Flood Risk Project
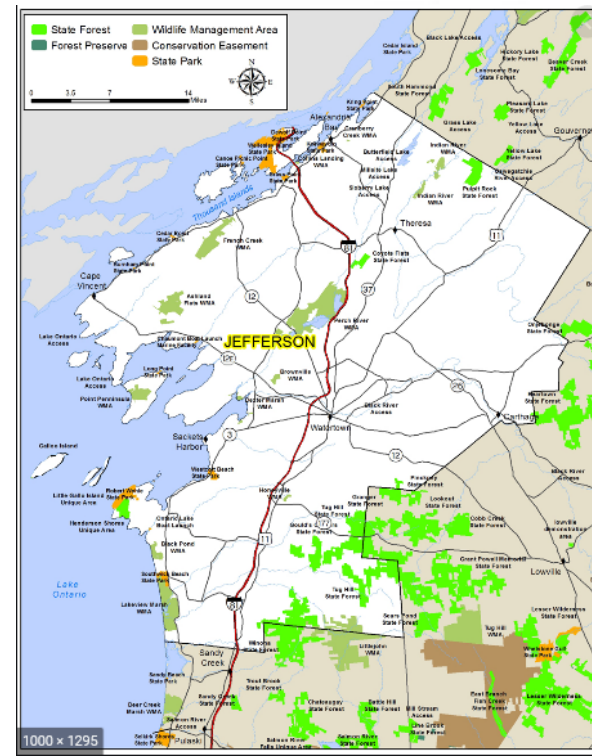Jefferson County, NY
Project Kick Off Meeting

February 9, 2021

Please Introduce Yourself (…in the chat!)

‣ **Name**

‣ **Role**

‣ **Organization**

Also, what do Jefferson 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

The value of updated flood hazard information

2

Recap of Flood Risk Study history, including Discovery and Great Lakes Coastal Study

3

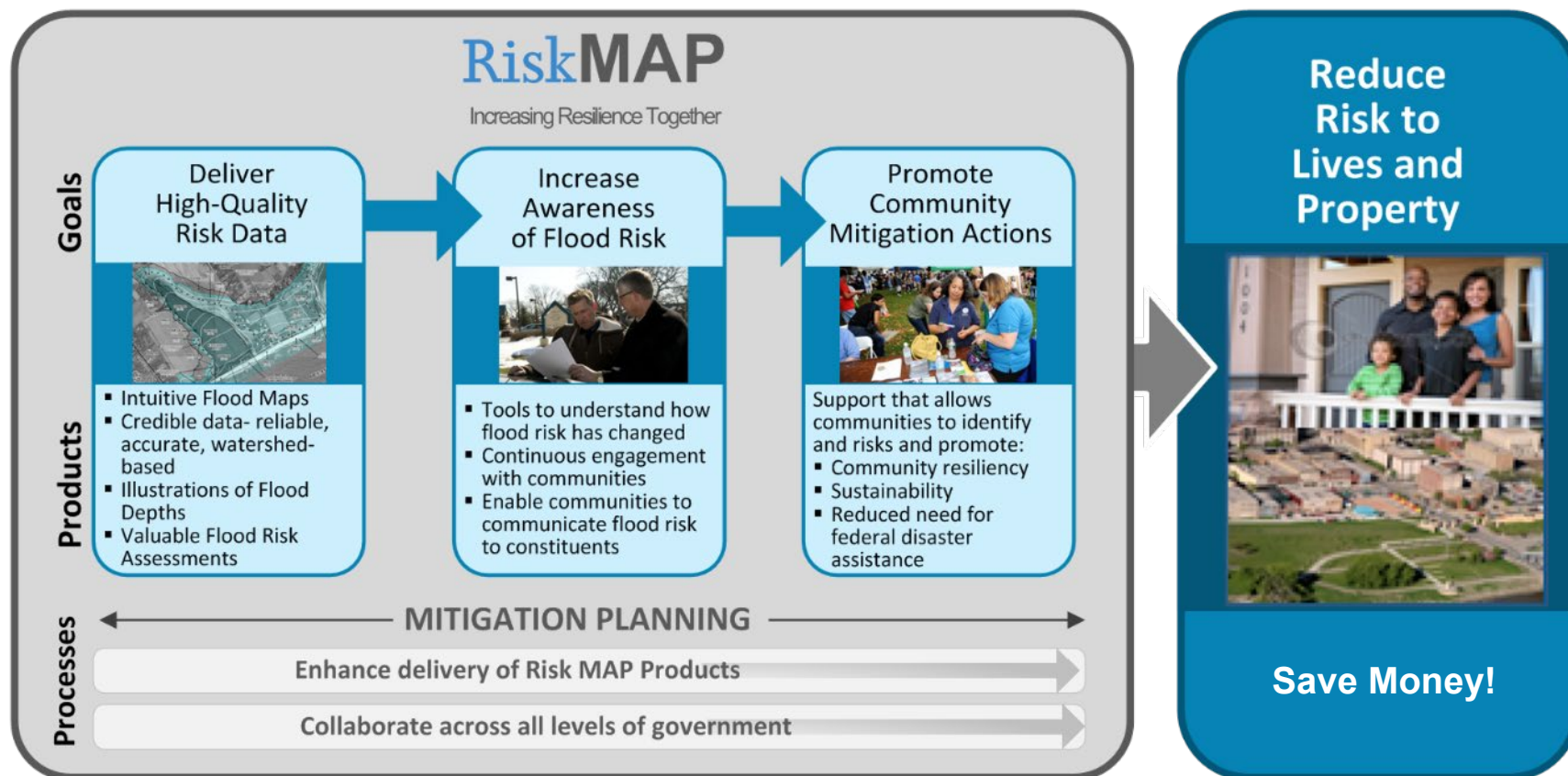Review county-wide study scope, products and outreach process

FEMA

Risk**MAP**
Increasing Resilience Together

FEMA Mitigation Division

Risk Analysis Branch
Goal: Stronger and Safer Communities
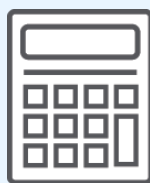
The Value of Updated Flood Maps for Local Communities
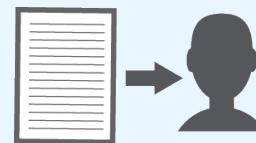
Flood Maps Promote Progress By:

Identifying and Assessing Flood Risk

Informing Flood Insurance Rates

Advising Local Land Use

Guiding Engineers and Developers

Equipping Emergency Managers

FEMA

RiskMAP
Increasing Resilience Together

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 Jefferson communities	NFIP Claims for affected communities	FEMA Insurance Claims Paid in affected communities	Hazard Mitigation Plan Status
381	283 since 1978	$2,401,258	Expired

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How Did We Get Here?
Review past activities

Discovery / Post-Discovery Progress
Recap

North Country Watersheds

▸ Meetings held in September 2019

▸ Discovery project completed in March 2020

▸ Community input guided FEMA priorities

▸ Jefferson County's Highest Priorities included:

  • Indian River – 3 separate approximate study reaches totaling 10.70 miles (overstated SFHAs; some include areas elevated 50' above the river)

  • Indian River – 1 detailed study reach, 1.5 miles long (SFHA inaccuracies near village office, lift stations, wastewater treatment plant, and Sand Street / railroad area)

