

Nevada Department Of Public Safety  
Preliminary Damage  
Assessment Tool  
User Training

March 29, 2022 | March 31, 2022



Begin Recording

# Training Staff



**Michael Lippmann**  
Co-Founder



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GIS Analyst



**Chris Gabris**  
Project Manager



# Training Agenda



# Training Agenda

- Introductions 15 mins
- ArcGIS Online Structure, Security, and Sharing 15 mins
- Overview of Preliminary Damage Assessment Tool Data 30 mins
- Preliminary Damage Assessment Tool Walkthrough 30 mins
  - Field Survey Demonstration
  - Damage Assessment Dashboard Demonstration
- Download, sign-in, and access Survey 20 mins
- Interactive Training 1 hour



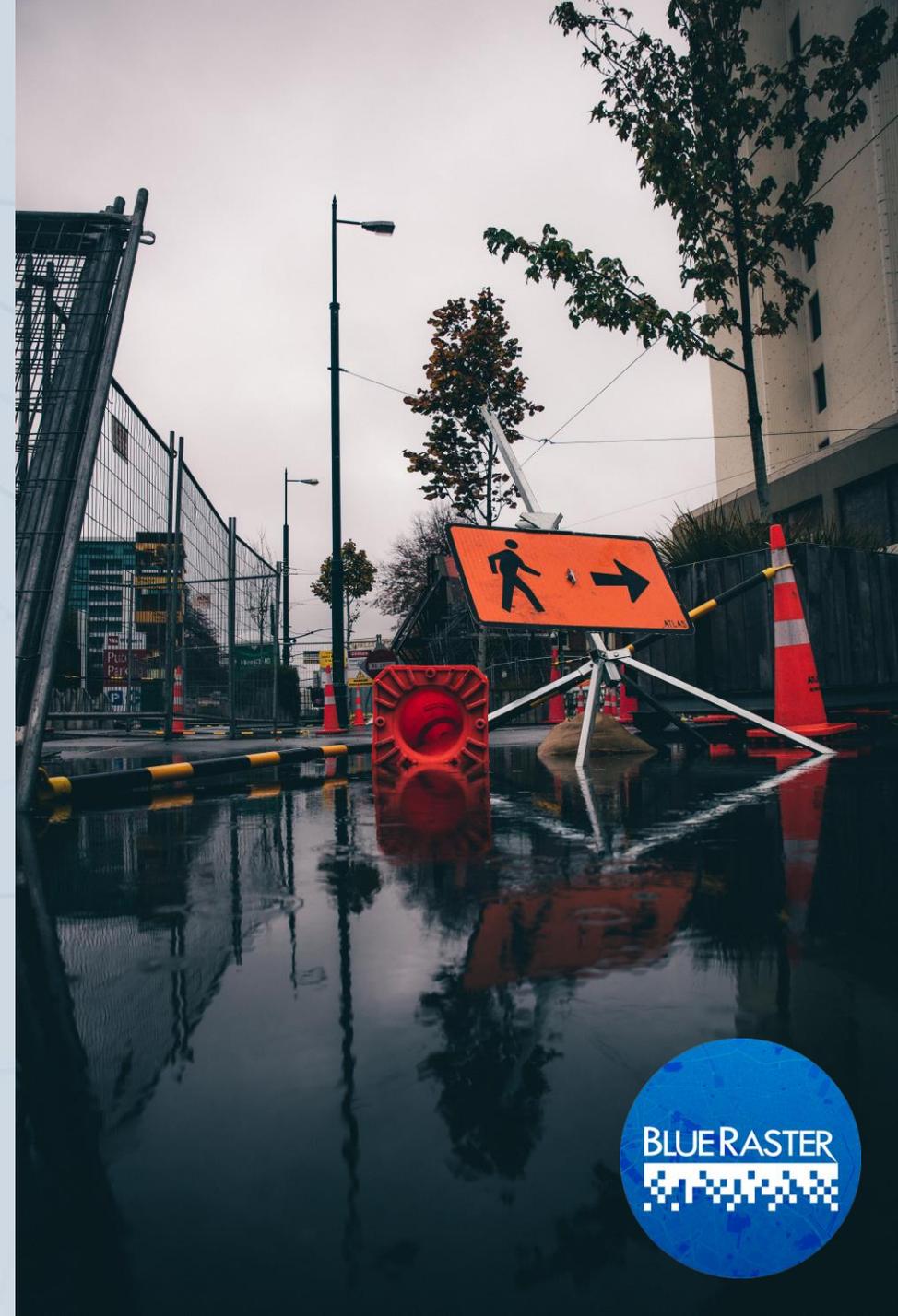
# Objectives of PDA Tool

- Conduct initial damage assessments following natural disaster or destructive event
- Captures extent and severity of damage to property
- Streamlines evaluation of need for resources and acquisition of resources



# Objectives of PDA Tool

- The tool has a set of capabilities for **aiding** emergency management,
- **Collecting** damage reports,
- **Performing** initial assessment,
- **Monitoring** impact of disaster,
- **Providing** information to stakeholders and public

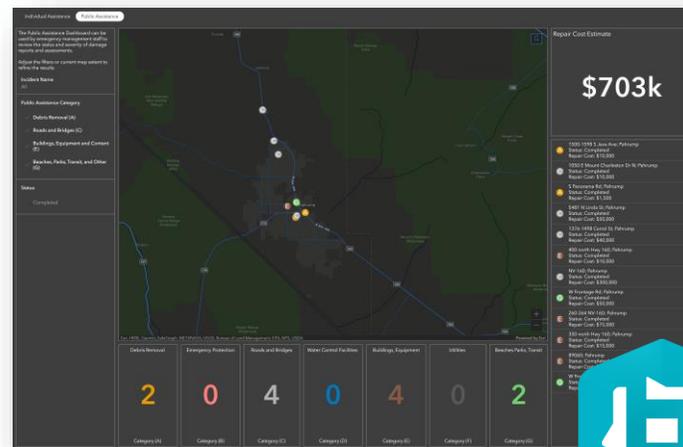
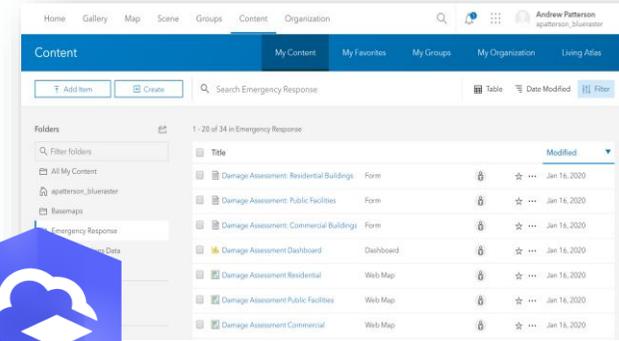


# Preliminary Damage Assessment Tool



Survey123 App  
Form-based Data  
Collection

ArcGIS Online  
Hosted Web  
Applications



ArcGIS Experience  
Builder  
Damage Assessment  
Application (Dashboard)



# Case Study: Nye County Flood Event

August 2021

- Flash flood event causing power loss and property damage
  - 1.87 inches of rainfall
  - 78 mph wind speeds
- Area businesses impacted
- Roadways and infrastructure inaccessible
- NDEM/Blue Raster rapidly configured and deployed PDA tool for emergency response

Home >> News

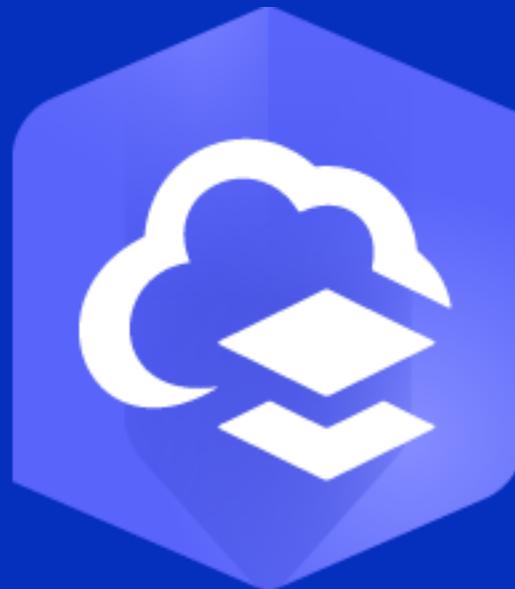
## Wild summer storms whip through Pahrump



Special to the Pahrump Valley Times Provided by Trudy Mazac Hampton, this photo shows a tree that struck an apartment building located at Calvada Boulevard and Pahrump Valley Boulevard following recent storms.



