Withlacoochee River Flood-Inundation Mapper and Other Flood Tools

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U.S. Department of the Interior
U.S. Geological Survey

The beginning of Georgia flood-inundation mapping

Albany

1994 Tropical

Storm Alberto

Flint River and downtown Albany, Ga. - 7/9/94 by T.W. Hale

USGS

Flood-inundation mapping

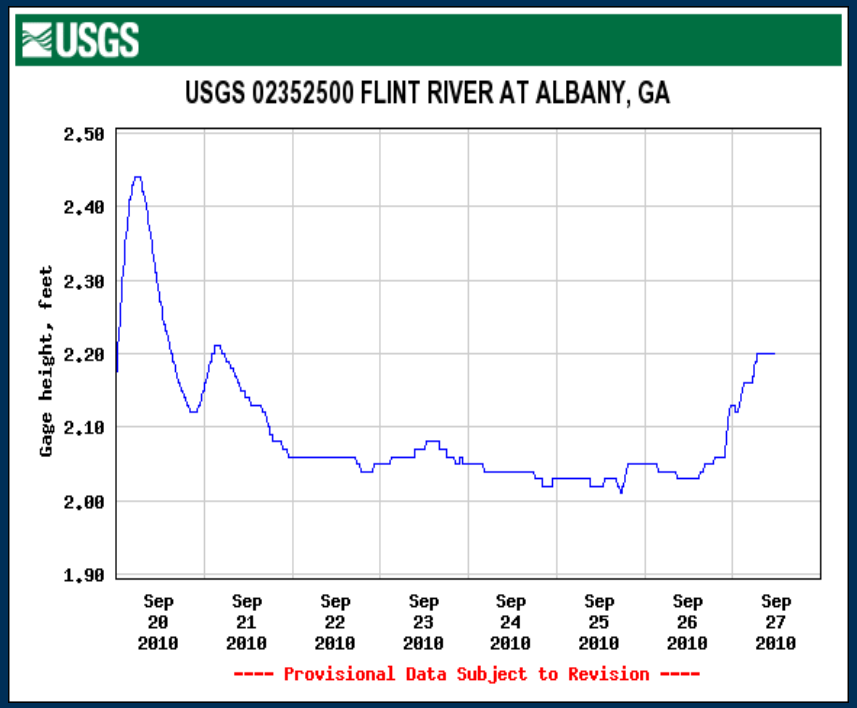
Approach

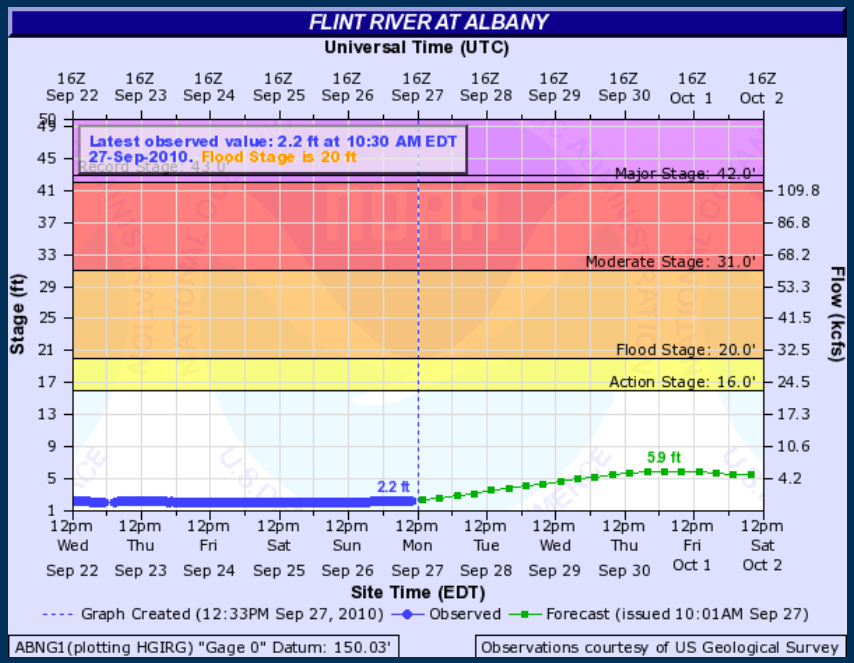
Flood products focus on:

- Real-time USGS streamgage data
- NWS forecasts

Difficult for someone to relate a “point” data value to their front step a block or a mile away from the gage

Have to rely on memory of past events to relate personal risk





Flood-inundation mapping

Requirements

USGS streamgage

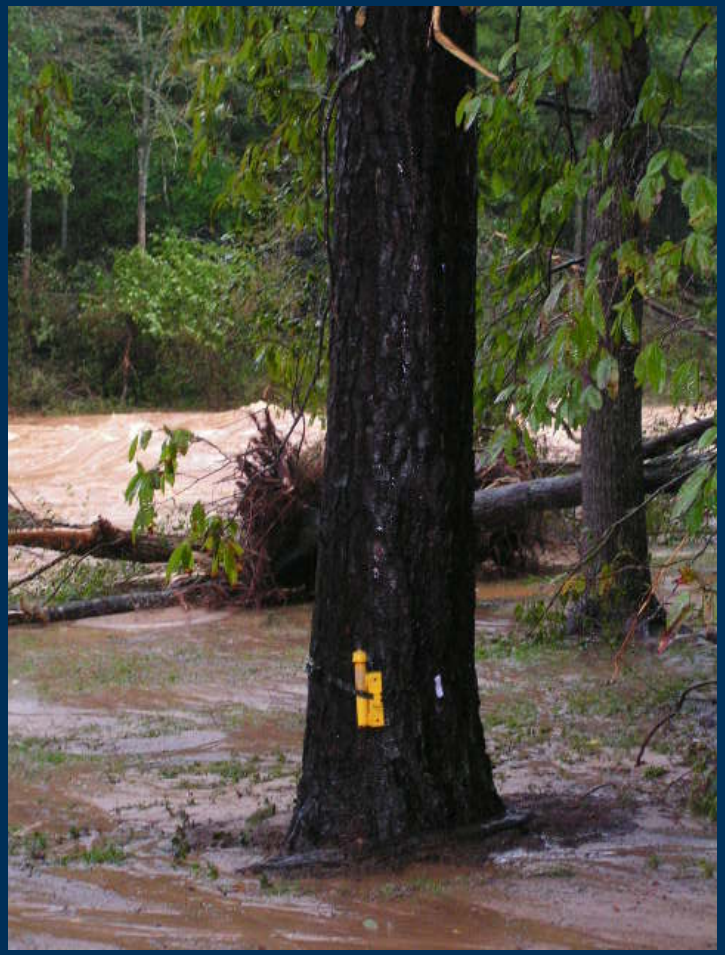
NWS flood forecast point

High-accuracy elevation data

Hydrologic model

Intensive quality assurance process

Outreach



Links to the Mapper

Original flood-inundation mapper:

http://wim.usgs.gov/FIMI

Direct link to Withlacoochee River site:

http://wimcloud.usgs.gov/apps/FIM/FloodInundationMapper.html?siteno=023177483

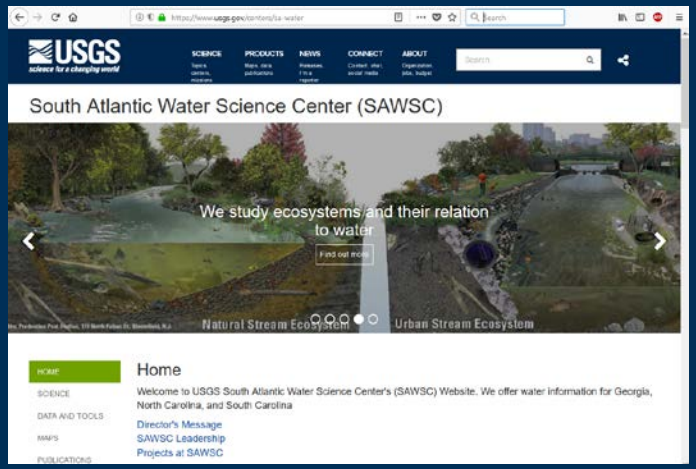
New mobile friendly mapper:

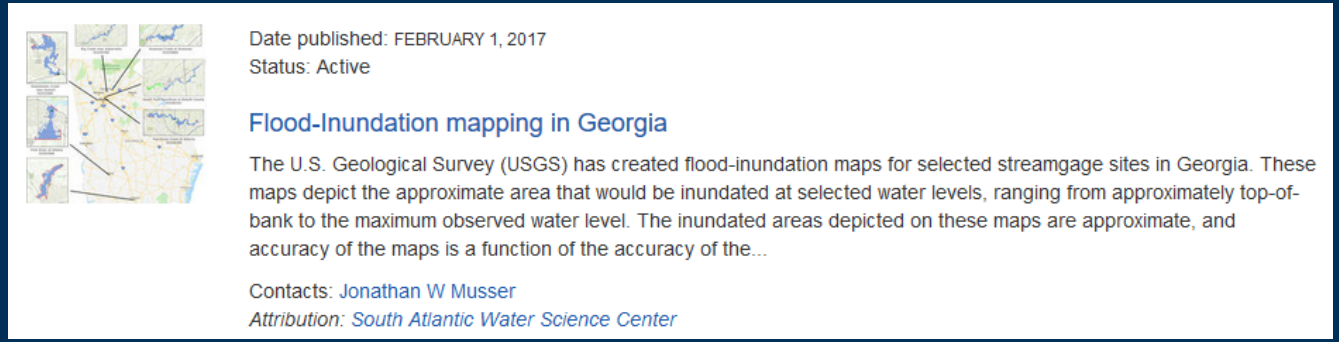
https://fim.wim.usgs.gov/fim

USGS

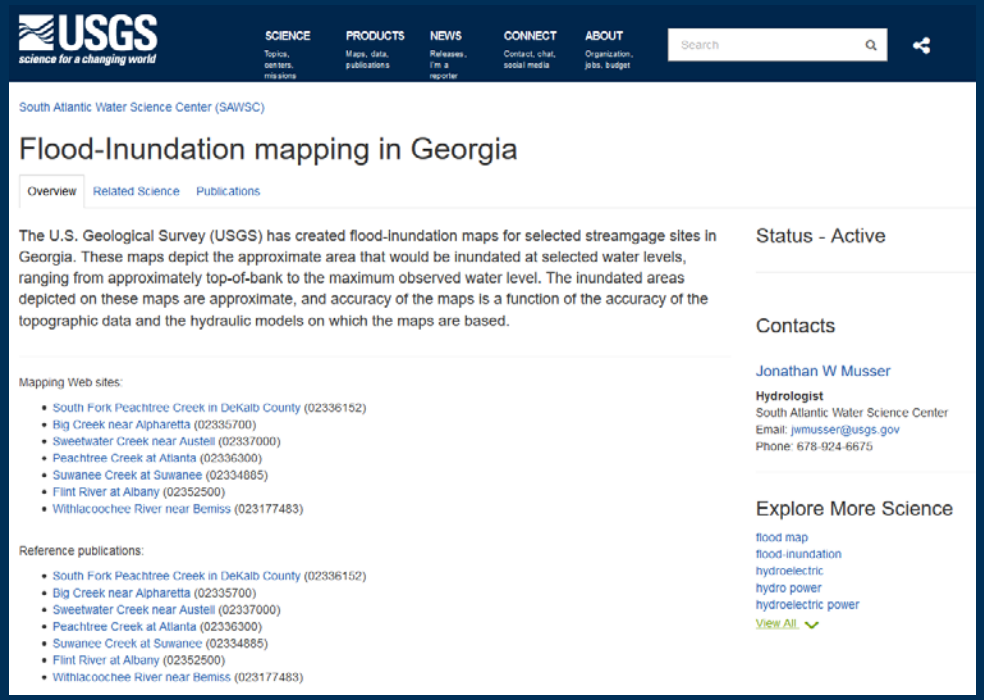
Links to the Mapper

https://www.usgs.gov/water/southatlantic -> Science -> Floods, Droughts, and Hurricanes -> Flood-Inundation mapping in Georgia





FIM Locations in Georgia



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South Atlantic Water Science Center (SAWSC)

Flood-Inundation mapping in Georgia

Overview | Related Science | Publications

The U.S. Geological Survey (USGS) has created flood-inundation maps for selected streamgage sites in Georgia. These maps depict the approximate area that would be inundated at selected water levels, ranging from approximately top-of-bank to the maximum observed water level. The inundated areas depicted on these maps are approximate, and accuracy of the maps is a function of the accuracy of the topographic data and the hydraulic models on which the maps are based.