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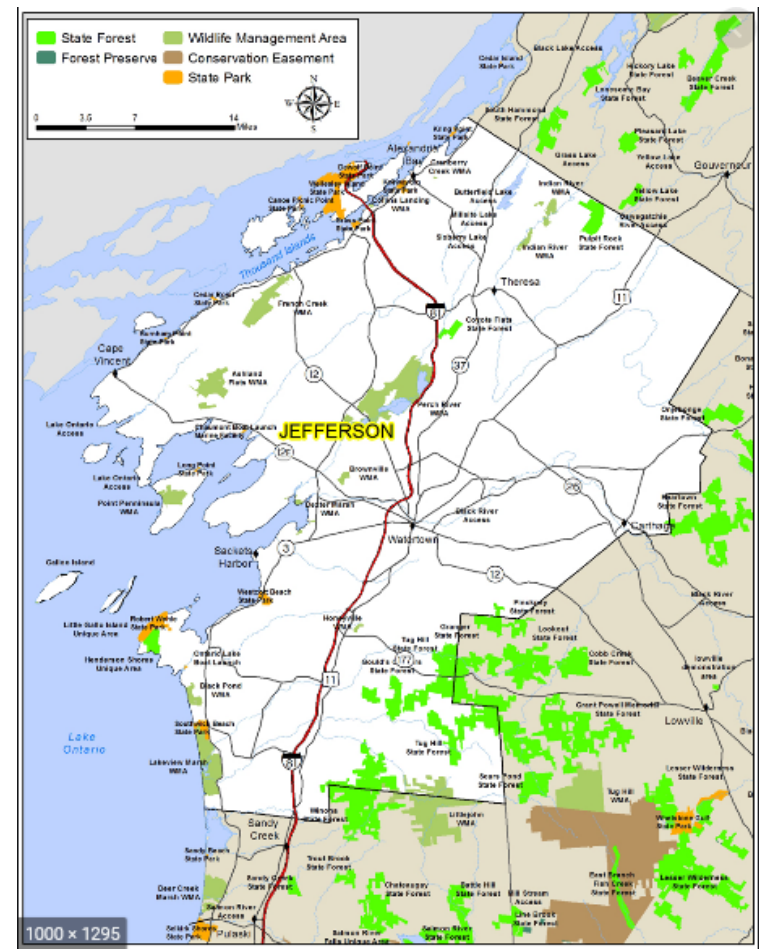
Discovery / Post-Discovery Progress
Recap

Lake Ontario Watersheds

- Meetings held in November 2013

- Discovery project completed in July 2016

- Community input guided FEMA priorities

- Jefferson County's Highest Priorities included:

  - Black Creek
  - Black River
  - Chaumont River
  - French Creek

  - Mullet Creek
  - Perch River
  - Sandy Creek
  - Stony Creek

Discovery Report
Lake Ontario – Headwaters to the St. Lawrence River Watershed
HUC 04150309
Jefferson and St. Lawrence Counties, New York*

*These counties span more than one watershed; please see the following page for a list of communities fully or partially located in the watershed. This report covers only the Headwaters to the St. Lawrence River Watershed in the State of New York.

Report Number 01
July 2016

FEMA
Federal Emergency Management Agency
Department of Homeland Security
26 Federal Plaza
New York, NY

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Leveraged Mapping
Recap – Great Lakes Coastal Study

‣ Flood Risk Review meetings held in July 2017

- 16 Coastal Jefferson County Communities

- 315 miles of shoreline (Lake Ontario and St. Lawrence River)

- Coastal Storm Flooding update

- 2015 USGS NY Great Lakes LiDAR

- Draft Data Viewer

‣ Any local data FEMA could leverage?

- Culvert/Bridge data

- Topographic/elevation

- Local Dam/levee (operation plans and EAPs)

- Local flood/drainage studies done for development planning
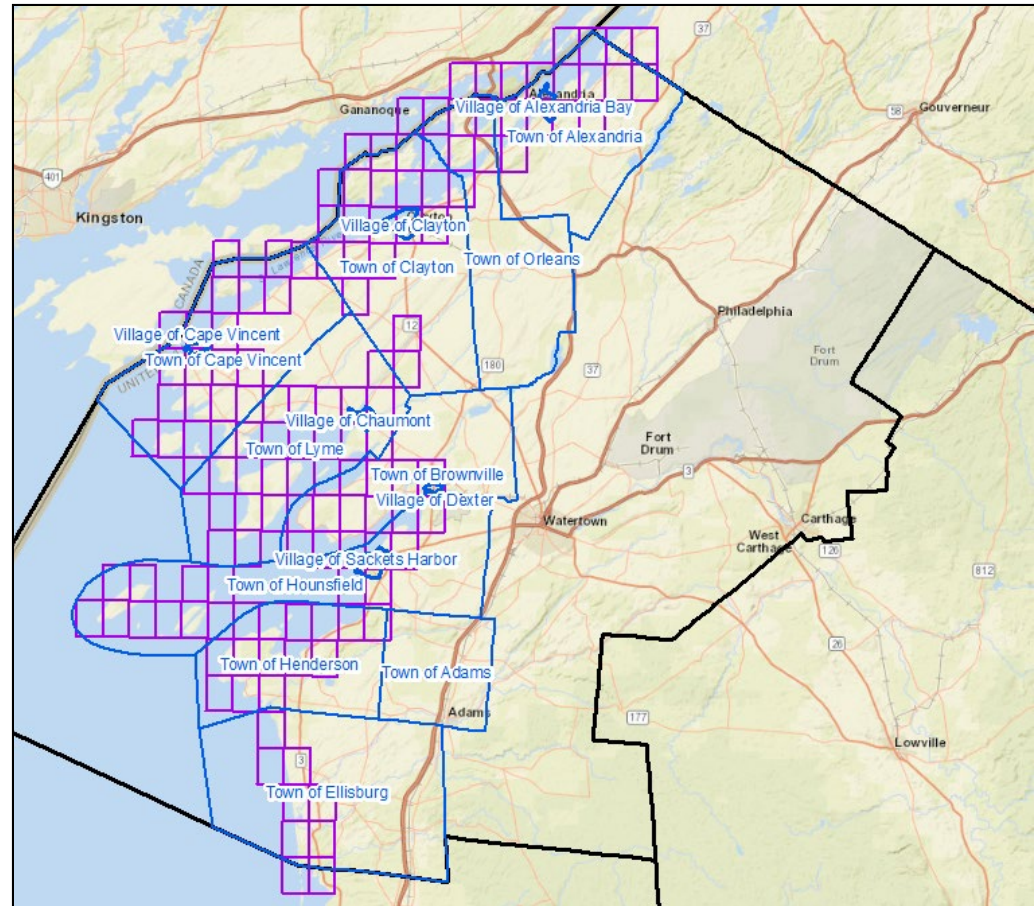
What Is Being Studied Now?
Discuss scope of new study

Jefferson County, Countywide Flood Risk Study Scope

- **First time digital maps**

- **Additional flooding sources analyzed**
  - Detailed studies (AE Zone) - 23 streams (76.2 miles), 1 lake (1.3 miles)
  - Approximate (A) studies – multiple streams, 860 miles
  - Leveraged Lake Ontario Coastal Mapping – 315 shoreline miles
  - Redelineation (AE) – 4 streams, 20 miles

