Disasters have **Challenges**

- Multiple units & areas need assistance
- Information is variable, unreliable, and piecemeal
- Poor field conditions hamper assessment
- Staff are cutoff from power, internet, offices, & equipment
- Access and compatibility of other’s data is limited
- Decisions must be made and documented
MSAR has Solutions

- Collect site damage information faster
- Consolidated data to make disaster related decisions
- Power and internet issues don’t affect response
- The office knows what the field crews know
- Data is standardized and easily accessed
- Everybody working off the same data
- Dates, information, and approvals are tracked
- Clarity of information leads to faster recovery
MSAR - Overview

The Federal Highway Administration Emergency Relief (ER) and Federal Lands Highways Emergency Relief for Federal Owned Roads (ERFO) programs are using the Mobile Solution for Assessment and Reporting (MSAR) software to streamline the data capture, approvals, and reporting of damages to transportation infrastructure.

The MSAR was developed by the FHWA to provide the following benefits:

- Reduce disaster management response time
- Improve situational awareness and oversight
- Increase data integrity and transparency
- Increase efficiencies and reduce costs
Why Do You need MSAR?

- Disasters such as hurricanes, flooding, landslides, tornados, and fires cause damage to transportation infrastructure
- Owner and a maintenance agencies must respond
- Must assess: What, where, how much damage?
- Apply for state & federal emergency funding & disaster declarations
- Document conditions before repairs
- Document emergency repairs for reimbursement
- Plan and estimate permanent repairs needed

MSAR gives you the tools and data to respond to disaster effectively!
MSAR - What it is

• 2 part software system– Mobile App & Web portal
• Supports variety of users including BIA, Tribes, OTT, State, and County
• Free to ERFO users

Mobile App
• Free App, secure login
• Collects the damage data in the field using smartphones or tablets
• Works online or offline
• Data includes asset, damage, GIS, photos, repair scope, and costs
• Uploads data to Web portal
MSAR - What it is

• Web Portal
  • Provides overall disaster event tracking and data management
  • View and Edit field reports
  • Submit and track for approvals
  • Real-time monitoring and reporting of the disaster
  • Customized dashboards, views, and lists
MSAR Technology

- Utilizes commonly available hardware – smartphones & tablets
- Android and IOS mobile device software platforms
- Incorporates GIS/mapping into app
- Includes high quality in-app photos
- Uses modern screen interaction methods (digital keyboards, drop downs, touch scrolling, voice to text)
- Allows a variety of file attachments
- Provides data fields for linkages to other systems
- Highly secure for all users, PIV compatible for FHWA
- Cloud based, redundant storage
- Seamless upgrades and maintenance
- Allows remote setup & support
- Flexible workflow and roles for partners
FAQs

• What equipment do I need?
  • Most phones or tablets that are iOS or Android work with MSAR. GIS enabled tablets and phones are preferred but not required.

• What If I do not have a Tablet or Smartphone?
  • Talk with your ERFO coordinator about possible data collection options. Data can also be collected on paper and input into the web portal from a desktop computer.

• How do I get a user account and get started with MSAR?
  • Contact your ERFO Coordinator with who needs MSAR access and they will get the user account set up.

• I have never used MSAR, will someone help me learn it?
  • Yes! FHWA offers training webinars, user guides, and in person OTJ training. Many users are able to use the app without a specific training session.

• How much does MSAR cost to use?
  • MSAR App is free to download. The access to the software for ERFO events is free.
ERFO Process Using MSAR

Disaster Event Occurs:

- Tribe notifies BIA of possible disaster
- BIA notifies FHWA of possible disaster
- FHWA creates the event data in MSAR web portal
- BIA/ TRIBE/ OTT complete damage assessment with MSAR App and upload draft site damage reports
- If Positive Finding: Users finish damage Reports (DDIRs) in MSAR Portal
- DDIR Review/Approval in MSAR
  - Tribe / BIA field staff submits
  - BIA ERFO Coordinator reviews and approve
  - FHWA ERFO Coordinator reviews and approve
- BIA/FHWA outputs Program of Projects from MSAR Portal
- Users generate reports and utilize dashboards to support Event and site decisions
MSAR - Work Flow

