APPENDIX C. MEETING DOCUMENTATION

Appendix C includes meeting agendas, sign-in sheets and minutes (where applicable and available) for meetings convened during the development of the Onondaga County Hazard Mitigation Plan Update.

ONONDAGA COUNTY MULTI-JURISDICTIONAL ALL-HAZARDS MITIGATION PLAN 2018 UPDATE
Steering Committee #1 – AGENDA
MEETING DATE/TIME: June 25, 2018 – 12:00pm-1:30pm

1. **Introductions**

2. **Hazard Mitigation Planning and Update Overview**
   - Focus on clearer communication of risk
   - Focus on stronger connection between the risk assessment and mitigation strategies
   - Focus on integration of plan into county and municipal policies, procedures, and decision making

3. **Steering Committee Composition and Ground Rules**

4. **Schedule**
   - Overview and Milestones
   - Meeting Schedule

5. **Data Collection Status**
   - NFIP Data Request
   - Letters of Intent to Municipalities
   - GIS Data
   - Critical Facility Inventory
   - Reports and Plans
   - Shared Site
   - Template Data Gathering/Update Tools (worksheets)
     - Municipal Information Sheets
     - Capability Assessments
     - Mitigation Strategy Updates

6. **Confirmation of Mission Statement, Goals, and Objectives**

7. **Hazards of Concern Identification**

8. **Public and Stakeholder Outreach**
   - Strategy – press releases, social media posts, capture of miscellaneous outreach
   - Tracking

9. **In-Kind Services Tracking**

Onondaga County Project Contact

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ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #1
MEETING DATE/TIME: June 25, 2018 12:00pm – 1:30pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
Megan Costa	Asst. Dir for Co. Planning	SOCPA	315-435-8571	mcosta@ongov.net
Ilana Cantrell	Planner	SOCPA	315-435-8573	icantrell@ongov.net
Cynthia Bianco	Planner	Tetra Tech	973-630-8044	cynthia.bianco@tetratech.com
Chris Huch	Planner	Tetra Tech	973-630-8357	chris.huch@tetratech.u
Joe Rinefield	Director	OCM	315-435-2525	jrinefield@ongov.net
James D'Agostino	Director	SMTC	315 422 5716	JDAGOSTINO@SMTC
Mario Colone	Program Manager	SMTC	"	mcolone@smtcmpo.org
Don Jordan	Acting Director	SOCPA	315-435-2611	donjordan@ongov.net
Dan Wears	Commissioner	OCDEM	315-435-2525	danielwears@ongov.net
Reggie Parker	Emergency Resp. Coordinator	DEC	315-426 7420	reginald.parker@dec.ny.g
Kelly Caramanna	~~Safety~~ Dir	OCWA	3154557061	kcaramanna@ocwa.org
Geoff Miller	Deputy Executive Director	OCWA	315-455-7061	gmiller@ocwa.org
Chris Kraynak	Sam Eng II	WEP	315-435-5402	ChrisKraynak@ongov.net
Tom Rhoads	Commissioner	WEP	"	tomrhoads@ongov.net
Chris Dodson	Assoc Director	SU-EFC	315-443-8818	[illegible]

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #1
MEETING DATE/TIME: June 25, 2018 12:00pm – 1:30pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
Danny Fitzpatrick	Gov. Relations Dir. / Town Supervisor	OCWA / Town of LaFayette	315-247-1600	dfitzpatrick@ocwa.org
Bob Tackman	Mayor	East Syracuse	315-437-3541	Btackman@villageofeastsyr
Travis Glazier	Director	Onondaga Co.	315-435-2647	travisglazier@ongv.net
Charles Wright	EM Director	NYS Canal Corp	518-410-5714	Charles.Wright@Canals.ny.gov
David Bottar	Ex. Dir	CNY RPDB	315-422-8276	dbottar@cnyrpdb.org
Beth Smith	Management Analyst	City - Syr.	315-448-8340	Bsmith@syrgov.net
Mary E. Robison	City Engineer	City of Syracuse	315-448-8200	mrobison@syrgov.net
MARTY VOSS	OCDOT		315-435-3205	martinvoss@ongov.net
Kathleen Bertuch	Planner	CNY RPDB	315-422-8276	Bertuch@cnyrpdb.org
MARK Burger	SWCD DIR	SWCD	315 457 0325	MBurger@ocswcd.org
FLOYD DUGER	TOWN COUNCILOR	TOWN OF ELBRIDGE	315-569-2978	fduger@aol.com

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #1
MEETING DATE/TIME: June 25, 2018 12:00pm – 1:30pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
Richard M Platten	Mayor	Village of Jordan	315-689-7350	clerk@villageofjordan.org
Chris Durham	Sony Upstate	Mgt Oneg	315 464-4180	Durham@upstatedc
Karen R Pollard	Marcellus	Town	315-673-3269	supervisor@marcellusnc.com
Robert Herrmann Jr	Codes Officer	Town Elbridge	315 689-9031x6	codesoffice@townofelbridge
Ed Michalenko	Supervisor	Town of DeWitt	315-439-3910	supervisor@townofdewitt.com
Doug Miller	Engineer	Town of Manlius	315 558 8417	Dougmiller@millerengineers.com
John Anton	Chief of Police	Town of DeWitt	315-449-3640	janton@townofdewitt.com

Onondaga County Multi-Jurisdictional All Hazard Mitigation Plan Update Minutes of Meeting

Purpose of Meeting:	Steering Committee Meeting #1
Location of Meeting:	Onondaga County Syracuse, New York
Date/Time of Meeting:	June 25, 2018; 12:00 p.m. – 2:00 p.m.

Attendees:

Kathleen Bertuch, CNY Regional Planning & Development Board
David Bottar, CNY Regional Planning & Development Board
Mark Burger, Onondaga County Soil & Water Conservation District
Ilana Cantrell, Syracuse-Onondaga County Planning Agency
Kelly Caramanna, Onondaga County Water Authority
Mario Colone, Syracuse Metropolitan Transportation Council
Megan Costa, Syracuse-Onondaga County Planning Agency
James D'Agostino, Syracuse Metropolitan Transportation Council
Khristopher Dodson, SU Environmental Finance Center
Floyd Duger, Town of Elbridge Councilor
Dan Fitzpatrick, LaFayette Town Supervisor, OC Association of Towns
Travis Glazier, Onondaga County Office of the Environment
Don Jordan, Syracuse-Onondaga County Planning Agency
Chris Kraynack, Onondaga County Dept. of Water Environment Protection
Geoff Miller, Onondaga County Water Authority
Reggie Parker, NYS Dept. of Environmental Conservation – Region 7
Tom Rhoads, Onondaga County Dept. of Water Environment Protection
Joseph Rinefierd, Onondaga County Dept. of Emergency Management
May E. Robison, City Engineer, City of Syracuse
Beth Smith, City of Syracuse
Robert Tackman, E. Syracuse Mayor, Association of Village Mayors
Dan Wears, Onondaga County Dept. of Emergency Management
Maty Voss, Onondaga County Dept. of Transportation
Chuck Wright, New York Power Authority - Canals
Cynthia Addonizio-Bianco, Tetra Tech
Chris Huch, Tetra Tech
Jane Rice, EDR, PC

Agenda Summary: To discuss the Hazard Mitigation Plan update process, expectations of steering committee, and discuss new hazards of concern

Item No.	Description	Action By:
1.	Welcoming Remarks Megan Costa, SOCPA welcomed the committee explaining that the update of the Onondaga County HMP Update is an important to the County and participating jurisdictions in that at the end of this process the FEMA-approved plan will provide eligibility for pre-disaster mitigation funding and that the plan will support increased resiliency of the County by decreasing the vulnerability of people, property and the economy to impacts of natural hazards and to provide a roadmap for implementation of resiliency and mitigation projects.	
2.	Hazard Mitigation Planning and Update Overview Tetra Tech provided an overview of the planning process which consists of several phases including 1) Organizing the Resources, 2) Risk Assessment, 3) Developing the Plan, and 4) Preparing a Plan Maintenance Strategy and ongoing public engagement to comply with the requirements of the Disaster Mitigation Act of 2000 (DMA2000), the authorizing legislation for this process. The update will require additional opportunities for public comment and stakeholder involvement, updated risk assessment, updated mitigation strategy,	

	and plan maintenance and adoption. In addition, NYS DHSES has requirements above and beyond federal requirements which must be met to enable FEMA approval. Several of these requirements are new to this update.	
3.	Steering Committee Composition and Ground Rules Tetra Tech reviewed the Steering Committee composition and ground rules which provide committee procedures during the process. The committee confirmed that the committee will be co-chaired by Don Jordan and Dan Wears and that committee quorum will be 10.	
4.	Schedule Tetra Tech reviewed the project schedule and noted the following milestones. • July 20th, 2018: Worksheets due to Ilana via email • August: Risk Assessment and Problem Identification • September: FEMA Mitigation Strategy Meeting • October: Municipal Annex Support Meetings • February 2019: Updated Plan Submittal to NSDHSES/FEMA • August: FEMA Approval Pending Adoption • December: Onondaga County Legislative Adoption	
5.	Data Collection Status Tetra Tech provided a status on the requested and received data to support risk analysis for the planning process and reported the following: • GIS data has been obtained, including critical facility inventory from the County • The flood profile will use 2016 Flood Maps with Depth Grids as well as building footprint mapping. This will allow an in depth structural level analysis for the flood profile. • Tetra Tech will provide critical inventory maps to the committee and participating jurisdictions for review and comment prior to initiating the risk analysis for the hazards of concern.	Tetra Tech
6.	Confirmation of Mission Statement, Goals, Objectives • The Steering Committee will be responsible for verifying/updating the goals and objectives. • The NYS Hazard Mitigation Plan included a goal of resiliency. • Tetra Tech suggested that the committee consider including resiliency as an aspect of the mission statement and to weave the concept of resiliency throughout the goals and objectives to better integrate the NYS HMP goals and objectives into this planning process. In addition, it was recommended that the committee weed out objectives that may be considered actions (those that are very specific). After review of current related County, State and local plan goals and objectives, Tetra Tech will provide suggested revisions to be considered by the committee. An electronic copy will be	Tetra Tech, Steering Committee

	sent out for comment prior to the next Steering Committee meeting.	
7.	Hazards of Concern Identification Tetra Tech reviewed the hazards of concern included in the current HMP and the committee discussed the possible inclusion of harmful algal bloom, invasive species, as well as the possible removal of the earthquake hazard. Tetra Tech will collate the input from the hazards of concern worksheet and will present to the committee at the next meeting to enable a discussion and confirmation of the hazards of concern to be included in the 2019 plan update.	Tetra Tech, Steering Committee
8.	Public and Stakeholder Outreach Tetra Tech noted that outreach will be necessary to include stakeholder and public input. Much of this will be done via survey but some direct contact. The committee noted that National Grid also allows an envelope stuffer. In addition, there is an email list for county employees that can be leveraged to request completion of the citizen survey and to provide information on the planning process to the public. The City of Syracuse also has a newsletter. The citizen survey will also be sent out to various environmental groups, lake associates, stormwater coalition, etc.	SOCPA, Steering Committee, Planning Partnership
9.	In-Kind Services Tracking The County will track in-kind services on behalf of the planning committee.	SOCPA

ONONDAGA COUNTY, NEW YORK
2019 ALL HAZARDS MITIGATION PLAN UPDATE

Municipal Kickoff Meeting - Agenda
June 25, 2018

Attendees:

- **Welcoming Remarks and Introductions**
- **Updating the Mitigation Plan – Why?**
- **Schedule**
- **Role of the Municipal and County Participants**
- **Planning Process**
- **Organize Resources**
- **Re-assess Risk**
- **Review and Update HMP**
- **Implement Plan and Monitor Progress**
- **Action Items**
    - **Return Letter of Intent to Participate**
    - **Confirm Local Floodplain Administrator and Contact Information**
    - **Worksheets –Complete electronic Word versions and send to Ilana Cantrell by July 20th.**
- **Upcoming Meetings**
    - **FEMA Mitigation Strategy Meeting – Date to be determined**
    - **Municipal Workshop – Date to be determined**
- **Questions and Answers**

Onondaga County Project Contacts

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ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Planning Partnership Kick-Off Meeting
MEETING DATE/TIME: June 25, 2018 2:00pm – 4:00pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
Victoria Rinefield	Highway Secretary Deputy Em.	Town of Clay	315-652-3805	vrinefield@townofclay.org
Mike Murnane	Codes Enforcement	Village of Manlius	315-530-2397	mmurnane@villageofmanlius
Melissa Flint-Morgan	Mayor	Village of Tully	585 627 3976	melissaflintmorgan@gmail.com
Ben Vincent	Code Enforcement	T/o Onondaga	315 469 3144	BVincent@TownofOnondaga.com
Holly Granat	Env. Pol. Analyst	On County	315-435-8497	HollyGranat@ongov.net
Sue Fassler	Project Coordinator	On County	315-435-2467	SueFassler@ongov.net
Paul Legretto	Highway Super	Town of Camillus	315-672-5556	PLegretto@TownofCamillus.com
John Houser	Codes officer	T of Marcellus	315-430-8952	jhouser@marcellus.ny.com
Chris Sherwood	Highway Super	V of Manlius	315-682-9171	Chris@ManliusVillage.com
Michael E Jones	CEO	Fayetteville	315-637-9864	MJones@Fayetteville NY.gov
Russell Houck	Facilities Engineer	City Syracuse	315-448-8459	rhouck@syrgov.net
Lisa Letteney	Director, Env Health	OCHD	315-435-6623	lisaletteney@ongov.net
Bill Morse	Engineer	Geddes	315-468-3600 ext. 7	engineer@townofgeddes.com
Richard Hooper	Director	Cicero	315 699.2201	rhooper@ciceronewyork.net

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Planning Partnership Kick-Off Meeting
MEETING DATE/TIME: June 25, 2018 2:00pm – 4:00pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
Joseph A Nicoletti	Highway Superintendent	Clay	315 652-3805	JNicoletti@TownofClay.sy
Steve Giarrusso	Biologist Operator	Minoa	315-952-9945	SGiarrusso@VillageofMinoa.com
Harold Kiehl	Supt Public works	V O Tully	315 399 0104	tullydpw@outlook.com
John Wheatley Jr	Highway Supt.	T.O. Onondaga	(315)469-1664	Jwheatley@Townofonondaga.com
Michael Moracco	Clerk	Village of E. Syr	315-425-7207	mmoracco@villageofEgl.sy
Erica Tauzer	EDR (Planner)	EDR	315-471-0688	etauzer@edrdpc.com
Bill Reagan	CEO	village of Liverpool camilli \ marcelly	315-457-3441	codes@villageofliverpool.org
Brian Johnstone	CEO	Village of North Syracuse	315 458 4763	codes@northsyracuseny.org
Allen Yager	Town Engineer	Town of Lysander	315-857-0291	engineer@townoflysander.org

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Planning Partnership Kick-Off Meeting
MEETING DATE/TIME: June 25, 2018 2:00pm – 4:00pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
Patricia Butler-Rhoades	Mayor	Village Camillus	672-3484	mayor@village of camillus-ny.gov
Lee Klosowski	Dept Cont Services Parks	Onon Co.	435-5510	leeklosowski@ongov.net
Doug Wickman	Staff Engineer	Town of Salina	315-415-7413	dwickman@salina.ny.us
Melanie Vilardi	Spvsr	Town of Fabius	3156835112	mvilardi@twony.rr.com

TETRA TECH

Onondaga County and Participating Municipalities Hazard Mitigation Plan Update

June 25, 2018

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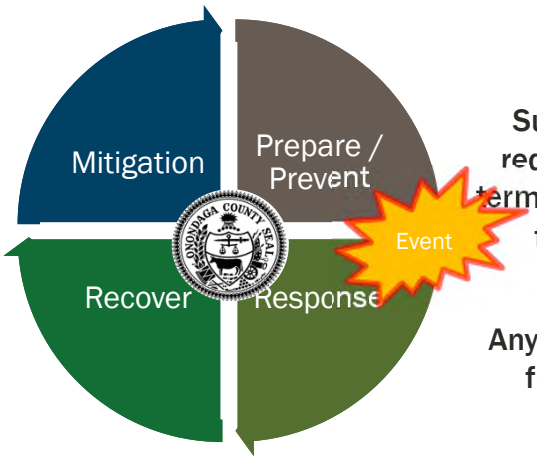
TETRA TECH

Today's Topics

- Introductions
- Updating the Hazard Mitigation Plan – Why??
- Schedule
- Participation
- Planning Process
- Action Items

TETRA TECH

Hazard Mitigation



"Mitigation"

Sustain action taken to reduce or eliminate long-term risk to life and property from a hazard event

-or-

Any action taken to reduce future disaster losses

"provides the blueprint for reducing potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability…" (CFR)

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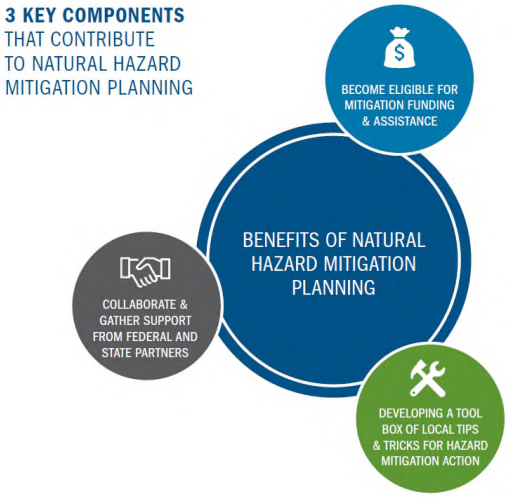
Benefits of Hazard Mitigation

TETRA TECH

Key Components to Hazard Mitigation



TETRA TECH

Onondaga County and DMA 2000

- **The Mitigation Plan Update will:**
  - Help the County prepare for and mitigate the effects of disasters
  - Continue to allow the County and participating municipalities to be eligible for pre- and post-disaster mitigation funding
  - Support CRS participation/rating of municipalities

A ***Local Mitigation Plan*** demonstrates the jurisdiction's commitment to reducing risk and serves as a guide for decision makers as they commit resources to minimize the effects of natural hazards.

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Requirements for Local Mitigation Plan Updates

- Include the opportunity for public comment and for relevant agency and stakeholder involvement
- Updated Risk Assessment – a factual basis for activities proposed in the Mitigation Strategy section and includes:
  - Overview of hazards (type, location, probability)
  - Vulnerability analysis (impact on buildings, infrastructure, economy, development trends)
  - Multiple jurisdictions (specific to each town/borough/city)
- Updated Mitigation Strategy – a blueprint for reducing losses identified in the risk assessment
- Plan Maintenance and Adoption Processes

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NYS DHSES Requirements

- Establish Jurisdictional Teams
- Assess Critical Facilities
- Plan for Displaced Residents
- Plan for Evacuation and Sheltering
- Document Past Mitigation Requirements
- Include Jurisdictional Annexes
- Develop Mitigation Actions (at least 2 Action Worksheets)
- Plan for Climate Change

TETRA TECH

What Makes your Plan Special?

- Project outreach brochure and newsletters!
- Updated risk assessment on a *structure* level!
- Project implementation/BCA workshop!
- Integrating the Onondaga County Climate Action Plan!
- Guidance for incorporating resiliency into local planning and zoning.
- Integrating elements of resiliency planning!

TETRA TECH

Schedule

• July 20th 2018	Worksheets due to Ilana via email
• August	Risk Assessment and Problem Identification
• September	FEMA Mitigation Strategy Meeting
• October	Municipal Annex Support Meetings
• February 2019	Updated Plan Submittal to NSDHSES/FEMA
• August	FEMA Approval Pending Adoption
• December	Onondaga County Legislative Adoption

TETRA TECH

Sections of the Hazard Mitigation Plan

- Volume 1 –
  - Contains all information that applies to the entire planning area (Onondaga County) such as description of the planning process, risk assessment for each hazard, goals and objectives, county/multi-jurisdictional mitigation strategies, and a plan maintenance program.
- Volume 2 –
  - Contains those elements that are specific to <u>your</u> jurisdiction. It's your community's chapter of the plan – these annexes will meet DMA and NYS DHSES requirements for each jurisdiction.

TETRA TECH

Organization of the Planning Group

- County Management Team - Syracuse-Onondaga County Planning Agency
- Contract Consultant – Tetra Tech
- Steering Committee
- Planning Committee
- Stakeholders
- General Public

TETRA TECH

Municipal Planning Partnership

- All municipalities are encouraged to participate (and continue to be covered by the county-wide plan) and all have indicated their interest.
  - All municipalities who wish to join the update process must formally indicated their intent to participate by providing the County with a copy of your Letter of Intent to Participate (LOIP).
- FEMA has greatly expanded their scrutiny of "participation"… Municipalities are required to actively participate.

Letters of Intent to Participate
Your LOIP for your community is due ASAP to Ilana Cantrell. Copies will be included in the HMP Update.

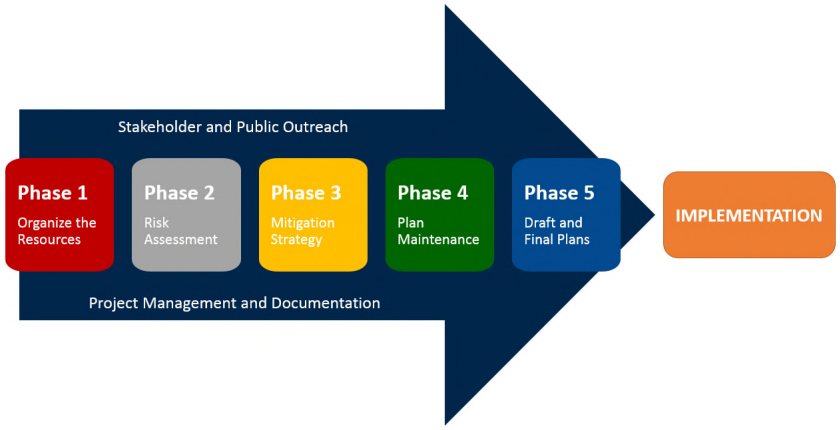
TETRA TECH

So…how do you participate?

- Attend planning partnership meetings and workshops
- Provide requested data and information in a timely manner
- Support public and stakeholder outreach in your community
- Assist with the development of your jurisdictional annex
- Review and provide feedback on draft and final plan documents
- Facilitate the adoption process – governing body must pass an adoption resolution
- Implement and maintain the plan

TETRA TECH

Overview of Planning Process



TETRA TECH

Steps to the Plan Update Process

- Organize resources
- Re-assess the risk
- Review and update the Hazard Mitigation Plan
- Develop procedures for plan implementation, monitoring, and updating
- NYS DHSES & FEMA approval
- Adopt the plan

Engage a Wide Range of "Stakeholders"

- Federal, state, regional, and local agencies
- Business and civic groups
- Academic institutions
- Other "local governments"
- The public

TETRA TECH

Organize the Resources

- Steering Committee oversees the Municipal Planning Partnership organizational structure
- Letter of Intent to document municipal participation
  - Identifying municipal participation expectations
  - Authorizing a Steering Committee to act on their behalf as appropriate

Municipal Involvement will be encouraged and promoted by:

- Three to four formal municipal planning partnership meetings (Kick-Off, Municipal Workshop, FEMA Mitigation Strategy)
- Data collection and annex tools, templates, surveys
- Completion of Municipal Annex supports "buy in" and "ownership"
- Planning process execution and municipal training programs builds local capability
- Local public outreach including RL/SRL outreach

TETRA TECH

Assemble Your Municipal Mitigation Team

Here is who we suggest include as part of your team:

- Floodplain Administrator
- Building Code Official
- Municipal Engineer
- Land Use Planner
- Municipal Clerk
- Municipal Mayor / Administrator
- Municipal CFO / Fiscal Rep
- Public Works Director
- Police Official
- Fire Official

TETRA TECH

Data Collection

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by July 20, 2018 to: Ilana M. Cantrell, SOCPA Planner
Phone: (315) 435-8573 E-mail: IlanaCantrell@ongov.net

#	Worksheet Name	Who is Responsible to Complete and Submit this Worksheet?	Where do you find the requested information?
0	Reports and Plans Inventory	Planner, OEM, Engineer, Clerk	Municipal and Agency files, library
1	Hazards of Concern Identification	OEM, Police, Fire, DPW, Engineer	FEMA Project Worksheets (PWs) DPW records, Police response records
2	Capability Assessment	Code Official, Planner, CFO/Fiscal Rep, Clerk	Code Book, e-Code, Municipal ordinances, Master Plan
3	NFIP Floodplain Administrator	Floodplain Administrator	NFIP Records
4	Mitigation Action Progress	HMP Main POC – see 'Responsible Party' column in the table provided for guidance	LOIs, NYS DHSES Grants, Capital Improvement records
5	Plan Integration Questionnaire	HMP Main POC	Discuss with Engineer, Clerk, Administrator, Planner, CFO, and Municipal Mayor/Administrator
6	New Development Table	Engineer, Planner, Building Department	Redevelopment Plans, Permits
7	Evacuation and Sheltering Needs	OEM, Code Official, Planner	Master Plan, Emergency Plans

TETRA TECH

Re-Assess the Risk

There are five steps to assessing the risk:

1. Identify Hazards
2. Profile Hazards
3. Inventory Assets
4. Estimate Losses
5. Evaluate Mitigation Options

TETRA TECH

Step 1 – Identify Hazards

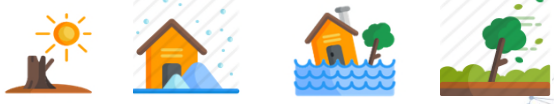
Hazards of Concern (HOCs) are those natural hazards that pose significant risk to the planning area – and we can address through mitigation rather than only through preparedness, response, and recovery.

- Review and update the hazards of concern that we will carry through the planning process (see Worksheet #1)
- Our effort should be proportional to the risk the hazards pose.
- Each municipality has different risk to the HOCs.
- We are generally limiting this plan to natural hazards

TETRA TECH

Hazards of Concern for Onondaga County

- The following hazards will be included in the 2019 Update:
  - Drought
  - Earthquake
  - Flood (riverine, flash, ice jam, and dam failure)
  - Ground Failure (landslides, subsidence, debris flow, and sinkholes)
  - Severe Storm (hail, wind, lightning, thunderstorm, tornado, hurricanes, and tropical storms)
  - Severe Winter Storm (snow, blizzard, ice, extreme cold, and Nor'Easter)
  - Algal Bloom ?



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Step 2 – Profile Hazards

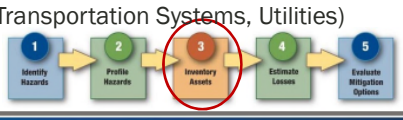
- **Hazards are profiled (described) according to:**
  - Background and local conditions
  - Historic frequency and probability of occurrence
  - Severity
  - Historic losses and impacts
  - Designated hazard areas
- **What hazard events have occurred since the 2013 Plan?**
- **What County and local losses have occurred as a result of these events?**

TETRA TECH

Step 3 – Inventory Assets

What is at risk? People, Property, Economy, Environment

- **Population and Demographics – Has this changed since 2013?**
- **Building Stock (Residential, Commercial, Industrial, Educational, etc.) – Has this changed since 2013?**
- **Facilities (critical and essential facilities, utilities, transportation features, high-potential loss facilities and user-defined facilities)**
  - Police, Fire, Emergency Services
  - Hospitals and Medical Care Facilities
  - Schools and Care Facilities
  - Sheltering Facilities
  - Infrastructure (Transportation Systems, Utilities)



TETRA TECH

Steps 4 & 5

Step 4 – Evaluate Losses

- Vulnerability Assessment - What do we predict our suffering to be if we do nothing to mitigate our risk:
  - Given current conditions, which have changed since 2013?
  - Given our improved understanding of risk, and tools to assess that risk, which have changed since 2013?

Step 5 – Evaluate Mitigation Options

- Goals - General guidelines that state what we want to achieve. Should be consistent with the State goals and other local goals. Example: "Protect property"
- Objectives - Define strategies or implementation steps to attain a stated goal. Example: "Enact or enforce regulatory measures that ensure new development will not increase flood threats to existing properties".

TETRA TECH

Step 5 – Re-Evaluate Capabilities

What resources do we have at our disposal to Mitigate Risk?

"Proposed mitigation actions will be evaluated against the backdrop of what is feasible in terms of your government's legal, administrative, fiscal and technical capacities" (FEMA 386-3)

- Serve to identify legal authority and administrative, technical and fiscal capabilities in the state, county and jurisdictions that will facilitate or hinder hazard mitigation goals and objectives.
- State-level mitigation capabilities summarized in the State HMP
- Part of this Planning Process is to build County and Local Mitigation Capabilities
- Training, Workshops and Seminars

TETRA TECH

NFIP Compliance – We need the NFIP Administrator Involved!

- We need to know specific information about the NFIP program in your community.
- Your NFIP Floodplain Administrator (FPA) MUST be actively involved in the update process.

TETRA TECH

Update, Identification and Analysis of Mitigation Actions

- Mitigation strategies need to be realistic, achievable and action-oriented.
- Will include both regional (county-wide) strategies, as well as jurisdiction-specific.
- For each proposed mitigation strategy, the following will be identified:
  - Implementation timeline
  - Estimated budget
  - Potential funding sources
  - Lead agency or department
  - Supporting agencies
  - Priority
  - For prior/old strategies provide update of status
- Proposed mitigation activities are evaluated using a Cost-Benefit Screening

TETRA TECH

Confirm Progress of 2013 Actions

- Confirm reported progress made on mitigation actions identified in 2013 plan.
- If an action wasn't completed, why not?
- This strategy review process is NOT meant to blame or punish. The answer can reveal things that need to be addressed to allow mitigation to progress (new initiatives), for example:
  - Obstacle: We do not have the technical resources to prepare a grant application.
  - Possible Action: Develop a county-level support team trained in application development.

TETRA TECH

Start Thinking About New Actions!

- Must start with a PROBLEM STATEMENT
- Opportunity to add *new* mitigation actions
- This includes all in-progress grant applications (HMGP generators, CDBG acquisitions, etc.)
- NYSDHSES?FEMA Mitigation

Workshop will provide guidance for developing strong actions!

"At the first sign of a flood, you just push this little button."

TETRA TECH

Types of Mitigation Actions

- **Plans and/or Regulations**. Measures such as zoning and building code, ordinances, planning (comprehensive/master plans, stormwater management plans, open space), hazard/risk insurance (e.g. NFIP).
- **Property Protection**. Measures such as acquisition, elevation, relocation, structural retrofits, storm shutters, rebuilding, barriers, floodproofing.
- **Public Education and Outreach**. Measures such as public awareness projects, real estate disclosure, hazard information centers, technical assistance.
- **Natural Resource Protection**. Measures such as erosion and sediment control, stream corridor protection, vegetative management, wetlands preservation.

TETRA TECH

Mitigation Action Example

Problem: The bridge is impacted by flood events which can block access to local hospital.

General Action: Retrofit the bridge to decrease flood impacts.

Detailed Action:

The Village will *replace* the Jefferson Avenue Bridge, located in the center of the Village to avoid river flow restrictions created by the current design of the bridge. The current bridge has suffered extensive structural damage during past flooding events. The center piling of the bridge is located mid-stream in the Mamaroneck River and contributes to debris back-up and reduced flow capacity of the river.

Action Words to Use: Replace; Retrofit; Reconstruct; Improve Design; Increase Capacity; Acquire; Elevate

TETRA TECH

Other Planning Tasks

- **Assuring wide involvement and public participation**
  - Notices and News Releases on planning effort (newspapers)
  - HMP Webpage detailing effort, providing downloadable drafts of the plan, and providing a way for public input (local contact information and email link)
  - Invite Stakeholder and Public Participation:
    - Citizen Survey
    - Stakeholder Surveys
    - Participate in County Comprehensive Economic Development Strategic Committee (County and Stakeholder Involvement)
  - Public access to draft and final plan documents
- **Documentation of the Planning Process**
- **Plan implementation and maintenance procedures**
- **Adoption by local governments**

TETRA TECH

Plan Implementation

- **Your mitigation strategy section provides a "blueprint" to follow for progressively reducing your community's natural hazard risk.**
- **It will includes two type of initiatives/projects – those that your community can "self fund", and those that will require outside (e.g. grant) funding.**
- **Mitigation grant opportunities open regularly:**
  - The annual HMA grant window (PDM and FMA)
  - HMGP funding comes in the wake of Declared Disasters in the State.

TETRA TECH

Integration with Other Plans and Programs

The Hazard Mitigation Plan should complement and support other Plans and Regulatory Mechanisms

- Emergency Operations Plan (EOP) / Comprehensive Emergency Management Plans (CEMP)
- Master Plans (regional and local) – these plans guide and direct land use and development
- Community Recovery and Redevelopment Programs
- Stormwater Management Plans
- Capital Improvement Plans (some of these projects are grant eligible)
- Higher Regulatory Standards (e.g. increased free-board, cumulative substantial damages)

TETRA TECH

We Need Your Engaged and Involved!

- Update your Municipal webpage and link to County's HMP Web Page – http://www.ongov.net/planning/haz.html
- Social media blasts via Facebook and Twitter
- Local Announcements of HMP Update
- Place brochures at municipal hall and library
- Local public meetings
- Provide community input through Homework worksheets.

TETRA TECH

Critical Dates

- July 20th 2018 — Worksheets due to Ilana via email
- August — Risk Assessment and Problem Identification
- September — FEMA Mitigation Strategy Meeting
- October — Municipal Annex Support Meetings
- February 2019 — Updated Plan Submittal to NSDHSES/FEMA
- August — FEMA Approval Pending Adoption
- December — Onondaga County Legislative Adoption

TETRA TECH

Data Collection (Your Homework!)

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by July 20, 2018 to: Ilana M. Cantrell, SOCPA Planner
Phone: (315) 435-8573 E-mail: IlanaCantrell@ongov.net

#	Worksheet Name	Who is Responsible to Complete and Submit this Worksheet?	Where do you find the requested information?
1	Hazards of Concern Identification	OEM, Police, Fire, DPW, Engineer	FEMA Project Worksheets (PWs) DPW records, Police response records
2	Capability Assessment	Code Official, Planner, CFO/Fiscal Rep, Clerk	Code Book, e-Code, Municipal ordinances, Master Plan
3	NFIP Floodplain Administrator	Floodplain Administrator	NFIP Records
4	Mitigation Action Progress	HMP Main POC – see 'Responsible Party' column in the table provided for guidance	LOIs, NYS DHSES Grants, Capital Improvement records
5	Plan Integration Questionnaire	HMP Main POC	Discuss with Engineer, Clerk, Administrator, Planner, CFO, and Municipal Mayor/Administrator
6	New Development Table	Engineer, Planner, Building Department	Redevelopment Plans, Permits
7	Evacuation and Sheltering Needs	OEM, Code Official, Planner	Master Plan, Emergency Plans

- Send via email to

  Ilana Cantrell IlanaCantrell@ongov.net by July 20th.

Onondaga County Multi-Jurisdictional All Hazard Mitigation Plan Update Minutes of Meeting

Purpose of Meeting:	Municipal Planning Partnership Kickoff Meeting
Location of Meeting:	Onondaga County Syracuse, New York
Date of Meeting:	June 25, 2018

Attendees:

Victoria Rinefierd, Highway Secretary, Town of Clay
Mike Murnane, Codes Enforcement, Village of Minoa
Melissa Flint-Morgan, Mayor, Village of Tully
Ben Vincent, Code Enforcement, Town of Onondaga
Holly Granat, Env. Pol. Analyst, Onondaga County
Sue Fassler, Project Coordinator, Onondaga County
Paul Legnetto, Highway Super, Town of Marcellus
John Houser, Codes Officer, Town of Marcellus
Chris Sherwood, Highway Super, Village of Marcellus
Michael E. Jones, CEO, Fayettville
Russel Houck, Facilities Engineer, City of Syracuse
Lisa Letteney, Director, Env Health, OCHD
Bill Norse, Engineer, Town of Geddes
Richard Hooper, Director, Town of Cicero
Joseph A. Nieoletti, Highway Super, Town of Clay
Steve Guarrusso, Biologist for Village of Minoa
Harold Kiehl, Supt Public Works, Village of Tully
John Wheatley Jr, Highway Supt, Town of Onondaga
Michael Moracco, Clerk, Village of East Syracuse
Erica Tauzer, EDR (Planner), EDR
Bill Reagan, CEO, Village of Liverpool, Camillus/Marcellus
Brian Johnstone, CEO, Village of North Syracuse
Allen Yager, Town Engineer, Town of Lysander
Patricia Butler-Rhoads, Mayor, Village of Camillus
Lee Klesasche, Dept Coordinator, City Parks, Onondaga County
Doug Wickman, Staff Engineer, Town of Salina
Melanie Vilard, Supervisor, Town of Fabius
Cynthia Bianco, Planner, Tetra Tech
Chris Huch, Planner, Tetra Tech
Megan Costa, Planner, Syracuse-Onondaga Co Planning
Ilana Cantrel, Syracuse-Onondaga Co Planning

Agenda Summary: To discuss the Hazard Mitigation Plan update process, expectations of steering committee, and discuss new hazards of concern

Item No.	Description	Action By:
1.	Welcoming Remarks	Megan Costa
2.	Hazard Mitigation Planning and Update Overview • Update will require additional opportunities for public comment and stakeholder involvement, updated risk assessment, updated mitigation strategy, and plan maintenance and adoption • NYS DHSES has additional requirements above and beyond federal requirements. Several of these requirements are new to this update.	Cynthia Bianco
3.	Schedule • July 20th, 2018: Worksheets due to Ilana via email • August: Risk Assessment and Problem Identification • September: FEMA Mitigation Strategy Meeting • October: Municipal Annex Support Meetings • February 2019: Updated Plan Submittal to NSDHSES/FEMA • August: FEMA Approval Pending Adoption • December: Onondaga County Legislative Adoption	Cynthia Bianco
4.	Role of the Municipal and County Participants • All municipalities are encouraged to actively participate	Cynthia Bianco

	• Attend planning partnership meetings and workshops • Provide requested data and information in a timely manner • Support public and stakeholder outreach in your community • Assist with the development of your jurisdictional annex • Review and provide feedback on draft and final plan documents • Facilitate the adoption process – governing body must pass an adoption resolution • Implement and maintain the plan	
5.	Planning Process Overview	Cynthia Bianco
6.	Organize Resources	Cynthia Bianco
7.	Re-assess Risk • Identify Hazards • Profile Hazards • Inventory Assets • Estimate Losses • Evaluate Mitigation Options	Cynthia Bianco
8.	Review and Update HMP	Cynthia Bianco
9.	Implement Plan and Monitor Progress	Cynthia Bianco
10.	Action Items • Return Letter of Intent to Participate • Confirm Local Floodplain Administrator and Contact Information • Worksheets-Complete electronic Word versions and send to Ilana Cantrell by July 20th	Cynthia Bianco
11.	Upcoming Meetings • FEMA Mitigation Strategy Meeting-Date to be determined • Municipal Workshop-Date to be determined	Cynthia Bianco

Onondaga Working Group meeting

June 29, 2018 (via conference call)

Attendees: Megan Costa (OC Planning)

Ilana Cantrell (OC Planning)

Cynthia Bianco (Tt)

Heather Apgar (Tt)

Notes:

-Received CEMP and Tt will review to identify sheltering and temporary housing procedures with regard to meeting NYSDHSES 2017 HMP guidelines

Schedule:

Date	Activity	Action by	comments
July	Steering Committee (SC) follow-up; Input on Hazards of Concern (HOC); Approve surveys; Review and update goals and objectives.	Tt to provide surveys, HOC worksheet and goals and objectives worksheet for review and completion	OC will send follow-up email with Hazard of Concern worksheet with reminder to return. Tt will provide draft citizen and stakeholder surveys as well as draft goals and objectives review document to enable input.
	Steering Committee (SC) follow-up for non-participants	OC to contact no-shows at KO meeting and gage interest in a second info meeting	Tt will provide a conference call, webinar or local meeting to inform this group.
	Planning Committee follow-up	OC to transmit worksheets and critical facility info to participants for completion.	
Beginning July	Draft project overview brochure	Tt to develop draft for review	
Beginning July	Press Release and website info.		
Beginning July	Draft newsletter #1	Tt to develop draft for review	
8/8/18, 1 pm	SC Meeting	SWOO and Risk Assessment	

9/12/18, 2:30 pm	AC/PC Risk Assessment Meeting	Present RA and develop problem statements	
10/10/18, 2:30pm	Mitigation Strategy Workshop: FEMA, NYSDHSES, PC (and SC optional)	Present how to develop mitigation actions based on problem statements and results of RA	
12/12/18 2:30pm	SC and PP Draft Plan Review	Present Draft Plan and discuss finalization for submittal to NYSDHSES	
January-TBA	Implementation workshop		

-Resiliency strategy: Tt to provide thoughts in anticipation of discussion with working group and meeting with Dept of Environment.

