

# IOWA

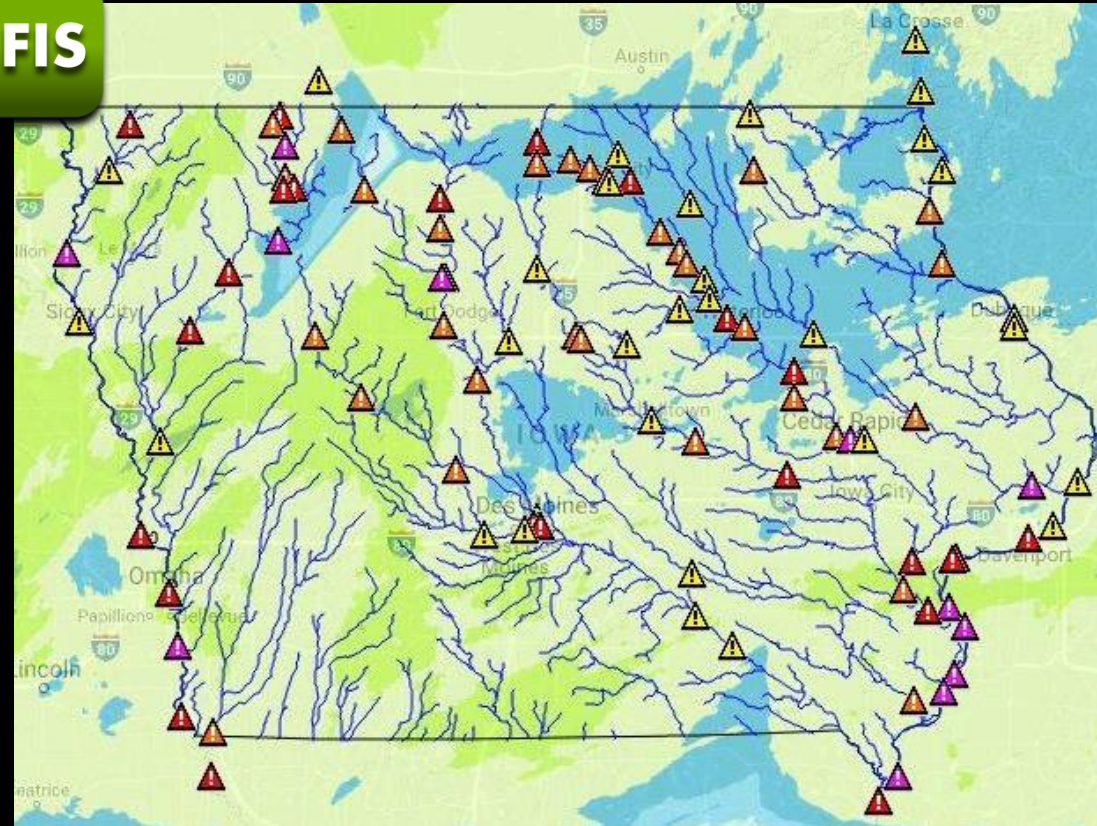


# Iowa Flood Information System

Real-time flood information for Iowans

September 16, 2021

IFIS





Cedar Rapids, IA 2008

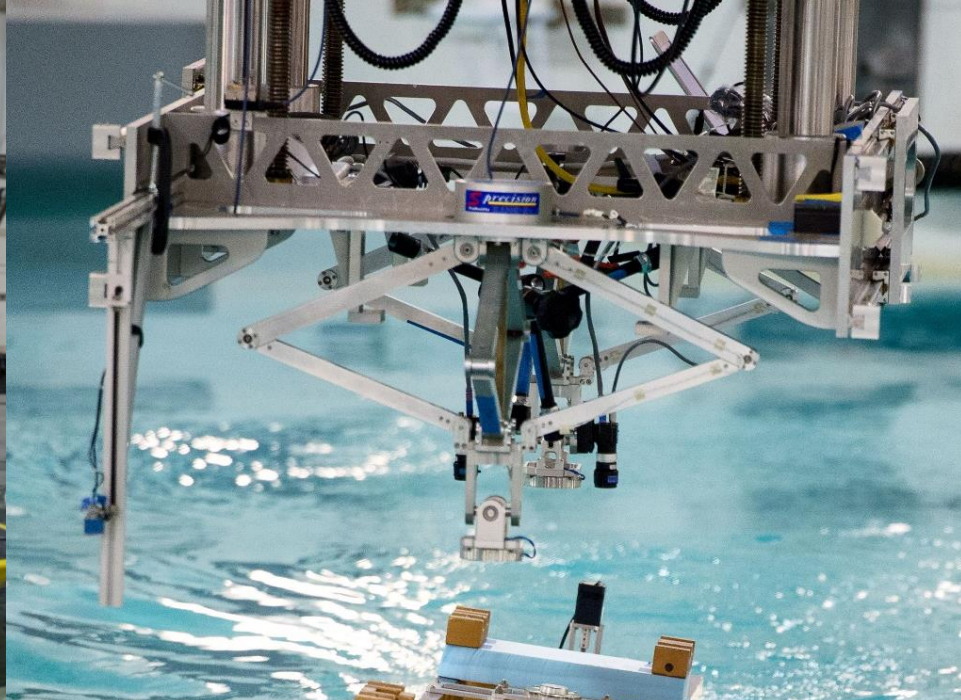
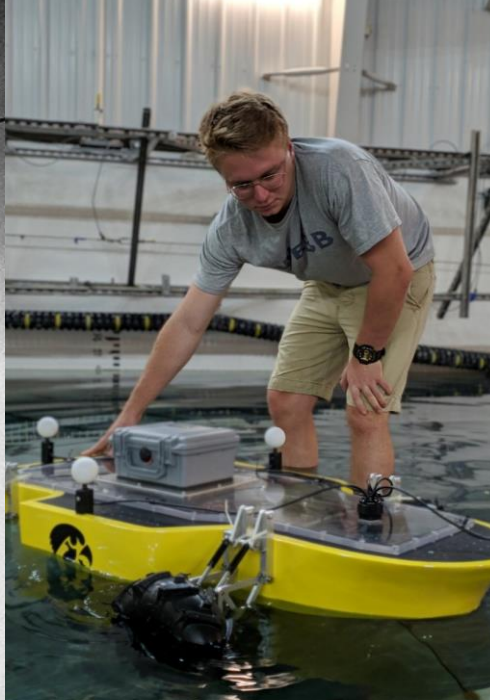




## Sec. 15. NEW SECTION. 466C.1 IOWA FLOOD CENTER

1. The state board of regents shall establish and maintain in Iowa City as a part of the state university of Iowa an Iowa Flood Center. In conducting the activities of this chapter, the center shall work cooperatively with the department of natural resources, the department of agriculture and land stewardship, the water resources coordinating council, and other state and federal agencies.
2. The Iowa flood center shall have all of the following purposes:
  - a. To develop hydrologic models for physically based flood frequency estimation and **real-time forecasting of floods**, including hydraulic models of **flood plain inundation mapping**.
  - b. To establish community-based programs to **improve flood monitoring** and prediction along Iowa's major waterways and to support ongoing flood research.
  - c. To **share resources and expertise** of the Iowa flood center.
  - d. To assist in the **development of a workforce** in the state, knowledgeable regarding flood research, prediction, and mitigation strategies.

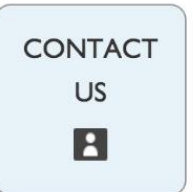
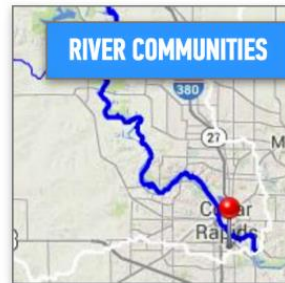
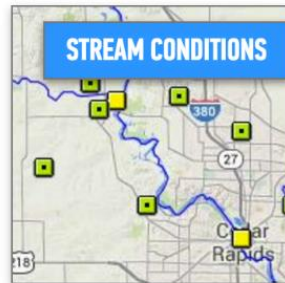
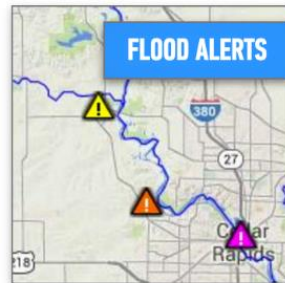
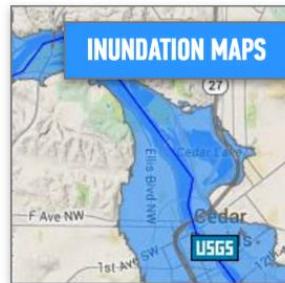






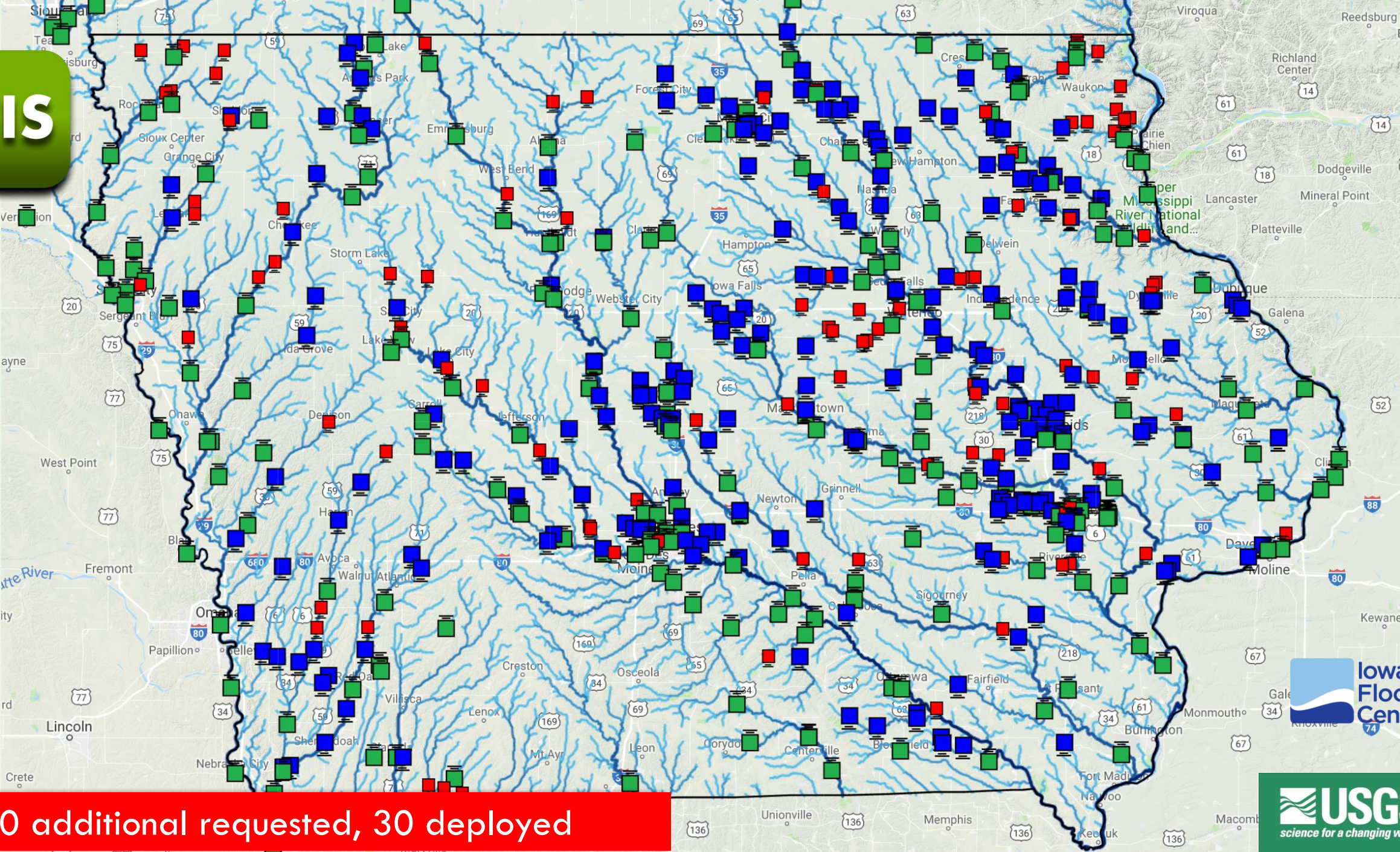
# IOWA FLOOD INFORMATION SYSTEM

The Iowa Flood Information System (IFIS) is a one-stop web-platform to access community-based flood conditions, forecasts, visualizations, inundation maps and flood-related data, information, and applications





