



## APPENDIX A. ADOPTION RESOLUTIONS

The Tioga County and municipal adoption resolutions will be included in this appendix upon receipt of the Federal Emergency Management Agency (FEMA) Approval Pending Adoption (APA) status. Please refer to Section 8 for additional information on plan adoption procedures.

This appendix also includes an example resolution to be submitted by Tioga County and participating jurisdictions authorizing adoption of the Tioga County Hazard Mitigation Plan Update.



**RESOLUTION NO. XXXX-XX**

**A RESOLUTION OF THE Governing Body OF THE Jurisdiction Name**

**AUTHORIZING THE ADOPTION OF THE**

**2018 TIOGA COUNTY, NY HAZARD MITIGATION PLAN UPDATE**

**WHEREAS**, all jurisdictions within Tioga County have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

**WHEREAS**; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

**WHEREAS**, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

**WHEREAS**; a coalition of Tioga County municipalities with like planning objectives has been formed to pool resources and create consistent mitigation strategies within Tioga County; and

**WHEREAS**, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

**NOW, THEREFORE, BE IT RESOLVED** that the **[jurisdiction name]**:

- 1) Adopts in its entirety, the 2018 Tioga County Hazard Mitigation Plan Update (the “Plan”) as the jurisdiction’s Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.
- 6) Will incorporate mitigation planning as an integral component of government and partner operations.
- 7) Will provide an update of the Plan in conjunction with the County no less than every five years.

PASSED AND ADOPTED on this X<sup>st</sup>, X<sup>nd</sup>, X<sup>rd</sup>, X<sup>th</sup> day of MONTH, YEAR, by the following vote:

AYES:

NOES:





ABSENT:

ABSTAIN:

ATTEST:

\_\_\_\_\_  
Clerk, Town/Village of \_\_\_\_\_

\_\_\_\_\_  
Mayor, Town/Village of \_\_\_\_\_



## APPENDIX B. PARTICIPATION MATRIX

The matrix in Appendix B is intended to give a broad overview of FEMA, New York State, county, municipal and stakeholder personnel that participated in the Tioga County HMP update planning process. Meeting attendees and input provided are also included. All participants were encouraged to attend the kick-off meeting and mitigation workshop. During the planning process the consultant contacted each participant to offer support, explain the process, and facilitate the submittal and review of critical documents.

The participating jurisdictions agreed to abide by the Planning Partner Expectations and Planning Committee Guidelines which established a Steering Committee. Letters of Intent to Participate indicating municipal planning efforts are included in this appendix. The Steering Committee served as the core of the working group. Participation is defined as having input to the hazard analysis (providing critical facility, hazard event, vulnerability data), and as having participated in the mitigation workshop or alternate annex meetings as described in the HMP for the purpose of creating a mitigation strategy to be included in each municipalities annex in Section 9.



Name	Title / Position	Attended Meeting(s)	Attended Planning Partnership Kickoff	Attended Steering Committee Meeting -	Attended Planning Partnership Kickoff	Attended Support Meeting 4/26/18	Attended Support Meeting - 6/13/18	Attended SWOO / Risk Assessment Meeting #1 - 6/13/18	Attended Mitigation Strategy Workshop #1 -	Attended Local Support Meeting - 7/12/18	Attended Plan Draft Review Meeting - 10/31/18	Completed Information Gathering Worksheets /	Provided Data and Information	Reviewed/Updated Inventories (e.g. Identified vulnerabilities	Identified progress on original Mitigation	Identified Locations for Shelters, Temporary	Supported update of Mitigation Strategy	Created Action Worksheets	Facilitated/Supported public and stakeholder	Supported	Integration/Coordination	Reviewed/Approved Draft and Final Plan	Designated Project Point of Contact
<b>Tioga County</b>																							
Elaine Jardine	CPD, Tioga County	X		X		X		X	X		X	X	X	X	X	X	X	X		X	X	X	
Wendy Walsh	District Manager, Tioga County SWCD	X	X	X		X		X	X		X	X	X	X	X	X	X	X		X	X		
Mike Jurn	Technician, Tioga County SWCD	X	X					X	X		X												
Alex Marks	Tioga County SWCD	X	X			X			X		X												
Miranda Palmer	Administrative Assistant, Tioga County	X	X	X		X		X	X		X												
Lisa McCafferty	Public Health, Tioga County	X	X			X					X		X	X	X	X	X	X				X	
Ellen Pratt	Sustainability Manager, Tioga County DPW	X	X	X		X			X		X		X	X	X	X	X	X				X	
Garry Hammond	Commissioner, Tioga County DPW												X	X	X	X	X	X				X	
Michael Simmons	Emergency Services Director					X		X					X	X	X	X	X	X				X	
Bob Williams	Deputy EMO										X												
Bill Ostrander	GIS Manager, Tioga County	X		X		X							X										
Martha Sauerbrey	District 2 Legislator & Legislative Chair, Tioga County	X	X																				
Andy Fagan	Executive Director, CCE Tioga	X		X		X			X		X												
Peter DeWind	County Attorney							X															
<b>Barton (T)</b>																							
Dick (Leon) Cary	Supervisor	X	X			X			X			X	X		X	X	X	X	x		X	X	
Chris Spalding	Highway Superintendent	X							X			X	X		X	X	X				X	X	
Chris Robinson	Code Enforcement											X	X										
<b>Berkshire (T)</b>																							
Keith Flesler	Supervisor	X				X		X				X		X	X		X	x				X	
Bill Spoonhower	Deputy Highway Superintendent	X				X						X		X	X							X	
<b>Candor (T)</b>																							
Jim Douglas	Code Enforcement					X		X				X	X		X	X	X	X	x			X	
William Strogali	Supervisor							X														X	



Name	Title / Position	Attended Meeting(s)	Attended Planning Partnership Kickoff	Attended Steering Committee Meeting -	Attended Planning Partnership Kickoff	Attended Support Meeting 4/26/18	Attended Support Meeting - 6/13/18	Attended SWOO / Risk Assessment Meeting #1 - 6/13/18	Attended Mitigation Strategy Workshop #1 -	Attended Local Support Meeting - 7/12/18	Attended Plan Draft Review Meeting - 10/31/18	Completed Information Gathering Worksheets /	Provided Data and Information	Reviewed/Updated Inventories (e.g. Identified vulnerabilities	Identified progress on original Mitigation	Identified Locations for Shelters, Temporary	Supported update of Mitigation Strategy	Created Action Worksheets	Facilitated/Supported public and stakeholder	Supported	Integration/Coordination	Reviewed/Approved Draft and Final Plan	Designated Project Point of Contact
<b>Candor (V)</b>																							
Eric Halstead	Mayor																					X	
Chad Edwards	Trustee																						X
<b>Newark Valley (T)</b>																							
Stuart Yetter	Supervisor	X					X			X						X	X	x		X		X	
Chuck Meade	Highway Super								X			X	X		X	X						X	
Thomas Larson	Code Enforcement Officer											X											
<b>Newark Valley (V)</b>																							
Bill Foster	DPW	X	X				X	X		X		X	X	X	X	X	X	x		X		X	
Jim Tornatore	Mayor	X	X				X	X		X		X	X	X	X	X	X			X		X	
Mertie Pozzi	Clerk/Treasurer											X											
<b>Nichols (T)</b>																							
Barb Crannell	Deputy Supervisor	X	X				X			X	X	X	X	X	X	X	X	X		X		X	
Robert Huseby	Code Enforcement Officer																					X	
<b>Nichols (V)</b>																							
Lesley Pelotte	Mayor	X	X				X	X		X	X	X	X	X	X	X	X	X		X		X	
<b>Owego (T)</b>																							
Debra Standing	Administrator	X	X	X		X						X	X	X	X	X	X	x		X		X	
Mark Clark	Highway Superintendent											X											
Lou Lorn	Supervisor								X														
Dean Morgan	Town Board								X													X	
<b>Owego (V)</b>																							
Kevin Millar	Flood Resiliency Coordinator	X				X		X		X	X	X	X	X	X	X	X	x		X			
Michael Baratta	Mayor																					X	
Chuck Benent	Code Enforcement	X								X													
Jeff Soules	DPW Superintendent	X				X						X	X	X	X	X	X			X		X	
Dean Morgan	Deputy Mayor	X								X													
<b>Richford (T)</b>																							
Charles Davis	Supervisor	X				X	X	X	X		X	X	X	X	X	X	X	x		X		X	



Name	Title / Position	Attended Meeting(s)	Attended Planning Partnership Kickoff	Attended Steering Committee Meeting -	Attended Planning Partnership Kickoff	Attended Support Meeting 4/26/18	Attended Support Meeting - 6/13/18	Attended SWOO / Risk Assessment Meeting #1 - 6/13/18	Attended Mitigation Strategy Workshop #1 -	Attended Local Support Meeting - 7/12/18	Attended Plan Draft Review Meeting - 10/31/18	Completed Information Gathering Worksheets /	Provided Data and Information	Reviewed/Updated Inventories (e.g. Identified vulnerabilities	Identified progress on original Mitigation	Identified Locations for Shelters, Temporary	Supported update of Mitigation Strategy	Created Action Worksheets	Facilitated/Supported public and stakeholder	Supported	Integration/Coordination	Reviewed/Approved Draft and Final Plan	Designated Project Point of Contact	
William Stell	Planning Board																						X	
Kevin McMahon	Code Enforcement																							
<b>Spencer (T)</b>																								
Randy Thayer	Supervisor	X	X					X	X		X	X	X	X	X	X	X	X	x		X		X	
Jane Bradley	Business Exec, Spencer-Van Etten	X	X																					
Steve Cortright	Code Enforcement																						X	
<b>Spencer (V)</b>																								
Christine Lester	Special Consultant	X	X	X																			X	
Ken Sutfin	Mayor	X	X	X			X	X	X		X	X	X	X	X	X	X	X	X		X		X	
Mike Katchmir	Code Enforcement											X												
<b>Tioga (T)</b>																								
Lou Zorne	Supervisor	X	X						X			X	X	X	X	X	X	X		X		X		
<b>Waverly (V)</b>																								
Daniel Gelatt	Chief of Police					X			X		X	X	X	X	X	X	X	X		X		X		
Robert Chisari	Code Enforcement											X	X											

FPA Floodplain Administrator  
 NFIP National Flood Insurance Program





## 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 Tioga County Hazard Mitigation Plan Update.





## TIOGA COUNTY, NEW YORK 2018 ALL HAZARDS MITIGATION PLAN UPDATE

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### Pre-Kick-Off Meeting - Agenda Thursday, March 8, 2018 at 3:00 PM Teleconference

**Attendees: Wendy Walsh – TCSWCD**  
**Elaine Jardine - TC Planning**  
**Mike Jura – TC SWCD**  
**Cynthia Bianco - Tetra Tech**

#### 1. Introductions

#### 2. Key Action Items/Discussion Points

- a. CRS Communities? CRS process? Expedited Schedule, Amount of County support, LOE for VA update,
  - **Schedule –**
    - i. 6 months from contract signature, six months from KO? Schedule driver? NYS review time (4-6 months)
    - ii. Ways to expedite? Need to expedite?
    - iii. Pending HMGP grants?
    - iv. Support HMA grant application schedule?
    - v. Draft Plan submittal to NYS date?
    - vi. Required turnaround time on committee review of draft sections and return of HW
  - **Budget**
    - i. County vs. Tt support, County to provide data and assist with local input
    - ii. LOE on profiles and VAs-just update levee area and run updated VA?
    - iii. Any changes of HOC?
    - iv. Project status update info to be provided
    - v. NYS guidelines-temp relocation areas, evacuation routes, sheltering info
  - **Priority Data/Outreach**
    - i. FEMA grant agreement
    - ii. Data Wish list
    - iii. LOI's for muni's
    - iv. Overview handout
    - v. NFIP request from FEMA
    - vi. CAV data request from State
    - vii. Public survey (prior to KO)?
    - viii. Worksheets (forward capability assessment and HOC prior to KO)?
    - ix. Stakeholder outreach plan
  - **Meetings**



## TIOGA COUNTY, NEW YORK 2018 ALL HAZARDS MITIGATION PLAN UPDATE

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- i. All meetings public?
- ii. Monthly Steering Committee Meetings
- iii. Biweekly Conference Call Working Group Meetings
- iv. Kick-Off Meeting-open to public?
- v. Public Meetings-needed?

### **3. Data Collection**

- Letters of Intent
- Capability Assessments-prior to KO?
- Critical Facility Inventory-how to obtain update, 2 week turnaround?
- NFIP Data Request – Tt to provide template
- Shared Site – Tt to provide if needed.

### **4. Hazards of Concern Identification**

### **5. Public and Stakeholder Outreach**

### **6. In-kind Services Tracking**



# Tioga County All Hazards Mitigation Plan Update Minutes of Meeting

Purpose of Meeting:	Pre-Kick-Off Meeting
Location of Meeting:	Conference Call
Date of Meeting:	March 8, 2018

Attendees: Wendy Walsh – Tioga County SWCD  
 Elaine Jardine – Tioga County Planning  
 Mike Jura – Tioga County SWCD  
 Alex – Tioga County SWCD  
 Cynthia Bianco-Tetra Tech

Agenda Summary: To discuss the project schedule, data collection, municipal participation, steering committee participation, public and stakeholder outreach, and in-kind services.

Item No.	Description	Action By:														
<b>1.</b>	<p><b>Schedule</b>            The consultant (Tetra Tech) and the County reviewed the preliminary schedule with a goal of submitting a Draft Plan (pre-reviewed by FEMA) to NYSOEM/FEMA by August 19, 2018. The driver for this accelerated schedule is the need for an approved plan to remain eligible for HMA grants. (County and Tt to confirm if HMA grant applications are acceptable without an approved plan.)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="width: 20%;">Now</td> <td>Send out municipal invitations w/LOI and Kick-Off (KO) Meeting date</td> </tr> <tr> <td>Start mid-March</td> <td>Steering Committee Meetings (3-4, monthly, starting mid-March) Biweekly conference calls with Executive Committee</td> </tr> <tr> <td>March 19</td> <td>Municipal Kick-Off Meeting <b>(to be confirmed if this can be announced on the County website as a public meeting).</b> Critical Facility Inventory Finalized 1 week after KO Meeting, Risk Modeling</td> </tr> <tr> <td>End-March to early April</td> <td>Municipal Information Gathering support meetings (by County with support by Tt)</td> </tr> <tr> <td>June - July</td> <td>Municipal Annex Workshop</td> </tr> <tr> <td>July</td> <td>Municipal Annex Support Meetings</td> </tr> <tr> <td>August</td> <td>Updated Plan, pre-reviewed, submitted to NYSOEM/FEMA</td> </tr> </table> <p>The Committee and Tt discussed the proposed schedule.            It was agreed that the Steering Committee would meet monthly (in person or via conference call*) and the Executive Committee would participate in bi-weekly calls with Tt to provide ongoing communication.            *Post meeting note</p>	Now	Send out municipal invitations w/LOI and Kick-Off (KO) Meeting date	Start mid-March	Steering Committee Meetings (3-4, monthly, starting mid-March) Biweekly conference calls with Executive Committee	March 19	Municipal Kick-Off Meeting <b>(to be confirmed if this can be announced on the County website as a public meeting).</b> Critical Facility Inventory Finalized 1 week after KO Meeting, Risk Modeling	End-March to early April	Municipal Information Gathering support meetings (by County with support by Tt)	June - July	Municipal Annex Workshop	July	Municipal Annex Support Meetings	August	Updated Plan, pre-reviewed, submitted to NYSOEM/FEMA	<p>Committee –            1) Schedule the KO and public meeting; 2) Arrange location for KO meeting; 3) Set tentative monthly steering committee meeting dates.</p> <p style="text-align: center;">Tt –</p> <p>1) To send a revised schedule to the County with concrete dates for review and approval.            2) To send schedule to FEMA as to when Plan sections will be complete for review by FEMA.</p>
Now	Send out municipal invitations w/LOI and Kick-Off (KO) Meeting date															
Start mid-March	Steering Committee Meetings (3-4, monthly, starting mid-March) Biweekly conference calls with Executive Committee															
March 19	Municipal Kick-Off Meeting <b>(to be confirmed if this can be announced on the County website as a public meeting).</b> Critical Facility Inventory Finalized 1 week after KO Meeting, Risk Modeling															
End-March to early April	Municipal Information Gathering support meetings (by County with support by Tt)															
June - July	Municipal Annex Workshop															
July	Municipal Annex Support Meetings															
August	Updated Plan, pre-reviewed, submitted to NYSOEM/FEMA															
<b>2.</b>	<p><b>Data Collection</b>  <u>Letter of Intent (LOI)</u> - In order to ensure participation, Tt recommended that the</p>	<p>Committee-            To send out LOIs;</p>														



# Tioga County All Hazards Mitigation Plan Update Minutes of Meeting

	<p>Committee distribute a LOI to participate to each municipal contact with an overview of the plan update process. A sample LOI and cover letter will be provided to the Committee to enable distribution to municipalities prior to Kick-Off Meeting.</p> <p><u>Capability Assessments</u> - Tt recommends sending additional materials to the municipalities with the Kick-Off meeting invitation asking for them to complete before arriving (Capability Assessments, Municipal Information Sheets and Hazard Identification Worksheet). The County suggested that the Tt combine the capability review with the new development and plan development requests to efficiently gather needed data.</p> <p><u>Critical Facility Inventory</u> – Tt will sent the Data Wish-List to Ms. Walsh prior to the meeting. Tt proposed to provide the critical facility data from the 2013 plan to enable the County to review and update. A discussion regarding the definition of critical facilities will be included on the KO agenda. It is the County’s responsibility to distribute and gather comments from the municipalities if they wish. Tt recommends setting a firm deadline of finalizing the inventory of one-week after the KO meeting.</p> <p><u>NFIP Data Request</u> – A template request letter and spreadsheet of the participating municipalities was provided to the County for transmittal to Ms. Marianne Luhrs of FEMA.</p>	<p>KO meeting invitations to municipalities and stakeholders; advertise the public/stakeholder meeting.</p> <p style="text-align: center;">Tt-</p> <p>1) Provide County with the following:</p> <ul style="list-style-type: none"> <li>• Media release sample</li> <li>• Example survey and set-up survey (Survey Monkey)</li> <li>• Hazard ID worksheet</li> <li>• List of contacts from neighboring counties</li> </ul>
<p><b>3.</b></p>	<p><b>Hazard of Concern Identification</b></p> <p>The County has already reviewed the Hazards of Concern and has decided to keep all hazards in the 2013 plan with the exception of the earthquake hazard. A discussion of the hazards of concern will be included on the steering committee kick-off agenda. In addition, Tt will review the NYS HMP, current County HMP, and declared disasters over the past 5 years and prepare a hazard of concern review matrix to be provided to the steering committee. Tt proposes to have the hazards re-confirmed and voted upon by the conclusion of the KO Meeting.</p>	<p>Tt – Provide the Committee the Hazard ID Worksheet.</p>
<p><b>4.</b></p>	<p><b>Public and Stakeholder Outreach</b></p> <p>Tt reviewed the public outreach plan consisting of press a public website, a public hazards survey, brochures, media releases. The County will advise Mr. Simmons (OEM) of the desire to update the County website with information about the planning process as well as announcements of upcoming meetings.</p> <p>(*Post-meeting note, perhaps County can arrange an agenda item on the Council of Governments meeting agenda to provide the HMP status and gather input. Are there other County-wide meetings such as OEM or planning meetings that can be leveraged for outreach?</p>	<p>Committee – Set up the public website which will advertise the KO meeting and have a link to the survey.</p> <p>Tt- See item #2</p>
<p><b>5.</b></p>	<p><b>In-Kind Services</b></p> <p>The County will use its cash match to fund the services of Ms. Wendy Walsh through Tioga County Soil &amp; Water Conservation. In-kind tracking of county and</p>	



# Tioga County All Hazards Mitigation Plan Update Minutes of Meeting

	municipal staff hours will not be necessary.	
<b>6.</b>	<p><b>GIS Data Collection</b></p> <p>Tt will contact Mr. Ostrander to discuss the available data at the County level. Tt will provide the critical facility inventory used for the 2013 plan as a basis for the County to provide updates. For the 2013 plan, the following critical facilities were evaluated but not included in the public plan:</p> <p>Substations Gas lines Water wells</p>	Tt
<b>7.</b>	<p><b>Miscellaneous Action Items</b></p> <p>County:</p> <ul style="list-style-type: none"> <li>▪ Provide a copy of project status report to enable Tt to populate new draft action strategies and project worksheets for ongoing projects.</li> <li>▪ Provide any new data or list of new plans developed since last plan update.</li> <li>▪ Provide Steering Committee and Planning Committee Contact list</li> <li>▪ Provide NYS grant agreement (complete)</li> <li>▪ Provide Cornell Climate Intensity Duration Document (complete)</li> <li>▪ Confirm with OEM that website can be updated with current HMP Planning process information</li> </ul> <p>Tetra Tech</p> <ul style="list-style-type: none"> <li>▪ Provide NFIP Request Letter Template (complete)</li> <li>▪ Provide list of critical facilities for County review and update</li> <li>▪ Provide agenda for Steering Committee and Planning Committee KO Meetings</li> <li>▪ Confirm eligibility/timing for HMA funding if plan is expired</li> </ul>	County and Tt as noted



# TIOGA COUNTY, NEW YORK ALL HAZARDS MITIGATION PLAN UPDATE



**Planning Committee Kick-Off Meeting - Agenda**  
**March 19, 2018 - 3:00 PM - 5:00 PM**  
**Hubbard Auditorium, 56 Main Street, Owego, NY 13827**

- 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 Heather Apgar by April 2<sup>nd</sup>.
- Upcoming Meetings
  - FEMA Mitigation Strategy Meeting – Date to be determined
  - Municipal Workshop – Date to be determined
- Questions and Answers

## **Tioga County Project Contact**

Wendy Walsh, CPESC, CCA, District Manager  
USC Watershed Coordinator and USC Board Member Tioga County SWCD  
(607) 687-3553

## **Tetra Tech Project Contacts**

Cynthia Addonizio-Bianco, CFM  
Tetra Tech, Inc., 6 Century Drive, Parsippany, NJ 07054  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM  
Tetra Tech, Inc., 6 Century Drive, Parsippany, NJ 07054  
(973) 630-8046 | [heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Planning Committee Kick-Off Meeting - 3:00-5:00 pm, March 19, 2018**  
**Sign-In Sheet**



Name	Title	Agency/Municipality	Phone Number	E-mail
Ken Stefan	Deputy Mayor	Village of Spencer	607-592-2268	KStefan@villageofspencer.com
Oriskany Lester	Mayor	Village of Spence	584 4310	mayor@villageofspence.com
Lesley Pelotte	Mayor	Village of Nichols	607 699-3947	pelotte101@gmail.com
Bill Foster	ORU	Village of NY	607 642 8702	villageofny@stny.net
Jim Tornatore	Mayor	Village of Newk-Vally	607-642-8030 (w) 607-642-3543 (h)	jtornatore@stny.net jvtornatore@stny.net
hou Zoran	Supervisor	Town of Tioga	607-658-6990	houzoran@stny.net
Paul Gammell	Dep Deput	Town of Nichols	607-655-3719	bcannell@stny.net
FRANK TRAPES	SUPERVISOR	Town " SPENCER	589-4087	
Alex Marks		Tioga		
Jane Bradley	BUSINESS EXEC	Spencer-VanEtten	589-7105	stanmour@stny.net
Kevin Clapp	Plm mgr. m. p. p.	NYG DATES	518 419 3286	Kevin.Clapp@nyg.org
Mate Sauerbrey	Chair	Tioga	687-8234	
Windy Walsh	District Manager	Tioga SWCS	687-3553	walshw@tioga.ny.us
Miranda Palmer	Admin ASST	"	"	palmerm@co.tioga.ny.us
Pick Cary	Supervisor	Barton	565-2261	
Debra Standinger	Asst Admin	Town ofwego	687-0123x6	dstandinger@townofwego.com



**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Planning Committee Kick-Off Meeting - 3:00-5:00 pm, March 19, 2018**  
**Sign-In Sheet**



Name	Title	Agency/Municipality	Phone Number	E-mail
Ellen Parth	Sustainability mgr.	Tioga Co DPM	607-687-8274	prarth@co.tyga.ny.us
Mike Jura	Technician	Tioga SWCD	607-687-5553	mjura@co.tyga.ny.us
Lisa McCafferty	Public Health	Tioga County		mccafferty@co.tyga.ny.us





**Hazard Mitigation Kick Off Meeting – March 19, 2018**  
**56 Main St Owego, New York – Legislative Room**  
**3:00pm – 5:00pm**

- **Welcoming Remarks and Introductions**

- Andy Fagan (TCCCE), Wendy Walsh (TCSWCD), Deb Standinger (T of Owego), Bill Ostrander (TC GIS) , Christine Lester (V of Spencer), Ken Sutfin (V of Spencer), Ellen Pratt (TC DPW/ Solid Waste) , Elaine Jardine (TC EDP), Cynthia Bianco (Tetrattech), Kevin Clapp (NYS DHSES), Miranda Palmer (TCSWCD), Alex Marks (TCSWCD), Mike Jura (TCSWCD), Lesley Pelotte (V of Nichols), Bill Foster (V of Newark Valley), Jim Tornatore (V of Newark Valley), Lou Zorn (T of Tioga), Barb Crannell (T of Nichols), Randy Thayer (T of Spencer), Jane Bradley (Spencer VanEtten Boces), Marty Sauerbrey (Tioga County Legislative Chair), Dick Cary (T of Barton), Lisa McCafferty (Tioga County Public Health).

- **Tetra Tech Power Point Presentation**

- Tioga County and Participating Municipalities Hazard Mitigation Plan Update
  - Introductions
  - Updating the mitigation plan. Why?
    - Why? Secure federal and state funding and identify vulnerabilities.
    - Help the county prepare for and mitigate the effects of potential disaster. Allow the county and participating partners to be eligible for pre and post disaster mitigation funding. Support CRS participation/rating of municipalities.
  - Schedule
    - Schedule was distributed to the group.
  - Participation
    - All municipalities are required to actively participate (and continue to be covered by the County- Wide Plan) and all have indicated their interest.
    - Municipalities need to submit letters intent to participate, and copies of the letters will be in the hazard mitigation plan.
    - Municipalities need to add Hazard Mitigation Plan Update to their meeting agendas to show participation. Then minutes from that meeting should be emailed to Wendy.
  - Planning Process
    - Organization of the Planning Groups
      - Management Team = SWCD, EDP, Emergency Management
      - Steering Committee – Management Team plus Deb Standinger, Bill Ostrander, Christine Lester, Dan Gelett.
      - Stakeholders = DPW, Hospitals, Major Businesses, School Districts, Salvation Army, Red Cross – Need to get the word out
      - General Public
    - Organize Resources, Re-Asses the Risk, Review and Update Mitigation Plan, Develop Procedures for Plan Implementation, Monitoring, and Update, NYSDHSES/FEMA Approval, Adopt the Plan.
  - Action Items

- Worksheets need to be completed by April 2<sup>nd</sup>.
  - Worksheet # 1 – Event/Losses
  - Worksheet # 2 – Capability Assessment
  - Worksheet # 3 – NFIP Floodplain Administrator
  - Worksheet # 4 – Mitigation Action Progress
  - Worksheet # 5 – Plan Integration Questionnaire
  - Worksheet # 6 – New Development Table
  - Worksheet # 7 – Evacuation and Sheltering Needs
  - Email completed worksheets by April 2<sup>nd</sup> to Heather @ [Heather.apgar@tetrattech.com](mailto:Heather.apgar@tetrattech.com)
- Removal of Earthquakes from plan – need to document why
- Other Discussion Items
  - Silver Jacket/Army Corps of Engineers – Multi Jurisdictional Issues – Example, Randy Thayer (T of Spencer), issues with site in town that is a result of water runoff from Tompkins County – need to identify this issue in our plan and Tompkins County Plan.
  - Plan Maintenance – Need to review the HMP on an annual basis and make sure things that were identified in the plan are still needs.
  - NYS DHSES Requirements (500 year flood)
    - Asses' Critical areas, how would you plan for a 500 year storm event?
    - Displaced resident – Where would you put FEMA trailers?
    - Mitigation Action Worksheet – at least two projects, must have specific project worksheets.



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# Tioga County and Participating Municipalities Hazard Mitigation Plan Update

March 19, 2018



## Today's Topics

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



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## Hazard Mitigation

*“Mitigation” -*

*Sustained 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 the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and local ability...” (CFR).**

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## Are there any Benefits to Mitigation Planning?

National Benefit-Cost Ratio Per Peril		Federally Funded
<small>*BCR numbers in this study have been rounded</small>		
<b>Overall Hazard Benefit-Cost Ratio</b>		<b>6:1</b>
<b>Riverine Flood</b>		<b>7:1</b>
<b>Hurricane Surge</b>		Too few grants
<b>Wind</b>		<b>5:1</b>
<b>Earthquake</b>		<b>3:1</b>
<b>Wildland-Urban Interface Fire</b>		<b>3:1</b>

Per FEMA's 2005 National Institute of Building Sciences report, mitigation saves \$ !

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# Benefits of Hazard Mitigation!

On average,

**\$1** spent on  
**HAZARD MITIGATION**

provides the  
**NATION**  
approximately

**\$4** IN FUTURE  
**BENEFITS**



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# Hazard Mitigation has Multiple Positive Outcomes

**3 KEY COMPONENTS**  
THAT CONTRIBUTE  
TO NATURAL HAZARD  
MITIGATION PLANNING



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## Tioga 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 partners 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 include:
  - 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

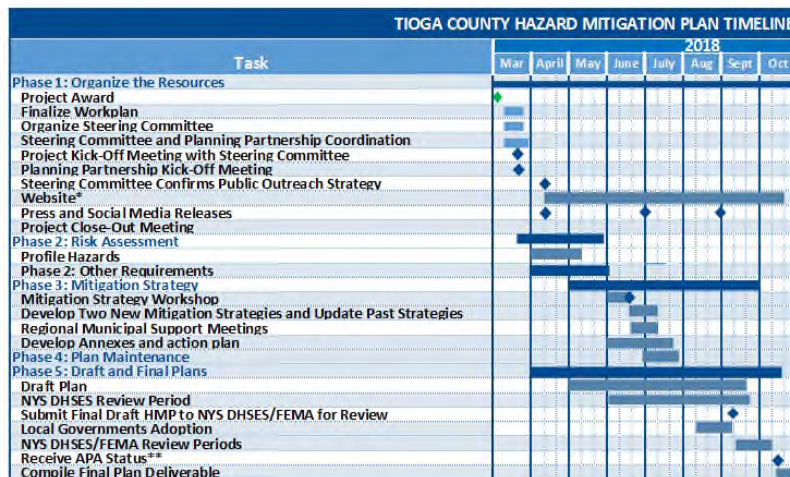
- Establish Jurisdictional Teams
- Assess Critical Facilities
- Plan for Displaced Residents
- Plan for Evacuation and Sheltering
- Document Past Mitigation Requirements
- Include Jurisdictional Annexes
- Develop Mitigation Actions (at least 2 Action Worksheets)
- Plan for Climate Change



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## Schedule (see handout)

Plan Expires: March 2018



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## Plan Document

- Volume 1 will contain all information that applies to the whole planning area (county) such as description of the planning process, risk assessment, goals and objectives, County/multi-jurisdictional mitigation strategies and a plan maintenance program.
- Volume 2 will contain those elements that are “jurisdiction specific”. Your community’s chapter. These annexes will meet DMA requirements for each jurisdiction.

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## Organization of the Planning Group

- County Management Team (Soil & Water Conservation District and Department of Planning)
- Contract Consultant (Tetra Tech)
- Steering Committee
- Planning Committee
- Stakeholders
- General Public

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## 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.
- FEMA has greatly expanded their scrutiny of “participation”... Municipalities are required to actively participate.
- All municipalities who wish to join the update process must formally indicate their intent to participate.

### Letters of Intent to Participate

**Your Letter of Intent to Participate (LOIP) for your community are due ASAP to Wendy Walsh. Copies will be included in the HMP.**

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## Municipal Participation

- Attend planning partnership meetings/workshops
- Provide data and information in a timely manner
- Support public and stakeholder outreach in your jurisdiction
- 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

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## Plan Update Process Steps

- Organize Resources
  - Re-Assess the Risk
  - Review and Update the Mitigation Plan
  - Develop Procedures for Plan Implementation, Monitoring and Update
  - 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



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## 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

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## Data Collection (see handout)

We are collecting:

- Critical Facilities
- Plans/Reports/Studies

Please send us any  
Plans/Studies that are  
not in this table.

**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
DATA COLLECTION: STUDIES/PLANS

County/Local – Comprehensive Plans, Emergency Plans, Floodplain Management Plans, Stormwater Management Plans

Studies/Plans Obtained to Date - Please provide others, including:

Existing plan, program or technical documents

Existing plan, program or technical documents	Date	Jurisdictional Applicability
Town of Berkshire Comprehensive Plan		
Town of Candor Comprehensive Plan	2017	Berkshire (T)
Town of Owego Emergency Operations Plan	2016	Candor (T)
Tioga County and Town of Owego Stormwater Management Program Plan	2016	Owego (T)
Village of Owego Comprehensive Plan Update	2015	Owego (T)
Town of Richford Comprehensive Plan Update	2012	Owego (T)
Waverly Glen Park Master Plan	2015	Owego (V)
Tioga County Community Health Improvement Plan	2015	Richford (T)
Tioga County 2030 Strategic Plan	2017	Waverly (V)
Tioga County NY Rising Community Reconstruction Plan	2014	Countywide
Tioga County Agricultural and Farmland Protection Plan Update	2014	Countywide
	2015	Countywide

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## Re-Assess the Risk



These are the Five Steps to Assess Risk:

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

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## Assess the Risk – Step 1: Hazard of Concern Identification

Hazards of Concern (HOCs)- 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.
- Our effort should be proportional to the risk the hazards pose.
- Each municipality has differing risk to the HOCs.
- We are generally limiting this plan to natural hazards.



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## Hazards of Concern for Tioga County

- **Hazards of concern for 2013:**
  - **Flood**
  - **Winter Storm**
  - **Severe Storm**
  - **Drought**
  - **Earthquake**
- **Earthquake being removed as hazard of concern for 2018**



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## Assemble Your Municipal Mitigation Team

*Here is who we suggest you include as part of your Hazard Mitigation Planning 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

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## Worksheets

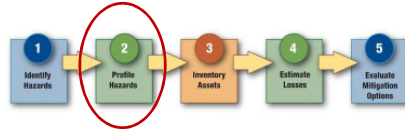
(Right-Side of Folder and on CD)

#	Worksheet Name	Who is Responsible to Complete and Submit this Worksheet?	Where do you find the requested information?
1	Events/Losses	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

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## Assess the Risk – Step #2: Hazard Profiling (Worksheet #1 on your CD)

- 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?



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## Worksheet #1 on CD Events and Losses

### Homework

**Complete Worksheet #1 (Events/Losses) and send  
Word electronic version via email by April 2**

**TIOGA COUNTY HAZARD MITIGATION PLAN  
UPDATE**

**Worksheet #1 – Events and Losses**

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by April 2, 2018 to Heather Aggar, Taha Tech  
Phone: (518) 339-8940 Email: heather.aggar@tiocountyny.com

Municipality: \_\_\_\_\_  
Name and Title of Individual Completing Worksheet: \_\_\_\_\_

Who can provide information about events and losses: OESM Coordinator, Police, Fire, DPW, building inspector, municipal engineer. Refer to FEMA Project Worksheets (PWs), DPW records, police response records, etc.

In the table below, please identify events in which your community suffered significant damages/losses and describe these losses (e.g., flooded roads, road closures, DPW/Police overtime, debris management, opened shelters for two days, etc.). Please add other non-declared events that affected your community that are not listed.

Then, please fill out an "Event and Loss Summary Sheet" for all events that have incurred significant damages/losses. Feel free to add additional sheets for other major events that impacted your community.

Date of Event	Event Type (Character Description if applicable)	County Designated?	Did your community suffer (any) injury from this event? (If "No," please complete an Event and Loss Summary Sheet for this event.)	Notes on damages within your jurisdiction:  In some cases, losses, injuries and other burdens may be shared.  A "No" could be checked if the nation's "5" used on March 11th to close the I-190. Events were spread across parts of central New York and Puerto Rico for up to March 11th. By the morning of the 11th, several municipalities from the 11th states of New York
6/14/03	NA	NA		
3/14/07	DR-632	Yes		

**For example**

Main Street closed for 3 days; Police/Fire/DPW overtime for 3 days to detour traffic, collect debris, assist at shelter; Shelter at High School open for 1 day

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## Worksheet #1 on CD Events and Losses (Continued)

**TIOGA COUNTY HAZARD MITIGATION PLAN  
UPDATE  
Worksheet #1 - Events and Losses**

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by April 2, 2018 to: Heather Appar, Tetra Tech  
Phone: (973) 630-8046 E-mail: heather.appar@tetratech.com

Municipality: \_\_\_\_\_  
Name and Title of Individual Completing Worksheet: \_\_\_\_\_

*Who can provide information about events and losses:* OEM Coordinator, Police, Fire, DPW, building inspector, municipal engineer. Refer to FEMA Project Worksheets (PWs), DPW records, police response records, etc.

In the table below, please identify events in which your community suffered significant damages/losses and describe these losses (e.g., flooded roads, road closures, DPW/Police overtime, debris management, opened shelter for two days, etc.). Please add other non-declared events that affected your community that are not listed.

Then, please fill out an 'Event and Loss Summary Sheet' for all events that have incurred significant damages/losses. Feel free to add additional sheets for other major events that impacted your community.

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Did your community suffer losses (costs from this event)? (Yes/No - If "yes" please complete an Event Loss Summary Sheet for this event.)	Notes on damages within your jurisdiction
6/14/15	N/A	N/A		In some areas, homes, schools and other businesses were flooded.
3/14/17	DR 4322	Yes		A Nor'easter moved up the eastern US coast on March 13th to late on the 14th. Heavy snow spread across parts of central New York and Pennsylvania late on March 13th. By late evening on the 14th snowfall amounts range from 8 to 33 inches of snow.

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## Assess the Risk – Step #3: Inventory Assets

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

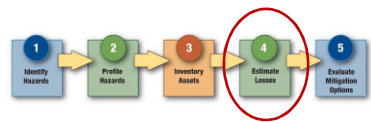
- Population and Demographics – Has this changed since 2013?
- Building Stock (Residential, Commercial, Industrial, Educational, etc.) – Has this changed since 2013?
- Facilities (critical and essential facilities, utilities, transportation features, high-potential loss facilities and user-defined facilities)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



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## Assess the Risk – Step #4: Estimate 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?



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## Assess the Risk – Step #5: Re-evaluate Hazard Mitigation Goals and Objectives

**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”.



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## Assess the Risk – 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

## Capability Assessments (Worksheet #2 on CD)

### Homework

**Complete Worksheet #2 and  
send Word version via email by April 2**

- **Building Code Official**
- **Municipal Engineer**
- **Land Use Planner**
- **Municipal Clerk**
- **Floodplain Administrator**
- **CFO/Fiscal Representative**

**CHEROKEE COUNTY HAZARD MITIGATION PLAN**  
 UPDATE  
**Worksheet #2 – Capability Assessment**

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by April 2, 2010 to: Heather Appar, Tetra Tech  
 Phone: (770) 630-8846 E-mail: heather.appar@tetratech.com

**Municipality:** \_\_\_\_\_  
**Name and Title of Individual Completing Worksheet:** \_\_\_\_\_

**1. Planning and Regulatory Capability:** Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation. In addition, indicate the code chapter, and name of plan including any explanation of authority in the right-most column.


**Who can assist with completing this table:** Municipal Planner, Clerk, Code Official. Refer to your municipal codes and ordinances, Master Plan.

Title / Program (Code Chapter, name of plan)	Do you have this (Yes/No) (Yes, date of adoption or update)	Authority (local, county, state, federal)	Dept. /Agency Responsible	Date Created and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Comprehensive / Master Plan				
Capital Improvements Plan				
Floodplain Management / Base Plan				
Sewerwater Management Plan				
Open Space Plan				

## NFIP Compliance

### We need the NFIP Floodplain 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.
- **Homework:** NFIP Administrator to complete **Worksheet #3**



**TIOGA COUNTY HAZARD MITIGATION PLAN  
UPDATE**  
Worksheet #3 – NFIP Floodplain Administrator  
Questionnaire

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by April 2, 2018 to: Heather Apper, Tetra Tech  
Phone: (717) 626-8046 E-mail: heather.apper@tetratech.com

Municipality: \_\_\_\_\_  
 NFIP Floodplain Administrator Name/Title: \_\_\_\_\_

**Flood Vulnerability Summary**

1. Does the municipality maintain lists/inventories of properties that have been flood damaged? If so, does this inventory identify property owners who are interested mitigation (e.g. elevation, acquisition)?
2. Characterize/quantify the number of structures damaged during flooding events. If possible, can you provide a table of these structures indicating the number of residential / commercial / industrial?
3. Do you make Substantial Damage estimates, and how many were declared for flood events in your jurisdiction?

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## 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



## Confirm Progress on 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.

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## Update Progress on 2013 Actions (Worksheet #4 to be sent to you by email for review)

### Homework

Review **Worksheet #4** (Custom to your Municipality) and send via email to Heather Apgar



Hazard Mitigation Plan Update  
Worksheet #4 - Mitigation Action Review Worksheet

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by April 2, 2018 to:  
Heather Apgar, Tetra Tech  
Phone: (973) 630-8046 E-mail: heather.apgar@tetratech.com

*Who should provide you information about past mitigation actions:* The 'Responsible Party' column in the table below which identifies who the point of contact/owner of this action in the 2018 HMP (e.g., DPW, Engineer, Code Official, Planner, OEM Coordinator, local residents, etc.).

Please use the following table to indicate progress and next steps on your community's mitigation strategy identified in the 2018 HMP. Please be as detailed as possible.

Project #	Project	Hazard(s) Addressed	Brief Summary of the Original Problem	Responsible Party	Status (In Progress, No Progress, Complete)	Evaluation of Success (if project status is complete)		Next steps
						Cost	Level of Protection	
					Choose an item.	Level of Protection	Damages Avoided; Evidence of Success	1. Project to be included in 2018 HMP or Discontinue 2. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 3. If discontinued, explain why.

## New Mitigation Actions for 2018 HMP Update

- Opportunity to add new mitigation actions
- This includes all in-progress grant applications (HMGP generators, CDBG acquisitions, etc.)
- FEMA's Mitigation Workshop – TBD



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

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## 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.

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## Mitigation Action Example

General Action: Retrofit Vulnerable Infrastructure

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

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## 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

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## We Need You Engaged and Involved!

### Outreach

- Update your Municipal webpage and link to County's HMP Web Page – *in process of being updated*
- Social Media Blasts
- Local Announcements of HMP Update
- Local public meetings
- **Homework – All due April 2nd via email to Heather**
- Plan Integration (**Worksheet #5** on CD)
- New Development (**Worksheet #6** on CD)

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## 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)**

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## Plan Integration (Worksheet #5 on your CD)

- For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. We need to gather an understanding of your community's progress in plan integration, as well identify potential integration opportunities that you may pursue in the future.
- Circulate to your "team"

**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
Worksheet #5 - Capability Assessment and Plan Integration Worksheet

**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
Worksheet #6 - Feasibility Assessment and Plan Integration Worksheet

## New Development (Worksheet #6 on your CD)

- Please indicate recent development since 2013, and any known or anticipated major new residential/commercial development and major infrastructure development that are identified for the next five (5) years in your municipality.

**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
Worksheet #6 - New and Recent Development Worksheet

Please work with your municipal planning team and complete this worksheet. Please send electronic Word version by April 2, 2018 to: Heather Aggar, Tatra Tech  
Phone: (717) 630-0060 E-mail: heather.aggar@tatrarech.com

Municipality: \_\_\_\_\_  
Name and Title of Individual Completing Worksheet: \_\_\_\_\_

Please indicate any recent development within your community from 2013 to present. Additionally, please indicate known or anticipated major residential and/or commercial development and major infrastructure development that are identified for the next five (5) years in your community.

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Address and Parcel ID	Known Based Year(s)	Description/Status of Development
Recent Development from 2013 to Present					
Known or Anticipated Development in the Next Five (5) Years					

# Sheltering and Evacuation (Worksheet #7 on your CD)

- Please indicate shelters, potential sites for temporary housing after a disaster, potential sites to relocate buildings out of the floodplain, and evacuation routes and procedures.

**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
Worksheet #7 - Shelters, Evacuation Routes, Temporary Housing

**Evacuation and Sheltering Needs**  
Evacuation and sheltering measures must be in place and available for public awareness to protect residents and mitigate risk stress and personal hardships during natural events.

Your municipality must identify routes and procedures to evacuate citizens prior to and during an event, and identify shelters for evacuated citizens. Provisions must be included for a range of medical needs, accommodations for pets, and compliance with the Americans with Disabilities Act. This plan must discuss (or refer to an existing plan) evacuation routes and procedures. Location of shelters (outside of the 1-percent annual chance flood area), and specific information about how these plans are accessible and available to the public or include the related narrative for these plans as an appendix in this plan.

**Sheltering Needs**  
In the table below, please identify any designated emergency shelters located in your community. Please include facility name, address, and provisions.

Facility Name	Address	Capacity	Accessibility	ADA Compliant	Shelter Provisions	Type of Medical Services Provided	Other Services Provided

\*\*Additionally, please provide an explanation of provisions available at each shelter that address medical needs. Indicate if medical personnel will be on staff at the shelter and if they are available full-time or part-time. Also indicate if medical needs shelters are available in the event shelters are needed.

Please identify any current procedures in place for sheltering.

**Evacuation Routes**  
Please identify your community's routes and procedures to evacuate your residents prior to and during an event.

**Worksheets #1 - 7**  
**Due in electronic format by April 2<sup>nd</sup>**  
**via email to Heather**  
All electronic templates are on your CD in the 'Worksheets' folder.  
Call us with questions!

#	Worksheet Name	Who is Responsible to Complete and Submit this Worksheet?	Where do you find the requested information?
1	Events/Losses	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



## Plan Implementation

- Your mitigation strategy section provides a “blueprint” to follow for progressively reducing your community’s natural hazard risk.
- It includes two types 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) opens April of this year.
  - HMGP funding comes in the wake of Declared Disasters in the State.



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## Public Outreach

- Link to the County Mitigation website  
<https://www.tiogacountyny.com/departments/emergency-services/>
- Place brochures at municipal hall/libraries
- Utilize social media
  - Facebook
  - Twitter

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## Critical Dates

- April 2 Worksheets due to Heather via email
- June Municipal Annex Workshop
- June FEMA Mitigation Strategy Meeting
- July Municipal Annex Support Meetings
- August Updated Plan Submittal to NYSDHSES/FEMA
- August Municipal Adoption of Plan
- Expedited (<45 days) FEMA Approval Pending Adoption
- September Send FEMA Final Plan with Adoptions

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## Next Meeting - Annex Workshop (Mandatory)

- Who needs to attend:
  - Municipal Engineer
  - Floodplain Administrator
  - Land Use Planner
  - Building Code Official
  - Municipal Clerk
  - Administrator
  - OEM Coordinator
  - Public Works Director
  - Police/Fire/EMS Officials

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Thank you!

Cynthia Bianco, CFM

Heather Apgar, CFM

Tetra Tech, Inc.

[cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

[heather.apgar@tetrattech.com](mailto:heather.apgar@tetrattech.com)



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# TIOGA COUNTY, NEW YORK ALL HAZARDS MITIGATION PLAN UPDATE



## Steering Committee/Working Group Meeting - Agenda

March 19, 2018 at 2:00 PM

Hubbard Auditorium

56 Main Street

Owego, NY 13827

1. **Background and Introductions**
2. **Project Approach-Planning Priorities**
3. **Schedule**
4. **Data Collection**
  - GIS Data
  - Plans and Reports
  - Letters of Intent to Participate
5. **Steering Committee Guidelines**
6. **Data Capture Worksheets (Homework)**
7. **Confirmation of Mission Statement, Goals, and Objectives**
8. **Confirmation of Hazards of Concern**
9. **Public and Stakeholder Outreach**
  - Press Release and Social Media
  - Capture of miscellaneous outreach
10. **Additional Items**
11. **Adjournment**

### Tioga County Project Contact

Wendy Walsh, CPESC, CCA, District Manager  
USC Watershed Coordinator and USC Board Member Tioga County SWCD  
(607) 687-3553 | WalshW@co.tioga.ny.us

### Tetra Tech Project Contacts

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



**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee Meeting - March 30, 2017, 2:00-3:00pm**  
**Sign-In Sheet**



Name	Title	Agency/Municipality	Phone Number	E-mail
Debra Standinger	A2 Admn.	Town of Owego	607-687-0123x6	dstandinger@townofowego.com
Ken Saffin	Deputy Mayor	Village of Spencer	607-592-2268	ksaffin@villageofspencer.com
Elaine Jordanne	CPD	Tioga County	607-687-8857	jordanne@co.tioga.ny.us
Mendy Walsh	District Manager	Tioga Co. SWCD	607-687-3553	walshm@co.tioga.ny.us
Andy Fagan	CEE Exec Director	CEE TI OGA	607-687-5420	afagan@ceetoga.com
Ellen Pratt	TC DPW/SEWD	TI OGA COUNTY	607-687-8274	pratt@co.tioga.ny.us
Miranda Palmer	Admin ASSIST	Tioga County SWCD	607-687-3553	palmerm@co.tioga.ny.us
Kevin Clapp	Program. Mgt. Prog.	NYS DHSES	(518) 493-2866	kevin.clapp@dhse.state.ny.us
Cynthia Biscoe	Project Mgr.	Tetra Tech, Inc.	973-630-8044	cynthia.biscoe@tetratech.com
Christa Seeks	Mayor	Village of Spencer	607-589-4310	mayor@villageofspencer.com
Will Ostwald	Tioga Co GIS Manager	Tioga County	607-687-8293	ostwald@co.tioga.ny.us



**Hazard Mitigation Kick Off Meeting – March 19, 2018**  
**56 Main St Owego, New York – Legislative Room**  
**2:00pm – 3:00pm**

- **Welcoming Remarks and Introductions**

- Andy Fagan (TCCCE), Wendy Walsh (TCSWCD), Deb Standinger (T of Owego), Bill Ostrander (TC GIS) , Christine Lester (V of Spencer), Ken Sutfin (V of Spencer), Ellen Pratt (TC DPW/ Solid Waste) , Elaine Jardine (TC EDP), Cynthia Bianco (Tetrattech), Kevin Clapp (NYS DHSES), Miranda Palmer (TCSWCD)

- **Updating the mitigation plan**

- Why? – Secure federal and state funding, and identify vulnerabilities.
- Each municipality needs to have two mitigation actions, state will provide workshops to assist with strategies and development of mitigation worksheets. Kevin said that typically these are for seeking future grant funding. Looking for top project priorities and don't have to be specific with each hazard. There should be a connection between risk assessment and projects that have been listed. Also the projects should be ones that are expected to be implemented within the next five years.
- Elaine recommended we not include School District in their own individual sections as they don't generally attend meetings, just roll them into their municipal annexes. Miranda let Elaine know that there actually has been school district participation in the last couple of meetings. Wendy thought we should just keep them the way they are currently. School districts do need to be part of the Hazard Mitigation Plan. Critical facilities
- Critical Facilities - Tetrattech has old spreadsheet. Looking for guidance from FEMA of DHSES, Kevin can provide a list of examples, but it is the county and municipalities roll to determine on our own what we believe the critical facilities are. The Steering Committee will follow up with this item at the next meeting.

- **Schedule**

- Schedule was passed around for the group. Elaine suggested that we allow for extension through December 2018 if needed. FEMA and DSHSES both need 45 days for review, so there was a concern that the plan wouldn't be finished in the schedule provided.
- Elaine asked about sending sections of the plan in pieces once they have been completed. Kevin said that this was fine, and that it also wouldn't hurt to copy Paul from FEMA on these emails as well.
- HMA
- HMGP – subset of HMA, can seek funding without approved plan, but maybe not eligible until have approved plan. Kevin will need to look into this for further clarification. HMGP is for funding related to declared disasters. Funding will be coming out soon for Stella and Lake Ontario shore flooding.
- PDM – need approved plan
- FMA – need approved plan
- Letter of Intent to Participate – Need to send out letter of intent to participate to each municipality and have them submit the letter on their own letterhead stating that they are going to participate in the plan. Would like to have this completed by April 2<sup>nd</sup>.

- **Public Outreach**
  - Social Media, Webpage, Outreach for events such as fair, legislative meeting. Elaine said that she would work with Mike Simmons to try and set up the use of the Emergency Management Page to be able to host the HMP site and be able to post the meeting schedules. Also need to have municipalities post link on their websites to the Emergency Management website, and they should take a screenshot of the action to show it was a completed task.
- **Legislative Contact**
  - Wendy will attend Legislative Work Session and give updates.
- **Steering Committee Guidelines**
  - Identified alternates, Wendy Chair, Elaine Alternate, Quorum would be 6, keep the same for this time.
- **SharePoint Website**
  - Cynthia thought there would be value in having a SharePoint. She is going to initiate that and have them start it.
- **GIS Data**
  - Bill will send April parcel data
- **Other Discussion/Follow Up Items**
  - MWBE Waiver – need to follow up with waiver request.
  - Objective 3-4 – need to add support business and agri business awareness.