# Components



# ArcGIS Online

*Structure, security, and sharing*

- ArcGIS Online is a cloud-based GIS platform that hosts and enables analysis of GIS Data, supports building web maps and applications
- Promotes sharing and collaboration of data and content
  - The Preliminary Damage Assessment Tool will be used by State, County, and Local Jurisdictions
- Access can be enumerated by creating Groups within the Organization



# ArcGIS Online

*WebGIS mapping, analytics, and collaboration*

- An arsenal of geographic data and tools
- Operates as real-time GIS
  - As new assessments come in, they are immediately captured and fed into dashboard
- Scalable
  - AGOL can easily handle an influx of user inputs without delays in performance
- Hosts and serves out content to the applications within the PDA tool:
  - ArcGIS Dashboards
  - Survey123



# Survey123

- Simple, user-friendly surveys based on smart forms for ease of operation
- Ask specific questions
- Collect information
- Make decisions and allocate resources



# ArcGIS Dashboards

- Comprehensive at-a-glance view of data
- A data-driven approach to monitor trends
- Collect statistics based on filters of your interest
- Dynamically reflects data as it is submitted



# ArcGIS Hub

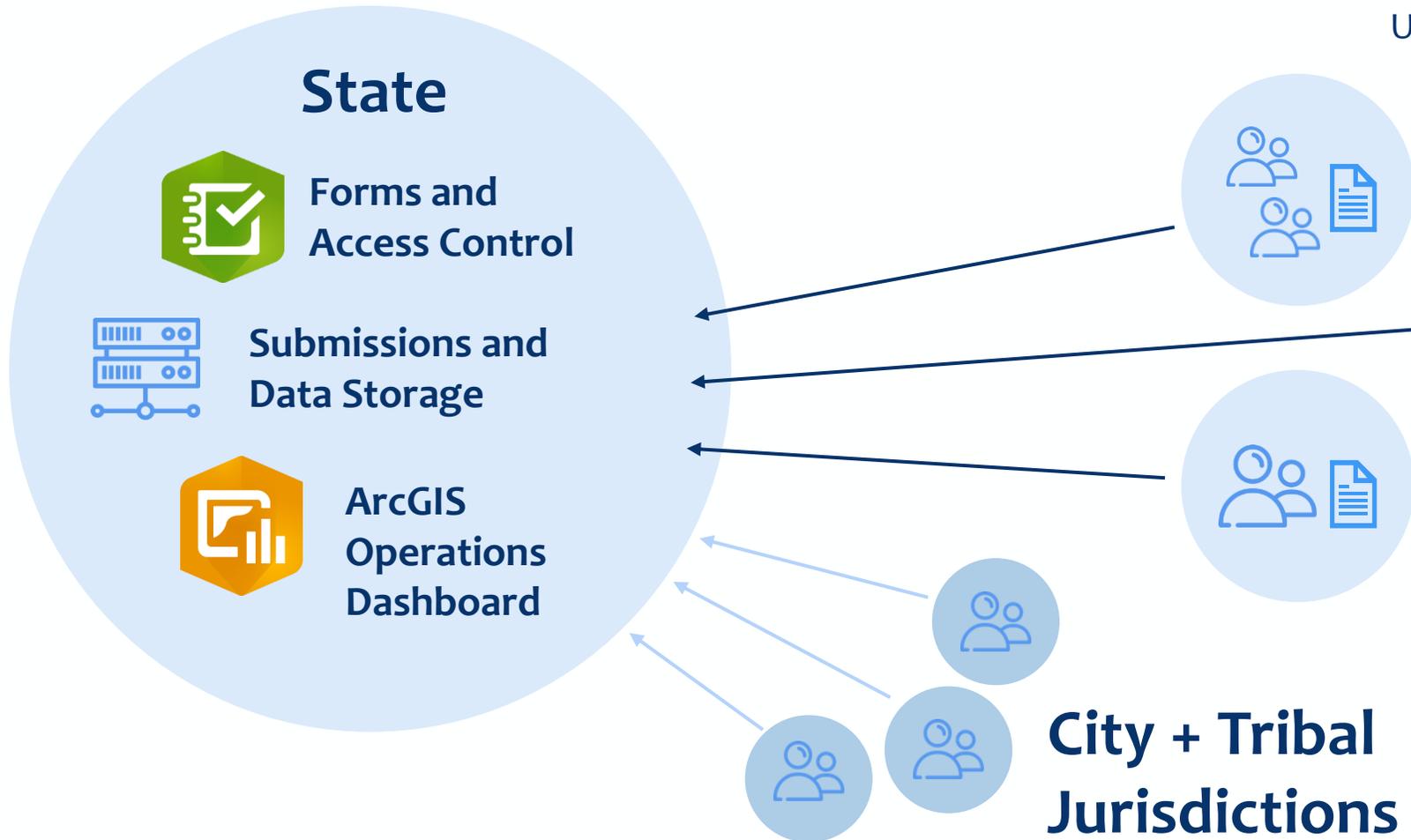
- Platform for connection and engagement between government and residents
- Promote resources and data useful to community
- Capture feedback and responses from community to improve services provided



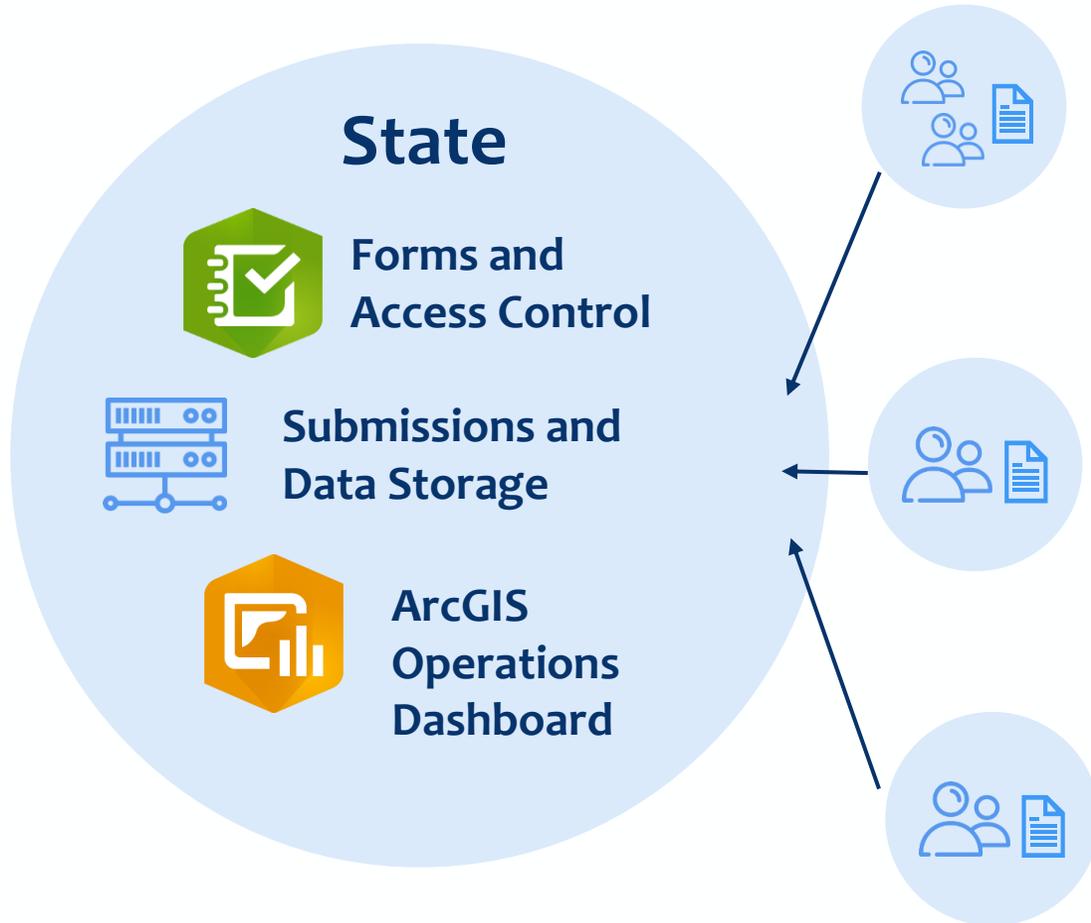
# Structure, Security, and Sharing

## Counties

Users from outside the organization can share data and submit field surveys directly to State DEM organization



# Groups in ArcGIS Online



|   |  |  |
|---|--|--|
|  | <b>Damage Assessment Collaboration</b><br>Owner: cgabris@blueraster.com<br>Created: Jul 26, 2021 Last updated: Jul 26, 2021 Viewable by:  Group members<br>A Group used to share feature layers with partners that need access to damage assessments.   |  Delete group |
|  | <b>Damage Assessment Content</b><br>Owner: cgabris@blueraster.com<br>Created: Jul 26, 2021 Last updated: Jul 26, 2021 Viewable by:  Everyone (public)<br>Applications, maps, data, etc. shared with this group generates the Damage Assessment content catalog.   |  Delete group |
|  | <b>Damage Assessment Core Team</b><br>Owner: cgabris@blueraster.com<br>Created: Jul 26, 2021 Last updated: Jul 26, 2021 Viewable by:  Organization<br> Shared Update Members of this group can create, edit, and manage the site, pages, and other content related to Damage Assessment. |  Delete group |
|  | <b>Damage Assessment Mobile Users</b><br>Owner: cgabris@blueraster.com<br>Created: Jul 26, 2021 Last updated: Aug 2, 2021 Viewable by:  Organization<br>A group used to grant access to mobile workers collecting windshield damage reports and individual or public assistance assessments.  |  Delete group |



