Gladwin County May 2020 Flood

Dave Pettersch - Managing Director
Gladwin County Road Commission
Sunday, May 17, 2020
Forecast calls for 4-8” of rainfall county wide
# Precipitation Report 05/18/2020

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<th>LOCATION</th>
<th>AMOUNT</th>
<th>TIME/DATE</th>
<th>PROVIDER</th>
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Tittabawassee River

- Starts in southern Roscommon/Ogemaw Counties, northern Gladwin County
- Runs north to south throughout Gladwin County
- Three dams: Secord, Smallwood, and Edenville (Wixom Lake)

- Rainfall hit hardest at the far northern edge of Gladwin County, into neighboring counties
- Monday, May 18: Our calls began in the northern townships
- Tuesday, May 19 - 6:00 PM: Dam burst in Edenville (on our southern border)
Jones Road
(Billings Twp)
M-30 at Wixom Lake
Storm Response

• Initial response proved futile – TOO MUCH WATER!

• We focused on getting stranded people out, especially in low-lying areas below the dams

• Hardest part of our response: very little you can do while the water is still flowing

• When the dam failed, the water went down and the work began
Challenges Begin

• When the water went down, it pulled the sediment from the lake bed and scoured the bridges
  • Highwood Road – severely compromised
  • Etsey Road – extremely compromised
  • Edenville M-30 – completely gone
  • Da;e Road – scoured and compromised

• All primary roads in the river area were also compromised

• Mobility was now SEVERELY compromised!!!!!
Next Challenge – PEOPLE

• All mobility east to west in our county and those counties to the south was cut off

• People could not get in or out; however, people from all over rushed to the area

• Homeowners, gawkers, volunteers, sightseers, first respondents, residents, etc.

• During a pandemic, it seemed like our county gained 50,000 residents and our roads were in disarray
Asset Management

- We mapped our closures and assigned priority
- We needed to establish mobility for the highest number of people
- We selected roads to work on first based on emergency (trapped) and traffic count
- We had to get those trapped or in need of emergency services first, then establish mobility for the highest number of individuals that we could with each repair
- In several cases, this meant repairing local roads first to keep traffic moving around the area before dropping back to primary roads with longer repair timelines
May 18-20, 2020
Storm

Tittabawassee/Saginaw River Watershed

Area of Heaviest Rainfall

White star represents city of Midland
NOTE: Heaviest rain amounts in vicinity of Midland

5 Day Accumulated Mean Areal Precipitation
For the Period Ending 05/20/2020 12 UTC
May 19, 2020

Edenville Dam / Wixom Lake
Sanford Dam / Sanford Lake

May 19, 2020
May 19-20, 2020

Road Closures
Aftermath
Lots of photos and video
Review ALL roads, bridges, culverts for damage
Detailed measurements
Keep records of all time & expenses
REPAIR FUNDING

- FHWA
- FEMA
- USDA (multiple sources)
- State Emergency Funds
- Begging
Post-flood
REPAIR WORK
Curtis Road
Post-flood

REPAIR WORK

Curtis Road
Post-flood REPAIR WORK

Curtis Road
Post-flood REPAIR WORK

Curtis Road
Post-flood REPAIR WORK

Poseyville Road
Post-flood
REPAIR WORK
Poseyville Road
Post-flood

REPAIR WORK

To Be Continued...
Mid-Michigan Flooding Emergency Response

Kimberly Zimmer, P.E.

MDOT: Bay Region
Associate Region Engineer - Operations
Flood on the Tittabawassee River at US-10 was between the 0.5% (200-year) and 0.2% (500-year) return frequencies.

Flooding in Midland, Gladwin, Arenac, Saginaw, and Iosco counties

On May 19, the Edenville Dam holding over 21 billion gallons of water at Wixom Lake failed. This water travelled down the Tittabawassee River to Sanford Lake where it subsequently overwhelmed the Sanford Dam and caused the release of an additional 4.5 billion gallons of water.

Presidential and Governor’s Declaration of Emergency

Largest Emergency Relief Event in Michigan

No fatalities
Response Activities during the Event

- County and State Level Emergency Operations Centers Activated
- Collaboration between Federal, State and Local Governments
- Continuous Communication:
  - Cell Phones/Devices
  - Text Messaging
  - Social Media
  - Websites
  - Online Meetings
  - Emails
  - GIS
- Road/Bridge Closures
- Evacuations
  - COVID Precautions

Image Courtesy: MDOT Safety & Security
Gladwin County Closures

May 2020 Flood Damage
Gladwin County

Road Closures

Data submitted 5/11/2020
Saginaw County Closures

May 2020 Flood Damage
Saginaw County
Response Activities during the Event
Mobility Impacts
Virtual Site Damage Assessments

- FHWA Travel Restrictions
- Innovative field assessments:
  - Facetime
  - Microsoft Teams
  - Emily
- Staff placed strategically for field reviews
- Recorded field meetings
- Live Q&A
Post Event: Site Damage Assessments

US-10 over Sanford Lake
Midland County

Photo credits: MDOT Photography Unit
Post Event: Site Damage Assessments

M-30 over Tittabawassee River
Midland County

Photo credits: MDOT Photography Unit
Post Event: Site Damage Assessments

M-30 over Tobacco River
Gladwin County

Photo credits: MDOT Photography Unit
Post Event: Site Damage Assessments

M-30 over Tobacco River, Gladwin County
Post Event: Site Damage Assessments

Saginaw Road – Village of Sanford
Midland County
Post Event: Site Damage Assessments