ONONDAGA COUNTY, NEW YORK
MULTI-JURISDICTIONAL ALL-HAZARDS
MITIGATION PLAN 2019 UPDATE

Steering Committee Meeting #2 - Agenda
Meeting Date/Time: August 8, 2018 – 1:00pm - 2:30pm
Location: John H. Mulroy Civic Center – Syracuse, NY

1. **Introductions**
2. **Project Status –** where we are in the process, public outreach, tracking time
3. **Addition of two new hazards –** invasive species and harmful algal bloom
4. **Confirm Changes to Mission Statement and Goals/Objectives**
5. **SWOO (Strengths, Weaknesses, Obstacles and Opportunities) related to limiting impact of Hazards of Concern**
6. **Next Steps**
7. **Adjournment**

Onondaga County Project Contact

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Ilana Cantrell
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Tetra Tech Project Contacts

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Heather Apgar, CFM
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ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #2
MEETING DATE/TIME: August 8, 2018 1:00pm – 3:00pm
SIGN-IN SHEET

Initial for Attendance	Name	Title	Agency/Municipality	Phone Number	E-mail
	Joseph Awald	Commissioner	City of Syracuse Water Department	315-473-2609	jawald@syrgov.net
	Derek Baichi	Mayor	Association of Village Mayors	315-468-1651	derekbaichi@yahoo.com
	Kathy Bertuch	Planner	CNY Regional Planning & Development Board	315-422-8276	kbertuch@cnyrpdb.org
	Bruce Keplinger ~~David Bettar~~	~~Executive Director~~	CNY Regional Planning & Development Board	315-422-8276	bkeplinger ~~dbettar~~@cnyrpdb.org
	Mark Burger	Director	Soil & Water Conservation District	315-457-0325	mburger@ocswcd.org
	Kelly Caramanna**	Safety Director	Onondaga County Water Authority	315-455-7001	kcaramanna@ocwa.org
	Mario Colone**	Program Manager	Syracuse Metro Transportation Council	315-422-5716	mcolone@smtcmpo.org
	James D'Agostino	Director	Syracuse Metro Transportation Council	315-422-5716	jdagostino@cnyrpdb.org
	Warren Darby	Chair	Oneida Lake Association		darbyny@aol.com
	Khristopher Dodson	Associate Director	SU Environmental Finance Center	315-993-8818	kadodson@syr.edu
	Dan Fitzpatrick	Gov. Relations Director/Town Supervisor	Association of Towns/LaFayette Town Supervisor	315-247-1600	fitzervisor@gmail.com
	Travis Glazier	Director	Onondaga County Office of the Environment	315-435-2647	TravisGlazier@ongov.net
	Mike Hooker	Executive Director	Onondaga County Water Authority	315-455-7061	mehooker@ocwa.org
	Don Jordan*	Acting Director	Syracuse-Onondaga County Planning Agency	315-435-2611	DonJordan@ongov.net

*Co-Chairs
**Alternate Steering Committee Member

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #2
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SIGN-IN SHEET

Initial for Attendance	Name	Title	Agency/Municipality	Phone Number	E-mail
	Lee Klosowski**	Deputy Commissioner	Onondaga County Parks Department	315-435-5510	leeklosowski@ongov.net
	Chris Kraynack**	San, Engineer II	Onondaga County Dept. of Water Environment Protection	315-435-5402	ChrisKraynak@ongov.net
	Bill Lansley	Commissioner	Onondaga County Parks Department	315-435-7275	williamlansley@ongov.net
	Lisa Letteney	Director	Health Dept - Environmental Health	315-435-6600	LisaLetteney@ongov.net
	Matthew Marko	Regional Director	NYS Department of Environmental Conservation – Syracuse Region	315-426-7403	matthew.marko@dec.ny.gov
	Geoff Miller**	Deputy Executive Director	Onondaga County Water Authority	315-455-7061	gmiller@ocwa.org
	Reggie Parker**	Regional Emergency Response Coordinator	NYS Department of Environmental Conservation – Syracuse Region	315-426-7420	reggie.parker@dec.ny.gov
	Bob Petrovich**	Engineer	Onondaga County Department of Transportation	315-435-3205	robertpetrovich@ongov.net
	Michael Plochocki	Legislator	Onondaga County Legislature	315-435-2170	mikeplochocki@hotmail.com
	Tom Rhoads	Commissioner	Onondaga County Department of Water Environment Protection	315-435-5402	TomRhoads@ongov.net
	Joseph Rinefierd	Director, Fire Bureau	Onondaga County Department of Emergency Management	315-435-2525	JoeRinefierd@ongov.net
	Mary E. Robison R. Houck	City Engineer	City of Syracuse	315-448-8200	mrobison@syrgov.net

*Co-Chairs
**Alternate Steering Committee Member

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #2
MEETING DATE/TIME: August 8, 2018 1:00pm – 3:00pm
SIGN-IN SHEET

Initial for Attendance	Name	Title	Agency/Municipality	Phone Number	E-mail
	Beth Smith**	Management Analyst	City of Syracuse	315-448-8500	bsmith@syrgov.net
	Robert Tackman	Mayor	Association of Village Mayors/East Syracuse Mayor	315-437-3541	RTackman@villageofeastsyracuse.com
MV	Meghan Vitale**	Planner	Syracuse Metro Transportation Council	315-422-5716	mvitale@smtcmpo.org
	Marty Voss	Commissioner	Onondaga County Department of Transportation	315-435-3205	MartinVoss@ongov.net
DW	Dan Wears*	Commissioner	Onondaga County Department of Emergency Management	315-435-2525	DanielWears@ongov.net
	Randy Wolken	Executive Director	Manufacturer's Assoc.of CNY	315-474-4201	rwolken@macny.org
	Charles Wright	EM Director	New York Power Authority - Canals	318-410-5714	Charles.wright@canals.ny.gov
CA	Cynthia Addonizio-Bianco	Project Manager	Tetra Tech	973-630-8044	Cynthia.bianco@tetratech.com
	Heather Apgar	Deputy Project Manager	Tetra Tech	973-630-8046	Heather.apgar@tetratech.com
CH	Chris Huch	Resiliency Planner	Tetra Tech	973-630-8357	Chris.Huch@tetratech.com
	Jane Rice		EDR	315-471-0688	jrice@edrdpc.com
MC	Megan Costa**	Assistant Director	Syracuse-Onondaga County Planning Agency	315.435.8571	MeganCosta@ongov.net

*Co-Chairs
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ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #2
MEETING DATE/TIME: August 8, 2018 1:00pm – 3:00pm
SIGN-IN SHEET

Initial for Attendance	Name	Title	Agency/Municipality	Phone Number	E-mail
IC	Ilana Cantrell	Planner	Syracuse-Onondaga County Planning Agency	315.435.8573	IlanaCantrell@ongov.net

*Co-Chairs
**Alternate Steering Committee Member

According to CFR 201.6(c)(3)(i): "The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards." The mitigation goals have been developed based on the risk assessment results, discussions, research, and input from amongst the committee, existing authorities, polices, programs, resources, stakeholders and the public.

For the purposes of this plan, goals and objectives are defined as follows:

Goals are general guidelines that explain what is to be achieved. They are usually broad, long-term, policy-type statements and represent global visions. Goals help define the benefits that the plan is trying to achieve. The success of the plan, once implemented, should be measured by the degree to which its goals have been met (that is, by the actual benefits in terms of hazard mitigation).

Onondaga County goals should be compatible with the needs and goals expressed in other available community planning documents as well as the NYS HMP. These goals and objectives should be reasonably in-line with goals established in other related planning documents and mechanisms including:

- 2014 New York State Hazard Mitigation Plan
- Onondaga County Comprehensive Emergency Management Plan (December 2003)
- 2010 Development Guide for Onondaga County (June 1998)
- Framework for Growth in Onondaga County (June 1998)
- Onondaga County Settlement Plan and Pilot Projects (2001)
- City of Syracuse Comprehensive Plan 2040 (2012 Update)
- Onondaga County Climate Action Plan (April 2012)
- VisionCNY (June 2013)
- CNY Rising (2016)
- Other local comprehensive and emergency management plans

Objectives are short-term aims which, when combined, form a strategy or course of action to meet a goal. Unlike goals, objectives are specific and measurable.

During the 2019 plan update process, the Steering Committee reviewed the goals and objectives established in the 2013 HMP. These goals and objectives were reviewed in consideration of the hazard events and losses since the 2013 plan, the updated hazard profiles and vulnerability assessment, the goals and objectives established in the New York State 2014 HMP, County and local risk management plans, as well as direct input on how the County and municipalities need to move forward to best manage their hazard risk.

As a result of this review process, the Goals and Objectives for the HMP update have been significantly amended, as presented below.

Mission Statement: The mission of the Onondaga County Multi-Jurisdictional Hazard Mitigation Plan is to protect the health, safety, property, environment and economy of the communities within Onondaga County and to increase resilience by partnering to identify and reduce our future vulnerability to natural hazards in a proactive and efficient manner.

2013 Goals and Objectives	2019 Goals and Objectives	Notes
Goal 1: Protect Life and Property	**Goal 1: Protect Life and Property**	Modified from NYS 2014 HMP Goal 2
Objective 1-1: Address repetitive and severe repetitive loss properties throughout the County.	Objective 1-1: Address repetitive and severe repetitive loss properties throughout the County.	No changes
Objective 1-2: Protect and maintain critical facilities and infrastructure.	Objective 1-2: Protect and maintain critical facilities and infrastructure.	No changes
Objective 1-3: Identify flood and other natural hazard areas.	Objective 1-3: Identify flood and other natural hazard areas.	No changes
Objective 1-4: Identify the need for, and acquire, any special emergency services, training, and equipment to enhance response capabilities for specific hazards.	Removed as it was a duplication of Objective 6-3	Removed as it was a duplication of Objective 6-3
Objective 1-5: Improve detection, warning and communication systems.	Objective 1-4: Improve detection, warning and communication systems.	Objective number changed; no changes to text
Objective 1-6: Pursue federal and state assistance toward the improvement of facilities and infrastructure.	Objective 1-5: Pursue federal and state assistance toward the improvement of facilities and infrastructure.	Objective number changed; no changes to text
Objective 1-7: Develop, maintain, strengthen and promote enforcement of ordinances, regulations and other mechanisms that facilitate hazard mitigation.	Objective 1-6: Develop, maintain, strengthen and promote enforcement of ordinances, regulations and other mechanisms that facilitate sustainable construction standards.	Objective number changed; revised text
Objective 1-8: Integrate the recommendations of this plan into existing regional and local programs.	Objective 1-7: Integrate risk reduction concepts, policies, and projects into existing local and regional planning and implementation mechanisms, such as comprehensive plans, codes, and capital improvement plans.	Objective number changed; revised text
Goal 2: Increase [Understanding of Hazard Risk, and] Public Awareness and Preparedness	**Goal 2: Increase Understanding and Awareness of Hazard Risk**	Revised text Modified from NYS 2014 HMP Goal 3
Objective 2-1: Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual preparedness activities.	Objective 2-1: Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual and household preparedness activities with the overall goal of reducing general public dependency on disaster response and recovery support services.	Revised text Modified from NYS 2014 HMP Objective 3.1 and 3.4
Objective 2-2: Develop and implement program(s) to better understand the public's level of individual and household preparedness.	Removed	Removed
Objective 2-3: Implement mitigation actions that enhance the capabilities of the County and communities to better profile and assess exposure of hazards.	Objective 2-2: Implement mitigation actions that enhance the capabilities of the County and communities to better profile and assess exposure of hazards and participate in state and local programs and efforts that focus on practices that support or enhance resiliency.	Objective number changed; added support of resiliency practices (2014 NYS HMP).
Objective 2-4: Promote awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards (i.e., flooding).	Objective 2-3: Promote awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards (i.e., flooding).	Objective number changed; no changes to text

2013 Goals and Objectives	2019 Goals and Objectives	Notes
Objective 2-5: Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards.	Objective 2-4: Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards.	Objective number changed; no changes to text
Objective 2-6: Provide information on tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities.	Objective 2-5: Working with municipalities, provide tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities.	Objective number changed; revised text
Goal 3: Promote Sustainability throughout the County	**Goal 3: Promote Resiliency throughout the County**	Revised text to incorporate resiliency Modified from NYS 2014 HMP Goal 4
Objective 3-1: Promote sustainable land development practices (from 2010 Development Guide)	Objective 3-1: Promote resilient and sustainable land development practices	Revised to include resilience concept.
Objective 3-2: Reduce the disruption of activities of daily living via protection of the vital infrastructure and critical facilities.	Removed	Removed
Objective 3-3: Promote the development of government and business continuity plans.	Removed	Removed
Objective 3-4: Develop and maintain adequate services and utilities to serve the County's population and business	Objective 3-2: Develop and maintain adequate services and utilities to serve the County's population and business	Objective number changed; no changes to text
Objective 3-5: Decrease the potential local economic loss and maintain local and government business continuity.	Objective 3-3: Develop business and government continuity plans to decrease potential local economic losses.	Objective number changed; revised text
Objective 3-6: Decrease time to recover and reduce social dislocation and family and individual stress (return to normalcy).	Objective 3-4: Reduce or eliminate hazard risks throughout the county. This would decrease recovery time and reduce social dislocation, and family and individual stress.	Objective number changed; revised text
Objective 3-7: Reduce general public dependency on disaster response and recovery support services.	Combined with Objective 2-1	Removed and combined with Objective 2-1
	NEW – Objective 3-5: Encourage building and rebuilding practices that address resiliency through higher standards and sustainable design to resist impacts of natural hazards and to reinvest in existing infrastructure rather than expanding the urbanized area.	New objective taken from NYS 2014 HMP Objective 5.1and expanded to include sustainable design.
Goal 4: Protect the environment and natural resources	**Goal 4: Protect the environment and natural resources**	No changes
Objective 4-1: Promote the continued use of natural systems and features, open space preservation, and land use development planning for natural hazard mitigation activities wherever possible to anticipate and reduce long term costs and maximize hazard mitigation effectiveness.	Objective 4-1: Promote the continued use of natural systems to reduce long-term costs and maximize hazard mitigation effectiveness including sustainable flood and erosion control projects and activities that demonstrate resiliency practices.	Revised text to include NYS 2014 HMP Objective 5.3.
Objective 4-2: Protect and preserve environmentally sensitive and critical areas	Objective 4-2: Protect and preserve environmentally sensitive and critical areas	No changes

2013 Goals and Objectives	2019 Goals and Objectives	Notes
Objective 4-3: Continue to preserve, protect and acquire open space	Objective 4-3: Continue to preserve, protect and acquire open space	No changes
Objective 4-4: Incorporate hazard considerations into land-use planning and natural resource management.	Objective 4-4: Incorporate hazard considerations into land-use planning and natural resource management.	No changes
Goal 5: Promote and Support Partnerships	**Goal 5: Promote and Support Partnerships**	No changes Modified from NYS 2014 HMP Goal 1
Objective 5-1: Create, maintain and enhance collaborative efforts with other identified stakeholders involved with natural hazard management.	Objective 5-1: Create, maintain and enhance collaborative efforts with other identified stakeholders involved with natural hazard management to promote resiliency.	Modified from NYS 2014 Objective 5.2.
Objective 5-2: Coordinate, where applicable or required, natural hazard mitigation efforts with adjacent jurisdictions agencies natural risk management activities.	Removed	Removed
Objective 5-3: Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.	Objective 5-2: Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.	Objective number changed; no changes to text
Objective 5-4: Identify and implement ways to engage public agencies with individual citizens, non-profit organizations, business, and industry to implement mitigation actions more effectively.	Objective 5-3: Engage public agencies, citizens, neighborhood groups, non-profit organizations, businesses, and industry to implement mitigation actions more effectively.	Objective number changed; no changes to text
Objective 5-5: Encourage shared services in acquiring maintaining and providing emergency services and equipment.	Objective 5-4: Encourage shared services in acquiring maintaining and providing emergency services and equipment.	Objective number changed; revised text
Objective 5-6: Encourage partnerships between neighborhood groups to work together and address hazards specific to their areas.	Removed	Removed
Goal 6: Enhance Disaster Preparedness, Response and Recovery	**Goal 6: Enhance Disaster Preparedness, Response, and Recovery**	No Changes
Objective 6-1: Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.	Objective 6-1: Enact policies to prioritize and implement mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.	Revised
Objective 6-2: Where appropriate, coordinate and integrate hazard mitigation actions with existing local emergency operations plans.	Objective 6-2: Coordinate and integrate hazard mitigation actions with existing local emergency operations plans.	Revised
Objective 6-3: Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities for specific hazards.	Objective 6-3: Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities for specific hazards.	No changes
Objective 6-4: Review and improve, if necessary, emergency traffic routes; communicate such routes to the public and communities.	Objective 6-4: Review and improve, if necessary, emergency traffic routes and evacuation routes; communicate such routes to the public and communities via the County's emergency notification system, social	Revised to include evacuation routes and how it is communicated

2013 Goals and Objectives	2019 Goals and Objectives	Notes
	media, and news media outlets.	
Objective 6-5: Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.	Objective 6-5: Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.	No changes
Objective 6-6: Maintain and expand shared services in acquiring maintaining and providing emergency services and equipment.	Removed	Removed
	NEW - Objective 6-6: Support County Emergency Management function as the central venue for community preparedness requirements and reconstruction efforts.	Revised text.

Goal 1 **Protect Life and Property**

Objective 1-1 Address repetitive and severe repetitive loss properties throughout the County.

Objective 1-2 Protect and maintain critical facilities and infrastructure.

Objective 1-3 Identify flood and other natural hazard areas.

Objective 1-4 Improve detection, warning and communication systems.

Objective 1-5 Pursue federal and state assistance toward the improvement of facilities and infrastructure.

Objective 1-6 Develop, maintain, strengthen and promote enforcement of ordinances, regulations and other mechanisms that facilitate sustainable construction standards.

Objective 1-7 Integrate risk reduction concepts, policies, and projects into existing local and regional planning and implementation mechanisms, such as comprehensive plans, codes, and capital improvement plans.

Goal 2 **Increase Understanding and Awareness of Hazard Risk**

Objective 2-1 Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual and household preparedness activities with the overall goal of reducing general public dependency on disaster response and recovery support services.

Objective 2-2 Implement mitigation actions that enhance the capabilities of the County and communities to better profile and assess exposure of hazards and participate in state and local programs and efforts that focus on practices that support or enhance resiliency.

Objective 2-3 Promote awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards (i.e., flooding).

Objective 2-4 Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards.

Objective 2-5 Working with municipalities, provide tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities.

Goal 3 **Promote Resiliency throughout the County**

Objective 3-1 Promote resilient and sustainable land development practices

Objective 3-2 Develop and maintain adequate services and utilities to serve the County's population and business

Objective 3-3 Develop business and government continuity plans to decrease potential local economic losses.

Objective 3-4 Reduce or eliminate hazard risks throughout the county. This would decrease recovery time and reduce social dislocation, and family and individual stress.

Objective 3-5 Encourage building and rebuilding practices that address resiliency through higher standards and sustainable design to resist impacts of natural hazards and to reinvest in existing infrastructure rather than expanding the urbanized area.

Goal 4 **Protect the environment and natural resources**

Objective 4-1	Promote the continued use of natural systems to reduce long-term costs and maximize hazard mitigation effectiveness including sustainable flood and erosion control projects and activities that demonstrate resiliency practices.
Objective 4-2	Protect and preserve environmentally sensitive and critical areas
Objective 4-3	Continue to preserve, protect and acquire open space
Objective 4-4	Incorporate hazard considerations into land-use planning and natural resource management.
Goal 5	**Promote and Support Partnerships**
Objective 5-1	Create, maintain and enhance collaborative efforts with other identified stakeholders involved with natural hazard management to promote resiliency.
Objective 5-2	Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.
Objective 5-3	Engage public agencies, citizens, neighborhood groups, non-profit organizations, businesses, and industry to implement mitigation actions more effectively.
Objective 5-4	Encourage shared services in acquiring maintaining and providing emergency services and equipment.
Goal 6	**Enhance Disaster Preparedness, Response, and Recovery**
Objective 6-1	Enact policies to prioritize and implement mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.
Objective 6-2	Coordinate and integrate hazard mitigation actions with existing local emergency operations plans.
Objective 6-3	Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities for specific hazards.
Objective 6-4	Review and improve, if necessary, emergency traffic routes and evacuation routes; communicate such routes to the public and communities via the County's emergency notification system, social media, and news media outlets.
Objective 6-5	Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.
Objective 6-6	Support County Emergency Management function as the central venue for community preparedness requirements and reconstruction efforts**.**

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Planning Together for a Resilient Onondaga County

2018 Onondaga County Hazard Mitigation Plan

Steering Committee Meeting

August 8, 2018

Today's Topics

- Introductions
- Project Status
- Hazards of Concern
- Mission Statement, Goals and Objectives
- SWOO
- Next Steps

This is where we are heading….

Mitigation Toolbox → **Mitigation Brainstorming** → **Updated Mitigation Strategy** → ***Implementation***

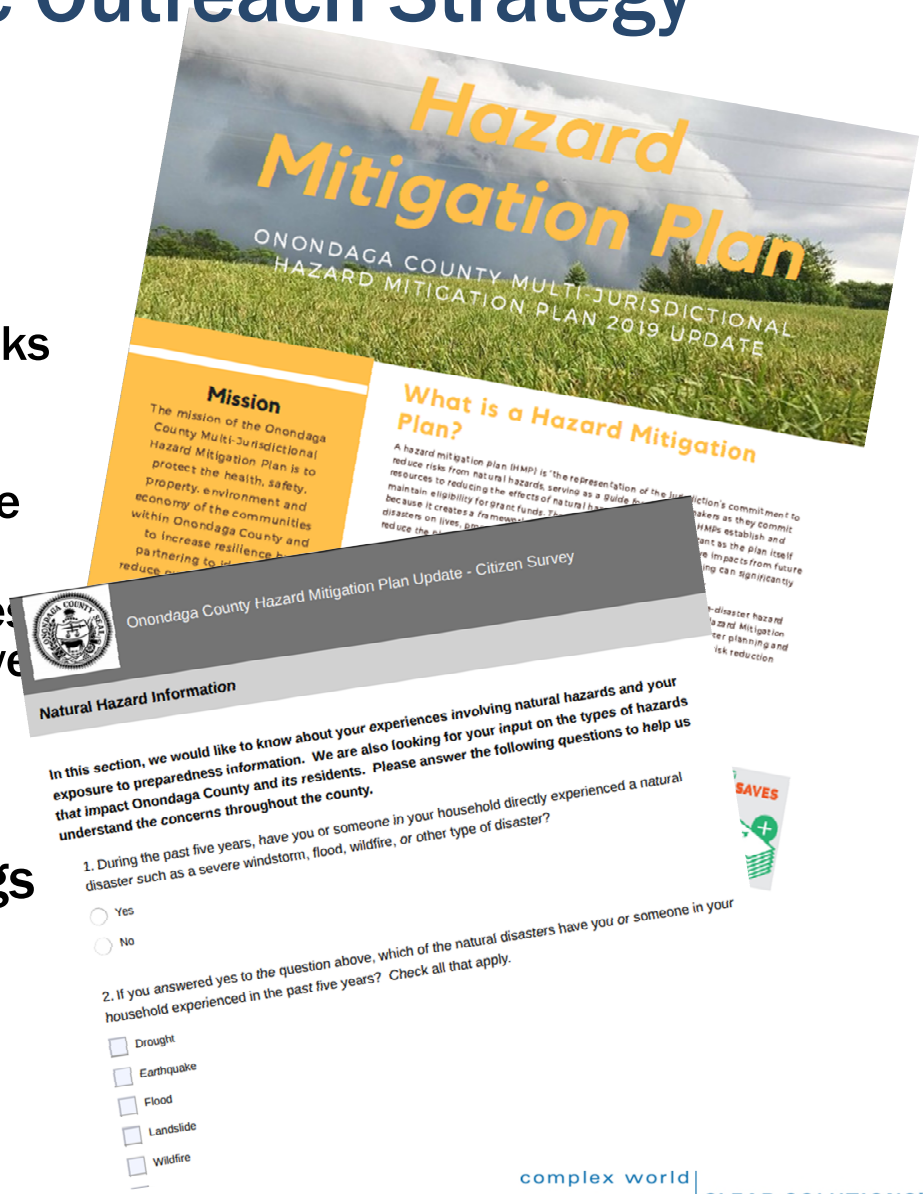
- 2019 Goals
- 2013 Mitigation Strategy
- **Risk Assessment Results**
- Capability Assessment Results
- Subject Matter Expertise
- Stakeholder Public Input
- Existing Plans/Integration
- FEMA Resources

Project Status

- Homework
- Critical Facility Inventory
- Confirm Hazards of Concern
- Profile Hazards
- Rank Hazards
- Perform/Review Vulnerability Assessment
- Develop Problem Statements
- Mitigation Strategy Workshop
- Mitigation Strategy
- Review Draft Plan

Stakeholder and Public Outreach Strategy

- Surveys (citizen and stakeholder) and information flyer created
  - Next step – distribute survey links and flyers
  - By August 17th, all links should be distributed to the appropriate people
  - By August 31st, all municipalities to have HMP project link and flyer posted on their website; press release sent to newspapers
- Outreach: Present key info on HMP process at local meetings



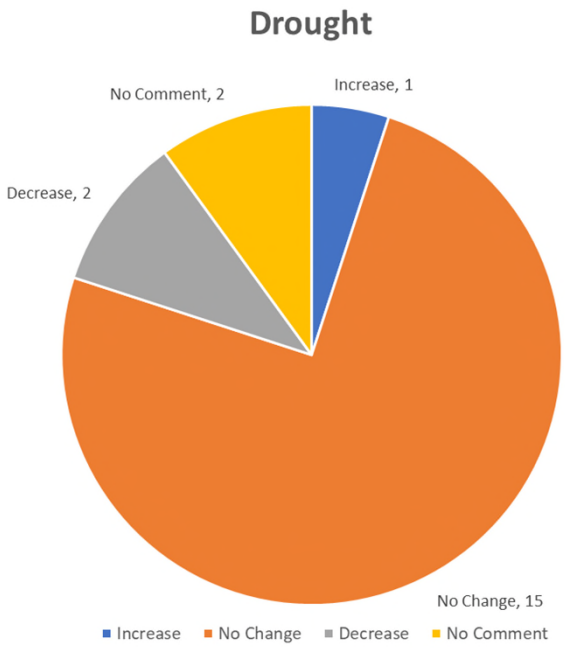
Hazards of Concern (HOC)

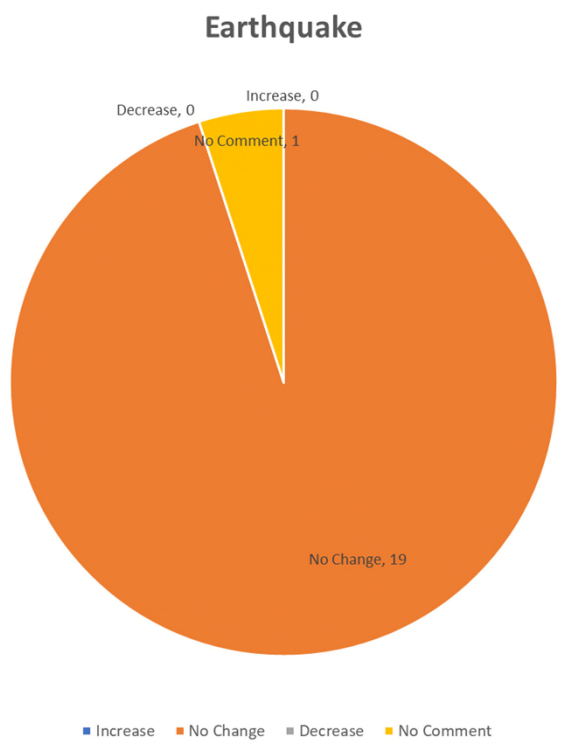
- Algal Bloom*
- Invasive Species*
- Earthquake
- Flood (riverine/flash flood, ice jam, and dam failure)
- Ground Failure (landslides, land subsidence, erosion, debris flows, and sinkholes)
- Severe Storm (hail, wind, lightning, thunderstorms, tornadoes, hurricanes, and tropical storms)
- Severe Winter Storm (heavy snow, blizzards, sleet, freezing rain, ice storms, extreme cold, and Nor'Easters)

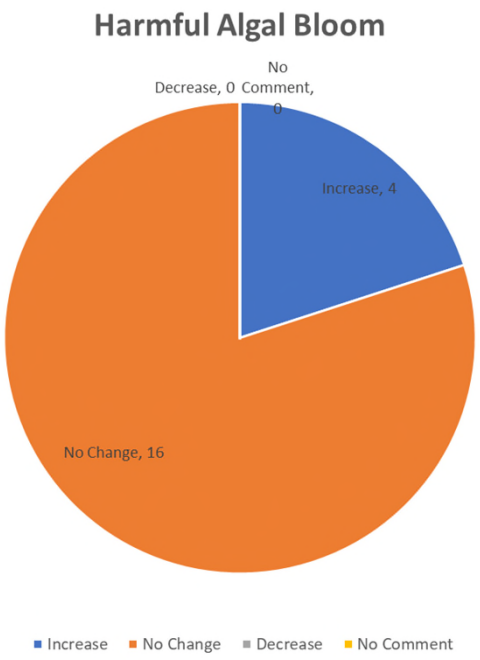
Potential Mitigation Actions (Algal Bloom and Invasive Species)

- Algae:
  - Extending water intakes into deeper water away from shorelines where harmful algal bloom concentrations are likely to be highest.
  - Reduce nutrient runoff into surface water bodies through stormwater improvements.
  - Increase the number of NYS Health Department sampling sites and frequency of testing.
  - Establishing backup water supplies in case of water intake shutdown.
- Invasive Species:
  - Prescribed burns of areas with invasive plants.
  - Manual, mechanical (mowing), and chemical removal of invasive plant species.
  - Prescribed burns and clear cutting of trees impacted by invasive insect species or disease.
  - Release of natural predators and herbivores to control population of invasive animal and plant species.
  - Harvesting affected species (such as ash trees)

Committee HOC Feedback - 20 worksheets returned







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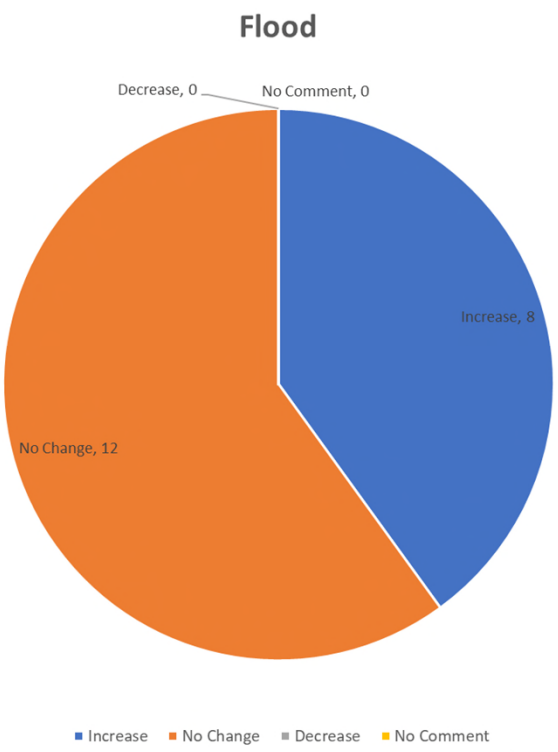

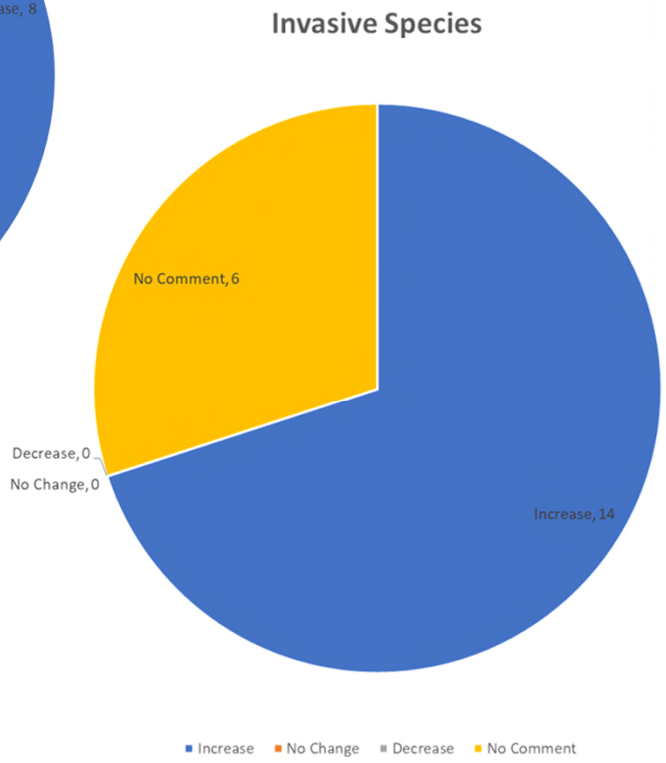

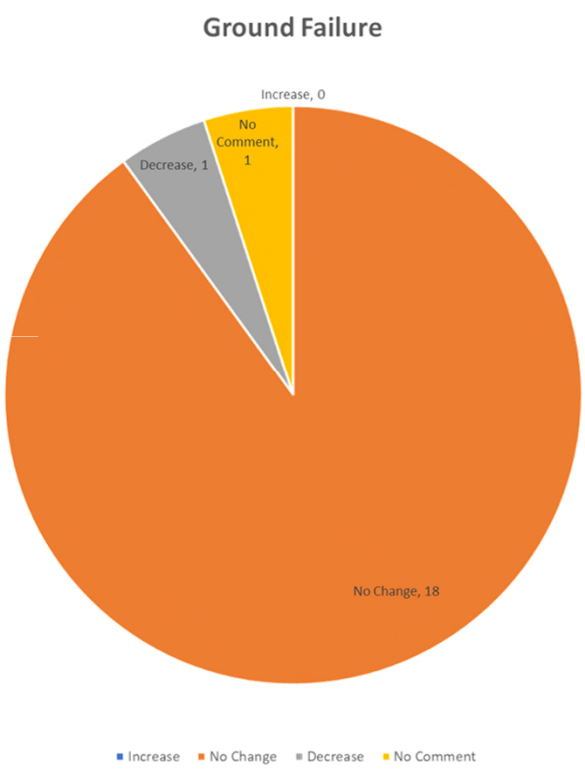

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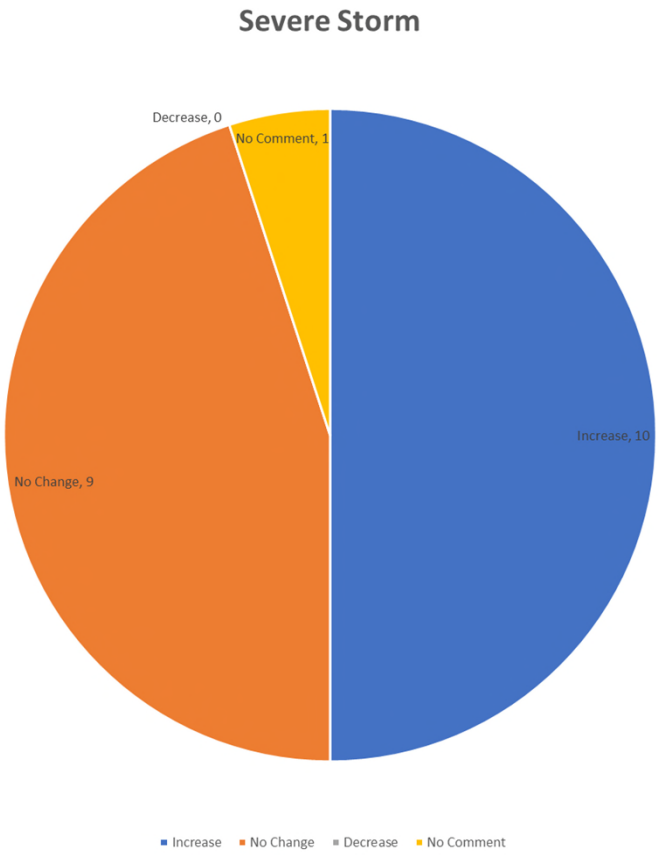
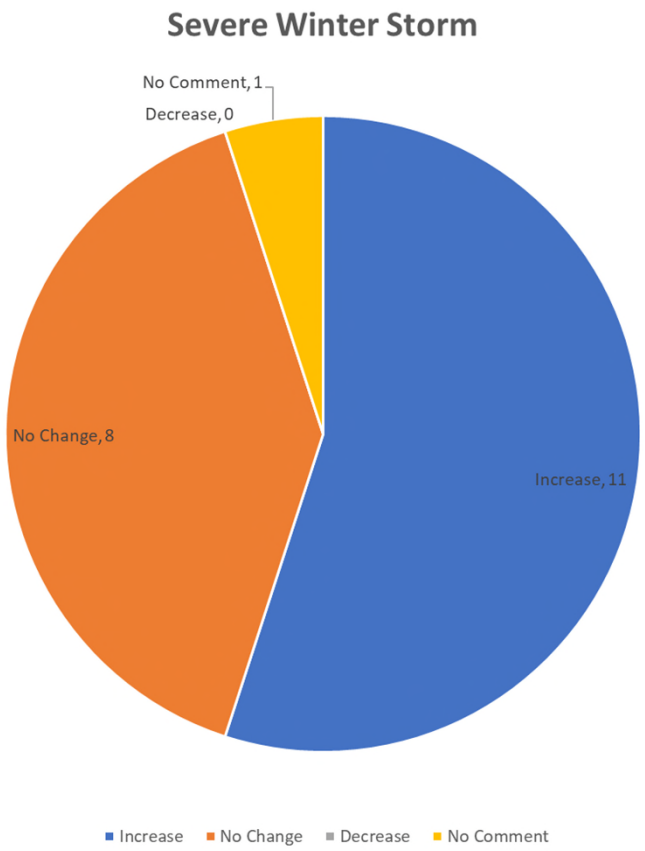


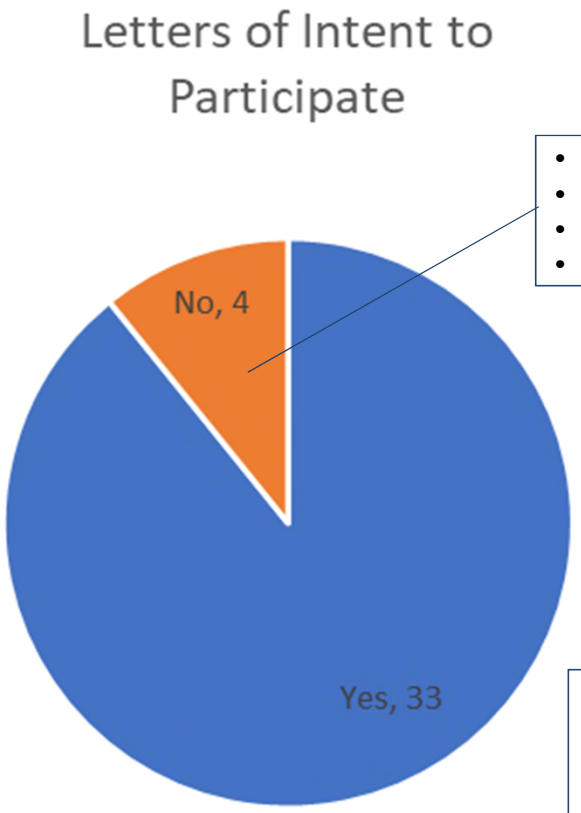


Committee HOC Feedback - 20 worksheets returned

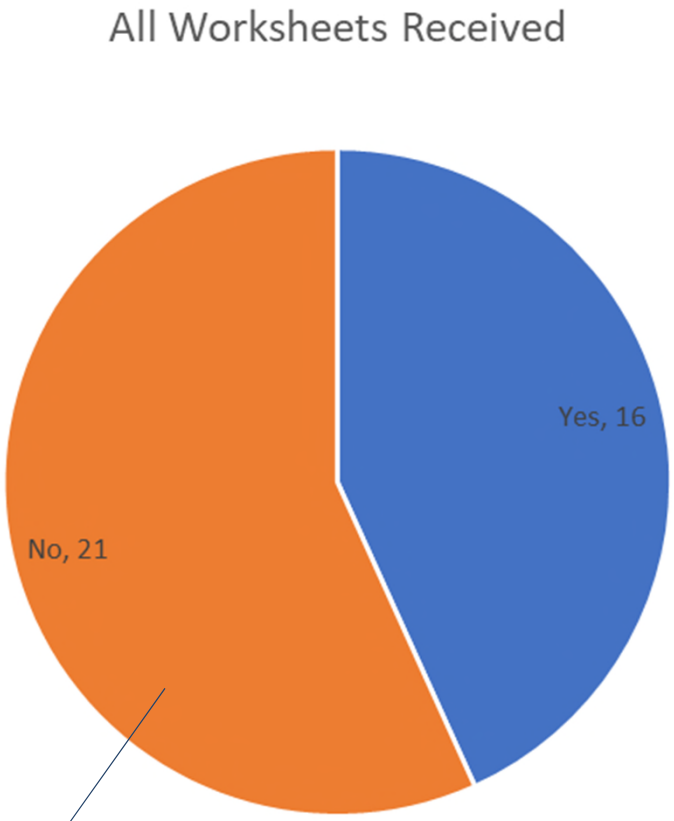
Additional Concerns:

- Increase in street flooding and stormwater flooding
- Ticks and Lyme disease
- Automobile and transportation accidents
- Deer collision with automobiles
- Manmade/technology failures
- Power grid failure
- Railroad accidents – rail cars carrying hazardous materials
- Stream debris
- Extreme heat
- Nuclear plant incidents

Worksheet Status



- Town of Otisco
- Town of Spafford
- Town of Van Buren
- Onondaga Nation



No Information Received from:

- Town of Fabius
- Town of LaFayette
- Town of Lysander
- Town of Otisco
- Town of Pompey
- Town of Salina
- Town of Spafford
- Town of Tully
- Town of VanBuren
- Village of Camillus
- Village of Fabius
- Village of Manlius
- Village of Marcellus
- Village of Skaneateles
- City of Syracuse
- Onondaga Nation

Mission Statement

The mission of the Onondaga County Multi-Jurisdictional Hazard Mitigation Plan is to protect the health, safety, property, environment and economy of the communities within Onondaga County *and to increase resilience* by partnering to identify and reduce our future vulnerability to natural hazards in a proactive and efficient manner.

Goals

- According to CFR 201.6(c)(3)(i): "The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards."
- Input: risk assessment results, discussions, research, and input from amongst the committee, existing authorities, polices, programs, resources, stakeholders and the public.

Compatibility with Other Planning Goals

Onondaga County goals should be compatible with the needs and goals expressed in other available community planning documents as well as the NYS HMP. These goals and objectives should be reasonably in-line with goals established in other related planning documents and mechanisms including:

- 2014 New York State Hazard Mitigation Plan
- Onondaga County Comprehensive Emergency Management Plan (December 2003)
- 2010 Development Guide for Onondaga County (June 1998)
- Framework for Growth in Onondaga County (June 1998)
- Onondaga County Settlement Plan and Pilot Projects (2001)
- City of Syracuse Comprehensive Plan 2040 (2012 Update)
- Onondaga County Climate Action Plan (April 2012)
- VisionCNY (June 2013)
- CNY Rising (2016)
- Other local comprehensive and emergency management plans

Proposed 2019 HMP Goals

- Goal 1 Protect Life and Property
- Goal 2 Increase Understanding and Awareness of Hazard Risk
- Goal 3 Promote Resiliency throughout the County
- Goal 4 Protect the Environment and Natural Resources
- Goal 5 Promote and Support Partnerships
- Goal 6 Enhance Disaster Preparedness, Response, and Recovery

Goal 1 - Protect Life and Property

- Objective 1-1: Address repetitive and severe repetitive loss properties throughout the County.
- Objective 1-2: Protect and maintain critical facilities and infrastructure.
- Objective 1-3: Identify flood and other natural hazard areas.
- Objective 1-4: Improve detection, warning and communication systems.
- Objective 1-5: Pursue federal and state assistance toward the improvement of facilities and infrastructure.
- Objective 1-6: Develop, maintain, strengthen and promote enforcement of ordinances, regulations and other mechanisms that facilitate sustainable construction standards.
- Objective 1-7: Integrate risk reduction concepts, policies, and projects into existing local and regional planning and implementation mechanisms, such as comprehensive plans, codes, and capital improvement plans.

Goal 2 - Increase Understanding and Awareness of Hazard Risk

- Objective 2-1: Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual and household preparedness activities with the overall goal of reducing general public dependency on disaster response and recovery support services.
- Objective 2-2: Implement mitigation actions that enhance the capabilities of the County and communities to better profile and assess exposure of hazards and participate in state and local programs and efforts that focus on practices that support or enhance resiliency.
- Objective 2-3: Promote awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards (i.e., flooding).
- Objective 2-4: Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards.
- Objective 2-5: Working with municipalities, provide tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities.

Goal 3 - Promote Resiliency throughout the County

- Objective 3-1: Promote resilient and sustainable land development practices
- Objective 3-2: Develop and maintain adequate services and utilities to serve the County's population and business
- Objective 3-3: Develop business and government continuity plans to decrease potential local economic losses.
- Objective 3-4: Reduce or eliminate hazard risks throughout the county. This would decrease recovery time and reduce social dislocation, and family and individual stress.
- *NEW* Objective 3-5: Encourage building and rebuilding practices that address resiliency through higher standards and sustainable design to resist impacts of natural hazards and to reinvest in existing infrastructure rather than expanding the urbanized area.

Goal 4 - Protect the Environment and Natural Resources

- Objective 4-1: Promote the continued use of natural systems to reduce long-term costs and maximize hazard mitigation effectiveness including sustainable flood and erosion control projects and activities that demonstrate resiliency practices.
- Objective 4-2: Protect and preserve environmentally sensitive and critical areas
- Objective 4-3: Continue to preserve, protect and acquire open space
- Objective 4-4: Incorporate hazard considerations into land-use planning and natural resource management.

Goal 5 - Promote and Support Partnerships

- Objective 5-1: Create, maintain and enhance collaborative efforts with other identified stakeholders involved with natural hazard management to promote resiliency.
- Objective 5-2: Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.
- Objective 5-3: Engage public agencies, citizens, neighborhood groups, non-profit organizations, businesses, and industry to implement mitigation actions more effectively.
- Objective 5-4: Encourage shared services in acquiring maintaining and providing emergency services and equipment.

Goal 6 - Enhance Disaster Preparedness, Response, and Recovery

- Objective 6-1: Enact policies to prioritize and implement mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.
- Objective 6-2: Coordinate and integrate hazard mitigation actions with existing local emergency operations plans.
- Objective 6-3: Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities for specific hazards.
- Objective 6-4: Review and improve, if necessary, emergency traffic routes and evacuation routes; communicate such routes to the public and communities via the County's emergency notification system, social media, and news media outlets.
- Objective 6-5: Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events.
- *NEW* Objective 6-6: Support County Emergency Management function as the central venue for community preparedness requirements and reconstruction efforts.

Strengths, Weaknesses, Obstacles, and Opportunities (SWOO)

The purpose of the SWOO is to identify mitigation strategies and capabilities that will meet the goals and objectives of the plan update. It is also used to develop potential mitigation actions for the participating jurisdictions.

