

Water Resources Coordinating Council

Monday, March 20, 2023

Meeting Notes

Call to Order and Virtual Meeting Logistics

The meeting was called to order at 1:34 PM. Virtual meeting logistics were briefly discussed. There were a total of 21 participants in the meeting.

WRCC Agency Updates (All)

NWS/IDALS (Glisan)- Glisan covered the 2023 Spring Flood outlook and discussed the Drought monitor in the absence of NWS. The presentation slides are attached to the meeting notes.

IEDA (Geerts)- New water/sewer awards through CDBG. 7 wastewater awards for \$2.5 million with nearly \$15 in matching funds. CDBG-DR has added a housing recovery program for 2020 derecho impacts. 350 total housing units to be rebuilt in 24 projects- projects will meet Green Streets criteria. City of Pacific Junction has completed EDA land use planning project and is implementing storm water management funding provided by EPA. IEDA is also working with DNR and IFA to improve urban conservation conditions on IFA building site.

DOT (Solberg)- Work continuing on road rebuilds near Hamburg. Projects will be bid now in October. Ring levee is now completed- Highway 333 is last project to secure community. Also working on 6 lane widening of I-35 between Ames and Des Moines. Total project will run 4-5 years and 4 lanes will be open throughout. Also working on Highway 61 improvements in far southeast Iowa. No update as of now on WOTUS impacts based on pending lawsuits.

ISU Extension (Helmers)- Dr. Jason Henderson is the newly named VP for Extension and Outreach with Dr. Lawrence retiring. Field day season is upcoming and ISU Conservation Stations are available for use at field days. Water quality monitoring is underway for the year. Iowa Nutrient Research Center call for proposals has been released for 2023 as well.

USDA-RD (Greenfield)- \$30 million in water/wastewater program funding has been awarded for projects so far in FY2023. Interest is about 3 times higher than available funding. BIL funding provided lots of SRF money to help with projects where USDA might not be able to. Renewable energy program is drawing high interest from farmers and small businesses interested in renewable programs.

HSEMD (Giofreddi)- Disaster programs include 8 open grants, 2 of which are flood related from 2018-19. About \$243 million obligated in those projects with about half paid. FEMA agency capacity has resulted in some processing delays, in addition to project delays where eligibility is an ongoing challenge. Also working through millions of dollars in open HMGP projects, with some sizeable flood risk reduction projects included. Working to facilitate BRIC as a vehicle for long-term flood recovery, with HSEMD staff helping to develop potential projects. HSEMD is working on school safety assessments to implement governor's school safety initiative and determine funding needs for school infrastructure needs/upgrades.

USACE (Bishop)- New WOTUS definition takes effect today but impacts are uncertain with lawsuits pending. Summer construction season with focus on Illinois River is forthcoming, which will obligate Rock Island district resources.

IIHR (Weber)- In process of completing final reports for IWA. Also doing a summary report based on demand. IIHR has received community project funding to expand hydrologic monitoring network. 23 stations were installed during IWA. Now adding one per county in CD1 and CD2 (about 35 more stations). Funding received from USACE to monitor completed navigation projects and ecosystem enhancements. Several universities involved and IIHR will work on Mississippi and Missouri river basins. Launched CIROH with University of Alabama and others for 5-year effort to take Iowa Flood Center modeling approach to national scale.

DNR (Hall, Schneiders)- Working with IDALS and ISU on NRS dashboard- focusing on phosphorus including use of turbidity as a surrogate to evaluate. Lots of monitoring included in NRS permits, meaning DNR has lots of monitoring indicating high levels of influent N & P during higher rainfall events, challenging permittees who are working to address concerns in point sources. Nutrient Reduction Exchange is now up and running. DNR has an EE Senior that is now evaluating NRE proposals for credit on permit compliance. Mason City and Forest City are currently working on NRE initiatives. DNR is also undergoing rule review for all key chapters over the next two years. PFAS interest is also increasing at the national scale. DNR has also completed the Iowa Drought Plan with partners and is working to implement recommendations. First water summary update released March 6, monthly updates will follow.

FSA (Russell)- General CRP signup is underway through mid-April.

IDALS (Kozak)- IDALS staff working on WQI demonstration projects are scaling up efforts into larger HUC8 watersheds and also expanding efforts with batch and build infrastructure. IDALS has also received a \$5.7 million RCPP grant to build on the success of the Taylor SWCD-based cattle-focused project. Crop insurance discount program verifications are still in progress. IDALS will announce 16 urban conservation grant awards on Earth Day. There will be \$2.7 million in awards with more than \$11 million in other funds leveraged. IDALS is also working to mitigate any re-emergence of HPAI. One case has been detected this spring and we are ready to dedicate resources to response and mitigation should additional cases be detected.

2022 Iowa HSEMD Levee Study

Larry Giofreddi, Iowa Homeland Security and Emergency Management Division, gave a presentation on the 2022 levee study commissioned by the Iowa Legislature. A copy of the presentation is included with the meeting notes. USACE will also provide a fact sheet on PL 84-99 eligibility.

Highway 2 Reconstruction Project: Flood Mitigation Discussion

Marc Solberg, Iowa DOT, gave an update on the Highway 2 reconstruction project recently completed in Fremont County in southwest Iowa. A copy of the presentation is included with the meeting notes.

Public Comments (Please contain comment length to 3 minutes per person)

Alicia Vasto, Iowa Environmental Council, addressed the WRCC. The 10 year anniversary of the NRS is this year. IEC has spoken with agencies and has asked for a review of the NRS and is making the same request to the WRCC. Happy to hear that watershed demonstration projects are moving into broader areas. Would like to see water quality data as a future output of projects. Also would like to request that natural infrastructure be a consideration as a recommendation of the levee study, including floodplain reconstruction, etc. as part of recommendations.

Adjourn

The meeting was adjourned at 3:52 PM. The next meeting will be scheduled for mid-June and will be held in a hybrid format with in-person attendance available at the Wallace Building.

	WRCC Representative	Position	Organization
<input checked="" type="checkbox"/>	1 Mike Naig	Secretary (WRCC Chair)	Iowa Department of Agriculture & Land Stewardship
<input type="checkbox"/>	2 Kim Reynolds <i>Nate Ristow</i>	Governor <i>Designee</i>	Governor's Office Governor's Office
<input checked="" type="checkbox"/>	3 Kayla Lyon (Tim Hall) <i>Adam Schneiders</i>	Director <i>Designee</i>	Iowa Department of Natural Resources Iowa Department of Natural Resources
<input checked="" type="checkbox"/>	4 Susan Kozak <i>Jake Hansen</i>	Director <i>Designee</i>	IDALS - Division of Soil Conservation & Water Quality IDALS - Division of Soil Conservation & Water Quality
<input type="checkbox"/>	5 Kelly Garcia <i>Kenneth Sharp</i>	Director <i>Designee</i>	IA Department of Public Health IA Department of Public Health
<input checked="" type="checkbox"/>	6 John Benson <i>Larry Giofreddi</i>	Acting Director <i>Designee</i>	Iowa Homeland Security & Emergency Management Iowa Homeland Security & Emergency Management
<input type="checkbox"/>	7 Dan Robison <i>Jamie Benning (Matt Helmers)</i>	Dean <i>Designee</i>	College of Agriculture and Life Sciences, ISU College of Agriculture and Life Sciences, ISU
<input type="checkbox"/>	8 Edith Parker <i>Tom Peters</i>	Dean <i>Designee</i>	College of Public Health, University of Iowa College of Public Health, University of Iowa
<input type="checkbox"/>	9 John Fritsch <i>Maureen Clayton</i>	Dean <i>Designee</i>	College of Humanities, Arts and Sciences, UNI College of Humanities, Arts and Sciences, UNI
<input checked="" type="checkbox"/>	10 Scott Marler <i>Marc Solberg</i>	Director <i>Designee</i>	Iowa Department of Transportation Iowa Department of Transportation
<input checked="" type="checkbox"/>	11 Debi Durham <i>Jeff Geerts</i>	Director <i>Designee</i>	Iowa Economic Development Authority Iowa Economic Development Authority
<input type="checkbox"/>	12 Debi Durham <i>Tony Toigo</i>	Executive Director <i>Designee</i>	Iowa Finance Authority Iowa Finance Authority
<input checked="" type="checkbox"/>	13 Alec Scranton <i>Larry Weber</i>	Dean <i>Designee</i>	College of Engineering, University of Iowa College of Engineering, University of Iowa
<input type="checkbox"/>	14 Jon Nania <i>Paul Rydlund</i>	Director <i>Designee</i>	USGS, Iowa-Illinois Water Science Center USGS, Iowa-Illinois Water Science Center
<input type="checkbox"/>	15 Jon Hubbert <i>Scott Cagle</i>	State Conservationist <i>Designee</i>	USDA, Natural Resources Conservation Service USDA, Natural Resources Conservation Service
<input checked="" type="checkbox"/>	16 Matt Russell	State Executive Director	USDA, Farm Service Agency
<input checked="" type="checkbox"/>	17 Theresa Greenfield <i>Kate Sand</i>	State Director <i>Designee</i>	USDA, Rural Development USDA, Rural Development
<input type="checkbox"/>	18 Meg McCollister <i>Edward Chu (Doug Jones)</i>	Regional Administrator <i>Designee</i>	EPA-Region 7 EPA-Region 7
<input checked="" type="checkbox"/>	19 Colonel Jesse Curry <i>Heather Bishop</i> <i>Philip Brown</i>	Rock Island District Commander <i>Designee</i> <i>Designee</i>	US Army Corps of Engineers Rock Island District US Army Corps of Engineers Rock Island District US Army Corps of Engineers
<input type="checkbox"/>	<i>Jeff Zogg</i>	<i>Designee</i>	National Weather Service

Current Conditions and Spring Flood Outlook.

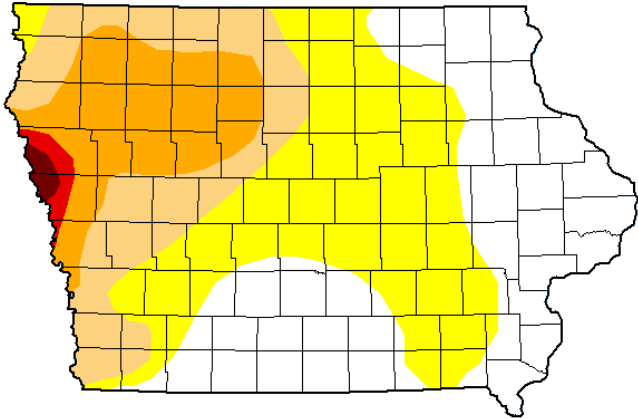
Justin Glisan, Ph.D.
State Climatologist of Iowa
Iowa Department of Agriculture and Land Stewardship
Climatology Bureau



IOWA DEPARTMENT OF
**AGRICULTURE &
LAND STEWARDSHIP**

US Drought Monitor

U.S. Drought Monitor Iowa



March 14, 2023

(Released Thursday, Mar. 16, 2023)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	35.33	64.67	31.93	15.54	1.51	0.57
Last Week <small>03-07-2023</small>	32.45	67.55	32.07	15.54	1.51	0.57
3 Months Ago <small>12-13-2022</small>	7.31	92.69	73.35	29.84	11.24	0.57
Start of Calendar Year <small>01-03-2023</small>	10.69	89.31	66.66	29.43	8.83	0.57
Start of Water Year <small>09-27-2022</small>	20.90	79.10	45.05	22.25	5.07	0.02
One Year Ago <small>03-15-2022</small>	16.35	83.65	38.43	2.30	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

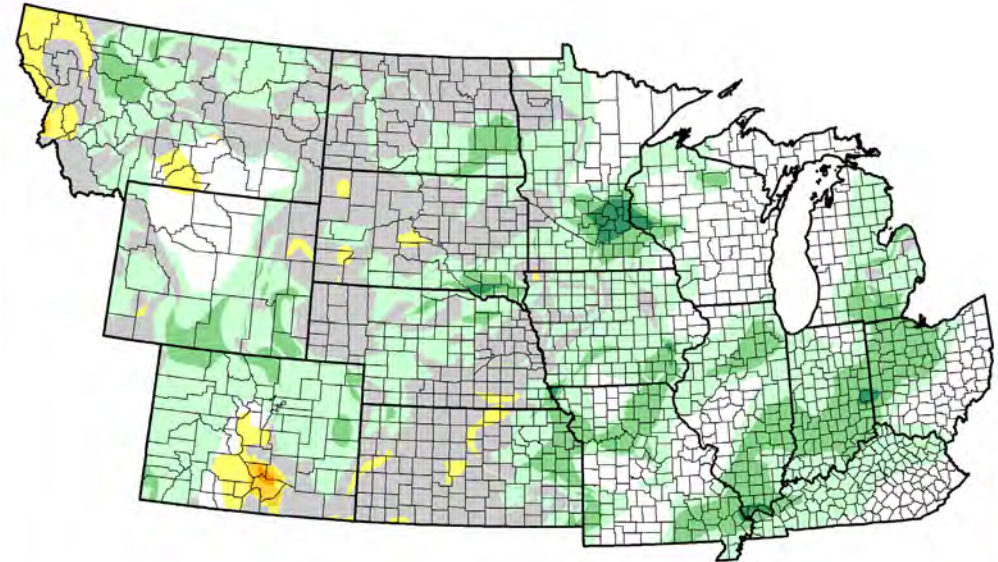
Author:

Brad Rippey
U.S. Department of Agriculture



droughtmonitor.unl.edu

U.S. Drought Monitor Class Change - NWS Central 12 Week



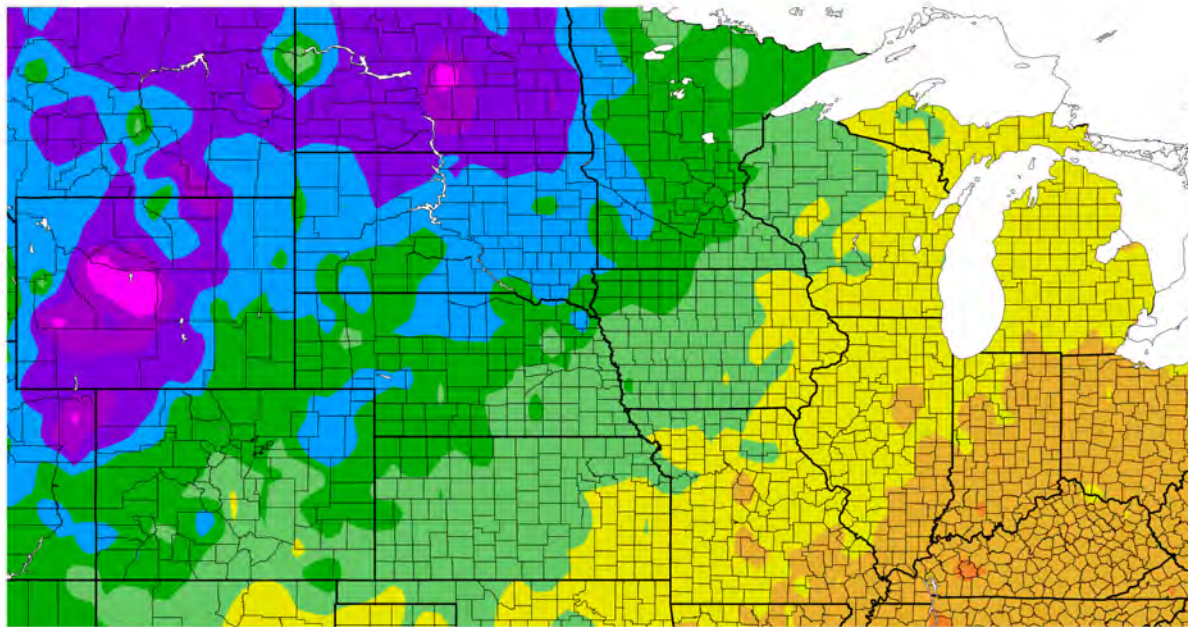
- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

March 14, 2023
compared to
December 20, 2022

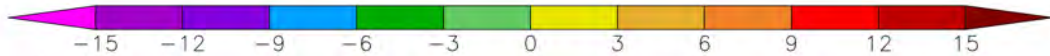
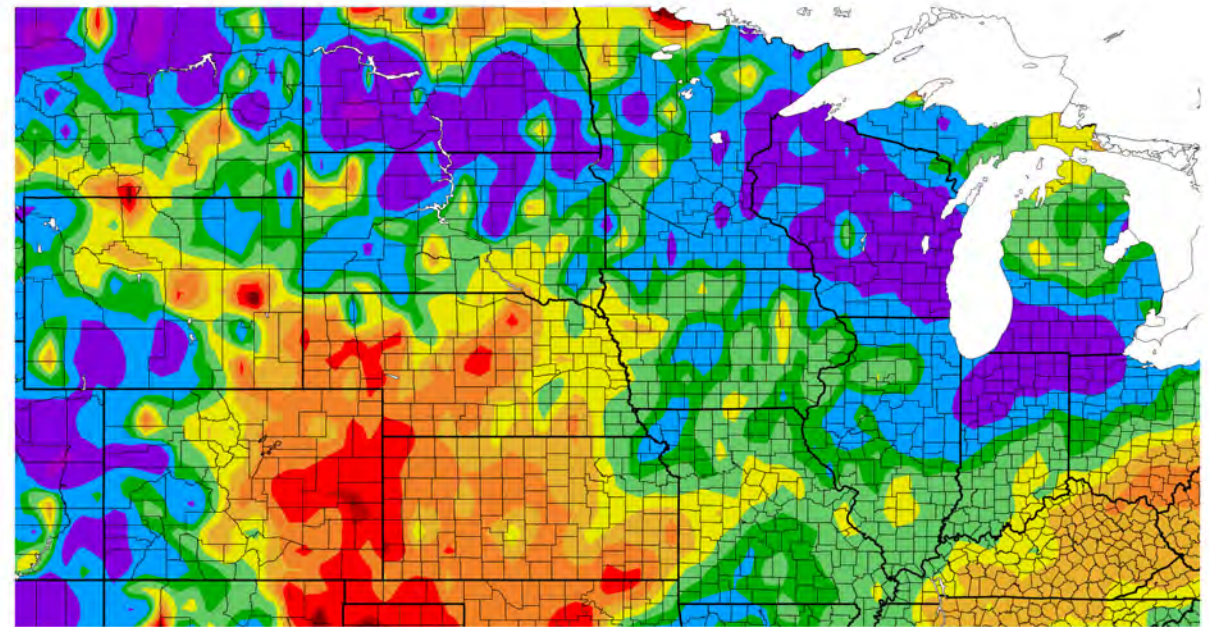
droughtmonitor.unl.edu

