



Presentation Overview



Introduction



Transportation Impacts due to Flooding



Iowa DOT Responses to Recent Floods



Planning for Resiliency



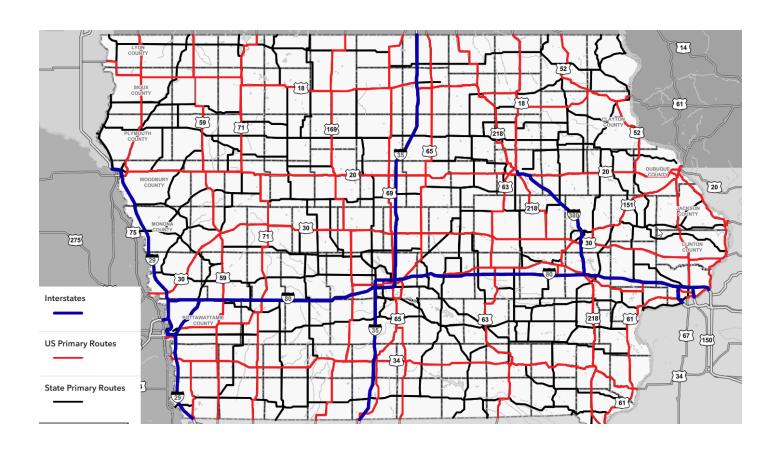
Data Collaboration Opportunities



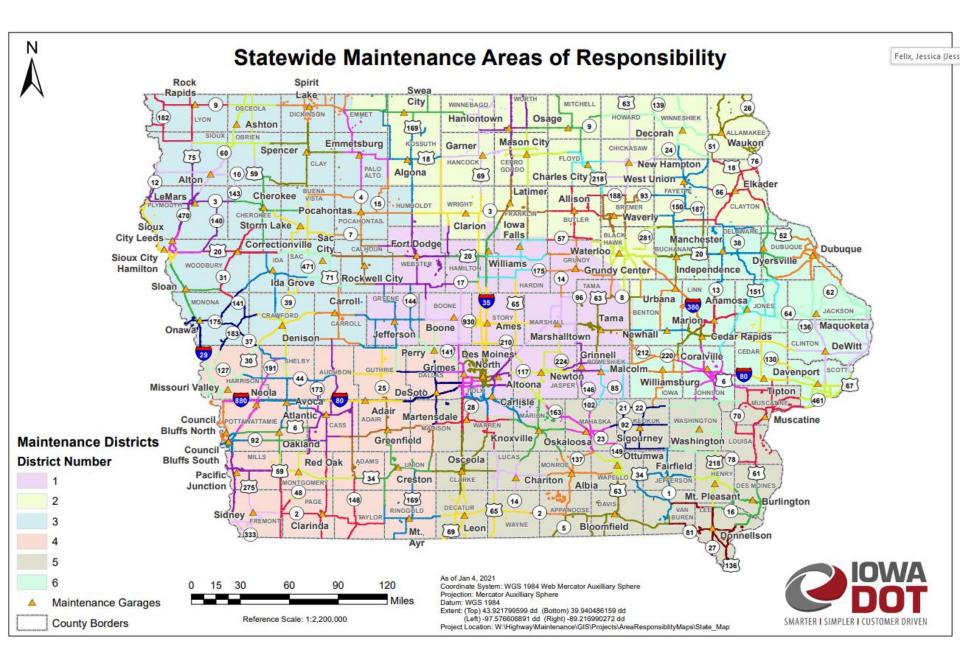
Next steps



State of Iowa









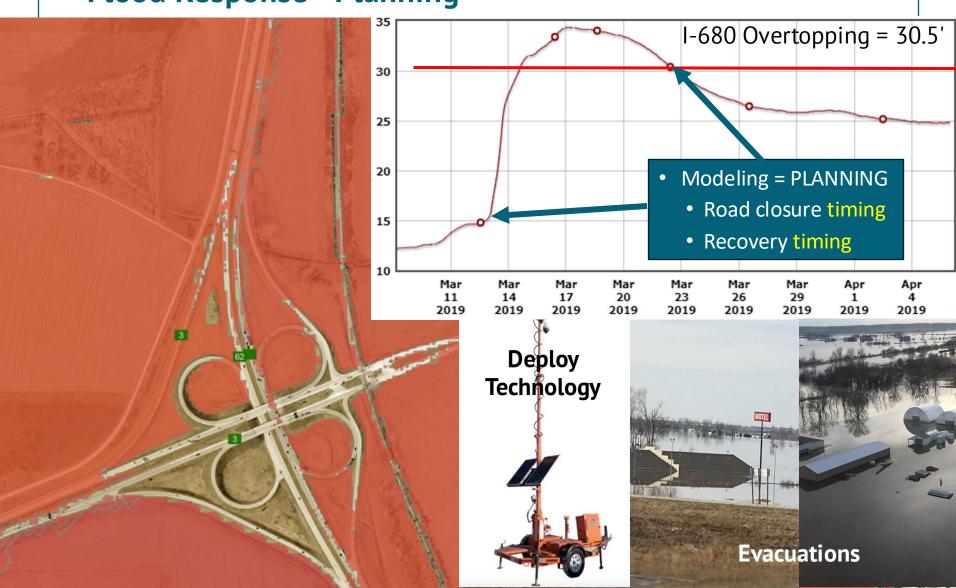
Flooding presents multiple levels of concern

