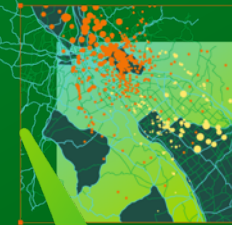




ArcGIS Solutions for Emergency Management

Scott Oppmann

2022 ESRI MIDWEST USER CONFERENCE



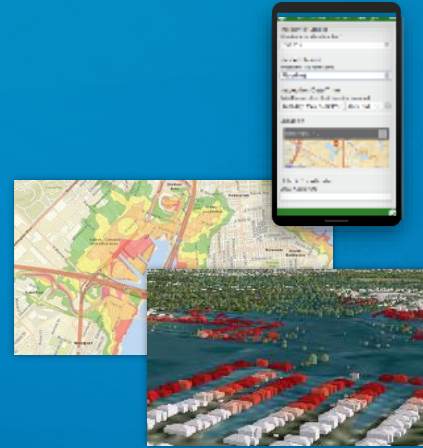
ArcGIS Solutions Ready-to-Use Apps for Specific Industries

Preconfigured

Tools
Data Models
Apps
Workflows
Maps
Initiatives
Add-Ins
Dashboards



Local & State Governments



Emergency Management & Public Safety



Health & Human Services



Utilities & Telecoms



Defense & Security

Industry Configurations

- Land Records
- Public Works
- Emergency Management
- Utilities / Network Management
- Planning and Development
- Natural Resources
- Transportation
- Defense
- Public Safety
- Telecommunications
- Conservation
- Elections
- Health / Human Services

- Extensive (150+)
- Easy to Deploy
- Fully Supported
- Included with ArcGIS

... Helping Users Quickly Realize Value

ArcGIS Solutions

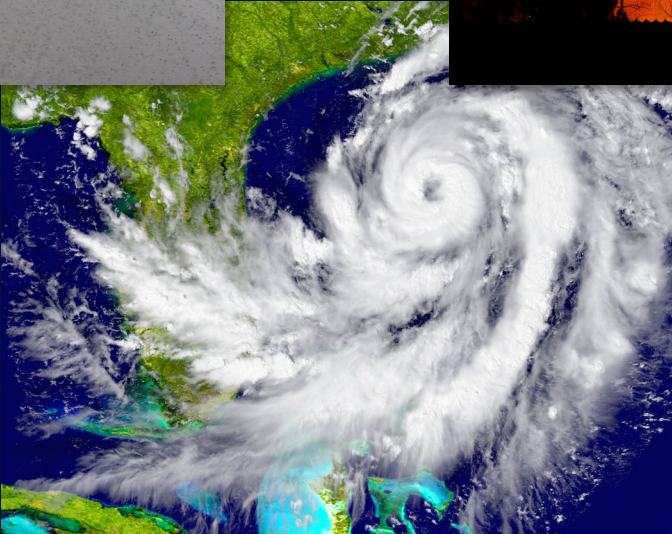
Mission

- Solve common business needs
 - Integrated workflows, focused maps and apps.....
- Drive implementation of ArcGIS
 - Roadmap for standard capabilities, improve service delivery, expand reach, innovation....
- Promote modern deployment patterns
 - Leverage new ArcGIS offerings, maximize available resources, focus on complex or unique problems....
- Provide feedback to core software development
- Work collaboratively with community
 - Best practices, industry tradecraft....



The New Reality

Cost, size and frequency of incidents increasing

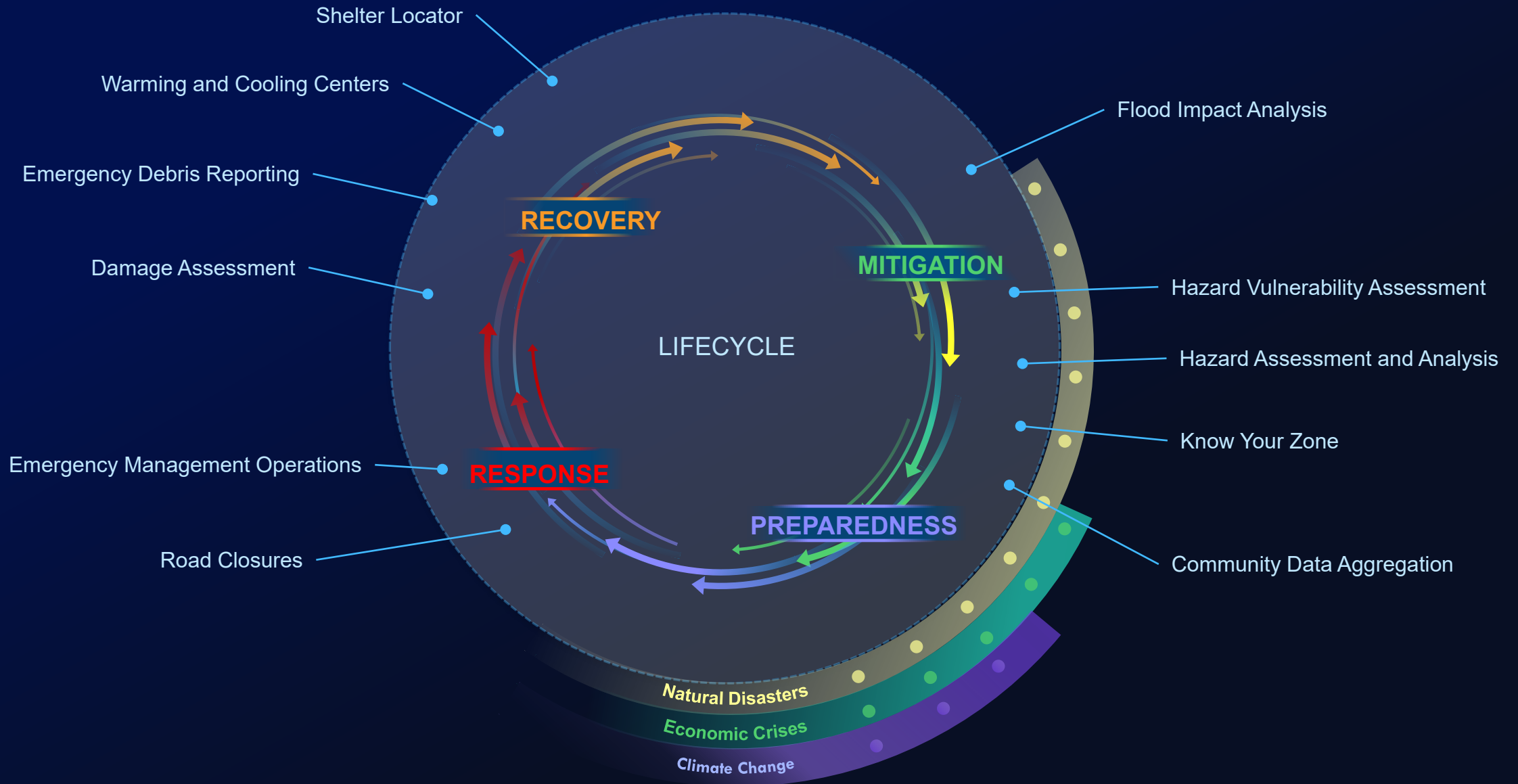


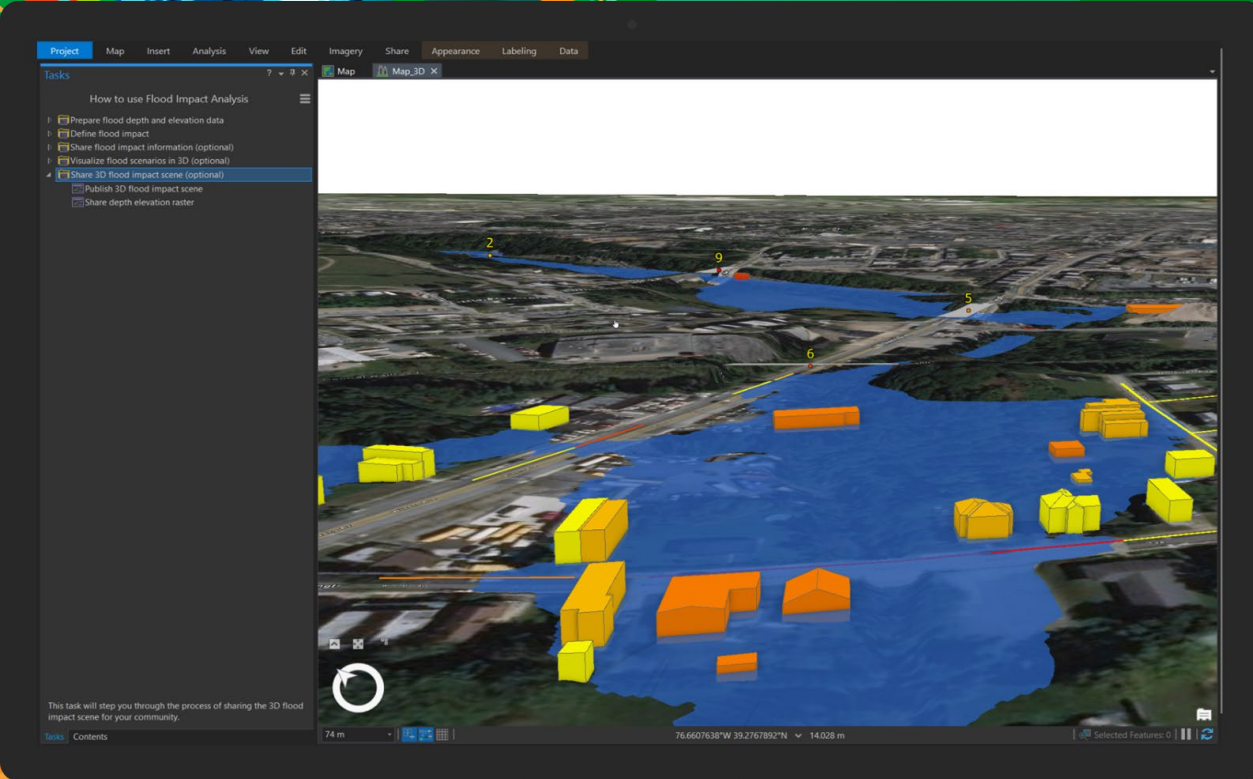
Common Challenges

- Constant state of preparedness
- What, when, who, and where
- Limited resources
- Being dynamic and real time operational briefs
- Effective recovery
- Clear communication with the public



Emergency Management





Show Me!