- Strengths – what we do well
- Weaknesses – what could we do better
- Obstacles – things that stand in the way, and either prevents you from doing something or something that need to be overcome
- Opportunities – used to develop mitigation strategies

2011 SWOO Results (Flood)

Strengths	Weaknesses	Obstacles	Opportunities
1. NYSDEC upgraded enforcement of dam inspections. Most dam EAPs are at least minimally acceptable. 2. Most dam owners/operators are aware of inspection and reporting requirements. 3. Recently updated flood mapping, will be adopted by communities later this year. Most issues with maps have been resolved. City Engineering has been doing some outreach to property owners. 4. Some communities (e.g. Cicero) have an extra layer of zoning in their flood zones. 5. The County planning board does review development applications and strongly discourages risky development. 6. County DOT has a very good service request system that gets flood problems into a service database. 7. NYS Building code requires 2' freeboard.	1. Competing interests of agencies/organizations that have control (to some extent) over water levels in major water bodies (e.g. Canal Corporation, owners of dams and hydro facilities). No uniform or overall control of water levels on the three-river system. 2. Lack flood forecasting capabilities along the canal system as in many other areas of Upstate NY. The county has been working with USGS and NWS to try to get gaging systems for data input into flood forecasting in this area, but funding has not permitting this to move forward. 3. Federal budget issues jeopardizing the maintenance of existing gages. 4. Soils (including mudboils) has exacerbated silting problems in streams, leading to localized flooding. Specific areas include Otsico along Rices Brook and at the outlet of Lake Onondaga in the City. 5. County has little control over communities with respect to development in hazard areas (zoning). They can recommend, but not legislate – "home rule". 6. Water control mechanisms along the canal system (including Oneida Lake) are antiquated and limit the amount that water levels can be controlled in a timely fashion, however rapid control could pass problems downstream including ecological damage. 7. Often time town and village departments, county departments or other agencies get calls from homeowners complaining of a tree that has fallen and is an obstacle and potential flood problem…but there is a problem of access and liability. 8. Often times NFIP FPAs are not aware of their responsibilities – including not having maps available (or they are out-of-date), or being able to answer residents issues with respect to NFIP and their property.	1. Federal budget issues jeopardizing the maintenance of existing gages or development of needed new gaging for flood forecasting. 2. The watersheds (basins) go far beyond the boundaries of the County, requiring regional solutions. 3. Some towns have their own drainage departments and associated drainage easements…County DOT only has jurisdiction over their right-of-way. 4. Budget constraints lead to maintenance (of catchbasins, etc.) on a reactive rather than proactive basis…there are just too many miles of roads. 5. Often time town and village departments, county departments or other agencies get calls from homeowners complaining of a tree that has fallen and is an obstacle and potential flood problem…but there is a problem of access and liability. Also, once you start the process when do you end.	1. Installation of gaging along canal system area in Onondaga County area; data to go to NWS and others to improve flood forecasting in the area. 2. Could climate change issue be an opportunity to fund mitigation projects (e.g. Waxman's sponsored bill)? 3. Perhaps County to lead an effort to develop a stream clearing strategy, including setting a threshold level for reacting to a situation, clearing the action through legal, etc. – the SWCD in OC is looking at doing this in the County, just as it is being done in Broome County. Each municipality should include an initiative to support the County wide program. 4. NYSDEC is supposed to create a Flood Mitigation Task Force which could serve as a tool to provide better communication and coordination of regional water level management.

2011 SWOO Results (Severe Storms)

Strengths	Weaknesses	Obstacles	Opportunities
1. Some CF owners (such as OCWA) take wind risk into building practices into all of their construction (e.g. roof clips). 2. Tree trimming programs are considered aggressive. 3. Good mutual aid. 4. A lot of attention is being made recently on hazard assessments for trees. 5. They have a good concept as to how they would operate (EM) for debris management, based on their experience with the Labor Day Storm.	• None identified	1. NYSDEC can be an obstacle with debris management.	• None identified

2011 SWOO Results (Severe Winter Storms)

Strengths	Weaknesses	Obstacles	Opportunities
1. Great experience and capabilities to deal with events. They have excellent snow clearing capabilities. 2. Ice storms are not that prevalent in the County. 3. Many critical facilities have backup power. All of OCWA has backup and "rolling stock". Most of WEP facilities have B/U. 4. DOT facilities and resources are good, with great forecasting and communications. DOT is stocking salt wherever possible, and have good municipal agreements to store. 5. Most new developments are encouraging underground utilities. 6. Communities have a good "weather sense" and preparedness for storm events that affect them frequently. 7. Very good alert and notification systems (e.g. NYAlert). 8. NWS has a meteorologist assigned to assist local and county emergency managers…and excellent resource.	1. Salt has become quite expensive. 2. Underground utilities do have some downsides with respect to trouble-shooting and repair. 3. Not all communities and residents are aware of and take advantage of alert and notification systems such as NYAlert. 4. Local media tends to "play up" weather events, and people may make decisions (e.g. school closings) on media's take on the weather. 5. Not much COOP/COG planning at the local level.	• None identified	1. Better public education on alert and notification systems such as NYAlert. 2. May need to work to educate the media on their effect on decision making…or educate the decision makers on what information to rely on.

2011 SWOO Results (Ground Failure)

Strengths	Weaknesses	Obstacles	Opportunities
1. Planning board / site plan review processes are formal. 2. Some of the local problem areas (e.g. Tully) have been added to the NYS State Open Space Plan, perhaps Allied Signal (Honeywell) property is being considered similarly. 3. Honeywell has a good handle on the extent of the mining solution areas affected.	1. Full understanding of the extent of ground failure hazard areas.	• None identified	• None identified

2011 SWOO Results (Earthquake)

Strengths	Weaknesses	Obstacles	Opportunities
1. Some CF owners (such as OCWA) takes seismic risk and building practices into all of their construction.	1. Only a cursory review of impacts on emergency management and CFs, including contingencies. 2. Very little experience with EQ events, thus little attention made or awareness of what to do.	• None identified	1. Better contingency planning is needed.

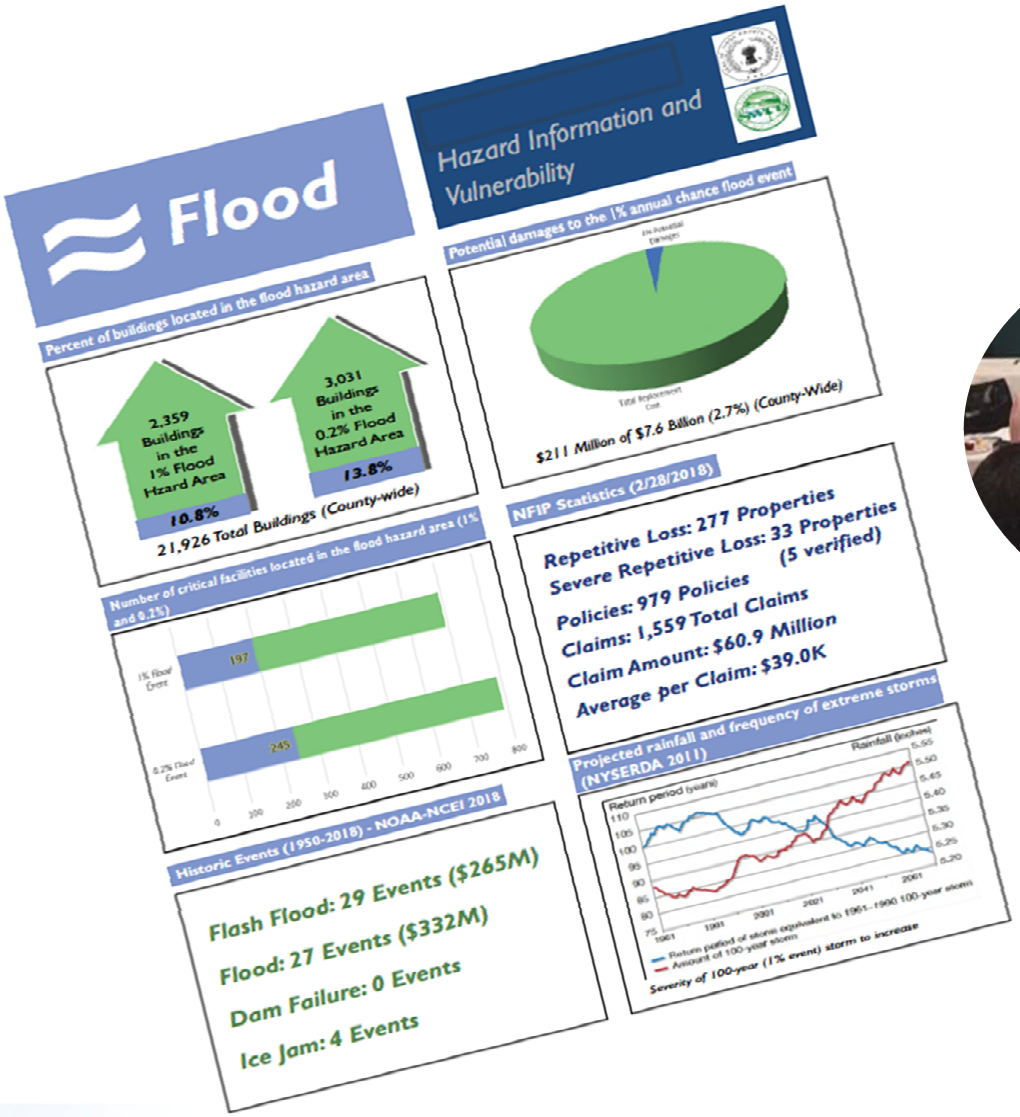
2018 SWOO (Invasive Species)

Strengths	Weaknesses	Obstacles	Opportunities
1. Municipalities are treating trees for Emerald Ash Borer	1. Emerald Ash Borer has left a large population of dead old growth trees that are next to roads, homes, and located on public and private property. As they decay, the County will experience downed trees from storms, increasing power outages and the likelihood of personal injury or fatalities. 2. Phragmites have resulted in significant increase in maintenance costs for roadside drainage infrastructure. 3. Municipalities are losing trees due to EAB and phragmites	1. Effects lake water and/or foliage around the lakes that could lead to increased runoff and decreased water quality	1. Develop an invasive species removal program (manual, mechanical, or chemical) 2. Remove dead trees impacted by insect species (emerald ash borer, hemlock wooly adelgid)

2018 SWOO (Harmful Algal Bloom)

Strengths	Weaknesses	Obstacles	Opportunities
1. County agencies are being proactive and looking at why HAB is occurring and how to control it. 2. County agencies are making plans to respond to and recover from HAB. 3. Carbon filters are utilized at water treatment plants 4. County website has information on HAB with a list of FAQs and information on what it is and what residents can do to avoid it	1. Not being able to control the amount of runoff from farms, yards, and leaking septic tanks 2. There is no action plan on steps to reduce HAB in the county.	1.	1. Establish backup water supplies in case of water intake shutdown 2. Increase the frequency of samples collected and number of NYS DOH sampling sites 3. Use nutrient reduction methods in impacted waterbodies

What is Next?
Review Risk and Vulnerability



Project Schedule Review

July 2018	Municipal Kick-Off Meeting
June-August	Data Collection
July-August	Update Hazard Profiles
August-September	Risk Assessment
September 12, 2018	Risk Results Presentation; Develop Problem Statements
October 10, 2018	Mitigation Strategy Workshop
November	Review Draft Plan
December	Submit to NYSDHSES
January 2019	Submit to FEMA

Any Questions?

Cynthia Addonizio-Bianco, Tetra Tech Inc.
Heather Apgar, Tetra Tech Inc.
Chris Huch, Tetra Tech, Inc.

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Onondaga County Multi-Jurisdictional All Hazard Mitigation Plan Update Minutes of Meeting

Purpose of Meeting:	Steering Committee Meeting #2
Location of Meeting:	Onondaga County Syracuse, New York
Date/Time of Meeting:	August 8, 2018; 1:00 p.m. – 3:00 p.m.

Attendees:
Kathleen Bertuch, CNY Regional Planning & Development Board
Mark Burger, Onondaga County Soil & Water Conservation District
Kelly Caramanna, Onondaga County Water Authority
Megan Costa, Syracuse-Onondaga County Planning Agency
Ilana Cantrell, Syracuse-Onondaga County Planning Agency
Khristopher Dodson, SU Environmental Finance Center
Chris Kraynack, Onondaga County Dept. of Water Environment Protection
Bill Lansley, Onondaga County Parks Department
Bruce Kelinger, CNY Regional Planning & Development
Bob Petrovich, Onondaga County Department of Transportation
Michael Plochocki, Onondaga County Legislature
Tom Rhoads, Onondaga County Dept. of Water Environment Protection
Joseph Rinefierd, Onondaga County Dept. of Emergency Management
Russel Houck, City Engineer, City of Syracuse
Meghan Vitale, Syracuse Metro Transportation Council
Dan Wears, Onondaga County Dept. of Emergency Management
Cynthia Addonizio-Bianco, Project Manager, Tetra Tech
Chris Huch, Resiliency Planner, Tetra Tech

Agenda Summary: To discuss the Hazard Mitigation Plan update process, upcoming outreach, discuss hazards of concern, changes to the mission statement and goals/objectives, discuss the SWOO

Item No.	Description
1.	**Welcoming Remarks** Cynthia Addonizio-Bianco welcomed attendees to the second meeting of the Steering Committee for the Onondaga County Hazard Mitigation Plan update. The committee was reminded that the Steering Committee makes key decisions on behalf of the planning partnership (municipalities and special purpose districts). The attendance of the Committee is used in part to justify the FEMA match for the project. Ms. Addonizio-Bianco explained that Megan Costa and Ilana Cantrell of the Syracuse-Onondaga County Planning Agency make up the core planning team and have been tracking homework sheets from municipalities and offering input to the planning process. Attendees were given copies of the presentation, mission statement and goals/objectives packet, SWOO handout, minutes of last meeting in a handout packet. Attendees were reminded that this is a public process and requires opportunities for public input. The Steering Committee will be asked to assist in promoting the public website. The Steering Committee approved of the meeting minutes from the first Steering Committee meeting.
2.	**Project Status**

	Homework was sent to municipalities in the start of July. • 19 out of 35 towns have returned homework. • Hazards of Concern worksheets were received from 26 particpants. • Several municipalities attended local support meetings prior to the steering committee meeting. • FEMA HMA grant window just opened so some muni's seem interested in submitting some of their projects for funding. • The Critical Facility Inventory was received from the County and sent out to the municipalities for review and comment. To date no feedback was received. Tetra Tech indicated that the inventory will be used as is unless comments are received back within the week. It was noted that actions to protect critical facilities located in the 100 year floodplain to the 500 year event are required as per NYS requirements. • Tetra Tech has begun developing risk profiles on hazards of concern.	
3.	**Stakeholder and Public Outreach** We will disperse a suite of about 8 surveys for various groups of agencies and the general public • Links to surveys should be distributed by August 17th • It was suggested to send out the link to the planning and zoning conference, Stormwater Coalition, some other groups, sharing on Twitter pages, Focus Greater Syracuse • HMP project link and flyer should be sent be posted on municipal websites by Aug 31 as well as press release sent to newspapers. Municipalities have confirmed that they will discuss the update process at their meetings	
4.	**Hazards of Concern were discussed, including feedback on the hazard of concern worksheet** Harmful Algal Bloom • DEC is looking into using Liquid copper sulfate treatment for HAB's • It was noted that nutrient issues that amplify HABs are not limited to stormwater but also natural/agricultural runoff Land-use issues • Filtration systems can be used in drinking water treatment • Backup water supplies may be difficult due to size • In the case of Skineateles Lake, there are some homes and commercial establishments that have private intake systems which may not have any sort of water treatment. NYS Health Dept has not approved any individual filtration systems. • Based on input from the Steering Committee, we will include Harmful Algal Bloom as a hazard in the HMP update Invasive Species • It was discussed that if deer tick related Lyme Disease was included in invasives, we may need to include mosquito borne diseases. • The Steering Committee discussed identifying individual species of concern and then having a general discussion of invasives as a whole	

	• OC OEM noted that some programs are already in place to deal with invasives • The Steering Committee discussed keeping insect borne disease such as Lymes Disease and Zika separate from invasive species Drought • Drought was not included in the last plan. • Agricultural producers are concerned. There were 2 recent droughts. Municipal water had to be pumped in to fill agricultural drinking supplies • We will look to identify the number of private wells. • Based on input from the Steering Committee, we will include drought as a hazard in the HMP update. Earthquake • Tetra Tech recommended leaving earthquake in as a profile, but scaling down the vulnerability assessment. • Building codes and rapid assessment are possible actions. • City of Syracuse has age and height of buildings in database. • Earthquake can have large impacts. Flood • Flood voted to remain as hazard of concern. • Members of the committee asked if stream debris could be included in the flooding section. • The State DOT likely knows the locations of road flooding as part of their Transportation Safety Project and Plan. Ground Failure • It was discussed that most ground failure (mudslide, sink hole, landslide) is water and flooding related. • Steering committee tentatively decided to fold ground failure into the flood profile and eliminate this profile. Severe Winter Storm • This hazard will be included in the HMP update. Severe Storm • This will be included in the HMP update Other feedback from the HOC worksheet included street flooding, power grid failure, transportation accidents. • The Committee discussed that the majority of these were not natural hazards and the remainder could be incorporated in existing hazard profiles. • Extreme heat has resulted in transportation problems in the past. Railroad bridge collapse was a result of heat. If no extreme temp profile, then heat will be wrapped into drought.	
5.	**Confirm Changes to Mission Statement and Goals/Objectives** Several proposed changes were introduced to the Mission Statement and Goals/Objectives: • A Crosswalk was part of the handout to show proposed changes	

	• It was proposed to add "and to increase resilience" to the mission statement. The Steering Committee agreed to this. • Added promote resiliency as Goal 3. • The Steering Committee recommended to add more descriptive language to resiliency goals and objectives • Need to DEFINE resiliency at next meeting or email • Megan Costa explained that the resiliency topic is something the County is working on and the County may use this plan as their resiliency plan. • Objective 3.5 is new • Want to add more language (teeth) to 3.1 • Will delete objective 3-4 • Objective 2.5 and 2.3 could be combined as they are related. • In Goal 2, we will add "natural" prior to "hazard risk" • Objective 4-1 should incorporate nutrient control • Objective 4-1 should be changed to reduce long term hazard related costs • Objectives 5-1 and 5-2 are the same and can be combined • Was suggested that if a goal and objective was supported by another plan, it should be captured and discussed as either a footnote.	
6.	**SWOO** Due to lack of time, the SWOO will be assigned as homework for the committee and will be emailed out to the committee for comment.	
7.	**Adjournmen**t	

ONONDAGA COUNTY, NEW YORK
MULTI-JURISDICTIONAL ALL-HAZARDS
MITIGATION PLAN 2019 UPDATE

Risk Assessment Meeting with Steering Committee and Planning Partnership - Agenda
Meeting Date / Time: September 20, 2018 at 2:00PM – 4:00PM
Location: John H. Mulroy Civic Center – Syracuse, NY

1. **Opening Remarks**
2. **Project Status -** where we are in the process, public outreach
3. **Risk Assessment Overview**
4. **Risk Ranking**
5. **Development of Hazard Problem Statements by Community –** working together in small groups, identify hazard problem statements for your community
6. **Next Steps**
7. **Adjournment**

Onondaga County Project Contact

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Syracuse-Onondaga County Planning Agency
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Ilana Cantrell
Syracuse-Onondaga County Planning Agency
(315)435-8573 | ilanacantrell@ongov.net

Tetra Tech Project Contacts

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(973) 630-8044 | cynthia.bianco@tetratech.com

Heather Apgar, CFM
6 Century Drive, Parsippany, NJ 07054
(973) 630-8046 | heather.apgar@tetratech.com

ONONDAGA COUNTY HAZARD MITIGATION PLAN UPDATE
Risk Assessment Meeting with Planning Partnership
Date: September 20, 2018 Time: 2:00pm – 4:00pm
Sign-In Sheet

Name	Title	Agency/Municipality	Phone Number	E-mail
John Houser	Codes officer	T Marcellus	673 3269 (4)	jhouser@marcellusny.com
Floyd Dugger	Councilor	T. Elbridge	569-2978	fdugger@aol.com
Rick Pennelli	DPW Sup.	V. Solvay	468-1606	[illegible]
Bill Reagan	Codes	V Liverpool	430-7927	codes@villageofliverpool.org
Eric Cushing	Operator	Village of Minoa	870-0848	cushin716@gmail.com
Mike Mormone	Codes Enforcement	Village Minoa	656-3100	[illegible]
Eric Schultheis	Sanitary Eng.	OCWEP	315 435-5402	ERICSCHULTHEIS@ONGOV.NET
Harold Kiehl	Supt public works	Village of Tully	315 3990104	tullydpw@outlook.com
Michael Jones	CEO	Fayetteville	315-637-9864	MJones@FayetteVilleNY.Gov
Russell Houck	Engineer	City Syracuse	315-448-8059	rhouck@syrgov.net
Chris Shields	CEO	East Syracuse	315-437-3541	cshields@villageofeastsyracuse
Brian Johnstone	CEO	N. Syracuse	315-458-4763	CODES@NORTHSYRACUSENY.ORG
Ralph Lamson	CEO	Tully Village Town	315-696-4693	Tully_Codes@Yahoo.com
Doug Miller	Engineer	Town Manlius & DeWitt	315 558 8417	DOUGMILLER@MILLERENGINEERS.COM
Erica Tauzer	Planner	EDR	906-399-7501	etauzer@edrpc.com
Greg Humphrey	CEO	Village of Baldwinsville	315-635-2481	ghumphrey@baldwinsvilla.org

ONONDAGA COUNTY HAZARD MITIGATION PLAN UPDATE
Risk Assessment Meeting with Planning Partnership
Date: September 20, 2018 Time: 2:00pm – 4:00pm
Sign-In Sheet

Name	Title	Agency/Municipality	Phone Number	E-mail
Travis Glazier	Dir.	OC Office of Env.	435-2647	travisglazier@ongov.net
Holly Grandt	Env. Policy Analyst	OC Environment	435-8497	Holly.Grandt@ongov.net
Samantha Holcomb	Senior Enviro. Analyst	EDR	471-0688	Sholcomb@edrdpc.com
Allen Yager	Town Engineer	Lycander	315-857-0291	engineer@townoflycander.org
SHANNON HARTY	DMO	(V) SKANEATELES	315-209-2229	DMO@VILLAGEOFSKANEATELES
Robert Petrovich	OCDOT PC			
Mary Robison	City Engineer	City of Syracuse	315-448-8214	Mrobison@syrgov.net
Kenny Berta	PTT Planner	CNY RPDB	315-422-8276	BERTUCH@CNYRPDB.ORG

TETRA TECH

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Planning Together for a Resilient Onondaga County

2018 Onondaga County Hazard Mitigation Plan

Planning Partnership Meeting - Risk Assessment Presentation

September 20, 2018

Today's Topics

- Introductions
- Project Status
- Risk Assessment Overview
- Risk Ranking
- SWOO Overview
- Breakout Groups
  - Development of Hazard Problem Statements by Community
- Next Steps

Public Outreach and Engagement

- SOCPA HMP webpage has been updated - http://www.ongov.net/planning/2019Update.html
- Citizen Survey is now open
- Stakeholder links have been distributed

2019 Hazard Mitigation Plan Update

The Syracuse-Onondaga County Planning Agency (SOCPA) is tasked with regularly updating the original 2013 Hazard Mitigation Plan (HMP). This plan is required by state and federal agencies in order for communities in Onondaga County to be eligible for certain types of non-emergency disaster assistance, including funding for mitigation projects. The ultimate goal of hazard mitigation is to reduce loss of life and property, lessening the impact of disasters.

The plan update will include an updated hazard risk and vulnerability assessment, new mitigation strategies, current jurisdictional annexes for participating jurisdictions in the County (e.g., city, towns, and villages), new NYS Department of Homeland Security and Emergency Services (DHSES) requirements (e.g., assessing critical facilities, plan for climate change, and plan for displaced residents and evacuation/sheltering), and a plan maintenance strategy.

How Can I Participate?

This webpage will be used throughout the planning process to post information, collect comments, announce meetings, and to post draft and final documents.

The survey for the 2019 update ... en. Click here to complete the survey.

roject idea for the Plan update, or want to know al municipality for more information.

through the Resources page.

Homework Status

Jurisdiction	LOIP	Worksheet 1 - Events and Losses	Worksheet 2 - Cap. Ass.	Worksheet 3 - NFIP FPA	Worksheet 4 - Past Action Progress	Worksheet 5 - Plan Integration	Worksheet 6 - New Development	Worksheet 7 - Shelters
Onondaga County								
Baldwinsville (V)	X	X	X	X	X	X	X	X
Camillus (T)	X			X				
Camillus (V)	X	X	X	X	X	X	X	X
Cicero (T)	X	X	X	X		X	X	
Clay (T)	X	X	X	X	X	X	X	X
DeWitt (T)	X	X	X	X	X	X	X	X
East Syracuse (V)	X	X	X	X	X	X	X	X
Elbridge (T)	X	X	X	X	X	X	X	X
Elbridge (V)	X	X	X	X	X	X	X	X
Fabius (T)	X							
Fabius (V)	X	X	X	X	X	X	X	X
Fayetteville (V)	X	X	X	X	X	X	X	X
Geddes (T)	X	X	X	X	X	X	X	X
Jordan (V)	X	X	X	X	X	X	X	X
LaFayette (T)	X	X	X	X	X	X	X	X
Liverpool (V)	X	X	X	X	X	X	X	X
Lysander (T)	X							
Manlius (T)	X	X	X	X	X	X	X	X
Manlius (V)	X	X						
Marcellus (T)	X	X	X	X	X	X	X	X
Marcellus (V)	X	X	X	X	X	X	X	X
Minoa (V)	X	X	X	X	X	X	X	X
North Syracuse (V)	X	X	X	X	X	X	X	X
Onondaga (T)	X	X	X	X	X	X	X	X
Onondaga Nation								
Otisco (T)								
Pompey (T)	X							
Salina (T)	X							
Skaneateles (T)	X	X	X	X	X	X	X	X
Skaneateles (V)	X							
Solvay (V)	X							
Spafford (T)								
Syracuse (C)	X	X	X	X	X	X	X	X
Syracuse Metropolitan Transportation Council		X						
Tully (T)	X	X	X	X	X		X	
Tully (V)	X	X	X		X	X	X	X
Van Buren (T)	Not participating as per Town Supervisor (6/22/18)							
OCWA	X	X	X	X	X	X	X	X

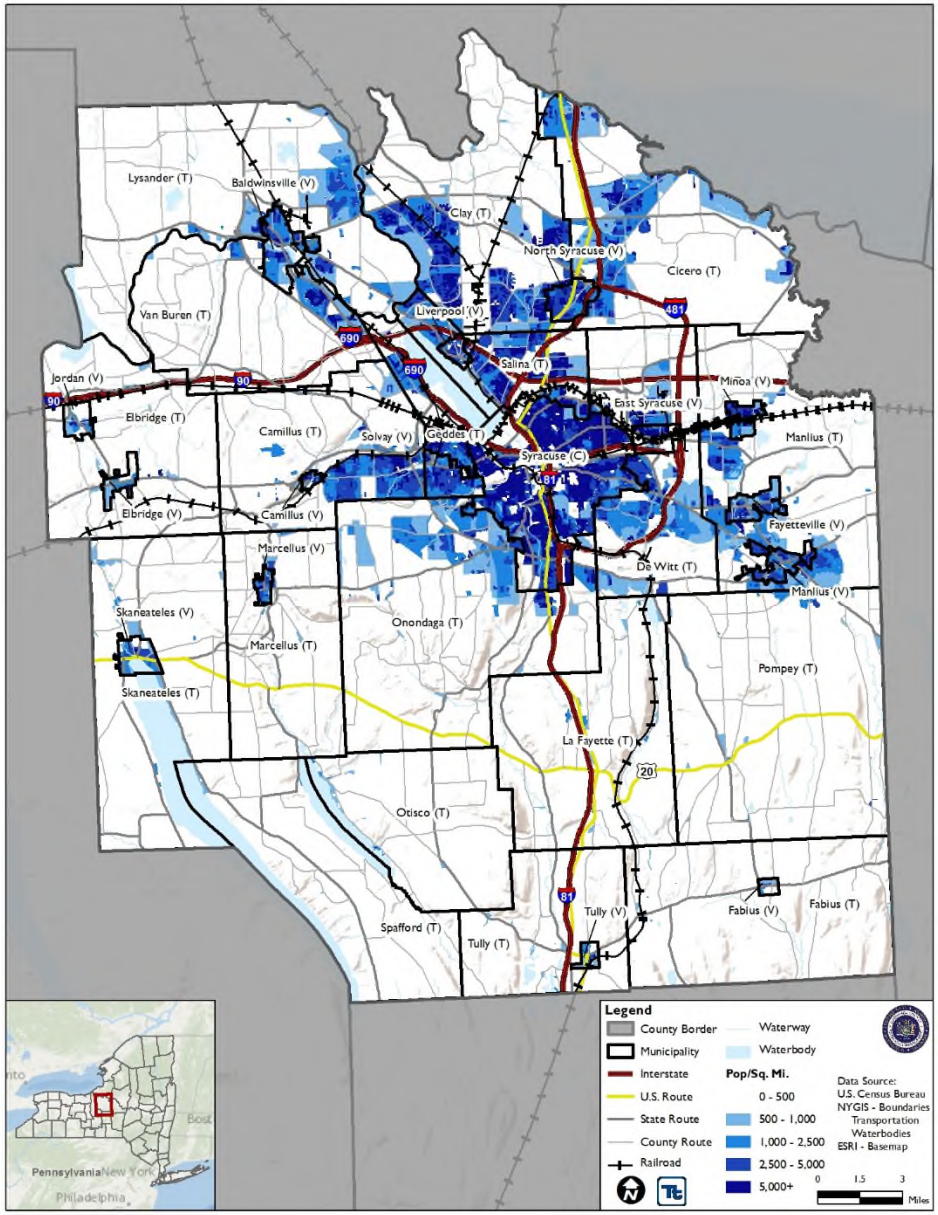
Participation: No response from Otisco, Spafford, Onondaga Nation.

Missing input: Towns of Camillus, Fabius, Lysander, Otisco, Pompey, Salina; Villages of Skaneateles, Solvay

Project Schedule Review

July 2018	Municipal Kick-Off Meeting
June-August	Data Collection
July-August	Update Hazard Profiles
August-September	Risk Assessment
September 20	Risk Results Presentation; Develop Problem Statements
October 10 (tentative)	Mitigation Strategy Workshop
November	Review Draft Plan
December	Submit to NYSDHSES
January 2019	Submit to FEMA

Risk Assessment Overview- Population



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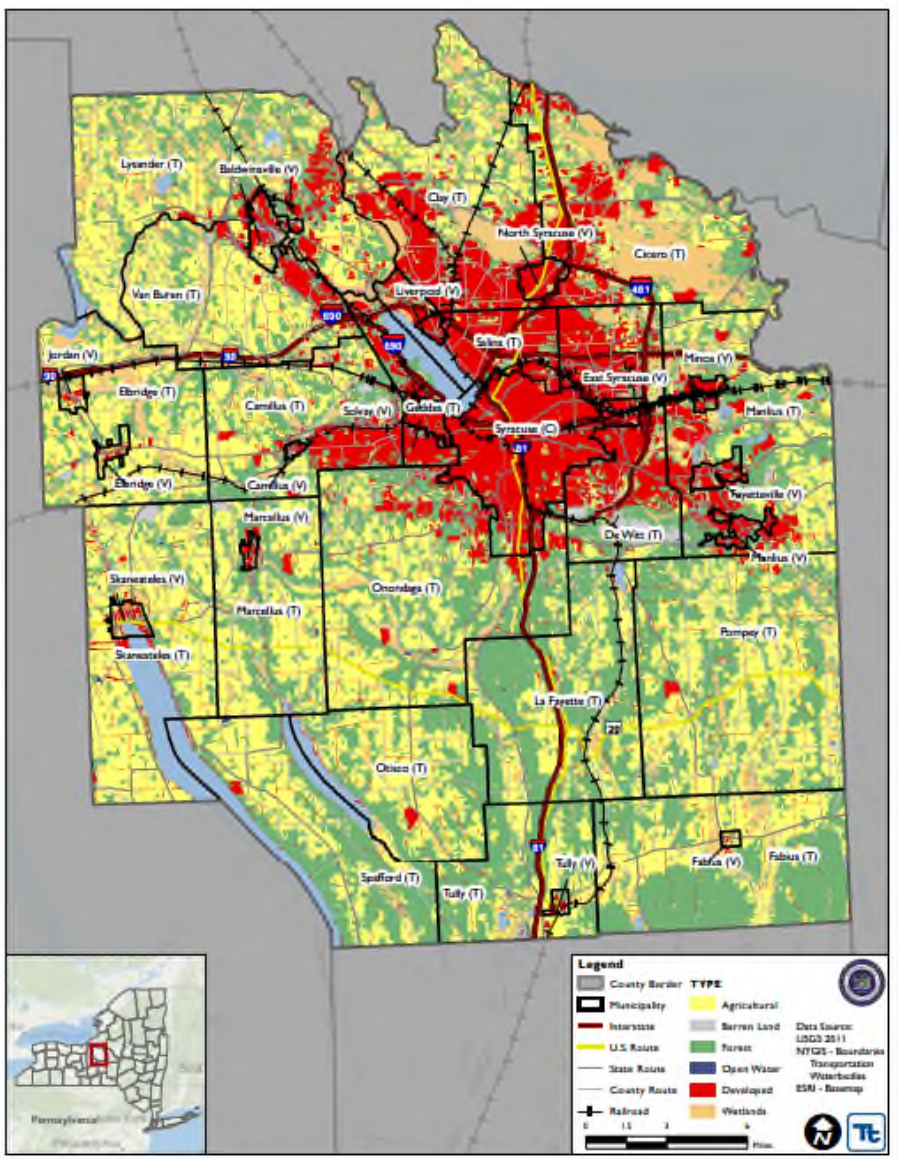
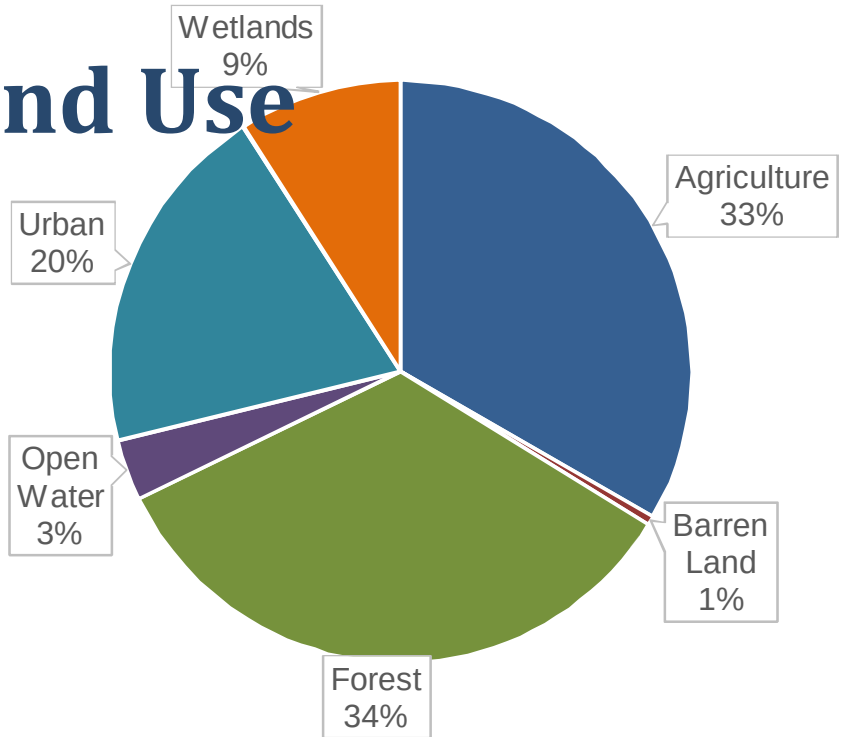
County Overview – Land Use

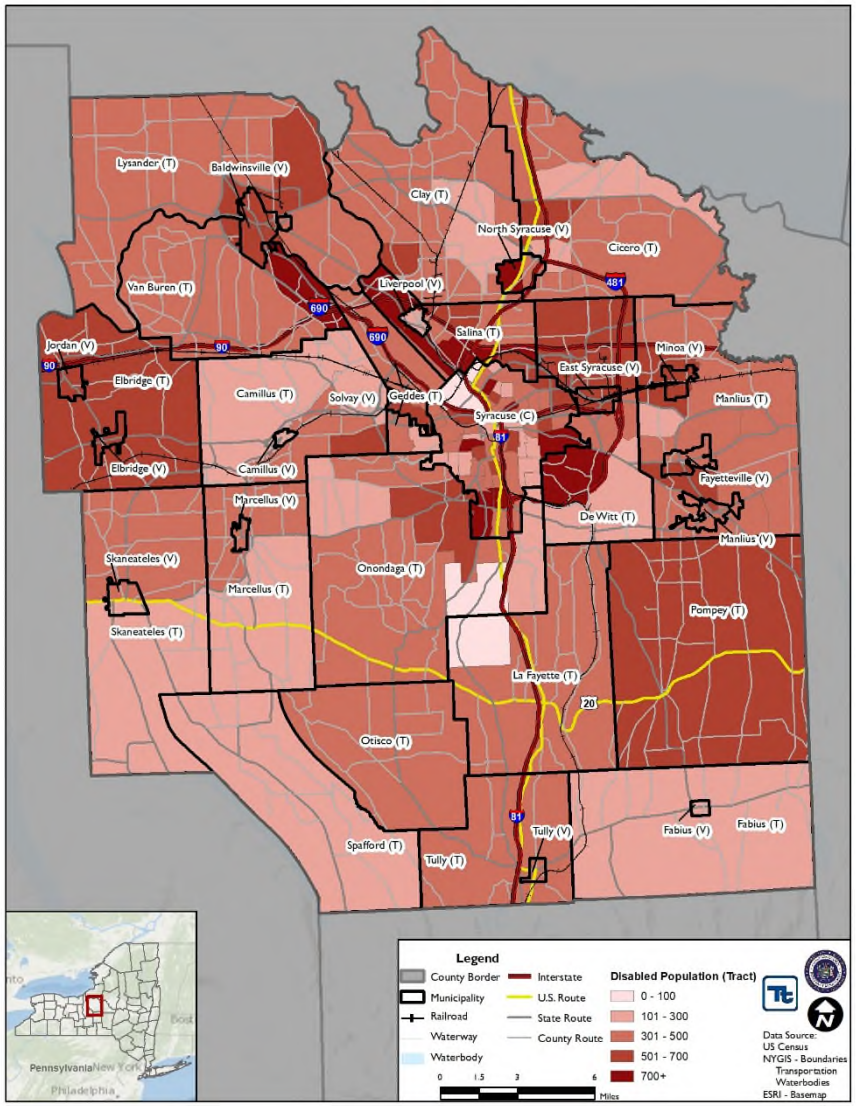


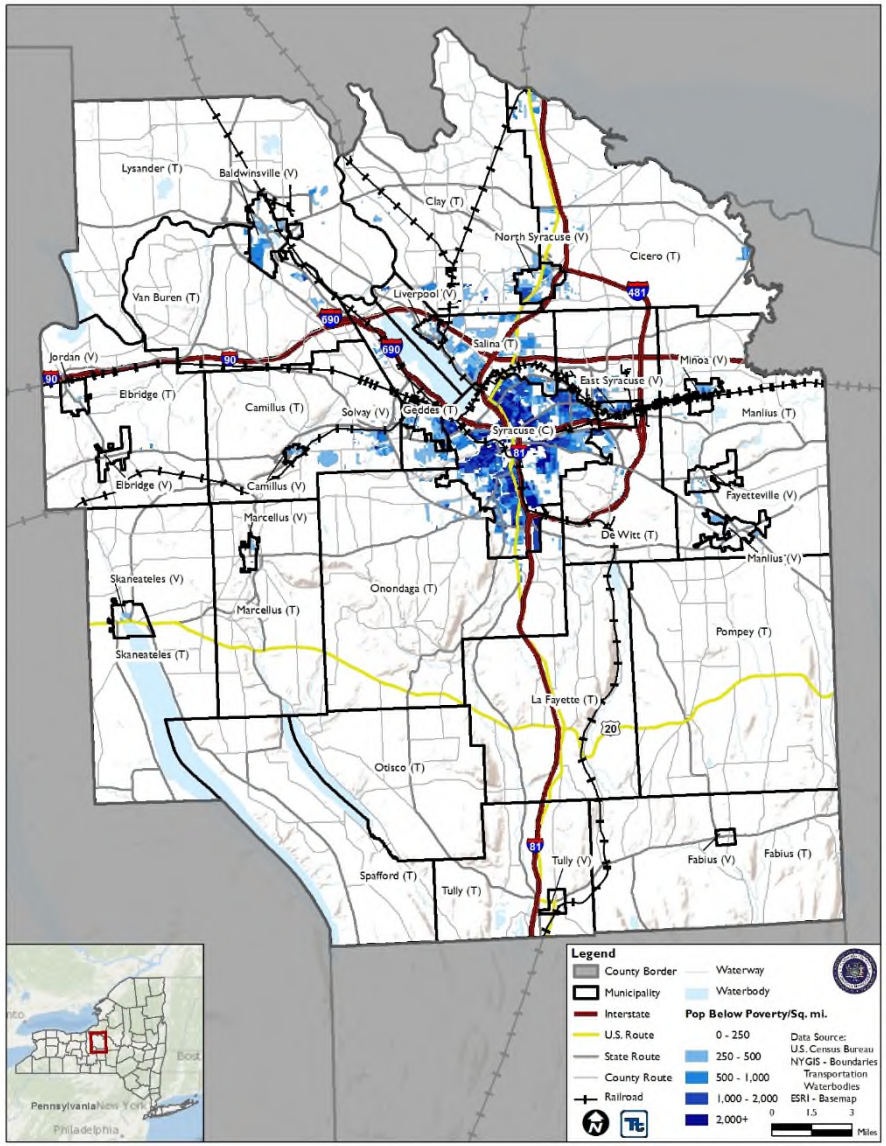


Land Use Category	Acreage	Percent of County
Agriculture	171,524.2	33.3%
Barren Land	2,647.8	0.5%
Forest	175,287.8	34.0%
Open Water	17,681.1	3.4%
Urban	101,383.8	19.7%
Wetlands	47,025.4	9.1%

County Overview – Vulnerable Populations

Low-Income and Disabled





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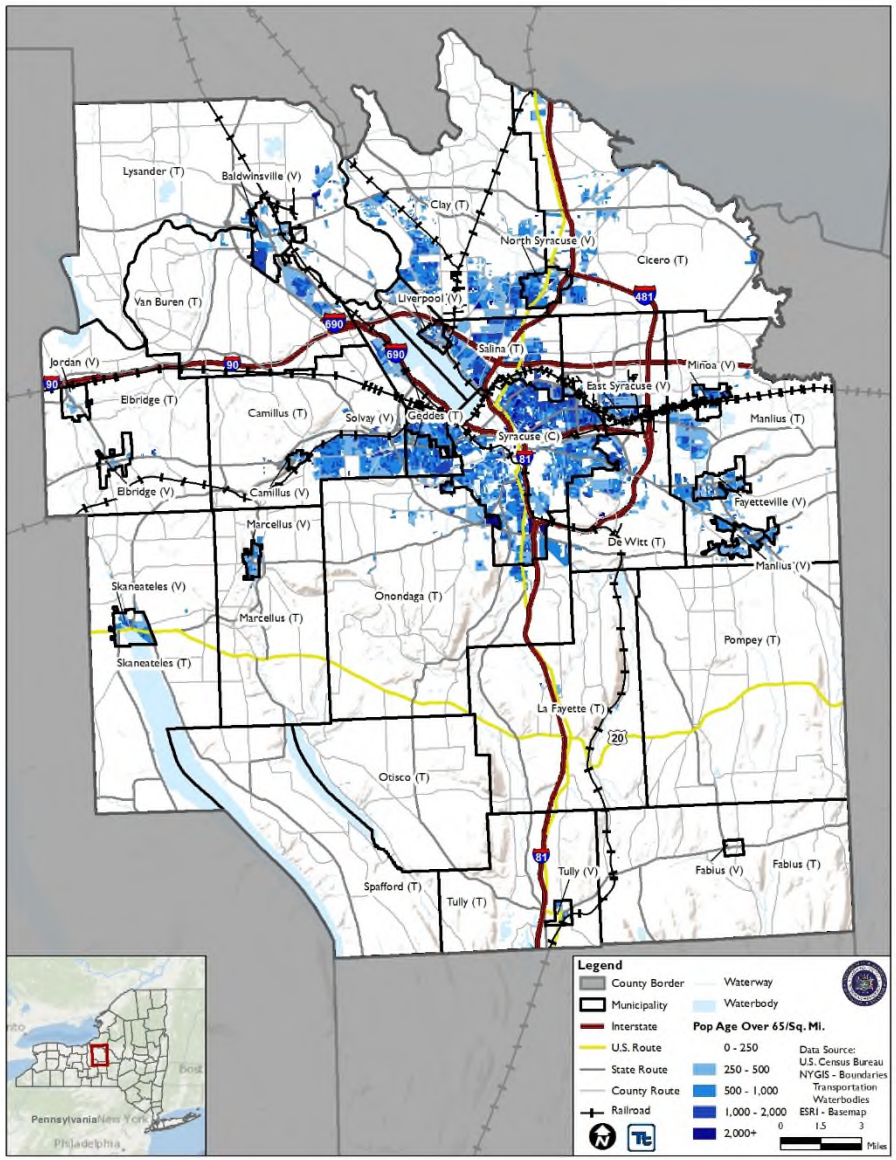
County Overview – Vulnerable Populations

Residents 65+



Hazards of Concern

2018 Hazard Mitigation Plan Hazards of Concern
Flood *(riverine/flash flood, ice jam, and dam failure)*
Severe Storm *(hail, wind, lightning, thunderstorms, tornadoes, hurricanes, and tropical storms)*
Earthquake
Severe Winter Storm *(heavy snow, blizzards, sleet, freezing rain, ice storms, extreme cold, and Nor'Easters)*
(Ground Failure)
Drought
Harmful Algal Bloom
Invasive Species *(emerald ash borer, hemlock woolly adelgid, phragmites, milfoil, purple loosestrife, giant hogweed, kudzu,)*

Flood

- History of flood events
  - Onondaga County included in 7 FEMA disaster declarations between 1954 and 2017

FEMA Disaster Number	Date(s) of Event	Incident Type
DR-447	July 1934	Severe Storms & Flooding
DR-487	October 1975	Storms, Rains, Landslides & Flooding
DR-1095	January 1996	Severe Storms and Flooding
DR-1335	August 2000	Severe Storms and Flooding
DR-1534	June 2004	Severe Storms and Flooding
DR-1564	September 2004	Severe Storms and Flooding
DR-1993	May 2011	Severe Storms, Flooding, Tornadoes, and Straight-line Winds

Flood History (1950-present)

Hazard Type	Number of Events Reported Between 1950 and 2018	Total Fatalities	Total Injuries	Total Property Damage ($)	Total Crop Damage ($)
Flash Flood	40	2	None reported	$35.9 million	None reported
Flood	6	None reported	None reported	$70,000	None reported
Dam Failure	0	None reported	None reported	None reported	None reported
Ice Jam	1	None reported	None reported	None reported	None reported
TOTAL	**26**	**2**	**None reported**	**$35.97 million**	**None reported**

Source: NOAA-NCEI 2018; USACE 2018: NPDP 2018
Note: The numbers listed above include events that were reported to NOAA, USACE, and NPDP. They may not represent all events that occurred in the County.

