Nevada Division of Emergency Management / Homeland Security

Preliminary Damage Assessment Tool User Training

2023

Begin Recording
BLUE RASTER

Training Staff

Michael Lippmann
Co-Founder

Andrew Patterson
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

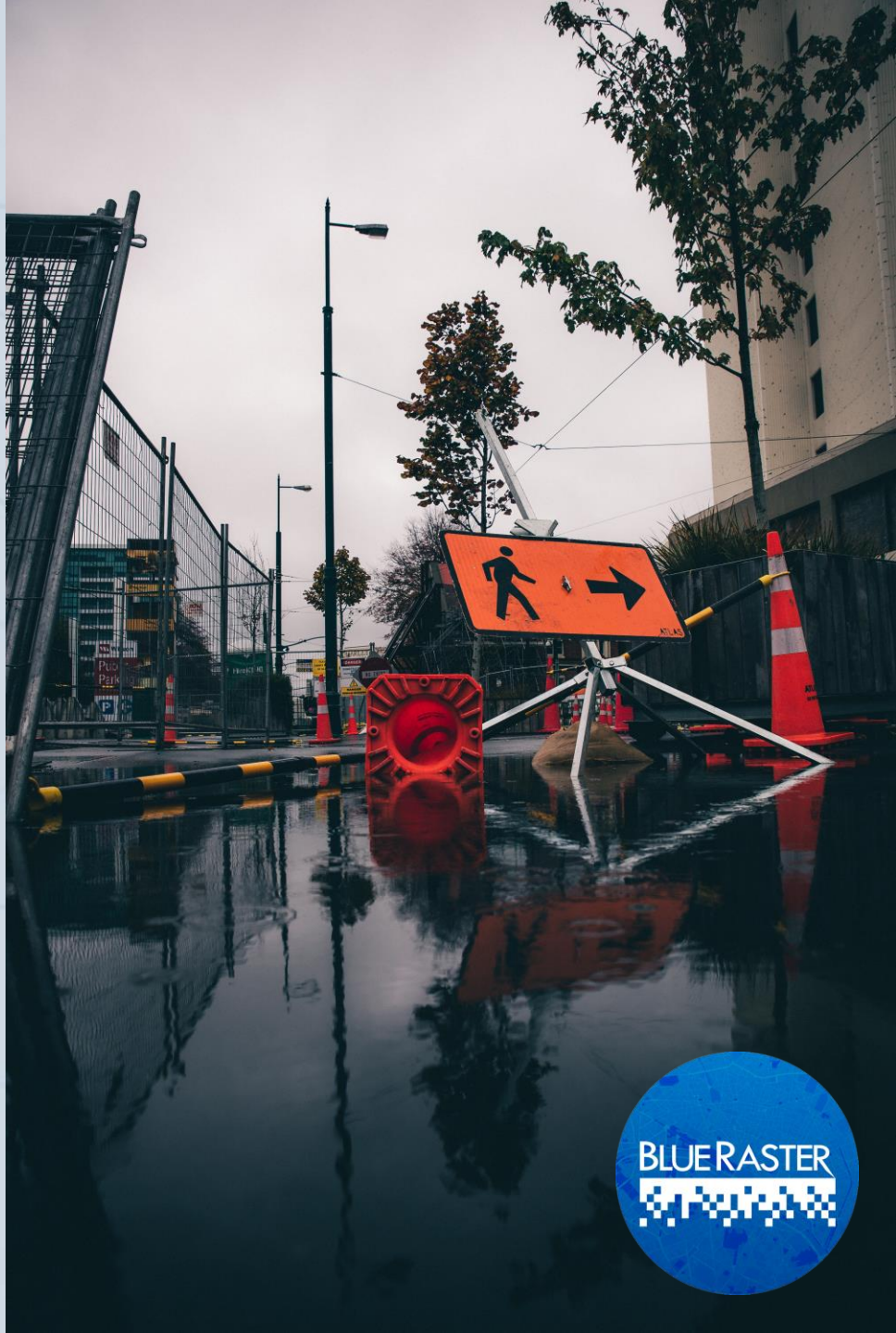
BLUE RASTER

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