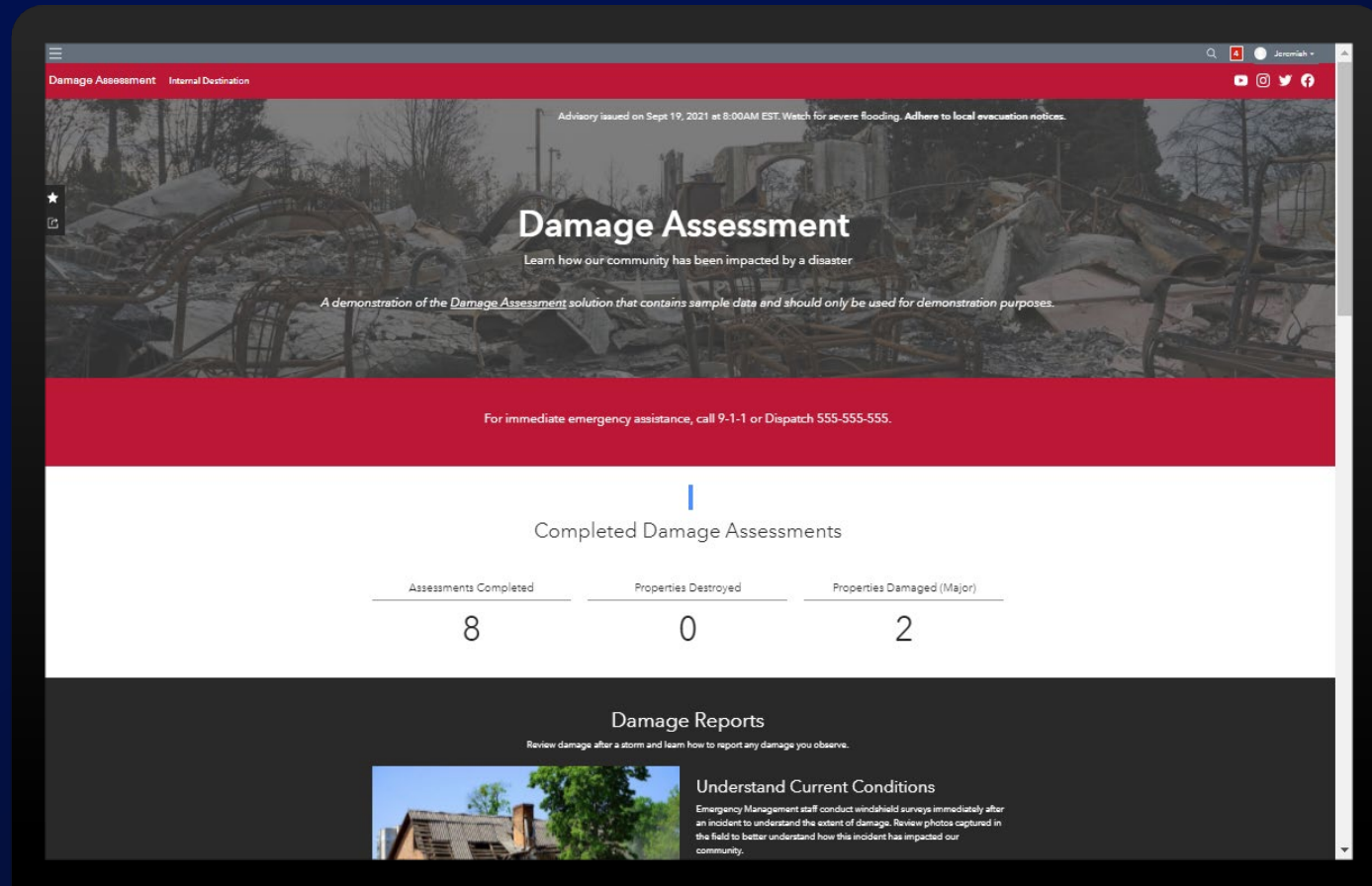
Emergency Management Operations



Damage Assessment

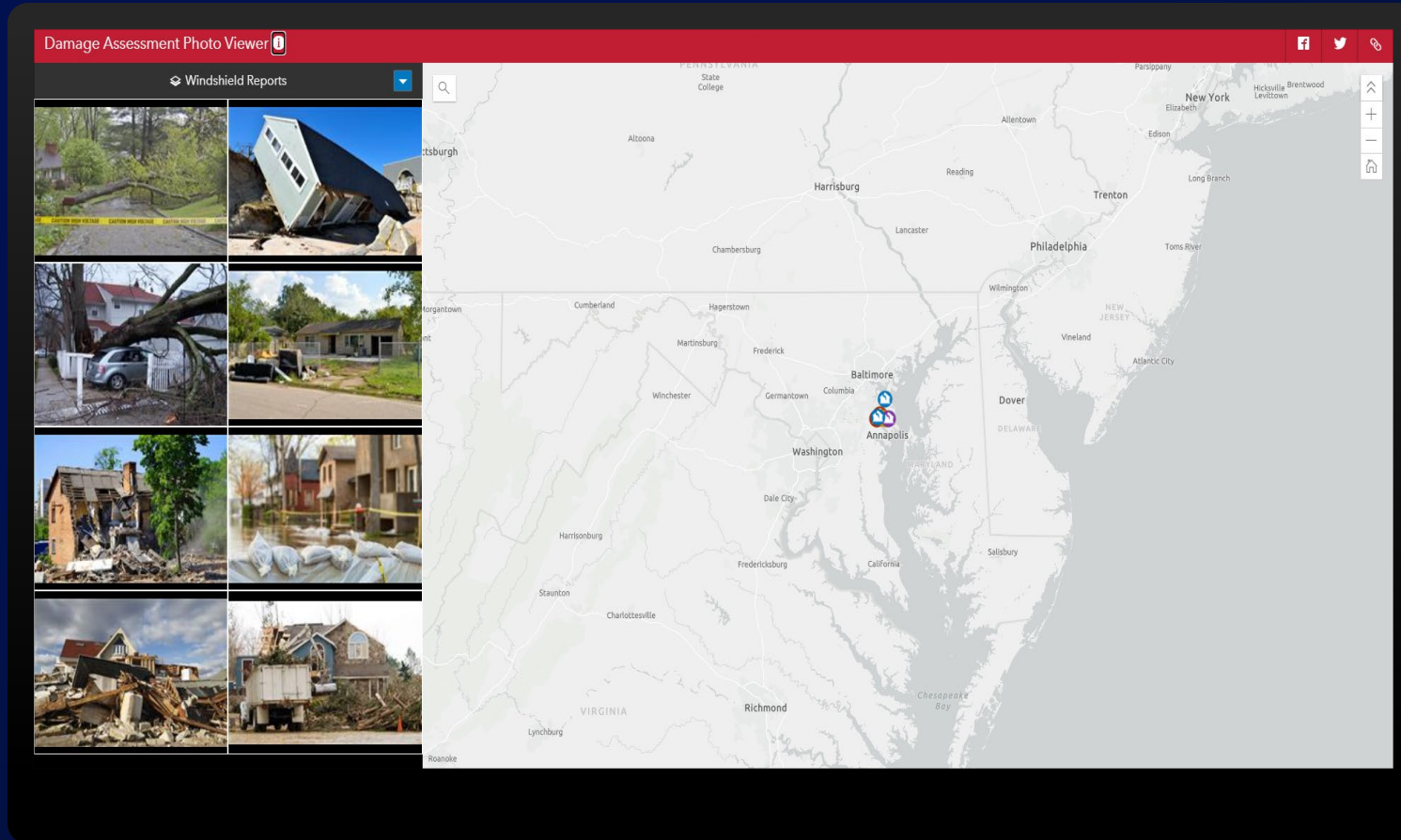
- Inform and engage the public
- Streamline damage assessments
- Improve collaboration with federal and state agencies

Inform and engage the public



An ArcGIS Hub site used by emergency management agencies to share damage assessment information with internal stakeholders and the public.

Inform and engage the public



An Attachment Viewer app used by emergency management staff and the public to view photos from windshield reports of damaged property.

Inform and engage the public

Public Damage Report

Location Information

The information you provide in this report will help local and state authorities understand locations impacted by disaster. This survey is not an application for or guarantee of assistance. This report is strictly for reporting damage or loss of personal property. Utility outages should still be reported to your local utility provider. If this is a life-threatening emergency, call 9-1-1.

Incident Name

Choose the incident that caused the damage:

Property Type

 Home Business Agriculture

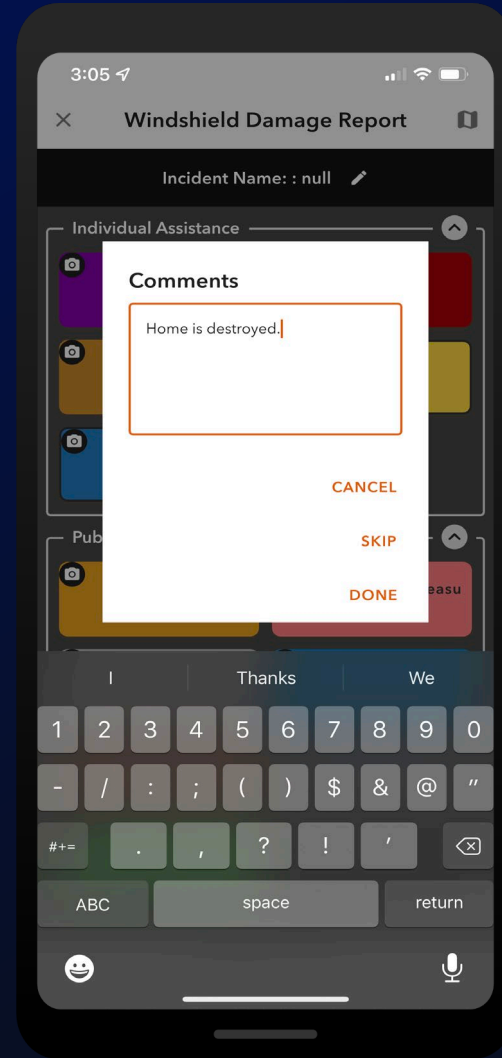
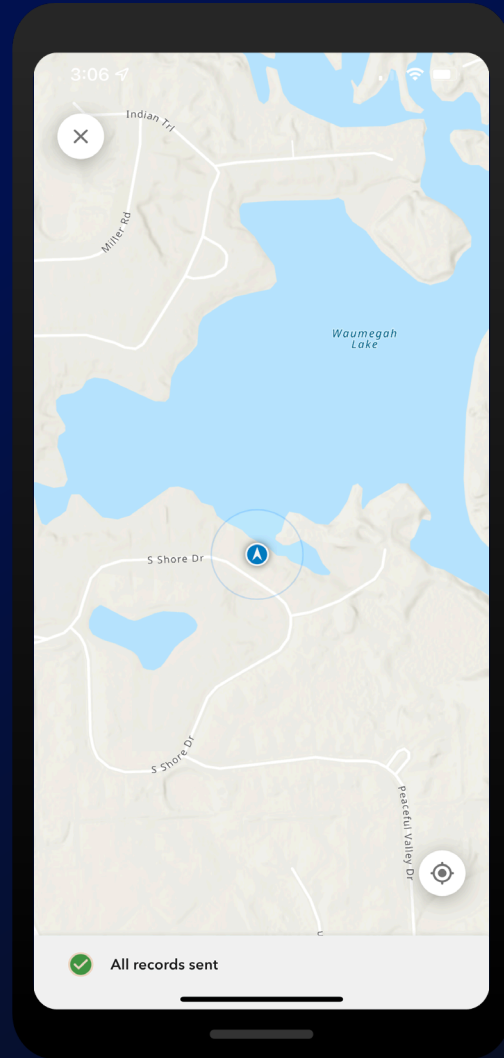
Property Location*

Search for an address or click on the map to specify location of the property. Make sure the pin is on the structure that was damaged.



