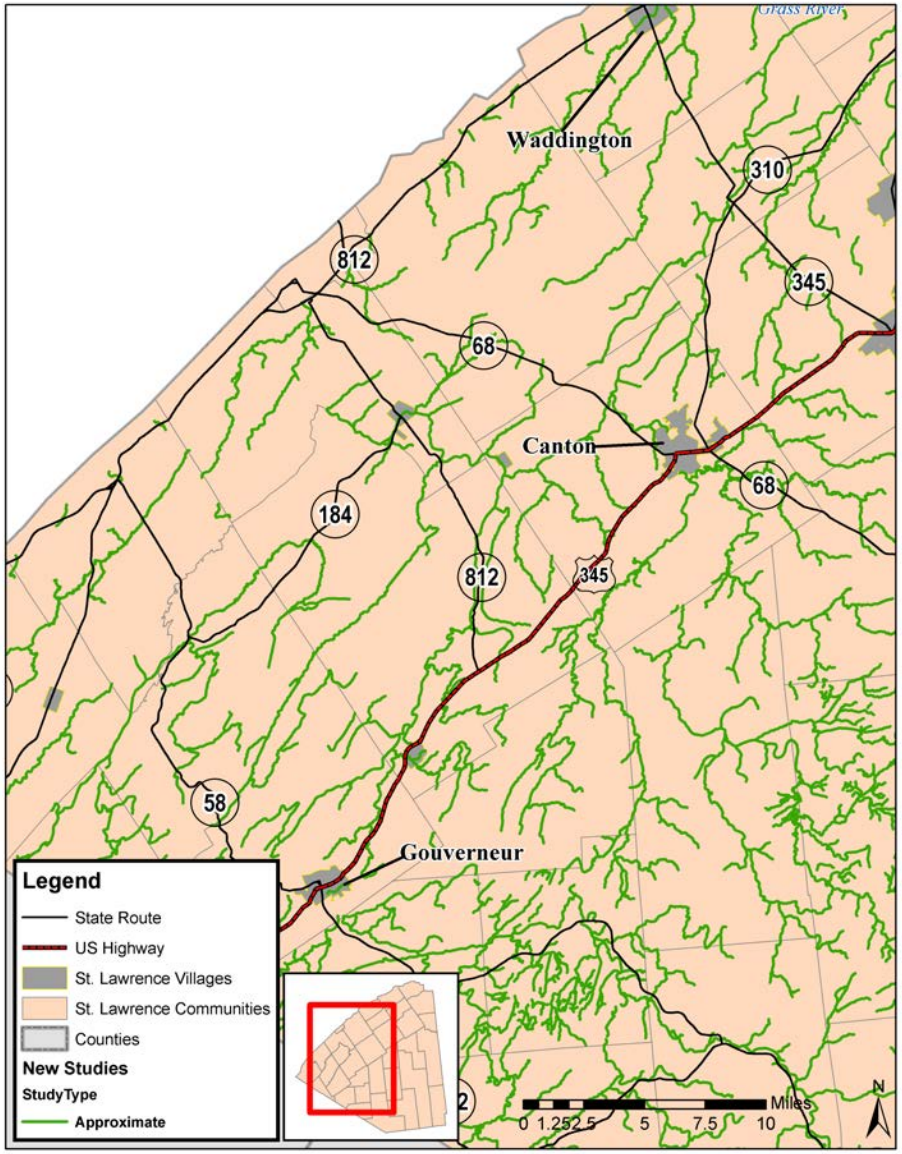
Engineering Methods - Detailed Streams

- **Hydrologic Method: HEC-HMS, rainfall-runoff model**
  - Black Lake
  - Portaferry Lake
- **Hydraulic Method: Stage – frequency analysis**
  - St. Lawrence River
- **Hydraulic Method: Lake – Stage frequency analysis**
  - St. Lawrence River – 75.2 miles
  - Black Lake – 15.3 miles
  - Portaferry Lake – 0.7 miles



Engineering Methods - Approximate Streams

- **Approximate Streams – 2450.6 miles**
  - Hydrologic Method
    - Statistical gage analysis
    - USGS regression equations
    - Volumetric calculations
  - Hydraulic Method
    - 1D steady state hydraulic model
    - Lake volumetric calculations assuming no outflows
- **Floodplain extents for 10%, 1%, and 0.2%**



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Where Are We Now; What Is Next?
Discuss next steps