**IFIS**

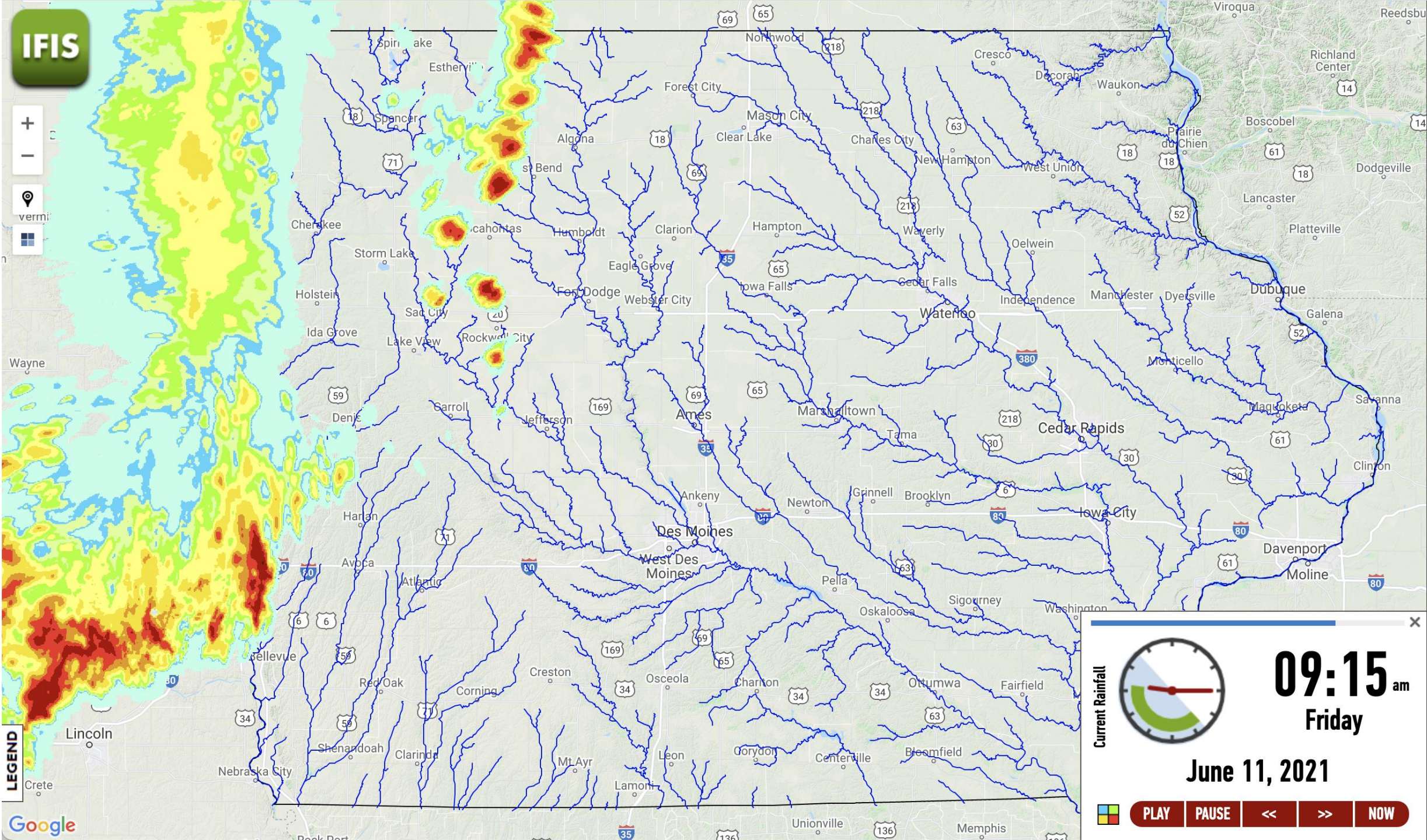


**100 additional requested, 30 deployed**






IFIS



Current Rainfall



**09:15 am**  
Friday

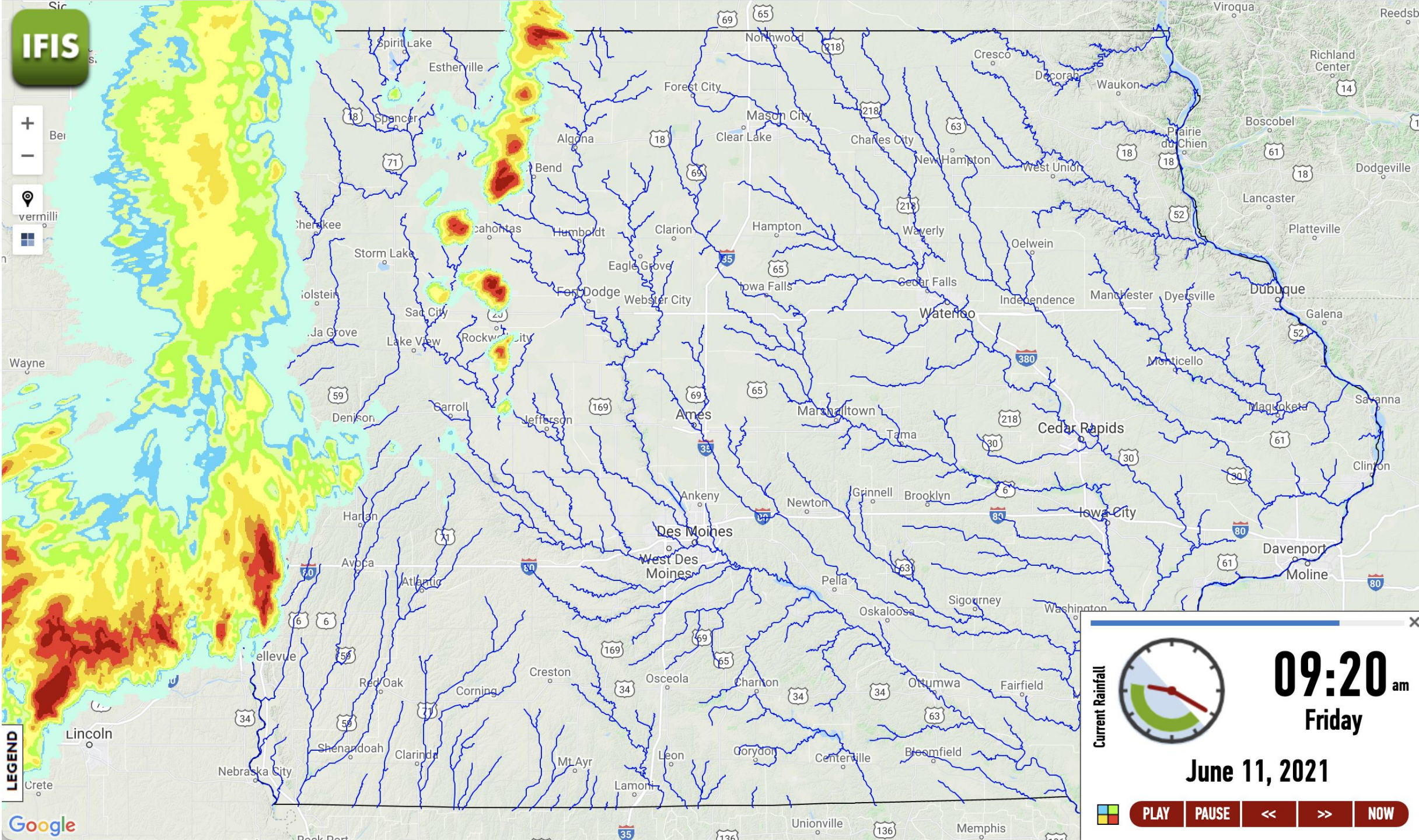
**June 11, 2021**

PLAY PAUSE << >> NOW

IFIS



IFIS



LEGEND

Google



Current Rainfall

**09:20** am  
Friday  
June 11, 2021

PLAY PAUSE << >> NOW

IFIS

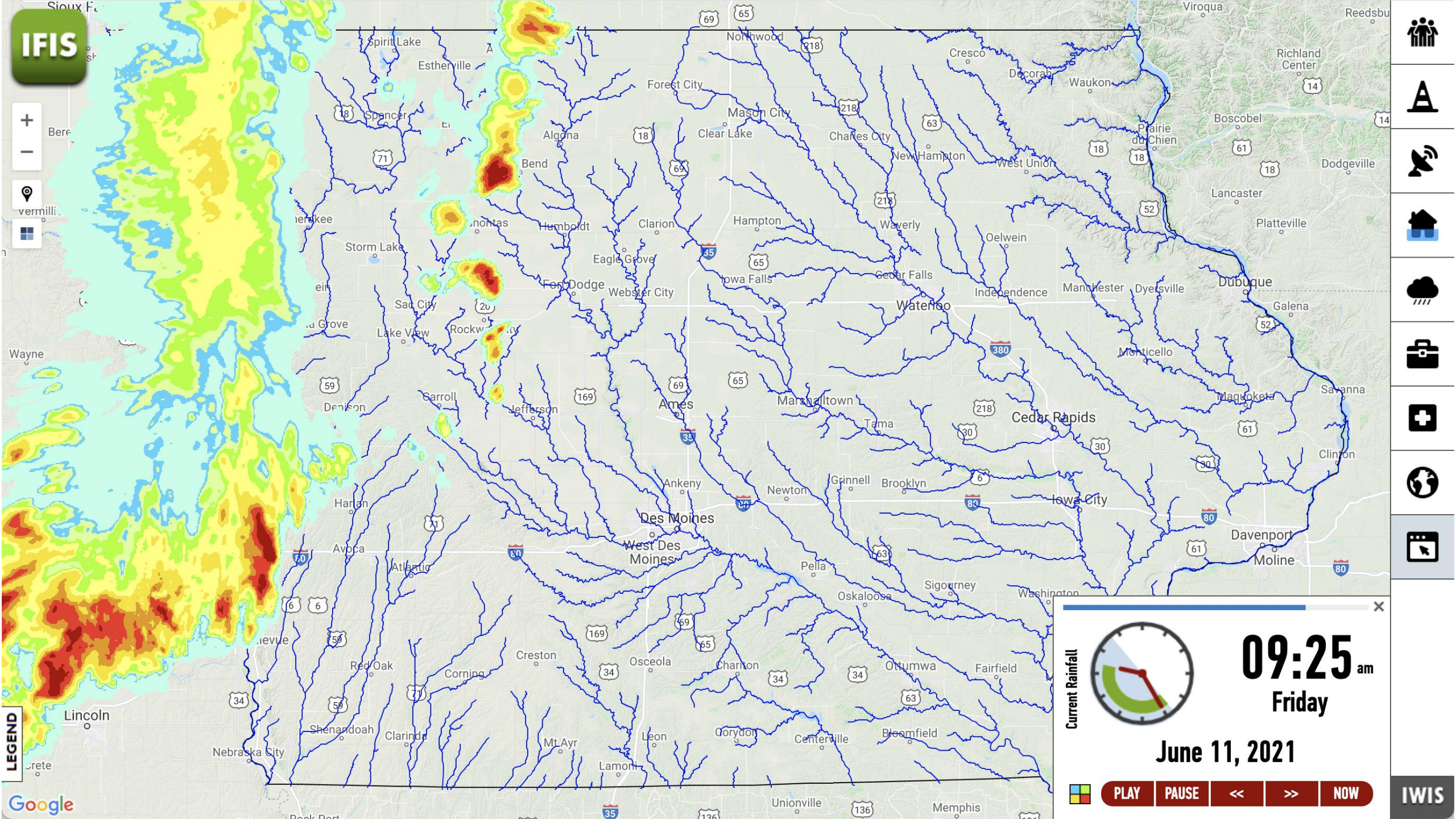



IFIS



LEGEND


Google



Current Rainfall 

**09:25 am**  
Friday

**June 11, 2021**

 **PLAY** **PAUSE** **<<** **>>** **NOW**

IFIS



IFIS



Close (X) button



**09:30** am  
**Friday**

**June 11, 2021**



PLAY

PAUSE

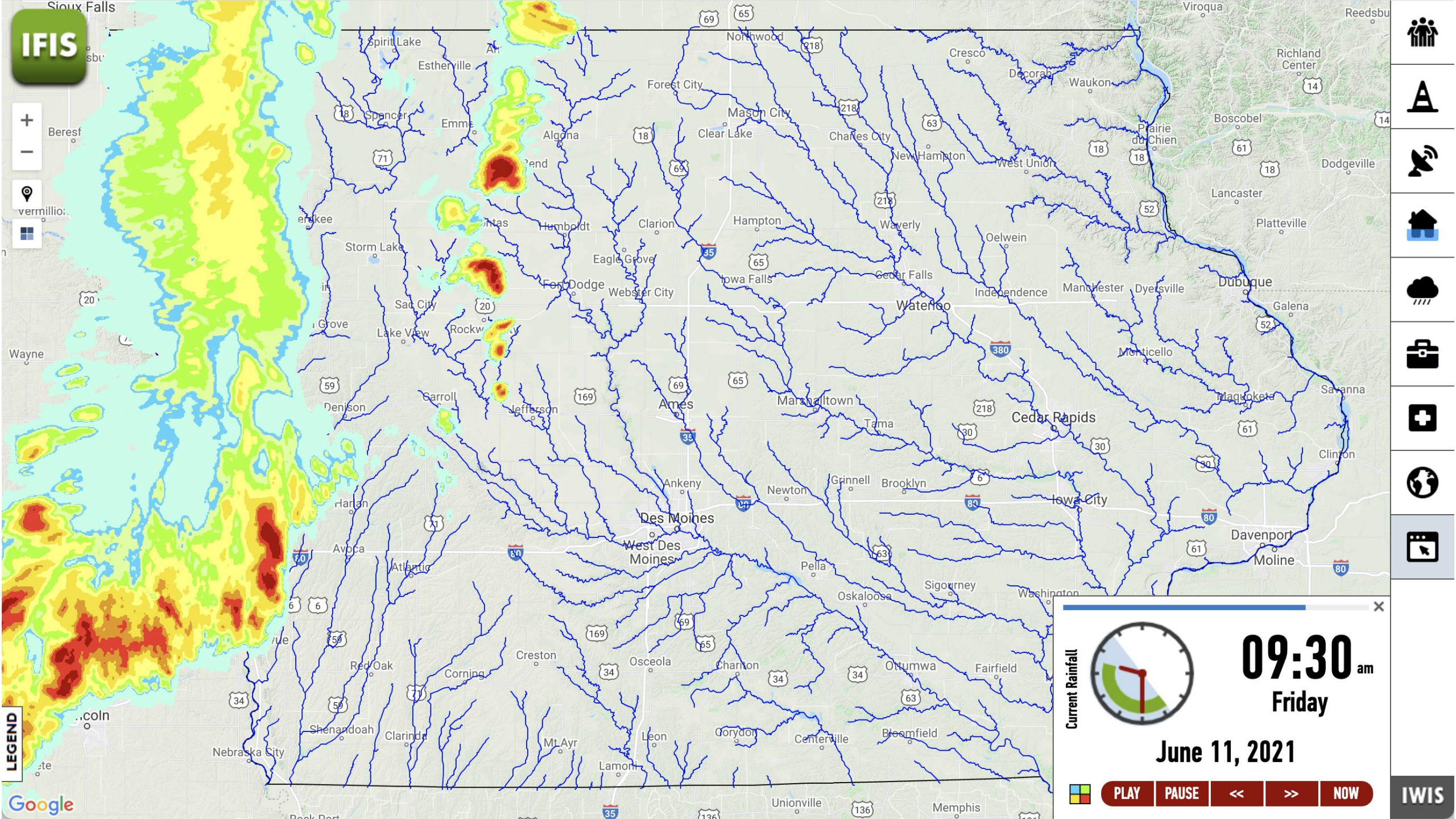


NOW

IFIS

LEGEND

Google



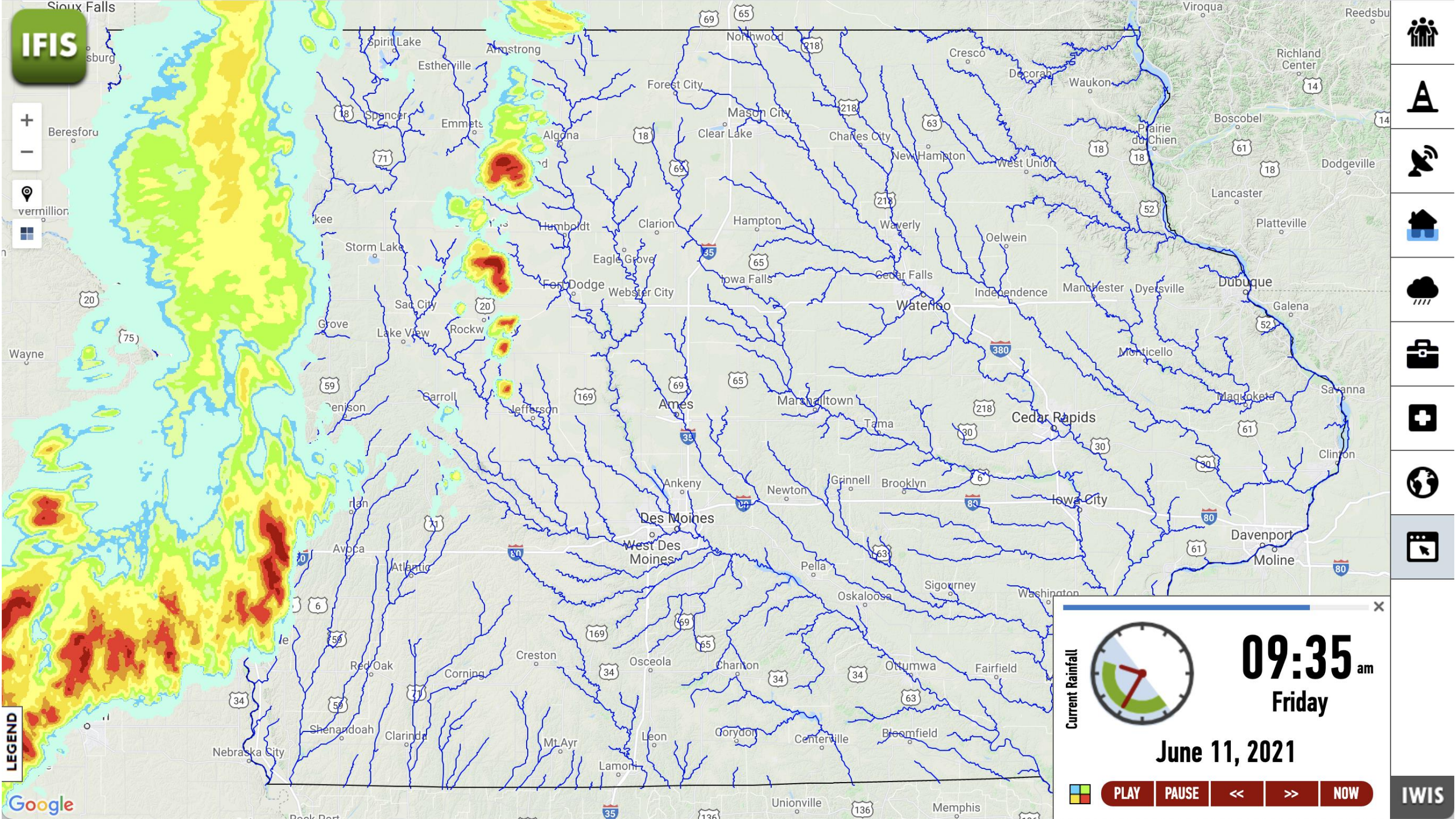



IFIS



LEGEND


Google



Current Rainfall 

**09:35 am**  
Friday

**June 11, 2021**

 **PLAY** **PAUSE** **<<** **>>** **NOW**

IFIS




IFIS



LEGEND

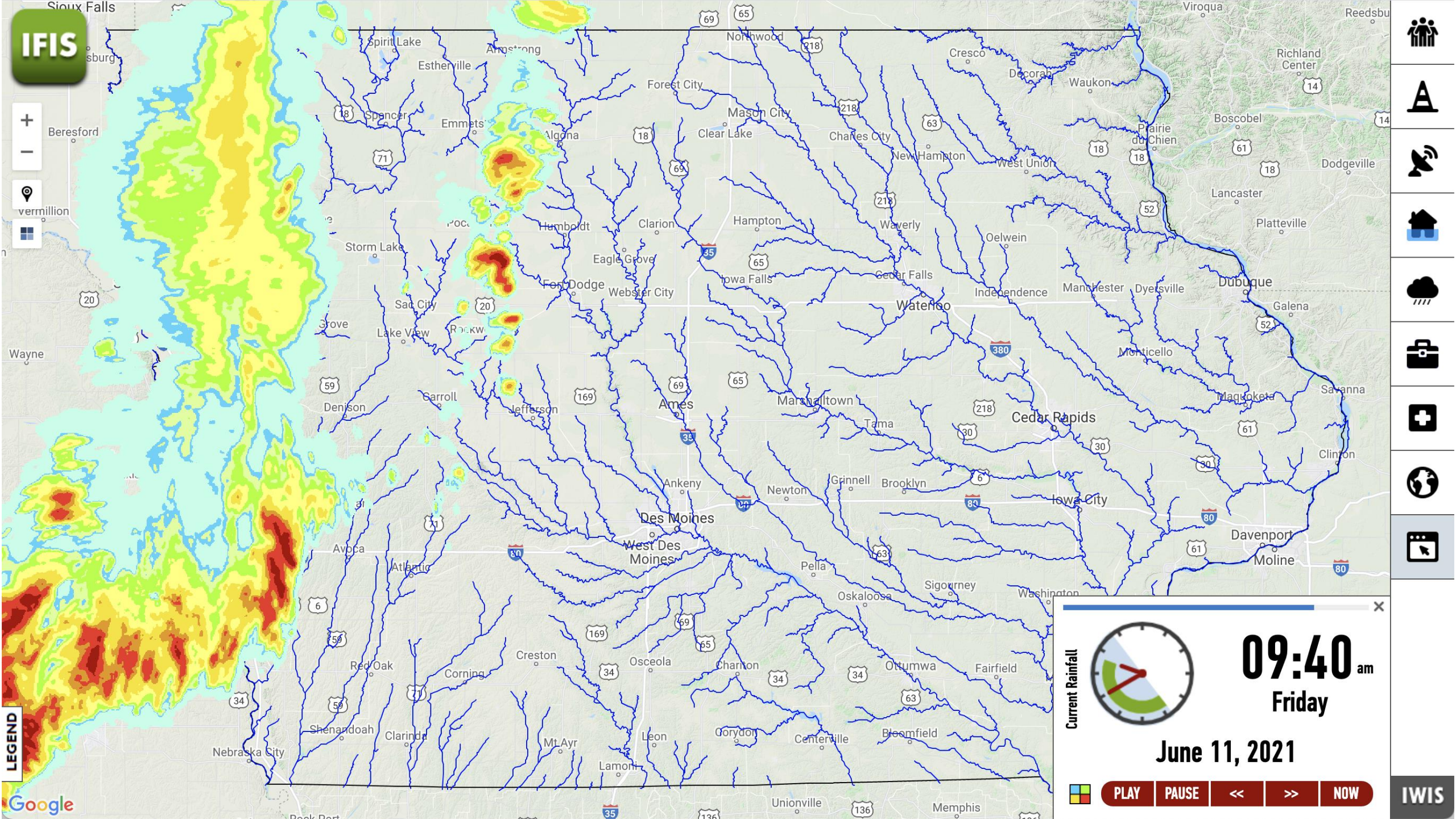
Google

Current Rainfall



**09:40** am  
Friday  
June 11, 2021

PLAY PAUSE << >> NOW






IFIS



LEGEND

Google

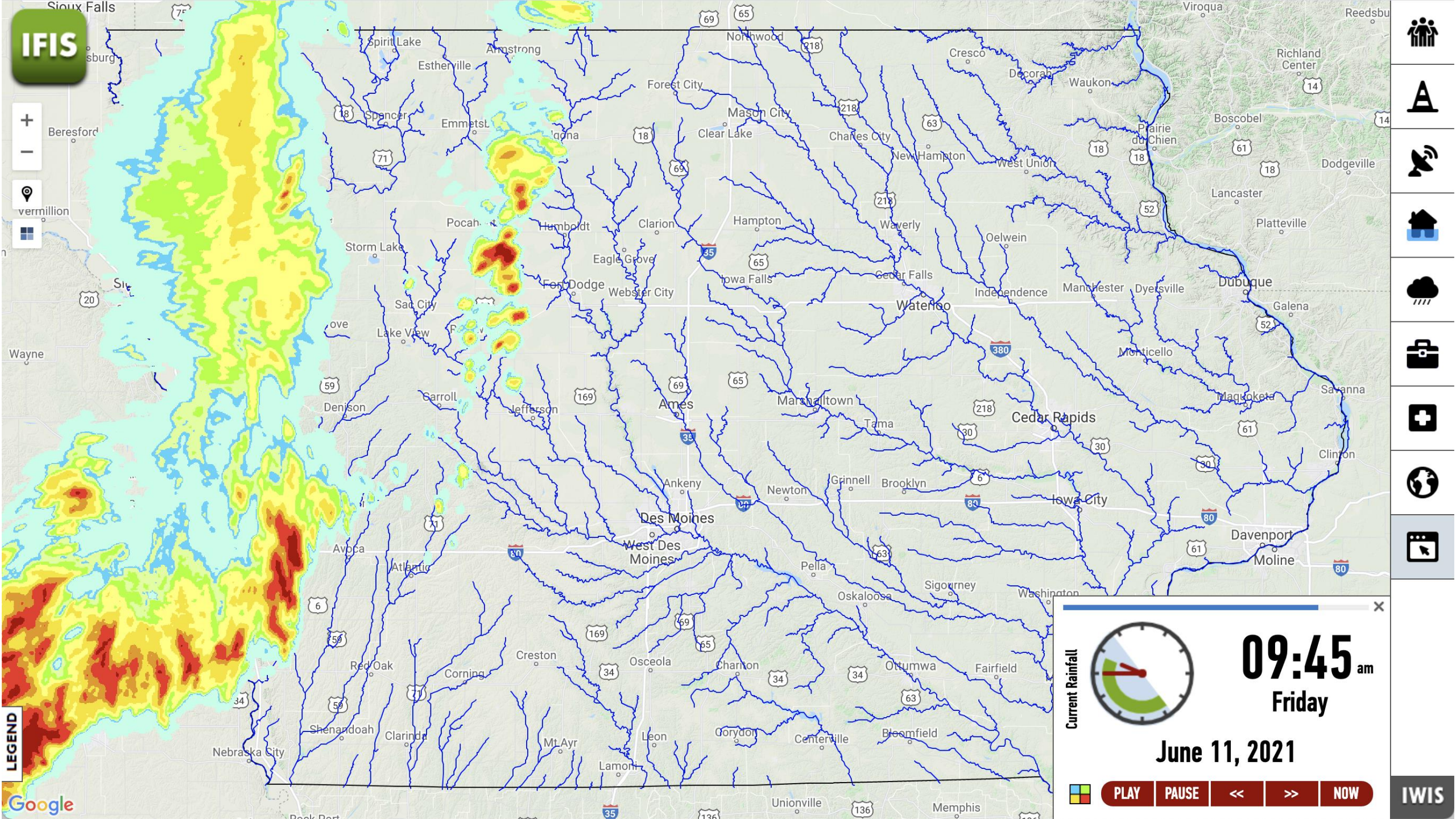
Current Rainfall



**09:45 am**  
Friday

**June 11, 2021**

PLAY PAUSE << >> NOW






IFIS



LEGEND

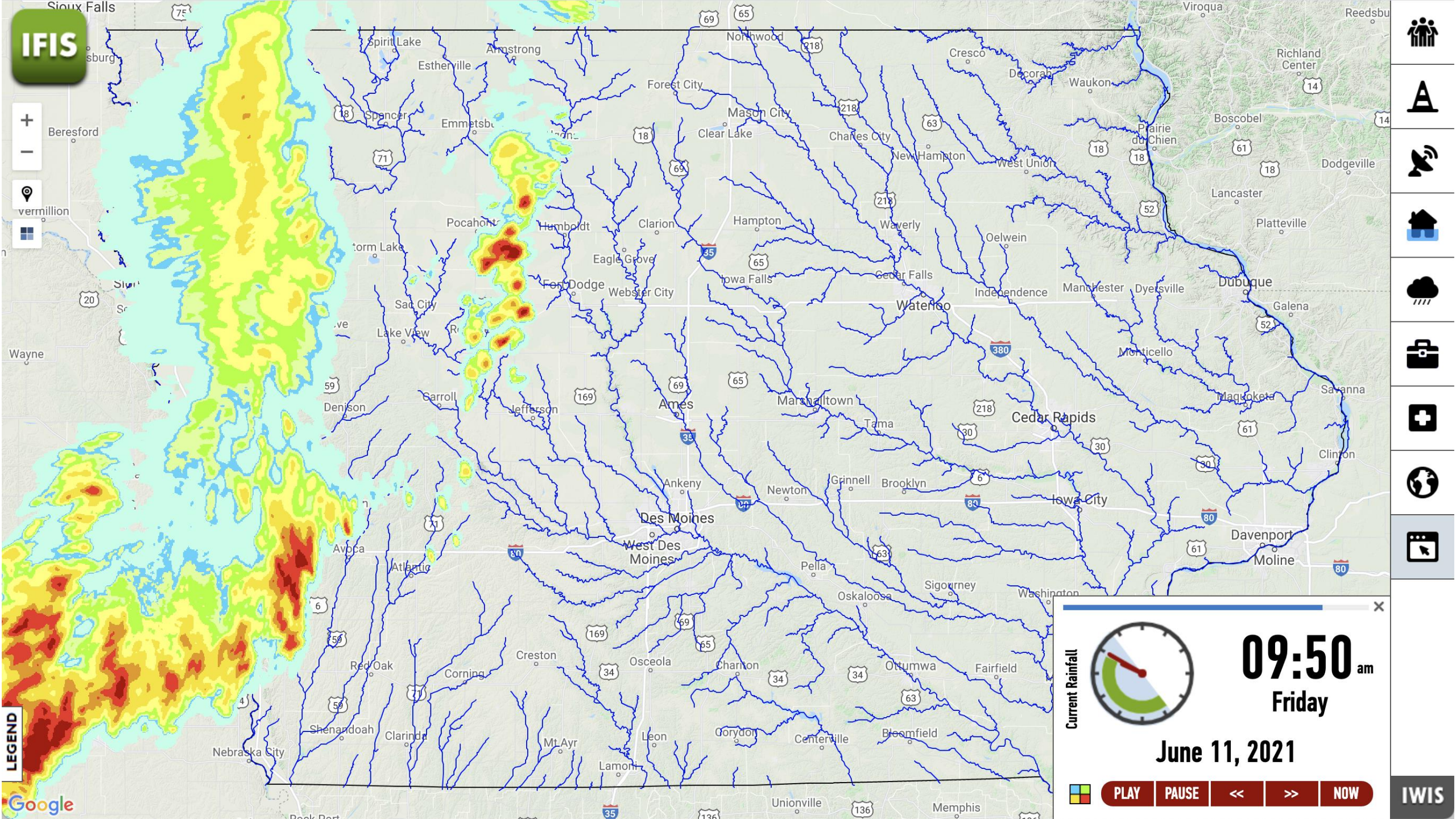
Google

Current Rainfall



**09:50** am  
Friday  
June 11, 2021

PLAY PAUSE << >> NOW






IFIS



LEGEND

Google

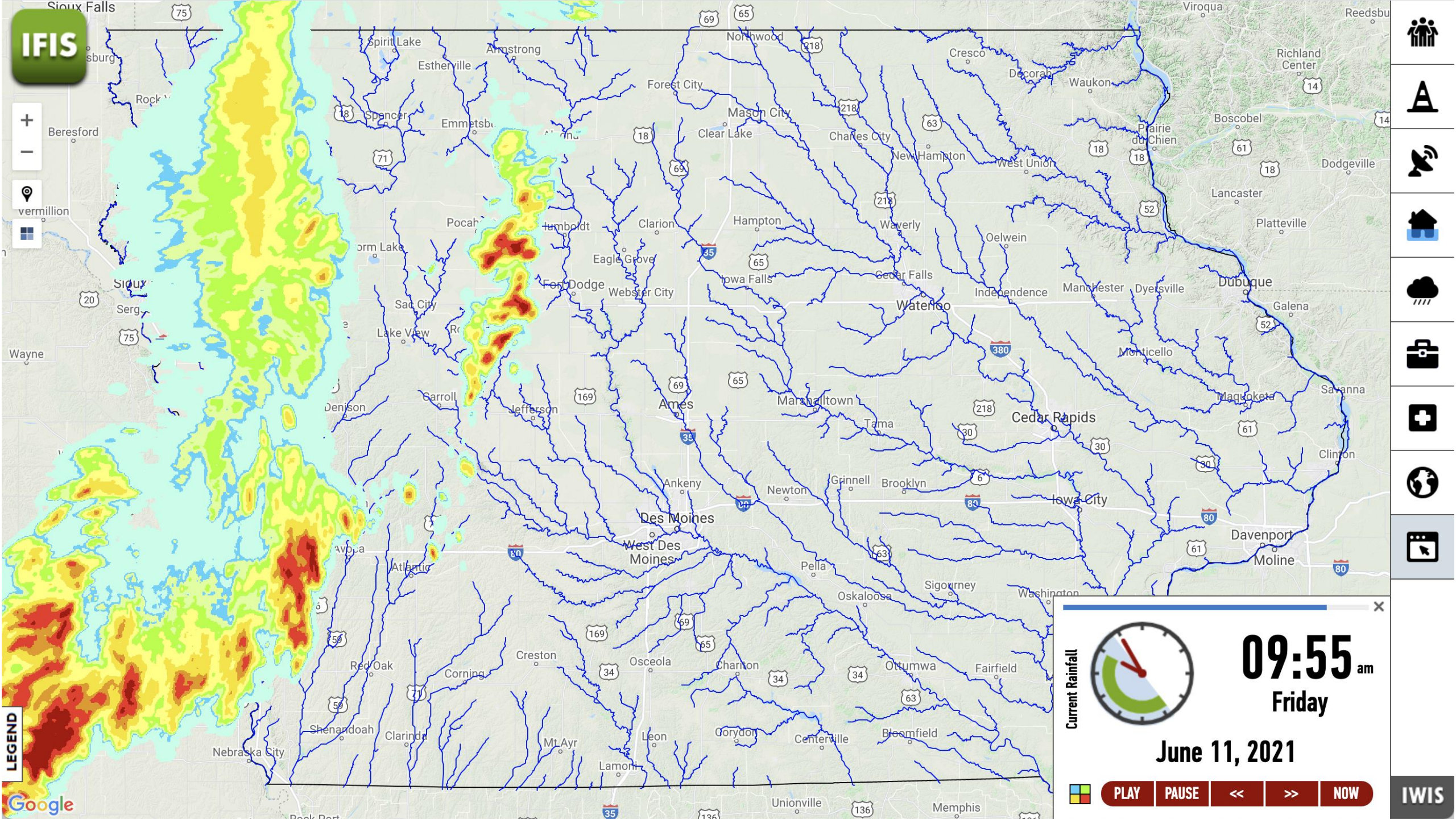
Current Rainfall



**09:55 am**  
Friday

**June 11, 2021**

PLAY PAUSE << >> NOW






