




Residents Working Against Huron River Flooding

March 31, 2022
Flood Level Change Meeting



Introductions

Amber S. Bismack - Director, Co-Founder

Diane Henry - Assistant Director, Co-Founder

Andrea Claassen - Secretary

Jeff Henry - Website Developer

Kerry Adams - Committee Chair of Upstream Water Inputs Study

Maureen Molloy & Stephanie Hreha-Phillips - Committee Chairs of FEMA Grant Applications



Thriving Earth Exchange

AGU's Thriving Earth Exchange advances community solutions. We help scientists, community leaders and sponsors work together to solve local challenges related to natural resources, climate change and natural hazards.

Introductions cont'd

Ms. Claire Zarakas
Community Science Fellow

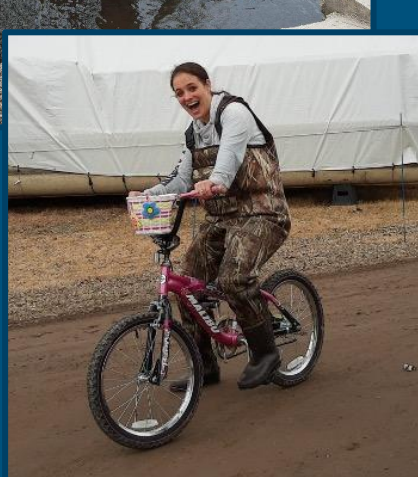
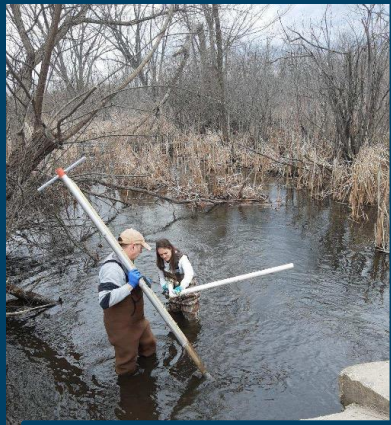
Dr. Wendy Robertson
Associate Professor of Hydrology @ CMU

Mr. Scott Dierks
Senior Water Resources Engineer @ GEI
Consultants

Dr. Rod Lammers
Assistant Professor of Engineering (Flood
Management; Environmental Modeling) @ CMU



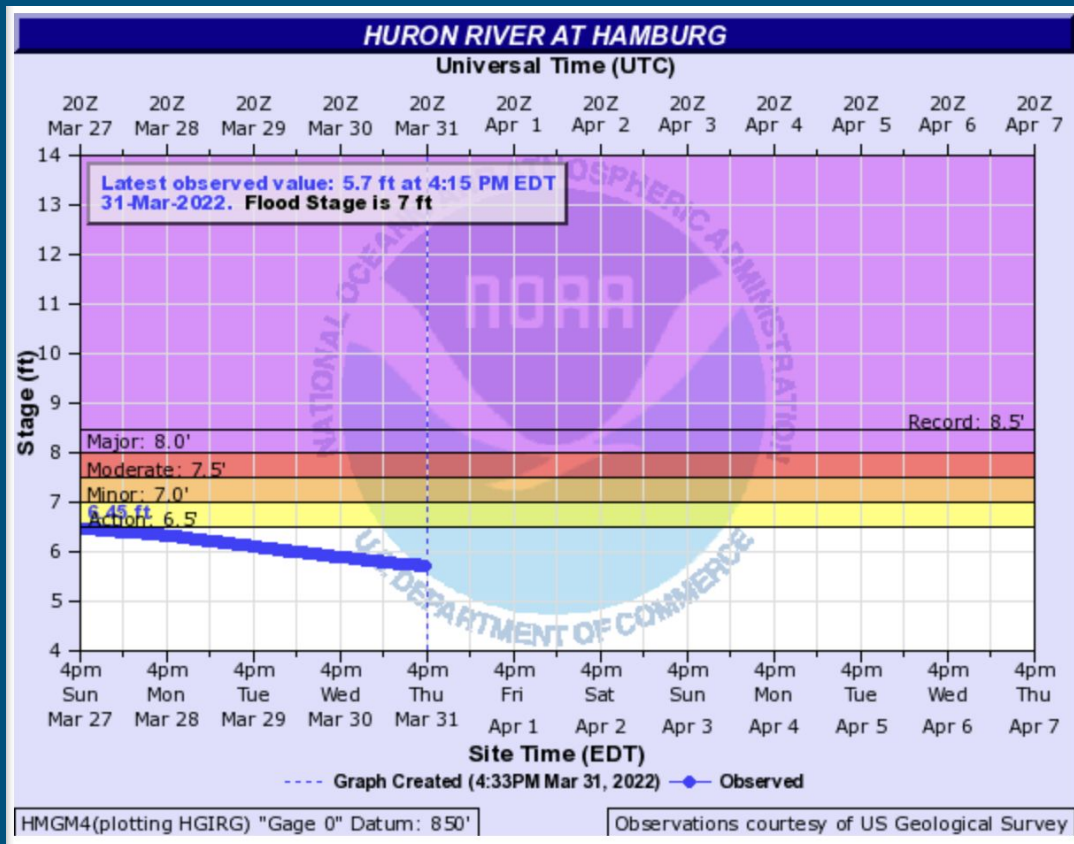
Transducers installed for data collection in 2022!