# Surge Events

Solutions for Disaster Preparedness and Response



**Preparedness**



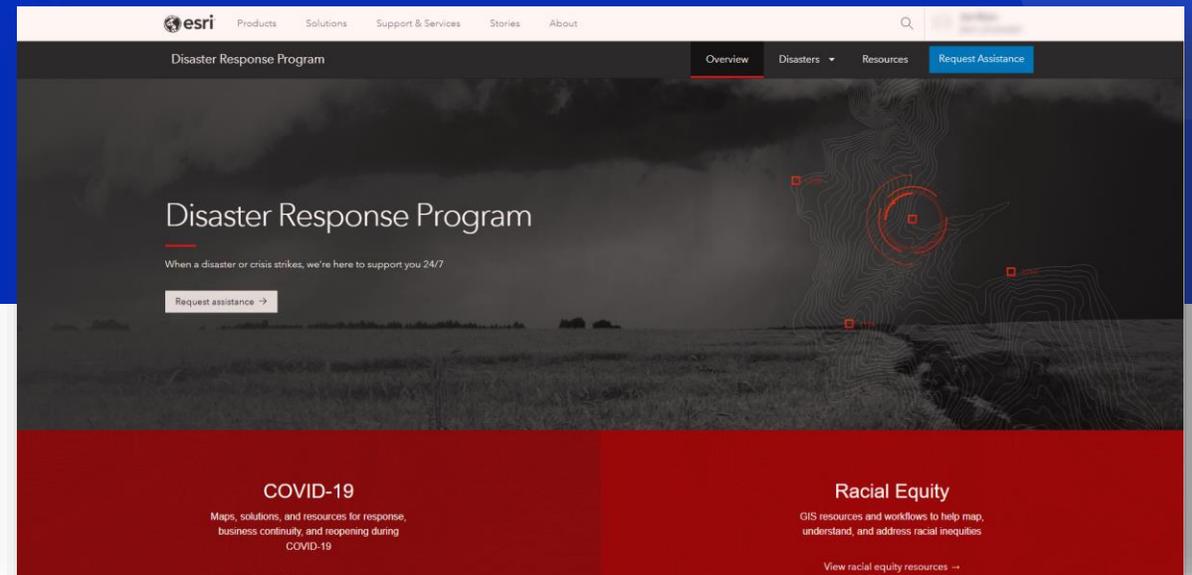
**Response**



**Recovery**

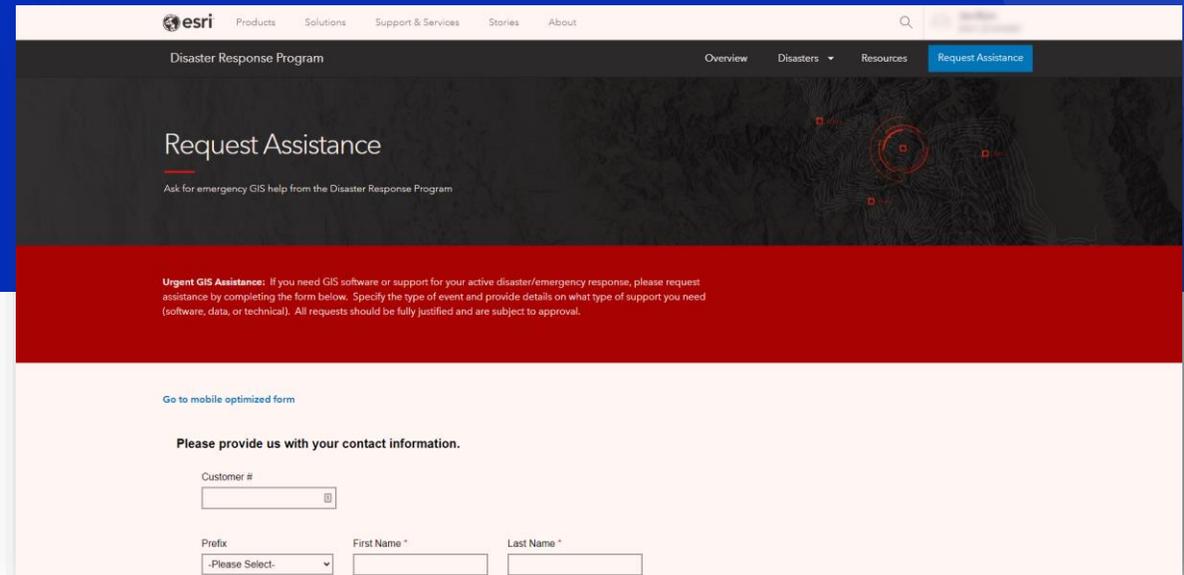
# Activating Surge Users

- Surge Licenses are activated through the Esri Disaster Response Program and are **requested through the State**
- Click the Request Assistance button in the top of the page:
  - <https://www.esri.com/en-us/disaster-response/overview>



# Activating Surge Users

- Additional Users are added for a given amount of time to support **improved disaster response**
- After the date stated in the Request Assistance Form, Surge users accounts are removed, and the license count is reset
- Extensions of surge licensing can be requested

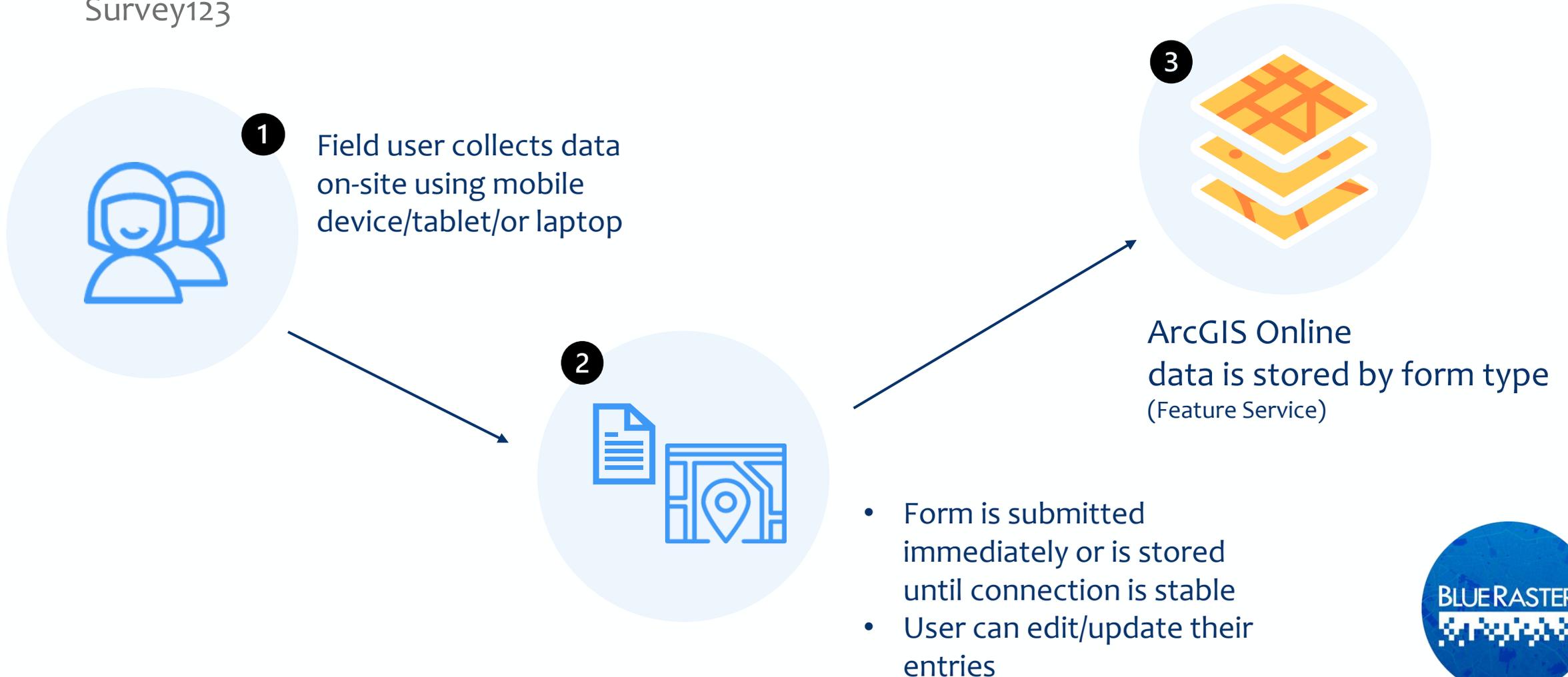


The screenshot shows the Esri Disaster Response Program Request Assistance page. The page has a dark header with the Esri logo and navigation links: Products, Solutions, Support & Services, Stories, and About. Below the header, there are tabs for Overview, Disasters, Resources, and Request Assistance. The main content area features a map with a red circle highlighting a location. Below the map, there is a red banner with the text: "Urgent GIS Assistance: If you need GIS software or support for your active disaster/emergency response, please request assistance by completing the form below. Specify the type of event and provide details on what type of support you need (software, data, or technical). All requests should be fully justified and are subject to approval." Below the banner, there is a link to "Go to mobile optimized form". The form itself is titled "Please provide us with your contact information." and includes a text input field for "Customer #", a dropdown menu for "Prefix" (currently set to "-Please Select-"), and text input fields for "First Name \*" and "Last Name \*".