Observed Temperature & Precip. Departure

Departure from Normal Temperature (F)
2/18/2023 - 3/19/2023

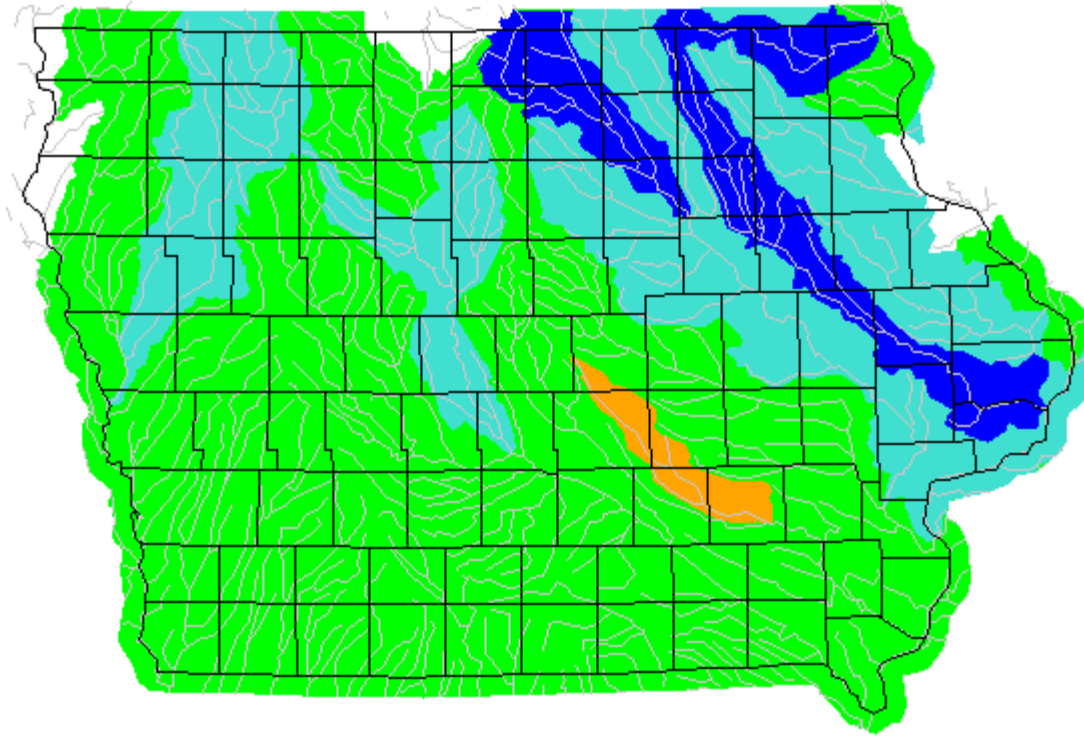


Percent of Normal Precipitation (%)
2/18/2023 - 3/19/2023



Current Streamflow

Sunday, March 19, 2023



Generally near to above normal stream flows across Iowa

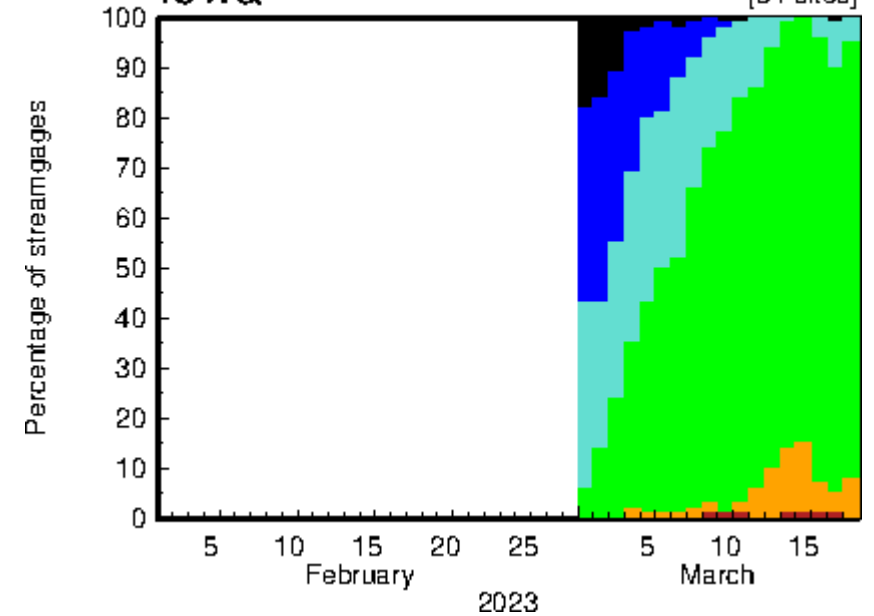


Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Last 45 Days

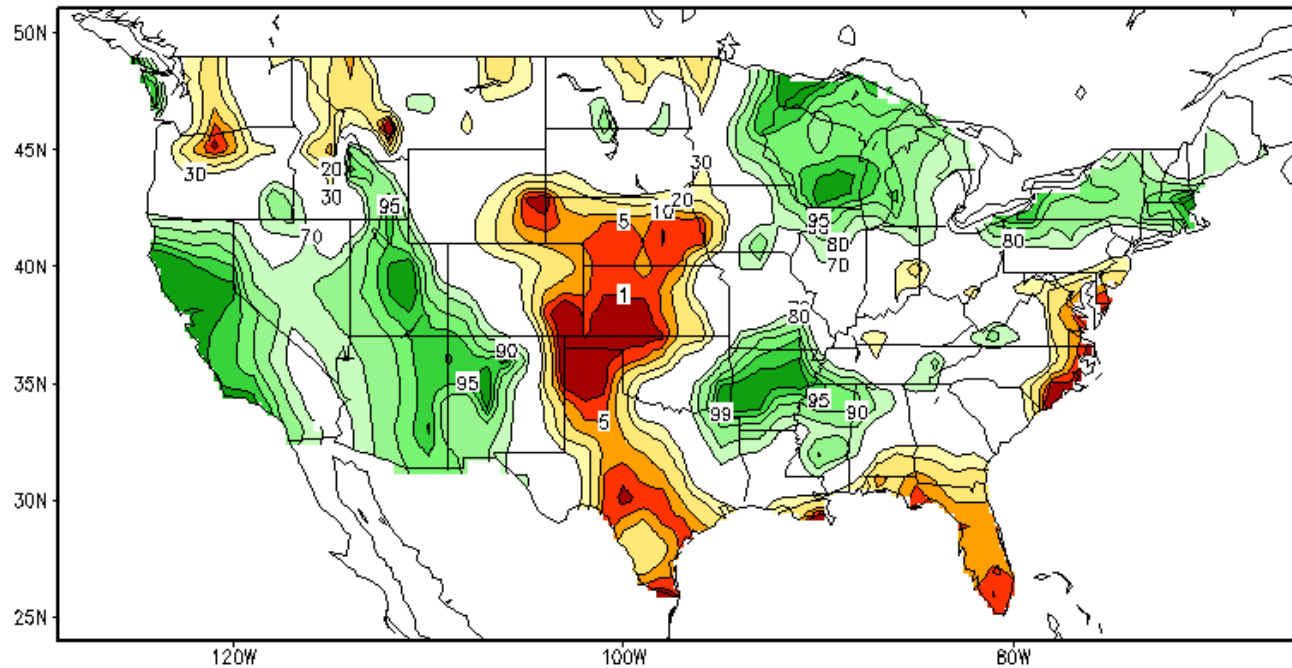
Iowa

[81 sites]



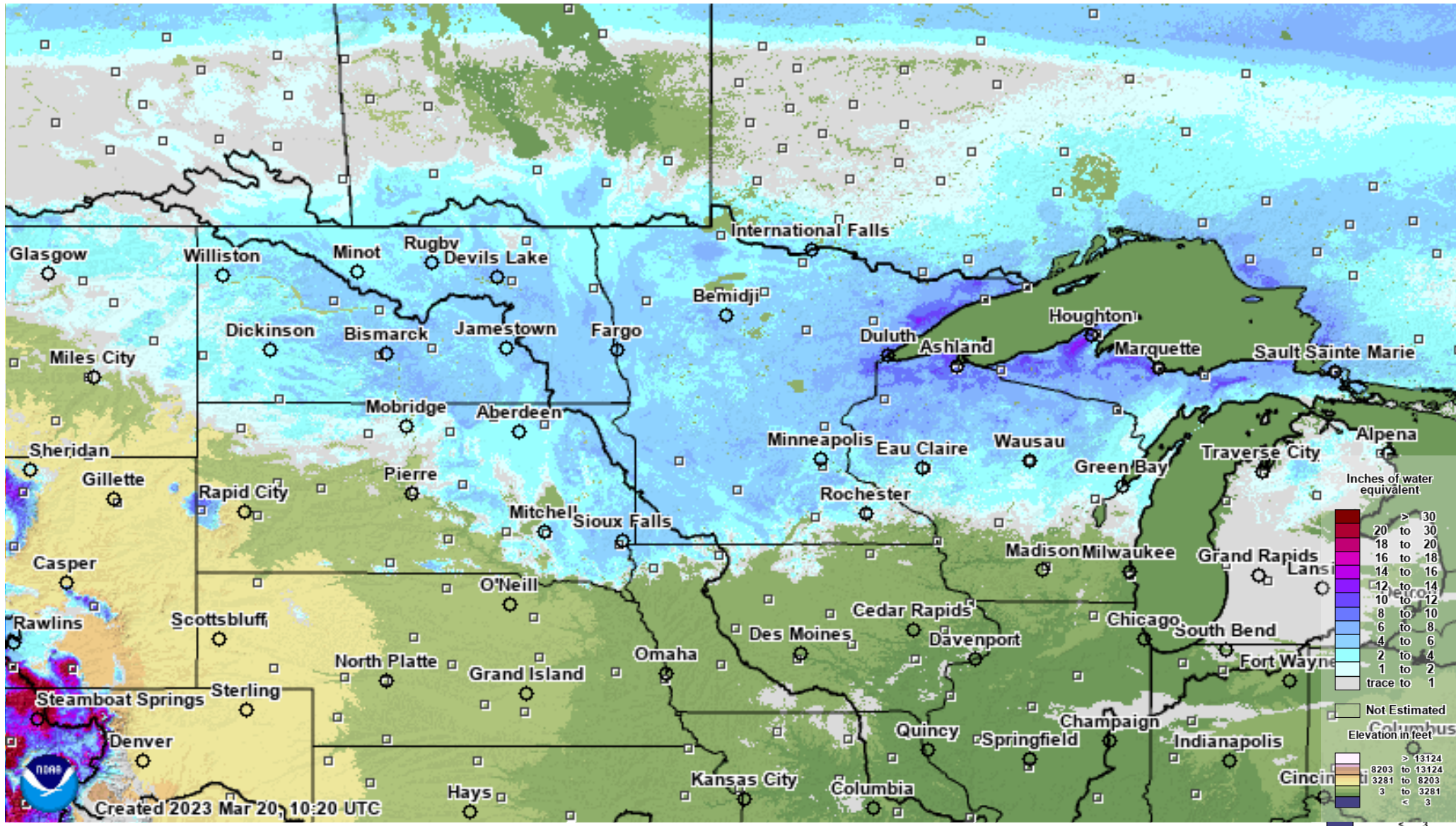
Soil Moisture Percentiles

Calculated Soil Moisture Ranking Percentile
MAR 19, 2023

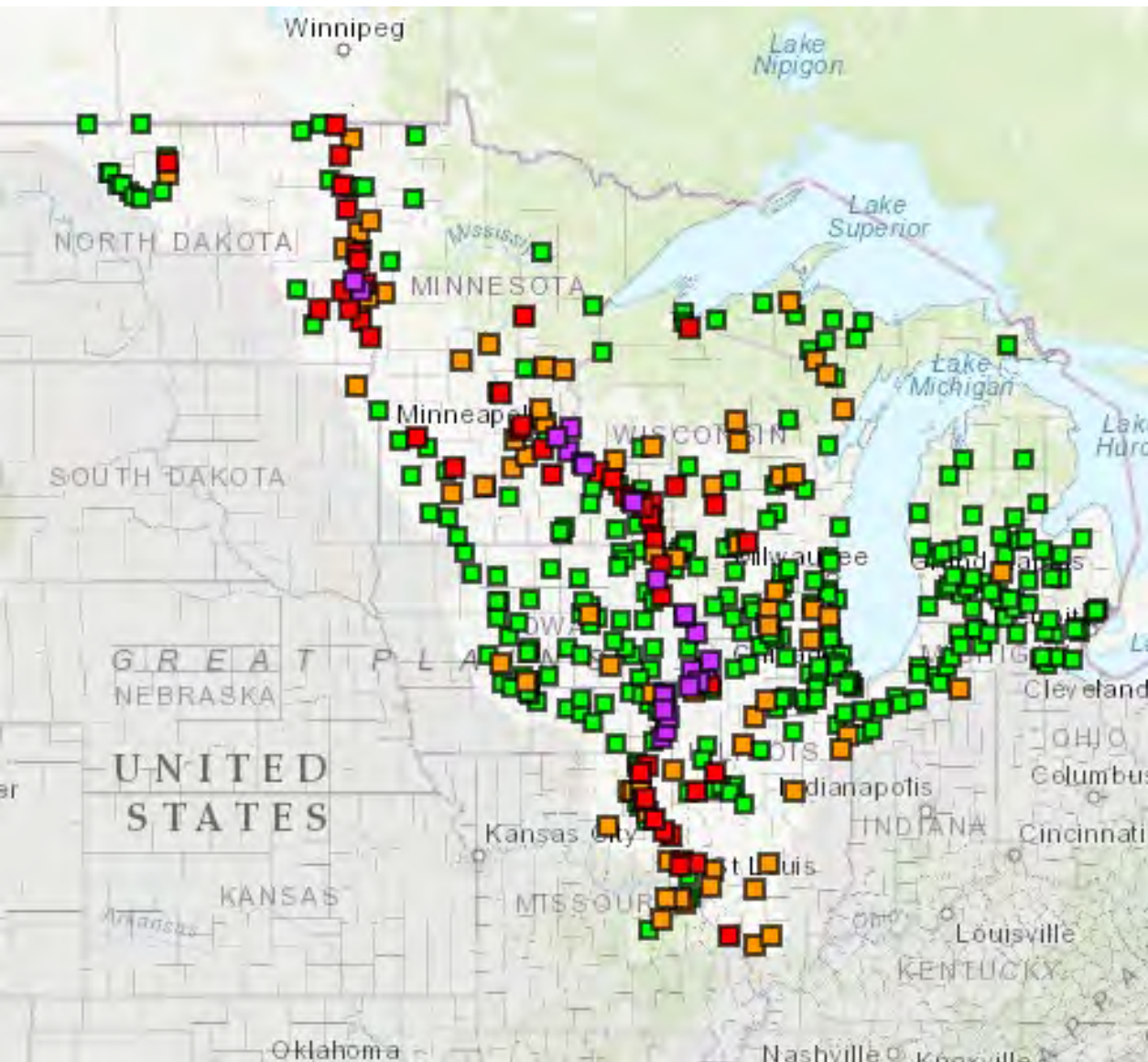


- 30th to 70th percentile is near normal (white)
 - >70th percentile is above normal (green)
 - <30th percentile is below normal (brown/red)
-
- Above normal across northeastern Iowa
 - Near normal central
 - Below normal across the west

Current Snowpack and SWE



March-April-May Flood Potential

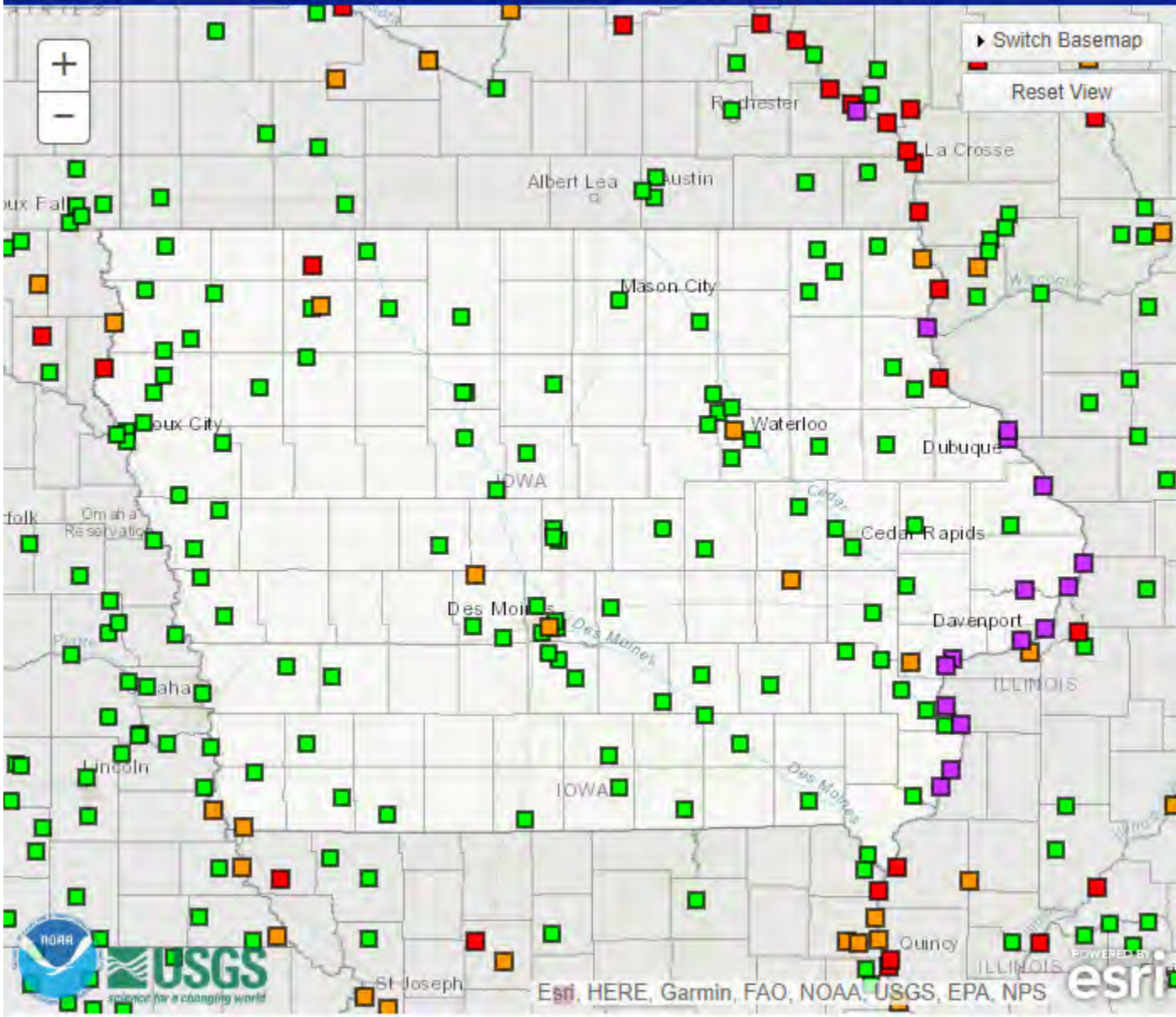


435 total gauges

Show locations with 50% or greater chance of flooding during Mar-Apr-May (148)