Flood Level Changed @ Huron River Gauge at Hamburg Road Bridge

- During Nov. 2, 2021 Hamburg Township Board of Trustees meeting:
 - Chief Duffany introduced a new, modified version of the Flood Response Action Plan (FRAP)
 - “...what was happening on the river and around the lakes wasn’t really lining up to what should have been happening as far as township action so myself and Supervisor Hohl met with the NOAA rep or spoke with him and we went through, so that’s reflected in Article 5 and then our response is in Article 6 to more accurately reflect what’s happening in real life and what actions we need to take. The previous one didn’t seem to be accurate” (Chief Duffany, Nov. 11 Township Board of Trustees meeting, 24:20-25:08 on video:
<https://livestream.com/accounts/11401930/events/9900540/videos/22705960>

Flood Stage Designation



National Weather Service (NWS) Flood Level Categories

Action Stage - the stage which, when reached by a rising stream, represents the level where the NWS or a partner/user needs to take some type of mitigation action in preparation for possible significant hydrologic activity. The type of action taken varies for each gage location. Gage data should be closely monitored by any affected people if the stage is above action stage.

Minor Flooding is defined to have minimal or no property damage, but possibly some public threat. A **FLOOD ADVISORY** product is issued to advise the public of flood events that are expected not to exceed the minor flood category. Examples of conditions that would be considered minor flooding include:

- water over banks and in yards
- no building flooded, but some water may be under buildings built on stilts (elevated)
- personal property in low lying areas needs to be moved or it will get wet
- water overtopping roads, but not very deep or fast flowing
- water in campgrounds or on bike paths
- inconvenience or nuisance flooding
- small part of the airstrip flooded, and aircraft can still land
- one or two homes in the lowest parts of town may be cut off or get a little water in the crawl spaces or homes themselves if they are not elevated.

In remote areas with few specific impacts, floods with 5-10 year recurrence interval would be assumed to be causing minor flooding on streams in the area.

<https://www.weather.gov/aprfc/terminology>

NOAA National Severe Storms Laboratory Flood Level Categories

River Flooding. Once a river reaches flood stage, the flood severity categories used by the River Forecast Centers include minor flooding, moderate flooding, and major flooding. Each category has a definition based on property damage and public threat. This applies to large scale river flooding:

- **Minor Flooding**—minimal or no property damage, but possibly some public threat or inconvenience
- **Moderate Flooding**—some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations are necessary.
- **Major Flooding**—extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations.