Flood Probability

Hazard Type	Number of Occurrences Between 1950 and 2018	Rate of Occurrence or Annual Number of Events (average)	Recurrence Interval (in years) (# Years/Number of Events)	Probability of Event in any given year	% chance of occurrence in any given year
Flash Flood	19	0.28	3.58	0.28	27.94%
Flood	6	0.09	11.33	0.09	8.82%
Dam Failure	0	0	0	0	0%
Ice Jams	1	0.01	68.00	0.01	1.47%
TOTAL	**26**	**0.39**	**2.62**	**0.38**	**38.24%**

Source: NOAA-NCDC 2018; CRREL 2018; NPDP 2018

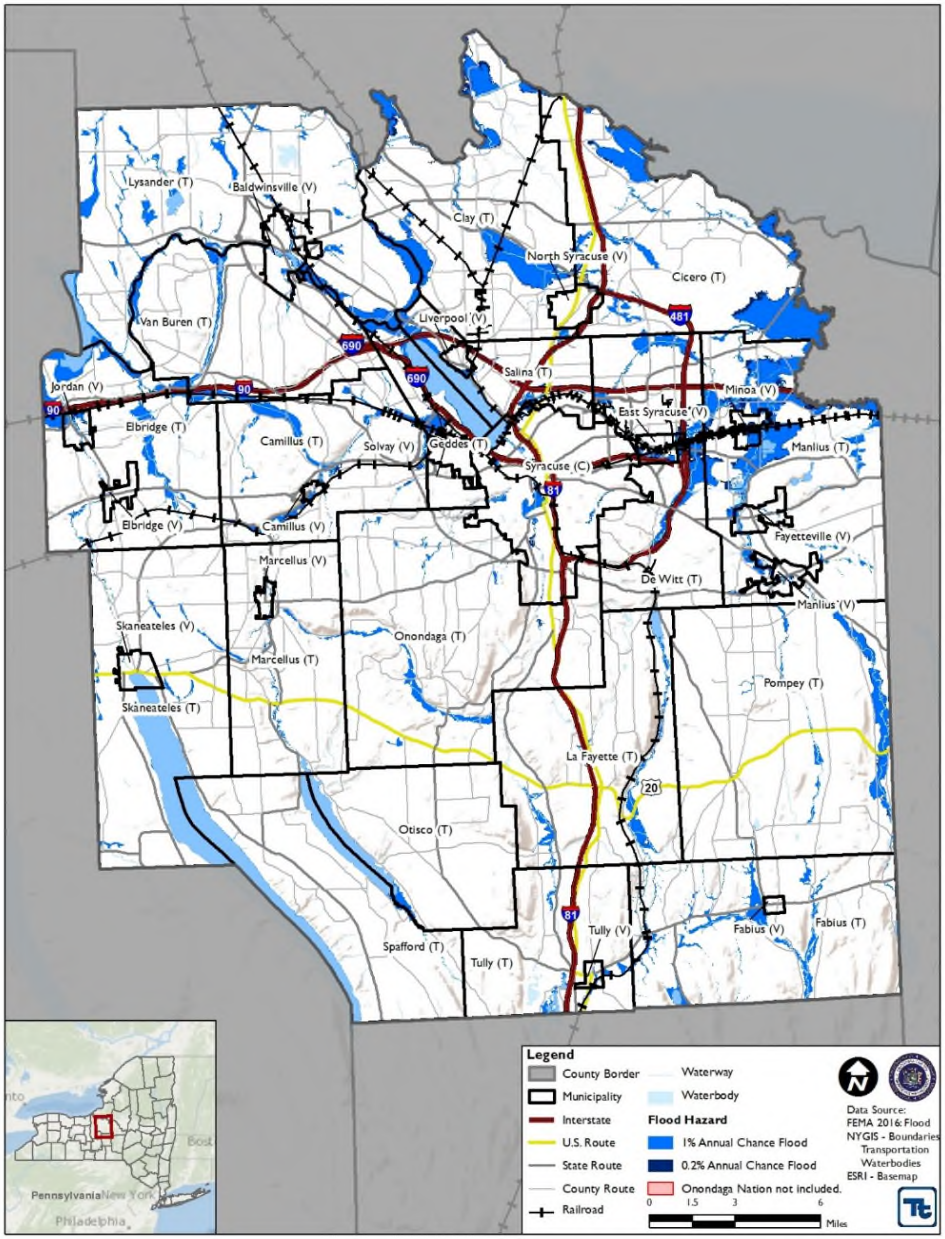
Estimated Exposure for Flood

- Estimated Exposure (People, Property)
  - 500,000+ acres land in the 1% annual chance floodplain (10.4%)
  - 15,700+ people in the 1% annual chance floodplain (3.4%)
  - 19,000+ exposed in the 0.2 annual chance floodplain (4.1%)
  - $3.2 Billion in exposed property(2.8% - 1% annual chance floodplain)
  - $4.4 Billion in exposed property (3.8% - 0.2% annual chance floodplain)
- Economic and Social Loss/Impact

  (1-Percent Annual Chance Flood)
  - $408 Million in estimated potential property damage
  - 19,000+ tons of debris
  - 12,000 people or 4,651 households displaced*
  - 561 people seeking shelter

**The 2010 Census enumerated 308.7 million people in the United States, 300.8 million lived in 116.7 million households for an average of 2.58 people per household.*

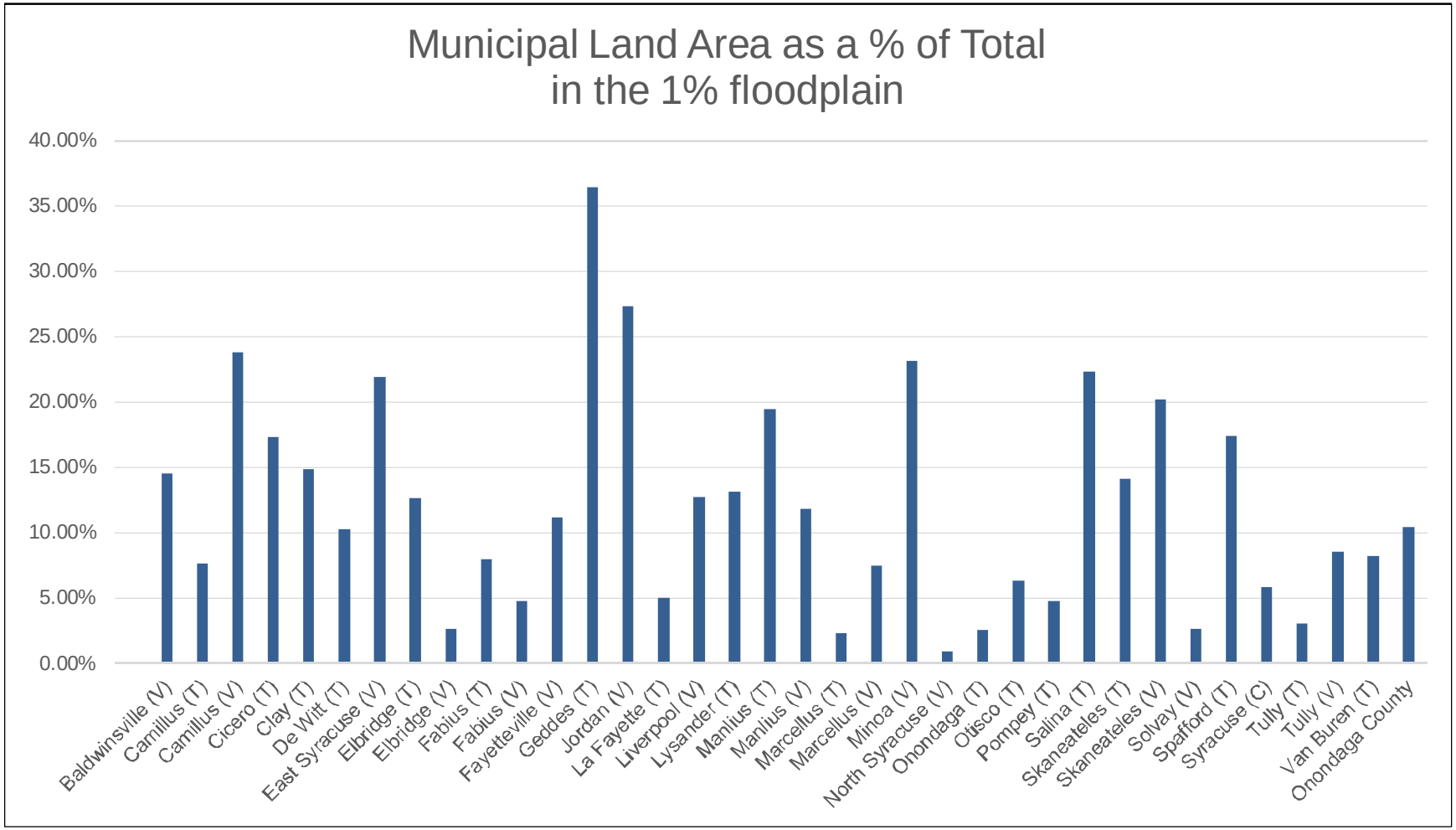
Flood Areas in Onondaga County



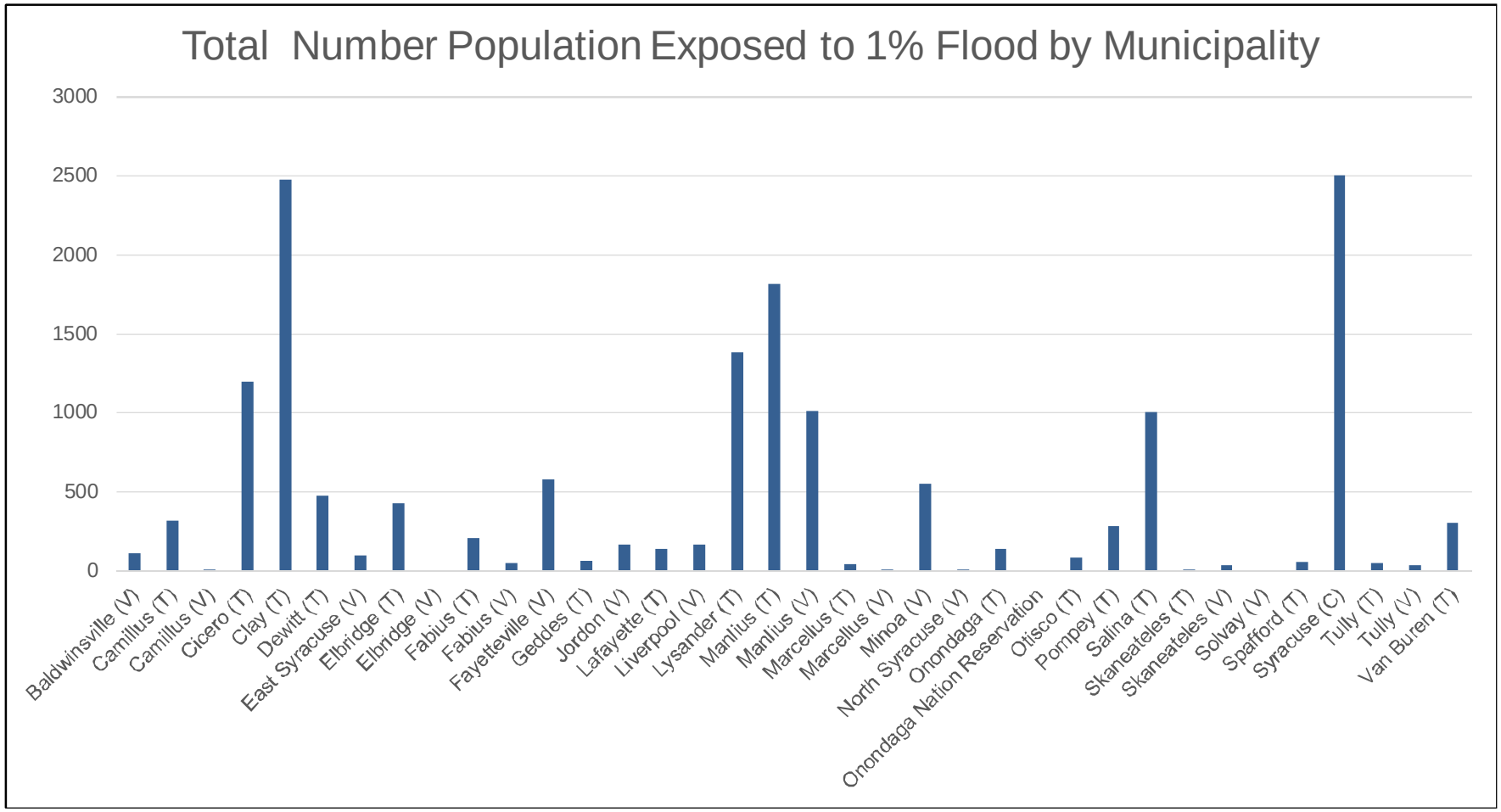
Top 5 Communities with Largest % of Population in the SFHA

1. Manlius (V) – 21.4% of population in SFHA
2. Minoa (V) – 16% of population in SFHA
3. Fabius (V) – 13.1% of population in SFHA
4. Fayetteville (V) – 13.1% of population in SFHA
5. Fabius (T) – 12.9% of population in SFHA

Flood Location by Municipality



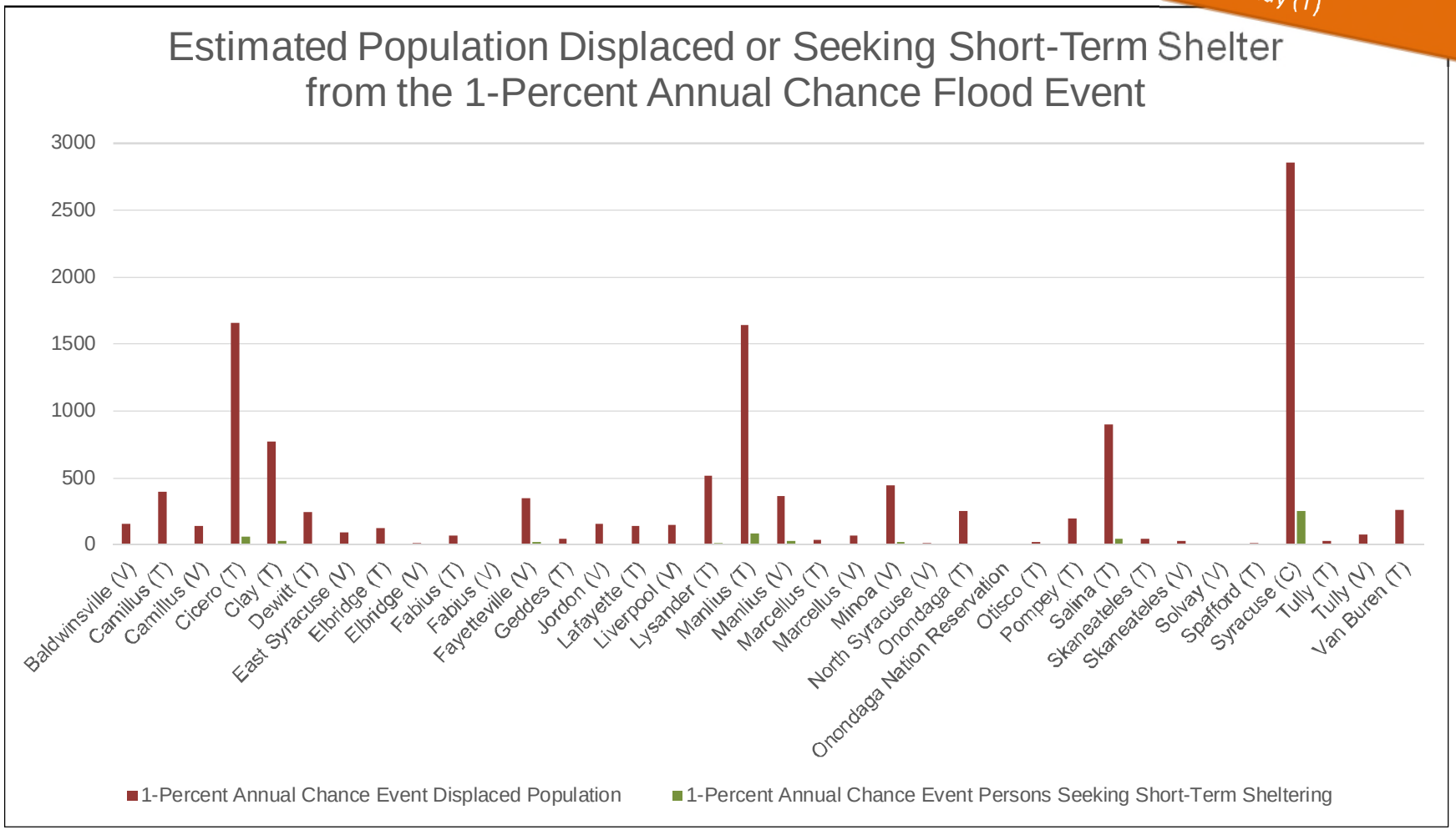
Impact on Population



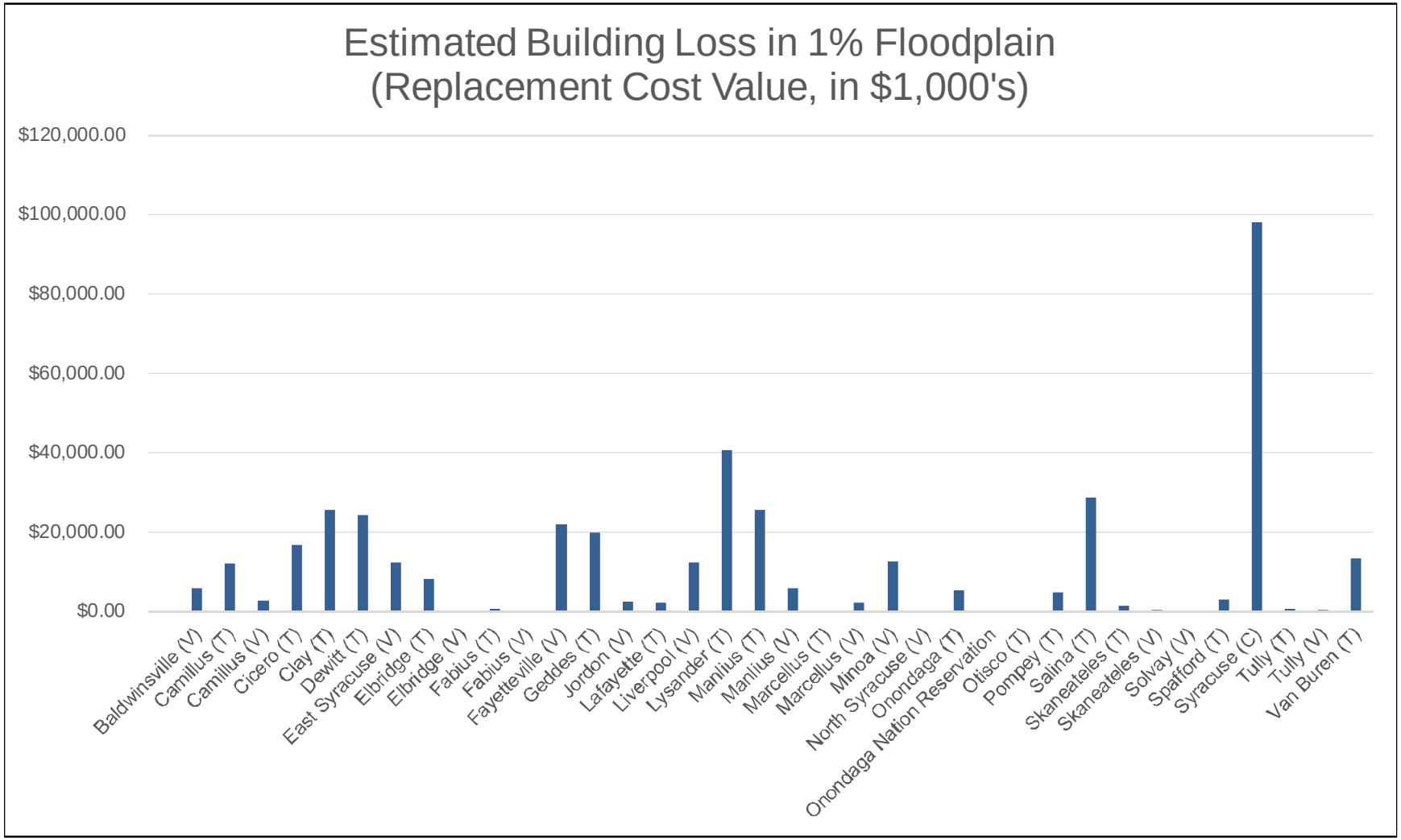
Impact on Population

Municipalities with Largest Number of Displaced Residents:

1. Syracuse (C)
2. Cicero (T)
3. Manlius (T)
4. Salina (T)
5. Clay (T)



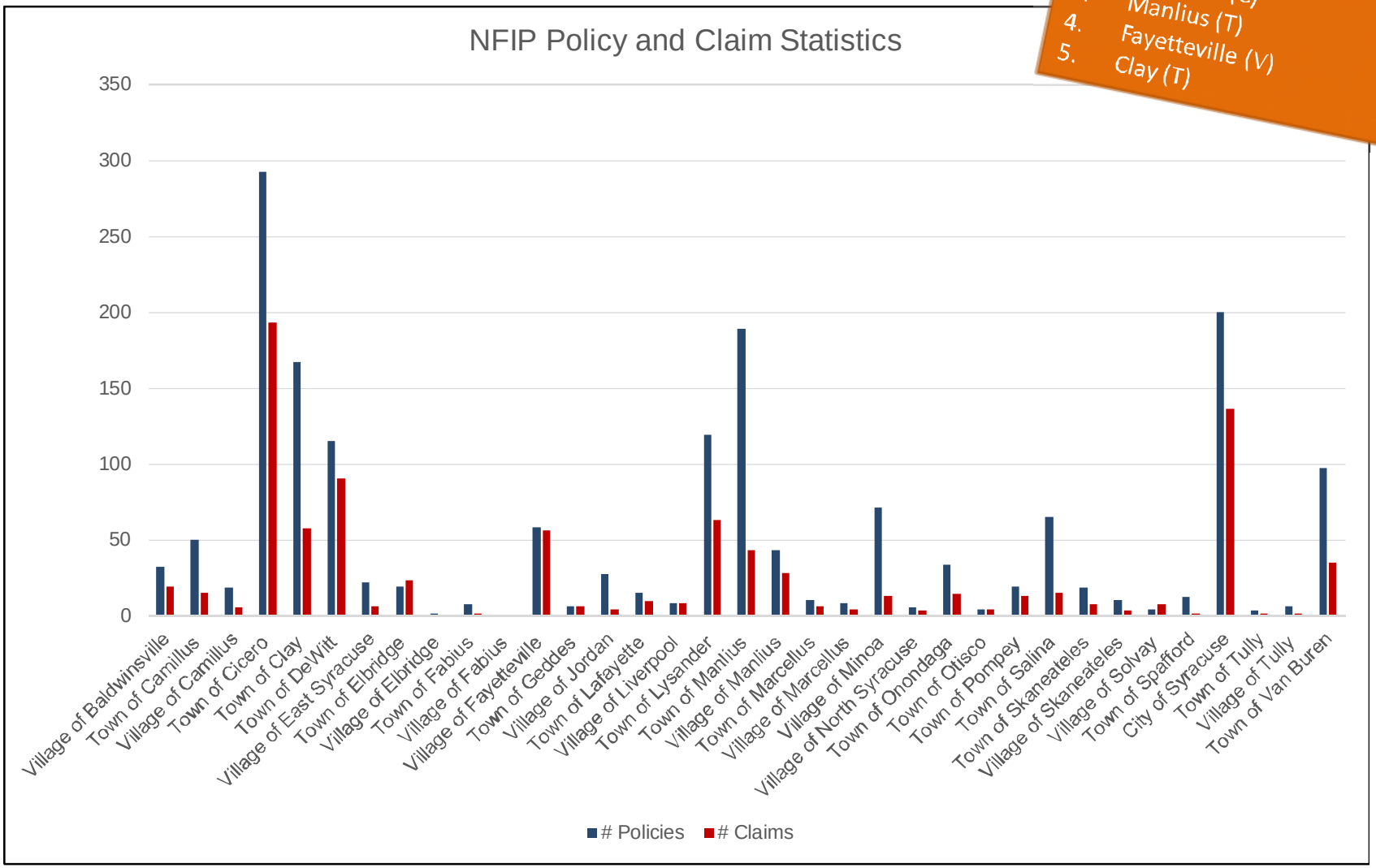
Impact on Building Stock



Flood Claim Stats

Municipalities with Largest Number of Claims:

1. Cicero (T)
2. Syracuse (C)
3. Manlius (T)
4. Fayetteville (V)
5. Clay (T)



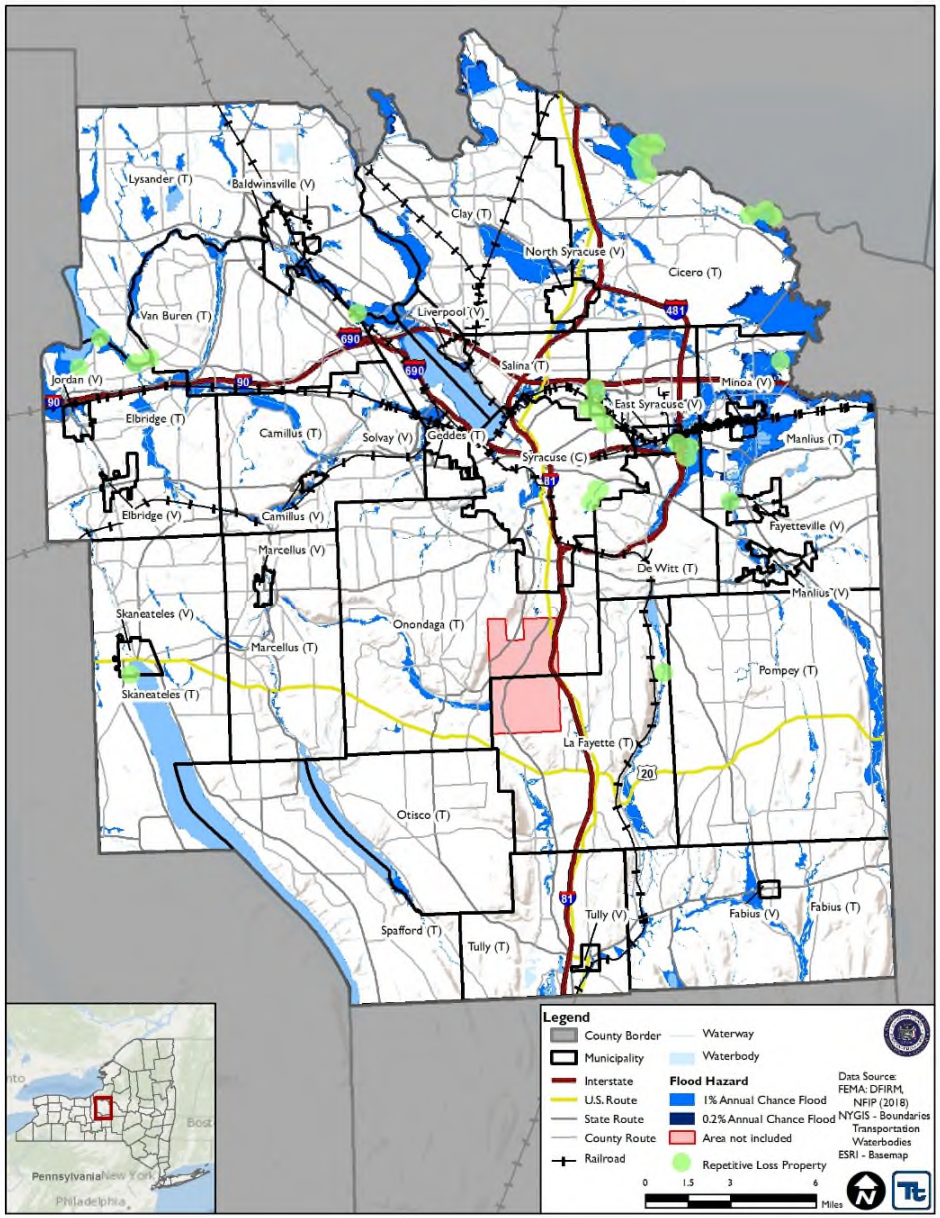
NFIP Claim Locations

NATIONAL FLOOD INSURANCE PROGRAM

Countywide Stats

- ✓ Policies: 1,753
- ✓ Claims: 889
- ✓ Total Losses: $6.5 Million

Number of RL/SRLs by Municipality		
Municipality	**# RL**	**#SRL**
T Cicero	23	0
T DeWitt	8	0
T Elbridge	2	0
T Lafayette	1	0
T Lysander	3	0
T Manlius	2	0
T Salina	1	0
V Skaneateles	1	0
City of Syracuse	5	0
County Total	**46**	**0**



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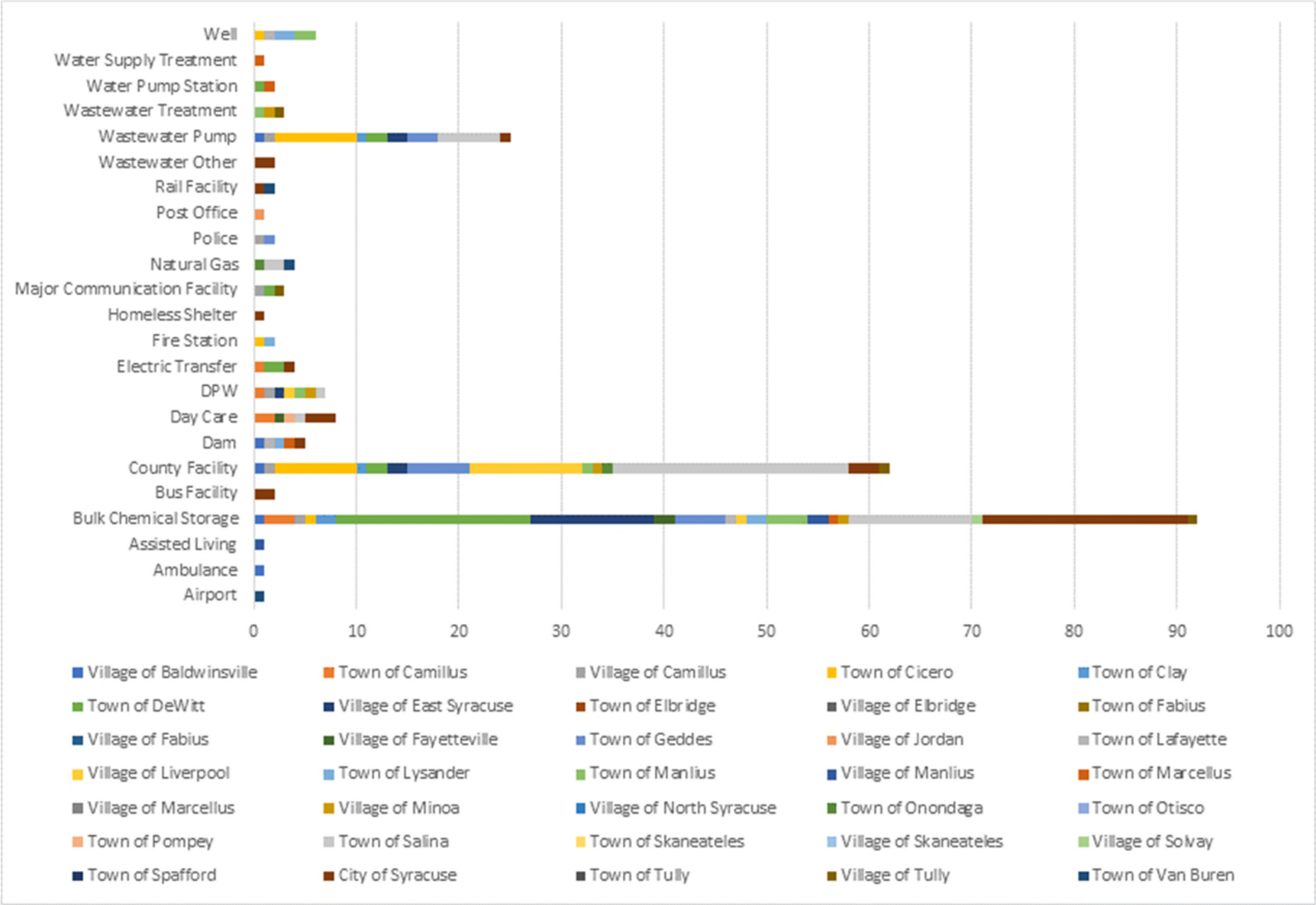

Well
Water Supply Treatment
Water Pump Station
Wastewater Treatment
Wastewater Pump
Wastewater Other
Rail Facility
Post Office
Police
Natural Gas
Major Communication Facility
Homeless Shelter
Fire Station
Electric Transfer
DPW
Day Care
Dam
County Facility
Bus Facility
Bulk Chemical Storage
Assisted Living
Ambulance
Airport
0
10
20
30
40
50
60
70
80
90
100
Village of Baldwinsville
Town of Camillus
Village of Camillus
Town of Cicero
Town of Clay
Town of DeWitt
Village of East Syracuse
Town of Elbridge
Village of Elbridge
Town of Fabius
Village of Fabius
Village of Fayetteville
Town of Geddes
Village of Jordan
Town of Lafayette
Village of Liverpool
Town of Lysander
Town of Manlius
Village of Manlius
Town of Marcellus
Village of Marcellus
Village of Minoa
Village of North Syracuse
Town of Onondaga
Town of Otisco
Town of Pompey
Town of Salina
Town of Skaneateles
Village of Skaneateles
Village of Solvay
Town of Spafford
City of Syracuse
Town of Tully
Village of Tully
Town of Van Buren

Severe Storm

- History
  - 10 federally declared severe storm events since 1954
  - 288 severe storm events between January 1, 1950 and May 31, 2018
- Vulnerability Assessment Results
  - $100.5 Million Property Damages from events (1950 -2018)
  - Annualized Losses
    - $21,615 (Hazus 4.2)

Severe Storm Event History

Extent of Severe Storms in Onondaga County	
Largest Hailstone on Record	2.75 inches
Strongest Tornado on Record	F3
Highest (non-tornado) Wind Speed on Record	80 mph

FEMA Declaration Number	Date(s) of Event	Event Type
DR-338	June 23, 1972	Tropical Storm Agnes
DR-447	July 23, 1974	Severe Storms & Flooding
DR-487	October 2, 1975	Storms, Rains, Landslides & Flooding
DR-1095	January 19-30, 1996	Severe Storms And Flooding
DR-1244	September 7, 1998	NY - Severe Wx, Sept 7, 1998
DR-1335	May 3-August 12, 2000	Severe Storms & Flooding
DR-1534	May 13-June 17, 2004	Severe Storms & Flooding
DR-1564	August 13-September 16, 2004	Severe Storms & Flooding
DR-1993	April 26-May 8, 2011	Severe Storms, Flooding, Tornadoes, & Straight-line Winds
EM-3351	October 27-November 8, 2012	Hurricane Sandy

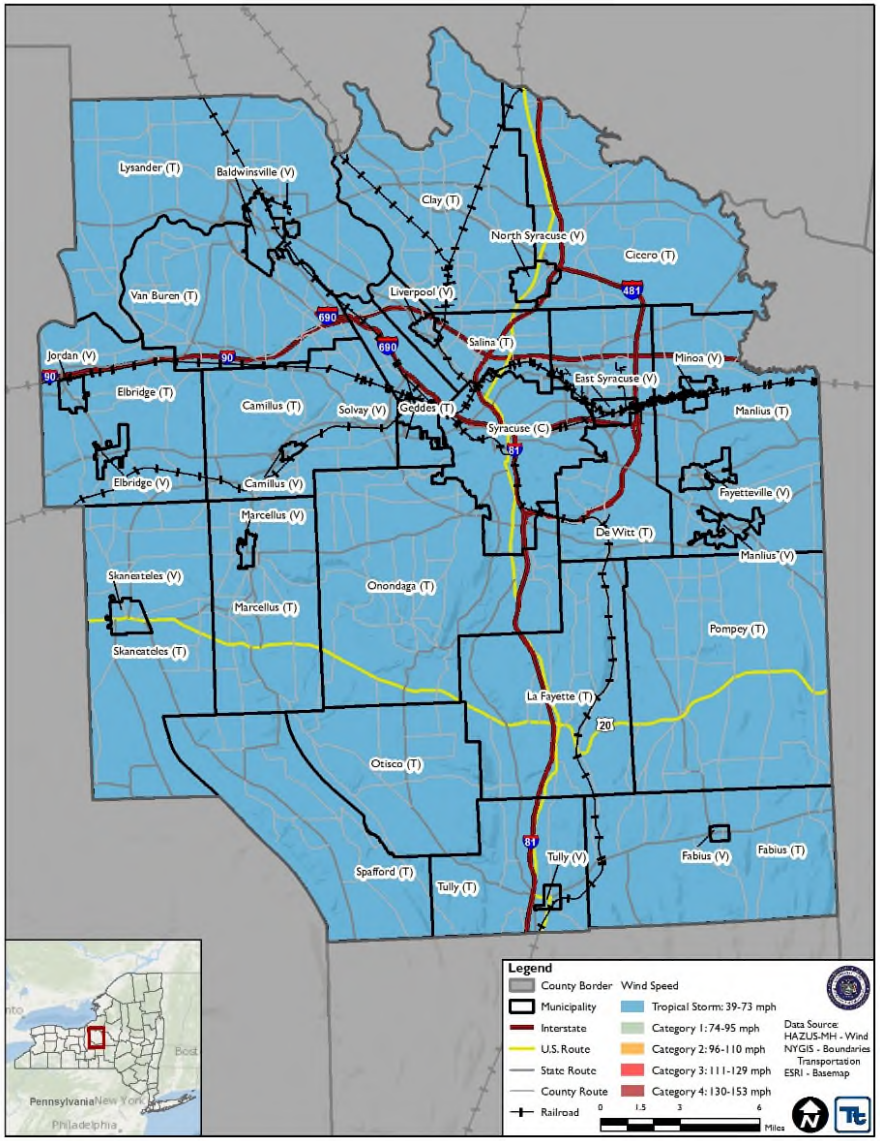
Severe Storm Impact

Hazard Type	Number of Occurrences Between 1950 and 2018	Total Fatalities	Total Injuries	Total Property Damage ($)	Total Crop Damage ($)
Funnel Cloud	1	0	0	$0	$0
Hail	78	0	3	$135,000	$15,000
Heavy Rain	3	0	0	$0	$0
High Wind	19	0	1	$555,000	$0
Hurricane*	0	0	0	$0	$0
Lightning	17	1	7	$342,000	$0
Strong Wind	2	0	0	$10,000	$0
Thunderstorm Wind	160	5	21	$94.165 million	$0
Tornado	8	0	5	$5.288 million	$0
Tropical Depression*	0	0	0	$0	$0
Tropical Storm*	0	0	0	$0	$0
TOTAL	**288**	**6**	**37**	**$100.495 million**	**$15,000**

Source: NOAA-NCEI 2018; NHC 2018
Note: The numbers listed above include events that were reported to NOAA. They may not represent all events that occurred in the County. Please note that one event may include multiple impacts in the county.
*Number of events were collected from NHC and includes events that occurred within 65 nautical miles of Onondaga County.