GET IT ON Google Play

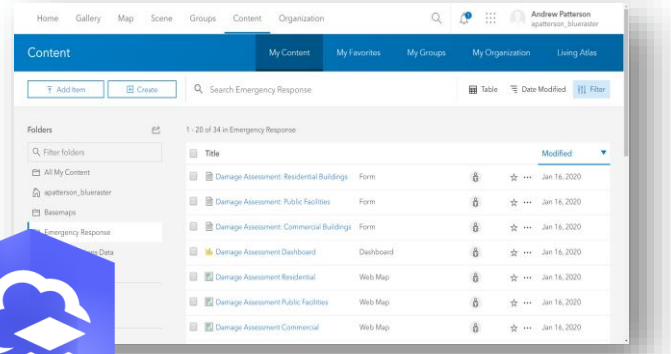
Download on the App Store

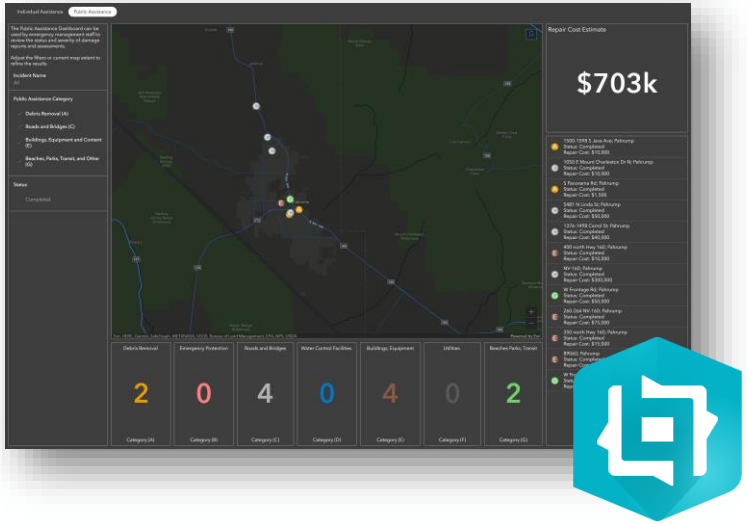
Survey123 App

Form-based Data Collection

ArcGIS Online

Hosted Web Applications





ArcGIS Experience Builder

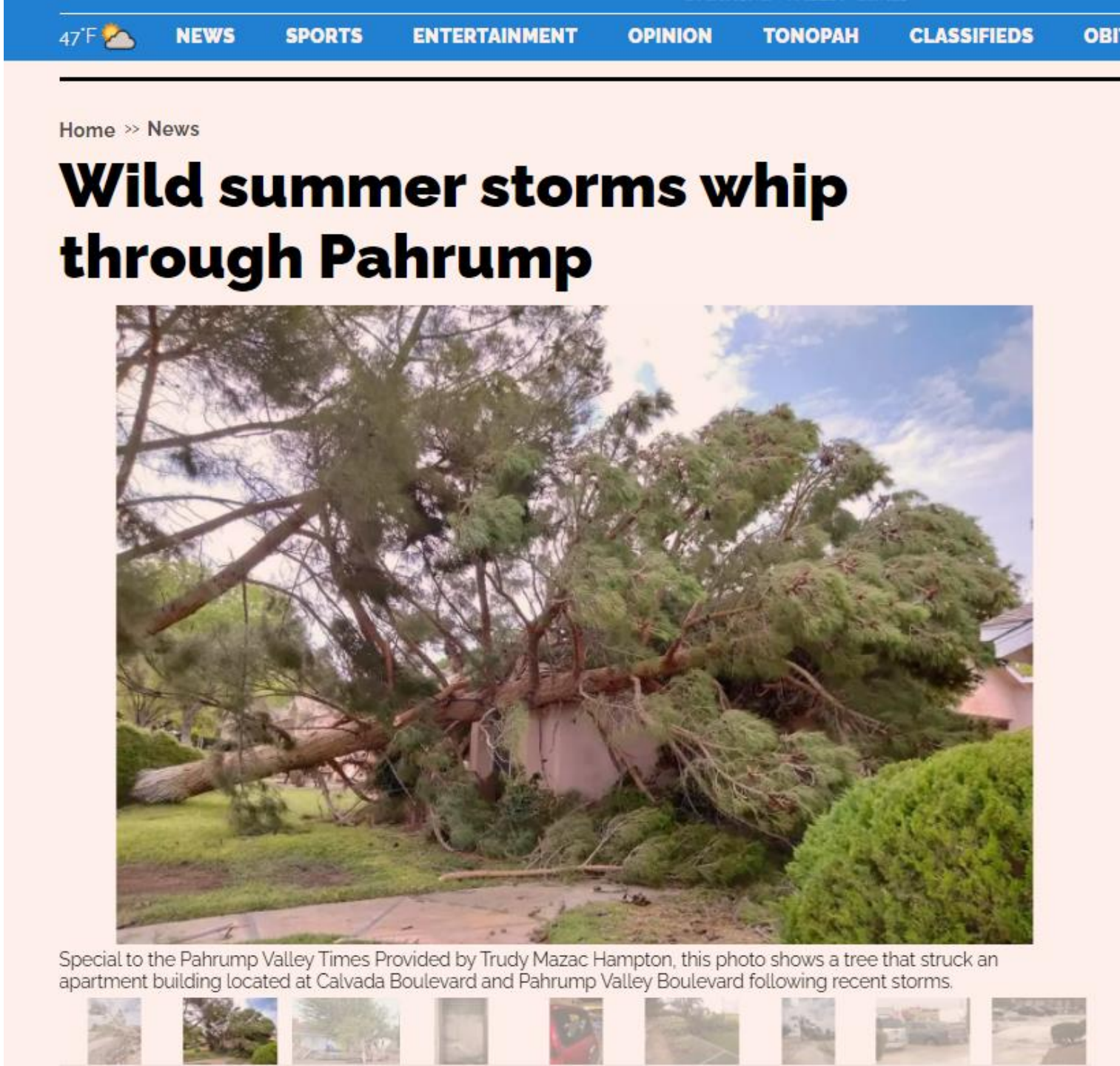
Damage Assessment Application (Dashboard)

