Northwest District
Flooding & Recovery Update

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Statewide Planning Partner Meeting
Missouri Department of Transportation
January 23, 2020
Presentation Outline

- Setting the Stage
- The Flood
- Response
- Ongoing Recovery
- Economic Transportation Impact
- Later this year?
Setting the Stage
Lincoln’s temperatures dip to lowest in 25 years because of polar vortex

Grace Gorenflo  Feb. 1, 2019
Bomb Cyclone
RAINFALL

Last 12 months
Statewide Precipitation Ranks
October 2018–September 2019
Period: 1865–2019

Last 6 months
Statewide Precipitation Ranks
April–September 2019
Period: 1865–2019

Source: NOAA National Centers for Environmental Information
MONTHLY RUNOFF ABOVE SIOUX CITY, IA

2019 CALENDAR YEAR FORECAST – 61.0 MAF

- **Forecast**
- **Average**
- **Observed**

**MONTHS**

- Jan
- Feb
- Mar
- Apr
- May
- Jun
- Jul
- Aug
- Sep
- Oct
- Nov
- Dec

**MILLION ACRE FEET (MAF)**

- Jan: 0.5
- Feb: 0.5
- Mar: 11.5
- Apr: 8.0
- May: 9.0
- Jun: 6.0
- Jul: 8.0
- Aug: 4.0
- Sep: 3.0
- Oct: 2.1
- Nov: 0.5
- Dec: 0.5

21-Oct, 2.1 MAF
RUNOFF COMPONENTS

PLAINS SNOWPACK  MOUNTAIN SNOWPACK  RAINFALL

2019 FORECAST* = 61.0** MILLION ACRE FEET (MAF)

*OCTOBER 1 FORECAST – AVERAGE ANNUAL RUNOFF IS 25.3 MAF

The Flood
Timeline of Events

- **March 13**: Blizzard hits western Nebraska.
- **March 14-16**: Flooding first reported in eastern Nebraska.
- **March 17**: At the height of the flood, over 3,000 miles of roads closed.
- **March 17**: Full Flooding.
- **March 18**: Waters begin to recede.
- **March 18**: Inspections begin.
- **March 18**: Opened roadways to isolated communities like Fremont.
- **March 18**: Design and Repair Work Commences.
Missouri Major Highway Closures

- I-29 75 Days
- US136 (Brownville) 217 Days
- US159 (Rulo) 224 Days
- US59 (Atchison) 115 Days
- US65 (Waverly) 170 Days
- MO41 (Miami) 50 Days
Not the ‘Normal’ Flood
Route 136, Atchison County
Route B, Atchison County
Route 111, Holt County
ABUTMENT ROAD WAYS AND UNDERMINED BOTH ABUTMENTS AND INTERIOIR BENTS

US 159, Little Tarkio, Holt County
Routes 65 & 10, Carroll County
US 65, Carroll County
Response
Maintenance: First Line of Defense
I-29 Decision Making Process

- 2011 Experience
- Consulted with MSHP and Local Law Enforcement
- Collaboration with Iowa DOT
Ongoing Recovery
Northwest Missouri Recovery

- MoDOT Maintenance Repairs
- Contracted Repairs
NW Estimated Repair Costs

- Awarded Projects - $14,682,000
- Upcoming Projects – $19,110,000
- Operations Cost - $2,400,000
- Grand Total - $36,192,000
US 159, Holt County - Before
US 159, Holt County - After
Miles of shoulder damage along 136 & 159
Unknowns

- Matching Funds
- Economic Development Administration Grants
- FEMA
- FHWA resiliency
- Levee Setbacks
Building Resiliency
Economic Transportation Impact
I-29 Closure Costs – 75 Days

- Detour and Delay costs = $656,000 per day
- Total impact = $49,200,000 to drivers
US136 Closure Costs – 217 Days

- With Iowa 2 closed = $427,000 per day
- With Iowa 2 open = $137,000 per day
Other Modes Impacted

- Rail - $40,500,000
- Air - $16,500,000
- Ports - $180,000,000
Later This Year?
Above average releases this winter to evacuate stored flood waters.

All designate flood storage will be available to start the 2020 runoff season.

Corps of Engineers is estimating 2020 to have been the 9th highest spring runoff in history.

Snowpack melt will likely be on very wet soils.

Many levees have not been repaired.
Don’t Drive Around Barricades!
Thank You!