RiskMAP
Increasing Resilience Together

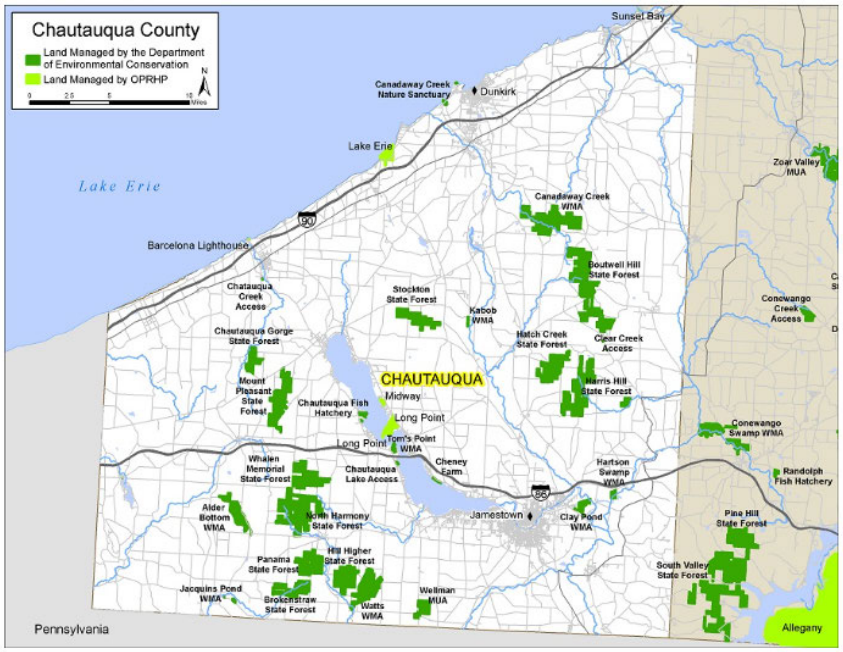
Flood Risk Project

Chautauqua County, NY
Project Kick Off Meeting

February 8, 2021

FEMA

Chautauqua County Map



Please Introduce Yourself … in the chat!

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

Also, what do Chautauqua communities aspire to accomplish using today's meeting?