- Immediate focus is to ensure the safety of Iowa motorists and residents
 - Support emergency and crisis management
 - Assist with immediate cleanup and initial recovery
- Next focus is on community and economic stability
 - Restore the infrastructure of the directly impacted area
 - Ensure the continuity and connectivity of long-distance routes
- Long-term focus on resiliency and efficiency
 - Balancing one-time costs against future uncertainty
 - Using data and planning tools to target investments



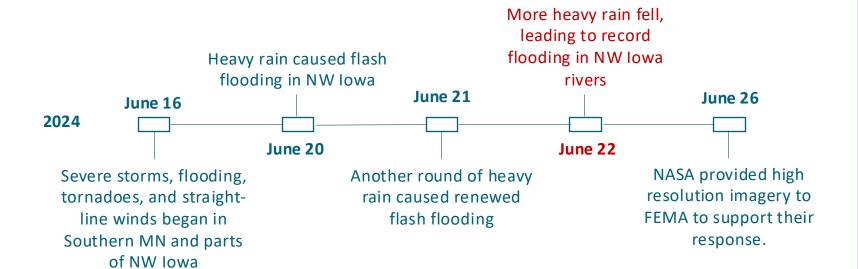


Flood Response - Planning





Timeline of Flooding





NWS Forecast Graphics

Source: https://www.facebook.com/NWSSiouxFalls

These are select graphics shared by the US National Weather Service Sioux Falls, South Dakota office; they do not include all posts.

Sunday, June 16, 2024

9:43 pm Update

 Heavy rainfall is another threat from the multiple rounds of thunderstorms expected across the area this week. Rainfall totals exceeding 2 inches are possible at many locations. There is a greater risk for flash flooding in some places late tonight, Monday morning, and Tuesday afternoon/evening. Ensure your gutters and downspouts are working correctly, and check your basement sump pump if you have one. Do not drive through flooded roadways, turn around, don't drown!

Monday, June 17, 2024

11:38 am Update

- Here's a look at some of the rainfall reports we've received overnight.
- Most areas south of I-90 received between 1-3 inches with a few isolated pockets of 4+ inches of rain. Check out the graphic below for more details.

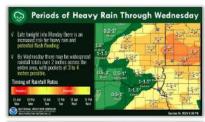
6:00 pm Update

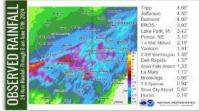
 Periodic showers and thunderstorms will continue through Thursday. Rainfall totals exceeding 2 inches are possible at some locations.

Tuesday, June 18, 2024

10:22 am Update

 With the additional rainfall of half an inch up to isolated 2 inches that occurred yesterday, minor to moderate river flooding continues across portions of the area. Additional rainfall is expected later this afternoon and evening, which may push current flooding levels higher. While we remain dry on Wednesday, chances for rain return again on Thursday.









3:57 pm Update

 After the risk of a few severe storms tonight, periodic showers and thunderstorms continue into the upcoming weekend. Highs will mainly be in the 70s and 80s, with lows in the 50s to lower 70s.

Wednesday, June 19, 2024

6:45 am Update

 Take advantage of the drier weather today to complete any outdoor activities. Periodic showers and thunderstorms will continue late tonight through Saturday, and there will be a possibility of occasional moderate to heavy rain. Ensure your gutters and downspouts are working correctly and check your basement sump pump if you have one.
 Do not drive through flooded roadways!

11:00 am Update

- Here's a look at how much rainfall has occurred across the across the area Sunday morning through this morning.
- Many locations have accumulated 1.50 to 3.00 inches, with some places over 4.00 inches.
- Beware that additional rain is coming tonight through Saturday!

4:38 pm Tonight's Weather Story

Several rounds of showers and thunderstorms are expected to move through the area beginning tonight through Saturday moming. Some of these storms may be strong to severe, producing heavy rain, large hail, and damaging wind gusts. Rainfall totals through Saturday have the potential to exceed 2-3 inches in places along and north of I-90. South of I-90, expect totals to range from 1-2 inches. Minor flooding potential is increasing as soils are already saturated, and rivers and streams have risen due to recent rain. As always, if you find a road with water flowing over it, do not cross it. Turn