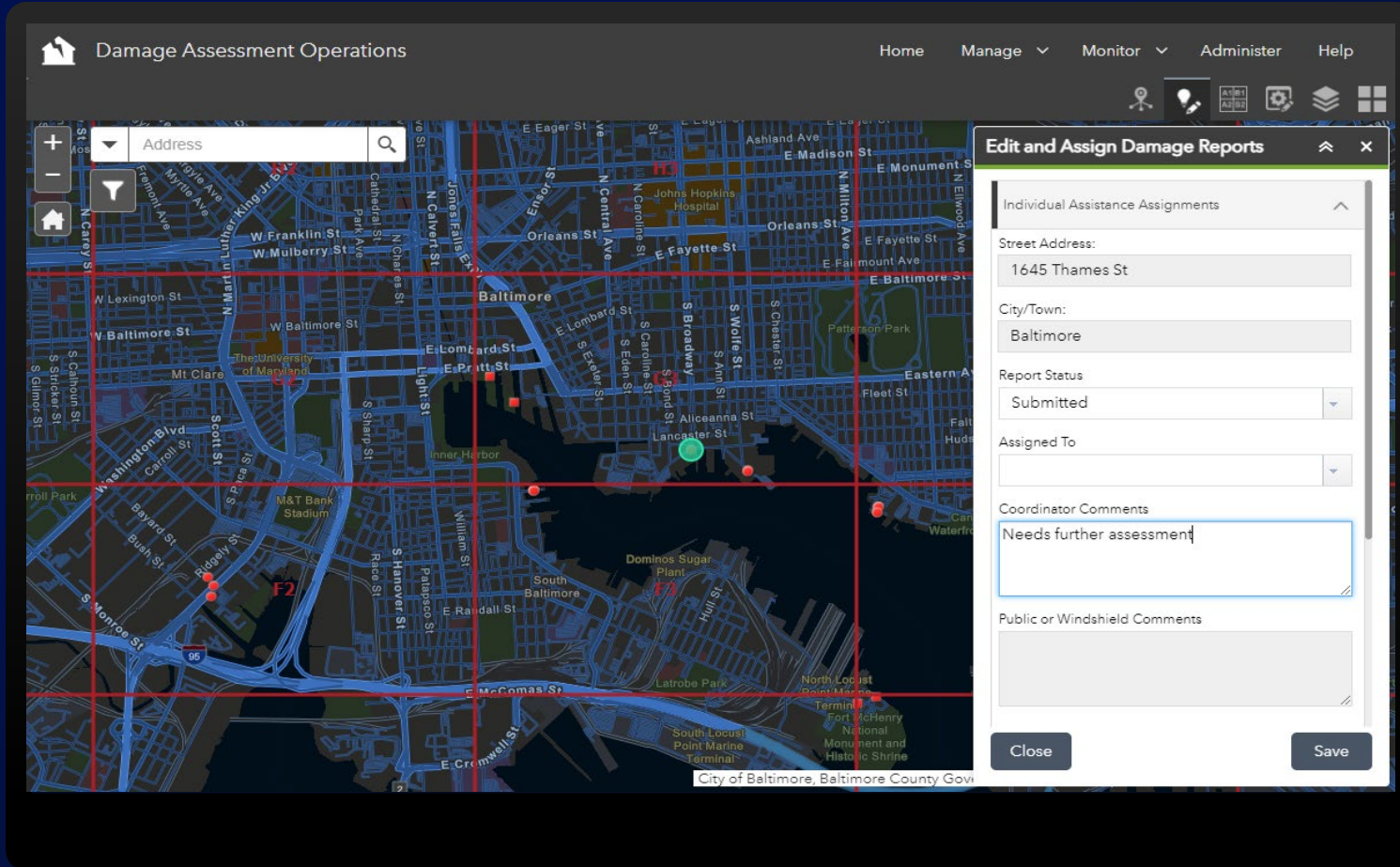
An ArcGIS Survey123 form used by the public to report damages to residences and businesses.

Streamline damage assessments



An ArcGIS QuickCapture project used by public safety or trained volunteers to rapidly capture damage reports.

Streamline damage assessments



An ArcGIS Experience Builder app used by emergency management staff to manage, monitor and administer damage assessments.

Streamline damage assessments

3:09

Individual Assistance Survey

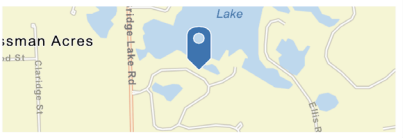
For questions on conducting damage assessments, refer to the:
[FEMA's Damage Assessment Operations Manual](#)

Individual Assistance Field Collection Survey

Incident Name/ID Number: *
Choose the incident Name or ID:
Incident 1

Incident Begin Date: *
Date

Coordinates of the damage: *
42°46'N 83°27'W ± 4.7 m



Location Information:
Street Address:
*Confirm address - New divisions may not reflect accurate location.

3:10

Individual Assistance Survey

Zipcode
Provide in Zipcode or Zipcode + 4 format

What event type caused the damage? *
(Select all that apply)

<input type="checkbox"/> Drought	<input type="checkbox"/> Earthquake	<input type="checkbox"/> Explosion
<input type="checkbox"/> Fire	<input type="checkbox"/> Flood	<input type="checkbox"/> Hurricane
<input type="checkbox"/> Landslide	<input type="checkbox"/> Mudslide	<input type="checkbox"/> Severe Storm
<input type="checkbox"/> Snowstorm	<input type="checkbox"/> Straight-Line Winds/ Derecho	<input type="checkbox"/> Terrorism
<input type="checkbox"/> Tidal Wave	<input type="checkbox"/> Tornado	<input type="checkbox"/> Tropical Depression
<input type="checkbox"/> Tropical Storm	<input type="checkbox"/> Tsunami	<input type="checkbox"/> Volcanic Eruption
<input type="checkbox"/> Winter Storm	<input type="checkbox"/> Other	

Are there any immediate needs?
 Yes
 No
 Unsure

Evaluation for Individual Assistance PDA

Owner or Renter? *
When no repair costs are expected select 'Renter'

3:15

Individual Assistance Survey

Date & Time of assessment: *
Wednesday, Septem... 3:09 PM

Provide photo(s) of the damage:

Photos

1 of 5

2 of 5

3 of 5

4 of 5

An ArcGIS Survey123 form used by field inspectors to conduct initial damage assessments for private properties.

Streamline damage assessments

3:16

Individual Assistance Express

For questions on conducting damage assessments, refer to the:
[FEMA's Damage Assessment Operations Manual](#)

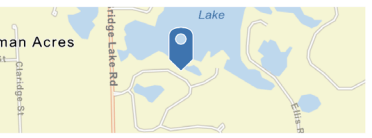
Individual Assistance Field Collection Survey (Express)

Incident Information

Incident Name/ID Number:
Choose the incident Name or ID:

Incident Begin Date: *

Area of the damage: *
Place a point that depicts the area central to the extent of damage



What event type caused the damage? *
(Select all that apply)

Drought Earthquake Explosion

Fire Flood Hurricane

Landslide Mudslide Severe Storm

Snowstorm Straight-Line Winds/Derecho Terrorism

Tidal Wave Tornado Tropical Depression

Tropical Storm Tsunami Volcanic Eruption

Winter Storm Other

Date & Time of assessment: *

Location Information:

City/Town:

State/Territory: *

3:16

Individual Assistance Express

Location Information:

City/Town:

State/Territory: *

County: *

Zipcode
Provide in Zipcode or Zipcode + 4 format

Structure(s) Information

Type of dwellings assessed *

Evaluation for Individual Assistance PDA (Express)


Counts by damage level:

Do you believe this dwelling or most of these dwellings are owned? *

Yes

3:16

Individual Assistance Express



What event type caused the damage? *
(Select all that apply)

Drought Earthquake Explosion

Fire Flood Hurricane

Landslide Mudslide Severe Storm

Snowstorm Straight-Line Winds/Derecho Terrorism

Tidal Wave Tornado Tropical Depression

Tropical Storm Tsunami Volcanic Eruption

Winter Storm Other

Date & Time of assessment: *

Location Information:

City/Town:

State/Territory: *

An ArcGIS Survey123 form used by field inspectors to assess damage that has impacted many structures in one location.

Streamline damage assessments

3:17

Public Assistance Survey

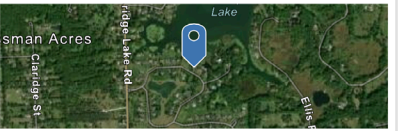
For questions on conducting damage assessments, refer to the: [FEMA's Damage Assessment Operations Manual](#)

Public Assistance Field Collection Survey

Incident Name/ID Number:
Choose the incident Name or ID:

Incident Begin Date: *
Date

Coordinates of the damage: *
42°46'N 83°27'W ± 4.8 m



Location Information:
Street Address:
*Confirm address - New divisions may not reflect accurate location.