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

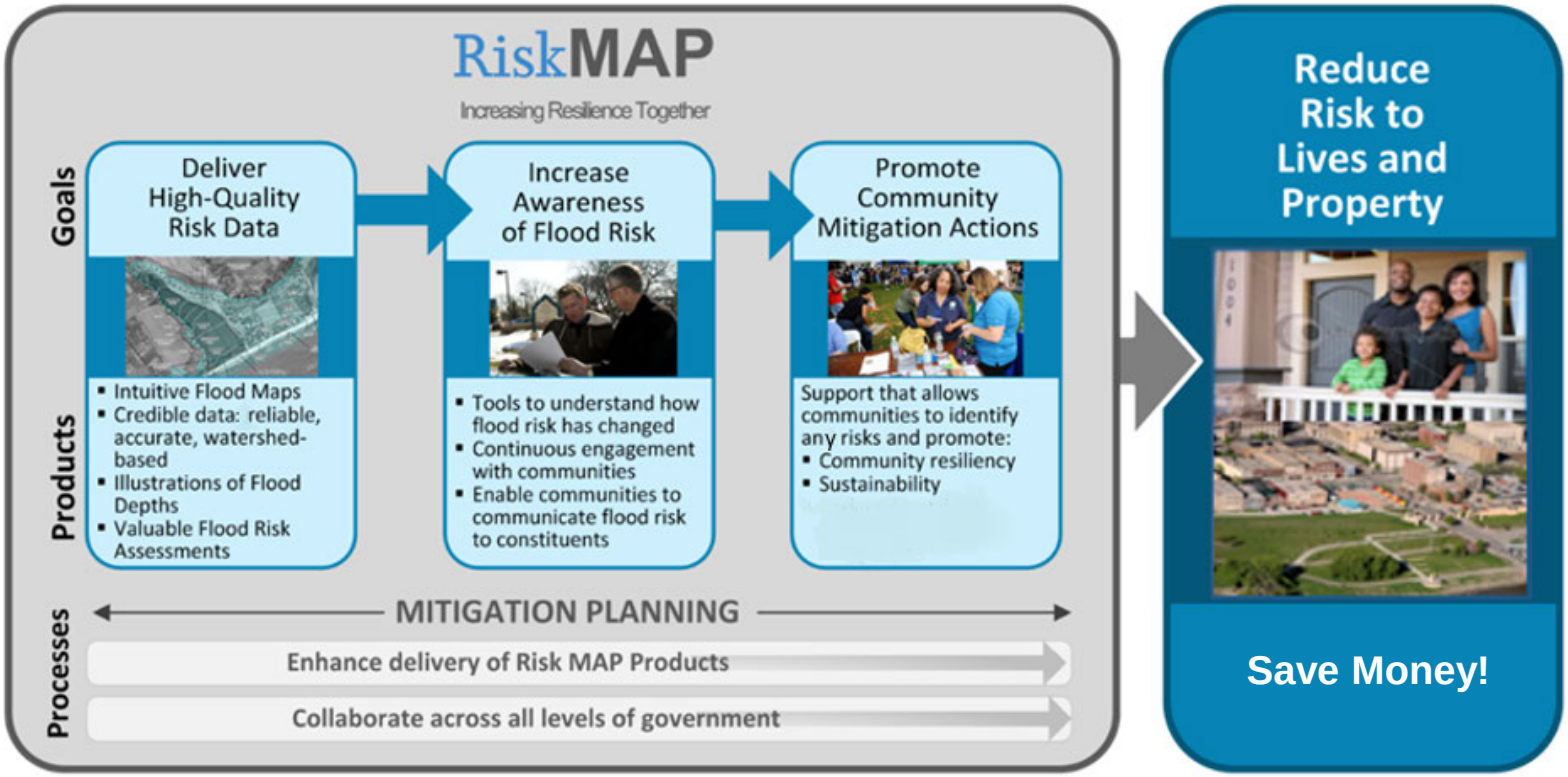
Today's Goals

1	2	3
The value of updated flood hazard information	Recap of Flood Risk Study history, including Lake Erie Coastal, Discovery, and Scoping of Priorities	Review countywide study scope, products, and outreach process

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 Guide Progress By:

Identifying and Assessing Flood Risk

Informing Flood Insurance Rates

Advising Local Land Use

Guiding Engineers and Developers

Equipping Emergency Managers

Why Are We 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 Chautauqua communities	NFIP Claims for affected communities	FEMA Insurance Claims Paid in affected communities	Hazard Mitigation Plan Status
564	2,003	$9,676,232	Approved

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How Did We Get Here?
Review past activities

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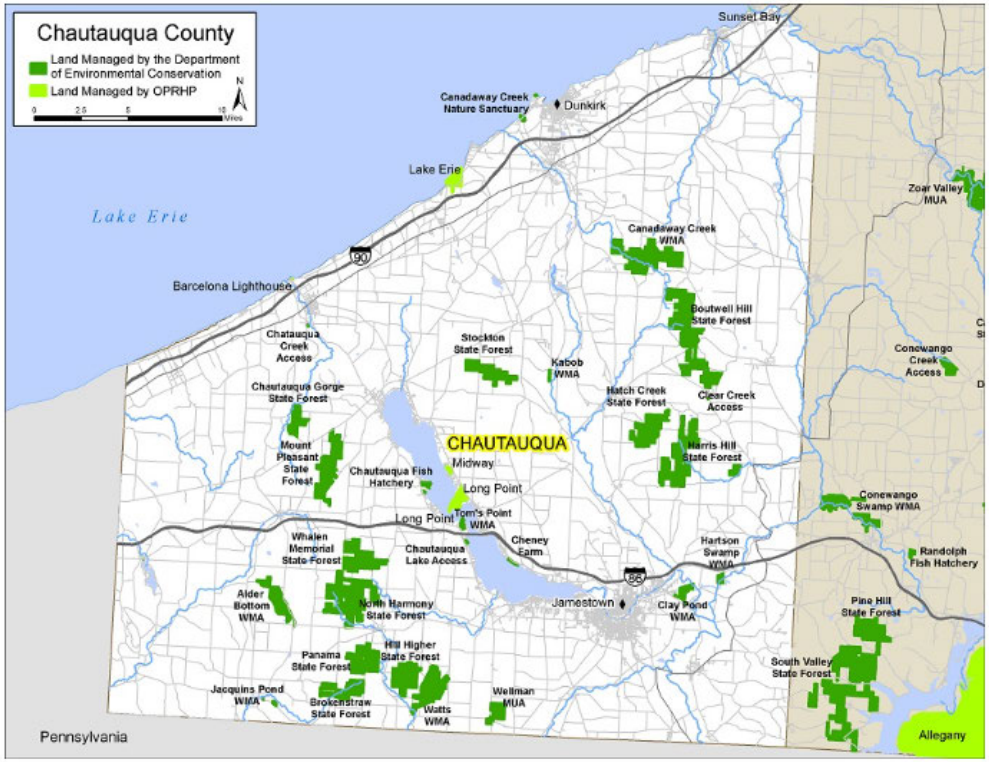
Coastal / Multi-Jurisdictional HMP *Recap*