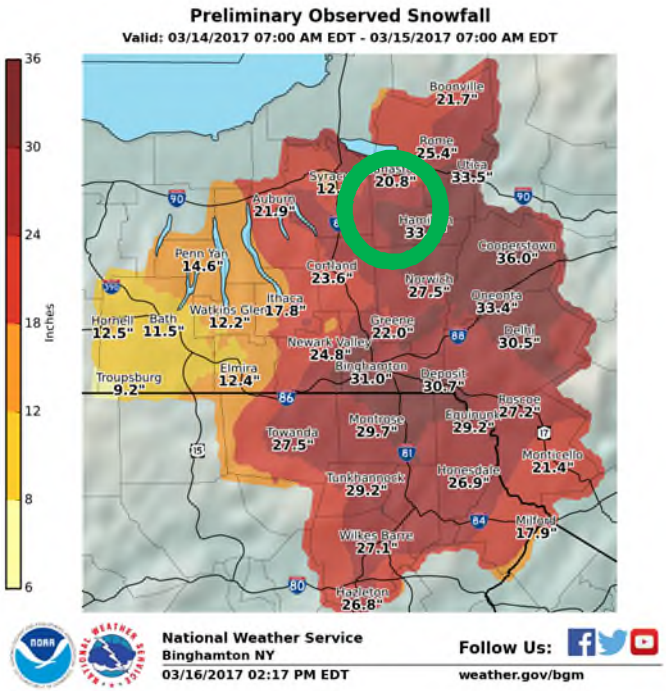
Severe Storm

- Estimated 100-year mean return period (MRP) event losses:
  - Wind speeds below 39 mph
  - No damages or debris estimated
- Estimated 500-year MRP event losses:
  - Wind speeds between 52 and 58 mph (Tropical Storm)
  - $25,000 (Structure Only) in building damages
  - Over 362 tons of tree debris
  - 3347 cu yards of eligible tree volume debris



Severe Winter Storm

- 23 winter storm events 2011 – 2018*
- 3 FEMA winter-related disaster declarations since 1954
  - Severe Blizzard (March 1993)
  - Snowstorms (December 2002-January 2003)
  - Severe Winter Storm and Snowstorm (March 2017)
- Exposure
  - Entire County is vulnerable to heavy snow and ice storms
  - Over $70 Billion in structural value
  - Impacts
    - Vulnerable populations
    - Damage to roofs and building frames
    - Power outages
    - Cost of snow/ice removal
    - Damage to roadways and infrastructure



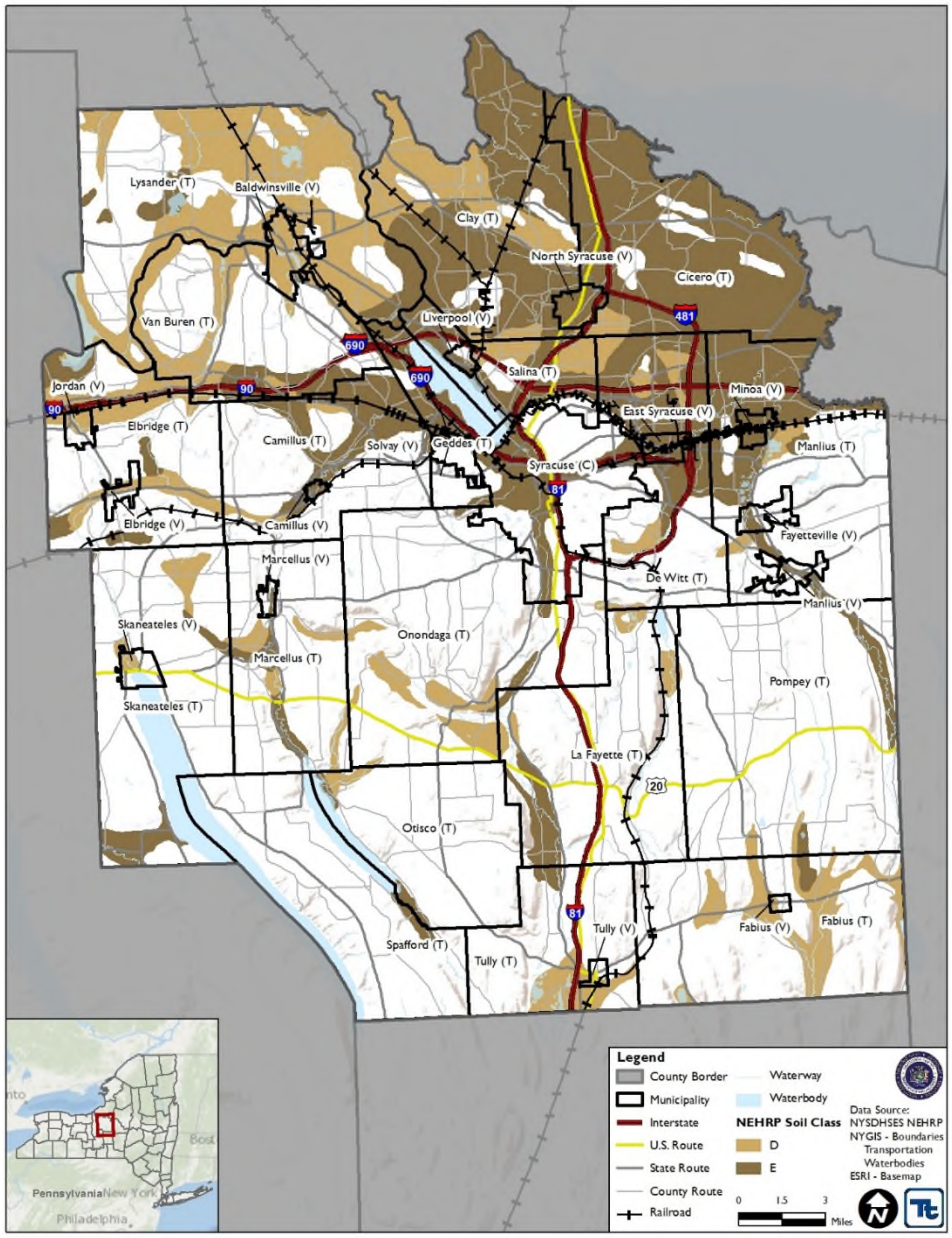
FEMA 2018; *NOAA-NCEI 2018

Earthquakes

- Population most susceptible to the impacts of earthquakes are those living in areas of National Earthquake Hazards Reduction Program (NEHRP) Class D and E soils. These types of soils can amplify ground shaking.

Overall County Impacts

- Over 178,000 acres of land in Class E and E soils
- 212,544 people living in Class D and E Soils
- 100,341 buildings located in Class D and E Soils
- Total damages:
  - Annualized - $1.1 million
  - 250-year event - $33.2 million
  - 1,000-year event - $246.3 million



Earthquake History

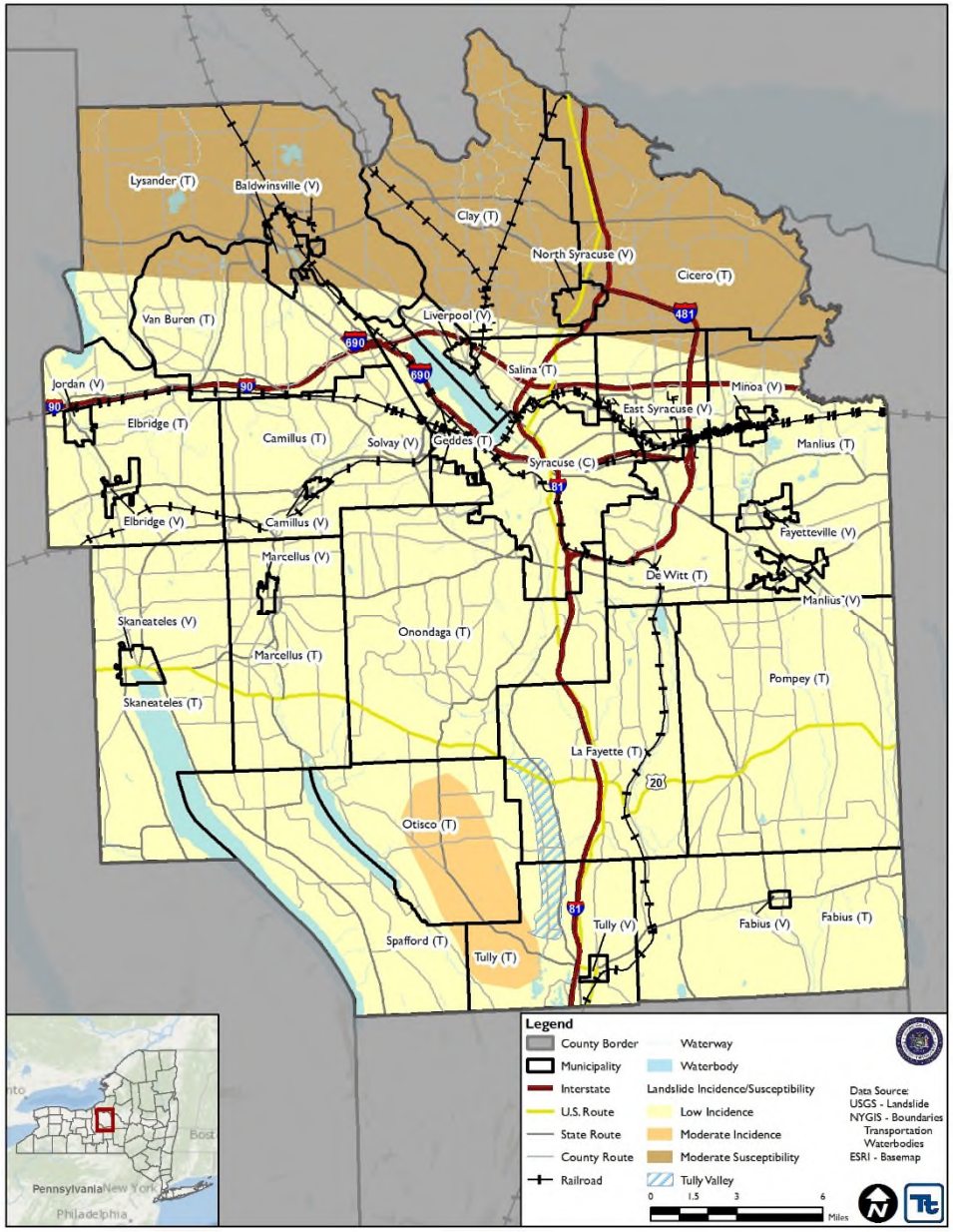
- While the County does not have a history of earthquakes with epicenters in the county, residents have felt events occurring outside of Onondaga County.

Dates of Event	Event Type	Location	FEMA Declaration Number (if applicable)	County Designated?	Losses / Impacts
June 23, 2010	Earthquake	Ontario-Quebec border, Canada	No	No	A magnitude 5.4 earthquake at the Ontario-Quebec border region in Canada was felt throughout the northeast, including Onondaga County. Shaking was felt throughout the county.
August 23, 2011	Earthquake	Richmond, Virginia	No	No	A magnitude 5.8 earthquake centered northwest of Richmond, Virginia was felt throughout the East Coast. Shaking was felt throughout the county.
May 17, 2013	Earthquake	Shawville, Canada	No	No	A magnitude 5.1 earthquake in Shawville, Canada was felt in portions of New York, including Onondaga County. Shaking was felt throughout the county with some reports of items falling off shelves.

Ground Failure Extent

Overall, Onondaga County, as a whole, has a low landslide incidence; however, the steep valley walls have a moderate incidence.
Onondaga County has been ranked as the 9th county in New York State most threatened by landslides and vulnerable to landslide loss (NYSDPC, 2008).

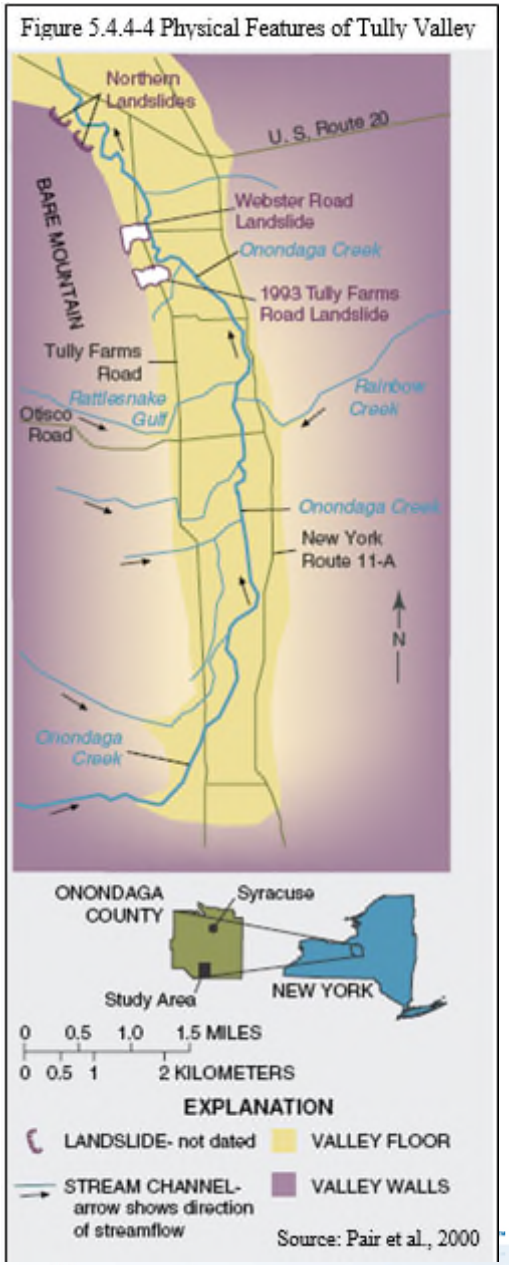
Landslides have been known to occur nearly every year within the Onondaga Lake Watershed, located in southern Onondaga County, particularly in the Tully Valley area within the Town of Lafayette (Onondaga Lake Partnership [OLP], 2005-2006).



(Ground Failure) *include in Flood?*

- Landslide
- Land Subsidence
- Mud Boils (Mud Volcanoes)
- Erosion
- Debris Flows (Mudslides)
- Sink Holes
- **Localized Exposure**

Flood Related Issues (wash outs, landslides, mud boils)



Drought

➢ USDA Disaster Declaration History (2012 to 2017) for Onondaga County

Date of Event	Event Type	USDA Designation Number
June 2012	Drought, Excessive Heat	S3427
June 2012	Drought	S3441
August 2016	Drought	S4023

2012 Census of Agriculture for Onondaga County

- Number of Farms = 681
- Land in Farms = over 150,000 acres
- Generate $152 million in sales in 2012
- Droughts lead to dryer conditions which cause crops to die and farmers losing money

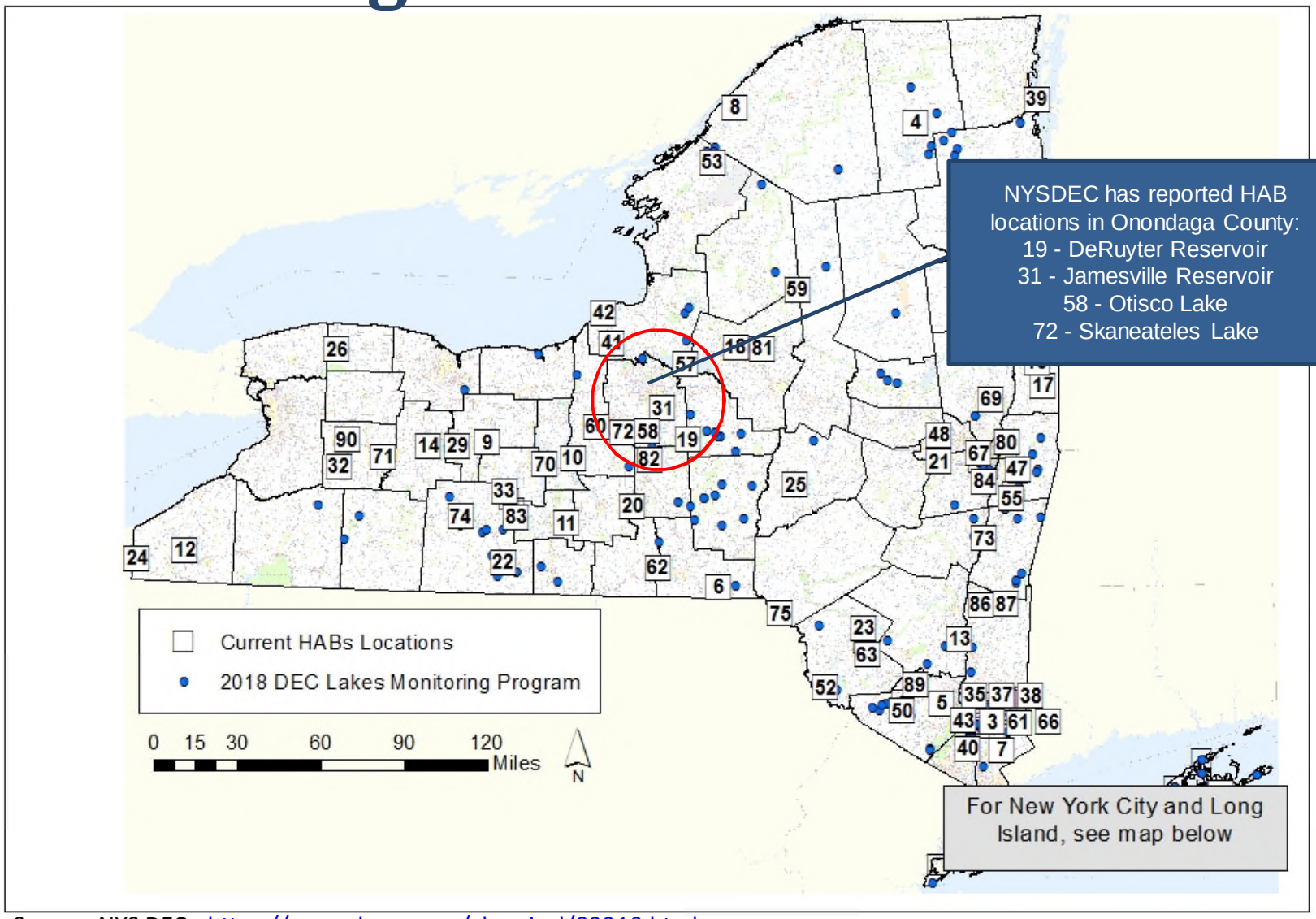
Water Supply and Quality

- Drought conditions can lead to water supply shortages
- Both ground water and surface water supplies are impacted

Recreation

- Lower water levels can restrict boating and water sports
- Stress to ecosystem can impact fishing

Harmful Algal Blooms



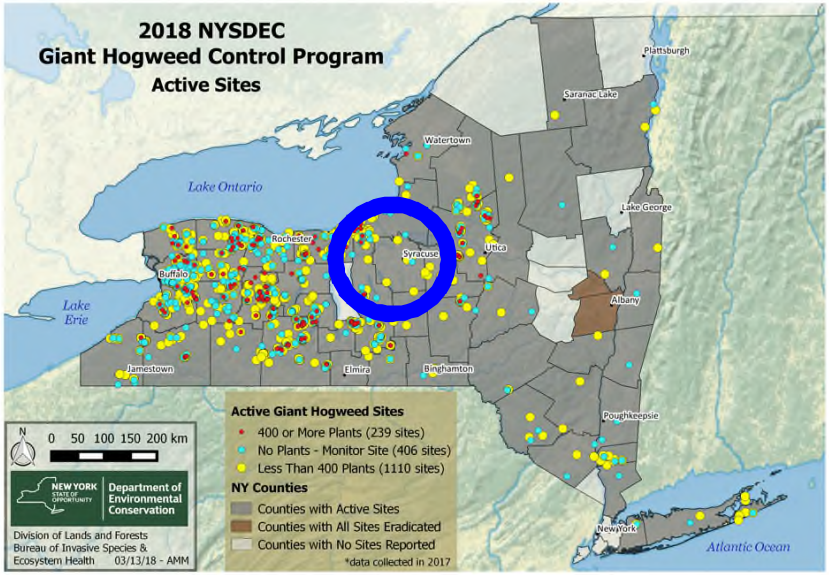
Source: NYS DEC - https://www.dec.ny.gov/chemical/83310.html

Harmful Algal Bloom Events in Onondaga County or Lakes Bordering Onondaga County, 2012 to 2018

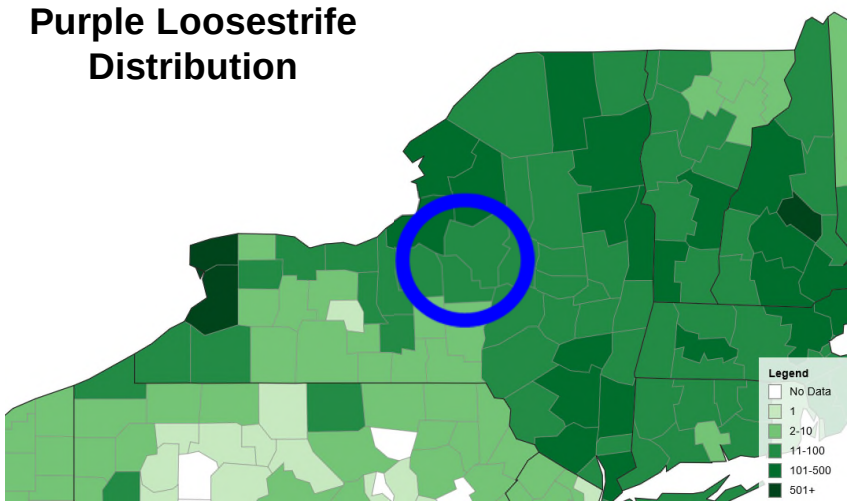
Dates of Listing of Event	Waterbody	Description
2012	Oneida River	S (Suspicious Bloom)
2013	Oneida Lake	C (Confirmed Bloom)
2013	Oneida River	S (Suspicious Bloom)
2014	Oneida Lake	S (Suspicious Bloom)
2015	Oneida Lake	S (Suspicious Bloom)
2015	Otisco Lake	S (Suspicious Bloom
2016	Hiawatha Lake	C (Confirmed Bloom)
2016	Oneida Lake	S (Suspicious Bloom)
2016	Oneida River	HT (Confirmed with High Toxins Bloom)
2016	Tully Lake	C (Confirmed Bloom)
2017	De Ruyter Reservoir	HT (Confirmed with High Toxins Bloom)
2017	Hiawatha Lake	HT (Confirmed with High Toxins Bloom)
2017	Jamesville Reservoir	C (Confirmed Bloom)
2017	Oneida Lake	HT (Confirmed with High Toxins Bloom)
2017	Otisco Lake	C (Confirmed Bloom)
2017	Skaneateles Lake	HT (Confirmed with High Toxins Bloom)
2017	Tully Lake	C (Confirmed Bloom)
2018	Hiawatha Lake	No additional information available
2018	Jamesville Reservoir	C (Confirmed Bloom) Bloom reported to have ended on June 23.
2018	Skaneateles Lake	C (Confirmed Bloom) Bloom reported to have ended on August 6
2018	Oneida Lake	S (Suspicious Bloom) Bloom initially identified in mid-September.

Invasive Species

- Invasive Plants
  - Giant Hogweed
  - Purple Loosestrife
  - Kudzu
  - Wild Parsnip
- Insect Borne Disease
  - West Nile Virus
  - Lyme Disease
  - Eastern Equine Encephalitis (EEE)

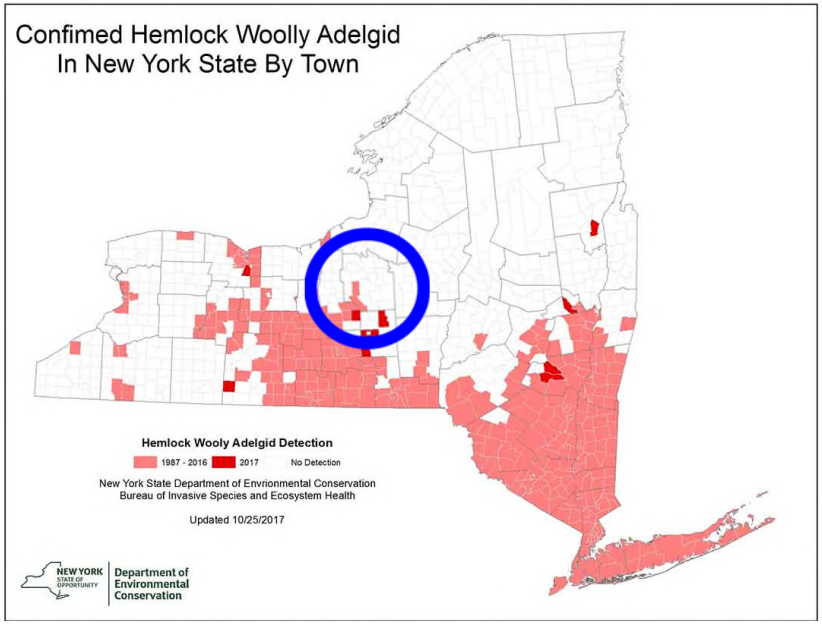


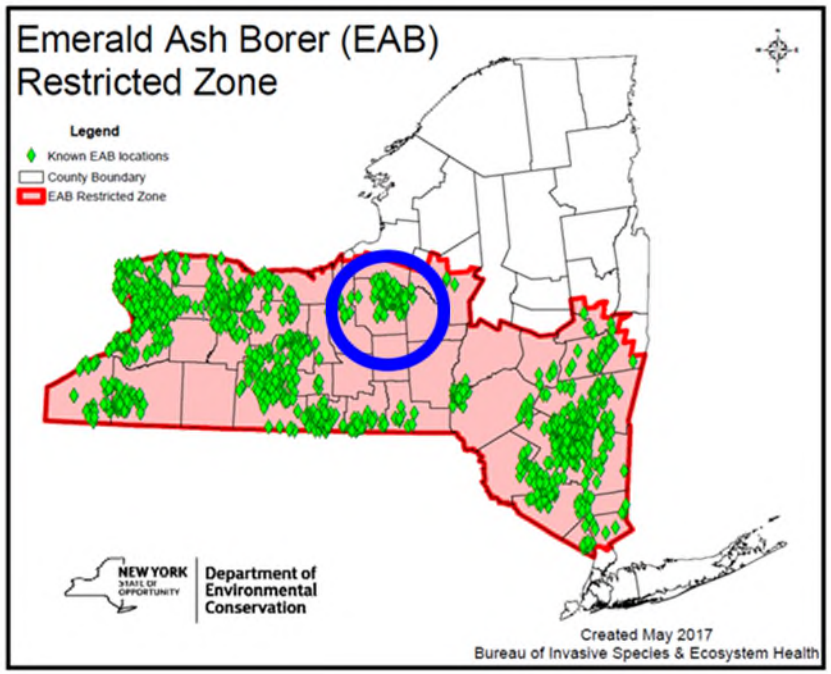
Purple Loosestrife Distribution



Invasive Species

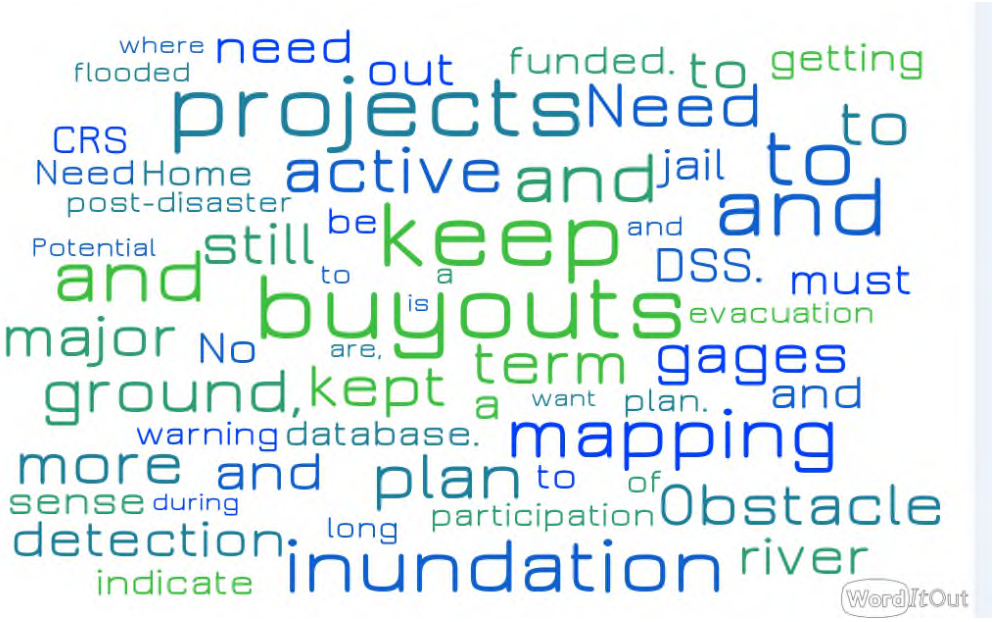
- Invasive Animals/Insects
  - Emerald Ash Borer
  - Hemlock Wooly Adelgid
  - True Army Worm
  - Brown Marmorated Stink Bug
  - Asian Longhorn Tick
  - Lone Star Tick





Strengths and Weaknesses Obstacles and Opportunities (SWOO) Update

- ***What are the Strengths, Weaknesses, Obstacles and Opportunities in Addressing Flood, Severe Storm, Severe Winter Storm Earthquake, Ground Failure, Algal Bloom, and Invasive Species Hazards?***
- ***Please refer to handout for discussion.***



Public and Agency Feedback

- No responses as of September 14, 2018

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Ranking of Hazards

What is your mitigation priority to reduce the impacts of natural hazards?

Ranking = [(Population Impact + Property Impact + Economy Impact) x 30% + Capability x 30% + Climate Impact x10%] + Probability of Occurrence x 30%

Hazard Probability of Occurrence

Rating	Probability	Definition
0	Unlikely	Hazard event is not likely to occur or Hazard event is unlikely to occur with less than a 1% annual chance probability
1	Rare	Hazard event has between 1 and 10% annual probability
2	Occasional	Hazard event ha between 10 and 100% annual probability
3	Frequent	Hazard event has 100% annual probability; may occur multiple times per year

Ranking of Hazards

What is your mitigation priority to reduce the impacts of Natural Hazards?

Category	Weighting Factor	Low Impact (1)	Medium Impact (2)	High Impact (3)
Population	3	<14% of developed land area is exposed to a hazard due to its extent and location	15% to 29% of your developed land area is exposed to a hazard due to its extent and location	30% or more of your developed land area is exposed to a hazard due to its extent and location
Property	2	Property exposure is 14% or less of the total replacement cost for your community	Property exposure is 15% to 29% of the total replacement for your community	Property exposure is 30% or more of the total replacement cost for your community
Economy	1	Loss estimate is 9% or less of the total replacement cost for your community	Loss estimate is 10% to 19% of the total replacement cost for your community	Loss estimate is 20% or more of the total replacement cost for your community

Ranking of Hazards, continued

What is your mitigation priority to reduce the impacts of Natural Hazards?

Category	Weighting Factor	Low Impact (1)	Medium Impact (2)	High Impact (3)
Capability	2	Weak/outdated/inconsistent plans, policies, codes/ordinances in place; no redundancies; limited to no deployable resources; limited capabilities to respond; long recovery	Plans, policies, codes/ordinances in place and meet minimum requirements; mitigation strategies identified but not implemented on a widespread scale; County/Jurisdiction can recover but needs outside resources; moderate County/Jurisdiction capabilities	Plans, policies, codes/ordinances in place and exceed minimum requirements; mitigation/protective measures in place; County/Jurisdiction has ability to recover quickly because resources are readily available and capabilities are high
Climate Change	1	No local data is available; modeling projects are uncertain on whether there is increased future risk; confidence level is low (inconclusive evidence)	Studies and modeling projections indicate a potential for exacerbated conditions due to climate change; confidence level is medium to high (suggestive to moderate evidence)	Studies and modeling projections indicate exacerbated conditions/increased future risk due to climate change; very high confidence level (strong evidence, well documented and acceptable methods)

County-wide Risk Ranking

HAZARD	RISK ASSESSMENT CATEGORY													RELATIVE RISK FACTOR
	PROBABILITY		IMPACT							ADAPTIVE CAPACITY		CHANGING FUTURE CONDITIONS		
			Population		Built Environment		Economy		Total					
	Numeric Value	Score	Numeric Value	Score	Numeric Value	Score	Numeric Value	Score		Numeric Value	Score	Numeric Value	Score	
Drought	3	0.9	3	9	1	2	2	2	3.9	2	0.6	2	0.2	**5.6**
Earthquake	1	0.3	1	3	1	2	1	1	1.8	2	0.6	2	0.2	**2.9**
Flood	2	0.6	1	3	1	2	2	2	2.1	3	0.9	3	0.3	**3.9**
Geologic														
Harmful Algal Bloom	3	0.9	2	6	0	0	2	2	2.4	1	0.3	2	0.2	**3.8**
Invasive Species	3	0.9	1	3	0	0	2	2	1.5	1	0.3	2	0.2	**2.9**
Severe Storm	3	0.9	2	6	2	4	1	1	3.3	2	0.6	2	0.2	**5**
Severe Winter Storm	3	0.9	2	6	2	4	1	1	3.3	1	0.3	1	0.1	**4.6**

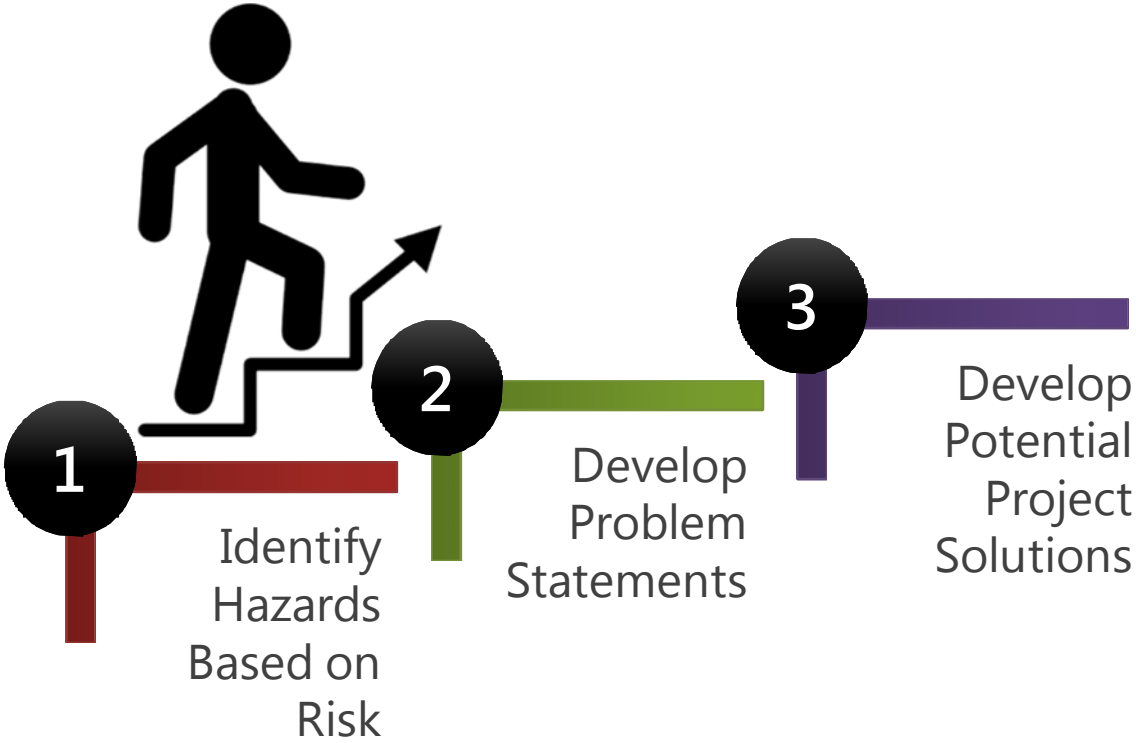
Low	<3.9
Medium	3.9-4.9
High	>=5

Municipal Hazard Ranking Input

What is the greatest concern for your jurisdiction?

Hazard of Concern	Importance/Rank	Why?
Flood		
Severe Storm		
Severe Winter Storm		
Earthquake		
Geologic		
Drought		
Algal Bloom		
Invasive Species		

Breakout Session



This is where we are heading….

Mitigation Toolbox → **Mitigation Brainstorming** → **Updated Mitigation Strategy** → ***Implementation***

- 2018 Goals
- 2013 Mitigation Strategy
- **Risk Assessment Results**
- Capability Assessment Results
- Subject Matter Expertise
- Stakeholder Public Input
- Existing Plans/Integration
- FEMA Resources

What is Next?
Problem Statements to Support
Updated Mitigation Strategy

- One worksheet needs to be completed per mitigation action
- **Focus on your problems**
- Quality, not quantity
- Provide details to support the issues and to help define solutions
- We will provide this information to NYSDHSES to prepare for our next meeting on October 10th

Any Questions?

Onondaga County Project Contact	
Megan Costa Syracuse-Onondaga County Planning Agency (315) 435-8571 | megancosta@ongov.net	Ilana Cantrell Syracuse-Onondaga County Planning Agency (315)435-8573 | ilanacantrell@ongov.net
Tetra Tech Project Contacts	
Cynthia Addonizio-Bianco, CFM 6 Century Drive, Parsippany, NJ 07054 (973) 630-8044 | cynthia.bianco@tetratech.com	Heather Apgar, CFM 6 Century Drive, Parsippany, NJ 07054 (973) 630-8046 | heather.apgar@tetratech.com

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Onondaga County Multi-Jurisdictional Hazard Mitigation Plan Update Minutes of Meeting

Purpose of Meeting:	Risk Assessment Meeting
Location of Meeting:	Onondaga County Syracuse, New York
Date/Time of Meeting:	September 20, 2018; 2:00 p.m. – 4:15 p.m.

Attendees:

Gregg Humphrey, CEO, Village of Baldwinsville
Doug Miller, Engineer, Town of Manlius & DeWitt
Chris Shields, CEO, Village of East Syracuse
Erica Tauzer, EDR (Planner), EDR
Samantha Holcomb, Senior Environmental Analyst, EDR
Floyd Duger, Councilor, Town of Eldridge
Michael E. Jones, CEO, Fayetteville
Allen Yager, Town Engineer, Town of Lysander
John Houser, Codes Officer, Town of Marcellus
Bill Reagan, CEO, Village of Liverpool, Camillus/Marcellus
Mike Murnane, Codes Enforcement, Village of Minoa
Eric Cushing, Operator, Village of Minoa
Brian Johnstone, CEO, Village of North Syracuse
Eric Schwitheis, Sanitary Engineer, OCWEP
Ilana Cantrell, Syracuse-Onondaga Co Planning
Kathleen Bertuch, CNY Regional Planning & Development Board
Michael DiGiulio, GIS Analyst, Tetra Tech
Megan Costa, Planner, Syracuse-Onondaga Co Planning
Holly Granat, Env. Pol. Analyst, Onondaga County
Travis Glazer, Director, OC Office of Environment
Robert Petrovich, OC DOT
Shannon Harty, DMO, Village of Skaneateles
Rick Penhall ., DPW Supervisor, Village of Solvay
Russel Houck, Facilities Engineer, City of Syracuse
Mary Robison, City Engineer, City of Syracuse
Cynthia Bianco, Planner, Tetra Tech
Ralph Lamson, CEO, Village/Town of Tully
Harold Kiehl, Supt Public Works, Village of Tully

Agenda Summary: To discuss the Hazard Mitigation Plan update process, project status, discuss the risk assessment and risk ranking, and development of hazard problem statements by each community.

Item No.	Description
1.	**Welcoming Remarks** Tetra Tech welcomed attendees to the Planning Committee Risk Assessment Meeting for the Onondaga County Hazard Mitigation Plan update. Attendees were given copies of the presentation, mission statement and goals/objectives packet, risk assessment overview handouts, SWOO handout, risk ranking handout, and minutes of last meeting in a handout packet.
2.	**Stakeholder and Public Outreach** The County reminded the Attendees of the SOCPA HMP webpage, that the Citizen Survey is now open, and that the Stakeholder links have been distributed. The attendees were requested to continue to distribute the outreach materials to their communities to receive public input. An Onondaga County HMP brochure was created to aid in public engagement to simplify the participation process. Tetra Tech informed the committee the purpose of the meeting was to provide an update on the project status, partake in the SWOO exercise, review the risk assessment results, and help begin the process of creating mitigation actions and addressing hazard vulnerability.
3.	**Project Status** Homework Status • County is working on its worksheets

	• No response from Otisco, Spafford, Onondaga Nation ○ The County advised that Otisco and Onondaga Nation may not be participating Input is missing input from the Towns of Camillus, Fabius, Lysander, Otisco, Pompey, Salina and Van Buren. Villages of Skaneateles, Solvay
4.	**Risk Assessment Overview** Overview of County Population, Land-Use, Vulnerable Populations (Disabled; Low-Income) • Tetra Tech – one of the purposes of the plan is to determine locations for temporary housing for populations that require it after an event – locations where FEMA can place trailers. Tetra Tech informed the attendees of the discussion to move ground failure into the flood hazard, as recent events have been due to a localized concern (Tully Mudboil), and County-wide impacts are mostly seen as a result of flooding / snow melt. Tetra Tech provided explanation of the vulnerability assessment process and what goes into the exposure analyses and HAZUS-MH models and how they estimate impacts and losses for the County. Flood • Tetra Tech provided an overview of flood history for the County, future flood probability, and risk assessment results. ○ Tetra Tech asked the attendees to provide input as to events that may not be included into the databases used to pull past events for the plan that resulted in damages or impacts to the community. • Tetra Tech explained the State Requirement for temporary housing as it can pertain to the potential displacement and sheltering needs from a County-wide flood event. • Tetra Tech informed attendees that Critical Facilities located within the floodplain must be protected to the 500-year level. An action is required in the plan that addresses each facility and how mitigation will be handled. Severe Storm • Tetra Tech provided an overview of severe storm history for County, future probability, and risk assessment results • Other potential source for wind speeds? Labor Day event may be higher than the record reported. Severe Winter Storm • Tetra Tech provided overview of Severe Winter Storm History for County, future probability, and risk assessment results • Earthquake • Tetra Tech provided overview of Earthquake History for County and risk assessment results

	Ground Failure • Tetra Tech explained that some ground failure events are more localized issue for Tully Valley and County-wide vulnerability is low • Tetra Tech asked for communities to provide information regarding localized events, but attendees could not provide information at this time. Drought • Tetra Tech provided overview of Drought History and County-wide vulnerability to drought (agriculture, water supply, recreation). Harmful Algal Blooms • Tetra Tech provided overview of Harmful Algal Bloom History. Invasive Species • Tetra Tech informed attendees that focus is on invasive species affecting vegetation and infrastructure, not health • Tetra Tech informed attendees that the final list of species being looked at is to be determined. • Onondaga Co Office of the Environment – Onondaga County currently spends $750,000/yr on Ash Tree management (removal and inoculation).
5.	**SWOO** Tetra Tech explained the purpose of the SWOO and the differences between strengths and opportunities and weakness and obstacles. The Attendees were provided the outcomes of the SWOO from the last HMP plan with updates provided by the County. Tetra Tech informed attendees to review the handout and fill out the SWOO cards with information for each municipality. SOCPA will email the SWOO to attendees for comment.
6.	**Risk Ranking** Tetra Tech provided attendees an overview of the risk ranking process and factors that are included in determining the rankings. Tetra Tech discussed the changes to the process from the last HMP. Attendees were informed that these rankings were generated at the County level and instructed to try to determine their community's relative risks using the risk ranking handout. Tetra Tech informed attendees that through this process of determining their community's risk, they can then generate mitigation strategies to address the highest risk areas.
7.	**Problem Statements/Brainstorming:** Based on the results of the risk assessment and the history of impacts to community assets from natural hazards, each community was asked to develop problem statements and potential solutions for problems identified in their municipality. Tetra Tech will compile into an electronic version and send to each community. The problem statements are due to

	Ilana Cantrell on or before October 10th after which they will be sent to NYS DHSES to support productive discussions and development of action worksheets during the upcoming mitigation action workshop.
8.	**Adjournment**

ONONDAGA COUNTY, NEW YORK
MULTI-JURISDICTIONAL ALL-HAZARDS
MITIGATION PLAN 2019 UPDATE

Steering Committee Meeting #3 - Agenda
Meeting Date / Time: September 20, 2018 at 11:00am – 12:30pm
Location: John H. Mulroy Civic Center – Syracuse, NY

1. **Opening Remarks**

2. **Project Status -** where we are in the process, public outreach

3. **Finalize Hazards of Concern**

4. **Finalize Goals and Objectives**
    a. **Discuss and confirm County definition of resiliency as it relates to this planning process.**
5. **SWOO (Strengths, Weaknesses, Obstacles and Opportunities) related to limiting impact of Hazards of Concern**

6. **Discussion of Risk Assessment and Overall Ranking**

7. **Next Steps**

8. **Adjournment**

Onondaga County Project Contact

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(973) 630-8046 | heather.apgar@tetratech.com

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #3
MEETING DATE/TIME: 2018 11:00pm – 12.30pm
SIGN-IN SHEET

Initial for Attendance	Name	Title	Agency/Municipality	Phone Number	E-mail
	Joseph Awald	Commissioner	City of Syracuse Water Department	315-473-2609	jawald@syrgov.net
	Derek Baichi	Mayor	Association of Village Mayors	315-468-1651	derekbaichi@yahoo.com
	Kathy Bertuch	Planner	CNY Regional Planning & Development Board	315-422-8276	kbertuch@cnyrpdb.org
	David Bottar	Executive Director	CNY Regional Planning & Development Board	315-422-8276	dbottar@cnyrpdb.org
	Bruce Keplinger	-	CNY Regional Planning & Development Board	315-422-8276	bkeplinger@cnyrpdb.org
	Mark Burger	Director	Soil & Water Conservation District	315-457-0325	mburger@ocswcd.org
	Kelly Caramanna*	Safety Director	Onondaga County Water Authority	315-455-7001	kcaramanna@ocwa.org
	Ilana Cantrell	Planner	Syracuse-Onondaga County Planning Agency	315.435.8573	IlanaCantrell@ongov.net
	Mario Colone*	Program Manager	Syracuse Metro Transportation Council	315-422-5716	mcolone@smtcmpo.org
	Megan Costa	Assistant Director	Syracuse-Onondaga County Planning Agency	315.435.8571	MeganCosta@ongov.net
	James D'Agostino	Director	Syracuse Metro Transportation Council	315-422-5716	jdagostino@cnyrpdb.org
	Warren Darby		Oneida Lake Association		darbyny@aol.com
	Khristopher Dodson	Associate Director	SU Environmental Finance Center	315-993-8818	kadodson@syr.edu
	Dan Fitzpatrick	Gov. Relations Director/Town Supervisor	Association of Towns/LaFayette Town Supervisor	315-247-1600	fitzervisor@gmail.com
	Travis Glazier	Director	Onondaga County Office of the Environment	315-435-2647	TravisGlazier@ongov.net

*Co-Chairs
**Alternate Steering Committee Member

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #3
MEETING DATE/TIME: 2018 11:00pm – 12:30pm
SIGN-IN SHEET

Initial for Attendance	Name	Title	Agency/Municipality	Phone Number	E-mail
[illegible]	Joseph Rinefierd	Director	Onondaga County Department of Emergency Management	315-435-2525	JoeRinefierd@ongov.net
[illegible] for	Mary E. Robison	City Engineer	City of Syracuse	315-448-8200	mrobison@syrgov.net
	Beth Smith	Management Analyst	City of Syracuse, Management Analyst	315-448-8500	bsmith@syrgov.net
	Robert Tackman	Mayor	Association of Village Mayors/East Syracuse Mayor	315-437-3541	RTackman@villageofeastsyracuse.com
[illegible]	Robert Petrovich ~~Marty Voss~~	Deputy Commissioner	Onondaga County Department of Transportation	315-435-3205	robertpetrovich@ongov.net MartinVoss@ongov.net
[illegible]	Dan Wears*	Commissioner	Onondaga County Department of Emergency Management	315-435-2525	DanielWears@ongov.net
	Randy Wolken	Executive Director	Manufacturer's Association of CNY	315-474-4201	rwolken@macny.org
	Charles Wright	EM Director	New York Power Authority - Canals	318-410-5714	Charles.wright@canals.ny.gov
	Cynthia Addonizio-Bianco	Project Manager	Tetra Tech Inc.	973-630-8044	Cynthia.bianco@tetratech.com
MP	Mike DiGiulio	Planner/GIS Analyst	Tetra Tech, Inc.	973-630-8058	Mike.DiGiulio@tetratech.com
	Jane Rice		EDR	315-471-0688	jrice@edrdpc.com
[illegible]	Dan Kwasowski	Pl. Dir.			