4/26/16

9:30 - 11:30 am

Tioga County Municipal HMP  
Support Mtg 5  
Sign-in

<u>name</u>	<u>Dept.</u>	<u>email</u>
Jim Douglas	code ENF. Candor NY	code.enforcement@ TOWN OF CANDOR, NY
Charles Davis	Supervisor Richford NY	cdavis@richfordny.com
Kevin Millan	Food Restory Coordinator Queyo, Ill. KJMillow@gmail.com	<u>2:30 pm</u>





# TIOGA COUNTY, NEW YORK ALL HAZARDS MITIGATION PLAN UPDATE



## Steering Committee/Working Group Meeting - Agenda

April 26, 2018 at 3:00 PM

Hubbard Auditorium

56 Main Street

Owego, NY 13827

1. Welcome and Opening Remarks
2. Progress Report
3. Schedule
4. Data Collection
  - GIS Data
  - Plans and Reports
  - Letters of Intent to Participate
5. Data Capture Worksheets (Homework) Status
6. Confirmation of Mission Statement, Goals, and Objectives
7. Confirmation of Hazards of Concern-Discussion of Earthquake Hazard
8. Public and Stakeholder Outreach
  - Website content, Surveys, Press Release and Social Media
9. Capture of miscellaneous outreach
10. Additional Items
  - Sharepoint site communication and document collaboration
11. Adjourn

### Tioga County Project Contact

Wendy Walsh, CPESC, CCA, District Manager  
USC Watershed Coordinator and USC Board Member Tioga County SWCD  
(607) 687-3553 | WalshW@co.tioga.ny.us

### Tetra Tech Project Contacts

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Tetra Tech, Inc., 6 Century Drive, Parsippany, NJ 07054	Tetra Tech, Inc., 6 Century Drive, Parsippany, NJ 07054
(973) 630-8044   cynthia.bianco@tetrattech.com	(973) 630-8046   heather.apgar@tetrattech.com



**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Steering Committee/Working Group Meeting - April 26, 2018, 3pm**  
**Sign-In Sheet**



Name	Title	Agency/Municipality	Phone Number	E-mail
Kevin Mullen	Board Policy Coord	V. Hay	607-687-3863	KJMilow@gmail.com
Leon Cary	Supervisor	Town of A-Barton	(607) 565-2261	
Ellen Pratt	Sustainability Mgr	Tioga County	(607) 687-8274	pratt@co.tioga.ny.us
Miranda Palmer	Admin Assist	Tioga SWCD	607-687-3553	palmerm@co.tioga.ny.us
Alex Parks	Cons. Tech	" "	" "	Yarksa@co.tioga.ny.us
Debra Standinger	P&Z Administrator	Town of Owego	607-687-0123x6	dstandinge@townofowego.com
Andy Fagan	COE Director	COE Tioga	607-687-4020	agfag@cornell.edu
Michael Simmons	Emergency Services Dir.	Tioga County	607-687-2023	simmons@co.tioga.ny.us
Bill Ostrander	GIS Manager	Tioga County	607-687-8293	ostrander@co.tioga.ny.us
Olisc McCafferty	Public Health	Tioga County	607-349-3372	mccafferty@co.tioga.ny.us
Wendy Walden	Dist. Manager	TIOGASWCD	607-687-3553	Walden@co.tioga.ny.us
DANIEL GELATT	CHIEF OF POLICE	WAVERLY VILLAGE	607-565-2836	dgelatt@villageofwaверy.com
Elaine Jardine	County Planning Dir.	Tioga County EDP	607-687-8257	jardine@co.tioga.ny.us
Cyathia Diaco		Tetutech		



## Tioga County, New York All Hazards Mitigation Plan Update

Steering Committee/Working Group Meeting  
April 26, 2018  
3:00 p.m.SWCD Conference Room  
183 Corporate Drive  
Owego, New York 13827

### 1.) Welcome and Opening Remarks

- a. Attendees: Wendy Walsh, Miranda Palmer, Alex Marks (Tioga County SWCD), Cynthia Bianco (Tetra Tech), Kevin Millar (Flood Resiliency Coordinator Village of Owego), Ellen Pratt (Tioga County Materials Recover Manager), Bill Ostrander (Tioga County GIS Manager), Elaine Jardine (Tioga County EDP), Lisa McCafferty (Tioga County Health Department), Dan Gelatt (Village of Waverly), Leon Carey (Town of Barton), Debra Stadinger (Town of Owego), Andy Fagan (Cornell Cooperative Extension), Emily Warfle (Tioga County Health Department), Michael Simmons (Emergency Services Director).

### 2.) Progress Report

- a. Handout given to the group, attached – “Handout A”
- b. Cynthia encouraged that all municipalities who have not done so return worksheets that were provided to them by May 2<sup>nd</sup>. Cynthia, Elaine, and Wendy, will work to reach out to those municipalities listed who have not provided back the worksheets.

### 3.) Schedule

- a. Handout given to the group, attached – “Handout B”
- b. Cynthia will distribute a list of the critical facilities that were listed in the last Hazard Mitigation plan to the group via email for suggestions and feedback.

### 4.) Data Collection

- a. GIS Data
  - i. Bill Ostrander has supplied requested data to Cynthia as of today.
- b. Plans and Reports
  - i. Cynthia is going to send Elaine a list of plans that each municipality has identified to have in place that are linked to natural hazard events. If the plans are not online (on the municipalities website), Cynthia would like to have access to them. After further discussion, decided it would be best to send the list of plans to the entire steering committee so that maybe all members could assist in the effort.

- c. Letters of Intent to Participate
      - i. There are still some municipalities who have not handed in their letters of intent to participate. Will need to do so by May 2<sup>nd</sup>.
- 5.) Data Capture Worksheets (“Homework”)
  - a. For status update on where each municipality stands, please see progress report attachment (“Handout A”)
- 6.) Confirmation of Mission Statement, Goals, and Objectives
  - a. A document was distributed to the group with changes/additions added in red. Cynthia reviewed the changes and additions with the group and asked if anyone had any additions or suggestions. Group confirmed that that changes all looked good, and gave Cynthia permission to make the changes to the plan.
  - b. See attached document, “Handout C”.
- 7.) Confirmation of Hazards of Concern – Discussion of Earthquake Hazard.
  - a. Discussion was held on the Earthquake Hazard. In the 2013 Hazard Mitigation plan, Earthquake was identified as a hazard. Past feedback from FEMA indicated that this was below the recommended threshold (3 peak ground acceleration (pga)) for inclusion of this hazard in mitigation plans, that the County could choose not to include it as a hazard of concern. Tioga County is in the lowest risk area in New York State, and the committee does not believe that it poses a high risk of impact to communities or that it provides an opportunity to include relevant mitigation actions to significantly reduce the impact of the hazard to communities. Discussion was held, and the group decided that it didn’t seem justifiable to keep earthquakes as an identified hazard in the plan and rather than including it as a hazard of concern, it would be best to justify omitting it. Tetra Tech will appropriately document this in the plan.
- 8.) Public and Stakeholder Outreach
  - i. Website Content
    - 1. Cynthia provided some recommended website content to the group. Emily is going to try to get this content on the Emergency Services page.
  - ii. Surveys
    - 1. A sample of surveys were distributed to the group before the meeting for review. Cynthia asked that if anybody had any suggestions on them to please let her know by May 2<sup>nd</sup>. The surveys will be posted to the website via a link to a survey monkey for people to fill out. Elaine suggested reducing the number of questions on the neighboring counties survey to closer to ten, her fear was neighboring counties weren’t going to want to go through twenty questions.
  - iii. Press Release
    - 1. Elaine will work on press releases before she goes on vacation.
  - iv. Social Media
    - 1. Cynthia mentioned that the link to the surveys could easily be posted on social media sites such as Facebook or Twitter.
- 9.) Capture of miscellaneous outreach
  - a. Cynthia will work with the group to collect miscellaneous outreach materials. Discussion was had on each member of the steering committee reaching out to partners to

encourage the use of the outreach materials reviewed. Recommendations to reach out to other groups consisted of LEPC, RPD, Utility Companies, Gas and Oil.

10.)Additional Items

- a. SharePoint site communication and document collaboration
  - i. Cynthia reminded the group that an email was sent to them to set up a SharePoint login in to access all documents that Tetra Tech will be making available. She encouraged all members of the steering committee to gain access to the SharePoint site.

11.)Adjourn

- a. Meeting Adjourned at 4:45pm



**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**SW00 / Risk Assessment Meeting - June 13, 2018**  
**3:00 pm - 5:00 pm / UDN. MEETING**  
**Sign-In Sheet**



Name	Title	Agency/Municipality	Phone Number	E-mail
Jim Jeff		Village of Otego - 10 Am - 11 Am		
Keith Flecker	Supervisor	T. Berksline 11 Am -		
Bill Spanbauer	DEPUTY	T. Berksline 11 Am -		
Dale Davis	Supervisor	Tom & Berksline 12:00 pm		cdavis@rrdli.com
Ken Sutfin	Mayor	V. Spencer 1 PM		





# **TIOGA COUNTY, NEW YORK ALL HAZARDS MITIGATION PLAN UPDATE**



**Steering Committee/Working Group Meeting - Agenda  
June 13, 2018 at 3:00PM – 5:00PM  
Hubbard Auditorium  
56 Main Street  
Owego, NY 13827**

- 1. Background and Introductions**
- 2. Project Status**
- 3. Risk Assessment Overview**
- 4. Risk Ranking**
- 5. SWOO (Strengths, Weaknesses, Obstacles and Opportunities) related to limiting impact of Hazards of Concern**
- 6. Breakout Groups**
- 7. Development of Hazard Problem Statements by Community**
- 8. Next Steps**
- 9. Adjournment**

### **Tioga County Project Contact**

Wendy Walsh, CPESC, CCA, District Manager  
USC Watershed Coordinator and USC Board Member Tioga County SWCD  
(607) 687-3553 | WalshW@co.tioga.ny.us

### **Tetra Tech Project Contacts**

Cynthia Addonizio-Bianco, CFM	Heather Apgar, CFM
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**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**SW00 / Risk Assessment Meeting - June 13, 2018**  
**3:00 pm - 5:00 pm**  
**Sign-In Sheet**



88

Name	Title	Agency/Municipality	Phone Number	E-mail
Elaine Jordine	County Plan Dir	EDP	607-687-8257	jardinee@co.tioga.ny.us
Chick Davis	Town Administrator	Rockwell	607-229-5118	cdavis@rockwell.com
Alex Marks	Tech.	Tioga SWCD	607-687-3553	marka@co.tioga.ny.us
Miranda Palmer	Admin Assit	SWCD	"	Palmerm@co.tioga.ny.us
MIKE JUR	Stem Tech	SWCD	607-687-3553	Jur.m@co.tioga.ny.us
Jim Tornatore	Mayor	Village of Newark Valley	642-3543	vtornatore@strnyrr.com
Wendy Walsh	District Manager	TIOGA SWCD	642-8686	wtornatore@strnyrr.com
Will Fales	DEW Sup	Village Newark Valley	(607) 687-3553	walshw@co.tioga.ny.us
Ken Suthin	Mayor <del>Spencer</del>	Village of Spencer	607-642-8702	villagebarn@strnyrr.com
Kevin Pallas	Key	Village of Spencer	607-592-2268	Mayor@villageofspencer.com
RANDY THAYER	SVP.	Village of Dryden	687-3663	KJMilow@Yahoo.com
Eric Melles	FTT Director	T.O. SPENCER	589-4889	
Steve Kelly	N.V. Supervisor	Tioga Bt	349-3372	
Kesley Pelotte	Mayor V. Nichols	Town of Newburgh	642-8746	NV Supervisor@STNYGov
BARB CRANFEE	DEP SUPER	Village of Nichols	699-3447	pelotte101@gmail.com
Michael Simmons	Director	Town of Nichols	699-3171	bcranne11@stnyrr.com
Peter DeWind	County Attorney	Tioga County OES	687-2023	simmons@co.tioga.ny.us
		Tioga Co. Legal	687-8253	dewind@co.tioga.ny.us







**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE  
SW00 / Risk Assessment Meeting - June 13, 2018  
3:00 pm - 5:00 pm  
Sign-In Sheet**

Name	Title	Agency/Municipality	Phone Number	E-mail
Heather Apgar	Consultant	TC		
Cynthia Bianco	Consultant	TC		



## Tioga County, New York All Hazards Mitigation Plan Update

Steering Committee/Working Group Meeting  
June 13, 2018 – 3:00pm – 5:00pm  
Hubbard Auditorium  
56 Main Street  
Owego, New York 13827

- 1.) Background and Introductions
  - a. Elaine Jardine (Tioga County EDP), Charles Davis (T of Richford), Alex Marks (Tioga County SWCD), Miranda Palmer (Tioga County SWCD), Mike Jura (Tioga County SWCD), Wendy Walsh (Tioga County SWCD), Jim Tornatore (V of Newark Valley), Will Foster (V of Newark Valley), Ken Sutfin (V of Spencer), Kevin Millar (V of Owego), Randy Thayer (T of Spencer), Lisa Mcafferty (Tioga County Public Health), Stu Yetter (T of Newark Valley), Lesley Pelotte (V of Nichols), Barb Crannell (T of Nichols), Michael Simmons (Tioga County OES), Peter DeWind (Tioga County Attorney), Cynthia Bianco (Tetra Tech), Heather Apgar (Tetra Tech).
- 2.) Project Status
  - a. There will be a mitigation strategy workshop held on July 11, 2018 in the Public Safety Conference room on corporate drive. We are on target to review the draft plan on August 15<sup>th</sup>. After the draft plan has been reviewed, the Hazard Mitigation Plan Update is scheduled for submitting to NYSDHSES in September and FEMA in November.
- 3.) Risk Assessment Overview
  - a. See attachment “A” - Flood Risk
- 4.) Risk Ranking
  - a. See attachment “B” – Hazard Vulnerability
- 5.) SWOO (Strengths, Weakness, Obstacles, and Opportunities) related to limiting impact of hazards of concern
  - a. See attachment “C”
- 6.) Breakout groups
  - a. After the presentation of risks and subsequent discussion of areas of concern, the attendees broke into smaller groups to document hazard problem statements. These statements were summarized on a poster and will be used to develop specific problem statements to support the county and municipal mitigation strategies.
- 7.) Development of Hazard Problem Statements by Community

- a. County Wide – Need to work on outreach and education throughout the community about severe weather events.
  - b. Village of Nichols – Leslie spoke about the flood in 2011, the village of Nichols was not accessible to reach for assistance. There was no way in or out of the village. She thought it was really important to do outreach and education in the village to keep residents aware of what they should be looking for in terms of river heights, evacuation procedures, evacuation routes, shelters, etc.
  - c. Town of Nichols – Barb spoke about having some time of early warning system for the town, especially for the residents of East and West River Road. Wasn't sure of the most effective way to do this, but it needs to be a priority. Need to keep the residents of the community alert and aware.
  - d. Town of Newark Valley – Stu spoke about having Owego Creek running through the town, they do have a small floodplain area as a result of Owego Creek. However most of their issues stem from undersized culverts and inadequate bridges. Kevin Clapp from DHSES mentioned that it would be beneficial to have specific locations noted of the problem areas with the bridges and culverts. Elaine mentioned after these locations are identified, they should be prioritized.
  - e. Town of Richford – Town seems to have minimal flooding, most of these issues are a result of flash flooding and rising water. They have a lot of commuter traffic with the 38/79 intersection. The key issue he identified was communication for residents trying to get in or out of town while severe weather events are happening. In the flood of 2011, there was no way to communicate with the residents what roads were accessible and which ones weren't.
  - f. Village of Newark Valley – Jim mentioned that a majority of their issues arise from flash flooding events, plugging of culverts/bridges. Mentioned they have an issue in the village with a storm drain which is owned/operated by NYSDOT. This inadequate storm drainage systems impacts residences along Route 38 that are not located within FEMA' Special Flood Hazard Area.
  - g. Village of Owego – Kevin spoke about the village having multiple sources of flooding. Flooding comes from Owego Creek, Susquehanna River, run off from Brick Pond development. The village has an inadequate storm drainage systems, the cost would be in the upward amount of \$10 million to make work correctly.
  - h. Village of Spencer – Spoke about having flooding issues as a result of Catatonk Creek, and also mentioned that there are 3 ponds that are filling with silt and causing issues.
- 8.) Next Steps
- a. Every municipality needs to work on problem statements to support updated mitigation strategy. One worksheet needs to be completed per mitigation action. Need to focus on problems, quality not quantity! Also need to provide details to support the issues in order to help define the solution to the problem. We will be providing this information to NYSDHSES to prepare for the July 11<sup>th</sup> meeting.
- 9.) Follow Up Items:
- a. Mike Simmons – To request Public Assistance claims from FEMA for each municipality

- b. Page 6 – Slide that says flood history – Correct July 23 – 24 event to note Town of Nichols (not Village), also in this slide there is an amount of \$308,000 in damages, this number is not accurate, it was actually much higher.
  - c. Town of Tioga also is not listed on the above-mentioned slide, they sustained substantial damages during the July rain event.
  - d. Potential County mitigation action: County to develop a sheet/tracking system for municipalities to utilize when storm events occur to track the impact it is having on them. Need to be able to track all damages in order to assist with the next hazard mitigation plan update and provide documentation for future grant applications. This needs to be a county wide action plan. Should bring to COG meeting.
  - e. Need to know what the federal presidential declaration threshold for Tioga County is – Action by SWCD.
  - f. Need to review FEMA and DHSES recommendation of critical facilities. We have some CF listed such as libraries that we may not need to be capturing. Steering Committee will work to narrow down what we can remove from the list.
  - g. Identify (if possible) official Red Cross shelter locations. Kevin mentioned making our own “CERT” team which would allow us identify our own shelters, evacuations routes, etc.
- 10.) Adjournment
- a. Meeting adjourned at 5:00pm.



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## Planning Together for a Resilient Tioga County

### 2018 Tioga County Hazard Mitigation Plan

Planning Partnership Meeting  
June 13, 2018



## Today's Topics

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



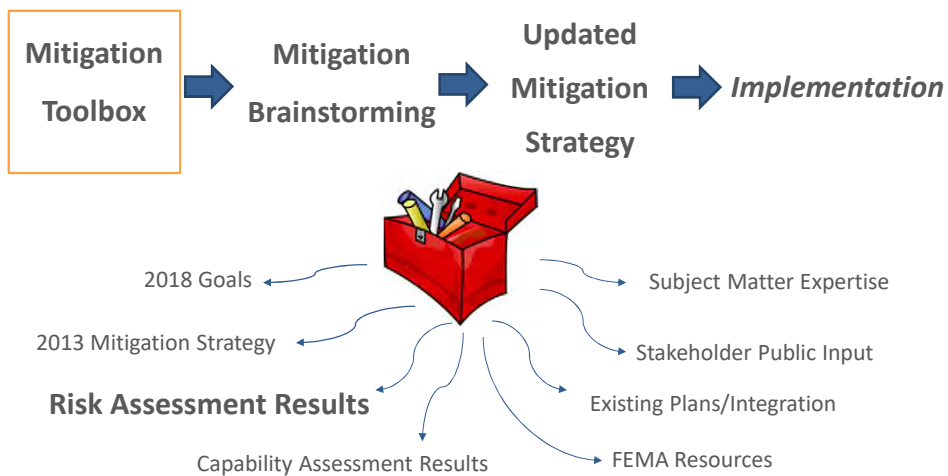
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## Project Schedule Review

- March 2018                      Municipal Kick-Off Meeting
- March-May                      Data Collection
- April – May                      Update Hazard Profiles
- May-June                      Risk Assessment
- **June-July**                      **Risk Results and SWOO;  
Develop Problem Statements**
- July 11, 2018                      Mitigation Strategy Workshop
- August                      Review Draft Plan
- September                      Submit to NYSDHSES
- November                      Submit to FEMA

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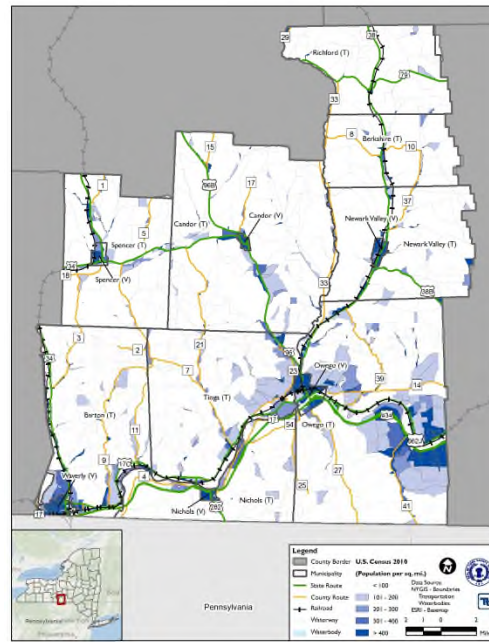
## This is where we are heading....



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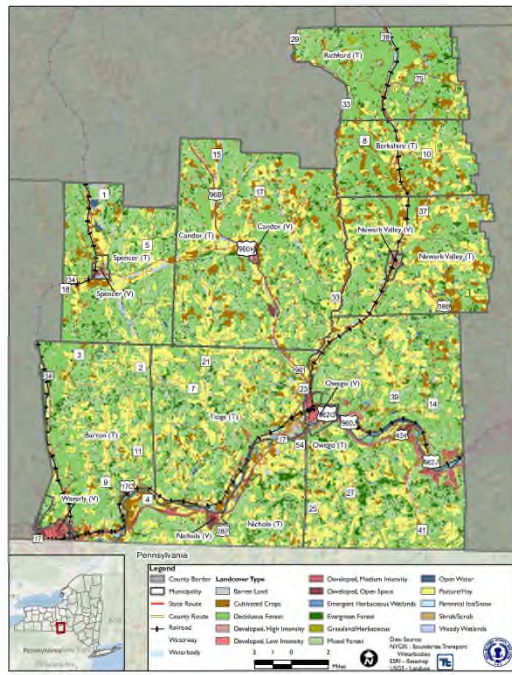
## County Overview

### Population



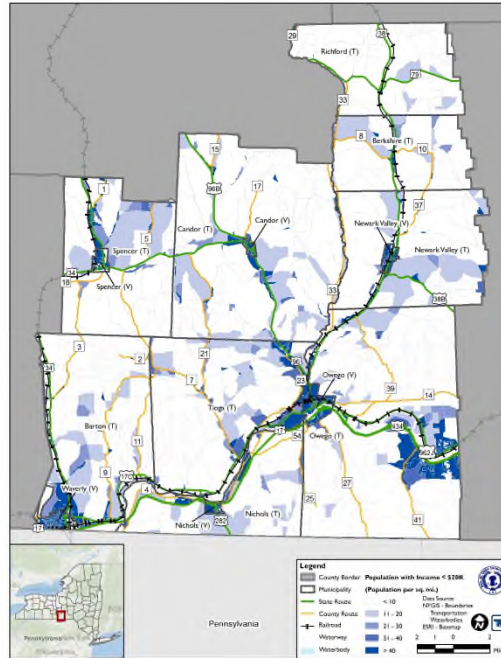
## County Overview

### Land Use



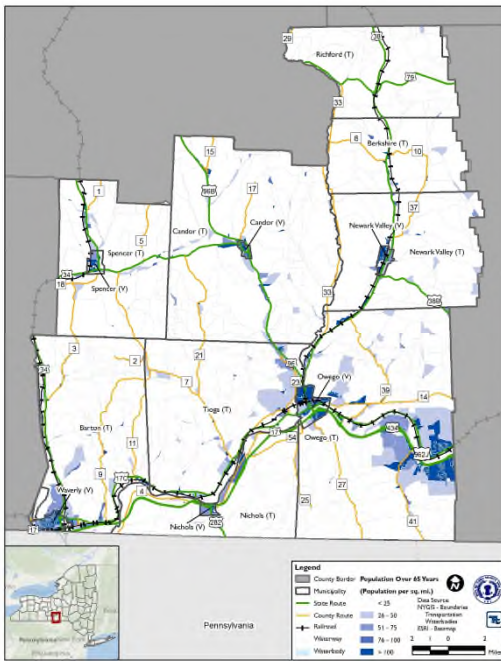
## County Overview

- Vulnerable Populations
  - (Income)



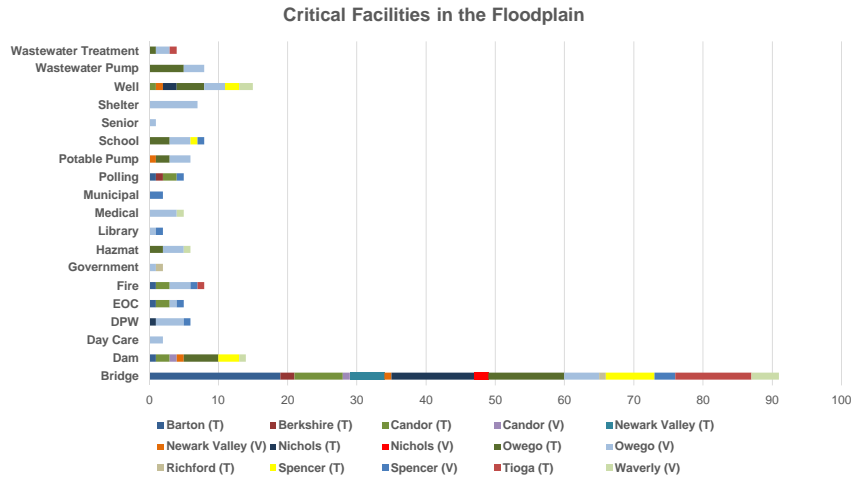
## County Overview

- Vulnerable Populations
  - (Seniors)





## Critical Facilities



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## Hazards of Concern Update

2013 Natural Hazards	2018 Natural Hazards
Flood	Flood
Drought	Drought
Earthquake	(Reviewed and due to level of potential impact, not included in the plan update.)
Severe Storm	Severe Storm
Severe Winter Storm	Severe Winter Storm

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# Flood

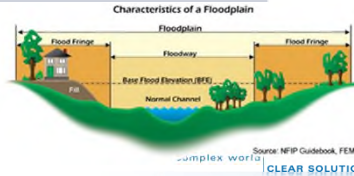
## ➤ History of flood events

- 11 FEMA Flood Disaster Declarations since 1954



Date	Type
October 1975	Severe Storms, Heavy Rains, Landslides & Flooding
July 1976	Severe Storms & Flooding
January 1996	Severe Storms & Flooding
June-July 1998	Severe Storms & Flooding
May-August 2000	Severe Storms & Flooding
May-June 2004	Severe Storms & Flooding
April 2005	Severe Storms & Flooding
June-July 2006	Severe Storms & Flooding
November 2006	Severe Storms & Flooding
April-May 2011	Severe Storms, Flooding, Tornadoes, & Straight-Line Winds
September 2011	Remnants of Tropical Storm Lee

- 7 (8) flood events (2012-2017)\*



FEMA 2018; \*NOAA-NCEI 2018

## Flood History (2012-present)

Dates of Event	Event Type	Municipality	Comments
July 1, 2013	Flash Flood	Town of Candor (Weltonville)	Bridge wash out: Frost Hollow and West Whitcomb road. Property damages: \$50,000.
August 8, 2013	Flash Flood	Richford	Several areas of significant flash flooding around the region. Richford: there were road closures. Damages: \$15K
August 9, 2013	Flash Flood	Town of Candor Willseyville	Significant flash flooding around the region. Catatunk Creek overflowed its banks and washed out a bridge. Property damages: \$75K in property damages were reported.
February 13, 2015	Ice Jam	Tuffs Island	A freeze up occurred on the Susquehanna River where the main (south) channel narrows at Tuffs Island.
June 14, 2015	Flash Flood	Richford Candor Newark Valley Weltonville	Michigan Hollow road closed due to severe flooding. Property and \$400K damages: North Spencer: flood water surrounded a house on Hurlbert Hollow Road. Water also flowed across County Routes 96 and 34. Property damages: \$400K in North Spencer to Candor and Newark Valley: Numerous bridges and roads were washed out by severe flooding from including a bridge on West Creek Road. Candor Property damages: \$400K. Weltonville: County Route 38 flooded at Rock Street. Several other points to the east of the Village of Newark Valley had water across roadways with numerous culvert washouts. Weltonville property damages: \$400K.
July 26, 2015	Flash Flood	Barton	Heavy rainfall and flooding caused a culvert washout on Ellis Creek Road. Property damages: \$25K.
July 14, 2017	Flash Flood	Richford	Water from small streams and culverts flooded over several portions of Route 79 between Richford and Center Lisle. Deep ponding of water on streets in nearby towns and village centers. Property damages: \$50K.
July 23-24, 2017	Flash Flood	Village of Nichols	Severe flooding occurred throughout the Village of Nichols. Major State Route 17 closed in both directions between Exit 62 and Exit 63 due to bridge erosion. Severe flash flooding along Wappasening Creek reaching nearby homes and crossing over Old Route 282. Debris collecting at the bridge and threatening its structural integrity. Property damages: \$308K.

## Flood events 1950-2018

Hazard Type	Number of Occurrences Between 1950 and 2018	Total Fatalities	Total Injuries	Total Property Damage (\$)	Total Crop Damage (\$)
Flash Flood	29	0	0	\$265.274M	\$0
Flood	27	0	0	\$332.245M	\$0
Dam Failure	0	0	0	\$0	\$0
Ice Jam	4	0	0	\$0	\$0
<b>TOTAL</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>\$597.519</b>	<b>\$0</b>

\*NCEI, 2018

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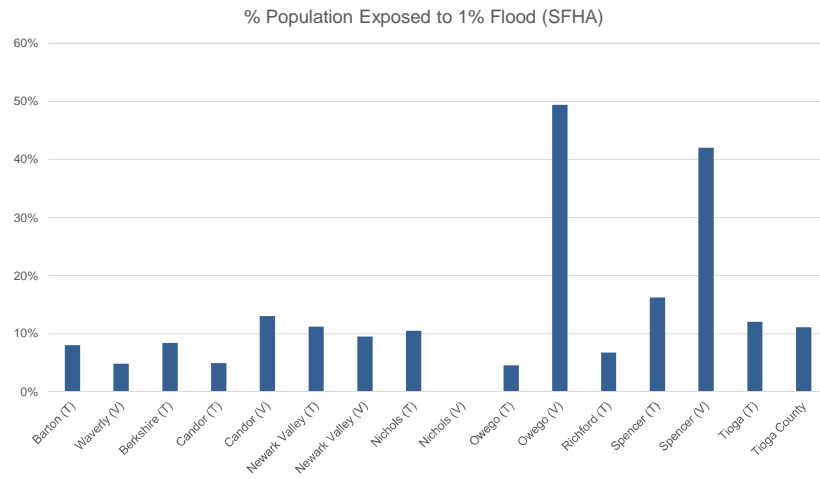
## Flood



- **Estimated Exposure (People, Property)**
  - 5,660 people in the 1% annual chance floodplain;
  - 7,048 in the 0.2 annual chance floodplain (2010 Census)
  - \$1.1 Billion in exposed property (1% annual chance floodplain)
  - \$1.5 Billion in exposed property (0.2% annual chance floodplain)
- **Economic and Social Loss/Impact**  
(1-Percent Annual Chance Flood)
  - \$211 Million in estimated potential property damage
  - 7,551 tons of debris
  - 4,053 households displaced
  - 1,541 people seeking shelter

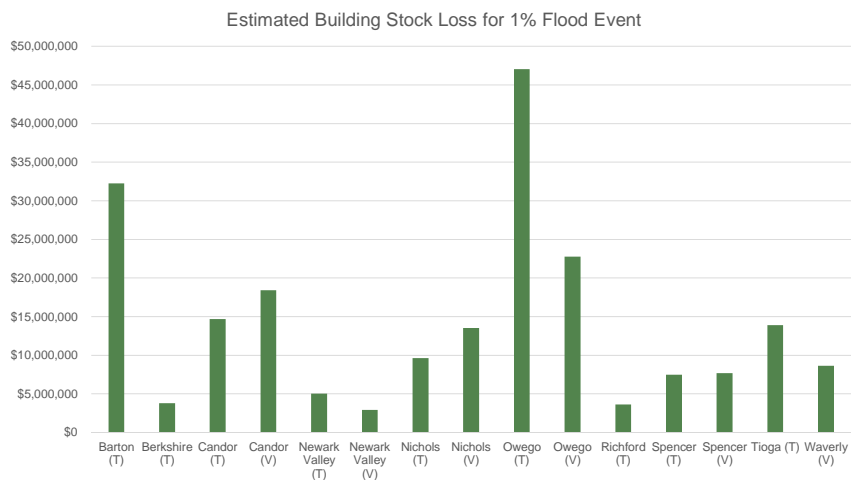
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## Impact on Population



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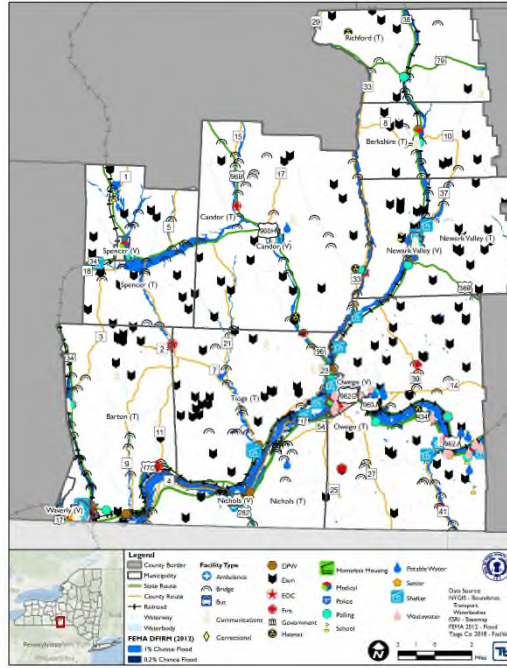
## Impact on Building Stock



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# County Overview

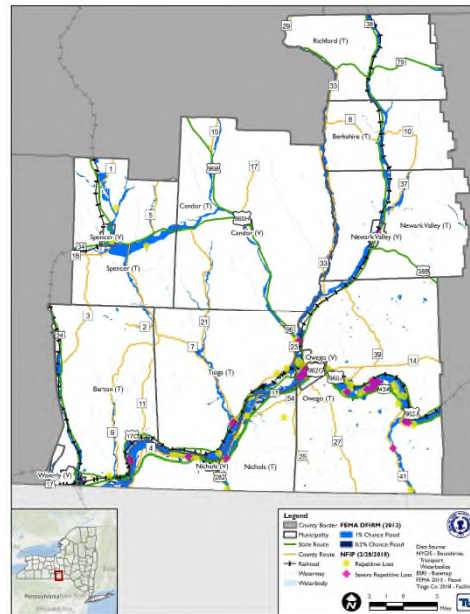
## Flood



# Flood

## Severe Repetitive Loss Stats (2018)

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)
Barton (T)	21	74	\$1,233,887.00
Berkshire (T)	20	4	\$14,730.00
Candor (T)	33	27	\$448,164.00
Candor (V)	4	10	\$211,034.00
Newark Valley (T)	20	13	\$183,484.00
Newark Valley (V)	14	14	\$200,635.00
Nichols (T)	57	96	\$2,925,310.00
Nichols (V)	11	4	\$28,512.00
Owego (T)	196	433	\$23,427,867.00
Owego (V)	448	699	\$27,976,061.00
Richford (T)	2	4	\$1,731.00
Spencer (T)	36	30	\$634,349.00
Spencer (V)	35	5	\$12,171.00
Tioga (T)	47	124	\$3,466,230.00
Waverly (V)	35	22	\$94,743.00
<b>Tioga County</b>	<b>979</b>	<b>1,559</b>	<b>\$60,858,908.00</b>



# Critical-Facility Specific Results

Number of Critical Facilities Located in the 1-Percent Annual Chance Flood Zone

Municipality	Facility Types																		
	Bridge	Dam	Day Care	DPW	EOC	Fire	Government	Hazmat	Library	Medical	Municipal	Polling	Portable Pump	School	Senior	Shelter	Well	Wastewater Pump	Wastewater Treatment
Barton (T)	19	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0
Berkshire (T)	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Candor (T)	7	2	0	0	2	2	0	0	0	0	0	2	0	0	0	0	1	0	0
Candor (V)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Newark Valley (T)	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Newark Valley (V)	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
Nichols (T)	12	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Nichols (V)	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Owego (T)	11	5	0	0	0	0	2	0	0	0	0	2	3	0	0	0	4	5	1
Owego (V)	5	0	2	4	1	3	1	3	1	4	0	0	3	3	1	7	3	3	2
Richford (T)	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Spencer (T)	7	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0
Spencer (V)	3	0	0	1	1	1	0	0	1	0	2	1	0	1	0	0	0	0	0
Tioga (T)	11	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Waverly (V)	4	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0
<b>Tioga County</b>	<b>91</b>	<b>14</b>	<b>2</b>	<b>6</b>	<b>5</b>	<b>8</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>1</b>	<b>7</b>	<b>15</b>	<b>8</b>	<b>4</b>

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## Drought

- History (2012 to 2017) \*USDA

Date of Event	Event Type	USDA Designation Number
June 2012	Drought, Excessive Heat	S3427
June 2012	Drought	S3441
April 2016	Drought	S4062
July 2016	Drought	S4031
August 2016	Drought	S4023

- Documented Damages 2007-2017 (Crops) \*USDA

Year	Crop Type	Event Type	\$ Claims
2010	All Other Crops	Drought	\$3,041
2016	All Other Crops	Drought	\$25,263
2017	-	-	-

Other damages?  
Recreational Water Levels?  
Potable Water Supply?

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## Severe Storm

- History
  - 43 federally declared severe storm events since January 1, 1950
  - 175 severe storm events between January 1, 1950 and December 31, 2017
  - 24 reported severe storm, thunderstorm, wind, hail, hurricane and lightening events between 2012 and 2017
- Vulnerability Assessment Results
  - \$9.6 Million Property Damages from events (1950 - 2017)
  - Annualized Losses
    - \$5,995 (Hazus 4.0)

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## Severe Storm

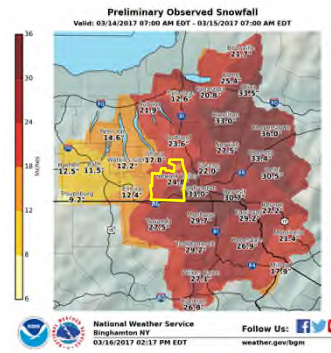
- Estimated 100-year mean return period (MRP) event losses:
  - Wind speeds below 39 mph
  - No damages or debris estimated
- Estimated 500-year MRP event losses:
  - Wind speeds between 52 and 58 mph (Tropical Storm)
  - \$391K (Structure Only) in building damages
  - Over 5,400 tons of tree debris
    - 3,410 of eligible tree debris



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## Winter Storm

- 11 winter storm events 2012 – 2017\*
- 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 \$4.7 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

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## Public and Agency Feedback

- 50 people in total took the survey.
- Most of the respondents have lived in the area 20 or more years, own their place of residence, and most have a single family detached home.
- Hazards that most have experienced: Severe Winter Storm, Severe Storm, and Street Flooding.
- Hazards most concerned with: Flooding, Severe Storm, Severe Winter Storm
- There were a wide variety of preparedness actions that people have taken.
- Most respondents received their information concerning a disaster from the internet, radio news, tv news, and police/fire/ems/911.
- Most do not have a home in the floodplain or own flood insurance (property hasn't flooded or located on high ground)
- Only 1 respondent had issues getting homeowners/renters insurance due to being in a flood zone.

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## Types of Projects - Public Feedback

- Respondents voted on a wide range of mitigation projects. Stream maintenance and retrofitting infrastructure were the most voted. One respondent also identified dredging the river.
- Most respondents would be willing to spend less than \$5,000 on protecting their home from disasters.
- Most respondents would be willing to undergo buyouts, relocation or elevation. Costs/funding were the major influencing issues identified.
- Respondents had mitigated their properties in the past through redoing basements after flooding, replacing roofing, fixing cracked foundations.
- Grant funding was the number one incentive identified to spend money on home mitigation projects.
- Possible mitigation projects identified:
  - dredging and clearing rivers/creeks
  - reinforcing stream and river banks
  - dangerous tree removal
  - keeping culverts clean
  - improving warning systems
  - increased outreach efforts
  - creating infrastructure and alternative routes during flooding

## Strengths and Weaknesses Obstacles and Opportunities Update

- **What are the Strengths, Weaknesses, Obstacles and Opportunities in Addressing Flood, Severe Storm, Severe Winter Storm and Drought Events?**



## Business Sector Feedback

- Have had brown/outs due to weather, flooding in 2011 resulted in temporary relocation, loss of files, damage to equipment and structures
- Most don't know if transportation infrastructure are designed to withstand closures or damage from hazards.
- Would like to see more information sessions during chamber of commerce/business association meetings on hazards.
- Not enough businesses are taking advantage of or know about the benefits of flood insurance until after a flood event takes place.
- Low level of knowledge of municipal and county capabilities regarding hazards
- None of the businesses are included in a COOP or COG but some have emergency plans for themselves.

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## Health Sector Feedback

- Not clear if critical and essential facilities are disaster resistant and have back up power.
- Not clear if utility infrastructure is disaster resistant enough to maintain healthcare functions. Also noted difficulty in trying to contact Penelec when issues arise. Asked for a better communications plan.
- Not clear if transportation infrastructure is capable of withstanding closure/damages from hazards but noted closure of major highways from flood cause problems as rural roadways may be difficult to use. Also 50% do not believe that announcements about road closures are accurate/available enough to support hospital functions. [(this ties into the last SW00 which noted that ambulance drivers need to know safe routes)].
- Half believe more effort needs to be made to inform the public of the use of reverse 911 and other systems. It is improving but more work needed.
- Not clear on emergency response, planning, and equipment are sufficient to manage and respond to disasters or if local governments understand, support, and possess resources for hazard risk reduction.
- All respondents have or are involved in a COOP or COG.
- Suggestions to reduce facility vulnerabilities:
  - HVA, THAM
  - More planning
  - Drills
  - Disaster kits
  - Generators
  - More staff/resident training on hazards/mitigation

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## Ranking of 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

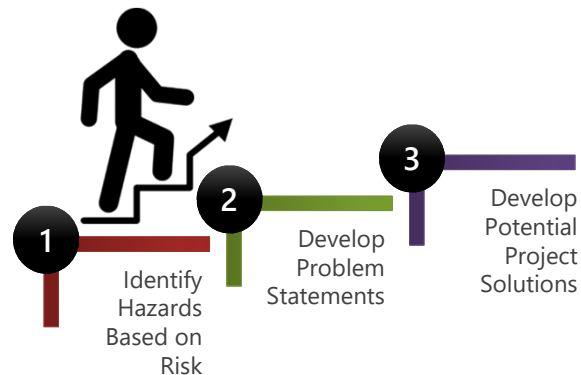
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## Ranking of Hazards

Municipality	Hazard Ranking			
	Drought	Flood	Severe Storm	Severe Winter Storm
Barton (T)	M	H	M	M
Berkshire (T)	M	M	M	M
Candor (T)	M	M	M	M
Candor (V)	M	H	M	M
Newark Valley (T)	M	M	M	M
Newark Valley (V)	M	M	M	M
Nichols (T)	M	H	M	M
Nichols (V)	M	M	M	M
Owego (T)	M	H	M	M
Owego (V)	M	H	M	M
Richford (T)	M	H	M	M
Spencer (T)	M	M	M	M
Spencer (V)	M	H	M	M
Tioga (T)	M	H	M	M
Waverly (V)	M	M	M	M
Tioga County	M	M	M	M

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## Breakout Session



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## 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 July 13th

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## Any Questions?



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## Thank you for your time!

Elaine Jardine, Tioga County Planning and Economic Development  
Mike Simmons, Tioga County Emergency Services  
Wendy Walsh, Tioga County Soil & Water Conservation Services

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



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# TIOGA COUNTY, NEW YORK ALL HAZARDS MITIGATION PLAN UPDATE



## Mitigation Workshop Meeting - Agenda July 11, 2018 at 2:00PM – 5:00PM

1. **Background and Introductions**
2. **Project Status**
3. **Overview – Developing Mitigation Strategies**
4. **Breakout Working Groups to Develop Mitigation Strategies**
  - a. **Review, Refine, Revise Problem Statements**
  - b. **Consider Options**
  - c. **Select Best Choice – write down the specific action selected**
  - d. **Review Action Worksheet – complete as much as practical today**
  - e. **Discuss Opportunities for Integrating mitigation into daily operations**
5. **Next Steps**
6. **Adjournment**

### **Tioga County Project Contact**

Wendy Walsh, CPESC, CCA, District Manager  
USC Watershed Coordinator and USC Board Member Tioga County SWCD  
(607) 687-3553 | WalshW@co.tioga.ny.us

### **Tetra Tech Project Contacts**

Cynthia Addonizio-Bianco, CFM  
Tetra Tech, Inc., 6 Century Drive, Parsippany, NJ 07054  
(973) 630-8044 | cynthia.bianco@tetrattech.com

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



**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Mitigation Workshop Meeting - July 11, 2018**  
**2:00- 5:00 p.m.**  
**Sign-In Sheet**



Name	Title	Agency/Municipality	Phone Number	E-mail
Chuck Meade	Hwy Supt	Town Newark Valley	649-9927	NHgwypdpt@stny.gov
Bill Foster	Dev Supt	Village Newark Falls	642-8700	villagebarn@stny.gov
Jim Tomatore	Mayor	Village Newark Valley	(607) 642-8686	Vonvmayor@stny.gov
Lesley Pelotte	Mayor	Village of Nichols	(607) 699-3947	pelotte101@gmail.com
Dick Cary	Supervisor	Town of Baxter	<del>585-2261</del>	
Kevin Clapp	Planning mgr	DHSES	(518) 4115-7866	Kevin.Clapp@dhsera.gov
Levy Thompson	Planning Mgr	DHSES	(518) 295-8448	levy.thompson@dhsera.gov
Mike Tura	Technician	Tioga County SWCD	607-687-3553	Tura@co.tioga.ny.us
Keith Flesher	Supervisor	TN/ Berkshire	607-343-3260	KFlesher73@gmail.com
Charis Davis	Supervisor	Town of Ballston	607-229-5118	charis.davis@ballstonny.gov
Elaine Jordine	County Planning Dir	Tioga Co EDP	607-687-8257	jordinee@co.tioga.ny.us
Cynthia Bianco	Planner	TetraTech Inc.	973-630-8044	cynthia.bianco@tetratech.com
Heather Apper	Planner	Tetra Tech	973-630-8046	heather.apper@tetratech.com
Randy Thayer	Supervisor	SPENCK		Randy.thayer@tioga.net
DANIEL GEART	CHIEF OF POLICE	Village of Warren	607-563-2226	dgeart@villageofwarren.com
Ellen Pratt	TE SOLID WASTE	Tioga County	607-687-8274	pratt@co.tioga.ny.us





**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Mitigation Workshop Meeting - July 11, 2018**  
 2:00 - 5:00 p.m.  
 Sign-In Sheet



Name	Title	Agency/Municipality	Phone Number	E-mail
Ken Saffin	Mayor	Village of Spencer	(607) 592-2268	Mayor@villageofspencer.com
Alex Nicks	Tech	TISCO	-	-
Tim Douglas	Code Office	Chardar	659-3175 xy	code.off@chardar.org
William Strassler	Supervisor	Chardar	659-3175 x5	Supervisor@townofchardar.org
Kenny Spamer	Commissioner	Tioga County NY	687 70302	haman@spaco.tioga.ny.us
Paul M. Yeart	Mitigation Planner	FEMA	518-792-0419	paul.yearth@fema.dhs.gov
Burkhard Spaulding	Mitigation	DHSEA	518-992-2290	burkhard.spaulding@dhsea.ny.gov
Wendy Walsh	DISTRICT MANAGER	TIOGA Co. SWCD	607-687-3553	walshw@co.tioga.ny.us
Miranda Belmer	ADMIN ASSISTANT	"	"	palmerm2@co.tioga.ny.us
Kevin Miller	Food Safety Council	Village of Oriskany	607-687-3263	ksmiller@yahood.com
Dean Morgan	Town Board	Town of Oriskany	(607) 687-5647	dmorgan@townoforiskany.com
Kou Zorn	<del>SUPERVISOR</del> TOWN OF TIOGA	Town of Tioga	607 658-6990	1201N@VERIZON.NET
Chris Spaulding	TIOGA BOARD SUPERVISOR	TOWN OF BARBON	607-738-1118	chrispaul12@icloud.com







FEMA

Risk MAP

# Mitigation Strategy Workshop

Presented By: Paul Hoole, Mitigation Planner, Region 2

Date: July 11, 2018 Tioga County



# Planning

## AGENDA

1. Overview Presentation (5 minutes)
2. Breakout Groups
  - Review, Refine, Revise Problem Statements
  - Consider Options
  - Select Best Choice – write down the specific action selected
  - Review Action Worksheet – complete as much as practical today
  - Discuss Opportunities for Integrating mitigation into daily operations

# Planning

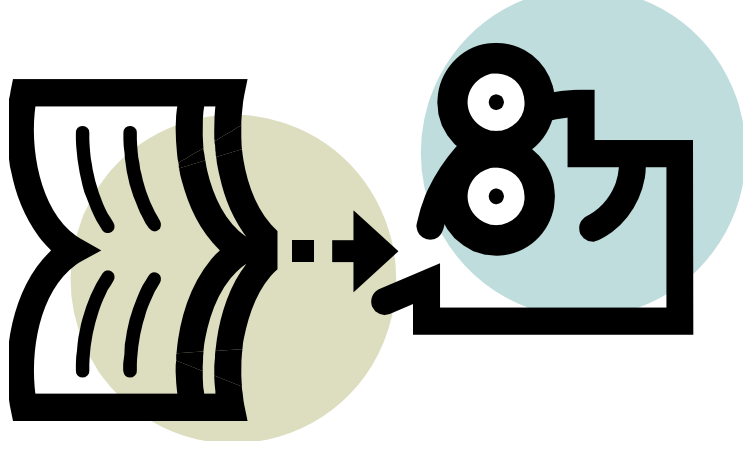
Planning is a systematic approach to making **Well Informed & Considered Decisions**

**Key Decision-Makers** must decide:

- what problems they face (unacceptable risk) and
- what can and should they do about it.

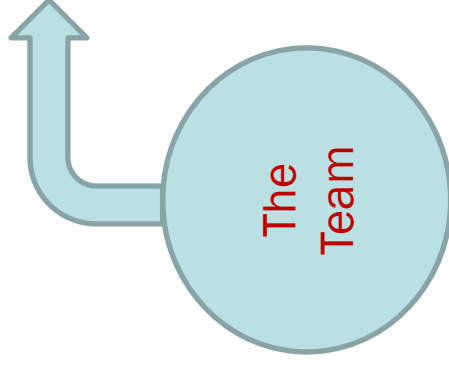
## Systematic Approach

- Identify Problems - [Hopefully Done / Earlier SWOO]
- Consider Options for each Problem [Brainstorm and Evaluation]
- Select the Best Option [Complete Worksheet]



# Mitigation Planning

- You & Your Team are Key Decision-Makers



If your full team is not here today, check back with them tomorrow.

# Mitigation Planning

- You & Your Team are Key Decision-Makers



## Identify Specific Problems

### A Refresher:

Were problems implicitly cited in the last plan sufficiently mitigated?

What problems did the public raise?

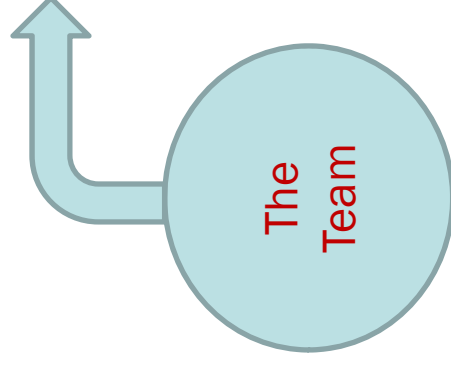
What does our updated Risk and Vulnerability Assessment tell us?

What does our daily experience tell us?

The  
Team

# Mitigation Planning

- You & Your Team are Key Decision-Makers



## Describe each Problem

- What hazard is causing the problem?
- Exactly where is the problem?
- What harm has or might occur?
  - Is it a critical facility?
  - Is it a recurring problem?
- What are the root causes, if known?

Answers justify the need for action.

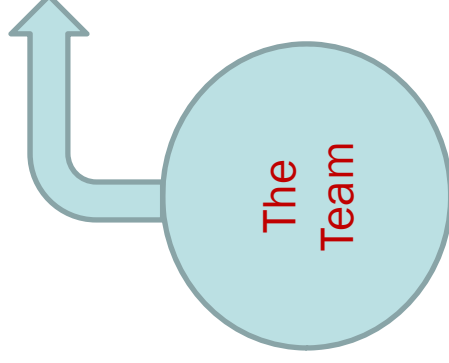
- Be clear – others may not be familiar with these problems.

# Mitigation Planning

- You & Your Team are Key Decision-Makers



**Brainstorm Possible Solutions**  
for each problem



**Consider a Range of Alternative**

- **Structural Projects**
  - Acquisitions / Elevations / Retrofits
  - Expand Drainage Capacity
- **Plans and/or Regulations**
  - Land Use / Zoning
- **Education and Outreach**
- **Natural Resource Protections**
  - Restore Steams & Wetlands

# Mitigation Planning

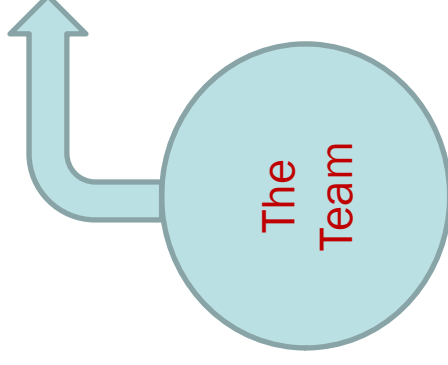
- You & Your Team are Key Decision-Makers



Brainstorm Possible Solutions  
for each problem

Consider a Range of Alternatives

- Low & High Cost Solutions
- Low “Hanging Fruit”
  - Quick & easy to Implement
- Larger Projects
  - Need outside Funding
  - Takes time to Implement



Don't limit your ideas at this point. This is a list of things you might do, not a list of things you will do.