IFIS



LEGEND

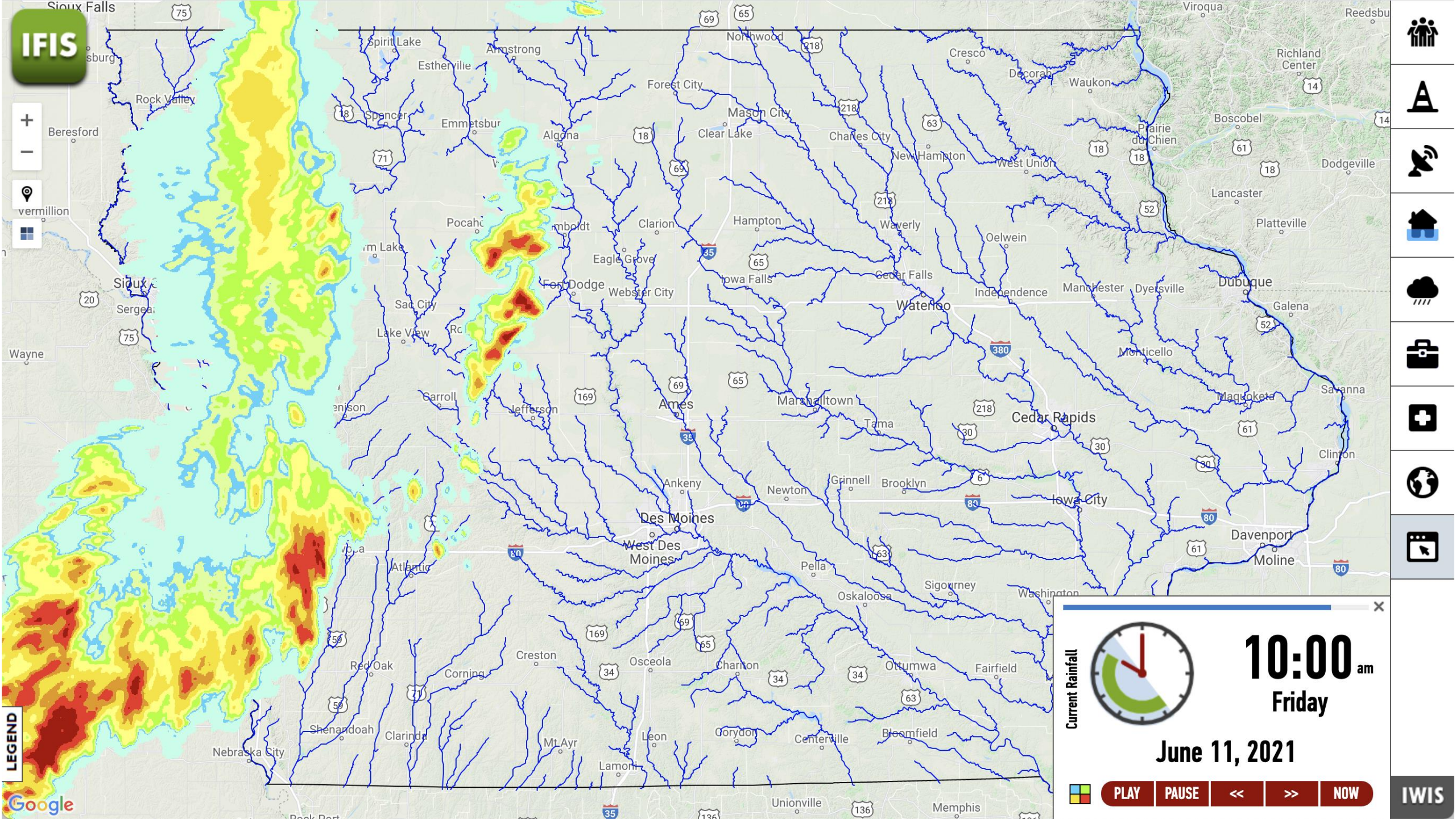
Google

Current Rainfall



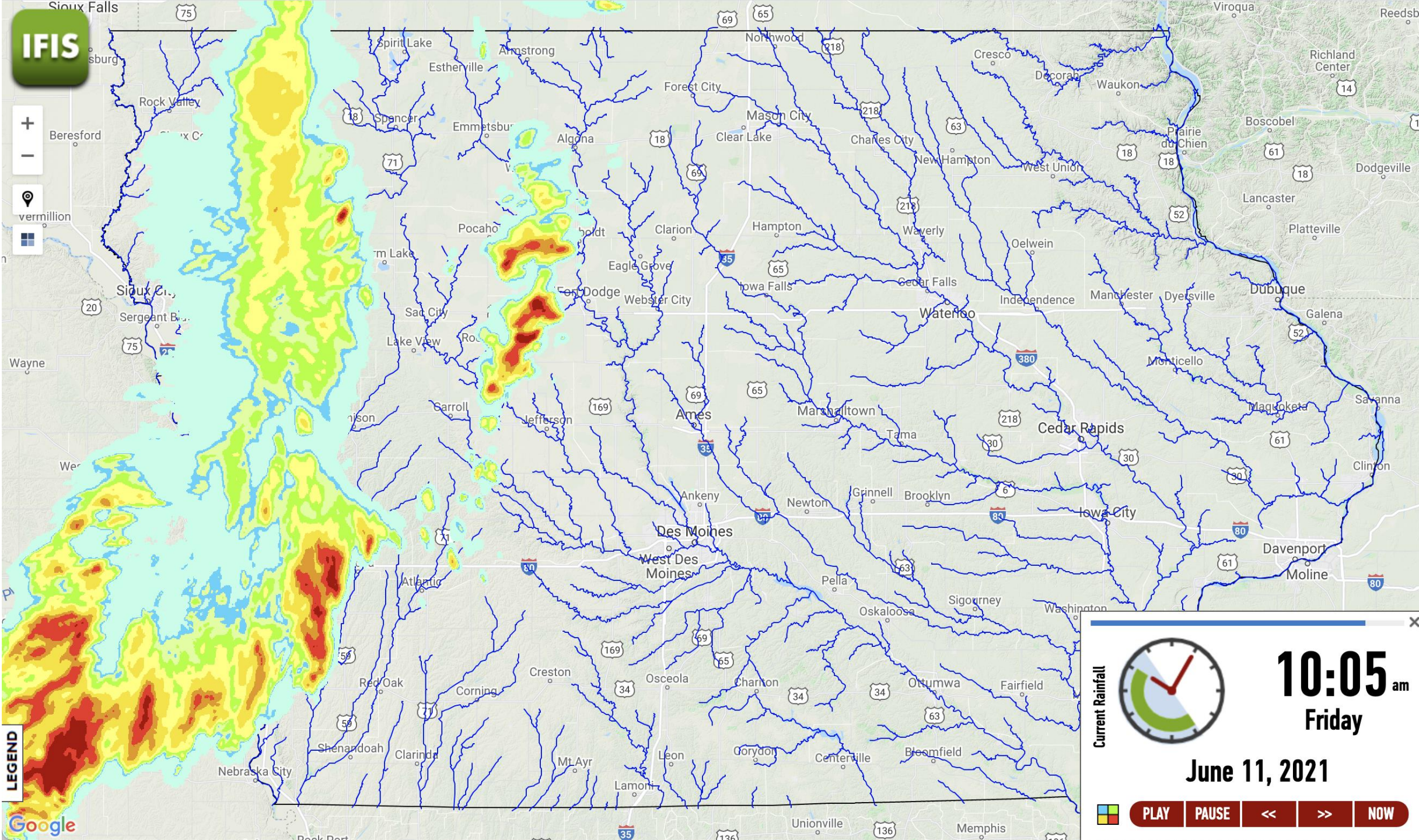
**10:00** am  
Friday  
June 11, 2021

PLAY PAUSE << >> NOW





IFIS



LEGEND

Google

Current Rainfall

**10:05** am  
Friday

**June 11, 2021**

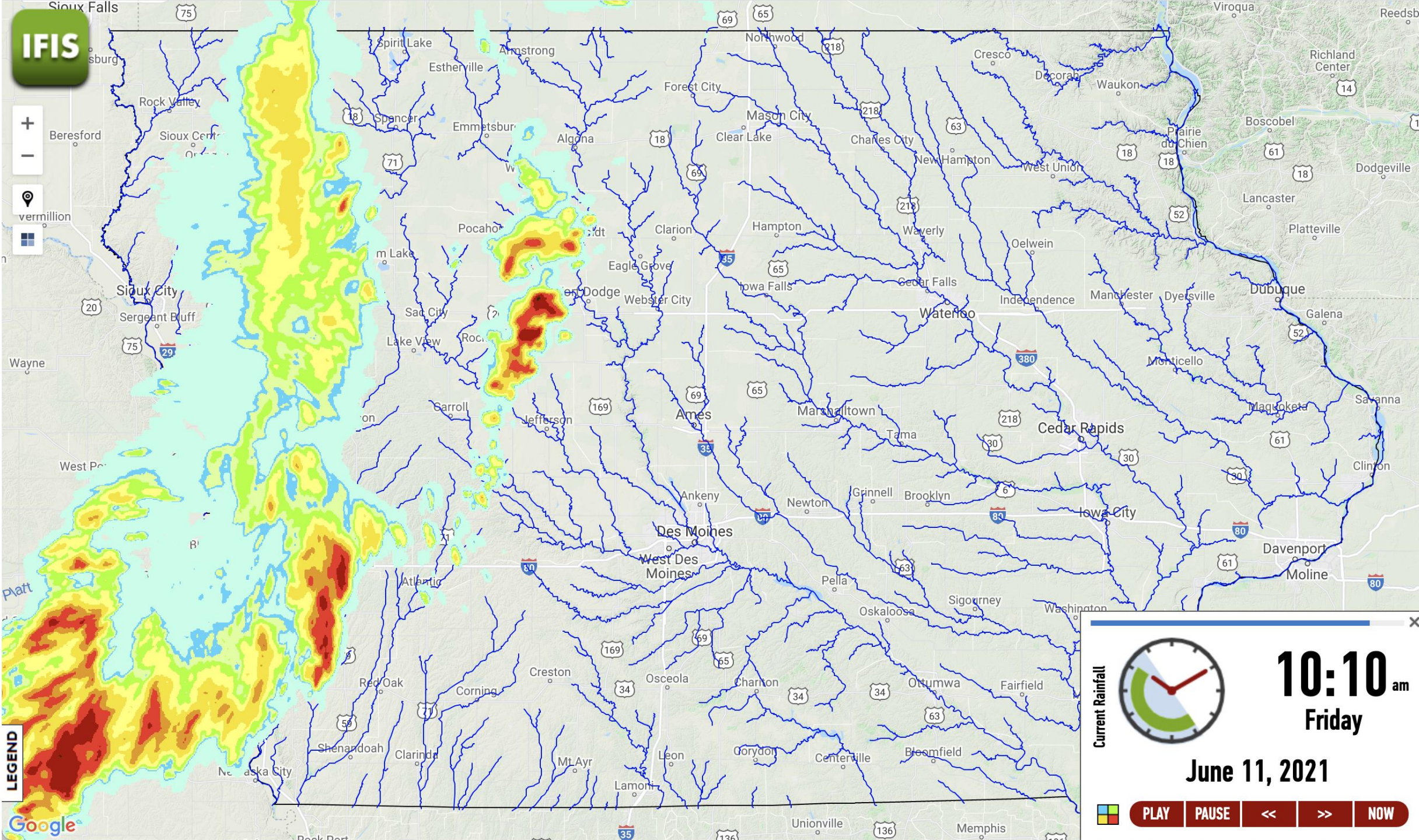
PLAY PAUSE << >> NOW

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IFIS



IFIS



LEGEND

Google

Current Rainfall 

**10:10** am  
Friday

**June 11, 2021**

 **PLAY** **PAUSE** **<<** **>>** **NOW**

IFIS



IFIS



LEGEND

Google

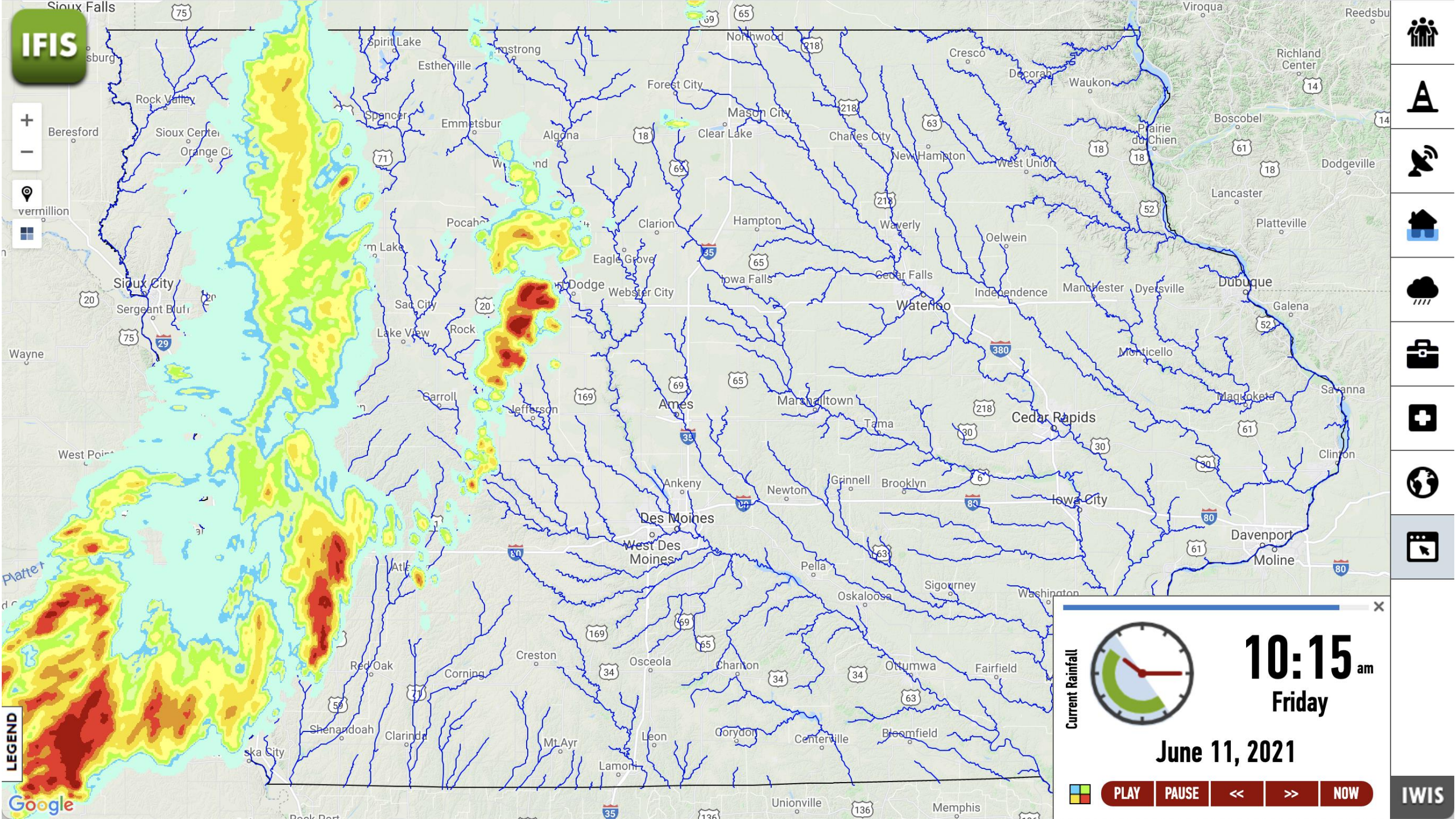
Current Rainfall



**10:15 am**  
Friday

**June 11, 2021**

PLAY PAUSE << >> NOW



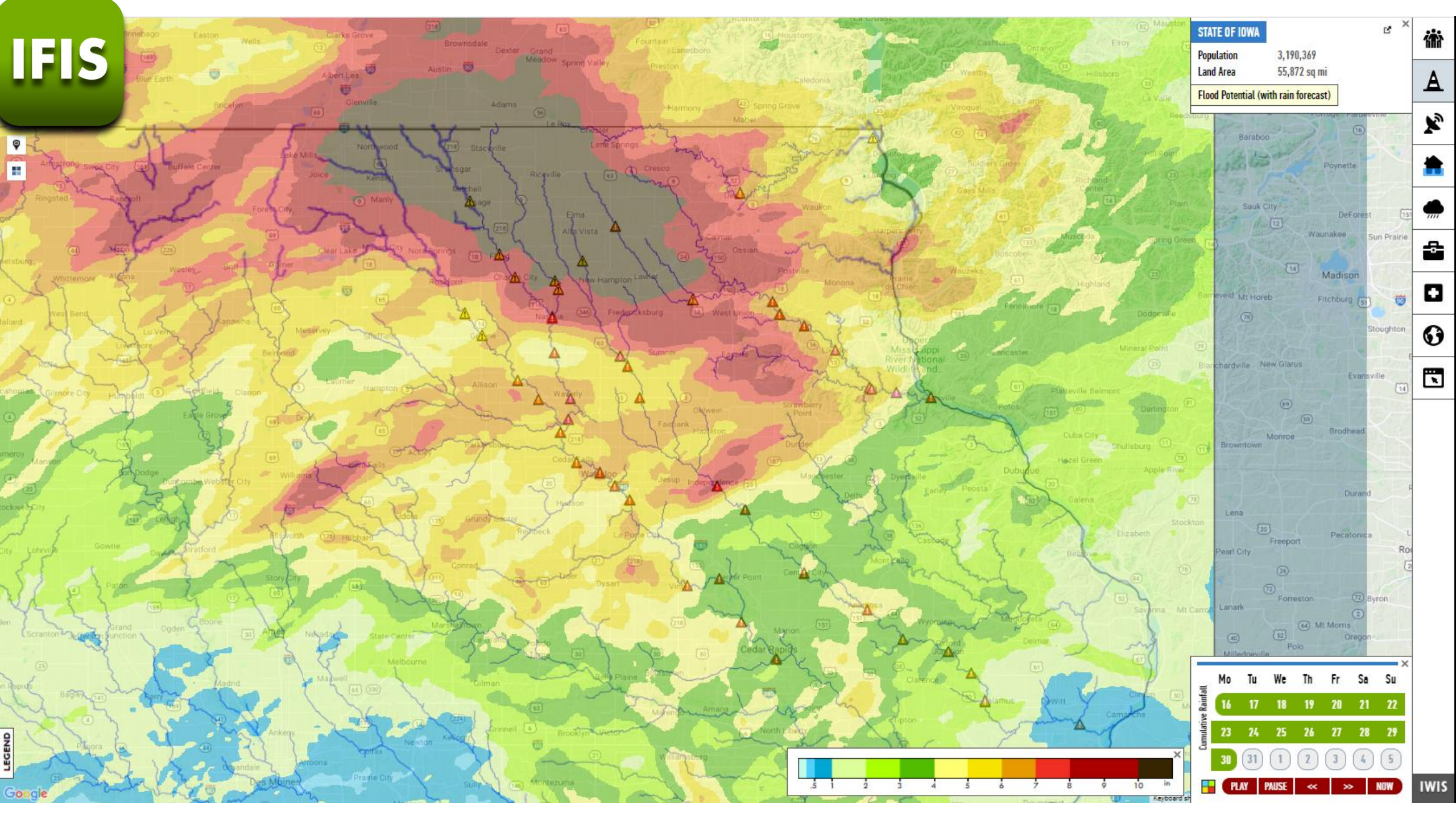


# IFIS

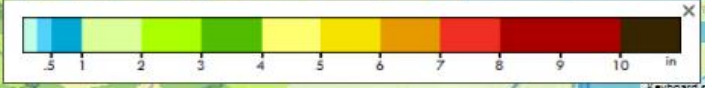
## STATE OF IOWA

Population 3,190,369  
Land Area 55,872 sq mi

### Flood Potential (with rain forecast)



LEGEND

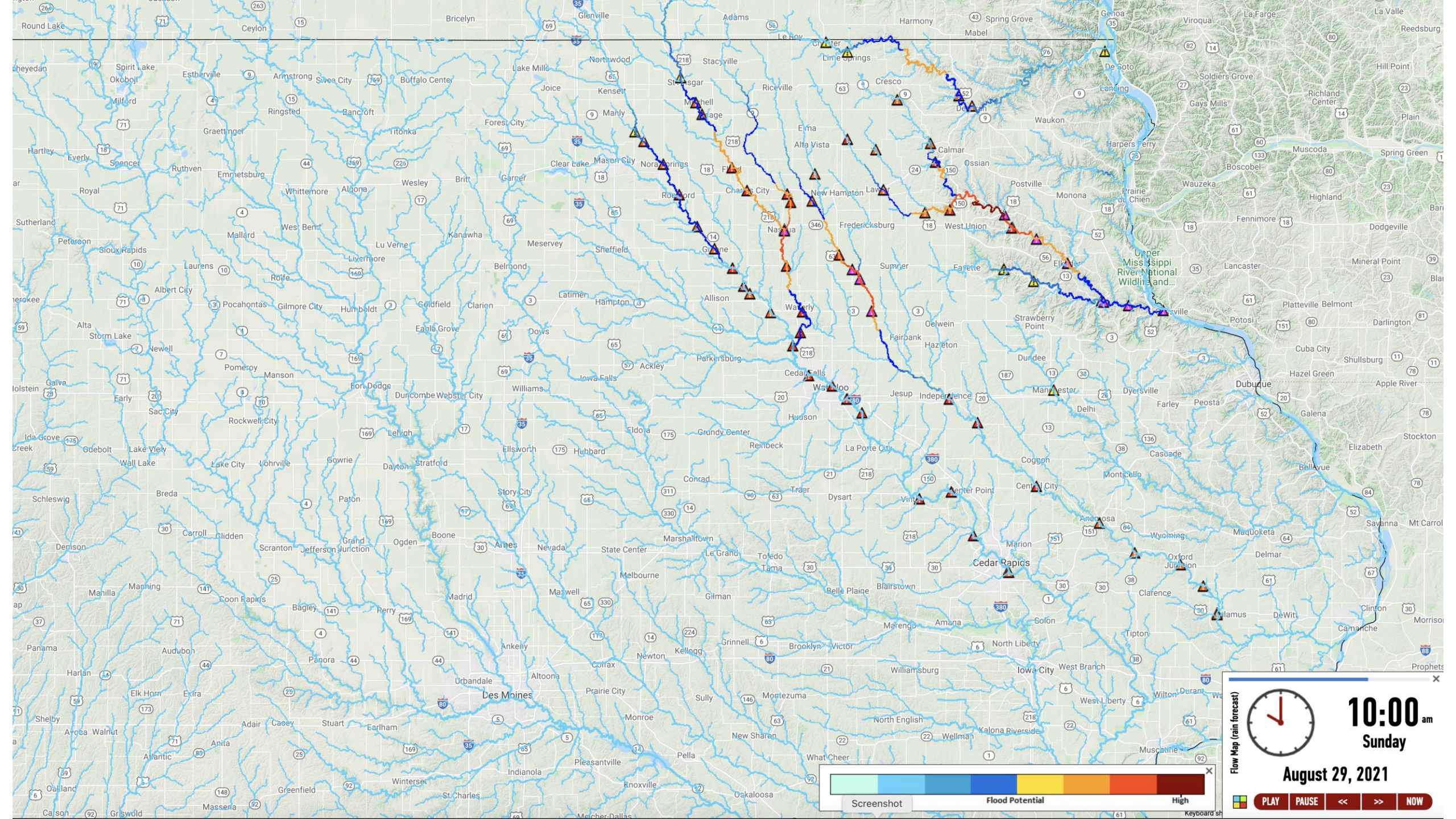


Cumulative Rainfall	Mo	Tu	We	Th	Fr	Sa	Su
16	17	18	19	20	21	22	
23	24	25	26	27	28	29	
30	31	1	2	3	4	5	


**PLAY PAUSE << >> NOW**

IWIS





Flow Map (rain forecast)



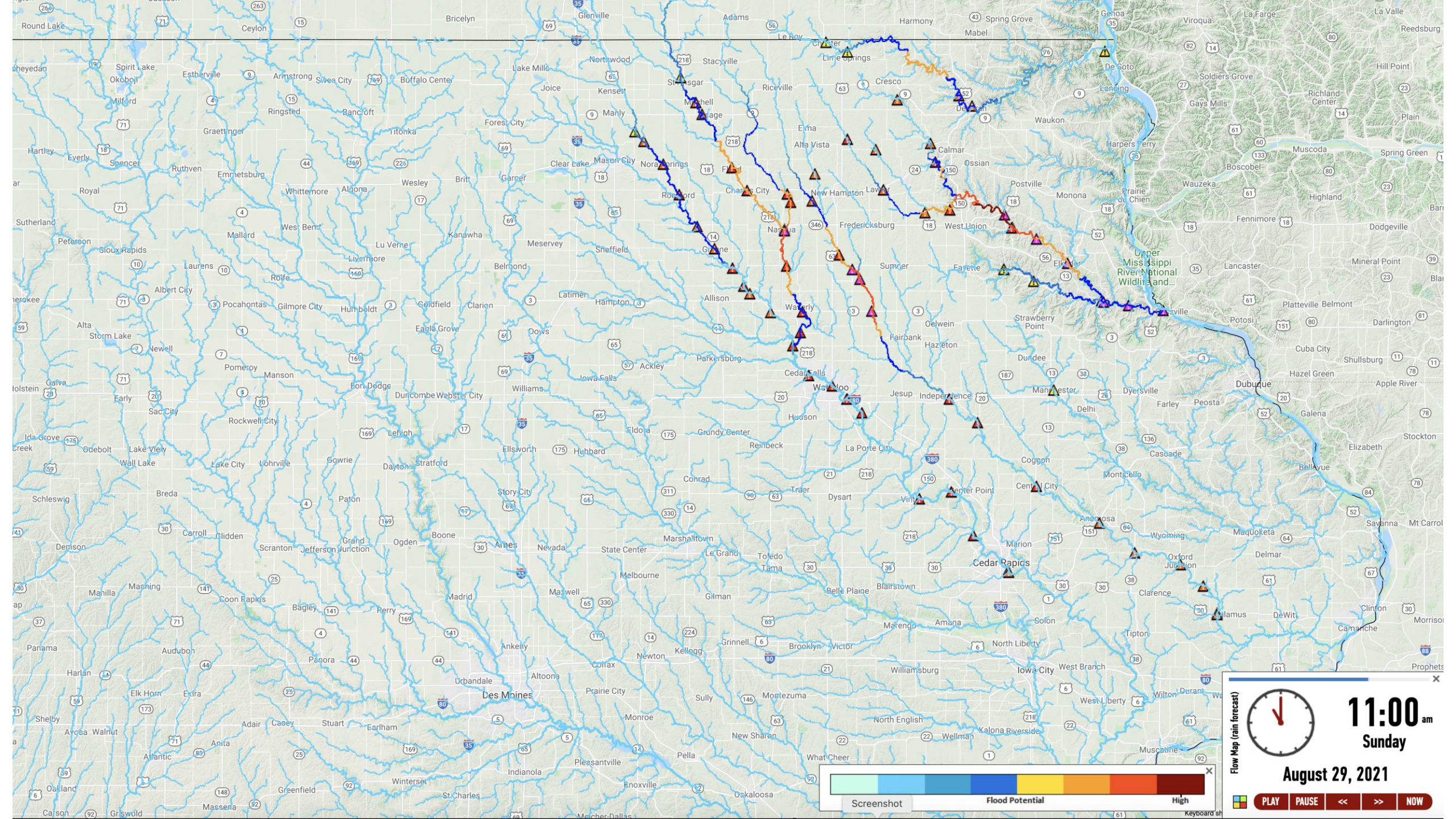
**10:00 am**  
Sunday

**August 29, 2021**

PLAY PAUSE << >> NOW







11:00 am  
Sunday

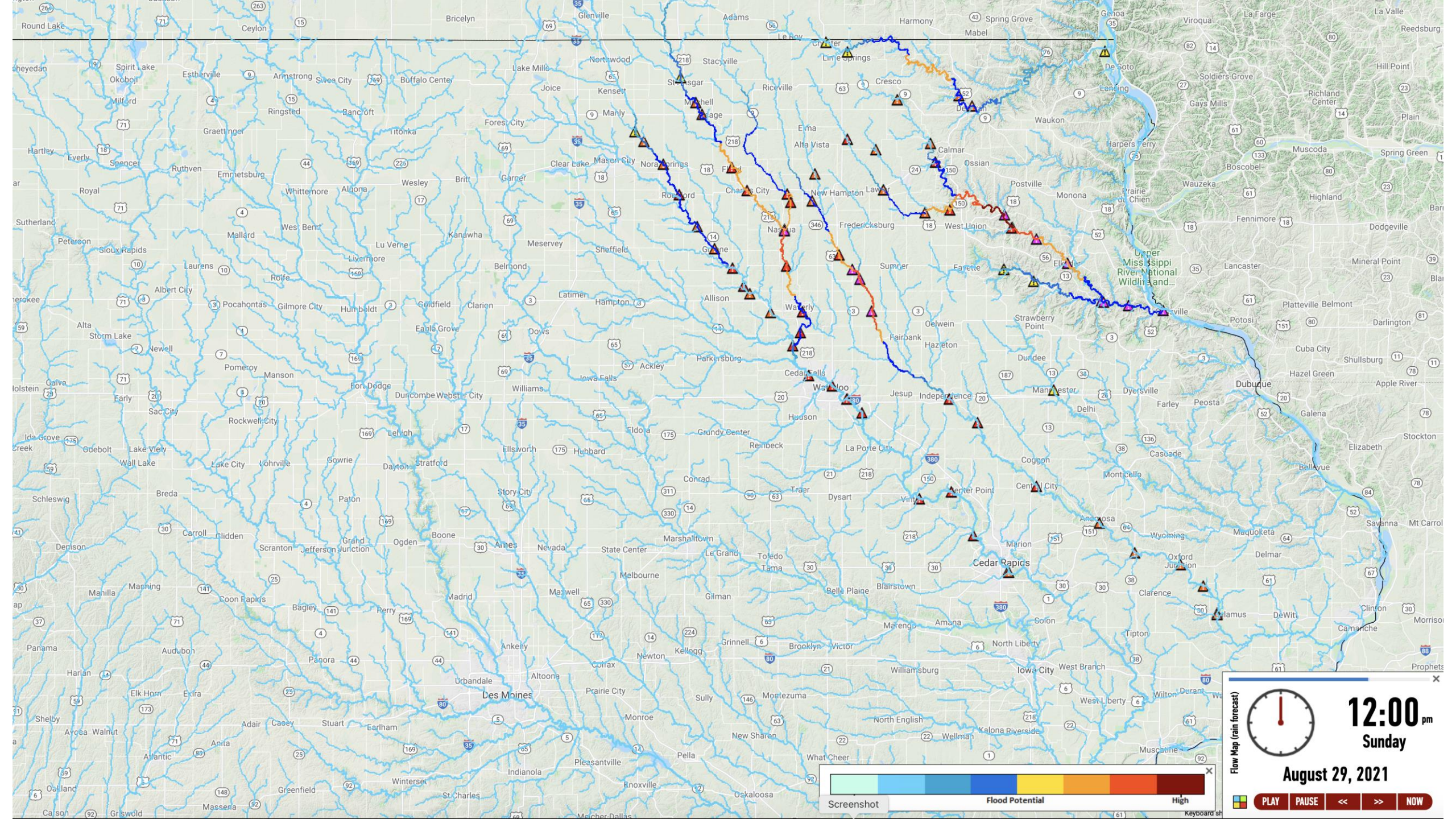
August 29, 2021

Flow Map (rain forecast)

PLAY PAUSE << >> NOW







**12:00 pm**  
Sunday

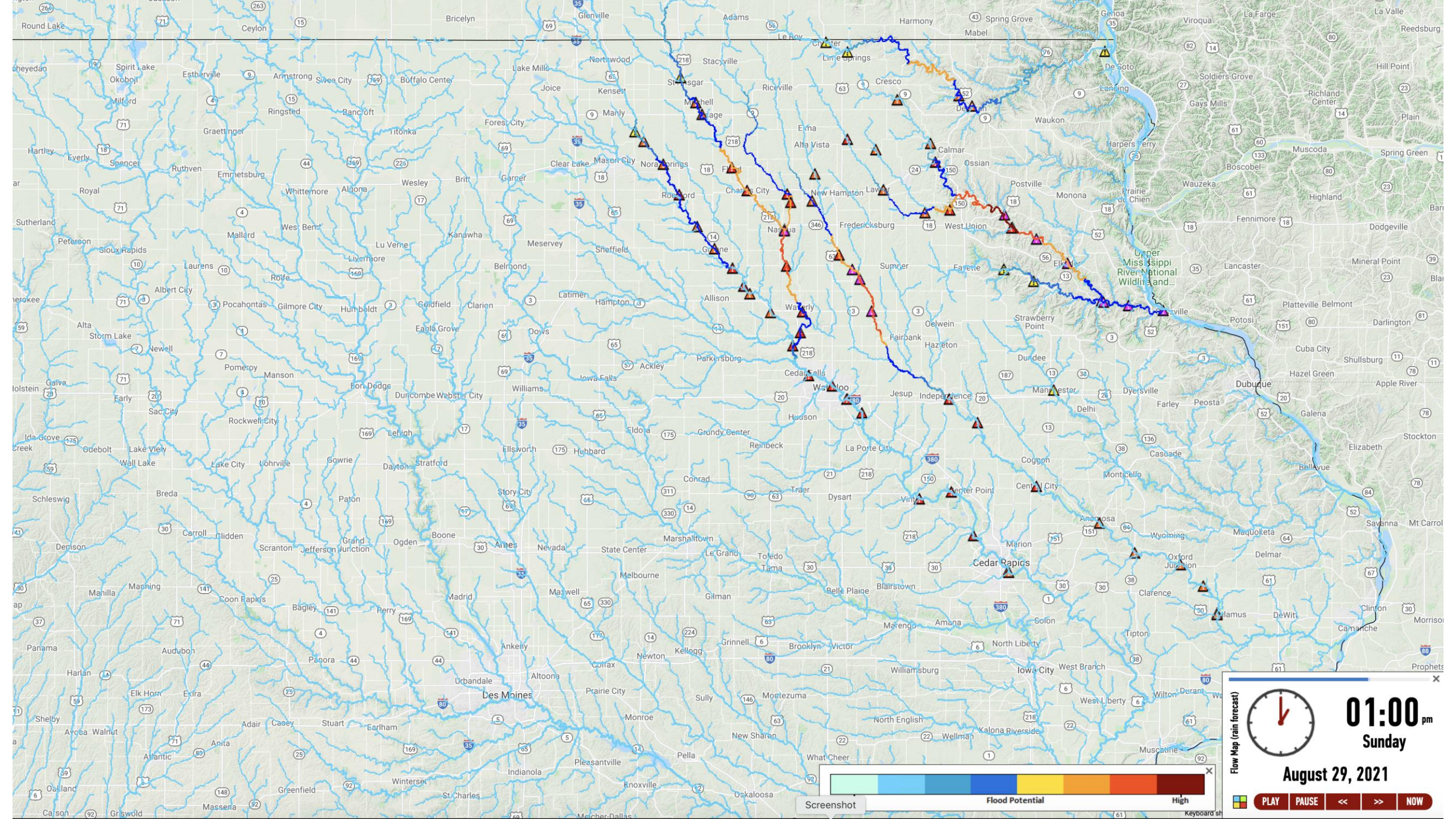
**August 29, 2021**

Flow Map (rain forecast)