3:17

Public Assistance Survey

Location Information:
Street Address:
*Confirm address - New divisions may not reflect accurate location.
8662 S Shore Dr

City/Town:
Clarkston

State/Territory: *
Reverse geocoding suggests the state is: **Michigan** (Scroll for additional choices)

County: *

Is this a tribal entity?
 Yes
 No

Zipcode
Provide in Zipcode or Zipcode + 4 format

What event type caused the damage? *
(Select all that apply)

3:17

Public Assistance Survey

What event type caused the damage? *
(Select all that apply)

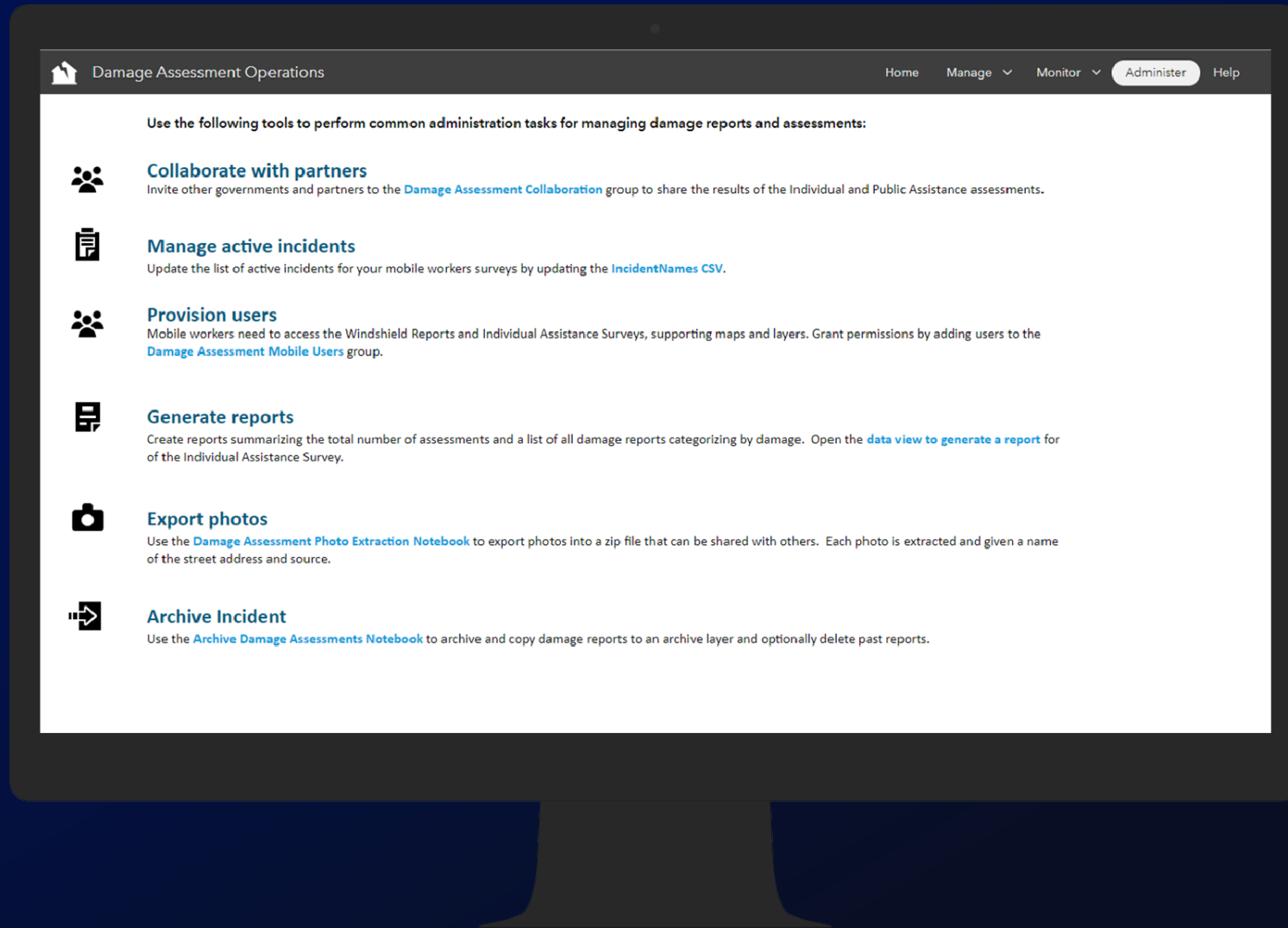
<input type="checkbox"/> Drought	<input type="checkbox"/> Earthquake	<input type="checkbox"/> Explosion
<input type="checkbox"/> Fire	<input type="checkbox"/> Flood	<input type="checkbox"/> Hurricane
<input type="checkbox"/> Landslide	<input type="checkbox"/> Mudslide	<input type="checkbox"/> Severe Storm
<input type="checkbox"/> Snowstorm	<input type="checkbox"/> Straight-Line Winds/Derecho	<input type="checkbox"/> Terrorism
<input type="checkbox"/> Tidal Wave	<input type="checkbox"/> Tornado	<input type="checkbox"/> Tropical Depression
<input type="checkbox"/> Tropical Storm	<input type="checkbox"/> Tsunami	<input type="checkbox"/> Volcanic Eruption
<input type="checkbox"/> Winter Storm	<input type="checkbox"/> Other	

Are there any immediate needs?
 Yes
 No
 Unsure

Public Assistance PDA
Potential Applicant Name: *
FIPS Number: (if known)

An ArcGIS Survey123 form used by field inspectors to conduct initial damage assessments for public-owned facilities.

Improve collaboration with federal and state agencies



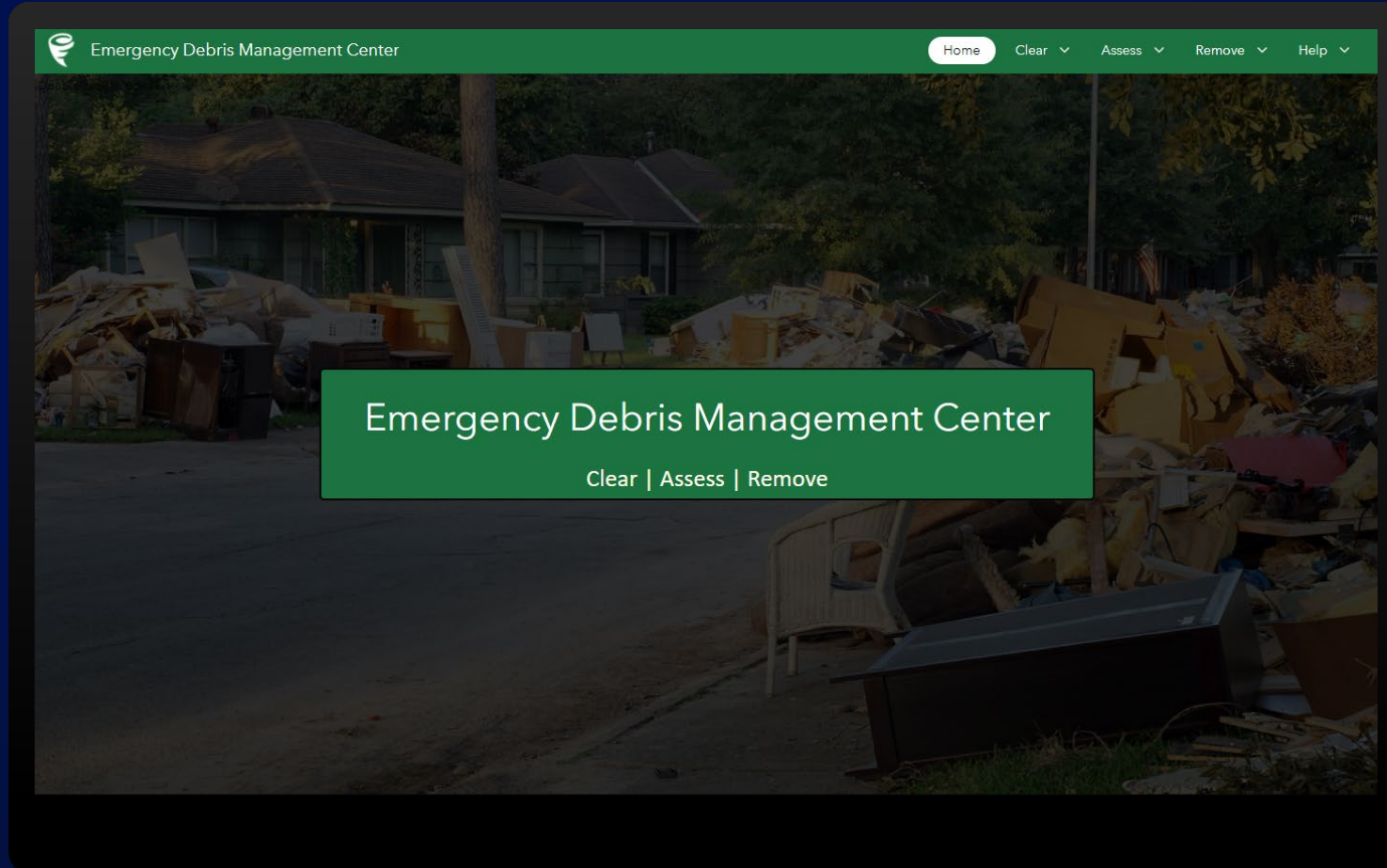
A series of ArcGIS Notebooks used by GIS professionals to archive damage assessment reports after an incident and extract every photo collected during the initial damage assessment.



