



Overview of Camp Mystic Flash Flood

7/4/2025 Flood – Camp Mystic, Kerr County, Texas

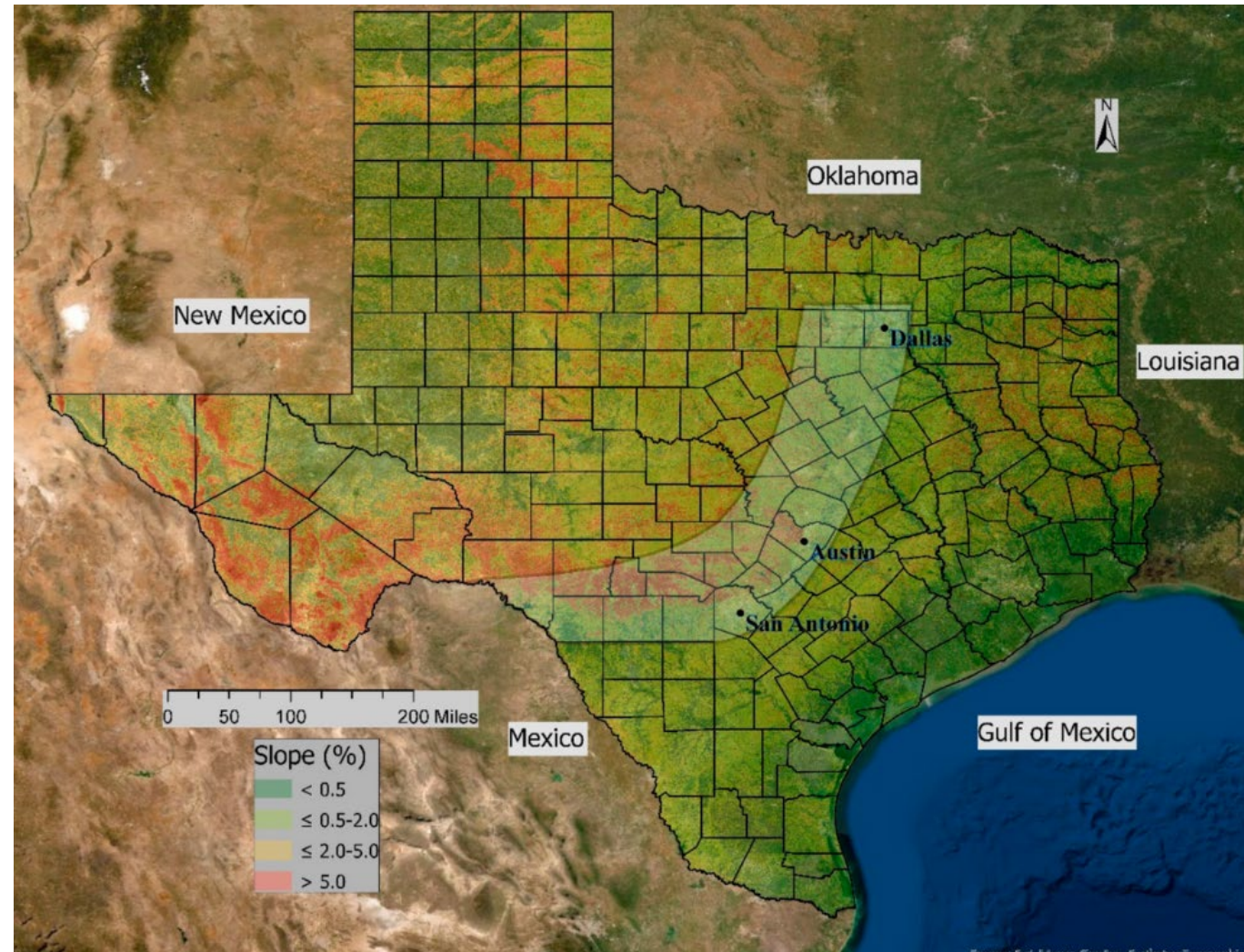
7/15/2026 DNR-LGU Forum
Garry Bennett, DNR Floodplain Hydrologist
Jen Sorensen, DNR Public Waters Hydrologist

Flooding and Campgrounds

- The 2025 flooding in Texas, particularly the damage and deaths at Camp Mystic Campground, generated a lot of interest and attention from other states.
- Since the flooding, more states are adopting stricter regulations for campgrounds in flood-prone locations and developing emergency plans and flood warning systems.
- There are no National Flood Insurance Program (NFIP) standards for campgrounds.
 - NFIP only regulates development and construction
 - Gap in regulation leaves campgrounds vulnerable to floods
- The Association of State Floodplain Managers (ASFPM) has developed two resources:
 - [Flooding Emergency Action Plan: A Developmental Guide for Camps, Campgrounds and RV Parks](#)
 - [Model Floodplain Ordinance: Guidance and Draft Language for Campground Operations](#)

7/4/2025 Central Texas flooding

- “Flash Flood Alley” is one of the most flood-prone regions in the U.S.
- Guadalupe River has flooded nearly once every decade over the past 100 years.
- At least 139 people were killed, at least 117 of them in Kerr County.
- Flooding began early on July 4 on the Guadalupe River after significant rainfall, with more flash flood warnings on July 5. More flooding on July 12 on the Lampasas River.
- Federal disaster declaration for Kerr County and state disaster declaration for several additional counties.



“Flash Flood Alley” in Texas. (Source: Wikipedia)

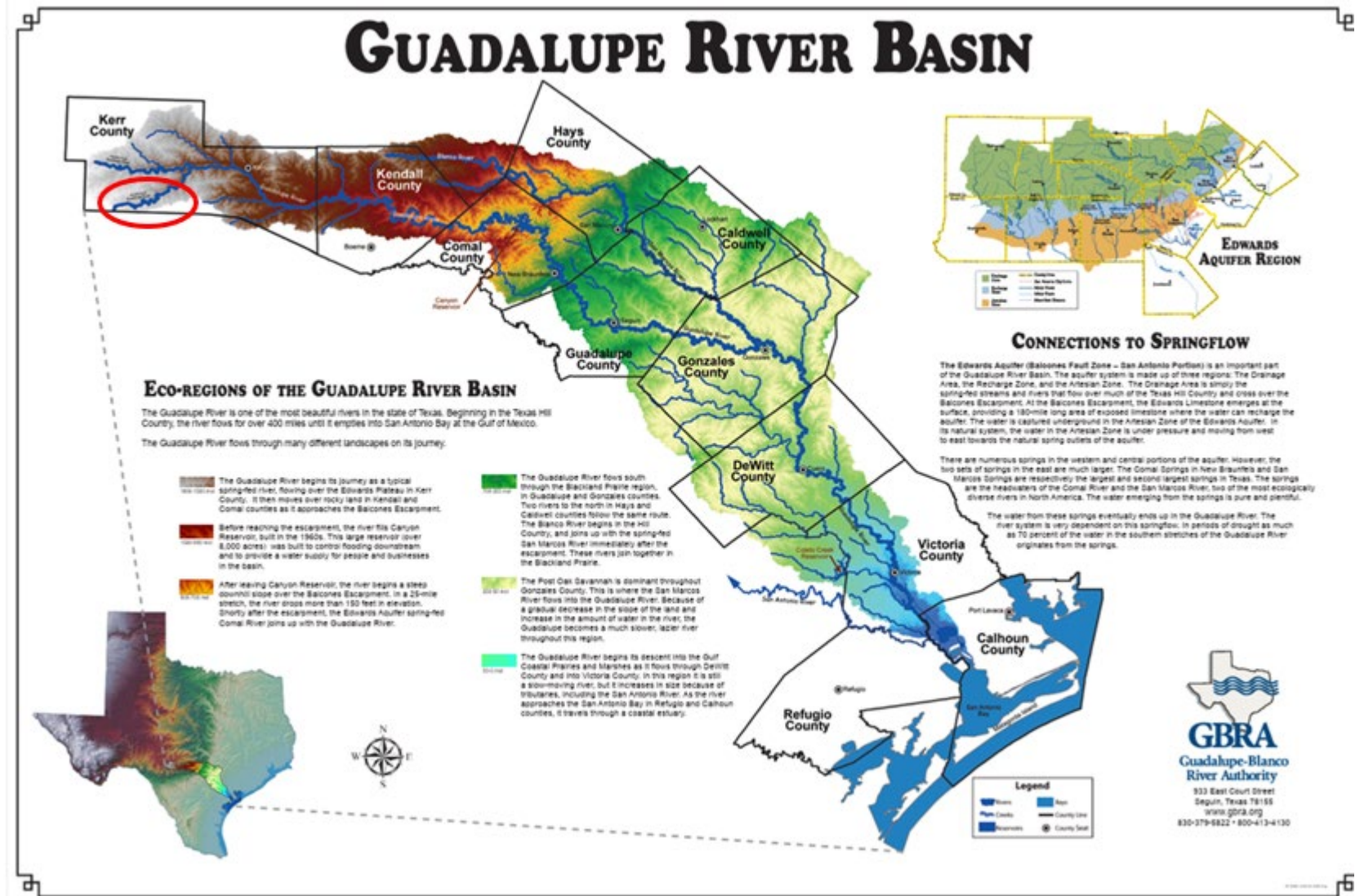
Location of Texas Hill Country and Camp Mystic

- Camp Mystic is located west of Austin and northwest of San Antonio in Hill Country
- Texas Hill Country covers about 25 counties and is known for scenic rocky hills and deep river valleys
- Area in Kerr County has thin topsoil and much exposed rock, making the area dry and prone to flash flooding



Location of Camp Mystic along the Guadalupe River

- Camp Mystic is on the South Fork of the Guadalupe River in the uppermost portion of the Guadalupe River drainage basin
- Guadalupe River flows for over 400 miles before flowing into the Gulf of Mexico



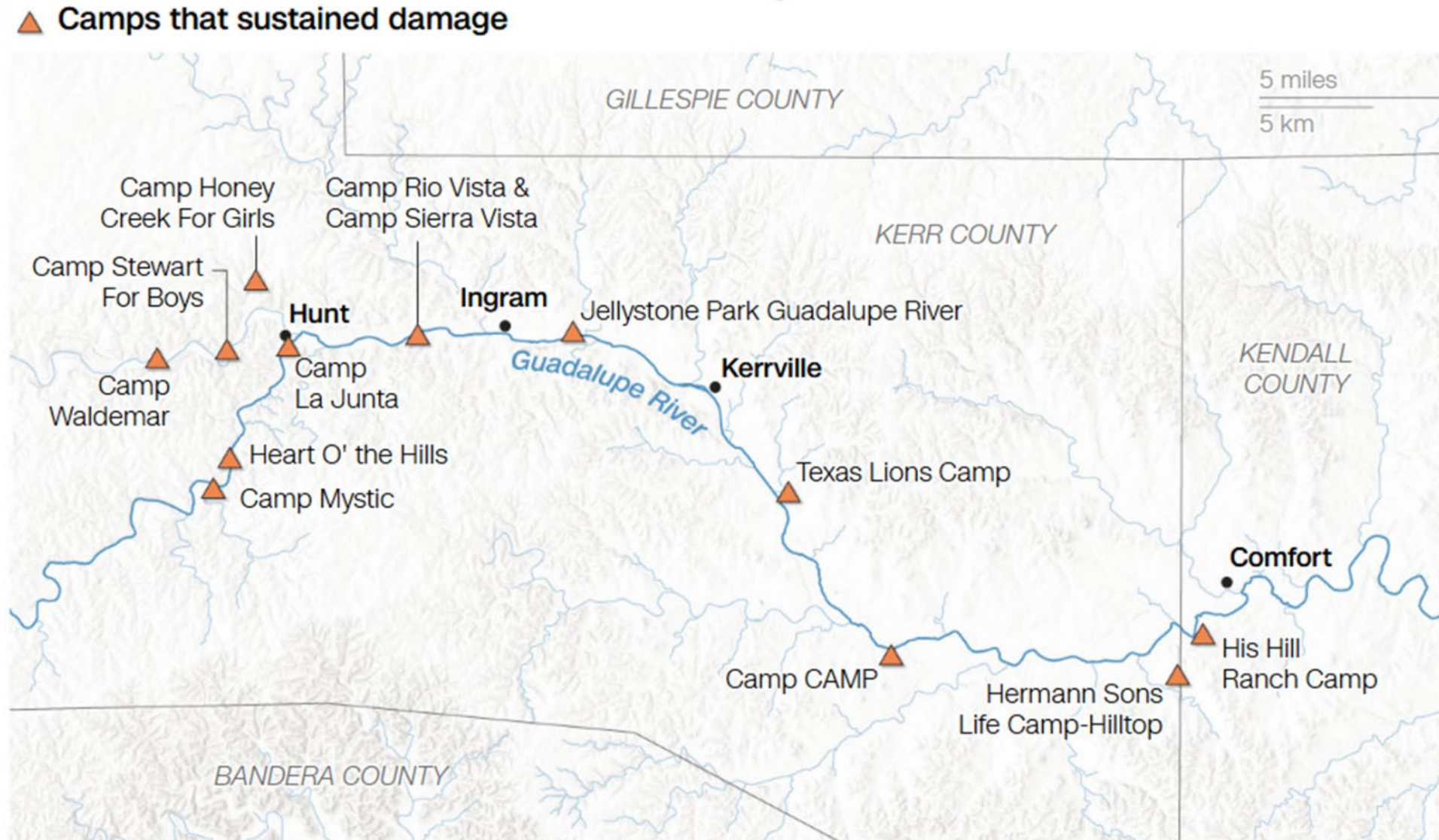
Location of Camp Mystic in Kerr County

- Camp Mystic was established in 1926
- Prominent Christian summer camp for girls
- 725-acre facility
- Served as a US army veterans' recovery center during WWII