PLAY PAUSE << >> NOW

Screenshot Flood Potential High





Flow Map (rain forecast)



**01:00 pm**  
Sunday  
August 29, 2021

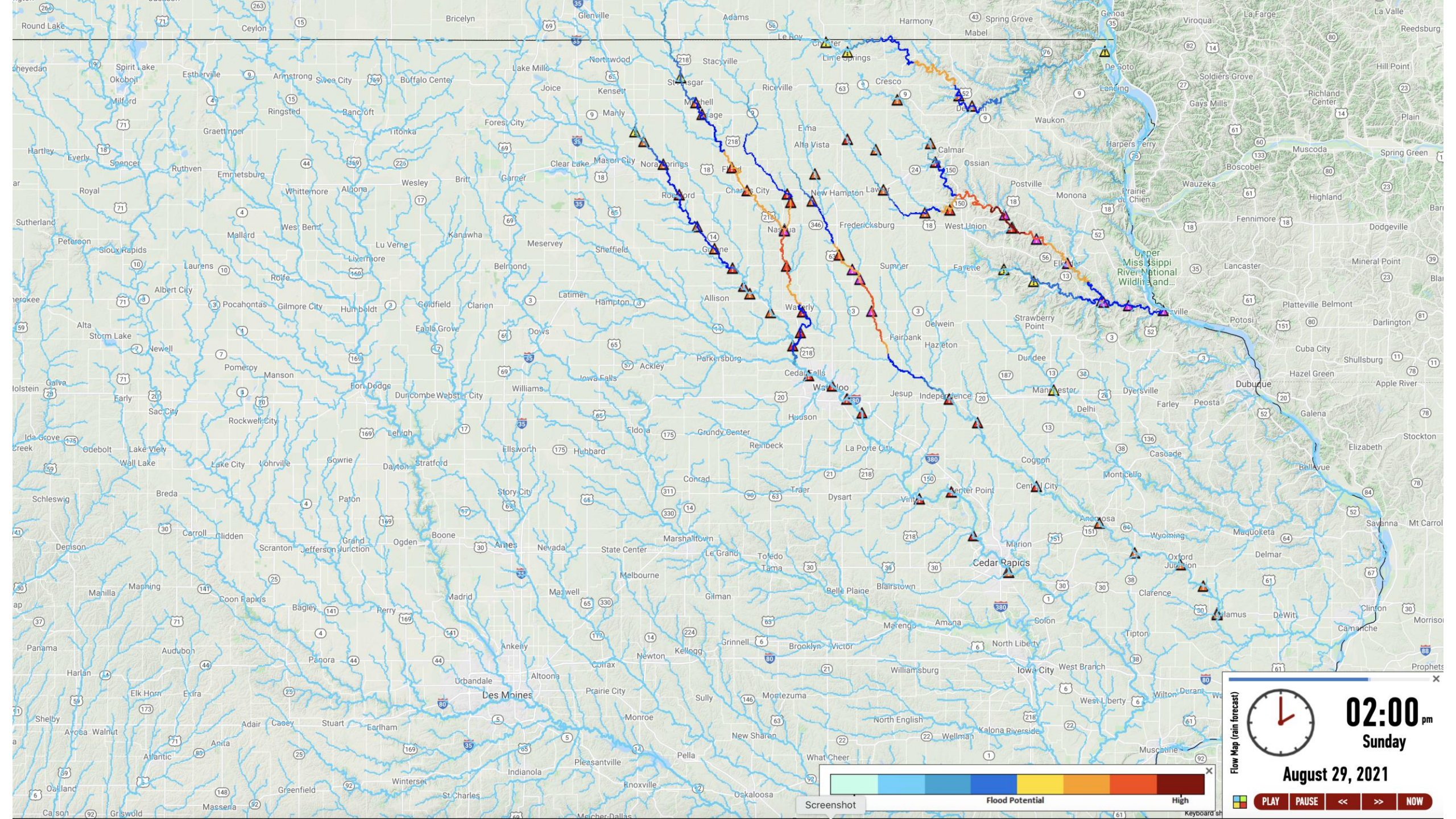
PLAY PAUSE << >> NOW

Screenshot



Flood Potential High





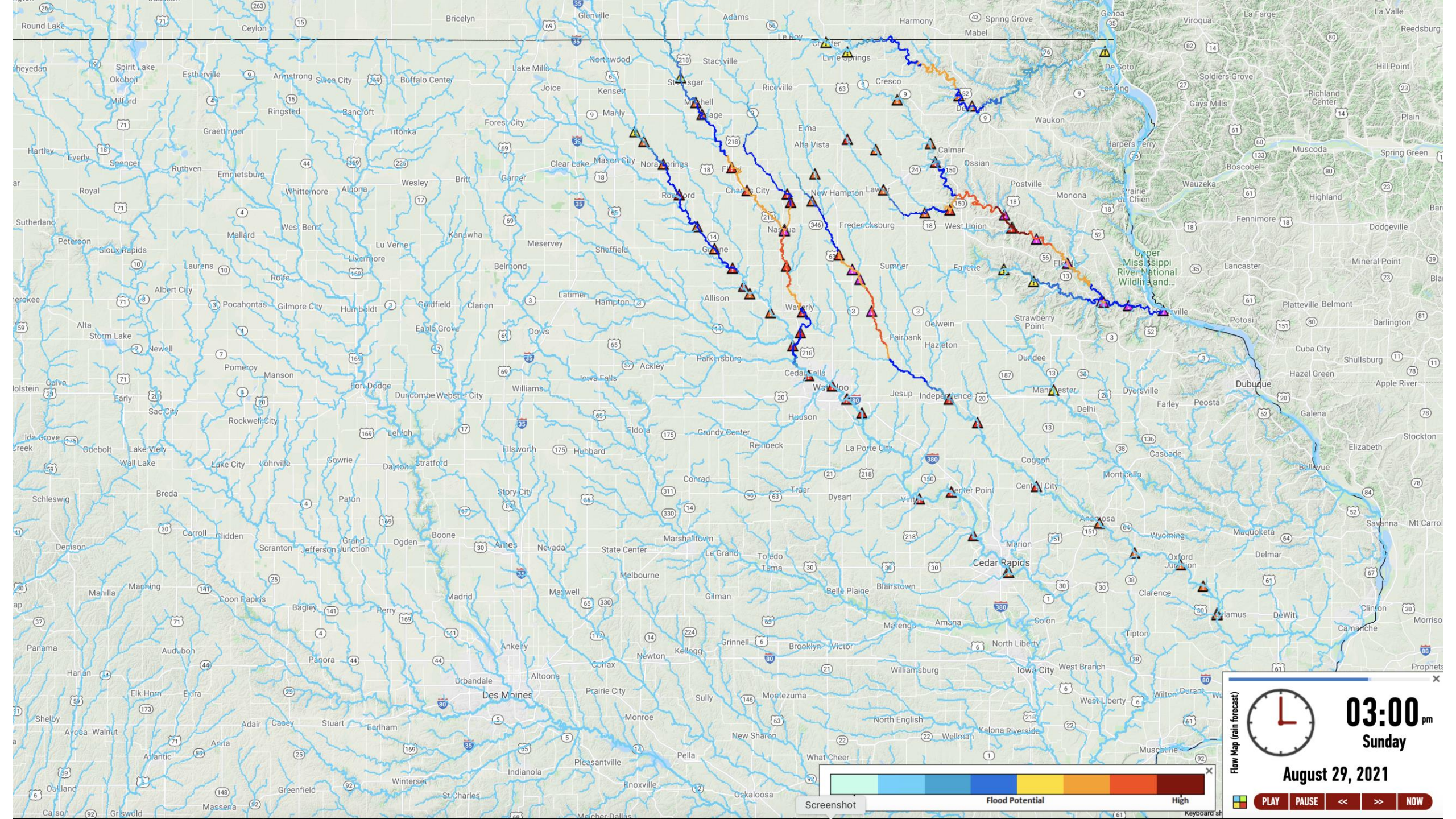
Flow Map (rain forecast)

**02:00 pm**  
Sunday  
August 29, 2021

PLAY PAUSE << >> NOW







Flow Map (rain forecast)

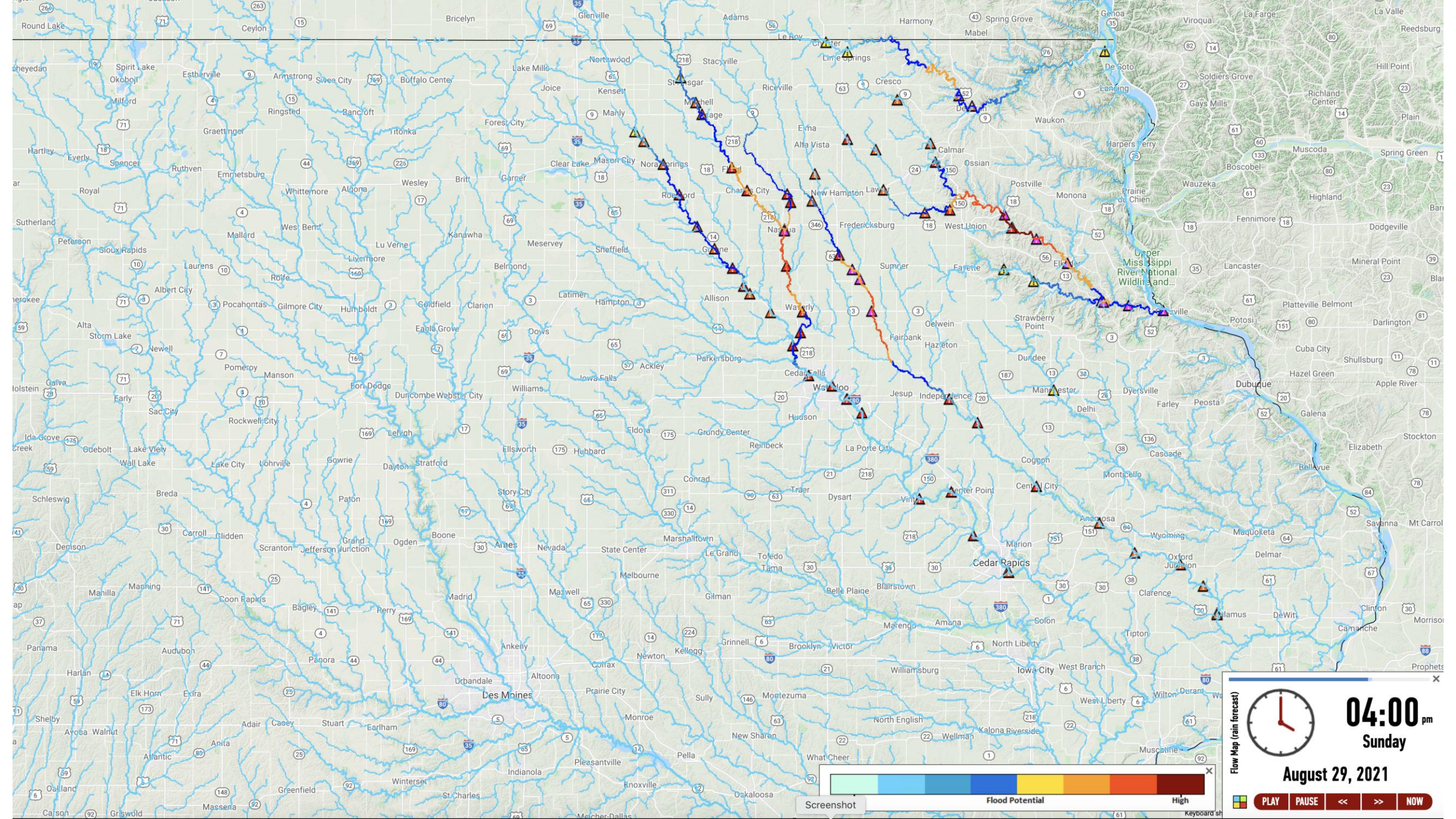
**03:00 pm**  
Sunday  
August 29, 2021

PLAY PAUSE << >> NOW


Screenshot

Flood Potential High





Flow Map (rain forecast)



**04:00 pm**  
Sunday  
August 29, 2021

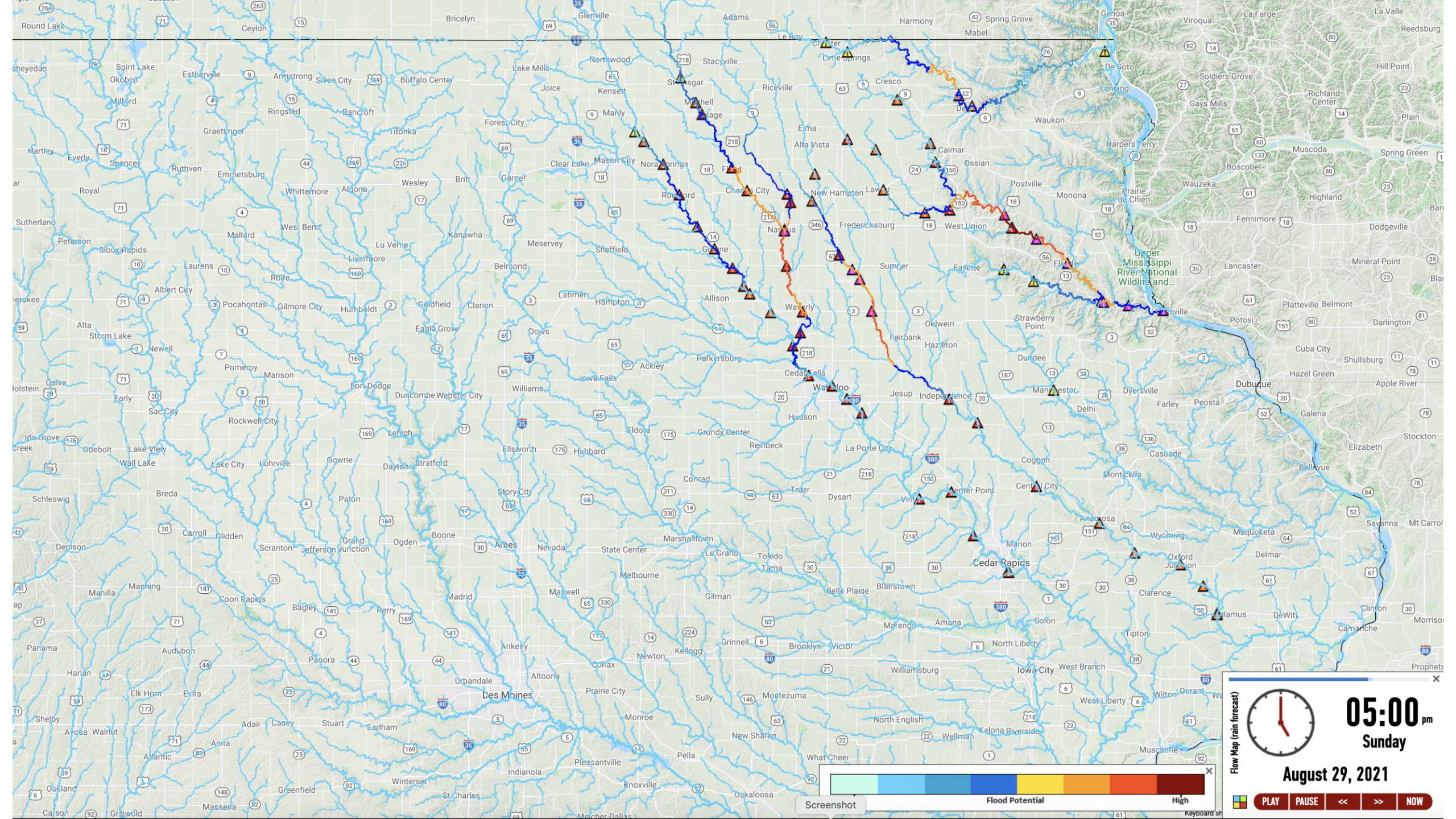
PLAY PAUSE << >> NOW

Screenshot




Flood Potential High





Flow Map (rain forecast)

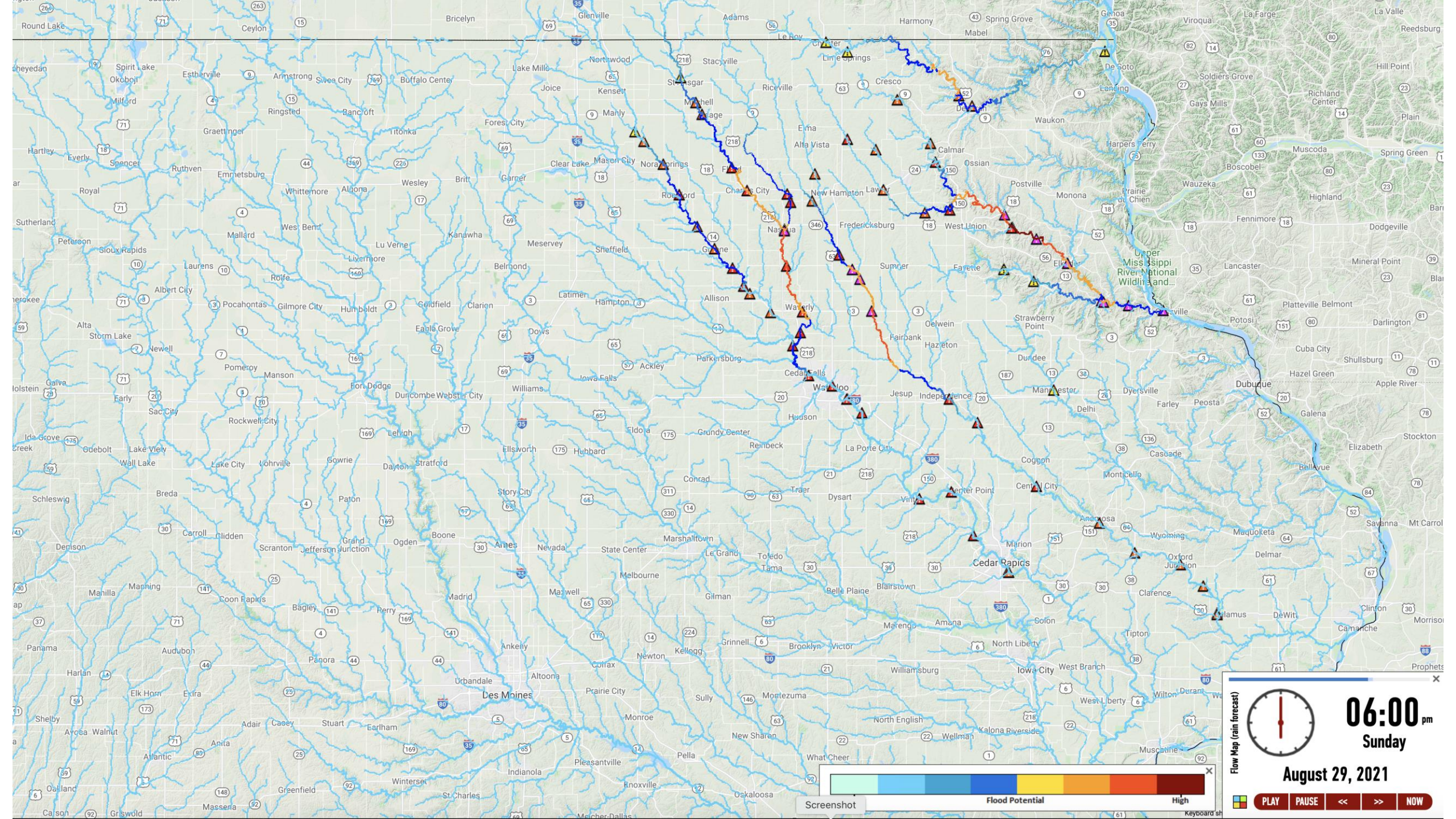


**05:00 pm**  
Sunday  
August 29, 2021

PLAY PAUSE << >> NOW







**06:00** pm  
Sunday

**August 29, 2021**

Flow Map (rain forecast)

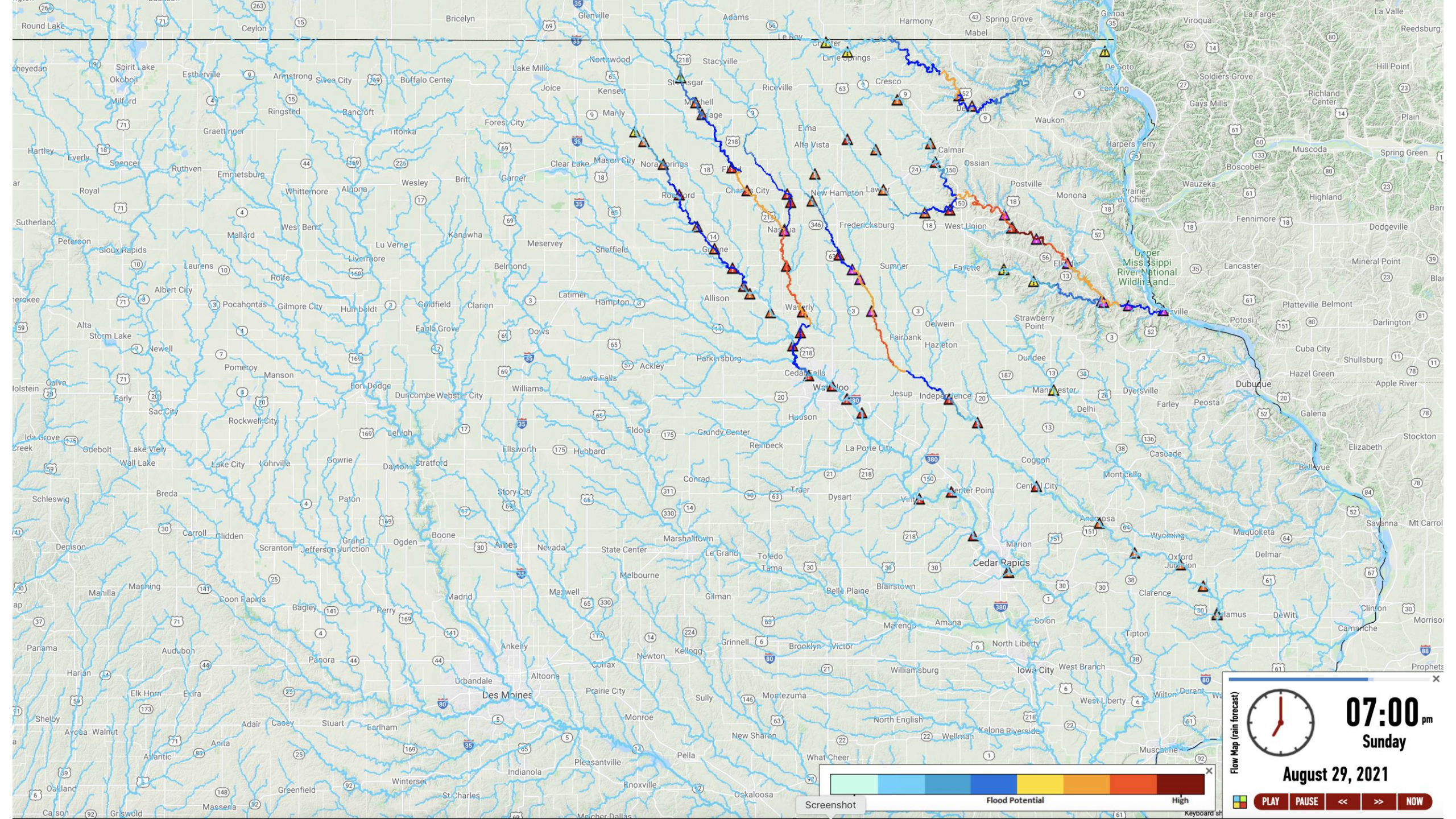
PLAY PAUSE << >> NOW




Screenshot

Keyboard





Flow Map (rain forecast)