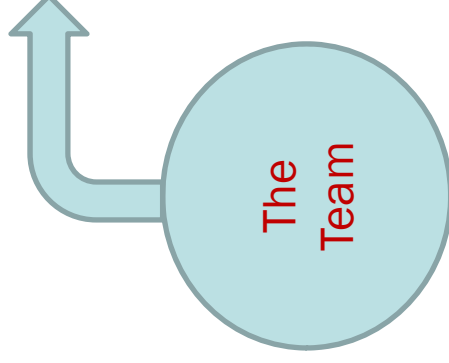


# Mitigation Planning

- You & Your Team are Key Decision-Makers



Evaluate each Possible Solutions



## Must Consider Benefits

- Lives saved / Injuries Avoided
- Structural Damage Avoided
- Business Downtime Avoided
- Long Detours Avoided

## Costs to Implement & Maintain

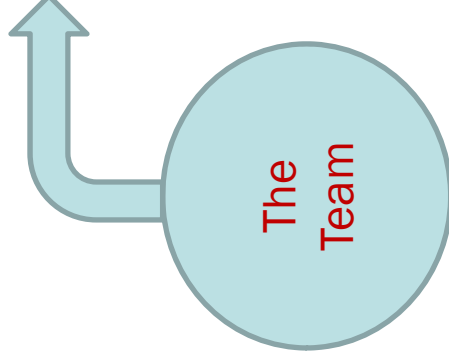
- Pre-Construction Costs
- Construction Cost
- Ancillary Costs (e.g. permits / fees)
- Annual Maintenance

# Mitigation Planning

- You & Your Team are Key Decision-Makers



## Evaluate each Possible Solutions



### Other Considerations

- Capacity to Implement
- Legal Authority
- Public & Political Support
- Social Impact (positive & negative)
- Environmental Impacts
- Local Champion to manage implementation

### After evaluating, select the best option(s).

- Subject to later funding decisions, if any.
- Subject to later environmental reviews, if any.

# Mitigation Planning

- **Action Plan**  
(Complete at least two Worksheets)
- **Responsible Organization (lead organization)**
  - This is an agency or department, not the jurisdiction
- **Action / Project Priority**
  - Numerical Rank; Tier 1/Tier 2/Tier 3; chronological by start date or completion date (Method is optional)
- **Estimated Timeline**
- **Potential Funding Source** – List multiple, if applicable
- **ID Local Planning Mechanism to facilitate Implementation**
  - If appropriate

# Integration of Plans, Policies, and Programs

*“Integration increases efficiency and avoids conflicting outcomes.”*

## Propose steps your community will take to improve integration.

Any conflicts between the Mitigation Plan and other plans? For example, are other plans encouraging development in high risk areas? Comprehensive plans, Land Use Plans, Economic Development Plans.

What more can be done to integrate your community’s plans and policies? For example, should new policies or procures be established to ensure appropriate consideration of natural hazards when routine decisions are made?

- Identify potential plans, policies or programs where integration makes sense
- Describe process for bringing about or improving integration
- Best way to meet this requirement is to describe the *integration actions*

# Grant Funding for Hazard Mitigation

## Requirements: Applicants

- Eligible Applicant
  - NYS, acting through DHSES (Div. of Homeland Security & Emergency Services)
- Eligible Sub-Applicants
  - State agencies & local governments
  - Federally-recognized Indian Tribal Governments
  - State-recognized Indian Tribes
  - Private non-profits providing government services ((HMGP only)
    - If participating in property acquisition they must have land conservation as a mission
- Individuals/businesses are not eligible sub-applicants, but may be represented by their local government. They should understand that property will be deed restricted for open space in perpetuity.

## FEMA Mitigation Grant Programs

Pre-Disaster Mitigation Program (PDM) – open for all hazards

- Applications solicited once a year.
- Nationally competitive

Flood Mitigation Program (FMA) – limited to flood mitigation

- Applications solicited once a year.
- Nationally competitive

Hazard Mitigation Grant Program – open to all hazards with priorities set by NYS DHSES

- Periodic solicitation – money becomes available after a Presidential Disaster Declaration and the amount is proportional to the damages occurred.
- Only sub-applicants from NYS are eligible

## Grant Requirements

- Technically Feasible
  - Must demonstrate proposal will eliminate or reduce future damages
- Cost Effectiveness
  - Projects must be cost-effective as determined by a Benefit-Cost Analysis (BCA)
  - BCA must verify that future benefits (losses to be avoided) equal or exceed the project's cost
- Local Match
  - Typically FEMA provides up to 75% reimbursement of eligible costs, up to the amount of the award.
  - In-kind services or material may be used toward the 25% non-federal match
  - Other federal funds may not be used, except for:
    - Increased Cost of Compliance (ICC) payouts from a National Flood Insurance Program (NFIP) policy
    - Most HUD Community Development Block Grants (CDBG)

# Grant Funding for Hazard Mitigation

## HMGP Grants will Pay for:

- Creating or updating a Multi-jurisdictional Hazard Mitigation Plan
- Acquisition and Demolition/Relocation or Elevation
- Structural Retrofitting; Dry Floodproofing
- Localized flood reduction measures
- Floodplain restoration, green infrastructure improvements
- Roadway elevation, culvert enlargements
- Stormwater drainage system expansion/upgrades
- Stormwater retention or detention basins
- Streambank stabilization to protect infrastructure
- Placing overhead electric systems underground

Note: state establishes priorities for every cycle

## HMGP will Not Pay for:

- Preparedness activities: shelters, sandbags
- Projects dependent on other phases for benefits
- Studies not directly tied to a proposed project
- Deferred repairs, negligence, operating expenses
- Dredging, limb & debris removal, beach nourishment
- Projects initiated, begun or completed



## **TIOGA COUNTY, NEW YORK ALL HAZARDS MITIGATION PLAN UPDATE**



**Planning Committee - Agenda  
October 31, 2018 - 3:00 PM - 5:00 PM  
Public Safety Building, Multipurpose Conference Room,  
103 Corporate Drive, Owego, NY 13827**

- Welcome
- Draft Plan Review
  - What is new?
  - Section by Section Content Overview
  - Information Gaps to Address to Finalize Plan
- Next Steps
- Questions

### **Tioga County Project Contact**

Wendy Walsh, CPESC, CCA, District Manager  
USC Watershed Coordinator and USC Board Member Tioga County  
SWCD (607) 687-3553

### **Tetra Tech Project Contacts**

Cynthia Addonizio-Bianco, CFM  
Tetra Tech, Inc., 6 Century Drive, Parsippany, NJ 07054  
(973) 630-8044 | [cynthia.bianco@tetrattech.com](mailto:cynthia.bianco@tetrattech.com)

Heather Apgar, CFM  
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Parsippany, NJ 07054  
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**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Draft Plan Review Meeting - October 31, 2018**  
**3:00- 5:00 p.m.**  
**Sign-In Sheet**



Name	Title	Agency/Municipality	Phone Number	E-mail
Wendy Walsh	DISTRICT MANAGER	TIOGA Co. SWCD	607-687-8553	walshw@co.tioga.ny.us
DAVID BELAT	CHIEF of POLICE	VILLAGE of WATKIN	607-565-2834	agelathe.villageofwatkins-ny.com
Dean Morgan	Board Member	Town of Owego	(607) 687-0123 x333	d.morgan@townofowego.com
Charles Platter	Deputy Mayor	Village of Owego	607-348-4227	Charles.platter@yahoo.com
RANDY THURTELL	SUPERVISOR	TOWN of STARK	607 588-4778	
Ken Suffin	Mayor	Village of Spencer	607-592-2268	Mayor@villageofspencer.com
Audly Fagan	CCB Tioga	Executive Director	607-687-4020	af@canell.edu
Jesse McElfeely	Tioga Public	Health Tioga County	607-349-3372	jmcelfeely@co.tioga.ny.us
Kevin Miller	Village of Dry	Flood Prevention	607-687-3663	KJM@villageofdry.com
Margaret Palmer	Admin. Ass't	Tioga SWCD	607-687-3553	Palmerm@co.tioga.ny.us
Keith Flester	Supervisor	Berkshire/Town	607-343-3260	KFlester73@gmail.com
Chuck Benent	Code Enforcement	Village of Fawcett	607-223-8151	aweb@villagecode.com
Eller Bratt	Sustainability Mgr	County IDW/SW	607-687-8274	pratt@co.tioga.ny.us
Mike Jones				
Bob Williams	Deputy ENO	Tioga County		
Alex Mears	Technician	Tioga SWCD	607-687-3553	mmears@co.tioga.ny.us
Mike Jones	Technician	Tioga SWCD	607-687-3553	mmears@co.tioga.ny.us







**TIOGA COUNTY HAZARD MITIGATION PLAN UPDATE**  
**Draft Plan Review Meeting - October 31, 2018**  
**3:00- 5:00 p.m.**  
**Sign-In Sheet**



Name	Title	Agency/Municipality	Phone Number	E-mail
Elaine Jardine	County Planning Dir	Tioga Co. EDP	607-687-8257	jardinee@co-tioga.ny.us
LESKEY PELOTTE	MAYOR	Village of Nichols	(607) 699-3947	pelotte101@gmail.com
Jim Tornatore	Mayor	Village of Newark Valley	607-642-3543 (H) 607-642-8686 (B)	vonmayor@stny.ny.com jtomatore@stny.ny.com
Bill Foster	DW Supervisor	Village Newark Valley	607-642-8700	villagebill@stny.ny.com
BARB CRANNELL	Dep Super	TOWN OF NICHOLS	607-699-3171	bcranne1@stny.ny.com
Stu Yeffer	SUPERVISOR	Town of Newark Valley	607-642-8746	msuper@stny.ny.com
John Davis	Super-use	Town of Nichols	607-657-8090	cdavis@nicholsny.com





## TIOGA COUNTY, NEW YORK ALL HAZARDS MITIGATION PLAN UPDATE



**Planning Committee - Agenda**  
**October 31, 2018 - 3:00 PM - 5:00 PM**  
**Hubbard Auditorium, 56 Main Street, Owego, NY 13827**  
**103 Corporate Drive, Owego, NY 13827**

- Welcome
- Draft Plan Review
  - What is new?
    - Entire steering committee got a draft “volume 1” of the plan in their email.
    - Updated flood mapping, updated critical facility inventory, more concise hazard profiles, risk assessment supplementary info appendix, critical facility appendix, update municipal annex content (more detailed information on hazard event damages, community dashboards, less and more detailed mitigation actions, mitigation action worksheets, temporary housing and evacuation routes, annex sign off sheets to document participation).
    - Before you have approved mitigation plan, you are in an adoption process.
    - Multi-jurisdictional plan – every jurisdiction participating in the plan needs to meet standards. If one jurisdiction does not adopt, the plan can still be adopted.
    - There was a question about the funding .... V of Newark Valley – the plan is expired, but they submitted a letter of intent for HMGP.
    - August 13 to 15 – public assistance funding – FEMA kick off meeting, if you have damages you begin a list of damages.
    - PDM and HMGP would be buy out, elevation, hazard mitigation projects. NV did submit a LOI, NV had the project listed in their annex, so they sent that in. T of Spencer also sent in a LOI. They can get the funding even if the plan was not adopted due to the extenuating circumstances.

- Citizen Survey – there were only 107 citizen responses this plan. Heather will email each community what the citizens are saying about the hazards in their area.
    - Board meeting – If someone comments on hazard mitigation plan at a public board meeting, we need to know about that.
    - Critical Facilities – Removed dams. If they are in 100 flood plain, they need to be updated to 500-year flood standard.
  - Section by Section Content Overview
    - Looking for housing options that are not located in the flood plain, trailer parks, campgrounds, etc.
  - Information Gaps to Address to Finalize Plan
- Next Steps
  - November 16 – Finalize Jurisdictional Annex – November 16
  - Submit to NYSDHSES and FEMA – November 30
  - Adoption – Estimated February 2019
- Questions

#### **Tioga County Project Contact**

Wendy Walsh, CPESC, CCA, District Manager  
 USC Watershed Coordinator and USC Board Member Tioga County  
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Tetra Tech, Inc., 6 Century Drive, Parsippany, NJ 07054	Tetra Tech, Inc., 6 Century Drive, Parsippany, NJ 07054
(973) 630-8044   cynthia.bianco@tetrattech.com (973) 630-8046   heather.apgar@tetrattech.com	

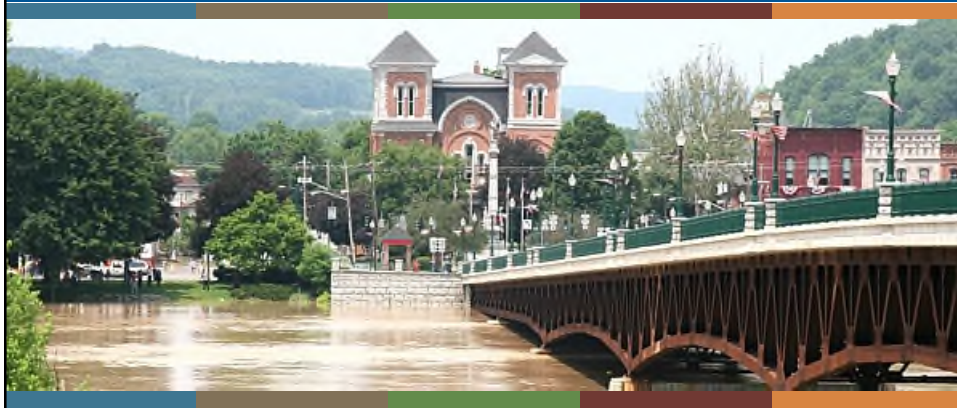


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## Tioga County Hazard Mitigation Plan Update Public Draft Plan Review Meeting



### Agenda

- Welcome
- Draft Plan Review
  - What is new?
  - Section by Section Content Overview
  - Information Gaps to Address to Finalize Plan
  - Next Steps
- Questions





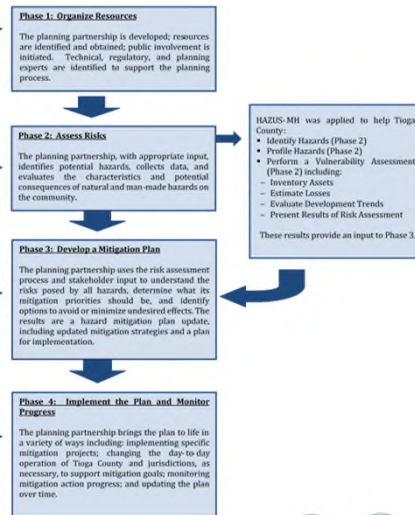
## What is new in the Tioga County HMP?

- Updated Flood Mapping
- Updated critical facility inventory
- More Concise Hazard Profiles
- Risk Assessment Supplementary Info Appendix
- Critical Facility Appendix
- Updated Municipal Annex Content
  - More detailed information on hazard event damages
  - Community dashboard(?)
  - Less and more detailed mitigation actions
  - Mitigation Action Worksheets
  - Temporary housing and evacuation routes
  - Annex sign off sheets to document participation



## Draft Plan Review – Section Contents

- Section 1: Introduction
  - Mitigation Planning
  - Participating Jurisdictions
  - Overview
- Section 2: Plan Adoption
  - Adoption Process
- Section 3: Planning Process
  - Participants
  - Activities
  - Ongoing Process





## Draft Plan Review

- 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

Figure 4-6. Distribution of General Population by Census Block for Tioga County, New York.



Source: HAZTD-ME V4.0, Census 2010



## Draft Plan Review

- Section 6: Mitigation Strategies
  - Past Accomplishments
  - Goals and Objectives
  - 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

Goal	Objective
<b>Goal 1: Protect Life and Property</b>	<i>Objective 1-1: Protect critical facilities and infrastructure.</i>
	<i>Objective 1-2: Address repetitive and severe repetitive loss properties throughout the County.</i>
	<i>Objective 1-3: Encourage the establishment of resilience-based policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.</i>
	<i>Objective 1-4: Implement mitigation actions that enhance the capabilities of the County to better profile and assess exposure to hazards including update of mapping information.</i>
	<i>Objective 1-5: Improve the understanding the hydrology of major rivers and streams and improve capacity of these water features to reduce flood vulnerability through improvements to water courses and improving natural floodplain resources.</i>
	<i>Objective 1-6: Develop, maintain, strengthen and promote enforcement of ordinances, regulations, plans and other mechanisms that facilitate voluntary and hazard mitigation.</i>
	<i>Objective 1-7: Integrate the recommendations of this plan into existing regional and local programs.</i>
	<i>Objective 1-8: Ensure that development is done according to modern and appropriate standards, including the consideration of natural hazard risk by using accessible construction and design measures that address resiliency.</i>
	<i>Objective 1-9: Identify and pursue funding opportunities to develop and implement local and county mitigation activities.</i>
	<i>Objective 1-10: Improve and Promote detection, warning and communication systems.</i>
	<i>Objective 1-11: Improve communication of emergency directives before, during, and after disaster events.</i>
<b>Goal 2: Increase Public Awareness and Preparedness / Understanding of Natural Hazards and their Risks</b>	<i>Objective 2-1: Develop and implement programs to increase the public's level of individual and household preparedness.</i>
	<i>Objective 2-2: Develop and implement additional ongoing 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 and promote awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards (i.e., flooding).</i>
	<i>Objective 2-3: Implement mitigation actions that enhance the capabilities of the County and communities to better profile and assess exposure to hazards.</i>
<b>Goal 3: Reduce Hazard Impact on the Economy (throughout the County)</b>	<i>Objective 3-1: Evaluate and implement an educational strategy and training component on stream processes and stream corridor management.</i>
	<i>Objective 3-2: Provide information to the public on bank, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities.</i>
	<i>Objective 3-3: Where appropriate, coordinate and integrate hazard mitigation actions with existing local emergency operations plans.</i>
	<i>Objective 3-4: Promote viable, sustainable and resilient land development practices.</i>
	<i>Objective 3-5: Support education and outreach to businesses and agricultural businesses to increase the understanding of vulnerability to natural hazards and to reduce potential interruptions in business operations or business closures.</i>
<b>Goal 4: Protect Open Space, Agricultural Land, the Environment and Natural Resources</b>	<i>Objective 4-1: Support business and agricultural business awareness of available flood insurance and incentives to mitigate business assets against natural hazards.</i>
	<i>Objective 4-2: Conserve, protect, and enhance stream and river systems so that channels and floodplains provide beneficial functions for flood damage prevention, habitat and water quality.</i>
	<i>Objective 4-3: Maintain and restore the connections between streams and their floodplains utilizing science-based approaches where stream systems are disturbed.</i>
	<i>Objective 4-4: Protect and preserve environmentally sensitive and critical areas.</i>





## Draft Plan Review

- 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



## Draft Plan Review

- 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



Section 9.16: Village of Waverly

Village of Waverly Action Worksheet			
Project Name:	Storm Drainage System Replacement - Business District		
Project Number:	V. Waverly-2		
<b>Risk / Vulnerability</b>			
Hazard(s) of Concern:	Heavy rain/flooding		
Description of the Problem:	The current storm drain system located under Broad Street is outdated and in bad condition per the Waverly OPW. When heavy rains hit the area the storm drains are unable to handle the flow of water leading to pooling on Broad Street (the business district of the Village of Waverly). The major concern is that if the outdated piping collapses, water will back up causing catastrophic damage to many businesses on Broad Street. We have had to close the intersection of Broad and Pennell's Ave. due to flooding. This has happened twice in the last 3 years. Traffic must use side streets when this happens. There are approximately 75 businesses on Broad street.		
Description of the Solution:	Risk Mitigation Method intended for implementation: Phase 1 is to hire a firm to determine the appropriate size of the piping. The current storm drain system running beneath Broad Street will need to be excavated and replaced. An engineering study will need to occur to determine the necessary capacity for the new system. Phase 2 is to implement the engineering findings within 1 year after receiving the report.		
Is this project related to a Critical Facility? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
If yes, the project is related to protect the 500-year flood extent at the actual water table Average Intensity, whichever is greater.			
Level of Protection:	Minimum of 100 years will be updated with engineering study.	Estimated Benefits (Losses avoided):	Minimize any losses related to the flooding of business on Broad Street. It will also minimize costs associated with infrastructure repairs needed because of street flooding.
Useful Life:	75-100 years		
Estimated Cost:	Possibly 3+ million (estimate will be needed later on final engineering plan)		
<b>Plan for Implementation</b>			
Prioritization:	High	Desired Timeframe for Implementation:	Less than 2 years
Estimated Time Required for Project Implementation:	1-2 years	Potential Funding Sources:	HMGP, PDIH





## Draft Plan Review

- 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 – NYS DHSES 2017 Mitigation Planning Standards



## Next Steps

- Finalize Jurisdictional Annexes – November 16, 2018
- Submit to NYS DHSES and FEMA – November 30, 2018
- Adoption – Estimated February 2019







## Contacts



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## Questions?

*Thank you for your time!*





## **APPENDIX D. PUBLIC AND STAKEHOLDER OUTREACH**

This appendix provides documentation of public and stakeholder outreach. Stakeholder involvement in this planning process was broad and productive as discussed and further documented in Section 3 (Planning Process). Public and stakeholder input has been incorporated throughout this HMP as appropriate, as identified in Section 3 and the References section, as well as within specific mitigation initiatives identified within the jurisdictional annexes (Section 9). Respondent feedback filtered by jurisdiction is included in each jurisdictional annex as available to provide an indication of community resident concerns related to natural hazards.

### **D.1 Tioga County Citizen Survey Results**

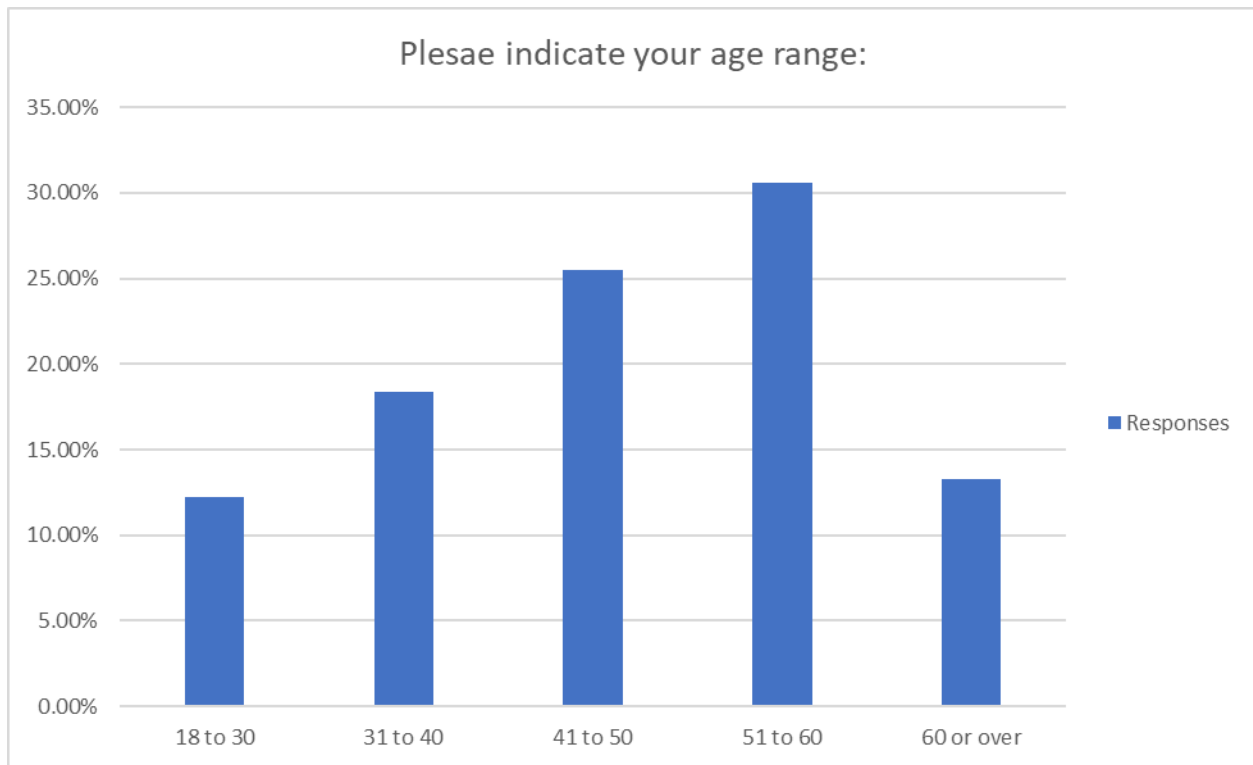
This section contains information and results gathered from the Tioga County Citizen Survey. The main objective of this survey was to gather information from citizens regarding their level of knowledge regarding hazard vulnerability and knowledge of hazard mitigation information for their local communities. 98 respondents completed this survey over a period of five months during the planning process.

#### **D.1.1 General Household Information**

Information from this section of the survey will be used to understand the overall effectiveness of the public outreach process and to help determine which demographic groups were most engaged. The information provided can inform local officials on effective methods of disseminating information regarding natural hazards. Questions within this section can help to recognize key demographics which are engaged in the planning process and where additional efforts may be needed to enhance overall participation. A summary of the responses to each question are provided below. These responses provide context to the planning process to ensure alignment of the proposed mitigation strategies with concerns of the public.



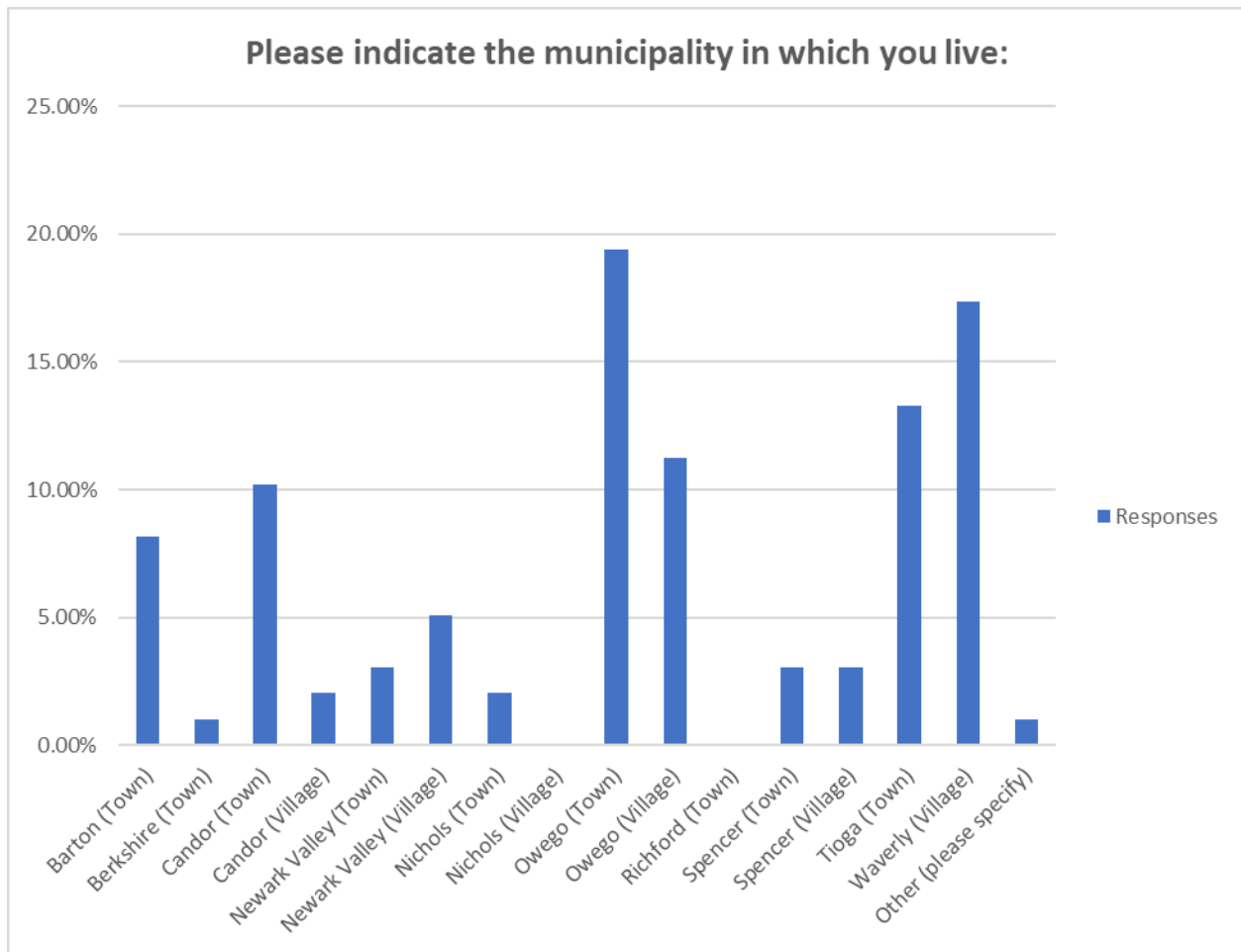
Figure D-1. Citizen Survey Question 1 Results



The first question of the survey is for respondents to identify their age range. This information can help identify which age groups were the most highly engaged during public outreach. *The survey results show that the highest response came from individuals between age 51 to 60 with approximately 30.61% of all responses to this question. The lowest response rate came from the 18 to 30 age group with 12.24% of responses.*



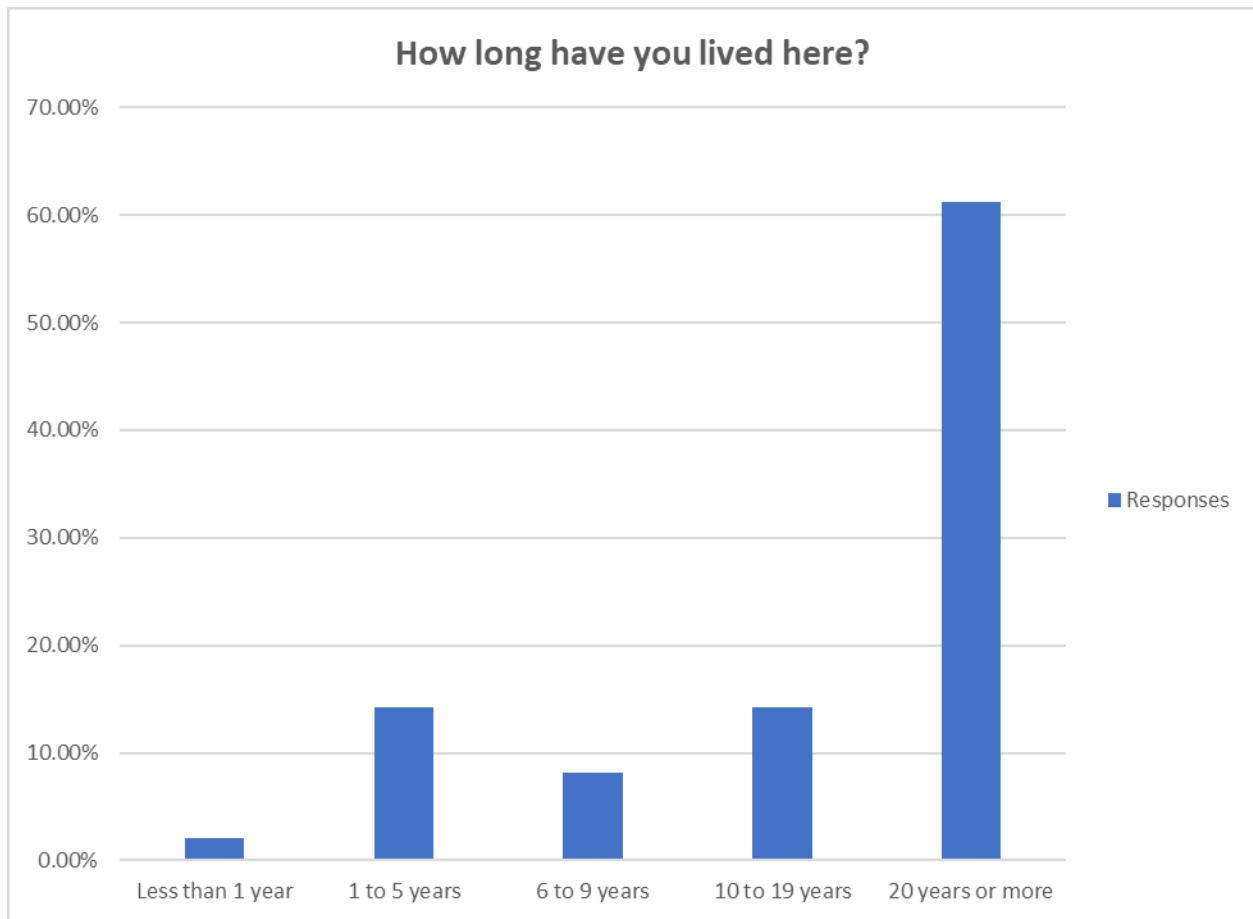
Figure D-2. Citizen Survey Question 2 Results



The second question asked respondents to indicate their municipality. This question can illustrate the geographic distribution of participation to show which communities had the highest level of participation. *The Town of Owego had the highest response rate, which represents 19.39% of responses for this question. The Village of Waverly had the second highest response rate, which represents 17.35% of responses for this question.*



Figure D-3. Citizen Survey Question 3 Results



Question three asked respondents to indicate how long they have lived within Tioga County. *The results show that the group with the highest response rate was individuals who have lived within the County for 20 years or more with 61.22% of responses. The group with the lowest response rate was those who indicated they have lived within Tioga County less than 1 year with 2.04% of responses.* This response may indicate that individuals who have lived within Tioga County for a longer period of time have a more intimate knowledge of local vulnerability, or a greater connection to their community.

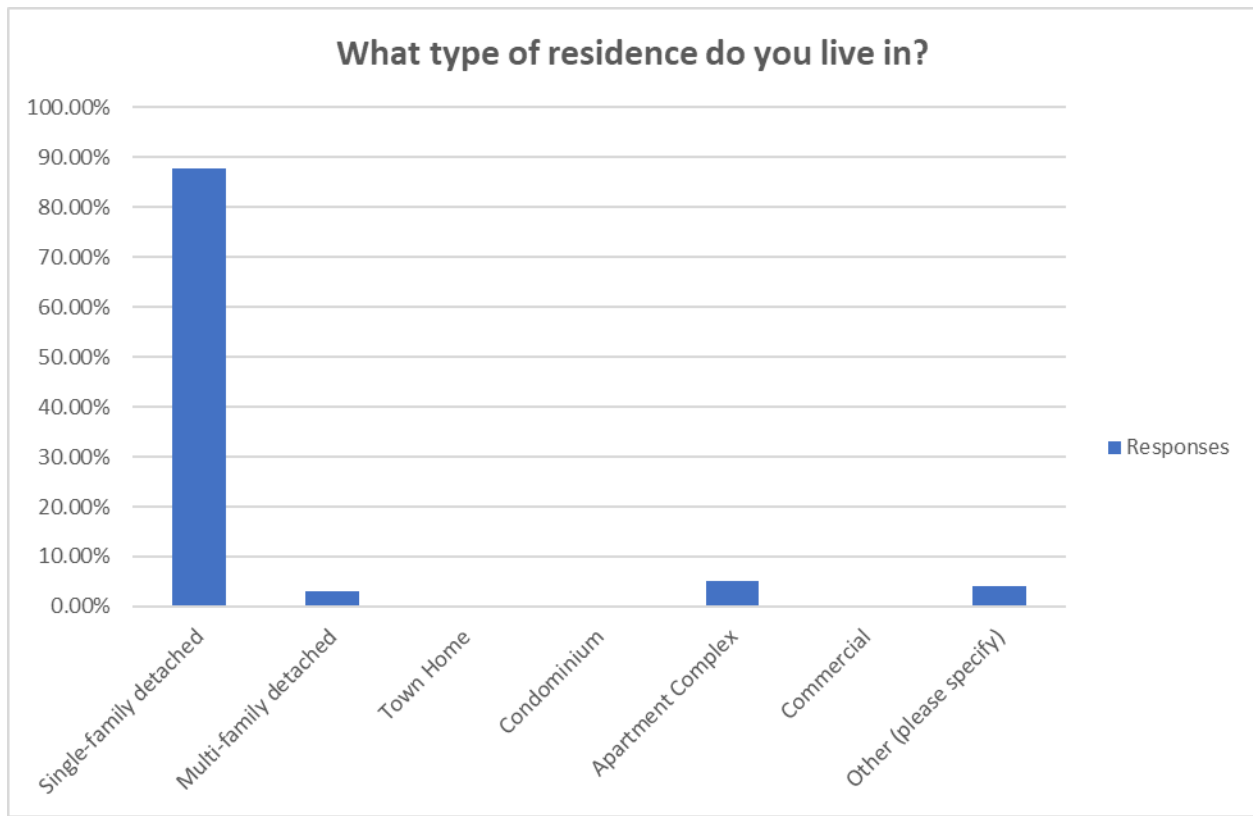


Figure D-4. Citizen Survey Question 4 Results



Question four asked respondents to indicate whether they own or rent their place of residence. *The responses indicate that 86.73% of respondents own their place of residence. Respondents who rent their place of residence represented 13.27% of responses to this question.*

Figure D-5. Citizen Survey Question 6 Results



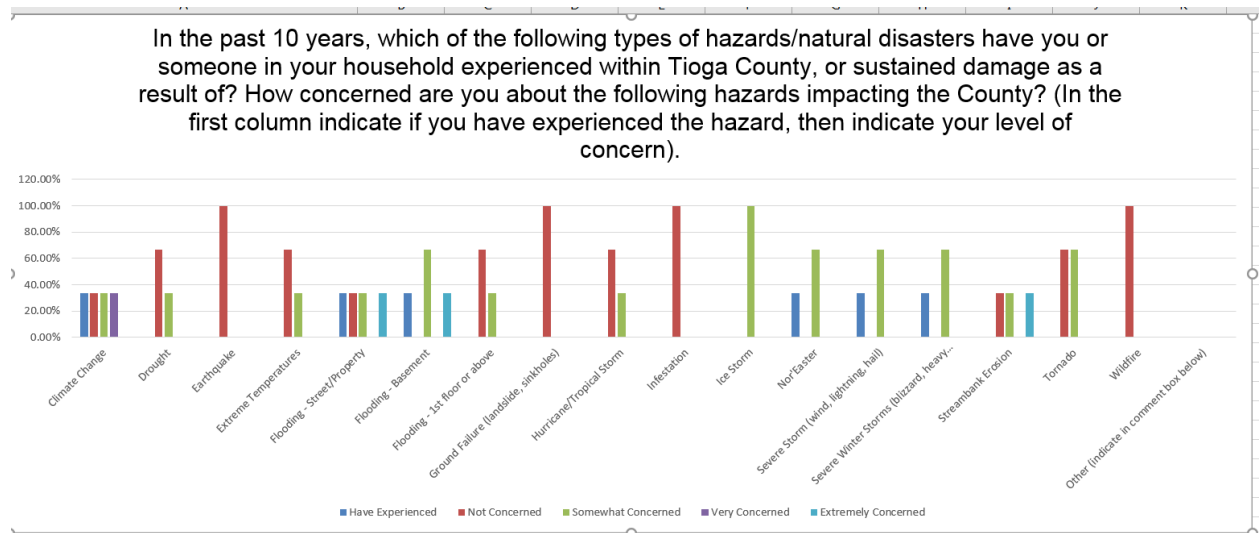
Question six of the survey asked respondents to indicate the type of residential structure in which they live. *Single-family detached housing represents 87.76% of all responses for this question. The next highest response was individuals who indicated they reside in an apartment complex, with 5.10% of all responses. Multi-family detached housing represented the smallest response at 3.06% of responses. Other housing structure types identified were mobile homes or farmsteads.*

### D.1.2 Natural Hazard Information

Information from this section of the survey will be used to understand the most pressing natural hazard concerns of the respondents. These responses may be used to indicate possible priorities for types of hazard mitigation initiatives.

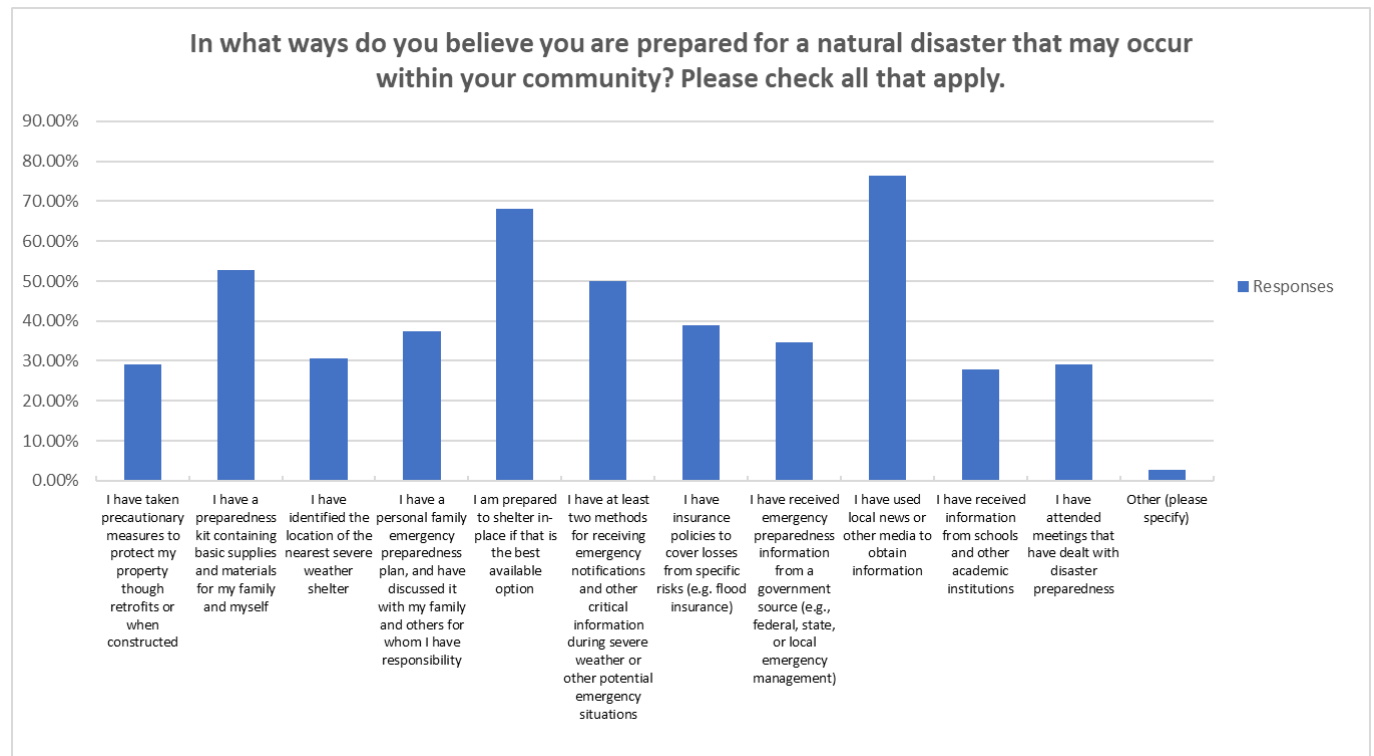


Figure D-6. Citizen Survey Question 7 Results



Question seven asked respondents to identify whether or not they have experience various types of hazards and to indicate their level of concern for each hazard. *The top three hazards that were experienced were Severe Winter Storms, Severe Storm, and Nor'Easters. Of the possible hazards, flooding represented the highest response for the "extremely concerned" category at approximately 61.53% and of that hazard, 30.77% of respondents indicated that Street/Property Flooding was the largest concern.*

Figure D-7. Citizen Survey Question 9 Results



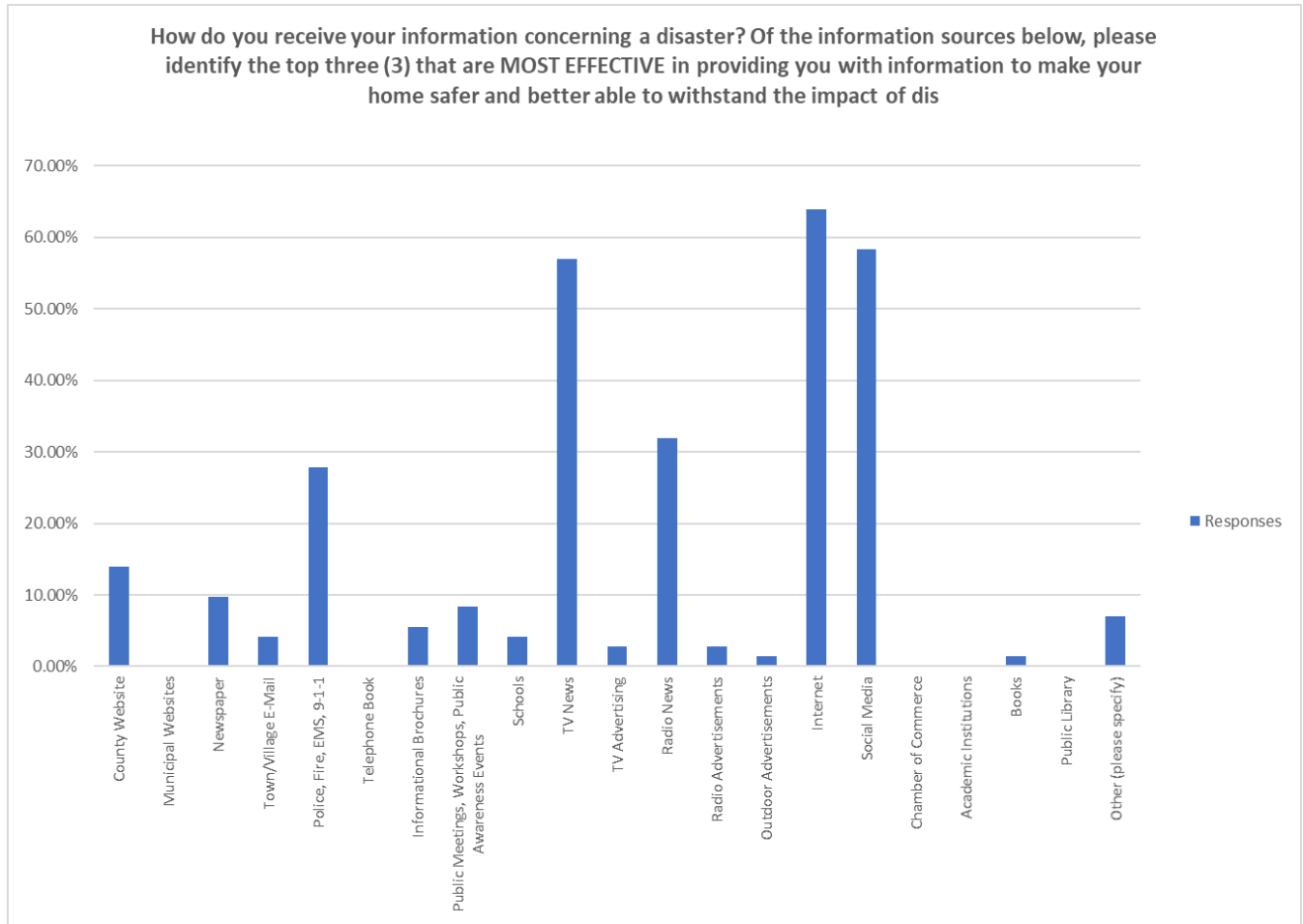
Question nine asked respondents to indicate various means of disaster preparedness within their community. *The highest response was utilizing local news or media outlets to obtain information during a disaster with*





72.39% of responses. The next highest responses were the ability to shelter in place at 68.06% of all responses, having an emergency preparedness kit available at 52.78%, and having multiple methods of receiving emergency information at 50.00%. Many of these methods identified can be relatively low cost, but can be effective leading up to, or during the course of a hazard/disaster.

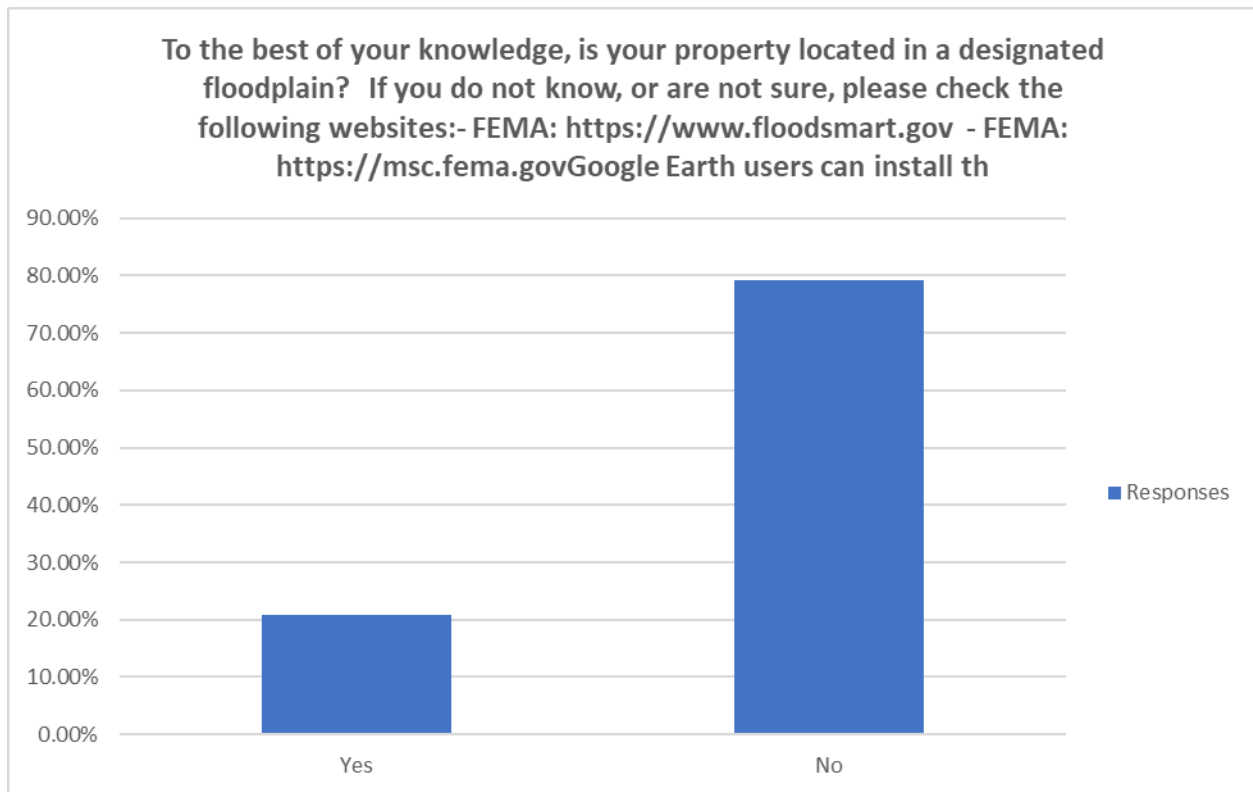
Figure D-8. Citizen Survey Question 10 Results



Question ten asked respondents to indicate the three most most effective methods of receiving emergency information. The answers which received the highest response were the internet, social media, and TV news. The answers with the lowest responses were the Public Library, Municipal Websites, Chamber of Commerce, Academic Institutions, and the Telephone Book.



Figure D-9. Citizen Survey Question 11 Results

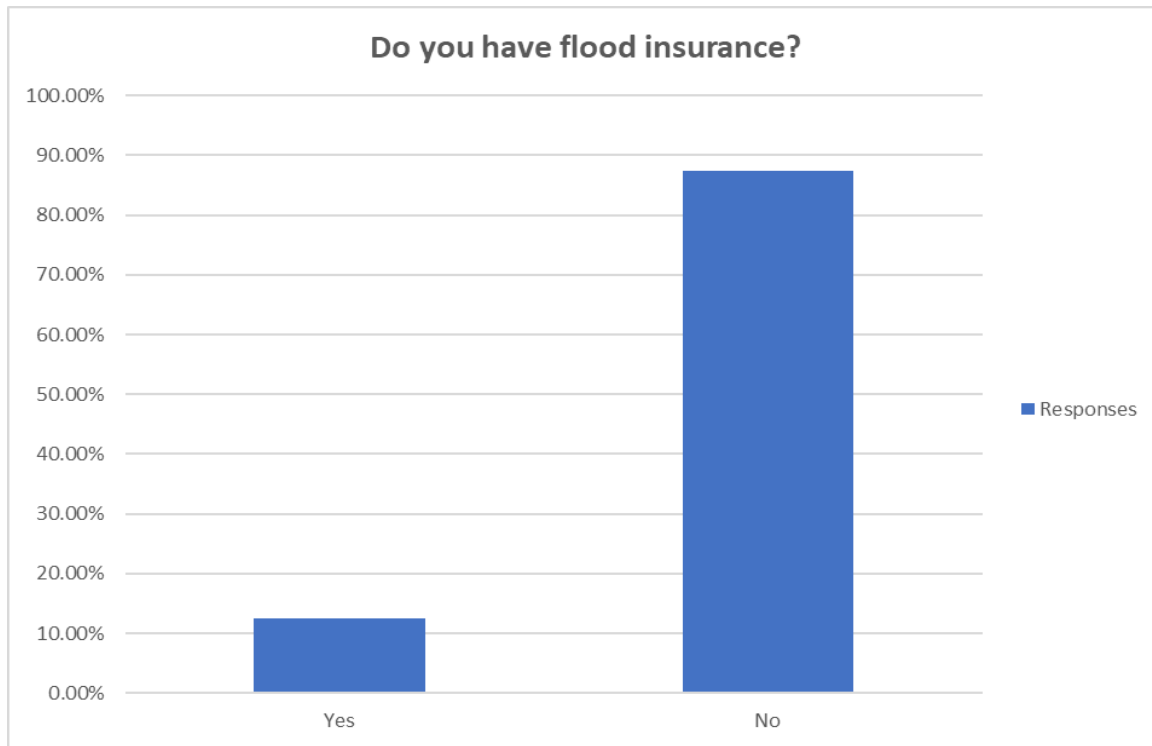


Full question: *To the best of your knowledge, is your property located in a designated floodplain? If you do not know, or are not sure, please check the following websites:- FEMA: <https://www.floodsmart.gov> - FEMA: <https://msc.fema.gov> Google Earth users can install the FEMA NFIP flood delineations by going to: <https://hazards.fema.gov/femaportal/wps/portal/NFHLWMSkmzdownload>*

Question eleven asked respondents to indicate to the best of their knowledge whether or not they knew if their property is located within the floodplain. 79.17% of respondents indicated that their property was not located within the floodplain.