- 23 Gauges: > 50% Major Long-Range Flood Risk
- 50 Gauges: > 50% Moderate Long-Range Flood Risk
- 75 Gauges: > 50% Minor Long-Range Flood Risk
- 287 Gauges: < 50% Long-Range Flood Risk
- 0 Gauges: No forecast within selected timeframe

Greater than: **50%** chance of exceeding river flood levels during **Mar-Apr-May**



[Return to national map.](#)

Click on the map or select one of the data views below:

- Iowa
- NWS Weather Forecast Offices
- NWS River Forecast Centers
- Water Resources Regions

263 total gauges
[Show locations with 50% or greater chance of flooding during Mar-Apr-May \(75\)](#)

- 16 Gauges: > 50% Major Long-Range Flood Risk
- 28 Gauges: > 50% Moderate Long-Range Flood Risk
- 31 Gauges: > 50% Minor Long-Range Flood Risk
- 188 Gauges: < 50% Long-Range Flood Risk
- 0 Gauges: No forecast within selected timeframe

[Show all locations](#)

Last map update:
03/20/2023 at 10:21:02 am EDT
03/20/2023 at 14:21:02 UTC

[What is UTC time?](#)

[Map Help](#)

[Product Description](#)

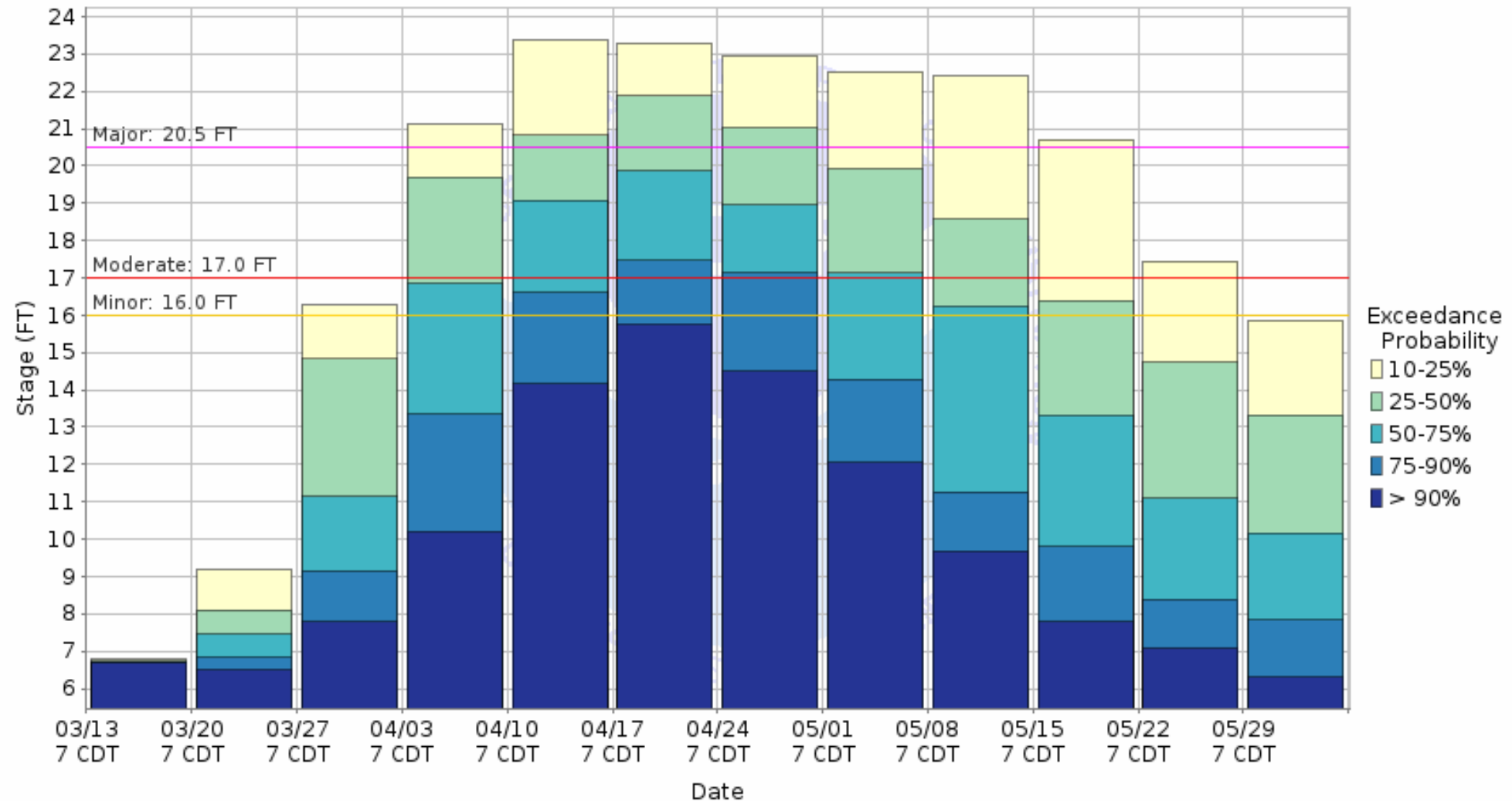
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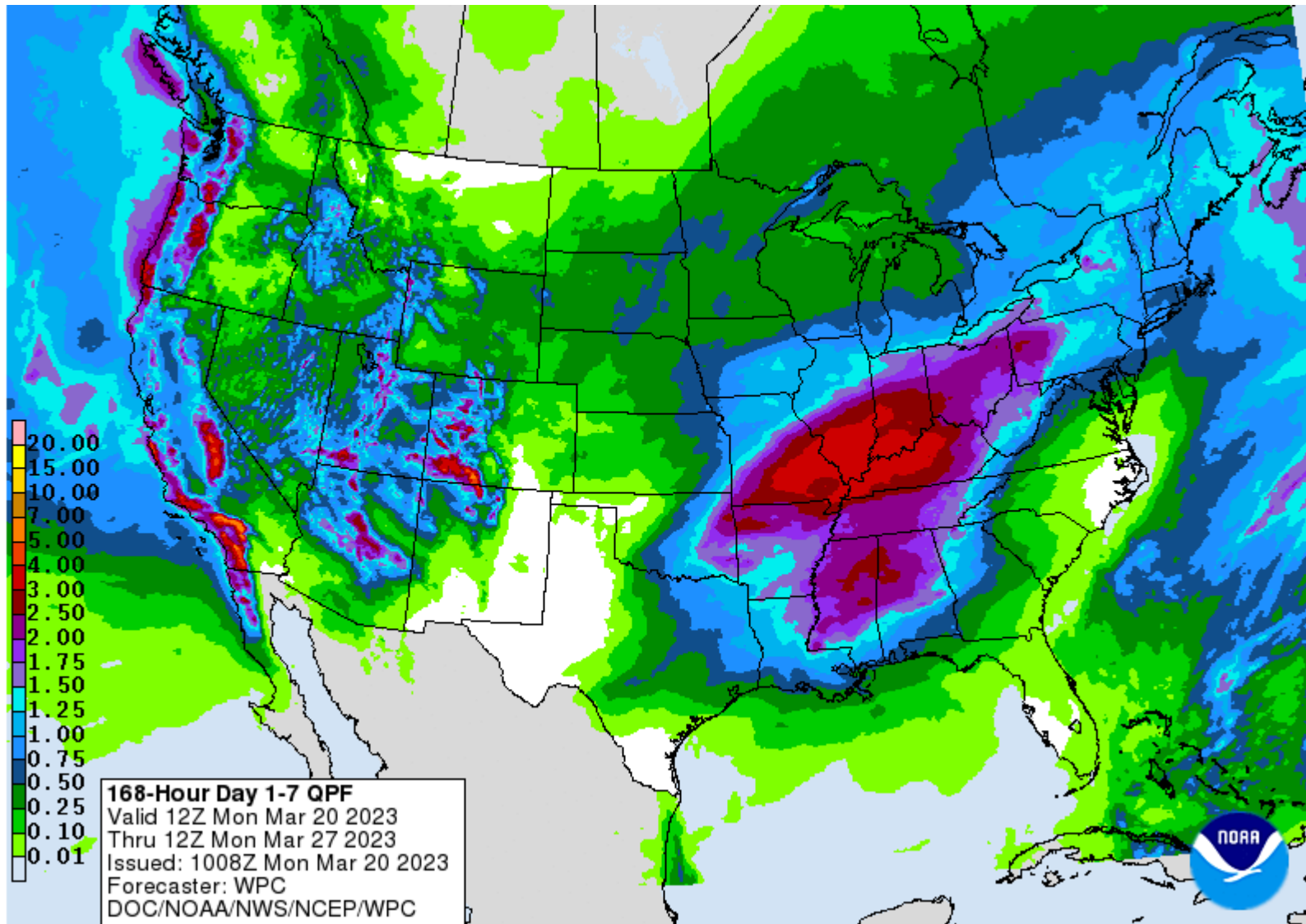


Dubuque Lock and Dam 11

Weekly Chance of Exceeding River Stage at Mississippi River at Dubuque L&D 11 (DLDI4)
Forecast for the period 03/13/2023 - 06/11/2023
This is a conditional simulation based on the conditions as of 03/06/2023

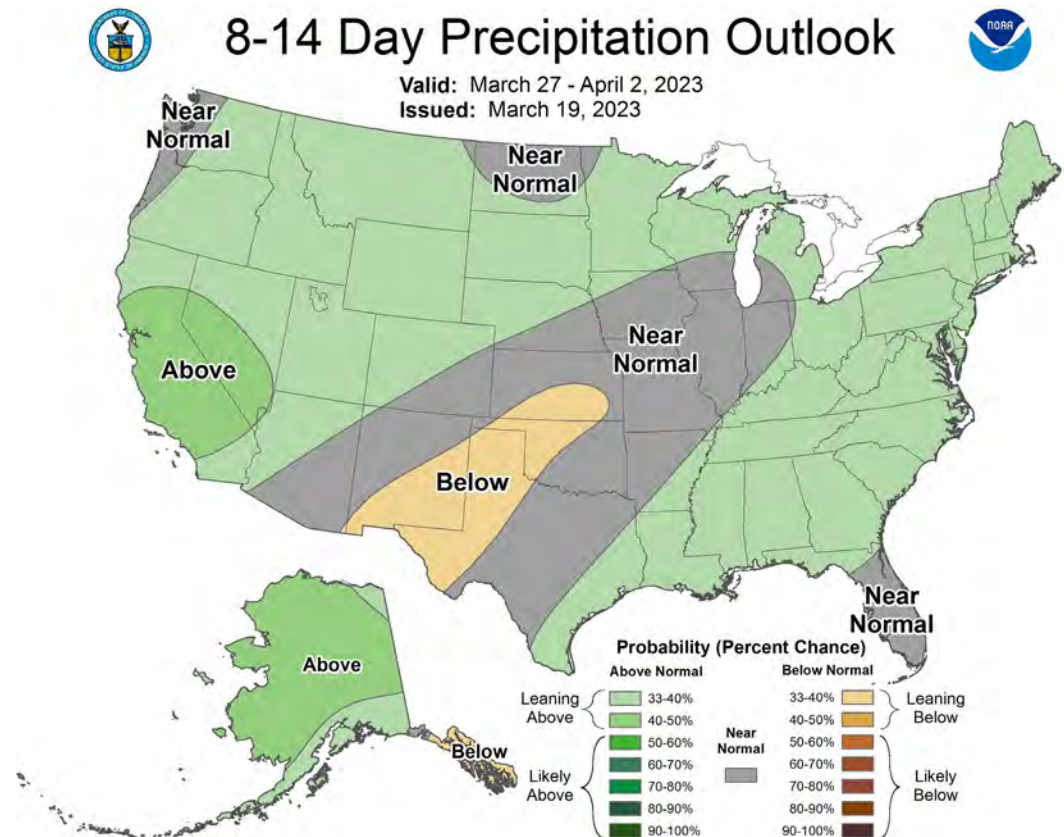
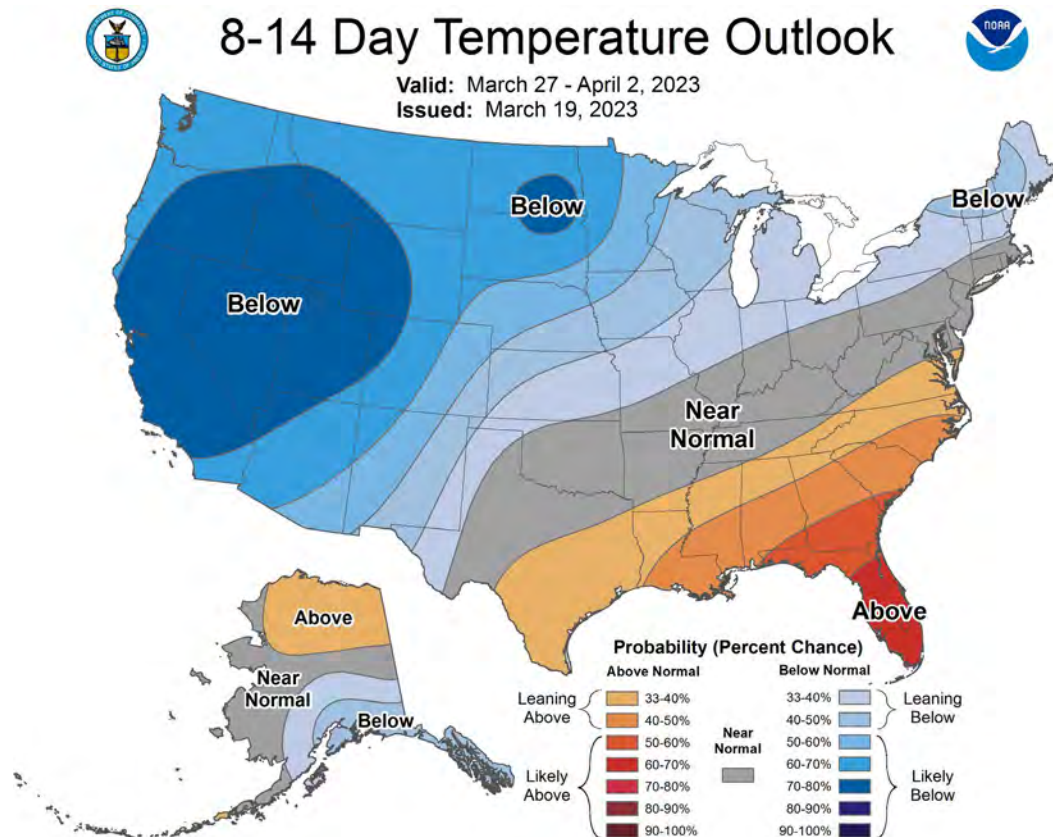