Periodic Showers and Thunderstorms

Tonight

Wed

Thu

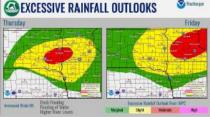
\$\frac{1}{335}\$

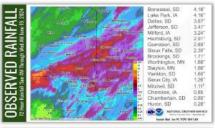
Thursdesdorms

Showers and flowers and flowers and flowers and flowers. \$\frac{1}{355}\$

Thursdesdorms

\$\frac{1}{355

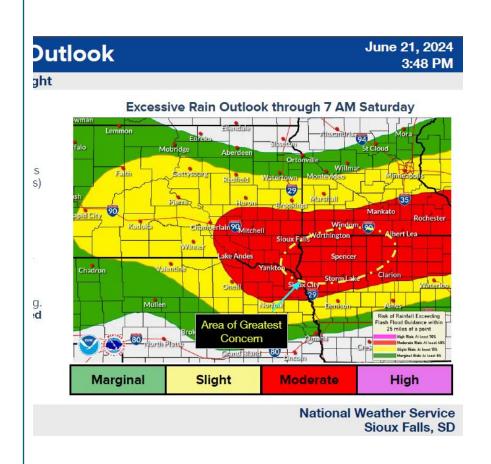


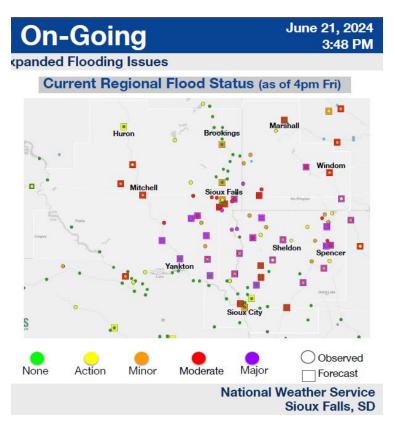




around, don't drown. Saturday afternoon showers clear out and Sunday should be partly cloudy. Highs during the rest of the week and into the weekend will remain warm, in the upper 70s to upper 80s with a few 90s sprinkled in.



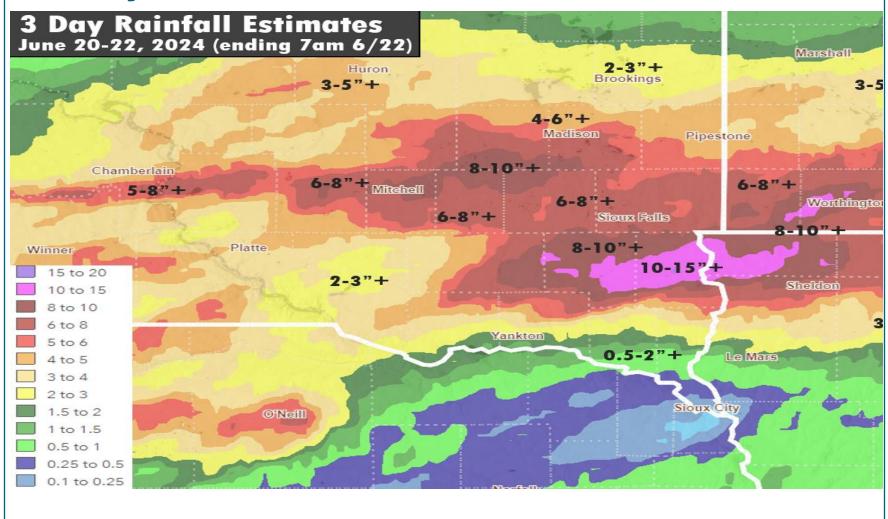




Record flooding observed at 25 river gauges.



3 Day Rainfall Estimates: June 20-22









Record Crests

- Floyd
- West Branch of the Floyd
- Big Sioux
- Little Sioux
- Rock River



Old Record: 37.7 New Record: 45.0 Water Rise of 28 feet in 18 hours





June 16, 2024 Landsat 9 June 16, 2024

June 24, 2024

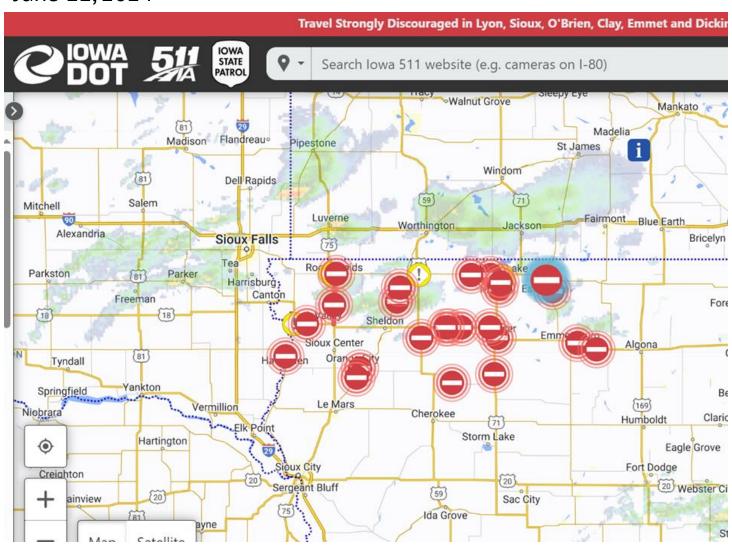
NASA provided high-resolution imagery to FEMA to support their response.