Mapping Web sites:

- South Fork Peachtree Creek in DeKalb County (02336152)
- Big Creek near Alpharetta (02335700)
- Sweetwater Creek near Austell (02337000)
- Peachtree Creek at Atlanta (02336300)
- Suwanee Creek at Suwanee (02334885)
- Flint River at Albany (02352500)
- Withlacoochee River near Bemiss (023177483)

Reference publications:

- South Fork Peachtree Creek in DeKalb County (02336152)
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- Flint River at Albany (02352500)
- Withlacoochee River near Bemiss (023177483)

Status - Active

Contacts

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South Atlantic Water Science Center
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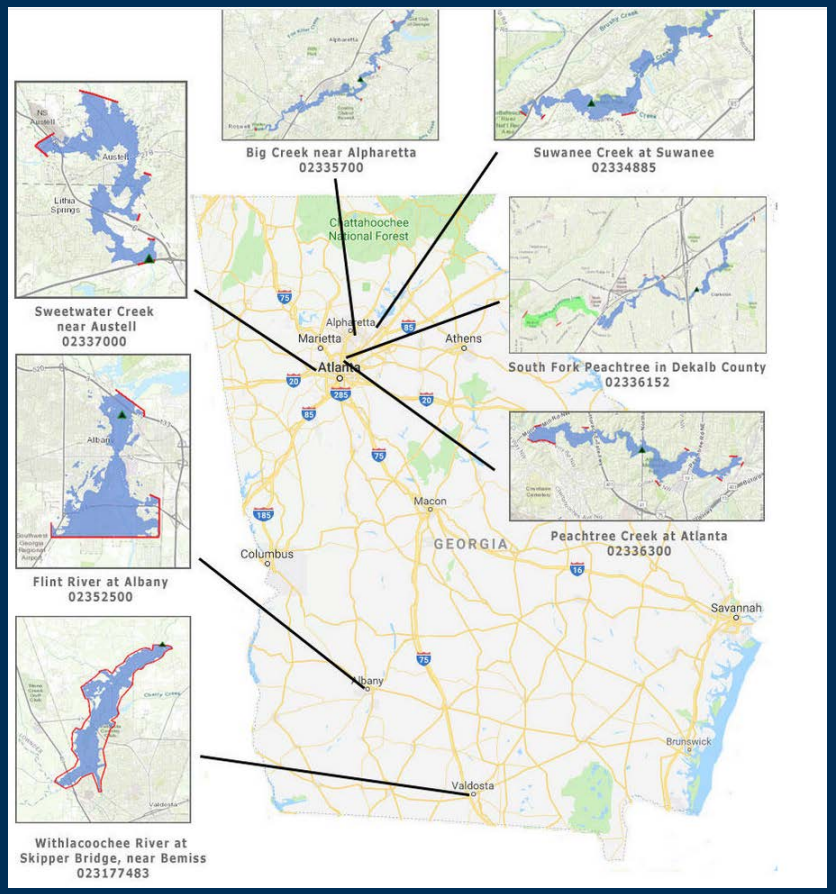
Phone: 678-924-6675

Explore More Science

flood map
flood-inundation
hydroelectric
hydro power
hydroelectric power
View All



USGS https://www.usgs.gov/centers/sa-water/science/flood-inundation-mapping-georgia-0

Mapper Anatomy

Full Screen View

Basemaps

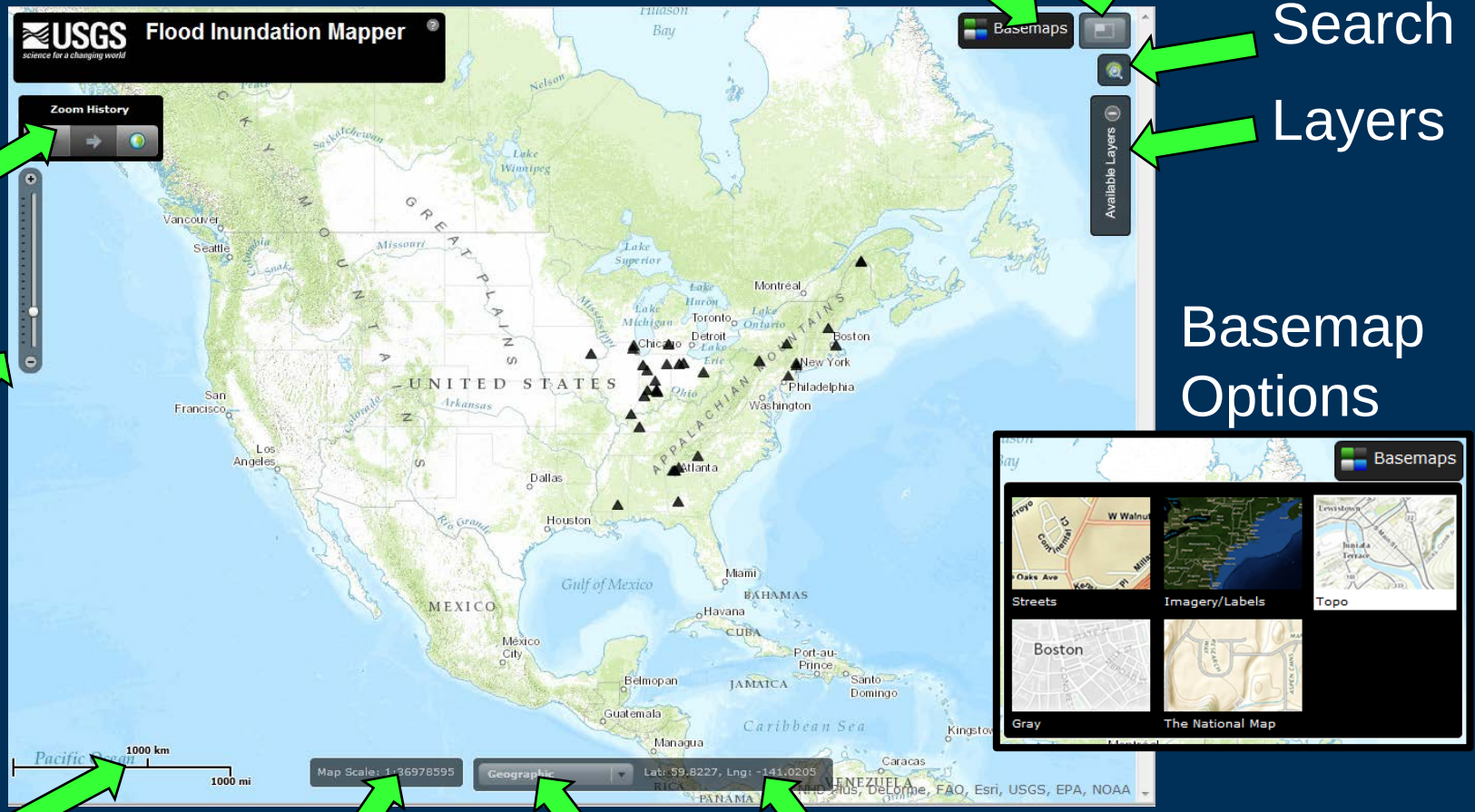
Search

Layers

Zoom history

Zoom slider

Basemap Options

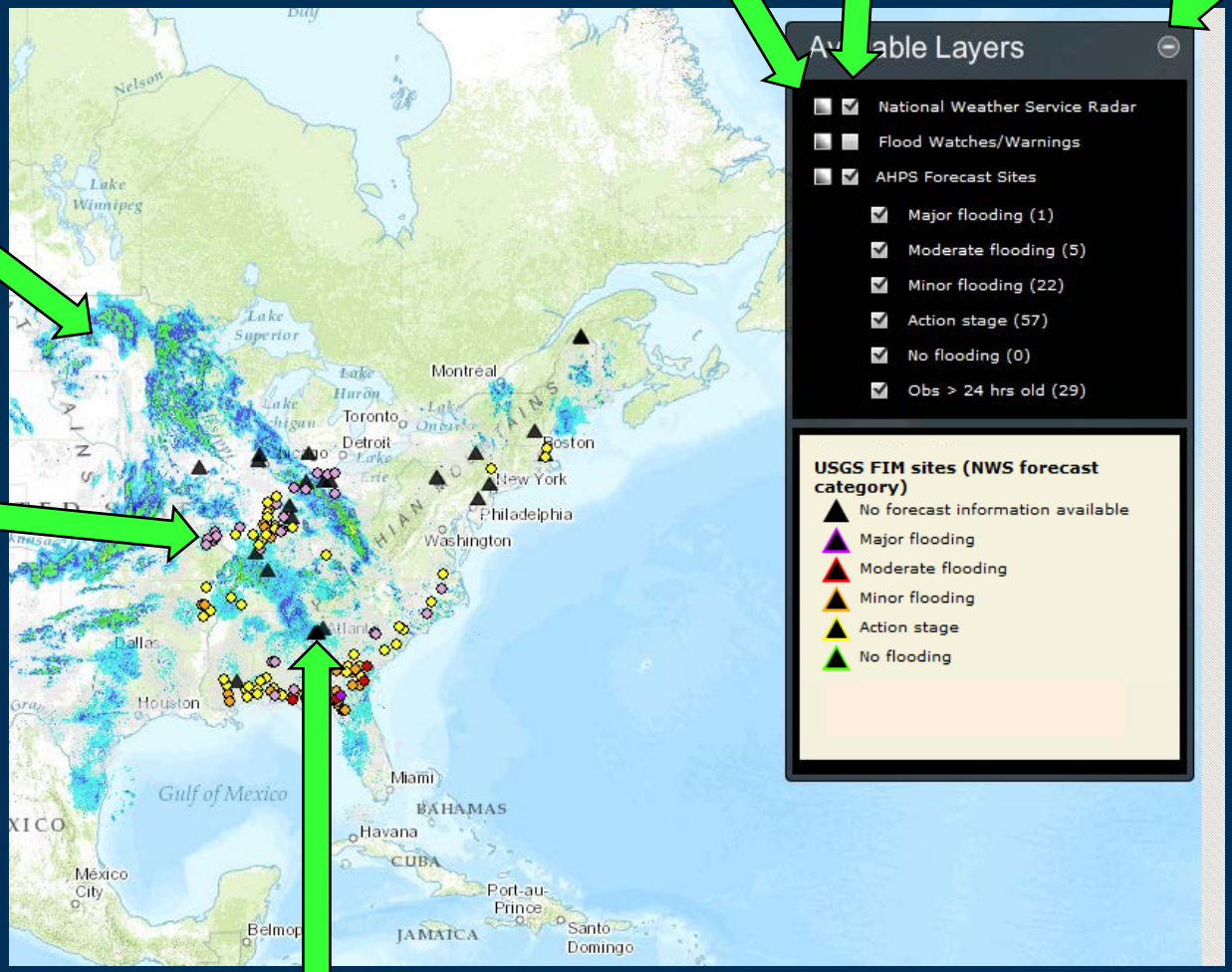


Scale bar

Scale text

Projection of cursor location (Lat/Long or USNG)