Mobile Workforce (BIA/Tribe)

Capture and submit report data in real-time via smartphone or tablet

Site data, GPS data, and Pictures are uploaded to the Web portal on Salesforce.com

Draft reports and data immediately accessible from any internet-connected computer or device for Partner & FHWA use
Current Tribe related MSAR Use

- Gradual Implementation started in 2016
- Used by BIA, Tribes, OTT, and A&Es
- Use ranges from minimal interaction with MSAR to detailed interaction, full system use
- 32 ERFO BIA events in MSAR
  - 20 events since 2016
  - Historical events still being added
  - 9 BIA Regions in MSAR

Oglala Sioux Tribe SD2019-1-BIA
MSAR Mandatory Use for ERFO

What:
- Effective October 1, 2021
- MSAR use required
- ERFO System of Record
- All events, sites, approvals, and funding
- Repository for official correspondence
- Includes all events 2016 to Present, & future

How:
- Existing data and users moved forward
- Info Presentations
  - FHWA OTT Webinar May 19
- Targeted Training
- FAQs, guides, topic sheets
- Increased Licenses
- Input of Historical items
- Custom list views and pre-made reports
- Adding users as identified
- Financial Module in development
MSAR Software Update

- Technology has advanced
- Program/ use evolved
- Demand increased
- Feature requests
- Looking forward

MSAR Software Update  May 2021

- Updated system platform and interface
- New data fields
  - Program Mgmt.
  - Reporting
- Added GIS features
  - Multiple points per site
- Improved Cost Tools
  - Import estimates
- Improved copying/ moving/ editing
- Expanded licenses for more users
- Program standardization
MSAR - Mobile App

Default Information
- Event: 2010 UT NPS Aug
- Applicant Agency: U.S. Fish and Wildlife
- State: Arkansas (6)
- County: Select

Saved Reports
There are 0 reports on this device.

Photos
Click on the Camera button to take a photo or click on the Browse button to upload photo(s) from your device. The thumbnails will be added to the section below.

Permanent Restoration
- ADD REPAIR
- Description: Embankment
- Cost: $3,307.50

Total Estimated Permanent Repairs: $3,307.50

Scope of Work:
Remove and replace with concrete box culvert (5' x 5') meeting design standards. Restore subgrade, base and replace the paved travel surface to open to traffic. Provide traffic control for detour. Seed and mulch disturbed area.

Description and Cause of Damage:
Flood waters with debris clogged culverts and overtopped the roadway. Two 24' culverts were washed out.

Comments:
Culvert was replaced in 2017 event.

Permanent Restoration Details
- Embankment
- Cost: $3,307.50

MSAR - New ERFO DDIR
- Permanent Restoration
- ADD REPAIR
- Event Name: 2020 NC BIA February Flooding
- Record Type: ERFO DDIR
- Applicant Agency: Bureau of Indian Affairs
- Report #: Iore2021-5-19_540.39Z
- Sub-Applicant: Minot Field Office
- Region/District: Southwestern
- Status: Draft
- Report Name:

Cost: $3,307.50
- Special: 0
- Cost: 245

MSAR - New ERFO DDIR
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- ADD REPAIR
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- Report #: Iore2021-5-19_540.39Z
- Sub-Applicant: Minot Field Office
- Region/District: Southwestern
- Status: Draft
- Report Name:
MSAR - Web Portal
MSAR - Web Portal Reports and Dashboards
MSAR - New Feature Highlights

Add multiple locations to a DDIR

• Set a secondary GPS location
• Take a picture
• Caption it!

Photos

Click on the Camera button to take a photo or click on the Browse button to upload photo(s) from your device. The thumbnails will be added to the section below. If you want to tag a photo with a different secondary location, update the Secondary Location by using the GPS buttons before using the Camera button. Update location as needed for further photos.