Hamburg Township Flood Response Action Plan (FRAP)

Gage Height	Category	Description of Flood Impacts	Responses
Up to 6.50 Feet (856.50 feet above sea level)	Bankfull	(None)	<ul style="list-style-type: none"> • Routine monitoring of NWS/USGS forecasts.
6.50 Feet (856.50 feet above sea level)	Action Stage	<ul style="list-style-type: none"> - Water begins to spill over bank - Boat docks begin to become submerged. 	<ul style="list-style-type: none"> • NWS begins issuing flood forecasts. • Daily monitoring of NWS/USGS reports, data and forecasts. • Fire and Police Departments begin physical monitoring of affected areas.
7.00 Feet (857.00 feet above sea level)	Minor flood Stage	<p><u>Damage Level:</u> Affected Damage.</p> <ul style="list-style-type: none"> - Yards of homes along the Huron River, Little Ore Lake and Ore Lake become flooded. 	<ul style="list-style-type: none"> • NWS issues Flood Warning over local media (radio, TV, newspapers) when actual gage height is 7.00 feet. • Continue monitoring of NWS/USGS reports, data or forecasts. • After reaching 7.00 feet with a forecast of 7.50 feet the Township Supervisor convenes an emergency meeting of the Township Board of Trustees and requests a resolution pursuant to MCL 324.80146 (“No Wake” restrictions for affected areas). • Fire and Police Departments continue physical monitoring of affected areas.

Hamburg Township Flood Response Action Plan (FRAP)

Gage Height	Category	Description of Flood Impacts	Responses
Up to 6.50 Feet (856.50 feet above sea level)	Bankfull	(None)	<ul style="list-style-type: none"> • Routine monitoring of NWS/USGS forecasts.
6.50 Feet (856.50 feet above sea level)	Action Stage	<ul style="list-style-type: none"> - Water begins to spill over bank - Boat docks begin to become submerged. 	<ul style="list-style-type: none"> • NWS begins issuing flood forecasts. • Daily monitoring of NWS/USGS reports, data and forecasts. • Fire and Police Departments begin physical monitoring of affected areas.
7.00 Feet (857.00 feet above sea level)	Minor flood Stage	<p><u>Damage Level:</u> Affected Damage.</p> <ul style="list-style-type: none"> - Yards of homes along the Huron River, Little Ore Lake and Ore Lake become flooded. 	<ul style="list-style-type: none"> • NWS issues Flood Warning over local media (radio, TV, newspapers) when actual gage height is 7.00 feet. • Continue monitoring of NWS/USGS reports, data or forecasts. • After reaching 7.00 feet with a forecast of 7.50 feet the Township Supervisor convenes an emergency meeting of the Township Board of Trustees and requests a resolution pursuant to MCL 324.80146 (“No Wake” restrictions for affected areas). • Fire and Police Departments continue physical monitoring of affected areas.

Hamburg Township Flood Response Action Plan (FRAP)

Gage Height	Category	Description of Flood Impacts	Responses
Up to 6.50 Feet (856.50 feet above sea level)	Bankfull	(None)	<ul style="list-style-type: none"> • Routine monitoring of NWS/USGS forecasts.
6.50 Feet (856.50 feet above sea level)	Action Stage	<ul style="list-style-type: none"> - Water begins to spill over bank - Boat docks begin to become submerged. 	<ul style="list-style-type: none"> • NWS begins issuing flood forecasts. • Daily monitoring of NWS/USGS reports, data and forecasts. • Fire and Police Departments begin physical monitoring of affected areas.
7.00 Feet (857.00 feet above sea level)	Minor flood Stage	<p><u>Damage Level:</u> Affected Damage.</p> <ul style="list-style-type: none"> - Yards of homes along the Huron River, Little Ore Lake and Ore Lake become flooded. 	<ul style="list-style-type: none"> • NWS issues Flood Warning over local media (radio, TV, newspapers) when actual gage height is 7.00 feet. • Continue monitoring of NWS/USGS reports, data or forecasts. • After reaching 7.00 feet with a forecast of 7.50 feet the Township Supervisor convenes an emergency meeting of the Township Board of Trustees and requests a resolution pursuant to MCL 324.80146 (“No Wake” restrictions for affected areas). • Fire and Police Departments continue physical monitoring of affected areas.