Emergency Debris Management

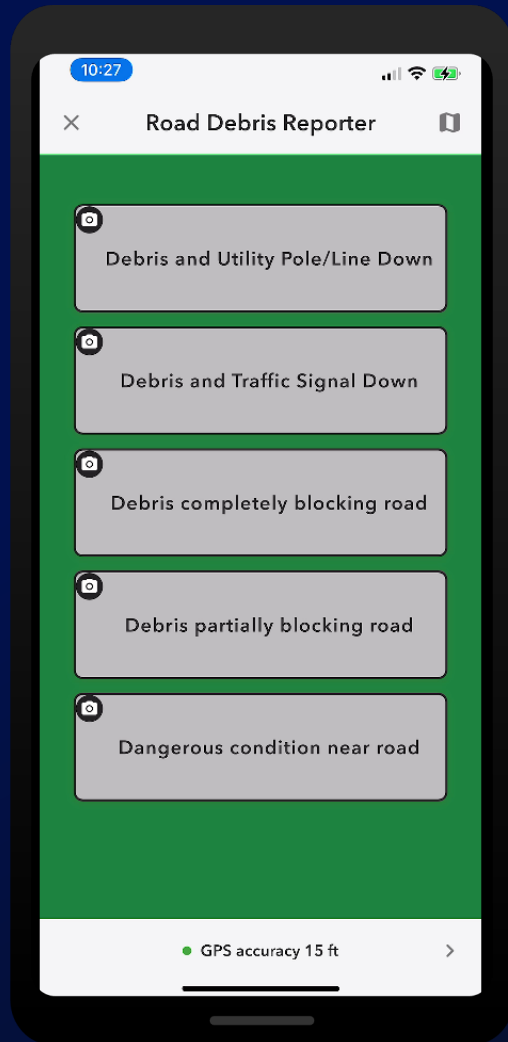
- Quickly clear road debris
- Efficiently assess the extent of debris
- Increase compliance with federal monitoring requirements during removal
- Inform the public

Quickly clear road debris



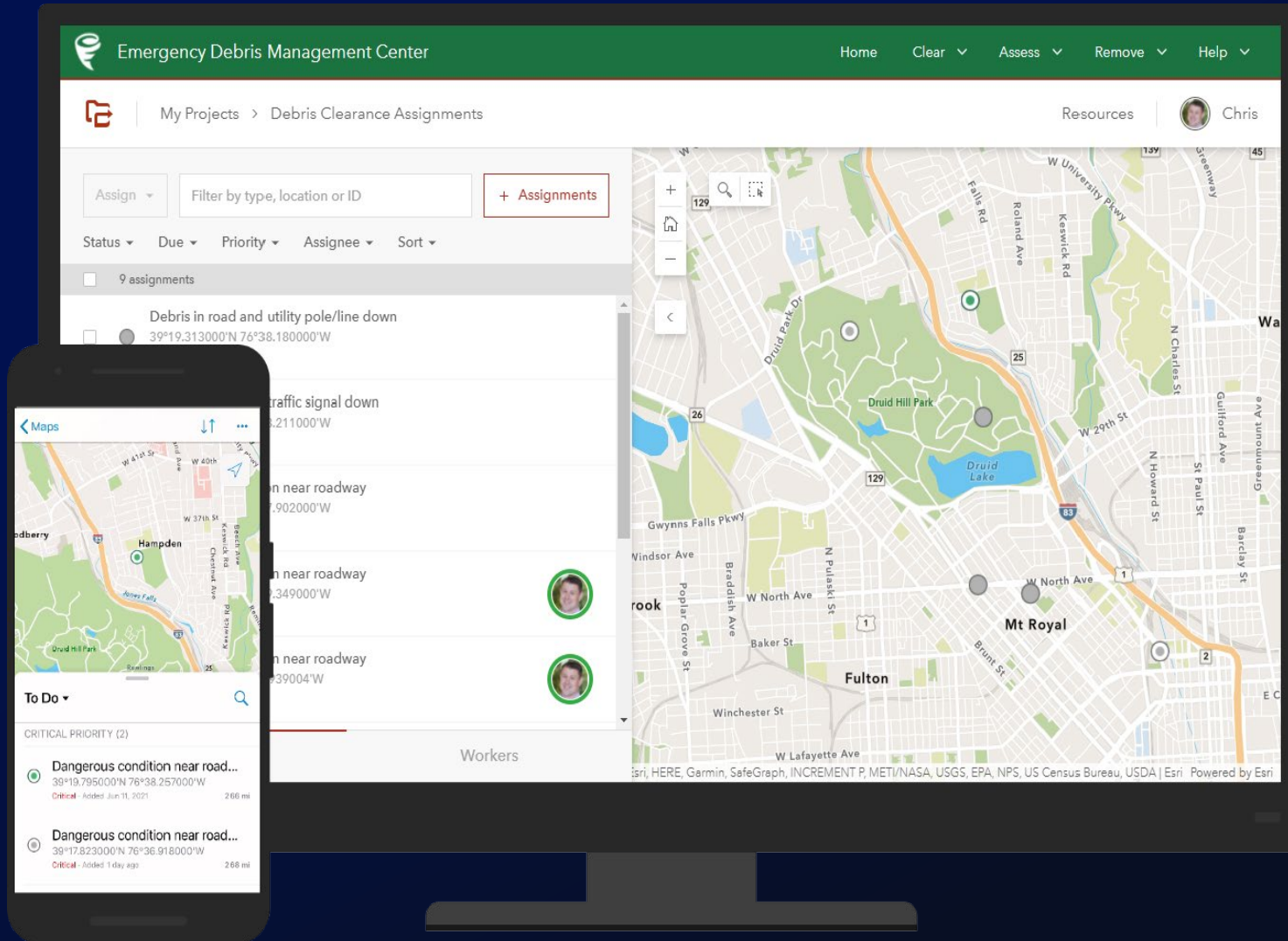
An ArcGIS Experience Builder app used by debris managers and operations leads to monitor progress and update status during the clearance, assessment, and removal phases of the debris management process.

Quickly clear road debris



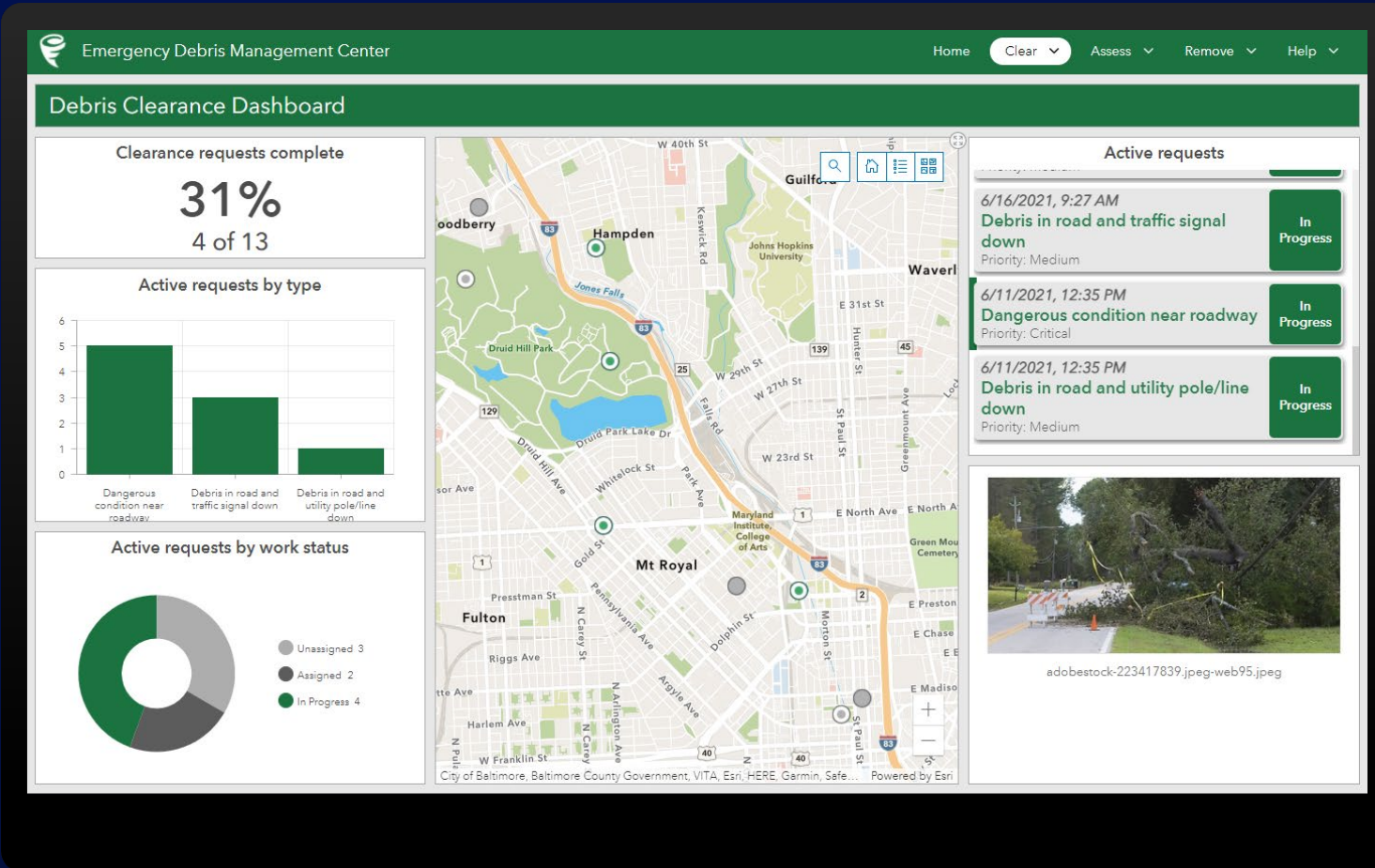
An ArcGIS QuickCapture project used by first responders during the first 72 hours of a disaster response to identify where debris is obstructing the roadway.

Quickly clear road debris



An ArcGIS Workforce project used by operations leads to manage road debris obstructions and clearance assignments.

Quickly clear road debris



An ArcGIS Experience Builder app used by debris managers and operations leads to monitor progress of clearance activities.

Efficiently assess the extent of debris

Emergency Debris Management Center

Home Clear Assess Remove Help

Manage assessment status

Manage assessment area status

Debris Areas

Area ID: 8

Area Name: Area 8

Assessment Status: Assessment Complete

Assessor Name: Maureen Craig

Assessor Email: mcraig@gov.gov

Assessor Phone: (555) 111-2222

Assessment Start Date: 6/16/2021

Assessment Current Status Date:

Close Save

An ArcGIS Experience Builder app used by debris managers to monitor the completion status of assessment activities by work zone and review individual assessments.

Efficiently assess the extent of debris

9:27

Debris Assessment Form

Use this form to document disaster debris piles in the public right of way.

Incident Name *

Flood 2021

Location *

39°18'N 76°37'W, 0 m

Address

36 Low St.

Status *

Assessed

Type *

Vegetative

Length (ft.)

Estimated volume field will autocalculate after populating the

9:25

Debris Assessment Form

Address

36 Low St.

Status *

Assessed

Type *

Vegetative

Length (ft.)

Estimated volume field will autocalculate after populating the length, width, and height fields

4

Width (ft.)

2

Height (ft.)

4

Est. Volume (cu. yd.) *

1.2

Est. Weight (lbs.)

9:23

Debris Assessment Form

Est. Volume (cu. yd.) *

1.2

Est. Weight (lbs.)