**07:00 pm**  
Sunday  
August 29, 2021

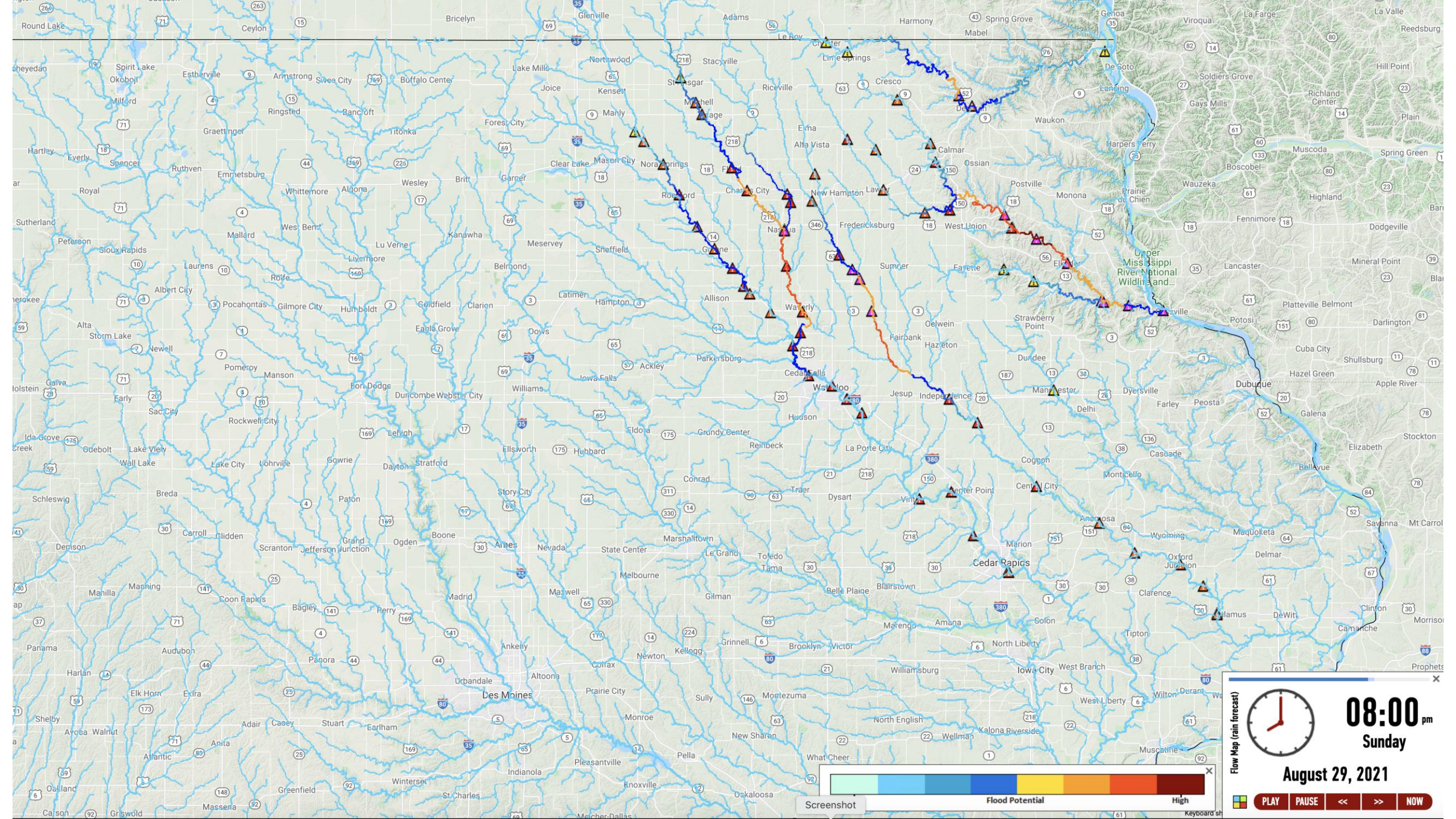
PLAY PAUSE << >> NOW

Screenshot




Flood Potential High





Flow Map (rain forecast)



**08:00 pm**  
Sunday  
August 29, 2021

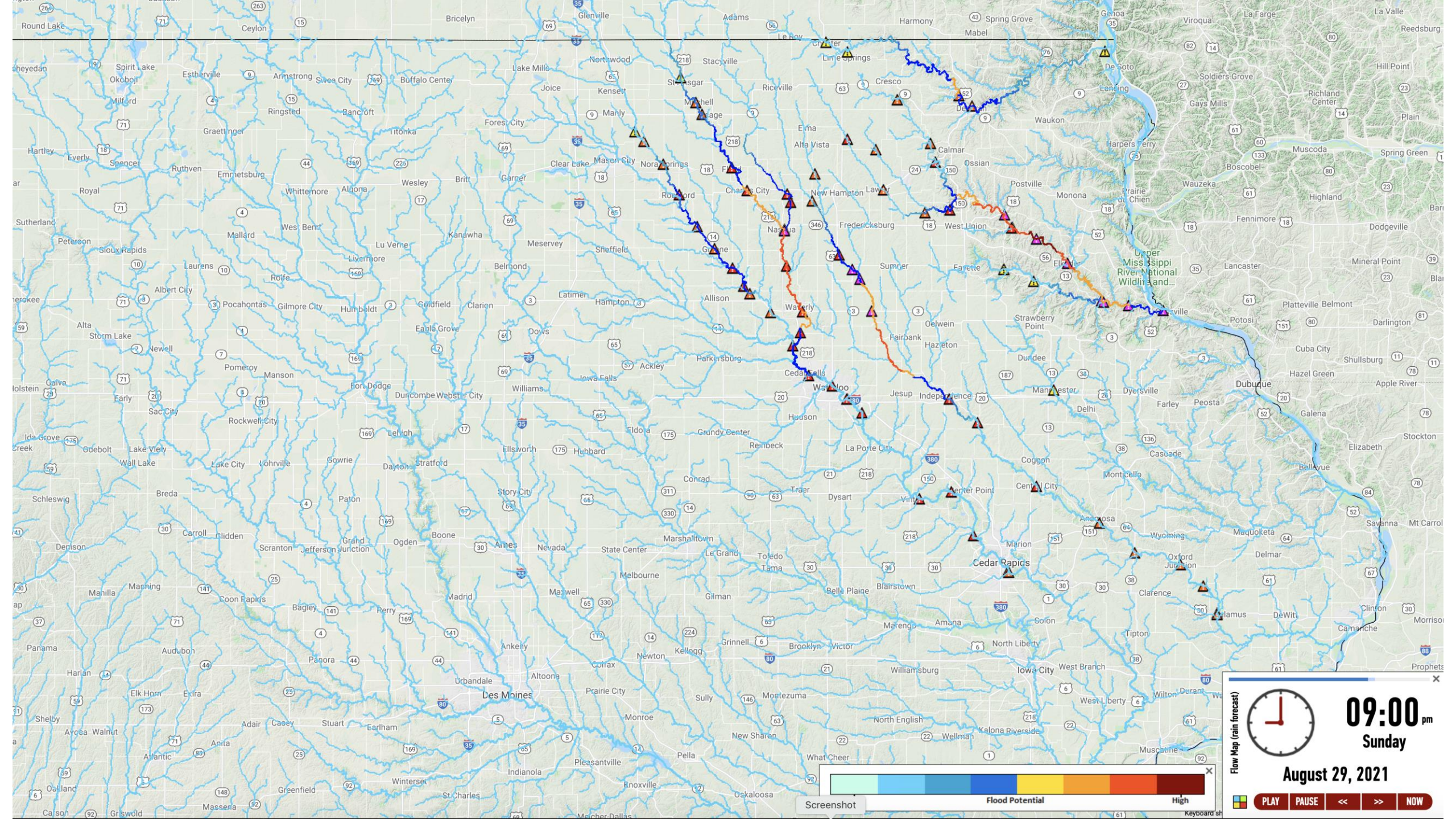
PLAY PAUSE << >> NOW

Screenshot



Flood Potential High





09:00 pm  
Sunday

August 29, 2021

Flow Map (rain forecast)

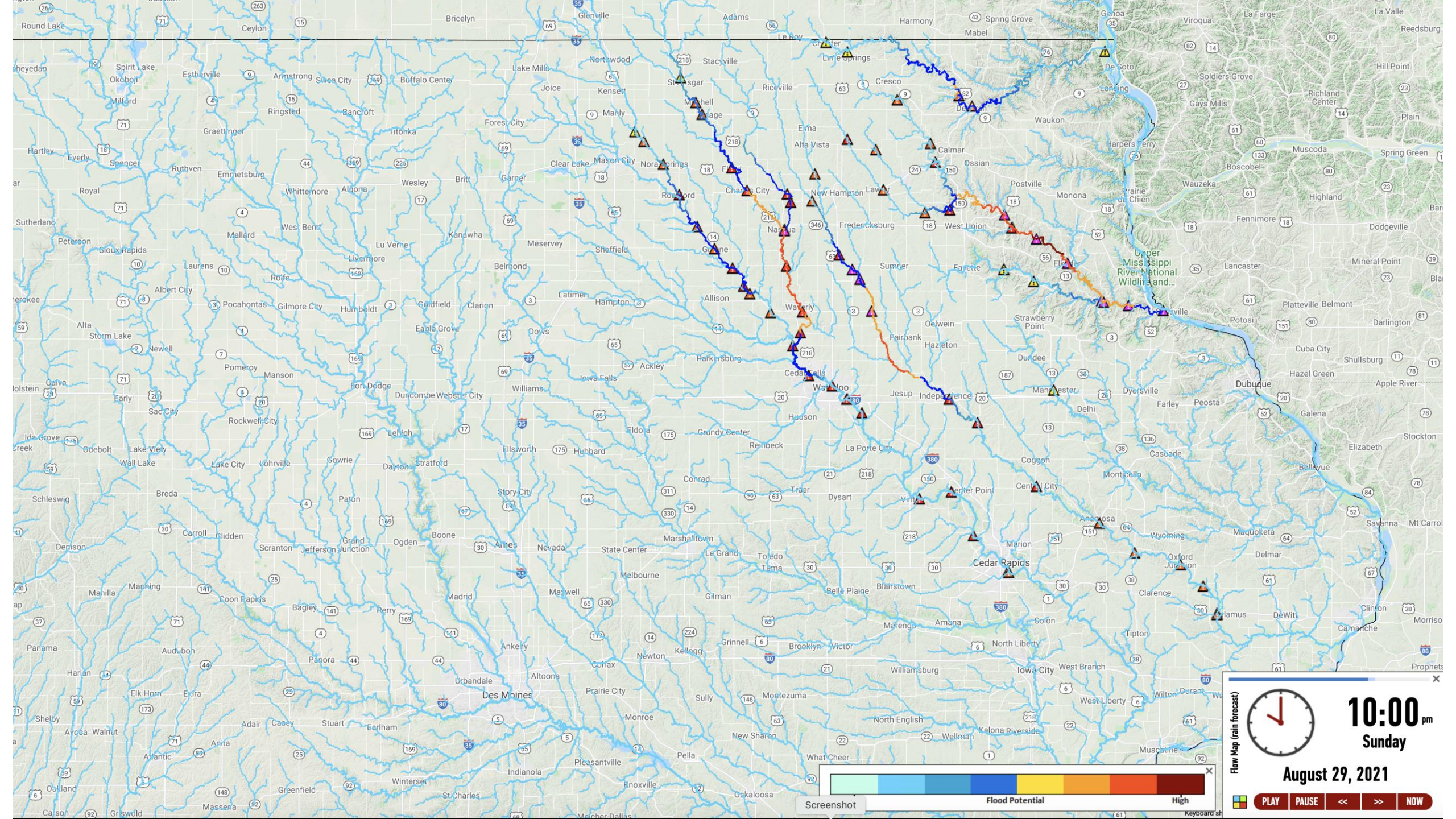
PLAY PAUSE << >> NOW



Screenshot

Keyboard Shortcuts






Flow Map (rain forecast)



**10:00 pm**  
Sunday  
August 29, 2021

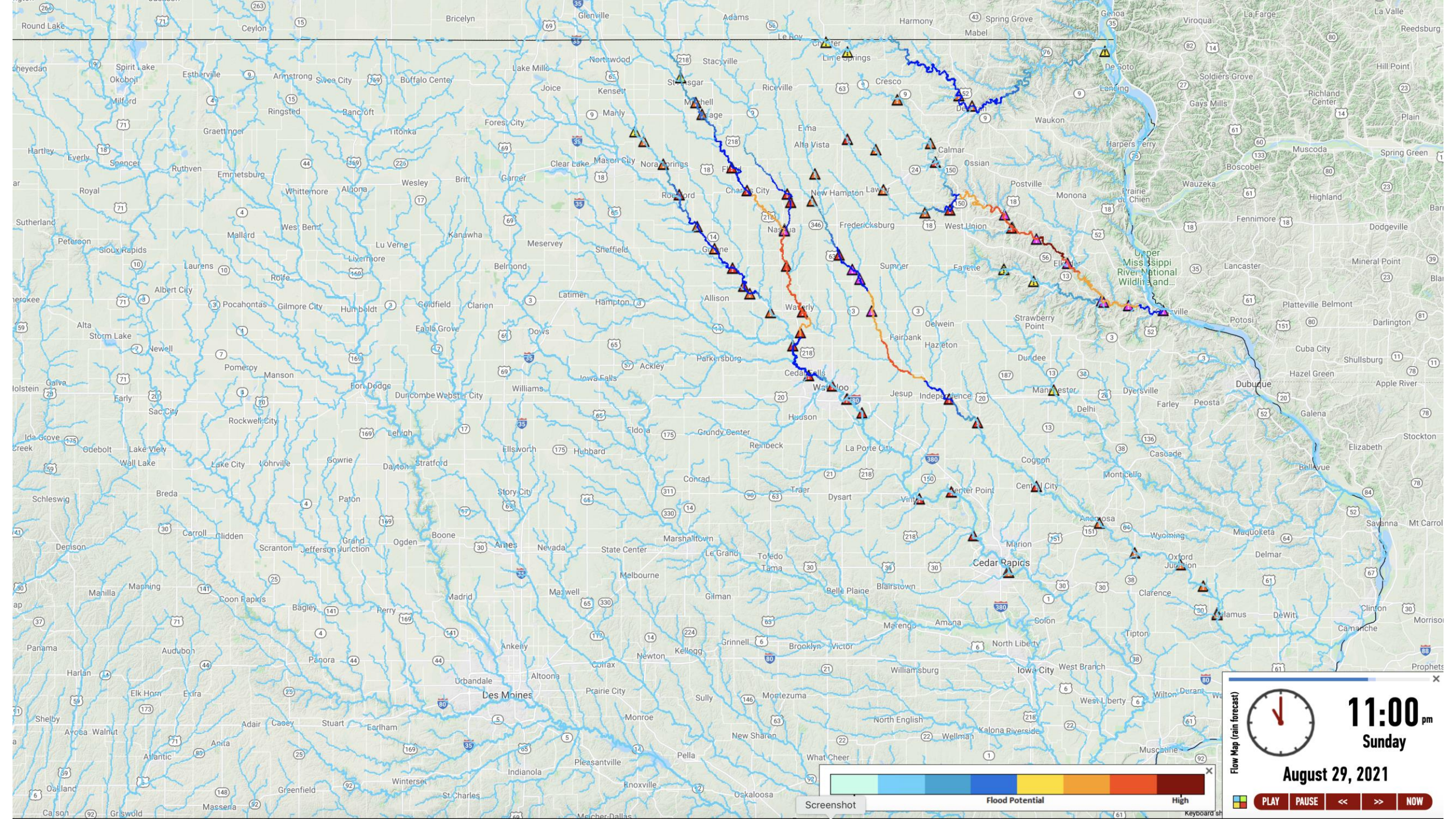
PLAY PAUSE << >> NOW

Screenshot




Flood Potential High





Flow Map (rain forecast)

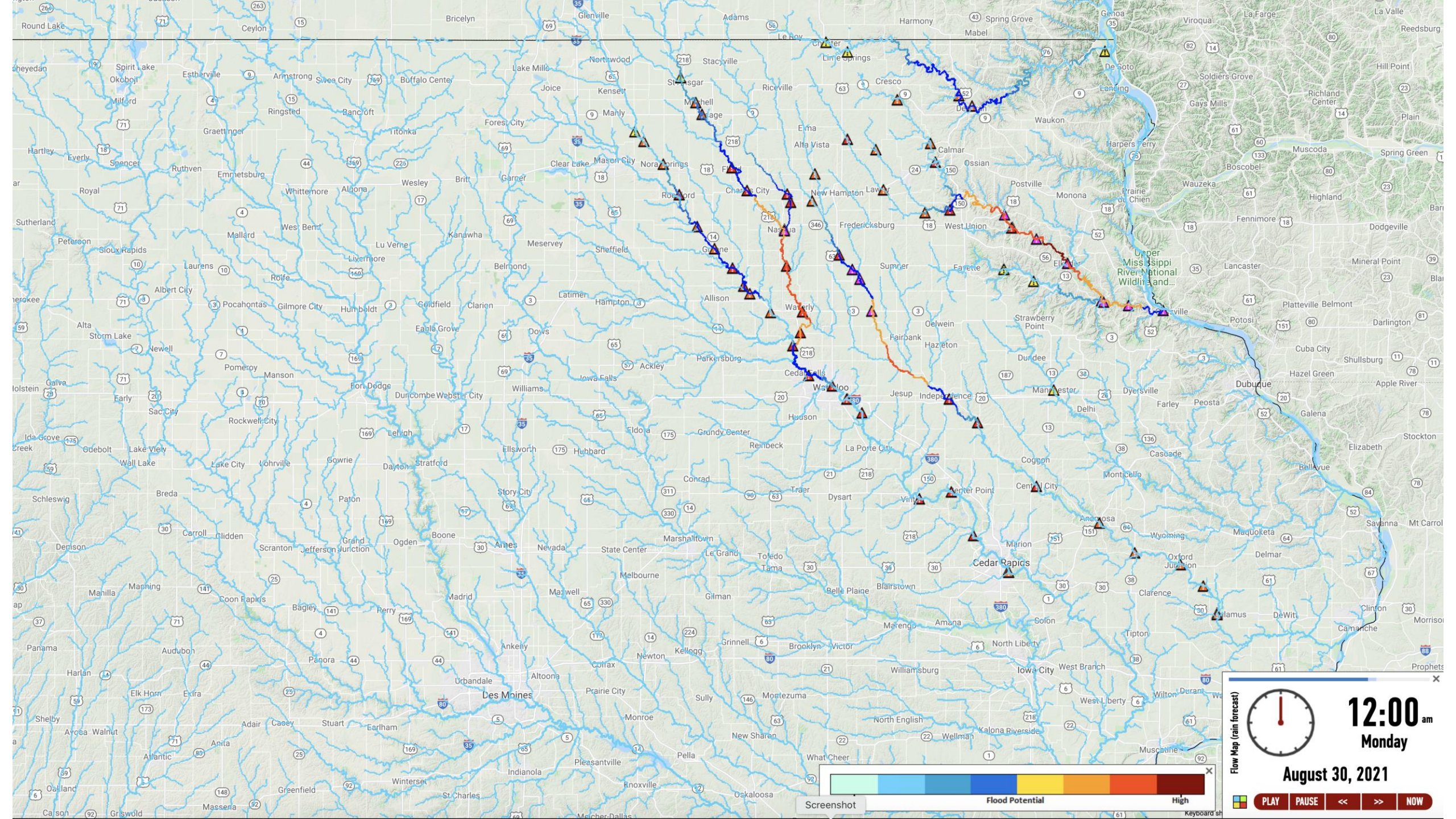


**11:00 pm**  
Sunday  
August 29, 2021

PLAY PAUSE << >> NOW







12:00 am  
Monday

August 30, 2021

Flow Map (rain forecast)

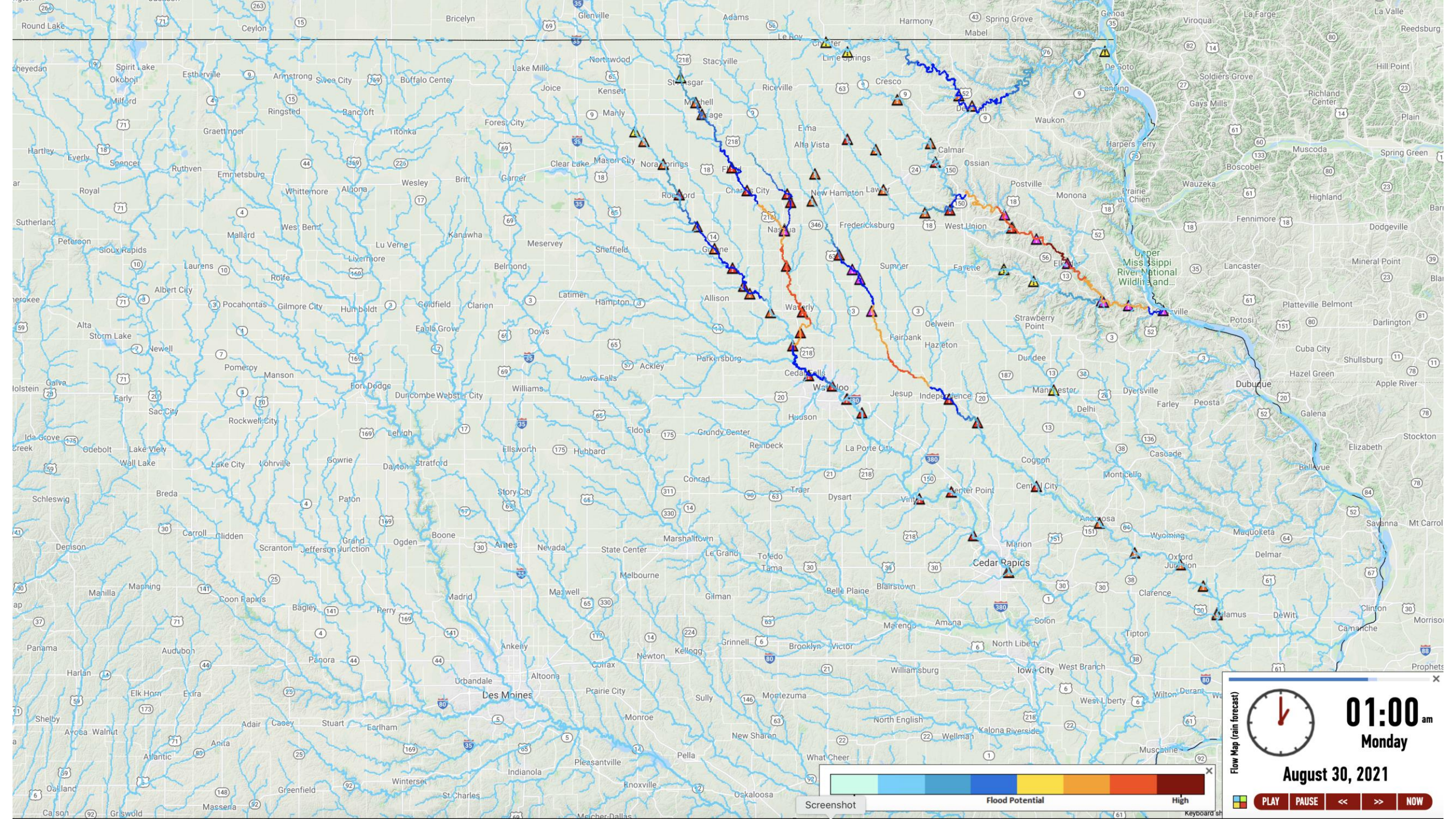
PLAY PAUSE << >> NOW



Screenshot

Keyboard





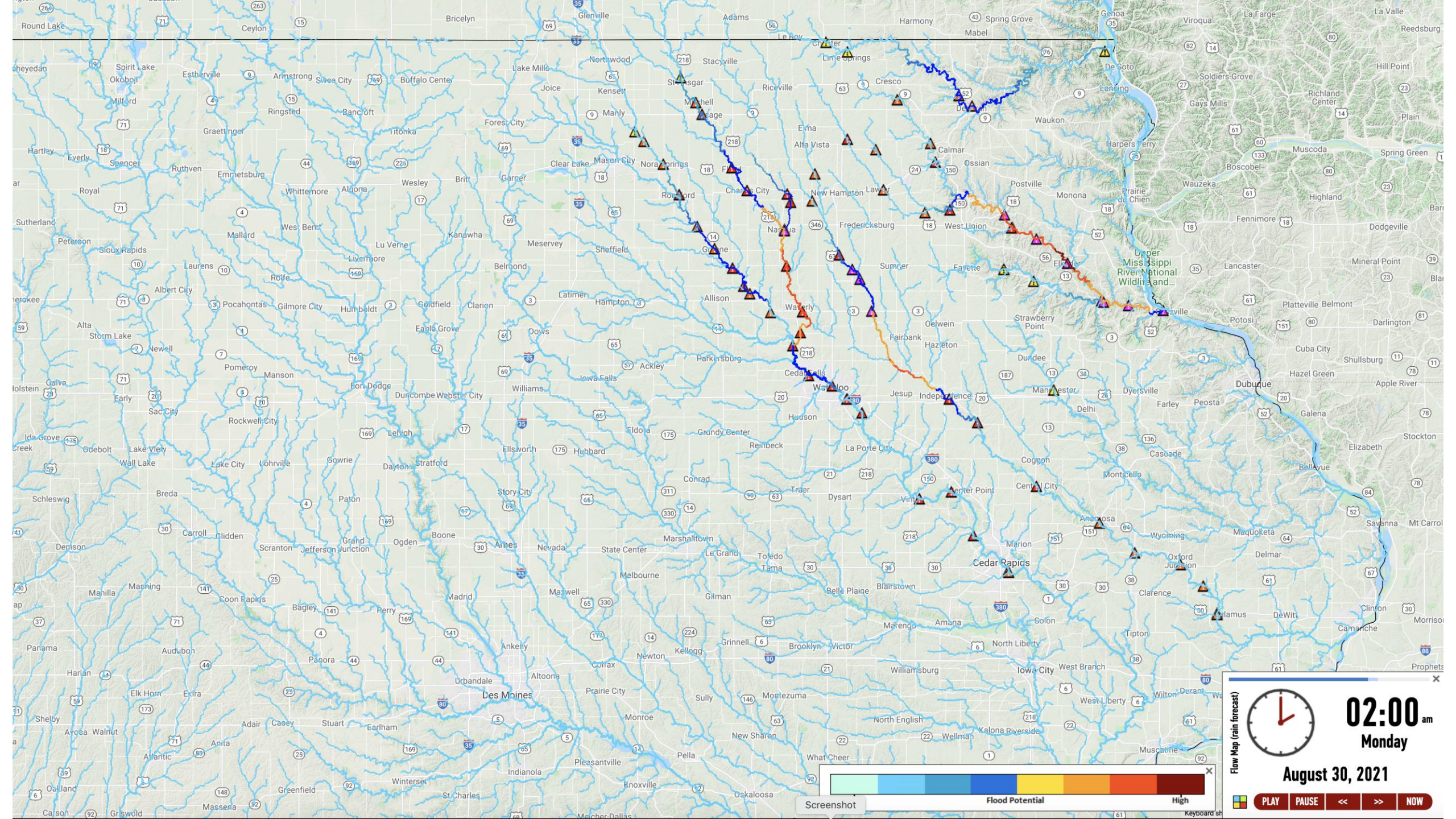
Flow Map (rain forecast)