Seven-Day Precip. Forecast



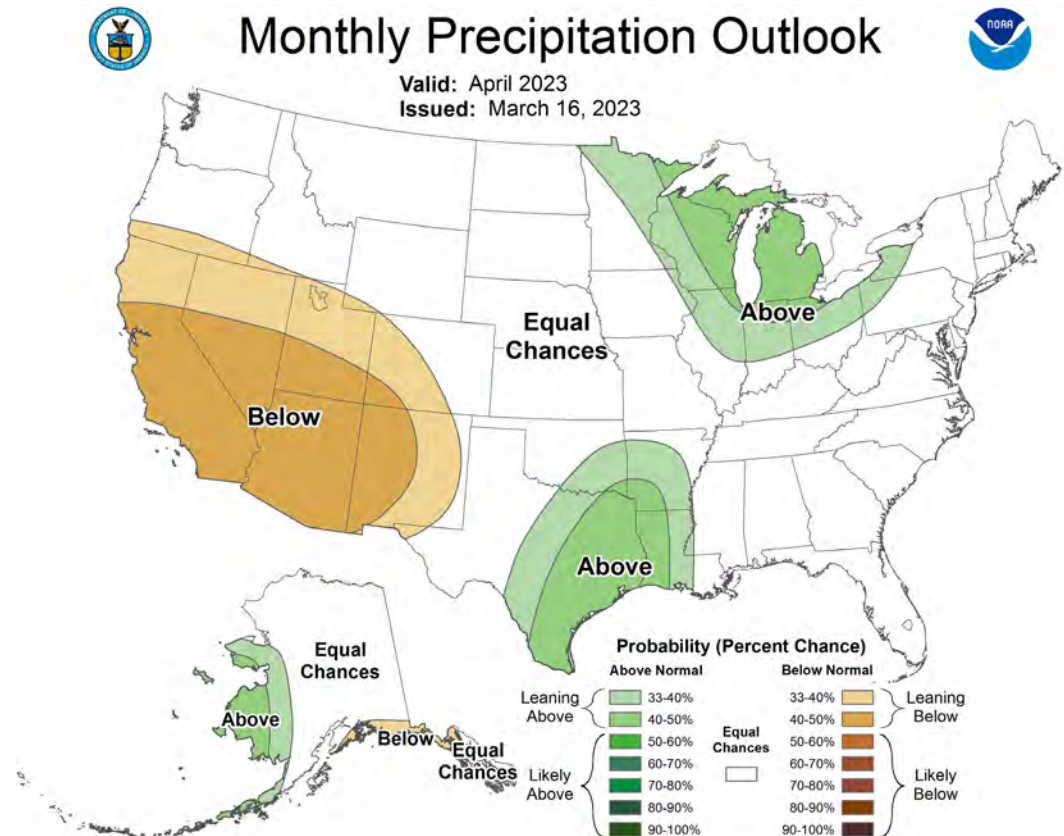
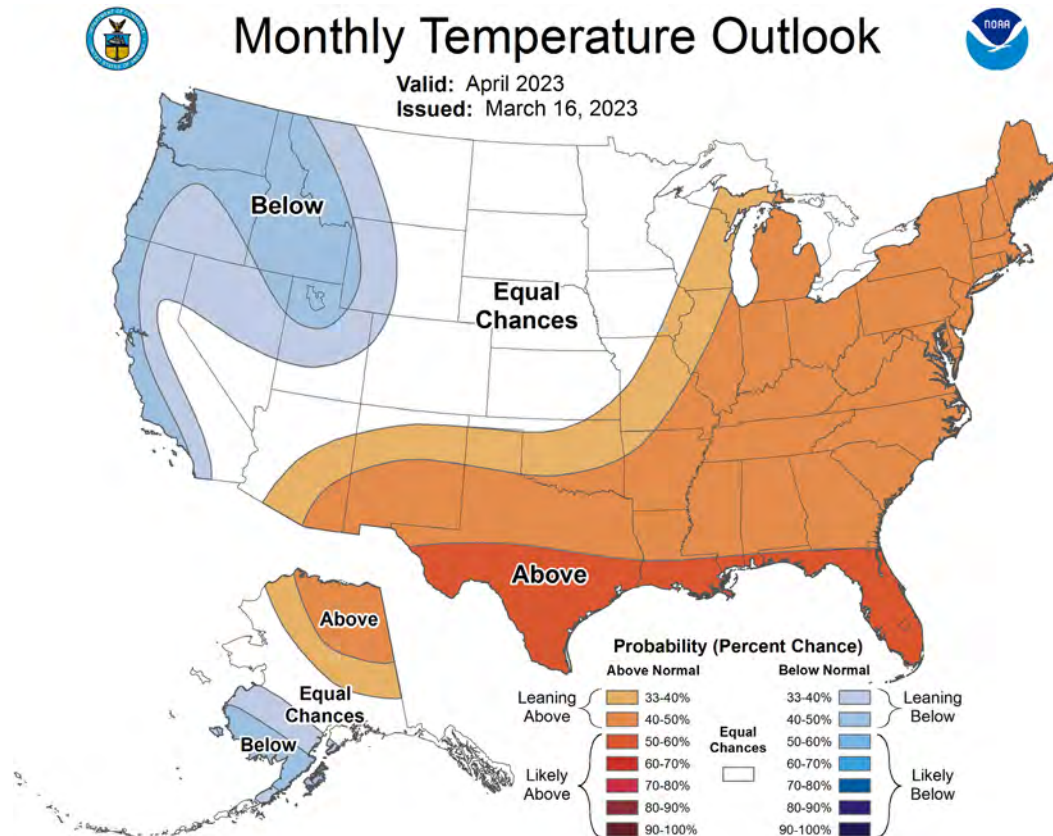
<https://www.wpc.ncep.noaa.gov/#>

8-14 Day Temperature and Precip. Outlooks



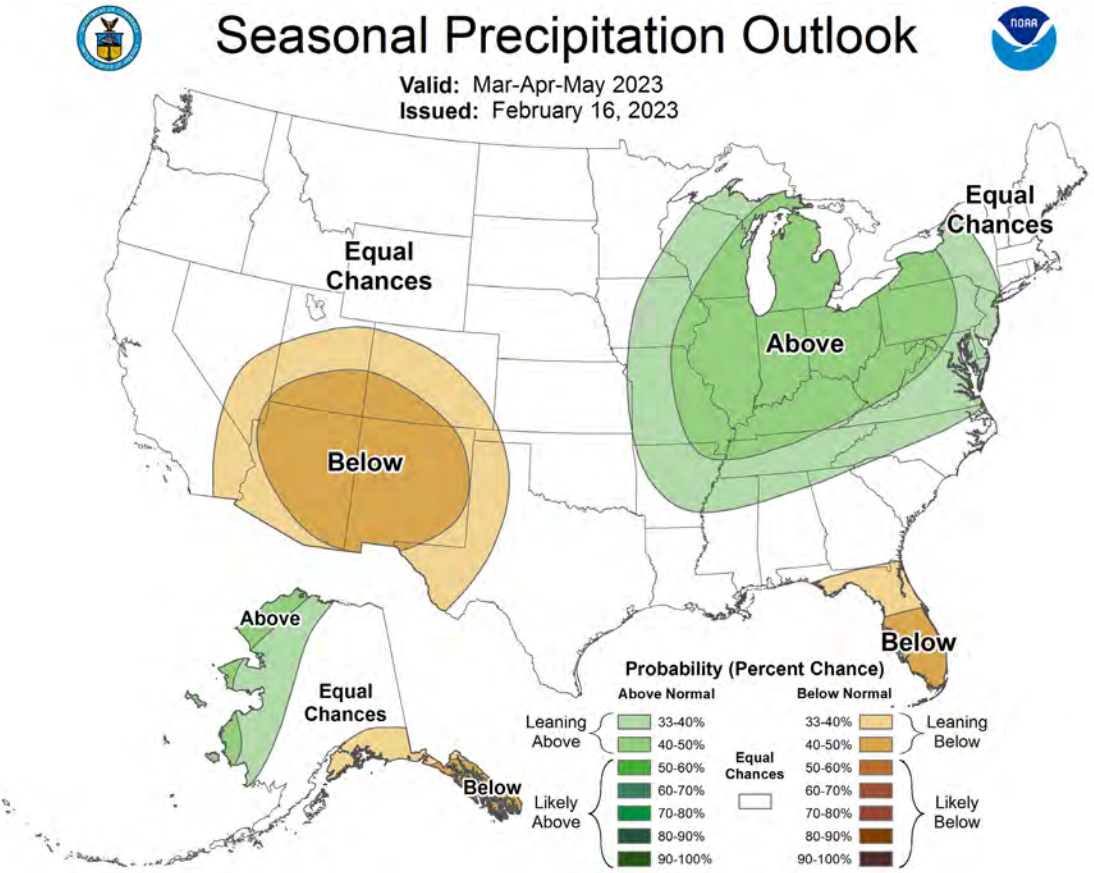
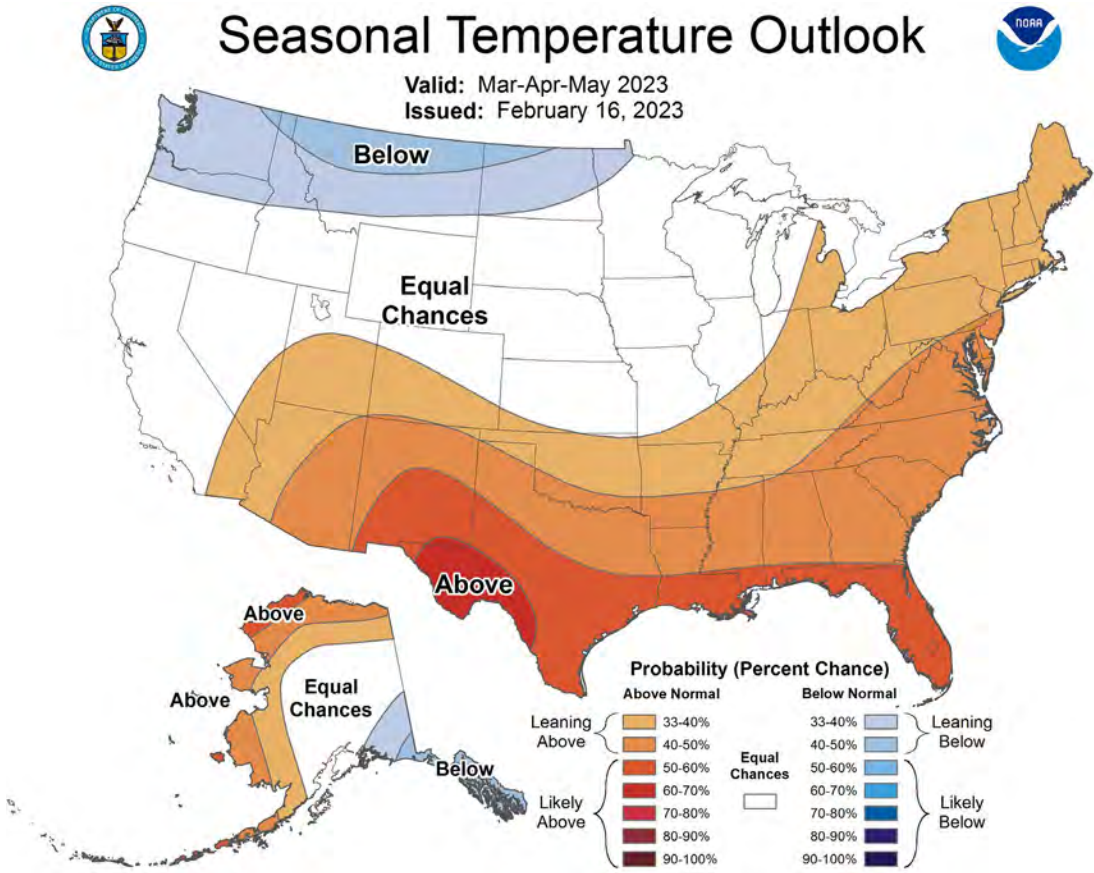
<https://www.cpc.ncep.noaa.gov/products/predictions/814day/>

Initial April Outlooks



https://www.cpc.ncep.noaa.gov/products/predictions/long_range/lead14/

March-April-May 2023

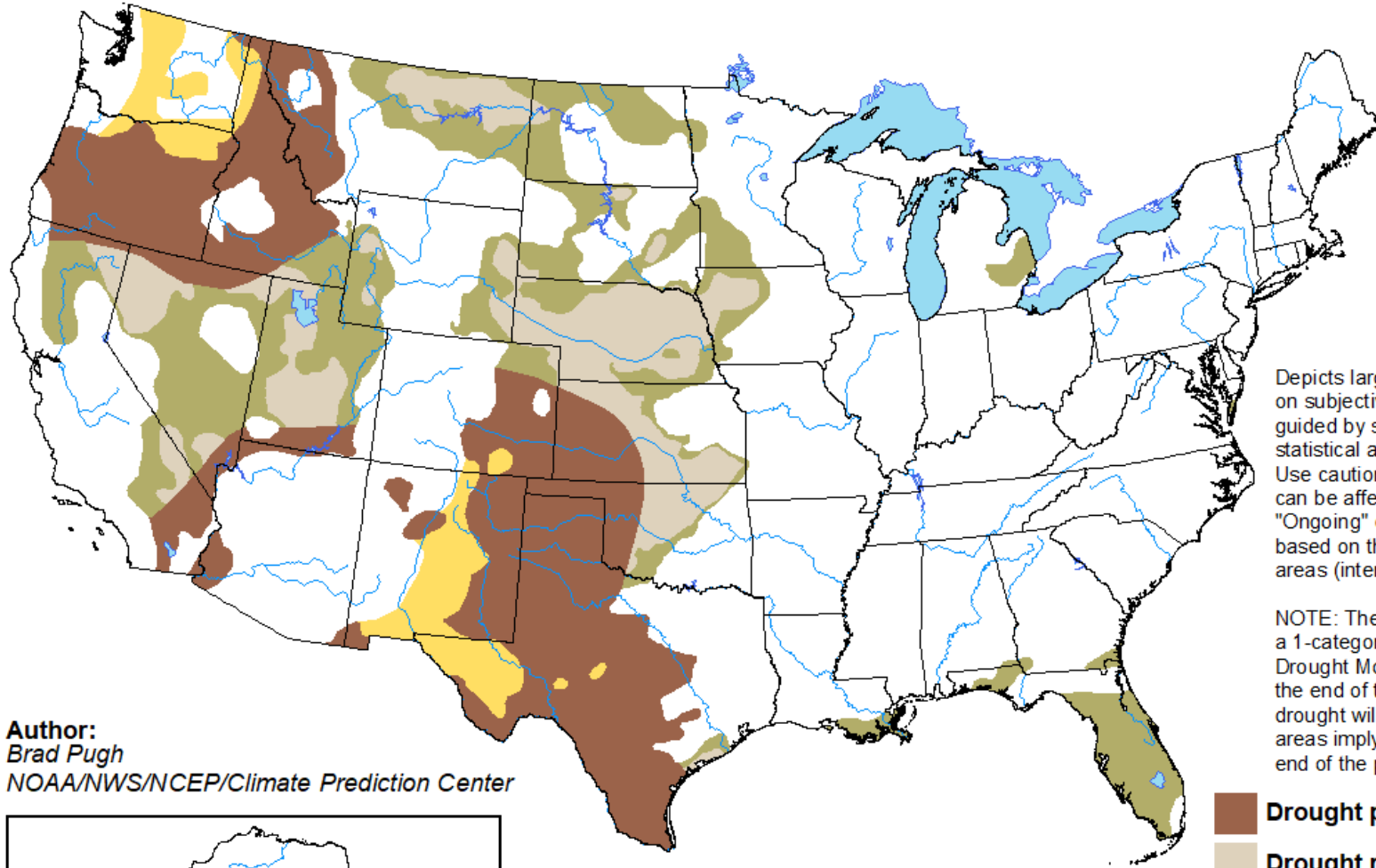


<http://www.cpc.ncep.noaa.gov/>

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

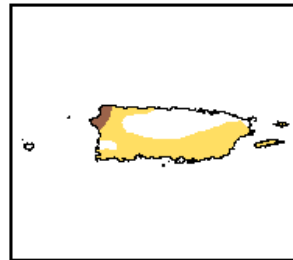
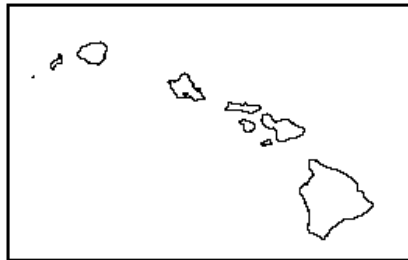
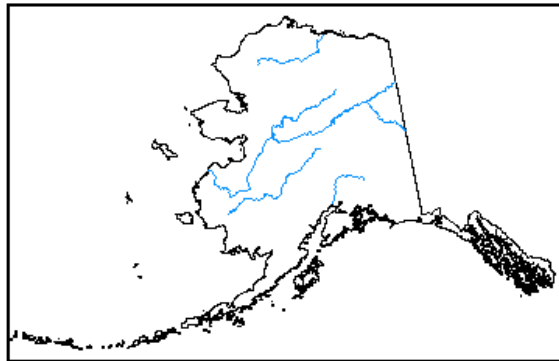
Valid for March 16 - June 30, 2023
Released March 16







Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center



-  Drought persists
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely



<http://go.usa.gov/3eZ73>



Spring 2023 Flood Outlook for Iowa

Overview

Key Messages

- Much above normal spring flood threat for the Mississippi River. **Probabilities for significant flooding on the Mississippi River have increased. Flooding along the Mississippi River has the potential to be similar to what happened in 2019.**
- Near to below normal spring flood threat for the rest of the state—except for the Missouri River below Council Bluffs, where the risk is above normal.
- Future weather—especially the weather conditions leading up to, during and immediately after the snowmelt period—can be a big factor in any spring flood threat.





Spring 2023 Flood Outlook for Iowa

Chances for significant flooding on the Mississippi River have increased—Why?

Future weather—especially the weather conditions leading up to, during and immediately after the snowmelt period—is the biggest factor for significant spring flooding.