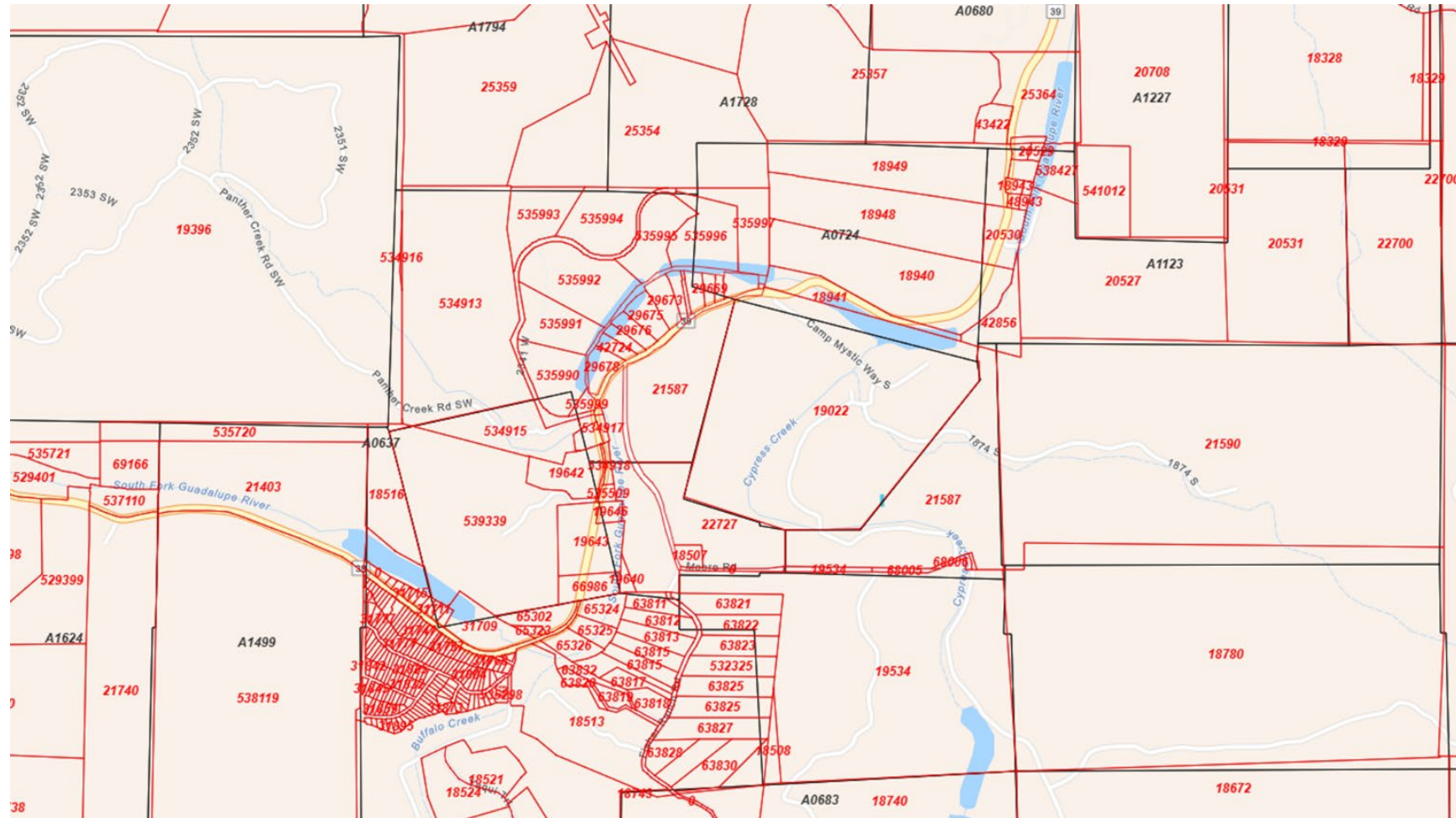
Camps Damaged from 7/4/2025 flooding

- Most of the deaths from the 7/4/2025 floods occurred in Kerr County
- 28 died at Camp Mystic, including 25 young campers, 2 counselors, and the camp's co-owner and director



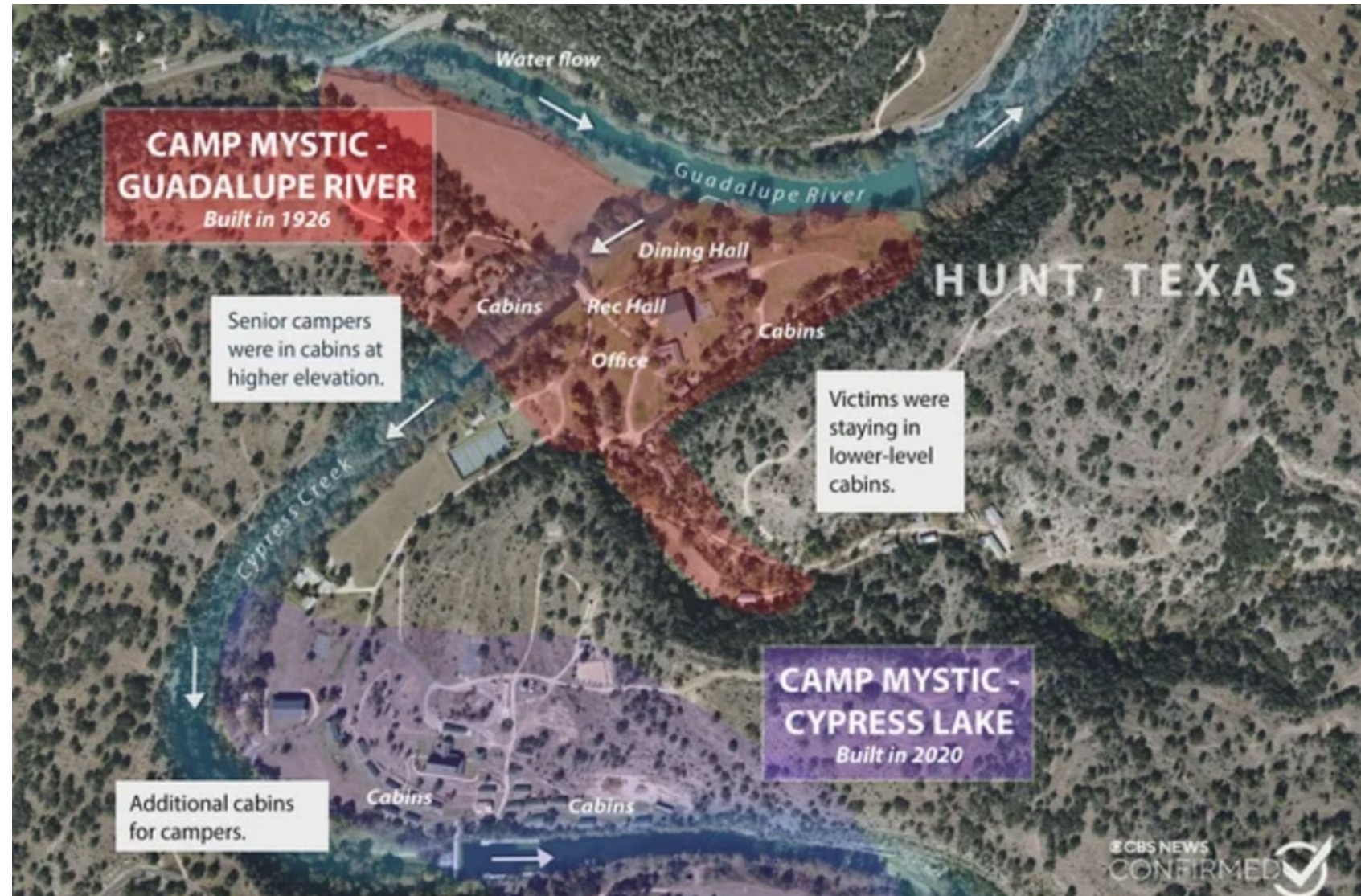
Kerr County parcel map – Camp Mystic area

- Five small reservoirs are on the South Fork of the Guadalupe River, one by Camp Mystic
- Cypress Creek also flows through Camp Mystic and into South Fork of the Guadalupe River



Layout of Camp Mystic

- Original, older structures located in red area on map, much of which is located in mapped floodway
- New part of camp (built in 2019 – 2020), located in purple area on map, is in mapped floodplain where floodway is not mapped



FEMA's National Flood Hazard Layer (NFHL) Viewer

with Web AppBuilder for ArcGIS

Find address or place

Zone AE

Zone A

KERR COUNTY UNINCORPORATED AREAS 430419

48265C0425F eff. 3/3/2011

48265C0450F eff. 3/3/2011

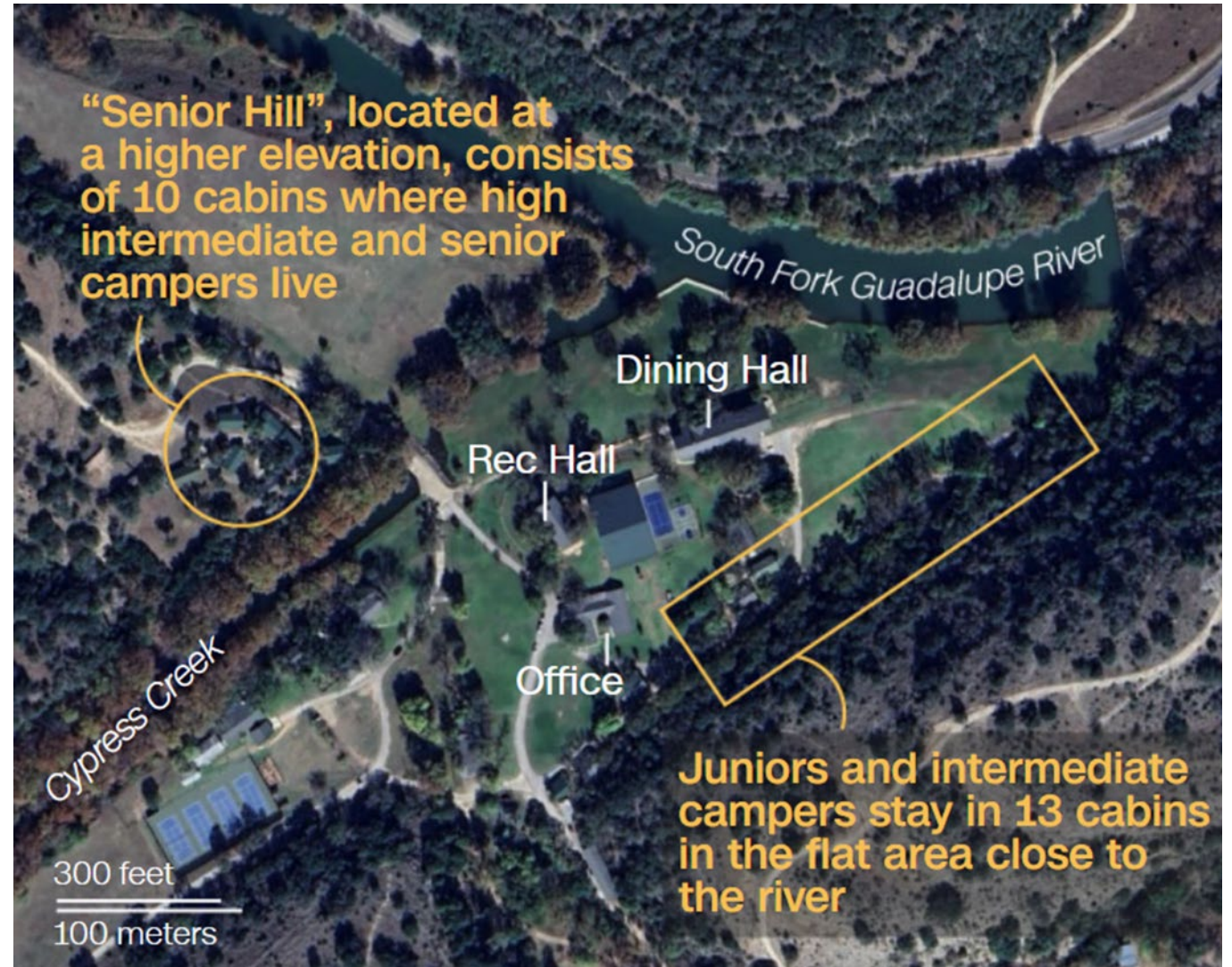
600ft

USDA, USGS The National Map, Orthoimagery, Data refreshed June, 2024

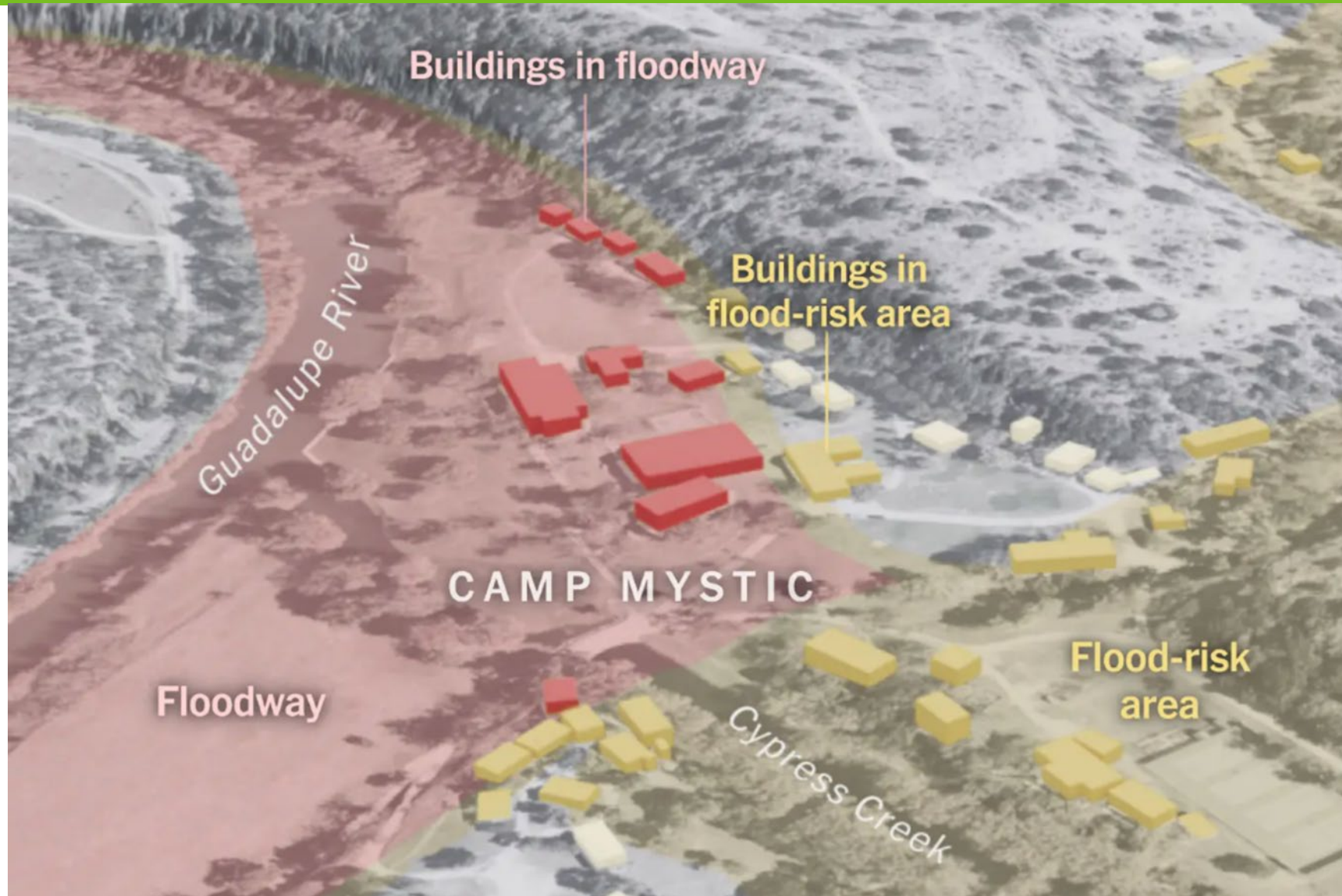
POWERED BY esri

Map of area of Camp Mystic located in floodway

- Cabins located close to the river were inundated with flowing water
- Where most of loss of life occurred