 **01:00 am**  
**Monday**  
**August 30, 2021**

    **NOW**







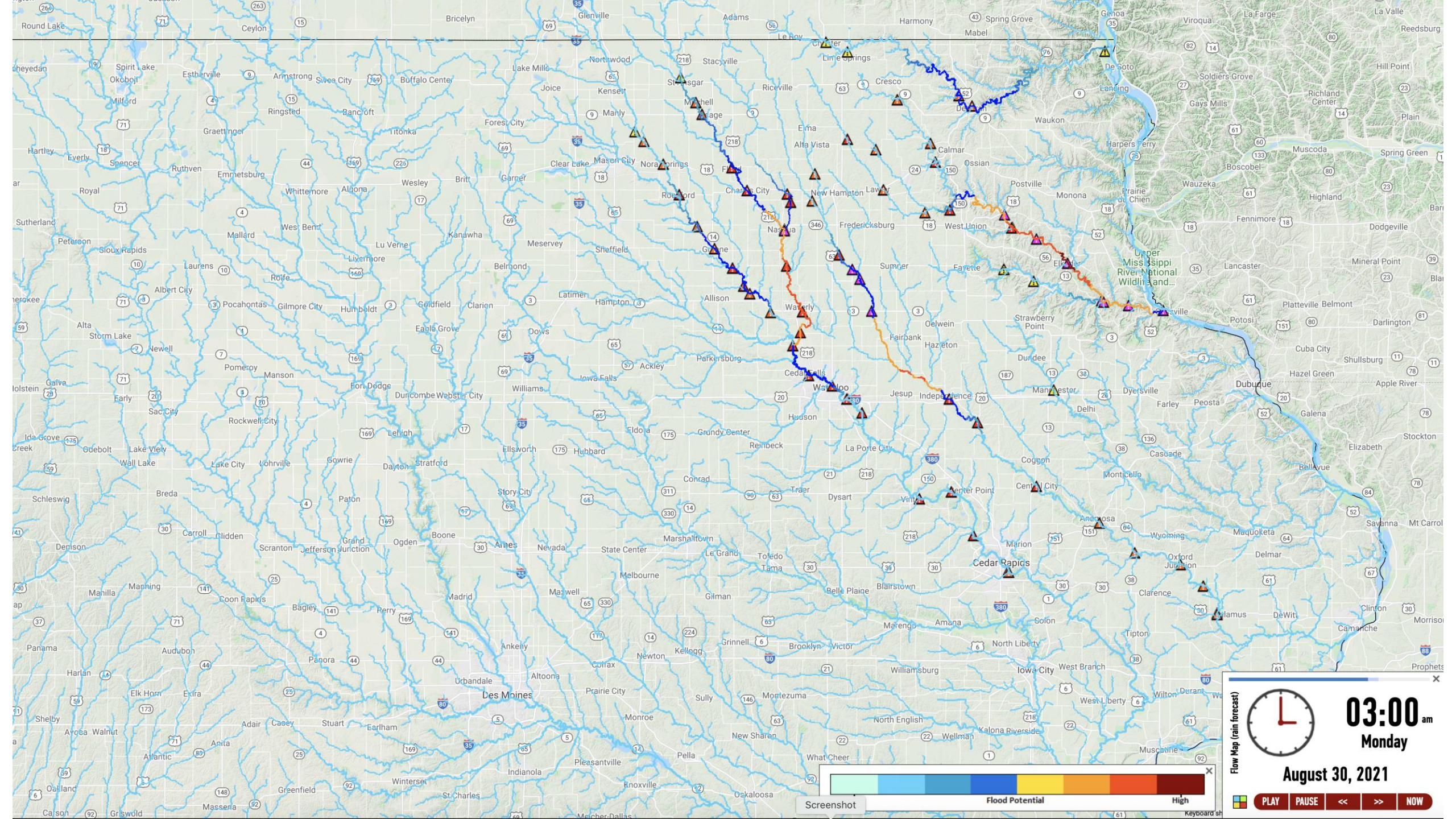
Flow Map (rain forecast)

**02:00** am  
**Monday**  
**August 30, 2021**

PLAY PAUSE << >> NOW







03:00 am  
Monday

August 30, 2021

Flow Map (rain forecast)

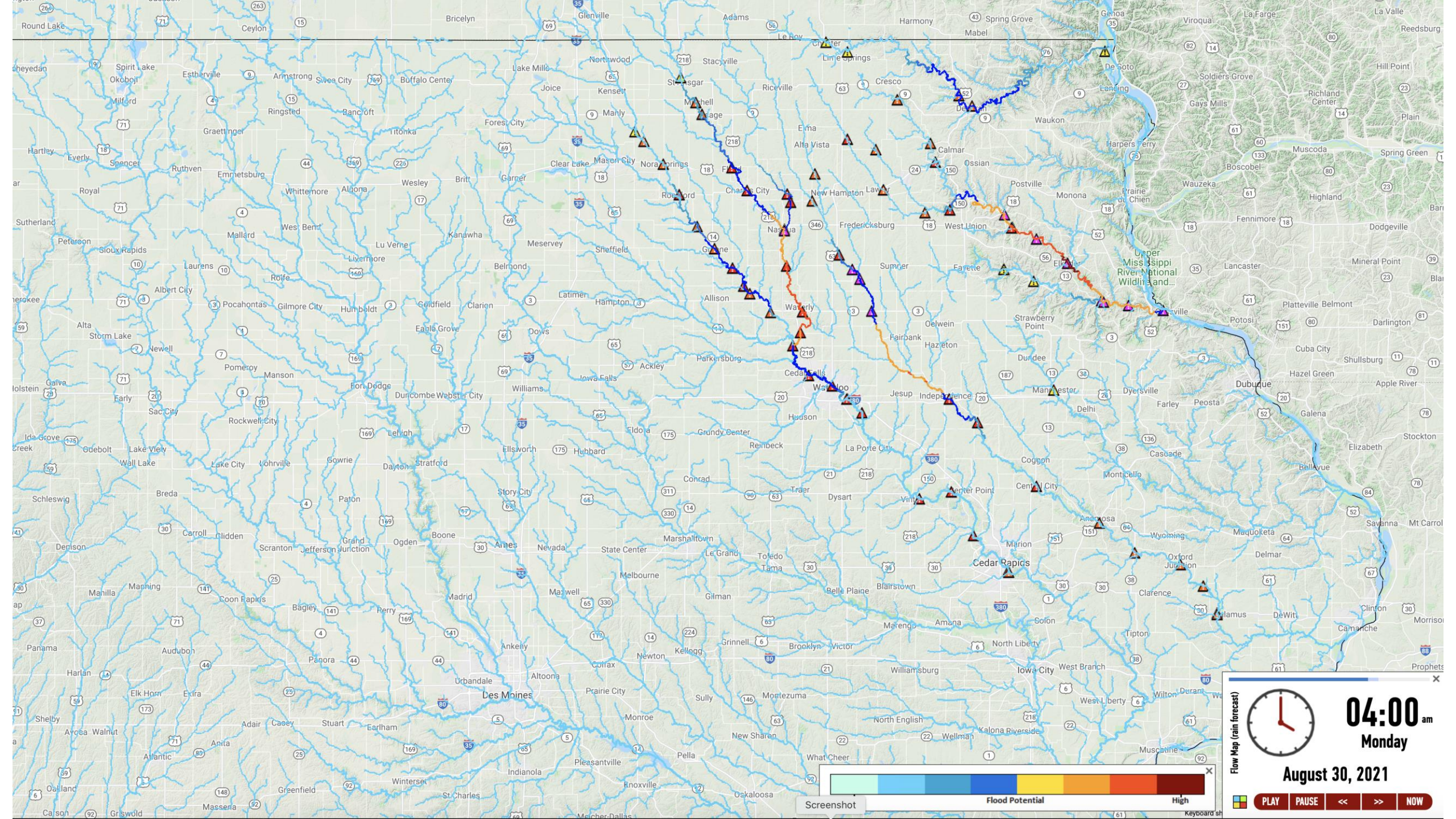
PLAY PAUSE << >> NOW




Screenshot

Keyboard





Flow Map (rain forecast)



**04:00** am  
Monday  
August 30, 2021

PLAY PAUSE << >> NOW

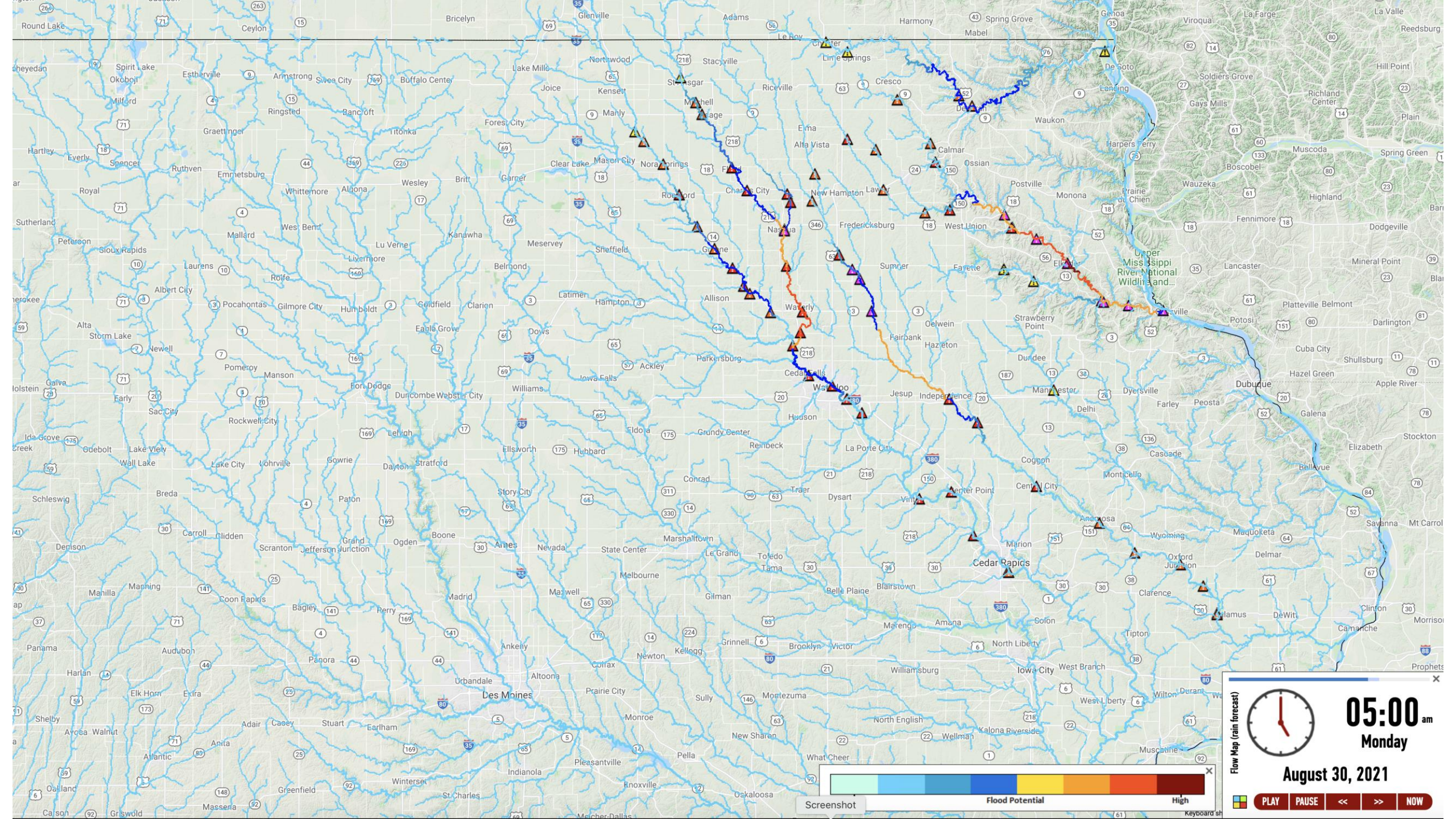
Screenshot



Flood Potential High

Keyboard Shortcuts





**05:00** am  
**Monday**

**August 30, 2021**

Flow Map (rain forecast)

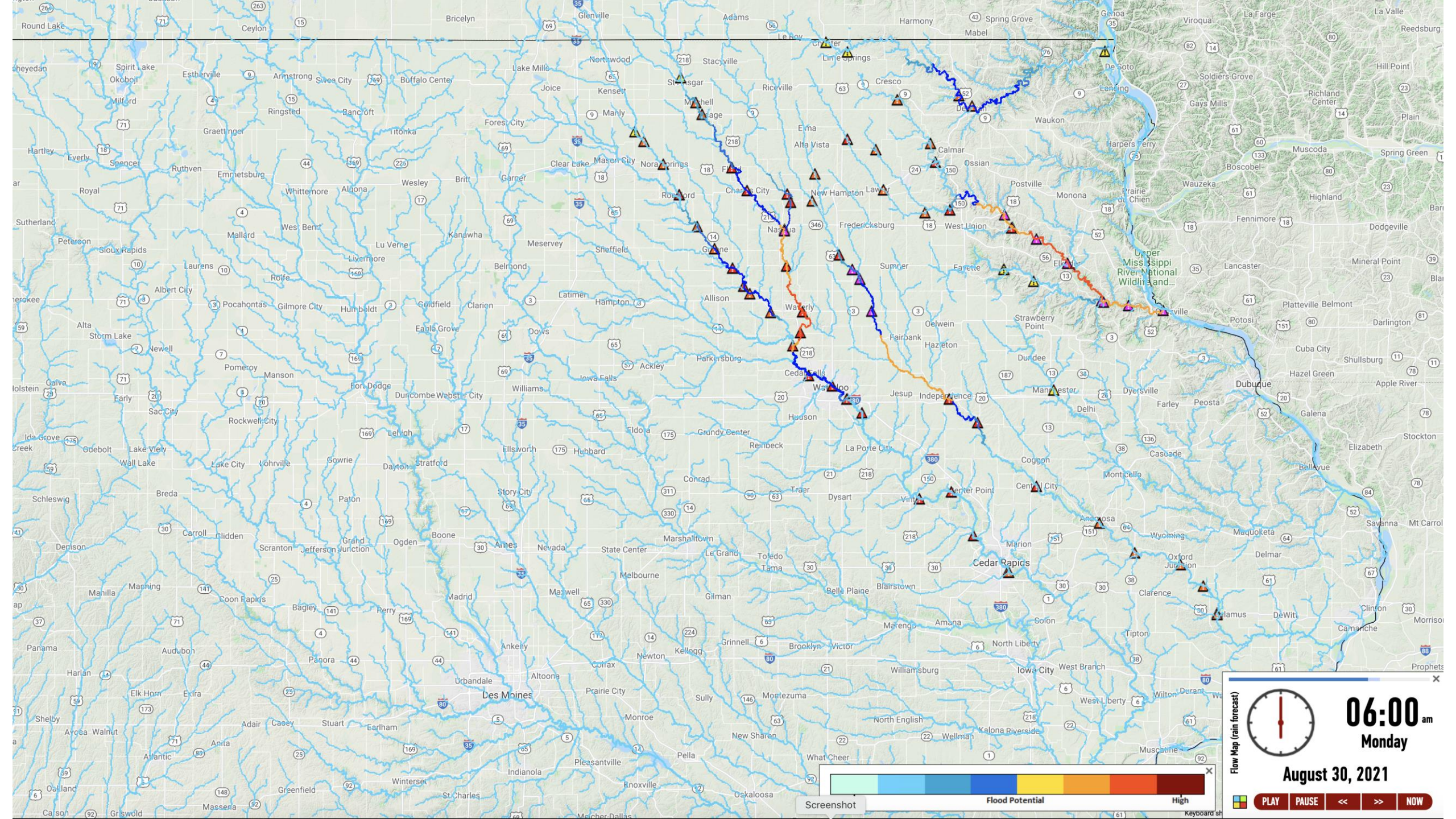
PLAY PAUSE << >> NOW



Screenshot

Keyboard shortcuts





**06:00** am  
**Monday**

**August 30, 2021**

Flow Map (rain forecast)

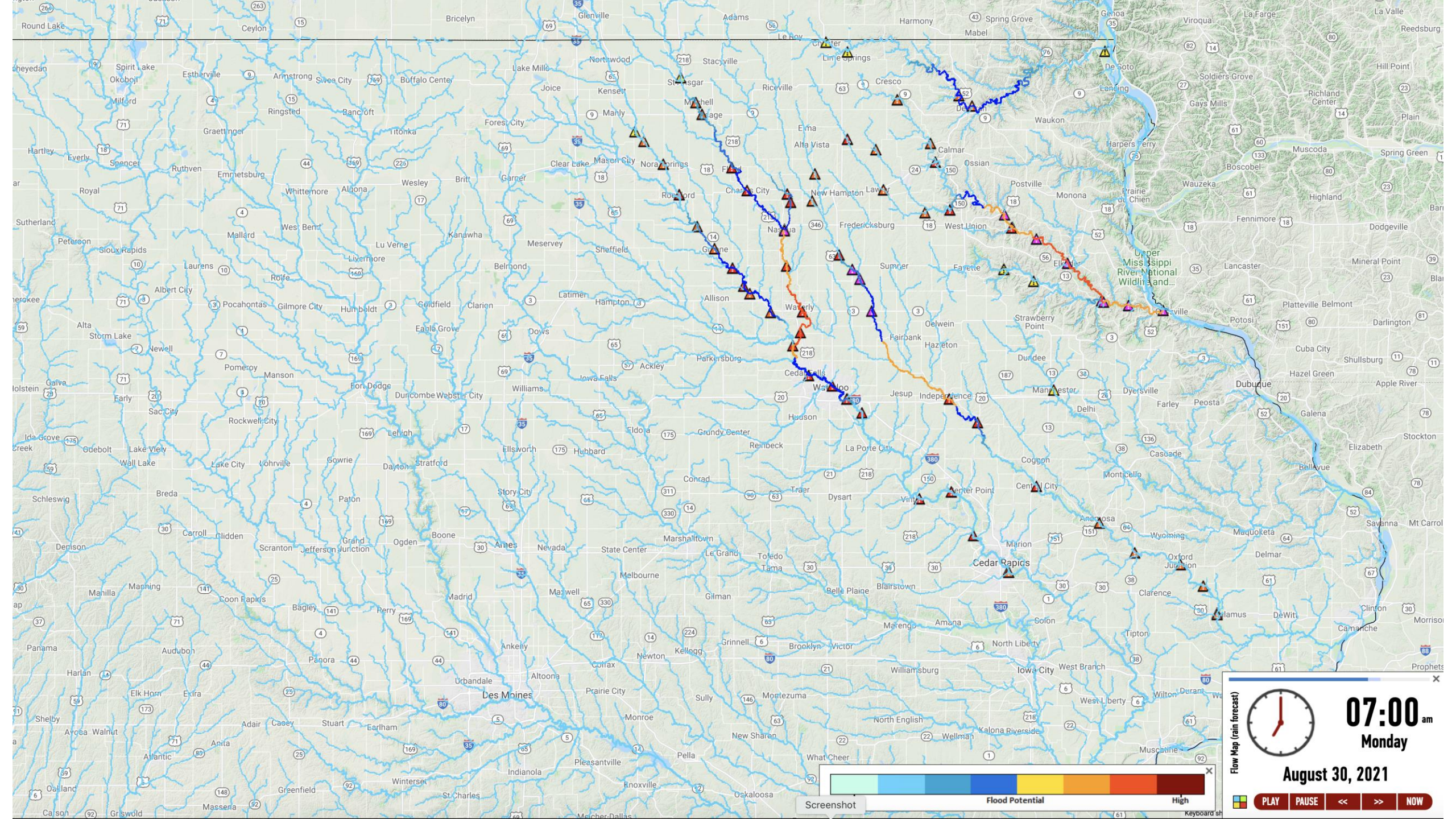
PLAY PAUSE << >> NOW



Screenshot

Keyboard





07:00 am  
Monday

August 30, 2021

Flow Map (rain forecast)

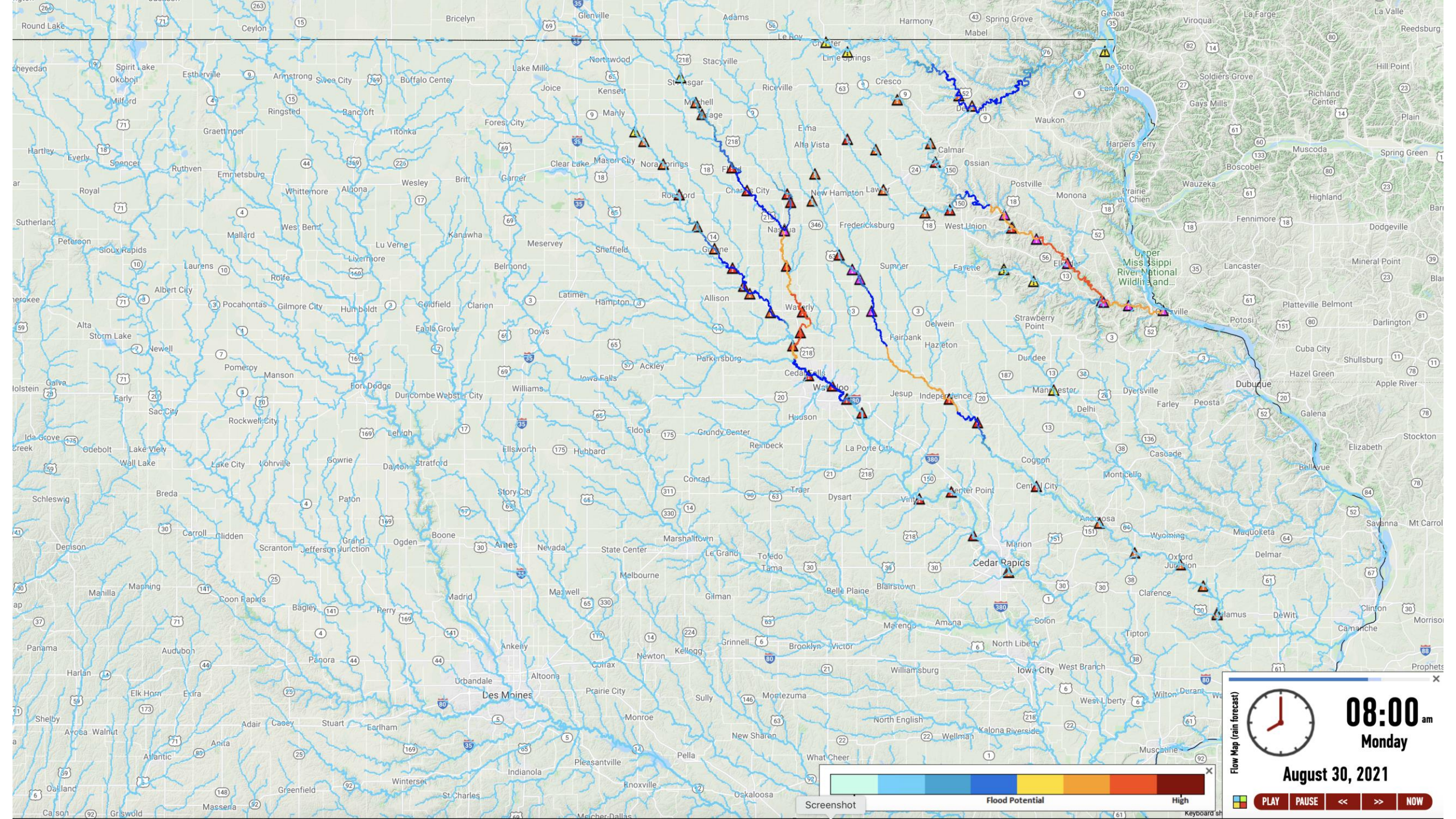
PLAY PAUSE << >> NOW



Screenshot

Keyboard





Flow Map (rain forecast)

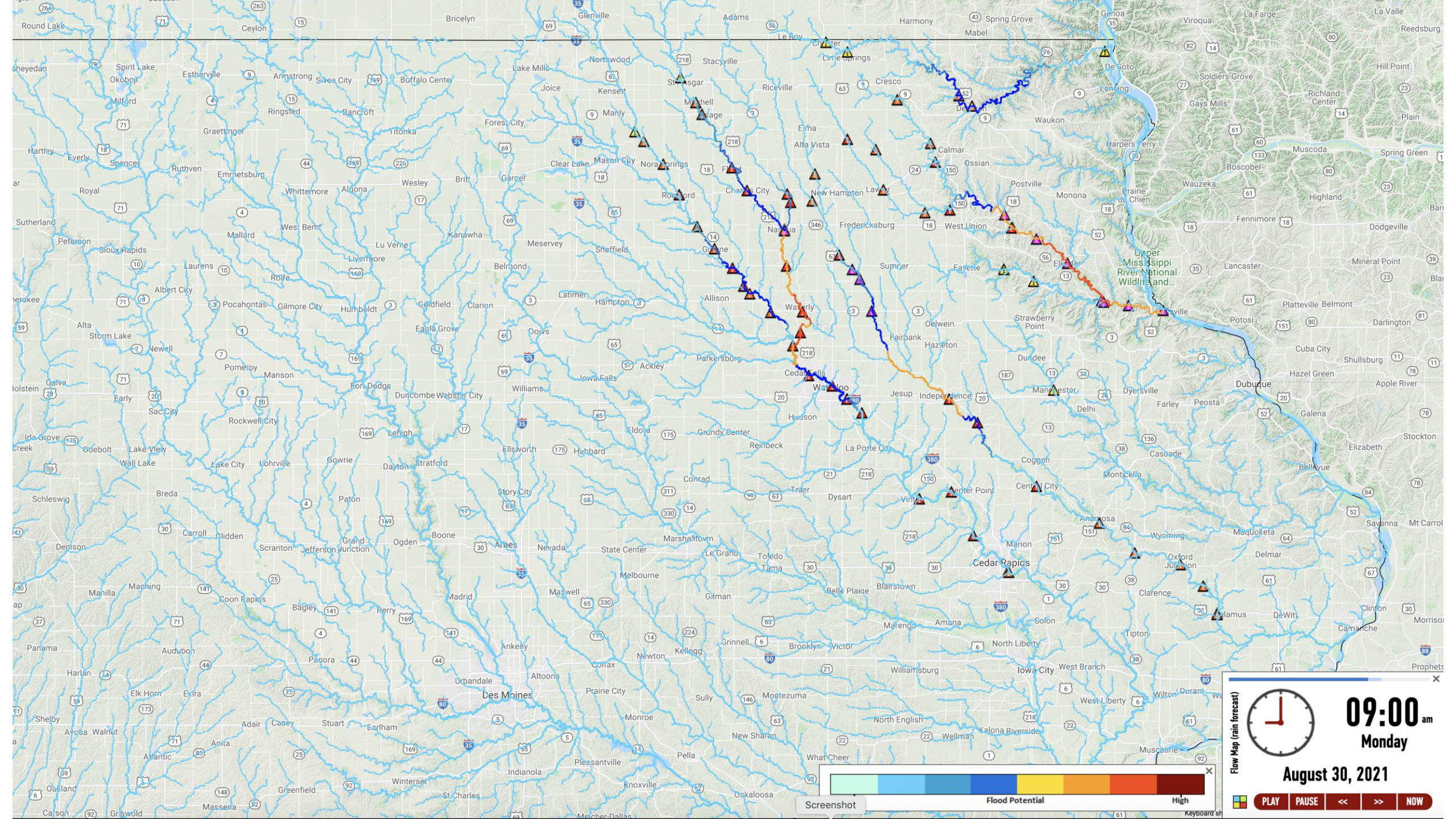
**08:00** am  
Monday  
August 30, 2021

PLAY PAUSE << >> NOW

Screenshot

Flood Potential High





Flow Map (rain forecast)