Chautauqua County

- Coastal Work Map Meeting held in December 2017
- Multi-Jurisdictional Hazard Mitigation Plan
  - Adopted January 2017, set to expire January 2022 (in ~11 months)
- Community input guided FEMA priorities

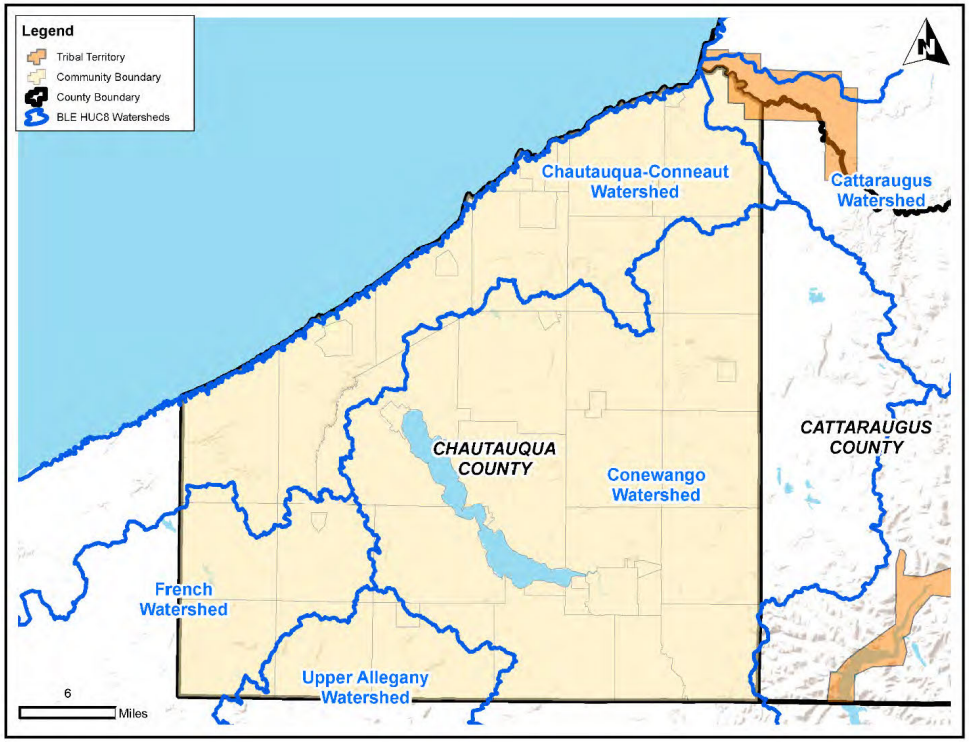
Chautauqua County Map



Scoping of Priorities and BLE
Recap

Chautauqua County

- Scoping meetings held in November 2019
- Goal of identifying and prioritizing streams for future FEMA Flood Insurance Studies in Western NY
- Community and county officials invited to participate
- Base Level Engineering (BLE) performed for ~1,000 mi.
  - BLE combines high-res ground elevation data + modeling technology to identify flood hazards at a watershed-level



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What Is Being Studied Now?
Discuss scope of new study