Mapper Anatomy



Opacity

On/off

Collapse button

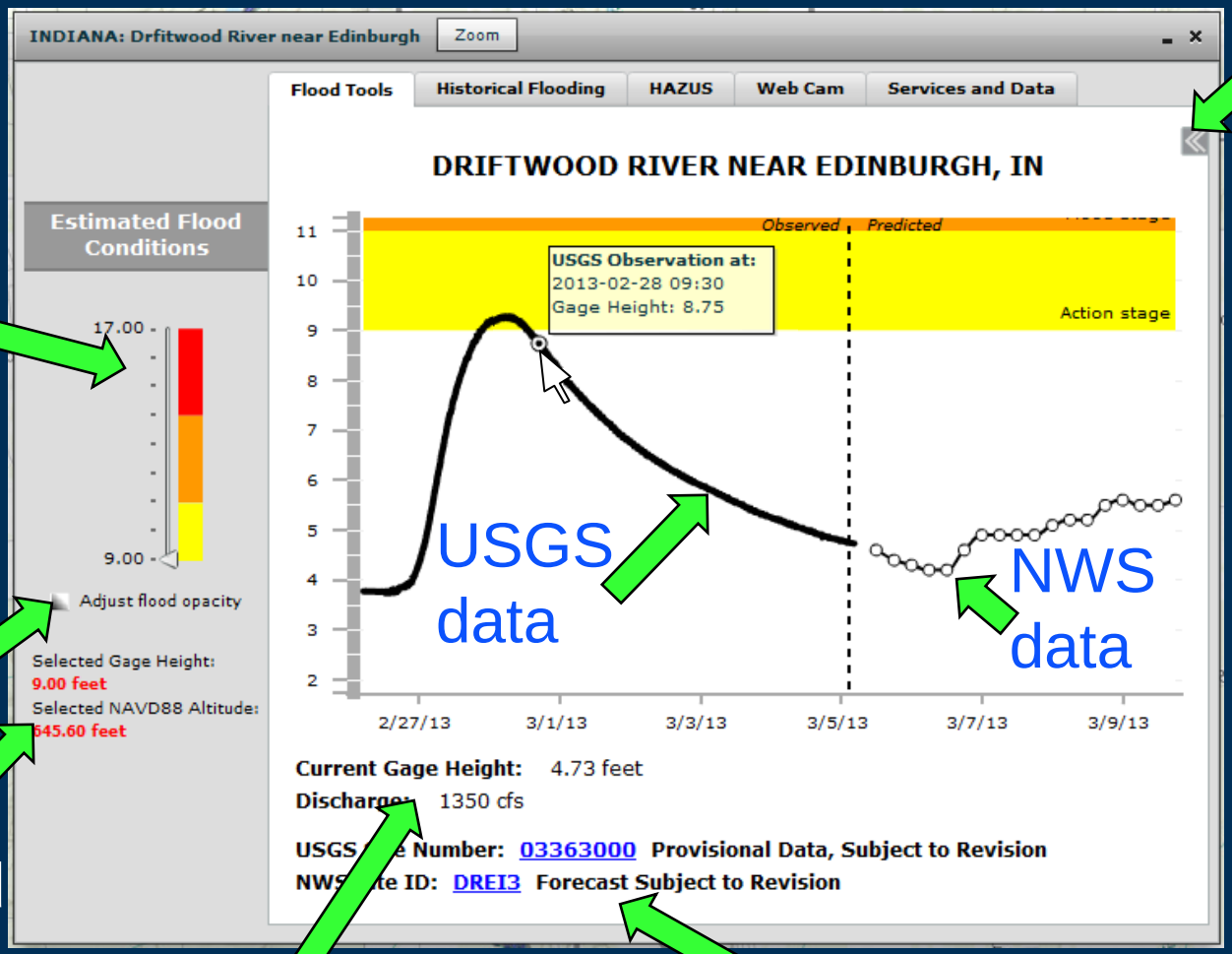
Radar

AHPS sites

FIM locations

USGS

Flood Tools Anatomy



Collapse tools

Flood slider

Opacity

Map displayed

USGS data

NWS data

Current gage readings

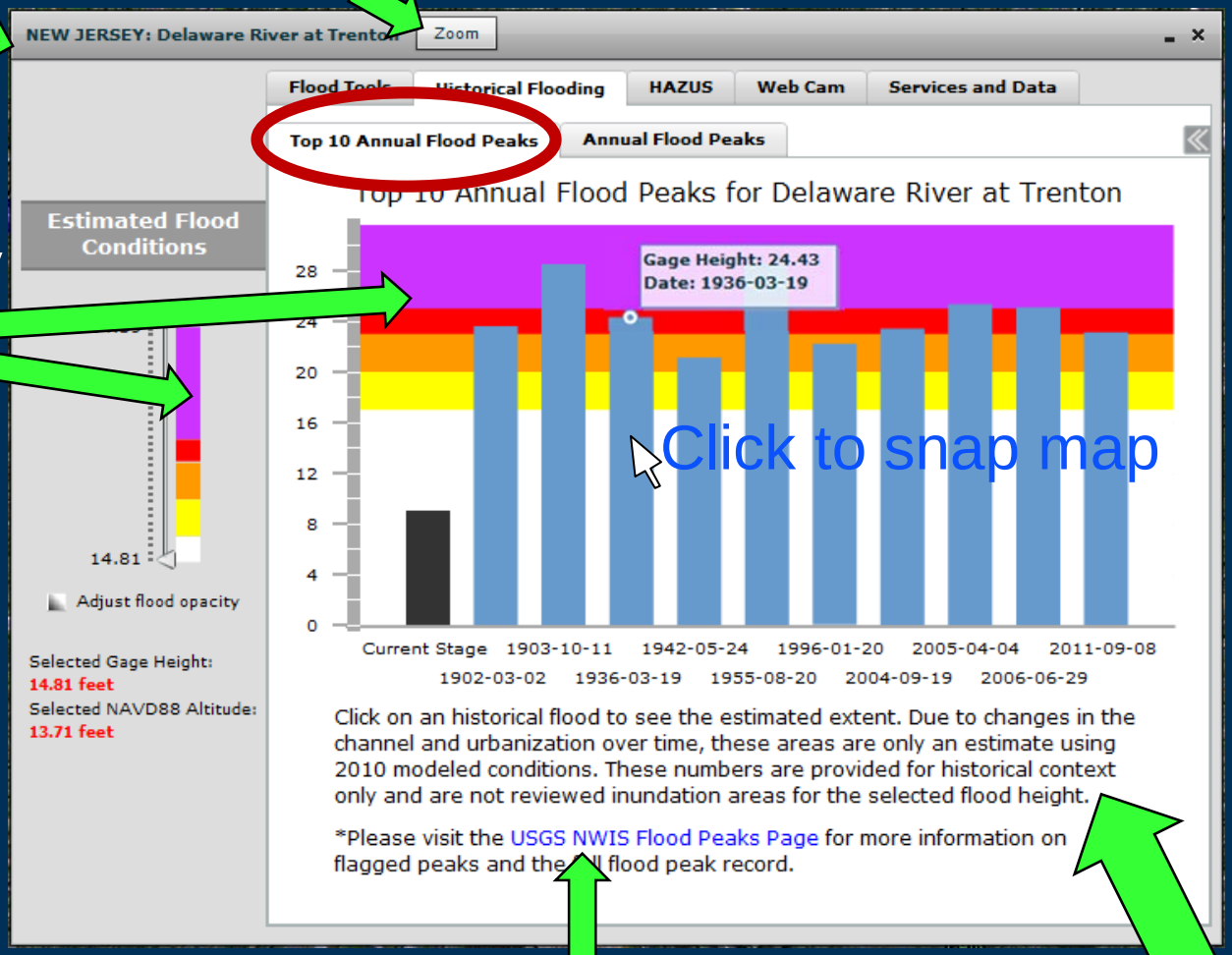
Links to NWIS/AHPS

Historical Flooding Anatomy

Site Name

"Zoom To"

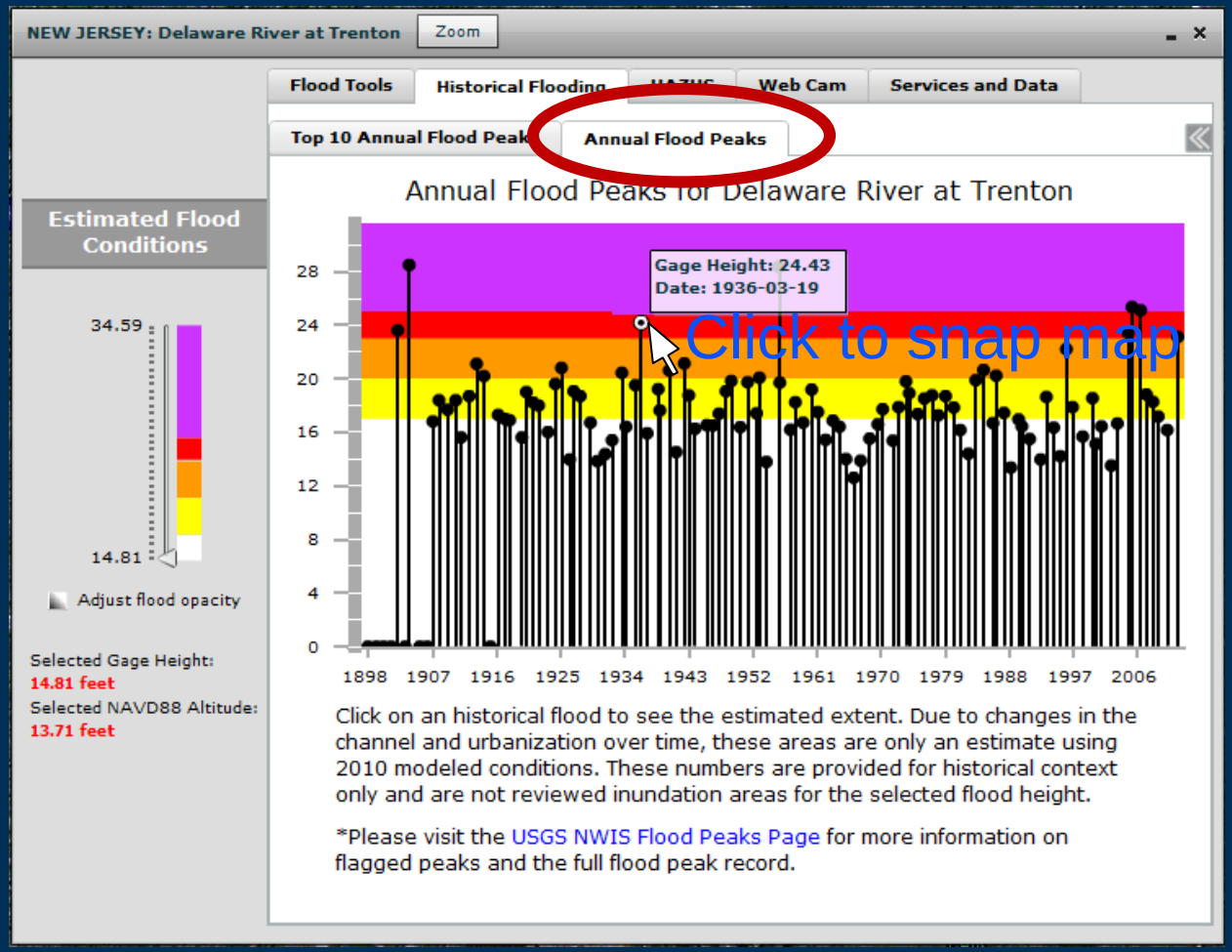
Flood category colors



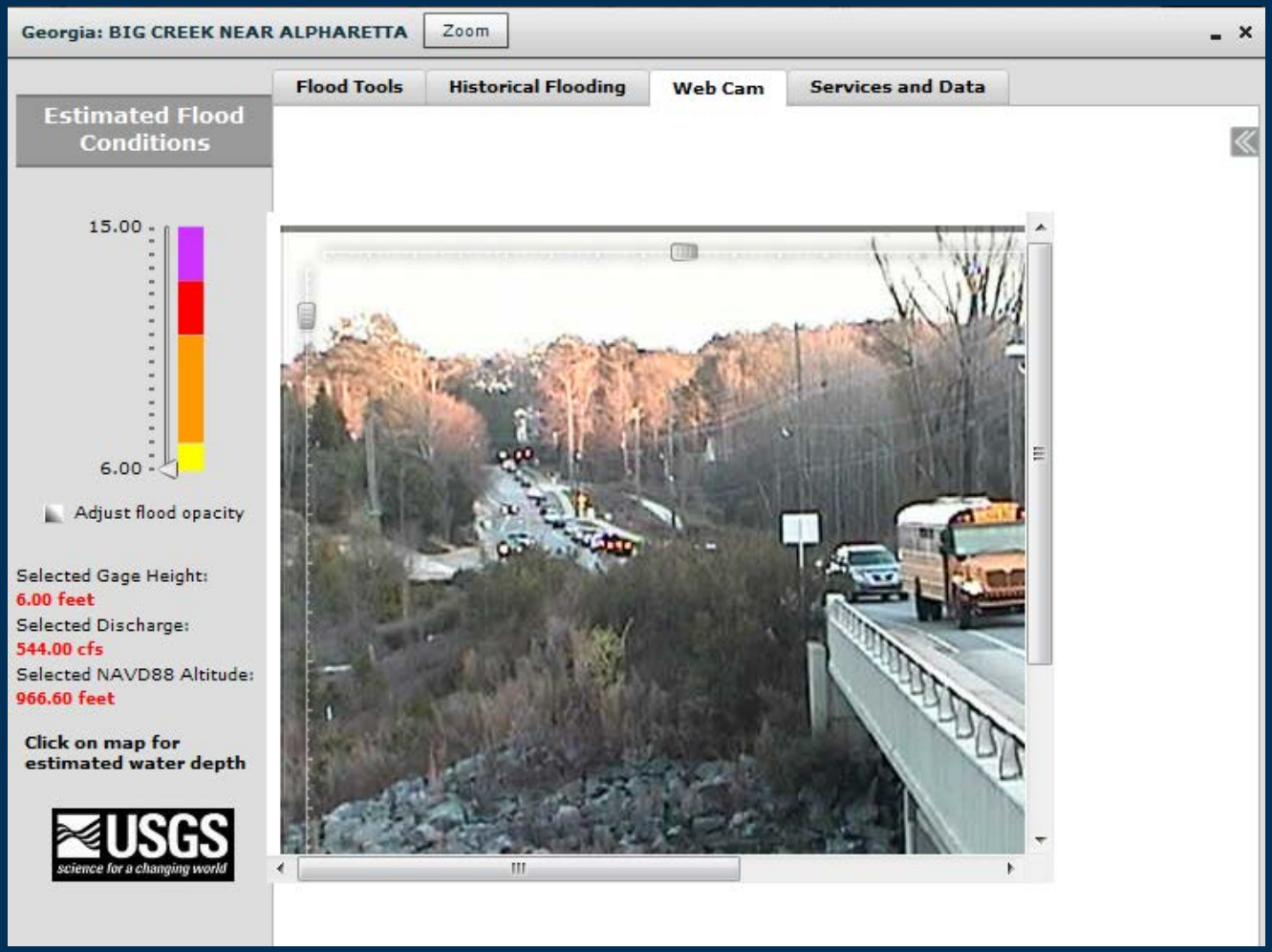
NWIS link

More disclaimer!