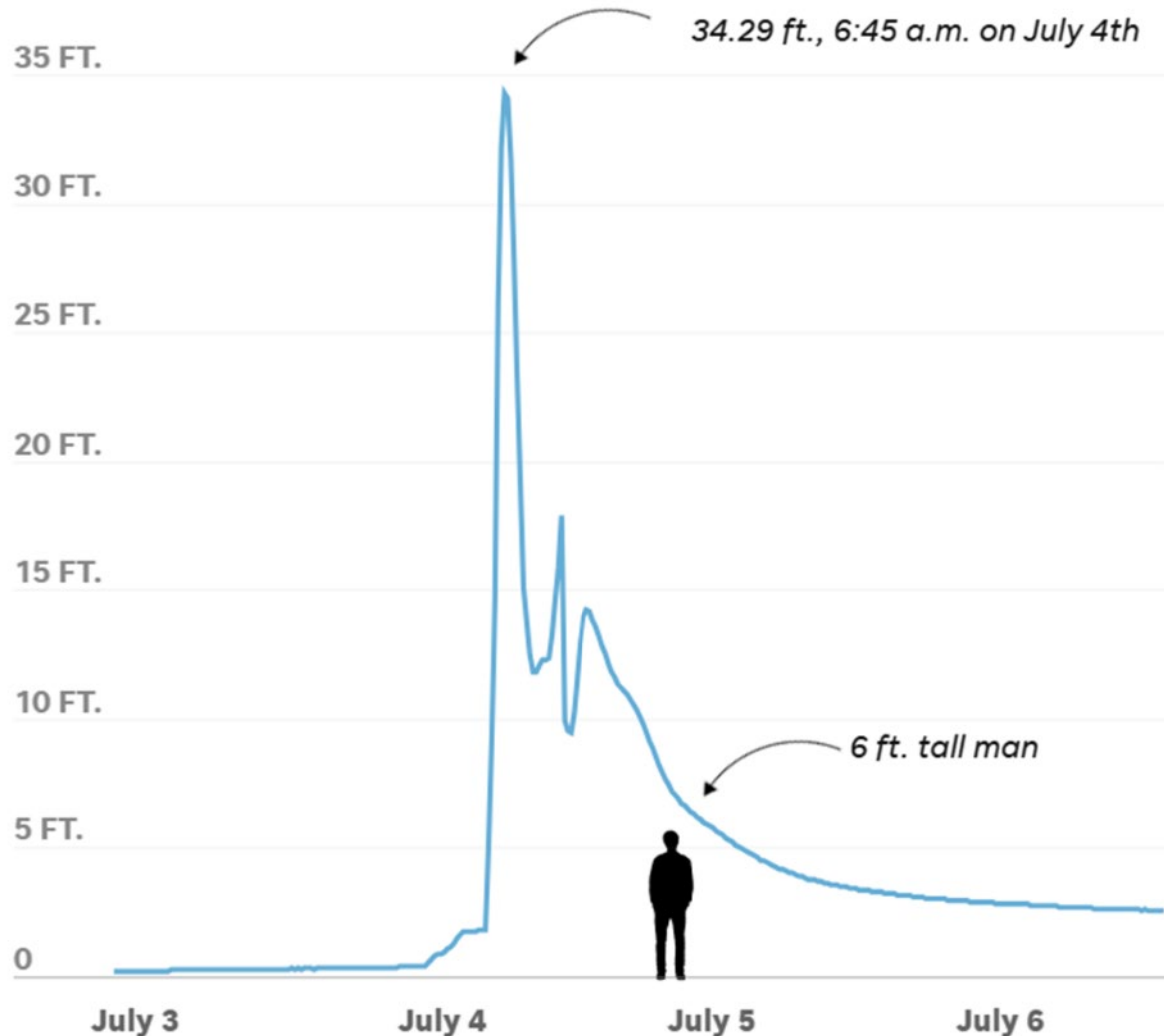


Locations of buildings in floodway



Hydrograph of Guadalupe River from 7/4/2025 storm Kerrville, TX

Guadalupe River rose from less than a foot on July 3 to more than 34 feet in Kerrville, Texas, by 6:45 a.m. July 4:



How high did the Guadalupe River rise?

At one point in the early hours of Friday, state officials reported the Guadalupe River had risen **26 feet** in just 45 minutes.

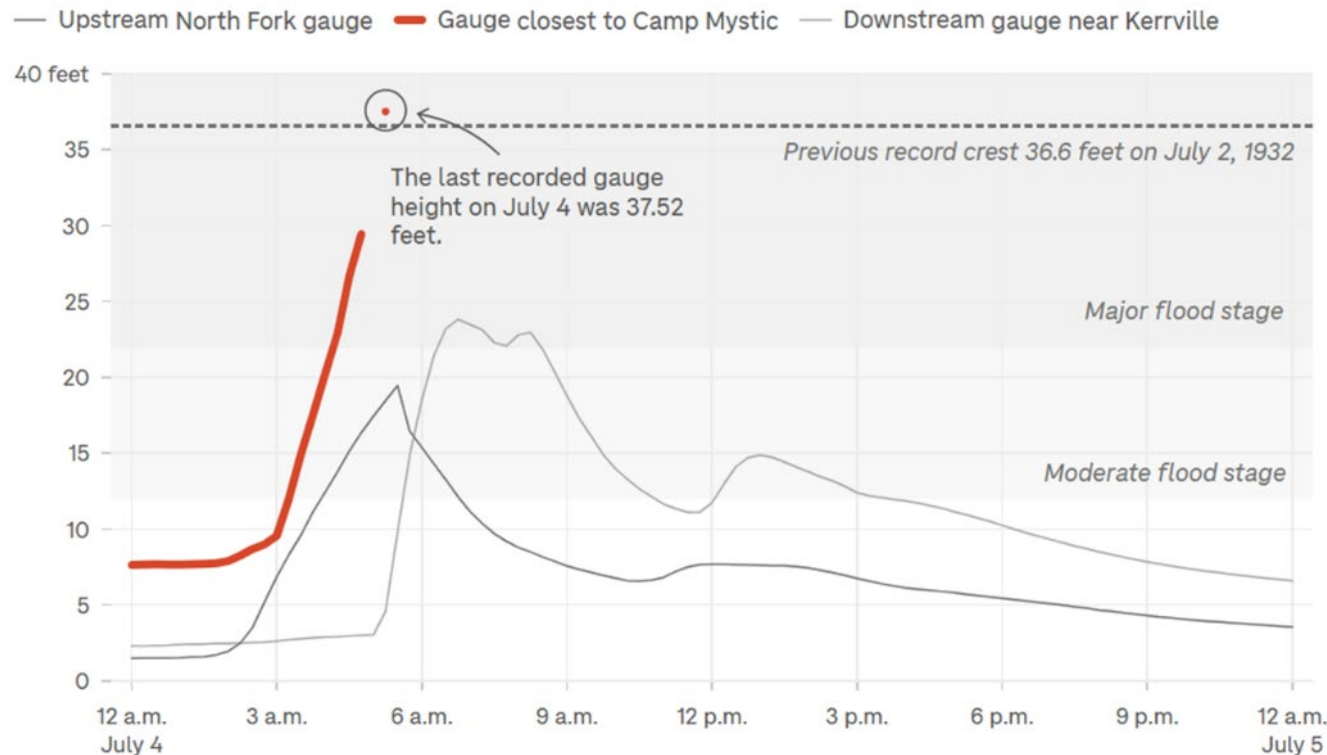
Although the U.S. Geological Survey has recorded the river flooding more than a dozen times since 1978, the Independence Day 2025 flood is among the worst in its history. The [USGS recorded](#) the Guadalupe River's discharge peaking at a staggering 111,000 cubic feet per second at 7:30 p.m. on Friday.

Austin American-Statesman
7/7/25
[Link to Article](#)

Hydrographs of Guadalupe River from 7/4/2025 storm

The river gauge closest to Camp Mystic is about five miles downstream of the camp, where the south and north forks of the Guadalupe River merge. It recorded a rise of more than 25 feet in two hours, before going silent for the rest of the day.

Guadalupe River gauge heights around Kerrville



- The Guadalupe River rose 26 feet in less than 1 hour in an area near the site of Camp Mystic

Satellite image of Camp Mystic on 6/23/2023



CNN Weather
7/8/25
[Link to Article](#)

Closer view: Satellite image of Camp Mystic on 6/23/2023



Satellite image of Camp Mystic on 7/8/2025



CNN Weather
7/8/25
[Link to Article](#)

Closer view: Satellite image of Camp Mystic on 7/8/2025



CNN Weather
7/8/25
[Link to Article](#)

Photos - After the flood



New York Times
7/7/25
[Link to Article](#)

Photos - After the flood



Photos - After the flood



Photos - After the flood



“Disasters are a human choice”: Texas counties have little power to stop building in flood-prone areas

Nearly 1.3 million Texas homes are similarly situated in parts of the state susceptible to dangerous floodwaters, [according to a state estimate](#). A quarter of the state’s land carries some degree of severe flood risk, leaving an estimated 5 million Texans in possible jeopardy.

Yet, local governments — especially counties — have limited policy tools to regulate building in areas most prone to flooding. The state’s explosive growth, a yearning for inexpensive land, and a state far behind in planning for extreme weather compound the problem, experts said.

While cities can largely decide what is built within their limits, counties have no jurisdiction to implement comprehensive zoning rules that could limit people from living close to the water’s edge.

Flooding and Park Visitor Safety

Whitewater State Park – Past, Present, and Future

Orientation to the Park





Lower Cedar Hills
Campground



Whitewater
State Park



Gooseberry Glen
Cart in Campground



Middle Fork Whitewater River

Middle Fork Whitewater River

Middle Fork Whitewater River

Middle Fork Whitewater River

Middle Fork Whitewater River

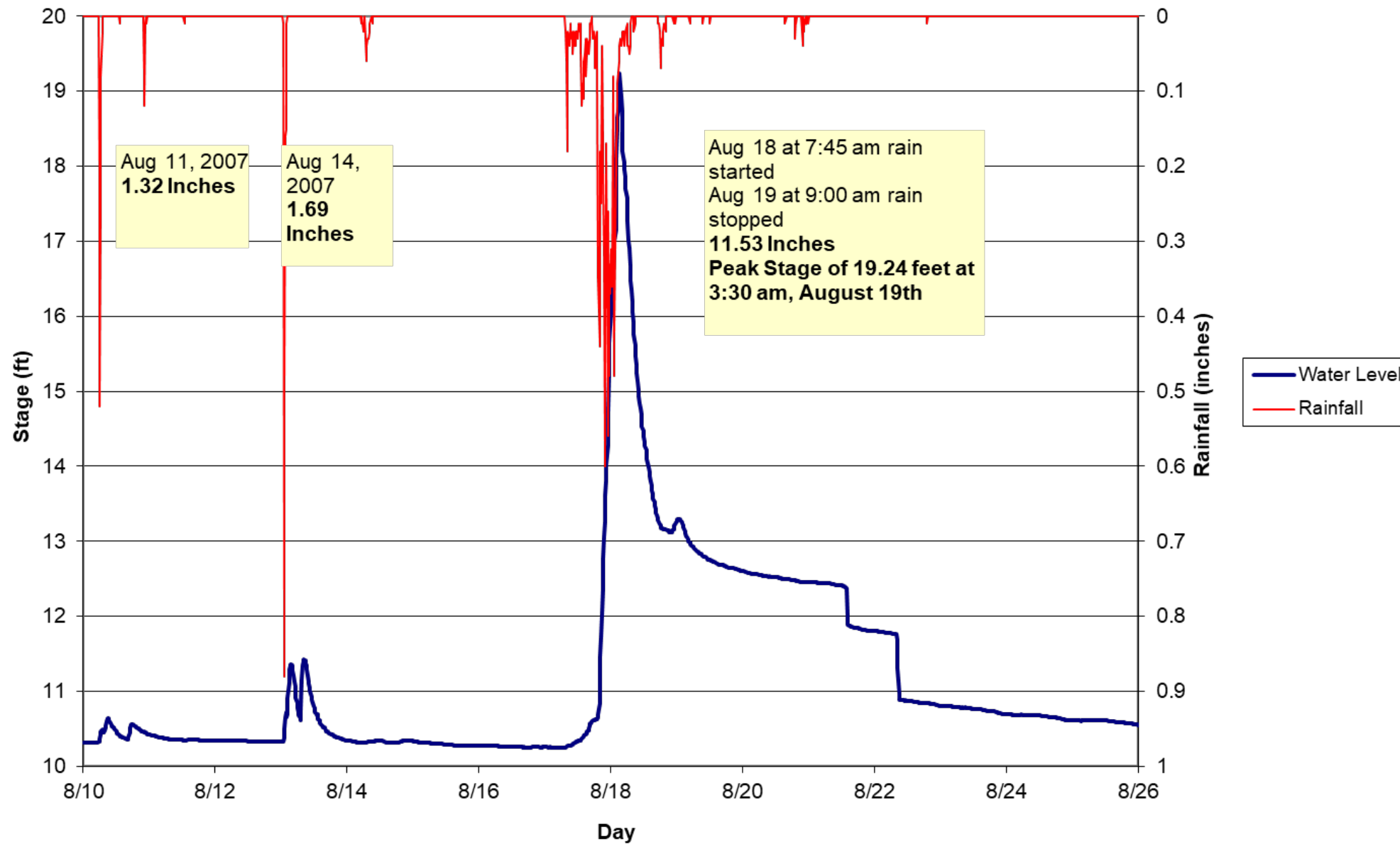
Past

- Flood of 1938 in the Whitewater River watershed spurred creation of first conservation district in MN
- Major floods in Whitewater State Park in 1974, 1975, 1978 and 2007
- Removed low water crossing access to Gooseberry Glen Campground