- **40 updated communities**

- **255 map panels**

- **Review meetings**
  - Hydrology Meeting
  - Hydraulics Meeting
  - Flood Risk Review Meeting
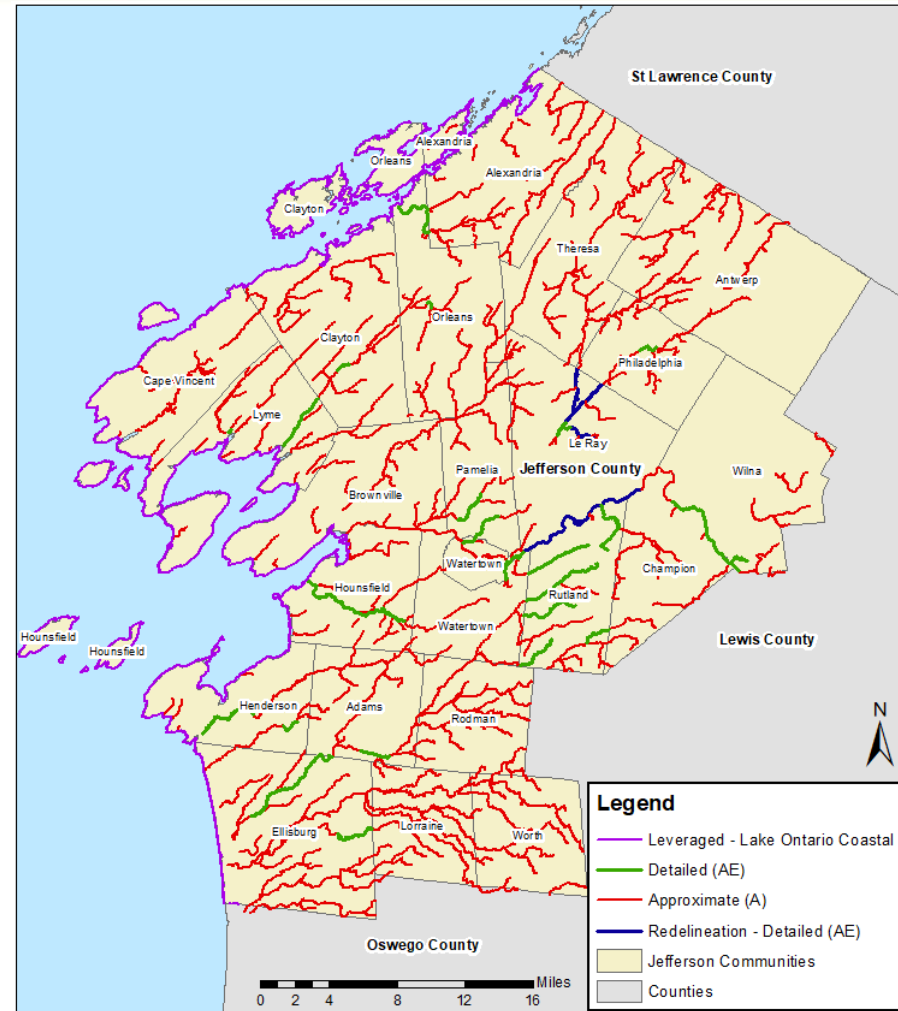
Detailed (AE Zone) Study Scope

▸ **24 Studied Streams/Lakes – 77.5 miles total**

- Bear Creek – 3.0 miles
- Black River – 8.1 miles
- Black River Tributaries – 1.4 miles
- Boynton Creek – 3.8 miles
- Chaumont River – 5.2 miles
- Churchill Creek – 1.8 miles
- Cold Creek – 1.2 miles
- Felts Mills Creek – 4.5 miles
- Freeman Creek – 2.8 miles
- Indian River – 1.5 miles
- Kelsey Creek 3.0 miles
- Mill Creek – 8.7 miles
- Mullet Creek – 4.5 miles
- Philomel Creek – 2.5 miles
- Pleasant Creek – 0.6 miles
- Rutland Hollow Creek – 4.0 miles
- Sandy Creek – 9.1 miles

- Soper Creek – 0.3 miles
- Staplin creek – 5.3 miles
- Stony Creek – 4.3 miles

- West Creek – 1.0 miles
- Crystal Lake – 1.3 miles

14
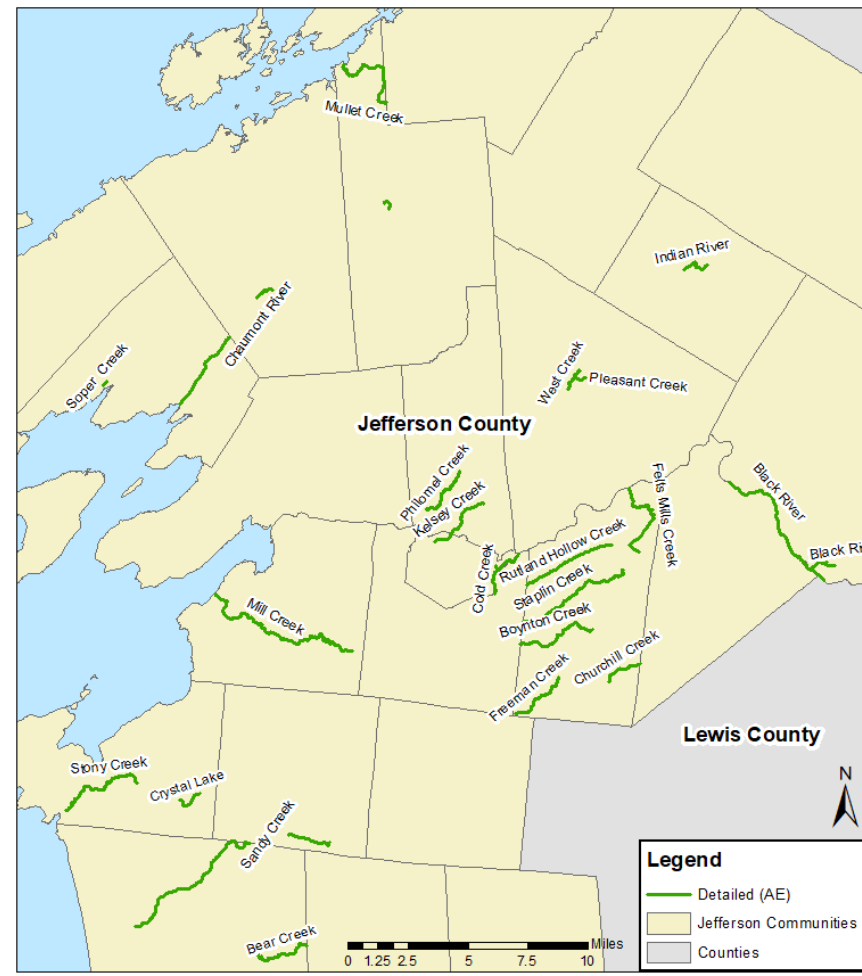
Approximate (A Zone) Study and Redelineation Scope

- ‣ **Completes countywide stream coverage**

- ‣ **Approximate Streams – 860 miles**
  - Notable streams include:
    - Black River
    - Indian River
    - North Branch Sandy Creek
    - Perch River
    - Skinner Creek
    - South Sandy Creek
    - Stony Creek