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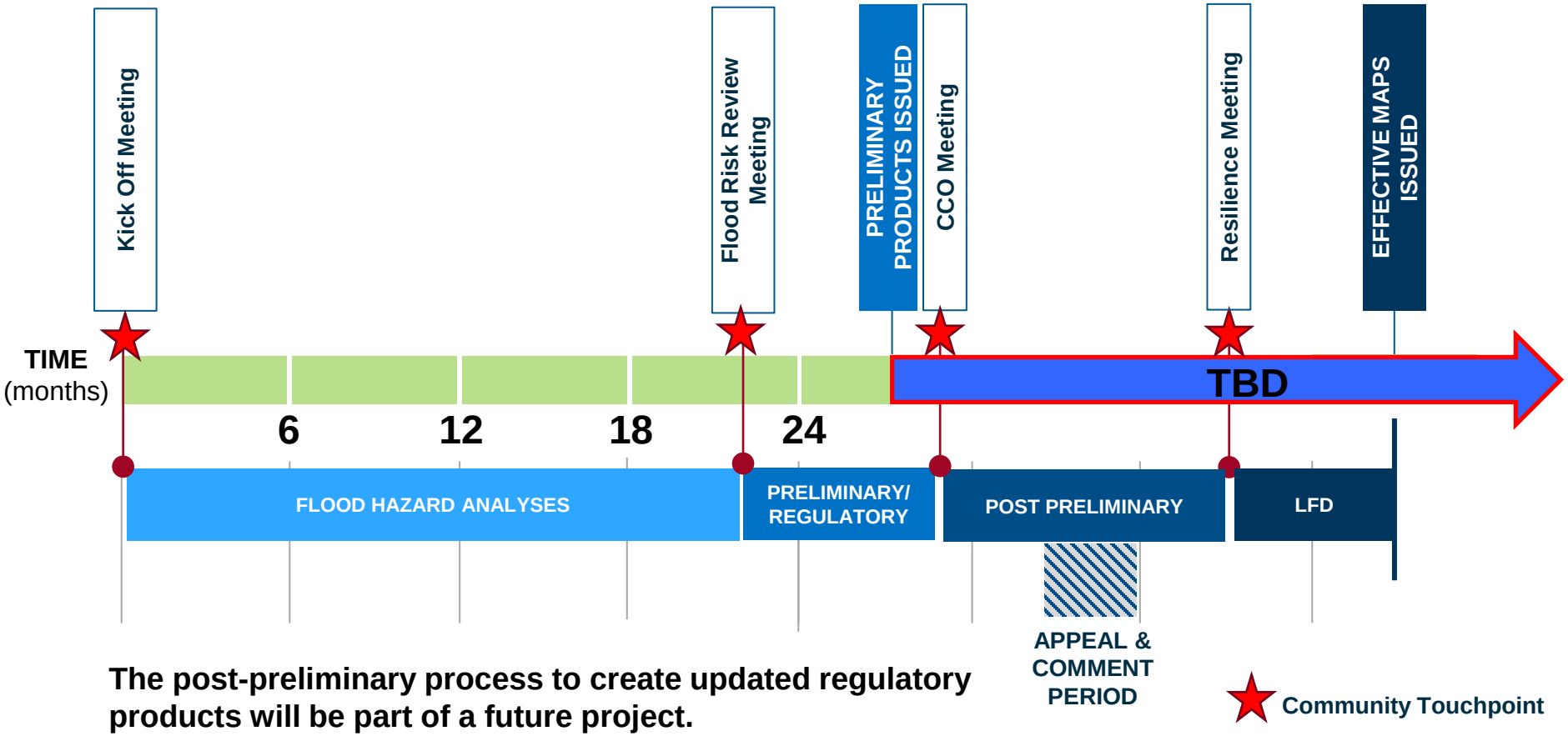
Overall Flood Risk Project Timeline



The post-preliminary process to create updated regulatory products will be part of a future project.

Major Study Milestones

- **Data Development (June 2022)**
  - Terrain processing
  - Engineering Methods Concurrence (620 letters)
  - Field reconnaissance and survey
  - Hydrologic modeling
  - Hydraulic modeling
  - Floodplain mapping (workmaps)
- **Flood Risk Review Meeting (November 2022)**
  - Review work map products with communities
- **Preliminary Products Update (FIRM & FIS)**
  - Preliminary Maps Issued (July 2023)

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What Will Communities Receive?
Preliminary and Planning Products