Past

- Flood Procedures in 2007
 - Pre-flood prep – monitor NWS weather watch and river level, notify campers of weather forecast, prepare equipment and call NWS for flood estimation
 - Mini flood actions – check river level every 15 minutes, comms w/NWS, talk w/MGC coordinators about their evacuation plans; evacuate campgrounds and sites if flooding is expected
 - Flood actions – order evacuation, verify departures, request assistance w/traffic control, and provide as much information as possible to the public

Middle Branch of the Whitewater River, August 11 through August 26, 2007















Present

- Replacement of Modern Group Center and South Picnic bridges in 2008 and numerous trail bridges, crossings, picnic tables, etc.
- Winona County installed emergency siren in the Park in 2009
- Gooseberry Glen Campground decision to close in 2011
- DNR installed flood warning gauge on bridge 1,200 ft downstream of the Modern Group Center in 2012
- DNR installed flood warning gauge on bridge 5.6 mi upstream of Modern Group Center in 2013
- Minnieska Campground opened in 2017
- Gooseberry Glen Campground closed in 2018



Present

- Continue using existing flood preparation plan
- *Ready, Set, Go!* Plan developed for MGC and test in 2026
 - Data-driven decision making
 - Guided by NOAA National Water Prediction Service categories of *Action*, *Minor Flooding* and *Moderate Flooding*
- Reservations cancelled within 24 hours when *Set or Go!* stages are reached or cancelled at *Ready* if > 6” rain is forecast within 24 hours

CR107 Gauge (NAVD88)	CR107 Gauge (River Stage)	Indicator
1009.46 feet	12.0 feet	READY
1012.31 feet	13.5 feet	SET
1013.81 feet	15.0 feet	GO
	19.13 feet	HISTORIC (<2002-Present) CREST RECORD* (08/19/2007)
* The river rose from 10.5 to 19.13 in approximately three hours.		

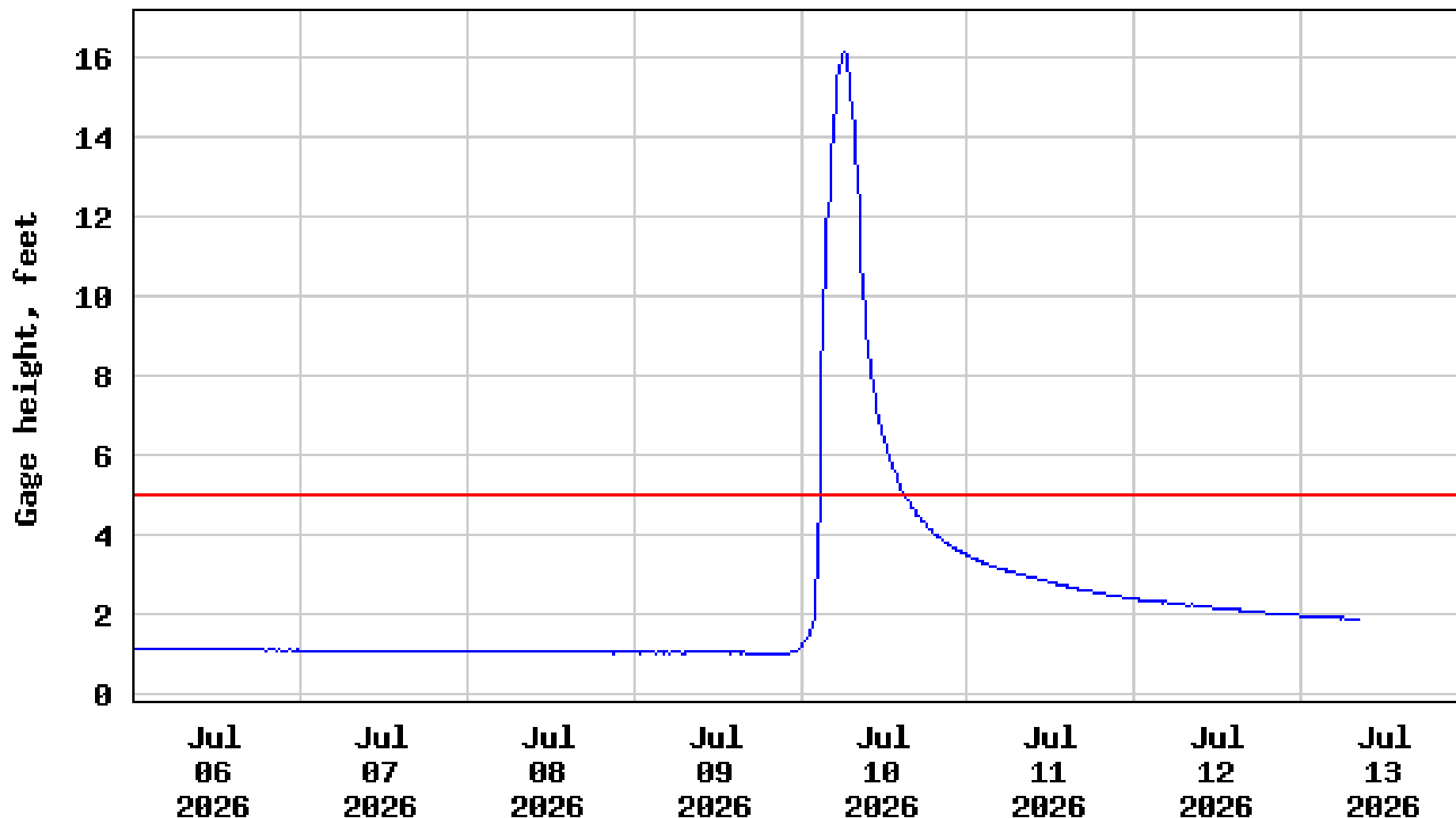
MGC Bridge Gauge (NAVD88)	MGC Bridge Gauge (River Stage)	Indicator
863.16 feet	37.5 feet	READY
864.66 feet	39 feet	SET
866.16 feet	40.5 feet	GO
	41.3 feet	HISTORIC (2012-Present) CREST RECORD (05/16/2017) *
* The river rose to approximately the fire ring area patio surface.		
872.1 feet		Bridge Surface

Present

When river rises to *Ready* stage:

- Call or speak in-person with on-site coordinator
 - inform them of the current river stage
 - inform them occupants should be *Set* to evacuate if river rises 1.5 feet
 - inform them they must *Go!* if the river rises 3 feet
- Monitor gauges and adapt communications commensurate with pace of river rise
- Repeat process with occupied sites in the Park
- Notify Winona County Emergency Manager of evacuation

USGS 07061270 East Fork Black River near Lesterville, MO



---- Provisional Data Subject to Revision ----

— Gage height

— National Weather Service Floodstage

Missouri

July 10, 2026

- Early precipitation warning from NWS
- Activation of State Emergency Ops Plan
- Pre-position of specialized response units
- Ground and aerial reconnaissance
- Use of helicopters for rapid transport
- Coordination with local agencies

Future

- Acquire and install new technologies to:
 - Increase visitor awareness of flood hazards and access to information
 - Increase visitor access to wireless communications, including at the MGC Lodge
 - Improve communications with MGC Lodge reservation holders
 - Provide outdoor PA system at the MGC Lodge

Summary

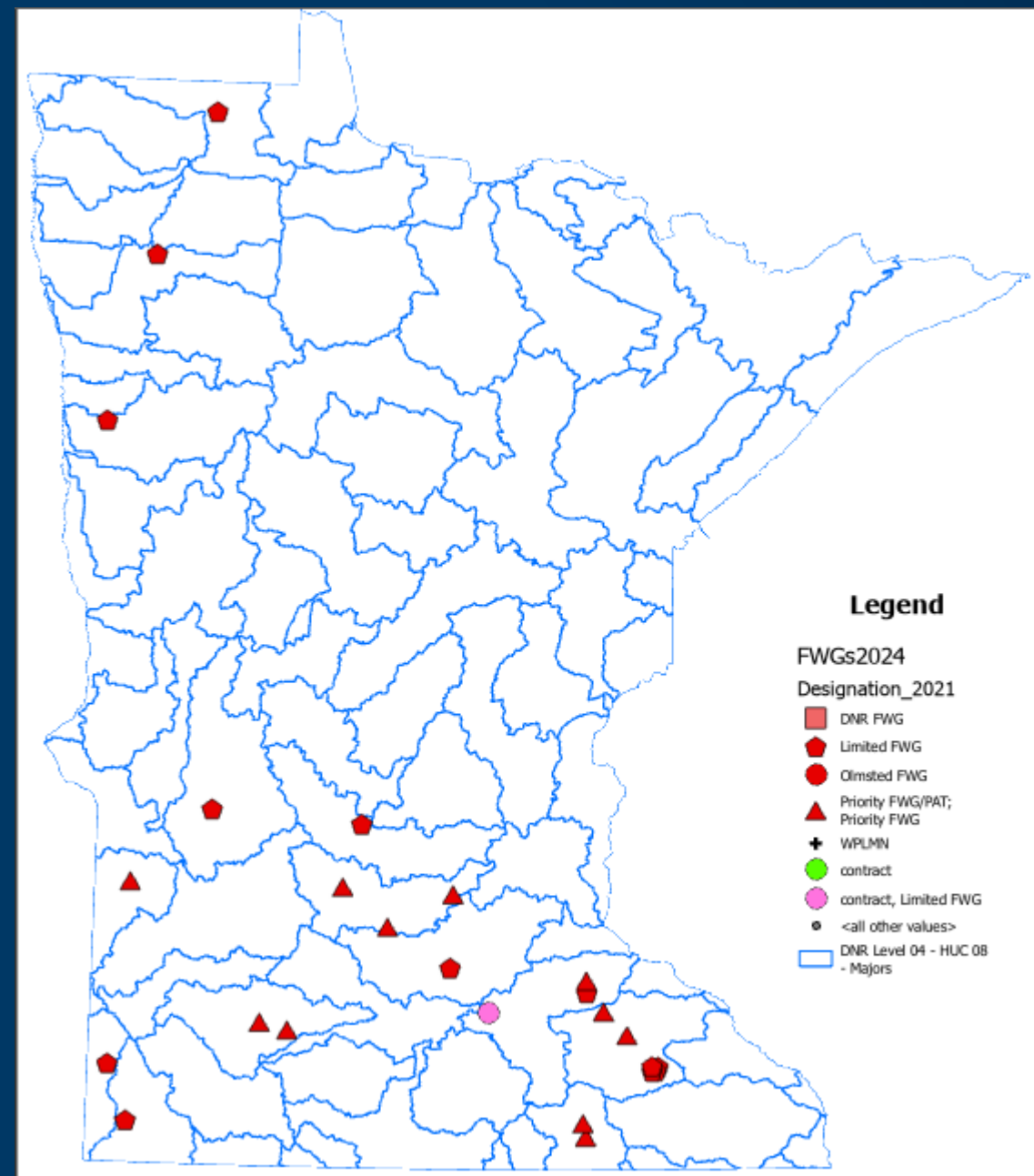
- Close call in 2007
- Improvements implemented over the following decade
- Next steps:
 - Increase visitor access to weather alerts
 - Improve speed of communications w/visitors
 - Learn from others

Comments? Questions? Observations?