Roads began closing rapidly



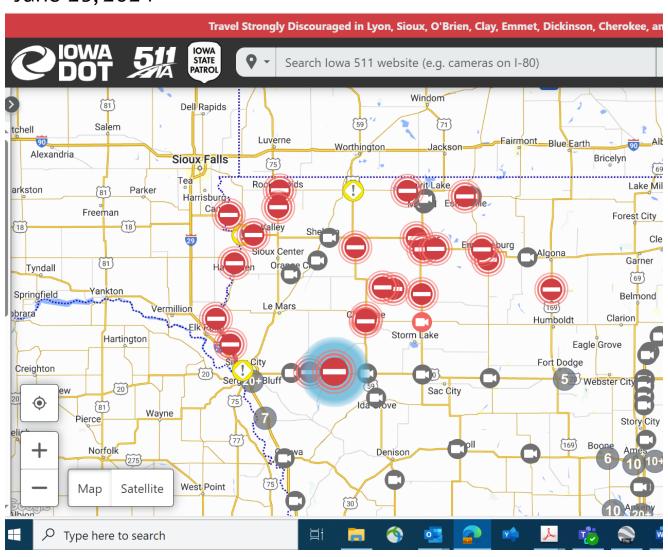
June 22, 2024



Roads began closing rapidly



June 23, 2024



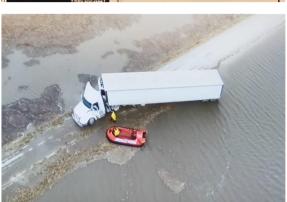


Flood Response - Traffic Management







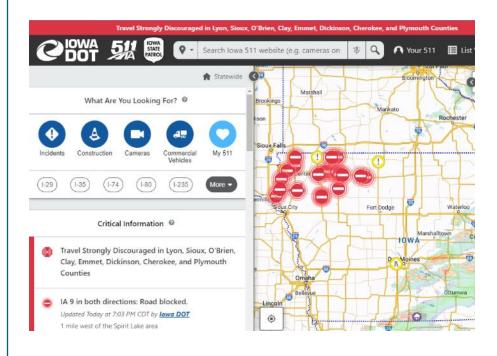








Posted Floodgate Messages to 511 – June 21-28







Historic Flood Event in June 2024

Damage to Local Communities

- The flooding resulted in over 300 homes and businesses being destroyed and thousands more receiving damage.
- 3 known fatalities also occurred from the flooding.
- Widespread flooding hit the communities of Rock Rapids, Rock Valley, Hawarden, Spencer, Sioux Rapids and Cherokee in Iowa the hardest.

IQWA | DOT

North of Doon US 75

June 27, 2024











IQWA | DOT

Rock Valley US 18







I Q WA | DOT

Big Sioux River IA 12





Hawarden









Spencer US 18/71





Grand Ave Bridge (US 71)