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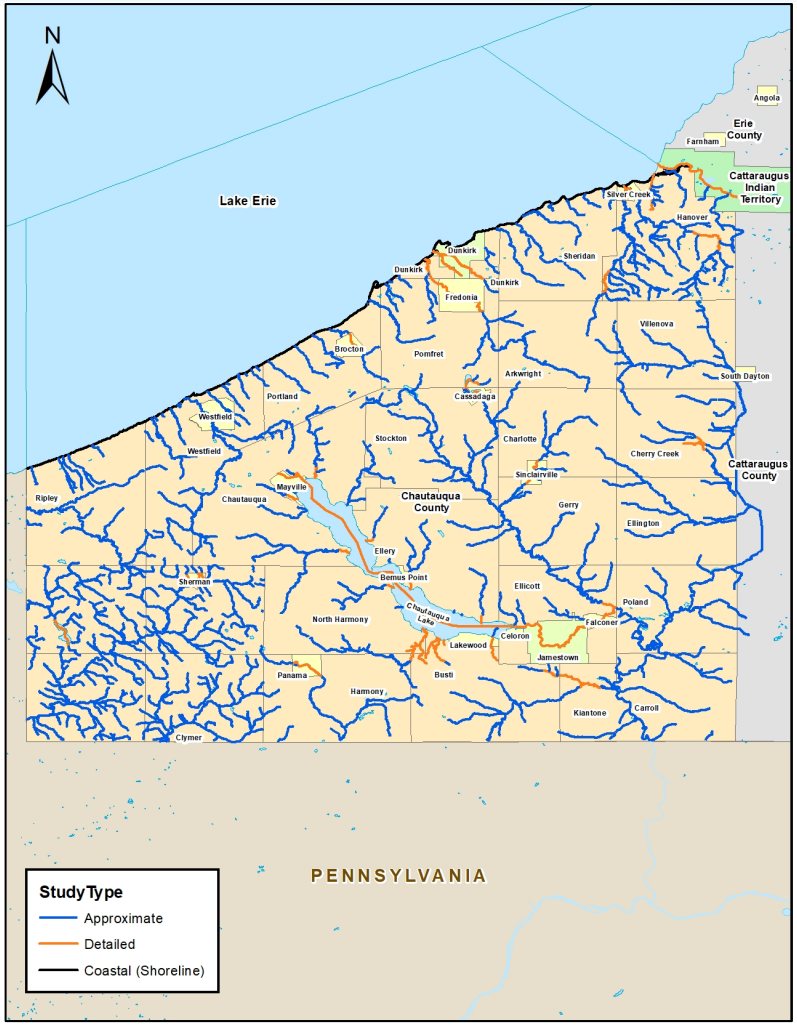
Chautauqua County, Countywide Flood Risk Study Scope

- **First time digital maps**
- **Flooding sources analyzed**
  - Detailed riverine studies (AE Zone)
    - 47 streams, 78 miles
  - Detailed lake studies (AE)
    - 3 lakes, 22 miles
  - Approximate (A) studies
    - multiple streams, 977 miles
- **45 communities updated**
- **232 map panels updated**
- **Review meetings**
  - Hydrology Meeting
  - Hydraulics Meeting
  - Flood Risk Review Meeting



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Detailed (Zone AE) Study Scope

- **47 Studied Streams – 78 miles total**
  - Ball Creek – 0.4 mile
  - Bemus Creek – 0.8 mile
  - Big Inlet – 1.2 miles
  - Black Creek – 1.3 miles
  - Canadaway Creek – 6.5 miles
  - Cassadaga Creek – 0.9 mile
  - Cassadaga Creek – 0.3 mile
  - Cattaraugus Creek – 6.0 miles
  - Chadakoin River – 9.2 miles
  - Cherry Creek – 0.7 mile
  - Conewango Creek – 1.7 miles
  - Conewango Creek – 0.6 mile
  - Cottage Park Creek – 2.0 miles

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Detailed (Zone AE) Study Scope

- **47 Studied Streams – 78 miles total**
  - Crooked Brook – 4.0 miles
  - Dutch Hollow Creek – 0.6 mile
  - French Creek – 1.0 mile
  - Goose Creek – 3.3 miles
  - Goose Creek Tributary – 1.7 miles
  - Goose Creek Tributary 1 – 0.2 mile
  - Goose Creek Tributary 2 – 0.2 mile
  - Goose Creek Tributary 3 – 0.4 mile
  - Halfway Brook – 2.7 miles
  - Little Brokenstraw Creek – 2.3 miles
  - Little Inlet – 0.8 mile
  - Maple Springs Creek – 0.6 mile
  - Mill Creek – 2.1 miles

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Detailed (Zone AE) Study Scope

- **47 Studied Streams – 78 miles total**
  - Moon Brook – 0.6 mile
  - Mud Creek – 0.8 mile
  - Prendergast Creek – 0.8 mile
  - School Creek – 0.6 mile
  - Silver Creek – 2.9 miles
  - Silver Creek – 1.3 miles
  - Slippery Rock Creek – 1.8 miles
  - Snake Creek – 1.7 miles
  - Stillwater Creek – 1.8 miles
  - Trib. No. 1 to French Creek – 0.6 mile
  - Trib. No. 2 to French Creek – 0.7 mile
  - Trib. No. 3 to French Creek – 0.7 mile
  - Trib. No. 4 to French Creek – 0.5 mile