BLUE RASTER

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



47°F NEWS SPORTS ENTERTAINMENT OPINION TONOPAH CLASSIFIEDS OBI

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

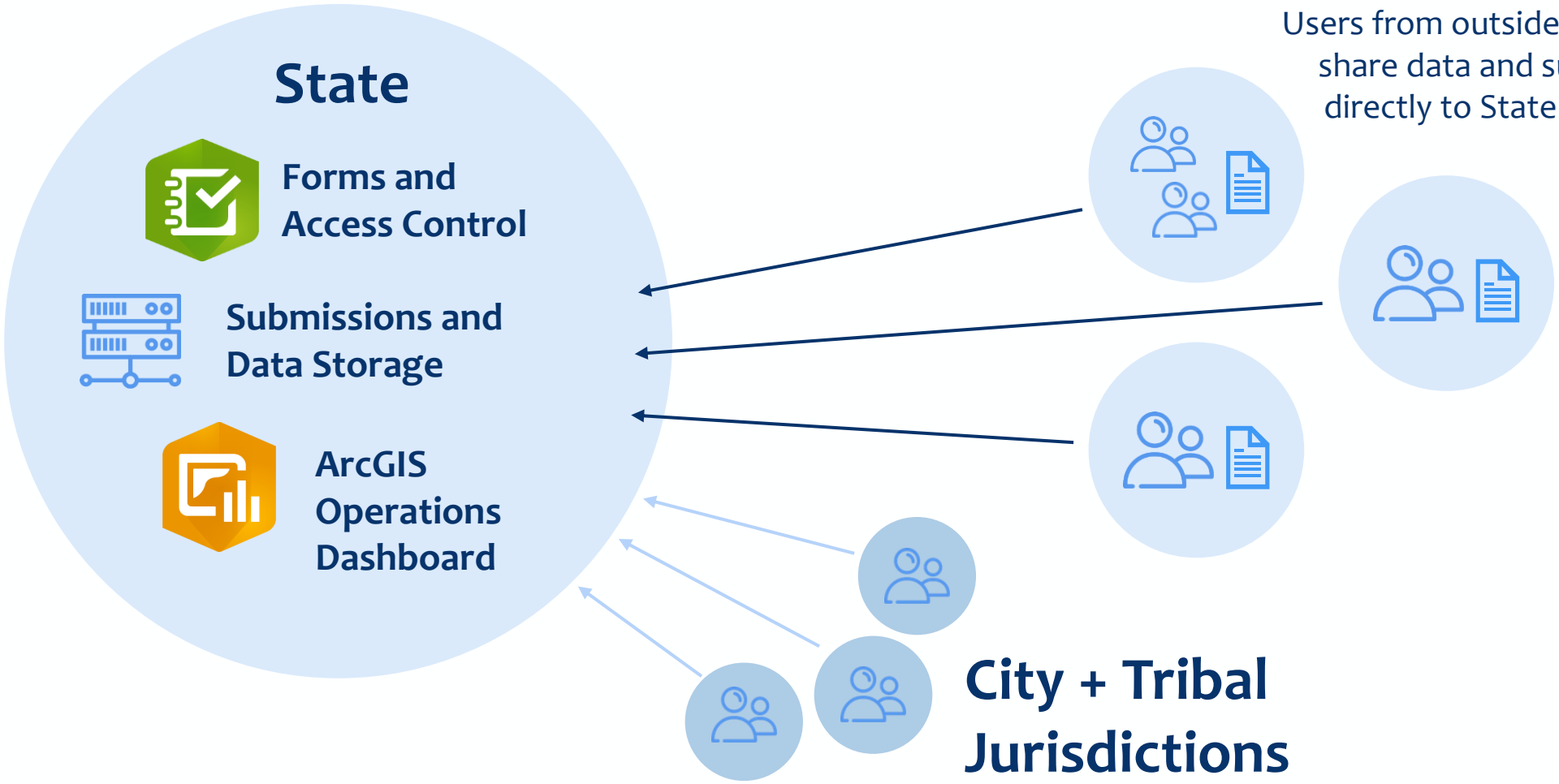
ArcGIS Hub

- 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

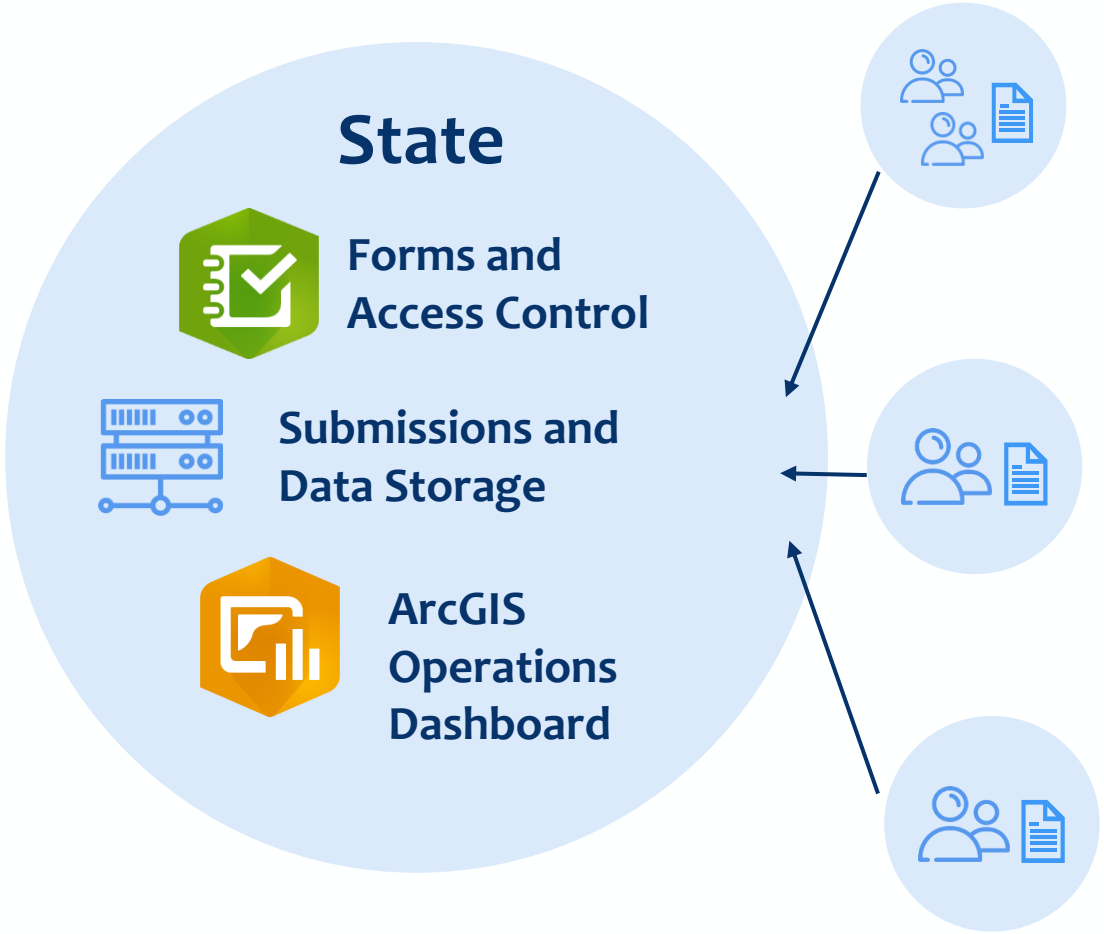
Structure, Security, and Sharing

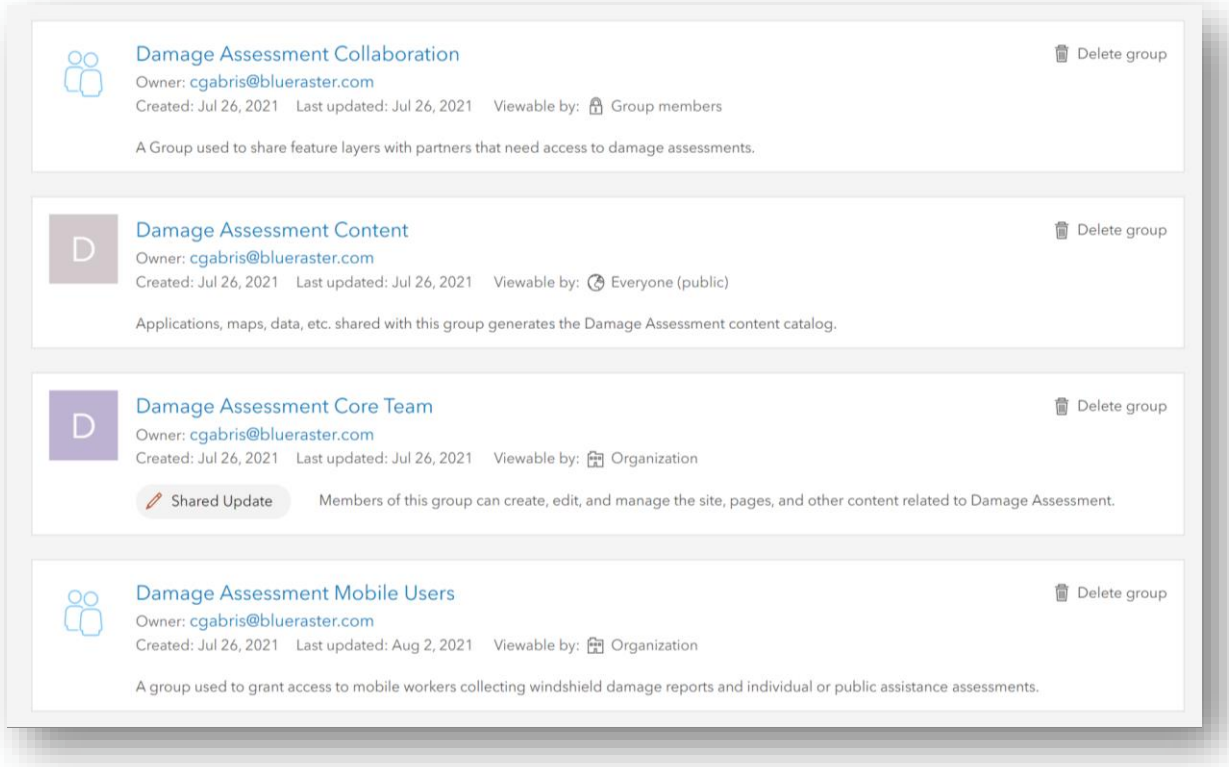