# Data Capture

Survey123

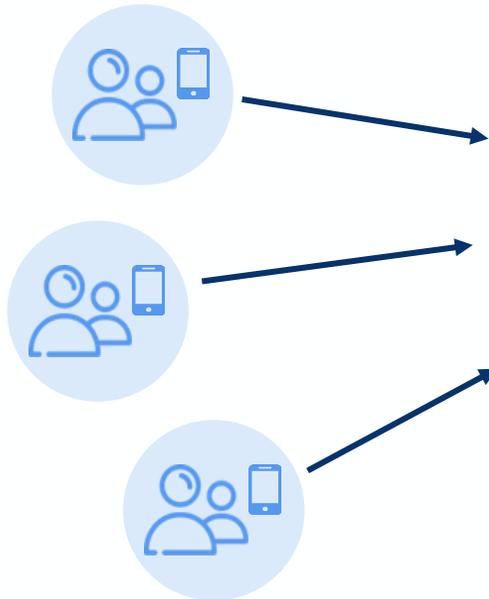


# Data Storage and Management

ArcGIS Online Feature Layer

## Field Surveys

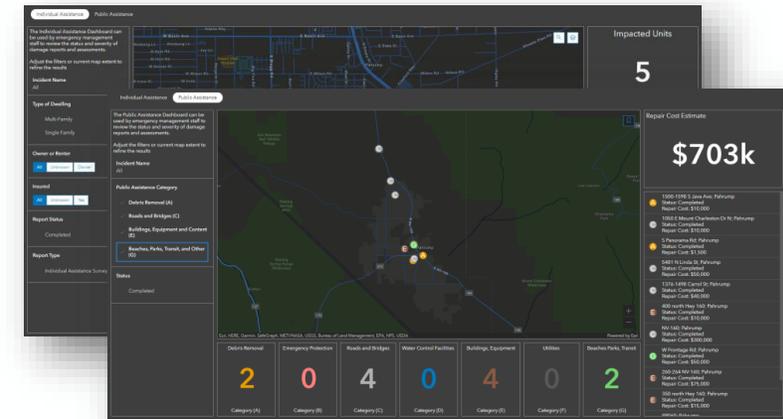
Forms submitted by users are all stored in a single ArcGIS Online item



## Storage + Management

## Dashboards

Data Filters **organize** and **visualize** the submitted data into 2 different dashboard views

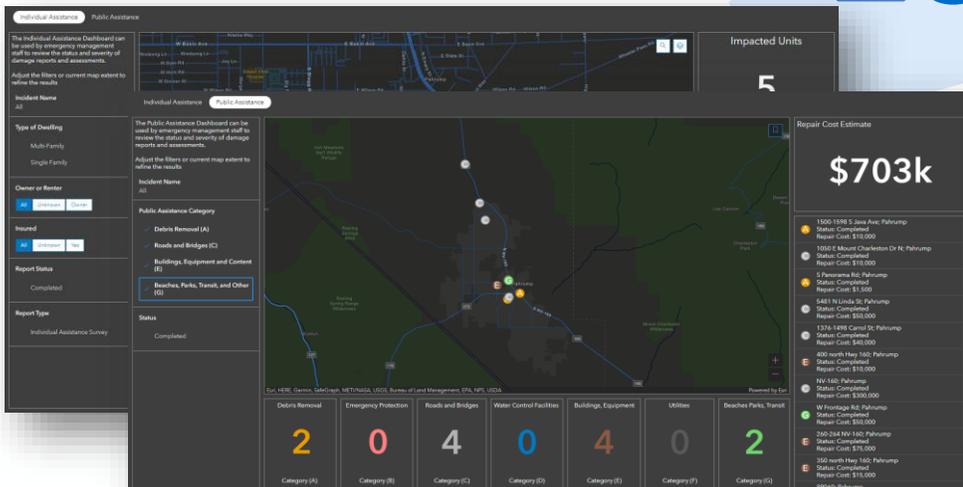


# Data Visualization

ArcGIS Experience Builder (Dashboard)

## Dashboard

 35



## Review Individual Entries

Key information and photos can be viewed directly from the Dashboard

## Summary Data

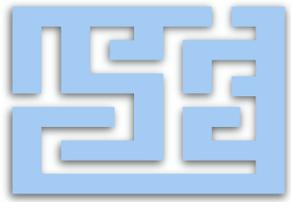
Statistic Cards provide a high-level summary at-a-glance

## Archive Data with Filters or Exports

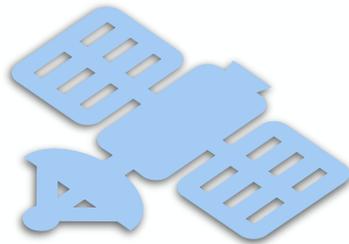
Once an event concludes, data can be archived by adding filters or exporting records