Historical Flooding – Annual Peaks



Web Cam


Georgia: BIG CREEK NEAR ALPHARETTA
Zoom
Flood Tools
Historical Flooding
Web Cam
Services and Data
Estimated Flood Conditions
15.00
6.00
Adjust flood opacity
Selected Gage Height:
6.00 feet
Selected Discharge:
544.00 cfs
Selected NAVD88 Altitude:
966.60 feet
Click on map for estimated water depth
USGS
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USGS

Services and Data

Special WaterAlert link

Author/ reviewers

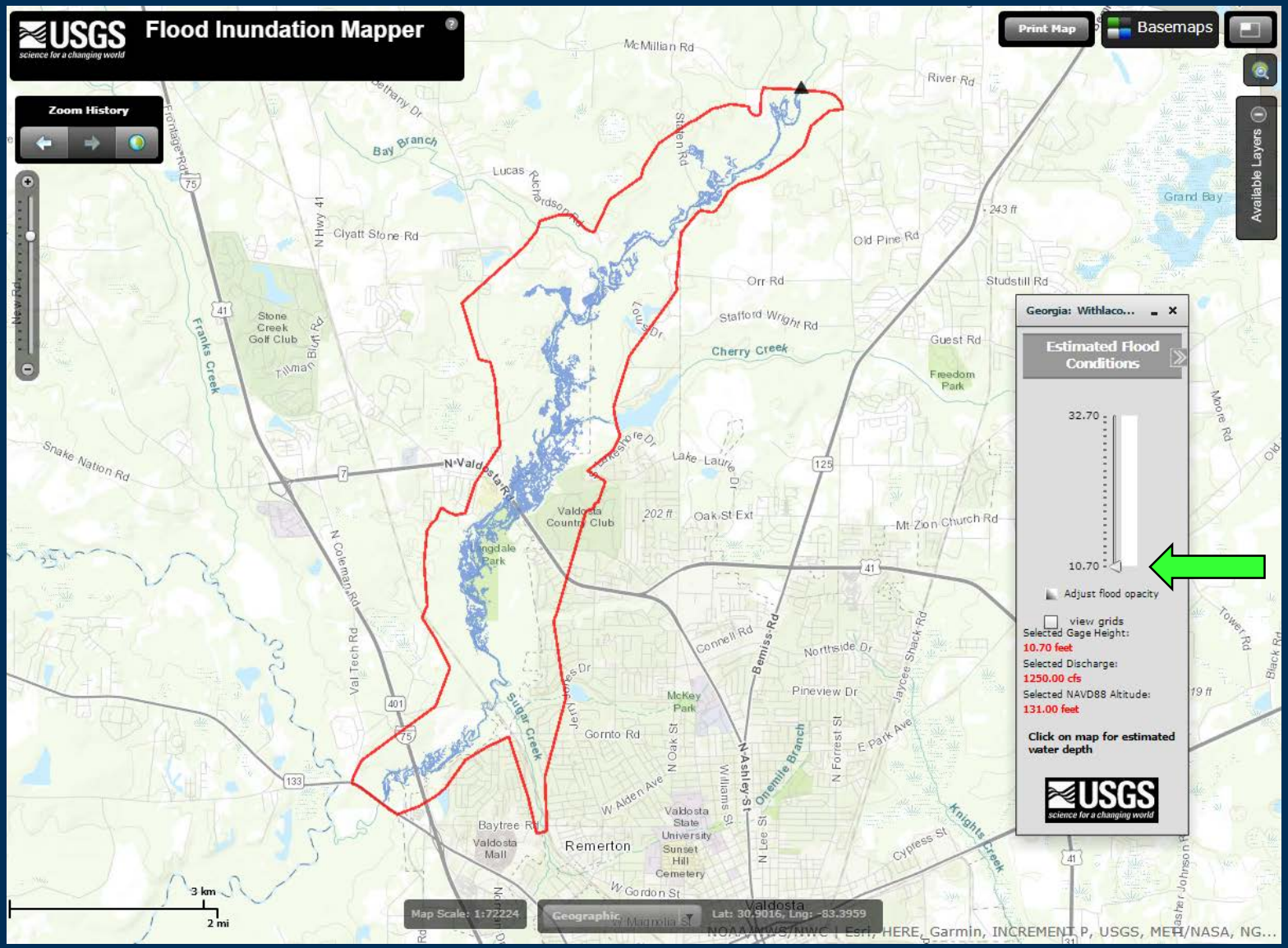
Link to get report

Logos

Link to data download site

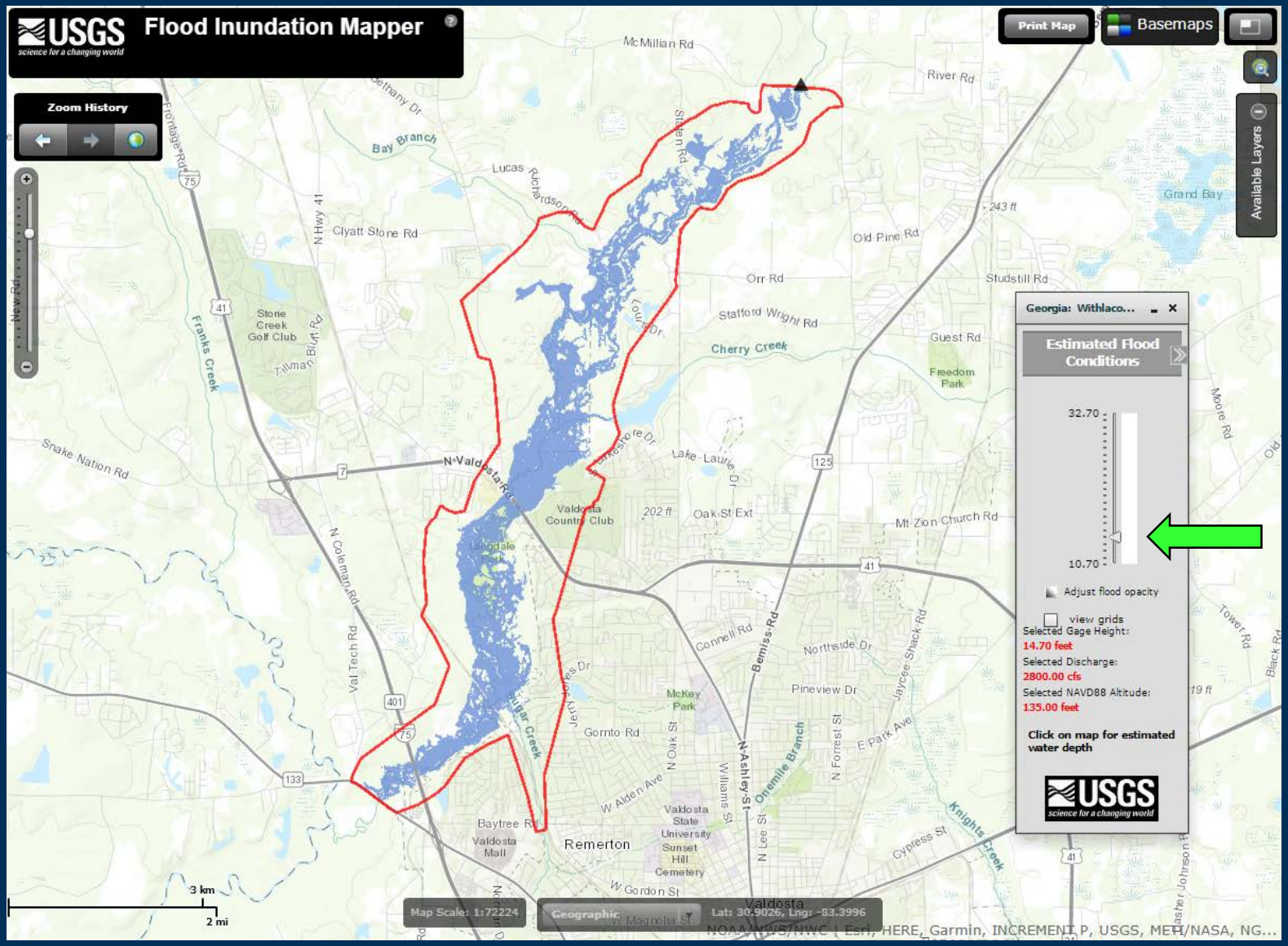
Opens popup

Opens NWS