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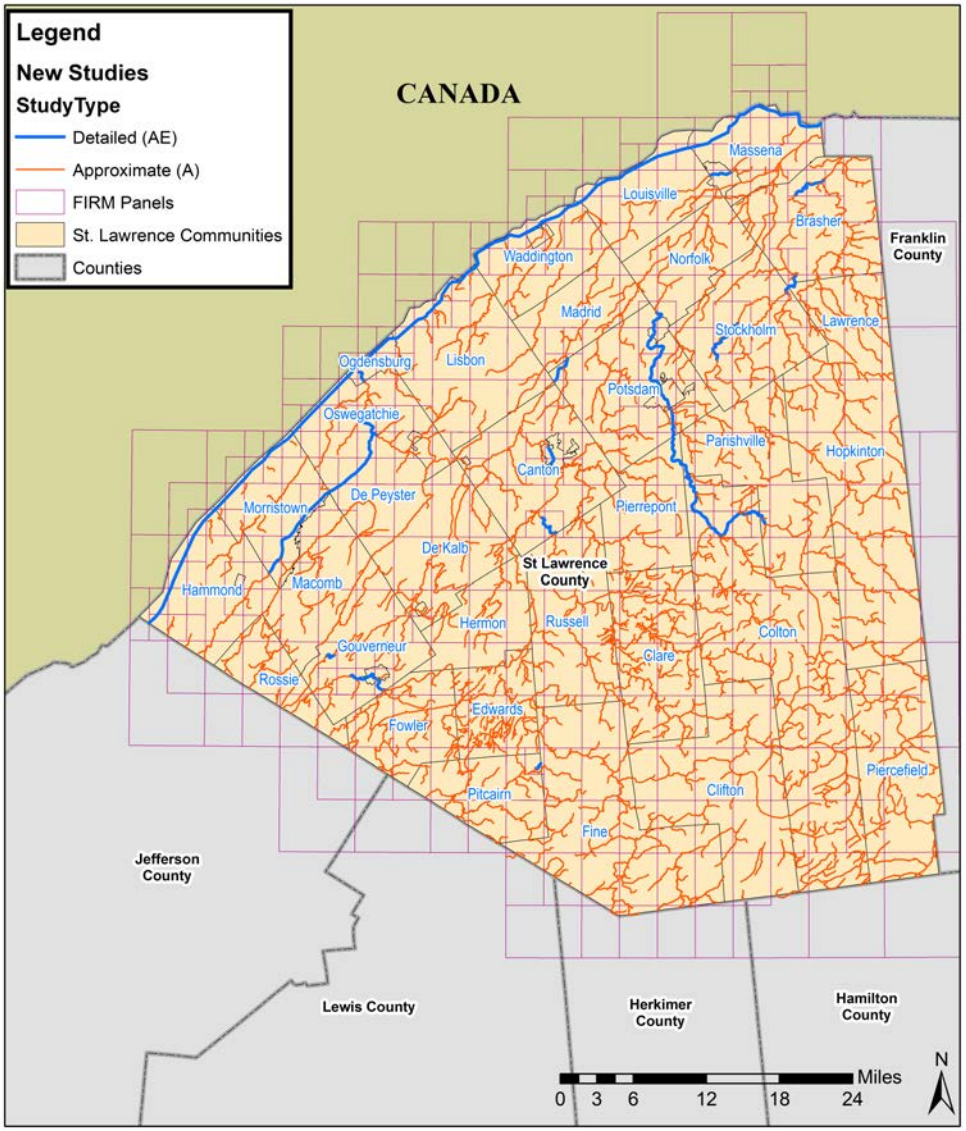
Work Maps

- **Draft floodplain mapping shared using draft maps**

- **Flood Risk Review meeting provides a review of the new engineering analysis results, allowing communities to:**
  - Identify potential updates for Hazard Mitigation Plans
  - Provide insight and input on hydrology and hydraulic results in updated study area
  - Seek local buy-in and review possible use of analysis
  - Identify areas of large changes and potential opportunities for risk reduction
  - Identify risk communications needs and options

Preliminary Mapping Products

- **Preliminary product development commences after draft map comment period**
- **Seamless countywide mapping produced**
- **Preliminary Digital Flood Insurance Rate Map (DFIRM) Database**
  - First Countywide mapping
- **402 Preliminary FIRM Panels**
- **Flood Insurance Study (FIS) Report**



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Flood Insurance Rate Map (FIRM) *Example*