MN DNR Flood warning gage network

Jeremy Rivord | EWR Water Monitoring and Surveys



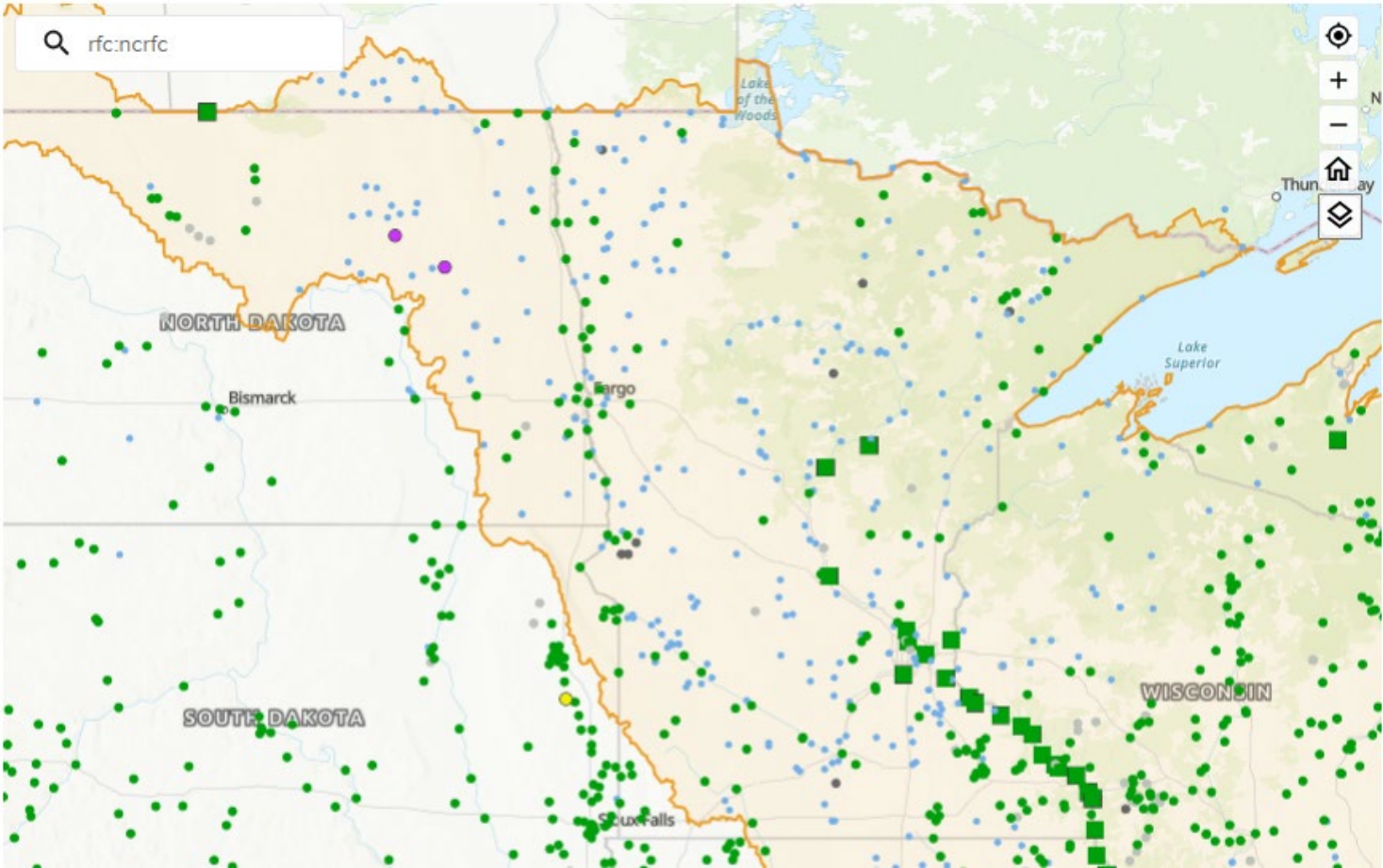
[Flood Inundation Mapping services](#) are now available for 60% of the U.S. population [here](#). Additional NWPS resources are available [here](#).



<https://www.weather.gov/ncrfc/>



National Observations / North Central River Forecast Center



NWS North Central River Forecast Center

[Weather.gov > North Central River Forecast Center](https://www.weather.gov/ncrfc/)

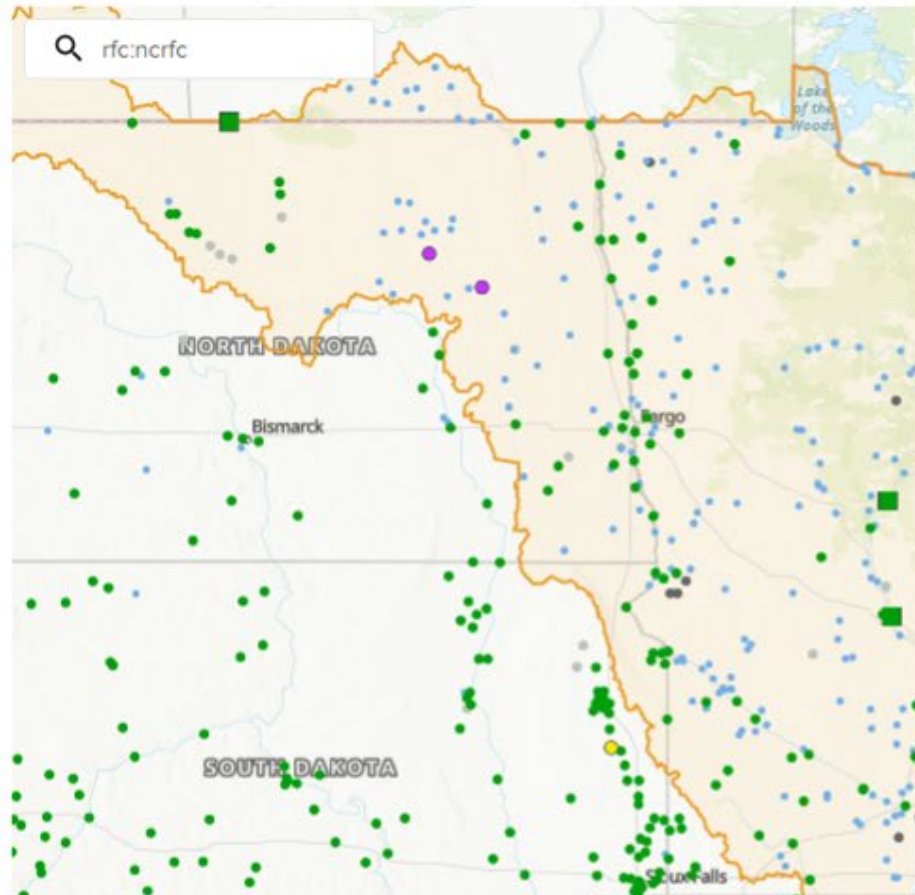
[River Observations and Forecasts](#) [Weather Observations and Forecasts](#) [Water Supply](#) [Climate and](#)

[Flood Inundation Mapping services](#) are now available for 60% of the resources are available [here](#)



<https://www.weather.gov/ncrfc/>

National Observations / North Central River Forecast Center



North Central River Forecast Center

[River Forecast Center](#)

WSPM5

Upstream gauge unavailable

[Full Gauge Page >](#)

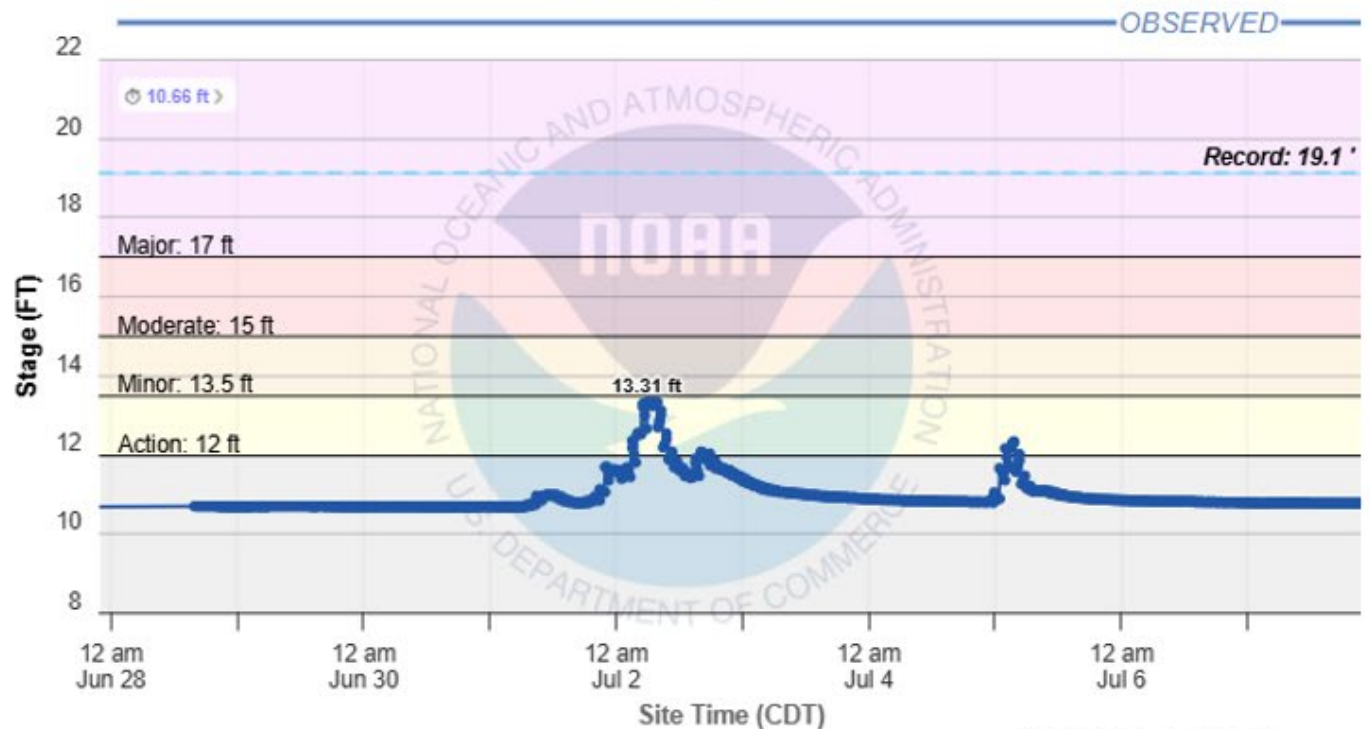
Downstream gauge (WWPM5) →

Heat Advisory

Official Forecast

Middle Fork Whitewater River near Whitewater State Park

NWSLI: WSPM5, Reach ID:



Observations courtesy of Minnesota DNR

Graph Created: (07:41 AM CDT Jul 15 2026)

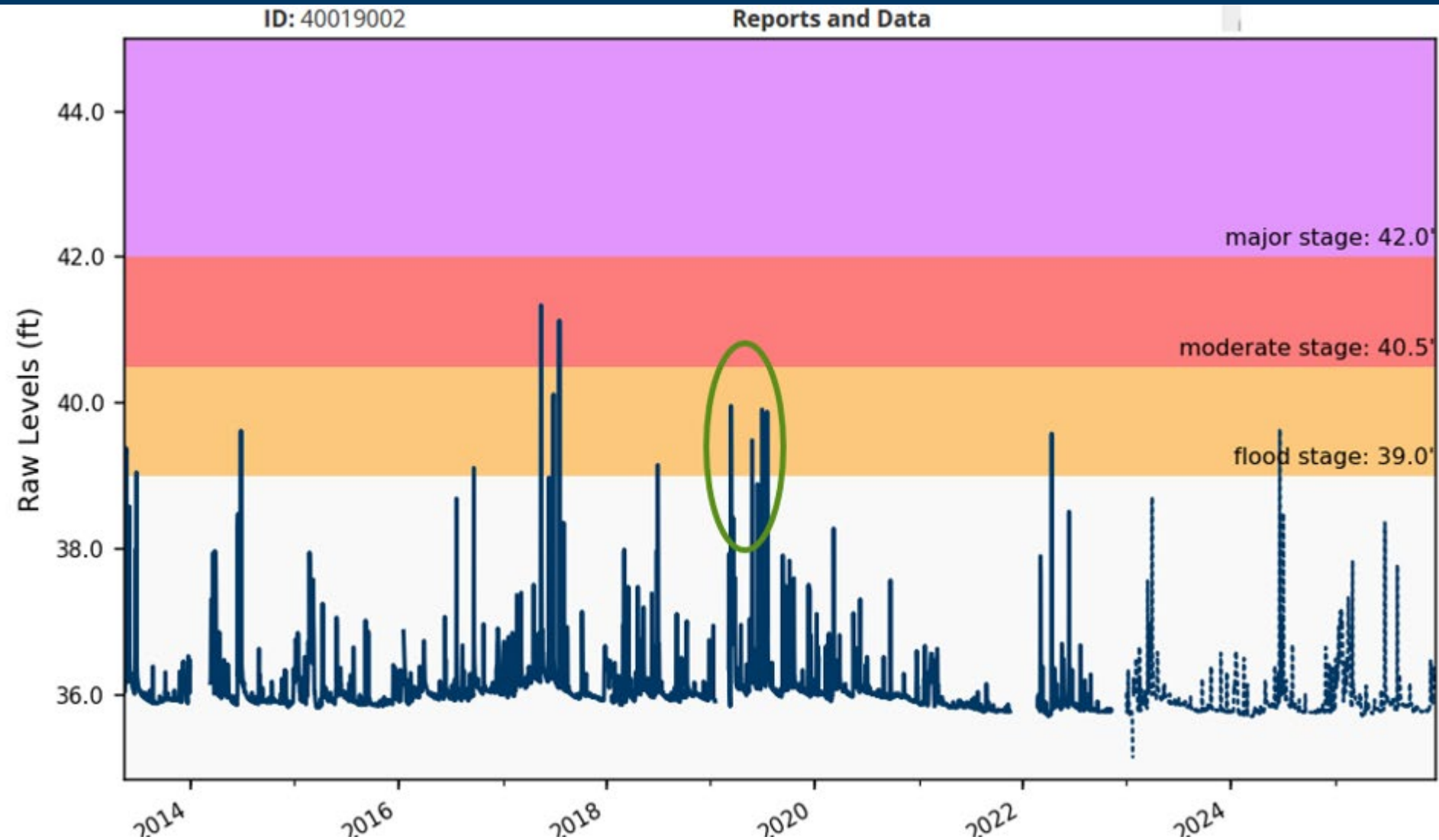
WSPM5 (plotting HGIRG) "Gage 0" Datum (NAVD88): 998.81'