IQWA DOT

Clay County US 18



US 18 over Stony Creek - west of Spencer





Cherokee IA 3

June 26, 2024





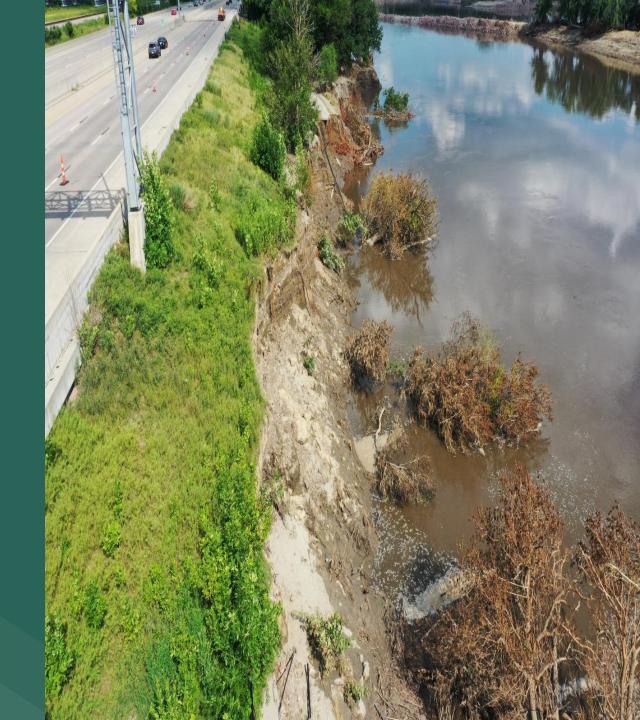






IQWA DOT

Big Sioux River I-29 SB









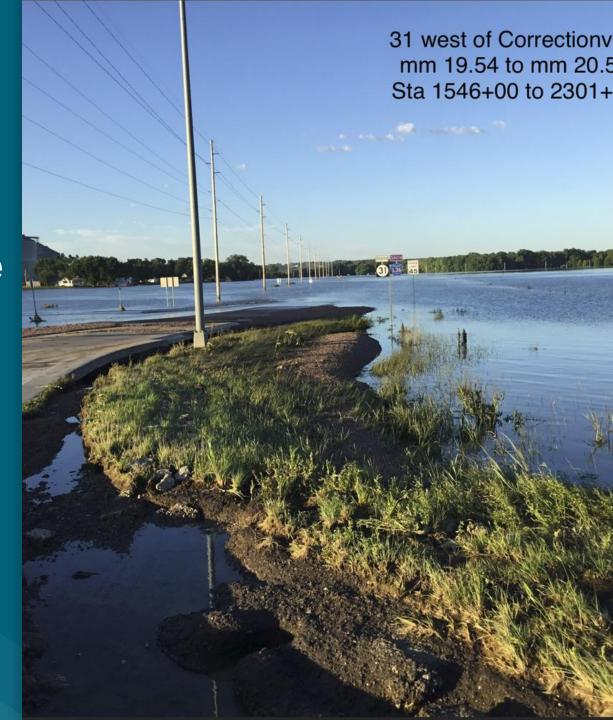
IQWA DOT

Missouri River I-29 SB



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Correctionville IA 31



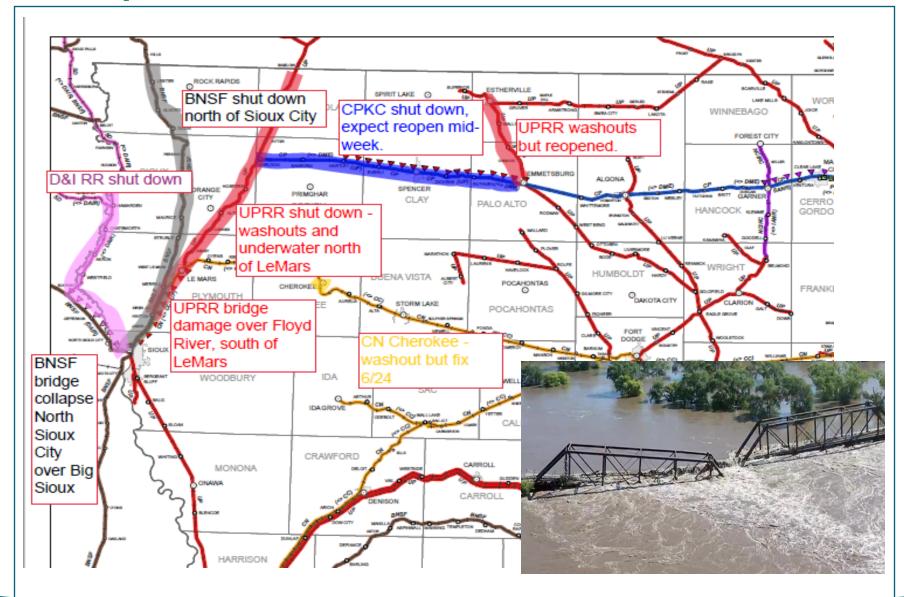


US 20 at Correctionville



Rail impacts (as of June 24)







Transit impacts

- DOT provided information on Federal Transit Authority Emergency Relief Documentation
- Region 3 RIDES transit agency (serves 9 counties in NW lowa) suspended service 6/24-7/1
- Sioux City transit suspended service in Riverside area for a few days



Aviation Impacts

- DOT Automated Weather Observation System sensors have now been fixed statewide.
- Emmetsburg airport closed 6/24 reopened 8/02. Numerous lighting fixtures damaged and approved for replacement by FEMA.
- Le Mars airport closed 6/24, reopened 6/25



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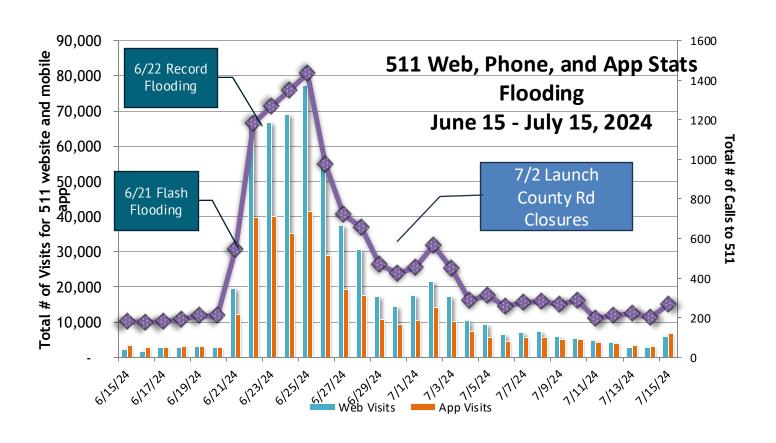


Our Main Focus

- Restoring mobility while keeping people safe.
- Coordinating with agencies and communities.