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Detailed (Zone AE) Study Scope

- **47 Studied Streams – 78 miles total**
  - Trib. of Crooked Brook – 2.1 miles
  - Trib. to Chautauqua Lake – 1.8 miles
  - Trib. to Chautauqua Lake Tributary 1 – 0.4 mile
  - Unnamed Tributary – 0.4 miles
  - Walnut Creek – 1.3 miles
  - Walnut Creek – 1.9 miles
  - Widow Bostwick Creek – 2.8 miles
- **3 Studied Lakes – 22 miles**
  - Cassadaga Lakes – 2.0 miles
    - Mud Lake – 0.6 mile
  - Chautauqua Lake – 17.2 miles
  - Findley Lake – 2.2 miles

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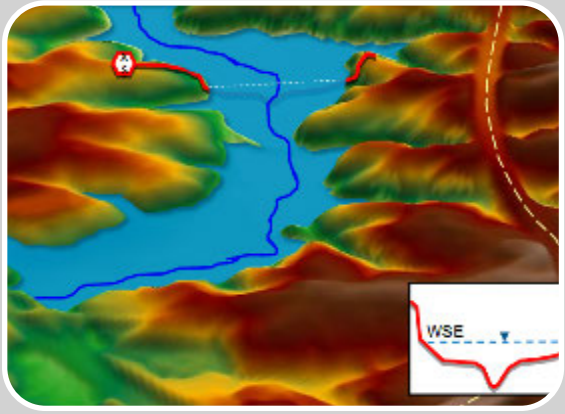
Flood Hazard Analysis



Hydrology

Volume of water?

Peak Flows?

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

Hydraulics

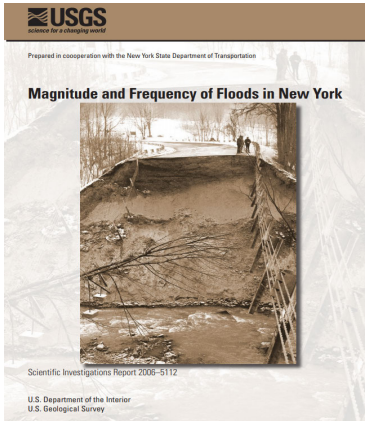
Will the stream in question be able to convey all storm water or runoff that arrives?

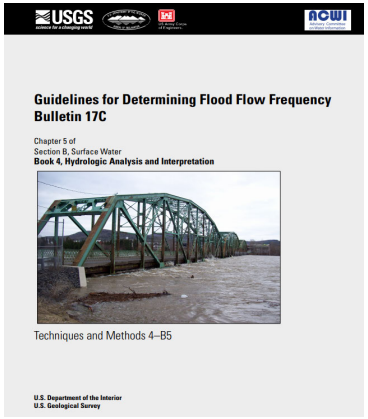
Floodplain Mapping

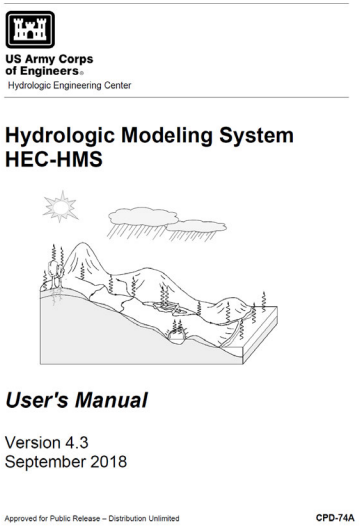
What areas of a community will be inundated based on engineering analysis?

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 modeling**
- **Discharges developed for**
  - 10%, 4%, 2%, 1%, 1%+, 1%-, 0.2% annual chance exceedance flood event