Middle Fork Whitewater River nr Elba, SPRK1

ID: 40019002

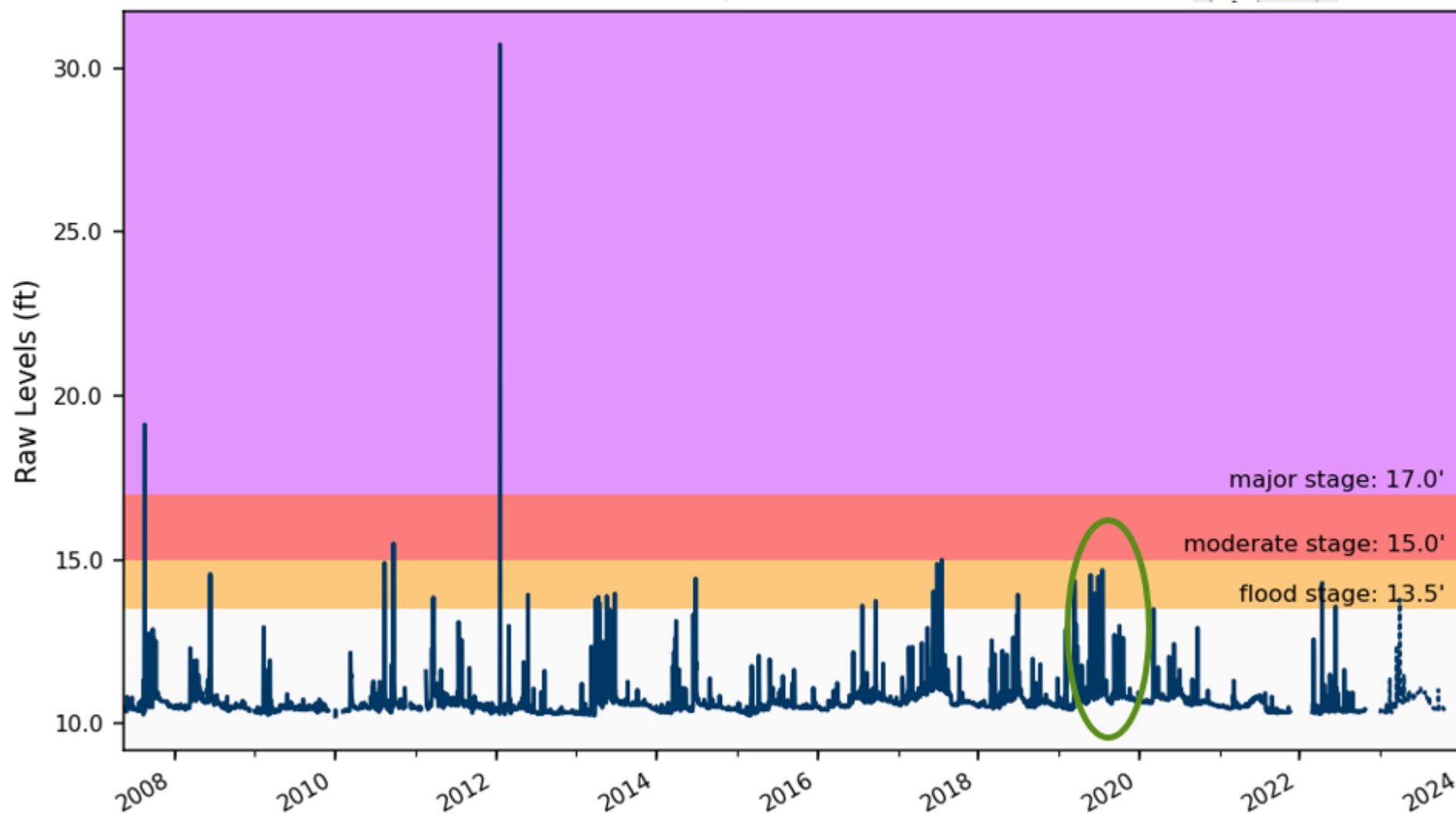
Reports and Data



Middle Fork Whitewater River nr St Charles, CR107

ID: 40019001

Reports and Data



Whitewater State Park Flood warning gages

Historic Crests collected nr CR107

- | | |
|----------------------------|----------------------------|
| 1. 19.13 ft on 08-19-2007 | 11. 14.43 ft on 06-27-2014 |
| 2. 15.50 ft on 09-23-2010 | 12. 14.42 ft on 03-14-2019 |
| 3. 15.37 ft on 03-13-2007 | 13. 14.08 ft on 06-11-2002 |
| 4. 15.00 ft on 07-19-2017 | 14. 13.99 ft on 06-12-2017 |
| 5. 14.91 ft on 08-14-2010 | 15. 13.98 ft on 06-16-2019 |
| 6. 14.88 ft on 06-29-2017 | 16. 13.97 ft on 06-25-2013 |
| 7. 14.69 ft on 07-19-2019 | 17. 13.94 ft on 05-26-2012 |
| 8. 14.56 ft on 06-12-2008 | 18. 13.94 ft on 06-30-2018 |
| 9. 14.51 ft on 05-27-2019 | 19. 13.90 ft on 05-20-2013 |
| 10. 14.45 ft on 07-01-2019 | 20. 13.86 ft on 03-23-2011 |