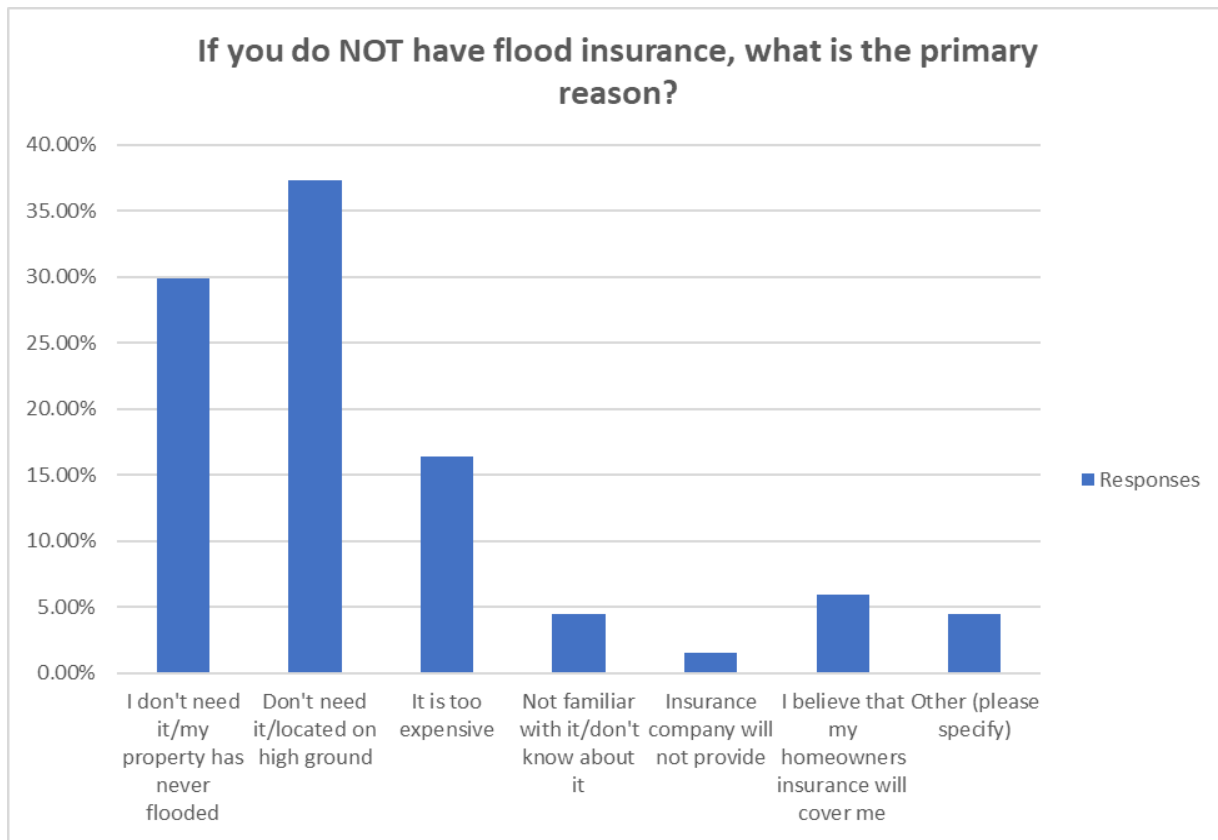
Figure D-10. Citizen Survey Question 12 Results



Question twelve asked respondents to indicate whether or not they have a flood insurance policy. 87.5% of respondents indicated they did not have flood insurance. 12.5% of respondents indicated that they have flood insurance.



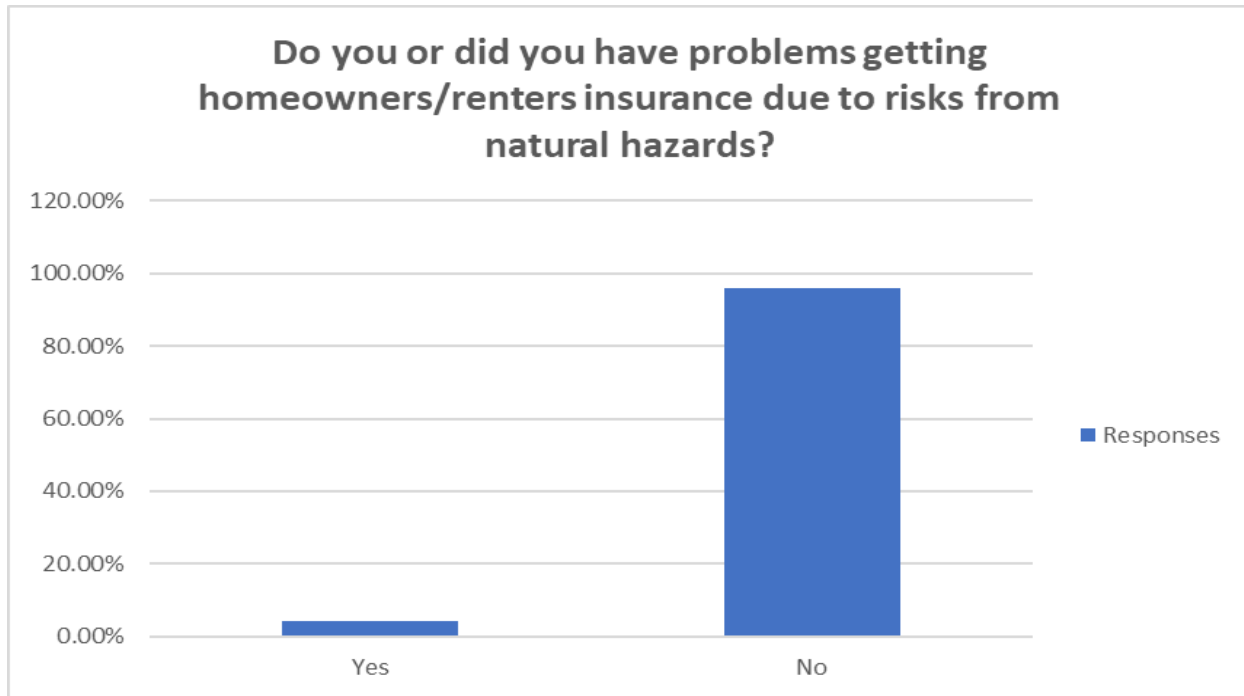
Figure D-11. Citizen Survey Question 13 Results



Question thirteen asked respondents who indicated that they do not have flood insurance to identify the primary reason for not having a policy. *The primary responses were “Don’t need it/located on high ground”; “I don’t need it/my property has never flooded”; and “It is too expensive.” Don’t need it/located on high ground received 37.31% of responses. “I don’t need it/my property has never flooded” received 29.85% of responses. “It is too expensive” received 16.42% of responses.*



Figure D-12. Citizen Survey Question 14 & 15 Results



Question fourteen asked respondents to indicate whether or not they had difficulties getting homeowners/renters insurance due to natural hazard risk. 95.83% of respondents indicated “No” while 4.17% of respondents indicated “Yes.”

Question fifteen asked respondents who had answered “yes” to question fourteen to identify the natural hazard/risk which complicated their ability to get insurance. *Location of the house in a floodplain was the most frequent response.*

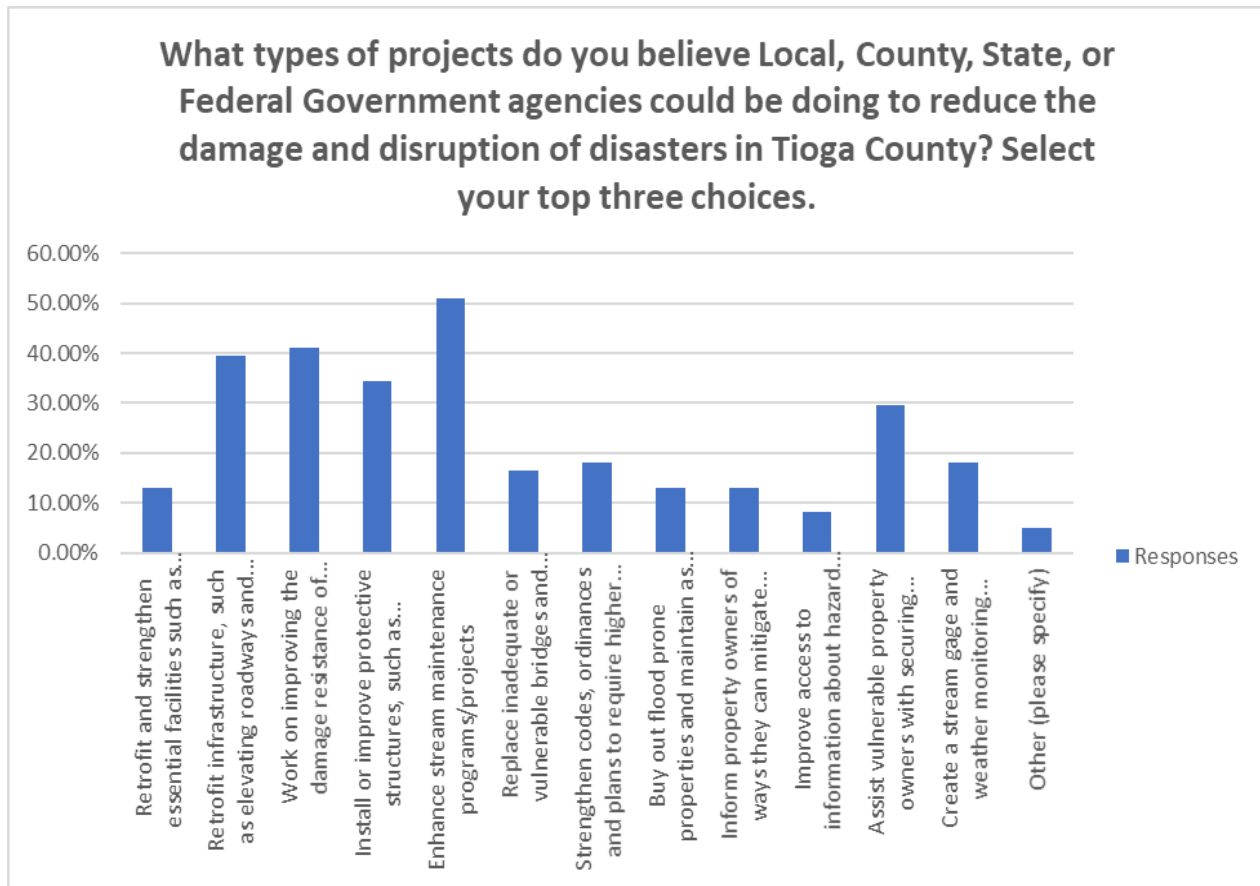
### D.1.3 Natural Hazard Mitigation

Information from this section of the survey can be used by local officials to supplement their current understanding of vulnerable areas and focus efforts on increasing resilience to natural hazards. This information can also help to gain an understanding of the most critical priorities from a citizen’s perspective as well.

Question sixteen asked respondents to indicate areas within Tioga County that are most likely to flood. *Some of the most commonly referenced areas were the Village of Owego, the Town of Barton, and areas adjacent to the Susquehanna River.*

Question seventeen asked respondents to indicate the types of mitigation projects that government entities could be doing to reduce damage and disruption caused by disasters. *Steam maintenance projects was the highest response at 50.82% followed by improving damage resistance of utilities at 40.98%, and then retrofitting infrastructure by elevating roadways and improving drainage systems at 39.34% of responses.*

Figure D-13. Citizen Survey Questions 16 & 17 Results



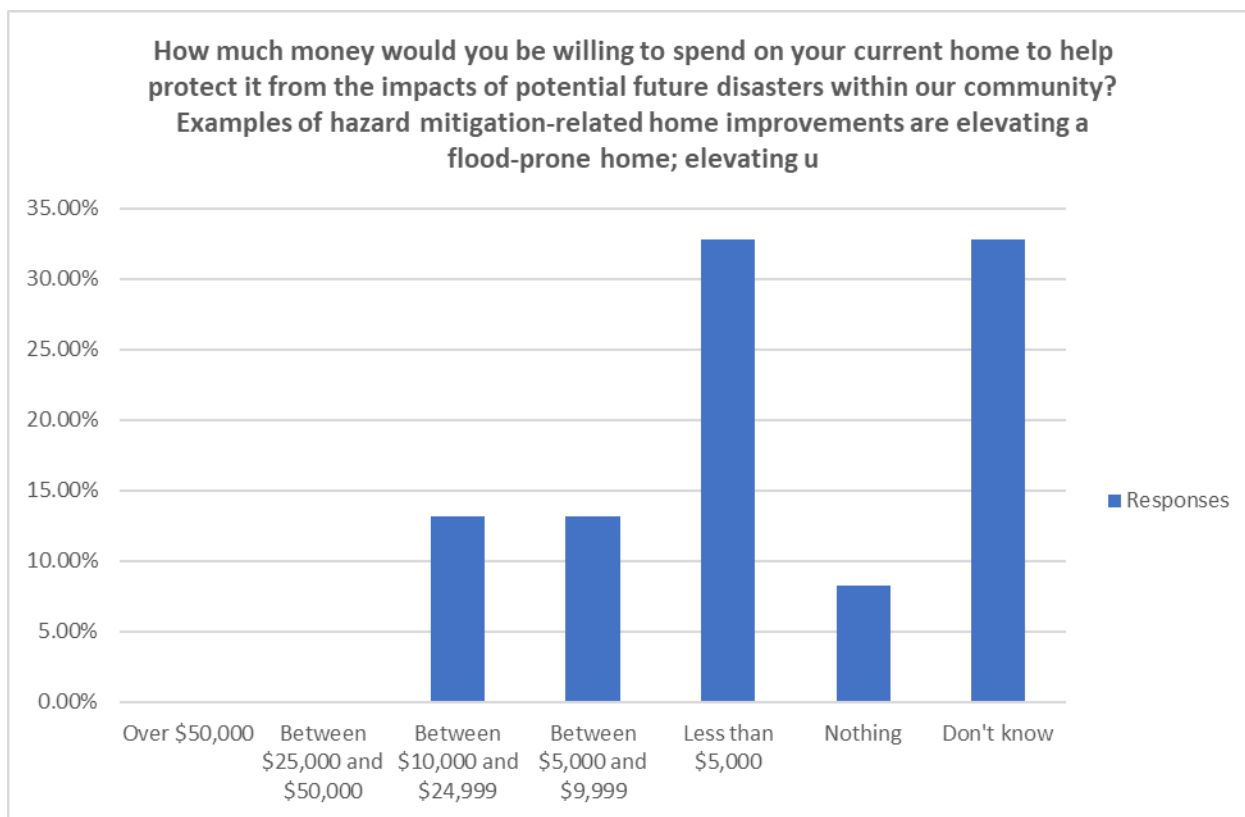
Response options (from left to right on the chart above):

1. Retrofit and strengthen essential facilities such as police, schools, and hospitals
2. Retrofit infrastructure, such as elevating roadways and improving drainage systems
3. Work on improving the damage resistance of utilities (electricity, communications, water/wastewater facilities etc.)
4. Install or improve protective structures, such as floodwalls, levees, bulkheads, and firebreaks
5. Enhance stream maintenance programs/projects
6. Replace inadequate or vulnerable bridges and causeways
7. Strengthen codes, ordinances and plans to require higher hazard risk management standards and/or provide greater control over development in high hazard areas
8. Buy out flood prone properties and maintain as open space
9. Inform property owners of ways they can mitigate damage to their properties
10. Improve access to information about hazard risks and high-hazard areas



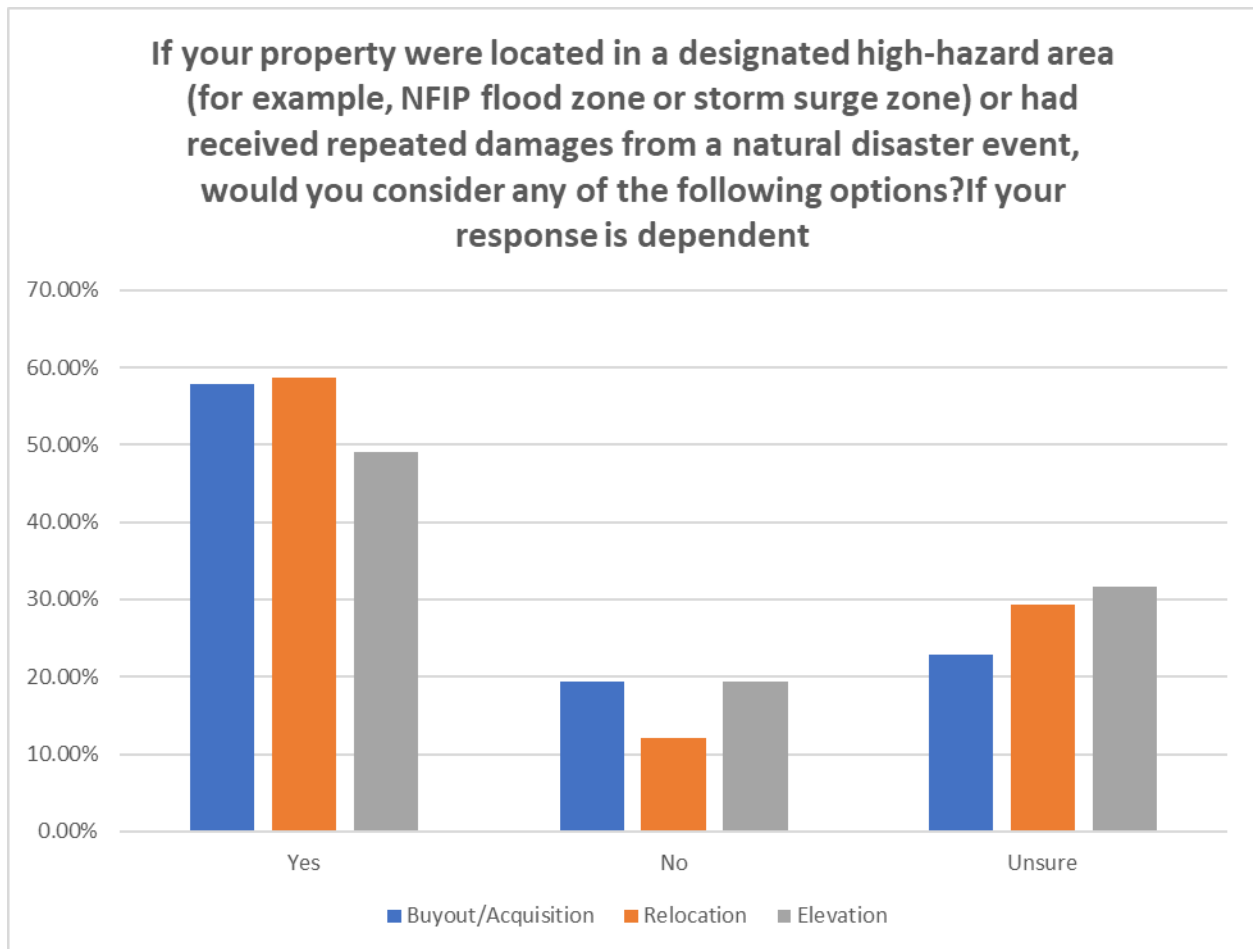
11. Assist vulnerable property owners with securing funding to mitigate their properties
12. Create a stream gage and weather monitoring program to provide more accurate data and warnings
13. Other (please specify)

Figure D-14. Citizen Survey Question 18 Results



Question eighteen asked respondents to indicate a range of money that they would be willing to spend to mitigate impacts of future hazards. *The options with the highest response were “Don’t know” and “Less than \$5,000” at 32.79%. The next highest responses were “Between \$5,000 and \$9,999” and “Between \$10,000 and \$25,999” at 13.11% of responses.*

Figure D-15. Citizen Survey Question 19-23 Results



Question nineteen asked respondents to indicate if their property was located in a designated high-hazard area (for example, NFIP flood zone or storm surge zone) or had received repeated damages from a natural disaster event, would they consider any of the following options? *All three of the mitigation options received “Yes” as the highest response. The factor that was most commonly cited by respondents for being unsure of willingness to participate in one of these mitigation options was cost.*

Question twenty asked respondents to indicate how much money has already been spent on mitigation and on what type of mitigation measures. *A majority of responses indicate that \$5,000 or less was spent on various mitigation measures such as roof replacement, securing siding, and purchasing sandbags. The highest costs indicated was \$40,000 on home reconstruction following flooding.*

Question twenty-one asked respondents to indicate what incentives would motivate them to spend more money on mitigation, and *the most commonly cited incentive options were additional grant funding and lower interest rates.*

Question twenty-two asked respondents to indicate any additional types of mitigation projects that could be done within Tioga County. *Responses ranged from stream resotation/maintenance, increasing public awareness/education, increased emergency planning initiatives, infrastructure improvement, and increased coordination with neighboring counties/municipalities.*





Question twenty-three asked respondents to indicate any other comments, questions, or concerns within Tioga County. *Responses varied, but increasing communications through various stakeholders, focusing on all hazard prone communities within the County, and to advertise public meetings/events to increase citizen participation.*

## **D.2 Stakeholder Surveys**

In addition to collecting information from residents of Tioga County, surveys were developed for the agencies and stakeholders in the county. Unlike steering committee or planning partnership members, stakeholders may not be involved in all stages of the planning process, but they may have information or input to provide. In order to gather that information, the surveys were sent to the following stakeholders: law enforcement, firefighters, emergency medical services, highway and public works, business and commerce, hospitals and health care providers, and utilities. Summaries of the agency survey responses is presented is presented the following pages.

## Q1 Name of Business

Answered: 6 Skipped: 0

## Q2 Name of Respondent

Answered: 5 Skipped: 1

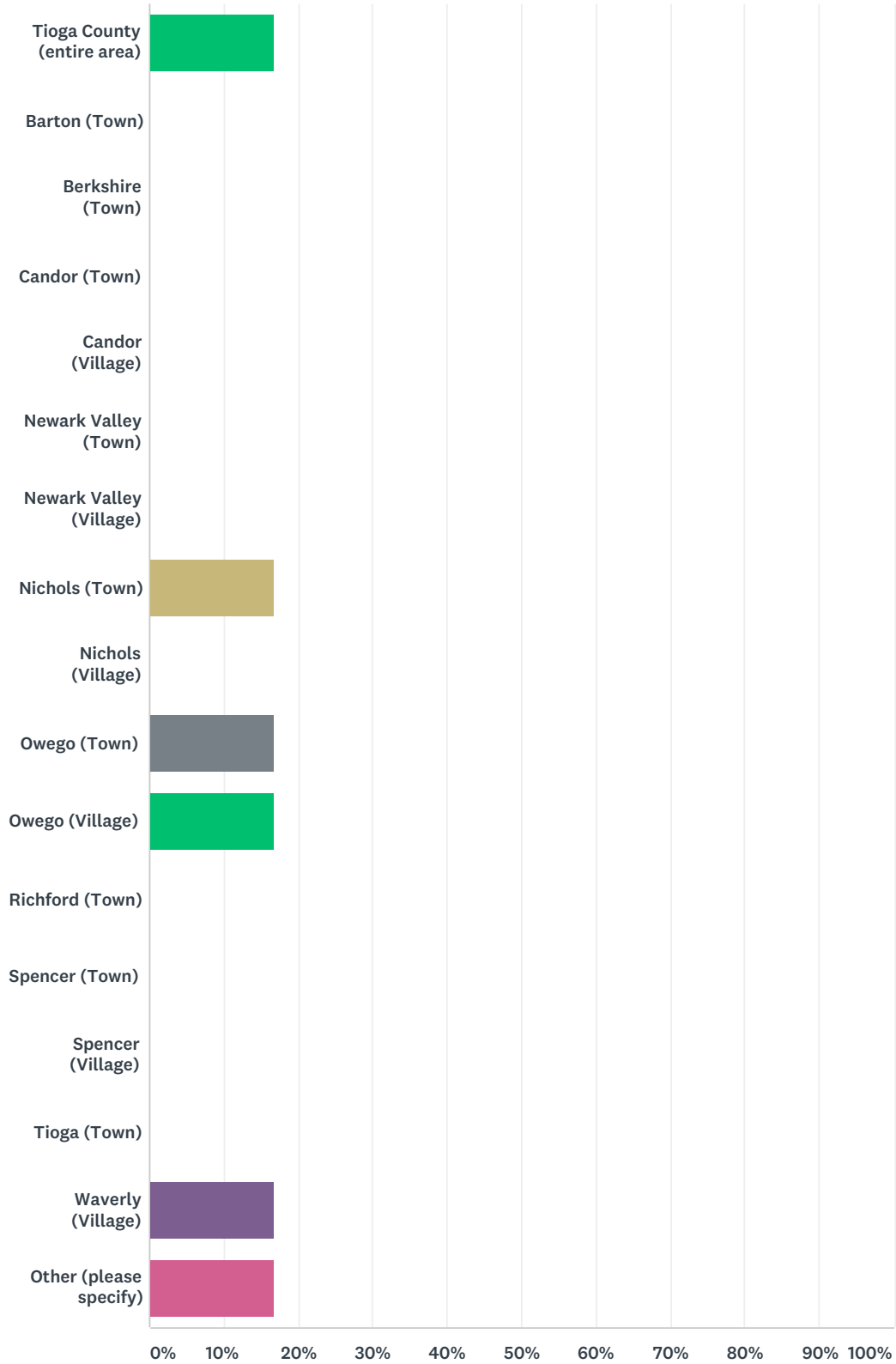
### Q3 Contact information (email address or phone number) optional

Answered: 5 Skipped: 1

**Q4 Please identify the location of your facility(ies) and/or primary service area. If your facilities are in more than one community, please specify the locations under the "other" category below, or "Tioga County (entire area)" if your service area is county-wide:**

Answered: 6 Skipped: 0

## Tioga County Hazard Mitigation Plan Update - Business and Commerce Survey



ANSWER CHOICES	RESPONSES	
Tioga County (entire area)	16.67%	1
Barton (Town)	0.00%	0
Berkshire (Town)	0.00%	0

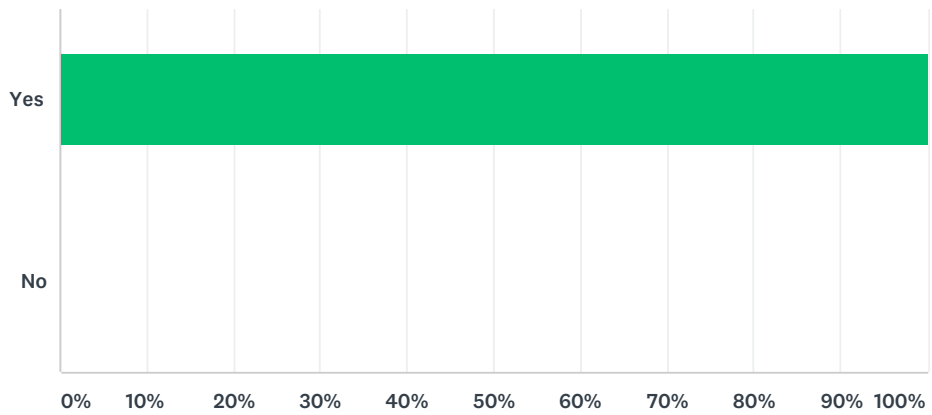
Tioga County Hazard Mitigation Plan Update - Business and Commerce Survey

Candor (Town)	0.00%	0
Candor (Village)	0.00%	0
Newark Valley (Town)	0.00%	0
Newark Valley (Village)	0.00%	0
Nichols (Town)	16.67%	1
Nichols (Village)	0.00%	0
Owego (Town)	16.67%	1
Owego (Village)	16.67%	1
Richford (Town)	0.00%	0
Spencer (Town)	0.00%	0
Spencer (Village)	0.00%	0
Tioga (Town)	0.00%	0
Waverly (Village)	16.67%	1
Other (please specify)	16.67%	1
<b>TOTAL</b>		<b>6</b>

#	OTHER (PLEASE SPECIFY)	DATE
1	Tioga County-some services to other surrounding counties	5/18/2018 2:25 PM

### Q5 Has your business been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 6 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	6
No	0.00%	0
<b>TOTAL</b>		<b>6</b>



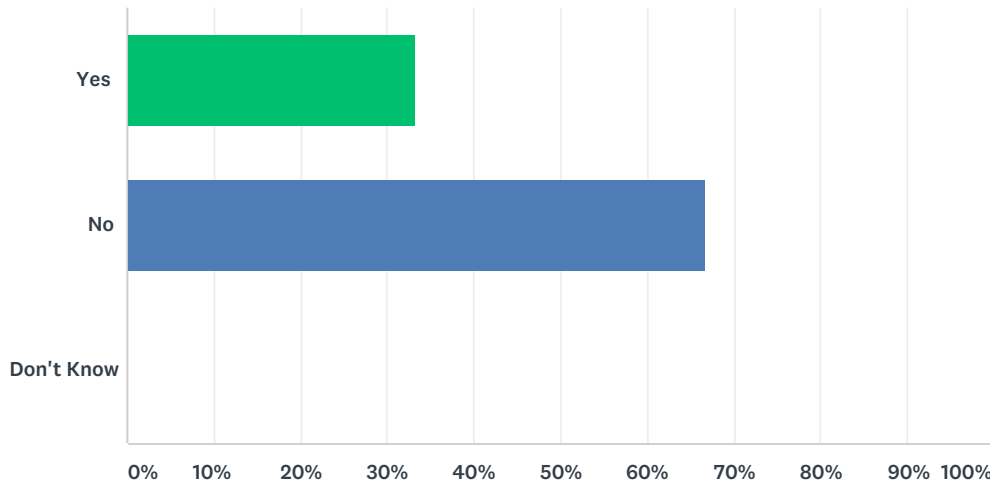
**Q6 If you answered "YES," please identify the events and provide a brief description of the damages or loss of service.**

Answered: 6 Skipped: 0

#	RESPONSES	DATE
1	electric outages impact our dairy. when flooding events take out roads and bridges can't get to fuel stations and milk trucks can't pick up our milk. Need fuel to power generators to milk cows and run equipment to feed them.	9/26/2018 12:34 PM
2	River flooding 2011	9/26/2018 8:07 AM
3	No Damage however infrastructure involving NYSEG Power, water, an roadway closures affected our Owego facility during the 2011 Flood events that took place across Tioga County	6/11/2018 3:33 PM
4	Brown-outs / black-outs due to weather	5/23/2018 12:18 PM
5	We had 30" of flood water in 2011 and had to temporarily relocate during cleanup	5/22/2018 3:48 PM
6	2011 Flood- loss of files-damage to equipment and structures	5/18/2018 2:25 PM

### Q7 Do you believe that your facilities are disaster resistant or capable of withstanding a natural disaster (e.g. are properly located and constructed and have back-up power as appropriate)?

Answered: 6 Skipped: 0

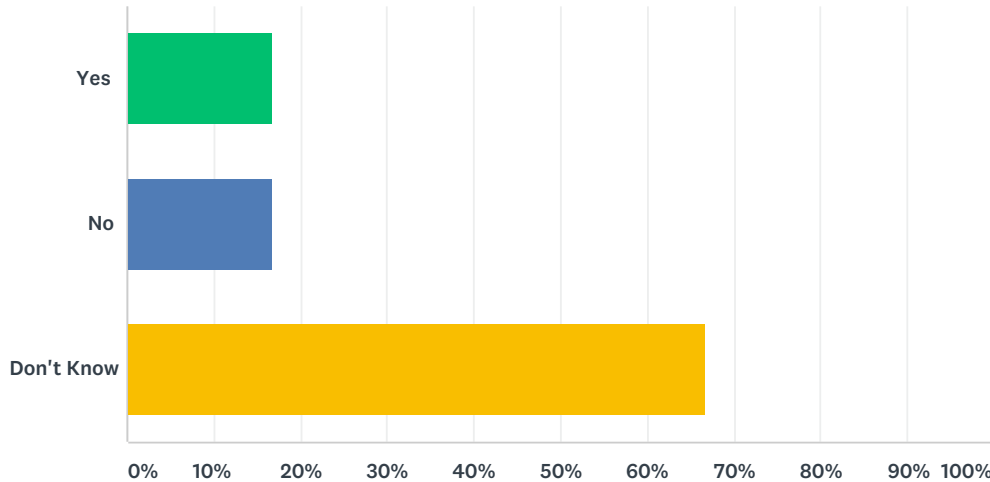


ANSWER CHOICES	RESPONSES
Yes	33.33% 2
No	66.67% 4
Don't Know	0.00% 0
<b>TOTAL</b>	<b>6</b>

#	PLEASE EXPLAIN	DATE
1	extended power outages and road/bridge closures are a problem that impacts our business. Very detrimental for extended periods, as typically happens with disaster level flooding.	9/26/2018 12:45 PM
2	In the process of developing a flood mitigation device with FEMA's approval	9/26/2018 8:13 AM
3	Location 24/7 Security and many backup and redundant systems	6/11/2018 3:35 PM
4	It depends upon the natural disaster type. We rent this facility and our landlord keeps the building in good shape. However, with certain disasters (like the flood of 2011) we would be in tough shape.s	5/22/2018 3:58 PM
5	No back-up power- 3 seperate offices located in the flood zone	5/18/2018 2:32 PM

**Q8 Do you think that the transportation infrastructure (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards, and thus provides long term support for your community's response and recovery needs?**

Answered: 6 Skipped: 0

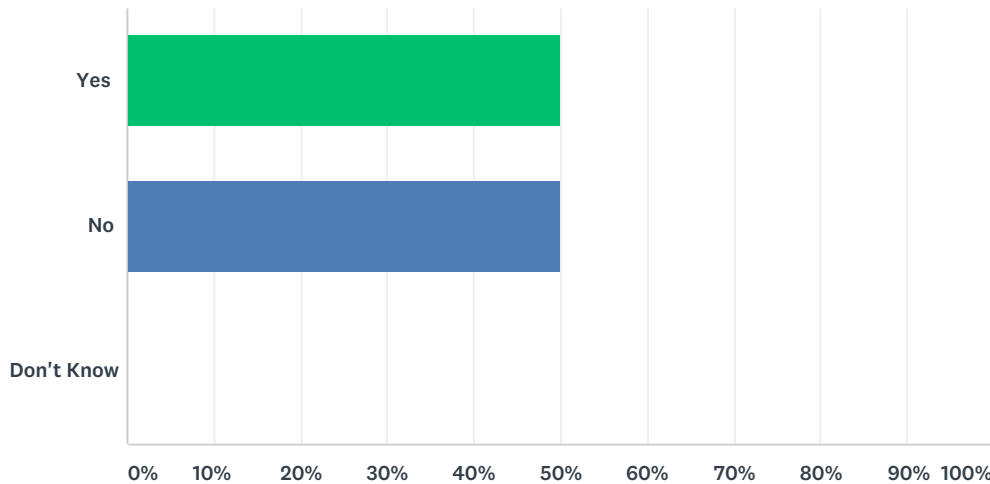


ANSWER CHOICES	RESPONSES
Yes	16.67% 1
No	16.67% 1
Don't Know	66.67% 4
<b>TOTAL</b>	<b>6</b>

#	PLEASE EXPLAIN	DATE
1	Some are and some are not, as has become apparent in past disasters. Also, flooding impacts are worsening over time, meaning infrastructure must accommodate those anticipated increases in water level. Very concerned about NYS Route 17 bridges, two of which might have been lost due to recent flood event!	9/26/2018 12:45 PM
2	Not privy to the engineering standards used to construct	5/23/2018 12:24 PM
3	I'm not familiar with the engineering of the bridges in the county	5/18/2018 2:32 PM

### Q9 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster resistant to support your department's ability to maintain operations and support response or recovery efforts?

Answered: 6 Skipped: 0

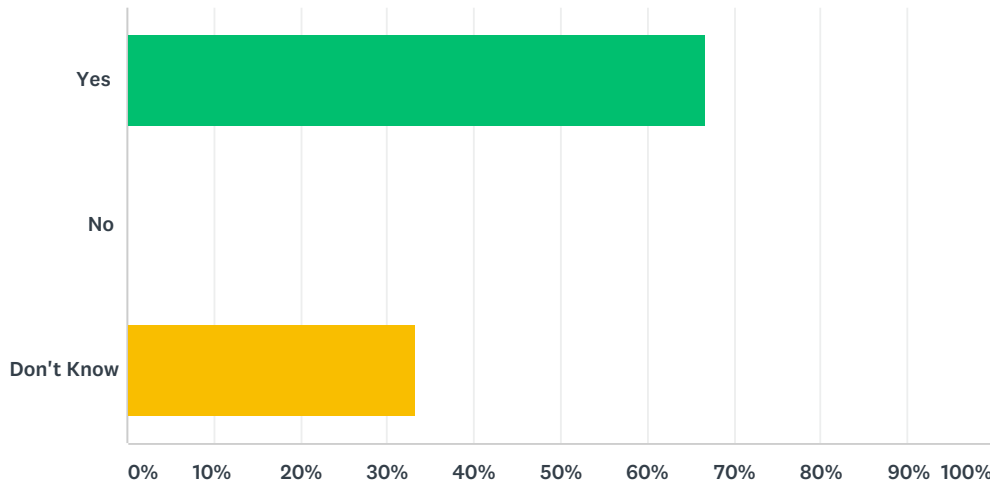


ANSWER CHOICES	RESPONSES	
Yes	50.00%	3
No	50.00%	3
Don't Know	0.00%	0
<b>TOTAL</b>		<b>6</b>

#	PLEASE EXPLAIN	DATE
1	our area endures extended power outages in a disaster. phone and internet infrastructure is ancient and problematic during the best of times.	9/26/2018 12:45 PM
2	As long as we have access to internet, we are good.	5/22/2018 3:58 PM

### Q10 Do you believe that natural hazard risks (e.g. flood zones, steep slopes, wildfire risk zones) are considered when local authorities consider land development and land use planning?

Answered: 6 Skipped: 0

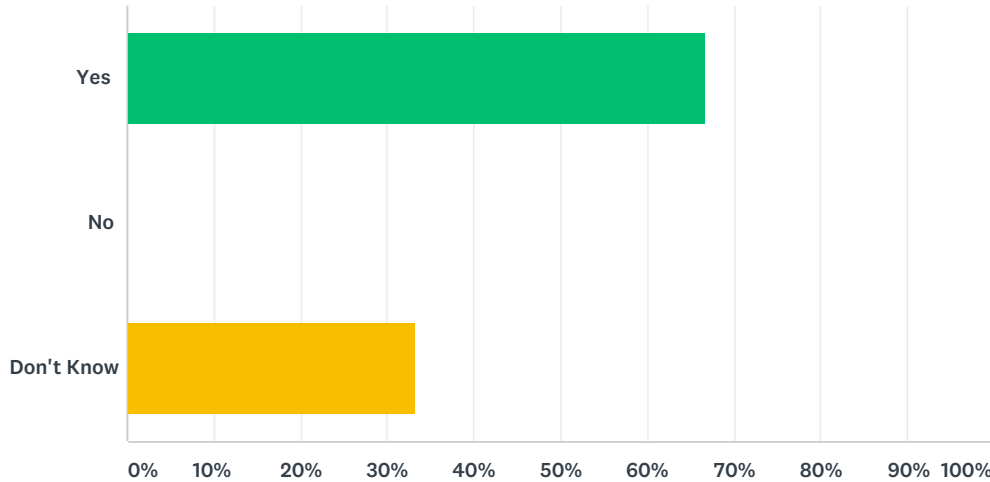


ANSWER CHOICES	RESPONSES	
Yes	66.67%	4
No	0.00%	0
Don't Know	33.33%	2
TOTAL		6

#	PLEASE EXPLAIN	DATE
1	depends upon the municipality. clearly locating a power substation in the floodplain in Nichols was land poor planning.	9/26/2018 12:45 PM

**Q11 Do you believe that business organizations/associations, chambers of commerce, etc., are a valuable resource in helping business owners protect themselves pre-disaster, and/or help in recovery post disaster?**

Answered: 6 Skipped: 0

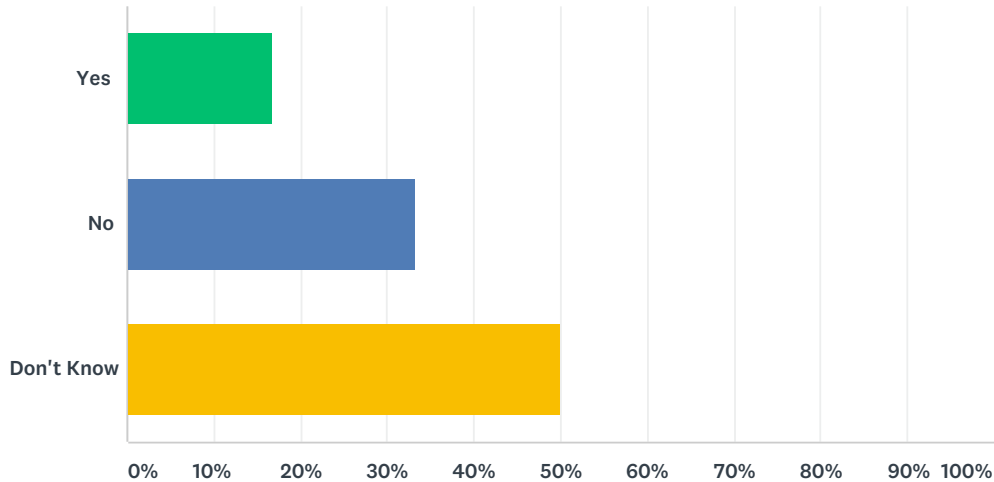


ANSWER CHOICES	RESPONSES
Yes	66.67% 4
No	0.00% 0
Don't Know	33.33% 2
<b>TOTAL</b>	<b>6</b>

#	PLEASE EXPLAIN	DATE
1	in most cases residents and fellow business operators have provided some/all support. our fire department helps too.	9/26/2018 12:45 PM
2	They are, but additional information sessions offered to business's would be helpful	5/18/2018 2:32 PM

## Q12 Do you believe that businesses are aware and take appropriate advantage of flood insurance and other risk management resources and programs to help protect them from losses, as well as to support recovery from disasters?

Answered: 6 Skipped: 0

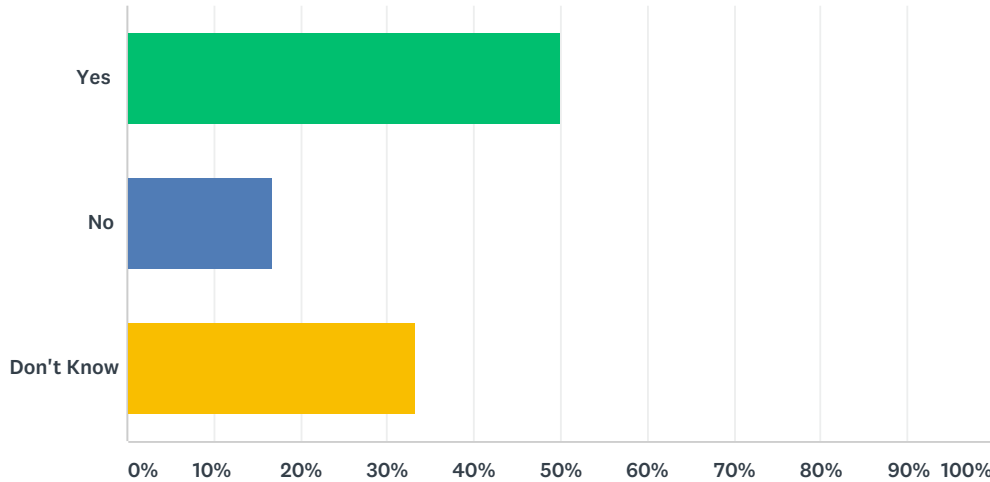


ANSWER CHOICES	RESPONSES
Yes	16.67% 1
No	33.33% 2
Don't Know	50.00% 3
TOTAL	6

#	PLEASE EXPLAIN	DATE
1	can only speak for our business on what is appropriate, but really question NYSEG and other businesses decisions to build infrastructure in floodplains.	9/26/2018 12:45 PM
2	LFC does, but I can't speak to other businesses	5/23/2018 12:24 PM
3	I think we are a knee jerk society and we react rather than plan. It might be good to provide prevention programs regularly for planning.	5/22/2018 3:58 PM
4	some not others	5/18/2018 2:32 PM

### Q13 Do you believe that emergency planning, services, and equipment are adequate to manage and respond properly to natural disasters that may impact your business or commercial interests?

Answered: 6 Skipped: 0



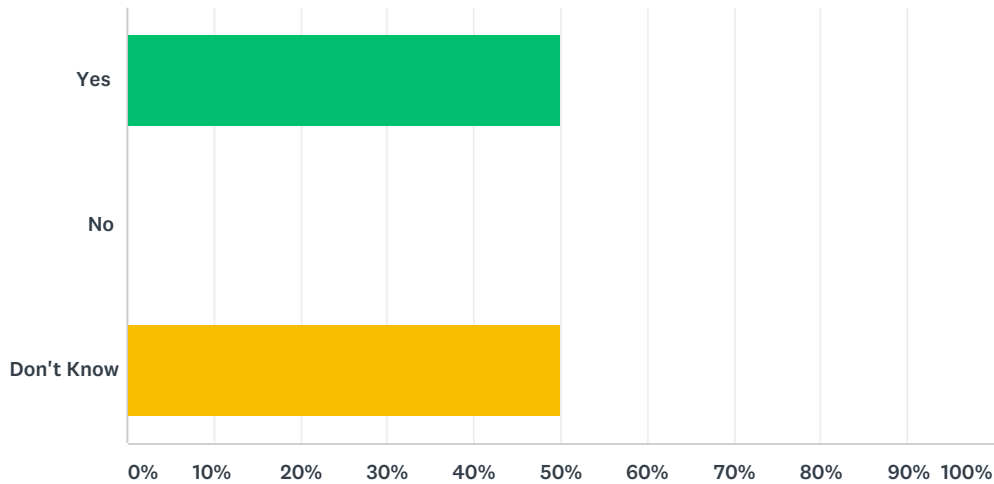
ANSWER CHOICES	RESPONSES
Yes	50.00% 3
No	16.67% 1
Don't Know	33.33% 2
TOTAL	6

#	PLEASE EXPLAIN	DATE
1	Not informed of what the local support capabilities offer	5/23/2018 12:24 PM
2	I know the region does the best they can with what is available.	5/22/2018 3:58 PM
3	I believe with the startup of the LEPC it will continually improve	5/18/2018 2:32 PM



## Q14 Do you think the local government understands, supports, and possess the resources for natural hazard risk reduction efforts in the community?

Answered: 6 Skipped: 0

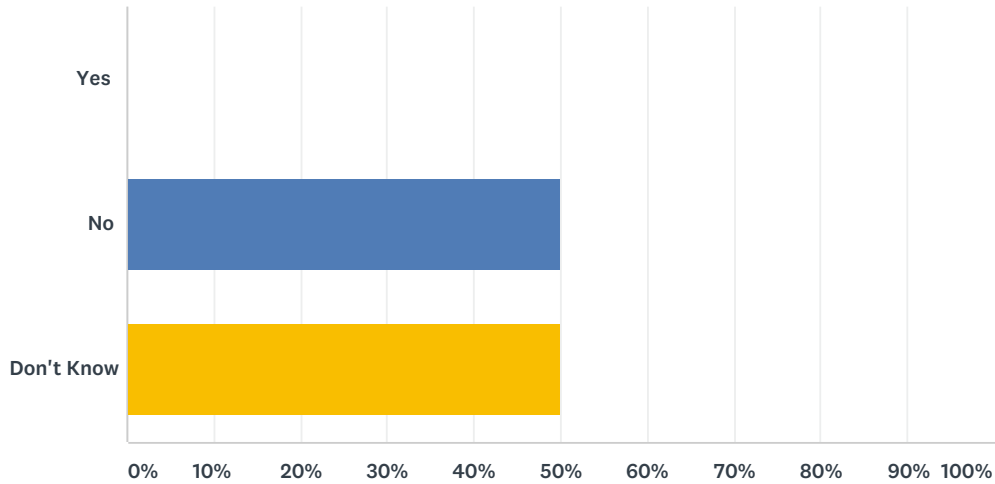


ANSWER CHOICES	RESPONSES	
Yes	50.00%	3
No	0.00%	0
Don't Know	50.00%	3
<b>TOTAL</b>		<b>6</b>

#	PLEASE EXPLAIN	DATE
1	municipalities differ, and many are resource-limited and lack the specialized expertise on their decision-making bodies	9/26/2018 12:45 PM
2	Understands yes- resources don't know	9/26/2018 8:13 AM
3	I know they understand and support. I'm not sure they possess the resources for risk reduction efforts.	5/22/2018 3:58 PM
4	some resources	5/18/2018 2:32 PM

**Q15 Is your department included within a Continuity of Operations / Continuity of Government (COOP / COG) plan? COOP / COG plans examine a department's ability to perform minimum essential functions during any situation. COOP activities support the continuance of essential functions, while COG activities support the continuance of local government.**

Answered: 6 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	50.00%	3
Don't Know	50.00%	3
<b>TOTAL</b>		<b>6</b>

#	PLEASE EXPLAIN	DATE
1	we are a business, not a department, so don't know how to respond...	9/26/2018 12:45 PM

## Q16 Can you identify projects or programs that you have implemented to reduce your business's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 5 Skipped: 1

#	RESPONSES	DATE
1	we invested in a generator after the 2006 flood. we need to invest in larger capacity generator (pto operated), as well as a second smaller generator that runs off of on site power. need to invest in on site fuel storage to mitigate inaccessibility of operating gas stations during disaster. We currently lack the funds needed for all these investments, so a program to help subsidize equipment/infrastructure to keep our businesses operational during a disaster would be very beneficial.	9/26/2018 12:53 PM
2	presently working with FEMA on system, plans to add second story above flood level	9/26/2018 8:19 AM
3	We are certified a sa Weather Ready faciltiy by the National Weather Service Office in Binghamton NY	6/11/2018 3:37 PM
4	We have a comprehensive Emergency Preparedness and Response Plan	5/23/2018 12:27 PM
5	We have minimized paper storage	5/22/2018 4:02 PM

## Q17 Can you identify projects or programs that you would like or plan to implement to reduce your business's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 5 Skipped: 1

#	RESPONSES	DATE
1	we need to invest in larger capacity generator (pto operated), as well as a second smaller generator that runs off of on site power. need to invest in on site fuel storage to mitigate inaccessibility of operating gas stations during disaster. We currently lack the funds needed for all these investments, so a program to help subsidize equipment/infrastructure to keep our businesses operational during a disaster would be very beneficial.	9/26/2018 12:53 PM
2	Deployable flood gate and adding second story to facility	9/26/2018 8:19 AM
3	None currently planned at this time. Could change in the future	6/11/2018 3:37 PM
4	Not at this time	5/23/2018 12:27 PM
5	a basic preparedness plan	5/22/2018 4:02 PM

## Q18 Do you have any other comments, questions, or concerns?

Answered: 5 Skipped: 1

#	RESPONSES	DATE
1	would like to see better land use planning throughout the county, with little to no future development in the floodplains. such development puts us all at risk, and the cost of such short sighted land use costs us all in the long run. we should avoid the impact to life and livelihood that results from such poor planning.	9/26/2018 12:53 PM
2	Decrease paper work and the number of "approvals", increase response times for projects/ project approval and funding	9/26/2018 8:19 AM
3	NO Not at This Time	6/11/2018 3:37 PM
4	Not at this time.	5/23/2018 12:27 PM
5	As we have dealt with a natural disaster, it is good to keep emergency preparedness in the forefront of our minds. You never know when/how the next one will be.	5/22/2018 4:02 PM

**Q1 Name of your EMS department or district:**

Answered: 1 Skipped: 0

## Q2 Name of respondent:

Answered: 1 Skipped: 0

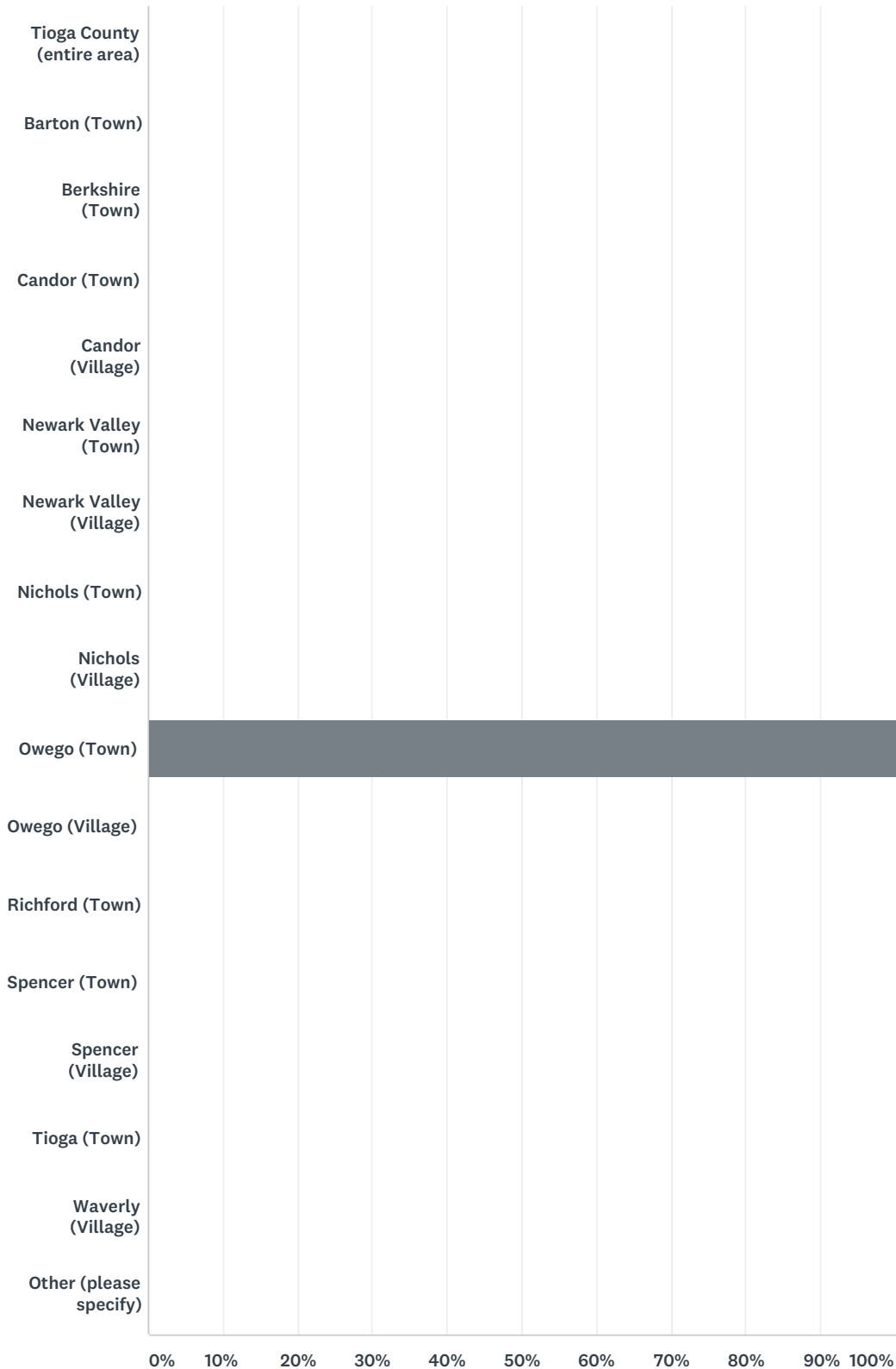
**Q3 Contact information (email address or phone number) - optional:**

Answered: 1 Skipped: 0



### Q4 Please identify the location of your facility(ies) and or primary service area:

Answered: 1 Skipped: 0



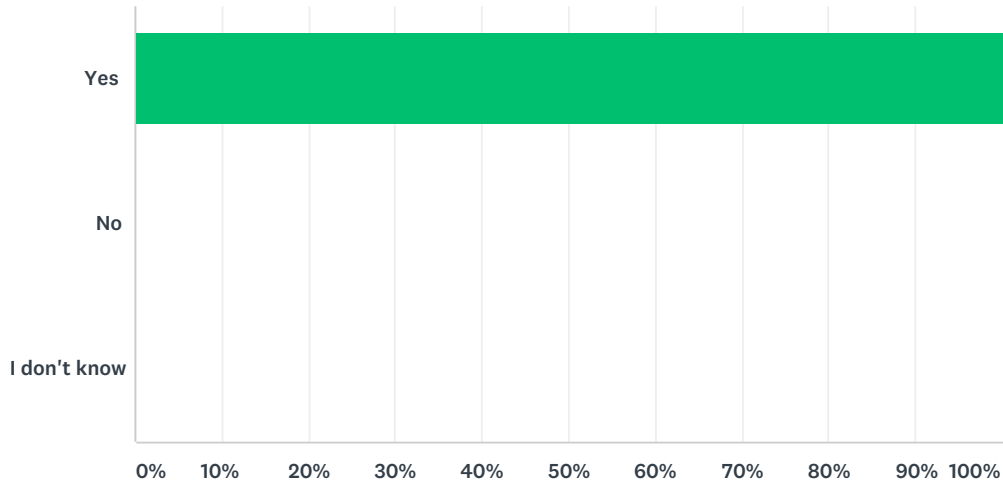
## Tioga County Hazard Mitigation Plan Update - EMS Survey

ANSWER CHOICES	RESPONSES	
Tioga County (entire area)	0.00%	0
Barton (Town)	0.00%	0
Berkshire (Town)	0.00%	0
Candor (Town)	0.00%	0
Candor (Village)	0.00%	0
Newark Valley (Town)	0.00%	0
Newark Valley (Village)	0.00%	0
Nichols (Town)	0.00%	0
Nichols (Village)	0.00%	0
Owego (Town)	100.00%	1
Owego (Village)	0.00%	0
Richford (Town)	0.00%	0
Spencer (Town)	0.00%	0
Spencer (Village)	0.00%	0
Tioga (Town)	0.00%	0
Waverly (Village)	0.00%	0
Other (please specify)	0.00%	0
<b>Total Respondents: 1</b>		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

**Q5 Do you think that critical and essential facilities (incl. EMS facilities, hospitals and medical centers) are disaster-resistant, or capable of withstanding a natural disaster (e.g. are properly located and constructed, and have back-up power as appropriate)?**

Answered: 1 Skipped: 0

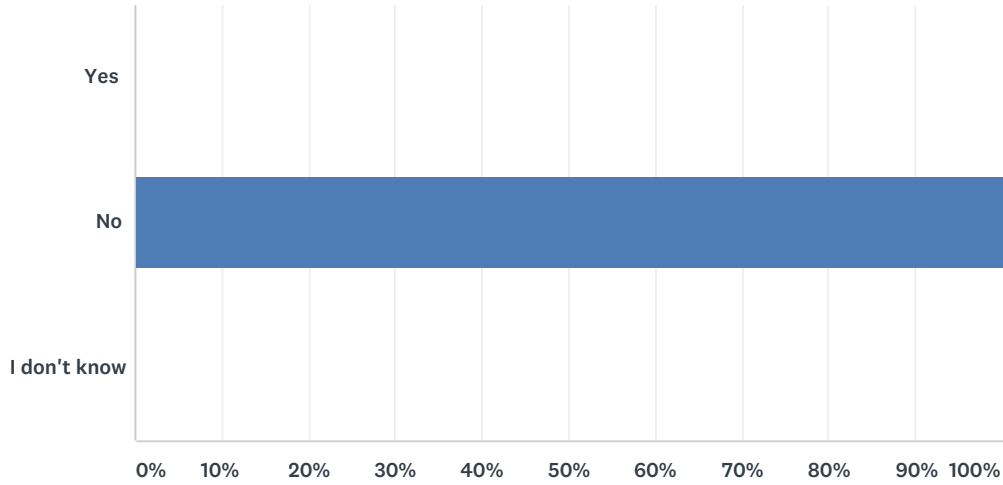


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
1	All of our stations are built to code, maintained in good working order, and have on demand power generators.	9/30/2018 10:07 PM

### Q6 Has your EMS facility been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 1 Skipped: 0

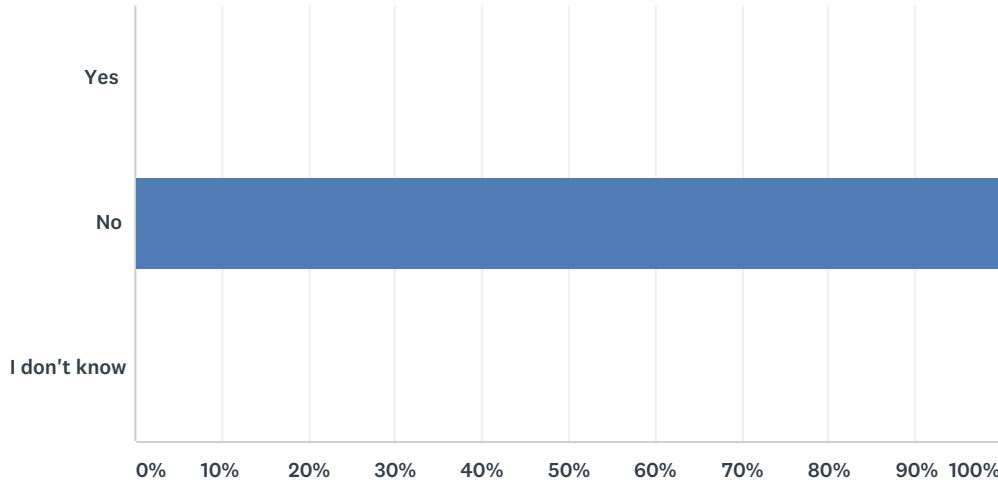


ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
<b>TOTAL</b>	<b>1</b>

#	IF YOU ANSWERED "YES," PLEASE IDENTIFY THE EVENTS AND PROVIDE A BRIEF DESCRIPTION OF THE DAMAGES OR LOSS OF SERVICE.	DATE
	There are no responses.	