Additional Details

Special Equipment Required

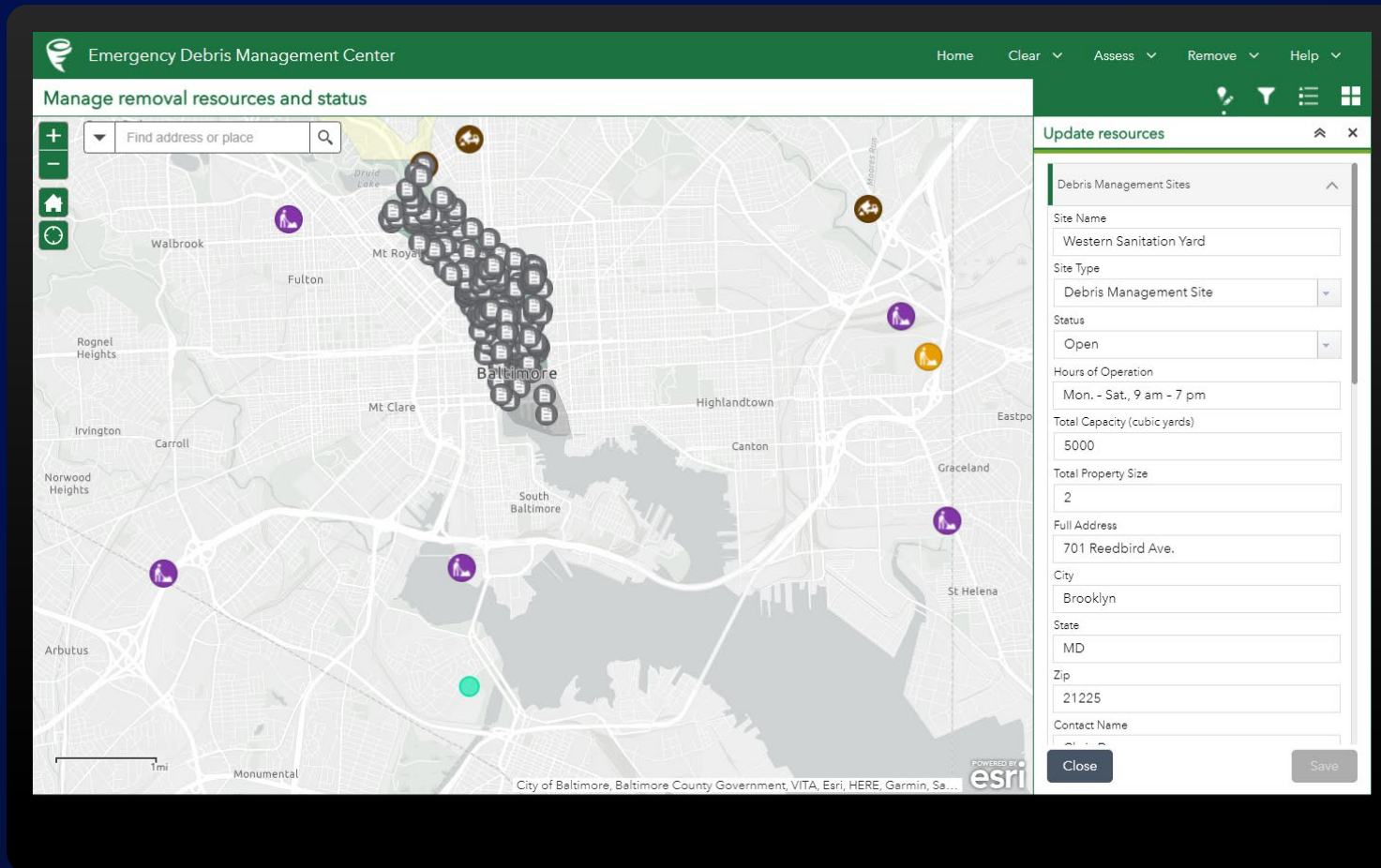
Reimbursable? *

Yes

Photo

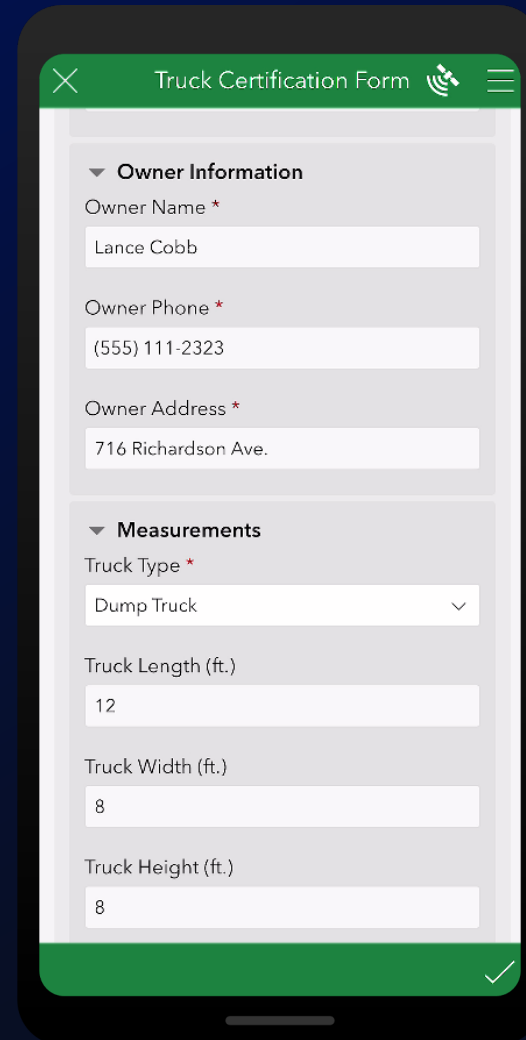
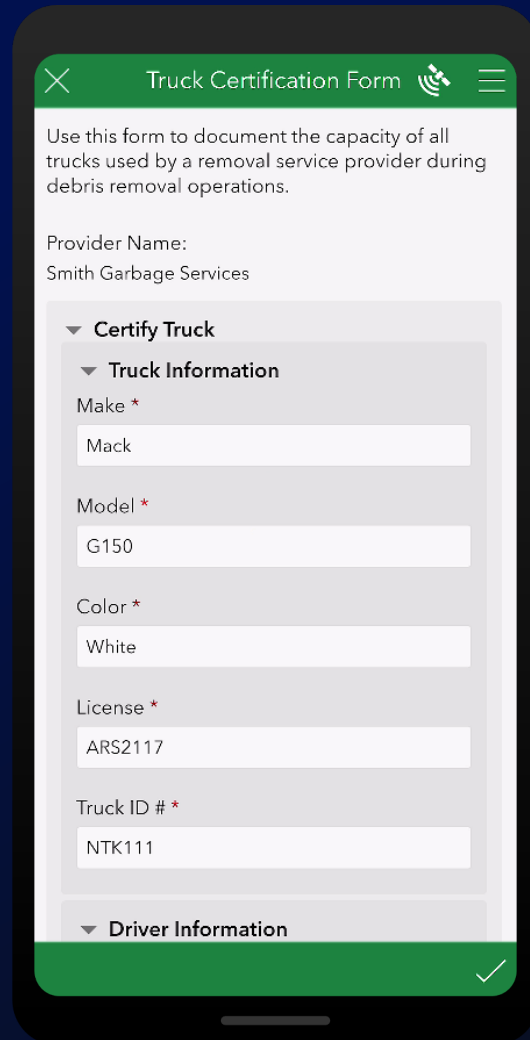
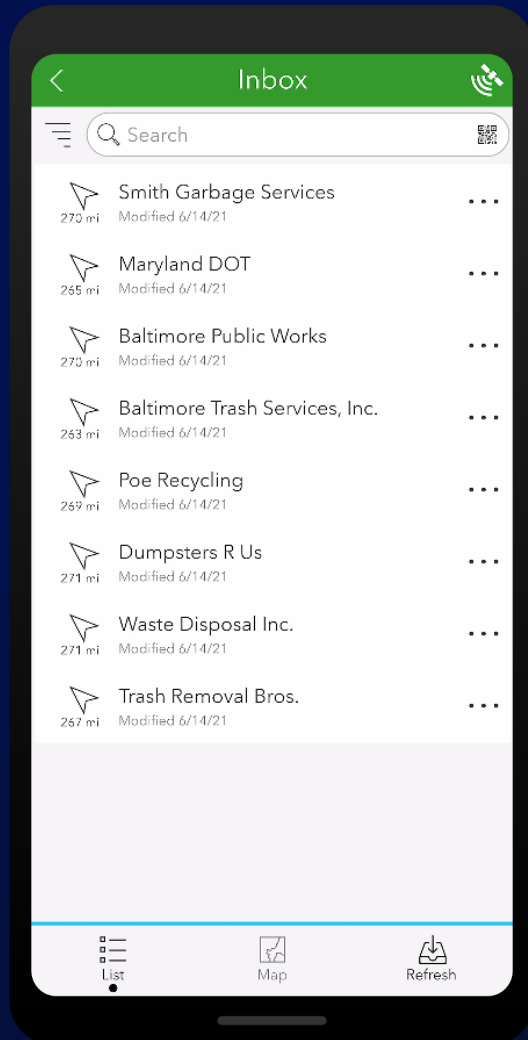
An ArcGIS Survey123 form used by assessors to perform debris assessments on public facilities or in the right-of-way.

Comply with federal removal monitoring requirements



An ArcGIS Experience Builder app used by operations leads to manage the removal status of work areas, debris management sites, contractors and other debris removal providers.

Comply with federal monitoring requirements during removal




An ArcGIS Survey123 form used by assessors to document the capacity of trucks used for emergency debris removal.

Comply with federal monitoring requirements during removal

Load Ticket

Owner: LocalGovChrisD
Created: 6/11/21 11:25 AM
Modified: 6/14/21 9:46 AM

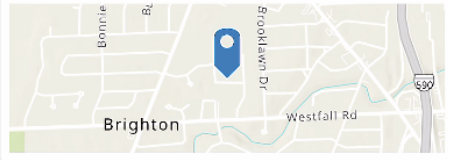
 Collect

Load Ticket

Incident Name *

Ticket Type *

Load Date *
Thursday, Septemb... 9:01 AM

Loading Location *
43°7'N 77°34'W ± 4.9 m, 148.8 ± 3.2 m


Address
40 Cohasset Dr

Debris Type *
Vegetative

Truck ID Number *

Load Ticket

Truck ID Number *

Capacity (cu. yd.) *

Load Odometer *

Driver Name *

Removal Provider Name *

Subcontractor Name (optional)

Comments

Photos

An ArcGIS Survey123 form used by debris monitors at a load site to initiate a load monitoring ticket.