L_Comm_Info.dbf	dBASE Table
L_Comm_Revis.dbf	dBASE Table
L_ManningsN.dbf	dBASE Table
L_Meetings.dbf	dBASE Table
L_Mtg_POC.dbf	dBASE Table
L_Pol_FHBM.dbf	dBASE Table
L_Source_Cit.dbf	dBASE Table
L_Summary_Discharges.dbf	dBASE Table
L_XS_Elev.dbf	dBASE Table
L_XS_Struct.dbf	dBASE Table
S_Base_Index.shp	Shapefile
S_BFE.shp	Shapefile
S_FIRM_Pan.shp	Shapefile
S_Fld_Haz_Ar.shp	Shapefile
S_Fld_Haz_Ln.shp	Shapefile
S_Gen_Struct.shp	Shapefile
S_Hydro_Reach.shp	Shapefile
S_Label_Ld.shp	Shapefile
S_Label_Pt.shp	Shapefile
S_Nodes.shp	Shapefile
S_PLSS_Ar.shp	Shapefile
S_Pol_Ar.shp	Shapefile
S_Profil_Basln.shp	Shapefile
S_Stn_Start.shp	Shapefile
S_Subbasins.shp	Shapefile
S_Submittal_Info.shp	Shapefile
S_Trnsport_Ln.shp	Shapefile
S_Wtr_Ln.shp	Shapefile
S_XS.shp	Shapefile
Study_Info.dbf	dBASE Table

FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 2

CLINTON COUNTY, NEW YORK

AND INCORPORATED AREAS

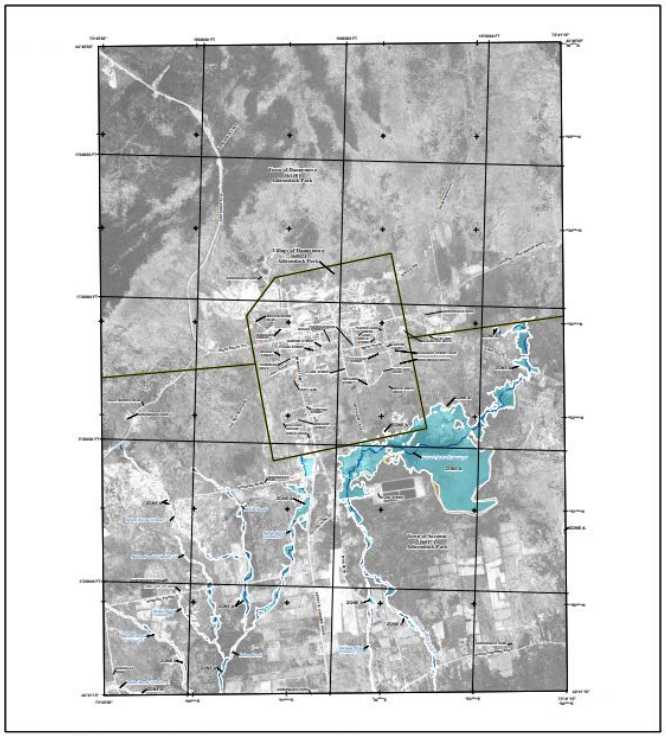
COMMUNITY NAME	COMMUNITY NUMBER
ALTONA, TOWN OF	361379
AUSABLE, TOWN OF	360165
BEEKMANTOWN, TOWN OF	360166
BLACK BROOK, TOWN OF	361309
CHAMPLAIN, TOWN OF	361311
CHAMPLAIN, VILLAGE OF	360167
CHAZY, TOWN OF	361310
CLINTON, TOWN OF	361380
DANNEMORA, TOWN OF	361381
DANNEMORA, VILLAGE OF	360024
ELLENBURG, TOWN OF	361382
MOOERS, TOWN OF	361383
PERU, TOWN OF	361384
PLATTSBURGH, CITY OF	360168
PLATTSBURGH, TOWN OF	360169
ROUSES POINT, VILLAGE OF	360170
SARANAC, TOWN OF	360171
SCHUYLER FALLS, TOWN OF	360172

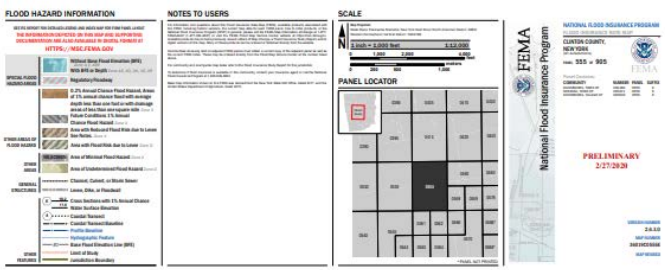
PRELIMINARY
2/27/2020

REVISED:

FEMA

FLOOD INSURANCE STUDY NUMBER
36019CV000B
Version Number 2.6.3.0





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Knowing the Risk

Communities that develop a sound understanding of flood risk will be more empowered to...

- Effectively plan use of resources for natural hazards and potential disasters;
- Implement effective hazard mitigation projects;
- Better regulate current and future development without increasing risk; and/or
- Accurately communicate about natural hazards to its residents about personal and community mitigation projects that can reduce long-term risk.

Contacts

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Questions? Comments?

Thank you!

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