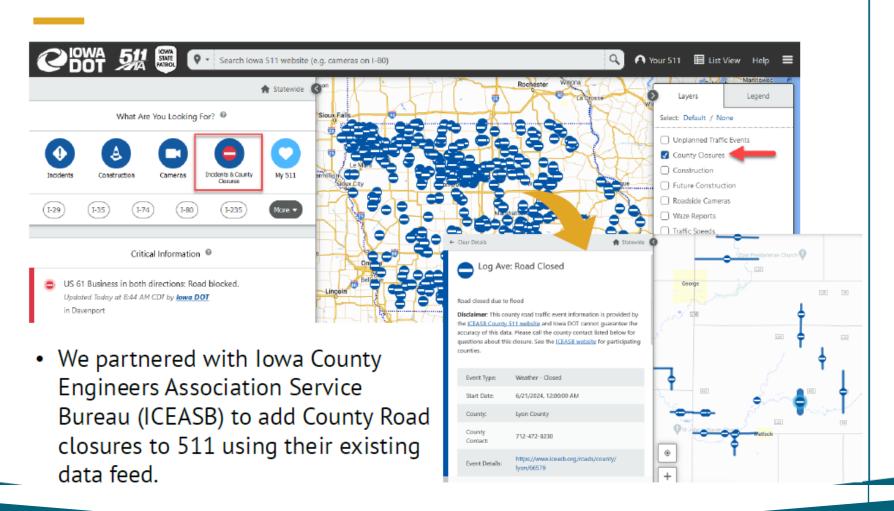


Usage spikes on 511





Added County Road Closures to 511





Flood Recovery—restore mobility (data assessment)

Utilize GIS to document and assess damage





Missions from State Emergency Operations Center— Coordinate with agencies & communities

- Pumps, generators, related equipment
- Sandbags/barriers
- License and ID services
- Structure inspections
- Sand-levee repair
- Debris transport
- Supply transport (water, cots, D-SNAP operations equipment)
- Traffic control
- Magnet truck
- County support
- Municipality Support
- Communications





Our Response

Spencer Mission

- Thousands of damaged structures
- 81 DOT staff
- 96 pieces of equipment
- 2,658 loads of debris including 1,479 appliances













Our Response

Road/Bridge Inspections & Replacements

73 primary highway & bridge closures

- Road/bridge inspection crews deployed immediately.
- Repairs began when safely feasible.
- September: All but one of these roads were back open.
- We completely demolished and rebuilt a bridge on US 18 in just four months.

MVD Support

 Temporary DL/ID issuance station was set up in Spencer and served more than 100 customers.



Our Response

Transportation Programming

- The Transportation Commission created a new "Business Relocation & Job Retention" category of RISE funding.
- The Transportation Commission accelerated reconstruction of the IA 3 bridge in Cherokee.
- The Transportation Commission authorized emergency funding for replacement of the US 18 bridge.











JUNE 2024 FLOODING NORTHWEST IOWA

LOOKING BACK AT THE MULTI-DAY HEAVY RAINFALL EVENT THAT LED TO WIDESPREAD FLOODING ACROSS PORTIONS OF NORTHWEST IOWA IN JUNE OF 2024.



BACKGROUND

WIDESPREAD flooding hit the communities of Rock Rapids, Rock Valley, Hawarden, Spencer, Sioux Rapids, and Cherokee in Iowa the hardest.

10 TO 20 INCHES of rain was reported between June 20 and June 22.

DESTROYED over 300 homes and businesses with thousands more receiving damage.

CLOSED 73 primary highway and bridges between June 21 and July 9.

FLOOD AFTERMATH FACTS









Spent on permanent repair work

WORKED ON OVER 100 FLOOD-RELATED PROJECT SITES ACROSS NORTHWEST IOWA

DELIVERING LASTING RESULTS



MISSION HIGHLIGHT: SPENCER, IA

Thousands of structures were damaged as a result of the flooding.



2,658 loads of debris, including nearly 1,479 applicances, were removed from Spencer, IA.



81 Iowa DOT staff and 96 pieces of equipment were mobilized rapidly to support emergency cleanup operations.



2026-2030 Highway Program

- Work is underway
- Commission adoption in June 2025
- ~ \$4.3 billion in state/federal funding on the state highway system
- Includes additional resiliency projects
- Financial situation
 - No new revenue
 - Inflation continues to moderate
 - Buying power challenges volume of work
 - Four of the five years are beyond the life of the Infrastructure Bill forecast flat revenue?



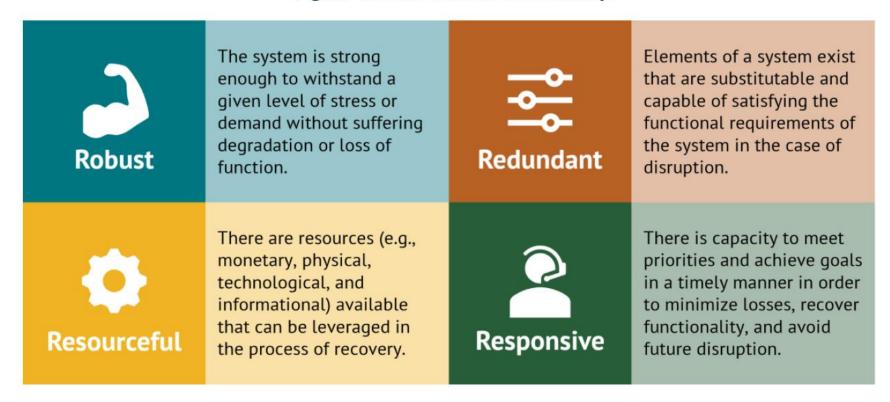
Resiliency Planning and Programming

- Enhancing the resiliency of our transportation system has been a priority in both our long-range planning and Five-Year Programming
- Resiliency Working Group 2019
- State Transportation Plan 2022
- Resiliency Improvement Plan 2024
- Dedicated federal funding PROTECT