*Co-Chairs
**Alternate Steering Committee Member

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Steering Committee Meeting #3
MEETING DATE/TIME: 2018 11:00pm – 12:30pm
SIGN-IN SHEET

Initial for Attendance	Name	Title	Agency/Municipality	Phone Number	E-mail
	Mike Hooker	Executive Director	Onondaga County Water Authority	315-455-7061	mehooker@ocwa.org
DJ	Don Jordan*	Acting Director	Syracuse-Onondaga County Planning Agency	315-435-2611	DonJordan@ongov.net
	Lee Klosowski*	Deputy Commissioner	Onondaga Parks Department	315-435-5510	leeklosowski@ongov.net
	Chris Kraynack*	San, Engineer II	Water Environment Protection	315-435-5402	ChrisKraynak@ongov.net
	Bill Landsley	Commissioner	Onondaga Parks Department	315-435-7275	williamlansley@ongov.net
	Lisa Letteney	Director	Health Dept - Environmental Health	315-435-6600	LisaLetteney@ongov.net
	Matthew Marko	Regional Director	NYS Department of Environmental Conservation – Syracuse Region	315-426-7403	matthew.marko@dec.ny.gov
	Geoff Miller*	Deputy Executive Director	Onondaga County Water Authority	315-455-7061	gmiller@ocwa.org
	Reggie Parker*	Regional Emergency Response Coordinator	NYS Department of Environmental Conservation	315-426-7420	matthew.marko@dec.ny.gov
	Bob Pertovich*	Engineer	Department of Transportation	315-435-3205	robertpetrovich@ongov.net
	Michael Plochocki	Legislator	Onondaga County Legislature	315-435-2170	mikeplochocki@hotmail.com
	Tom Rhoads	Commissioner	Onondaga County Department of Water Environment Protection	315-435-5402	TomRhoads@ongov.net

*Co-Chairs
**Alternate Steering Committee Member

TETRA TECH

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Planning Together for a Resilient Onondaga County

2018 Onondaga County Hazard Mitigation Plan

Steering Committee Meeting

September 20, 2018

Today's Topics

- Introductions
- Project Status
- Finalize Goals and Objectives
- SWOO
- Finalize Hazards of Concern
- Discussion of Risk Assessment and Overall Ranking
- Next Steps

Project Schedule Review

July 2018	Municipal Kick-Off Meeting
June-August	Data Collection
July-August	Update Hazard Profiles
August-September	Risk Assessment
September 20	Risk Results Presentation; Develop Problem Statements
October 10 (tentative)	Mitigation Strategy Workshop
November	Review Draft Plan
December	Submit to NYSDHSES
January 2019	Submit to FEMA

Homework Status

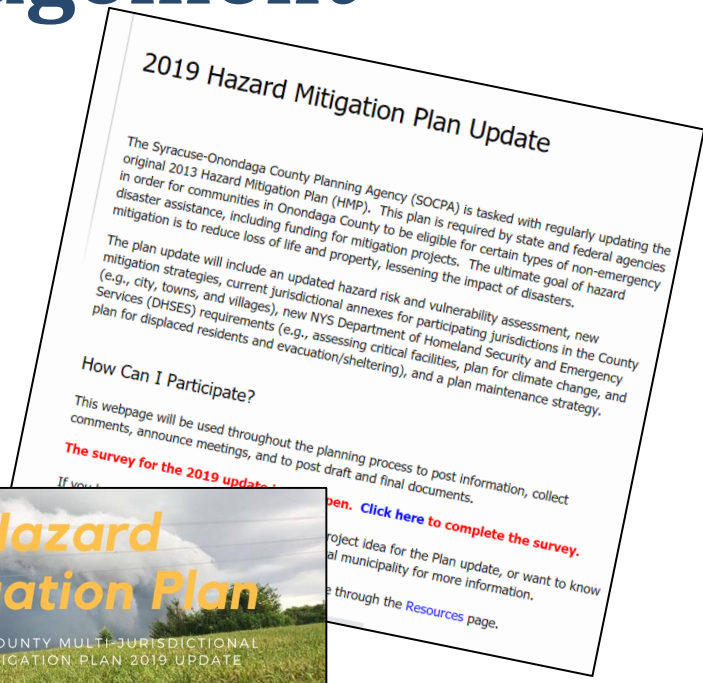
Jurisdiction	LOIP	Worksheet 1 - Events and Losses	Worksheet 2 - Cap. Ass.	Worksheet 3 - NFIP FPA	Worksheet 4 - Past Action Progress	Worksheet 5 - Plan Integration	Worksheet 6 - New Development	Worksheet 7 - Shelters
Onondaga County								
Baldwinsville (V)	X	X	X	X	X	X	X	X
Camillus (T)	X			X				
Camillus (V)	X	X	X	X	X	X	X	X
Cicero (T)	X	X	X	X		X	X	
Clay (T)	X	X	X	X	X	X	X	X
DeWitt (T)	X	X	X	X	X	X	X	X
East Syracuse (V)	X	X	X	X	X	X	X	X
Elbridge (T)	X	X	X	X	X	X	X	X
Elbridge (V)	X	X	X	X	X	X	X	X
Fabius (T)	X							
Fabius (V)	X	X	X	X	X	X	X	X
Fayetteville (V)	X	X	X	X	X	X	X	X
Geddes (T)	X	X	X	X	X	X	X	X
Jordan (V)	X	X	X	X	X	X	X	X
LaFayette (T)	X	X	X	X	X	X	X	X
Liverpool (V)	X	X	X	X	X	X	X	X
Lysander (T)	X							
Manlius (T)	X	X	X	X	X	X	X	X
Manlius (V)	X	X						
Marcellus (T)	X	X	X	X	X	X	X	X
Marcellus (V)	X	X	X	X	X	X	X	X
Minoa (V)	X	X	X	X	X	X	X	X
North Syracuse (V)	X	X	X	X	X	X	X	X
Onondaga (T)	X	X	X	X	X	X	X	X
Onondaga Nation								
Otisco (T)								
Pompey (T)	X							
Salina (T)	X							
Skaneateles (T)	X	X	X	X	X	X	X	X
Skaneateles (V)	X							
Solvay (V)	X							
Spafford (T)								
Syracuse (C)	X	X	X	X	X	X	X	X
Syracuse Metropolitan Transportation Council		X						
Tully (T)	X	X	X	X	X		X	
Tully (V)	X	X	X		X	X	X	X
Van Buren (T)	Not participating as per Town Supervisor (6/22/18)							
OCWA	X	X	X	X	X	X	X	X

Participation: No response from Otisco, Spafford, Onondaga Nation.

Missing input: Towns of Camillus, Fabius, Lysander, Otisco, Pompey, Salina; Villages of Skaneateles, Solvay

Public Outreach and Engagement

- SOCPA HMP webpage has been updated - http://www.ongov.net/planning/2019Update.html
- Citizen Survey is now open
- Stakeholder links have been distributed



2019 Hazard Mitigation Plan Update

The Syracuse-Onondaga County Planning Agency (SOCPA) is tasked with regularly updating the original 2013 Hazard Mitigation Plan (HMP). This plan is required by state and federal agencies in order for communities in Onondaga County to be eligible for certain types of non-emergency disaster assistance, including funding for mitigation projects. The ultimate goal of hazard mitigation is to reduce loss of life and property, lessening the impact of disasters.

The plan update will include an updated hazard risk and vulnerability assessment, new mitigation strategies, current jurisdictional annexes for participating jurisdictions in the County (e.g., city, towns, and villages), new NYS Department of Homeland Security and Emergency Services (DHSES) requirements (e.g., assessing critical facilities, plan for climate change, and plan for displaced residents and evacuation/sheltering), and a plan maintenance strategy.

How Can I Participate?

This webpage will be used throughout the planning process to post information, collect comments, announce meetings, and to post draft and final documents.

The survey for the 2019 update

pen. Click here to complete the survey.

roject idea for the Plan update, or want to know al municipality for more information.

e through the Resources page.

Hazard Mitigation Plan

ONONDAGA COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN 2019 UPDATE

Onondaga County and participating municipalities are preparing an update of the Countywide Hazard Mitigation Plan. The goal of this plan is to identify ways to reduce damages from future natural hazards.

As part of the planning process, we are looking for your input on what natural hazards affect you most and how.

Please take a few minutes to complete our online survey.

Interested Citizen? Click here!

Do you represent one of the following?
(click on the name below to fill out our stakeholder survey!)

Academia
Business
Emergency Services
Health Care / Hospitals
Public Works / Highways
Utilities

Public and Agency Feedback

- No responses as of September 14, 2018

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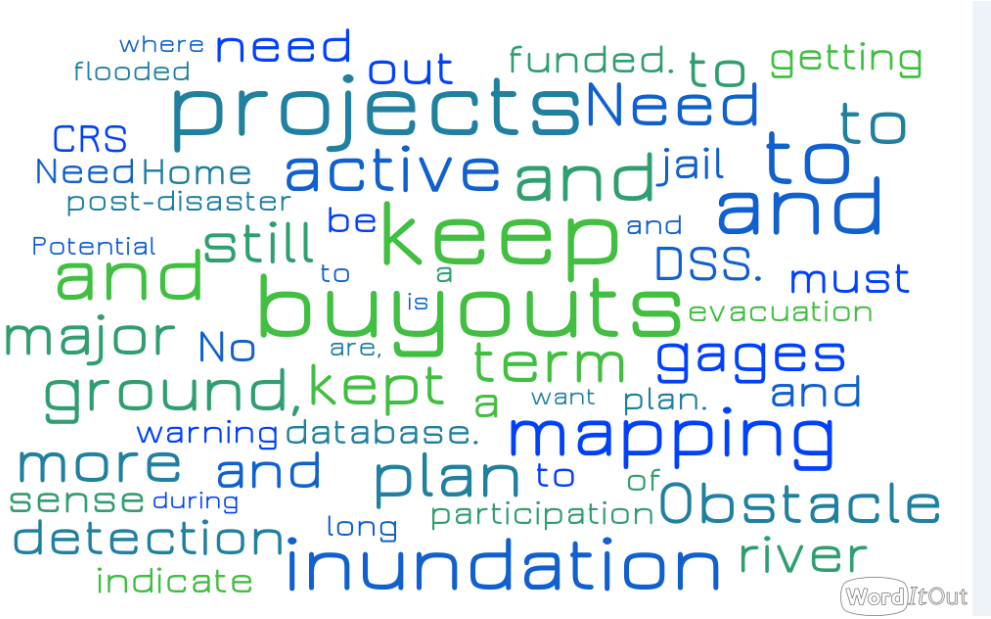
Goals and Objectives

Goal 1: Protect Life and Property	Goal 2: Increase Understanding and Awareness of Natural Hazard Risk	Goal 3: Promote Resiliency throughout the County	Goal 4: Protect the environment and natural resources	Goal 5: Promote and Support Partnerships	Goal 6: Enhance Disaster Preparedness, Response, and Recovery
Objective 1-1: Address repetitive and severe repetitive loss properties throughout the County. Objective 1-2: Protect and maintain critical facilities and infrastructure. Objective 1-3: Identify flood and other natural hazard areas. Objective 1-4: Improve detection, warning and communication systems. Objective 1-5: Pursue federal and state assistance toward the improvement of facilities and infrastructure. Objective 1-6: Develop, maintain, strengthen and promote enforcement of ordinances, regulations and other mechanisms that facilitate sustainable construction standards. Objective 1-7: Integrate risk reduction concepts, policies, and projects into existing local and regional planning and implementation mechanisms, such as comprehensive plans, codes, and capital improvement plans.	Objective 2-1: Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual and household preparedness activities with the overall goal of reducing general public dependency on disaster response and recovery support services. Objective 2-2: Implement mitigation actions that enhance the capabilities of the County and communities to better profile and assess exposure of hazards and participate in state and local programs and efforts that focus on practices that support or enhance resiliency. Objective 2-3: Working with municipalities, provide tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities including promotion of awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards. Objective 2-4: Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards.	Objective 3-1: Promote resilient and sustainable land development practices to improve the ability to recover and bounce back faster from impacts of natural hazard events. Objective 3-2: Develop and maintain adequate services and utilities to serve the County's population and business Objective 3-3: Develop business and government continuity plans to decrease potential local economic losses. Objective 3-4: Reduce or eliminate hazard risks throughout the county. This would decrease recovery time and reduce social dislocation, and family and individual stress. Objective 3-5: Encourage building and rebuilding practices that address resiliency through higher standards and sustainable design to resist impacts of natural hazards and to reinvest in existing infrastructure rather than expanding the urbanized area.	Objective 4-1: Promote the continued use of natural systems to reduce long-term hazard related costs and maximize hazard mitigation effectiveness to include sustainable flood and erosion control projects, reduction of nutrient loading in water systems and activities that demonstrate resiliency practices. Objective 4-2: Protect and preserve environmentally sensitive and critical areas Objective 4-3: Continue to preserve, protect and acquire open space Objective 4-4: Incorporate hazard considerations into land-use planning and natural resource management.	Objective 5-1: Create, maintain and enhance collaborative efforts including inter-jurisdiction and inter-agency communication, coordination, and partnerships and other identified stakeholders involved with natural hazard management to promote resiliency. Objective 5-2: Engage public agencies, citizens, neighborhood groups, non-profit organizations, businesses, and industry to implement mitigation actions more effectively. Objective 5-3: Encourage shared services in acquiring maintaining and providing emergency services and equipment.	Objective 6-1: Enact policies to prioritize and implement mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure. Objective 6-2: Coordinate and integrate hazard mitigation actions with existing local emergency operations plans. Objective 6-3: Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities for specific hazards. Objective 6-4: Review and improve, if necessary, emergency traffic routes and evacuation routes; communicate such routes to the public and communities via the County's emergency notification system, social media, and news media outlets. Objective 6-5: Ensure continuity of governmental operations, emergency services, and essential facilities at the local level during and immediately after disaster and hazard events. Objective 6-6: Support County Emergency Management function as the central venue for community preparedness requirements and reconstruction efforts.

Strengths and Weaknesses Obstacles and Opportunities (SWOO)

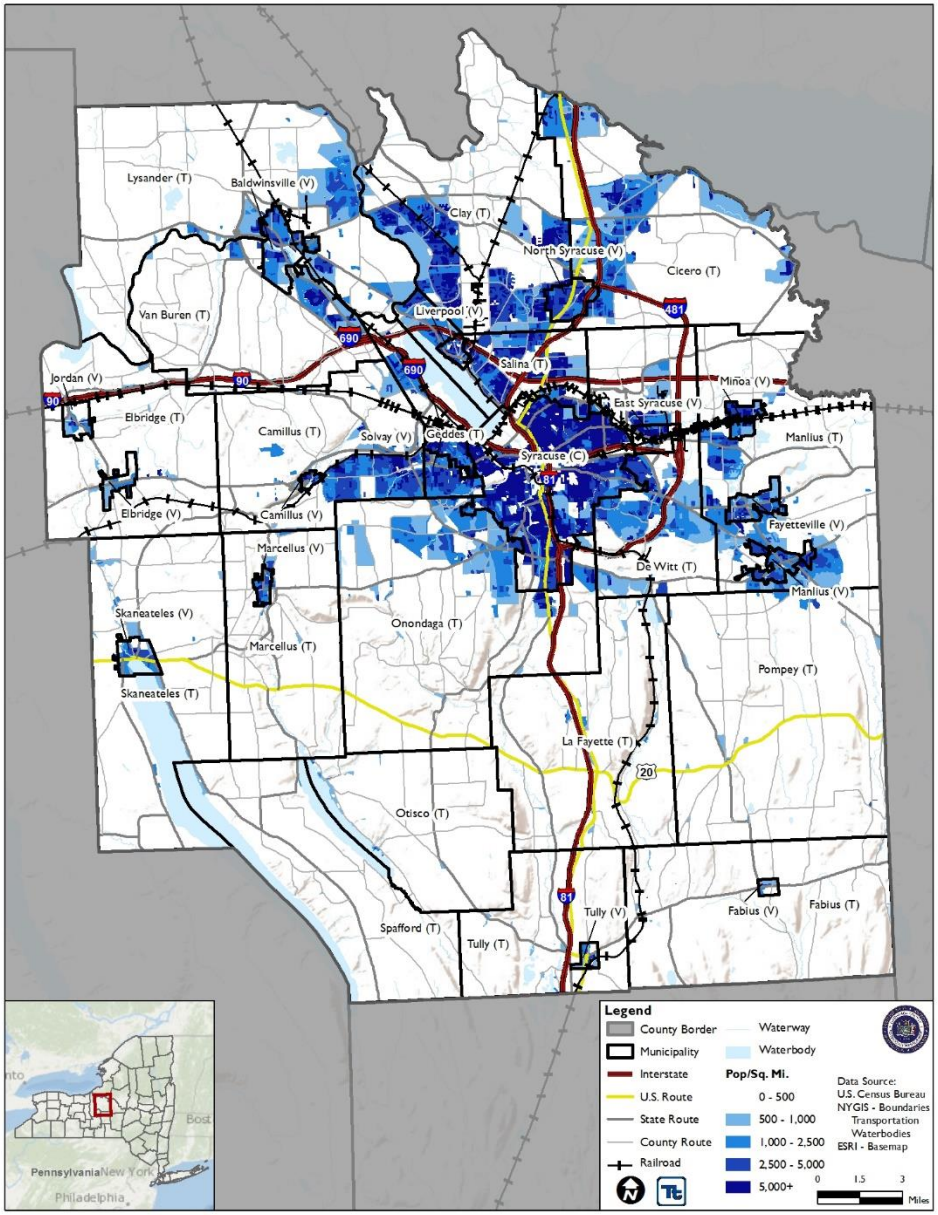
- ***What are the Strengths, Weaknesses, Obstacles and Opportunities in Addressing Flood, Severe Storm, Severe Winter Storm, Drought, Earthquake, Ground Failure*, Algal Bloom, and Invasive Species Hazards?***
- ***Please refer to handout for discussion.***



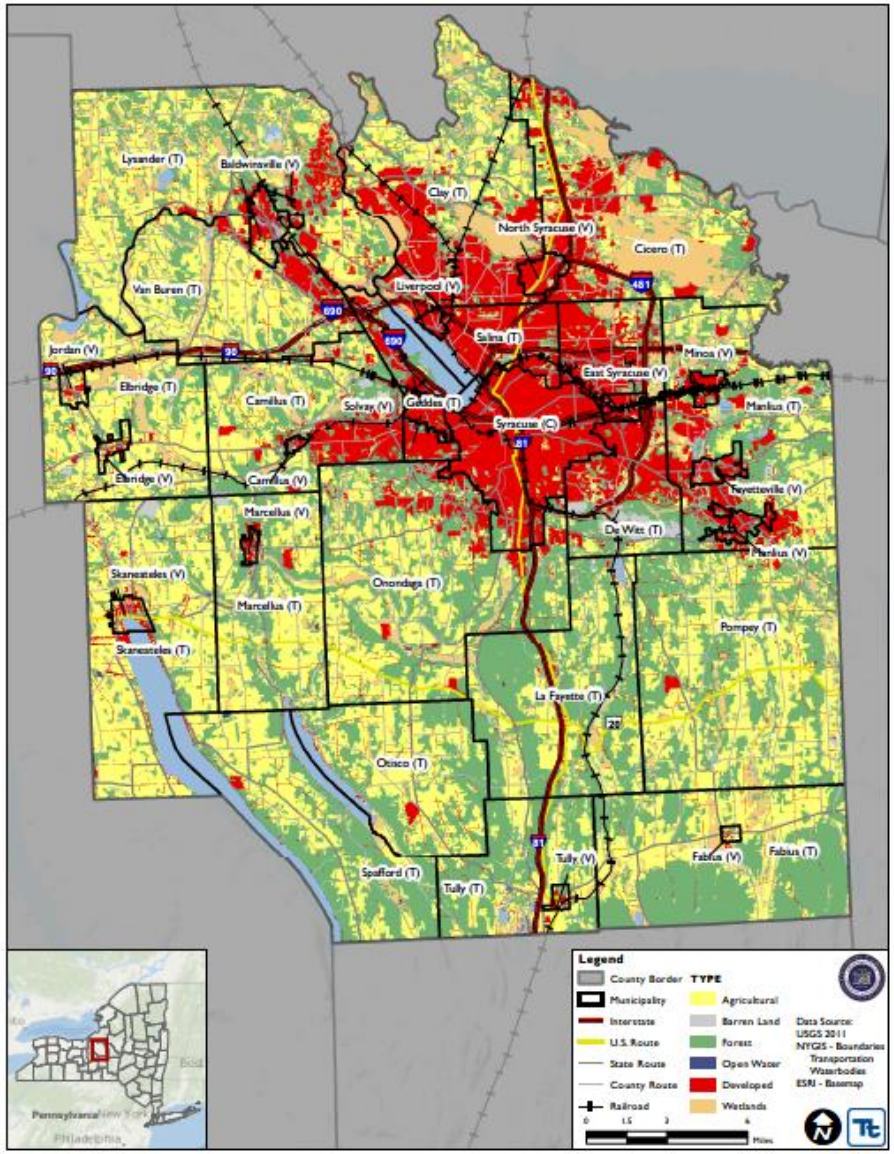
Hazards of Concern

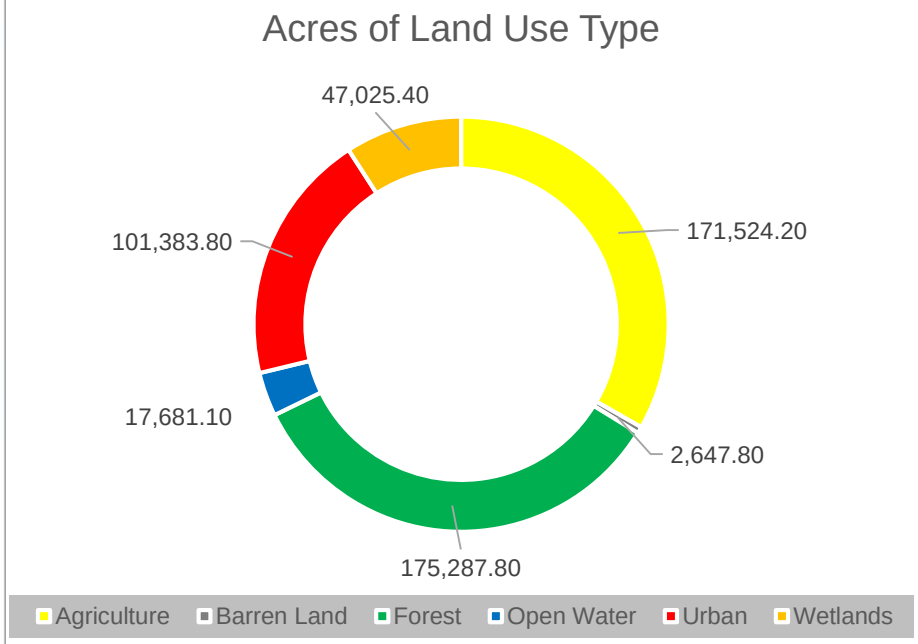
2018 Hazard Mitigation Plan Hazards of Concern
Flood *(riverine/flash flood, ice jam, and dam failure)*
Severe Storm *(hail, wind, lightning, thunderstorms, tornadoes, hurricanes, and tropical storms)*
Earthquake
Severe Winter Storm *(heavy snow, blizzards, sleet, freezing rain, ice storms, extreme cold, and Nor'Easters)*
(Ground Failure)
Drought
Harmful Algal Bloom
Invasive Species *(emerald ash borer, hemlock woolly adelgid, phragmites, milfoil, purple loosestrife, giant hogweed, kudzu,)*

Risk Assessment Overview - Population



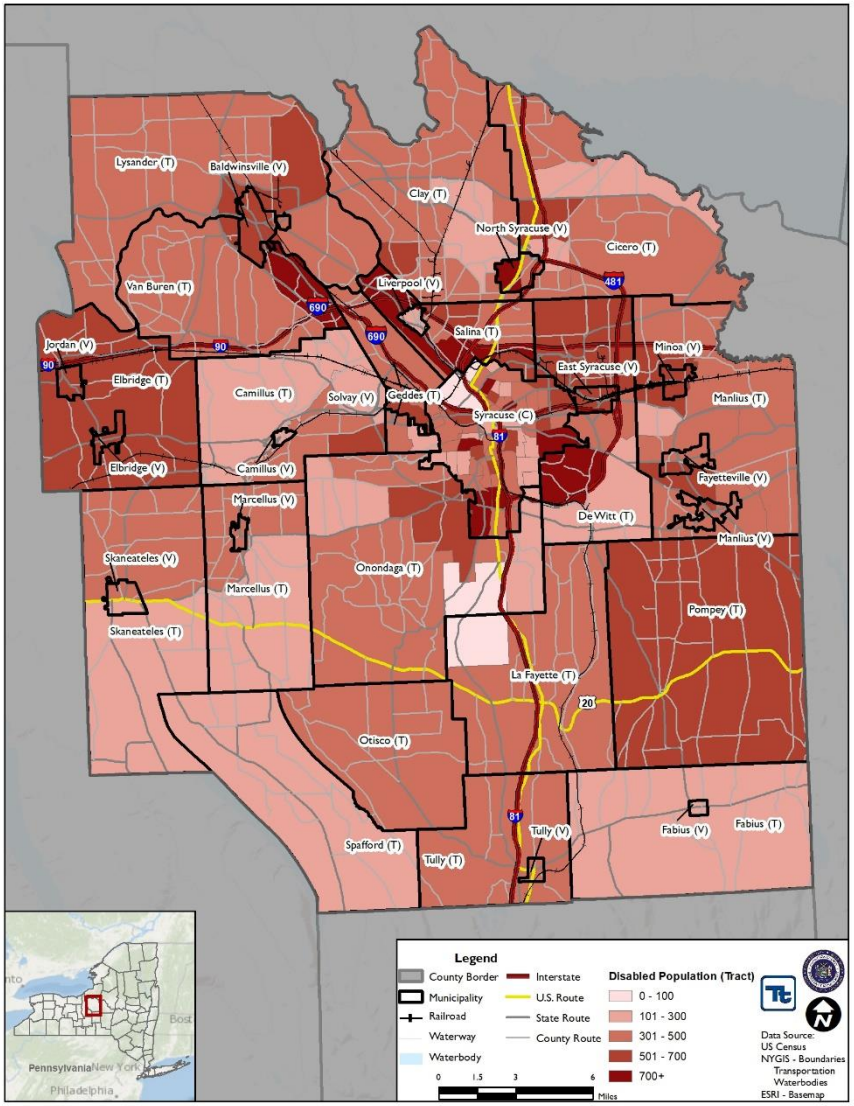
County Overview – Land Use

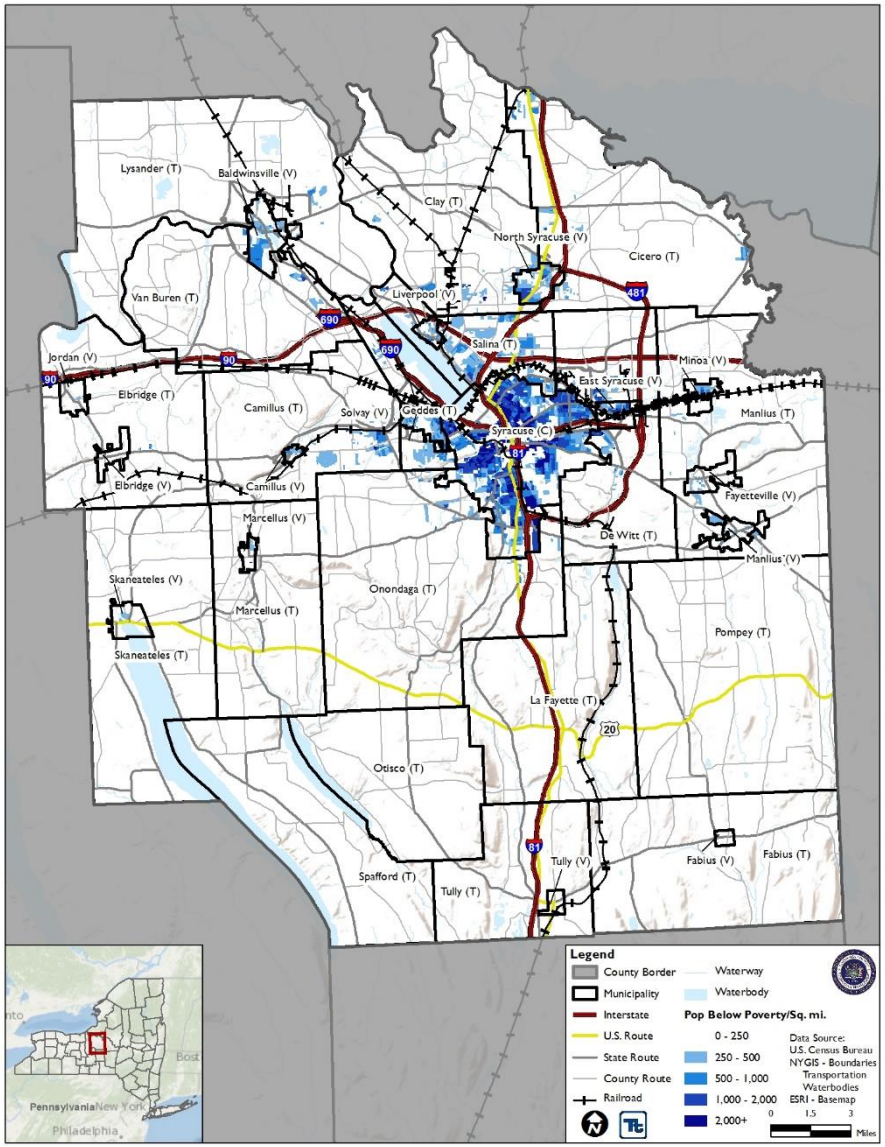




County Overview – Vulnerable Populations

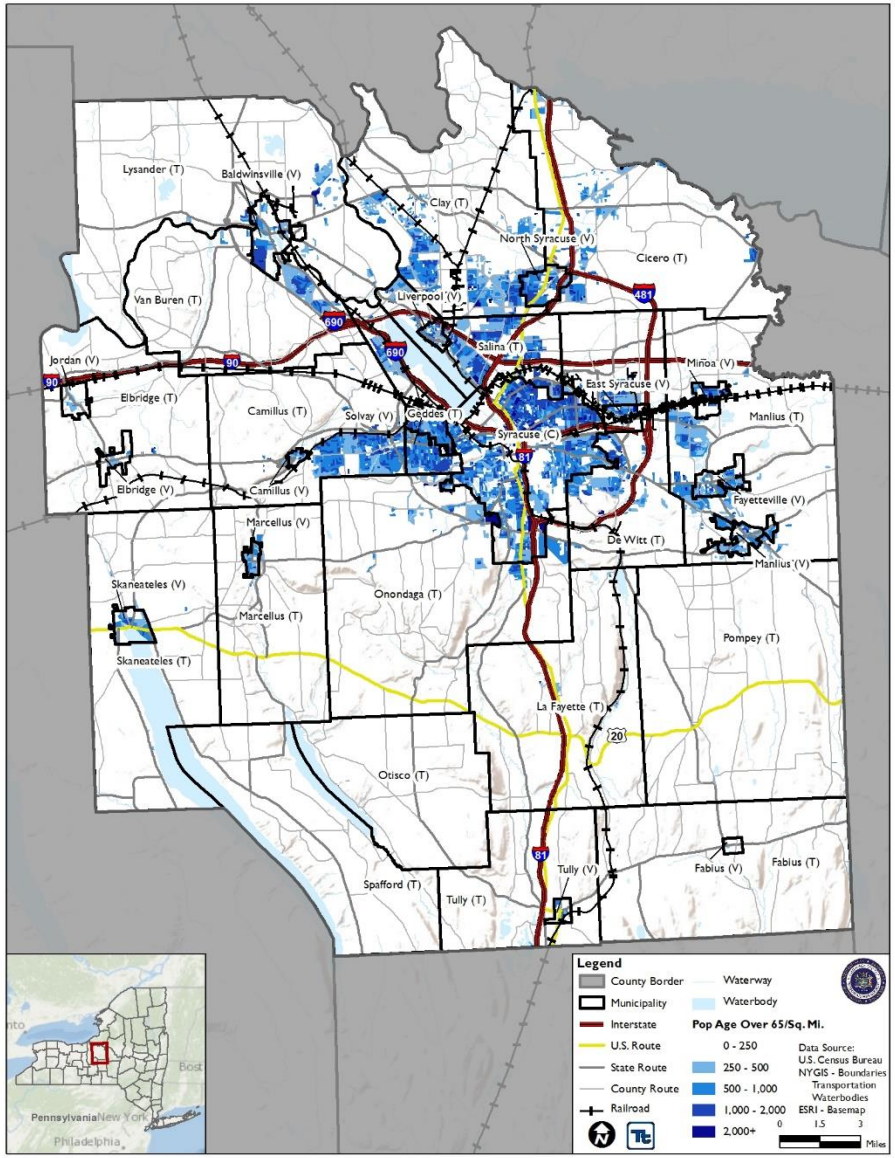
Low-Income and Disabled





County Overview – Vulnerable Populations

Residents 65+



Flood

- History of flood events
  - Onondaga County included in 7 FEMA disaster declarations between 1954 and 2017

FEMA Disaster Number	Date(s) of Event	Incident Type
DR-447	July 1934	Severe Storms & Flooding
DR-487	October 1975	Storms, Rains, Landslides & Flooding
DR-1095	January 1996	Severe Storms and Flooding
DR-1335	August 2000	Severe Storms and Flooding
DR-1534	June 2004	Severe Storms and Flooding
DR-1564	September 2004	Severe Storms and Flooding
DR-1993	May 2011	Severe Storms, Flooding, Tornadoes, and Straight-line Winds

Flood History (1950-present)

Hazard Type	Number of Events Reported Between 1950 and 2018	Total Fatalities	Total Injuries	Total Property Damage ($)	Total Crop Damage ($)
Flash Flood	40	2	None reported	$35.9 million	None reported
Flood	6	None reported	None reported	$70,000	None reported
Dam Failure	0	None reported	None reported	None reported	None reported
Ice Jam	1	None reported	None reported	None reported	None reported
TOTAL	**26**	**2**	**None reported**	**$35.97 million**	**None reported**

Source: NOAA-NCEI 2018; USACE 2018: NPDP 2018
Note: The numbers listed above include events that were reported to NOAA, USACE, and NPDP. They may not represent all events that occurred in the County.