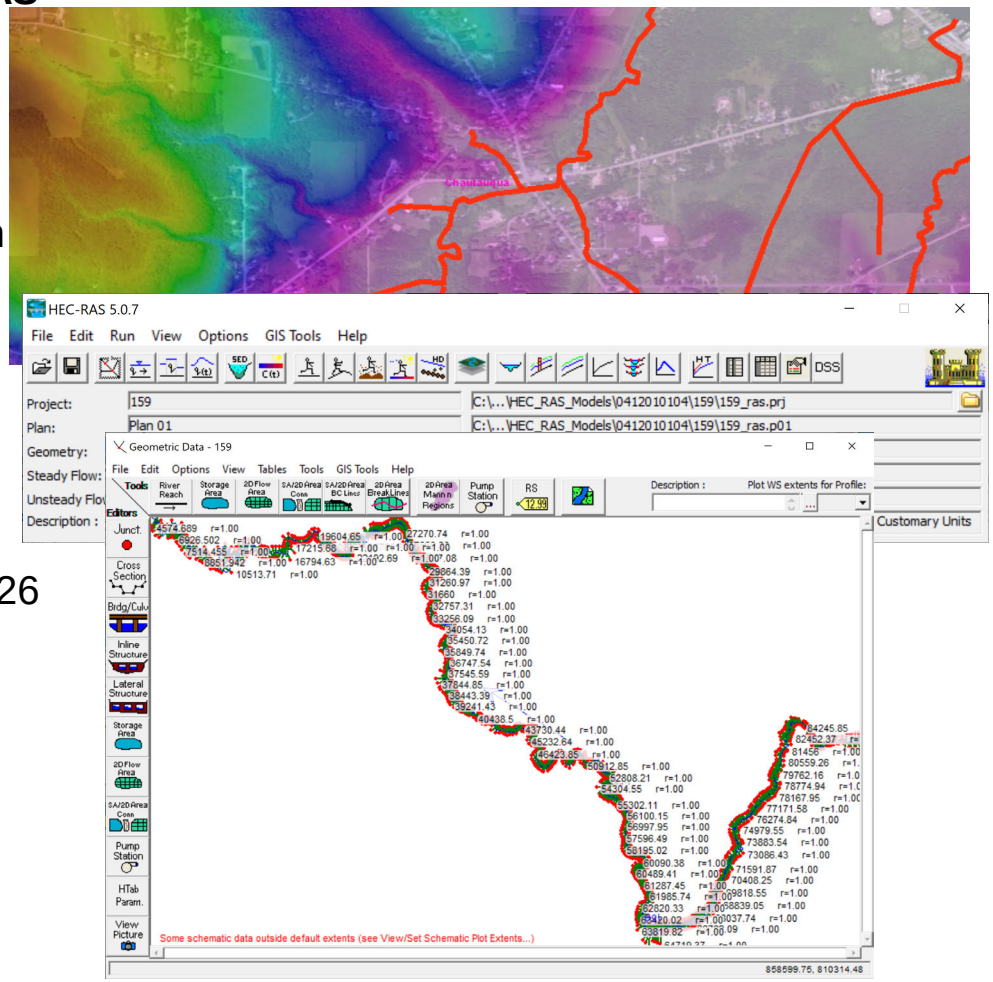






Engineering Methods - Hydraulic Analysis

- **Modeling developed using USACE's HEC-RAS Program**
  - One Dimensional (1D) Steady State
- **Terrain Data**
  - Provides topographic elevation information
  - Data Source:
    - 2017 NYS Bare Earth DEM USGS Quality Level 2
  - Supplemented by field survey
- **Field Survey for Detailed only**
  - Collection underway: 313 structures and 926 under water channel cross sections
- **Flood Hazard Data Generated**
  - Elevations: 10%, 4%, 2%, 1%, 1%+, 1%-, 0.2%
  - Floodplain extents: 10%, 1%, 0.2%, Floodway