# Survey123 for ArcGIS



Simple, intuitive, and thorough set of questions to collect relevant information

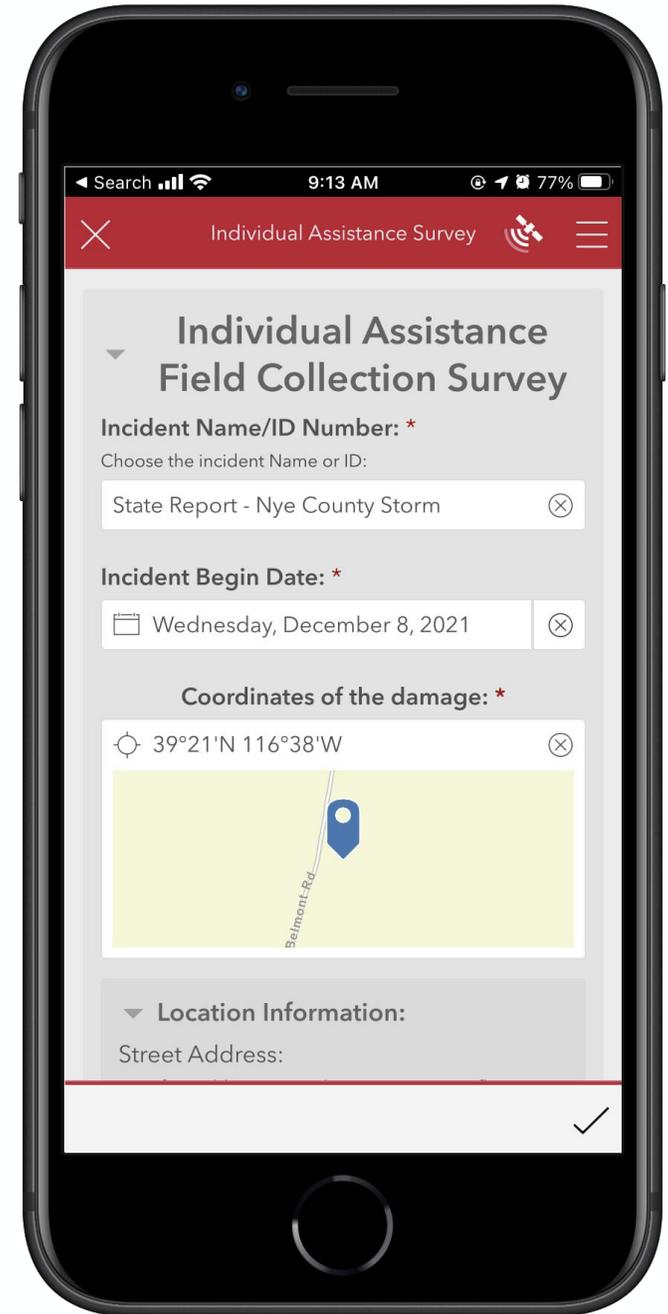


Uses GPS, Cell Signal, and Wi-Fi to help collect accurate location data

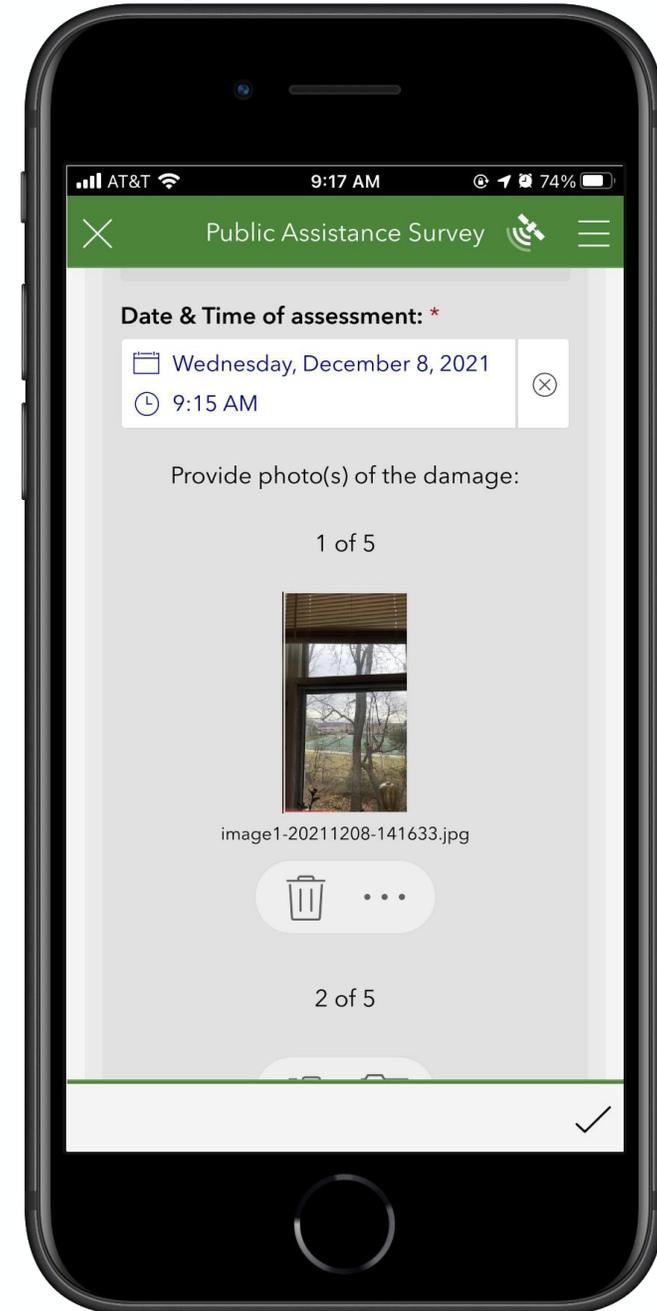
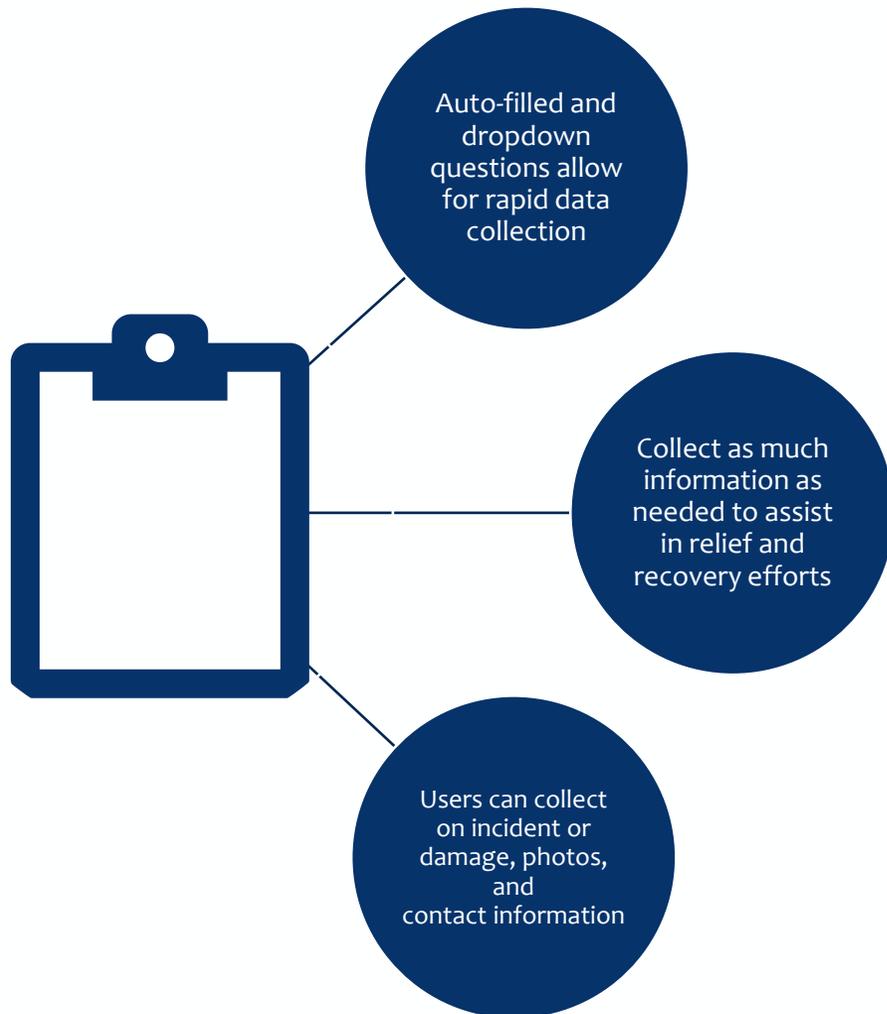


Users can use the location question to drop a point at precise location

**Form information can be recorded both online and offline**

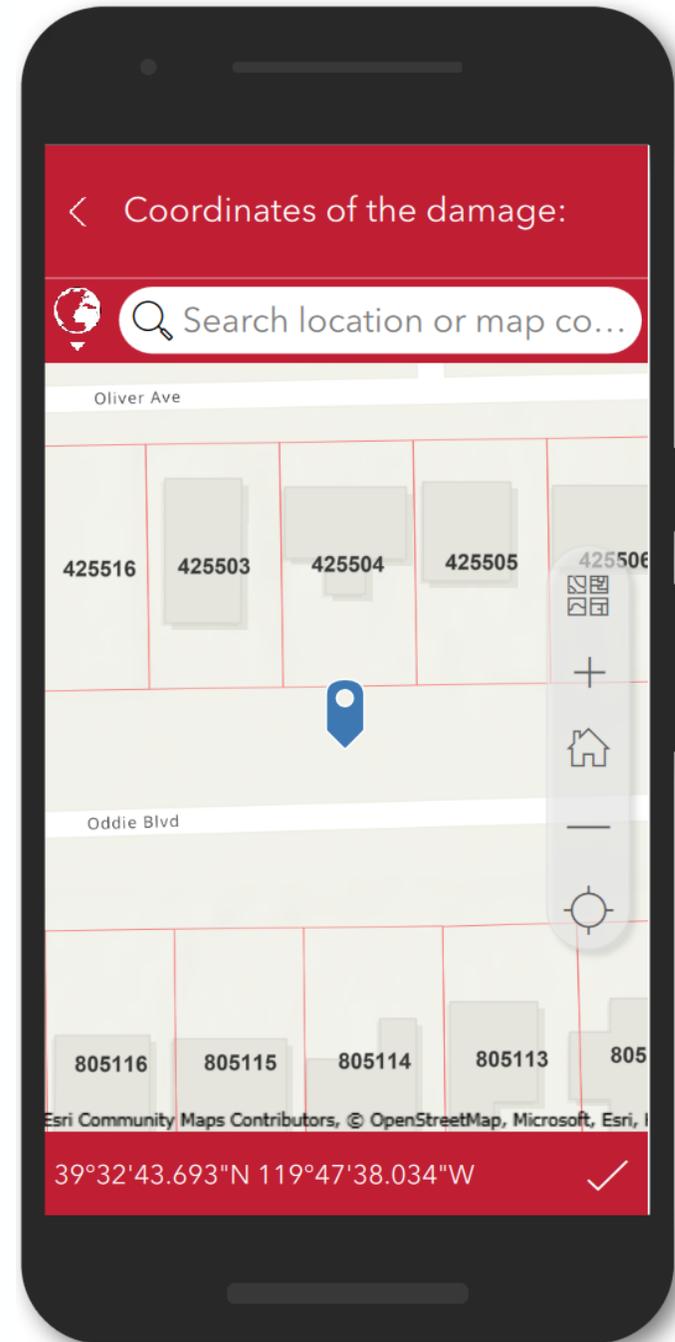


# Survey123 for ArcGIS



# Survey123 for ArcGIS

- Reference data such as Imagery and Parcels can be added to survey, providing field users with added context
- Parcel Data is contained so that accurate information is available for form completion
- 13 of 17 cities/counties are available in the PDA Tool