Secondary Location for Photos

Launch Map

Use Device Coords

Latitude: Good 39.69222729098023
Longitude: Good -105.13480802076415

Camera Browse

Close Save Delete

Map Satellite

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<tr>
<th>Name</th>
<th>Coordinate Type</th>
<th>Description</th>
<th>Latitude</th>
<th>Longitude</th>
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<td>38.245</td>
<td>-111.476</td>
</tr>
</tbody>
</table>
MSAR - New Feature Highlights

Cost Estimate Items

- Pay item code field
- Import cost estimates tool
- Easier adding & editing
MSAR Benefits

- Cost and time savings to FLMA/ TRIBE and FHWA
- Improved efficiency in ERFO project delivery (timelier submission of assessment and approvals)
- Electronic file management and approval process Transparency for the event to HQ, Division, BIA, Tribe, and OTT
- Consistency in reporting eligible projects
- Ease of monitoring and managing multiple ERFO events
MSAR Benefits

• Combined data for multiple programs and jurisdictions
• Easy access, availability, and transparency for Audits
• Use one device with one software for all sites
• Assists in workload management with document statusing and customized routing of approvals
• Automatic notifications and real time data updates
• Data is easily queried and exported for other use by other systems
MSAR - More than just disasters

- FHWA Order 5182.1 – Emergency Relief Program Responsibilities
  - Strengthens administration and oversight
  - Addresses external and internal concerns (lack of control, tardiness, inconsistency, eligibility determination, etc.)

- EDC-3, e-Construction Initiative
  - Creates a paperless, more efficient process for the ER Program for both the State DOT, Federal Partners, and FHWA

- Executive Order 13653 - Preparing the United States for the Impacts of Climate Change (Resiliency)
  - Identify sites damage of previous disasters to be considered as related to climate change and extreme weather events for risk, preparedness, and resilience

- FHWA Order 5520 - Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events
  - Provides data and documents consideration and adaptation of repairs in the ER program to accommodate preparedness and resilience
WY2017-1-BIA Disaster Highlight

Wind River Reservation

- Unusual Natural Event – June 2017 Storm and Flooding
- NOI, August 30, 2017
- Assessment & DSR writing – Sept 2017
- Positive Finding, 10/13/2017
- MSAR Accounts set up for BIA users
- DSRs written on paper by BIA/tribe, entered by BIA into web portal
- MSAR used for approval process & DSR updates
- POP of $1.9 million
- Work Delivered by Tribe
AK2021-3-BIA Disaster Highlight

Chilkoot Tribal Association

- Rain on Snow Event – Flooding Dec. 2-8, 2020
- NOI, January 15, 2021
- Positive Finding, March 17, 2021
- MSAR Accounts set up for BIA & Tribe users
- MSAR DDIR training for App & Portal
- DDIR Field Collection - May 24-27, 2021
- Initial estimates of $9.5 million
Chilkoot Tribal Association
AK2019-1-BIA Disaster Highlight

Organized Village of Kasaan

- Catastrophic Event – Landslide, Jan. 1, 2019
- NOI, January 10, 2019
- Disaster Assmnt. & DDIR field trip, Jan. 16, 2019
- Positive Finding, February 5, 2019
- Quick Release - $400,000, February 11, 2019
- MSAR Accounts set up for BIA users
- MSAR DDIR developed by WFLHD.
- Initial estimate of $2.2 million
- DDIR $794,000
Organized Village of Kasaan - Landslide
MSAR Key Takeaways

• MSAR is a FHWA software used successfully for 5 years on ERFO disasters
• MSAR use has proven benefits
• FHWA is requiring mandatory use of MSAR starting Oct 1, 2021
• MSAR recently had a major upgrade with new features
• MSAR is being used by a variety of Tribes and BIA offices
Questions?

ERFO Resources
https://highways.dot.gov/federal-lands/programs/erfo

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Thank You!