Figure 4.1: The four Rs of resiliency





Flood Resiliency







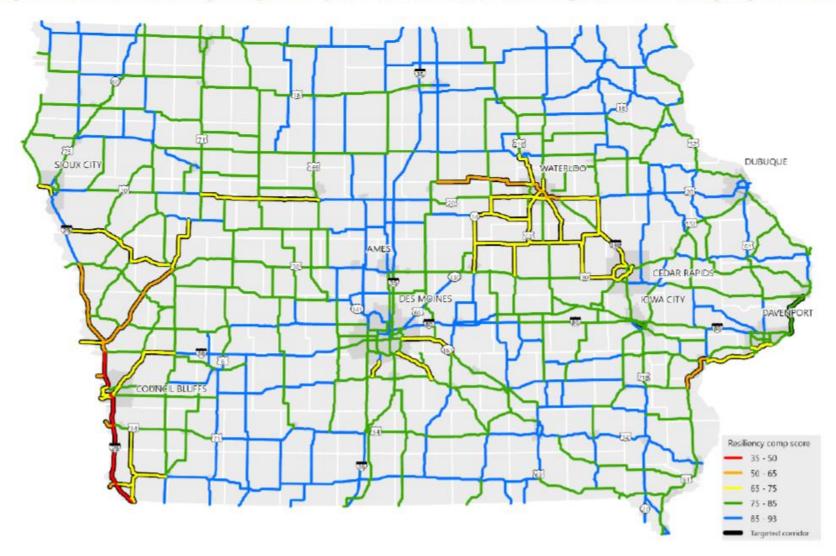








Figure 3.3: Flood resiliency analysis composite scores and corridors targeted for resiliency improvements



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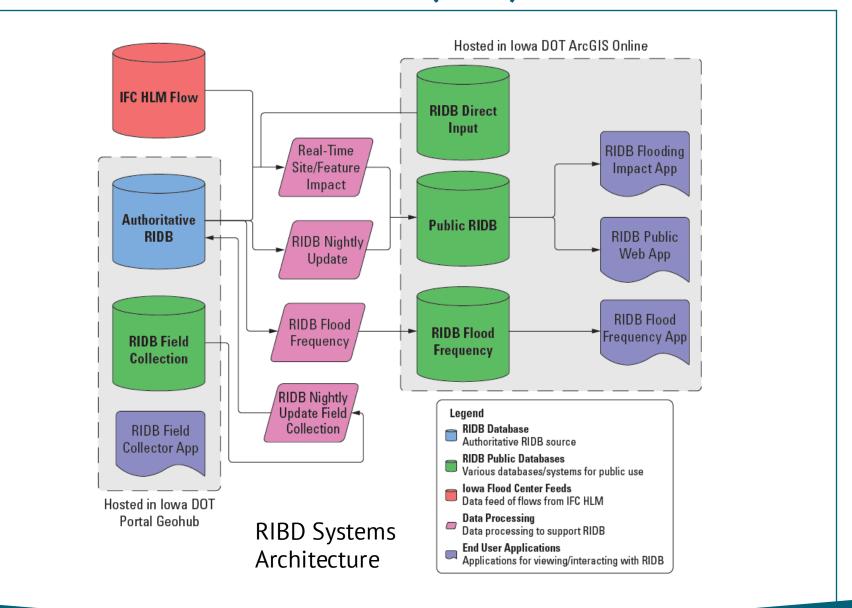
Data Collaboration Opportunities





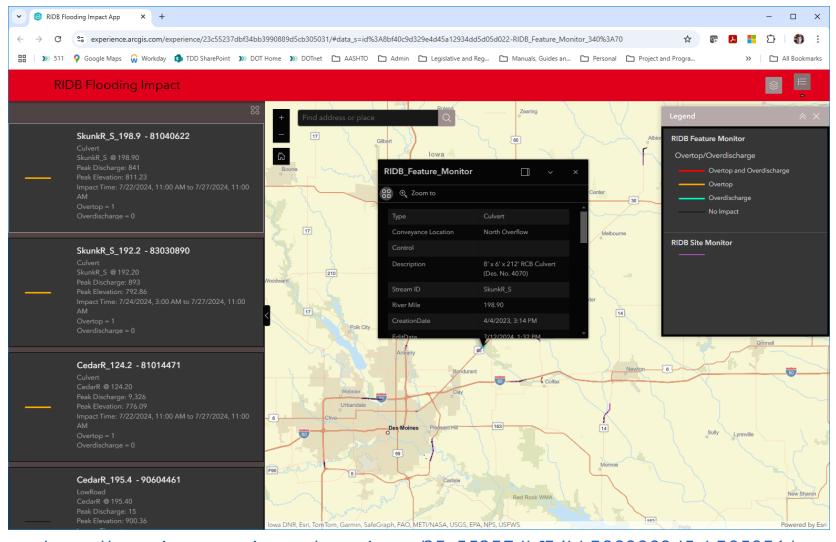
Riverine Infrastructure Database (RIDB)