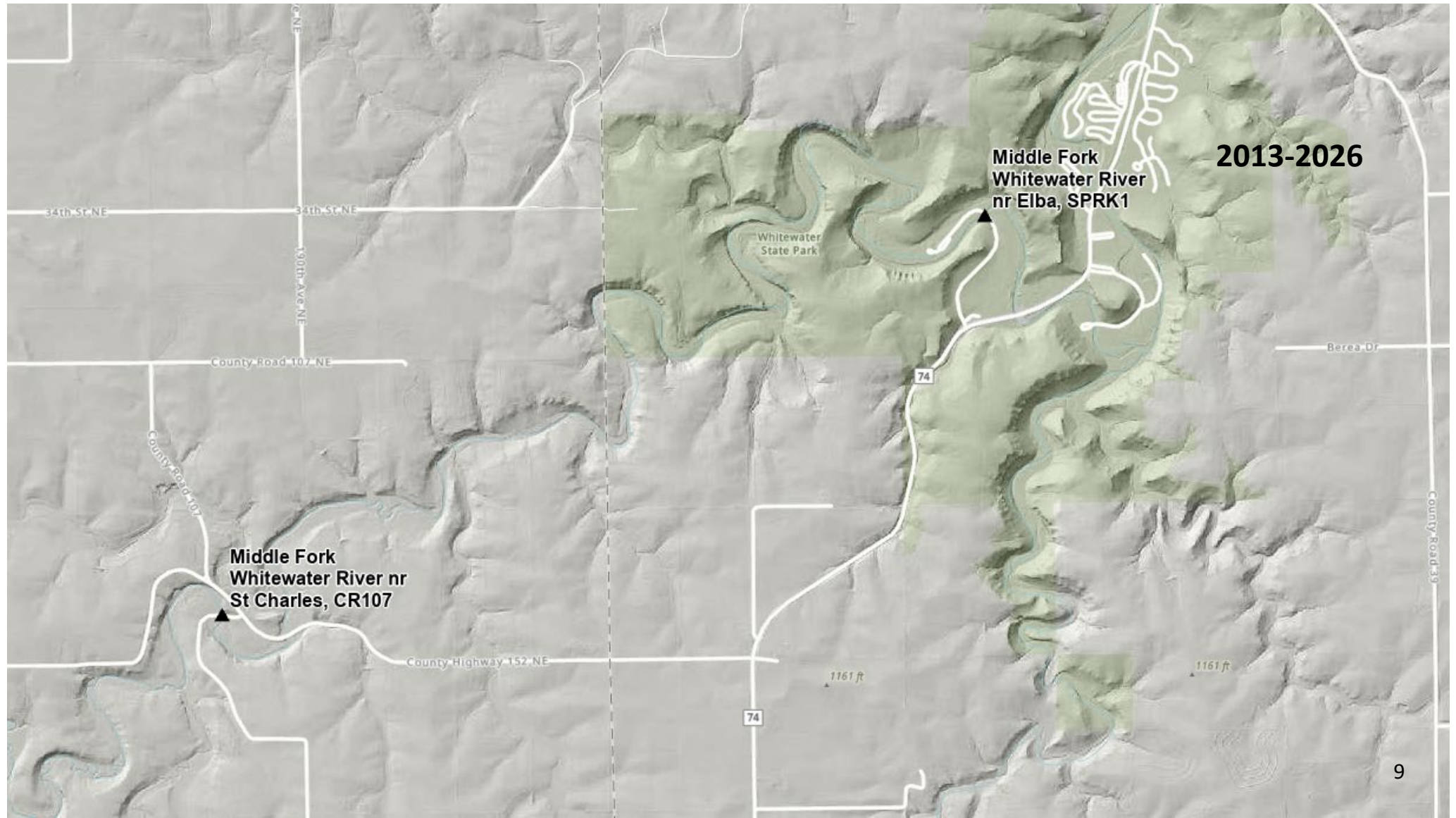
<https://water.noaa.gov/gauges/wspm5>



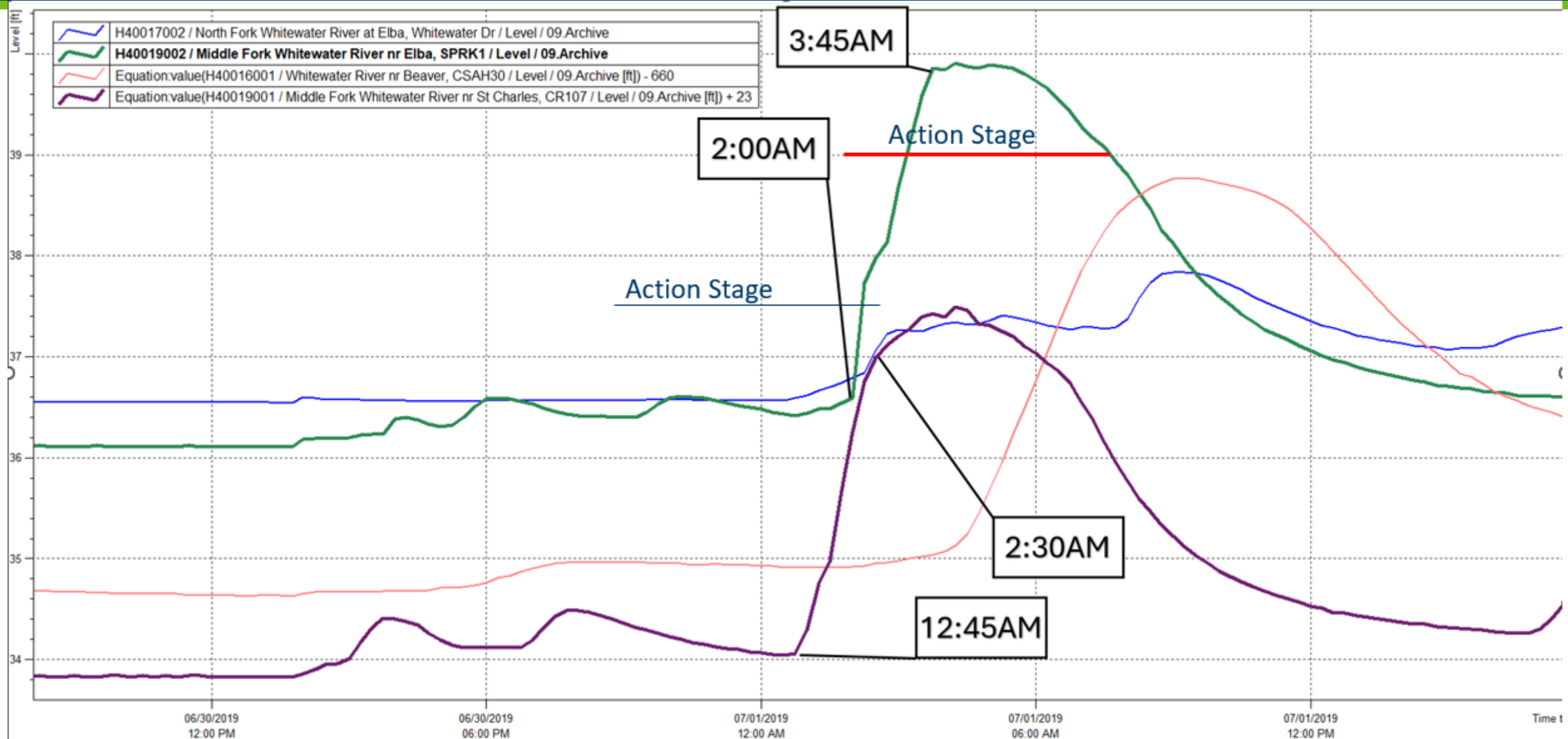
7-2-2019 St. Charles

Whitewater State Park Flood warning gages

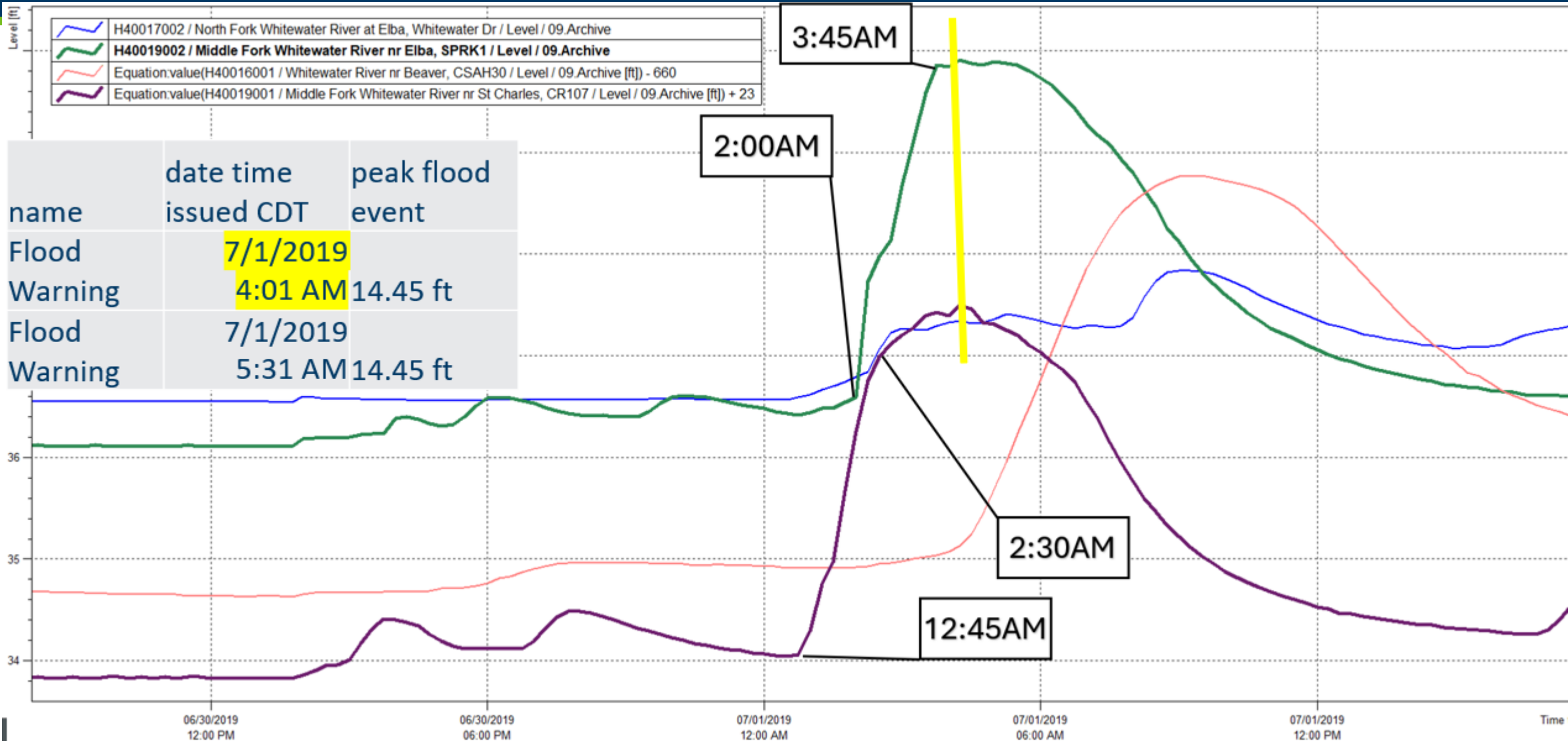
2007-2026



Whitewater State Park Flood warning gages



Whitewater State Park Flood warning gages



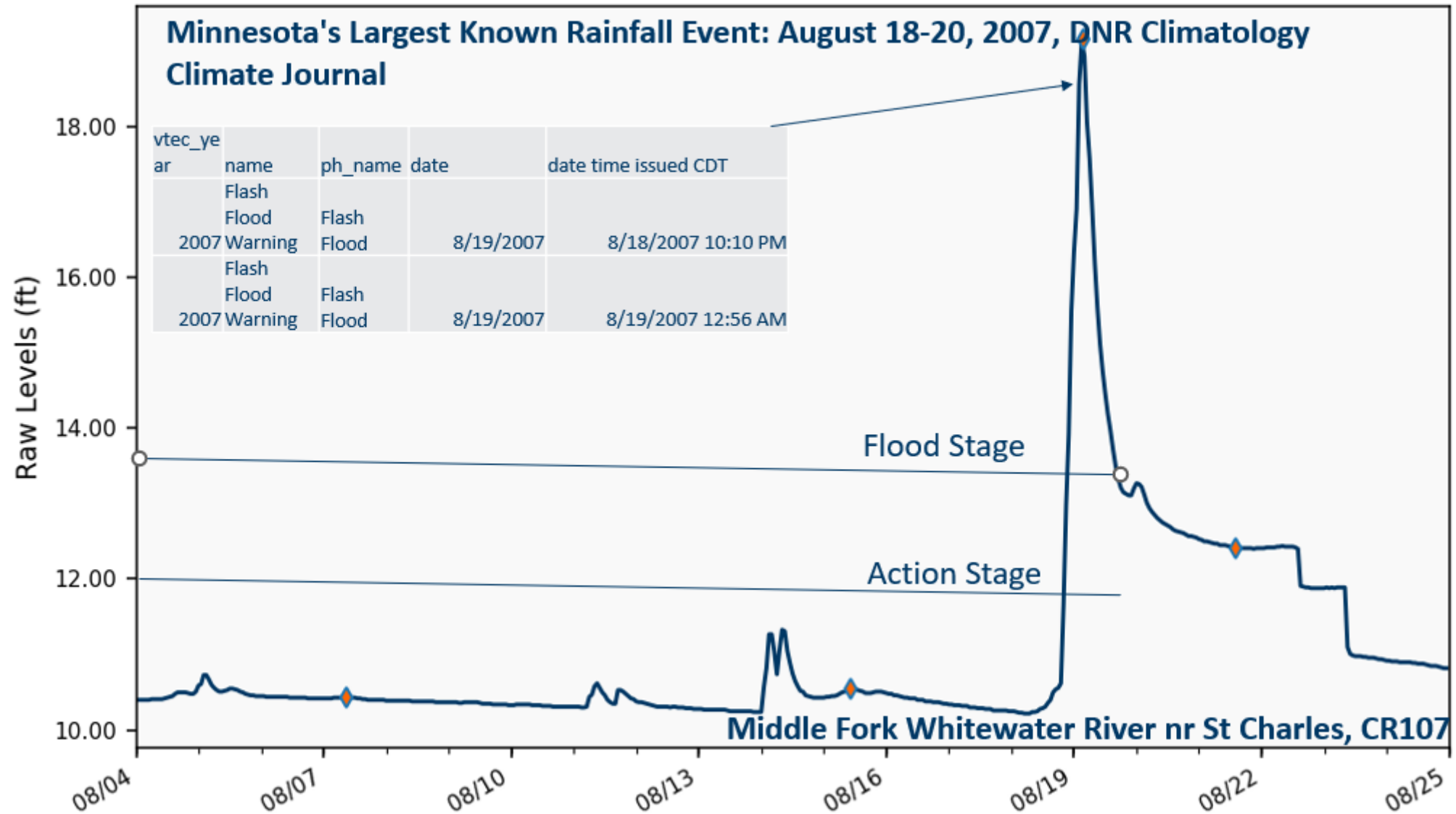
Whitewater State Park Flood warning gages

Historic Crests collected nr CR107

record from 2007 through current

- | | |
|----------------------------|----------------------------|
| 1. 19.13 ft on 08-19-2007 | 11. 14.43 ft on 06-27-2014 |
| 2. 15.50 ft on 09-23-2010 | 12. 14.42 ft on 03-14-2019 |
| 3. 15.37 ft on 03-13-2007 | 13. 14.08 ft on 06-11-2002 |
| 4. 15.00 ft on 07-19-2017 | 14. 13.99 ft on 06-12-2017 |
| 5. 14.91 ft on 08-14-2010 | 15. 13.98 ft on 06-16-2019 |
| 6. 14.88 ft on 06-29-2017 | 16. 13.97 ft on 06-25-2013 |
| 7. 14.69 ft on 07-19-2019 | 17. 13.94 ft on 05-26-2012 |
| 8. 14.56 ft on 06-12-2008 | 18. 13.94 ft on 06-30-2018 |
| 9. 14.51 ft on 05-27-2019 | 19. 13.90 ft on 05-20-2013 |
| 10. 14.45 ft on 07-01-2019 | 20. 13.86 ft on 03-23-2011 |

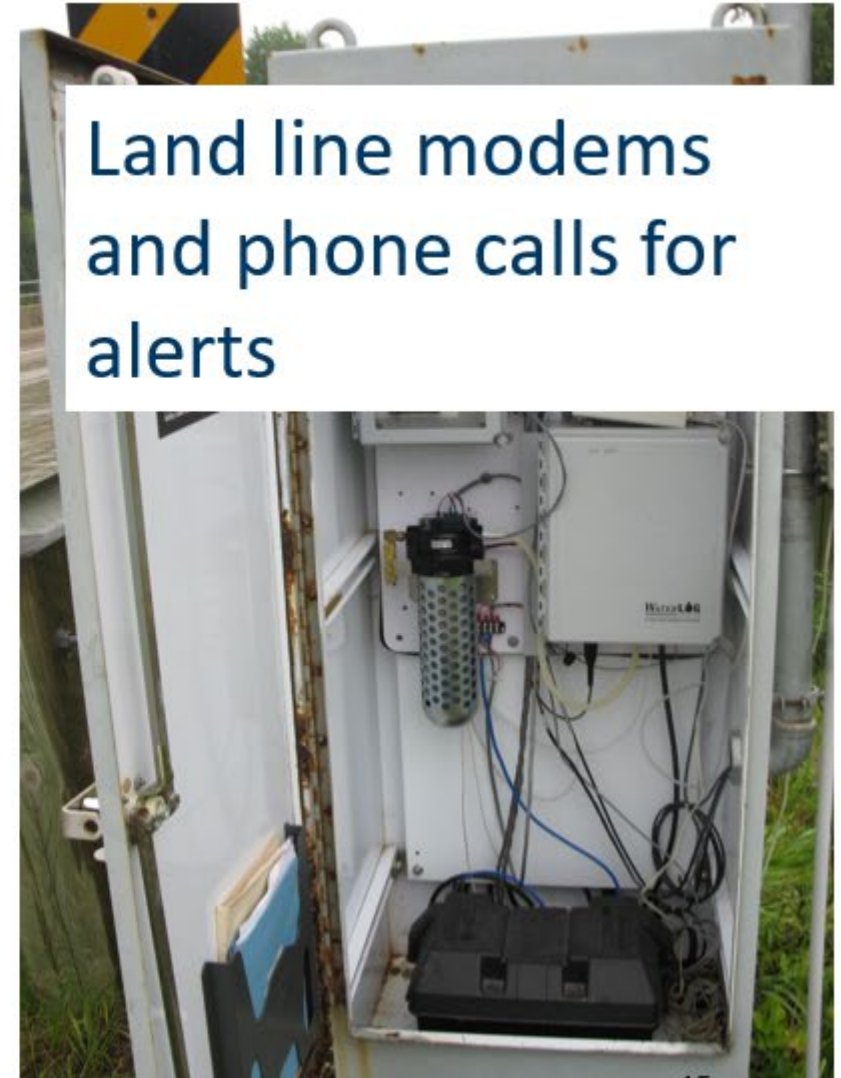
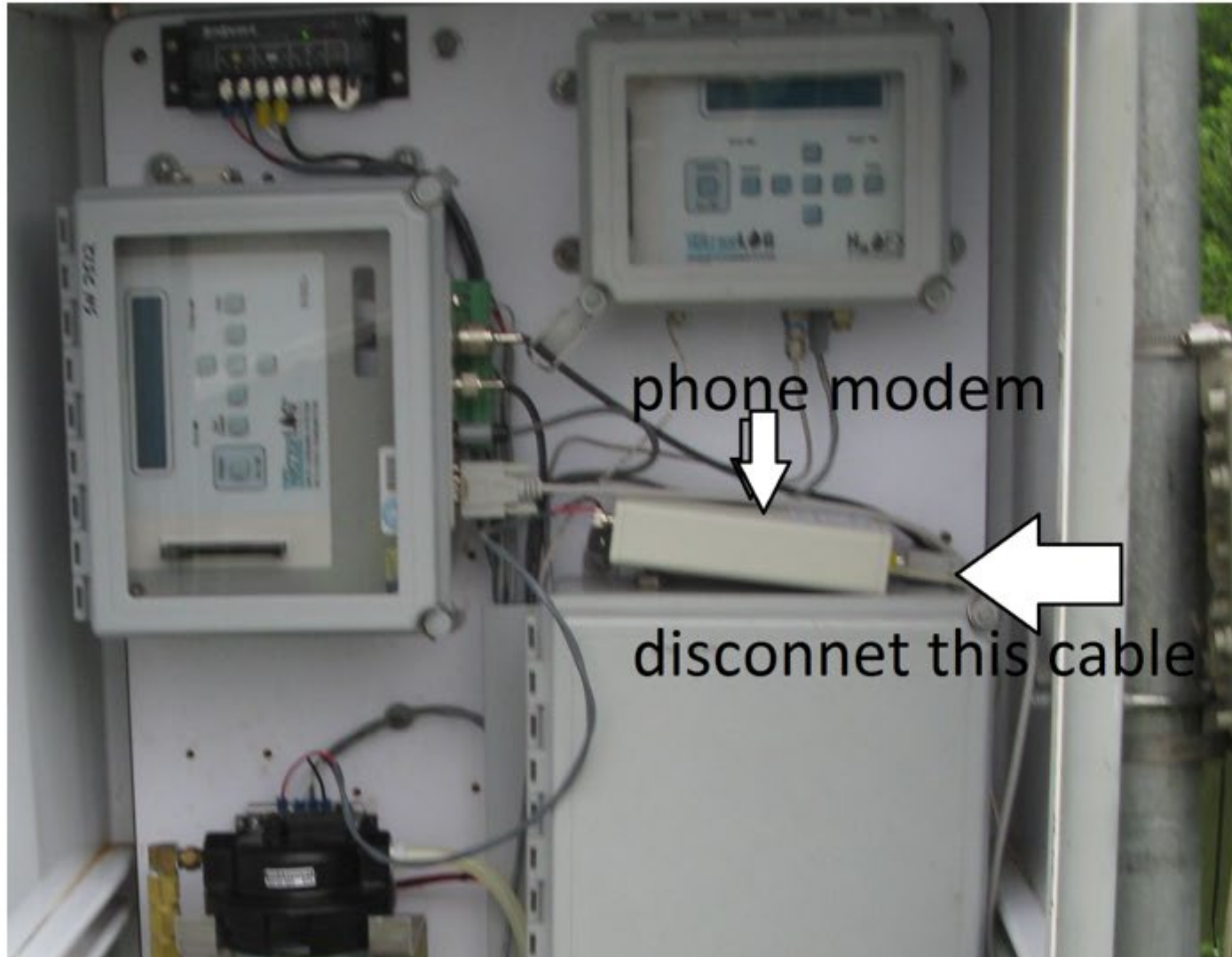
<https://water.noaa.gov/gauges/wspm5>