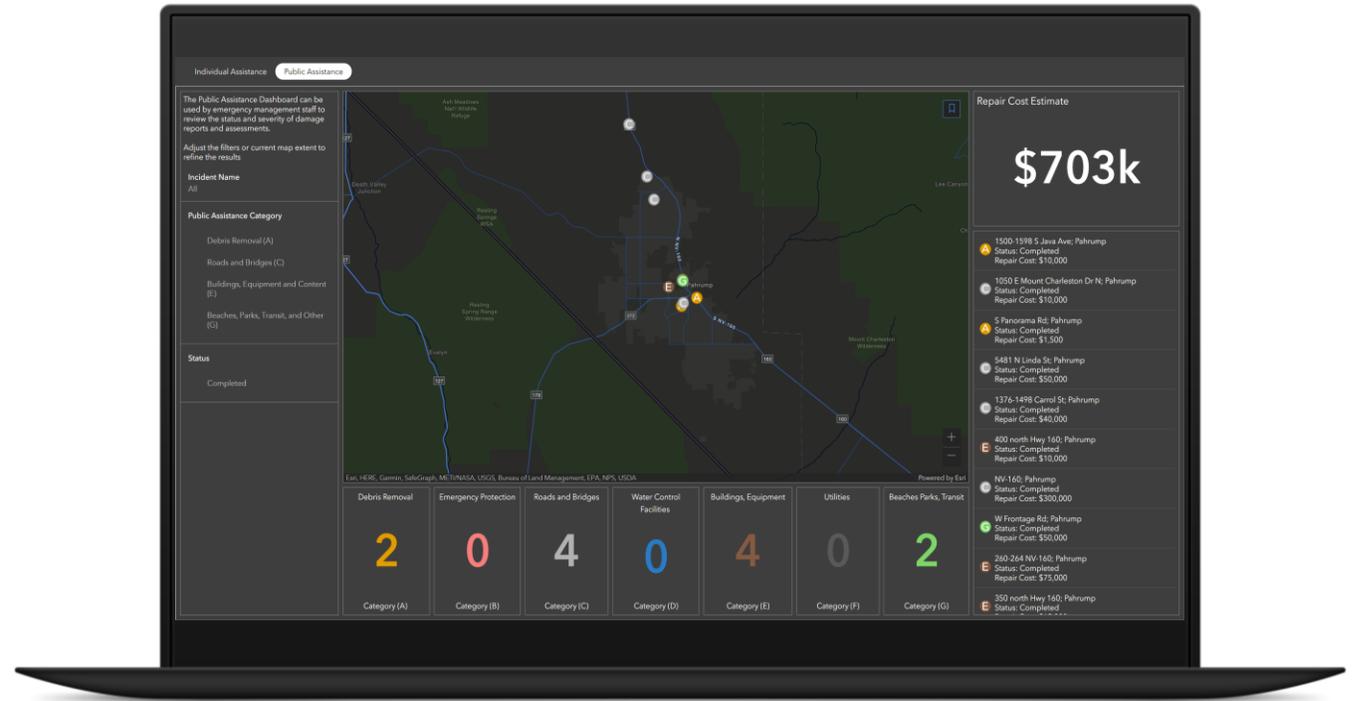




# Preliminary Damage Assessment Dashboard

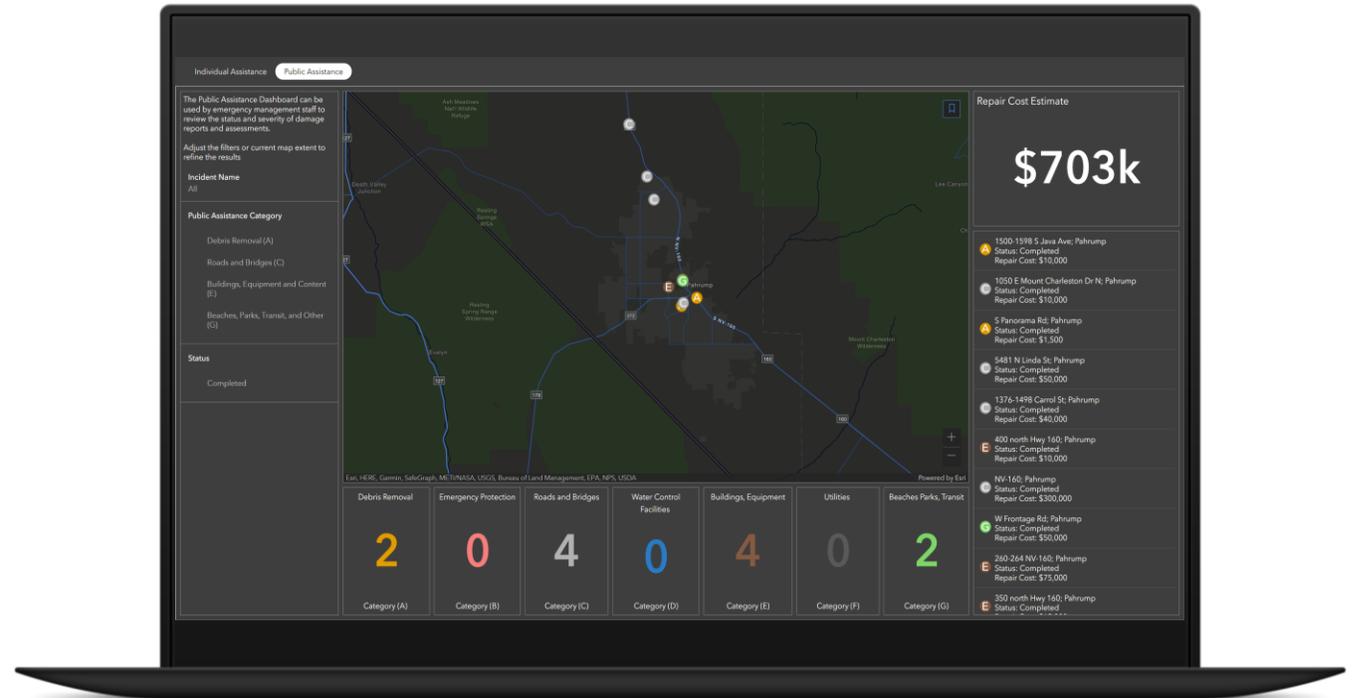
# Preliminary Damage Assessment Dashboard

- The PDA Dashboard allows monitoring of field collection
  - Summarizes information as it is submitted
- Dynamic elements support Large and Medium format screens

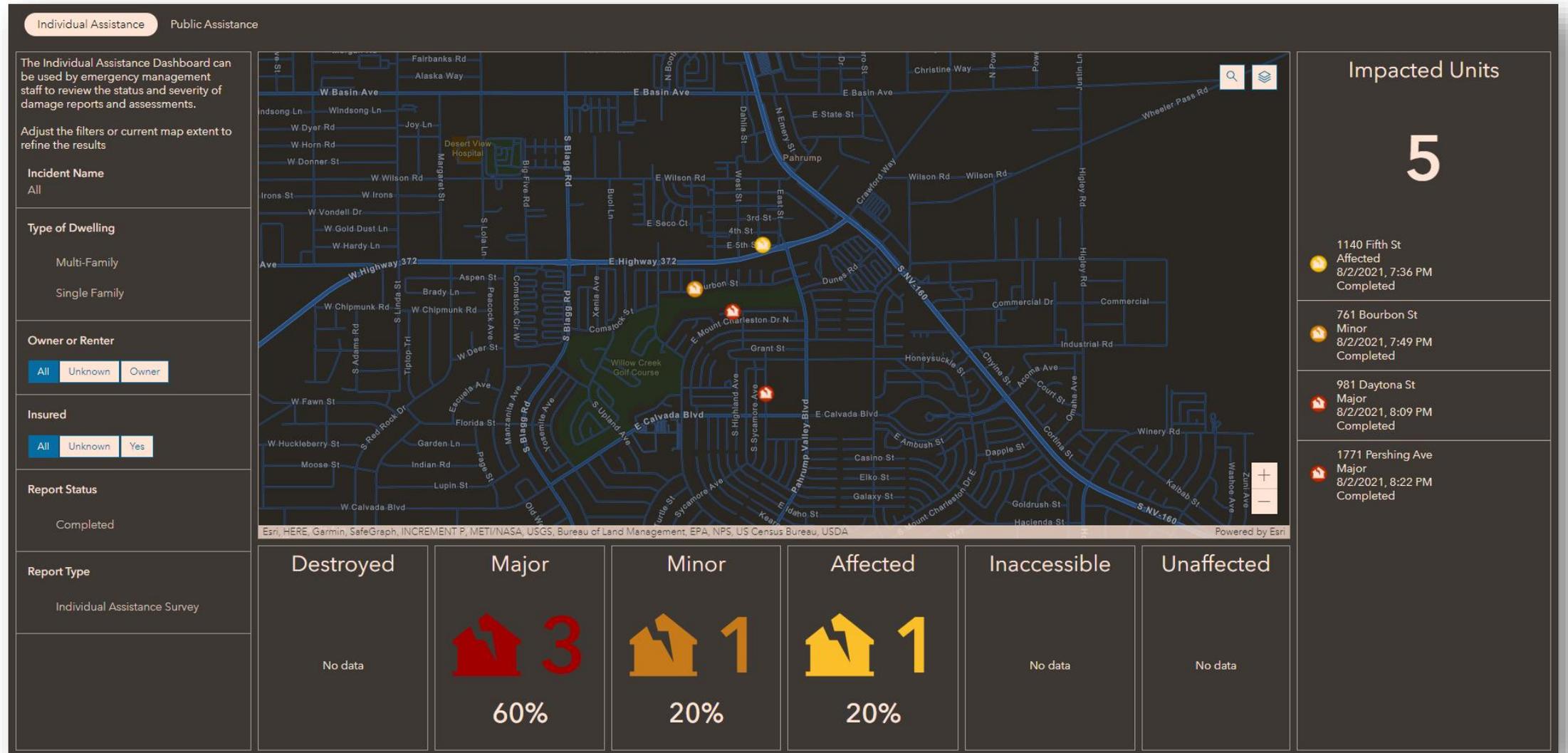


# Preliminary Damage Assessment Dashboard

- Filters produce statistics on the fly for specific categories
  - i.e., how many incidents are classified as major
  - how many incidents occurred at uninsured residences
- View Dashboard
  - <https://bit.ly/NDEM-PDA>