- ‣ **Redelineated Streams – 20 miles**
  - Notable streams include:
    - Black River
    - Indian River
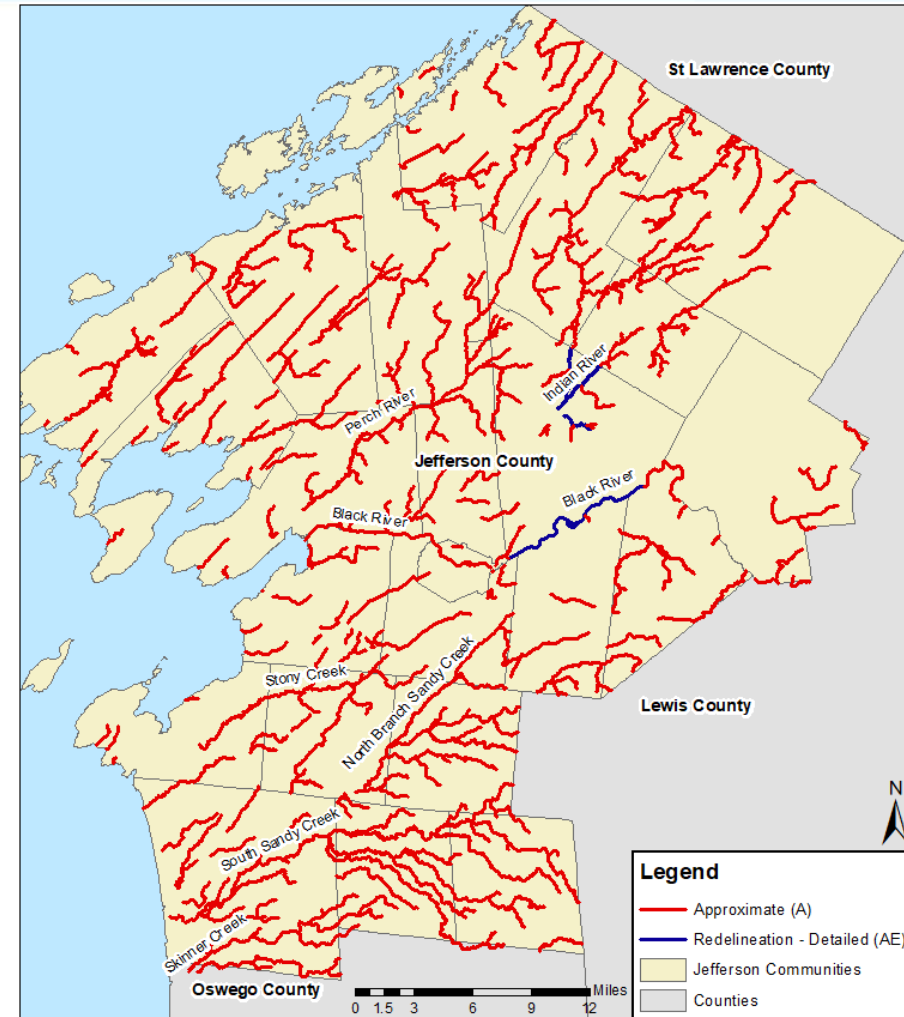
Flood Hazard Analysis
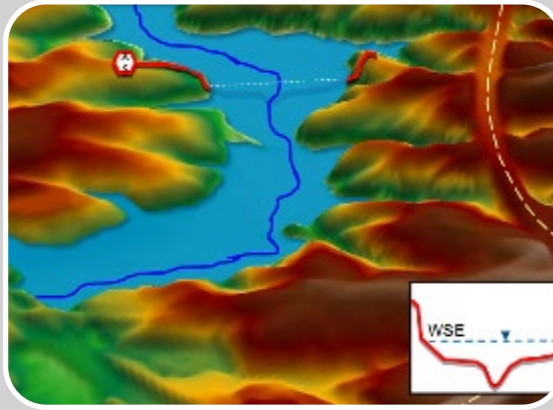
Hydrology

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

Discharges developed for

- 10%, 4%, 2%, 1%, 1%+, 1%-, 0.2%

- Inputs for hydraulic analyses

HEC-HMS Model

Legend
- Streams
- Storage Areas
- Fish Creek Subbasins
- Anthony Kill Subbasins

Regression Report

Gage Analyses
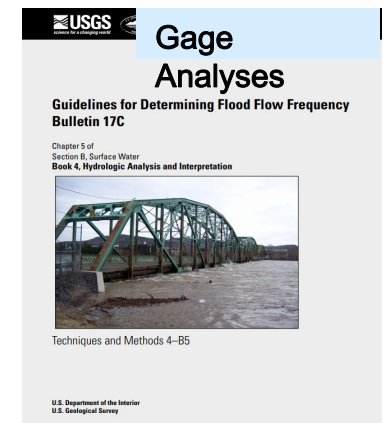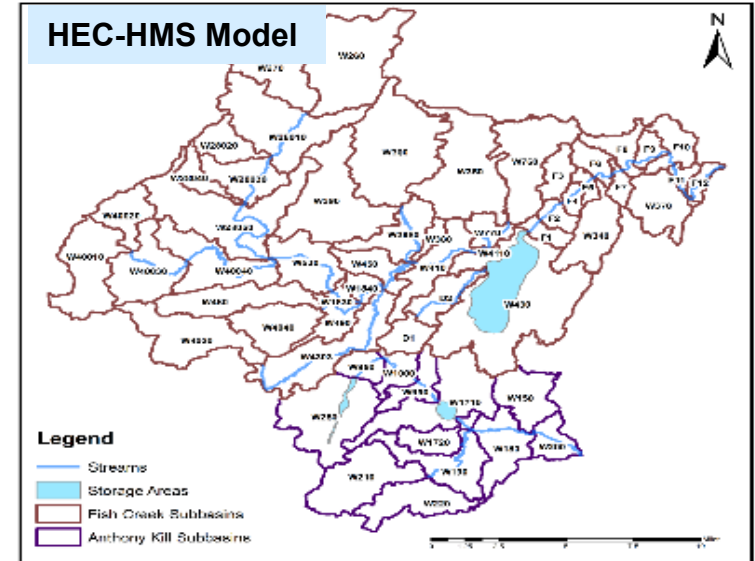
Engineering Methods - Hydraulic Analysis

- **Modeling developed using USACE's HEC-RAS Program**
  - One Dimensional (1D) Steady State
  - One Dimensional (1D) Unsteady State

- **Terrain Data**
  - Provides topographic elevation information
  - Supplemented by field survey
  - Data Sources:
    - 2014 FEMA Bare Earth DEM (1 meter)
    - 2010 NYS Bare Earth DEM (2 meter)

- **Field Survey for Detailed only**
  - Collection underway: 157 structures and 786 under water channel sections

HEC-RAS Models

1D Steady State

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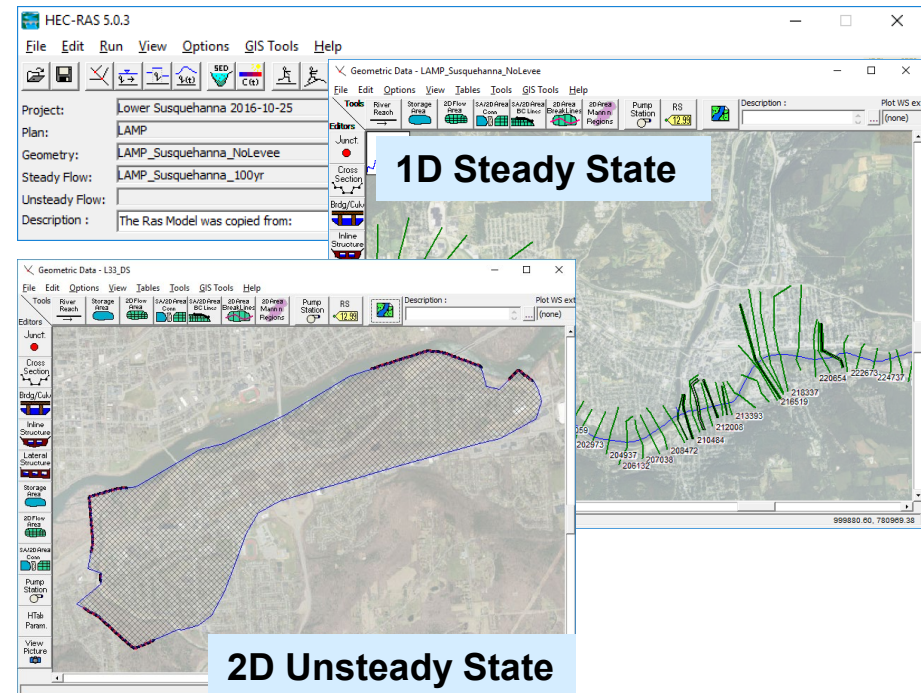
- **Flood Hazard Data Generated**
  - Elevations: 10%, 4%, 2%, 1%, 1%+, 1%-, 0.2%
  - Floodplain extents: 10%, 1%, 0.2%, Floodway