Counties

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



Groups in ArcGIS Online





Surge Events

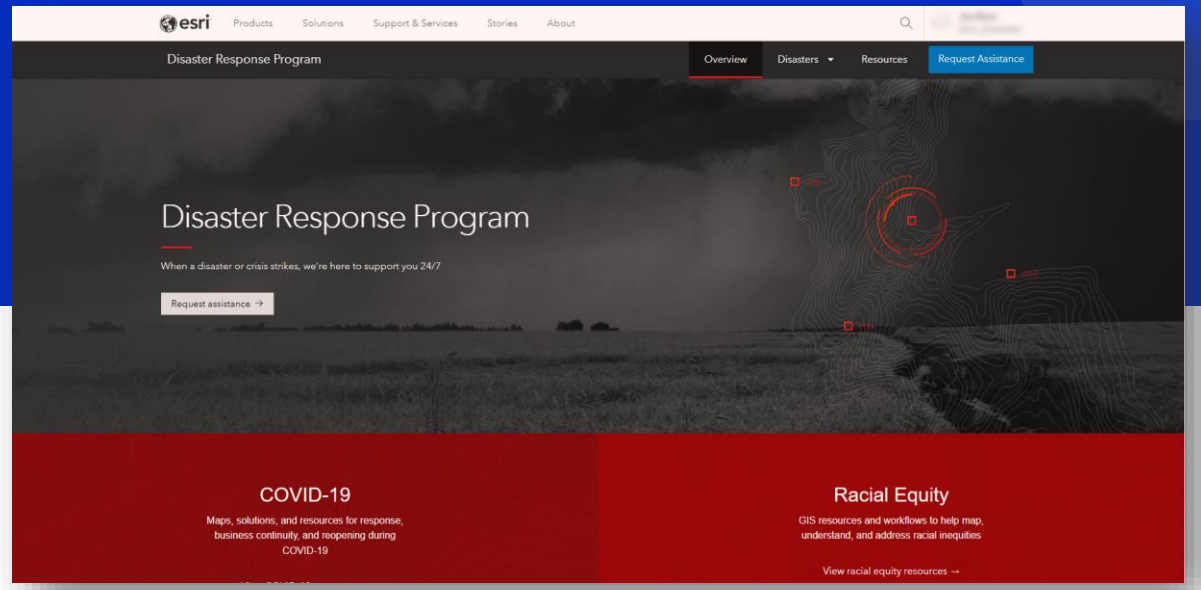
Solutions for Disaster Preparedness and Response

Preparedness