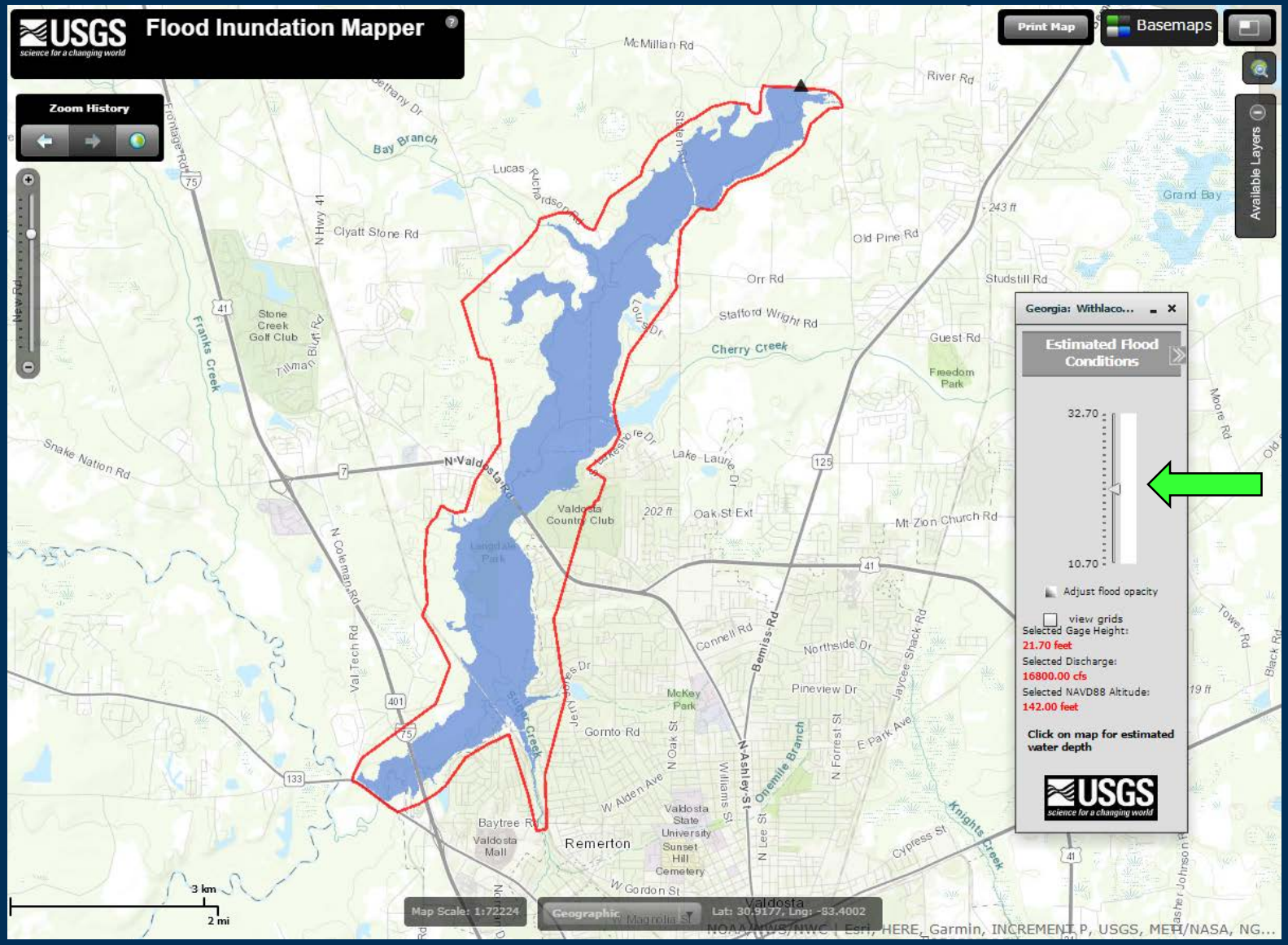
USGS

Action Stage
10.7 ft gage height – 131.0 ft elevation



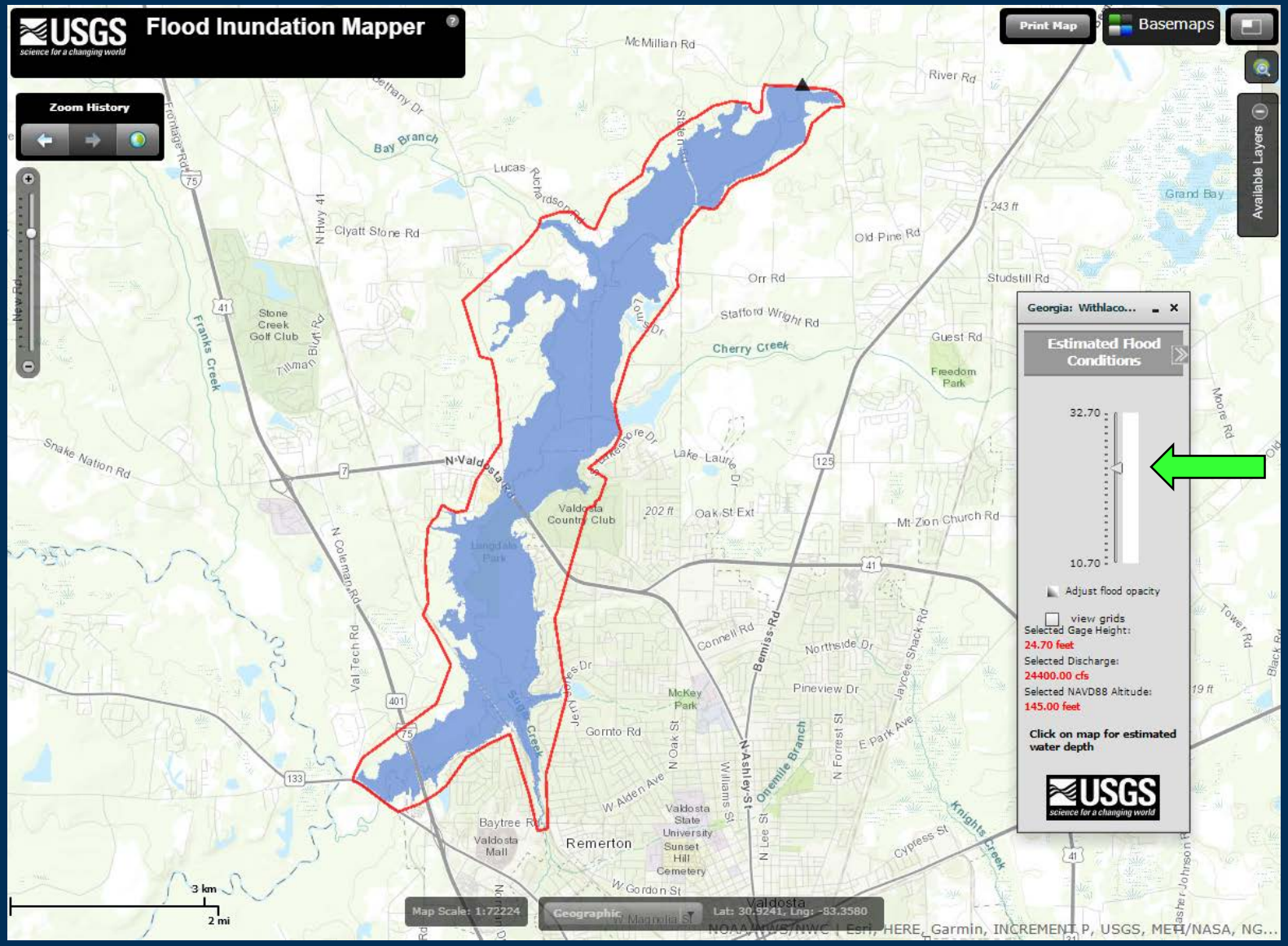
USGS

Flood Stage
14.7 ft gage height – 135.0 ft elevation



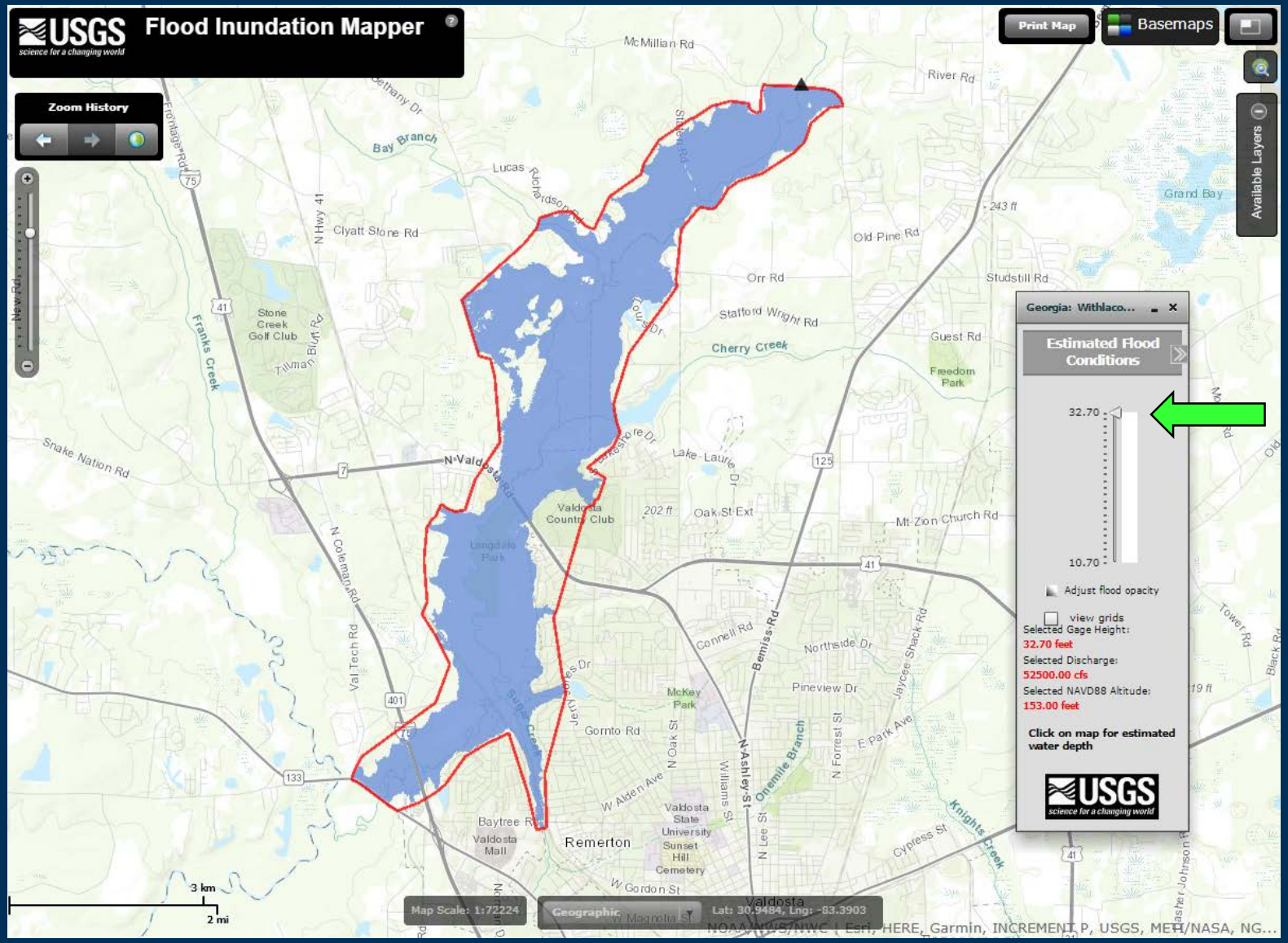
USGS

Moderate Flood Stage
21.7 ft gage height – 142.0 ft elevation



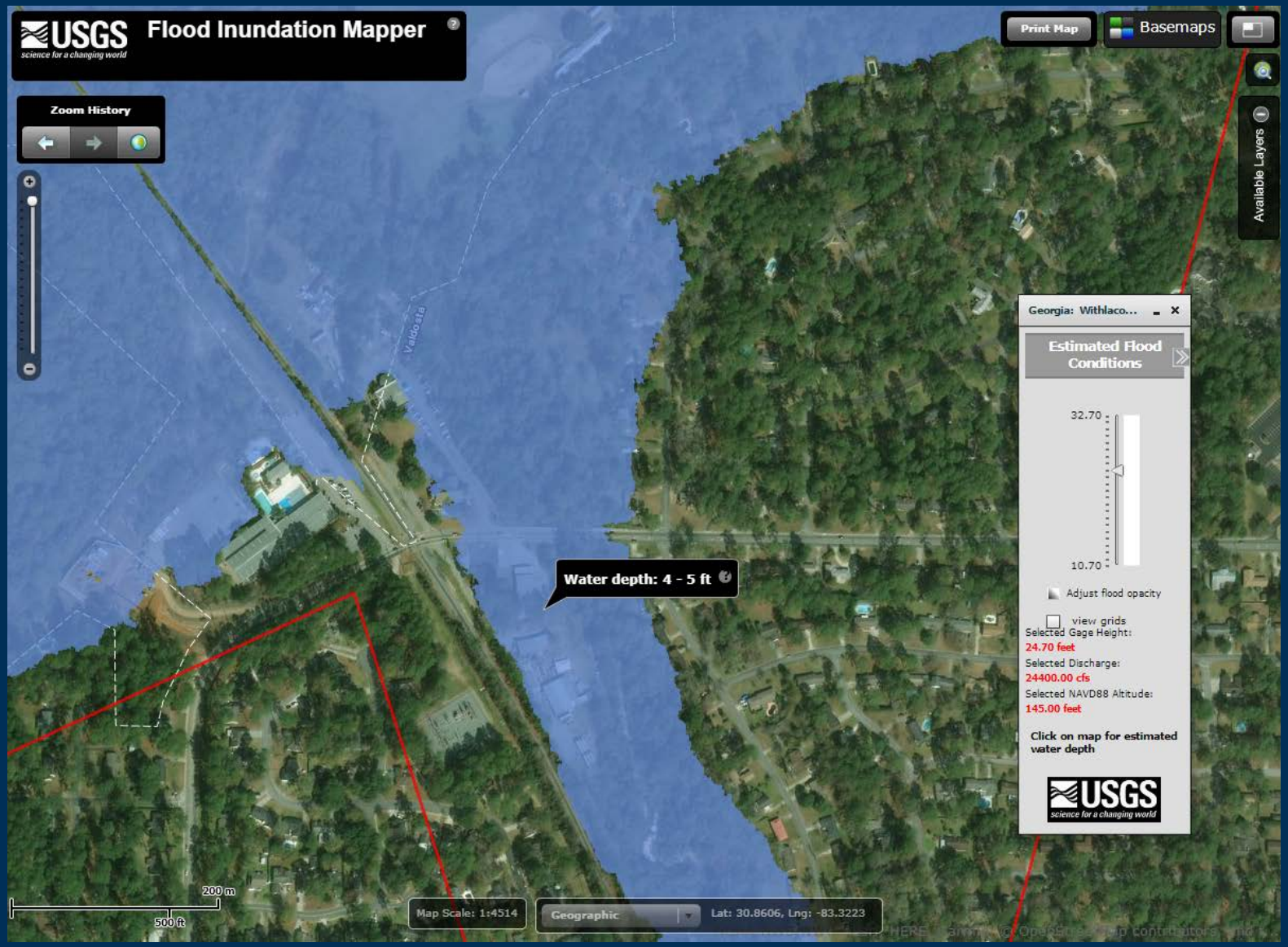
USGS

Major Flood Stage
24.7 ft gage height – 145.0 ft elevation



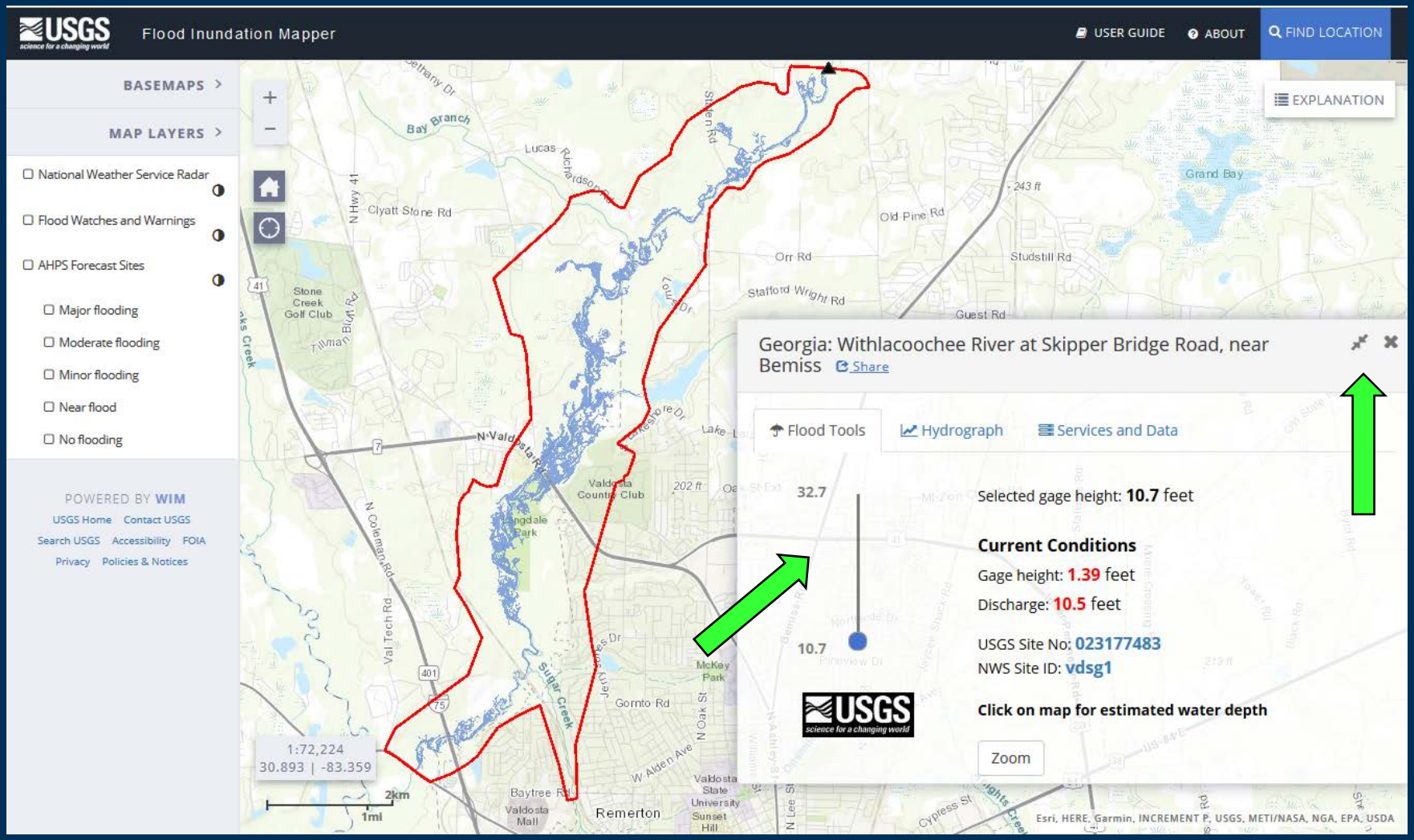
USGS

Peak Stage of Flood-Inundation Mapper
32.7 ft gage height – 153.0 ft elevation

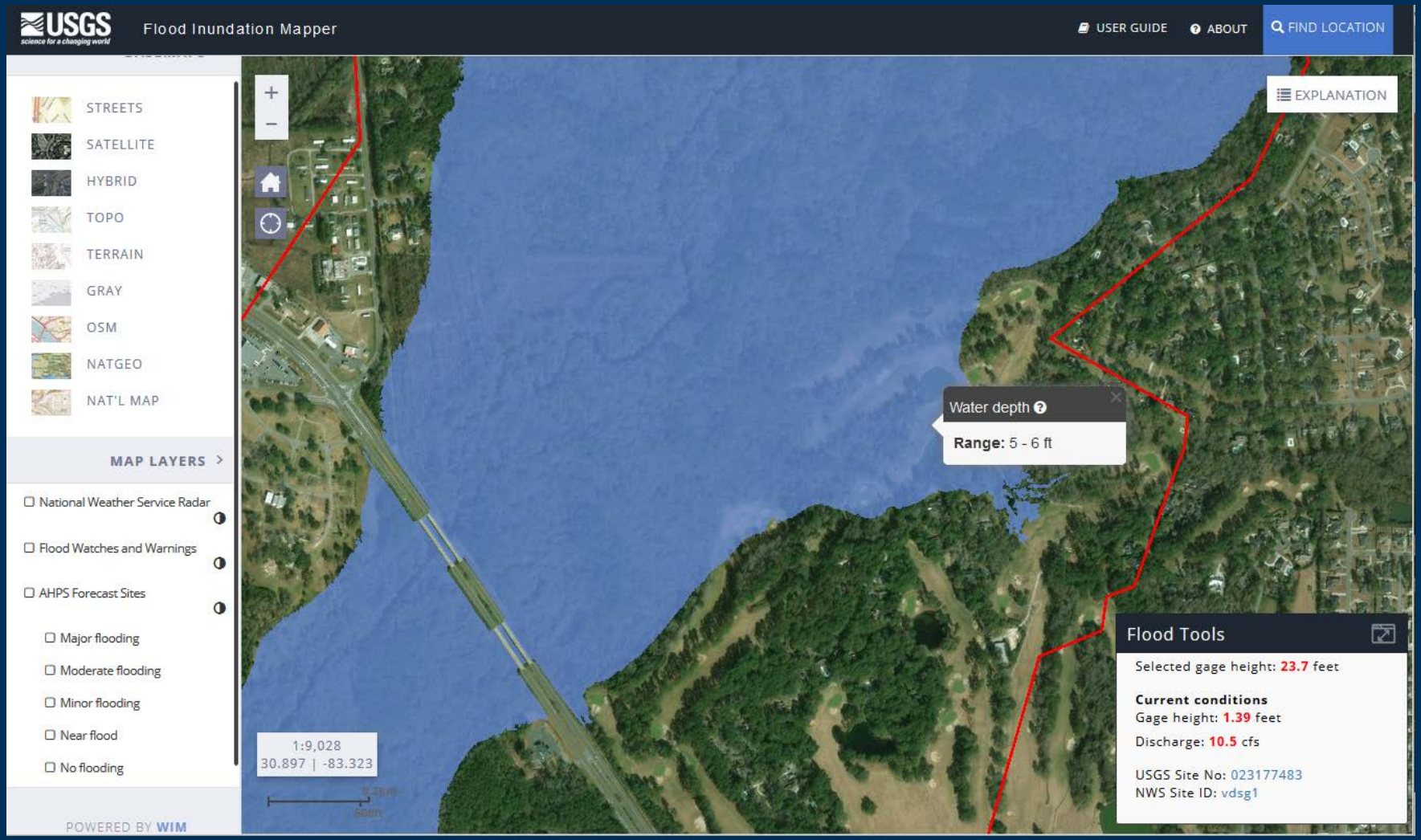


USGS