Engineering Methods - Detailed Streams

▸ **Hydrologic Method: Gage Analysis/USGS Regression Equations**

- Bear Creek
- Black River
- Black River Tributaries
- Boynton Creek
- Chaumont River
- Churchill Creek
- Cold Creek
- Felts Mills Creek
- Freeman Creek
- Indian River
- Kelsey Creek

- Mill Creek
- Mullet Creek
- Philomel Creek
- Pleasant Creek
- Rutland Hollow Creek
- Sandy Creek
- Soper Creek
- Staplin creek
- Stony Creek
- West Creek

▸ **Hydrologic Method: Stage-Frequency Analysis using HEC-HMS**

- Crystal Lake
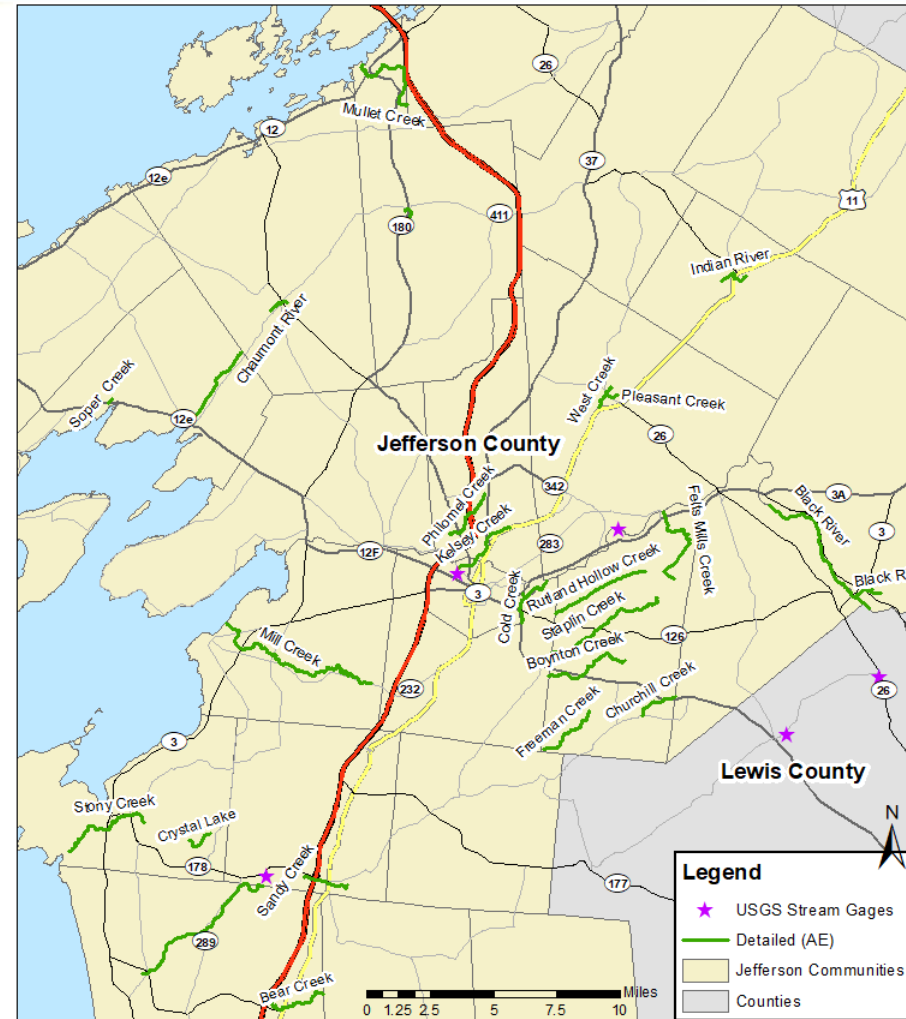
Engineering Methods - Detailed Streams

▸ **Hydraulic Method: HEC-RAS, 1D steady state hydraulic model**

- Bear Creek
- Black River
- Black River Tributaries
- Boynton Creek
- Chaumont River
- Churchill Creek
- Cold Creek
- Felts Mills Creek
- Freeman Creek
- Indian River
- Kelsey Creek

- Mill Creek
- Mullet Creek
- Philomel Creek
- Pleasant Creek
- Rutland Hollow Creek
- Sandy Creek
- Soper Creek
- Staplin creek
- Stony Creek
- West Creek

▸ **Hydraulic Method: Lake Stage-Frequency Analysis**

- Crystal Lake
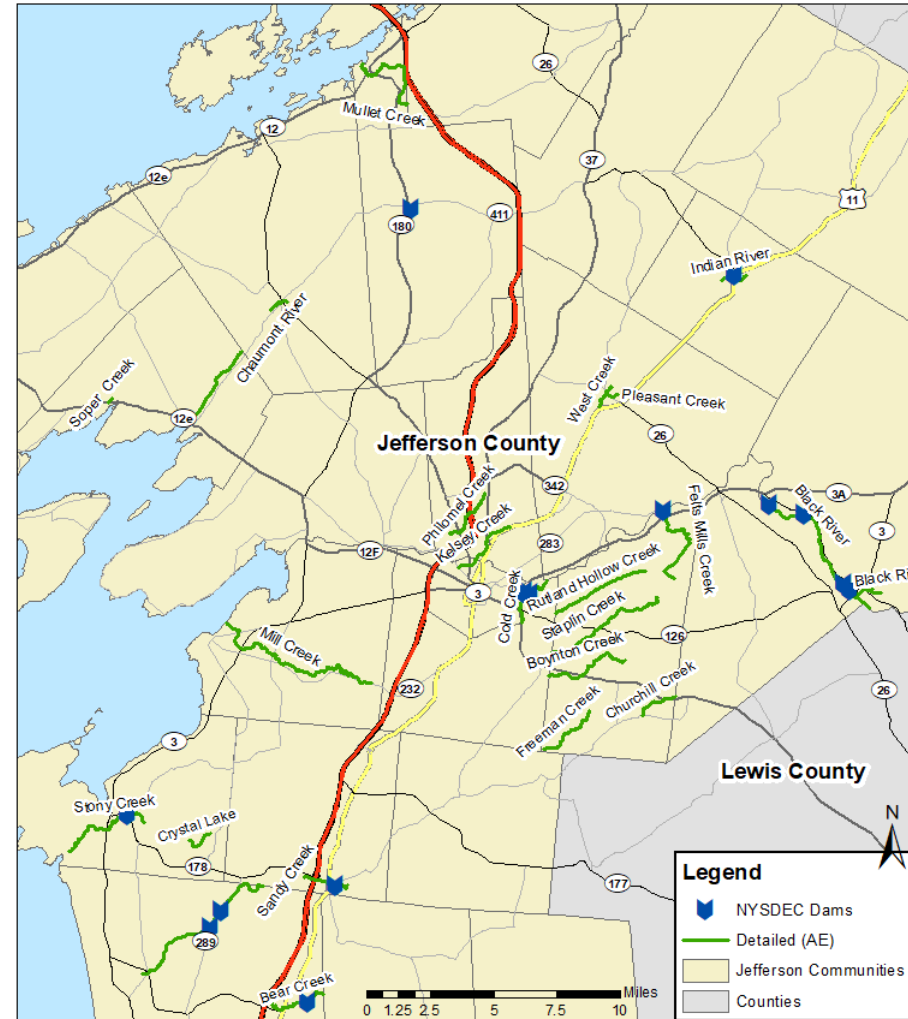
Engineering Methods - Approximate Streams