Flood Probability

Hazard Type	Number of Occurrences Between 1950 and 2018	Rate of Occurrence or Annual Number of Events (average)	Recurrence Interval (in years) (# Years/Number of Events)	Probability of Event in any given year	% chance of occurrence in any given year
Flash Flood	19	0.28	3.58	0.28	27.94%
Flood	6	0.09	11.33	0.09	8.82%
Dam Failure	0	0	0	0	0%
Ice Jams	1	0.01	68.00	0.01	1.47%
TOTAL	**26**	**0.39**	**2.62**	**0.38**	**38.24%**

Source: NOAA-NCDC 2018; CRREL 2018; NPDP 2018

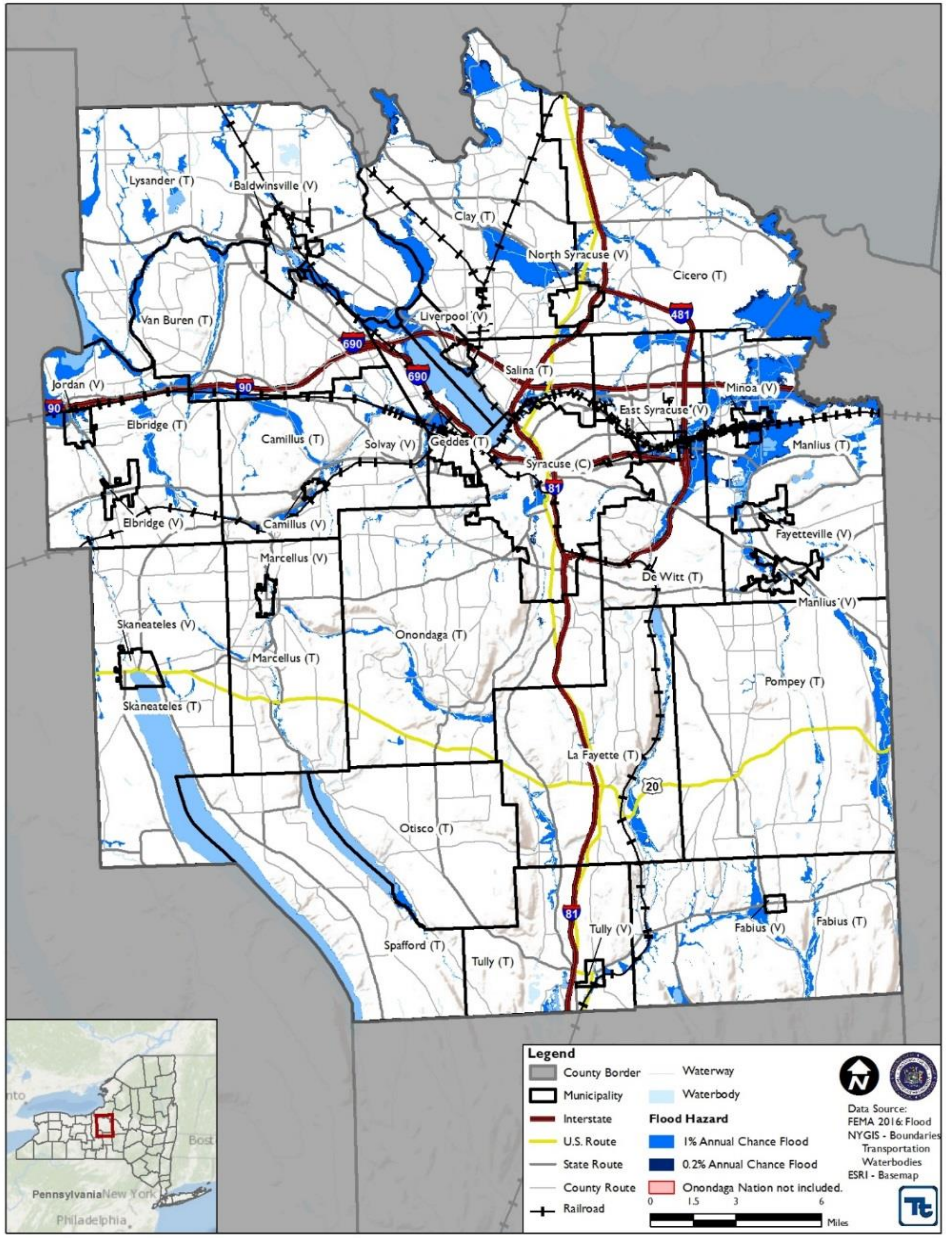
Estimated Exposure for Flood

- Estimated Exposure (People, Property)
  - 500,000+ acres land in the 1% annual chance floodplain (10.4%)
  - 15,700+ people in the 1% annual chance floodplain (3.4%)
  - 19,000+ exposed in the 0.2 annual chance floodplain (4.1%)
  - $3.2 Billion in exposed property(2.8% - 1% annual chance floodplain)
  - $4.4 Billion in exposed property (3.8% - 0.2% annual chance floodplain)
- Economic and Social Loss/Impact

  (1-Percent Annual Chance Flood)
  - $408 Million in estimated potential property damage
  - 19,000+ tons of debris
  - 12,000 people or 4,651 households displaced*
  - 561 people seeking shelter

**The 2010 Census enumerated 308.7 million people in the United States, 300.8 million lived in 116.7 million households for an average of 2.58 people per household.*

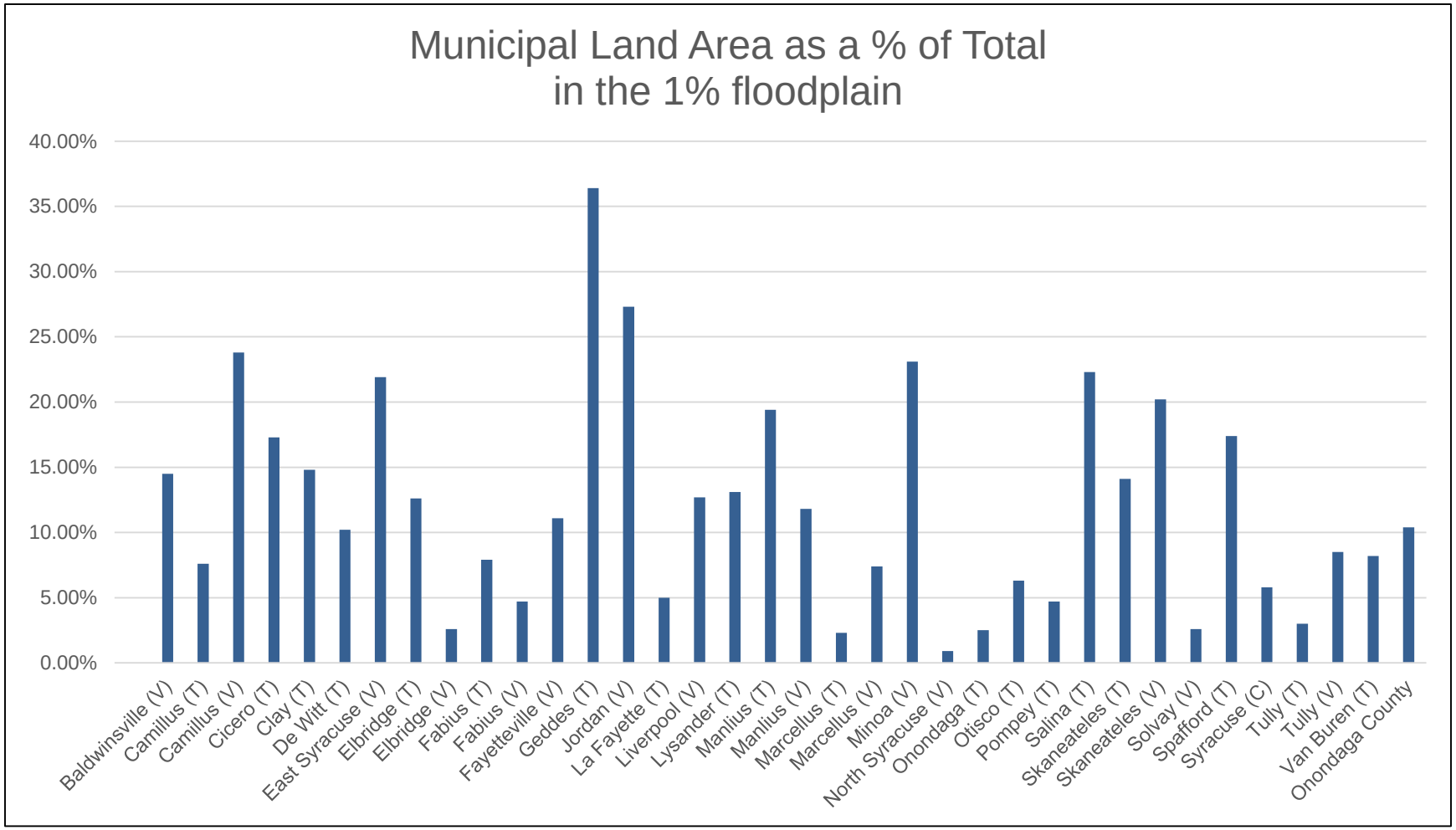
Flood Areas in Onondaga County



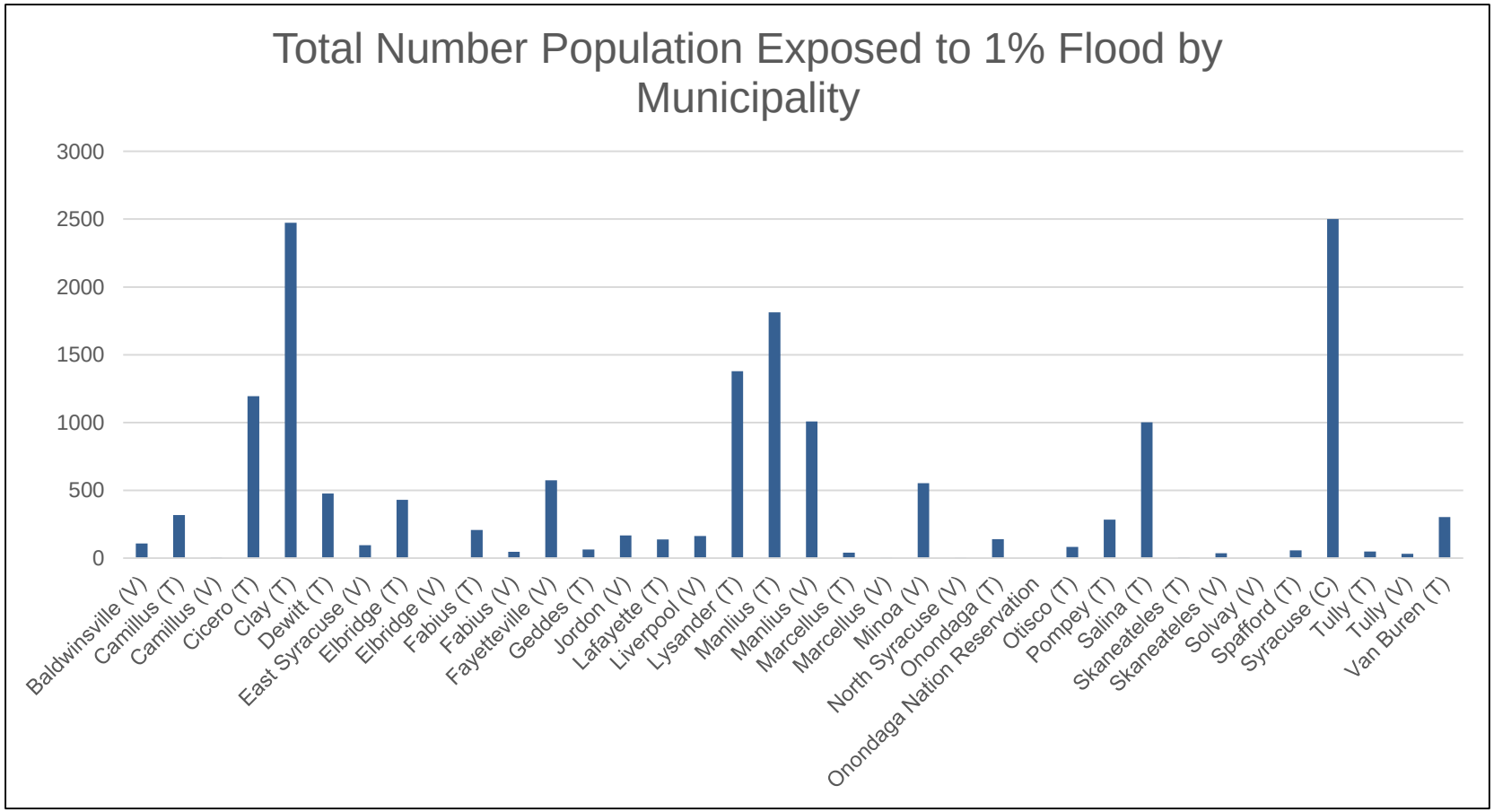
Top 5 Communities with Largest % of Population in the SFHA

1. Manlius (V) – 21.4% of population in SFHA
2. Minoa (V) – 16% of population in SFHA
3. Fabius (V) – 13.1% of population in SFHA
4. Fayetteville (V) – 13.1% of population in SFHA
5. Fabius (T) – 12.9% of population in SFHA

Flood Location by Municipality



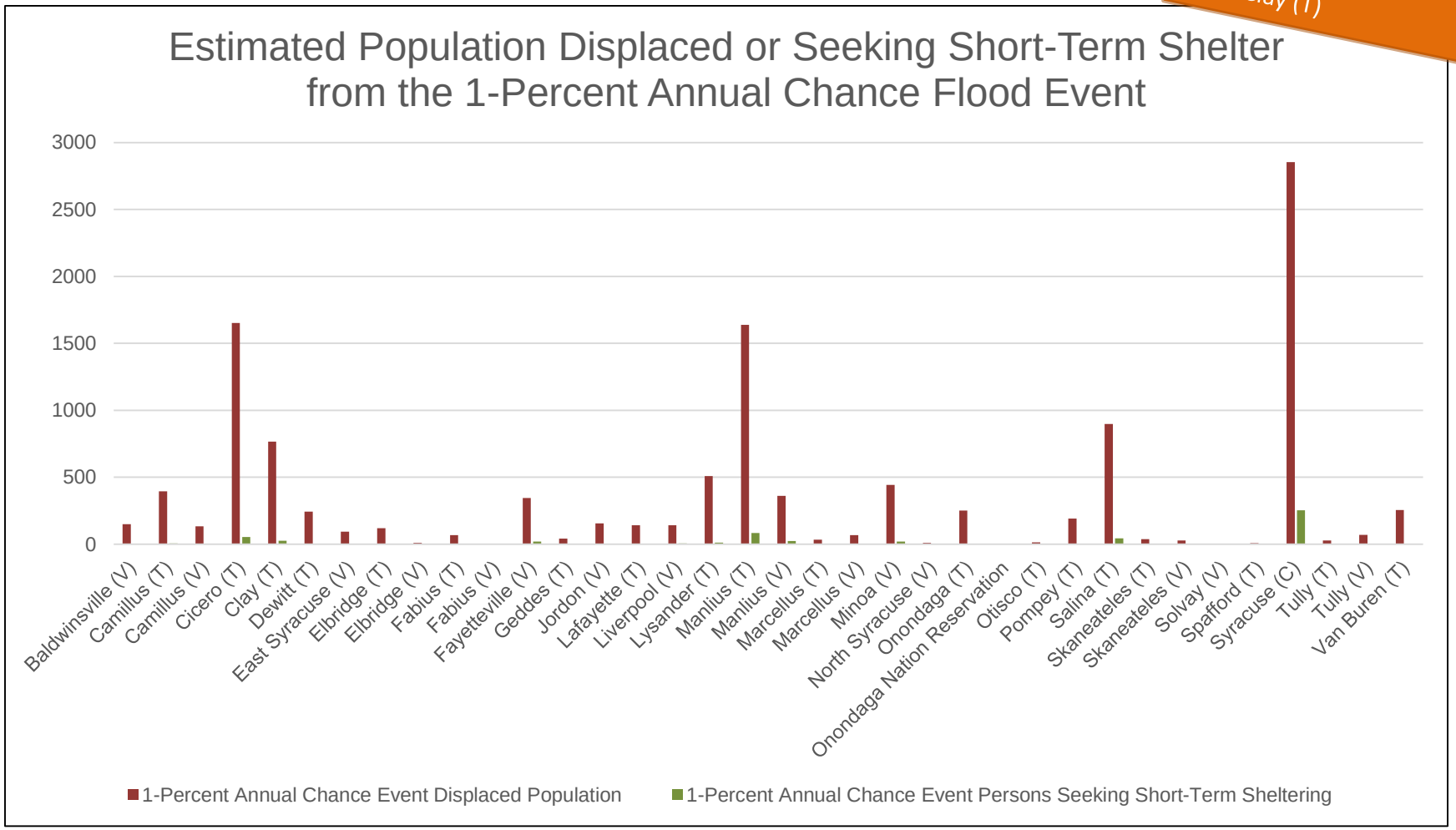
Impact on Population



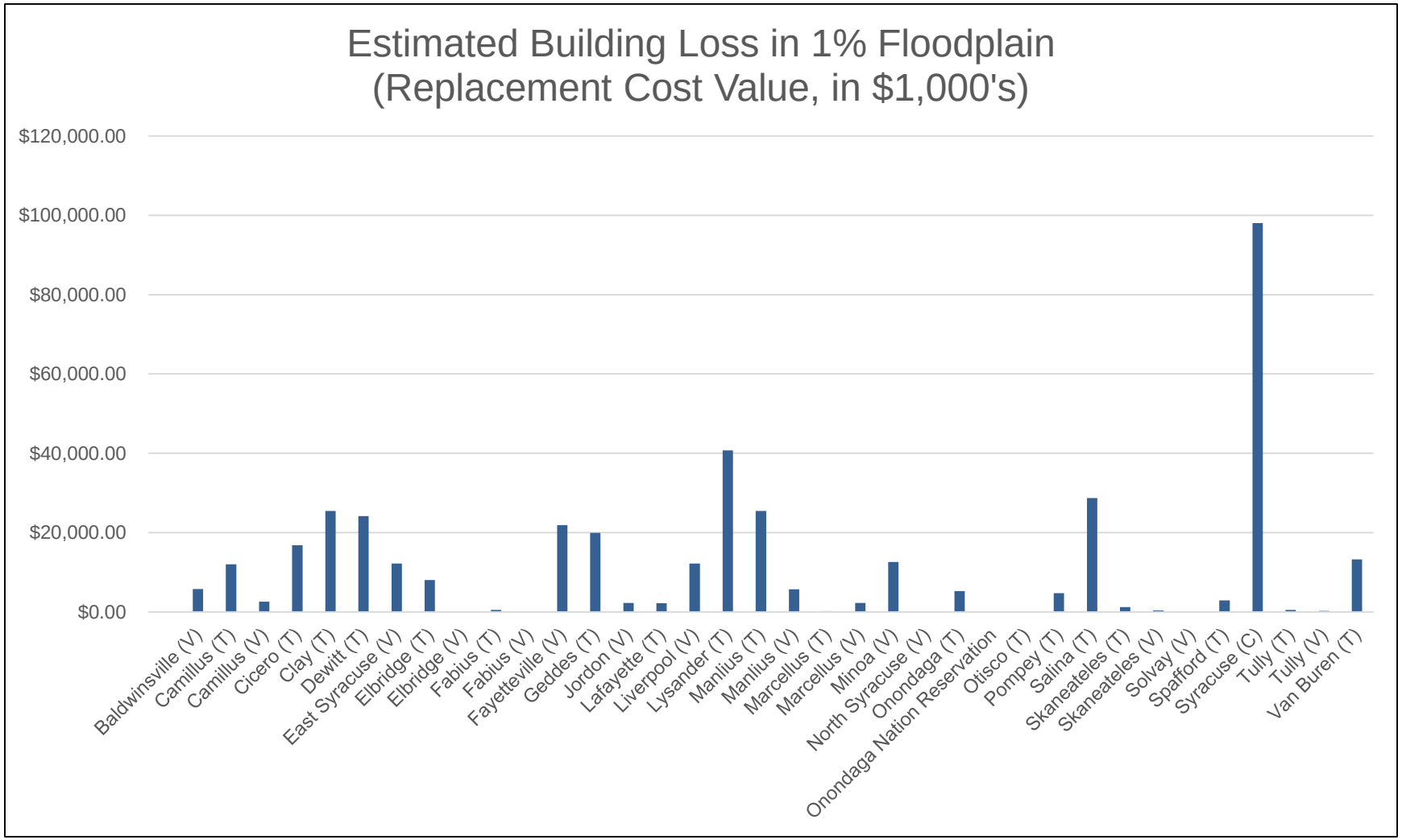
Impact on Population

Municipalities with Largest Number of Displaced Residents:

1. Syracuse (C)
2. Cicero (T)
3. Manlius (T)
4. Salina (T)
5. Clay (T)



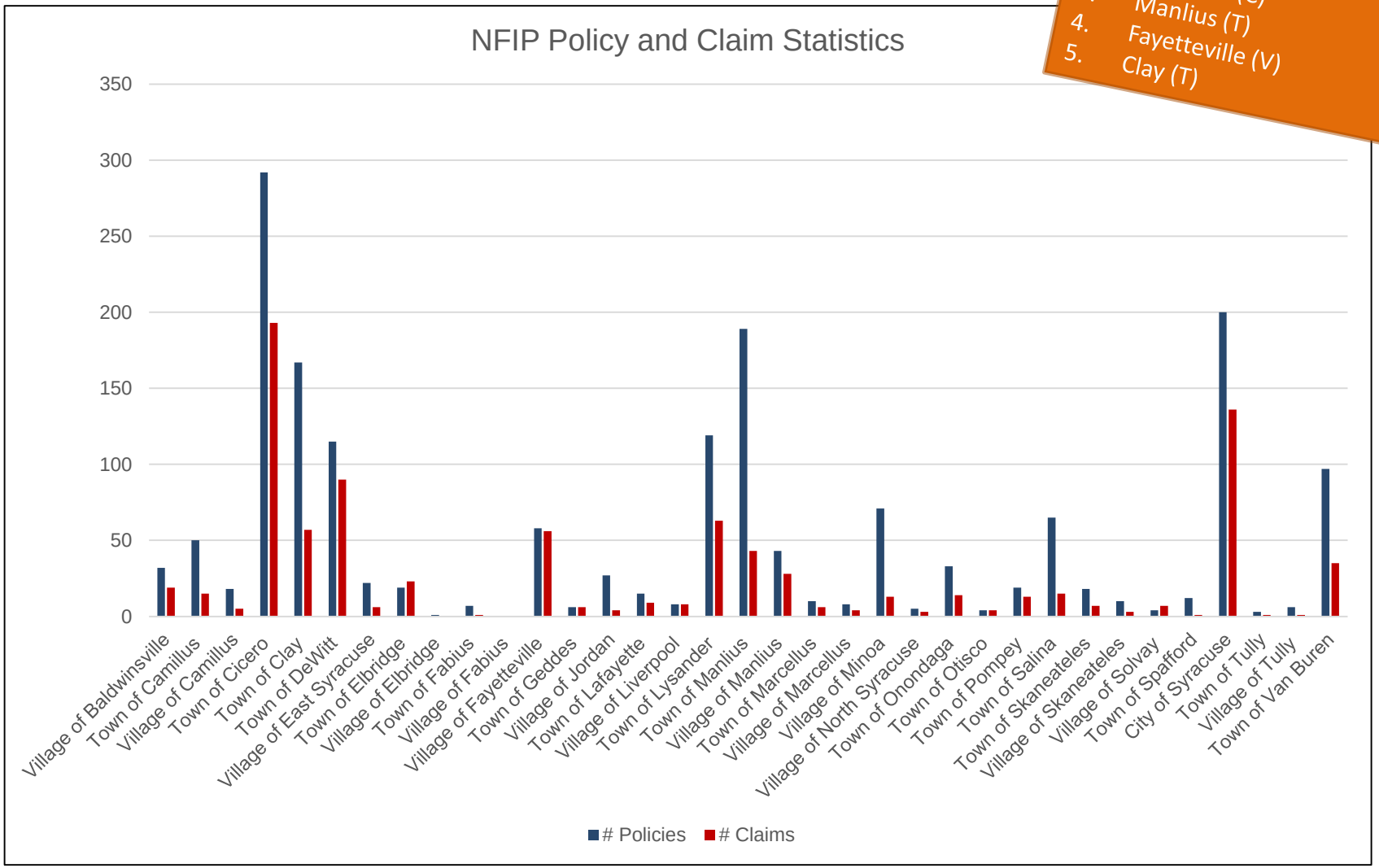
Impact on Building Stock



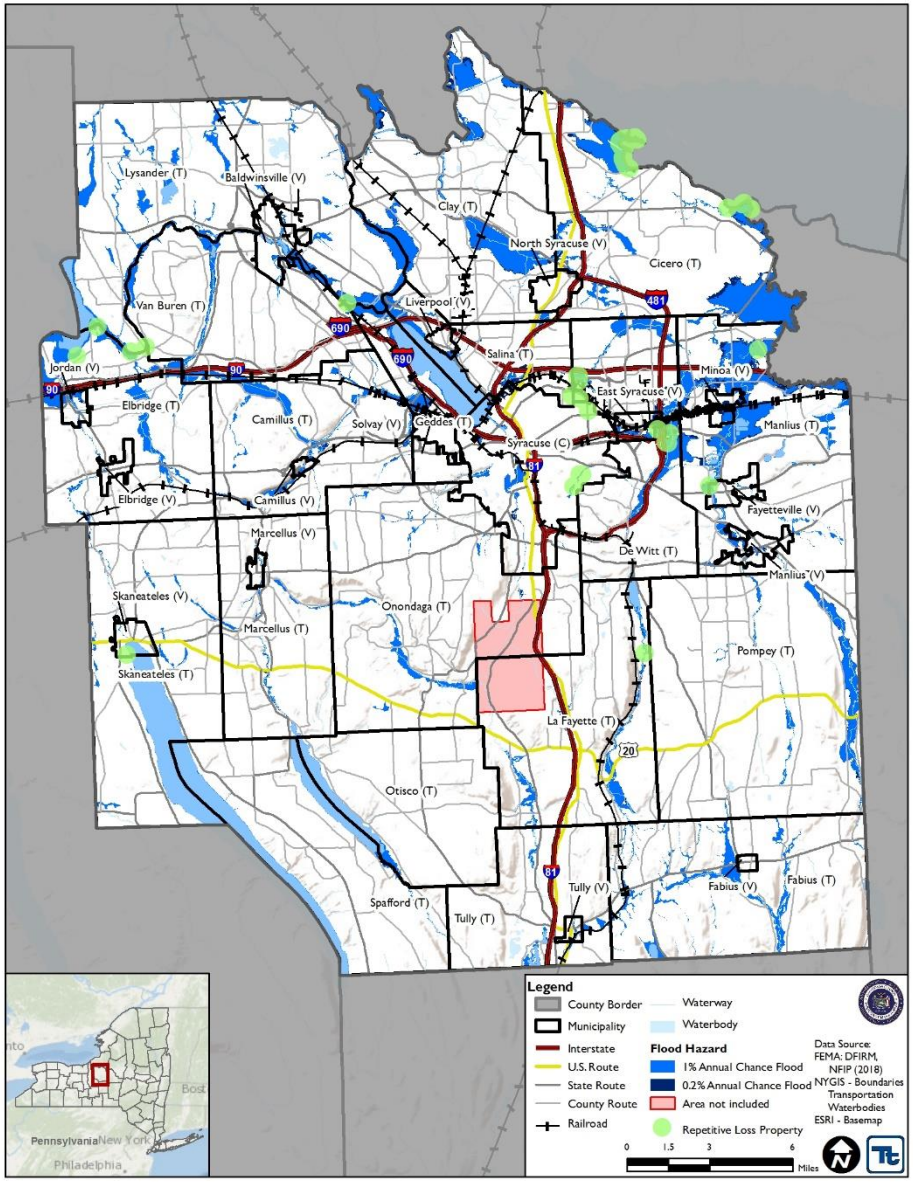
Flood Claim Stats

Municipalities with Largest Number of Claims:

1. Cicero (T)
2. Syracuse (C)
3. Manlius (T)
4. Fayetteville (V)
5. Clay (T)



NFIP RL/SRL Locations



County-wide Stats

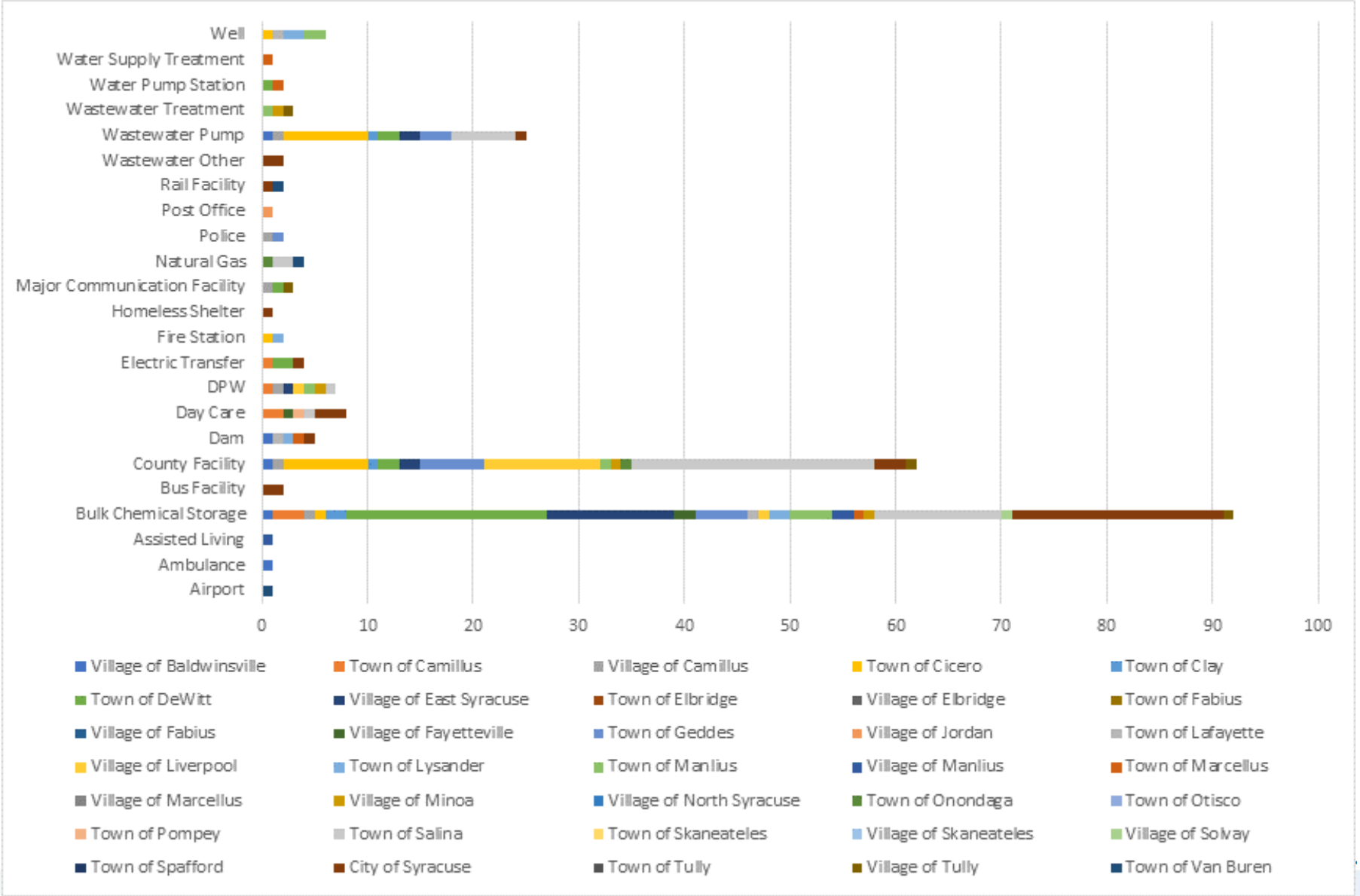
Policies: 1,753

Claims: 889

Total Losses: $6.5 Million

Number of RL/SRLs by Municipality		
Municipality	**# RL**	**#SRL**
T Cicero	23	0
T DeWitt	8	0
T Elbridge	2	0
T Lafayette	1	0
T Lysander	3	0
T Manlius	2	0
T Salina	1	0
V Skaneateles	1	0
City of Syracuse	5	0
County Total	**46**	**0**

Critical Facilities in the Floodplain



Severe Storm

- History
  - 10 federally declared severe storm events since 1972
  - 288 severe storm events between January 1, 1950 and present
- Vulnerability Assessment Results
  - $100.5 Million Property Damages from events (1950 -2018)
  - Annualized Losses
    - $21,615 (Hazus 4.2)

Severe Storm Event History

Extent of Severe Storms in Onondaga County	
Largest Hailstone on Record	2.75 inches
Strongest Tornado on Record	F3
Highest (non-tornado) Wind Speed on Record	80 mph

FEMA Declaration Number	Date(s) of Event	Event Type
DR-338	June 23, 1972	Tropical Storm Agnes
DR-447	July 23, 1974	Severe Storms & Flooding
DR-487	October 2, 1975	Storms, Rains, Landslides & Flooding
DR-1095	January 19-30, 1996	Severe Storms And Flooding
DR-1244	September 7, 1998	NY - Severe Wx, Sept 7, 1998
DR-1335	May 3-August 12, 2000	Severe Storms & Flooding
DR-1534	May 13-June 17, 2004	Severe Storms & Flooding
DR-1564	August 13-September 16, 2004	Severe Storms & Flooding
DR-1993	April 26-May 8, 2011	Severe Storms, Flooding, Tornadoes, & Straight-line Winds
EM-3351	October 27-November 8, 2012	Hurricane Sandy

Severe Storm Impact

Hazard Type	Number of Occurrences Between 1950 and 2018	Total Fatalities	Total Injuries	Total Property Damage ($)	Total Crop Damage ($)
Funnel Cloud	1	0	0	$0	$0
Hail	78	0	3	$135,000	$15,000
Heavy Rain	3	0	0	$0	$0
High Wind	19	0	1	$555,000	$0
Hurricane*	0	0	0	$0	$0
Lightning	17	1	7	$342,000	$0
Strong Wind	2	0	0	$10,000	$0
Thunderstorm Wind	160	5	21	$94.165 million	$0
Tornado	8	0	5	$5.288 million	$0
Tropical Depression*	0	0	0	$0	$0
Tropical Storm*	0	0	0	$0	$0
TOTAL	**288**	**6**	**37**	**$100.495 million**	**$15,000**

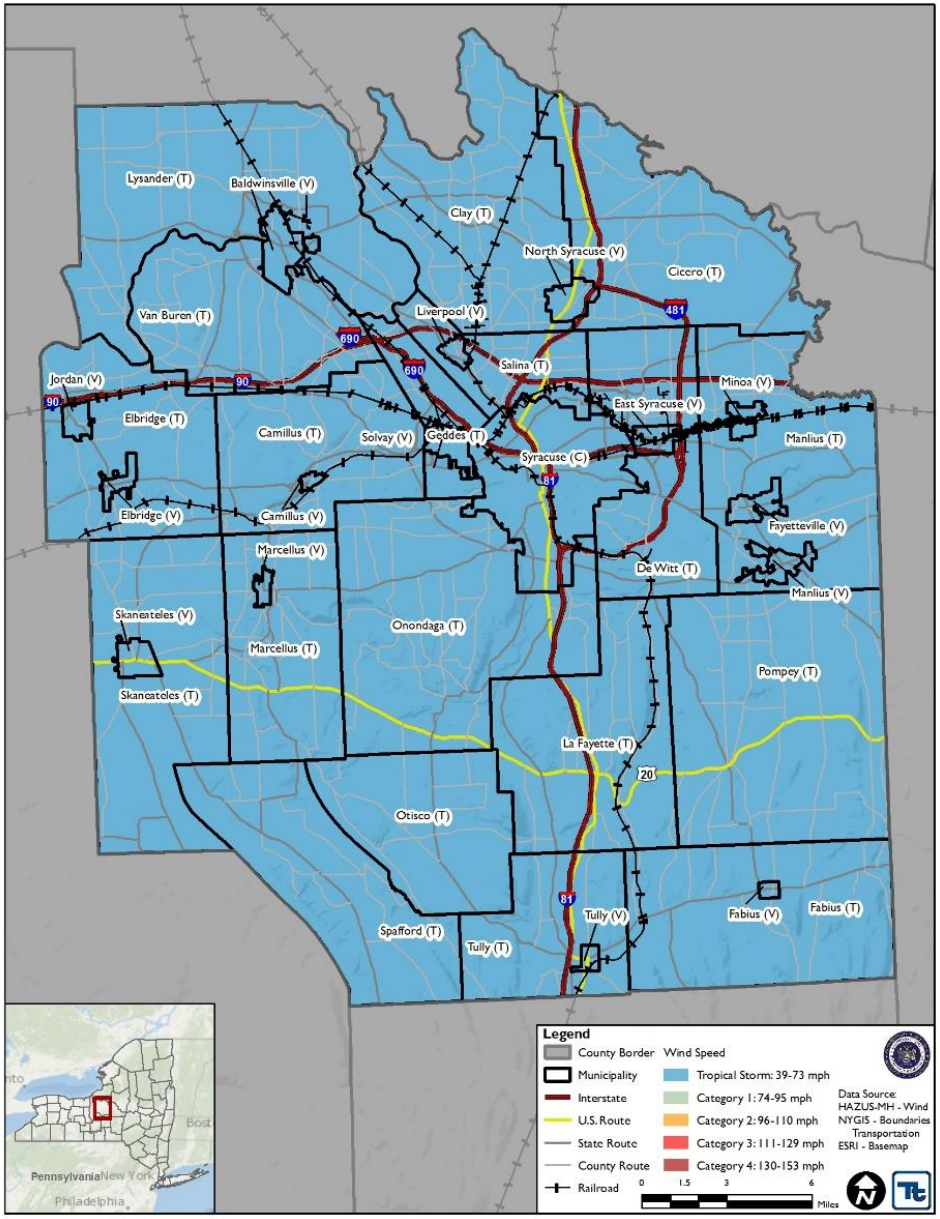
Source: NOAA-NCEI 2018; NHC 2018

Note: The numbers listed above include events that were reported to NOAA. They may not represent all events that occurred in the County. Please note that one event may include multiple impacts in the county.

*Number of events were collected from NHC and includes events that occurred within 65 nautical miles of Onondaga County.

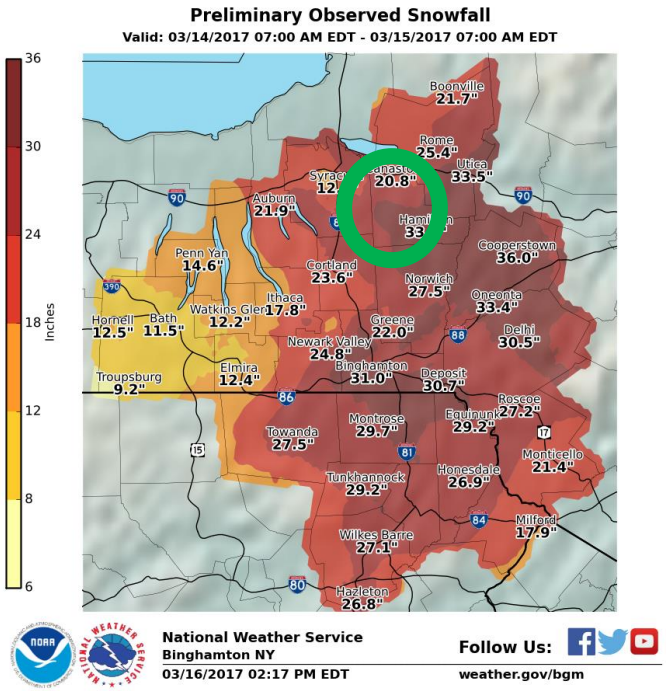
Severe Storm

- Estimated 100-year mean return period (MRP) event losses:
  - Wind speeds below 39 mph
  - No damages or debris estimated
- Estimated 500-year MRP event losses:
  - Wind speeds between 52 and 58 mph (Tropical Storm)
  - $25,000 (Structure Only) in building damages
  - Over 362 tons of tree debris
  - 3,347 cu yards of eligible tree volume debris



Severe Winter Storm

- 23 winter storm events 2011 – 2018*
- 3 FEMA winter-related disaster declarations since 1954
  - Severe Blizzard (March 1993)
  - Snowstorms (December 2002-January 2003)
  - Severe Winter Storm and Snowstorm (March 2017)
- Exposure
  - Entire County is vulnerable to heavy snow and ice storms
  - Over $70 Billion in structural value
  - Impacts
    - Vulnerable populations
    - Damage to roofs and building frames
    - Power outages
    - Cost of snow/ice removal
    - Damage to roadways and infrastructure



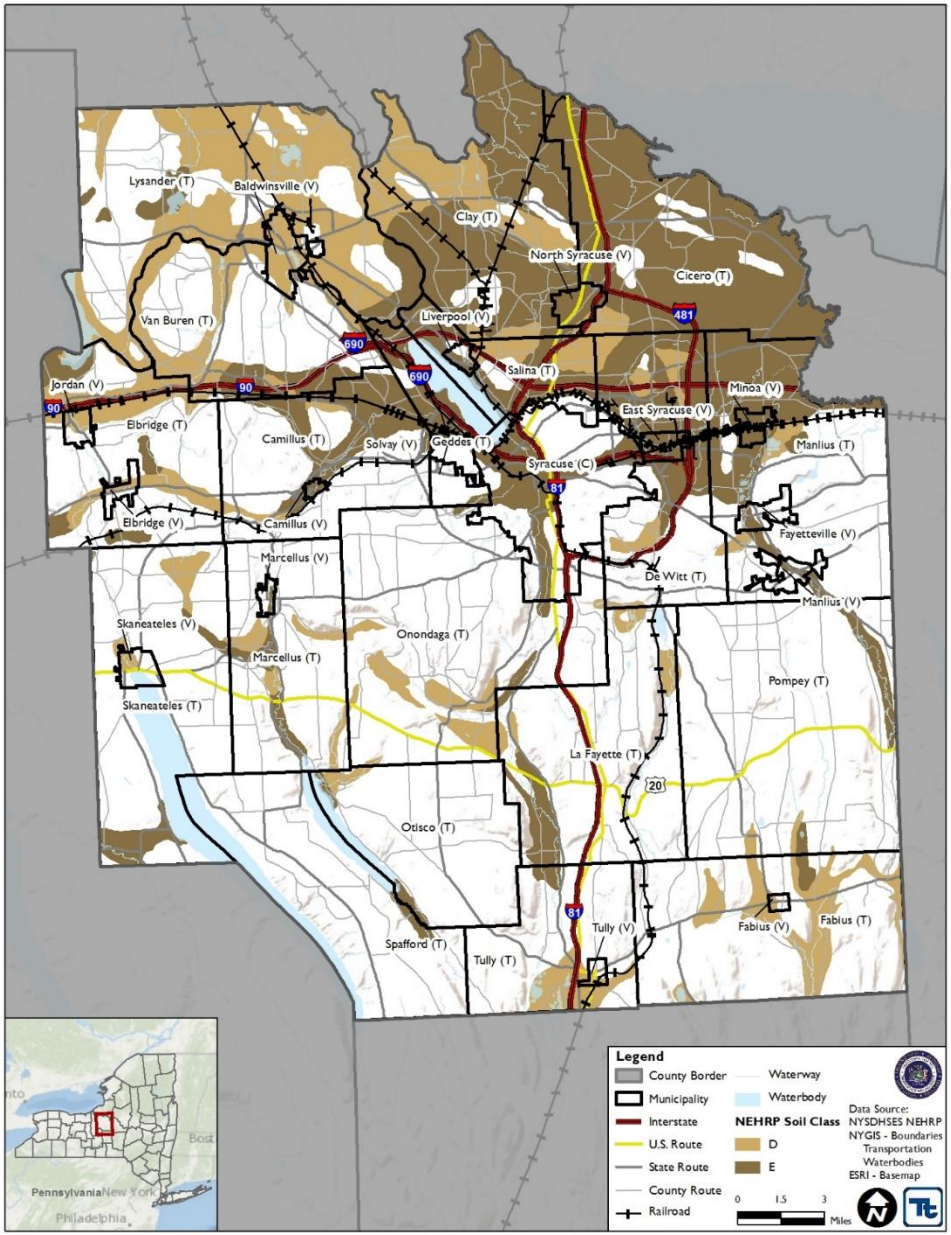
FEMA 2018; *NOAA-NCEI 2018

Earthquake

- Population most susceptible to the impacts of earthquakes are those living in areas of National Earthquake Hazards Reduction Program (NEHRP) Class D and E soils. These types of soils can amplify ground shaking.

Overall County Impacts

- Over 178,000 acres of land in Class E and E soils
- 212,544 people living in Class D and E Soils
- 100,341 buildings located in Class D and E Soils
- Total damages:
  - Annualized - $1.1 million
  - 250-year event - $33.2 million
  - 1,000-year event - $246.3 million



Earthquake History

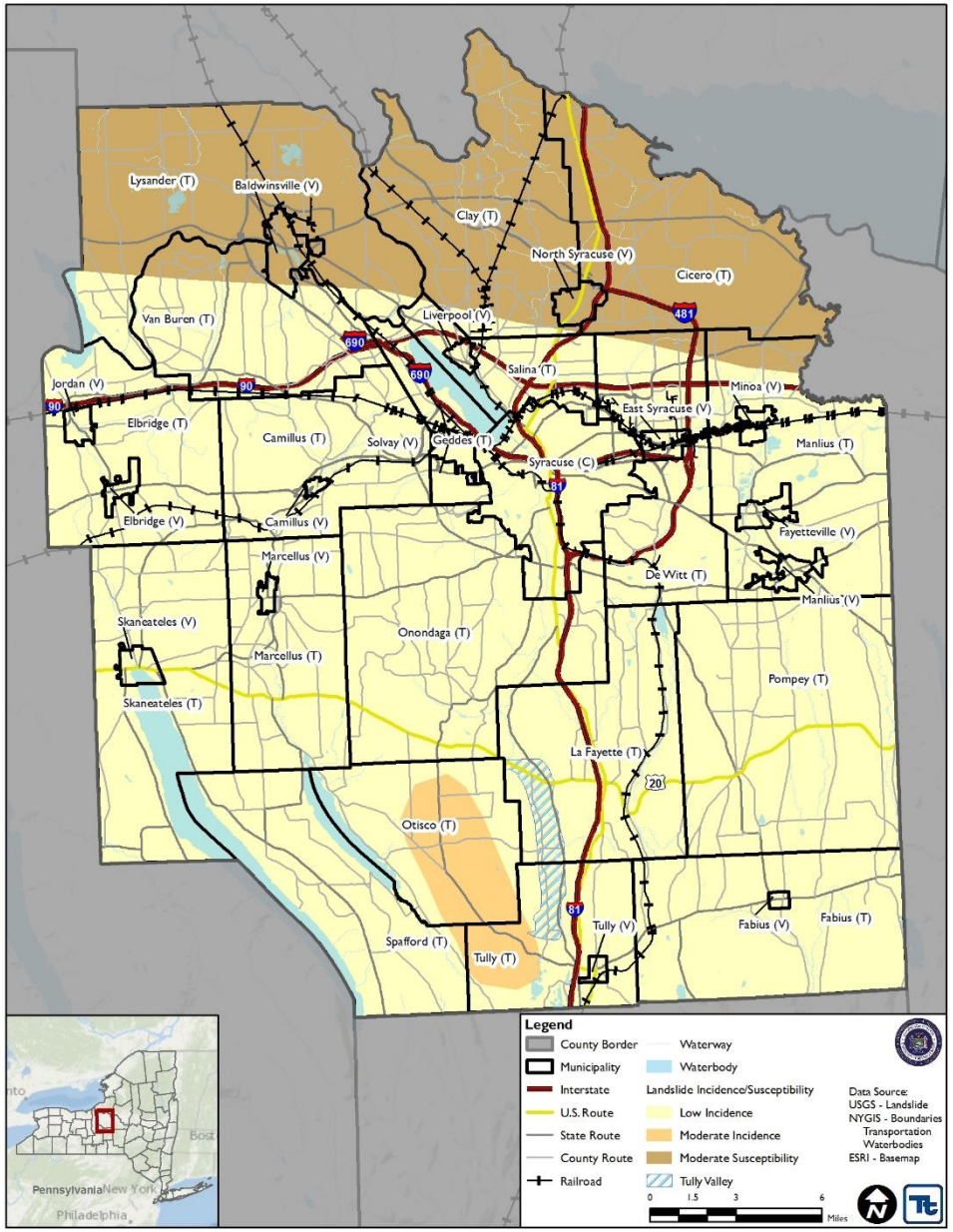
- While the County does not have a history of earthquakes with epicenters in the county, residents have felt events occurring outside of Onondaga County.

Dates of Event	Event Type	Location	FEMA Declaration Number (if applicable)	County Designated?	Losses / Impacts
June 23, 2010	Earthquake	Ontario-Quebec border, Canada	No	No	A magnitude 5.4 earthquake at the Ontario-Quebec border region in Canada was felt throughout the northeast, including Onondaga County. Shaking was felt throughout the county.
August 23, 2011	Earthquake	Richmond, Virginia	No	No	A magnitude 5.8 earthquake centered northwest of Richmond, Virginia was felt throughout the East Coast. Shaking was felt throughout the county.
May 17, 2013	Earthquake	Shawville, Canada	No	No	A magnitude 5.1 earthquake in Shawville, Canada was felt in portions of New York, including Onondaga County. Shaking was felt throughout the county with some reports of items falling off shelves.