### Q7 Do you think that the transportation infrastructure (e.g. roads and bridges) is properly designed to withstand damage due to natural hazards?

Answered: 1 Skipped: 0

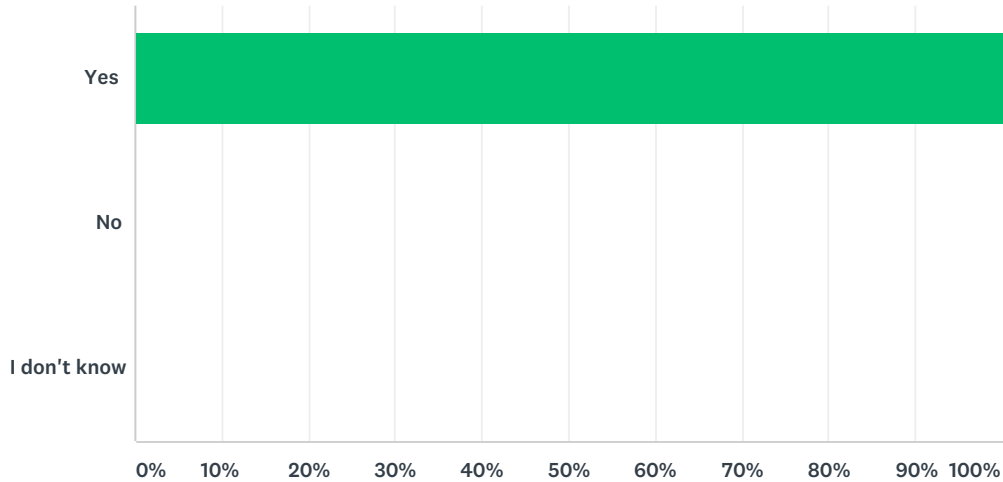


ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
<b>TOTAL</b>	<b>1</b>

#	PLEASE EXPLAIN	DATE
1	Bridges throughout our response district have been damaged or destroyed on an ongoing basis by flash flooding.	9/30/2018 10:07 PM

### Q8 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support EMS functions during natural hazard events?

Answered: 1 Skipped: 0

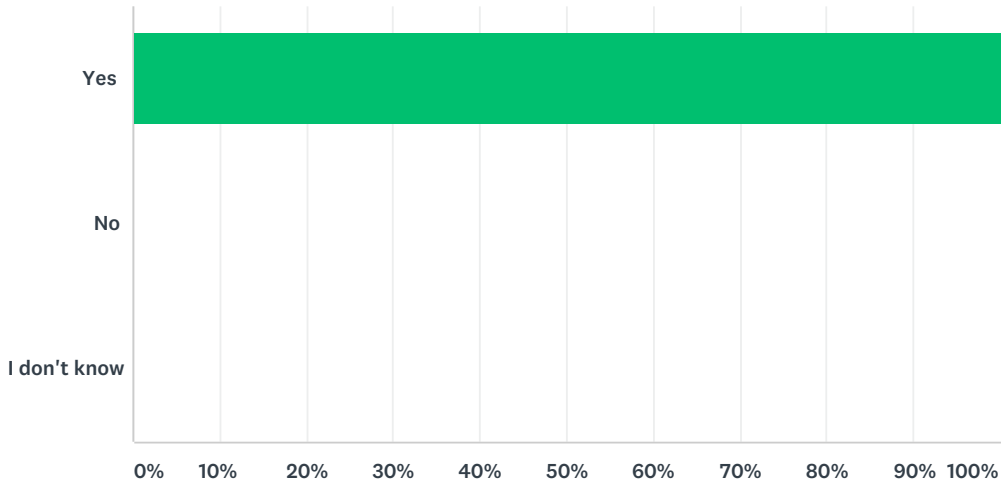


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q9 Do you think that local public education and awareness programs succeed at informing the public on what they should do to be prepared for and reduce their personal risk to natural disasters, so as not to increase the need for EMS during hazard events?**

Answered: 1 Skipped: 0

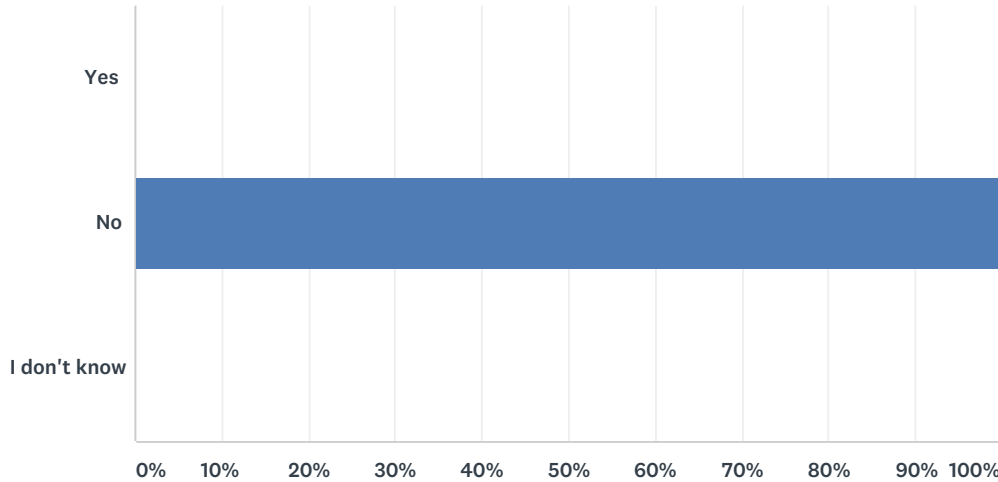


ANSWER CHOICES	RESPONSES
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
<b>TOTAL</b>	<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q10 Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support EMS functions during natural hazard events?

Answered: 1 Skipped: 0



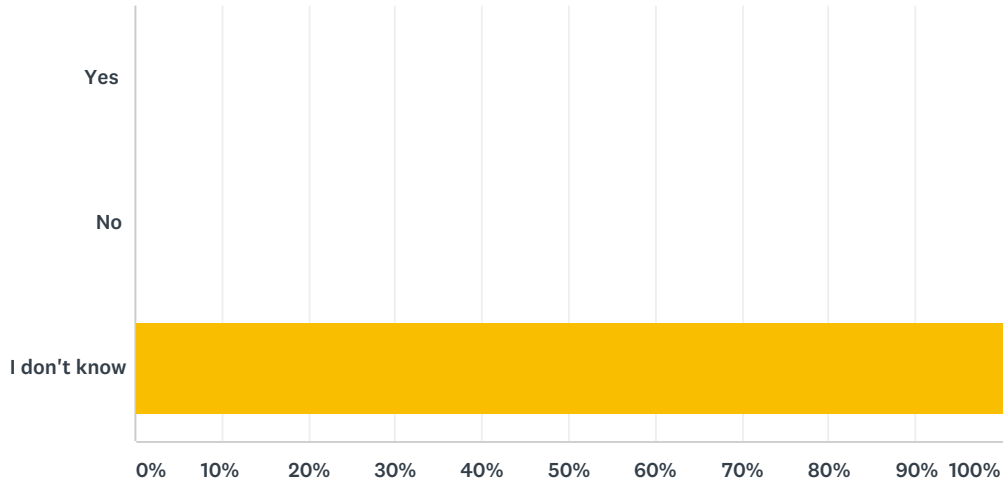
ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
<b>TOTAL</b>	<b>1</b>

#	PLEASE EXPLAIN	DATE
1	Information is anecdotally provided, not done via a structured system.	9/30/2018 10:09 PM



**Q11 Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, PERS, audible alerts, cell and text services, Hyper-Reach)?**

Answered: 1 Skipped: 0

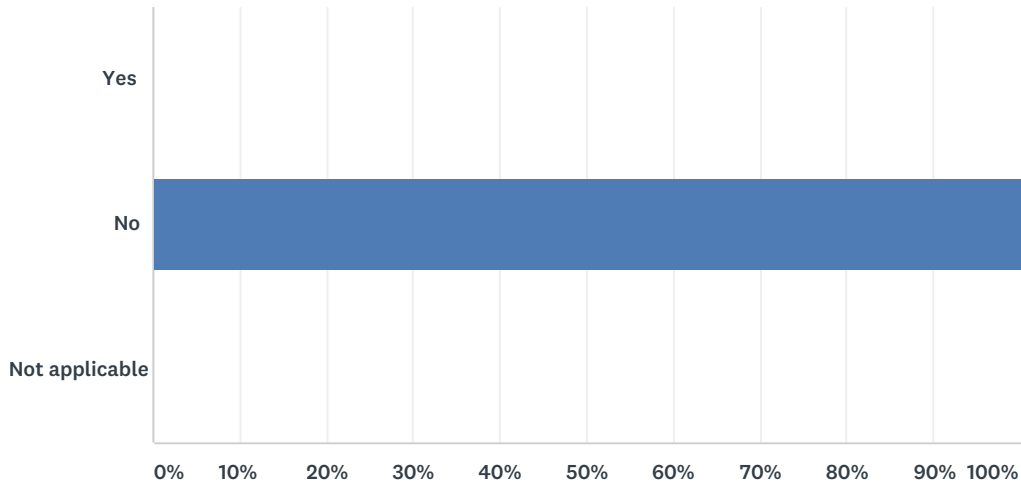


ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
<b>TOTAL</b>	<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

## Q12 Do you think that your EMS company works to inform your constituents of how they can better manage their risk to natural hazards?

Answered: 1 Skipped: 0

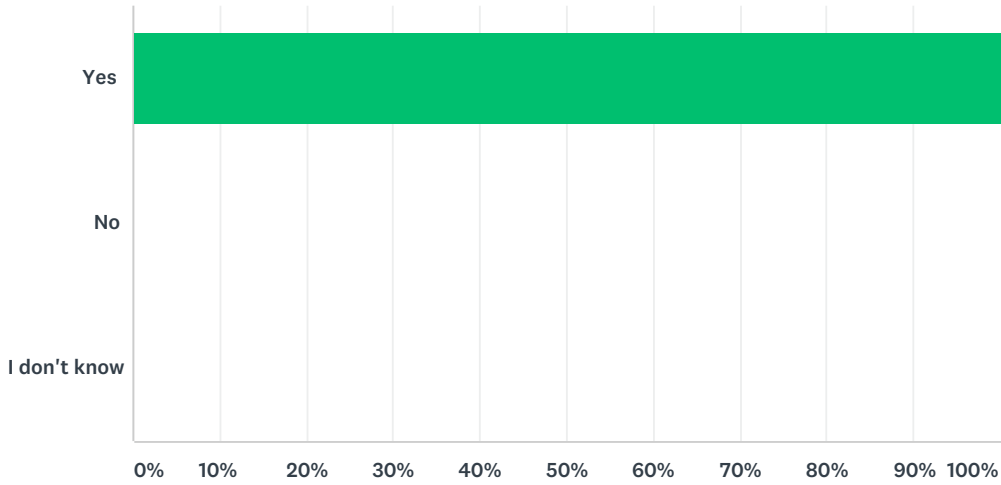


ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	100.00% 1
Not applicable	0.00% 0
<b>TOTAL</b>	<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q13 Do you think that emergency response planning, services, and equipment are capable of managing and responding properly to natural disasters in your community?

Answered: 1 Skipped: 0

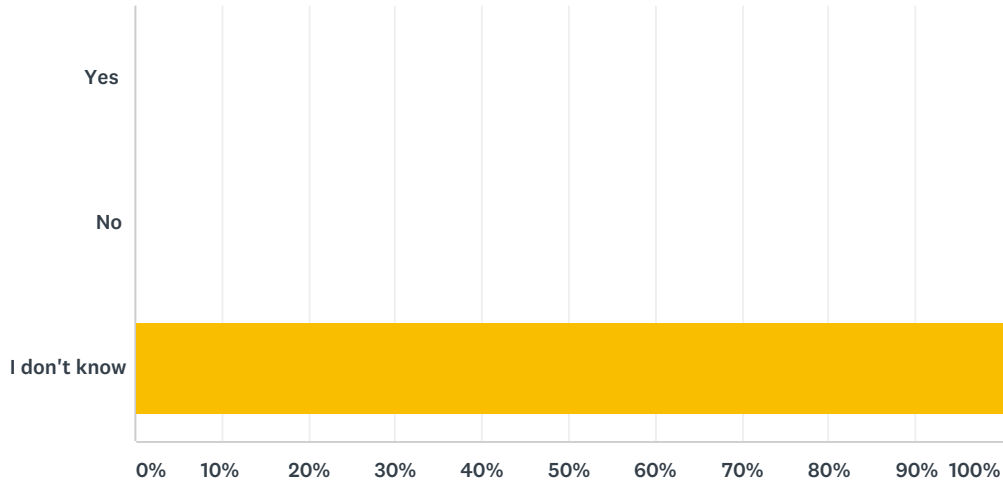


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q14 Do you think that local government understands, supports, and possess adequate resources for natural hazard risk reduction efforts in the community?

Answered: 1 Skipped: 0

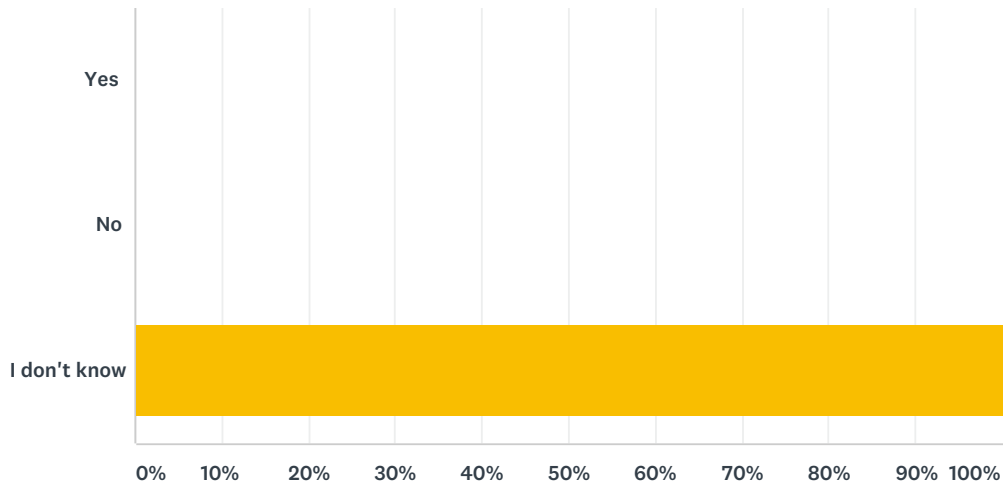


ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
TOTAL	1

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q15 Is your agency covered by a COOP / COG plan? (Continuity of Operations / Continuity of Government plans examine an agency’s ability to perform minimum essential functions during any situation. COOP activities support the continuance of agency functions, while COG activities support the continuance of agency governance.)**

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
I don't know	100.00% 1
TOTAL	1

#	IF "YES", PLEASE EXPLAIN.	DATE
	There are no responses.	

Q16 Can you identify projects or programs that you have implemented to reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	None	9/30/2018 10:10 PM

**Q17 Can you identify projects or programs that you would like or plan to implement to reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?**

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	No	9/30/2018 10:10 PM

## Q18 Do you have any other comments, questions, or concerns?

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	



**Q1 Name of your fire department or district:**

Answered: 1 Skipped: 0

## Q2 Name of respondent:

Answered: 1 Skipped: 0

**Q3 Contact information (email address or phone number) - optional:**

Answered: 1 Skipped: 0

**Q4 Please identify the location of your facility(ies) and/or primary service area. You may choose more than one if your service area covers multiple communities, or "Tioga County (entire area)" if your service area is county-wide:**

Answered: 1 Skipped: 0

## Tioga County Hazard Mitigation Plan Update - Firefighter Survey



ANSWER CHOICES	RESPONSES	
Tioga County (entire area)	0.00%	0
Barton (Town)	0.00%	0
Berkshire (Town)	0.00%	0

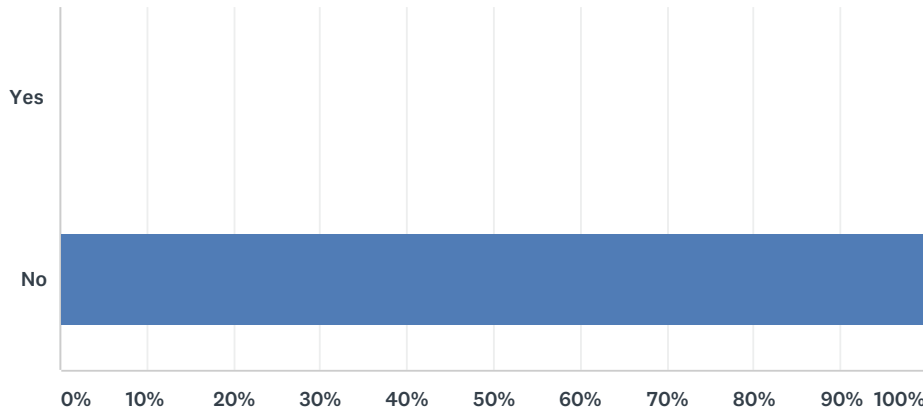
## Tioga County Hazard Mitigation Plan Update - Firefighter Survey

Candor (Town)	0.00%	0
Candor (Village)	0.00%	0
Newark Valley (Town)	0.00%	0
Newark Valley (Village)	0.00%	0
Nichols (Town)	0.00%	0
Nichols (Village)	0.00%	0
Owego (Town)	100.00%	1
Owego (Village)	0.00%	0
Richford (Town)	0.00%	0
Spencer (Town)	0.00%	0
Spencer (Village)	0.00%	0
Tioga (Town)	0.00%	0
Waverly (Village)	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 1		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

### Q5 Has your fire department been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 1 Skipped: 0

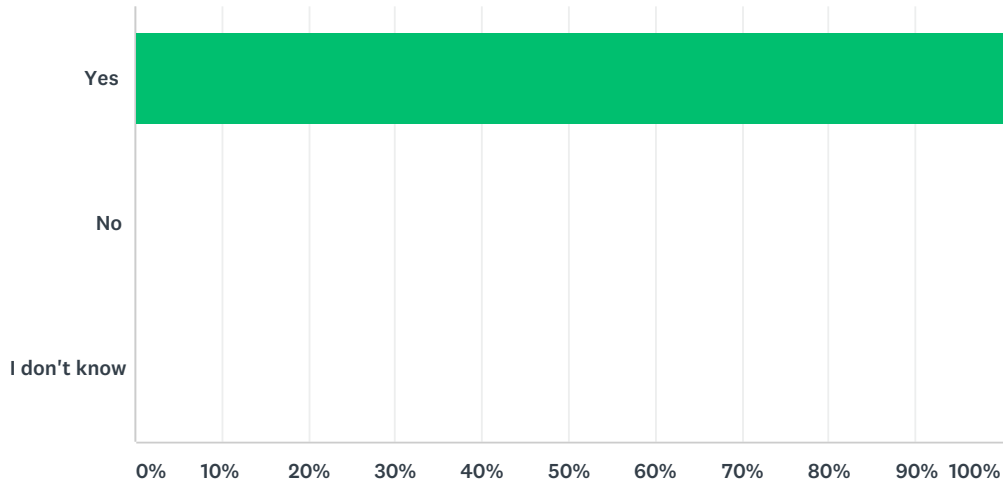


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	1
TOTAL		1

#	IF YOU ANSWERED "YES", PLEASE IDENTIFY THE EVENTS AND PROVIDE A BRIEF DESCRIPTION OF THE DAMAGES OR LOSS OF SERVICE	DATE
	There are no responses.	

**Q6 Do you think that critical and essential facilities (incl. fire departments, EMS, hospitals and medical centers) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?**

Answered: 1 Skipped: 0



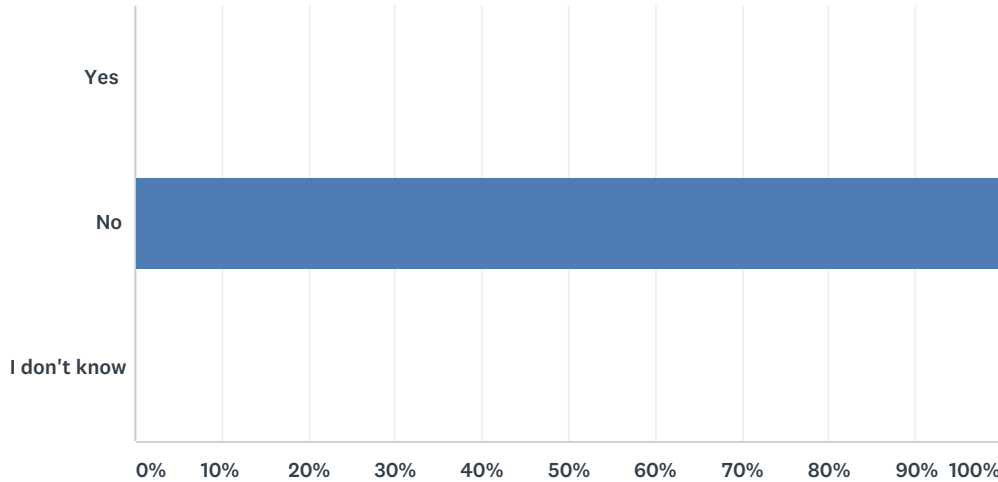
ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	



### Q7 Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards?

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	100.00% 1
I don't know	0.00% 0
<b>TOTAL</b>	<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q8 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support school functions after natural hazard events?

Answered: 0 Skipped: 1

 No matching responses.

ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>0</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q9 Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to natural disasters, so as not to increase the need for fire fighting services during hazard events?**

Answered: 0 Skipped: 1

 No matching responses.

ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
<b>TOTAL</b>	<b>0</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q10 Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support fire department functions during natural hazard events?

Answered: 0 Skipped: 1

 No matching responses.

ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
TOTAL	0

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q11 Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, PERS, audible alerts, cell and text services, Hyper-Reach)?**

Answered: 0 Skipped: 1

 No matching responses.

ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	0.00%	0
I don't know	0.00%	0
TOTAL		0

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q12 Do you think that your department/fire district works to inform your constituents of how they can better manage their risk to natural hazards (e.g. proper use of portable heaters and generators, defensible space for wildfires, etc.)?**

Answered: 0 Skipped: 1

 No matching responses.

ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	0.00% 0
I don't know	0.00% 0
<b>TOTAL</b>	<b>0</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q13 Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to natural disasters in your community?

Answered: 0 Skipped: 1

 No matching responses.

ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	0.00%	0
I don't know	0.00%	0
TOTAL		0

#	PLEASE EXPLAIN	DATE
	There are no responses.	

## Q14 Do you think that local government understands, supports, and possess the resources for natural hazard risk reduction efforts in the community?

Answered: 0 Skipped: 1

 No matching responses.

ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	0.00%	0
I don't know	0.00%	0
TOTAL		0

#	PLEASE EXPLAIN	DATE
	There are no responses.	



**Q15 Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of your organization's functions.**

Answered: 0 Skipped: 1

 No matching responses.

ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>0</b>

#	IF "YES", PLEASE EXPLAIN.	DATE
	There are no responses.	

**Q16 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?**

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

**Q17 Can you identify projects or programs that you have implemented to reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?**

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

## Q18 Do you have any other comments, questions, or concerns?

Answered: 0 Skipped: 1

#	RESPONSES	DATE
	There are no responses.	

**Q1 Name of your health care facility:**

Answered: 5 Skipped: 0

## Q2 Name of respondent:

Answered: 5 Skipped: 0

### Q3 Contact information (email address or phone number) - optional:

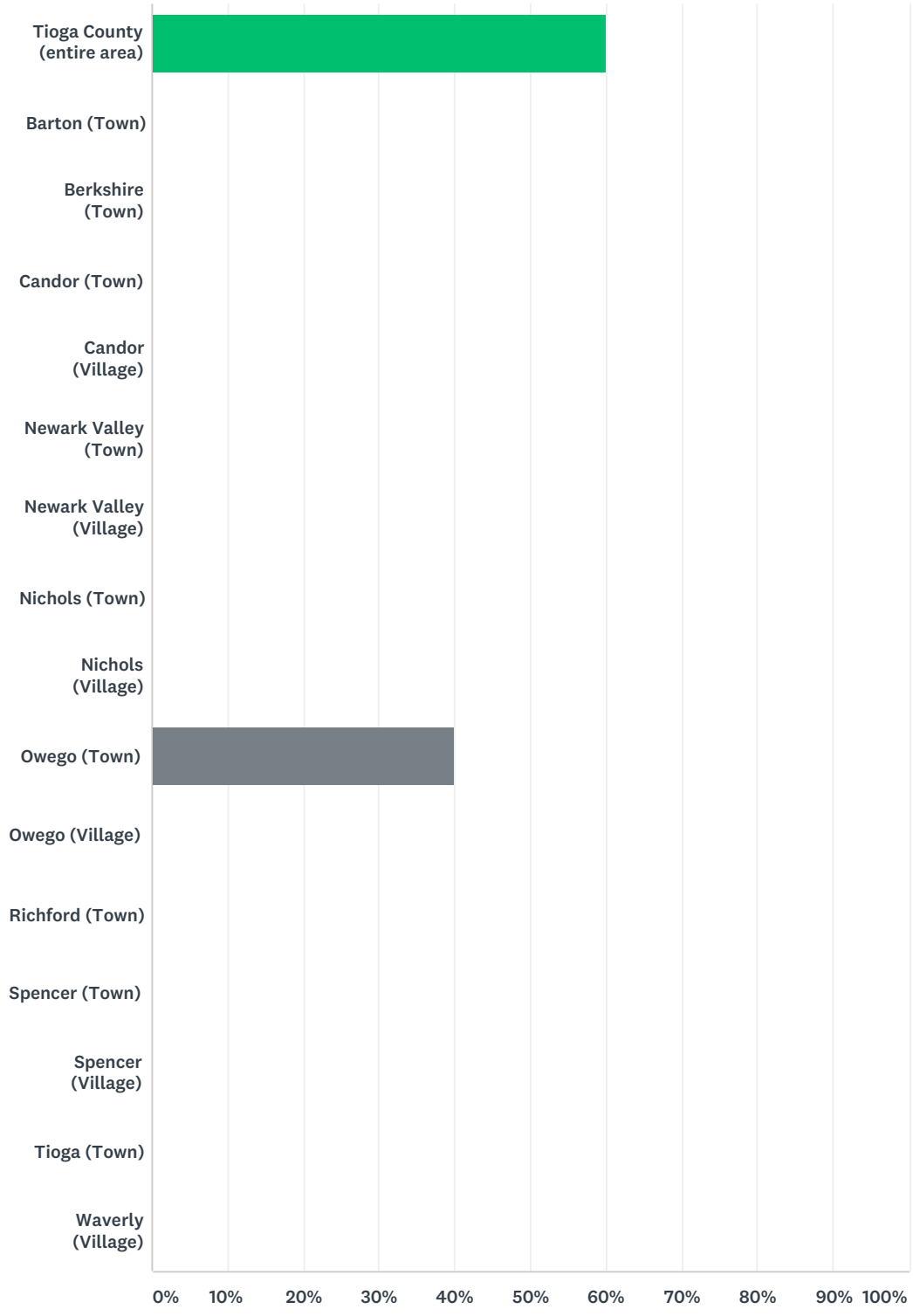
Answered: 4 Skipped: 1

**Q4 Please identify the location of your facility(ies) and/or primary service area. If your facilities are in more than one community, please specify the locations under the "other" category below, or "Tioga County (entire area)" if your service area is county-wide:**

Answered: 5 Skipped: 0



# Tioga County Hazard Mitigation Plan Update - Hospital and Health Care Provider Survey



ANSWER CHOICES	RESPONSES	
Tioga County (entire area)	60.00%	3
Barton (Town)	0.00%	0
Berkshire (Town)	0.00%	0
Candor (Town)	0.00%	0
Candor (Village)	0.00%	0

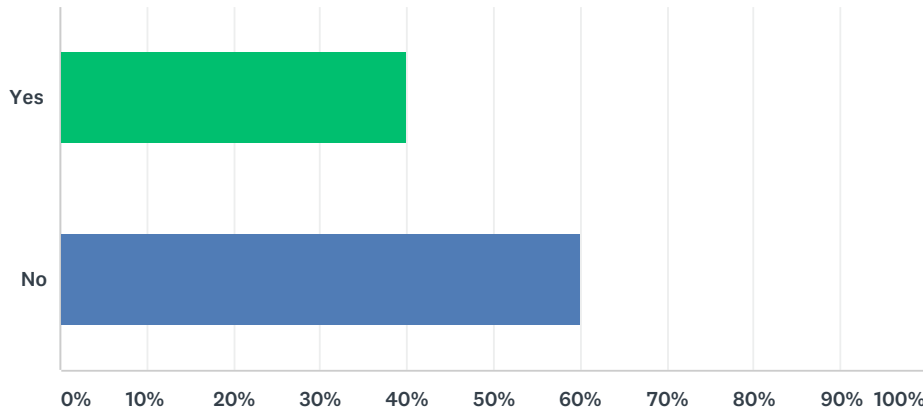
Tioga County Hazard Mitigation Plan Update - Hospital and Health Care Provider Survey

Newark Valley (Town)	0.00%	0
Newark Valley (Village)	0.00%	0
Nichols (Town)	0.00%	0
Nichols (Village)	0.00%	0
Owego (Town)	40.00%	2
Owego (Village)	0.00%	0
Richford (Town)	0.00%	0
Spencer (Town)	0.00%	0
Spencer (Village)	0.00%	0
Tioga (Town)	0.00%	0
Waverly (Village)	0.00%	0
<b>TOTAL</b>		<b>5</b>

#	OTHER (PLEASE SPECIFY)	DATE
1	Hospital has several service lines it offers in the county	5/18/2018 8:46 AM
2	Broome	5/18/2018 7:51 AM
3	30 mile radius around waverly NY with multistate service area	5/17/2018 2:52 PM

## Q5 Have your facilities been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 5 Skipped: 0

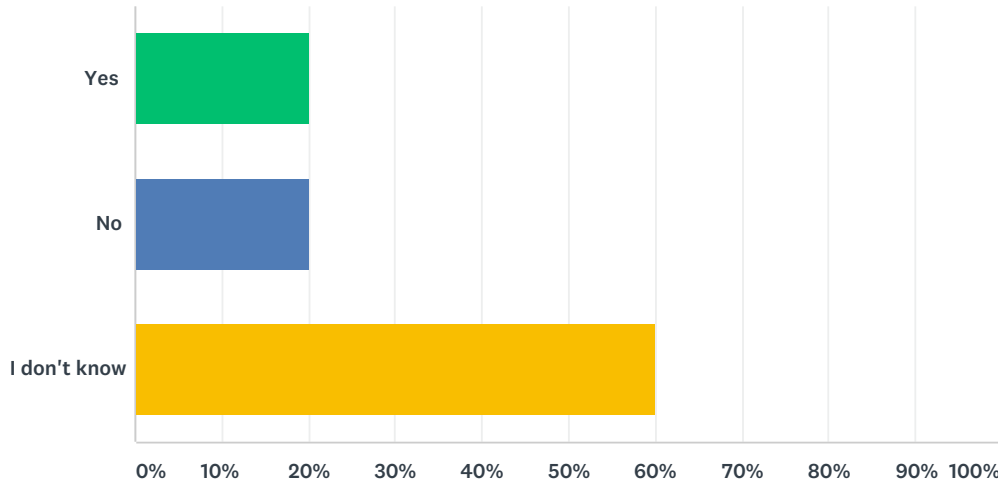


ANSWER CHOICES	RESPONSES	
Yes	40.00%	2
No	60.00%	3
TOTAL		5

#	IF YOU ANSWERED "YES", PLEASE IDENTIFY THE EVENTS AND PROVIDE A BRIEF DESCRIPTION OF THE DAMAGES OR LOSS OF SERVICE	DATE
1	Owego practice has been flood out and had to be gutted and rebuilt.	5/18/2018 8:46 AM
2	2007- Ballast on 4th floor blew creating noxious smell prompting partial internal evacuation of unit. Problem sourced and remedied within the day with support of local fire. 2017- Lightning hit transformer outside building during thunderstorm losing power. Generator supplied emergency power but malfunctioned after several hours due to overheating. Fire alarm signaled due to excessive heat and generator stopped losing all power to the unit. Prompting evacuation of the entire south unit internally. Remedied same day.	5/17/2018 2:52 PM

**Q6 Do you think that critical and essential facilities (including hospitals and medical centers, EMS facilities, schools, etc.) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?**

Answered: 5 Skipped: 0

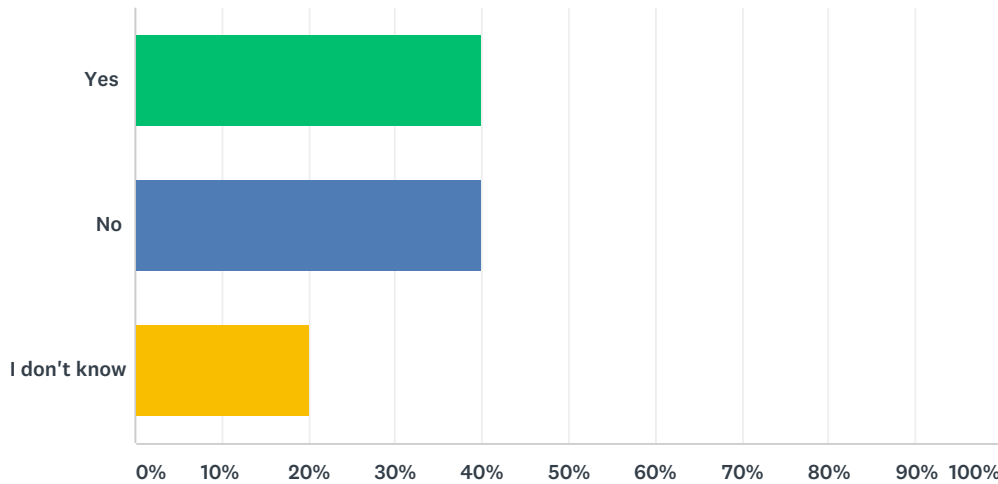


ANSWER CHOICES	RESPONSES
Yes	20.00% 1
No	20.00% 1
I don't know	60.00% 3
<b>TOTAL</b>	<b>5</b>

#	PLEASE EXPLAIN	DATE
1	It depends on the disaster impact, and the mitigation that has been done	5/18/2018 8:46 AM
2	Opportunity exists for collaboration regarding external capabilities as part of the facility's annual mitigation and emergency preparedness plan.	5/17/2018 2:52 PM

### Q7 Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to hazard events?

Answered: 5 Skipped: 0

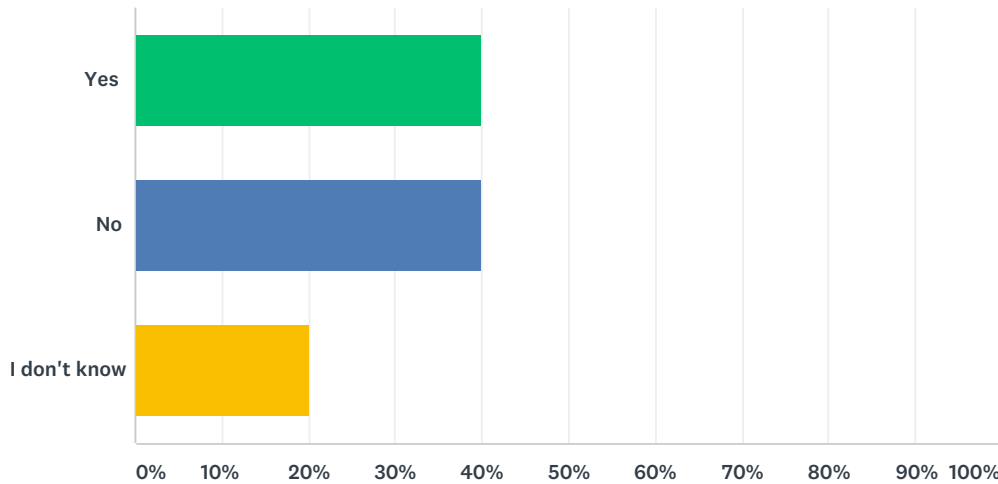


ANSWER CHOICES	RESPONSES
Yes	40.00% 2
No	40.00% 2
I don't know	20.00% 1
<b>TOTAL</b>	<b>5</b>

#	PLEASE EXPLAIN	DATE
1	Believe there could be improvements throughout the county in this area. Our patients rely on our staff being able to get to them during events so better drainage and clearing of ditches would be an essential help.	6/7/2018 3:07 PM
2	It will depend on the nature and degree of disaster. For a flood, no.	5/18/2018 8:46 AM
3	Critical access issues experienced when major highway shut down due to floods. Back roads often a challenge due to rural nature to reach facility.	5/17/2018 2:52 PM

### Q8 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support your facility's health care functions during and after hazard events?

Answered: 5 Skipped: 0

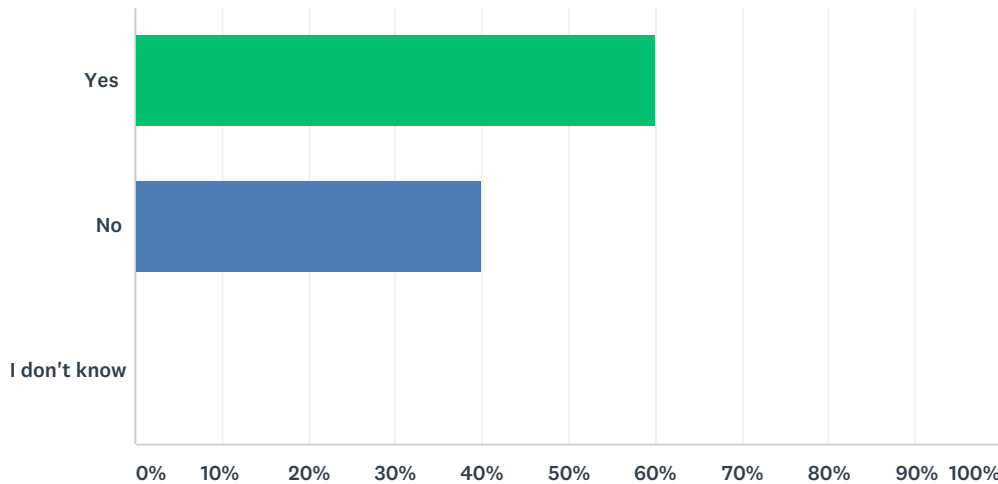


ANSWER CHOICES	RESPONSES
Yes	40.00% 2
No	40.00% 2
I don't know	20.00% 1
<b>TOTAL</b>	<b>5</b>

#	PLEASE EXPLAIN	DATE
1	Many time electricity goes down which impacts our client base that relies on life saving equipment such as oxygen. For the most part if our staff can't get through on phone lines they can get through via text.	6/7/2018 3:17 PM
2	Penelec is difficult to get ahold of with prompt resolution of issues. Communications plan is in need of thought.	5/17/2018 2:56 PM

**Q9 Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and reduce their personal risk to disasters, so as not to increase the need for health care services during hazard events?**

Answered: 5 Skipped: 0

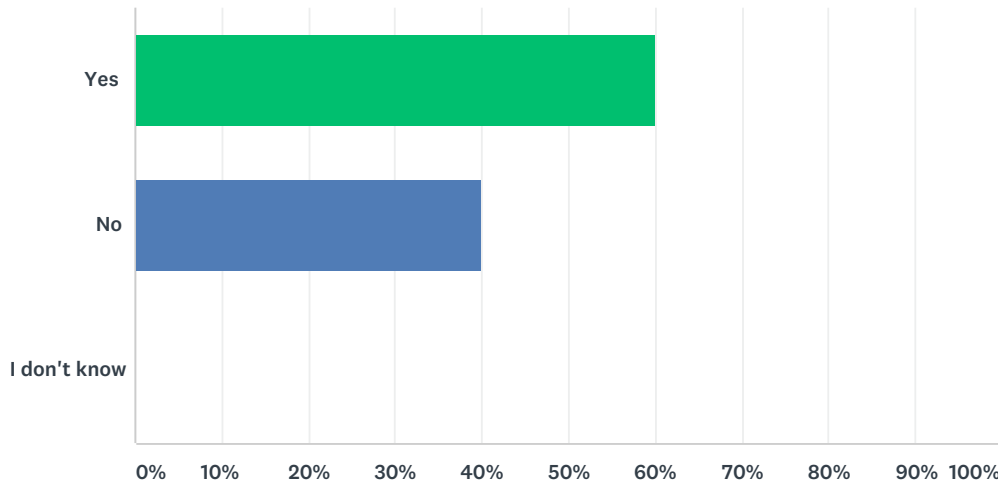


ANSWER CHOICES	RESPONSES
Yes	60.00% 3
No	40.00% 2
I don't know	0.00% 0
<b>TOTAL</b>	<b>5</b>

#	PLEASE EXPLAIN	DATE
1	However, I don't think that many believe anything will ever impact them.	6/7/2018 3:17 PM
2	If people are proactive and are prepared	5/18/2018 8:51 AM
3	opportunity to integrate with community/facility. Good relationship with Waverly Central schools and local Waverly PD. Especially with Active Shooter.	5/17/2018 2:56 PM

### Q10 Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support hospital functions during hazard events?

Answered: 5 Skipped: 0



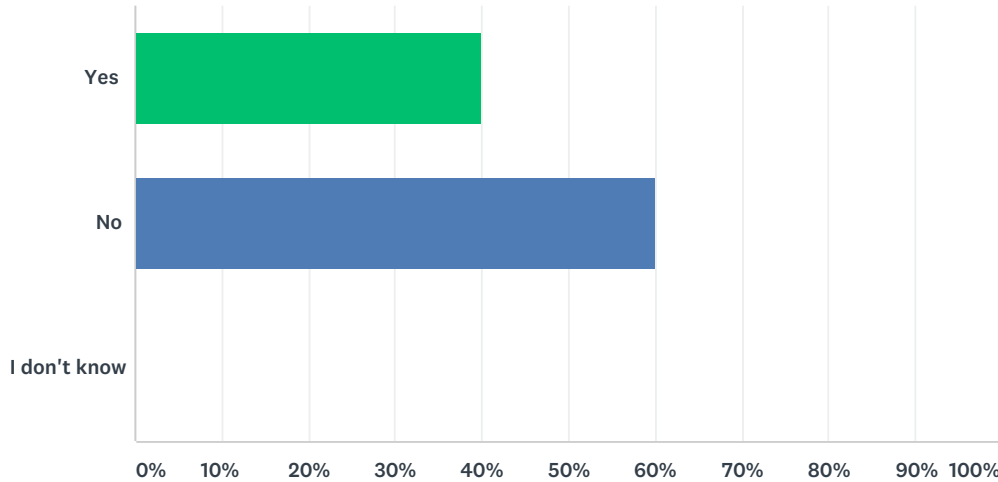
ANSWER CHOICES	RESPONSES	
Yes	60.00%	3
No	40.00%	2
I don't know	0.00%	0
<b>TOTAL</b>		<b>5</b>

#	PLEASE EXPLAIN	DATE
1	When you cross county lines sometimes the information is missed.	5/18/2018 8:51 AM
2	Quicker more comprehensive communication strategy is needed.	5/17/2018 2:56 PM



**Q11 Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, PERS, audible alerts, cell and text services, Hyper-Reach)?**

Answered: 5 Skipped: 0

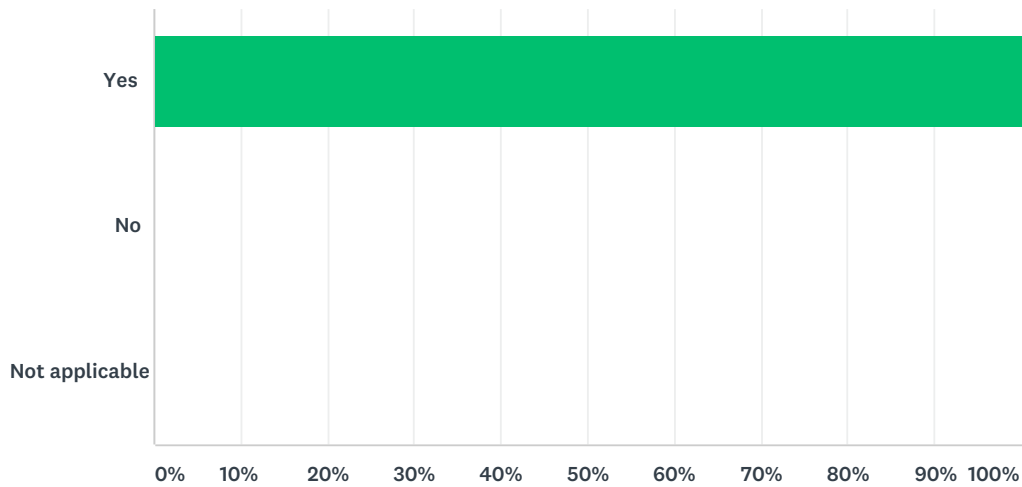


ANSWER CHOICES	RESPONSES
Yes	40.00% 2
No	60.00% 3
I don't know	0.00% 0
<b>TOTAL</b>	<b>5</b>

#	PLEASE EXPLAIN	DATE
1	It has gotten better over time.	5/18/2018 8:51 AM
2	NY Alert should be utilized more	5/17/2018 2:03 PM

## Q12 Do you think that your organization works to inform your constituents of how they can better manage their risk to hazard events?