Comply with federal monitoring requirements during removal

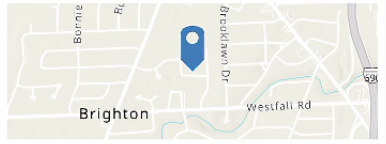
10:22

Unload Ticket

▼ Loading

Ticket Type
Load Ticket

Loading Location
43°7'N 77°34'W, 149.2 m



Address
40 Cohasset Dr

Truck ID Number
1F53AB

Removal Provider Name
Baltimore Trash Services, Inc.

Subcontractor Name

Capacity (cu. yd.)
14.4

10:22

Unload Ticket

▼ Unloading

Unloading location *
Northwest Transfer Station

Unloading Date *
Thursday, September 23, 2021
10:22 AM

Load Percent of Truck Capacity *
85

Disposal Weight (optional)

Load Size (cu. yd.) *
12.2

Unloading Odometer *
15298

Site Monitor Name *
LocalGovChrisD

10:23

Unload Ticket

Unloading Odometer *
15298

Site Monitor Name *
LocalGovChrisD

Report any loading issues (optional)

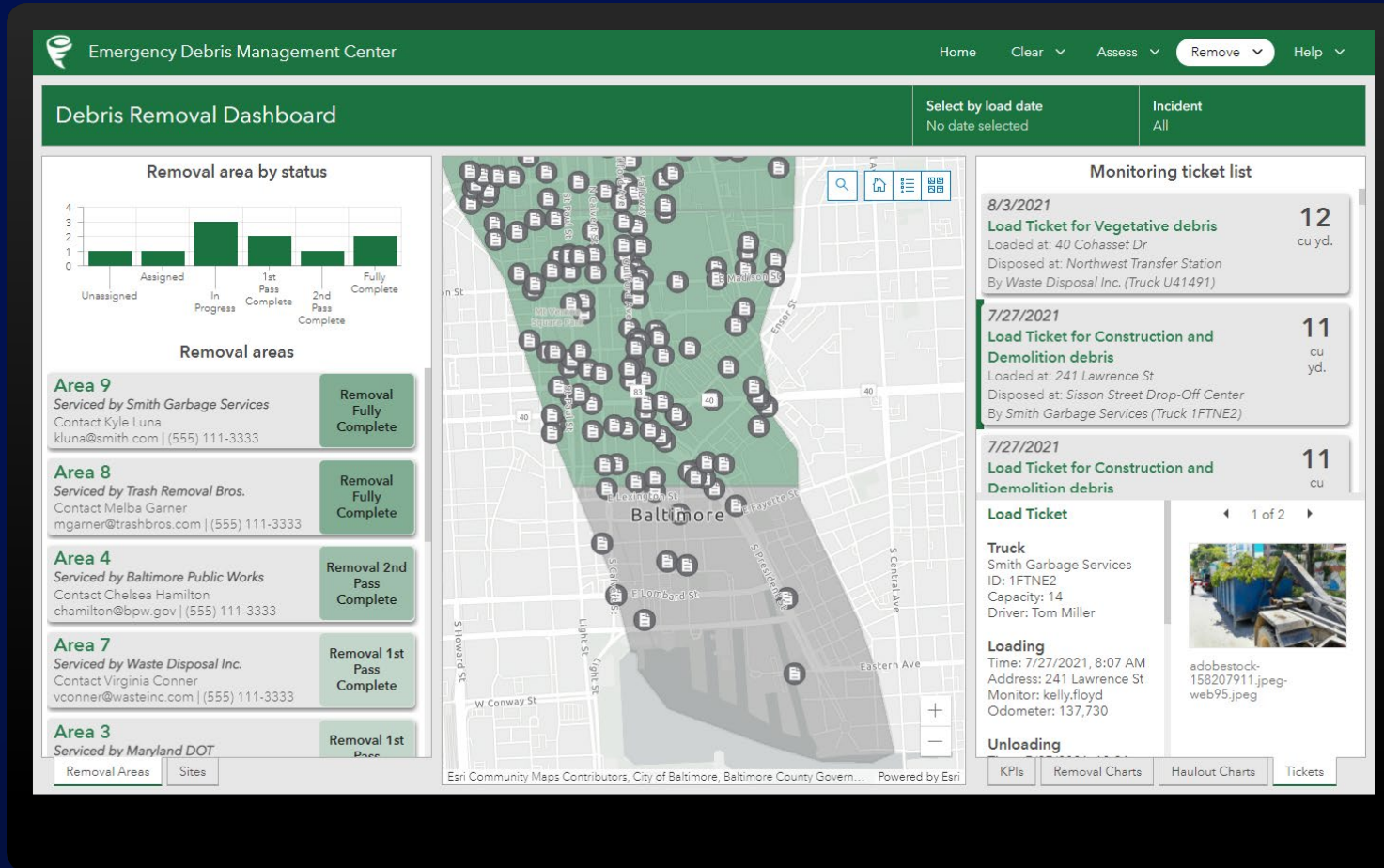
Comments (optional)

▼ Photos
Capture Photo(s) of Load

1 of 1

An ArcGIS Survey123 form used by debris monitors at debris management sites to complete load monitoring tickets.

Comply with federal monitoring requirements during removal



An ArcGIS Experience Builder app used by debris managers to monitor status of removal areas and capacity of debris management sites, understand volumes of debris removed and hauled to landfills, and review debris monitoring tickets.

Comply with federal monitoring requirements during removal

Review Debris Records

Assessments Tickets

Debris Monitoring Tickets

Ticket Type	Contractor	Truck ID	Capacity (cu yd.)	Driver	Debris Type
Load Ticket	Smith Garbage Services	18E2W	14.4	Mike Sweeney	Vegetation
Haulout Ticket	Smith Garbage Services	1FTNE2	14.4	James Johnson	Vegetation
Load Ticket	Smith Garbage Services	T033606	14.4	Kyle Crendell	Vegetation
Load Ticket	Smith Garbage Services	1FTNF9	14.4	Tom Miller	Construction

Details Photos

Haulout Ticket

Truck
Smith Garbage Services
ID: 1FTNE2
Capacity: 14
Driver: James Johnson

Loading
Time: 6/14/2021, 10:01 AM
Address: 2840 Sisson St
Monitor: LocalGovChrisD
Odometer: 65466

Unloading

An ArcGIS Experience Builder app used by contractors or auditors to view debris records from the field, and to review or export logs from the office.

Review Debris Records

Assessments Tickets

Find address or place

Details Photos Filters

Haulout Ticket

Truck
Smith Garbage Services
ID: 1FTNE2
Capacity: 14
Driver: James Johnson

Loading
Time: 6/14/2021, 10:01 AM
Address: 2840 Sisson St
Monitor: LocalGovChrisD

Inform the public

Debris Removal Services

I-83 N, Baltimore, Maryland, 21217

Results Total: 2

Your service area: Area 7

Status: Removal 1st Pass Complete

Service Schedule
8AM-5PM, Mon.-Sat.
Start Date:
Date of Current Status:
Completed Date:

Serviced By
Waste Disposal Inc.
Contact: Virginia Conner

Call Email

Nearby drop-off site: Sisson Street Drop-Off Center

Materials Accepted: Vegetative, Construction and demolition, Electronics, White goods, Vehicles and vessels

2840 Sisson St., Baltimore

Hours of operation:
Mon. - Sat., 9 am - 7 pm

Call Email

Clear search location

Map showing service area and drop-off site.

A Nearby app used by the public to understand the debris removal requirements, the pickup schedule for their property and where debris can be dropped off.

ArcGIS Solutions Roadmap

Last update: January 2022

Near-term

- Adopt-a-Catch Basin (Update)
- Broadband Outreach
- Citizen Problem Reporter (Update)
- **Civil Support**
- Combined Sewer UN Foundation
- Dam Safety (Update)
- Economic Development
- Electric Overhead Inspections
- Elections Management (Update)
- Election Outreach (Update)
- Election Results (Update)
- **Fire Accreditation**
- **Hydrant Inspections**
- My Trash Services (Update)
- Network Path Planner (Update)
- **Operations / Readiness Management (Update)**
- Park Infrastructure Management (Update)
- Pipeline Referencing Foundation
- **Pre-Incident Planning (Update)**
- Sewer Manhole Inspections
- **Weather Operational Effects**