Factors leading to increased chances

- Slower than normal warm-up leading up to the snowmelt period—keeps the snowpack longer
- Fast warm-up during the snowmelt period—leads to rapid snowmelt
- Above normal precipitation leading up to the snowmelt period—adds more water to the system
- Moderate to heavy precipitation (rainfall) during the snowmelt period—including rain on snow—adds more water to the system
- Above normal precipitation immediately after the snowmelt period—prolongs the higher river stages and may result in secondary crests

Factors leading to decreased chances

- Normal warm-up leading up to the snowmelt period
- Slow and steady snowmelt—introduces water to the system more slowly
- Little to no additional precipitation during the snowmelt period—adds little if any additional water to the system
- Normal precipitation immediately after the snowmelt period—allows the river levels to fall back to normal levels





Climatology Bureau

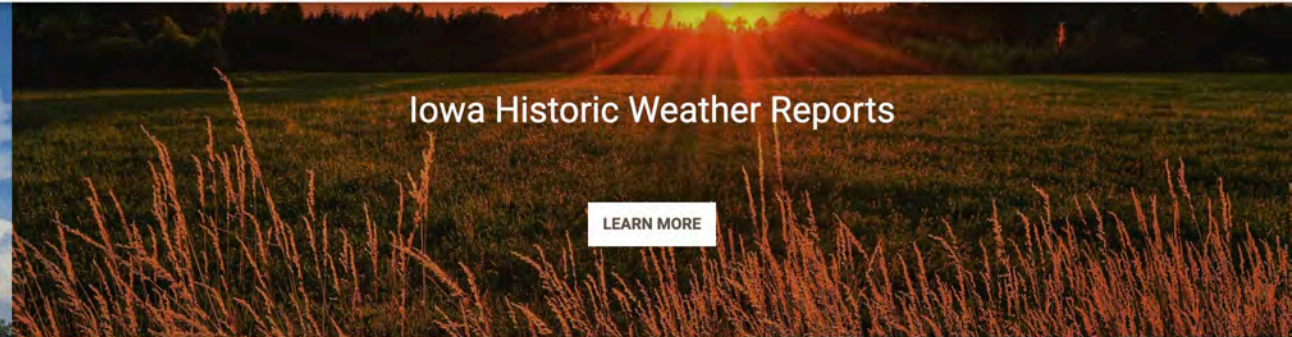
Iowa Weather and Climate Records

- [Climatology Home](#)
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- [Monthly Weather Report](#)
- [Historic Weather Reports](#)
- [Weekly Growing Season Report](#)
- [Current Conditions](#)
- [Climate Outlooks](#)



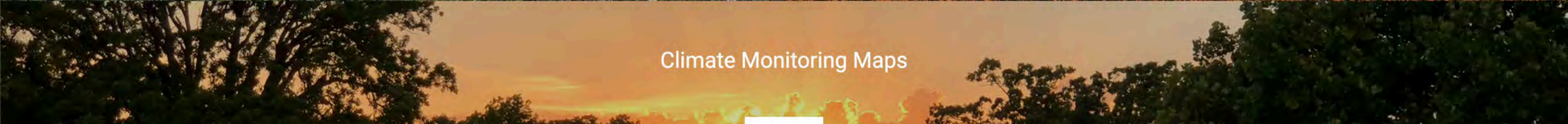
Iowa Monthly Weather Report

[VIEW REPORT](#)



Iowa Historic Weather Reports

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Climate Monitoring Maps



IOWA DEPARTMENT OF
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Thank you!

Justin.Glisan@IowaAgriculture.gov

Tel: 515-281-8981

[@JustinMGlisan](#)

<https://iowaagriculture.gov/climatology-bureau>

IOWA LEVEE STUDY

Scope

- Existing levee-related infrastructure
- Taxing/assessing authorities
- Current budgets
- Budget shortfalls

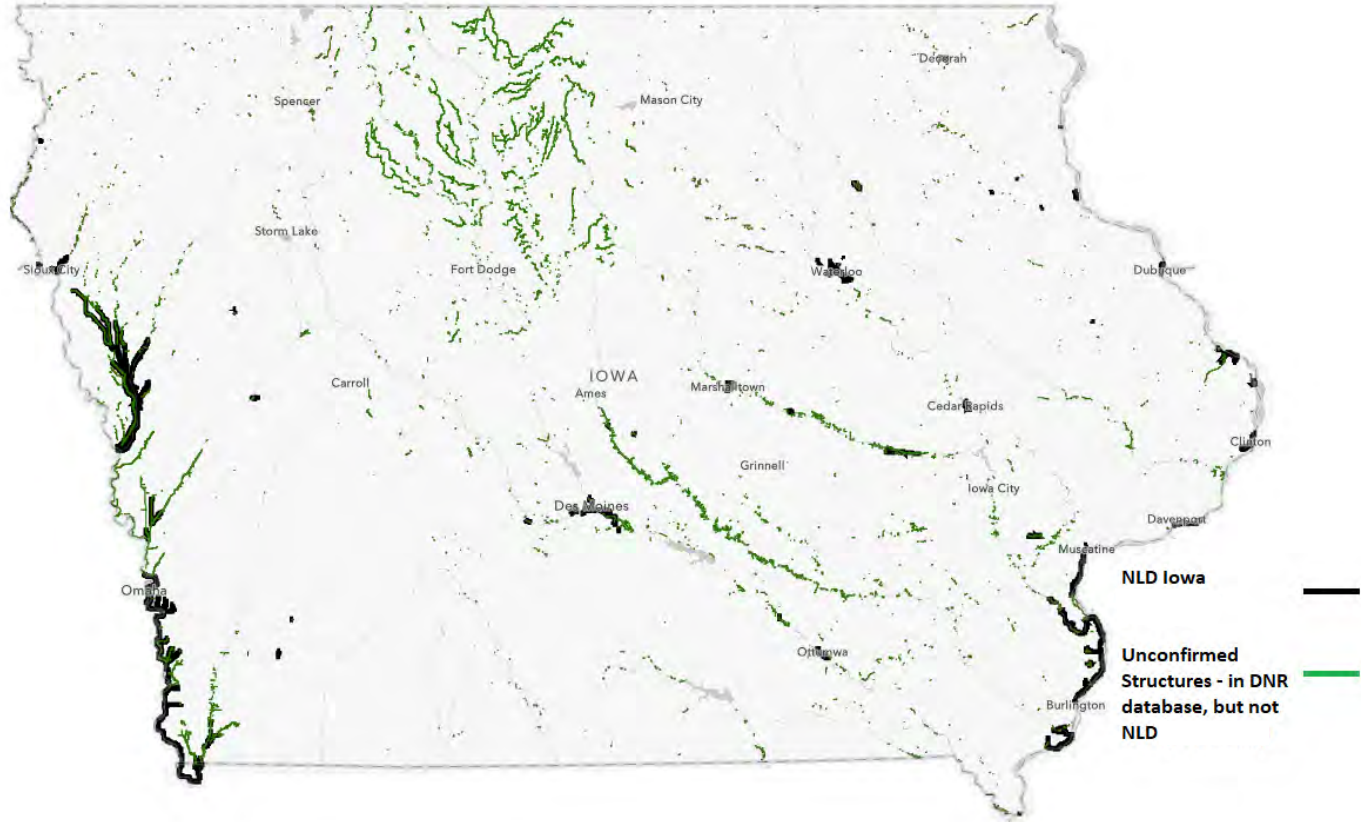
Infrastructure

- 143 levee districts
- 181 systems
- 246 segments
- 50+ years average age

Authorization

	USACE Constructed, OUSACE O&M	USACE Constructed, Public Sponsor O&M	Non-Federally Constructed, Local O&M
Systems	1	76	104
Segments	2	129	115
Miles	11	533	207

Levee Systems – NLD/IDNR Database Differences



Operational Condition

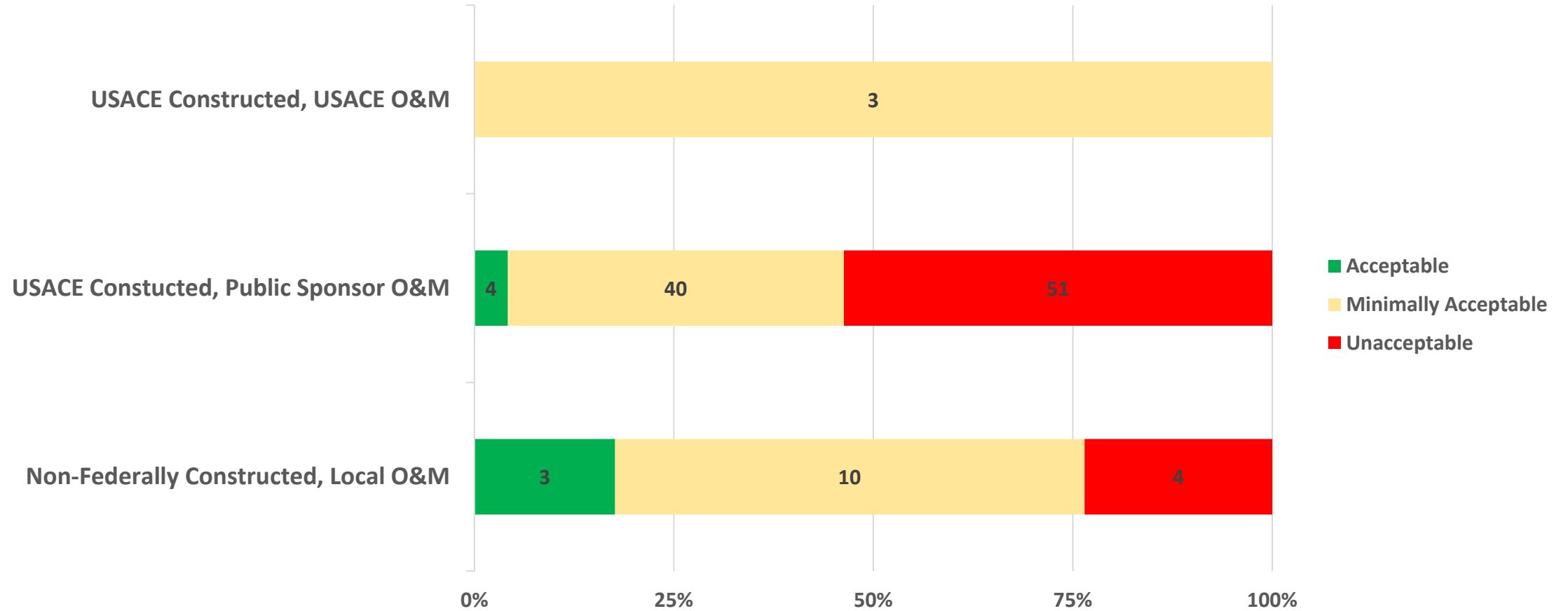
Number of segments – based on inspection ratings

- Acceptable – 8 (7%)
- Minimally Acceptable – 52 (45%)
- Unacceptable – 55 (48%)

Top Unacceptable Deficiencies

- Levee Embankments – Culverts/Discharge Pipes
- Interior Drainage System – Culverts/Discharge Pipes
- Flood Damage Reduction Channels - Erosion

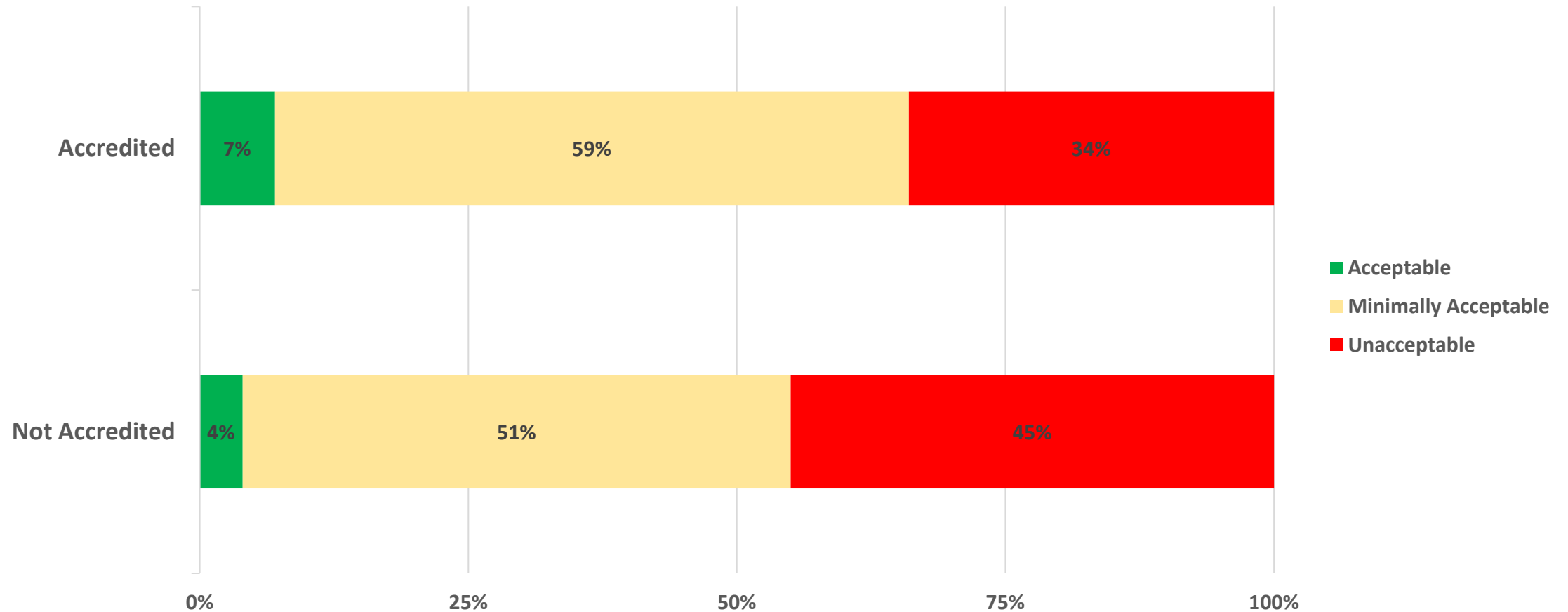
Levee Segment – Inspection Rating by Levee Type



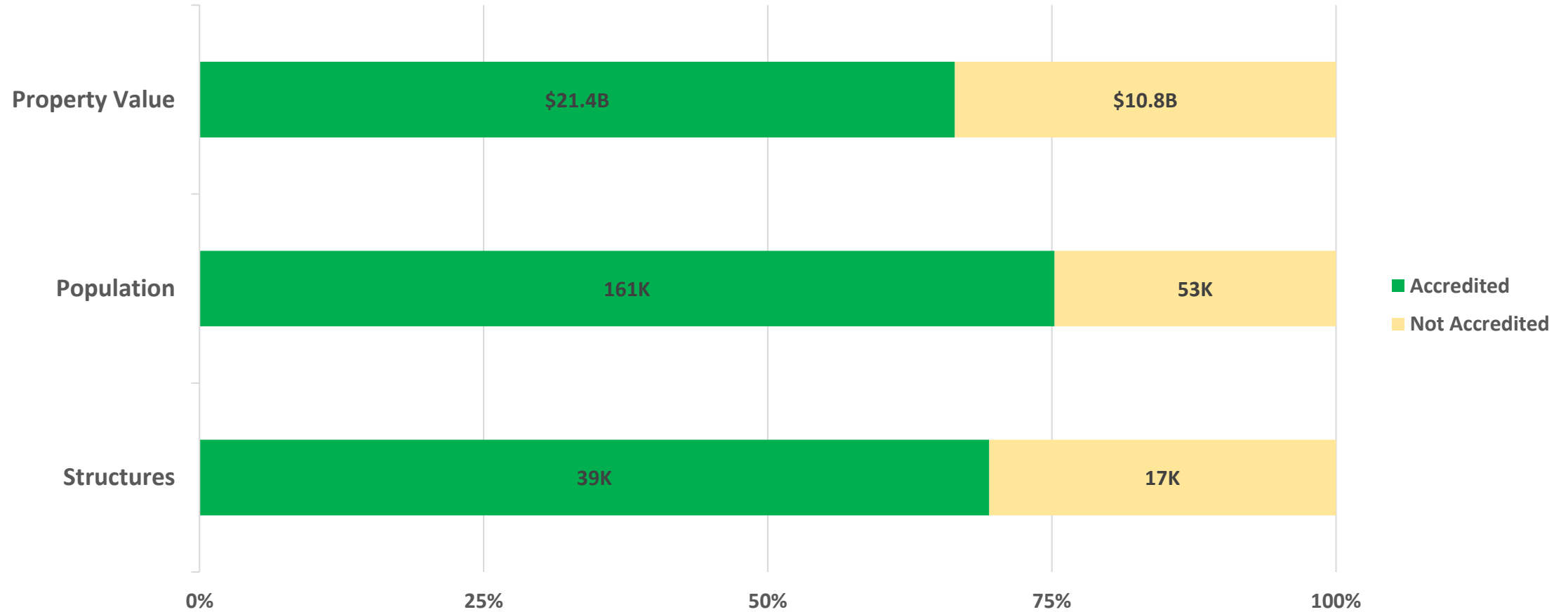
Accreditation Status

	Accredited	Not Accredited
Systems	55	126
Segments	85	161
Miles	292	459

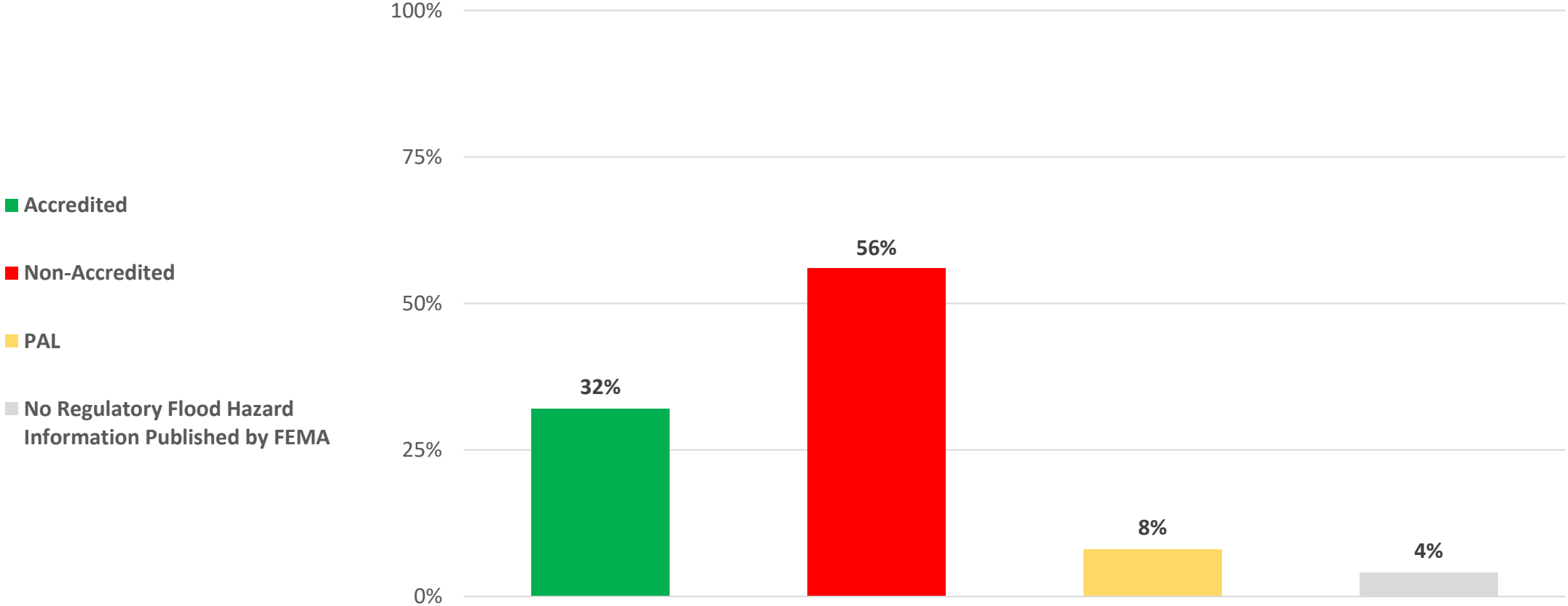
Levee System – Inspection Rating by Accreditation Status