Answered: 5 Skipped: 0

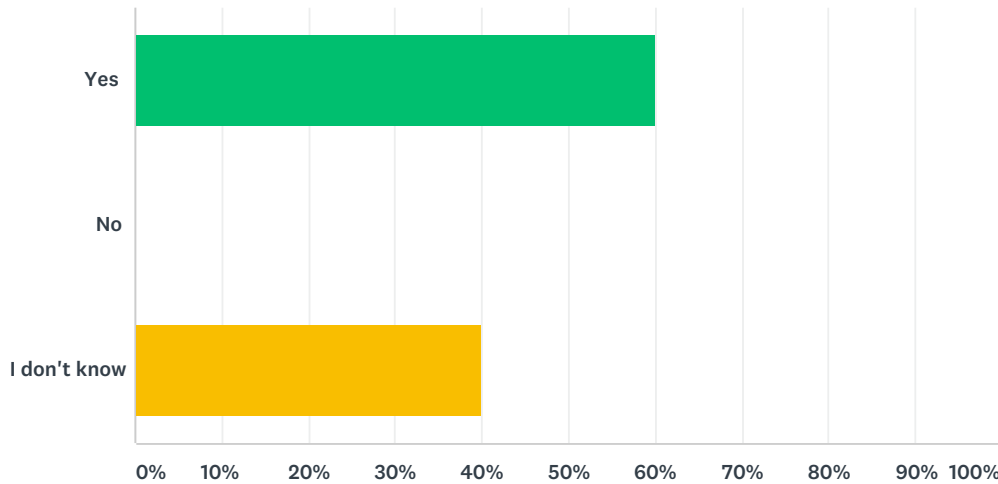


ANSWER CHOICES	RESPONSES	
Yes	100.00%	5
No	0.00%	0
Not applicable	0.00%	0
<b>TOTAL</b>		<b>5</b>

#	PLEASE EXPLAIN	DATE
1	Our emergency preparedness packets sent out to new clients have been updated as of end of 2017	6/7/2018 3:17 PM
2	Information sharing.	5/18/2018 8:51 AM
3	though this continues to improve. Developing internal plan for family notification of emergency preparedness efforts and all-hazards approach.	5/17/2018 2:56 PM

### Q13 Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to disasters in your community?

Answered: 5 Skipped: 0

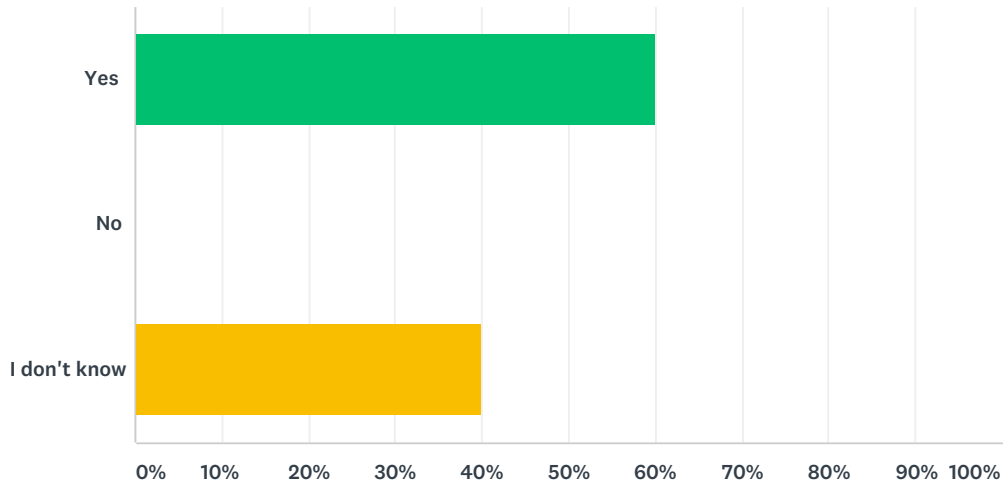


ANSWER CHOICES	RESPONSES
Yes	60.00% 3
No	0.00% 0
I don't know	40.00% 2
TOTAL	5

#	PLEASE EXPLAIN	DATE
1	For the most part. However, I think the elderly with no family/friend support are still at risk.	6/7/2018 3:17 PM
2	It depends on the incident	5/18/2018 8:51 AM
3	External collaboration is required to explore this.	5/17/2018 2:56 PM

### Q14 Do you think that local government understands, supports, and possess the resources for hazard risk reduction efforts in the community?

Answered: 5 Skipped: 0

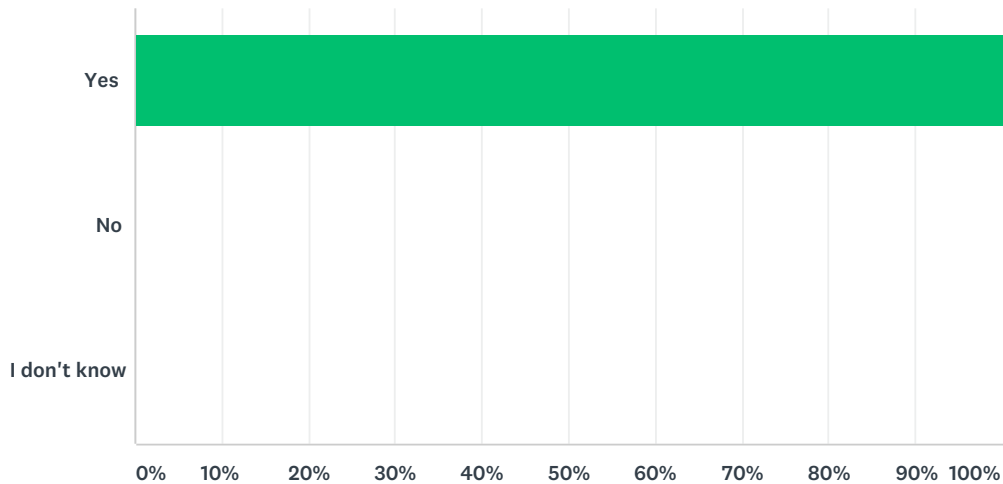


ANSWER CHOICES	RESPONSES
Yes	60.00% 3
No	0.00% 0
I don't know	40.00% 2
<b>TOTAL</b>	<b>5</b>

#	PLEASE EXPLAIN	DATE
1	It depends on the incident	5/18/2018 8:51 AM
2	External collaboration is required to explore this but initial conversations with the county have begun!	5/17/2018 2:56 PM

**Q15 Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of organization functions.**

Answered: 5 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes	100.00% 5
No	0.00% 0
I don't know	0.00% 0
<b>TOTAL</b>	<b>5</b>

#	IF "YES", PLEASE EXPLAIN.	DATE
1	We have a basic plan that covers most of the possibilities.	5/18/2018 8:51 AM

## Q16 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?

Answered: 5 Skipped: 0

#	RESPONSES	DATE
1	No	6/7/2018 3:19 PM
2	Pre-planning, community involvement	5/18/2018 8:53 AM
3	We do not provide information regarding preplanning for emergencies and disasters through the use of surveys. Feel free to contact me to discuss.	5/18/2018 7:54 AM
4	engagement in drills, engagement with vendors and local resources required for annual or biannual mitigation meetings.	5/17/2018 3:00 PM
5	COOP, planning for disasters, disaster kits	5/17/2018 2:04 PM

**Q17 Can you identify projects or programs that you have implemented to reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?**

Answered: 5 Skipped: 0

#	RESPONSES	DATE
1	No	6/7/2018 3:19 PM
2	HVA, THAM.	5/18/2018 8:53 AM
3	We do not provide information regarding preplanning for emergencies and disasters through the use of surveys. Feel free to contact me to discuss.	5/18/2018 7:54 AM
4	Russell Phillips relationship to evaluate hazards and develop mitigation and staff/resident training plans. Numerous initiatives to discuss.	5/17/2018 3:00 PM
5	generator	5/17/2018 2:04 PM

## Q18 Do you have any other comments, questions, or concerns?

Answered: 5 Skipped: 0

#	RESPONSES	DATE
1	No	6/7/2018 3:19 PM
2	NO	5/18/2018 8:53 AM
3	No	5/18/2018 7:54 AM
4	Elderwood would request we have seat at the table in mitigation planning with the county and ability to take part in review of the plan. This would help us also meet NYDOH regulatory requirements.	5/17/2018 3:00 PM
5	no	5/17/2018 2:04 PM



**Q1 Name of your police department or law enforcement agency:**

Answered: 1 Skipped: 0

## Q2 Name of Respondent:

Answered: 1 Skipped: 0

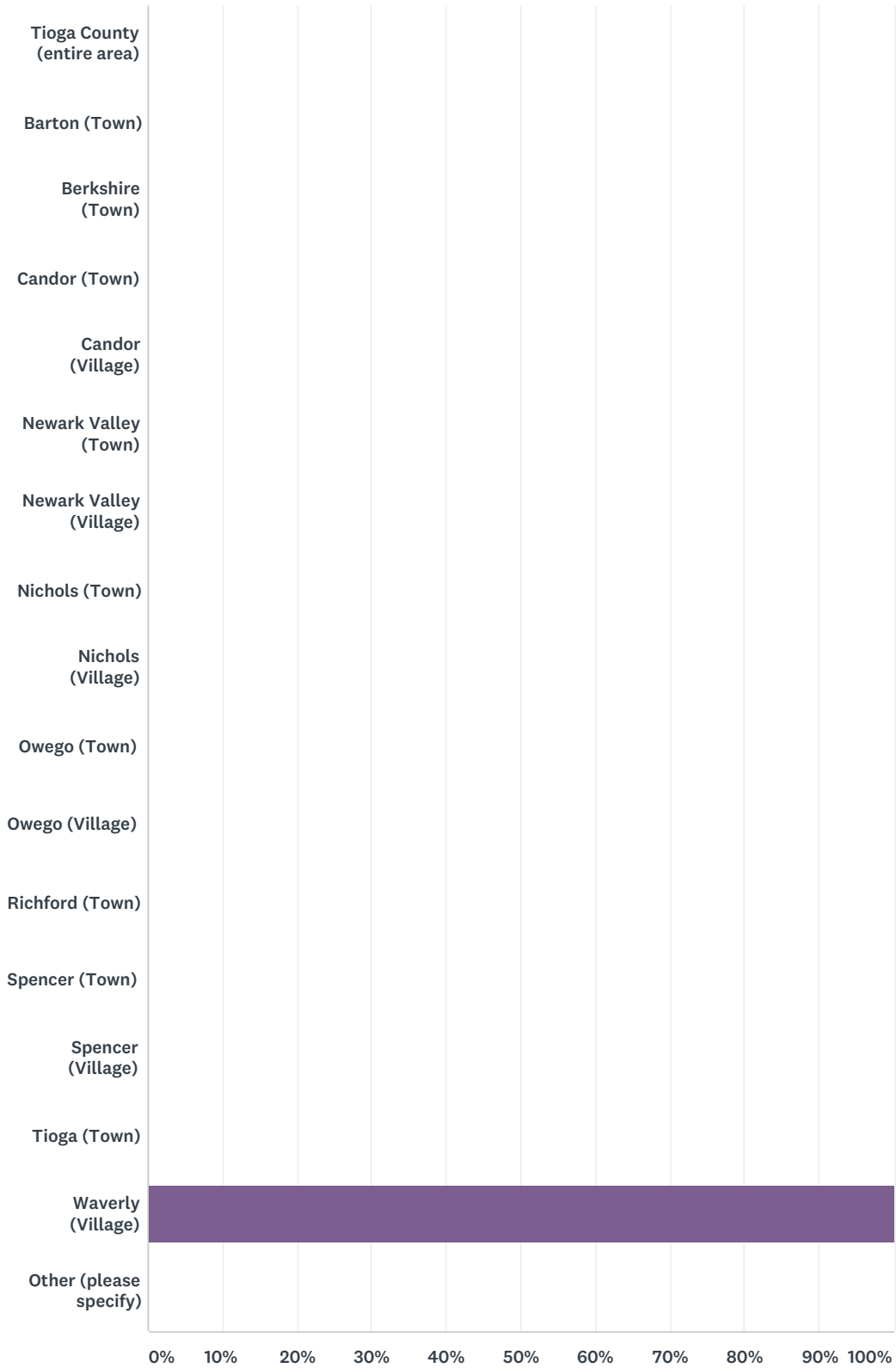
**Q3 Contact information (email address or phone number) - optional:**

Answered: 1 Skipped: 0

**Q4 Please identify the location of your facility(ies) and/or primary service area. You may choose more than one if your service area covers multiple communities, or "Tioga County (entire area)" if your service area is county-wide:**

Answered: 1 Skipped: 0

## Tioga County Hazard Mitigation Plan Update - Law Enforcement Survey



ANSWER CHOICES	RESPONSES	
Tioga County (entire area)	0.00%	0
Barton (Town)	0.00%	0
Berkshire (Town)	0.00%	0

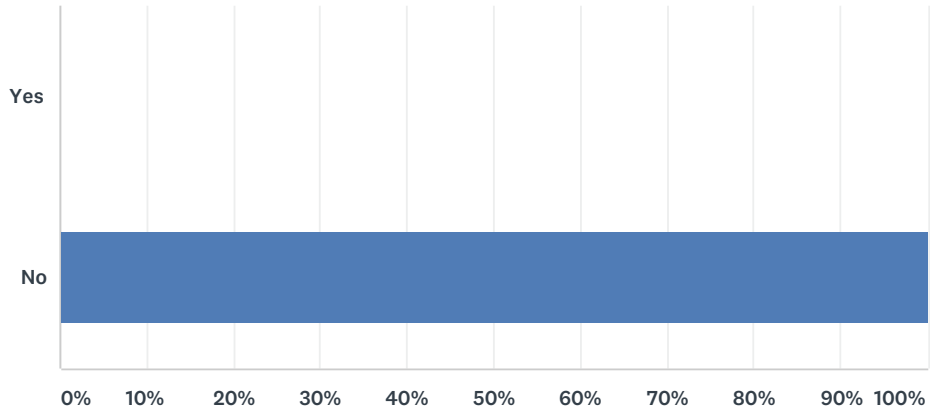
## Tioga County Hazard Mitigation Plan Update - Law Enforcement Survey

Candor (Town)	0.00%	0
Candor (Village)	0.00%	0
Newark Valley (Town)	0.00%	0
Newark Valley (Village)	0.00%	0
Nichols (Town)	0.00%	0
Nichols (Village)	0.00%	0
Owego (Town)	0.00%	0
Owego (Village)	0.00%	0
Richford (Town)	0.00%	0
Spencer (Town)	0.00%	0
Spencer (Village)	0.00%	0
Tioga (Town)	0.00%	0
Waverly (Village)	100.00%	1
Other (please specify)	0.00%	0
Total Respondents: 1		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

### Q5 Has your police department or law enforcement agency been impacted by natural hazard events (damaged, closed for extended periods, etc.)?

Answered: 1 Skipped: 0

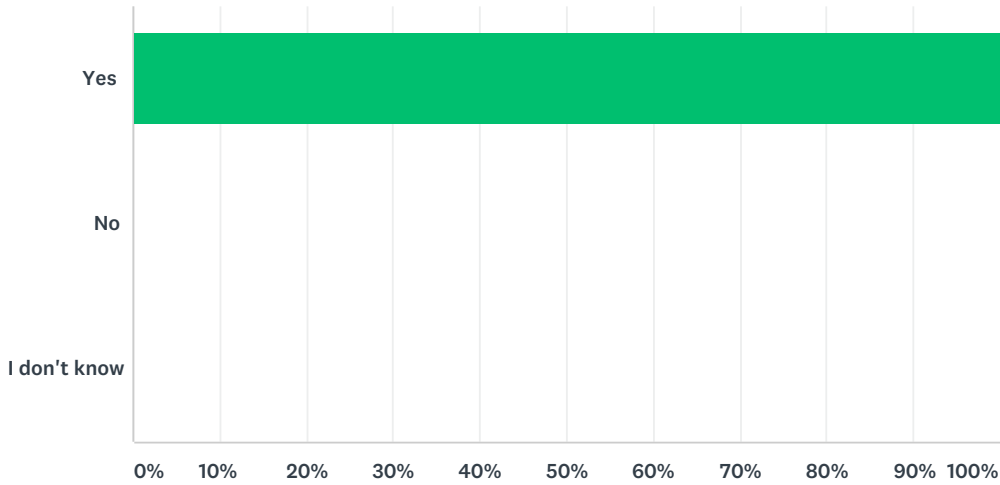


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	1
TOTAL		1

#	IF YOU ANSWERED "YES", PLEASE IDENTIFY THE EVENTS AND PROVIDE A BRIEF DESCRIPTION OF THE DAMAGES OR LOSS OF SERVICE	DATE
	There are no responses.	

**Q6 Do you think that critical and essential facilities (including police stations, jails and detention centers) are disaster-resistant (e.g. are properly located and constructed, and have back-up power as appropriate)?**

Answered: 1 Skipped: 0



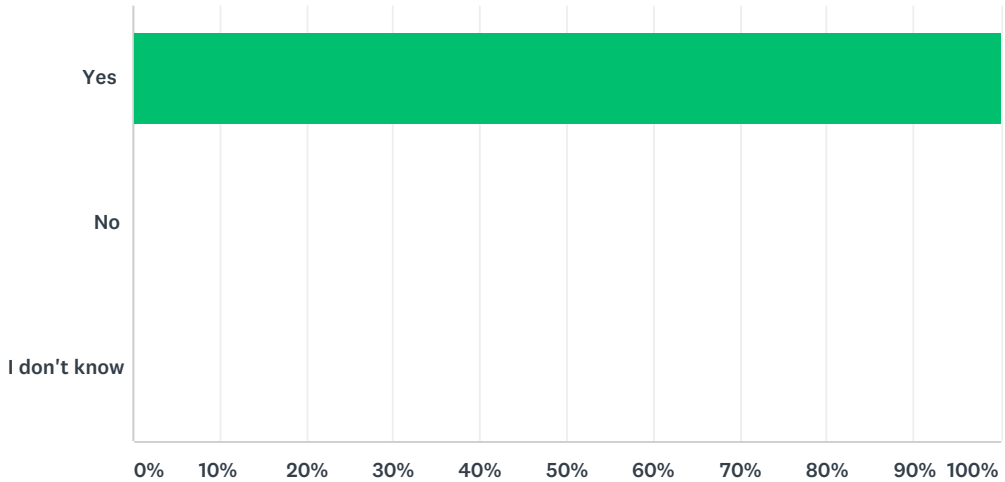
ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	



### Q7 Do you think that the transportation infrastructure serving your facilities (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to hazard events?

Answered: 1 Skipped: 0

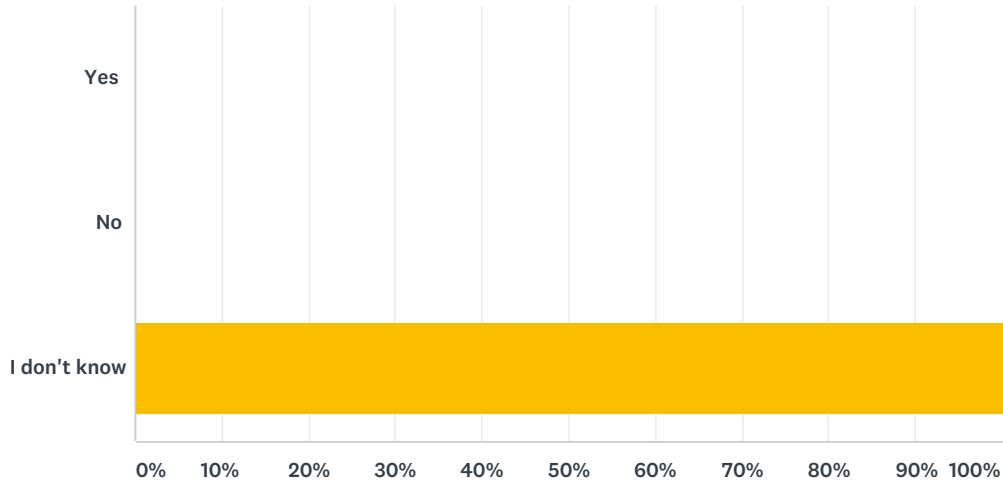


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q8 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster-resistant to support law enforcement functions during and after hazard events?

Answered: 1 Skipped: 0

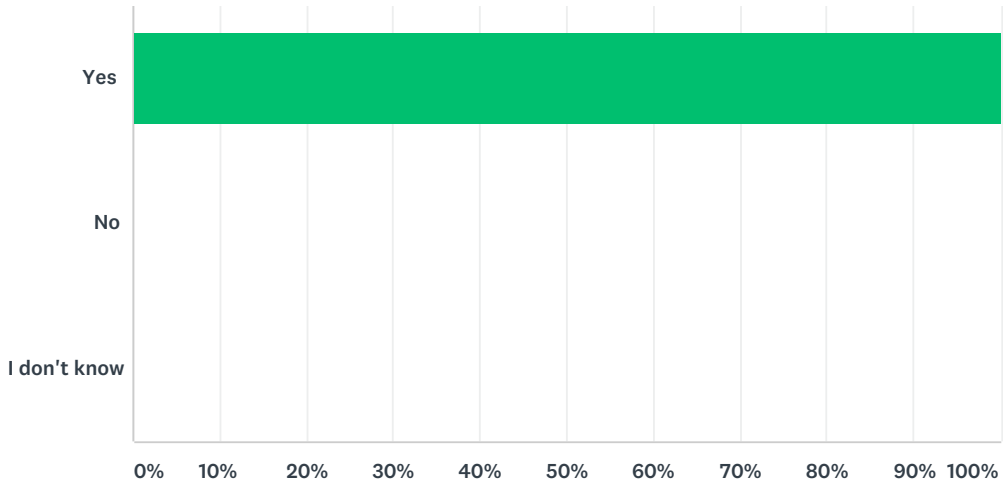


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	0.00%	0
I don't know	100.00%	1
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
1	It's certainly sufficient but is susceptible to major incidents like severe wind, flooding etc.	10/31/2018 11:54 AM

**Q9 Do you think that local public education and awareness programs are effective at informing the public on what they should do to be prepared for and how to reduce their personal risk to disasters, so as not to increase the need for law enforcement and police protective services during hazard events?**

Answered: 1 Skipped: 0

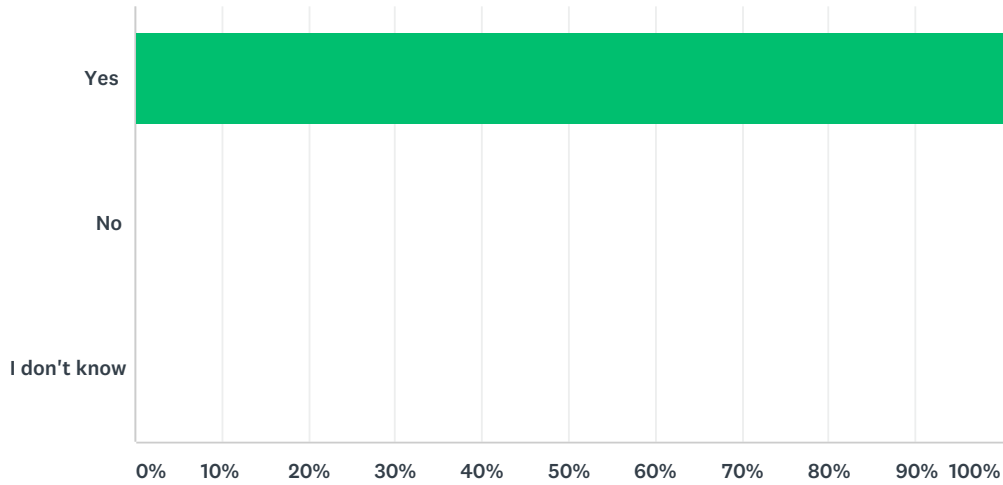


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
TOTAL		1

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q10 Do you think that announcements of road closures and pending road closures are sufficiently accurate and available to support law enforcement and police protective service functions during hazard events?

Answered: 1 Skipped: 0

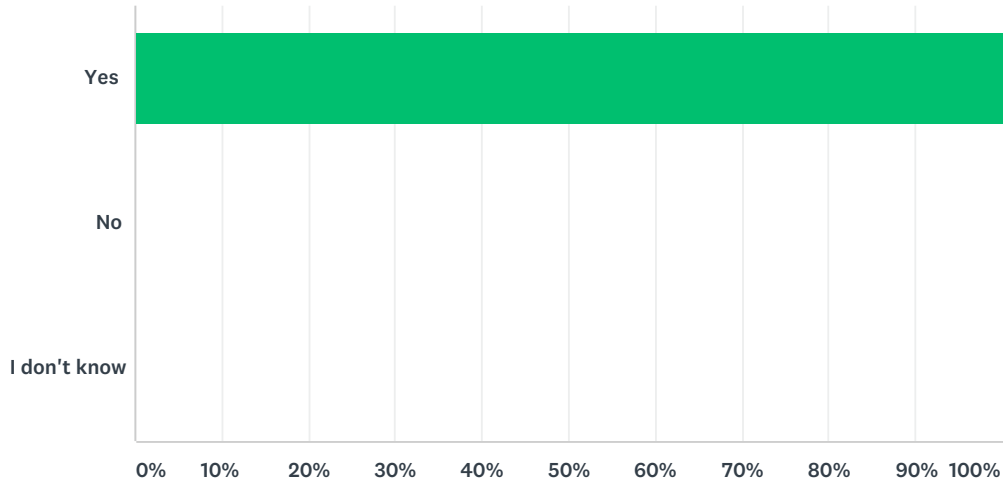


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q11 Do you think that the public is aware of, understands, and takes advantage of emergency warning and notification systems and services (reverse 911, PERS, audible alerts, cell and text services, Hyper-Reach)?**

Answered: 1 Skipped: 0

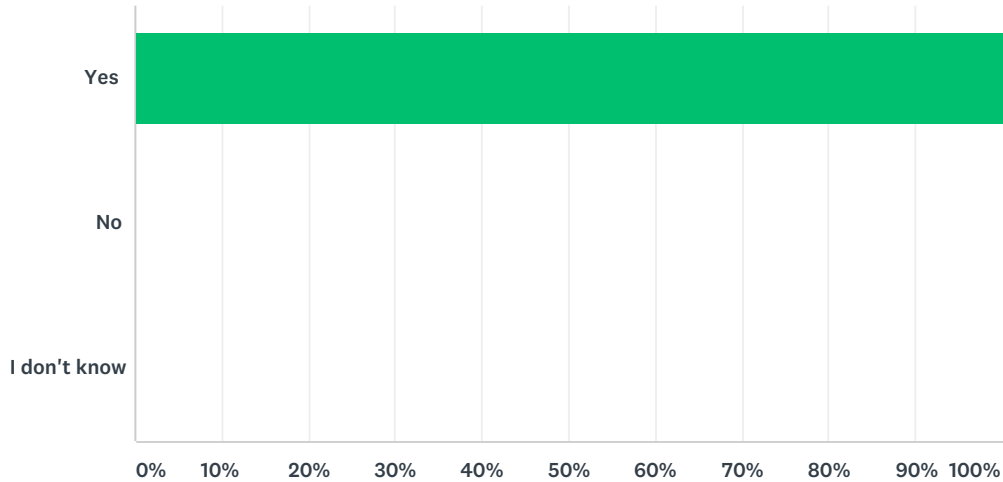


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

## Q12 Do you think that emergency response planning, services, and equipment are adequate to manage and respond properly to disasters in your community?

Answered: 1 Skipped: 0

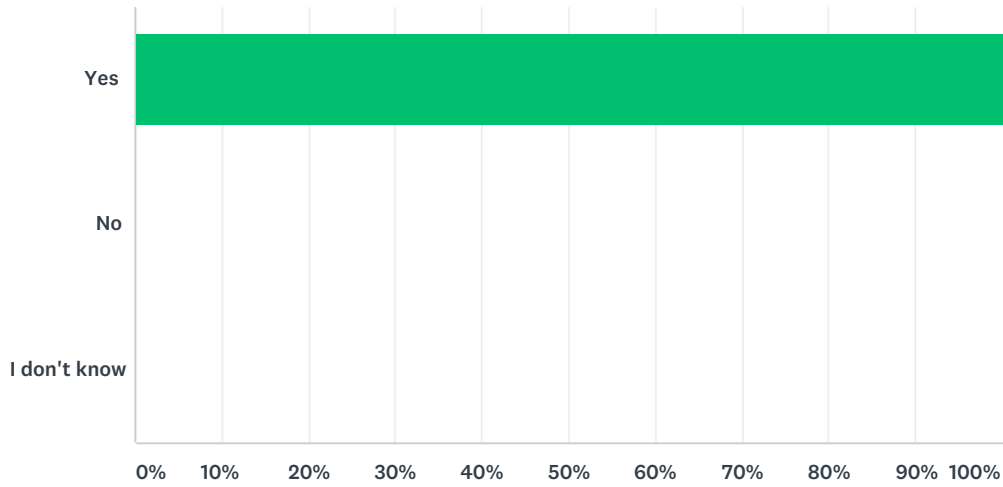


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q13 Do you think that local government understands, supports, and possess the resources for hazard risk reduction efforts in the community?

Answered: 1 Skipped: 0

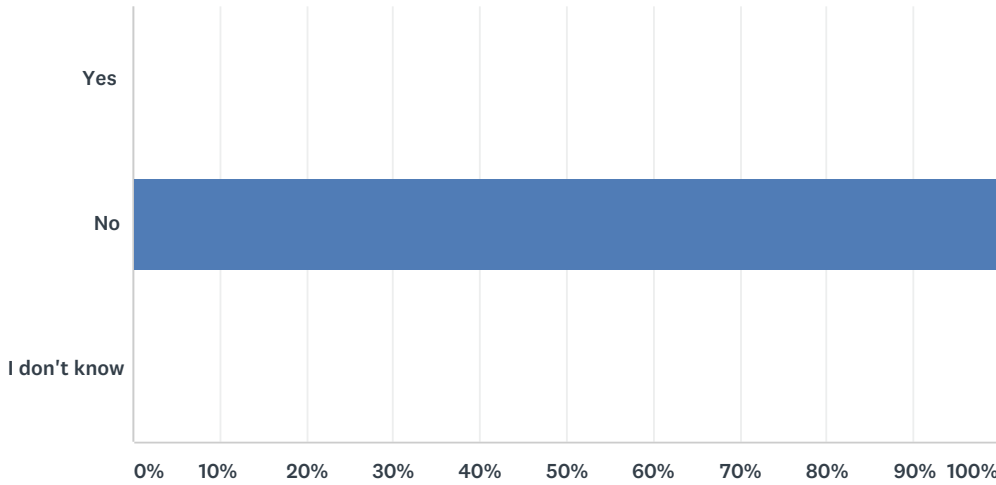


ANSWER CHOICES	RESPONSES
Yes	100.00% 1
No	0.00% 0
I don't know	0.00% 0
<b>TOTAL</b>	<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q14 Is your organization covered by a Continuity of Operations (COOP) plan? COOP plans examine an organization's ability to perform minimum essential functions during any situation, and support the continuance of your organization's functions.**

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	1
I don't know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	IF "YES", PLEASE EXPLAIN.	DATE
	There are no responses.	



**Q15 Can you identify projects or programs that you have implemented to reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?**

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	The current facility has a generator which is able to power all law enforcement functions in the event of a power loss.	10/31/2018 11:54 AM

**Q16 Can you identify projects or programs that will reduce your facility's vulnerability to damages and losses, including loss of operation/service, to hazard events?**

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	No	10/31/2018 11:54 AM

## Q17 Do you have any other comments, questions, or concerns?

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	No	10/31/2018 11:54 AM

**Tioga County Local Emergency Planning Committee Meeting**  
**MINUTES - Wednesday, May 9, 2018**

- I. Welcome – Bob Williams, Deputy Director, Tioga County Office of Emergency Services
  - II. Introductions – Bob Williams
  - III. Guest Speaker – Daniel Miller
    - New York State Division of Homeland Security and Emergency Services – Office of Emergency Management & Planning – <http://www.dhSES.ny.gov/oem/disaster-prep/>
  - IV. Report of the Office of Emergency Services – Bob Williams
    - Bureau of Fire – two new NYS Fire Instructors in process of completing certification training
    - Emergency Management Office- purchase of new Pickup for towing HazMat trailer
    - Several grant applications in process
  - V. Member sharing
    - Community Organizations Active in Disasters (COAD) – Andy Hafer – attended training in Albany.
    - County Animal Rescue Team (CART) – Denise Liske – attended training at Cornell Univ. Resolutions have passed at County Legislature. Now working to be included into County Emergency Plan. Also working on an emergency shelter trailer.
    - Multi-Hazard Planning for Schools – Bob Williams
      - Multi-Hazard Emergency Planning for Schools Course (G-364) 2 ½ Days  
July 10-12, 2018 at the Broome County Public Safety Facility
    - Public Health Initiatives – Emily Warfle – reported on POD exercise in Waverly, last month, very well attended. She is also working on a plan for disease outbreak.
    - UHS – have completed drills with Homecare staff and Active Shooter training
    - LEPRINO – new management would like to plan a larger scope emergency drill to include PA and NY
    - Red Cross – Airline disaster drill at Broome County Airport
    - Soil & Water – Hazard Mitigation survey
  - VI. Stagecoach – Training and Exercise - Maureen Ball
    - Training exercise on May 23, 2018 8:00am - @ Stagecoach site, Owego
    - May 22, 2018 @ 4:00pm at Watkins Glen Fire Dept.
  - VII. Update of the LEPC – Bob Williams
    - Emily Warfle and Andy Hafer will serve as co-chairs of the LEPC
    - If you have any ideas for a guest speaker, please let them know.
  - VIII. Next Meeting Wednesday, July 11th, 2018 at 9 AM at the Tioga County Public Safety Building, 103 Corporate Drive, Owego, New York 13827
  - IX. Adjourned at 10:40
- Respectfully submitted,

Debora J. Stubecki

**Tioga County Local Emergency Planning Committee Meeting**  
**MINUTES - Wednesday, July 11, 2018**

- I. Welcome – Andrew Hafer, Community Organizations Active in Disasters (COAD)
- II. Introductions – Emily Warfle
- III. Member sharing
  - County Animal Rescue Team (CART) – Denise Liske –Trailer has been purchased, and outfitted by area AKC groups. Now working on MOU with multi counties, insurance, garage for trailer, as well as a vehicle for towing.
  - Public Health Initiatives –Emily Warfle is working on a plan for disease outbreak. (POD Hep-A) and POD at Elderwood-flu vaccines). In addition it would be beneficial for terminology purposes to take the ICS 100 and NIMS700 training, located on FEMA website.
  - Excessive Heat- Reminder to plan accordingly, keep cool and hydrated. Cooling centers: Libraries, Tioga Opportunities, Owego Pool. Emily/Bob W. working with fire departments to be proactive. In addition, through grant from Social Services (HEAP) applicants can acquire air conditioning or fan.
  - UHS – have completed drills with Homecare staff and Active Shooter training
  - LEPRINO – Concerns about who to call in NYS/Tioga County, since 911 call goes to PA. Sgt. Cawley, NYSP suggested that they advise 911 Dispatch to also call NYS/Tioga County.
  - Soil & Water – Hazard Mitigation survey. Link on website
  - DHSES- OFPC – Mountour Falls has training, equipment and resources to mobilize in case of railcar disaster.
  - NYS DHSES OEM – Move is complete from Broome County Airport to Old Vestal Road.
  - NYSP – Sgt. Jason Cawley is new Station Comander for Tioga County.
- IV. Next Meeting **Wednesday, September 12, 2018 at 9 AM** at the Tioga County Public Safety Building, 103 Corporate Drive, Owego, New York 13827
- V. Adjourned at 10:40  
Respectfully submitted,

Debora J. Stubecki  
TC Office of Emergency Services

**Q1 Name of your Municipality and Department:**

Answered: 1 Skipped: 0

## Q2 Name of Respondent

Answered: 1 Skipped: 0

Q3 Please identify the services your department normally provides. Of these services, please identify which services you believe are essential services that must be provided prior to, during, and after a disaster in order to protect public safety and health.

Answered: 1 Skipped: 0

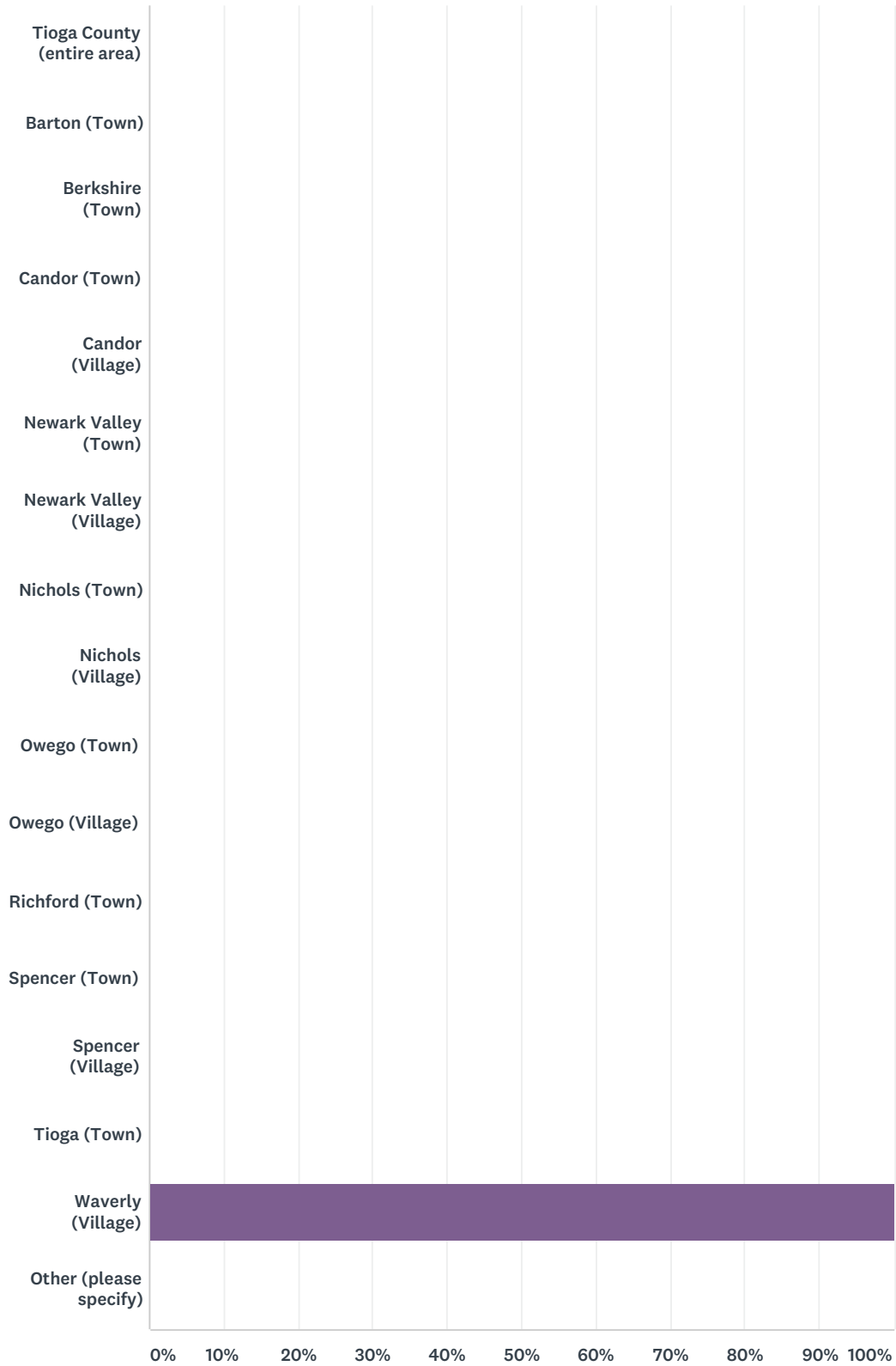
#	RESPONSES	DATE
1	Streets and drainage	9/28/2018 10:20 AM



**Q4 Please identify the location of your facility(ies) and or primary service area. You may choose more than one if your service area covers multiple communities, or "Tioga County (entire area)" if your service area is county-wide:**

Answered: 1 Skipped: 0

## Tioga County HMP - Highway and Public Works Survey



ANSWER CHOICES	RESPONSES	
Tioga County (entire area)	0.00%	0
Barton (Town)	0.00%	0
Berkshire (Town)	0.00%	0

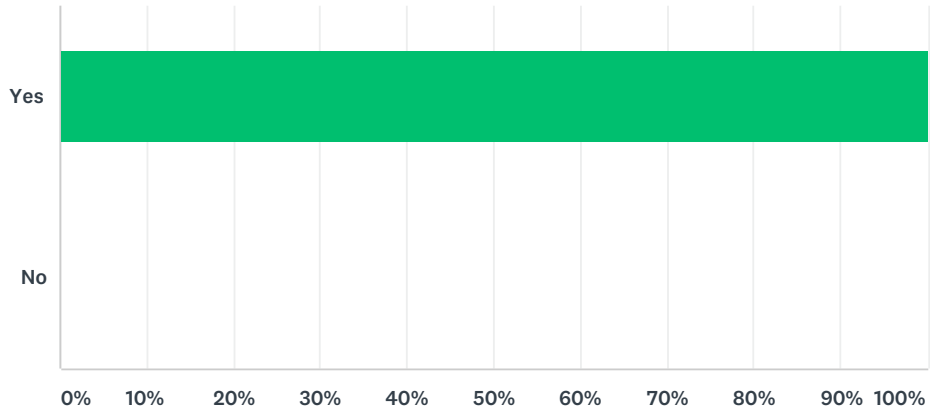
## Tioga County HMP - Highway and Public Works Survey

Candor (Town)	0.00%	0
Candor (Village)	0.00%	0
Newark Valley (Town)	0.00%	0
Newark Valley (Village)	0.00%	0
Nichols (Town)	0.00%	0
Nichols (Village)	0.00%	0
Owego (Town)	0.00%	0
Owego (Village)	0.00%	0
Richford (Town)	0.00%	0
Spencer (Town)	0.00%	0
Spencer (Village)	0.00%	0
Tioga (Town)	0.00%	0
Waverly (Village)	100.00%	1
Other (please specify)	0.00%	0
Total Respondents: 1		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

**Q5 Has your department, or the facilities you are responsible to maintain (buildings, roads, bridges, water/sewer plants, etc.) been impacted by natural hazard events (damaged, closed for extended periods, etc.)?**

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
TOTAL		1

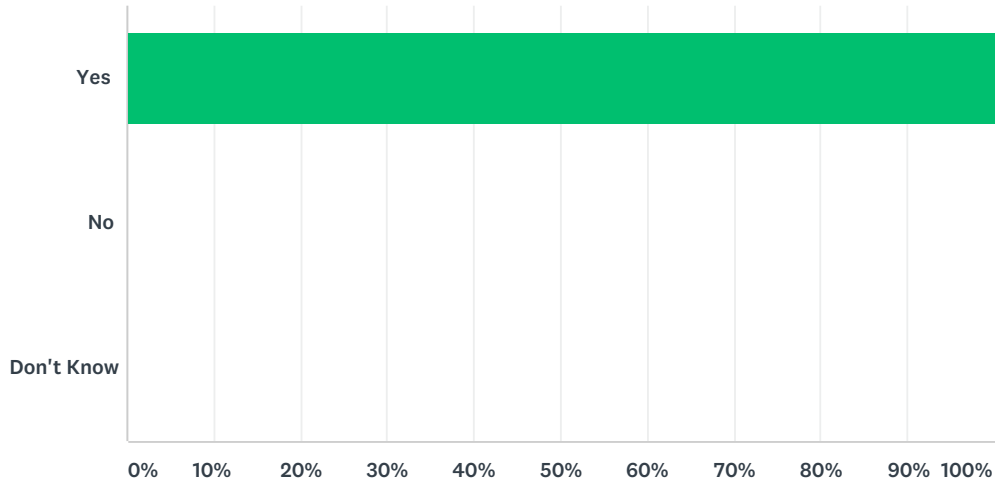
**Q6 If you answered "YES," please identify the events and provide a brief description of the damages or loss of service.**

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	flooding and loss of drainage pipe	9/28/2018 10:20 AM

**Q7 Do you believe that your facilities are disaster resistant or capable of withstanding a natural disaster (e.g. are properly located and constructed and have back-up power as appropriate)?**

Answered: 1 Skipped: 0

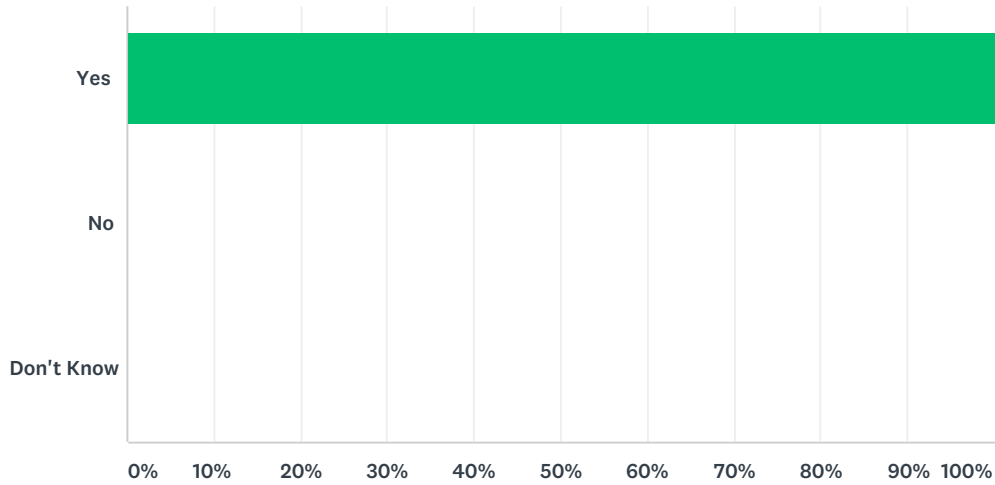


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
Don't Know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q8 Do you think that the transportation infrastructure (e.g. roads and bridges) are properly designed to withstand closures and/or damage due to natural hazards, and thus provides long term support for your community’s response and recovery needs?**

Answered: 1 Skipped: 0

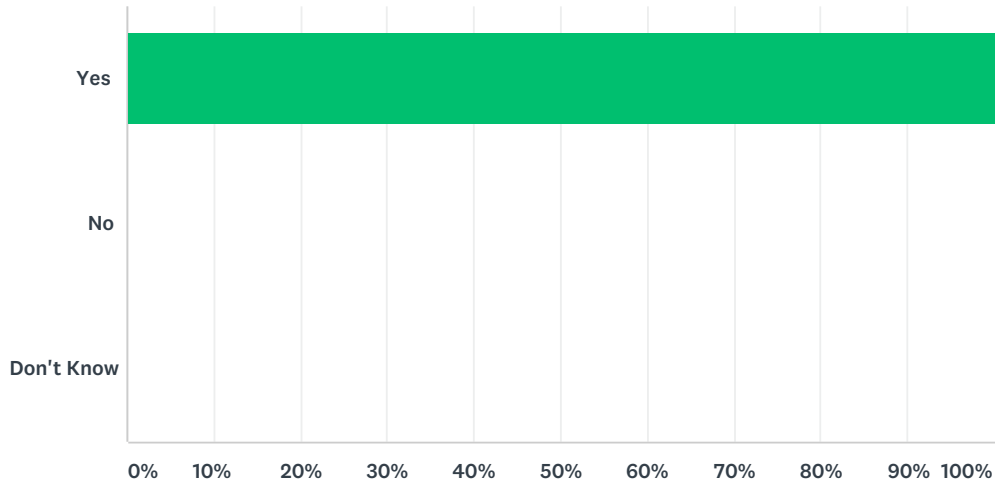


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
Don't Know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q9 Do you think that the utility infrastructure (specifically electricity and communications) is sufficiently disaster resistant to support your department's ability to maintain operations and support response or recovery efforts?

Answered: 1 Skipped: 0



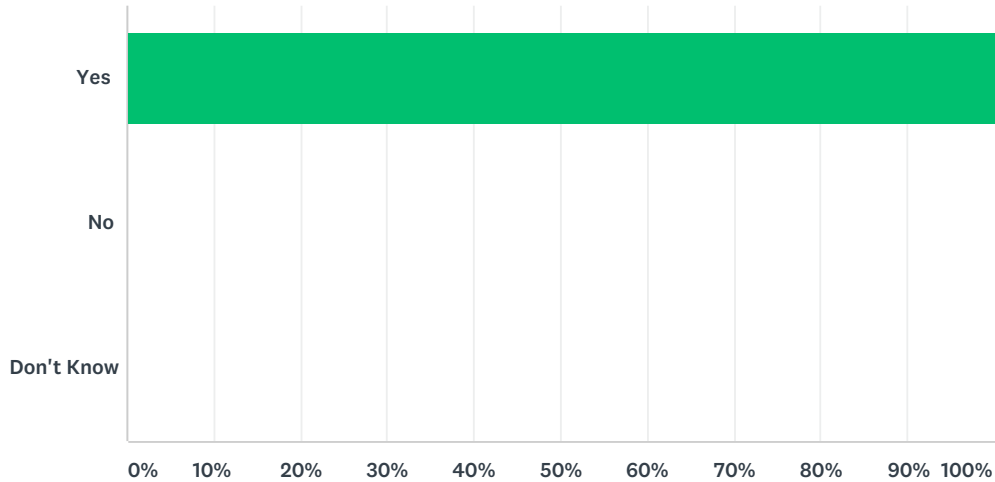
ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
Don't Know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	



### Q10 Do you believe that natural hazard risks (e.g. flood zones, steep slopes, wildfire risk zones) are considered when local authorities consider land development and land use planning?

Answered: 1 Skipped: 0

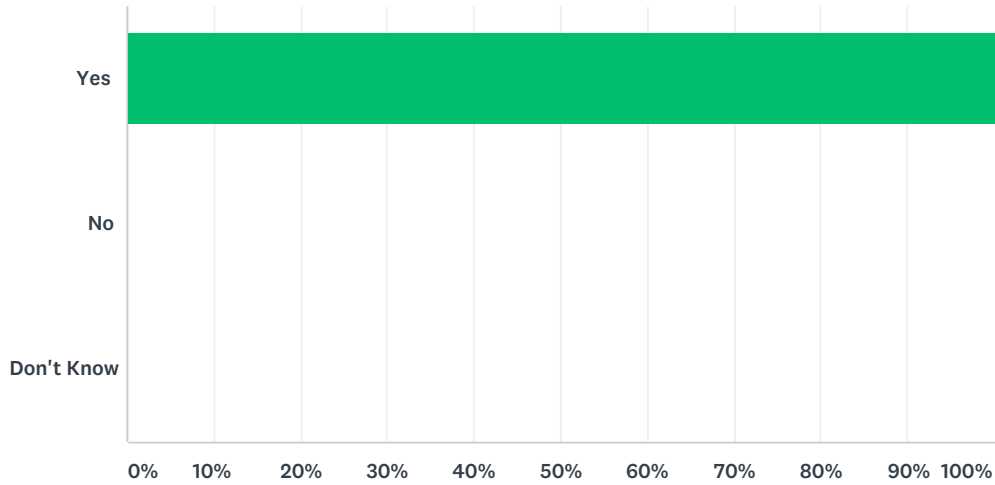


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
Don't Know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q11 Do you believe that private businesses (construction companies, equipment rental companies, building material supply companies, etc.) are a valuable resource in helping your department perform pre-disaster preparation and/or help in recovery post disaster?**

Answered: 1 Skipped: 0

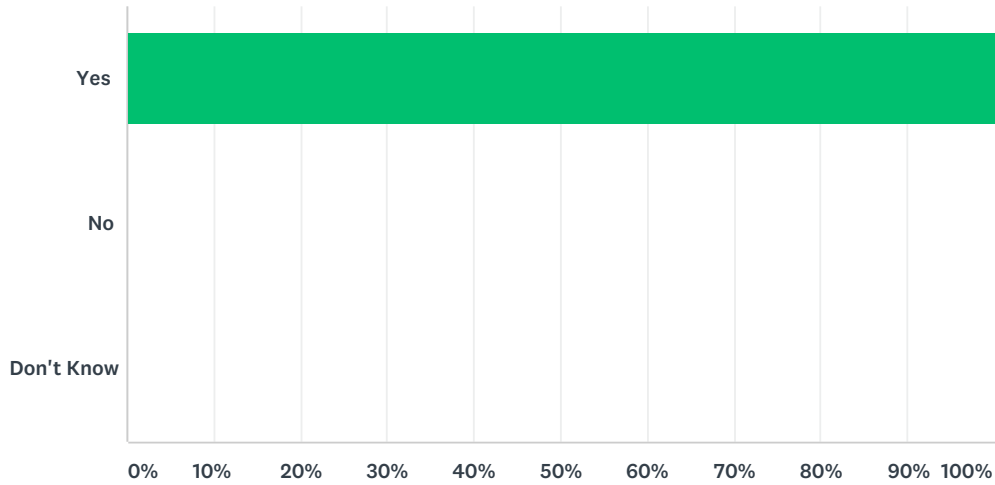


ANSWER CHOICES	RESPONSES
Yes	100.00% 1
No	0.00% 0
Don't Know	0.00% 0
<b>TOTAL</b>	<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q12 Do you believe that private businesses (construction companies, equipment rental companies, building material supply companies, etc.) are a valuable resource in helping your department perform pre-disaster preparation and/or help in recovery post disaster?**

Answered: 1 Skipped: 0

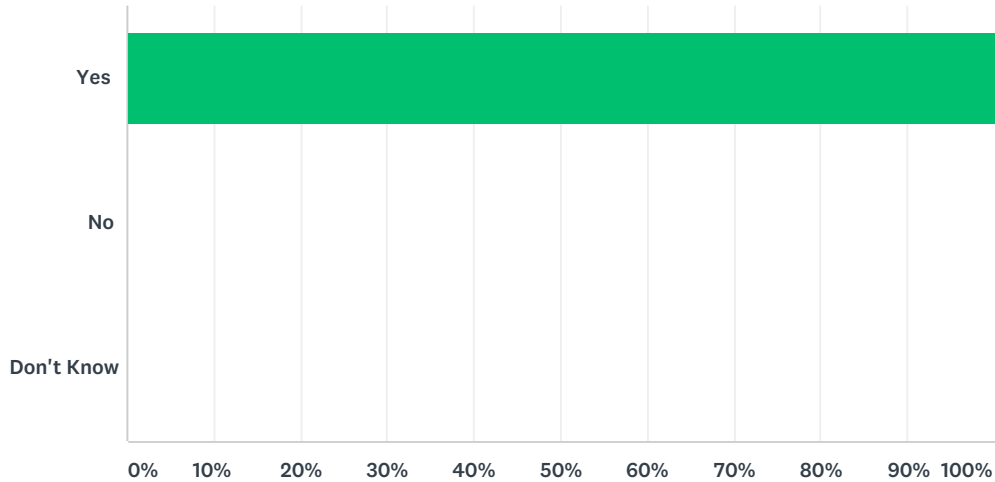


ANSWER CHOICES	RESPONSES
Yes	100.00% 1
No	0.00% 0
Don't Know	0.00% 0
<b>TOTAL</b>	<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q13 Does your department have a defined role or responsibility in an existing adopted or draft emergency response plan established for your local municipality?