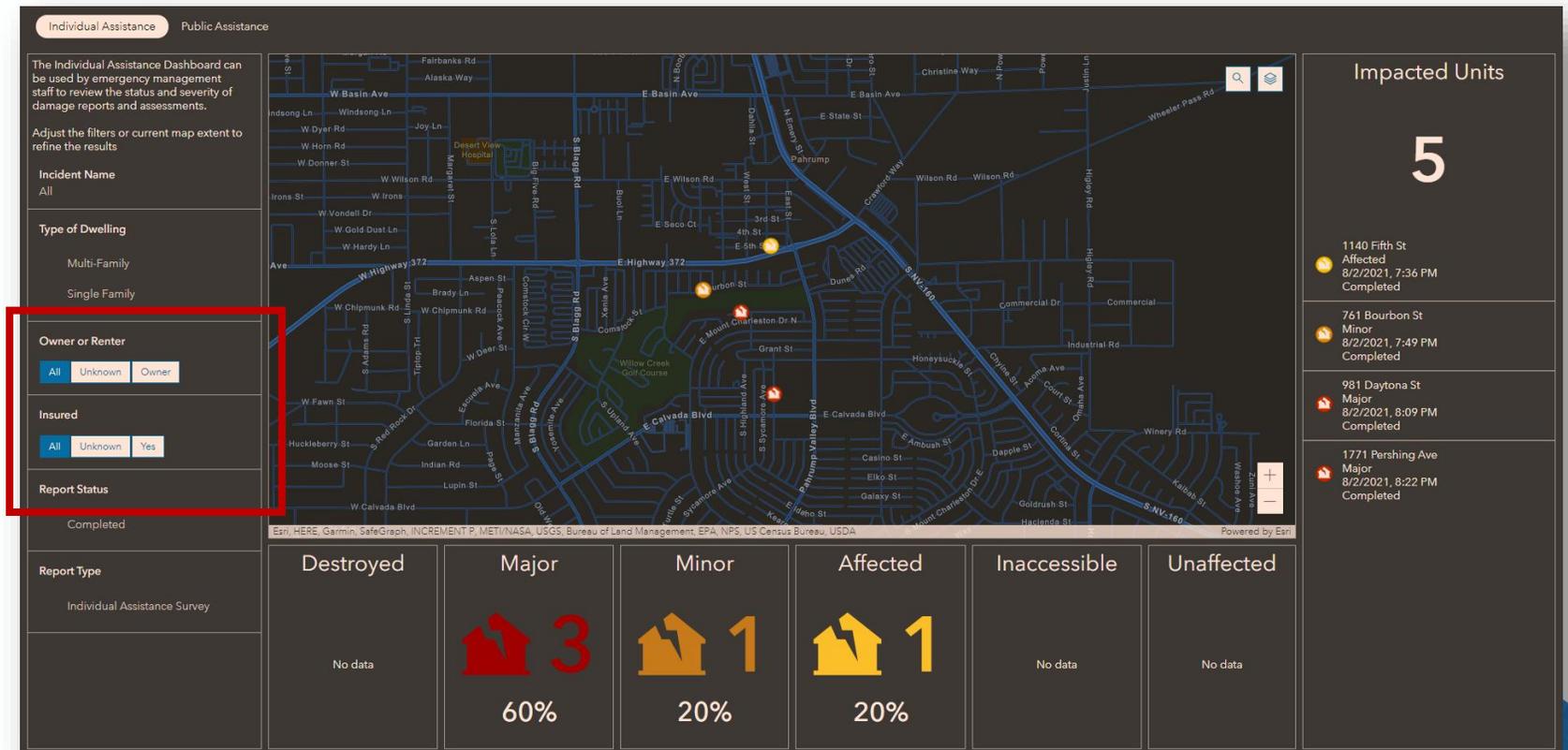


# Individual Assistance Dashboard



# Individual Assistance Dashboard

- Visualize spread of logged incidents
- Identify the nature of the incident (e.g., major, minor)
- Filter by:
  - Owner or renter
  - Insured status



# Public Assistance Dashboard

Individual Assistance
Public Assistance

The Public Assistance Dashboard can be used by emergency management staff to review the status and severity of damage reports and assessments.

Adjust the filters or current map extent to refine the results

**Incident Name**  
All

**Public Assistance Category**

- Debris Removal (A)
- Roads and Bridges (C)
- Buildings, Equipment and Content (E)
- Beaches, Parks, Transit, and Other (G)

**Status**

Completed

Map showing incident locations in Pahrump, NV. Markers are color-coded by category: A (Debris Removal), C (Roads and Bridges), E (Buildings, Equipment and Content), and G (Beaches, Parks, Transit, and Other). The map includes labels for Death Valley Junction, Resting Springs WSA, Evelyn, Pahrump, and Lee Canyon.

**Repair Cost Estimate**

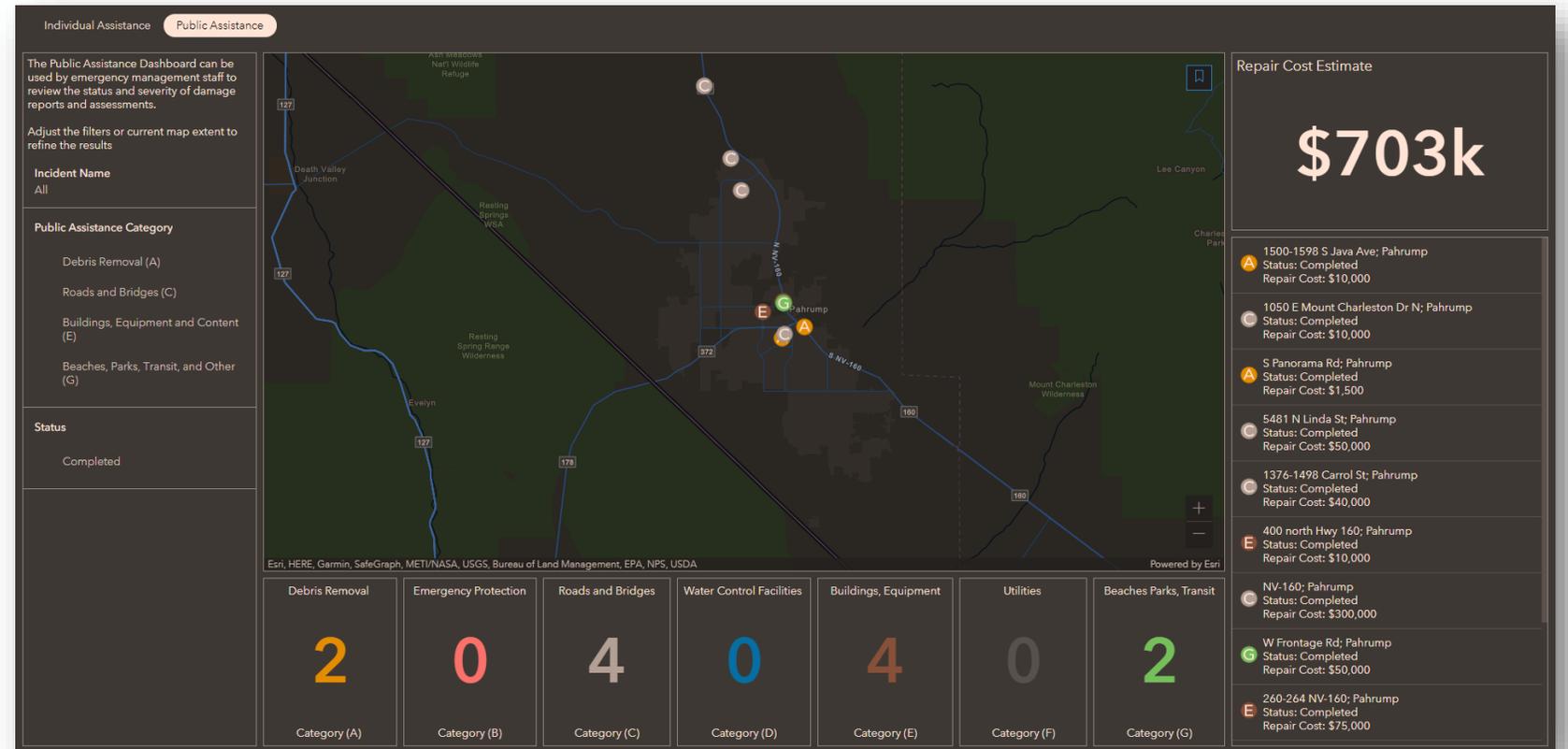
## \$703k

|                |                      |                   |                          |                      |              |                        |
|----------------|----------------------|-------------------|--------------------------|----------------------|--------------|------------------------|
| Debris Removal | Emergency Protection | Roads and Bridges | Water Control Facilities | Buildings, Equipment | Utilities    | Beaches Parks, Transit |
| 2              | 0                    | 4                 | 0                        | 4                    | 0            | 2                      |
| Category (A)   | Category (B)         | Category (C)      | Category (D)             | Category (E)         | Category (F) | Category (G)           |

- A 1500-1598 S Java Ave; Pahrump  
 Status: Completed  
 Repair Cost: \$10,000
- C 1050 E Mount Charleston Dr N; Pahrump  
 Status: Completed  
 Repair Cost: \$10,000
- A S Panorama Rd; Pahrump  
 Status: Completed  
 Repair Cost: \$1,500
- C 5481 N Linda St; Pahrump  
 Status: Completed  
 Repair Cost: \$50,000
- C 1376-1498 Carrol St; Pahrump  
 Status: Completed  
 Repair Cost: \$40,000
- E 400 north Hwy 160; Pahrump  
 Status: Completed  
 Repair Cost: \$10,000
- C NV-160; Pahrump  
 Status: Completed  
 Repair Cost: \$300,000
- G W Frontage Rd; Pahrump  
 Status: Completed  
 Repair Cost: \$50,000
- E 260-264 NV-160; Pahrump  
 Status: Completed  
 Repair Cost: \$75,000