Mid-term

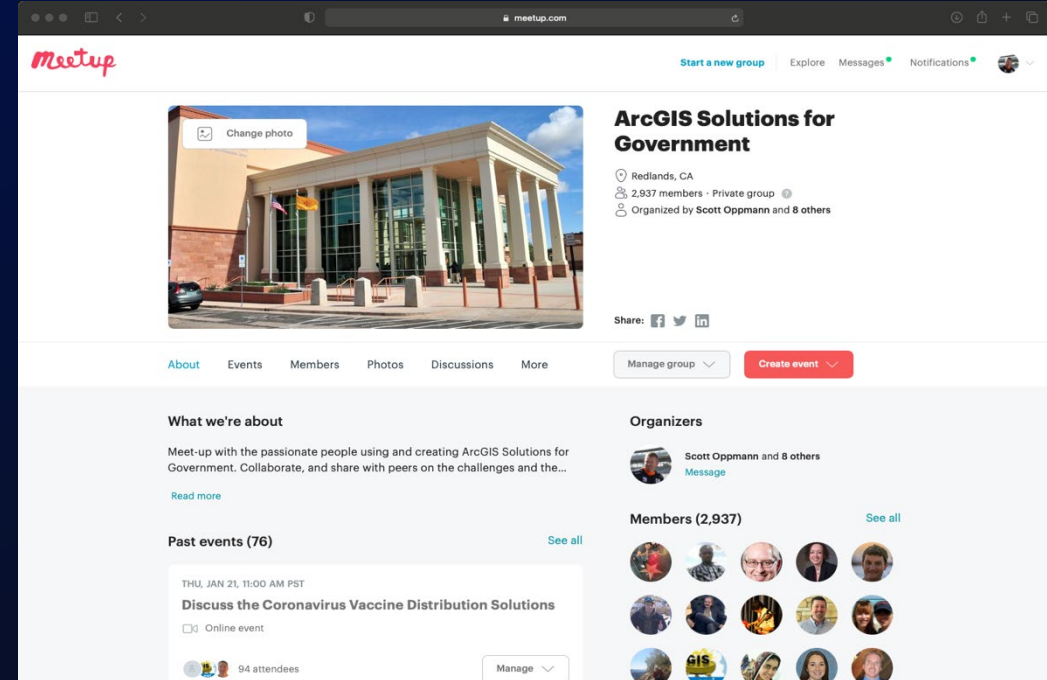
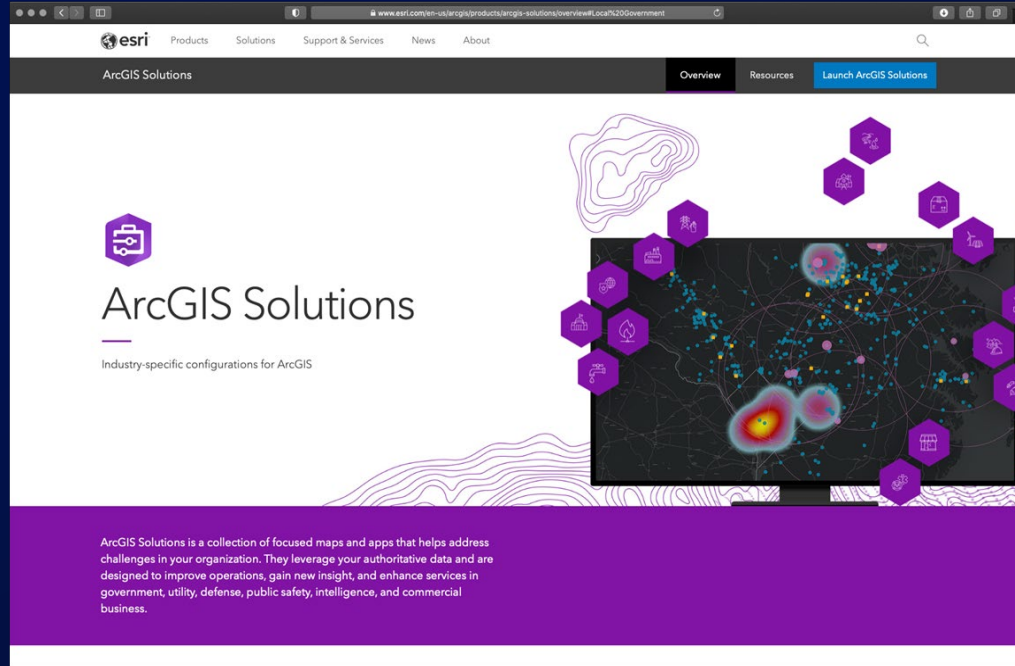
- Abandoned Well Management
- Combined Sewer Data Management
- **Community Risk Reduction**
- Conservation Easement Monitoring (Update)
- **Crime Analysis (Update)**
- **Crime Reduction Operations**
- Curb Management
- Environmental Analysis
- Equitable Property Value (Update)
- EV Charging Sites / Infrastructure
- Gridded Reference Graphic
- **Hazard Mitigation and Resilience**
- Joint Use Survey
- Military Aspects of Terrain
- Protection Operations (Update)
- Sidewalk Management
- Water Distribution UN Trace
- Water Distribution Valve Inspections
- Water Utility Outreach

Long-term

- Affordable Housing
- Capital Project Planning / Tracking (Update)
- Electric UN Foundation
- **Emergency Management Operations**
- Fat, Oil, and Grease Management
- Flood Impact Analysis (Update)
- Forest Inventory
- Gas Leak Survey
- Military Decision-Making Process
- Military Training Center Management
- Military (Land, Air, Maritime) Operations
- My Neighborhood
- Recreation Outreach (Update)
- Roadway Management
- ROW / Encumbrance Data Management
- Sign / Signal Management
- Stormwater Catch Basin Inspections
- Utility As-Building
- Water Distribution Backflow Inspections
- Wildlife Monitoring

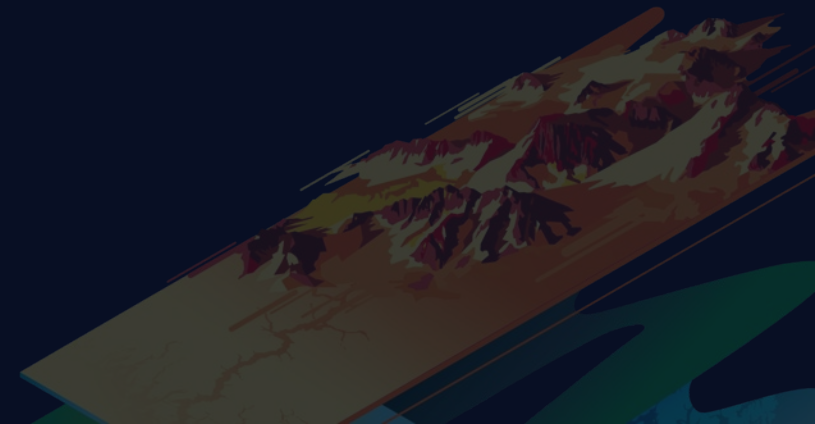
The Community

It's not just about the technology



Key Takeaways

- ArcGIS includes a rich set of solutions you can leverage
- Help agencies address common business needs
- Promote modern deployment patterns and leverage ArcGIS capabilities
- Developed collaboratively with community
- Deploying ArcGIS Solutions has never been easier



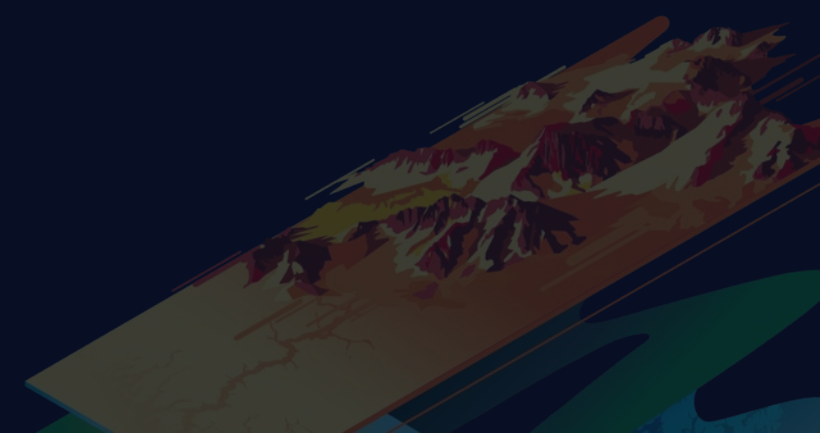
Thank you

Be innovative, aware, and know you are not alone

Scott Oppmann, Manager
ArcGIS Solutions

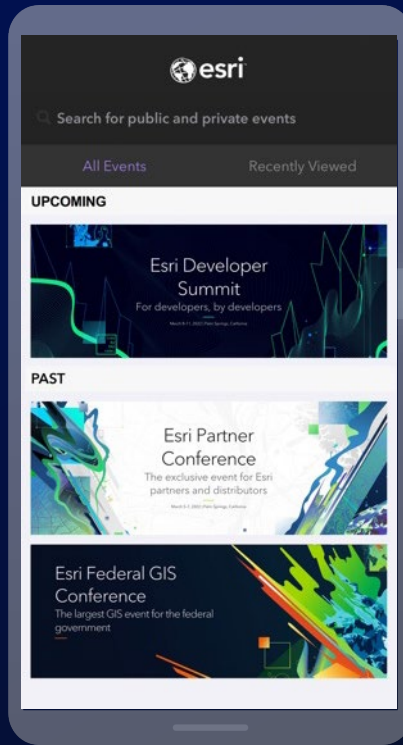
 <http://solutions.arcgis.com/>

 <http://meetup.com/ArcGIS-for-Government/>

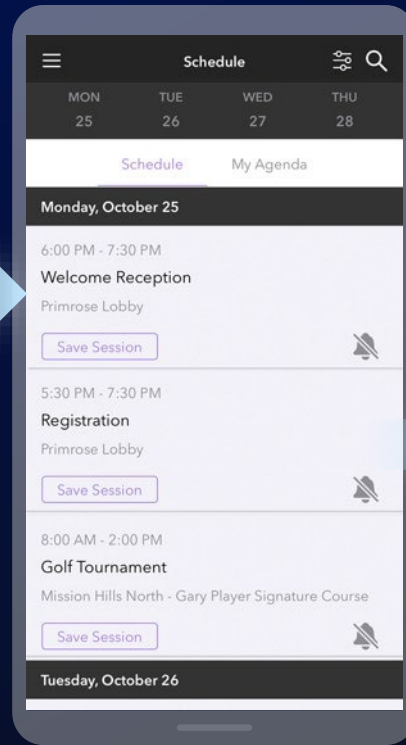


Please Share Your Feedback in the App

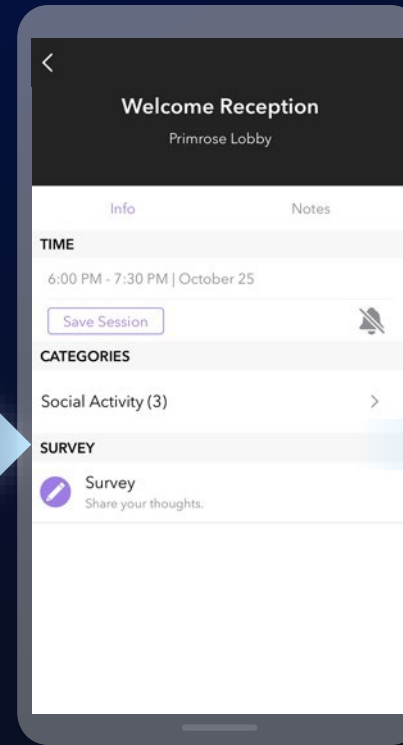
Download the Esri Events app and find your event



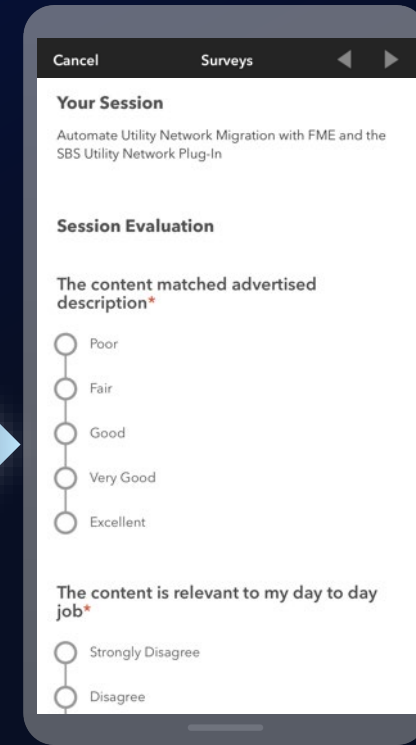
Select the session you attended



Scroll down to "Survey"



Log in to access the survey





esri®

THE
SCIENCE
OF
WHERE®