Consequences by Accreditation



Levee System – Effective FIRM Status



Rehabilitation Status

	Federally Authorized, Local O&M, RP Active	Federally Authorized, Local O&M, RP Not Active	Local O&M, Enrolled in RP, RP Active	Local O&M, Enrolled in RP, RP Not Active
Segments	60	37	12	137
Miles	359	177	19	298

Risk Status

	Moderate	Low	Not Screened
Systems	11	76	111
Segments	21	119	126
Miles	118	534	245

Funding Sources

- **Local** – assessment of benefiting landowners (reliable stream, but archaic assessment requirements result in insufficient amounts)
- **State** – Flood Mitigation Program, Flood Recovery Fund, State Contingency Fund loans (inconsistent streams)
- **Federal** – USACE PL 84-99, WRRDA; FEMA Public Assistance & Hazard Mitigation Assistance programs (inconsistent and competitive)

Financial Status

- Majority of surveyed levee districts have average annual revenues less than average annual expenses (O&M, improvements, professional services, contract labor, etc).
- Primary cause of shortfall appears related to insufficient assessment revenue
- Most financially vulnerable districts are those with the smallest system footprint

Financial

Most vulnerable districts are those with the smallest system footprint

151 systems are less than 5-miles in length (total ~ 220 miles)

- \$5,700 average annual maintenance cost per mile
- \$1,400 average annual assessment revenue per mile
- \$4,300 average annual assessment revenue shortfall per mile
- \$946,000 estimated average annual shortfall (statewide aggregate)

Governance – Control, Supervision, & Management

- Board of Supervisors (Default)
- Board of Trustees (majority of districts)
- Communities
- Other jurisdictional officers – auditor, treasurer, law enforcement, EMA, etc.
- State – IDNR – Flood Plain management; Dam Safety; NFIP
- Federal – USACE – Levee Safety: Inspections, risk assessments, O&M, repair; replacement, & rehabilitation (PL 84-99); levee inventory, FEMA – NFIP – Levee Accreditation

Regulatory/Policy

- O&M requirements continue to shift more burden to local sponsors
 - Video inspections of culverts and pipes
 - Electronic testing of pump components
 - Freeboard standards
- Added stress on district's financial and capacity resources
- Changing expectations have become unsustainable

Future Operational Challenges

- Changing precipitation and runoff conditions
- Aging infrastructure
- Local funding
- Governance
- Regulatory/policy

Recommendations

- Encourage the formation of joint levee/drainage district organizations at the levee system level
- Consider Iowa Code changes to support district capability to satisfy O&M requirements and to facilitate future system improvements
- Form state-level levee safety program

Abridged Levee Report

<https://homelandsecurity.iowa.gov/media/317/download?inline>



Highway 2 Reconstruction Project: Flood Mitigation

Marc Solberg
Location and Environment Bureau



Topics

The 2019 Floods

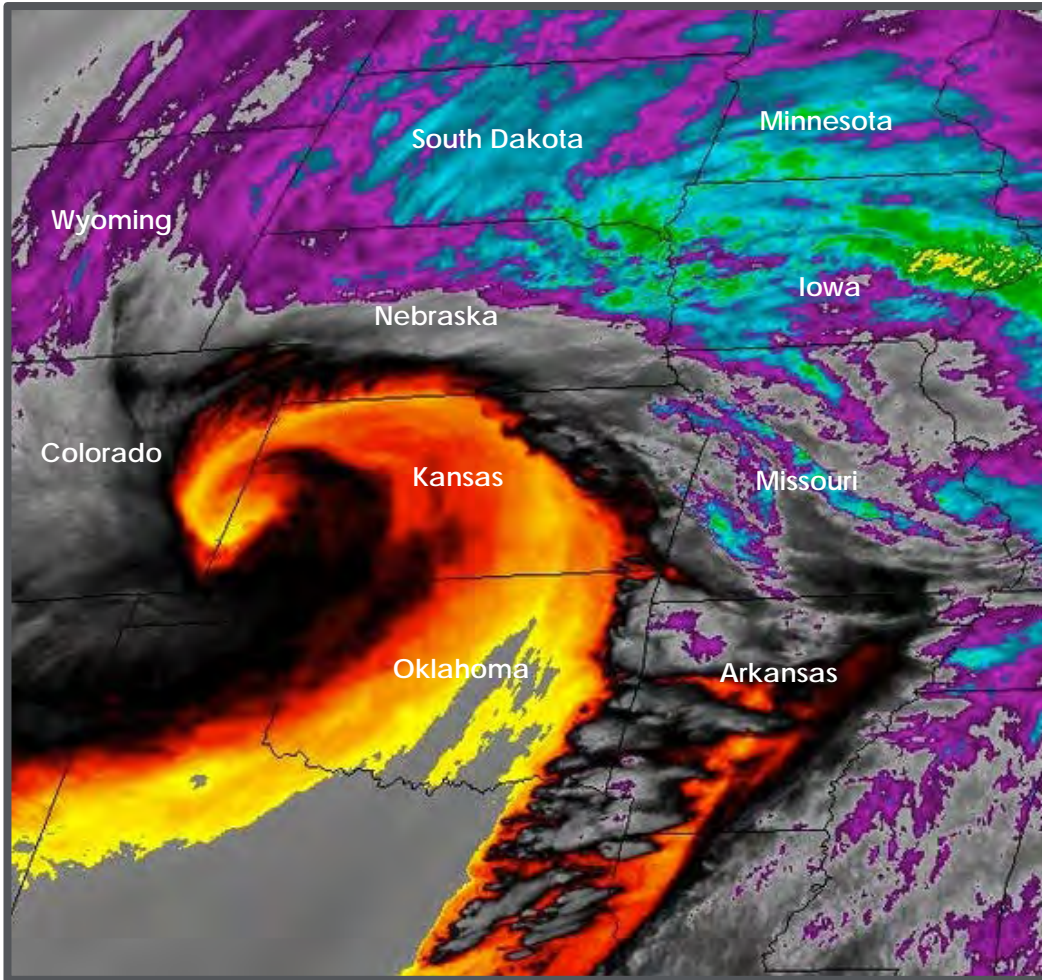
The Response

The Recovery

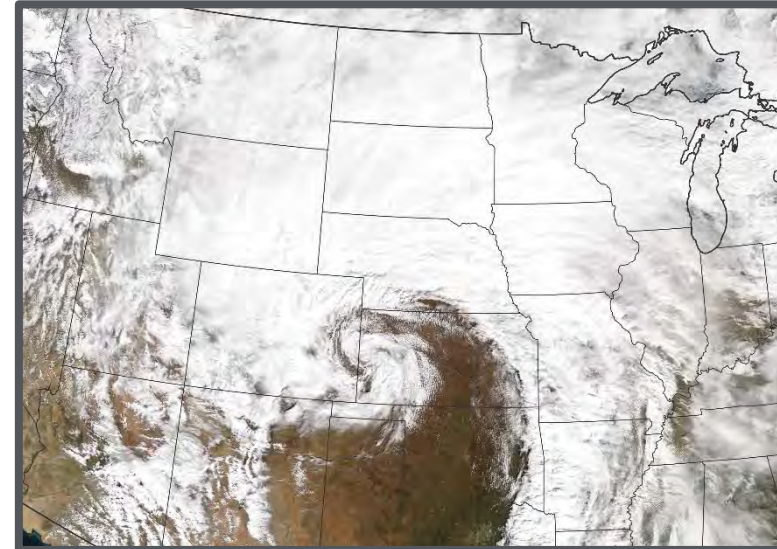
The Resiliency

Highway 2 Reconstruction

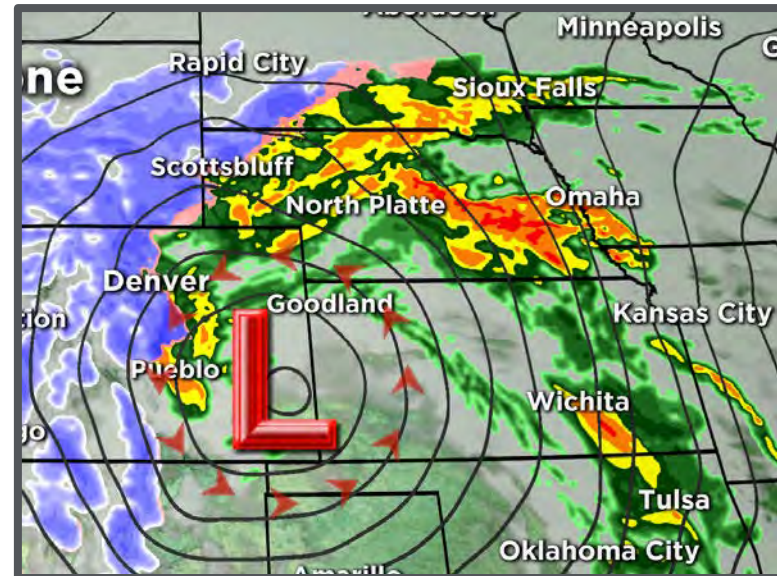
WINTER STORM ULMER



Water vapor satellite image of the storm on Wednesday, March 13, 2019 (NASA)

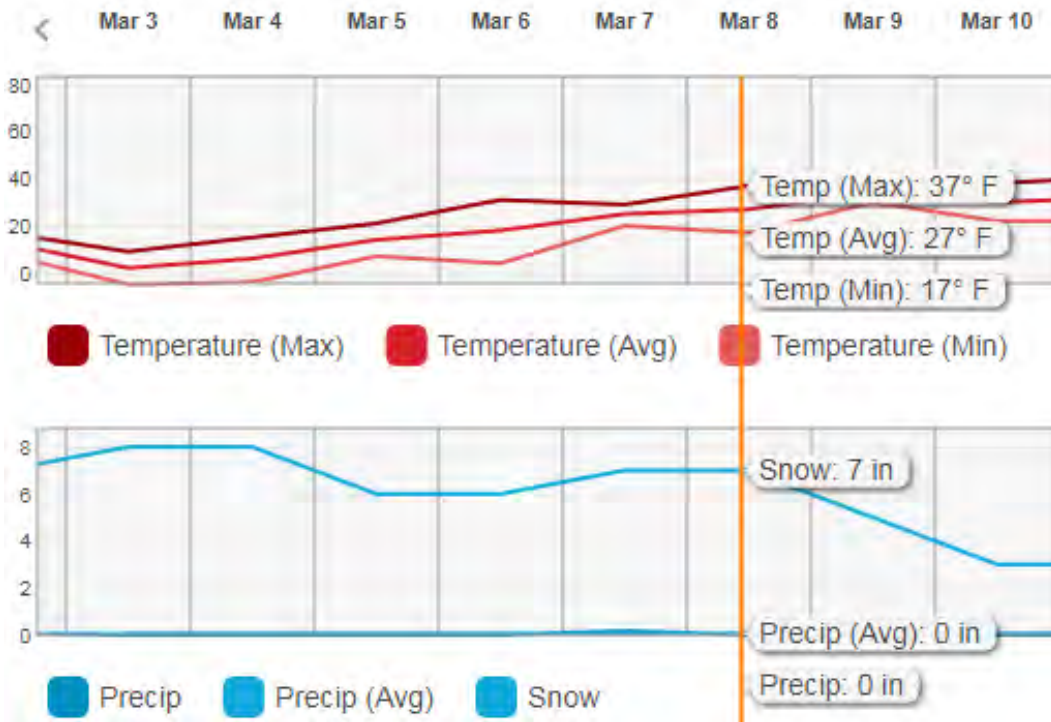


Satellite view of Winter Storm Ulmer on Wednesday, March 13, 2019 (NASA)



Barometric pressure and precipitation on Wednesday, March 13, 2019 (Denver CBS4)