RIDB Flooding Impact Application

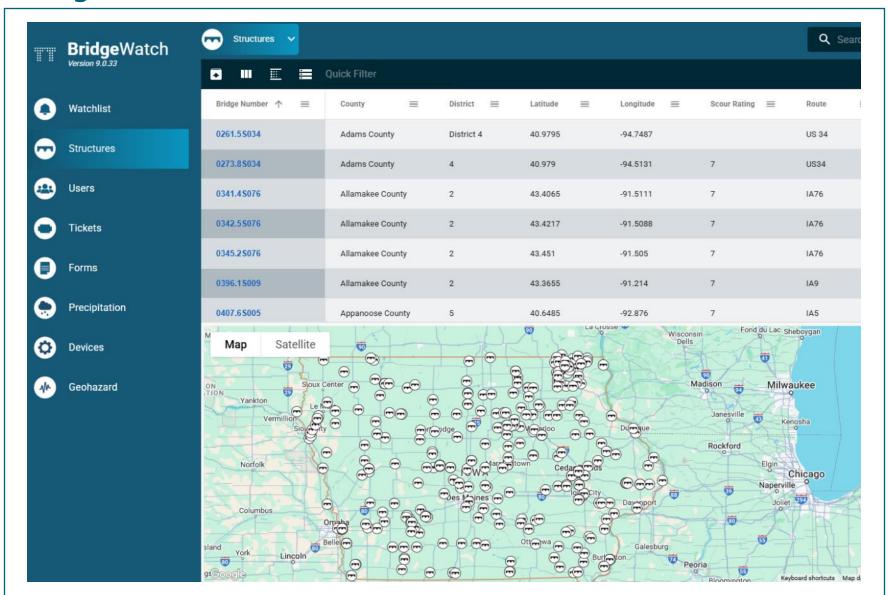




https://experience.arcgis.com/experience/23c55237dbf34bb3990889d5cb305031/

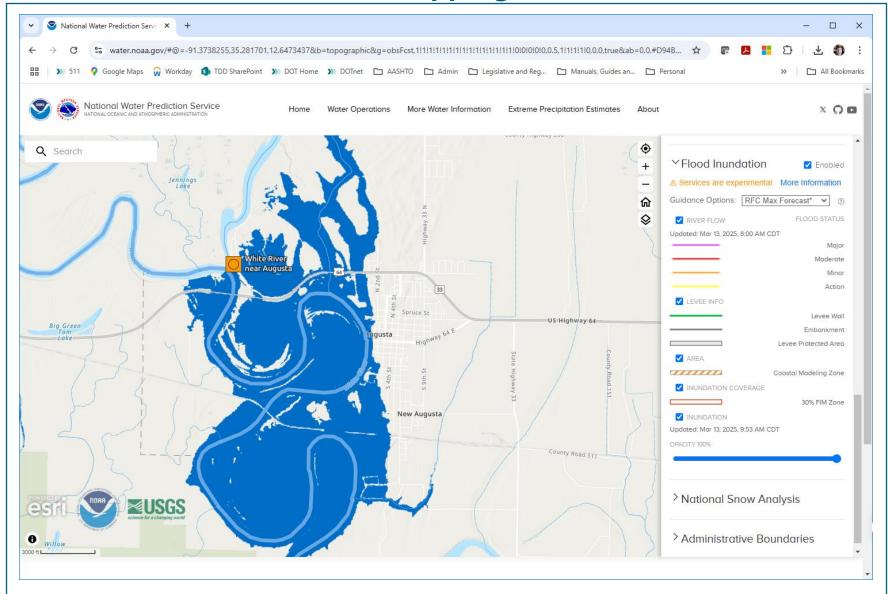
BridgeWatch Software





National Flood Inundation Mapping Service

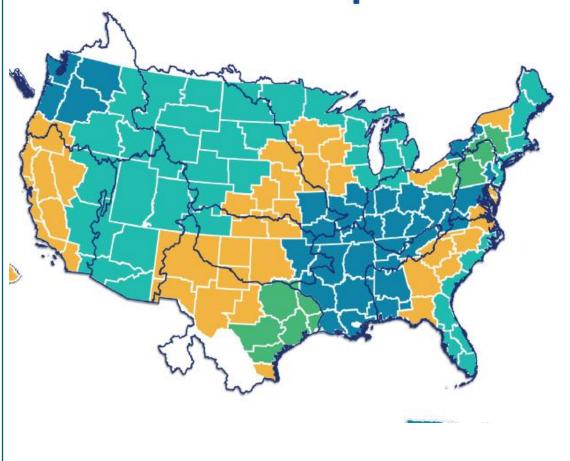




National Flood Inundation Mapping Service







Map Legend

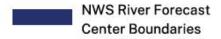














Next Steps



- Working with communities on emergency management training and planning
- ICS training for new staff
- Creating/updating standard operating procedures
- Protective Property purchases
- ✓ LET 3 remaining permanent repair projects as need clearances
- Continued monitoring of watersheds





Questions?

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