Answered: 1 Skipped: 0

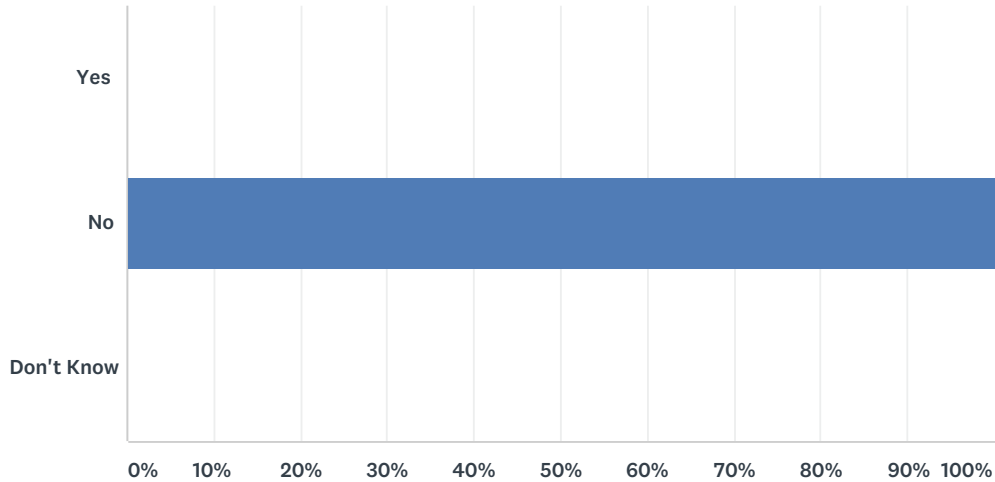


ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
Don't Know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

### Q14 Do you think the local government understands, supports, and possess the resources for natural hazard risk reduction efforts in the community?

Answered: 1 Skipped: 0

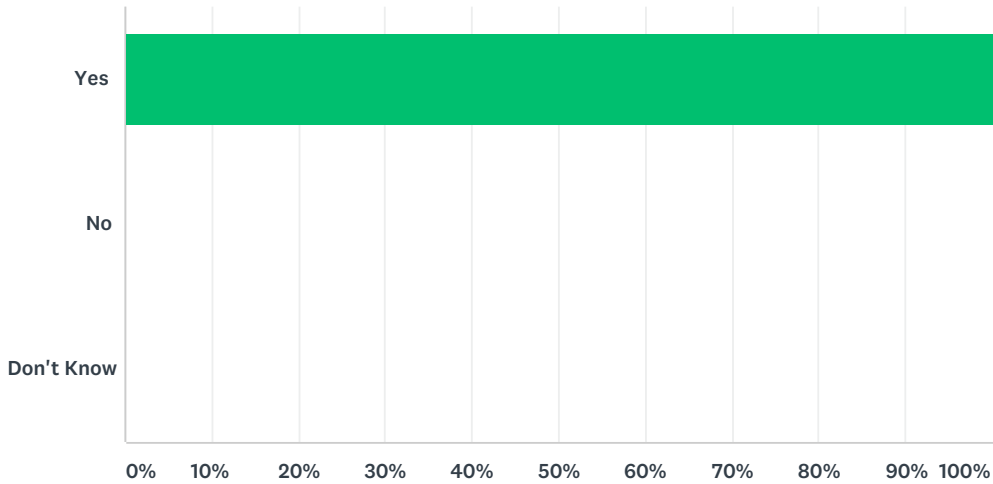


ANSWER CHOICES	RESPONSES
Yes	0.00% 0
No	100.00% 1
Don't Know	0.00% 0
TOTAL	1

#	PLEASE EXPLAIN	DATE
	There are no responses.	

**Q15 Is your department included within a Continuity of Operations / Continuity of Government (COOP / COG) plan? COOP / COG plans examine a department’s ability to perform minimum essential functions during any situation. COOP activities support the continuance of essential functions, while COG activities support the continuance of local government.**

Answered: 1 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
Don't Know	0.00%	0
<b>TOTAL</b>		<b>1</b>

#	PLEASE EXPLAIN	DATE
	There are no responses.	

Q16 Can you identify projects or programs that you have implemented to reduce your community's vulnerability to infrastructure (roads, public buildings, bridges, water/sewer plants, etc.) damage and losses, including loss of operation/service, to hazard events?

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	replacing old drainage pipes and improving road structure	9/28/2018 10:35 AM

**Q17 Can you identify projects or programs that you would like to implement to reduce your community's vulnerability to infrastructure (roads, public buildings, bridges, water/sewer plants, etc.) damage and losses, including loss of operation/service, to hazard events?**

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	replace all old drainage systems	9/28/2018 10:35 AM



## Q18 Do you have any other comments, questions, or concerns?

Answered: 1 Skipped: 0

#	RESPONSES	DATE
1	I believe more grants and programs should be available and accessible for smaller local municipalities to utilize in upgrading their infrastructure	9/28/2018 10:35 AM



## D.3 Website and Social Media Posts

The following provides screenshots of websites, news articles, and social media posts.

Figure D-16. April 30, 2018 Press Release

**TEAM TIOGA**  
we work for you

ECONOMIC DEVELOPMENT & PLANNING | INDUSTRIAL DEVELOPMENT AGENCY | LOCAL DEVELOPMENT CORPORATION

**PRESS RELEASE**

**Release Date:** 4/30/2018      **Address:** 56 Main Street  
**Contact:** Elaine D. Jardine      Owego NY 13827  
County Planning Director      **Phone:** (607) 687-8257  
**Office:** Tioga County Department of      **E-mail:** [jardinee@co.tioga.ny.us](mailto:jardinee@co.tioga.ny.us)  
Economic Development and      Planning

**Tioga County Is Preparing For Future Flooding and Other Natural Hazards by Updating It's All-Hazards Mitigation Plan from 2013**

The Tioga County Departments of Emergency Services and Economic Development & Planning, along with the Tioga County Soil and Water Conservation District have begun the process of updating the 2013 Hazard Mitigation Plan for the County and its 15 municipalities.

This plan will identify key actions to be taken to reduce or eliminate the long-term risk to human life and property from natural disasters such as floods, severe storms, and winter storms. FEMA defines hazard mitigation as a "sustained action taken to reduce or eliminate long-term risk and their property from hazards."

With the aid of the hired consultant, Tetrattech, the county's Hazard Mitigation Planning Committee will conduct risk assessment tasks. First the Committee will identify hazards that may impact the county and its municipalities and then profile the relevant hazards and their potential consequences. Secondly, assets that are subject to losses or damage, including physical structures, critical facilities, functions and populations will be identified. Finally, potential losses that could result from each type of hazard will be estimated.

Following the risk assessment, Hazard Mitigation Planning Committee members will develop a hazard mitigation strategy for their respective municipalities. The strategy will include the identification of hazard mitigation goals as well as a prioritized list of actions designed to reduce losses.

The plan focuses on existing and future buildings, infrastructure, and critical facilities that might be impacted by natural disasters. Ultimately, the mitigation projects identified and implemented will reduce vulnerability and enable communities to recover more quickly from disasters.

The update of this plan allows the county and participating municipalities to continue to be eligible for future pre-disaster mitigation funding from FEMA. Example of grant-eligible projects include home acquisitions or elevations – to either remove houses located in the floodplain to generate open space and increase flood storage or to raise their first floor above the FEMA base flood elevation – and local flood control measures.

A series of meetings open to the public will be part of the plan development process, both to solicit public comment and to present the draft plan to residents and local officials. In the near future, information about the All Hazards Mitigation Plan and meeting dates will be posted on the county's web site at <http://www.tiogacountyny.com/departments/emergency-services/>.

It is expected that this All Hazards Mitigation Plan update will be complete by the end of 2018. For questions and more information, please contact Elaine Jardine, County Planning Director, at [jardinee@co.tioga.ny.us](mailto:jardinee@co.tioga.ny.us) or by phone at (607) 687-8257.

####

Figure D-17. May 12, 2018 Article in the Owego Pennysaver Press



HOME
NEWS
READER'S COLUMN
WHAT'S HAPPENING
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WHAT'S NEW | AUGUST 8, 2018 | TIOGA OPPORTUNITIES, INC. OFFERS WAI CHI CLASS IN BERKSHIRE

## Tioga County is preparing for future flooding and other natural hazards



POSTED BY: PSAADVERTY | MAY 12, 2018

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Figure D-18. Tioga County Planning Department Facebook Post, May 23, 2018

The screenshot shows a Facebook post from the page 'Team Tioga' (@teamtioga). The post, dated May 23, 2018, contains the following text: "Do you want to help Tioga County reduce devastating impacts of floods and other natural disasters? If so, please click below and scroll to the bottom of the Emergency Services page to take a survey to provide your ideas!". Below the text is a link to 'TIOGACOUNTYNY.COM' with the title 'Tioga County, New York Government - Emergency Services'. The link description states: "The Office of Emergency Services provides and/or supports the the volunteer fire departments and emergency squad/first responder units in Tioga...". The post has 2 likes and 1 share. The Facebook interface includes a top navigation bar with the user's name 'Heather' and a search bar. On the left, there is a navigation menu with options like Home, About, Photos, Reviews, Videos, Events, Posts, Community, and Info and Ads. On the right, there is a 'Send Message' button and a section for 'Pages Liked by This Page' which includes 'Tioga Downs Casino...', 'Tioga County Historic...', and 'Visions Federal Credit...'. The browser's address bar shows the URL 'https://www.facebook.com/teamtioga/'.



Figure D-19. Tioga County Soil & Water Conservation District Facebook Post, May 15, 2018

Secure | <https://www.facebook.com/TiogaSWCD/>

Tetra Tech Sites Storm Prediction Ce Tetra Linx Facebook Gmail Imported From IE Northeast Operatio Staples FEMA Disaster Decla My Tetra Tech USDA RMA Losses NPDP Storm Ev

Tioga County Soil & Water Conservation District Heather Home

Like Follow Share ... Send Message

Time: 11:00 am—2:00pm

1 Like 1 Share

Like Comment Share

Write a comment...

**Tioga County Soil & Water Conservation District** May 15 · 🌐

"Do you want to help Tioga County reduce devastating impacts of floods and other natural disasters? If so, please click <https://www.surveymonkey.com/r/TiogaCitizenSurvey> to take a survey to provide your ideas!"

**SURVEYMONKEY.COM**  
**Tioga County Hazard Mitigation Plan Update - Citizen Survey**  
Web survey powered by SurveyMonkey.com. Create your own online survey now with SurveyMonkey's expert certified FREE templates.

2 Likes

Like Comment Share

Write a comment...

**Tioga County Soil & Water Conservation District** May 2 · 🌐

Congratulations to Candor's – Candor Core – Envirothon Team! The team took first place out of 36 teams at the Southern Tier Regional Envirothon

**Community** See All

Invite your friends to like this Page

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[www.tiogacountyny.com/programs-agencies/soil](http://www.tiogacountyny.com/programs-agencies/soil)

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Facebook © 2018




Figure D-20. Tioga County Emergency Services Website

www.tiogacountyny.com/departments/emergency-services/

TIOGA COUNTY, NY Government Community Services FOIL CONTACT HOW DO I...?

email to add your primary cellphone number or additional phone numbers and e-mail addresses, click on the logo above and complete the on-line form. The service is free!


Take this Survey to help Tioga County Reduce Devastating Impacts of Floods and Other Natural Disasters



RFP - Hazard Materials Emergency Planning Consultant  
Tioga County, NY request that proposals be submitted for the purpose of assisting the Tioga County Office of Emergency Services to fulfill its obligations under a NYS Department of Homeland Security HMEP (2017) Grant.

### PLANS AND PROGRAMS

- Comprehensive Emergency Management Plan
- Tioga County Multi Jurisdictional Hazard Mitigation Plan
- [Tioga County Hazard Mitigation Plan Update 2018](#)



The Federal Emergency Management Agency (FEMA) requires that counties and municipalities update our Hazard Mitigation Plans every five years. Tioga County's last Hazard Mitigation Plan was updated in 2013. Tioga County includes only natural hazards in this Plan.

Please click here to see a listing of meetings scheduled to develop Tioga County's 2018 Hazard Mitigation Plan Update. Please note that dates are subject to change. Time and Location are TBD. This schedule will be updated continually during Plan development.

Figure D-21. Waverly Police Department Facebook Post, July 18, 2018



#### D.4 County and Local Meetings

Throughout the planning process, municipalities and county agencies were encouraged to add the hazard mitigation planning process to meeting agendas. The following provides the dates of meetings where the hazard mitigation plan was discussed:

- On April 10, 2018, a verbal presentation of the planning process was given to the Town of Spencer Board.
- On May 9, 2018 at the Tioga County Local Emergency Planning Committee Meeting, the County Soil and Water Conservation District discussed the hazard mitigation plan and the citizen and stakeholder surveys, asking attendees of the meeting to complete the survey and share the link with residents.
- On July 11, 2018, at the Tioga County Local Emergency Planning Committee Meeting, the County Soil and Water Conservation District discussed the hazard mitigation plan and the citizen and stakeholder surveys, asking attendees of the meeting to complete the survey and share the link with residents.



- The Village of Newark Valley held a special meeting on August 27, 2018 to discuss the hazard mitigation plan process. The Village posted the meeting on their website and the presentation was given to the Village Trustees and flood-impacted residents.

Click here for more information and to sign up electronically .

Tags: Uncategorized

**Notice:**  
August 21st, 2018

**Special Meeting of the  
Village of Newark Valley**

**Monday August 27<sup>th</sup> at 7:00pm**


**To be held in the Noble Room at  
9 Park Street, Newark Valley**

**Topic of Discussion: Hazard Mitigation**

Tags: Uncategorized

and Staff via the e-mail format or just tell us "What is on your mind". Information must be easy to retrieve and we believe this user friendly format will be useful to everyone.

Our five members Board of Trustees welcome your insight and participation with the opportunities and obstacles in operating this community in the most fiscally responsible manner. We wish to improve infrastructure, tax base and attractions in our Village. With your comments and help - that will happen.

 Best Regards  
James P. Tomatore  
Mayor

**Office Hours**

Monday-Thursday 9AM to 5PM  
Fridays 9AM to 12PM

Closed on following Holidays:  
New Year's Day  
Good Friday  
Memorial Day  
Independence Day  
Labor Day  
Veterans Day  
Thanksgiving (Thursday & Friday)  
Christmas Day



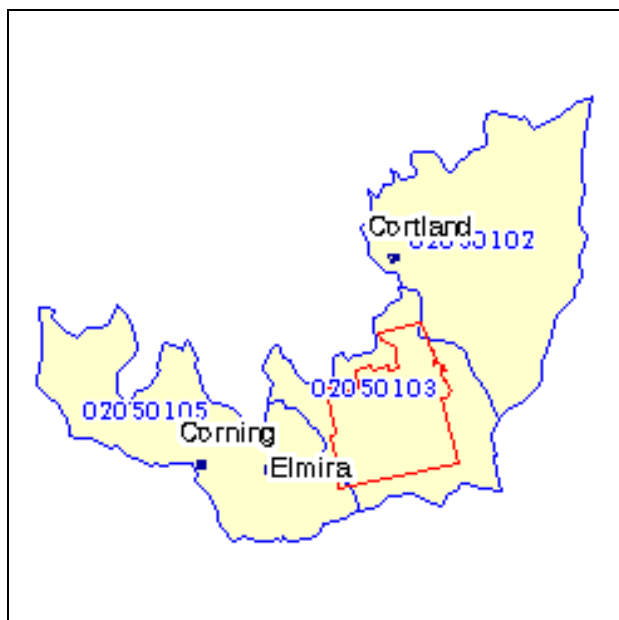
# APPENDIX E. COUNTY PROFILE AND RISK ASSESSMENT SUPPLEMENTARY DATA

## E.1 Overview

This section contains information and details to support information provided in Section 4 – County Profile which provides general information for Tioga County (physical setting, population and demographics, general building stock, and land use and population trends) and critical facilities located within the County.

### E.1.1 Watersheds Designations in Tioga County

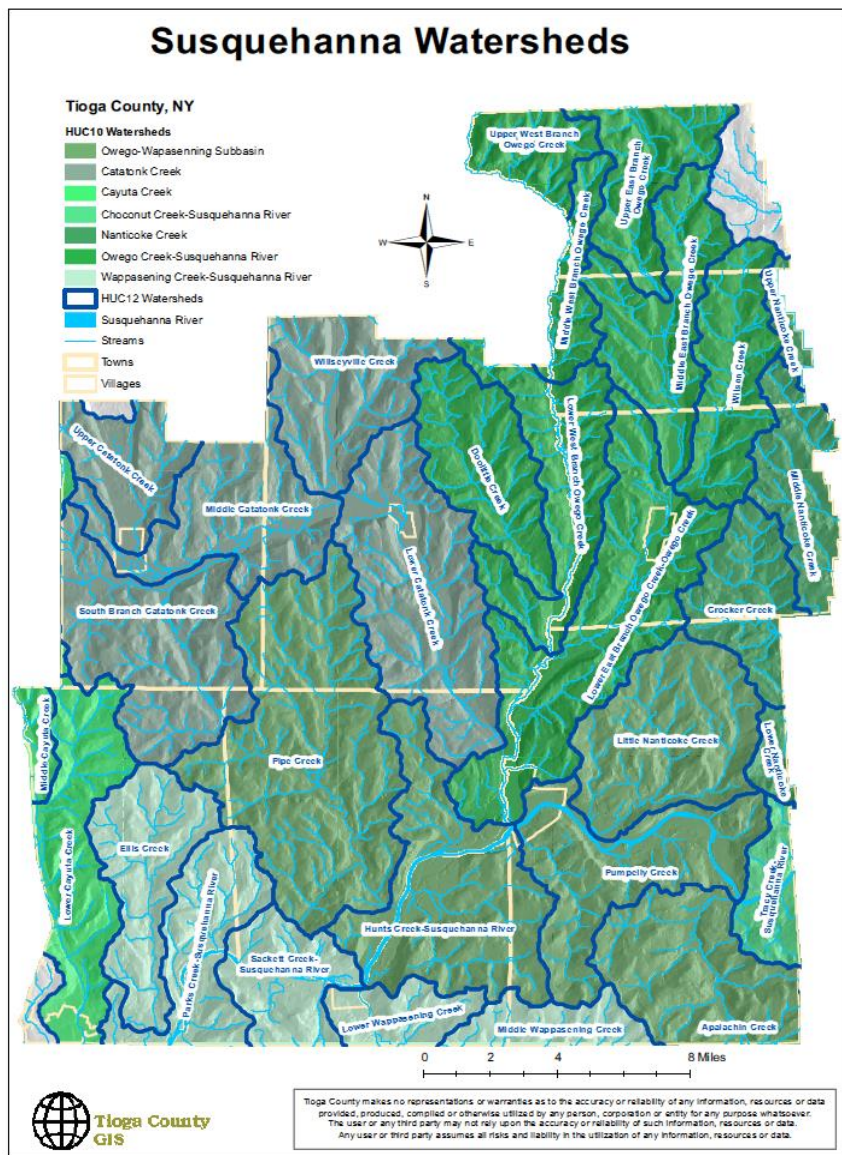
Figure E-1. Watersheds of Tioga County, New York



Source: USEPA, 2012  
 Note(s): The red outline indicates the location of Tioga County  
 Watershed Designations in Tioga County:  
 02050103 Owego-Wappasening  
 02050105 Chemung  
 04140201 Seneca  
 02050102 Chenango

## E.1.2 Susquehanna Basin Watersheds in Tioga County

Figure E-2. Susquehanna Watersheds in Tioga County



Source: Tioga County GIS



## E.2 Tioga County Population Data

**Table E-1. Tioga County Population Statistics (2010 U.S. Census and 2006-2010 American Community Survey Estimates)**

Municipality	Total <sup>1</sup>	Pop. 65+ <sup>2</sup>	% Pop. 65+	Pop. Under 5 <sup>1</sup>	% Pop. Under 5	Low Income Population <sup>2*</sup>	% Low Income Population	2010 % Below Poverty Level <sup>3**</sup>
Barton (T)	4,414	625	14.2%	277	6.3%	695	15.7%	7.8%
Waverly (V)	4,444	795	17.9%	302	6.8%	1,352	30.4%	12.8%
Berkshire (T)	1,412	206	14.6%	81	5.7%	256	18.2%	8.1%
Candor (T)	4,454	676	15.2%	231	5.2%	727	16.3%	7.6%
Candor (V)	851	112	13.2%	67	7.9%	182	21.4%	8.7%
Newark Valley (T)	2,949	431	14.6%	171	5.8%	433	14.7%	6.6%
Newark Valley (V)	997	155	15.5%	57	5.7%	172	17.2%	5.5%
Nichols (T)	2,013	347	17.2%	105	5.2%	341	16.9%	6.7%
Nichols (V)	512	68	13.3%	26	5.1%	115	22.4%	8.0%
Owego (T)	15,987	2,683	16.8%	834	5.2%	1,320	8.3%	4.2%
Owego (V)	3,896	620	15.9%	261	6.7%	1,078	27.7%	13.4%
Richford (T)	1,172	124	10.6%	81	6.9%	177	15.1%	9.1%
Spencer (T)	2,394	312	13.0%	117	4.9%	473	19.8%	8.1%
Spencer (V)	759	125	16.5%	47	6.2%	142	18.7%	9.0%
Tioga (T)	4,871	753	15.5%	316	6.5%	680	14.0%	9.5%
<b>Tioga County</b>	<b>51,125</b>	<b>8,032</b>	<b>15.7%</b>	<b>2,973</b>	<b>5.8%</b>	<b>8,142</b>	<b>15.9%</b>	<b>7.6%</b>

Source: U.S. Census 2010 (U.S. Census Bureau)<sup>1</sup>; HAZUS-MH v4.0 (2010 Data)<sup>2</sup>; 2006-2010 American Community Survey 5-Year Estimates<sup>3</sup>

Note: Pop. = population

\* Individuals below poverty level (Census poverty threshold for a 3-person family unit is approximately \$19,749); HAZUS-MH v4.0 provides counts as households, so the total counts in HAZUS-MH v4.0 were multiplied by 2.49 (Average Household Size per 2010 U.S. Census)

\*\* % Below Poverty Level = Percentage of Families and People Whose Income in The Past 12 Months Is Below the Poverty Level.

**Table E-2. Tioga County Population Statistics (2012-2016 American Community Survey Estimates)**

Municipality	Total	Pop. 65+	% Pop. 65+	Pop. Under 5	% Pop Under 5	% Below Poverty Level*
Barton (T)	4,340	613	14.1%	243	5.6%	19.7%
Berkshire (T)	1,279	257	20.1%	62	4.8%	12.9%
Candor (T)	4,419	747	16.9%	278	6.3%	7.7%
Candor (V)	729	85	11.7%	75	10.3%	12.6%
Newark Valley (T)	2,646	465	17.6%	112	4.2%	7.7%
Newark Valley (V)	1,167	121	10.4%	77	6.6%	11.6%
Nichols (T)	2,111	446	21.1%	142	6.7%	9.5%
Nichols (V)	557	68	12.2%	14	2.5%	15.5%
Owego (T)	15,458	3,259	21.1%	659	4.3%	7.0%
Owego (V)	3,787	599	15.8%	226	6.0%	17.7%
Richford (T)	1,069	140	13.1%	54	5.1%	15.9%
Spencer (T)	2,193	301	13.7%	126	5.7%	12.8%



Municipality	Total	Pop. 65+	% Pop. 65+	Pop. Under 5	% Pop Under 5	% Below Poverty Level*
Spencer (V)	839	154	18.4%	48	5.7%	18.2%
Tioga (T)	4,768	866	18.2%	181	3.8%	16.0%
Waverly (V)	4,287	779	18.2%	320	7.5%	21.8%
<b>Tioga County</b>	<b>49,649</b>	<b>8,900</b>	<b>17.9%</b>	<b>2,617</b>	<b>5.3%</b>	<b>11.0%</b>

Source: 2012-2016 American Community Survey 5-Year Estimates

Note: Pop. = population

\* % Below Poverty Level = Percentage of Families and People Whose Income in The Past 12 Months Is Below the Poverty Level.

It is noted that the Census data for household income provided in HAZUS-MH includes two ranges (\$0-10,000 and \$10,000-\$20,000/year) that were totaled to provide the “low-income” data used in this study. This does not correspond exactly with the “poverty” thresholds established by the 2017 U.S. Census Bureau, which identifies households with three adults and no children with an annual household income below \$19,173 per year, or households with one adult and two children with an annual household income below \$19,749 per year as “low income” for this region. This difference is not believed to be significant for the purposes of this planning effort.

The 2010 U.S. Census data also identified 2,490 of the 20,634 households as having an annual income of less than \$15,000. The 2000 U.S. Census data indicates a total of 6,729 persons living in households below the poverty level (13%).

**Table E-3. Tioga County Population Trends, 1950 to 2016**

Year	Population	Change in Population	Percent (%) Population Change
1950	30,166	-	-
1960	37,802	7,636	20.2%
1970	46,513	8,711	18.7%
1980	49,812	3,299	6.6%
1990	52,337	2,525	4.8%
2000	51,784	-553	-1.1%
2010	51,125	-659	-1.3%
2016	49,649	-1,478	-2.8%

Source: U.S. Census Bureau, 2012; Tioga County Strategic Plan, 2010; 2016 American Community Survey

Note: Change in population and percent in population change was calculated from available data

### E.3 Tioga County Land Use Data

**Table E-4. Land Use (2011) in Tioga County**

Land Use	Total Area (sq. mi.)	Percent of County (%)
Barren	151.03	28.9%
Developed	0.60	0.1%
Farmland	29.01	5.6%
Forested	326.80	62.5%
Open Water	4.39	0.8%
Wetlands	10.67	2.0%
<b>Total</b>	<b>151.03</b>	<b>28.9%</b>

Source: FEMA, 2012; USGS, 2011

Note: sq. mi. = square miles





## E.4 History of Hazard Events within the County

To supplement the information provided in this plan, events prior to the update of this plan are included below by Hazard of Concern.

### E.4.1 Flood

According to NOAA’s NCDC storm events database, Tioga County experienced 51 flood events between 1950 and April 2012. Total property damages, as a result of these flood events, were estimated at \$608.7 million; however, the estimate only includes damages identified in the database and the total may not agree with specific event information presented later in this plan. According to the Hazard Research Lab at the University of South Carolina’s Spatial Hazard Events and Losses Database for the U.S. (SHELDUS), between 1960 and 2010, 57 flood events occurred within the County. The database indicated that flood events and losses specifically associated with Tioga County and its municipalities totaled over \$119.2 million in property damage and over \$818,000 in crop damage. However, these numbers may vary due to the database identifying the location of the hazard event in various forms or throughout multiple counties or regions.

Between 1954 and 2012, FEMA declared that New York State experienced 40 flood-related disasters (DR) or emergencies (EM) classified as one or a combination of the following disaster types: severe storms, coastal storms, flash flooding, heavy rain, tropical storm, hurricane, high winds, ice jam, wave action, high tide and tornado. Generally, these disasters cover a wide region of the State; therefore, they may have impacted many counties. However, not all counties were included in the disaster declarations. Of those events, the NYS HMP and other sources indicate that Tioga County has been declared as a disaster area as a result of eight flood events (FEMA, 2011).

**Table E-5. Flooding Events Between 1950 and 2012**

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
October 1954	Hurricane Hazel	DR-26	No	Heavy rain from Hurricane Hazel caused some minor flooding in the County.	Tioga County HMP
August 1955	Hurricane Diane	DR-45	No	Heavy rain from Hurricane Diane caused some minor flooding in the County.	Tioga County HMP
April 6, 1964	Flooding	N/A	N/A	Heavy spring runoff caused the Susquehanna River to overflow its banks in the County.	Tioga County HMP
June 20-25, 1972	Hurricane Agnes (flooding)	DR-338	Yes	<p>The waterways within the County overflowed their banks, causing extensive damage to many municipalities. Homes were flooded, roadways flooded and/or washed out, bridges were damaged/destroyed, streambanks were eroded, and landslides occurred.</p> <p>In the Catatunk Creek watershed, the Town and Village of Spencer experienced flooding of 15 homes and commercial structures, road wash-outs, and severe stream bank erosion. The Willseyville Creek and Prospect Creek had severe streambank erosion and road washouts along Prospect Creek. In the Village of Candor, 30 homes and commercial structures flooded, the high school flooded, and two dams in Catatunk Creek were damaged. In the hamlet of Cataonk, 10 homes were flooded. In the Town of Tioga, homes were flooded and there was streambank erosion.</p> <p>In the Owego Creek watershed, the hamlet of Berkshire had 10 homes that were flooded, and Glen Road was washed out in several locations. In the Town of Berkshire, Route 38 and</p>	FEMA FIS, SHELDUS, Tioga County HMP



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
				secondary roads south of Berkshire hamlet was flooded and there was streambank erosion. Homes, churches and commercial structures were flooded in the Village of Newark Valley. In the Town of Newark Valley, a bridge washed out and there was flooding. Homes were flooded, and Park Settlement Road washed out in several locations in the Town of Owego. Homes were flooded in the Village of Owego.  Towns and Villages along the Susquehanna River experienced over \$19M in damages from this event.	
March 17-19, 1973	Flood	N/A	N/A	Heavy rain and flooding caused over \$227K in property damage to Tioga County.	SHELDUS
September 25-27, 1975	Severe Storms, Heavy Rain, Landslides, Flooding	DR-487	Yes	No losses and/or damages associated with this event identified for Tioga County.	FEMA
July 11-12, 1976	Severe Storms and Flooding	DR-515	Yes	No losses and/or damages associated with this event identified for Tioga County.	FEMA
March 14, 1985	Flood	N/A	N/A	Flooding caused approximately \$1M in property damage and \$1K in crop damage to Tioga County.	SHELDUS
March 29-31, 1993	Flood	N/A	N/A	Flooding caused approximately \$550K in property damage to Tioga County.	NOAA-NCDC
April 1-5, 1993	Flood	N/A	N/A	Flooding caused approximately \$500K in property damage to Tioga County.	SHELDUS, NOAA-NCDC
April 10-15, 1993	Flood	N/A	N/A	Flooding caused approximately \$5M in property damage to Tioga County.	SHELDUS, NOAA-NCDC
February 22, 1994	Flash Flood	N/A	N/A	An ice jam along the Chemung River caused water to back up in the Village of Waverly. The County had approximately \$50 K in property damage.	NOAA-NCDC
August 18, 1994	Flash Flood (Remnants of Tropical Storm Beryl)	N/A	N/A	Tropical Storm Beryl caused severe damage to the Villages of Waverly and Newark Valley. In Waverly, the village hall was flooded, along with several businesses on Broad Street. In the Village of Newark Valley, water from a small stream flooded Main Street and several homes. Flooding caused approximately \$500K in property damage to Tioga County. There was one reported fatality in the County.	SHELDUS, NOAA-NCDC
January 19-20, 1996	Flash Flood	DR-1095	Yes	This was a flash flood event caused by melting snow and rains which affected all of Tioga County. Damages from this flood event exceeded \$7.8M in 12 municipalities and included over \$5M in damage to public infrastructure.	SHELDUS, NOAA-NCDC, FEMA, Tioga County HMP
December 1-2, 1996	Flash Flood	N/A	N/A	Flooding caused approximately \$20K in property damage to Tioga County.	NOAA-NCDC
December 13, 1996	Flash Flood	N/A	N/A	A slow-moving storm system brought heavy rains and small stream flooding to most of Tioga County. The most notable flooding occurred along the West Branch of the Owego Creek where roadways were closed due to standing water. The flooding caused \$20K in property damage to the County.	NOAA-NCDC
July 8, 1998	Severe Storms and Flooding (flash)	DR-1233	Yes	A batch of TSTMs produced excessive rainfall, with amounts between two and four inches in many areas of the County. The Catatunk Creek, Hoyt Creek and Bliven Creek caused the most significant problems. In the Town of Owego, the bridge that	NOAA-NCDC, FEMA, Tioga



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
	floods)			crosses the intersection of Owego and Catatonk Creeks at Route 96 and 38 was closed due to water levels topping the bottom of the bridge. Six bridges were washed out in the Towns of Spencer and Candor. Many roads were closed, and water had to be pumped out of the first floor of homes in the Town of Spencer, near Owl Creek. Tioga County had approximately \$2.9 M in damages.	County HMP
May 10-11, 2000	Flash Flood	DR-1355	Yes	Tioga County had \$1.25 M in property damages.	NOAA-NCDC
March 2004	Flood	N/A	N/A	Tioga County had \$40 K in property damages.	NYS HMP
July 7, 2004	Flash Flood	N/A	N/A	The Town of Spencer had \$150 K in property damages.	NYS HMP, NOAA-NCDC
September 16-18, 2004	Remnants of Hurricane Ivan	DR-1565	Yes	Heavy rain in the area caused flash flooding. Rainfall totals ranged between two and six inches. Many creeks and streams went out of their banks; the Susquehanna River flooded. The County had approximately \$1M in property damage.	NOAA-NCDC
March 28, 2005	Flash Flood	N/A	N/A	In the Town of Owego, State Route 96 was closed due to flooding of the Owego Creek. Several other roads were closed in the hamlets of Berkshire and Tioga Center. One road in the Town of Berkshire was closed due to a mudslide. Overall, the County had approximately \$70K in property damage.	NYS HMP, NOAA-NCDC
April 2-4, 2005	Flood	DR-1589	Yes	Overall, New York State had \$66.21 M in damages. All towns and villages in Tioga County were affected by flash flooding. Between one and four inches of rain fell, causing creeks and streams to overflow their banks. Many roads, bridges and buildings were damaged from this event in the County. Tioga County had approximately \$500K in property damage.	NYS HMP, NOAA-NCDC, FEMA
June 10, 2005	Flash Flood	N/A	N/A	Slow moving TSTMs brought heavy rain to the County, which caused flash flooding. Roads were flooded and closed in the Towns of Barton, Nichols and Waverly. The County had approximately \$20K in property damage.	NYS HMP, NOAA-NCDC
October 25, 2005	Flood	N/A	N/A	The Town of Waverly had \$20 K in property damages from a flooding event.	NYS HMP
November 30 – December 1, 2005	Flood	N/A	N/A	The Town of Waverly had \$25 K in property damages from a flooding event.	NYS HMP
January 18, 2006	Flood	N/A	N/A	Heavy rainfall caused minor flooding in Tioga County. The Town of Barton had \$10 K in property damages from a flooding event.	NYS HMP, NOAA-NCDC
June 26-30, 2006	Tropical Storm Ernesto	DR-1650	Yes	Flood caused widespread damage throughout the Susquehanna River Basin. Overall, New York State had \$246.33 M in damages.  Tropical moisture entered into south-central New York State, bringing heavy rain and TSTMs to many areas in upstate New York. Total rainfall for this three-day event was up to six inches in Tioga County. Almost every stream and creek overflowed its banks. Flash flooding occurred in the Town of Owego and the Village of Waverly. Numerous roads, bridges, businesses and homes were flooded. A total of 5,000 homes were affected, with 500 homes damaged and 10 destroyed. Hardest hit areas were Tioga, Campville, Owego, Nichols, Barton and Apalachin. The County declared a state of emergency. The Susquehanna at Owego rose above its flood stage of 30 feet. The County had over \$105M in property damage.	FEMA FIS, NYS HMP, NOAA-NCDC



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
November 16-17, 2006	Flash Flood	DR-1670	Yes	<p>A line of TSTMs produced 45 to 74 mph winds across central NYS. This area experienced heavy rainfall, with amounts of 1.5 to four inches within three hours that caused significant flash flooding. Overall, New York State had \$32.59 M in damages.</p> <p>In Tioga County, many roads were washed out in the Towns of Owego, Apalachin, and Nichols. The County had approximately \$35 K in property damages.</p>	NYS HMP, NOAA-NCDC
March 15-16, 2007	Riverine Flood	N/A	N/A	<p>Heavy rainfall and melting snow caused many rivers and creeks to exceed their flood stages. Rainfall totals in the Susquehanna River Basin ranged between 0.75 inches to 1.5 inches. The Susquehanna River at Conklin crested just above its moderate flood stage of 13 feet. Twenty homes, one business and five roads were flooded. An ice jam was associated with this flood event.</p> <p>In Tioga County, the Town of Barton experienced minor flooding on the Susquehanna River at Waverly/Sayre. The River crested at 14.2 feet, 3.2 feet over the flood state of 11 feet. Over an inch of rain, along with snowmelt, caused minor flooding in the Town. The Town had approximately \$5 K in property damage.</p>	NYS HMP, NOAA-NCDC
March 25-30, 2007	Riverine Flood	N/A	N/A	<p>Rainfall totals of one-half to one inch, along with warm temperatures and snowmelt, minor flooding occurred along a few rivers. River levels were close to or slightly above flood stage along the Susquehanna River from the Town of Waverly east through the City of Binghamton.</p> <p>In Tioga County, the Town of Barton experienced minor flooding on the Susquehanna River. The River at Waverly/Sayre crested at 11.1 feet.</p>	NOAA-NCDC
September 30 – October 1, 2010	Flash Flooding (Remnants of Tropical Storm Nicole)	N/A	N/A	<p>Remnants of Tropical Storm Nicole brought between three to six inches of rain across central NYS. The rain caused flash floods and minor flooding along the main stem rivers.</p> <p>In Tioga County, the heavy rain caused flash flooding in the Town of Newark Valley. The most serious flooding occurred where water and debris flowed downhill across Rock Street to Irishtown Road. Both roads were closed. Water continued across Route 38 in the Village of Newark Valley. Homes flooded along Mill and Clinton Streets. The Owego Creek flooded the Trout Pounds recreation area. Flash flooding occurred along Route 388 in the Town of Newark Valley due to a mudslide. In the Village of Owego, several roads were flooded. Overall, the County had approximately \$75 K in property damage.</p>	NOAA-NCDC
April 27-28, 2011	Flash Flooding	DR-1993	Yes	<p>A severe weather outbreak brought heavy rain, flash floods and tornadoes to central New York State. In Tioga County, major flash flooding occurred in several areas of the County, especially along State Route 38 corridor. In the Town of Newark Valley, the storms impacted 50 homes, washed out roads and caused road closures. In the Town of Owego, damages included roads, five major stream crossings, ditches, culverts and road closures. The County had approximately \$3 M in property damages.</p>	NOAA-NCDC, FEMA
September 7-12, 2011	Flooding (Tropical Storm Lee)	DR-4031	Yes	<p>The remnants of Tropical Storm Lee moved into the Appalachians, bringing between six and 12 inches over most of the Susquehanna River Basin. The heavy rain caused record breaking flooding on small streams, creeks and the River. The River crested from one to four feet higher than the previous record crests from June 2006.</p> <p>In Tioga County, record flooding occurred along the Susquehanna River near the Town of Waverly where it crested at 26.67 feet. In the Town of Owego, the River crested at</p>	NOAA-NCDC





Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
				39.62 feet. The County had over \$477 M in property damages.	

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

- Cfs Cubic feet per second
- DR Federal Disaster Declaration
- EM Federal Emergency Declaration
- FEMA Federal Emergency Management Agency
- FSA Farm Service Agency
- HMP Hazard Mitigation Plan
- IA Individual Assistance
- K Thousand (\$)
- M Million (\$)
- N/A Not applicable
- NCDC National Climate Data Center
- NOAA National Oceanic Atmospheric Administration
- NWS National Weather Service
- NYS New York State
- PA Public Assistance
- SHELDUS Spatial Hazard Events and Losses Database for the U.S.
- TSTM Thunderstorm

**Table E-6. Ice Jam Events in Tioga County between 1900 and 2011**

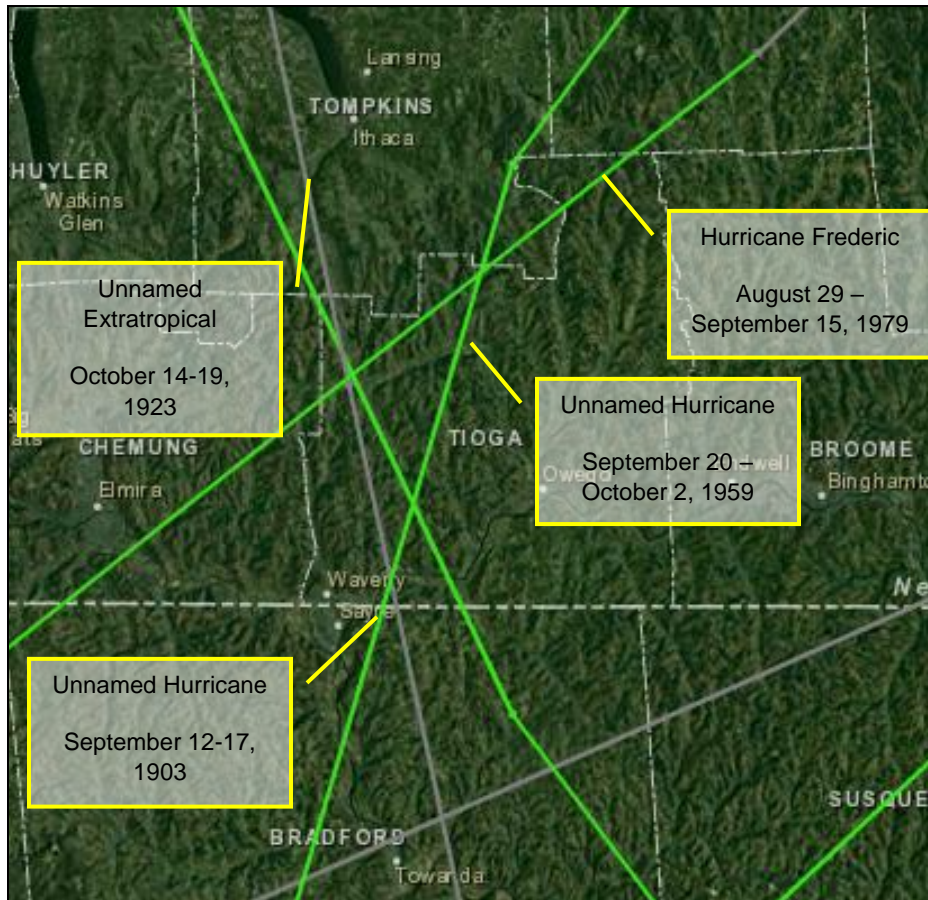
Event Date	River / Location	Description	Source(s)
January 22, 1959	Town of Spencer / Dean Creek	Gage height of 4.80 feet; affected by backwater from ice. Discharge 290 cfs.	CRREL
January 19, 1996	Town of Owego / Owego Creek	Maximum gage height of 11.66 feet due to an ice jam at USGS gaging station near the Town of Owego.	CREEL
March 6, 2007	Village of Waverly / Susquehanna River	Due to an ice jam, the stage of the Susquehanna River at Waverly was fluctuating between eight and 10 feet. The ice jam released as a result of heavy rain and snowmelt.	CRREL

Source: CRREL, 2012

Note: Although many events were reported for Tioga County, information pertaining to every event was not easily ascertainable; therefore, this table may not represent all ice jams in the County.

### E.4.2 Severe Storm

Figure E-3. Historical North Atlantic Tropical Cyclone Tracks (1842-2010)



Source: NOAA, 2012

According to NOAA’s NCDC storm events database, Tioga County experienced 80 severe storm events between 1950 and April 2012. These events include funnel clouds, hail, high winds, lightning, hurricane and tropical storms, precipitation, strong winds, thunderstorms and tornadoes. Total property damages, as a result of these severe storm events, were estimated at \$171,000. This total also includes damages to other counties. According to the Hazard Research Lab at the University of South Carolina’s Spatial Hazard Events and Losses Database for the U.S. (SHELDUS), between 1960 and 2010, 214 severe storm events occurred within the County. The database indicated that severe storm events and losses specifically associated with Tioga County and its municipalities totaled over \$12.1 million in property damage and over \$768,000 in crop damage. However, these numbers may vary due to the database identifying the location of the hazard event in various forms or throughout multiple counties or regions.

Between 1954 and 2012, FEMA declared that New York State experienced 51 severe storm-related disasters (DR) or emergencies (EM) classified as one or a combination of the following disaster types: winter storms, severe storms, coastal storms, flooding, heavy rain, tropical storm, hurricane, high winds and tornado. Generally, these disasters cover a wide region of the State; therefore, they may have impacted many counties. However, not all counties were included in the disaster declarations. Of those events, the NYS HMP and other sources indicate that Tioga County has been declared as a disaster area as a result of 12 severe storm events (FEMA, 2012).



Table E-7. Severe Storm Events Between 1950 and 2012

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
June 17, 1960	TSTMs, High Wind, Hail, Heavy Rain	N/A	N/A	The County had over \$260 K in property damage.	SHELDUS
July 4, 1963	Wind	N/A	N/A	The County had over \$80 K in property damage.	SHELDUS
1972	Tropical Storm Agnes	DR-338	Yes	No reference and/or no damage reported.	FEMA
April 14, 1974	Wind	N/A	N/A	The County had one injury reported and approximately \$125 K in property damage.	SHELDUS
July 2-3, 1974	TSTM	N/A	N/A	The County had over \$294 K in property damage.	SHELDUS
September 22-28, 1975	Severe Storms, Heavy Rain, Landslides, Flooding	DR-487	Yes	The County had approximately \$6.25 M in property damage.	SHELDUS, FEMA
July 11-12, 1976	Severe Storms and Flooding	DR-515	Yes	No reference and/or no damage reported.	FEMA
October 27-28, 1981	Severe Storm / TSTM	N/A	N/A	The County had over \$800 K in property damage from heavy rain.	SHELDUS
May 2, 1983	Tornado (F3)	N/A	N/A	The County had approximately \$2.5 M in property damage and one reported injury.	NOAA-NCDC
March 21-22, 1980	TSTM / Wind	N/A	N/A	The County had over \$80 K in property damage.	SHELDUS
August 27, 1988	Tornado (F1)	N/A	N/A	The County had approximately \$2.5 M in property damage from a tornado that struck between the Towns of Nichols and Owego (Apalachin).	NOAA-NCDC, SHELDUS
January 19-30, 1996	Severe Storms and Flooding	DR-1096	Yes	No reference and/or no damage reported.	FEMA
July 8, 1998	Severe Storms and Flooding	DR-1233	Yes	No reference and/or no damage reported.	FEMA, NOAA-NCDC
May 31, 1998	Severe Storm	N/A	N/A	<p>Severe thunderstorms ripped through the County. The series of storms downed trees and power lines throughout the County, with isolated roof damage to homes west of the Town of Owego. Golf ball sized hail was reported in the Town of Newark Valley. The hail damaged cars and crops; with hundreds of acres of crops at local fruit stands severely damaged. The County had approximately \$50 K in property damage and \$30 K in crop damage.</p> <p>The storms also caused tornadoes in central NYS. The most devastating tornado cut a discontinuous 60-mile track from southeastern Tioga County across southern Broome County and into Delaware County where it finally lifted back into the cloud base. This tornado alone damaged or destroyed more than 30 homes and injured nearly 20 people.</p>	NOAA-NCDC



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
September 27, 1998	Severe Storms	N/A	N/A	Severe thunderstorms that produced wind damage in Tioga County. There were isolated reports of wind damage in the Village of Waverly and in the Town of Nichols. Most of the damage was downed trees and power lines. The County had approximately \$35 K in property damage.	NOAA-NCDC
May 3 – August 12, 2000	Severe Storms	DR-1335	Yes	5/18 - TSTM winds produced wind damage to the County 6/11 - Wind damage was reported throughout the County. 6/29 – One- inch diameter hail was reported in the Town of Candor, with some accumulation noted. Many trees and wires were down with 100 residents left without power; a rotating wall cloud was reported over the Town of Owego. 8/9 - TSTM winds brought down numerous trees and power lines. Brown Road, West Creek Road, and Wilson Creek Road were blocked by fallen trees and limbs.	NOAA-NCDC
December 12, 2000	Wind	N/A	N/A	The County had over \$64 K in property damage.	SHELDUS
May 31, 2002	Tornado (F1)	N/A	N/A	The tornado first touched down about a mile and a half northeast of the Village of Owego, along Carmichael Road. As the tornado passed over a ridge toward Beecher Hill Road, it caused extensive damage. There was major tree damage, two mobile homes were completely destroyed, and a house experienced significant damage. The tornado moved east and crossed Lisle Road causing significant tree damage. It continued east crossing Gaskill Road, destroying a barn and shed. Trees were uprooted, and debris was blown over a quarter mile away. The tornado made one last final touchdown in the area of Ford Road, Foster Road and Whittemore Road. In this area, a mobile home was destroyed and there was significant tree damage. Overall, the tornado damaged between 30 and 50 homes and destroyed three mobile homes. Many barns were damaged. There were seven injuries and \$600 K in property damage.	NOAA-NCDC, SHELDUS
July 21, 2003	Severe Storm	N/A	N/A	Thunderstorm winds downed trees and wires. Roads were blocked off in the Town of Nichols (Lounsberry). Trees fell on cars and trucks in the Town of Owego. The County had approximately \$50 K in property damage.	NOAA-NCDC
September 19, 2003	Wind	N/A	N/A	The County had approximately \$50 K in property damage.	SHELDUS
October 15, 2003	Wind	N/A	N/A	The County had over \$58 K in property damage.	SHELDUS
November 13, 2003	Wind	N/A	N/A	The County had over \$52 K in property damage.	SHELDUS
September 16-18, 2004	Severe Storm (Tropical Storm Ivan)	DR-1565	Yes	No reference and/or no damage reported.	FEMA
April 2-4, 2005	Severe Storms and Flooding	DR-1589	Yes	No reference and/or no damage reported.	FEMA
June 6, 2005	Severe Storm	N/A	N/A	TSTM winds downed numerous trees and wires. The towns affected by this storm were the Towns of Spencer, Barton, Tioga, Candor, Newark Valley, and Owego. The County had approximately \$50 K in	NOAA-NCDC, NWS



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
				property damage.	
June 26 – July 10, 2006	Severe Storm and Flooding	DR-1650	Yes	7/10 - Trees down on some wires in the County	FEMA, NOAA-NCDC, SHELDUS
November 16-17, 2006	Severe Storm and Flooding	DR-1670	Yes	A series of storms produced squall line TSTMS with heavy rainfall across parts of NYS. The line of TSTMS produced 45 to 74 mph winds across central NYS. Many hillsides and creeks were flooded, causing mudslides and debris flows. In Tioga County, the Town of Owego experienced heavy rainfall and flash flooding. There were reports of downed trees in the County.	FEMA, NOAA-NCDC, SHELDUS
May 16, 2009	Tornado (F0)	N/A	N/A	A series of showers and TSTMS developed across NYS. Some of the TSTMS produced tornadoes, wind damage and large hail. In Tioga County, the Towns of Owego and West Newark felt the effects of the storms. The County had approximately \$10 K in property damage.	SHELDUS, NOAA-NCDC
April 26 – May 8, 2011	Severe Storm, Flooding, Straight-Line Winds	DR-1993	Yes	No reference and/or no damage reported.	FEMA, NOAA-NCDC
May 26, 2011	Severe Storms	N/A	N/A	A storm system brought rain and TSTMS to the area. There were many reports of large hail and damaging winds across central NYS. In Tioga County, the storms downed trees and wires in the Town of Owego. Route 17C was closed. There were numerous power outages in the County. The County had approximately \$45 K in property damage.	NOAA-NCDC
September 7 -10, 2011	Remnants of Tropical Storm Lee	EM-3341 / DR-4031	Yes	No reference and/or no damage reported.	FEMA, NOAA-NCDC

Sources: FEMA, NOAA-NCDC, NWS, SHELDUS

Note: Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of inflation.

- DR Federal Disaster Declaration
- EM Federal Emergency Declaration
- FEMA Federal Emergency Management Agency
- IA Individual Assistance
- K Thousand (\$)
- M Million (\$)
- Mph Miles Per Hour
- NCDC National Climate Data Center
- NOAA National Oceanic Atmospheric Administration
- NYS New York State
- NWS National Weather Service
- PA Public Assistance
- SHELDUS Spatial Hazard Events and Losses Database for the U.S.
- TSTM Thunderstorms

### E.4.3 Severe Winter Storm

According to NOAA’s NCDC storm events database, Tioga County experienced 12 snow and ice storm events between April 30, 1950 and 2012. Total property damages, as a result of these winter storm events, were estimated at \$5 million. This total also includes damages to other counties. According to the Hazard Research Lab at the University of South Carolina’s Spatial Hazard Events and Losses Database for the U.S. (SHELDUS), between 1960 and 2010, 171 winter storm events occurred within the County. The database indicated that severe winter storm events and losses specifically associated with Tioga County and its municipalities totaled over \$5.8 million in property damage and over \$726,000 in crop damage. However,





these numbers may vary due to the database identifying the location of the hazard event in various forms or throughout multiple counties or regions.

Between 1954 and 2012, FEMA declared that New York State experienced 23 winter storm-related disasters (DR) or emergencies (EM) classified as one or a combination of the following disaster types: winter storms, severe storms, coastal storms, ice storm, blizzard, snow, snowstorm, Nor’Easter and flooding. Generally, these disasters cover a wide region of the State; therefore, they may have impacted many counties. However, not all counties were included in the disaster declarations. Of those events, the NYS HMP and other sources indicate that Tioga County has been declared as a disaster area as a result of one winter storm-related events (FEMA, 2012).

**Table E-8. Winter Storm Events Between 1950 and 2012.**

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
March 13-17, 1993	Severe Blizzard (“Storm of the Century”)	EM-3107	Yes	This storm was an extremely intense and massive storm that tracked from the western Gulf of Mexico to the Florida panhandle and up the eastern seaboard to Massachusetts. Snowfall amounts ranged from 12 inches in southern Alabama to over 40 inches in New York State. Winds of up to 70 mph were common across the affected area, with snow drifts of up to 20 feet high. The storm caused nearly 300 deaths.	FEMA, NOAA
December 25, 2002	Snowstorm	EM-3173 (PA)	Yes	A strong winter storm produced significant snowfall across parts of central New York State and northeast Pennsylvania. Snowfall totals in Tioga County ranged from 8.3 inches in the town of Berkshire to 10.3 inches in Oakley Corners (Newark Valley and Owego).	FEMA, NWS, SHELDUS
January 2-4, 2003				A strong storm system moved up the east coast and produced significant snowfall across central New York State. Snowfall totals in Tioga County ranged from 11.2 inches in Apalachin to 19 inches in Berkshire. The County had over \$475 K in property damage.	
February 16-17, 2003	Snowstorm	EM-3184 (PA)	No	Snowfall totals in Tioga County ranged from 9.5 inches in Berkshire to 15 inches in Lockwood. The County had over \$152 K in property damage.	FEMA, SHELDUS, NWS
February 13-14, 2007 (Valentine’s Day Storm)	Severe Winter Storm	N/A	N/A	Snowfall totals in Tioga County ranged from 12 inches in Waverly to 18 inches in Waverly.	NWS
November 17, 2007	Winter Weather	N/A	N/A	Approximately four inches of snow fell across the southern part of the County. The Town of Owego had 4.5 inches of snow.	NOAA-NCDC
December 13, 2007	Heavy Snow	N/A	N/A	Light snow started to fall over central New York State becoming heavy. Overall, snowfall totals ranged between five and 10 inches. In Tioga County, the storm brought between six and eight inches of snow.	NOAA-NCDC
March 6-7, 2011	Heavy Snow	N/A	N/A	A band of heavy snow developed over central New York State and northeast Pennsylvania. Snowfall totals ranged between one and two feet, with several locations receiving over two feet of snow. In Tioga County, snowfall totals ranged from 13 to 18 inches.	NOAA-NCDC

Sources: NOAA-NCDC, FEMA, NWS, SHELDUS

Note: Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of inflation.