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

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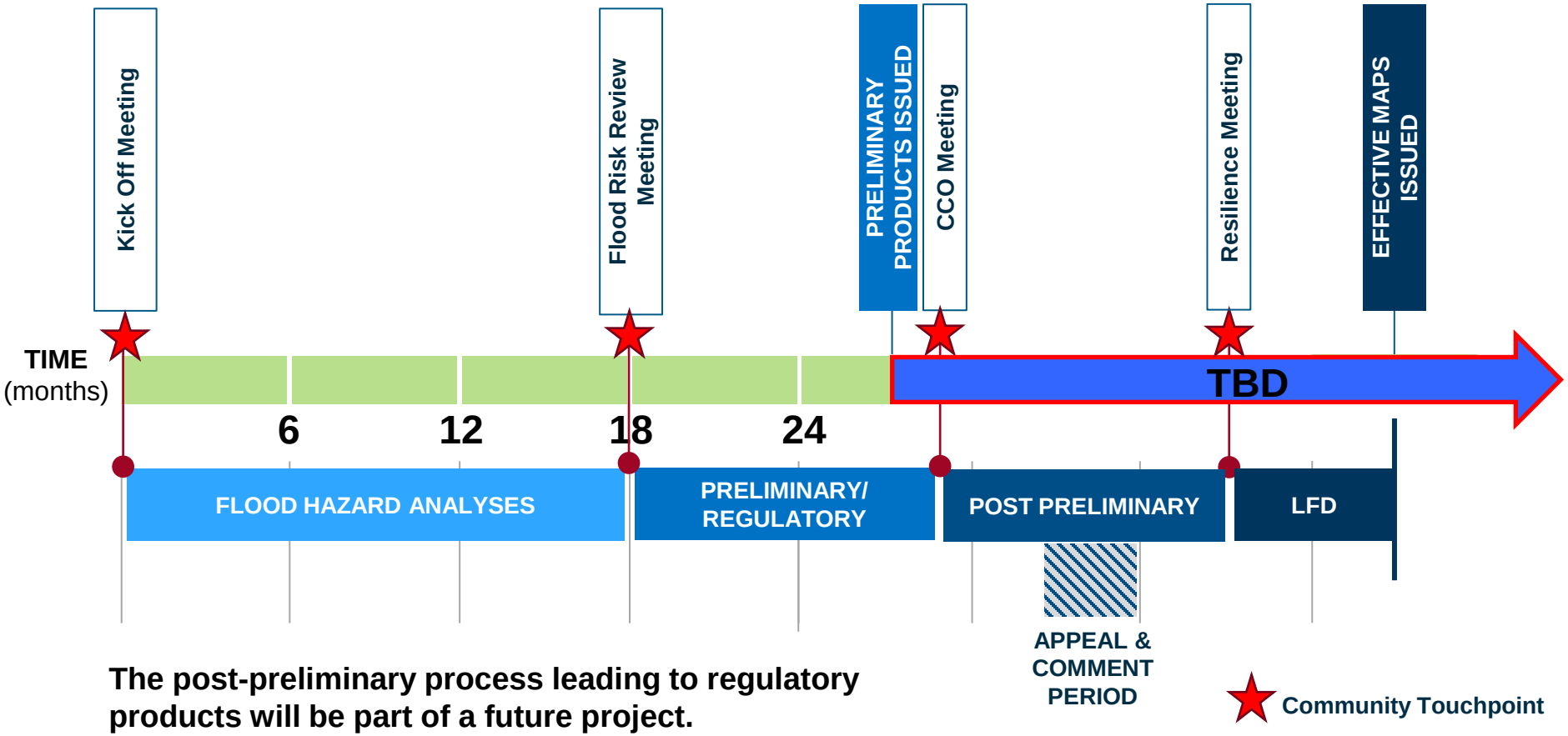
Overall Flood Risk Project Timeline



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

Major Study Milestones

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

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What Will Communities Receive?
Preliminary and Planning Products

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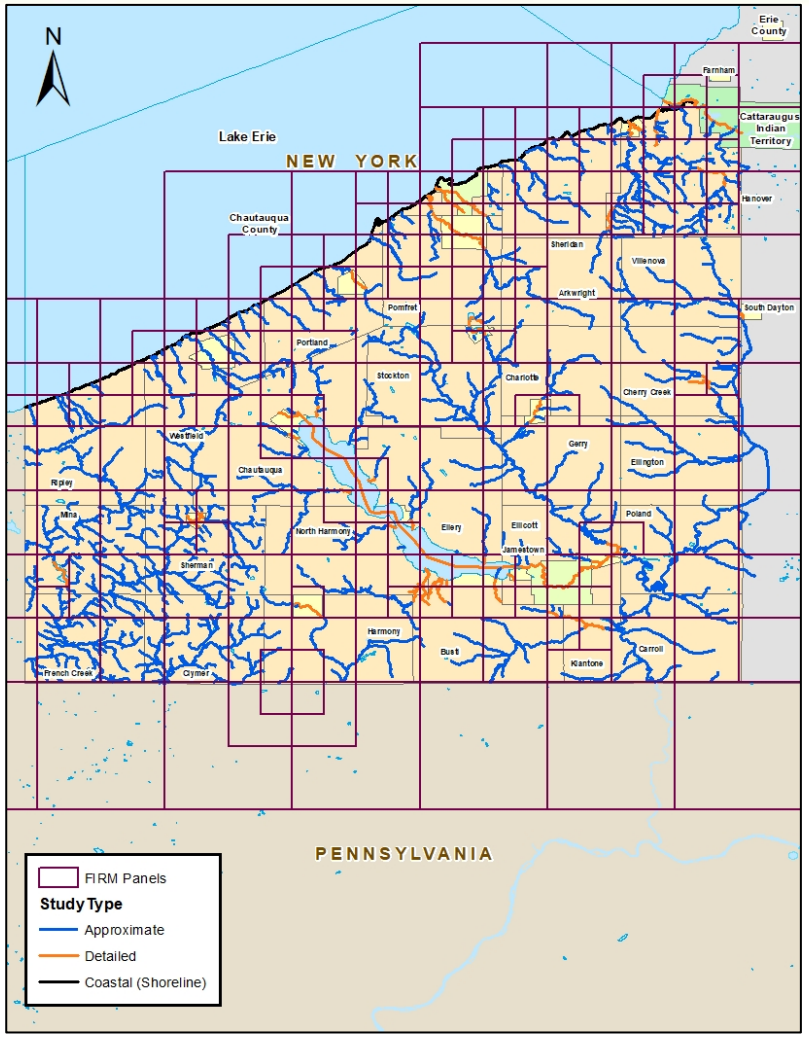
Work Maps