Whitewater State Park Flood warning gages



Whitewater State Park Flood warning gages



Whitewater State Park Flood warning gages

Historic Crests collected nr CR107

- | | |
|----------------------------|----------------------------|
| 1. 19.13 ft on 08-19-2007 | 11. 14.43 ft on 06-27-2014 |
| 2. 15.50 ft on 09-23-2010 | 12. 14.42 ft on 03-14-2019 |
| 3. 15.37 ft on 03-13-2007 | 13. 14.08 ft on 06-11-2002 |
| 4. 15.00 ft on 07-19-2017 | 14. 13.99 ft on 06-12-2017 |
| 5. 14.91 ft on 08-14-2010 | 15. 13.98 ft on 06-16-2019 |
| 6. 14.88 ft on 06-29-2017 | 16. 13.97 ft on 06-25-2013 |
| 7. 14.69 ft on 07-19-2019 | 17. 13.94 ft on 05-26-2012 |
| 8. 14.56 ft on 06-12-2008 | 18. 13.94 ft on 06-30-2018 |
| 9. 14.51 ft on 05-27-2019 | 19. 13.90 ft on 05-20-2013 |
| 10. 14.45 ft on 07-01-2019 | 20. 13.86 ft on 03-23-2011 |

<https://water.noaa.gov/gauges/wspm5>

Whitewater State Park Flood warning gages



DEPARTMENT OF
NATURAL RESOURCES

“READY, SET, GO” FLOOD PLAN

WHITEWATER STATE PARK – MODERN GROUP CENTER

GOAL: Ensure safety of employees, visitors and volunteers

OVERVIEW: The Whitewater State Park (Park) is visited by an average of 300,400,000



Whitewater State Park Flood warning gages

“Park visitors are ultimately responsible for their own safety during severe weather. State Parks, State Recreation Areas and State Forest Recreation Areas will have posted general procedures on how park visitors should respond to severe weather events. Division of Parks and Recreation staff will make reasonable efforts to advise visitors of impending severe weather information when staff is present.” (Policy 016, 2008)

Park staff must consider the growing risk of flooding and be prepared to first ensure their own safety and secondly ensure the safety of visitors and volunteers. Park staff will follow the procedures below, which are guided by best available science.

Whitewater State Park Flood warning gages

Park staff actions will be guided by hydrologic data collected less than three miles southwest (upstream) of the Modern Group Center (MGC) (Middle Fork at County Road 107, hereafter CR107 Gauge) and from the MGC access road (NWS Middle Fork Whitewater River Gauge at Whitewater State Park Group Camp, hereafter MGC Road Gauge). The links are to the NWS website and provide data that is within the hour. (See the end of the plan for examples.)

The Ready, Set, Go thresholds generally align with the four NWS flood categories:

- Action: The level which, when reached by a rising stream, represents the level where the NWS or a customer/partner needs to take some type of mitigation action in preparation for possible significant hydrologic activity.
- Minor Flooding: Minimal or no property damage, but possibly some public threat.
- Moderate Flooding: Some inundation of structures and roads near stream.
- Major Flooding: Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations. NOTE: Out of an abundance of caution, mandatory evacuations at MGC will occur before the river level reaches the Major Flooding category at either gauge location.





Minnesota Standards & What Other States are Doing

Garry Bennett | Floodplain Hydrologist

Ceil Strauss | State Floodplain (NFIP) Manager

Texas Floodplain Law Changes

Key legislation (2025):

- Senate Bill 1 - Heaven's 27 Camp Safety Act
- House Bill 1 – Youth CAMPER Act

Requirements:

- Prohibits camper cabins in flood prone areas (must either be adjacent to still waterbody (lake/pond) or at least 1,000 feet from floodway)
- All youth camps must have an emergency warning system (not reliant on the internet), such as a public address (PA) system
- Camp staff must be trained on evacuation procedures
- Annual state compliance inspections

Texas Legislative Report (June 2026)

Confirmed emergency action plan (EAP) gaps:

- Failed to maintain written EAPs that complied with state requirements
- Failed to adequately prepare for July 3-4, 2025 storm
- Failed to evacuate in time, despite having ample opportunity
- Mismanaged reunification efforts and incident response

Key Lessons

- 1) Regulatory gaps leave camps and campgrounds vulnerable
 - NFIP does not adequately address temporary uses like camping
- 2) Advanced warnings only work when paired with an action plan
 - Limited effectiveness if don't have an EAP
- 3) EAPs for flash flooding in campgrounds are non-existent or insufficient
 - EAPs not specific to flooding (often lumped with severe weather)
- 4) Plans must be practiced to be effective
 - Exercised so that response becomes “automatic”
- 5) Parents need awareness and must ask the right questions [for camps]
 - Texas now requires a parental “consent and release” for camps

Minnesota Model Floodplain Ordinance Changes

Key updates:

- Section 2.116, added “Campground” definition

2.116 Campground. A parcel or tract of land made available to persons for camping – either by day or overnight, whether by tent, trailer, camper, cabin, recreational vehicle, or similar device, and includes the outdoor recreational facilities located on the real property. For the purposes of these regulations, a campground also includes Recreational Vehicle Parks and Day Camps but does not include manufactured home parks. For the purposes of this ordinance, this definition shall include, but is not limited to, those facilities subject to Minnesota Rules, part 4630.

Minnesota Model Floodplain Ordinance Changes

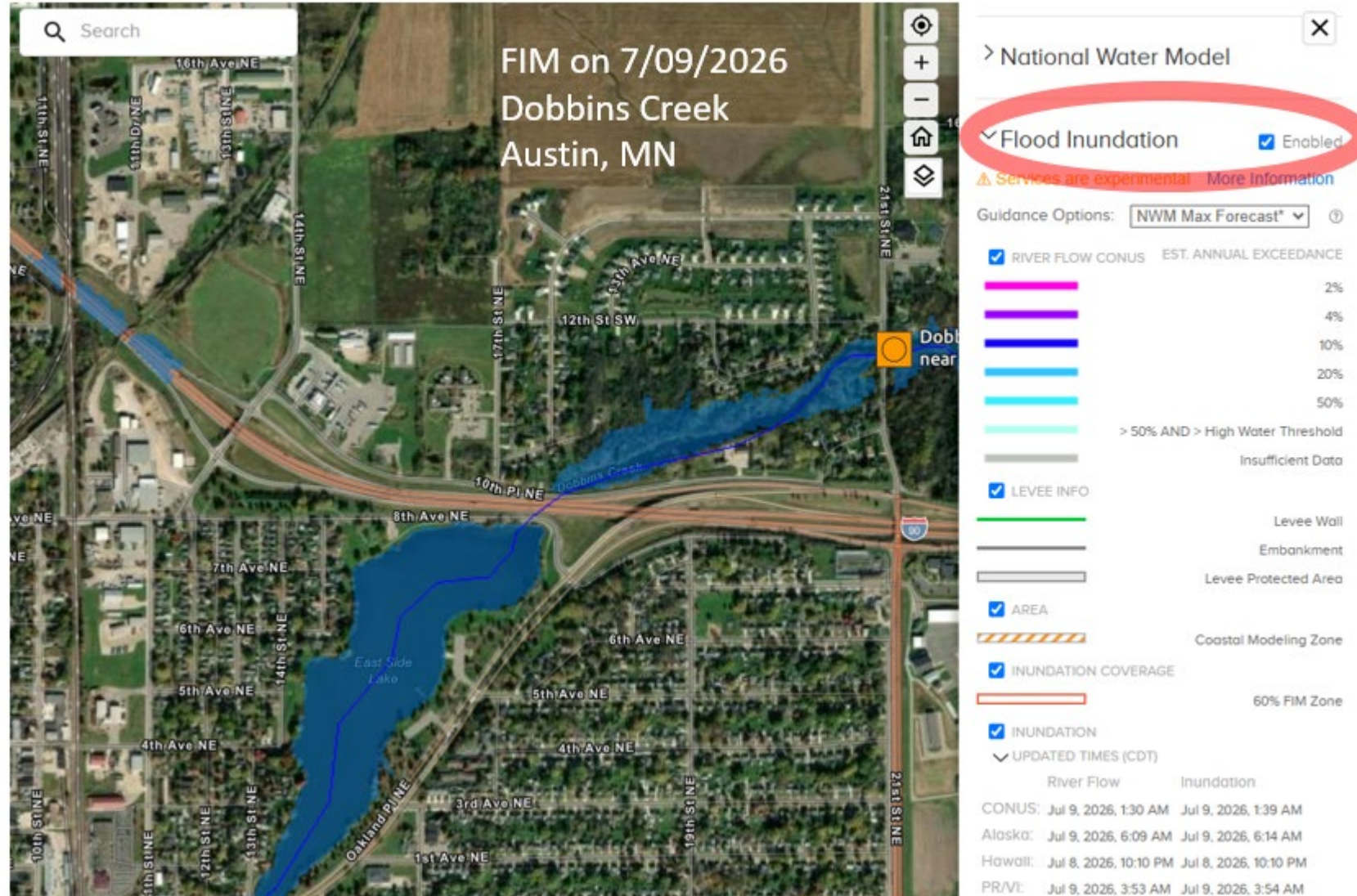
Key updates:

- Section 8.2, added “Campground” standards:
 - Prohibits camp sites and other development in the floodway
 - Requires emergency action plan (EAP) as optional higher standard, to include:
 - Description of flood hazard and assessment of risk
 - Description of monitoring/detection and emergency alert system
 - Management functions: Warnings, decision making, method of warning, content of warning, channel of warning, and personnel responsible 24/7
 - Evacuation routes and procedures for evacuation, including permanent signage
 - Procedures for making staff and campers aware of EAP
 - Campground EAPs subject to annual review with County Emergency Manager

Resources – NWS Flood Inundation Mapper

NWS Real-time Flood Inundation Mapper (FIM)

- Go to [NWS National Water Prediction Service](#)
- Turn on “Flood Inundation” layer (right-hand side)
- Allows you to see areas NWS is forecasting will be flooded (shaded blue)
- Based on 5-day weather forecast



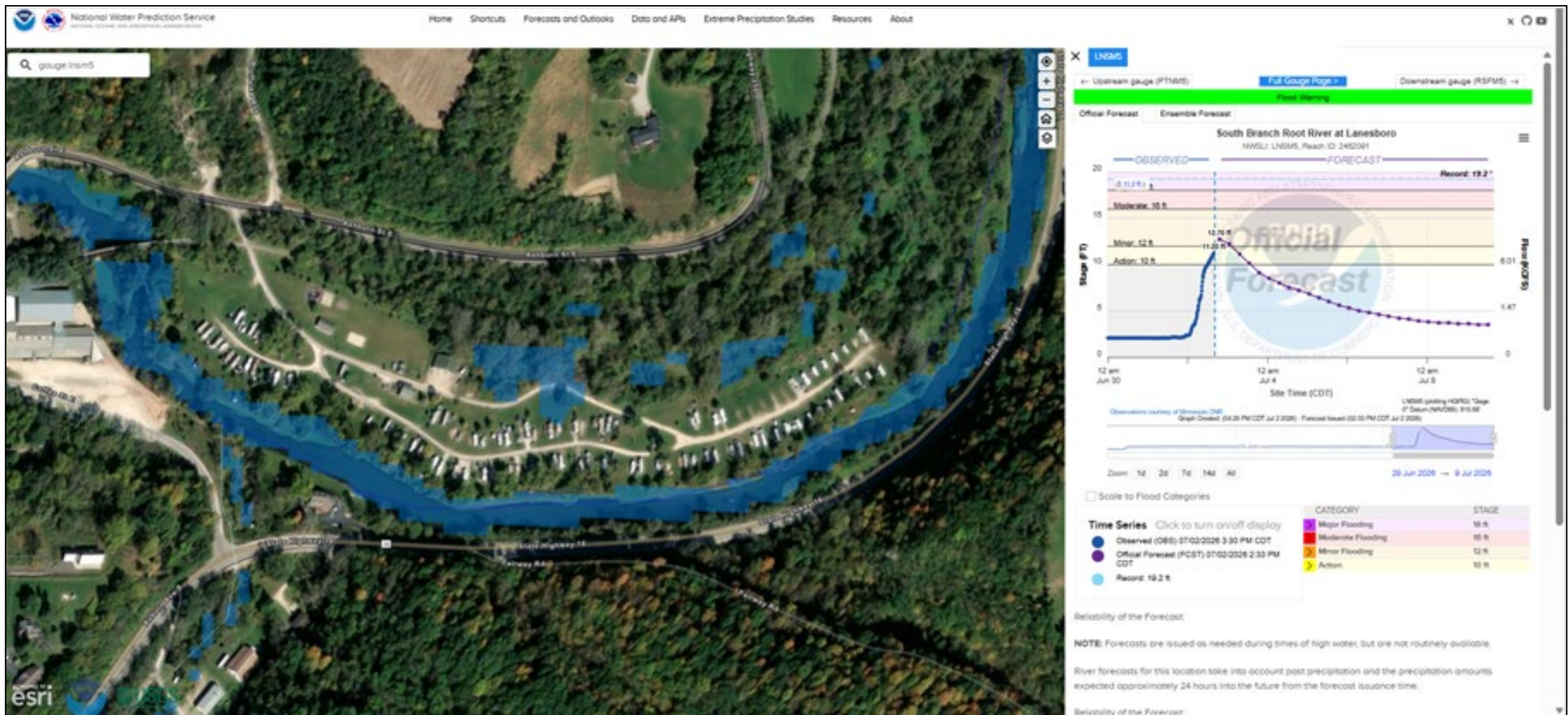
Resources – NWS Flood Inundation Mapper

7/09/2026 Beaver Trails Campground (Rose Creek nr. Austin, MN) example



Resources – NWS Flood Inundation Mapper

7/02/2026 Lanesboro example



Resources – new ASFPM flood safety for campgrounds

Flooding Emergency Action Plan Guide

- Step-by-step guide for camp owners and managers
- Walks through EAP development

Model ordinance language

- Ready to adopt language
- Requires EAPs for campgrounds
- Includes minimum EAP standards