- DR Disaster Declaration
- EM Emergency Declaration
- FEMA Federal Emergency Management Agency
- K Thousand (\$)
- M Million (\$)
- N/A Not Applicable
- NCDC National Climatic Data Center
- NOAA National Oceanic and Atmospheric Administration





NWS National Weather Service  
 PA Public Assistance  
 SHELDUS Spatial Hazard Events and Losses Database for the United States

### E.4.4 Drought

According to NOAA’s NCDC storm events database, Tioga County experienced one drought and one extreme heat event between April 30, 1950 and December 31, 2011. There were no damages associated with this event. According to the Hazard Research Lab at the University of South Carolina’s Spatial Hazard Events and Losses Database for the U.S. (SHELDUS), between 1960 and 2011, three drought events and one extreme heat event occurred within the County. The database indicated that drought events and losses specifically associated with Tioga County and its municipalities totaled over \$33,000 in property damage and over \$4.7 million in crop damages. The database indicated that extreme heat events and losses specifically associated with Tioga County and its municipalities totaled over \$1,600 in property damages. However, these numbers may vary due to the database identifying the location of the hazard event in various forms or throughout multiple counties or regions.

Between 1954 and 2011, FEMA declared that New York State experienced one drought-related disaster (DR) or emergency (EM) classified as one or a combination of the following disaster types: water shortage. Generally, these disasters cover a wide region of the State; therefore, they may have impacted many counties. However, not all counties were included in the disaster declarations. Of those events, the NYS HMP and other sources indicate that Tioga County has been declared as a disaster area as a result of one drought-related event (FEMA, 2011).

**Table E-9. Drought and Extreme Heat Events affecting Tioga County Between 1950 and 2012.**

Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
September – November 1895	Drought	N/A	N/A	Three-month duration with the lowest PDSI of -3.54 in October.	NRCC
November – December 1899	Drought	N/A	N/A	Two-month duration with the lowest PDSI of -3.35 in November.	NRCC
August 1900 – February 1901	Drought	N/A	N/A	Seven-month duration with the lowest PDSI of -3.79 in October.	NRCC
August 1909 – January 1910	Drought	N/A	N/A	Six-month duration with the lowest PDSI of -4.84 in December.	NRCC
July 1910 – September 1911	Drought	N/A	N/A	Fifteen-month duration with the lowest PDSI of -4.31 in July 1911.	NRCC
October – December 1914	Drought	N/A	N/A	Three-month duration with the lowest PDSI of -3.72 in November.	NRCC
April – June 1915	Drought	N/A	N/A	Three-month duration with the lowest PDSI of -3.21 in May.	NRCC
November – December 1916	Drought	N/A	N/A	Two-month duration with the lowest PDSI of -3.15 in December.	NRCC
September 1921 – February 1922	Drought	N/A	N/A	Six-month duration with the lowest PDSI of -3.99 in October.	NRCC



Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
November – December 1922	Drought	N/A	N/A	Two-month duration with the lowest PDSI of -3.65 in December.	NRCC
May 1923 – January 1924	Drought	N/A	N/A	Nine-month duration with the lowest PDSI of -4.23 in September.	NRCC
August 1930 – June 1931	Drought	N/A	N/A	Eleven-month duration with the lowest PDSI of -5.68 in December.	NRCC
November – December 1931	Drought	N/A	N/A	Two-month duration with the lowest PDSI of -3.66 in December.	NRCC
August 1939 – February 1940	Drought	N/A	N/A	Seven-month duration with the lowest PDSI of -4.31 in January.	NRCC
May – June 1941	Drought	N/A	N/A	Two-month duration with the lowest PDSI of -3.30 in June.	NRCC
September 1941 – April 1942	Drought	N/A	N/A	Eight-month duration with the lowest PDSI of -3.93 in April 1942.	NRCC
August 1964 – February 1966	Drought and Water Shortage	DR-204	Yes	Nineteen-month duration with the lowest PDSI of -5.99 in November 1964.	FEMA, NRCC
July – August 1966	Drought	N/A	N/A	Two-month duration with the lowest PDSI of -3.52 in August.	NRCC
October – November 1966	Drought	N/A	N/A	Two-month duration with the lowest PDSI of -3.06 in October.	NRCC
January – February 1967	Drought	N/A	N/A	Two-month duration with the lowest PDSI of -3.17 in February.	NRCC
March 1994	Drought	N/A	N/A	The drought warning issued by the New York State Drought Management Task Force was downgraded to a drought advisory on March 21, 1994, as the usable storage in the New York City water supply system reached 73.9 percent. The drought advisory was in effect for Delaware, Dutchess, Greene, Otsego, Schoharie, Sullivan, and Ulster Counties.	NOAA-NCDC
June – September 1995	Drought	N/A	N/A	A lack of rainfall across much of eastern New York State caused officials to enforce water restrictions in some areas. Many crops were excessively damaged, include vegetable, grain and vine crops. Some private wells ran dry. The Susquehanna River level was one-third of normal. Crop yields were down 30 to 60%. Lowest PDSI of -3.63 in August.	NRCC, NYS HMP
July 4-11, 1998	Heat	N/A	N/A	Tioga County had approximately \$1,667 in property damage.	SHELDUS
September 1999	Drought	N/A	N/A	A very dry spring and summer caused major crop failures and some wells to run dry. Many streams and rivers were also brought to their lowest recorded levels. The crops most affected were corn and hay. Tioga County was among the counties affected. Overall, the state had \$50 M in damages.	NYS HMP
November 2001 – January 2002	Drought	N/A	N/A	Three-month duration with the lowest PDSI of -3.28 in December.	NRCC





Dates of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts	Source(s)
Summer 2005	Drought	N/A	N/A	Pastures are completely gone and have been feeding hay for the last week or more. Corn is showing severe stress at this time. The lack of rain will have a great impact on the crop. The grass hay crop was half that of a normal year. We have not mowed the lawn in 3 weeks. We had only 1 inch of rain early in July. There has only been maybe a trace of rain in Spencer since then.	Drought Impact Reporter
October – November 2007	Drought	N/A	N/A	Due to low water levels in Hinkley Reservoir, the entire state canal system was closed early to traffic, recreational users and commercial users.	Drought Impact Reporter
July 21-23, 2011	Heat Wave	N/A	N/A	Extreme heat affected the central part of the U.S., bringing high temperatures across much of central New York State. Temperatures were into the 90s and exceeded 100°F in many parts. In Tioga County, temperatures in the County reached 95°F to 100°F each day of the heat wave. It was reported in the Village of Waverly, a record high of 100°F occurred on the 21 <sup>st</sup> .	NOAA-NCDC

*FEMA* Federal Emergency Management Agency  
*N/A* Not Applicable  
*NCDC* National Climatic Data Center  
*NOAA* National Oceanic and Atmospheric Administration  
*NRCC* Northeast Regional Climate Center  
*PDSI* Palmer Drought Severity Index  
*U.S.* United States



## APPENDIX F. CRITICAL FACILITIES

### F.1 Overview

This section contains information and details to support information provided in Section 4 – County Profile which provides the distribution of critical facilities located within Tioga County and its municipalities.



Name	Address	City	Type
Barton Highway Barn	221 Shepard Rd	Barton (T)	DPW
Barton Municipal Building	304 State Route 17C	Barton (T)	Municipal
Barton Town Hall	304 State Route 17C	Barton (T)	Polling
Citizens Telecomm Co Of Ny Dba Frontier Comm Of Ny	Lockwood Run Rd	Barton (T)	Telecommunication Facility
Lockwood	6836 Main St	Barton (T)	EOC
Lockwood	34 Main Street, Lockwood	Barton (T)	Fire
Lockwood Fire Station	34 Main Street	Barton (T)	Polling
Medical Facility	No Address Provided	Barton (T)	Medical
Medical Facility	No Address Provided	Barton (T)	Medical
NYS DOT Highway Garage	15 Pembleton Pl	Barton (T)	DPW
Ridge Road Radio Tower Site	1355 Ridge Rd	Barton (T)	Communication Tower
Waverly Fire Station #2	6698 State Route 17C	Barton (T)	EOC
Waverly Station #2	1627 Rt. 17C, Barton	Barton (T)	Fire
Well 1	No Address Provided	Barton (T)	Well
Well 1	No Address Provided	Barton (T)	Well
Well 2	No Address Provided	Barton (T)	Well
Well 2	No Address Provided	Barton (T)	Well
Berkshire	12515 State Route 38, Berkshire	Berkshire (T)	Fire
Berkshire Emergency Squad	12515 State Route 38, Berkshire	Berkshire (T)	Ambulance
Berkshire Family Medicine	No Address Provided	Berkshire (T)	Medical
Berkshire Free Library	No Address Provided	Berkshire (T)	Library
Berkshire Town Barn	12633 State Route 38	Berkshire (T)	DPW
Berkshire Town Hall	18 Railroad Ave	Berkshire (T)	Municipal
Berkshire Town Hall	18 Railroad Ave	Berkshire (T)	Polling
Citizens Telecomm Co Of Ny Dba Frontier Comm Of Ny	Main St	Berkshire (T)	Telecommunication Facility
Hazard	No Address Provided	Berkshire (T)	Hazmat
Ball Park well 2	No Address Provided	Candor (T)	Well
Candor Elderly Housing	Spencer Rd	Candor (T)	Senior
Candor Hill Radio Tower Site	Candor Hill Rd	Candor (T)	Communication Tower



Name	Address	City	Type
Candor Main Fire Station	74 Owego Road	Candor (T)	Polling
Candor Main Station	5489 Owego Rd	Candor (T)	EOC
Candor Main Station	74 Owego Road, Candor	Candor (T)	Fire
Candor Town Hall	101 Owego Rd	Candor (T)	Municipal
Candor Township Storage Tank #1	No Address Provided	Candor (T)	Storage Tank
Candor Township Storage Tank #2	No Address Provided	Candor (T)	Storage Tank
Hazard	No Address Provided	Candor (T)	Hazmat
Hazard	No Address Provided	Candor (T)	Hazmat
Ward Street well 1	No Address Provided	Candor (T)	Well
Well 1	No Address Provided	Candor (T)	Well
Well 1	No Address Provided	Candor (T)	Well
Well 2	No Address Provided	Candor (T)	Well
Well 2	No Address Provided	Candor (T)	Well
Well 3	No Address Provided	Candor (T)	Well
Weltonville	3232 West Creek Road, Weltonville	Candor (T)	Fire
Weltonville Fire Station	5407 West Creek Rd	Candor (T)	EOC
Weltonville Fire Station	3232 West Creek Road	Candor (T)	Polling
Willseyville Station	462 Ithaca Rd	Candor (T)	Fire
Allen memorial Baptist Church	8 Church Street	Candor (V)	Shelter
Candor Central Elementary School	2 Academy Street	Candor (V)	Shelter
Candor Central Junior/Senior High School	1 Academy Street	Candor (V)	Shelter
Candor Elementary School	3 ACADEMY ST	Candor (V)	School
Candor Emergency Squad	Main Street, Candor	Candor (V)	Ambulance
Candor Family Care	No Address Provided	Candor (V)	Medical
Candor Free Library	No Address Provided	Candor (V)	Library
Candor High School	1 ACADEMY ST	Candor (V)	School
Candor Village Hall	138 Main St	Candor (V)	Municipal
Citizens Telecomm Co Of Ny DbA Frontier Comm Of Ny	89 Main St	Candor (V)	Telecommunication Facility
Hazard	No Address Provided	Candor (V)	Hazmat



Name	Address	City	Type
Medical Facility	No Address Provided	Candor (V)	Medical
Town of Candor Highway Barn	33 Humiston St	Candor (V)	DPW
UHS Primary Care - Candor	No Address Provided	Candor (V)	Medical
Village of Candor Public Works Garage	8 Rich St	Candor (V)	DPW
Newark Valley Central School	No Address Provided	Newark Valley (T)	School
Newark Valley Fire Department	7151 State Route 38	Newark Valley (T)	Polling
Newark Valley Fire Station	4400 State Route 38	Newark Valley (T)	EOC
Newark Valley High School	68 WILSON CREEK RD	Newark Valley (T)	School
Newark Valley High School	68 Wilson Creek Road	Newark Valley (T)	Shelter
Newark Valley Township Storage Tank	No Address Provided	Newark Valley (T)	Storage Tank
North Tioga Family Care Center	No Address Provided	Newark Valley (T)	Medical
UHS Primary Care - Newark Valley	No Address Provided	Newark Valley (T)	Medical
Well 1	No Address Provided	Newark Valley (T)	Well
Well 1	No Address Provided	Newark Valley (T)	Well
Well 2	No Address Provided	Newark Valley (T)	Well
Berkshire EMS, Newark Valley	9 Park Street, Newark Valley	Newark Valley (V)	Ambulance
Citizens Telecomm Co Of Ny Dba Frontier Comm Of Ny	5 Maple Ave	Newark Valley (V)	Telecommunication Facility
Hazard	No Address Provided	Newark Valley (V)	Hazmat
Hazard	No Address Provided	Newark Valley (V)	Hazmat
Nathan T Hall Elementary School	86 WHIG ST	Newark Valley (V)	School
Nathan T. Hall Elementary School	86 Whig Street	Newark Valley (V)	Shelter
Newark Valley Central School District Office	No Address Provided	Newark Valley (V)	School
Newark Valley Central School Warehouse	No Address Provided	Newark Valley (V)	School
Newark Valley Middle School	88 WHIG ST	Newark Valley (V)	School
Newark Valley Middle School	88 Whig Street	Newark Valley (V)	Shelter
Newark Valley Municipal Building	9 Park St	Newark Valley (V)	Polling
Newark Valley Town Hall	109 Whig St	Newark Valley (V)	Municipal
Newark Valley Village Municipal Building	9 Park St	Newark Valley (V)	Municipal
Newark Valley Village Reservoir	No Address Provided	Newark Valley (V)	Water Tower



Name	Address	City	Type
Newark Valley Village Water Pump #1	No Address Provided	Newark Valley (V)	Potable Pump
Newark Valley Village Water Pump #2	No Address Provided	Newark Valley (V)	Potable Pump
Tappan Spaulding Memorial Library	No Address Provided	Newark Valley (V)	Library
Town of Newark Valley Highway Barn	89 Whig St	Newark Valley (V)	DPW
Village of Newark Valley Public Works Garage	83 Whig St	Newark Valley (V)	DPW
Well 3 shop well	No Address Provided	Newark Valley (V)	Well
Well 4 trout pond well	No Address Provided	Newark Valley (V)	Well
Newark Valley	7164 State Route 38, Newark Valley	Newton Valley (T)	Fire
Nichols Township Reservoir	No Address Provided	Nichols (T)	Water Tower
Nichols Township Storage Tank	No Address Provided	Nichols (T)	Storage Tank
Town of Nichols Highway Garage	742 E River Rd	Nichols (T)	DPW
Well 1	No Address Provided	Nichols (T)	Well
Well 2	No Address Provided	Nichols (T)	Well
Cady Library	No Address Provided	Nichols (V)	Library
Hazard	No Address Provided	Nichols (V)	Hazmat
Nichols	39 River Street, Nichols	Nichols (V)	Fire
Nichols Elementary School	139 ROKI BOULEVARD	Nichols (V)	School
Nichols Elementary School	139 Roki Boulevard	Nichols (V)	Polling
Nichols Elementary School	139 Roki Blvd	Nichols (V)	Shelter
Nichols Fire Station	928 W River Rd	Nichols (V)	EOC
Nichols Schoolhouse Apartments	Cady Ave	Nichols (V)	Senior
Nichols Town Hall	54 E River Rd	Nichols (V)	Municipal
Nichols United Methodist Church	59 S Main St	Nichols (V)	Polling
Nichols Village Water Pump	No Address Provided	Nichols (V)	Potable Pump
Verizon New York, Inc.	53 E River Rd	Nichols (V)	Telecommunication Facility
Village of Nichols Highway Garage	61 Kirby St	Nichols (V)	DPW
Well 1	No Address Provided	Nichols (V)	Well
Apalachin Alliance Church	293 Tobey Road	Owego (T)	Shelter
Apalachin Elementary School	405 PENNSYLVANIA AVENUE	Owego (T)	School





Name	Address	City	Type
Apalachin Elementary School	405 Pennsylvania Avenue	Owego (T)	Polling
Apalachin Family Care	No Address Provided	Owego (T)	Medical
Apalachin Fire Station #1	3914 Pennsylvania Ave	Owego (T)	EOC
Apalachin Mehtodist Church	303 Pennsylvania Ave.	Owego (T)	Shelter
Apalachin Public Library	No Address Provided	Owego (T)	Library
Apalachin Station #1	230 Pennsylvania Ave., Apalachin	Owego (T)	Fire
Apalachin Station #2	4283 Pennsylvania Ave., Apalachin	Owego (T)	Fire
Apalachin Station #3	8924 State Route 434, Apalachin	Owego (T)	Fire
Blessed Trinity Parish (formerly St. Margaret Mary)	1110 Pennsylvania Ave.	Owego (T)	Shelter
Campville Fire Station	6153 State Route 17C	Owego (T)	Polling
Campville Fire Station #1	2747 State Route 17C	Owego (T)	EOC
Campville Station #1	6153 State Route 17C, Town of Owego	Owego (T)	Fire
Campville Station #2	4279 Gaskill Road, Town of Owego	Owego (T)	Fire
Carmichael Hill Road Radio Tower Site	1141 Carmichael Hill Rd	Owego (T)	Communication Tower
Citizens Telecomm Co Of Ny Dba Frontier Comm Of Ny	545 Main St	Owego (T)	Telecommunication Facility
Flemingville United Methodist Church	540 W. Creek Road	Owego (T)	Shelter
Franziska Racker Center	McFadden Rd	Owego (T)	Senior
Guthrie Apalachin	No Address Provided	Owego (T)	Medical
Guthrie Owego	No Address Provided	Owego (T)	Medical
Hazard	No Address Provided	Owego (T)	Hazmat
Hazard	No Address Provided	Owego (T)	Hazmat
Hazard	No Address Provided	Owego (T)	Hazmat
Hazard	No Address Provided	Owego (T)	Hazmat
Hazard	No Address Provided	Owego (T)	Hazmat
Health & Human Services Building	1062 State Route 38	Owego (T)	Shelter
Living Water Baptist Church	1405 Bodle Hill Road	Owego (T)	Polling
New York State Police	2356 State Route 434	Owego (T)	Police
NYS DOT Residency	1497 State Route 96	Owego (T)	DPW
Owego Town Hall	2354-2356 State Route 434	Owego (T)	Municipal





Name	Address	City	Type
Owego Town Hall	2354 State Route 434	Owego (T)	Polling
Owego Township Reservoir	No Address Provided	Owego (T)	Water Tower
Owego Township Storage Tank #1	No Address Provided	Owego (T)	Storage Tank
Owego Township Storage Tank #2	No Address Provided	Owego (T)	Storage Tank
Owego Township Storage Tank #3	No Address Provided	Owego (T)	Storage Tank
Owego Township Waste Water Treatment #1	No Address Provided	Owego (T)	Wastewater Treatment
Owego Township Waste Water Treatment #2	No Address Provided	Owego (T)	Wastewater Treatment
Owego Township Water Pump #1	No Address Provided	Owego (T)	Potable Pump
Owego Township Water Pump #2	No Address Provided	Owego (T)	Potable Pump
Owego Township Water Pump #3	No Address Provided	Owego (T)	Potable Pump
Owego Township Water Pump #4	No Address Provided	Owego (T)	Potable Pump
Owego Township Water Pump #5	No Address Provided	Owego (T)	Potable Pump
Owego Township Water Pump #6	No Address Provided	Owego (T)	Potable Pump
Owego Township Water Pump #7	Taylor Road	Owego (T)	Potable Pump
Owego Township WW Pump Station #1	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #10	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #11	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #2	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #3	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #4	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #5	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #6	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #7	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #8	No Address Provided	Owego (T)	Wastewater Pump
Owego Township WW Pump Station #9	No Address Provided	Owego (T)	Wastewater Pump
Owego-Apalachin Central School	No Address Provided	Owego (T)	School
Owego-Apalachin Central School	No Address Provided	Owego (T)	School
Owego-Apalachin Central School	No Address Provided	Owego (T)	School
Owego-Apalachin Central School	No Address Provided	Owego (T)	School





Name	Address	City	Type
Owego-Apalachin Central School	No Address Provided	Owego (T)	School
Owego-Apalachin Central School	No Address Provided	Owego (T)	School
Park Terrace United Methodist Church	30 Glann Road	Owego (T)	Polling
Playyard Concepts, Inc.	No Address Provided	Owego (T)	Day Care
Public Safety Building Tower	103 Corporate Dr	Owego (T)	Communication Tower
South Side	3120 Waits Road, Owego	Owego (T)	Fire
South Side Fire Station	3839 Waits Rd	Owego (T)	EOC
Thomas J Watson Sr Elementary School	263 RIDGEFIELD ROAD	Owego (T)	School
Tioga County Health & Human Services Building	1062 State Route 38	Owego (T)	Government
Tioga County Jail	103 Corporate Dr	Owego (T)	Correctional
Tioga County Pubic Safety Building	2849 Corporate Dr	Owego (T)	EOC
Tioga County Public Safety Building	103 Corporate Dr	Owego (T)	Government
Tioga County Sheriffs Office	Corporate Dr	Owego (T)	Police
Tioga County Soil & Water Conservation District	183 Corporate Dr	Owego (T)	Government
Tioga County Stone Building	1062 State Route 38	Owego (T)	Government
Tioga Hills Elementary School	40-48 GLANN ROAD	Owego (T)	School
UHS Urogynecology - Apalachin	No Address Provided	Owego (T)	Medical
Well 1	No Address Provided	Owego (T)	Well
Well 1	No Address Provided	Owego (T)	Well
Well 1	No Address Provided	Owego (T)	Well
Well 1	No Address Provided	Owego (T)	Well
Well 1	No Address Provided	Owego (T)	Well
Well 2	No Address Provided	Owego (T)	Well
Well 2	No Address Provided	Owego (T)	Well
Well 2	No Address Provided	Owego (T)	Well
Well 2	No Address Provided	Owego (T)	Well
Well 4	No Address Provided	Owego (T)	Well
West Learning Center	No Address Provided	Owego (T)	School
Charlton Registered Family Daycare	Erie St	Owego (V)	Day Care



Name	Address	City	Type
Coburn Free Library	No Address Provided	Owego (V)	Library
Dornblaser Registered Family Daycare	Talcott St	Owego (V)	Day Care
Dr Keith A Nichols Office	No Address Provided	Owego (V)	Medical
Dr. Randolph Cooke Office	No Address Provided	Owego (V)	Medical
Former Owego Middle School	No Address Provided	Owego (V)	School
Hazard	No Address Provided	Owego (V)	Hazmat
Hazard	No Address Provided	Owego (V)	Hazmat
Hazard	No Address Provided	Owego (V)	Hazmat
HHAP	Green St	Owego (V)	Homeless Housing
Long Meadow Apartments	Sheldon Guile Blvd	Owego (V)	Senior
Lourdes Owego Family Practice	No Address Provided	Owego (V)	Medical
Medical Facility	No Address Provided	Owego (V)	Medical
Owego Apalachin CSD	36 Talcott Street	Owego (V)	Shelter
Owego Apalachin Middle School	3 Sheldon Guile Blvd	Owego (V)	Shelter
Owego Central Fire Station	512 North Ave	Owego (V)	EOC
Owego Central Station	87 North Avenue, Owego	Owego (V)	Fire
Owego Chiropractic, P.C.	No Address Provided	Owego (V)	Medical
Owego Elementary School	1 CHRSTA MCALFF LN	Owego (V)	School
Owego Elementary School	1 Christa McAuliffe Lane	Owego (V)	Shelter
Owego Free Academy	1 SHELDON GUILLE BLVD	Owego (V)	School
Owego Free Academy	1 Sheldon Guile Boulevard	Owego (V)	Shelter
Owego Gardens	No Address Provided	Owego (V)	Senior
Owego Middle School	3 Sheldon Guile Blvd	Owego (V)	Polling
Owego Police Department	90 Temple St	Owego (V)	Police
Owego Station #2	North Avenue, Owego	Owego (V)	Fire
Owego Station #4	Montrose Ave & South Side Drive, Owego	Owego (V)	Fire
Owego Talcott St.	Talcott Street, Owego	Owego (V)	Fire
Owego UMA Family Practice	No Address Provided	Owego (V)	Medical
Owego United Methodist Church	261 Main Street	Owego (V)	Shelter



Name	Address	City	Type
Owego Village Court House	90 Temple St	Owego (V)	Government
Owego Village Hall	178 Main St	Owego (V)	Municipal
Owego Village Storage Tank	No Address Provided	Owego (V)	Storage Tank
Owego Village Waste Water Treatment #1	No Address Provided	Owego (V)	Wastewater Treatment
Owego Village Waste Water Treatment #2	No Address Provided	Owego (V)	Wastewater Treatment
Owego Village Waste Water Treatment #3	No Address Provided	Owego (V)	Wastewater Treatment
Owego Village Water Pump #1	No Address Provided	Owego (V)	Potable Pump
Owego Village Water Pump #2	No Address Provided	Owego (V)	Potable Pump
Owego Village Water Pump #3	George Street	Owego (V)	Potable Pump
Owego Village Water Pump #4	No Address Provided	Owego (V)	Potable Pump
Owego Village Water Pump #5	East Main Street	Owego (V)	Potable Pump
Owego Village WW Pump Station #1	No Address Provided	Owego (V)	Wastewater Pump
Owego Village WW Pump Station #2	No Address Provided	Owego (V)	Wastewater Pump
Owego Village WW Pump Station #3	No Address Provided	Owego (V)	Wastewater Pump
Owego Village WW Pump Station #4	No Address Provided	Owego (V)	Wastewater Pump
Owego Village WW Pump Station #5	No Address Provided	Owego (V)	Wastewater Pump
Owego-Apalachin Central School	No Address Provided	Owego (V)	School
Owego-Apalachin Middle School	3 SHELDON GUILLE BLVD	Owego (V)	School
Riverview Manor Health Care Center	Fifth Ave	Owego (V)	Senior
Ronald E Dougherty County Office Building	56 Main St	Owego (V)	Government
St. Patrick School	309 FRONT STREET	Owego (V)	School
St. Patrick's Church	300 Main Street	Owego (V)	Shelter
Tioga County Boys and Girls Club	Sheldon Guile Blvd	Owego (V)	Day Care
Tioga County Boys and Girls Club	201 Erie Street	Owego (V)	Shelter
Tioga County Building & Grounds	62-64 Temple St	Owego (V)	DPW
Tioga County Building & Grounds	68 Temple St	Owego (V)	DPW
Tioga County Clerks Building	16 Court St	Owego (V)	Government
Tioga County Court Annex	20 Court St	Owego (V)	Government
Tioga County Court House	Court St	Owego (V)	Government



Name	Address	City	Type
Tioga County Rural Ministry	No Address Provided	Owego (V)	School
Tioga Opportunities Inc.	9 Sheldon Guile Blvd	Owego (V)	Shelter
Town of Owego Highway Garage	70 Delphine St	Owego (V)	DPW
Turtletown Day Care Center	No Address Provided	Owego (V)	Day Care
UHS Primary Care - Owego	No Address Provided	Owego (V)	Medical
Verizon New York, Inc.	110 Temple St	Owego (V)	Telecommunication Facility
Village of Owego Public Works Garage	20 Elm St	Owego (V)	DPW
Well 1	No Address Provided	Owego (V)	Well
Well 3	No Address Provided	Owego (V)	Well
Well 4	No Address Provided	Owego (V)	Well
Hazard	No Address Provided	Richford (T)	Hazmat
North Tioga Center for Family Health	No Address Provided	Richford (T)	Medical
Popple Hill Radio Tower Site	587 Popple Hill Rd	Richford (T)	Communication Tower
Richford	988 Route 79, Richford	Richford (T)	Fire
Richford Highway Garage	10 Town Barn Rd	Richford (T)	Government
Richford Town Hall	7 Bowery Ln	Richford (T)	Municipal
Richford Town Hall	7 Bowery Lane	Richford (T)	Polling
North Spencer Christian Academy	721 ITHACA RD	Spencer (T)	School
Spencer's Van Etten Jr/Sr High School	16 Dartts Cross Rd	Spencer (T)	Shelter
Spencer-Van Etten High School	16 DARTTS CROSSROAD	Spencer (T)	School
Well 1	No Address Provided	Spencer (T)	Well
Well 1	No Address Provided	Spencer (T)	Well
Well 2	No Address Provided	Spencer (T)	Well
Citizens Telecomm Co Of Ny DbA Frontier Comm Of Ny	5 Park St	Spencer (V)	Telecommunication Facility
Hazard	No Address Provided	Spencer (V)	Hazmat
Medical Facility	No Address Provided	Spencer (V)	Medical
Spencer	25161 N Main St	Spencer (V)	EOC
Spencer	41 North Main Street, Spencer	Spencer (V)	Fire
Spencer Emergency Squad	47 West Tioga Street, Spencer	Spencer (V)	Ambulance



Name	Address	City	Type
Spencer Police Dept	81 E Tioga St	Spencer (V)	Police
Spencer Public Library	No Address Provided	Spencer (V)	Library
Spencer Town Hall	79 E Tioga St	Spencer (V)	Municipal
Spencer Town Hall	79 East Tioga Street	Spencer (V)	Polling
Spencer Village Hall	41 N Main St	Spencer (V)	Municipal
Spencer-Van Etten Middle School	ONE CENTER STREET	Spencer (V)	School
Town of Spencer Highway Garage	81 E Tioga St	Spencer (V)	DPW
Ballou Hill Road Microwave Tower Site	Ballou Rd	Tioga (T)	Communication Tower
Candor Station #2	458 Route 96, Town of Tioga	Tioga (T)	Fire
Halsey Valley	1518 Hamilton Valley Rd	Tioga (T)	EOC
Halsey Valley	506 Hamilton Valley Road, Town of Tioga	Tioga (T)	Fire
Loyal Order of Moose #1595	3 Goodrich Road	Tioga (T)	Polling
Owego Church of the Nazarene	3732 Waverly Rd	Tioga (T)	Shelter
Spaulding Hill Backup Radio Tower Site	Spaulding Hill Rd	Tioga (T)	Communication Tower
Tioga Center	60 Fifth Avenue, Tioga Center	Tioga (T)	Fire
Tioga Center Fire Station	1145 Fifth Ave	Tioga (T)	EOC
Tioga Central Elementary School	41 Fifth Ave	Tioga (T)	Shelter
Tioga Central High School	27 Fifth Ave	Tioga (T)	Shelter
Tioga Central Middle School	28 Fifth Ave	Tioga (T)	Shelter
Tioga County Highway Department	477 Route 96	Tioga (T)	Communication Tower
Tioga County Public Works & Highway Department	477 Rt 96	Tioga (T)	Government
Tioga CSD	3 Fifth Ave	Tioga (T)	Shelter
Tioga Elementary School	41 FIFTH AVENUE	Tioga (T)	School
Tioga Highway Garage	46 Halsey Valley Rd	Tioga (T)	DPW
Tioga Middle School	27 FIFTH AVENUE	Tioga (T)	School
Tioga Senior High School	27 FIFTH AVENUE	Tioga (T)	School
Tioga Town Hall	54 Fifth Ave	Tioga (T)	Municipal
Tioga Town Hall	54 Fifth Avenue	Tioga (T)	Polling
Tioga Township Storage Tank #1	No Address Provided	Tioga (T)	Storage Tank



Name	Address	City	Type
Tioga Township Storage Tank #2	No Address Provided	Tioga (T)	Storage Tank
Tioga Township Waste Water Treatment	No Address Provided	Tioga (T)	Wastewater Treatment
Well 1	No Address Provided	Tioga (T)	Well
Well 1	No Address Provided	Tioga (T)	Well
Well 1	No Address Provided	Tioga (T)	Well
Well 1	No Address Provided	Tioga (T)	Well
Well 1	No Address Provided	Tioga (T)	Well
Well 1	No Address Provided	Tioga (T)	Well
Well 2	No Address Provided	Tioga (T)	Well
Well 3	No Address Provided	Tioga (T)	Well
Well 4	No Address Provided	Tioga (T)	Well
Zion Lutheran Church	3917 Waverly Road	Tioga (T)	Shelter
Zion Lutheran School	No Address Provided	Tioga (T)	School
Elderwood Assisted Living at Waverly	No Address Provided	Waverly (V)	Senior
Elderwood Health Care at Tioga	No Address Provided	Waverly (V)	Medical
Elderwood Skilled Nursing at Waverly	No Address Provided	Waverly (V)	Senior
Elm Street Elementary School	145 ELM STREET	Waverly (V)	School
Elm Street Elementary Shool (Waverly CSD)	145 Elm St.	Waverly (V)	Shelter
Elm Street Stadium	No Address Provided	Waverly (V)	School
Guthrie Waverly	No Address Provided	Waverly (V)	Medical
Guthrie Waverly Eye Care	No Address Provided	Waverly (V)	Medical
Hazard	No Address Provided	Waverly (V)	Hazmat
Lincoln Street Elementary School	45 LINCOLN STREET	Waverly (V)	School
Muldoon Gardens	No Address Provided	Waverly (V)	Senior
Springview Apartments	Spring St	Waverly (V)	Senior
St. James Parochial School	No Address Provided	Waverly (V)	School
The Victorian Manor	No Address Provided	Waverly (V)	Senior
Tioga County DSS Satellite Clinic	80 William Donnelly Pkwy	Waverly (V)	Government
Verizon New York, Inc.	423 Park Ave	Waverly (V)	Telecommunication Facility



Name	Address	City	Type
Village of Waverly Justice Court	358 Broad St	Waverly (V)	Government
Waverly District Office	15 Frederick Street	Waverly (V)	Shelter
Waverly Head Start	No Address Provided	Waverly (V)	School
Waverly High School	1 FREDERICK STREET	Waverly (V)	School
Waverly High School	1 Frederick St.	Waverly (V)	Shelter
Waverly Main Station	94 William Donnelly Parkway, Waverly	Waverly (V)	Fire
Waverly Middle School	1 FREDERICK ST	Waverly (V)	School
Waverly Police Department	Broad St	Waverly (V)	Police
Waverly Public Works	81 Spring St	Waverly (V)	DPW
Waverly Public Works Garage	83 Spring St	Waverly (V)	DPW
Waverly Village Hall	32 Ithaca St	Waverly (V)	Municipal
Waverly Village Hall	32 Ithaca St	Waverly (V)	Polling
Waverly Village WW Pump Station	No Address Provided	Waverly (V)	Wastewater Pump
Well 1	No Address Provided	Waverly (V)	Well
Well 3	No Address Provided	Waverly (V)	Well
Well 4	No Address Provided	Waverly (V)	Well



## APPENDIX G. PLAN REVIEW TOOLS

This appendix includes worksheets to facilitate plan maintenance and review by the Tioga County Planning Committee.





**Plan Goal(s)/Objective(s) Addressed:**

Goal: \_\_\_\_\_

Objective: \_\_\_\_\_

**Indicator of Success** (e.g., losses avoided as a result of the acquisition program):

*In most cases, you will list losses avoided as the indicator. In cases where it is difficult to quantify the benefits in dollar amounts, you will use other indicators, such as the number of people who now know about mitigation or who are taking mitigation actions to reduce their vulnerability to hazards.*

\_\_\_\_\_  
\_\_\_\_\_

**Status** (Please check pertinent information and provide explanations for items with an asterisk. For completed or canceled projects, see Worksheet #2 — to complete a project evaluation):

**Project Status**

Project on schedule

Project completed

Project delayed\*

\*explain: \_\_\_\_\_

\_\_\_\_\_

Project canceled

**Project Cost Status**

Cost unchanged

Cost overrun\*

\*explain: \_\_\_\_\_

\_\_\_\_\_

Cost underrun\*

\*explain: \_\_\_\_\_

\_\_\_\_\_

**Summary of progress on project for this report:**

A. What was accomplished during this reporting period?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. What obstacles, problems, or delays did you encounter, if any?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. How was each problem resolved?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



<i>When gearing up for the plan evaluation, the planning team should reassess its composition and ask the following questions:</i>	YES	NO
Have there been local staffing changes that would warrant inviting different members to the planning team?		
<b>Comments/Proposed Action:</b>		
Are there organizations that have been invaluable to the planning process or to project implementation that should be represented on the planning team?		
<b>Comments/Proposed Action:</b>		
Are there any representatives of essential organizations who have not fully participated in the planning and implementation of actions? If so, can someone else from this organization commit to the planning team?		
<b>Comments/Proposed Action:</b>		
Are there procedures (e.g., signing of MOAs, commenting on submitted progress reports, distributing meeting minutes, etc.) that can be done more efficiently?		
<b>Comments/Proposed Action:</b>		
Are there ways to gain more diverse and widespread cooperation?		
<b>Comments/Proposed Action:</b>		
Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?		
<b>Comments/Proposed Action:</b>		

*If the planning team determines the answer to any of these questions is “yes,” some changes may be necessary.*

Project Name and Number: \_\_\_\_\_

Project Budget: \_\_\_\_\_

Project Description: \_\_\_\_\_

Associated Goal and Objective(s): \_\_\_\_\_

Indicator of Success (e.g., losses avoided): \_\_\_\_\_



Was the action implemented?  YES  NO



**Why not?**

Was there political support for the action?

Were enough funds available?

Were workloads equitably or realistically distributed?

Was new information discovered about the risks or community that made implementation difficult or no longer sensible?

Was the estimated time of implementation reasonable?

Were sufficient resources (for example staff and technical assistance) available?

**YES NO**



What were the results of the implemented action? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

	YES	NO
Were the outcomes as expected? If No, please explain:		
Did the results achieve the goal and objective(s)? Explain how:		
Was the action cost-effective? Explain how or how not:		
What were the losses avoided after having completed the project?		
If it was a structural project, how did it change the hazard profile?		
Additional comments or other outcomes:		

---

Date: \_\_\_\_\_

Prepared by: \_\_\_\_\_

Risk Assessment Steps	Questions	YES	NO	COMMENTS
<b>Identify hazards</b>	Are there new hazards that can affect your community?			
<b>Profile hazard events</b>	Are new historical records available?			
	Are additional maps or new hazard studies available?			
	Have chances of future events (along with their magnitude, extent, etc.) changed?			
	Have recent and future development in the community been checked for their effect on hazard areas?			
<b>Inventory assets</b>	Have inventories of existing structures in hazard areas been updated?			
	Is future land development accounted for in the inventories?			
	Are there any new special high-risk populations?			
<b>Estimate losses</b>	Have loss estimates been updated to account for recent changes?			

*If you answered "Yes" to any of the above questions, review your data and update your risk assessment information accordingly.*

# Worksheet #1

# Progress Report

# step 2

Page 1 of 3

Progress Report Period: October 1, 2003 to December 31, 2003  
(date) (date)

Project Title: Raging River Views Park Flood Acquisition Project Project ID#: HVMP-2003-01

Responsible Agency: Hazardville Department of Planning

Address: 1909 Burnham Way

City/County: Hazardville, Emergency

Contact Person: Eustoe Eudlid Title: Grants Administrator

Phone #(s): (555) 555-8478 email address: eeudlid@town.hazardville.oh

List Supporting Agencies and Contacts:

Hazardville Department of Housing: Noah Hudson (555) 555-8465

Hazardville Habitat for Humanity: Carter Goodman (555) 555-9432

Total Project Cost: \$360,000

Anticipated Cost Overrun/Underrun: \$N/A

Date of Project Approval: July 21, 2003 Start date of the project: November 15, 2003

Anticipated completion date: Summer 2005

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase):

Acquire and demolish 14 structures located at the Raging River Views Park. Work with Habitat for Humanity and the Department of Housing to construct new housing or rehabilitate existing housing for displaced low-income residents. The Department of Housing will also provide funds for temporary housing to displaced residents.

Milestones	Complete	Projected Date of Completion
Conduct surveys of ground and first-floor elevations	✓	
Obtain Notices of Intent by owners	✓	
Conduct structure appraisals	✓	
Send letters of offer to homeowners		1/31/04
Perform title work		3/30/04
Acquire structures		6/30/04
Begin construction of new housing or reconstruction of existing housing for relocated residents		6/30/04
Send payment for relocation to centers		9/30/04
Finalize contract for demolition		1/12/05
Demolish structures		4/26/05
Landscape open parcels		6/30/05



Plan Goal(s)/Objective(s) Addressed:

Goal: Minimize losses to existing and future structures within hazard areas.

Objective: Reduce potential damages to the manufactured home park in the floodplain.

Indicator of Success (e.g., losses avoided as a result of the acquisition program):

*In most cases, you will list losses avoided as the indicator. In cases where it is difficult to quantify the benefits in dollar amounts, you will use other indicators, such as the number of people who now know about mitigation or who are taking mitigation actions to reduce their vulnerability to hazards.*

Losses Avoided. After a major flood (100-year), the Department of Economic Development will assist the Planning Department in calculating the losses avoided.

Status (Please check pertinent information and provide explanations for items with an asterisk. For completed or canceled projects, see Worksheet #2 — to complete a project evaluation):

Project Status	Project Cost Status
<input checked="" type="checkbox"/> Project on schedule	<input checked="" type="checkbox"/> Cost unchanged
<input type="checkbox"/> Project completed	<input type="checkbox"/> Cost overrun*
<input type="checkbox"/> Project delayed*	*explain: _____
*explain: _____	_____
<input type="checkbox"/> Project canceled	<input type="checkbox"/> Cost underrun*
	*explain: _____
	_____

Summary of progress on project for this report:

A. What was accomplished during this reporting period?

The Department of Planning contacted the owners of the properties vulnerable to floods to determine their willingness to sell their properties. Of the 14 property owners contacted, 10 agreed to have their homes acquired. An appraiser contracted by the Department of Planning estimated the value of the 10 properties.

B. What obstacles, problems, or delays did you encounter, if any?

The owners of four properties refused to sell. There has been some limited neighborhood opposition to various suggestions for the community open space created by the acquisitions.

C. How was each problem resolved?

The Department of Planning has proposed to the residents a design charrette to develop alternatives for the open space that would be created, with the understanding that no permanent structures can be constructed on the open parcels after acquisition and demolition has been completed. Recreational activities will be limited to passive uses such as trails and bike paths.

**Next Steps:** What is/are the next step(s) to be accomplished over the next reporting period?

- 1. Send offer letters to leaseowners.
- 2. Do title work.
- 3. Work with the Department of Housing and Habitat for Humanity to identify existing housing for rehabilitation and stable vacant parcels to construct new housing for the displaced residents.

**Other comments:**

None

Adapted from the North Carolina HMGP Progress Report Form at [http://www.dem.dcc.state.nc.us/miligation/document\\_index.htm](http://www.dem.dcc.state.nc.us/miligation/document_index.htm).

## Worksheet #2 Evaluate Your Planning Team step **3**

<i>When gearing up for the plan evaluation, the planning team should reassess its composition and ask the following questions:</i>	YES	NO
Have there been local staffing changes that would warrant inviting different members to the planning team?		✓
Comments/Proposed Action: <b>NA</b>		
Are there organizations that have been invaluable to the planning process or to project implementation that should be represented on the planning team?	✓	
Comments/Proposed Action: <b>Hazardville Habitat for Humanity has been invaluable to assisting the relocation of former Ragging River Views Park residents. The organization should be invited to participate in THORR.</b>		
Are there any representatives of essential organizations who have not fully participated in the planning and implementation of actions? If so, can someone else from this organization commit to the planning team?	✓	
Comments/Proposed Action: <b>It is essential that the Department of Public Works be represented at each meeting because so many mitigation actions involve them. However, representatives from the department have been unable to attend meetings consistently since the development of the plan. THORR will work with the department's director to find consistent, active representation.</b>		
Are there procedures (e.g., signing of MOAs, commenting on submitted progress reports, distributing meeting minutes, etc.) that can be done more efficiently?	✓	
Comments/Proposed Action: <b>Again, the Department of Public Works has been unable to provide timely progress reports of its mitigation actions. Administrative duties and paperwork have fallen through the cracks since the department has been assigned numerous new duties to Hazardville's mitigation efforts. Perhaps the department, in partnership with THORR, should approach the Town Council for funding for more department staff.</b>		
Are there ways to gain more diverse and widespread cooperation?	✓	
Comments/Proposed Action: <b>THORR members believe that better publicity about mitigation actions will garner more interest from the public, affected/interested organizations, and state agencies.</b>		
Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?	✓	
Comments/Proposed Action: <b>THORR has learned about new PDM funding. The state has asked that local jurisdictions submit applications for brick and mortar projects and risk assessments studies.</b>		

*If the planning team determines the answer to any of these questions is "yes," some changes may be necessary.*



# Worksheet #3 Evaluate Your Project Results **step 3**

page 1 of 2

Project Name and Number:

**Raging River Views Park Flood Acquisition Project (HVMP-2003-01)**

Project Budget:

**\$360,000**

Project Description:

**Acquisition and demolition of 14 flood-prone structures**

Associated Goal and Objective(s):

**Goal: Minimize losses to existing and future structures within hazard areas**

**Objective: Reduce potential damages to the manufactured home park in the floodplain**

Indicator of Success (e.g., losses avoided):

**Losses avoided by acquisition and demolition of flood-prone structures**



Town of Hazardville Composite Loss Map developed previously during risk assessment (see FEMA 386-2).

Was the action implemented?  YES  NO

**IF NO**

Why not?

Was there political support for the action?

YES NO

Were enough funds available?

Were workloads equitably or realistically distributed?

Was new information discovered about the risks or community that made implementation difficult or no longer sensible?

Was the estimated time of implementation reasonable?

Were sufficient resources (for example staff and technical assistance) available?

**IF YES**

What were the results of the implemented action?

**Of the 14 proposed properties, 10 were acquired. The benefit-cost ratio is 2.19, based on project benefits of \$789,000 and costs of \$360,274. Benefits are based on the net present value of the avoided damages over the project life. Furthermore, about 40 people are no longer in the path of a potential flood, making emergency rescue operations in that area less likely and evacuation easier.**

	YES	NO
Were the outcomes as expected? If No, please explain:		<input checked="" type="checkbox"/>
The project originally set out to acquire 14 properties. Four of the 14 owners did not want to participate in the buyout program.		
Did the results achieve the goal and objective(s)? Explain how:	<input checked="" type="checkbox"/>	
Despite four properties still in harm's way, the objective has been largely met. See additional comments.		
Was the action cost-effective? Explain how or how not:	<input checked="" type="checkbox"/>	
The FEMA Limited Data module was used to perform the benefit-cost analysis. Data for the analysis was collected from historical flood data and used as benchmarks in the before mitigation section of the analysis. The damages after mitigation section was left blank, due to the properties being permanently acquired, and the economic risk removed completely. The analysis resulted in a benefit-cost ratio of 2.19, with benefits totaling \$789,000 for 10 properties.		
What were the losses avoided after having completed the project?		
Total avoided losses are \$789,000 over the lifetime of the project (estimated at 100 years).		
If it was a structural project, how did it change the hazard profile?		
N/A		
Additional comments or other outcomes:		
The Planning Department has agreed to work with the remaining four homeowners in evaluating other flood-proofing options.		

Date: October 12, 2005

Prepared by: Hazardville Department of Economic Development  
Hazardville Department of Planning

**Worksheet #4 Revisit Your Risk Assessment step 4**

Risk Assessment Steps	Questions	YES	NO	COMMENTS
Identify hazards	Are there new hazards that can affect your community?		✓	
Profile hazard events	Are new historical records available?		✓	
	Are additional maps or new hazard studies available?	✓		Recently completed maps and studies showing vulnerability of the new coastal development to erosion and tidal surge are available.
	Have chances of future events (along with their magnitude, extent, etc.) changed?		✓	
	Have recent and future development in the community been checked for their effect on hazard areas?	✓		
Inventory assets	Have inventories of existing structures in hazard areas been updated?	✓		
	Is future land development accounted for in the inventories?	✓		The Planning Department is preparing a coastal development plan to ensure that any future development is set back far enough to be outside the erosion zones and the coastal high hazard areas. Current and future road configurations will also be studied to ensure adequate evacuation routes before hurricane events.
	Are there any new special high-risk populations?	✓		Coastal residents and business owners.
Estimate losses	Have loss estimates been updated to account for recent changes?	✓		

*If you answered "Yes" to any of the above questions, review your data and update your risk assessment information accordingly.*





%	Percent
ACS	American Community Survey
APA	Approval Pending Adoption
BCA	Benefit Cost Analysis
BFE	Base Flood Elevation
CBS	Chemical Bulk Storage
CCE	Cornell University Cooperative Extension
CDBG	Community Development Block Grant
CDBG-DR	Community Development Block Grant Disaster Recovery
CDC	Centers for Disease Control
CDMS	Comprehensive Data Management System
CEMP	Comprehensive Emergency Management Program
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
COTS	Commercial Off the Shelf
CPC	Climate Prediction Center
CRRA	Community Risk and Resiliency Act
CRREL	Cold Regions Research and Engineering Laboratory
CRS	Community Rating System
CSC	Climate Smart Communities (NYSDEC)
CSD	Central School District
CWSRF	Clean Water State Revolving Fund
DCEA	Division of Code Enforcement and Administration
DFIRM	Digital Flood Insurance Rate Map
DHS	Department of Homeland Security
DIN	Dam Incident Notification
DMA 2000	Disaster Mitigation Act of 2000
DPW	Department of Public Works
DR	Major Disaster Declaration (FEMA)
EDP	Economic Development and Planning
EF	Enhanced Fujita Scale
EFC	New York State Environmental Facilities Corporation
EM	Emergency Declaration (FEMA)



EMS	Emergency Medical Services
EOC	Emergency Operation Center
EOP	Emergency Operation Plan
EQIP	Environmental Quality Incentives Program
ESF	Emergency Support Function
ESI	Emergency Stream Intervention
ESRI	Environmental Systems Research Institute
EWP	Emergency Watershed Protection Program
FD	Fire Department
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FMA	Flood Mitigation Assistance
FPA	Floodplain Administrator
FTA	Federal Transit Administration
FY	Fiscal Year
GCM	Global Climate Model
GIS	Geographic Information System
GML	General Municipal Law
HAZMAT	Hazardous Materials
HAZUS	Hazards U.S.
HAZUS-MH	Hazards U.S. Multi-Hazard
HMGP	Hazard Mitigation Grant Program
HMI	Human Machine Interfaces
HMP	Hazard Mitigation Plan
HSGP	Homeland Security Grant Program
HUC	Hydrologic Unit
IA	Individual Assistance
IDF	Intensity Duration Frequency
IRIS	Institute for Resource Information Sciences (Cornell University)
IT	Information Technology
LEPC	Local Emergency Planning Committee
LWRP	Local Waterfront Revitalization Program





MGD	Million Gallons per Day
Mi	Mile
MOSF	Major Oil Storage Facilities
Mph	Miles per Hour
MRC	Medical Reserve Corps
MRP	Mean Return Period
N/A	Not Applicable
NA	Not Available
NAC-AAA	National Avalanche Center – American Avalanche Association
NCEI	National Centers for Environmental Information
NESIS	Northeast Snowfall Impact Scale
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NHC	National Hurricane Center
NID	National Inventory of Dams
NIMS	National Incident Management System
NJAFM	New Jersey Association for Floodplain Management
NOAA	National Oceanic and Atmospheric Administration
NPDP	National Performance of Dams Program
NPL	National Priorities List
NRCC	Northeast Regional Climate Center
NRCS	Natural Resources Conservation Service
NRDC	Natural Resources Defense Council
NSIDC	National Snow and Ice Data Center
NSSL	National Severe Storms Library
NWS	National Weather Service
NY	New York
NYRCR	New York Rising Community Reconstruction
NYS	New York State
NYS DHSES	New York State Division of Homeland Security and Emergency Services
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation



NYSERDA	New York State Energy Research and Development Authority
NYSOEM	New York State Office of Emergency Management
OASCD	Owego Apalachin Central School District
OES	Office of Emergency Services
PA	Pennsylvania
PAD	Cornell Program on Applied Demographics
PBS	Petroleum Bulk Storage
PD	Police Department
PDM	Pre-Disaster Mitigation Program
PGA	Peak Ground Acceleration
Pop.	Population
RCV	Replacement Cost Value
RL	Repetitive Loss
RSI	Regional Snowfall Index
SBA	Small Business Administration
SDI	State Drought Index (NYSDEC)
SFHA	Special Flood Hazard Area
SHSP	State Homeland Security Program
SPC	Storm Prediction Center
SPDES	State Pollutant Discharge Elimination System
Sq. Mi.	Square mile
SRL	Severe Repetitive Loss
SSBG	Social Services Block Grant Program
SWCD	Soil and Water Conservation District
SWOO	Strengths, Weaknesses, Obstacles and Opportunities
TBD	To Be Determined
TMDL	Total Maximum Daily Load
TPA	Tourism Promotion Agency
UASI	Urban Areas Security Initiative
UHS	United Health Services
USACE	U.S. Army Corps of Engineers
USD	U.S. Dollar
USDA	U.S. Department of Agriculture
USDEA	U.S. Economic Development Administration



## *ACRONYMS AND ABBREVIATIONS*

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USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WMA	Watershed Management Area
WQIP	Water Quality Improvement Project
WWTP	Wastewater Treatment Plant



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