Ground Failure Extent

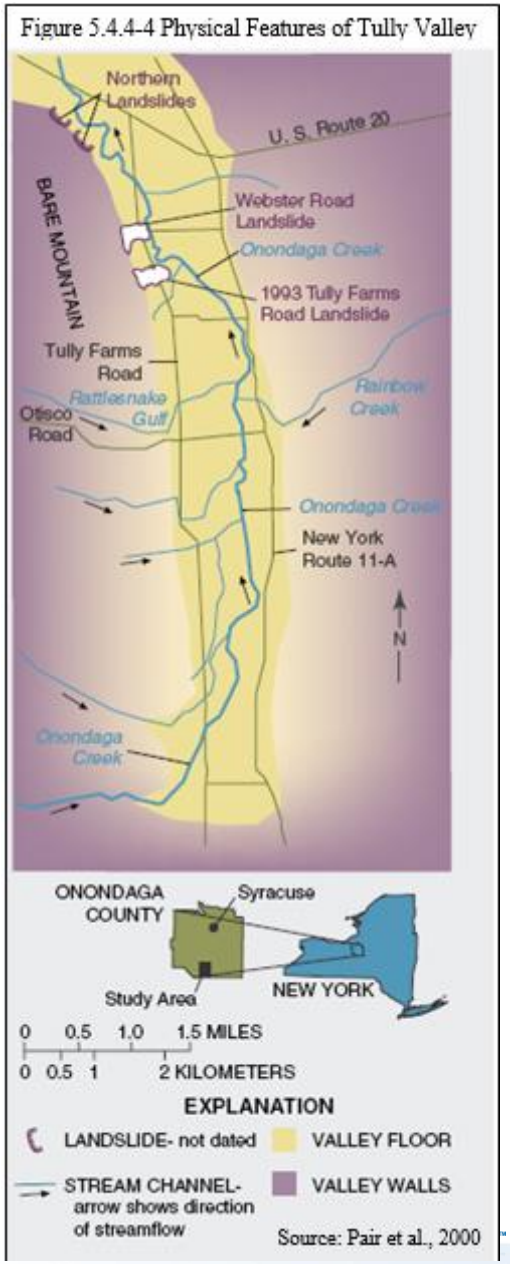
Overall, Onondaga County, as a whole, has a low landslide incidence; however, the steep valley walls have a moderate incidence.
Onondaga County has been ranked as the 9th county in New York State most threatened by landslides and vulnerable to landslide loss (NYSDPC, 2008).

Landslides have been known to occur nearly every year within the Onondaga Lake Watershed, located in southern Onondaga County, particularly in the Tully Valley area within the Town of Lafayette (Onondaga Lake Partnership [OLP], 2005-2006*).*



(Ground Failure) *include in Flood?*

- Landslide
- Land Subsidence
- Mud Boils (Mud Volcanoes)
- Erosion
- Debris Flows (Mudslides)
- Sink Holes
- Localized Exposure
- Flood Related Issues (wash outs, landslides, mud boils)



Drought

USDA Disaster Declaration History (2012 to 2017) for Onondaga County

Date of Event	Event Type	USDA Designation Number
June 2012	Drought, Excessive Heat	S3427
June 2012	Drought	S3441
August 2016	Drought	S4023

2012 Census of Agriculture for Onondaga County

- Number of Farms = 681
- Land in Farms = over 150,000 acres
- Generate $152 million in sales in 2012
- Droughts lead to dryer conditions which cause crops to die and farmers losing money

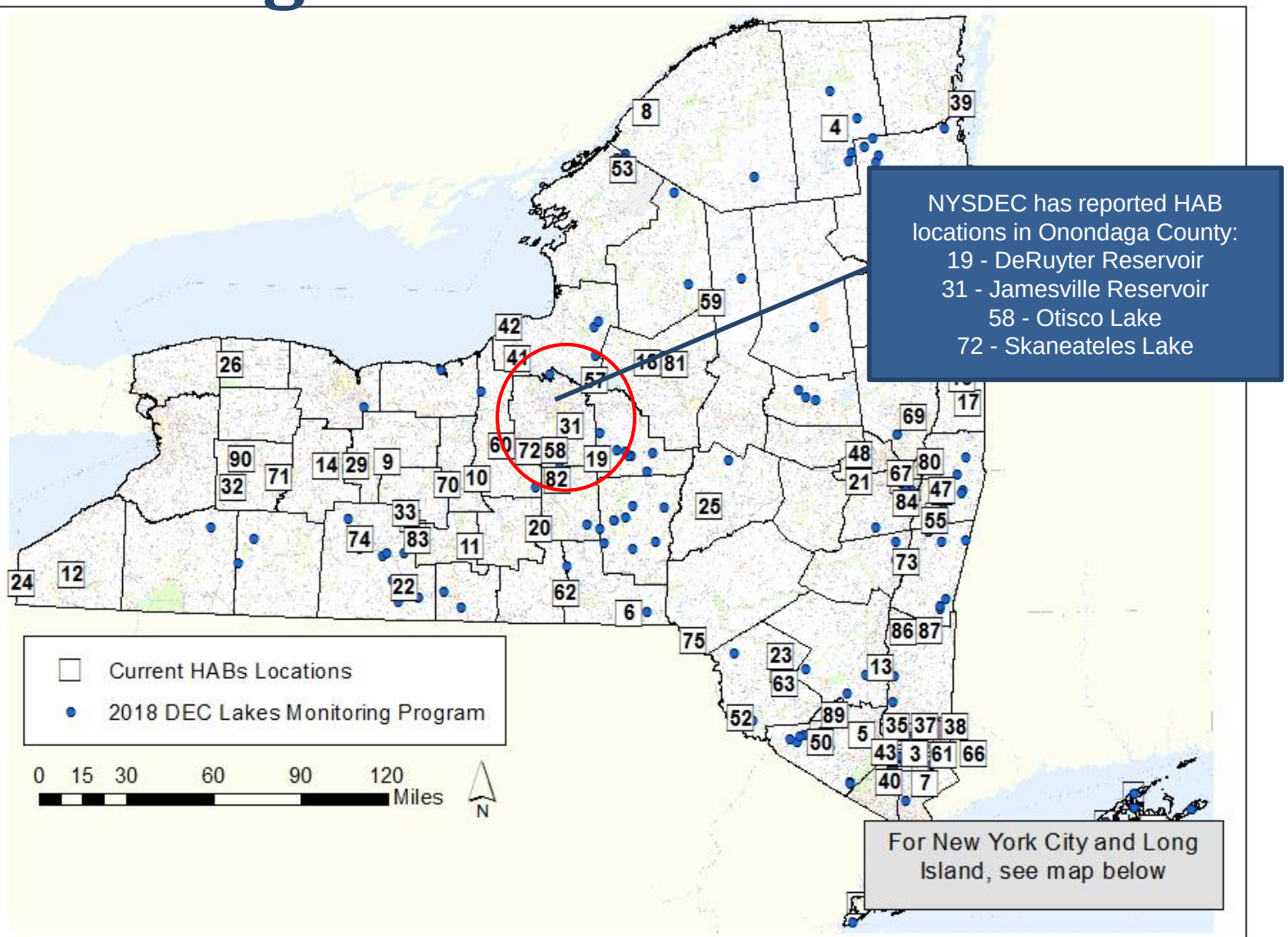
Water Supply and Quality

- Drought conditions can lead to water supply shortages
- Both ground water and surface water supplies are impacted

Recreation

- Lower water levels can restrict boating and water sports
- Stress to ecosystem can impact fishing

Harmful Algal Blooms



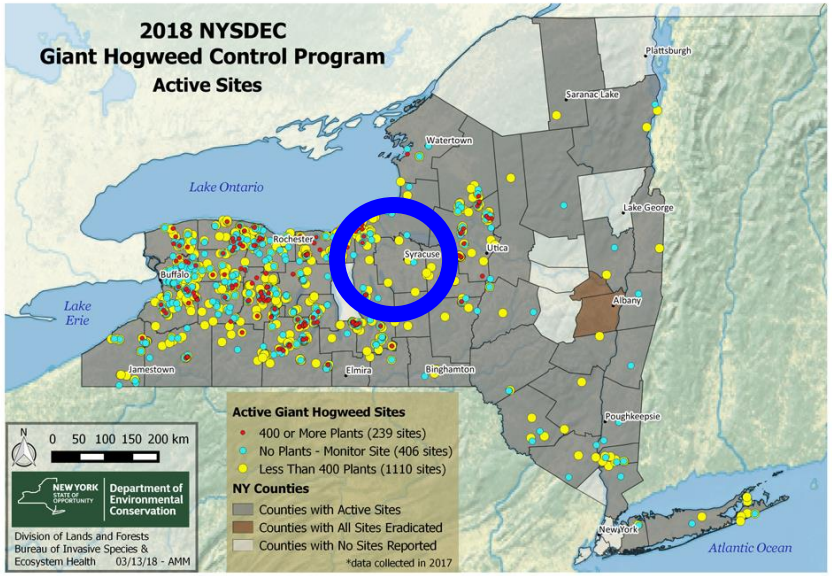
Source: NYS DEC - https://www.dec.ny.gov/chemical/83310.html

Harmful Algal Bloom Events in Onondaga County or Lakes Bordering Onondaga County, 2012 to 2018

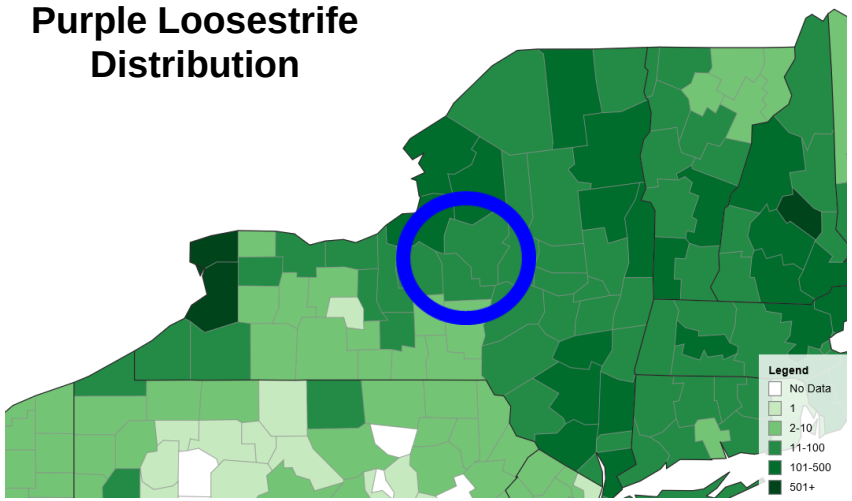
Dates of Listing of Event	Waterbody	Description
2012	Oneida River	S (Suspicious Bloom)
2013	Oneida Lake	C (Confirmed Bloom)
2013	Oneida River	S (Suspicious Bloom)
2014	Oneida Lake	S (Suspicious Bloom)
2015	Oneida Lake	S (Suspicious Bloom)
2015	Otisco Lake	S (Suspicious Bloom
2016	Hiawatha Lake	C (Confirmed Bloom)
2016	Oneida Lake	S (Suspicious Bloom)
2016	Oneida River	HT (Confirmed with High Toxins Bloom)
2016	Tully Lake	C (Confirmed Bloom)
2017	De Ruyter Reservoir	HT (Confirmed with High Toxins Bloom)
2017	Hiawatha Lake	HT (Confirmed with High Toxins Bloom)
2017	Jamesville Reservoir	C (Confirmed Bloom)
2017	Oneida Lake	HT (Confirmed with High Toxins Bloom)
2017	Otisco Lake	C (Confirmed Bloom)
2017	Skaneateles Lake	HT (Confirmed with High Toxins Bloom)
2017	Tully Lake	C (Confirmed Bloom)
2018	Hiawatha Lake	No additional information available
2018	Jamesville Reservoir	C (Confirmed Bloom) Bloom reported to have ended on June 23.
2018	Skaneateles Lake	C (Confirmed Bloom) Bloom reported to have ended on August 6
2018	Oneida Lake	S (Suspicious Bloom) Bloom initially identified in mid-September.

Invasive Species

- Invasive Plants
  - Giant Hogweed
  - Purple Loosestrife
  - Kudzu
  - Wild Parsnip
- Insect Borne Disease
  - West Nile Virus
  - Lyme Disease
  - Eastern Equine Encephalitis (EEE)

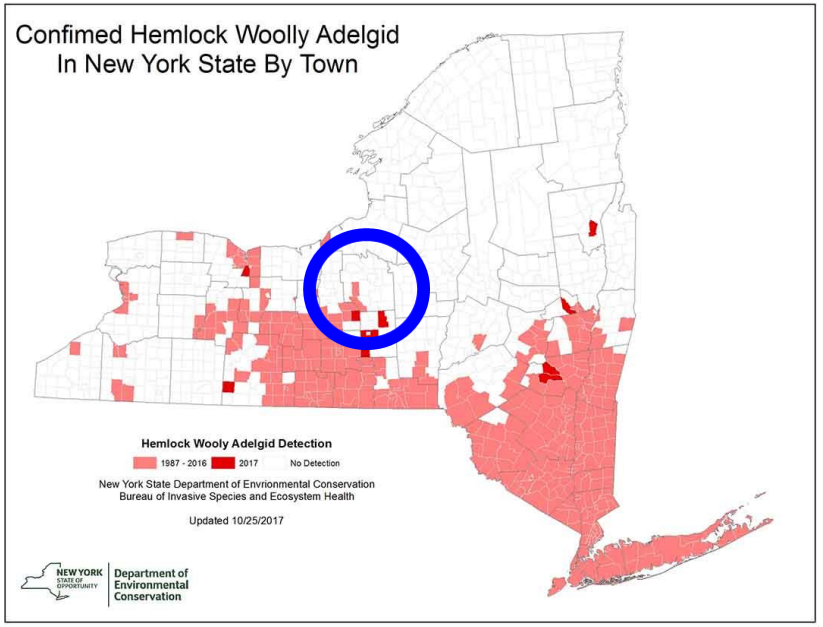


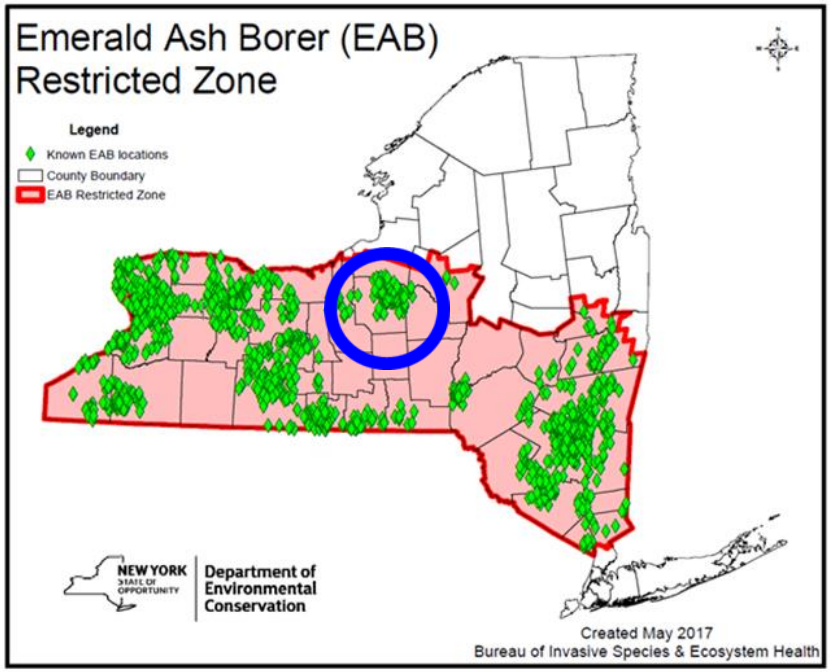
Purple Loosestrife Distribution



Invasive Species

- Invasive Animals/Insects
  - Emerald Ash Borer
  - Hemlock Wooly Adelgid
  - True Army Worm
  - Brown Marmorated Stink Bug
  - Asian Longhorn Tick
  - Lone Star Tick





Ranking of Hazards

What is your mitigation priority to reduce the impacts of natural hazards?

Ranking = [(Population Impact + Property Impact + Economy Impact) x 30% + Capability x 30% + Climate Impact x10%] + Probability of Occurrence x 30%

Hazard Probability of Occurrence

Rating	Probability	Definition
0	Unlikely	Hazard event is not likely to occur or Hazard event is unlikely to occur with less than a 1% annual chance probability
1	Rare	Hazard event has between 1 and 10% annual probability
2	Occasional	Hazard event ha between 10 and 100% annual probability
3	Frequent	Hazard event has 100% annual probability; may occur multiple times per year

Ranking of Hazards

What is your mitigation priority to reduce the impacts of Natural Hazards?

Category	Weighting Factor	Low Impact (1)	Medium Impact (2)	High Impact (3)
Population	3	<14% of developed land area is exposed to a hazard due to its extent and location	15% to 29% of your developed land area is exposed to a hazard due to its extent and location	30% or more of your developed land area is exposed to a hazard due to its extent and location
Property	2	Property exposure is 14% or less of the total replacement cost for your community	Property exposure is 15% to 29% of the total replacement for your community	Property exposure is 30% or more of the total replacement cost for your community
Economy	1	Loss estimate is 9% or less of the total replacement cost for your community	Loss estimate is 10% to 19% of the total replacement cost for your community	Loss estimate is 20% or more of the total replacement cost for your community

Ranking of Hazards, continued

What is your mitigation priority to reduce the impacts of Natural Hazards?

Category	Weighting Factor	Low Impact (1)	Medium Impact (2)	High Impact (3)
Capability	2	Weak/outdated/inconsistent plans, policies, codes/ordinances in place; no redundancies; limited to no deployable resources; limited capabilities to respond; long recovery	Plans, policies, codes/ordinances in place and meet minimum requirements; mitigation strategies identified but not implemented on a widespread scale; County/Jurisdiction can recover but needs outside resources; moderate County/Jurisdiction capabilities	Plans, policies, codes/ordinances in place and exceed minimum requirements; mitigation/protective measures in place; County/Jurisdiction has ability to recover quickly because resources are readily available and capabilities are high
Climate Change	1	No local data is available; modeling projects are uncertain on whether there is increased future risk; confidence level is low (inconclusive evidence)	Studies and modeling projections indicate a potential for exacerbated conditions due to climate change; confidence level is medium to high (suggestive to moderate evidence)	Studies and modeling projections indicate exacerbated conditions/increased future risk due to climate change; very high confidence level (strong evidence, well documented and acceptable methods)

County-wide Risk Ranking

HAZARD	RISK ASSESSMENT CATEGORY													RELATIVE RISK FACTOR
	PROBABILITY		IMPACT							ADAPTIVE CAPACITY		CHANGING FUTURE CONDITIONS		
			Population		Built Environment		Economy		Total					
	Numeric Value	Score	Numeric Value	Score	Numeric Value	Score	Numeric Value	Score		Numeric Value	Score	Numeric Value	Score	
Drought	3	0.9	3	9	1	2	2	2	3.9	2	0.6	2	0.2	**5.6**
Earthquake	1	0.3	1	3	1	2	1	1	1.8	2	0.6	2	0.2	**2.9**
Flood	2	0.6	1	3	1	2	2	2	2.1	3	0.9	3	0.3	**3.9**
Geologic														
Harmful Algal Bloom	3	0.9	2	6	0	0	2	2	2.4	1	0.3	2	0.2	**3.8**
Invasive Species	3	0.9	1	3	0	0	2	2	1.5	1	0.3	2	0.2	**2.9**
Severe Storm	3	0.9	2	6	2	4	1	1	3.3	2	0.6	2	0.2	**5**
Severe Winter Storm	3	0.9	2	6	2	4	1	1	3.3	1	0.3	1	0.1	**4.6**

Low	<3.9
Medium	3.9-4.9
High	>=5

This is where we are heading….

Mitigation Toolbox → **Mitigation Brainstorming** → **Updated Mitigation Strategy** → ***Implementation***

- 2018 Goals
- 2013 Mitigation Strategy
- **Risk Assessment Results**
- Capability Assessment Results
- Subject Matter Expertise
- Stakeholder Public Input
- Existing Plans/Integration
- FEMA Resources

Any Questions?

Onondaga County Project Contact	
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Tetra Tech Project Contacts	
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Onondaga County Multi-Jurisdictional All Hazard Mitigation Plan Update Minutes of Meeting

Purpose of Meeting:	Steering Committee Meeting #3
Location of Meeting:	Onondaga County Syracuse, New York
Date/Time of Meeting:	September 20, 2018; 11:00 a.m. – 1:00 p.m.

Attendees:
Kathleen Bertuch, CNY Regional Planning & Development Board
Kelly Caramanna, Onondaga County Water Authority
Megan Costa, Syracuse-Onondaga County Planning Agency
Ilana Cantrell, Syracuse-Onondaga County Planning Agency
Mario Colone, Syracuse Metro Transpiration Council
Khristopher Dodson, SU Environmental Finance Center
Don Jordan, Syracuse-Onondaga County Planning Agency
Bill Lansley, Onondaga County Parks Department
Bob Petrovich, Onondaga County Department of Transportation
Joseph Rinefierd, Onondaga County Dept. of Emergency Management
Mary E. Robinson, City of Syracuse
Dan Wears, Onondaga County Dept. of Emergency Management
Dan Kwasnowski, Syracuse-Onondaga County Planning Agency.,
Cynthia Addonizio-Bianco, Project Manager, Tetra Tech
Mike DiGiulio, GIS Analyst, Tetra Tech

Agenda Summary: To discuss the Hazard Mitigation Plan update process, project status, finalize hazards of concern, finalize goals and objectives, discuss the SWOO, and discuss the risk assessment and overall ranking.

Item No.	Description
1.	**Welcoming Remarks** Tetra Tech welcomed attendees to the third meeting of the Steering Committee for the Onondaga County Hazard Mitigation Plan update. Attendees were reminded that this is a public process and requires opportunities for public input. Attendees were given copies of the presentation, mission statement and goals/objectives packet, risk assessment overview handouts, SWOO handout, risk ranking handout, and minutes of last meeting in a handout packet. The Steering Committee approved of the meeting minutes from the second Steering Committee meeting. Tetra Tech informed the committee the purpose of the meeting was to provide an update on the project status, partake in the SWOO exercise, review the risk assessment results, and help begin the process of creating mitigation actions and addressing hazard vulnerability. The attendees were given a review of the overall Project Schedule. In order to enhance outreach, committee members suggested the following stakeholder groups to receive information about the planning process with a request to provide feedback via stakeholder and citizen surveys: FOCUS Greater Syracuse

	Planning Federation PACNY Stormwater Coalition Save the Rain Lake Associations
2.	**Project Status** Homework Status • County is working on its worksheets • No response from Otisco, Spafford, Onondaga Nation ○ The County advised that Otisco and Onondaga Nation may not be participating • Input is missing input from the Towns of Camillus, Fabius, Lysander, Otisco, Pompey, Salina and Van Buren. Villages of Skaneateles, Solvay
3.	**Stakeholder and Public Outreach** Tetra Tech advised that the SOCPA HMP webpage has been updated to reflect the plan update process, that the Citizen Survey is now open, and that the Stakeholder links have been distributed. Municipalities are also posting on their websites as well. An Onondaga County HMP brochure was created to aid in public engagement to simplify the participation process and was provided to attendees for distribution.
4.	**Goals & Objectives** Tetra Tech reviewed the Onondaga County HMP's mission statement. At the request of the Steering Committee at the last meeting, SOCPA suggested a definition of resiliency as addressed in the mitigation plan for committee consideration. After discussion the attendees confirmed the below definition to be referenced in the plan with respect to the mission statement, goals and objectives. Definition: *Resiliency – Resistant to the effects and impacts of natural hazards and climate change with the capabilities to recover quickly after an event.* The committee approved the goals and objectives as revised in the last committee meeting.

5.	**SWOO**
	
	Tetra Tech explained the purpose of the SWOO and the differences between strengths and opportunities and weakness and obstacles. The attendees were provided the outcomes of the SWOO from the 2013 Onondaga County Hazard Mitigation Plan with recent updates provided by the County. Suggestions added by the attendees are summarized below.
	
	Flood:
	• Strength
	  ○ Save the Rain Program
	  ▪ Attendee stated that it seemed localized to primarily the City and suggested it be expanded to MS4s

- Suggested: Statewide Construction Stormwater Permit

Severe Storm

- Opportunities
  - Suggested: Expanding sizing of culverts – Severe Storm related rains can create localized flooding but can also be included in Flood.

Severe Winter Storm

- Opportunities
  - Suggested: Pilot program in City to quickly clear select sidewalks and walkways for residents.
    - Discussion about how that may not be considered an opportunity because the process of the plan is for more wide-scale hazard mitigation; however, for the purposes of the SWOO it is more relatable at smaller, local scales with helping populations. There was additional discussion on what is considered a Severe Winter Storm and if this action would be useful during a major event.

Ground Failure

- Tetra Tech discussed the removal of ground failure as a standalone hazard that could be moved into flood.
- Obstacles
  - Discussion of public vs. private responsibility. If a hazardous area is on a private property that can affect the adjacent road, does the local jurisdiction have the responsible/right to proactively go onto the site and address the issues?

Invasive Species

- Tetra Tech gave an overview of the inclusion of the hazard and directed the attendees to the items in the handouts.

Harmful Algal Bloom

- Strengths
  - Suggested: DEC Finger Lakes Hub is researching HAB and reported on findings that could be used for water bodies in the County
  - Suggested: Monitoring programs on affected lakes
  - Suggested: State funding available for monitoring
  - Suggested: USGS installed monitors in Onondaga Lake
  - Suggested: State has winter monitoring
  - Suggested: State training for citizens
- Weakness
  - Lack of notification system for the County
    - Suggested: Wording to be changed since the County has a notification system that could be utilized.

	• Opportunities
	  ○ Identify response/action plan
	  ▪ Suggested: Move to Strength
	  ○ Suggested: Regional Planning is working on 9 Element Plans that can include multi-county coordination with addressing HABs. It was noted that conversations can occur between the agency and HMP team to effectively integrate the plans.
	
	Drought
	• Opportunities
	  ○ Suggested: State health department certifies water buffaloes, which can be used in the event of a severe event to draw water from.

6.	**Hazards of Concern were discussed, including feedback on the hazard of concern worksheet** Overview of County Population, Land-Use, Vulnerable Populations (Disabled; Low-Income) • Tetra Tech – NYSDHSES requires identification of locations for temporary housing for populations that require it after an event – locations where FEMA can place trailers. ○ Attendee – many communities do not allow for single, resident trailers due to zoning, does the State have land that could be used or do communities need allow them? Tetra Tech – State is requiring this be addressed for each community as a part of the planning process. Further discussion will need to be held regarding the ability to freeze local zoning ordinances to allow for these temporary shelters. Tetra Tech provided explanation of the vulnerability assessment process and what goes into the exposure analyses and HAZUS-MH models and how they estimate impacts and losses for the County. Flood • Tetra Tech provided overview of flood history for the County, future flood probability, and risk assessment results. • Tetra Tech suggested thinking about a Debris Management Plan in response to a major flood event and using the debris results as a starting point for addressing of potential debris issues following hazard events. • Suggestion - conservation areas, parks, etc. map vs. floodplain for municipal land percentages • Critical facilities graph in PowerPoint was from Broome, Attendees will be provided the correct graph. Severe Storm • Tetra Tech provided overview of severe storm history for the County, future probability, and risk assessment results • Other potential source for wind speeds? Labor Day event may be higher than the record reported.

Severe Winter Storm

- Tetra Tech provided overview of severe winter storm history for the County, future probability, and risk assessment results
- 2017 storm – County was not declared for the FEMA event.

Earthquake

- Tetra Tech provided overview of earthquake history for the County and risk assessment results

Ground Failure

- Tetra Tech explained that ground failure events are more localized issue for Tully Valley and County-wide vulnerability is low
- Tetra Tech asked for alternate source for landslide risk?
    - Attendee – check USGS (William Kappell)
- Tetra Tech asked for potential erosion locations?
    - Localized sources for stream bank erosion – Soil and Water Conservation Districts

Drought

- Tetra Tech provided overview of drought history and County-wide vulnerability to drought (agriculture, water supply, recreation).

Harmful Algal Blooms

- Tetra Tech provided overview of harmful algal bloom history.
- NYSDEC reported 72 events in Skaneateles Lake – Attendees discussed that the number appears misleading, because many of those events may not have been of any direct harm. Similar questions about data in map and table for other water bodies as well. Attendees suggested working with the Finger Lakes hub at the NYSDEC.

Invasive Species

- Tetra Tech informed attendees that focus is on invasive species primarily affecting infrastructure.
- TT to check Kudzu – Attendee suggested it may not have been identified in the County, and was not perceived by the Steering Committee to be a significant threat at this time.
- Suggested: Other more prevalent such as phragmites or hydrilla/milfoil should be included.
    - Hogweed and purple loosestrife have more of an impact on health and should be considered to be omitted from the plan.
- Onondaga County – suggested removing insect borne diseases from insects that are not invasive
- Emerald Ash Borer and Hemlock will be maintained as they can cause widespread damage to forested areas and in urban areas, which will lead to fracturing and fallen trees.

	• Onondaga County and Steering Committee – a methodology must be determined to decide what exactly should be included.
7.	**Risk Ranking** Tetra Tech provided attendees an overview of the risk ranking process and factors that are included in determining the rankings. Tetra Tech discussed the changes to the process from the last HMP. An attendee discussed changes to a federal vulnerability assessment requirement which will go into effect next year and may provide a set standard for risk ranking. Attendees did not anticipate drought being the highest hazard; Tetra Tech explained the ranking is the starting point to be updated as needed by Committee input. Attendees believe Invasive Species could potentially be ranked higher with more impacts to the built environment. Attendees discussed that using same criteria to rank each hazard may not be the most effective way to rank hazards, which led to additional discussion regarding maintaining Invasive Species in the plan as it is an emerging hazard and has the potential to create widespread impacts (example: Onondaga Lake Parkway – milfoil clogging pipes).
7.	**Adjournment**

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Planning Partnership Mitigation Strategy Meeting
MEETING DATE/TIME: January 14, 2019 10:00am to 1:00pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	
Rick Penmill	Supt.	Solvay	481-7521	RAPenhall@HotMail
Joe Nicoletti	Superintendent	Clay	529-4596	JNicoletti@TownofClay.org
Doug Fisher	Program Mgr	Soil & Water	315 457 0375	dfisher@ocswcd.org
Pat Byrnes	DPW Supsr	Village of Jordan	315 952 4292	lcb2045@twc.com
Lizette Lewis	EDR - Plan	EDR	315-471-0688	llewis@edrdpc.com
Jane Bece	Principal-E	EDR	315-471-0688	JBice@edrdpc.com
Jason Hoy	T Engineer	Van Buren	315 635-3007	engineer@[illegible]
David J Pringle	Codes Officer	T/o Van Buren	315 635 3604	CODEPROD JP@yahoo.com
Rich Abbott	Sanitarian	Syr. Water Dept	315 685-6486	Rabbott@syrgov.net
Mike Decker	Codes Official	Manlius, Fabius	315 378-2722	MDecker@manliusvillage.org
Steve Procopio	Director Code Enforcement	Town of Cicero	315-699-2201	sprocopio@ciceronewyork.net
Jim White	Highway Super	Town of Elbridge	315 689 3351	highwaysupt@townofelbridge
Floyd Duger	Councilor	Town of Elbridge	315-569-2978	fduger@aol.com
John Murray	Trustee	Village of Elbridge	315-730-4683	Trustee3@villageofelbridge.com
Bill Reagan	CEO	Village Liverpool Camillus Marcellus	315-430-7927	codes@villageofliverpool.org

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Planning Partnership Mitigation Strategy Meeting
MEETING DATE/TIME: January 14, 2019 10:00am to 1:00pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
Paul Legnetto	Highway	Town of Camillus	315-672-5556	plegnetto@townofcamillus.com
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Allan Wellington	Highway Sup	Town of Skaneateles	315-952-2645	awellington@townofskaneateles.com
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ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Planning Partnership Mitigation Strategy Meeting
MEETING DATE/TIME: January 14, 2019 10:00am to 1:00pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
John Horser	CEO	T Marcellus	315 673 3269 (x)	jhorser@marcellusny.com
Russ Hauk	FACILITIES ENGINEER	Syracuse	315 448-8059	rhouk@syr.gov.net
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Ralph Lawson	CEO	Town of Lafayette Town of Tully Village of Tully	315-677-5371 315-696-4693	lafayettecodes@Chymail.com Tully_Codes@Yahoo.com
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Edward Ware	DPW Super	Village of N S	315 458 0790	DPW@northsyracuseny.org

ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Planning Partnership Mitigation Strategy Meeting
MEETING DATE/TIME: January 14, 2019 10:00am to 1:00pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
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DOUG MILLER	ENGINEER	DEWITT, TOWN OF MANLIUS TOWN OF SYRACUSE	315-558-8417	DOUGMILLER@MILLERENGINEERS.COM
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ONONDAGA COUNTY, NEW YORK
MULTI-JURISDICTIONAL ALL-HAZARDS
MITIGATION PLAN 2019 UPDATE

Draft Plan Review Meeting
Meeting Date / Time: Monday, March 4, 2019 – 10:30 am to 12 pm
Location: OneGroup Center – 706 North Clinton Street, Syracuse

1. **Opening Remarks**
2. **Draft Plan Review**
   a. **What is new?**
   b. **Section by Section Content Review**
   c. **Information Gaps to Address to Finalize Plan**
3. **Next Steps**
4. **Questions**
5. **Adjournment**

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ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Draft Plan Review Meeting
MEETING DATE/TIME: March 4, 2019 10:30 am to 12 pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
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ODEAN DYER	DEPUTY COMMISSIONER	COUNTY DOT	435 3205	ODEANDYER@ONGOV.NET
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ONONDAGA COUNTY ALL-HAZARD MITIGATION PLAN UPDATE
Draft Plan Review Meeting
MEETING DATE/TIME: March 4, 2019 10:30 am to 12 pm
SIGN-IN SHEET

Name	Title	Agency/Municipality	Phone Number	E-mail
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Onondaga County Hazard Mitigation Plan Update Draft Public Draft Plan Review Meeting

Monday, March 4, 2019

Agenda

- Welcome
- Draft Plan Review
  - What is new?
  - Section-by-section content overview
  - Information gaps to address and finalize plan
    - (action worksheets, hazard impacts, adoption dates)
  - Next steps
- Questions

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What is new in the 2019 Update?

- Updated critical facility inventory
- Additional Hazards of Concern
- More concise hazard profiles
- Risk assessment and supplementary info appendix
- Updated municipal annex content
  - More detailed information on hazard event damages
  - Community dashboard
  - Less, more detailed mitigation actions
  - Mitigation action worksheets
  - Temporary housing and evacuation routes

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What is in the Plan?

- Section 1 – Introduction
  - Mitigation planning
  - Participating jurisdictions
  - Overview
- Section 2 – Plan Adoption
  - Adoption process
- Section 3 – Planning Process
  - Participants
  - Activities
  - Ongoing process

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What is in the Plan?

- Section 4 – County Profile
  - History
  - Physical setting
  - Population and demographics
  - General building stock
  - Land use and population trends
  - Critical facilities
- Section 5 – Risk Assessment
  - Hazards of concern
  - Hazard ranking
  - Hazard profiles

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What are the Hazards of Concern for Onondaga County?

- The following hazards will be included in the 2019 Update:
  - Flood (riverine, flash, ice jam, and dam failure)
  - Geologic Hazards (landslides, subsidence, debris flow, and sinkholes)
  - Severe Storm (hail, wind, lightning, thunderstorm, tornado, hurricanes, and tropical storms)
  - Severe Winter Storm (snow, blizzard, ice, extreme cold, and Nor'Easter)
  - Earthquake
  - Algal Bloom (NEW)
  - Invasive Species (NEW)
  - Drought (NEW)

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Hazard Highlight - FLOOD

- In total, 2,530 residents are NFIP policy holders, and there have been 889 claims totaling $6.5 million.
- 46 Repetitive Loss Properties in Onondaga County (22 in Cicero); no SRL
- 237 Potentially Critical Facilities located in the 100-year floodplain

Figure 5.4.3-6. NFIP Repetitive Loss Properties - Onondaga County

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Hazard Highlight – GEOLOGIC HAZARD

- Landslides, land subsidence, and mudboils
- Steep slopes in southern Onondaga

Steep Slop Areas in Onondaga County

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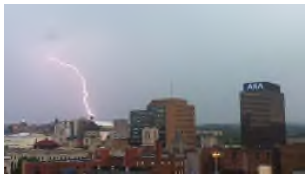
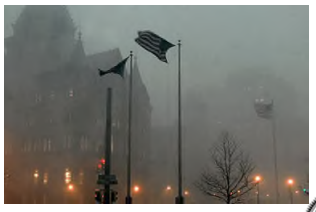
Hazard Highlight – SEVERE STORMS

- Thunderstorms, lightning, hail, tornadoes, high winds, hurricanes/tropical storms
- Thunderstorm Wind most impactful; next is hail

Table 5.4.7-1. Severe Storm Extent in Onondaga County (1950 to 2018)

Extent of Severe Storms in Onondaga County	
Largest Hailstone on Record	2.75 inches
Strongest Tornado on Record	F3
Highest Wind Speed on Record	70 knots (80.5 mph)
Strongest Tropical Storm/Hurricane on Record	Unnamed Tropical Storm(August 1993)





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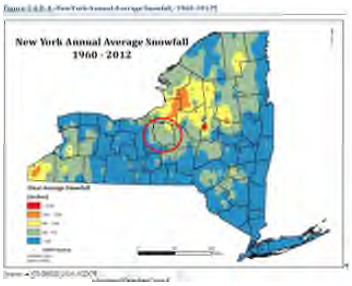
Hazard Highlight – SEVERE WINTER STORMS

- Blizzards,. Heavy snow, Ice Storms,
- Onondaga County experienced 102 winter weather events between 1950 and 2018, including 71 heavy snow events, seven ice storms, 22 winter storms, and two winter weather events.
- 2 FEMA Disasters (Mar 1993, May 2013)
- 100% probability for heavy snow!



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Hazard Highlights - EARTHQUAKE

- HAZUS-MH estimates that the northeast portion of Onondaga County will experience light shaking during the 250-year event.
- HAZUS-MH estimates that the northeast portion of Onondaga County will experience strong shaking during the 1,000-year event.

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Hazard Highlight –HARMFUL ALGAL BLOOMS

- NYS DEC records indicate eight waterbodies in Onondaga County had documented HABs in recent years.

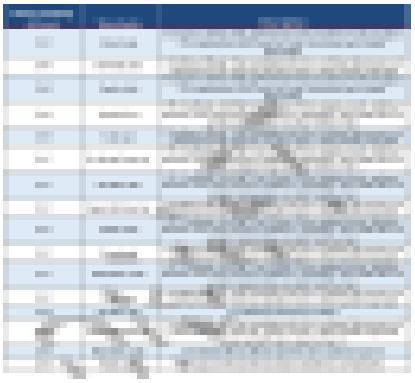

Figure 5.4.5-2. NYSDEC Lakes Monitoring Program Map

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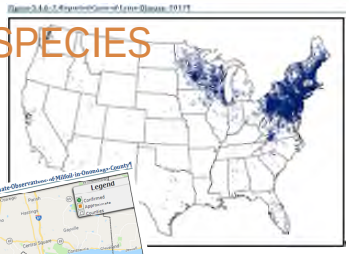
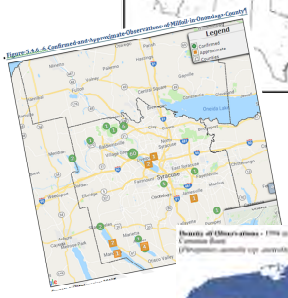
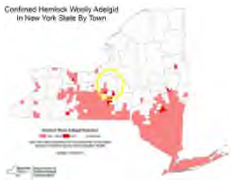
Hazard Highlight –INVASIVE SPECIES

- Onondaga County, a total of 150 invasive species (plants, animals, and insects) have been observed in the County
- In addition to invasive species, Onondaga County identified the infestation of ticks and mosquitos as a concern due to the diseases they can carry and the spread of those diseases throughout the County.
- Focus on 5: Emerald Ash Borer, Hemlock Wooly Adelgid, Phragmites, Eurasian Milfoil, Water Chestnut
- Tick Borne Diseases (Lyme)
- Mosquito Borne Diseases (West Nile, EEE, Asian Tiger Mosquito)







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Hazard Highlight - DROUGHT

- USDA records indicate county has experienced crop losses from drought events generally every 2-3 years in recent history.
- Drought disasters in 2012 and 2016.
- Climate Change impacts: increase incidence projected

Table 5.4.1-4. Projected Seasonal Precipitation Change in Region 6, 2050s (percent change)

Winter	Spring	Summer	Fall
+5 to +15	0 to +10	-5 to +10	-5 to +10

Source: NYSERDA 2011

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Draft Plan Review – Section Contents

- Section 6 – Mitigation Strategies
  - Past accomplishments
  - Goals and objectives
    - Integrating Resilience
  - Capability assessment
    - Plans, programs, resources available
    - Administrative and technical capabilities
    - Fiscal capabilities
  - Mitigation strategy development and update
    - Action identification
    - Evaluation and prioritization
    - Benefit/cost review

2019 Goals

Goal 1 – Protection life and property
Goal 2 – Increase Understanding and Awareness of Natural Hazard Risk
Goal 3 – Promote Resiliency throughout the County
Goal 4 – Protect the environment and natural resources
Goal 5 - Promote and Support Partnerships
Goal 6 - Enhance Disaster Preparedness, Response, and Recovery

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Draft Plan Review – Section Contents

- Section 7 – Plan Maintenance
  - HMP Coordinator
  - Ongoing Planning Committee
  - Monitoring
  - Continuous evaluation and progress reports
  - Updating
  - Integration of hazard mitigation with existing and future programs
  - Continued public involvement

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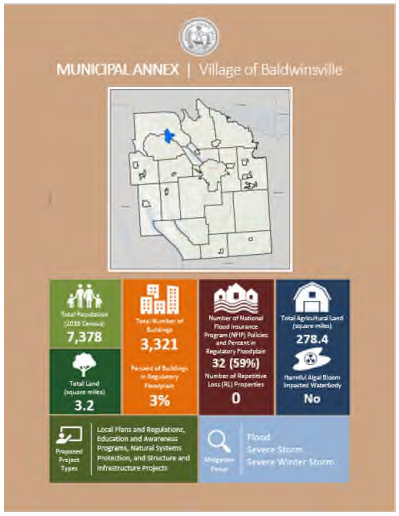
Draft Plan Review – Section Contents

- Section 8 – Planning Partnership
  - Participating jurisdictions
  - Introduce jurisdictional annexes
- Section 9 – Annexes
  - Point of Contact
  - Municipal Profile
  - Risk Assessment
  - NFIP
  - Critical Facilities
  - Capabilities
  - Status of Past Mitigation Actions
  - Current Mitigation Actions
  - Future Needs



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Mitigation Strategy – What Types of Actions?

- Local Plans and Regulations (LPR)
- Structure and Infrastructure Project (SIP)
- Natural Systems Protection (NSP)
- Education and Awareness Programs (EAP)

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What Actions are Included in the Plan?

- Culvert projects (flood, severe storm)
- Identification of high risk trees and high hazard tree removal (severe storm, severe winter storm, invasive species-EAB)
- Stream bank restoration/hardening (flood, severe storm)
- Generator projects (all hazards)
- Roadway/bank stabilization (severe storm)
- Beaver dams (flood, severe storm)
- Deeper Intake Pipes (hazardous algal bloom)
- Warning systems; electronic signs; Nixle (all hazards)
- Outreach projects (all hazards)

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Draft Plan Review – Section Contents

- Appendices
  - Appendix A – Sample Adoption Resolution
  - Appendix B – Participation Matrix
  - Appendix C – Meeting Documentation
  - Appendix D – Public and Stakeholder Outreach Documentation
  - Appendix E – County Profile and Risk Assessment Supplementary Data
  - Appendix F – Critical Facilities
  - Appendix G – FEMA Plan Review Tools
  - Appendix H – Mitigation Catalog
  - Appendix I – Plan Review Summaries
  - Appendix J – NYS DHSES 2017 Mitigation Planning Standards

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Next Steps

- March 8, 2019 — Steering Committee edits due
- March 11, 2019 — Public Comment Period begins
- March 22,2019 — Annex edits due ***asap*** or by 3/22
- April 11, 2019 — Public Comment Period ends
- April 12, 2019 — Submit to NYS DHSES
- July 2019 (est.) — Plan Adoption by County and Jurisdictions

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Questions

Thank you for your time and support during this planning process!

TETRA TECH

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