Curtis Road over Tittabawassee River Midland County

Photo credits: MDOT Photographic Unit
Post Event: Site Damage Assessments

- Estimated Repair Costs: $104M
- 117 DDIR’s (63 MDOT/54 Local) submitted to FHWA
- DDIR’s conducted by Spicer Group and Michael Baker, Inc.
Post Event: Restoring Mobility

- MDOT and local agencies needed help
- As-needed Program Manager Consultant (PMC) Contracts
  - AECOM and Fishbeck selected as prime consultants
  - Expedited contracting process through MDOT Contract Services Division (CSD) utilizing Task Orders from PMC Contracts
- 13 Task Orders issued to date, with more in process
- Unrealistic deadlines all while working remotely during a pandemic
Post Event: Restoring Mobility

- AECOM Team
  - Edenville Dam Mitigation and Design Assistance for EGLE
  - Hydraulic Analysis and Design of Scour Monitoring System at M-30 over Tobacco River (Causeway) Bridge
  - Curtis Road over Tittabawassee River – Midland County
  - Saginaw Road over Tittabawassee River Detailed Inspection – Village of Sanford
  - Scour Countermeasure Design in Gladwin and Midland Counties
Post Event: Restoring Mobility

- Fishbeck Team
  - M-30 over Tittabawassee River - Washout repairs and scour countermeasures
  - M-65 Culverts - Rehabilitation and Replacements at 10 locations
  - M-65 Bridges – Scour countermeasures at two structures
  - Saginaw Road – Road reconstruction and repair in the Village of Sanford
  - M-30 over Tobacco River - Roadway reconstruction and approach design
Post Event: Restoring Mobility

Rivard Family – Edenville Resident
US-10 over Sanford Lake

Photo credits: MDOT Photography Unit
US-10 over Sanford Lake

Photo credits: MDOT Photography Unit
US-10 over Sanford Lake

Photo credits: MDOT Photography Unit
M-30 over Tittabawassee River

Photo credits: MDOT Photography Unit
M-30 over Tittabawassee River

Photo credits: MDOT Photography Unit
M-30 over Tittabawassee River

Photo credits: MDOT Photography Unit
M-30 over Tobacco River (Causeway Bridge)

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M-30 over Tobacco River (Causeway Bridge)

Photo credits: MDOT Photography Unit
Status/Progress Update:

- Estimated Repair Costs: Approximately $104M
- 117 DDIR’s (63 MDOT/54 Local)
- Consultant Contracts
  - DDIR’s
  - Design Services
- Emergency/Expedited Contracts:
  - US-10 over Sanford Lake (2 contracts)
  - Debris Removal at M-30 bridges
  - M-30 over Tittabawassee River (Repairs)
  - M-65 Detour Route
  - US-23 over AuGres River
  - Saginaw Road - Village of Sanford
  - Curtis Road – Midland County
  - M-30 over Tobacco River - Temporary Bridge
- Ongoing meetings with EGLE, FLTF
Teamwork

- Director Ajegba
- Bob Ranck
- Matt Chynoweth
- Gregg Brunner
- Eileen Phifer
- Connie Vallier
- Kimberly Zimmer
- Kim Hill
- Paul Schiefer
- Adam Walsh
- Jason Garza
- Bill Mayhew
- Shaun Bates
- Cory Isola
- Jocelyn Hall
- Bruce Kadzban
- Erik Carlson
- Brian Ulman
- Carol Rademacher
- Dick Endres
- Ryan Snook
- Heather Stinson
- Joe Thick
- Derek Weichlein
- Karl Brandys
- Laura Dotson
- Kathleen Gleeson
- Jim Shell
- Mike Loynes
- Jessica Kennett
- Tim Anderson
- Andy Philp
- Brian Stark
- Teresa Vanis
- MDOT Reach All Crew

- Don Matula
- Jack Hofweber
- Clint Mayoral
- Brad Wagner
- Jessica Lee
- Jeff Cranson
- Adam Rivard
- Matt Beatty
- Albert Bekmanis
- Janice Harris
- Jeff Triezenberg
- Eve Fischer
- Brian Atkinson
- Brent Brooks
- FHWA
- EGLE
- County Road Commissions

- Consultants
  - Kamran Qadeer
  - Jim Stankiewicz
  - Chris Sikkema
  - Raja Jildeh
  - Troy Naperala
  - Mukund Patel
  - Paul Perri
  - John Kelley
  - Doug Parmerlee
  - Mike Niederquell
  - Rich Kathrens
  - Jeff Bartlett
  - Cheryl Gregory
  - Michael Vought
  - Casey Collings
  - Jon Zaremski

- Consultants
  - Vik Gautam
  - Rich Kathrens
  - Mike Mitchell
  - David Murphy
  - Vanessa Martin
  - Brittany Bouche
  - Matt Seitz
  - Jason Sadowski
  - Bea Hunt
  - Bea Hunt
  - Ryan Edison
  - Sal Todaro
  - Aaron Humphrey
  - Andy Trojanowski
  - Ethan Carpenter
  - Tim Platz
Emergency Response
Reflecting on the response to event:

- Limited Resources:
  - Staff
  - Traffic Control Devices
  - Routes
- Use of Technology for Communications and Public Engagement
- Understanding Emergency Relief Process
- Use of Emergency Contracting Procedures
- Relationships & Communication
  - MDOT
  - Federal, State, Local Governments
  - Emergency Responders & Emergency Operation Centers
  - 911 Central Dispatch
- Resilient & Reactive Staff
The Human Element

“To have that kind of quick action is really meaningful for communities that have quite literally been to hell and back.”
-Michael Hayes: State Transportation Commission Vice Chair

“The reopening made possible thanks to swift work by the Michigan Department of Transportation and the Midland County Road Commission.”
– Craig Gosen: Edenville Twp. Supervisor