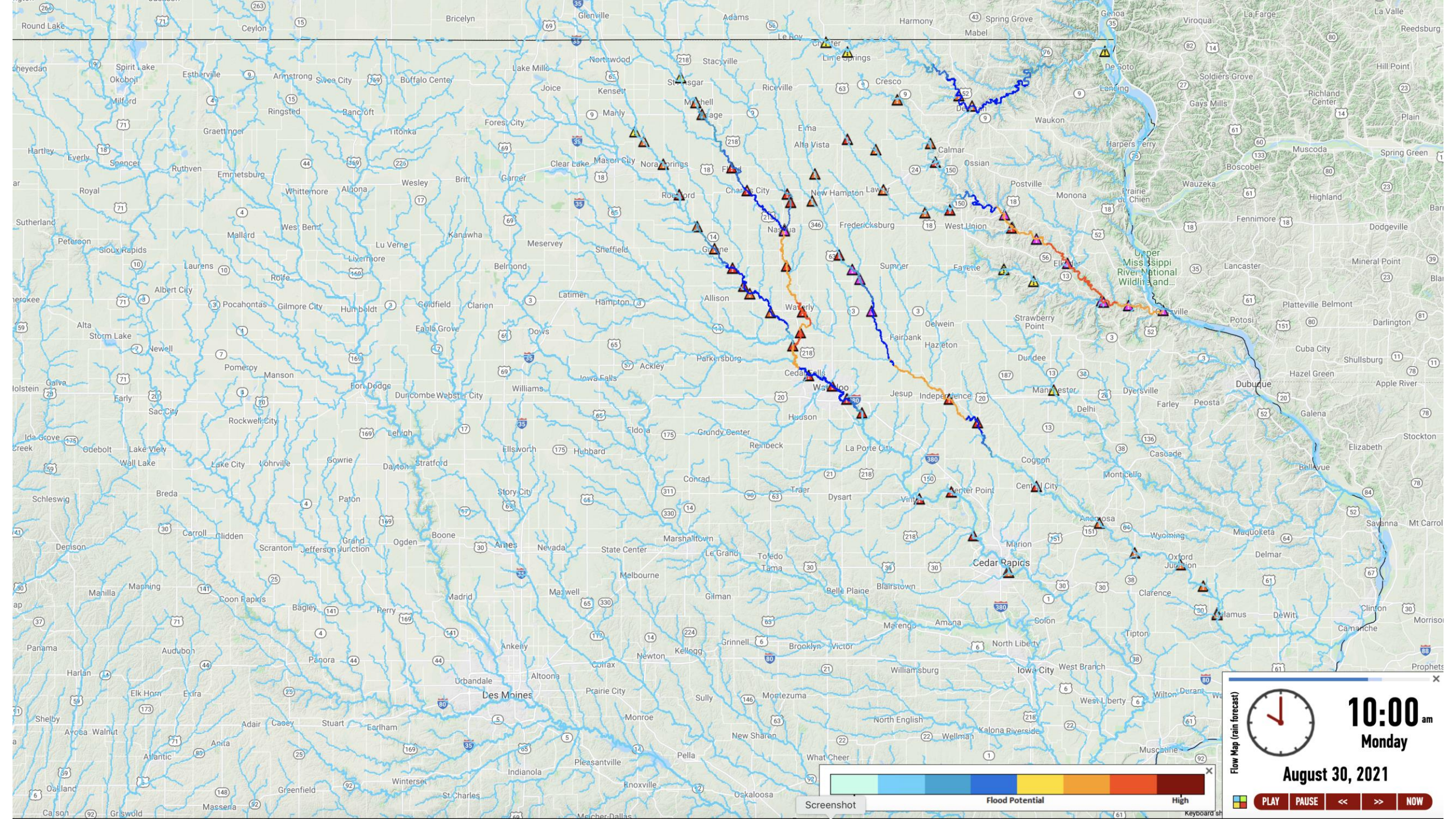
**09:00 am**  
**Monday**  
**August 30, 2021**

PLAY PAUSE << >> NOW

Screenshot

**Flood Potential** High





Flow Map (rain forecast)

**10:00 am**  
**Monday**  
**August 30, 2021**

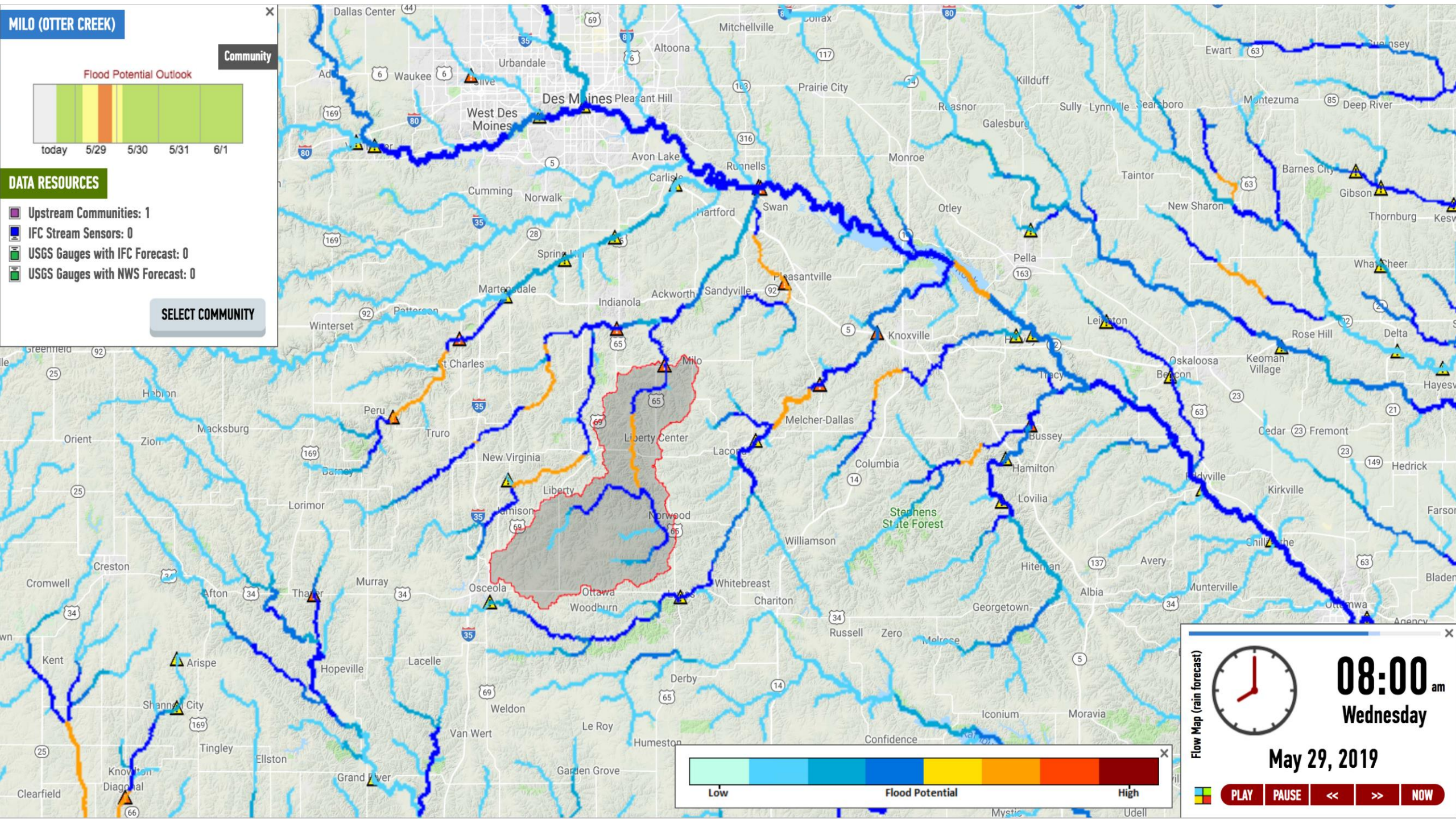
PLAY PAUSE << >> NOW

Screenshot

**Flood Potential** High

Keyboard shortcuts: Screenshot, Keyboard shortcuts

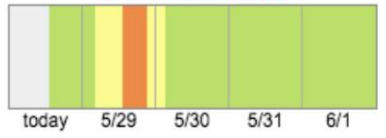




**MILO (OTTER CREEK)**

Community

**Flood Potential Outlook**



**DATA RESOURCES**

- Upstream Communities: 1
- IFC Stream Sensors: 0
- USGS Gauges with IFC Forecast: 0
- USGS Gauges with NWS Forecast: 0

**SELECT COMMUNITY**



Flow Map (rain forecast)

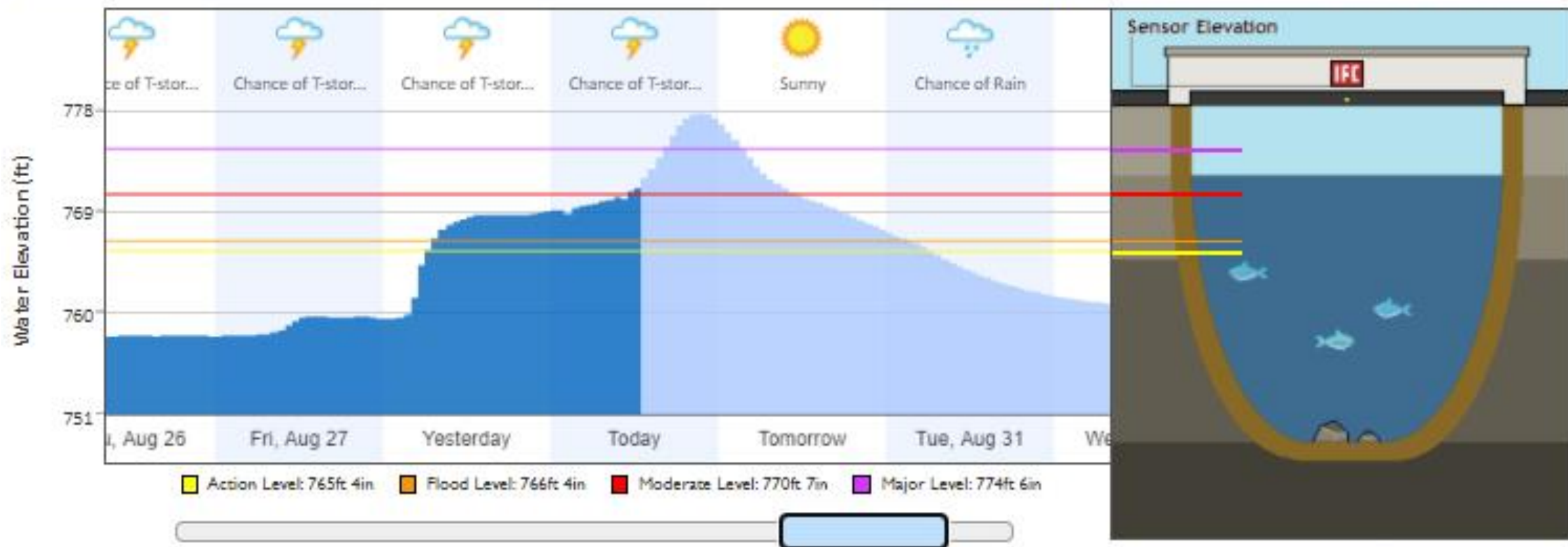
**08:00** am  
Wednesday  
May 29, 2019

PLAY PAUSE << >> NOW



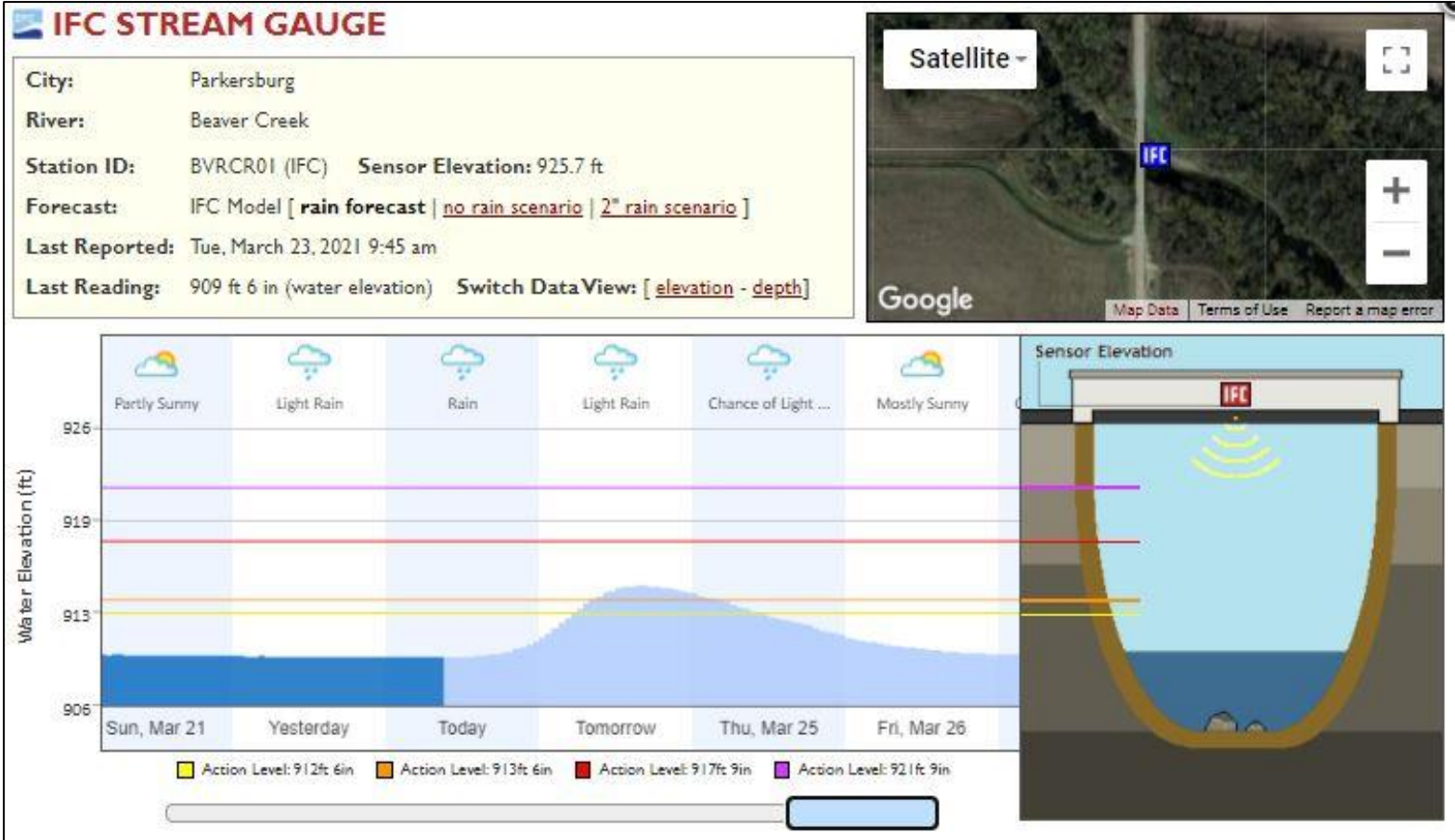
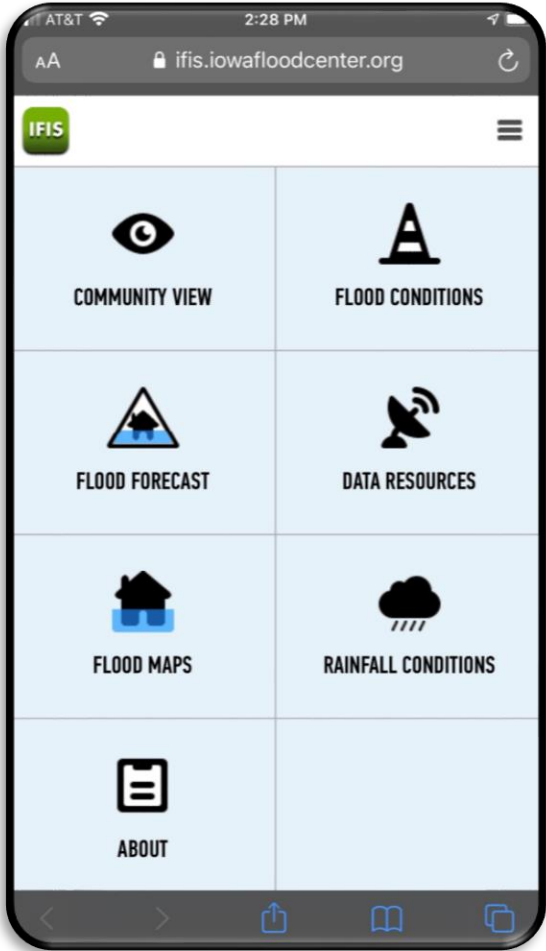
# IFC STREAM GAUGE

City: Elgin  
River: Turkey River  
Station ID: TKYRV02 (IFC) Sensor Elevation: 778.4 ft  
Forecast: IFC Model [ [rain forecast](#) | [no rain scenario](#) | [2" rain scenario](#) ]  
Last Reported: Sun, August 29, 2021 1:00 pm  
Last Reading: 771 ft 4 in (water elevation) [Switch Data View: \[ \[elevation\]\(#\) - \[depth\]\(#\) \]](#)





# IFIS Mobile Alerts





What is the flood condition for Iowa City?

Minor flood warning issued for Iowa City

list type voice

- What is the flood condition for Iowa City [Cedar Rapids]?
- What is the flood potential for my community?
- Is it raining in Iowa City [Cedar Rapids] right now?
- What does 100-year flood mean?
- How can I bookmark a community in IFIS?



Flood AI Alpha - IFIS  
Iowa Flood Information System

help

Flood AI Alpha - IFIS  
[Flood AI Alpha]  
HELP  
You can ask me anything about flooding like  
- What is the weather forecast for Iowa City?  
- Show me stage data for nearest sensor?  
- What does catchment area mean?  
- How many stream sensors are there in Iowa City watershed?

What is the weather forecast for Iowa City?

Flood AI Alpha - IFIS  
It will be partly cloudy in Iowa City.

Show me stage data for nearest sensor

Flood AI Alpha - IFIS  
Here is the 5-day graph of nearest gauge (USGS: 05454500) at Iowa City

Iowa River at Iowa City

Stage Height: 13.9, 1.6  
Last Reported: May 2, 2019 12:00 pm  
Stage Height: 15

NO FLOOD ALERT

BETA | FAQs - Feedback - English | Terms - Privacy - © 2016 Skype/Microsoft



Flood AI  
Active on Messenger

What is the upstream area of my community?

IFIS  
Upstream Area: 870 sq mi

what will be the weather forecast for Iowa City?

IFIS  
It will be partly cloudy in Iowa City.

What is drainage basin?

A drainage basin or catchment basin is an extent or an area of land where all surface water from rain, melting snow, or ice converges to a single point at a lower elevation, usually the exit of the basin, where the waters join another body of water, such as a river, lake, reservoir, estuary, wetland, sea, or ocean.

IFIS

How many stream sensors are there in Iowa City watershed?

IFIS  
There are 45 stream sensors in Iowa City (Iowa River) watershed

Show me stage data for nearest sensor?

IFIS  
Here is the 5-day graph of nearest gauge (USGS: 05454500) at Iowa City

Type a message...



FLOOD AI

SMART ASSISTANT

VOICE RECOGNITION

ARTIFICIAL INTELLIGENCE

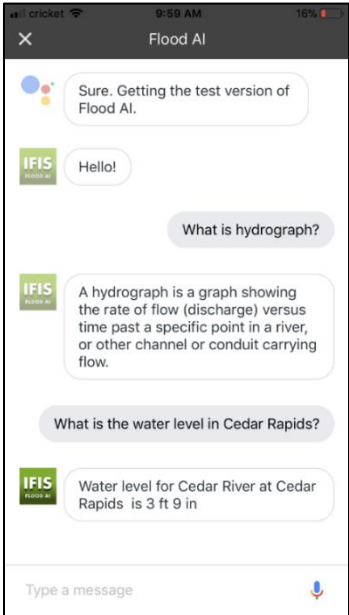
IOWA



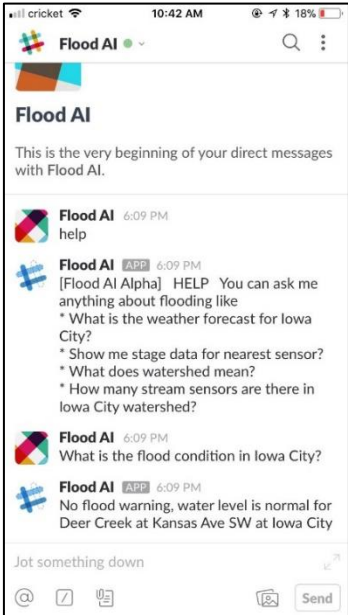
# Flood AI Alpha: Artificial Intelligence System for Disasters



 Cortana



 Google Assistant



 slack



Amazon Echo  
Alexa **ask Flood AI ...**



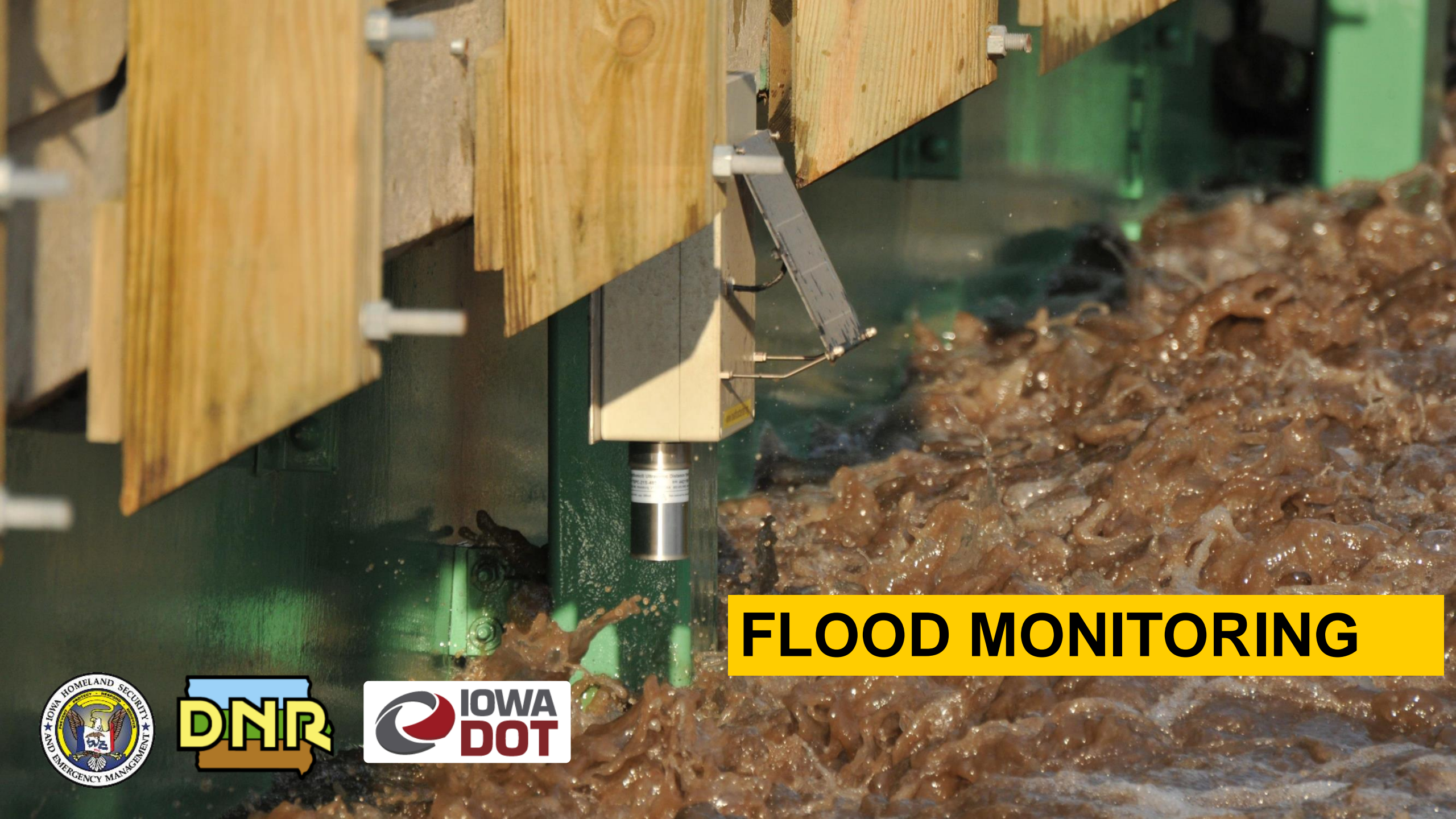
Google Home  
Ok Google **talk to Flood AI**