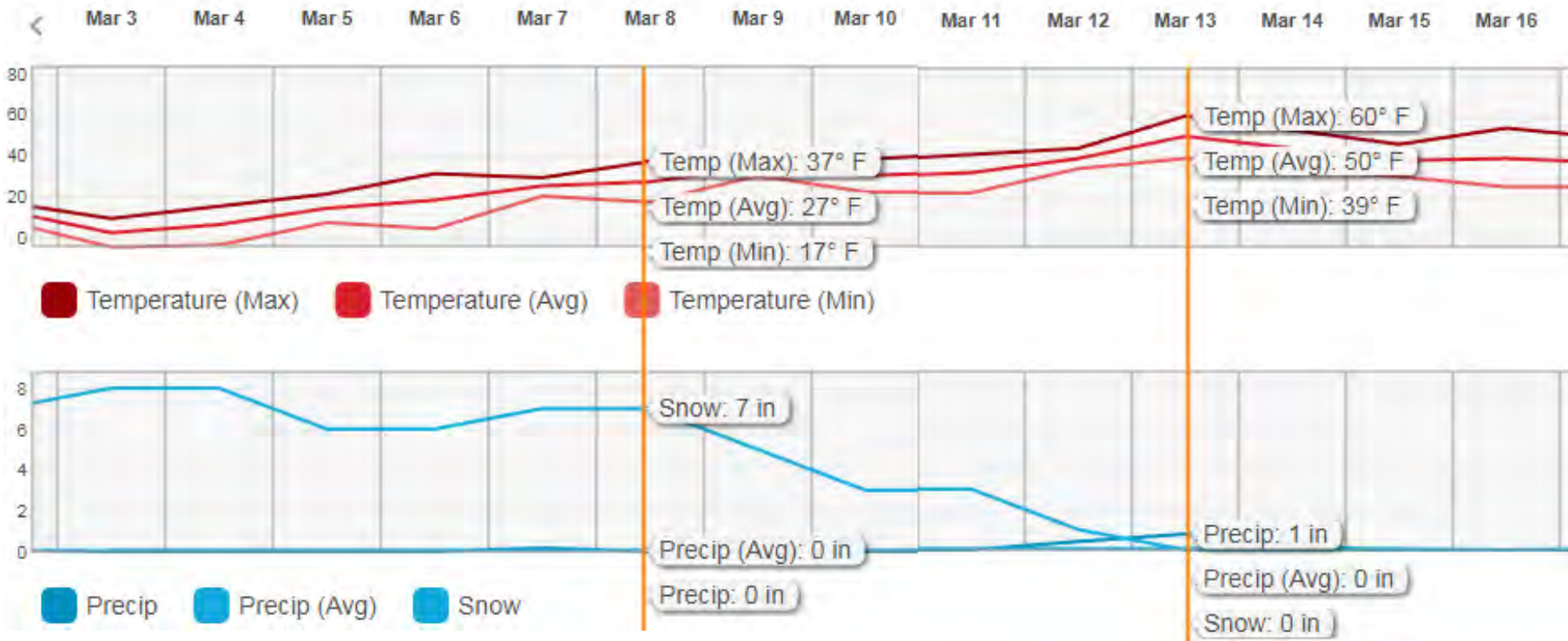
Omaha, NE – March 2019



Cold
Temperatures

Substantial
Snowpack

Omaha, NE – March 2019



Highway 2 Reconstruction



Highway 2 Reconstruction

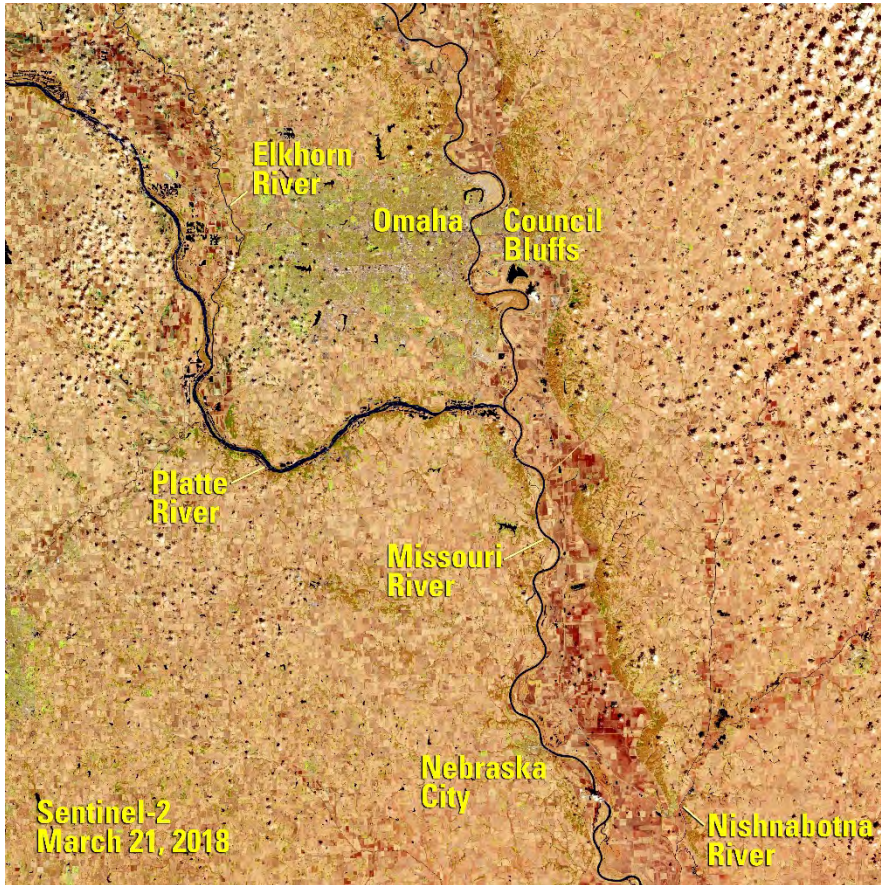


Photo Credit: U.S. Army Corps of Engineers

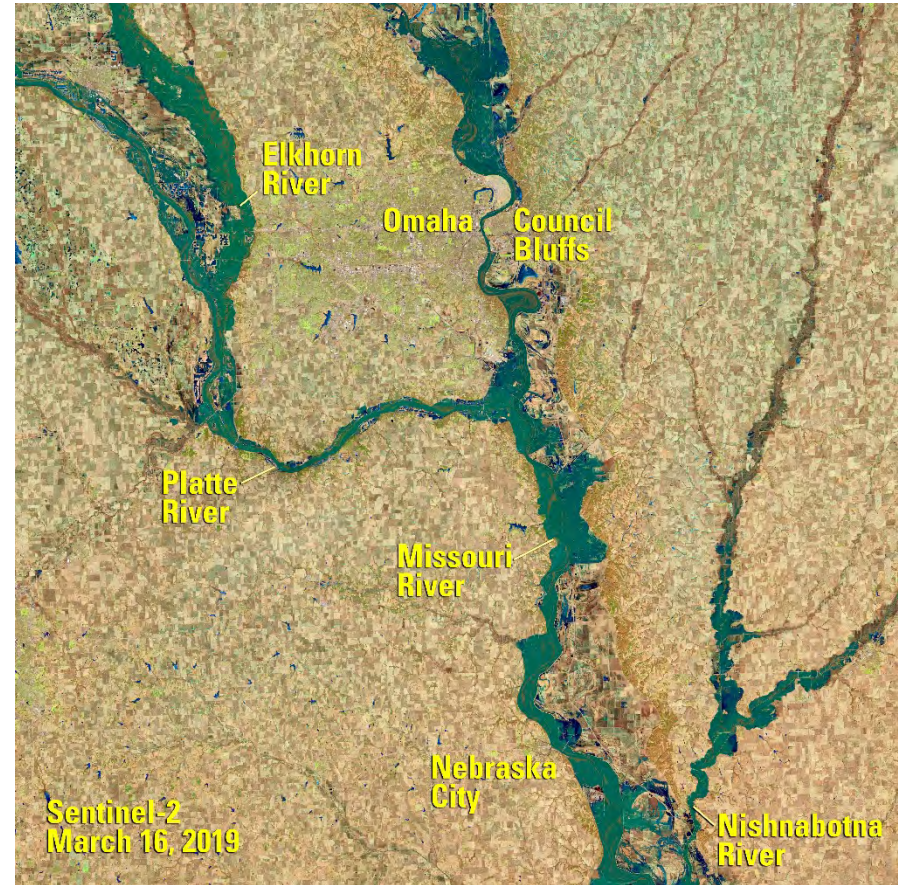
L-575_A_I breach and interim repair, 3 miles north of Percival
(June 2019)

Highway 2 Reconstruction

Missouri River Basin
(March 16, 2018)



Missouri River Basin
(March 16, 2019)



Highway 2 Reconstruction



Topics

The 2019 Floods

The Response

The Recovery

The Resiliency

Highway 2 Reconstruction

GUIDING PRINCIPLE: EVERY DAY COUNTS

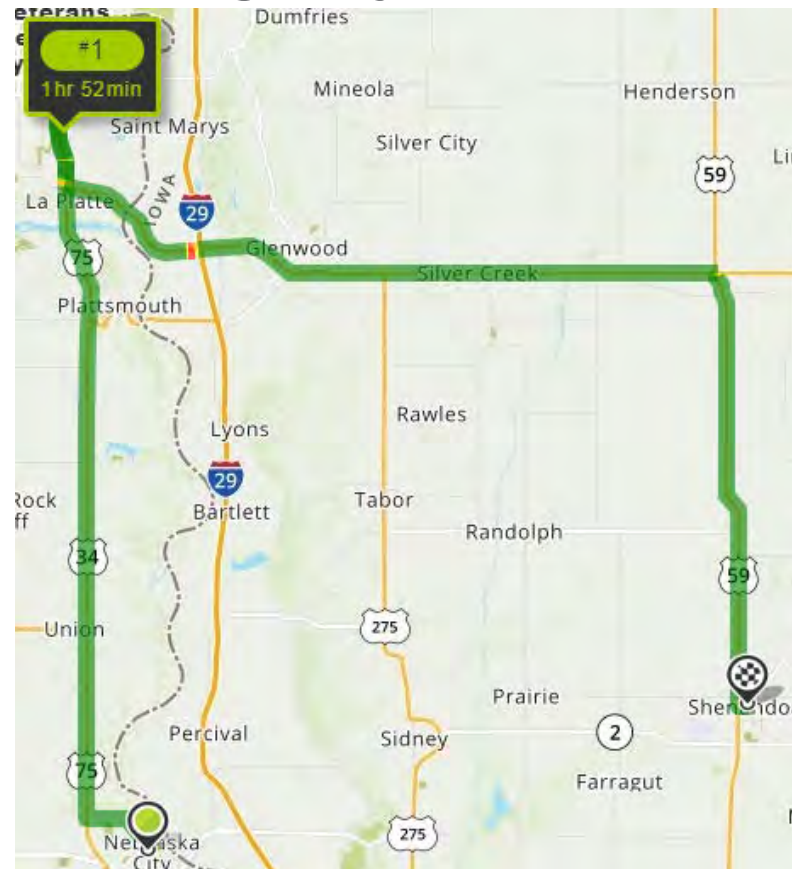


GUIDING PRINCIPLE: EVERY DAY COUNTS

I-29 Detour



Highway 2 Detour



RESPONSE

- Flood Response Team
 - Lead
 - District 4 Staff
 - Support
 - DOT Central Office
 - Hydrologists
 - HDR Engineering
 - Law Enforcement
 - EMC
 - Contractors
- Coordination Meetings and Calls
 - Twice Daily Minimum
- Crisis Management
 - Hourly
- ITS Deployment
 - Cameras
 - Message Boards
- Communication
 - Public
 - Media
 - Property Owners

RESPONSE

- Leverage Partners
 - States
 - Counties
 - Cities
 - Federal Government
 - Law Enforcement
 - Contractors
 - Consultants
 - Railroads
 - Media
 - National Guard



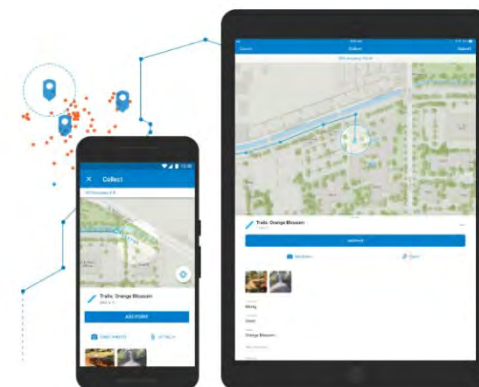
RESPONSE

- Leverage Technology
 - Deploy Mobile Cameras
 - Message Boards
 - Drones
 - GIS (ArcGIS Collector App)
 - Social Media




Collector
for ArcGIS

Accurate data collection made easy



Topics

The 2019 Floods

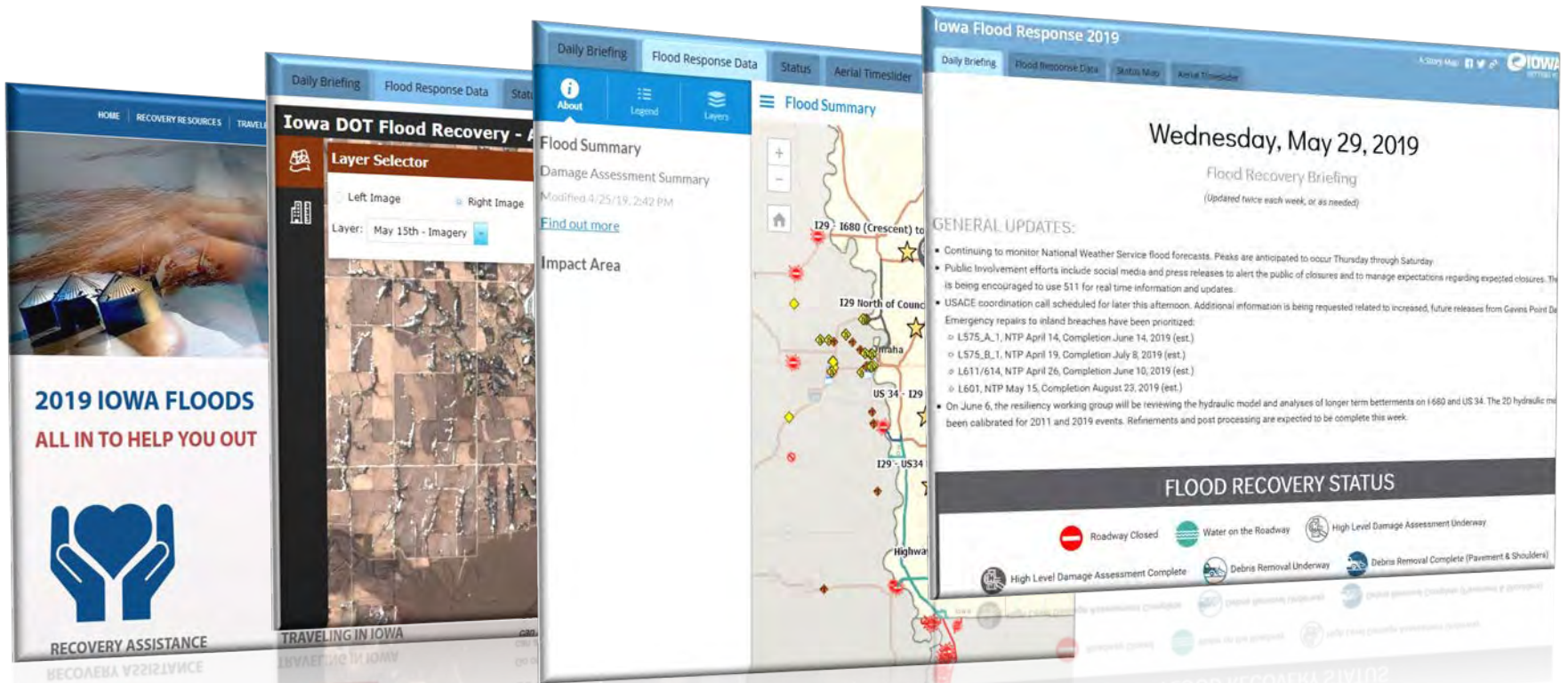
The Response

The Recovery

The Resiliency

RECOVERY

- Flood Recovery Team and Public Resources



ArcGIS Story Maps

RECOVERY

- Daily Briefings
- Weekly Coordination Meetings

Status of Repairs Underway* As of May 8, 2019



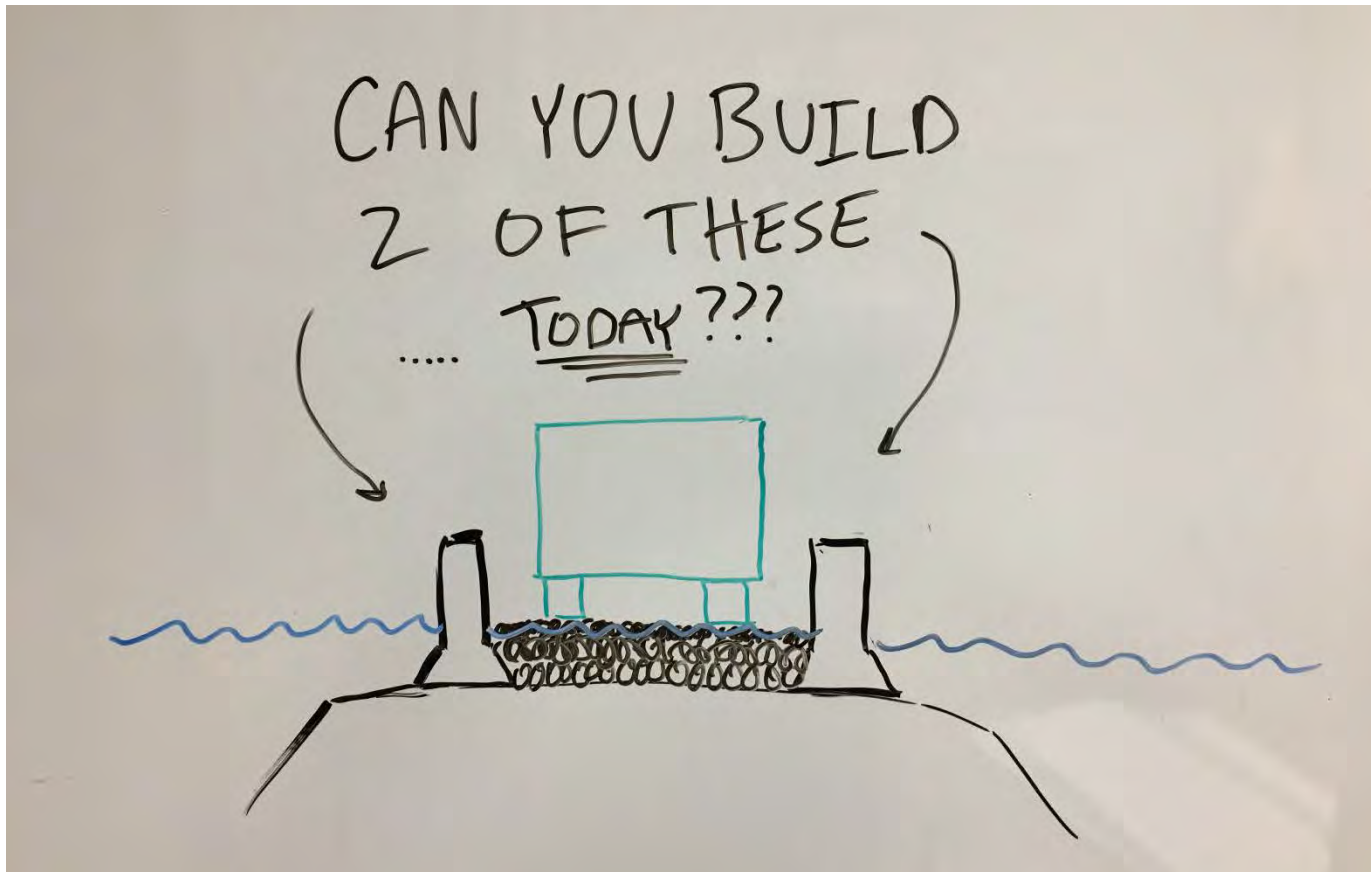
RECOVERY



Iowa 2 at MM 1 on April 15, 2019

RECOVERY

- How can we restore traffic to a flooded roadway?



RECOVERY

2019-05-02 02:36:12 PM IA 2 @ Missouri River (IWZ 3713)



Iowa 2 on May 2, 2019



RECOVERY



Iowa 2 on May 5, 2019



Iowa 2 on May 15, 2019

RECOVERY

2019-05-28 12:36:24 PM IA 2 @ Missouri River (IwZ 3713)