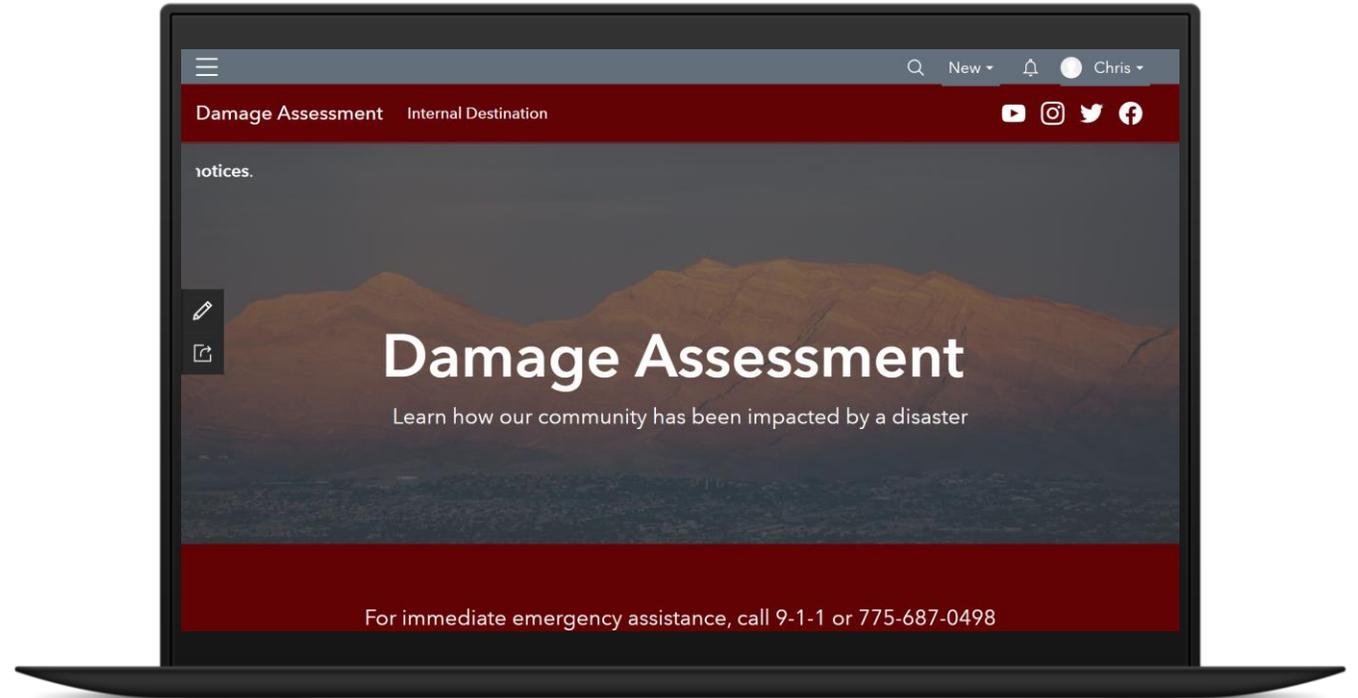
# Public Assistance Dashboard

- Visualize spread of logged incidents
- Easily identify public assistance category
- Summary of estimated recovery costs



# Preliminary Damage Assessment Hub

- A site containing relevant links and resources for damage assessment
  - Houses surveys and instructions for use
- See key metrics for how disaster is affecting whole state
- View Hub
  - <https://damage-assessment-ndem.hub.arcgis.com/>



# Preliminary Damage Assessment Hub

This screenshot shows the 'Damage Reports' section of the website. The header includes 'Damage Assessment' and 'Internal Destination' on the left, and search, 'New', and notification icons on the right. The main heading is 'Damage Reports' with a subtext: 'Review damage after a storm and learn how to report any damage you observe.' Below this, there are two main content areas. The first is 'Understand Current Conditions', which includes a photo of a destroyed brick house and text explaining that emergency management staff conduct windshield surveys. A red button labeled 'Review conditions' is positioned below the text. The second area is 'Report Damage', which includes a photo of a flooded residential street and text stating that assistance will help with damage reports. A red button labeled 'Report damage' is positioned below the text. A sidebar on the left contains edit and share icons.

This screenshot shows the main 'Damage Assessment' page. The header includes 'Damage Assessment' and 'Internal Destination' on the left, and search, 'New', and notification icons on the right. A dark red banner at the top contains the text: 'Advisory issued on Sept 19, 2021 at 8:00AM EST. Watch for severe flooding. Adhere to local evacuation notices.' The main heading is 'Damage Assessment' with the subtext: 'Learn how our community has been impacted by a disaster'. Below this, a dark red banner contains the text: 'For immediate emergency assistance, call 9-1-1 or 775-687-0498'. The bottom section is titled 'Completed Damage Assessments' and features three data points: 'Assessments Completed', 'Properties Destroyed', and 'Properties Damaged (Major)', each with a horizontal line underneath.

# Interactive Training



# Field Preparation

- Confirm Survey123 application is most recent update
- Test your login
  - Corin Roth or Suz Coyote can help with ArcGIS Online sign-in and resets
- Go Bag has extra devices if you are still having trouble



# Field Preparation

Public Assistance Survey

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

|  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> Severe Storm                | <input type="checkbox"/> Flood        |
| <input type="checkbox"/> Straight-Line Winds/Derecho | <input type="checkbox"/> Drought      |
| <input type="checkbox"/> Earthquake                  | <input type="checkbox"/> Explosion    |
| <input type="checkbox"/> Fire                        | <input type="checkbox"/> Landslide    |
| <input type="checkbox"/> Mudslide                    | <input type="checkbox"/> Snowstorm    |
| <input type="checkbox"/> Terrorism                   | <input type="checkbox"/> Tornado      |
| <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: \*

✓

Coordinates of the damage:

Search location or map coordinate

Nevada National Security Site

Timbi-Sha Shoshone Reservation

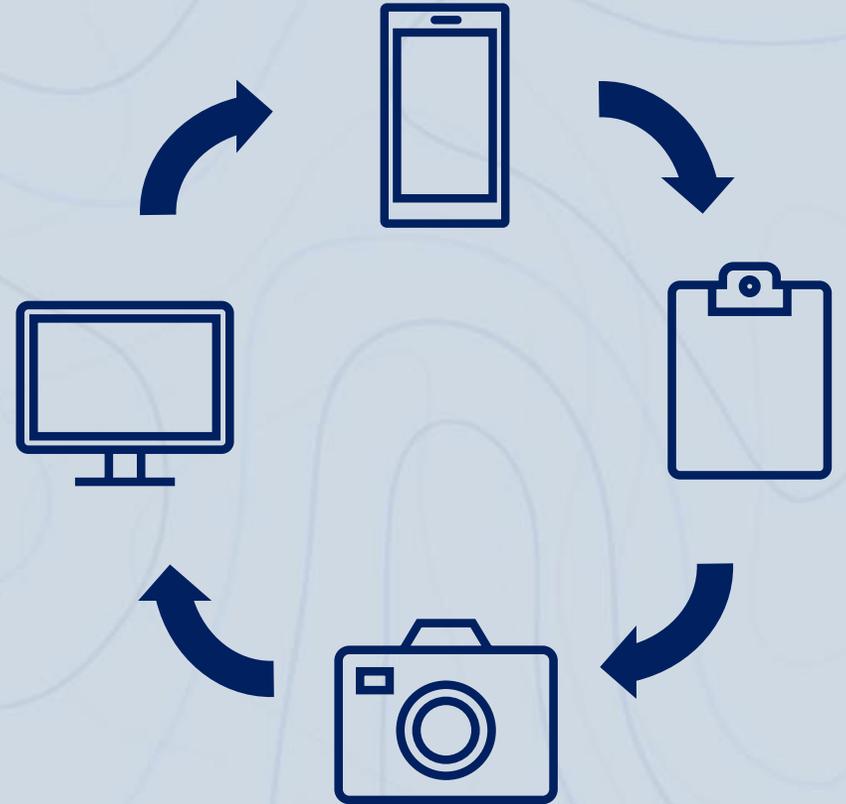
Pahrump

Esri contributors



# Interactive Training

1. Access Survey123 on your device
2. Go into the field
3. Fill-in questions
  - Become familiar with different drop-down options and dependent questions
4. Include pictures and any supplemental information you find
5. Submit
6. Monitor dashboard to see submitted surveys



# PDA Tool User Training Summary

- WebGIS concepts and overview of ArcGIS Online, Hub, Dashboards, and Survey123
- Structure of ArcGIS Online
- Licensing and usage of the tools
- Field experience with the survey
- Remaining questions



# Additional Resources

- Esri documentation:
  - <https://doc.arcgis.com/en/arcgis-solutions/latest/reference/introduction-to-damage-assessment.htm>
- FEMA PDA guidelines:
  - <https://www.fema.gov/disaster/how-declared/preliminary-damage-assessments#conduct>
- Reach out to Corin Roth at [croth@dem.nv.gov](mailto:croth@dem.nv.gov)