- **Approximate Streams – 860 miles**
  - Hydrologic Method: USGS Regression Equations
  - Hydraulic Method: HEC-RAS, 1D steady state hydraulic model

- **Floodplain extents for 10%, 1%, and 0.2%**
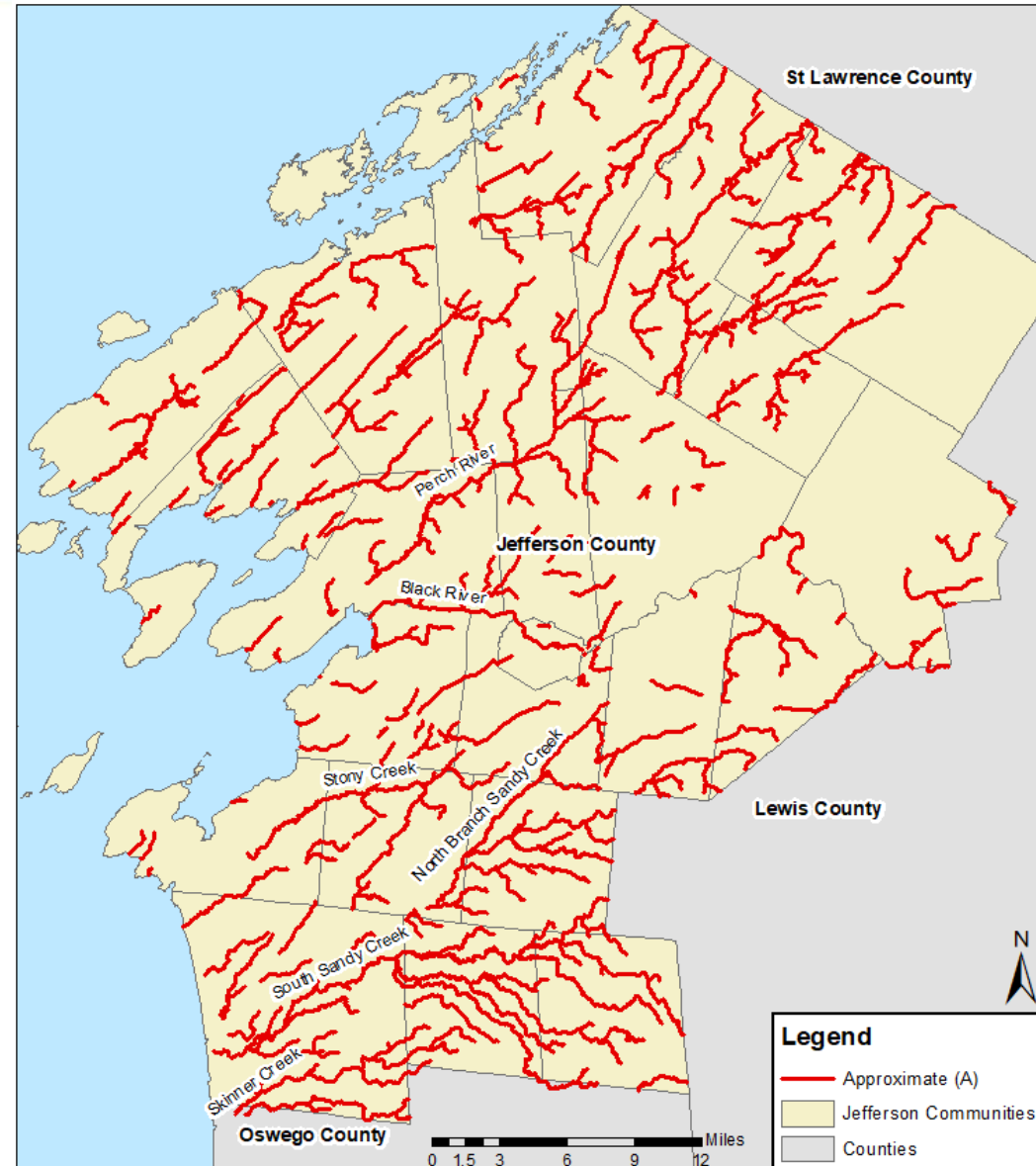
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Redelineated Streams

- **Redelineated Streams (AE) – 19 miles**
  - Streams include:
    - Black River
    - Indian River
    - Pleasant Creek
    - West Creek
- **No hydrology or hydraulic analyses conducted**
- **Flood extents are redelineated using the latest LiDAR topographic data**
- **Vertical Datum Conversion conducted**
- **Existing flood elevations converted from NGVD29 to NAVD88 datum**

Legend

- Redelineation - Detailed (AE)
- Jefferson Communities
- Counties

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

Overall Flood Risk Project Timeline

Kick Off Meeting

Hydrology Review Meeting

Hydraulics Review Meeting

Flood Risk Review Meeting

PRELIMINARY PRODUCTS ISSUED

CCO Meeting

Resilience Meeting

EFFECTIVE MAPS ISSUED

TIME (months)