Response

Recovery

Activating Surge Users

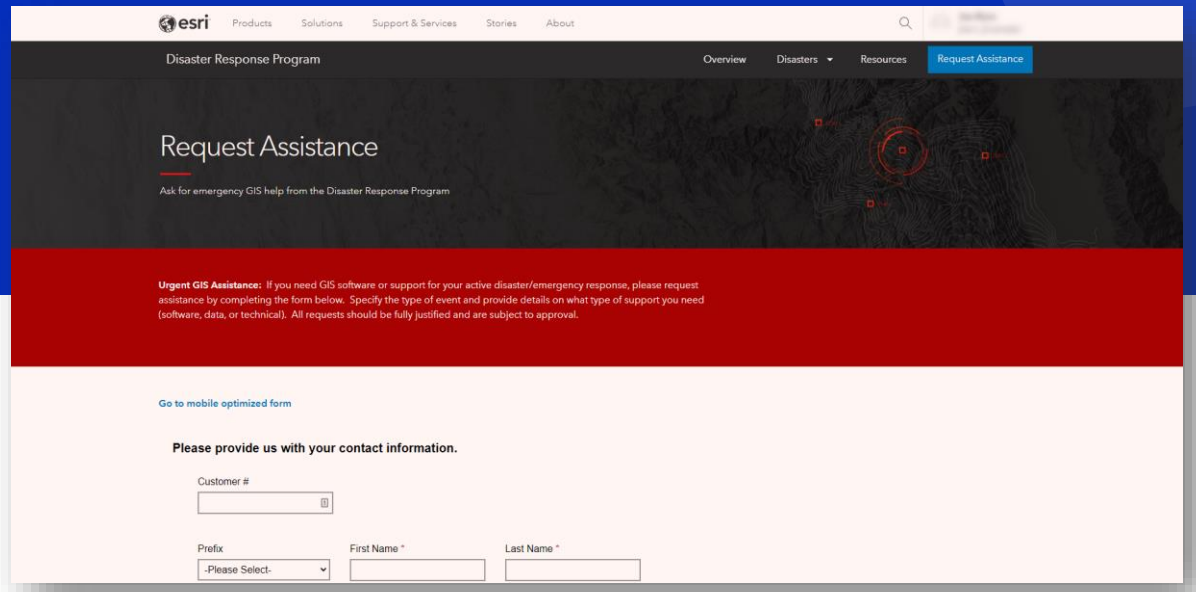


- Surge Licenses are activated through the Esri Disaster Response Program and are **requested through the State**