Click on the map and get an estimated water depth for that location



New more mobile friendly flood-inundation mapping website



Collapse Flood Tools box, Change the basemap, Click for depth

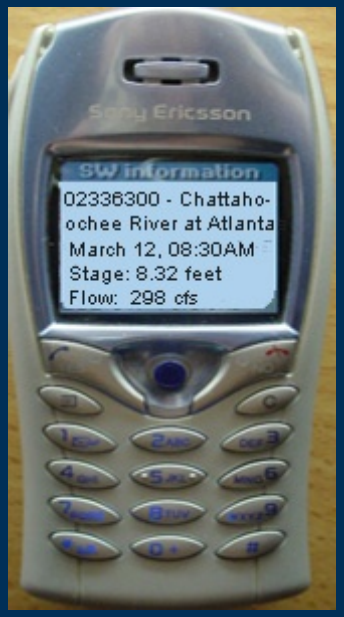
Additional Preparedness Tools

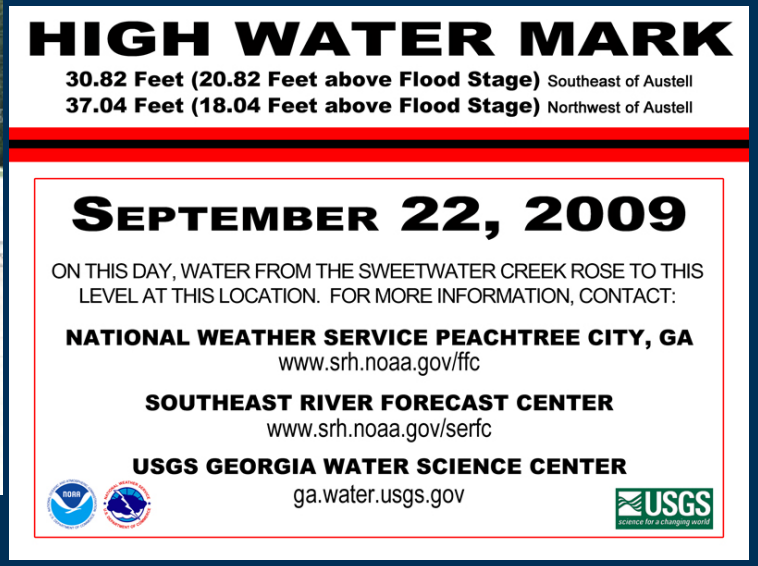
USGS WaterAlert

USGS WaterNow

USGS RiverCam

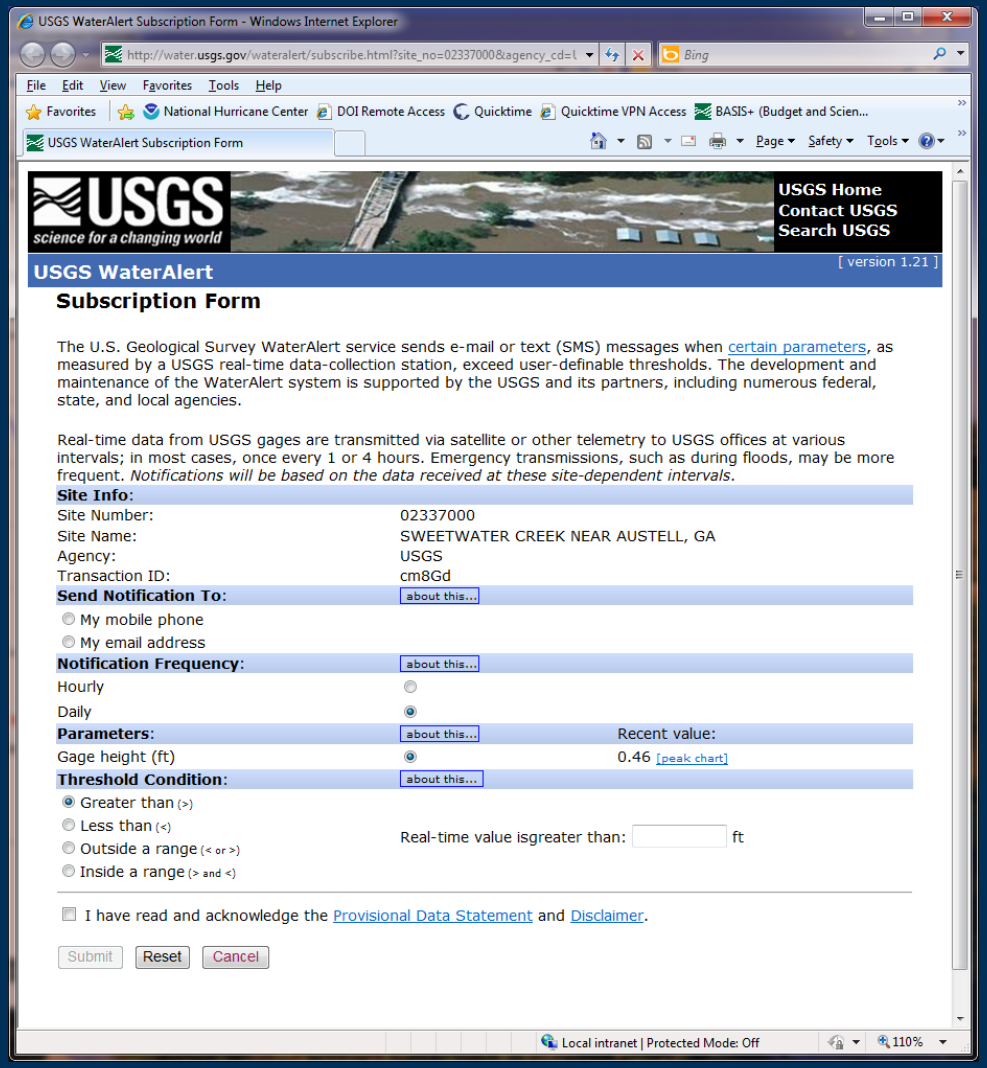
NWS HWM Signage





USGS WaterAlert

- Anyone can subscribe for emails/texts from streamgages
- Set thresholds on river level, rainfall, flow, or water quality parameter
- Notifications sent hourly or daily
- Critical first response for flood warning