West I-29 @ IA-2 (IwZ 3703) 06/03/2019 12:38:05

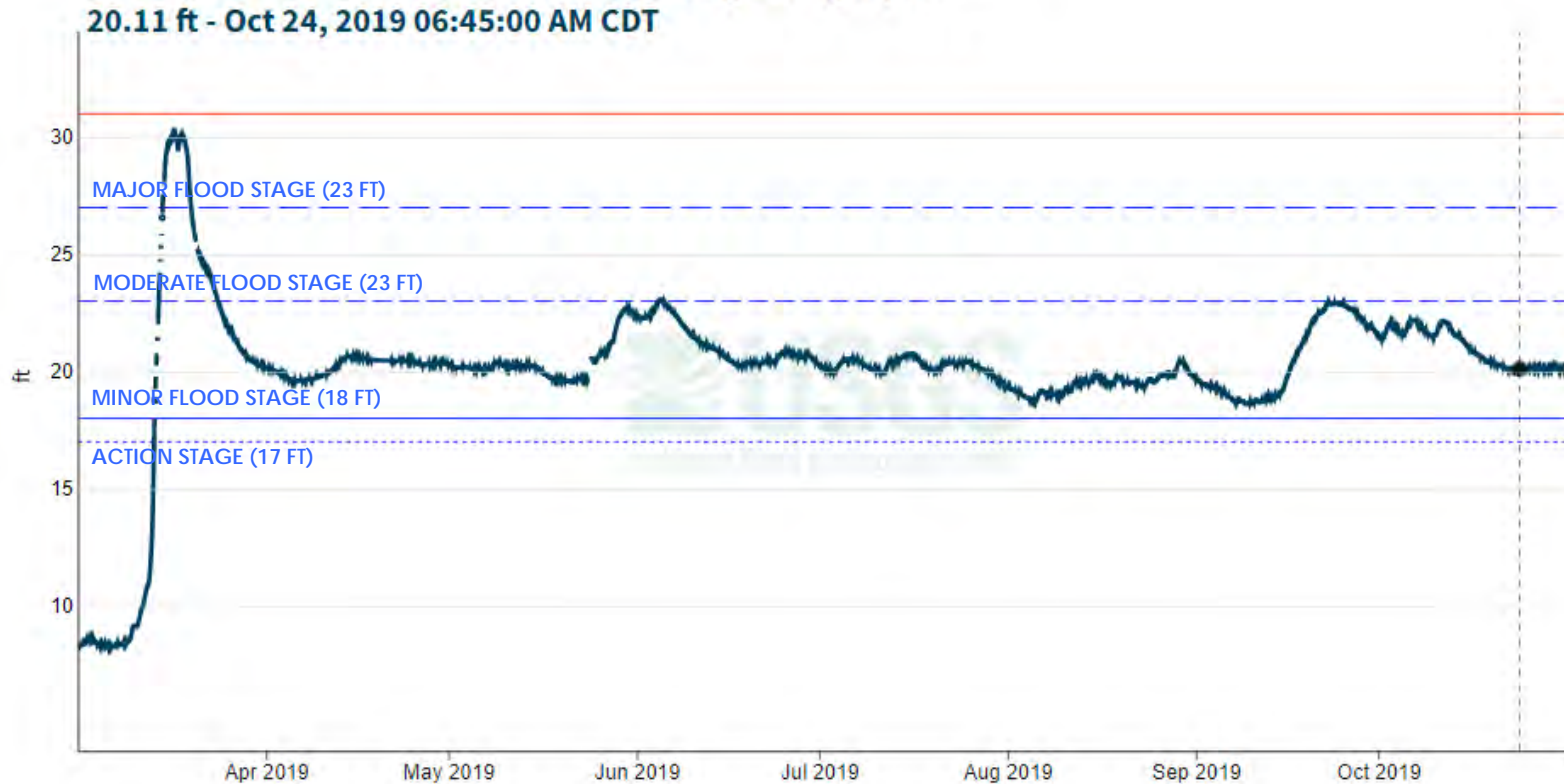


RECOVERY

Missouri River at Nebraska City, NE

March 1, 2019 - October 31, 2019

Gage height, ft ⓘ



Topics

The 2019 Floods

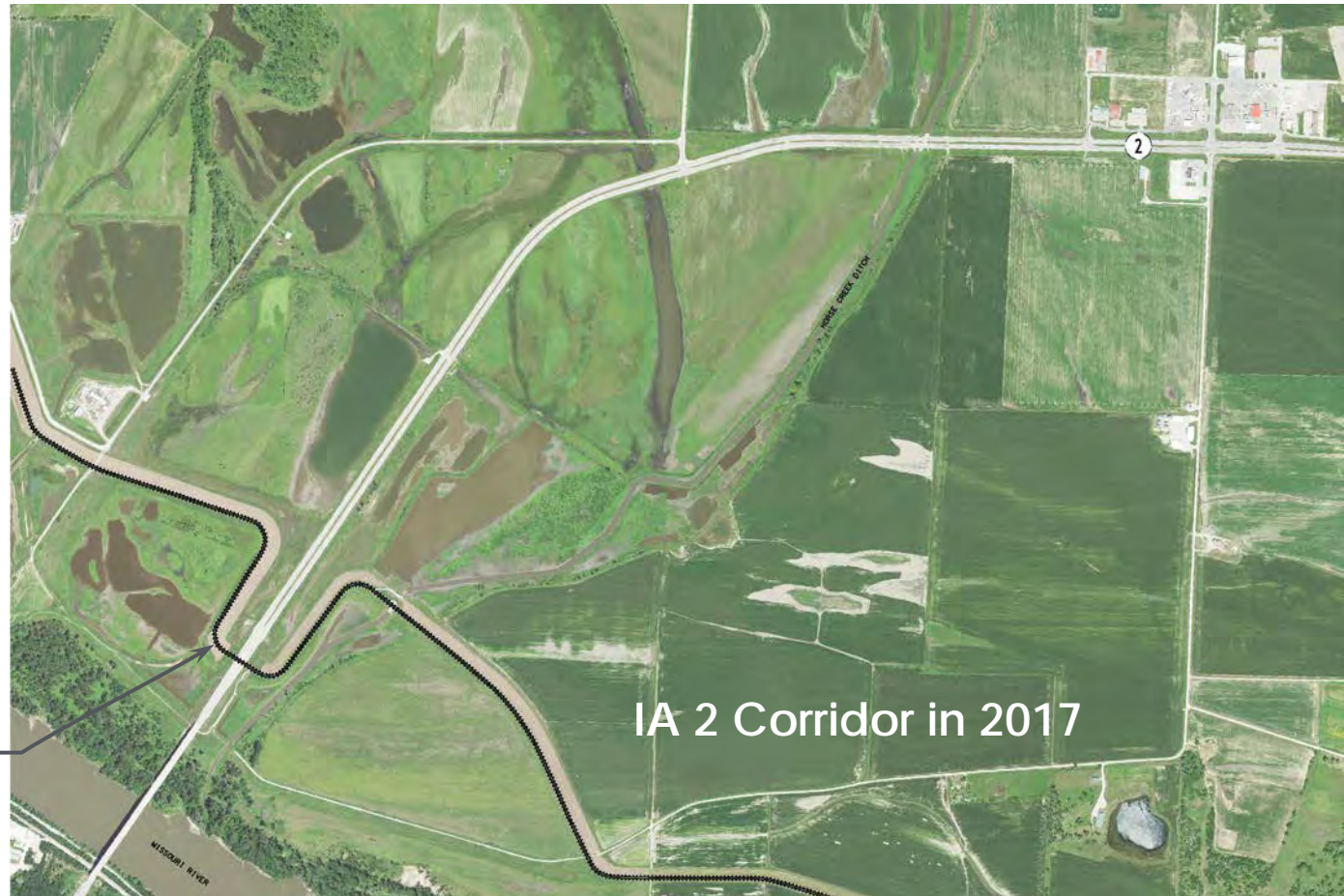
The Response

The Recovery

The Resiliency

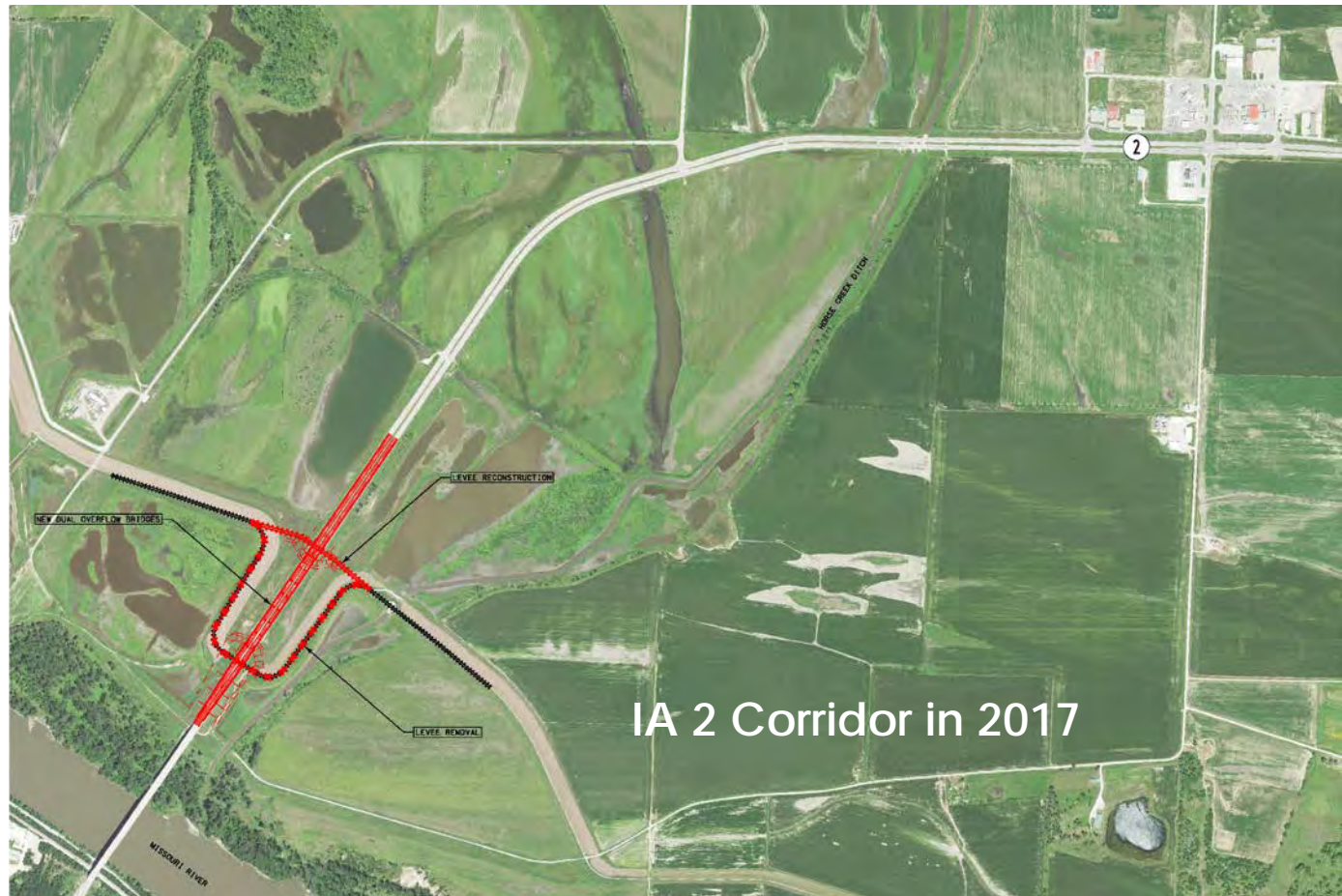
RESILIENCY

- Highway 2 Overflow Bridges



RESILIENCY

- Highway 2 Overflow Bridges

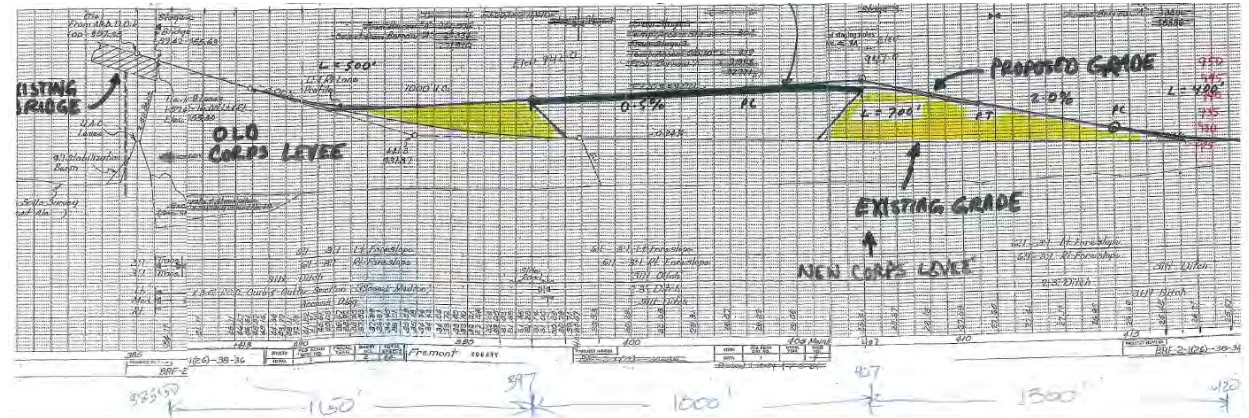


Highway 2 Reconstruction

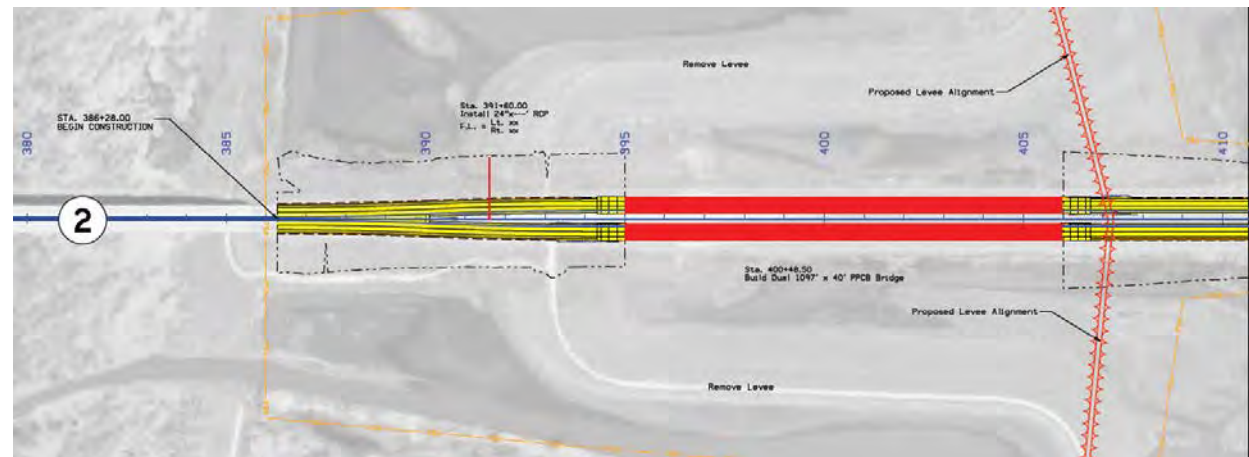
RESILIENCY

- Highway 2 Overflow Bridges

April 16, 2019
 Sketch on old as-builts



May 9, 2019
 Preliminary plans



RESILIENCY

- Highway 2 Overflow Bridges



October 23, 2019

Eastbound bridge under construction

RESILIENCY

- Highway 2 Overflow Bridges



December 2019

New levee tie-in completed; eastbound bridge nearing completion

RESILIENCY

- Highway 2 Overflow Bridges



December 2019

Eastbound bridge completed and open to traffic

RESILIENCY

- Highway 2 Overflow Bridges

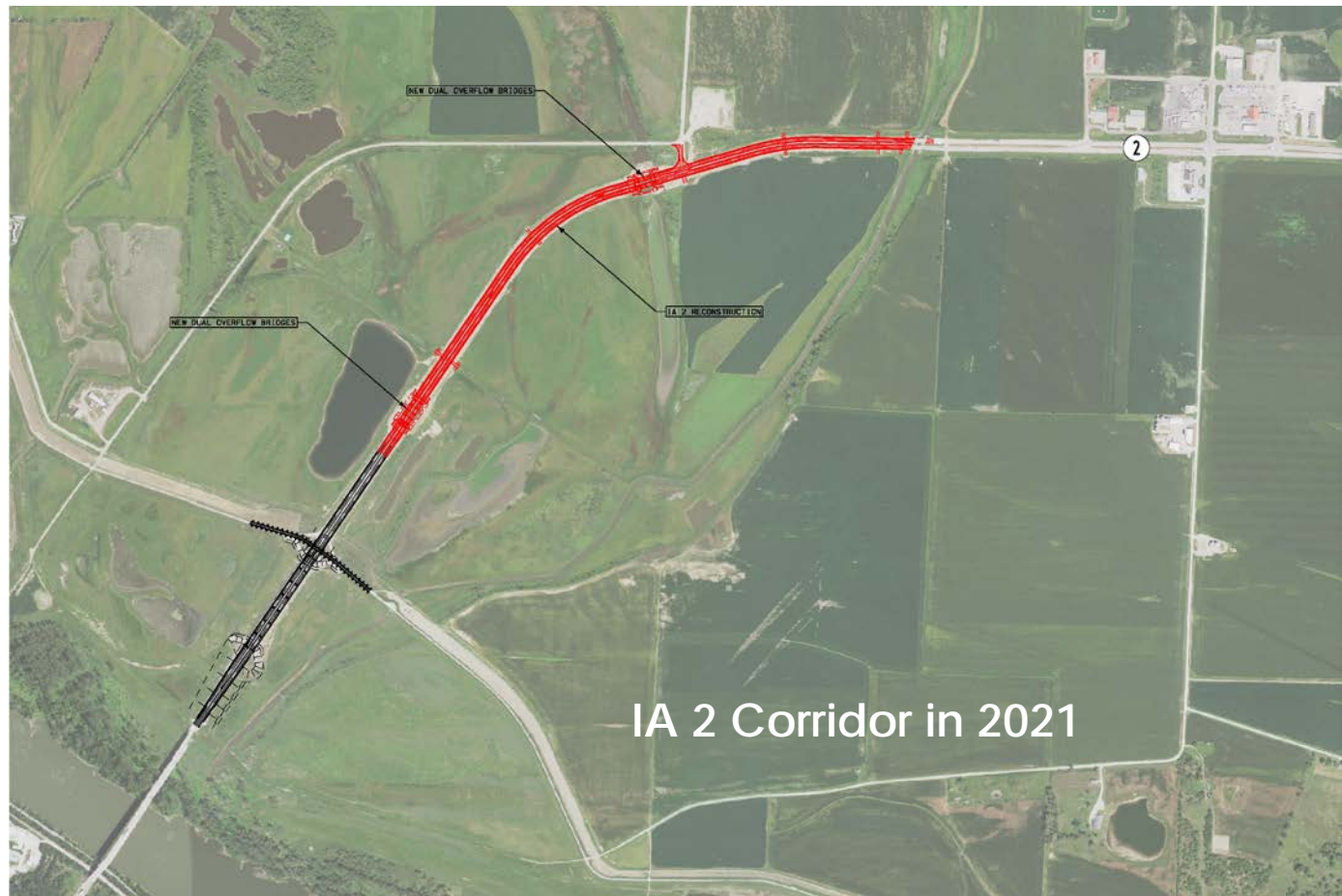


June 2020

Eastbound bridge completed; westbound bridge nearing completion.

RESILIENCY

- Highway 2 Overflow Bridges



RESILIENCY

- Highway 2 Overflow Bridges



RESILIENCY

- I-680 and I-29 Resiliency Projects



Flexi-Mat Rolls along foreslope

Asphalt overlays to raise vertical grade



FLOOD RECOVERY TEAM

- Iowa DOT
 - Project Delivery Division
 - Operations Division
- Consultant Team
 - HDR Engineering
 - HGM
 - FOTH
 - Western Engineering
- Contractors
 - Hawkins Construction
 - Henningsen Construction
 - Ames Construction
 - Reilly Construction
 - Cramer & Associates
 - PCI
 - C.J. Moyna & Sons Construction
 - Cedar Valley Corporation
- Support
 - Assoc. of General Contractors (AGC)
 - Asphalt Paving Assoc. of Iowa (APAI)
 - Iowa Concrete Paving Assoc. (ICPA)
 - U.S. Army Corps of Engineers (USACE)
 - Federal Highway Administration (FHWA)
 - FEMA
 - BNSF Railroad
 - Iowa Department of Homeland Security & Emergency Management
 - Harrison/Pottawattamie/Mills/Fremont Counties (Engineering and Sheriff's Office)
 - Nebraska DOT
 - Missouri DOT
 - Iowa/Nebraska/Missouri State Patrols
 - Governor's Office

QUESTIONS?



Highway 2 Reconstruction

