The purpose of the project was to estimate the extent of potential damage to structures at risk from various future flooding scenarios. An objective of this study was to develop a tool that planners and emergency managers can use for flood mitigation efforts.

Resources to learn more about managing flood risks include the following documents and web sites:

The Chemung 2007 Stream Processes—A Guide to Living in Harmony with Streams provides an excellent overview of managing streams to minimize flood risks and damage from flooding:
http://www.chemungcountyswcd.com/PDF/Soil%20&%20Water%20Guide.pdf

The NYS Division of Homeland Security and Emergency Services has a Hazard Mitigation Grant Program that provides funding for hazard mitigation programs:
http://www.dhses.ny.gov/oem/programs/hmgp.cfm

The Association of State Floodplain Managers provides tools and publications related to the goal of "No Adverse Impact" floodplain management:
http://www.floods.org/index.asp?menuID=460&firstlevelmenuID=187&siteID=1

The NYS Department of Environmental Conservation maintains a web page with links to useful information about dam safety and flood management at:
http://www.dec.ny.gov/lands/311.html

The National Weather Service provides a map with stream gauges located. One can click on individual gauges to receive current stream heights and flood stages. This site also has links to river forecasts and other information:
http://water.weather.gov/ahps/region.php?state=ny

For further information contact:

DEC Bureau of Flood Protection and Dam Safety
518-402-8185
Email: floodpln@gw.dec.state.ny.us
Web: http://www.dec.ny.gov/lands/311.html

Maps and data tables will be available at
http://www.dec.ny.gov/lands/24267.html
after October 1, 2012

002911-0015-01TTOMohawk River Watershed Based Floodplain Assessment Trifold 2.ai-10/10/15-GRA

Mohawk River Watershed Based Floodplain Assessment

New York State Department of Environmental Conservation

Ecology and Environment, Inc.

Schenectady Community College, September 2011, Hurricane Irene

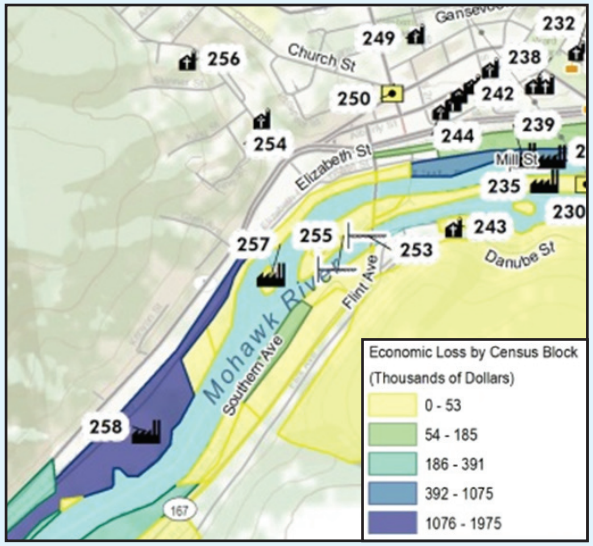
The Bureau of Flood Protection & Dam Safety, New York State Department of Environmental Conservation contracted with Ecology and Environment, Inc. to complete a floodplain assessment for a portion of the Mohawk River the City of Utica in Oneida County through Herkimer County, Montgomery County, Schenectady County. Tributaries to the Mohawk River, and the watersheds of these tributaries, were not included in the scope of work for this project. The project was supported by a grant from the Federal Emergency Management Agency (FEMA) and funded through the New York State Office of General Services (NYOGS).

The 2006 flood, caused an estimated $20M in damages to Lourdes Hospital, Binghamton. It forced the hospital to close for two weeks, and cut off health care services to the community at a time when the need was critical. When the area was inundated by record-high floodwaters in September 2011 from the remnants of Tropical Storm Lee, this time the hospital remained fully operational thanks to the $7M floodwall completed in the summer of 2010 with funding from FEMA.

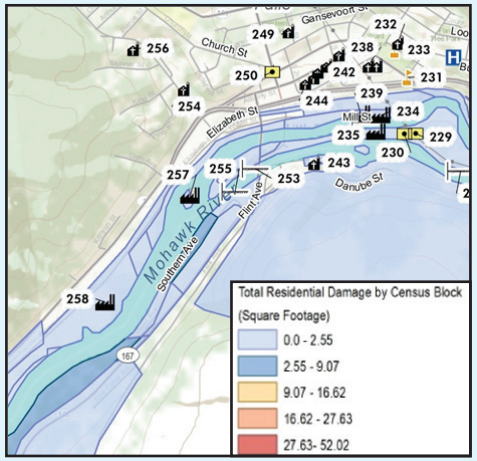
The 389 facilities[1] that were identified were ranked by risk of flooding and importance, and these values were multiplied to provide a "Hazard Score" for each facility. The study concluded that within the 100-year flood zone between the western boundary of Utica and the eastern boundary of Schenectady:

- 3,200,000 square feet of residential buildings could be lost from flooding;
- Total economic losses of $310 million dollars could occur;
- Flood waters could create 50,000 tons of debris from structures;
- 7,800 jobs from just the major employers in the region could be disrupted; and
- 5,700 people could require shelter during a flood.

[1] Facilities that are included were those available in region-wide data bases. Linear structures like railroads and highways were not included unless they were specifically listed in databases.



Not all these impacts are likely to occur in a single flood, but the risk of these impacts accumulates over time because flooding could occur along this whole corridor. Knowing the scale of the risk, flood managers and emergency preparedness offices can focus on response planning, planners, zoning boards, and officials can consider the control of construction in these zones, and owners and agencies can consider mitigation to prevent or minimize risks.

Mitigation can include:

- Land use practices to reduce flooding, such as:
  - The creation or expansion of detention ponds to retain flood waters and increase infiltration to ground water;
  - Creation of grassy swales and diversions to capture and retain runoff from paved surfaces;
  - Rain gardens to retain and utilize rooftop drainage;
- Alteration of structures to minimize damage, including:
  - Construction of building floodwall systems
  - Removal of sensitive equipment from first floors
  - Raising of buildings atop new foundations
- Purchase of flood insurance.