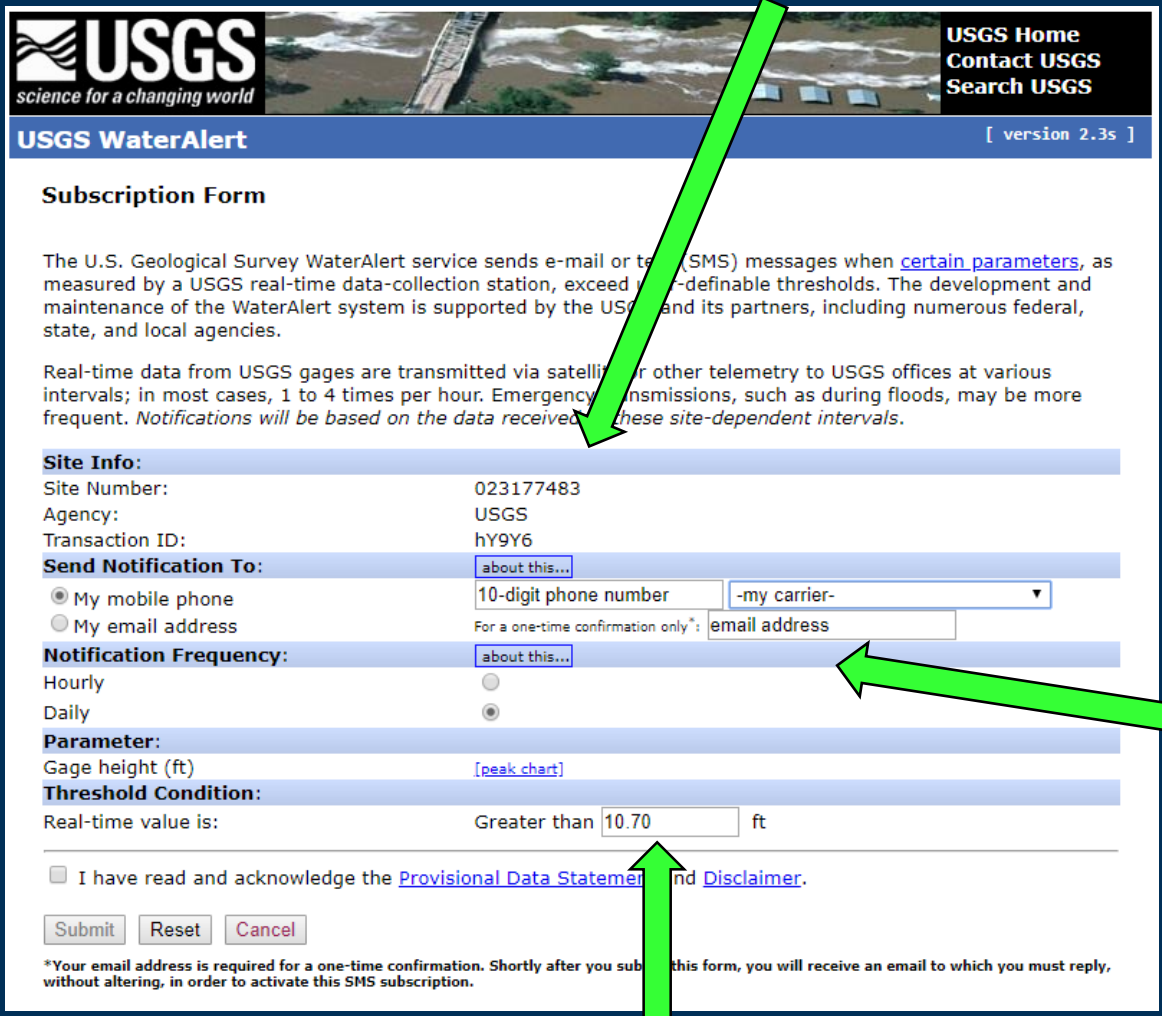


USGS

http://water.usgs.gov/wateralert

USGS WaterAlert

Site number, sent by mapper



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USGS WaterAlert [version 2.3s]

Subscription Form

The U.S. Geological Survey WaterAlert service sends e-mail or te (SMS) messages when certain parameters, as measured by a USGS real-time data-collection station, exceed -definable thresholds. The development and maintenance of the WaterAlert system is supported by the US and its partners, including numerous federal, state, and local agencies.

Real-time data from USGS gages are transmitted via satelli r other telemetry to USGS offices at various intervals; in most cases, 1 to 4 times per hour. Emergency nsmissions, such as during floods, may be more frequent. *Notifications will be based on the data received these site-dependent intervals.*

Site Info:	
Site Number:	023177483
Agency:	USGS
Transaction ID:	hY9Y6
Send Notification To:	about this...
My mobile phone	10-digit phone number -my carrier-
My email address	For a one-time confirmation only*: email address
Notification Frequency:	about this...
Hourly	
Daily	
Parameter:	
Gage height (ft)	[peak chart]
Threshold Condition:	
Real-time value is:	Greater than 10.70 ft

I have read and acknowledge the Provisional Data Statemen nd Disclaimer.

Submit Reset Cancel

*Your email address is required for a one-time confirmation. Shortly after you sub this form, you will receive an email to which you must reply, without altering, in order to activate this SMS subscription.

Personal info

Threshold level, selected by mapper

USGS

USGS WaterNow

Stream data on demand

Send email or text to WaterNow@usgs.gov

In subject line, put “023177483”

Will receive an email or text back within minutes

Additional parameters can be entered

USGS

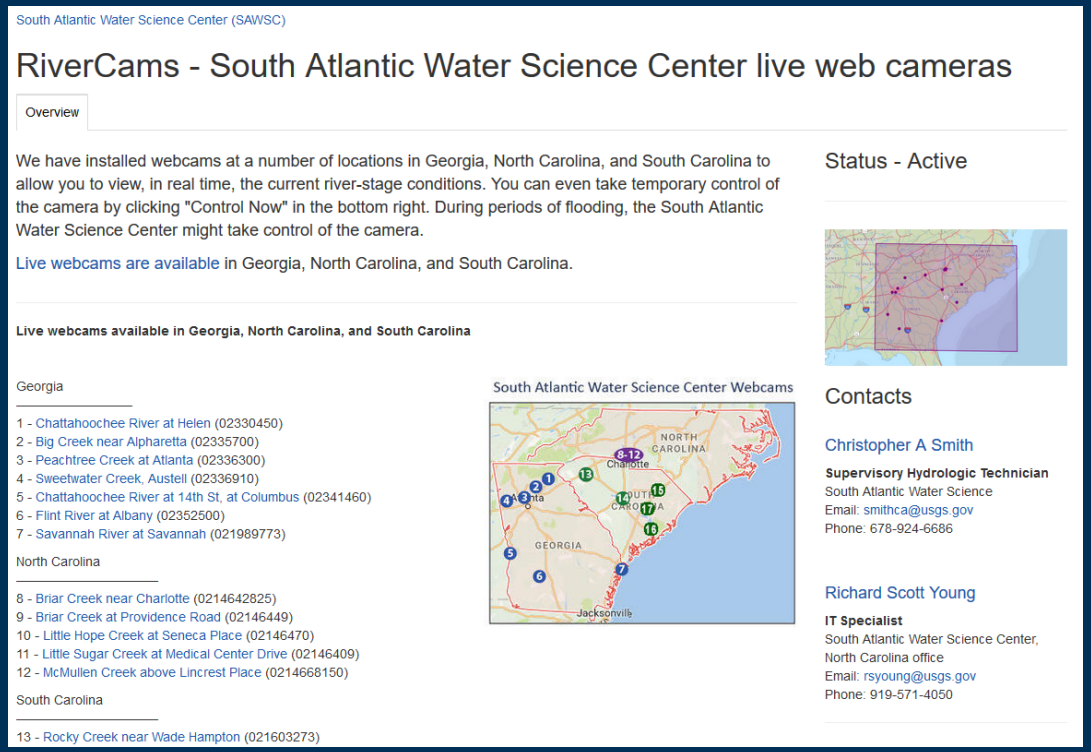
http://water.usgs.gov/waternow

USGS RiverCams

Streaming video web cams provide real-time look of river conditions

USGS

USGS RiverCams



South Atlantic Water Science Center (SAWSC)

RiverCams - South Atlantic Water Science Center live web cameras

Overview

We have installed webcams at a number of locations in Georgia, North Carolina, and South Carolina to allow you to view, in real time, the current river-stage conditions. You can even take temporary control of the camera by clicking "Control Now" in the bottom right. During periods of flooding, the South Atlantic Water Science Center might take control of the camera.

Live webcams are available in Georgia, North Carolina, and South Carolina.

Live webcams available in Georgia, North Carolina, and South Carolina

Georgia

1 - Chattahoochee River at Helen (02330450)
2 - Big Creek near Alpharetta (02335700)
3 - Peachtree Creek at Atlanta (02336300)
4 - Sweetwater Creek, Austell (02336910)
5 - Chattahoochee River at 14th St, at Columbus (02341460)
6 - Flint River at Albany (02352500)
7 - Savannah River at Savannah (021989773)

North Carolina

8 - Briar Creek near Charlotte (0214642825)
9 - Briar Creek at Providence Road (02146449)
10 - Little Hope Creek at Seneca Place (02146470)
11 - Little Sugar Creek at Medical Center Drive (02146409)
12 - McMullen Creek above Lincrest Place (0214668150)

South Carolina

13 - Rocky Creek near Wade Hampton (021603273)

South Atlantic Water Science Center Webcams

Status - Active

Contacts

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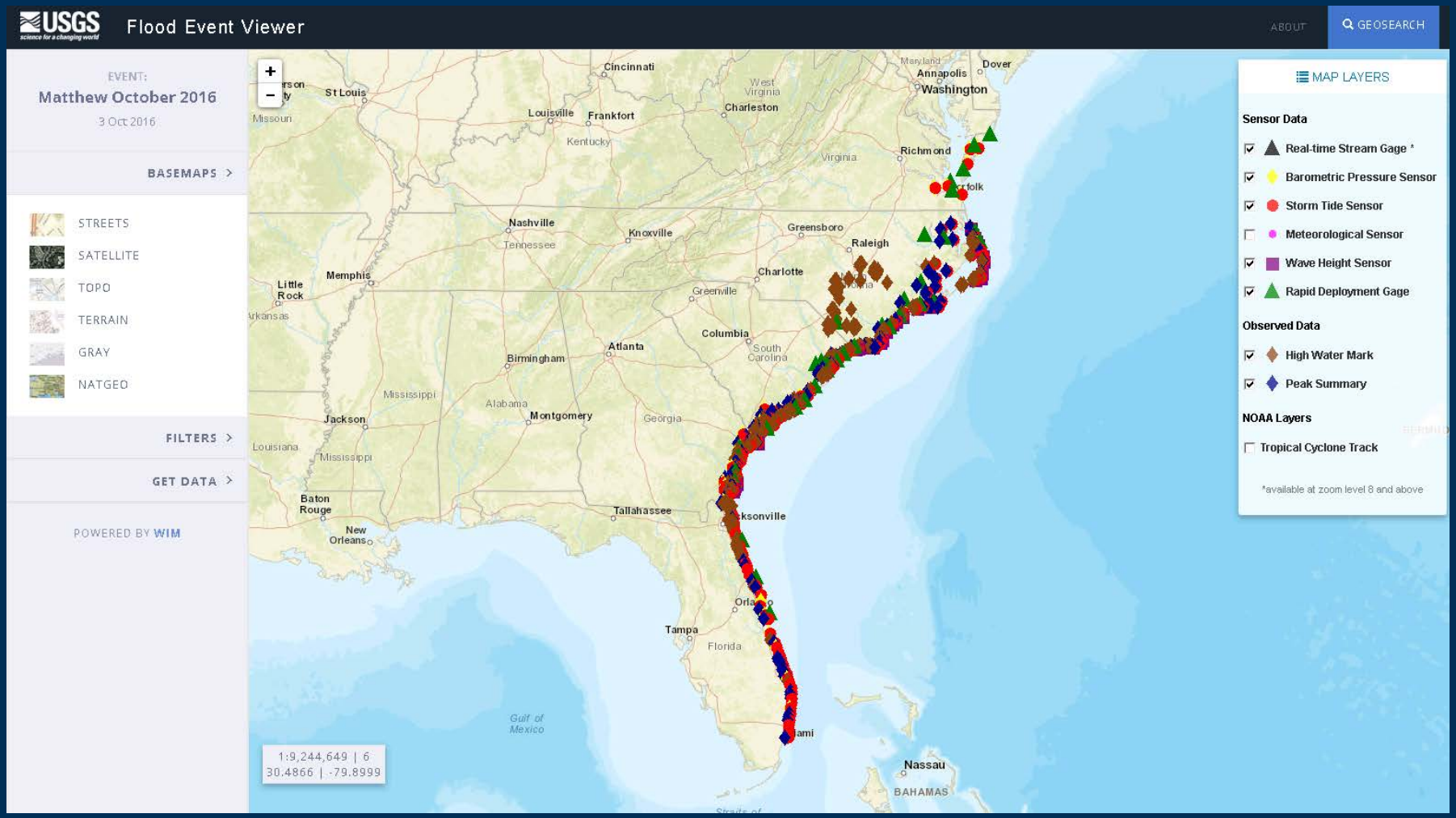
Phone: 919-571-4050