Hamburg Township Flood Response Action Plan (FRAP)

<p>7.50 Feet (857.50 feet above sea level)</p>	<p>Moderate Flooding</p>	<p><u>Damage Level:</u> Transitions From Affected Damage to Minor Damage.</p> <ul style="list-style-type: none">- Water reaching foundations and crawl spaces of many homes along the Huron River, Little Ore Lake and Ore Lake as homes are surrounded by flood water-Roads in flood prone areas are being covered by flood waters	<ul style="list-style-type: none">• NWS continues issuing Flood Warnings over local media (radio, TV, newspapers) cross-indexed to precipitation forecasts and NOAA Advanced Hydrologic Prediction Service modeling.• Township Supervisor closely monitors NWS flooding forecast and has daily consultations with Director of Public Safety and Public Safety command officers (multiple times daily if necessary)• Fire and Police Departments continue physical monitoring of affected areas and conduct needs assessment based upon conditions and forecast.• Township Supervisor formally requests “No Wake” restrictions from Livingston County Sheriff and/or Livingston County Emergency Management Coordinator.• If a “No Wake” order is issued, the Action Plan outlined in Article 12 of the FRAP is implemented.• Police Department begins enforcing “No Wake” restrictions in affected areas.• Shut off utilities such as grinder pumps, electrical service and natural gas service as needed.
---	--------------------------	--	--

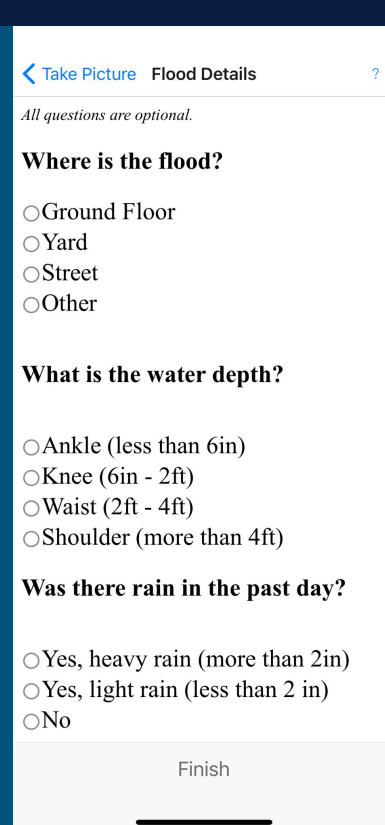
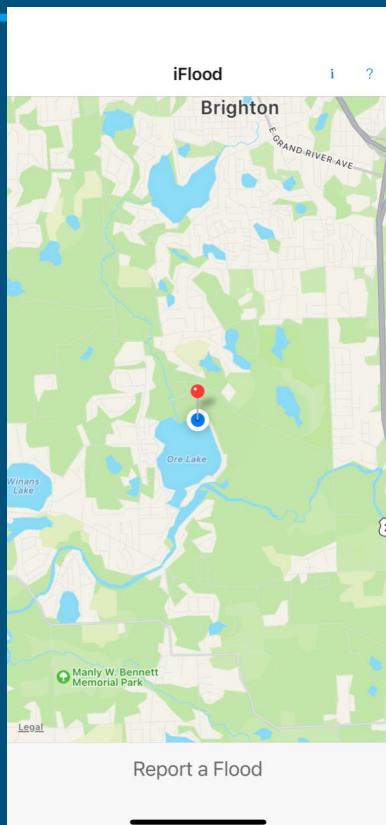
Flood Stage Designation: Why should you care?

- Support for homeowners is based on the river level at the Hamburg Road Bridge
- Changes will affect when the NWS issues flood watches/warnings
- Will affect No Wake on Ore Lake and Huron River

iFlood App



WOODS HOLE
OCEANOGRAPHIC
INSTITUTION®



Questions?