6   12   18   24

TBD

FLOOD HAZARD ANALYSES

PRELIMINARY/ REGULATORY

POST PRELIMINARY

LFD

APPEAL & COMMENT PERIOD

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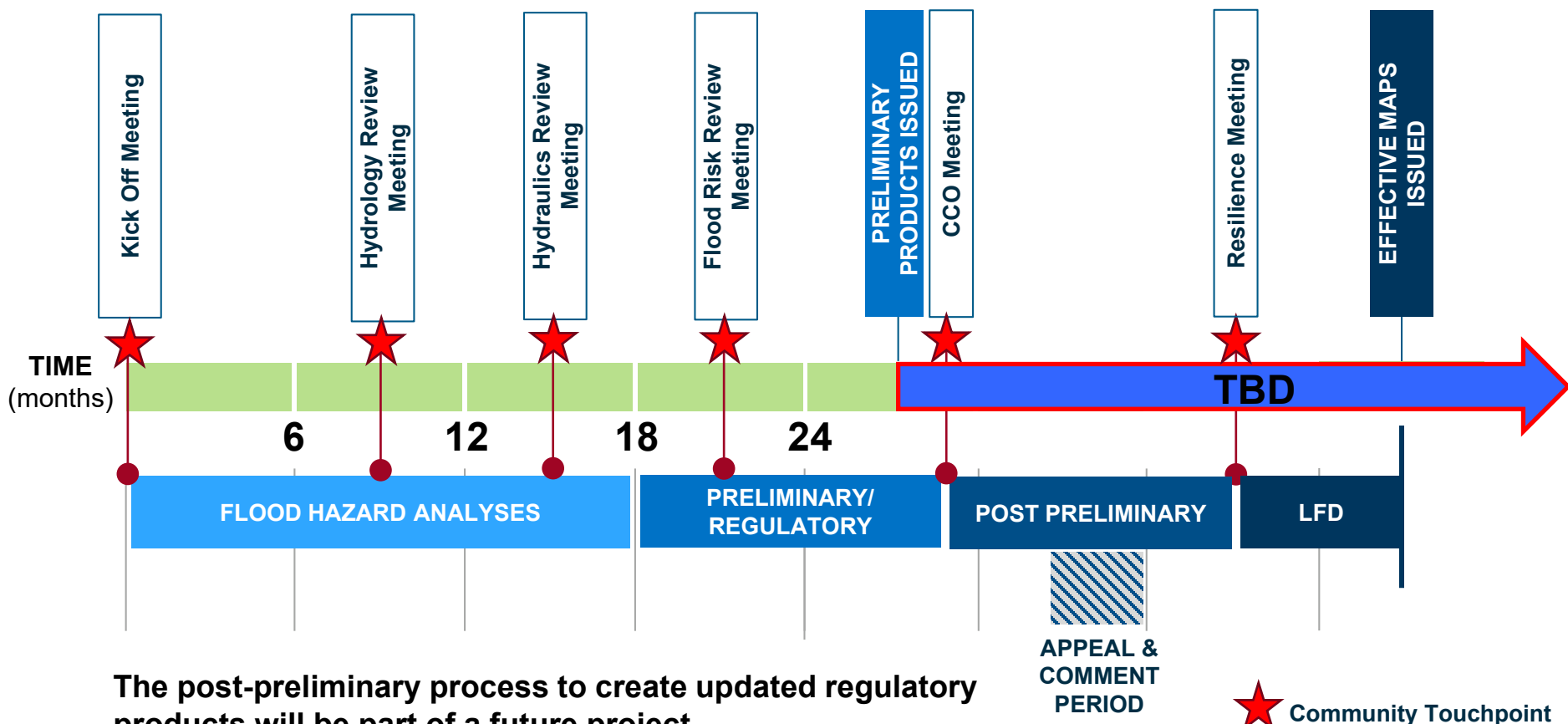
The post-preliminary process to create updated regulatory products will be part of a future project.

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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 (December 2022)**

- Review work map products with communities

▸ **Preliminary Products Update (FIRM & FIS)**

- Preliminary Maps Issued (June 2023)

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What Will Communities Receive?
Preliminary and Planning Products

Work Maps

- **Draft floodplain mapping shared using work 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

  - [Draft National Flood Hazard Viewer](#)

Draft Flood Hazard Viewer (*Example*)
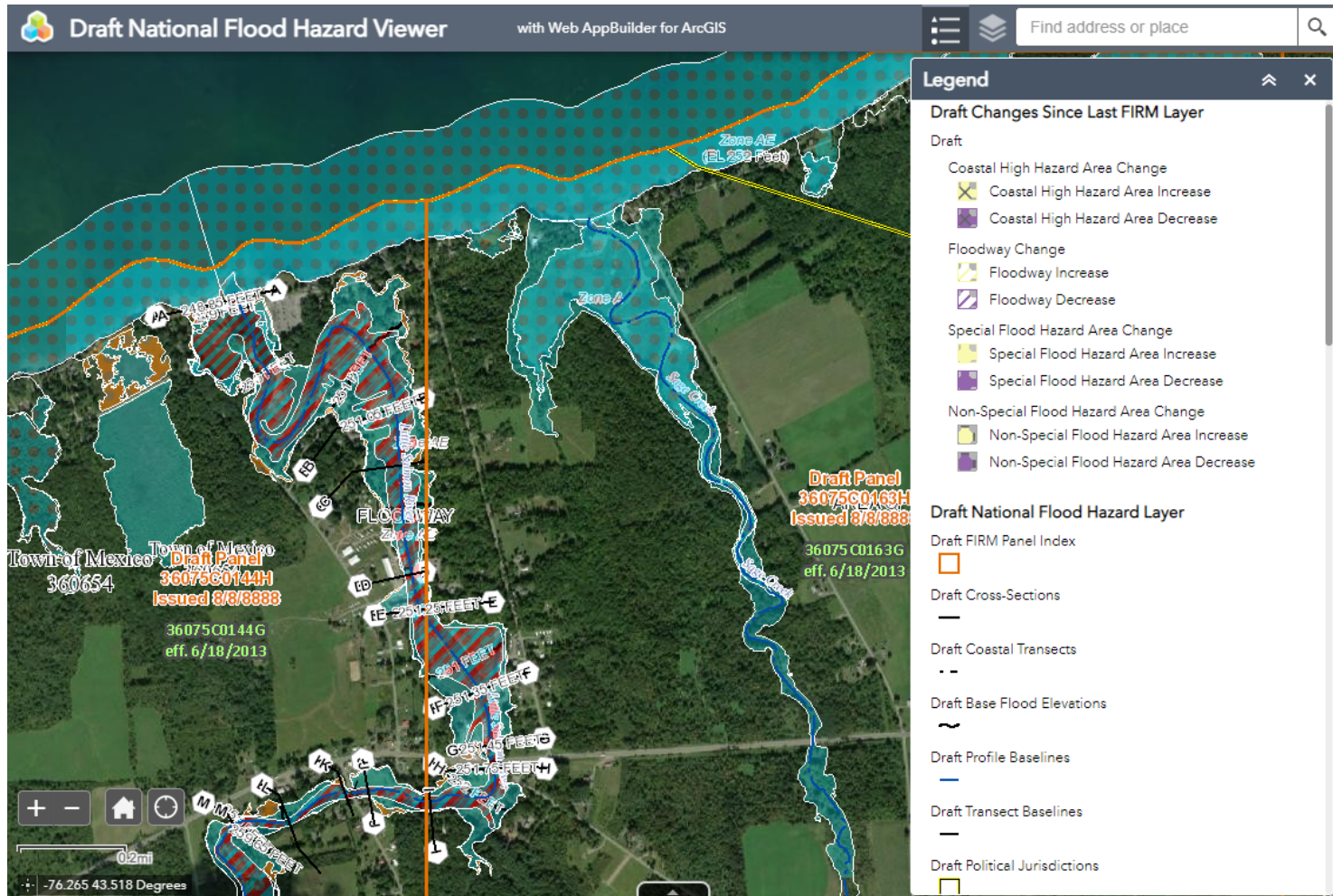
Preliminary Mapping Products