Access the webcams from SAWSC web page
Select MULTIMEDIA – filter for Webcam

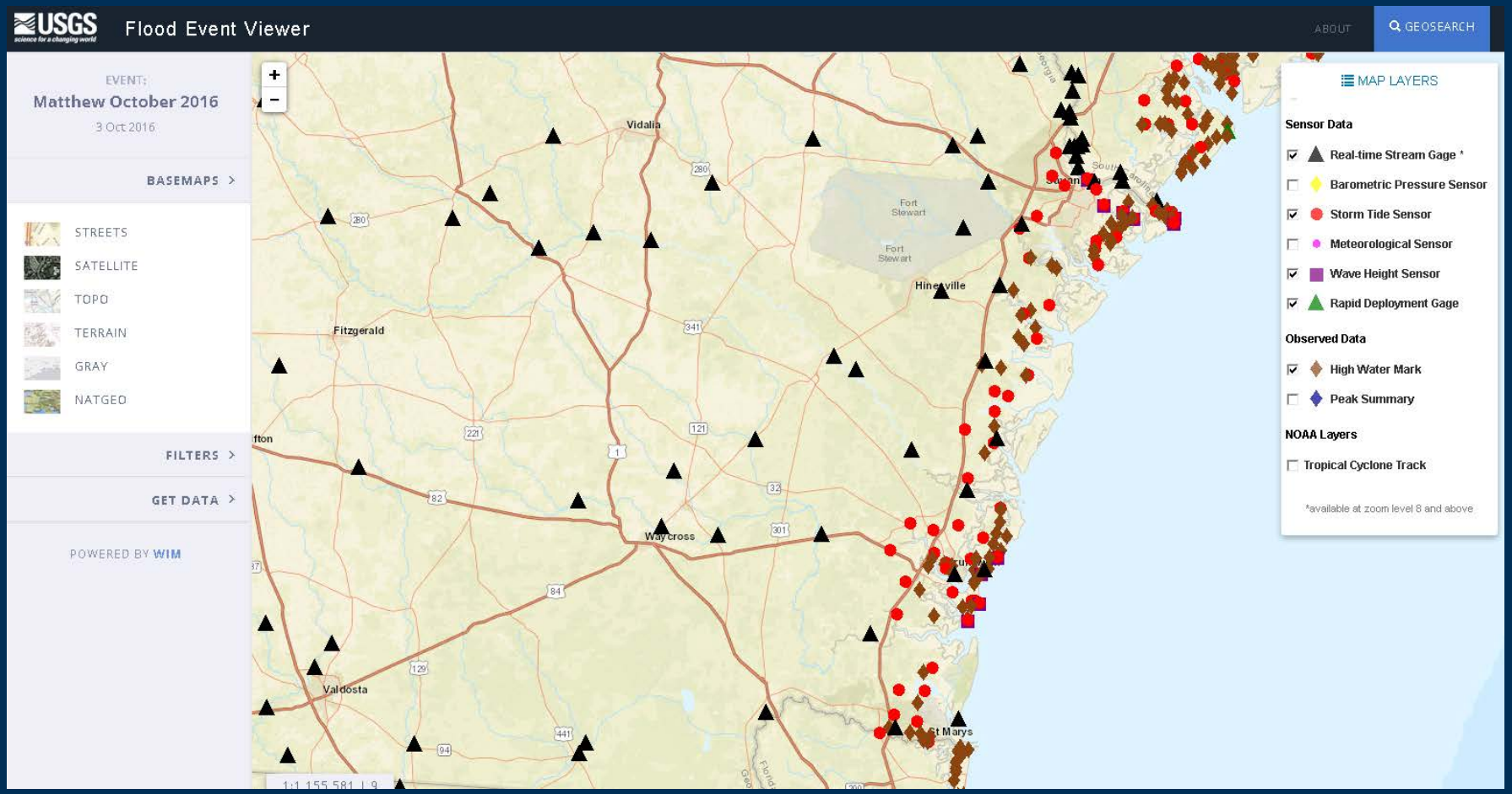
https://www.usgs.gov/centers/sa-water/science/webcams-south-atlantic-water-science-center

Flooding from Hurricane Matthew Oct 2016



USGS **Short-Term Network Flood Event Viewer**

Flooding from Hurricane Matthew Oct 2016



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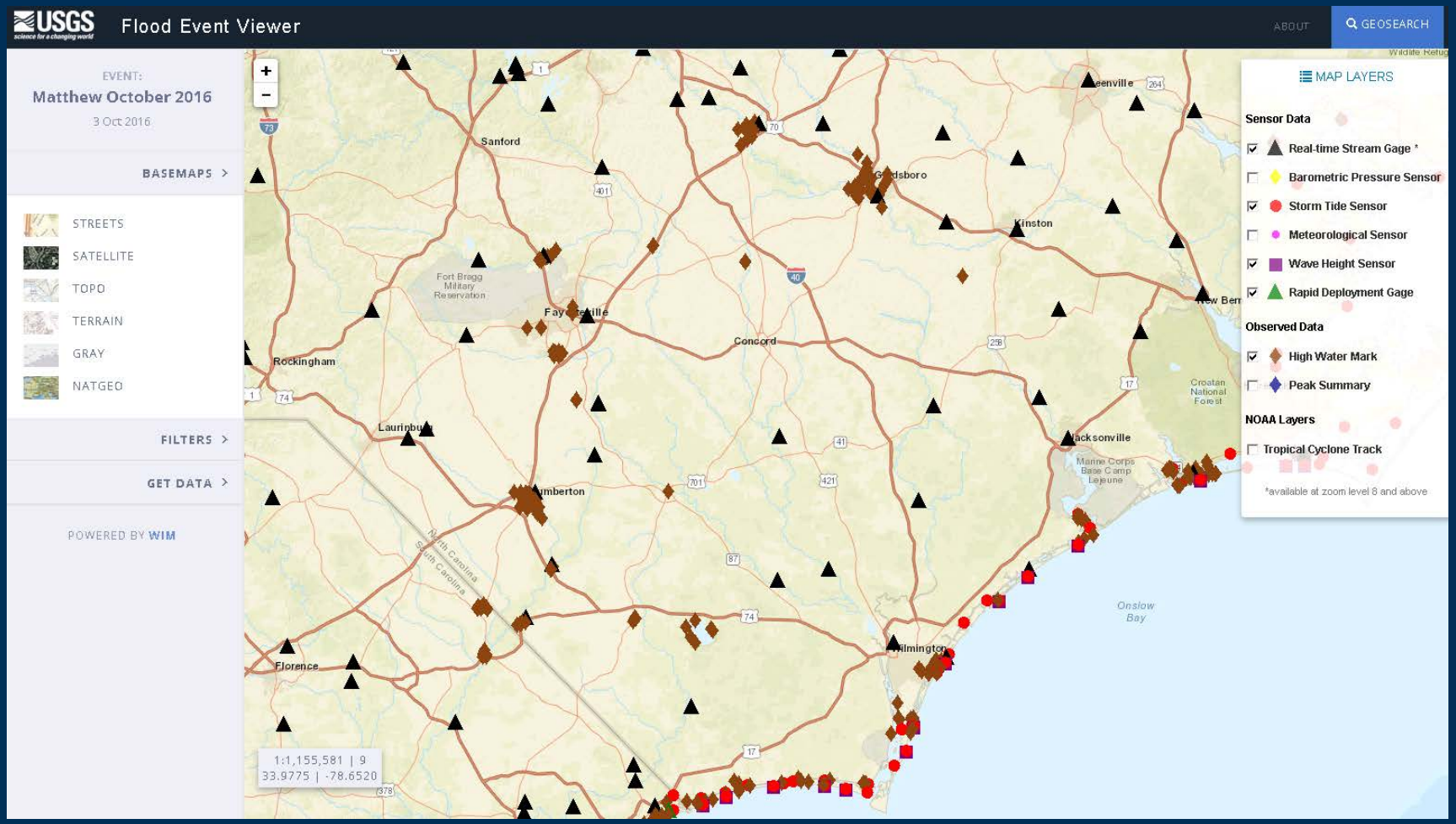


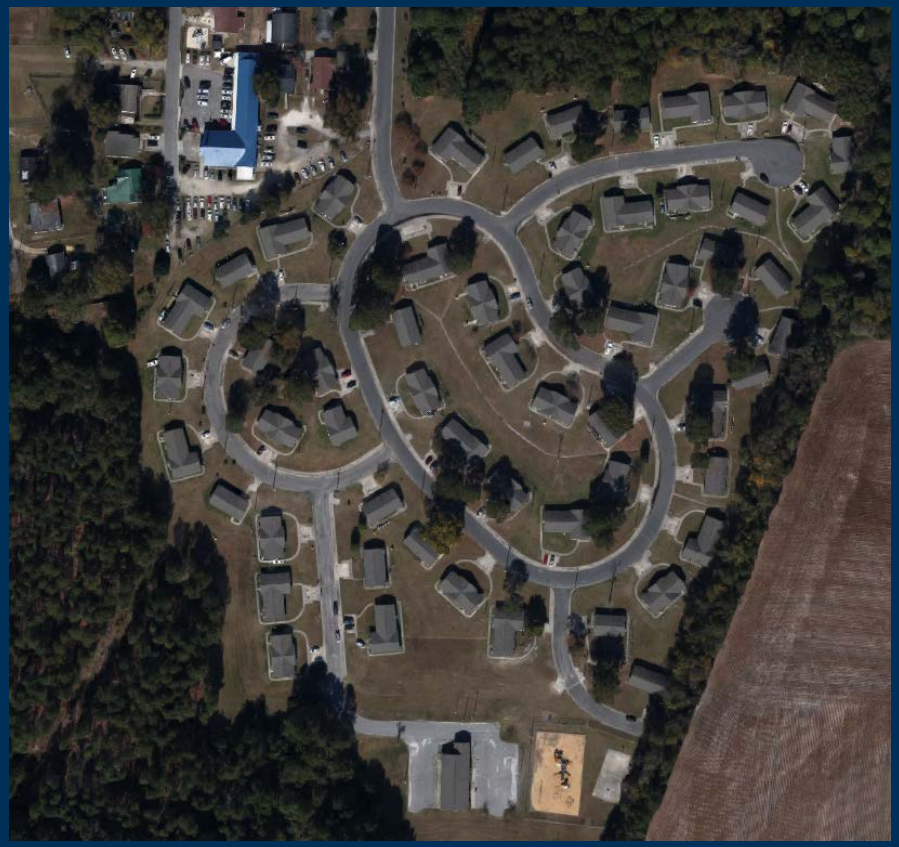
USGS **Short-Term Network Flood Event Viewer**

Inland Flooding in North Carolina

USGS

Lumberton

Inland Flooding in North Carolina



USGS

Lumberton

Inland Flooding in North Carolina

USGS

Smithfield

Inland Flooding in North Carolina

USGS

Smithfield

Questions and Demo

Jonathan Musser

jwmusser@usgs.gov

USGS

https://www.usgs.gov/water/southatlantic