Smart Assistants

Smart Devices

**IOWA**





# FLOOD MONITORING

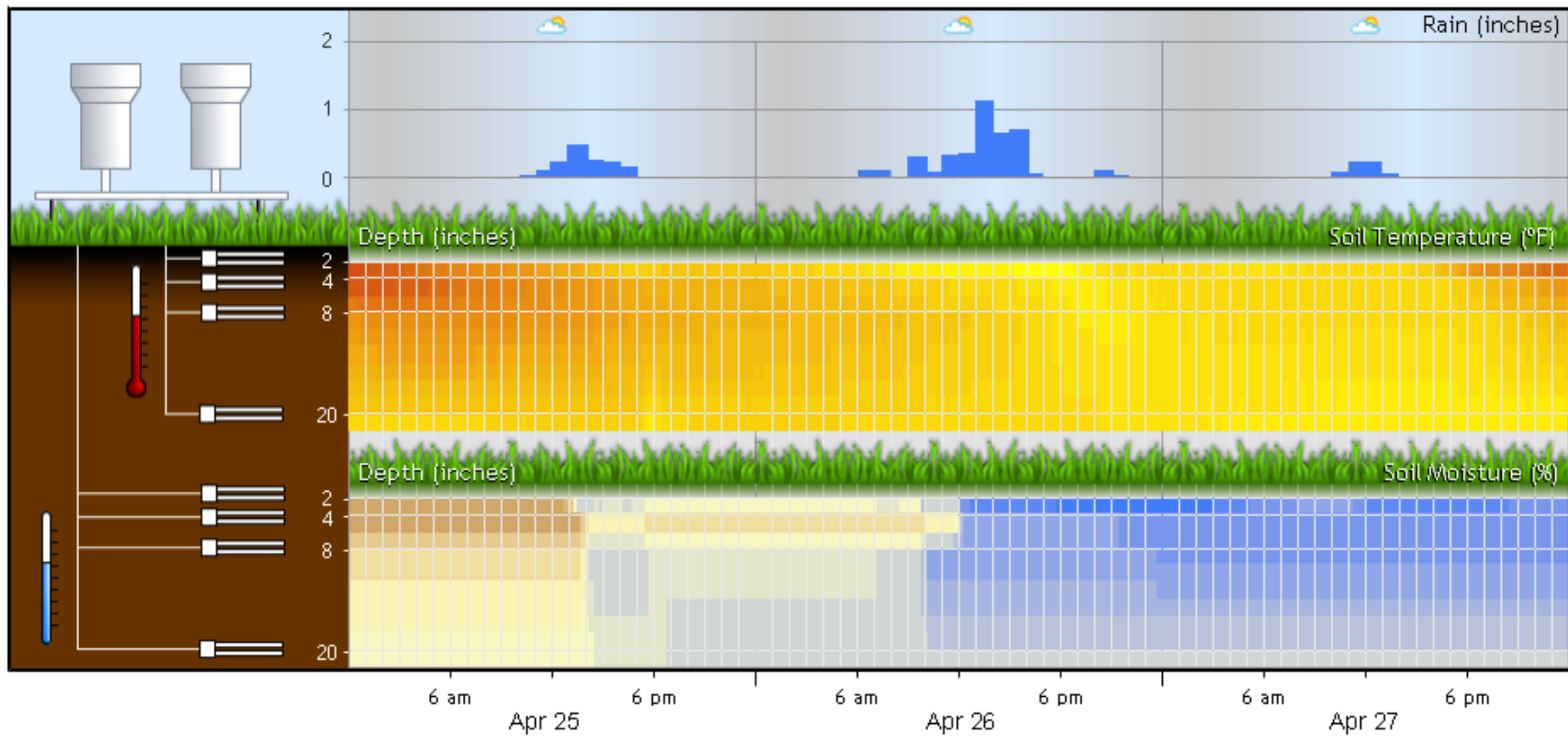






**STATEWIDE HYDROLOGIC NETWORK**

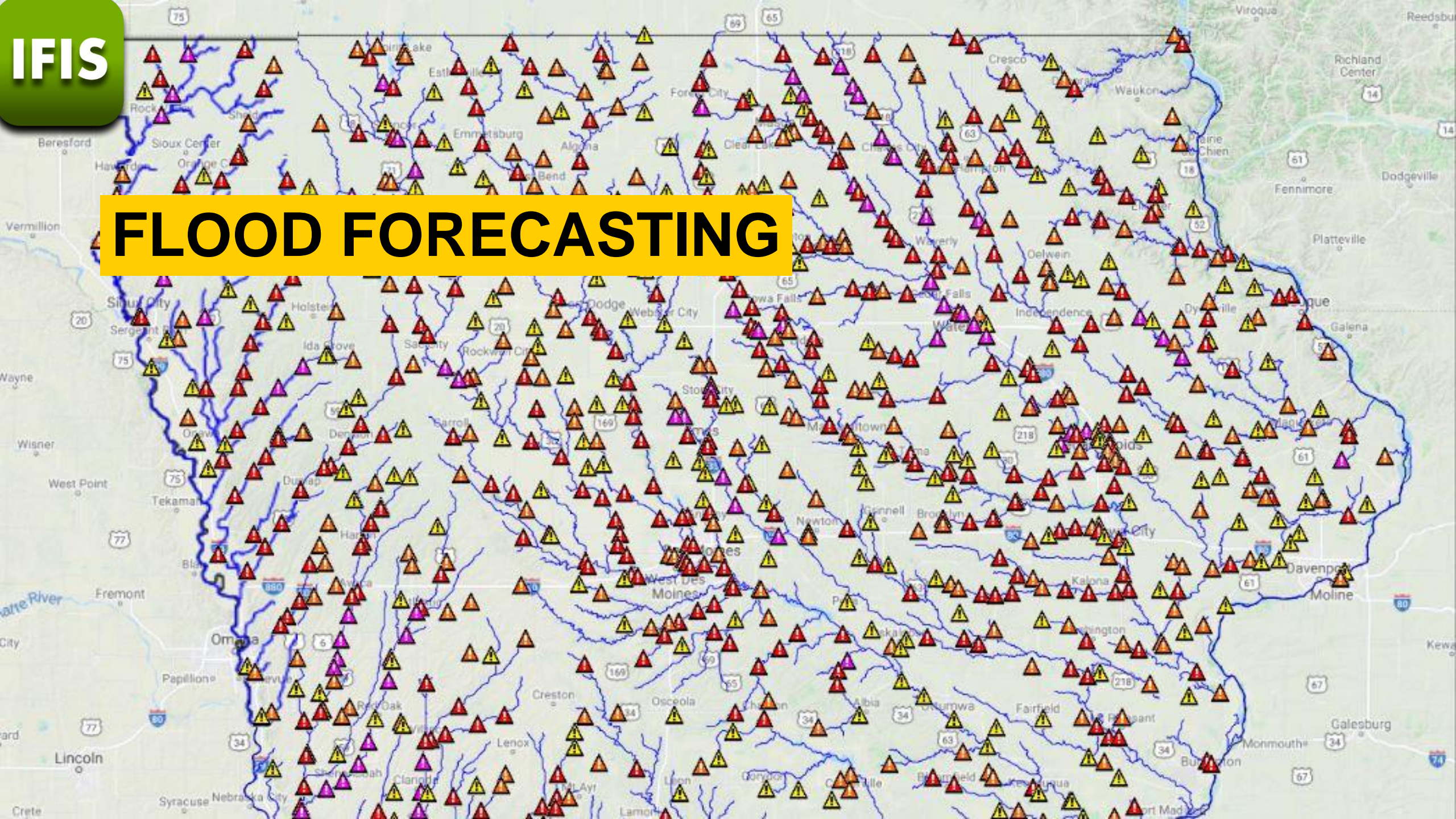






**IFIS**

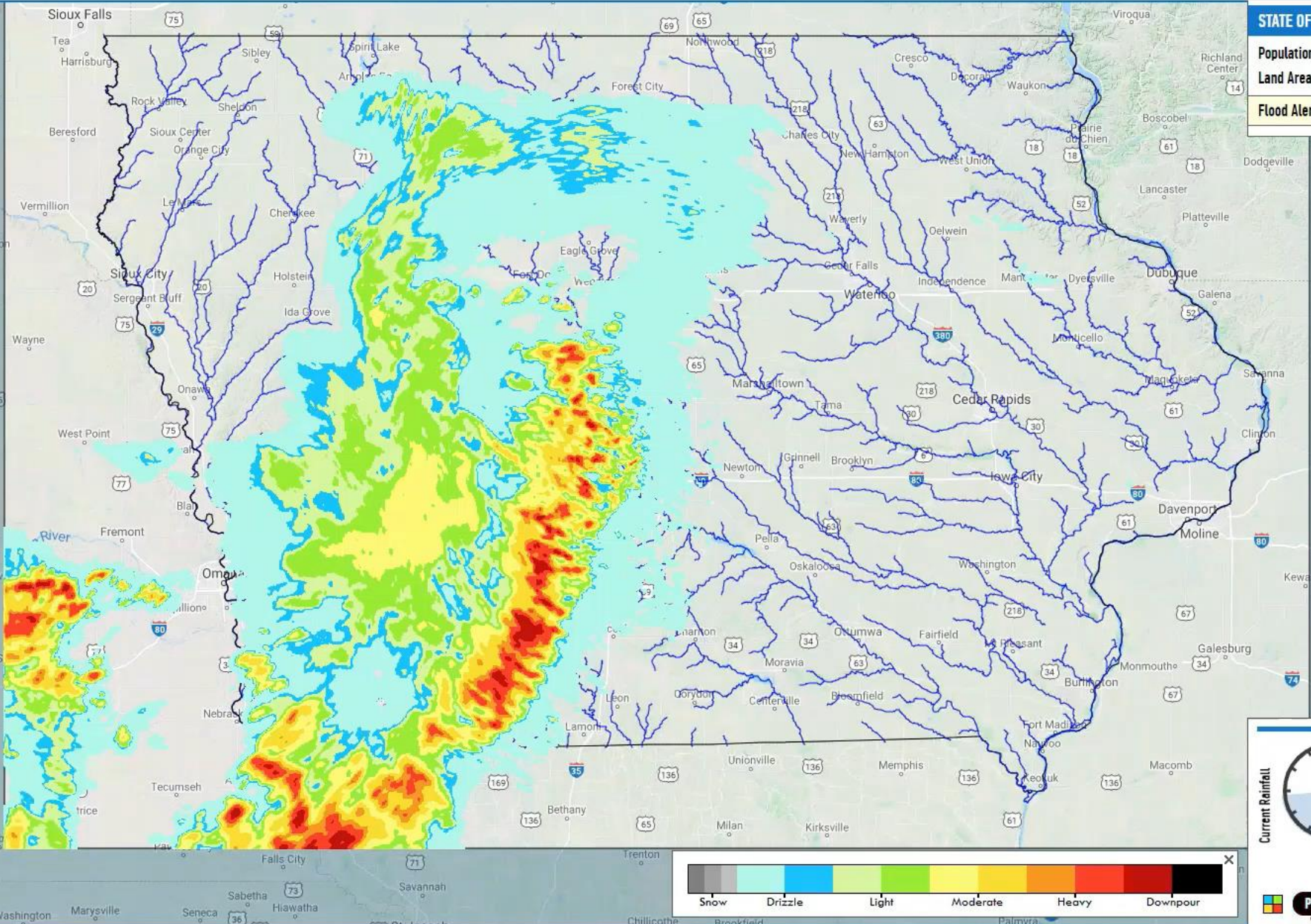
# FLOOD FORECASTING





**IFIS**

Map navigation controls: zoom in (+), zoom out (-), location pin, home, and other utility icons.



**STATE OF IOWA**

Population: 3,046,355  
 Land Area: 55,872 sq mi

**Flood Alerts (observations)**



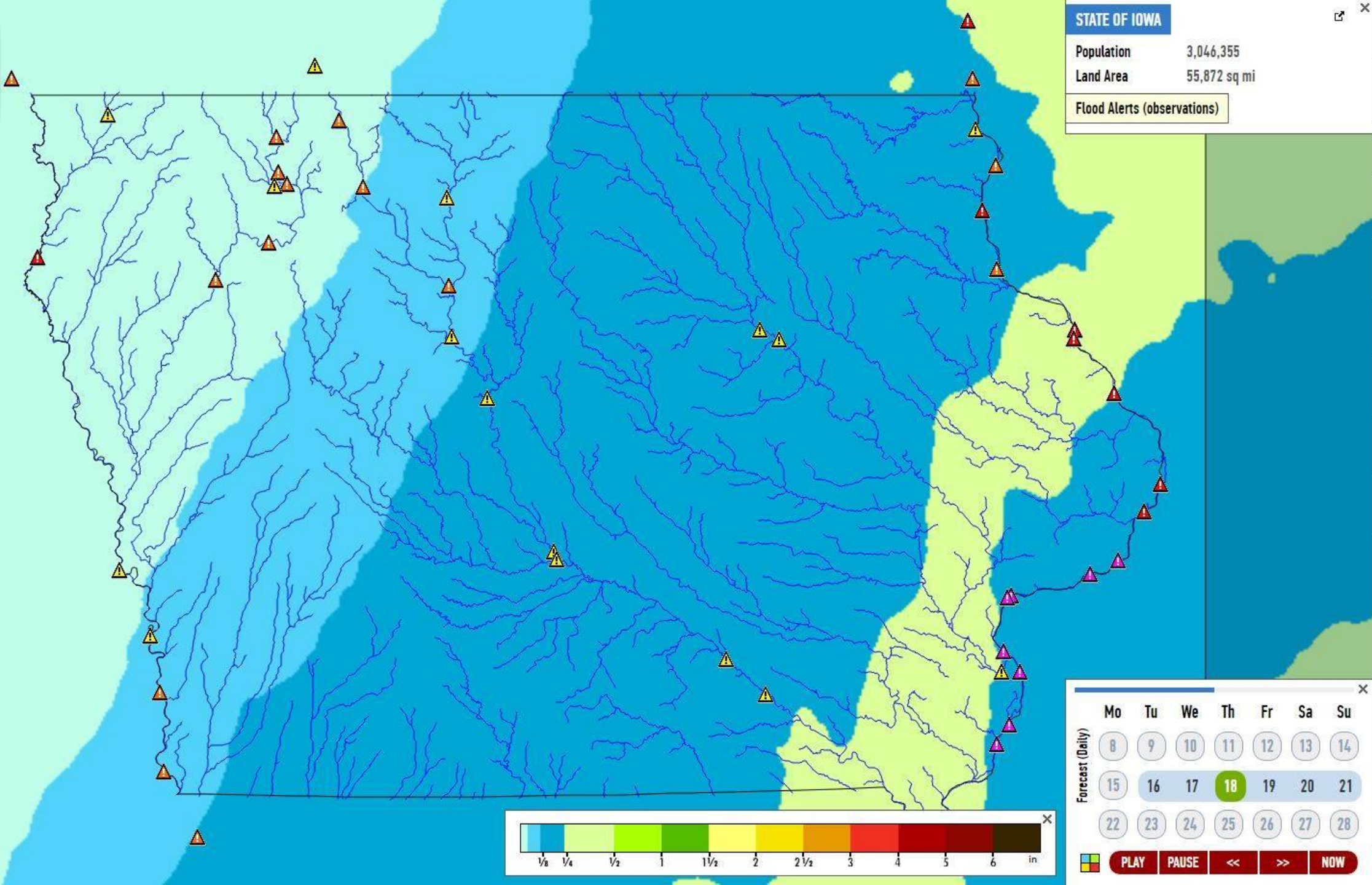
**Current Rainfall**

05:10 am  
 Thursday  
 June 24, 2021

PLAY PAUSE << >> NOW

Vertical sidebar with utility icons: user profile, home, weather, location, and other navigation tools.





**STATE OF IOWA**

Population 3,046,355  
Land Area 55,872 sq mi

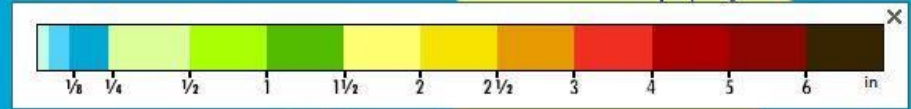
Flood Alerts (observations)

- 🗺️
- 📏
- 📶
- 🏠
- ☁️
- 🔧
- +
- 🌐
- 📅

Forecast (Daily)

Mo	Tu	We	Th	Fr	Sa	Su
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

PLAY PAUSE << >> NOW







# FLOOD MAPPING



- LEGEND**
- ▲ Major Flood Stage
  - ▲ Moderate Flood
  - ▲ Flood Stage
  - ▲ Action Stage
  - ▲ No Alert



**US Army Corps of Engineers®**





### FLOOD MAPS

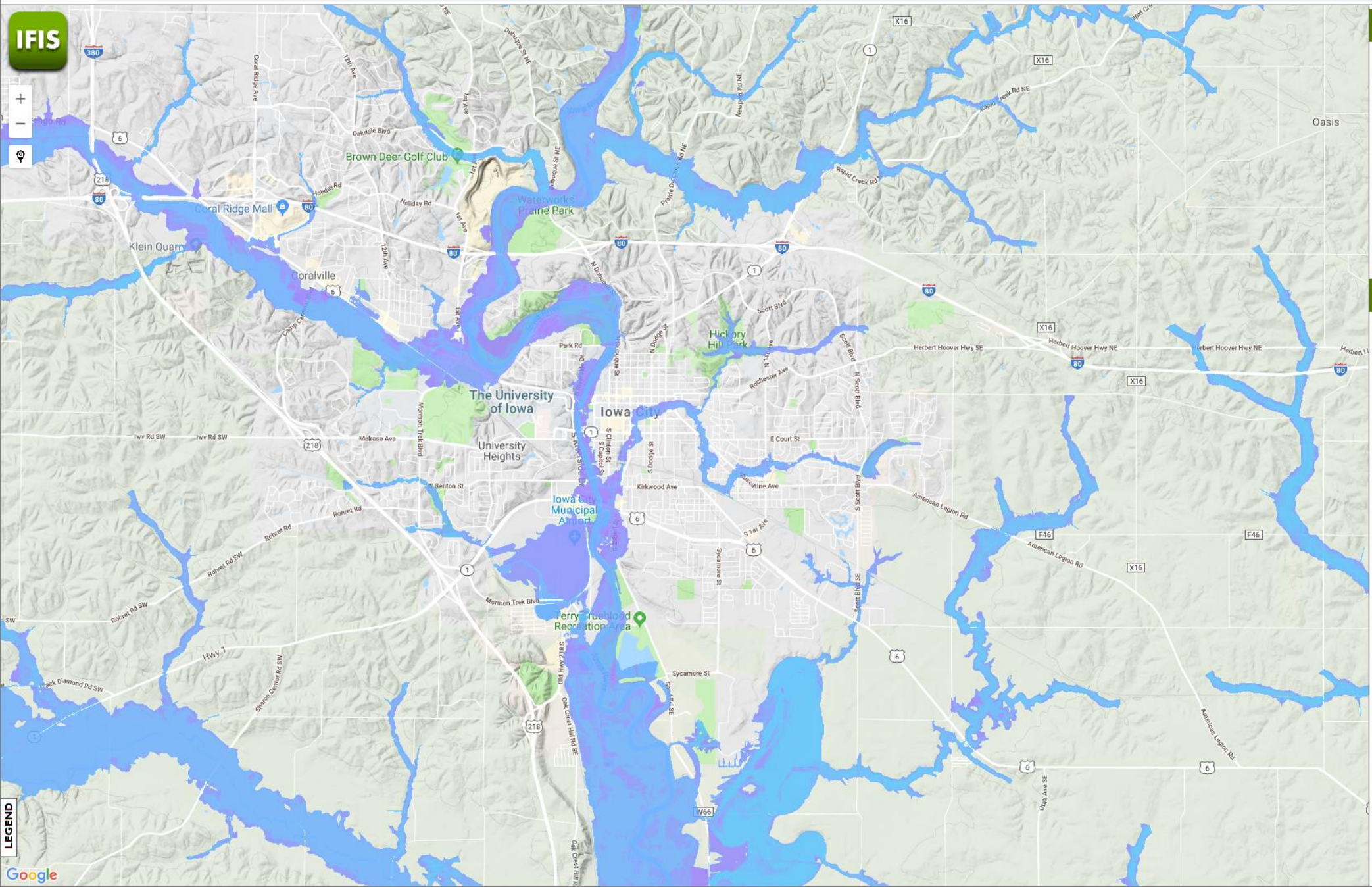
- Current Conditions
- Community Scenarios
- Reservoir Releases
- State-wide Inundation
  - 1% (100 yr)
  - 0.5% (200 yr)
  - 0.2% (500 yr) - less likely

### MAP RESOURCES

- Draft Flood Hazard Maps [↗](#)
- Flood Risk Management Maps [↗](#)







### FLOOD MAPS

- Current Conditions
- Community Scenarios
- Reservoir Releases
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- 0.2% (500 yr) - less likely

### MAP RESOURCES

- Draft Flood Hazard Maps [↗](#)
- Flood Risk Management Maps [↗](#)









- LEGEND**
- ▲ Major Flood Stage
  - ▲ Moderate Flood Stage
  - ▲ Flood Stage
  - ▲ Action Stage
  - ▲ No Alert
  - > 75%
  - 50-75%
  - 25-50%
  - < 25%

**Flood Damage Estimate:**

Affected Buildings:	3841
Structure Damage:	\$39,845,227
Content Damage:	\$93,149,875

**CEDAR RAPIDS**

River: Cedar River  
 Gauge ID: 05464500 (reference)  
 Flood Level: 12 ft  
 Date Created: Jan 2011  
 Terms of Use: provisional - not for regulatory use

**View Maps by**

- River Stage
- Annual Chance

**Flood Map Controller**

Stage: 31 ft  
 Discharge: 139000 cfs



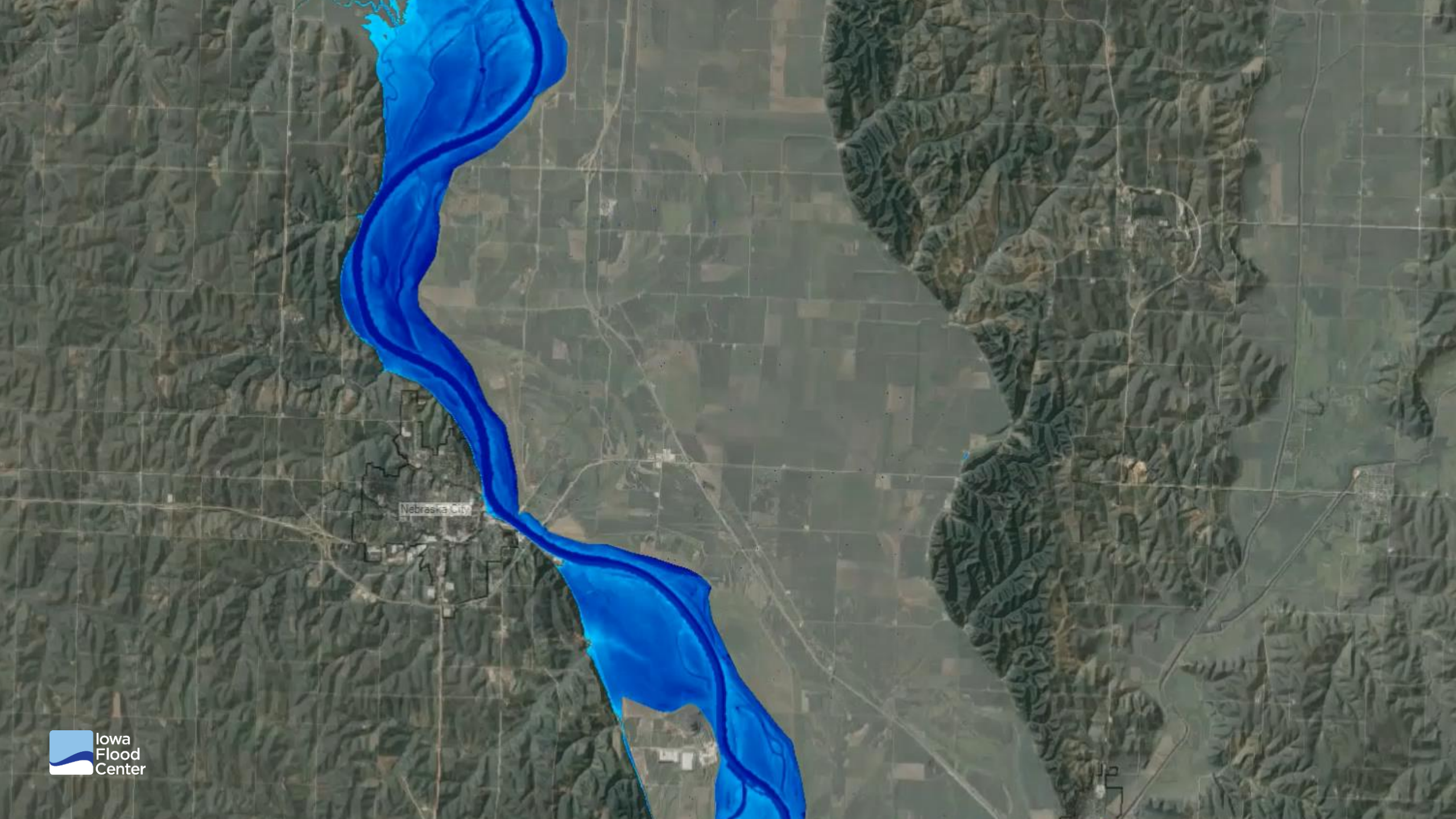
- Water Depth
- Damage Estimate



Hamburg, IA 2019







Nebraska City



A close-up photograph of a waterfall. The water is cascading down, creating a white, frothy foam on the right side. The water on the left is a deep blue-green color, reflecting light. The overall scene is dynamic and natural.

# IFC Updates

Projects and outreach



# COMMUNITY RATING SYSTEM

THANK YOU  
*Please*  
COME BACK



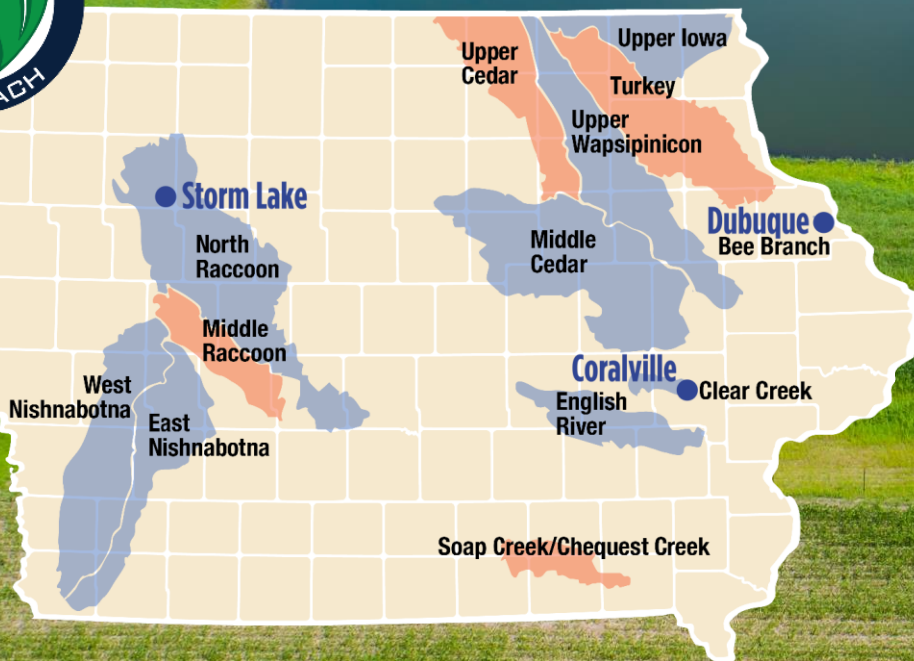




# UNDERSTANDING FLOOD FREQUENCY



# IOWA WATERSHED APPROACH











**OUTREACH**





Iowa  
Flood  
Center

IOWA  
WATER  
TRAILS

Great  
River  
Reunite











# IFC in the News

The Gazette

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## Other states look to UI-based Iowa Flood Center for expertise

Texas latest to visit as the Iowa City center's renown grows



# News Tribune

## Missouri has plan to develop flood monitoring system

Inspired by neighboring Iowa's flood-monitoring system, a Missouri group tasked with giving recommendations on building flood resiliency to the governor by the end of the month heard a presentation Wednesday on how the state could develop a similar system.

by Phillip Sitter May. 14 2020 @ 12:05am



The North Jefferson City Recreation Area was still underwater in June 2019 while the Missouri River was in major flood stage. The Missouri River at Jefferson City was in flood for 53 days in 2019 from May 21 to July 13. Photo by Quinn Wilson / News Tribune.

Inspired by neighboring Iowa's flood-monitoring system, a Missouri group tasked with giving recommendations on building flood resiliency to the governor by the end of the month heard a presentation Wednesday on how the state could develop a similar system.

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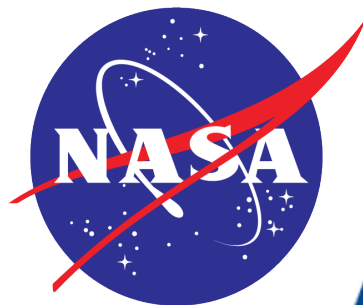
## Iowa "light years ahead" with flood forecasting services



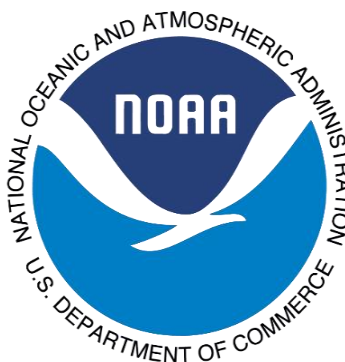
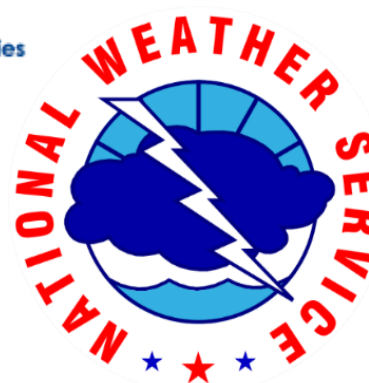
NATHAN YOUNG is the Associate Director of the Iowa Flood Center. Young explained his center's leadership of the State of Iowa's development of advanced flood forecasting services to benefit the state's citizens.







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UNIVERSITY**





# IOWA



Thank you!





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[www.iowafloodcenter.org](http://www.iowafloodcenter.org)