- **Draft floodplain mapping shared using web viewer**
- **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 significant change and potential opportunities for risk reduction
  - Identify risk communications needs and options

Preliminary Mapping Products

- **Preliminary product development commences after work map comment period**
- **Seamless countywide mapping produced**
  - Incorporates existing Lake Erie Coastal Mapping
- **Preliminary Digital Flood Insurance Rate Map (DFIRM) Database**
- **232 Preliminary FIRM Panels**
- **Flood Insurance Study (FIS) Report**



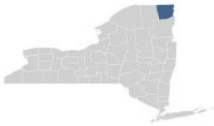
Flood Insurance Rate Map (FIRM)
Example

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:

FLOOD INSURANCE STUDY NUMBER
36019CV000B
Version Number 2.6.3.0

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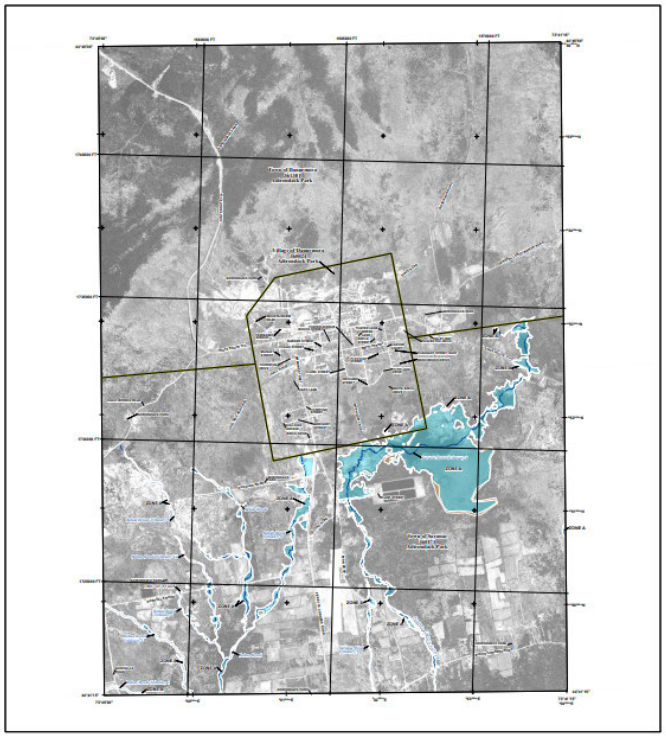

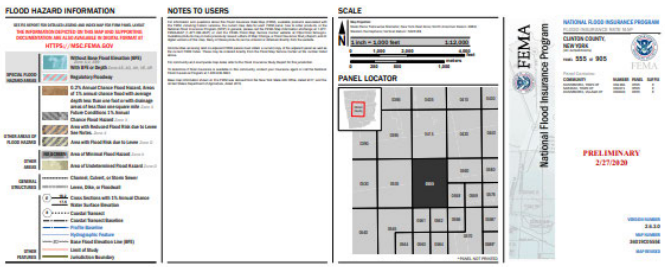

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Knowing the Risk

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;
- Effectively regulate current and future development without increasing risk; and/or
- Effectively 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? Flood Data?

Thank you!

FEMA