- **Preliminary product development commences after work map comment period**

- **Seamless countywide mapping produced**

  - Incorporates Lake Ontario Coastal mapping

- **Preliminary Digital Flood Insurance Rate Map (DFIRM) Database**

- **255 Preliminary FIRM Panels**

- **Flood Insurance Study (FIS) Report**

- **Flood Map Changes Viewer**
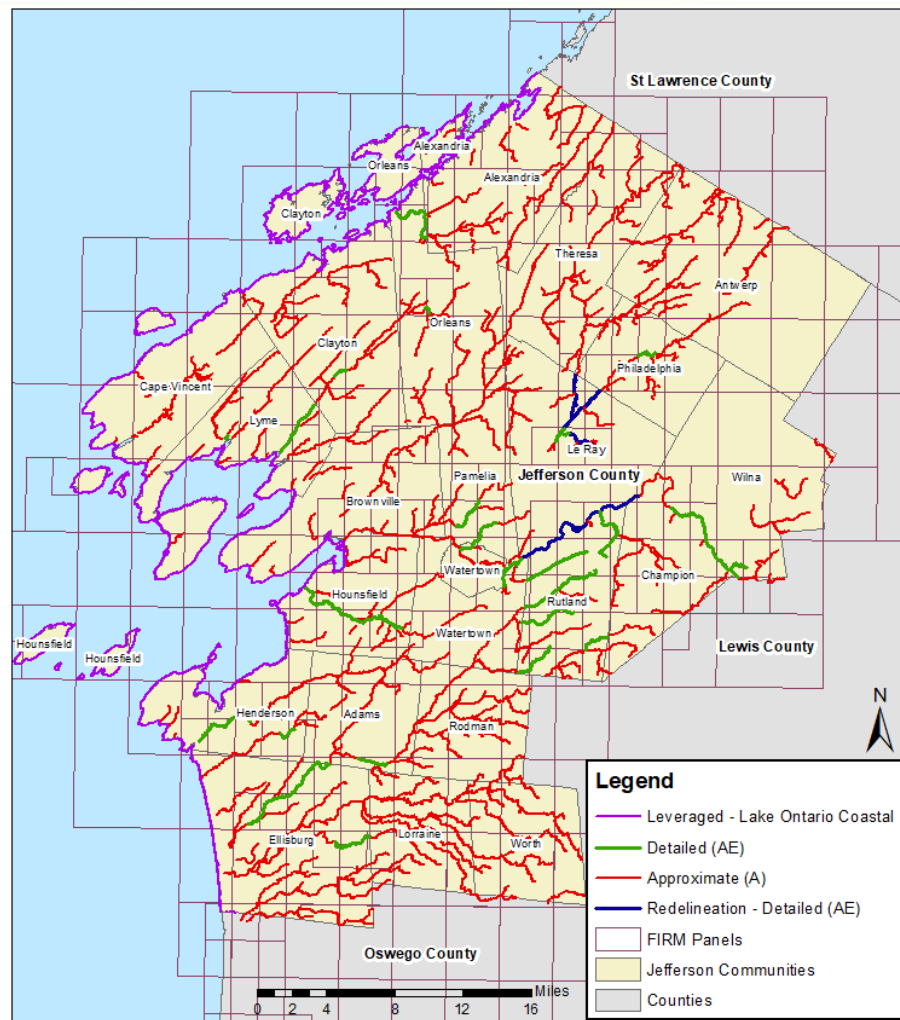
Flood Map Changes Viewer (*Example*)

Flood Insurance Rate Map (FIRM)
Example

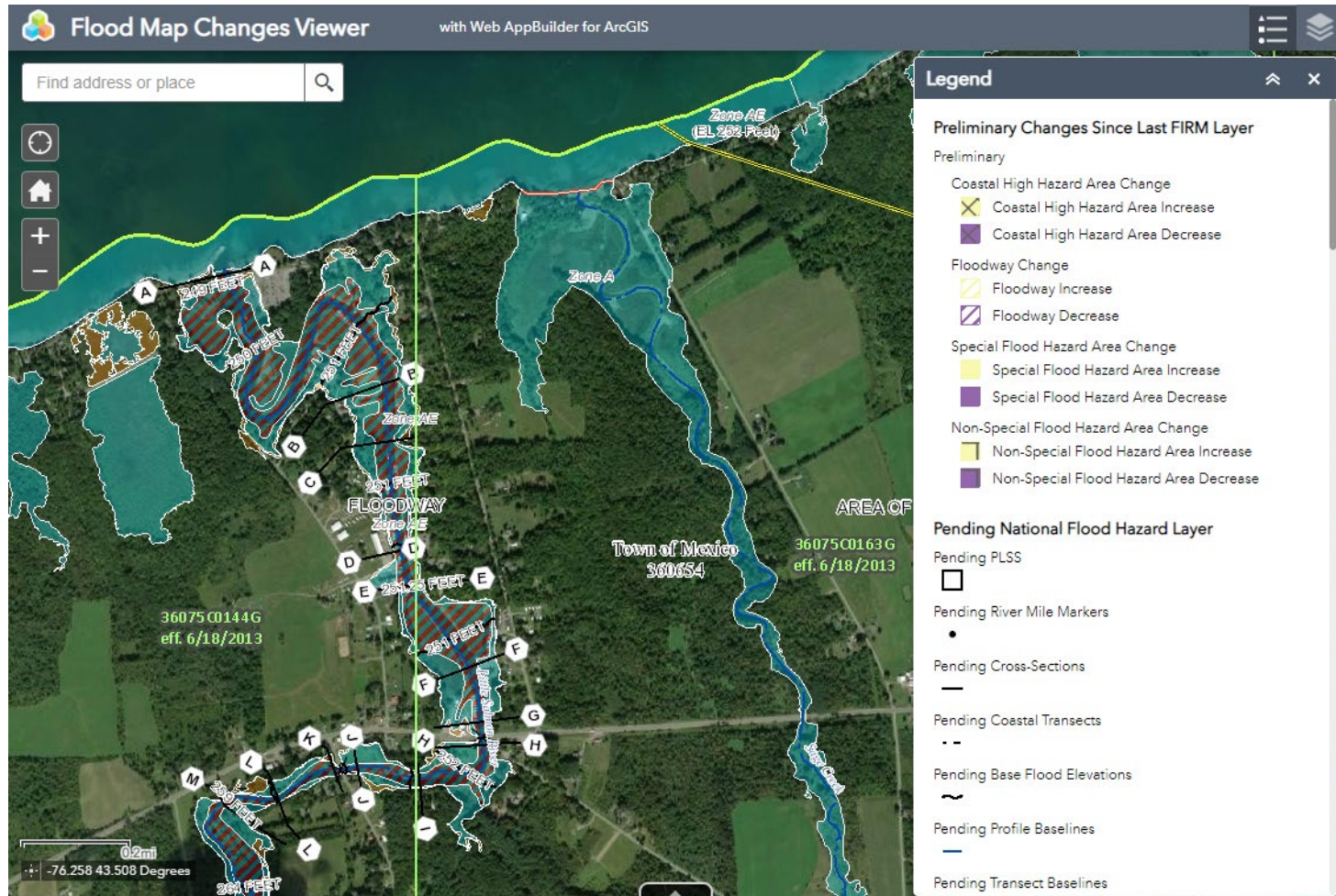|	
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S_BFE.shp	Shapefile
S_FIRM_Pan.shp	Shapefile
S_Fld_Haz_Ar.shp	Shapefile
S_Fld_Haz_Ln.shp	Shapefile
S_Gen_Struct.shp	Shapefile
S_Hydro_Reach.shp	Shapefile
S_Label_Ld.shp	Shapefile
S_Label_Pt.shp	Shapefile
S_Nodes.shp	Shapefile
S_PLSS_Ar.shp	Shapefile
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

FEMA

31

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.

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Contacts

- **FEMA Project Monitor**
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  202-702-4273
  shudipto.rahman@fema.dhs.gov

- **FEMA Outreach Coordinator**
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  stephanie.gootman@fema.dhs.gov

- **NY State Department of Environmental Conservation**
  Central Office Contact: Brad Wenskoski
  Region 6 Contact: Mary Binder
  315-705-3038
  Mary.Binder@dec.ny.gov

- **STARR II Project Manager**
  David Sutley, PE
  303-951-0612
  dsutley@dewberry.com

- **STARR II Regional Support Center Lead**
  Rosemary Bolich
  646-490-3848
  rosemary.bolich@stantec.com

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Questions? Comments?

Thank you!