- 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

Data Capture

Survey123

1. Field user collects data on-site using mobile device/tablet/or laptop

2

3

ArcGIS Online
data is stored by form type
(Feature Service)

- Form is submitted immediately or is stored until connection is stable
- User can edit/update their entries

BLUE RASTER

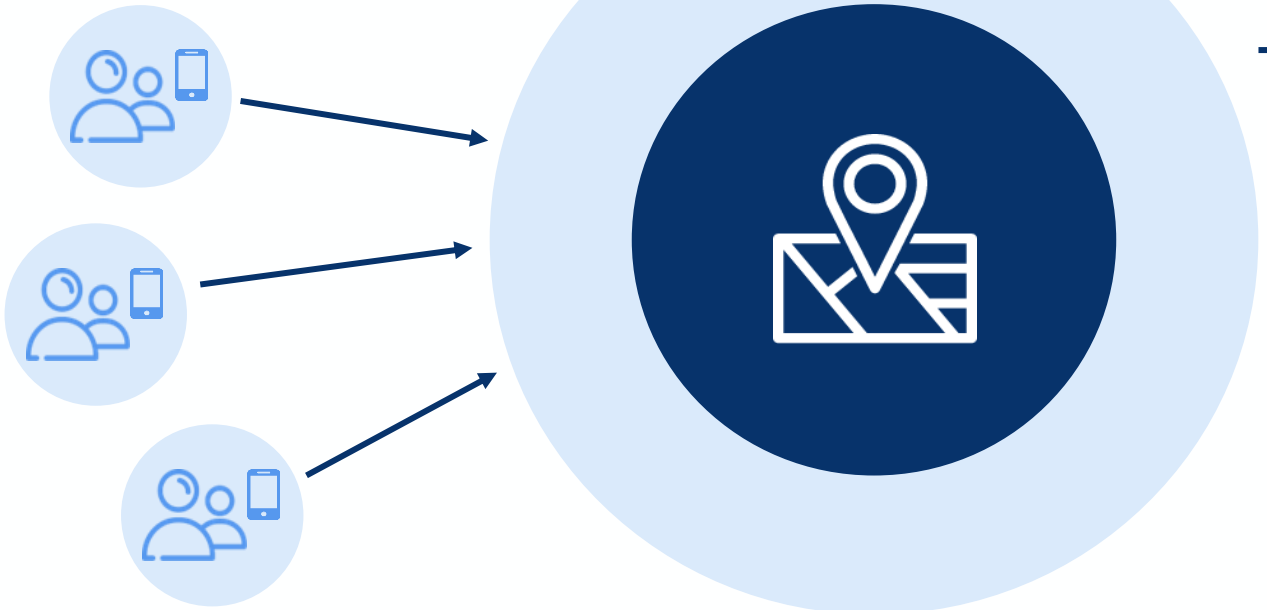
Data Storage and Management

ArcGIS Online Feature Layer

Field Surveys

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

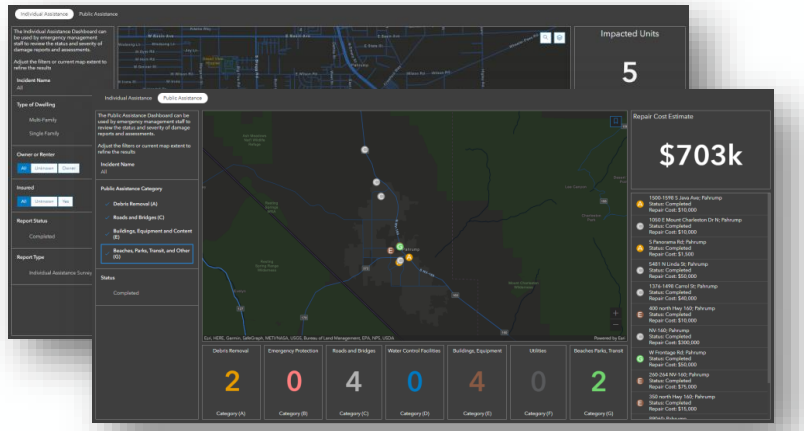
Storage + Management



Apply Filters

Dashboards

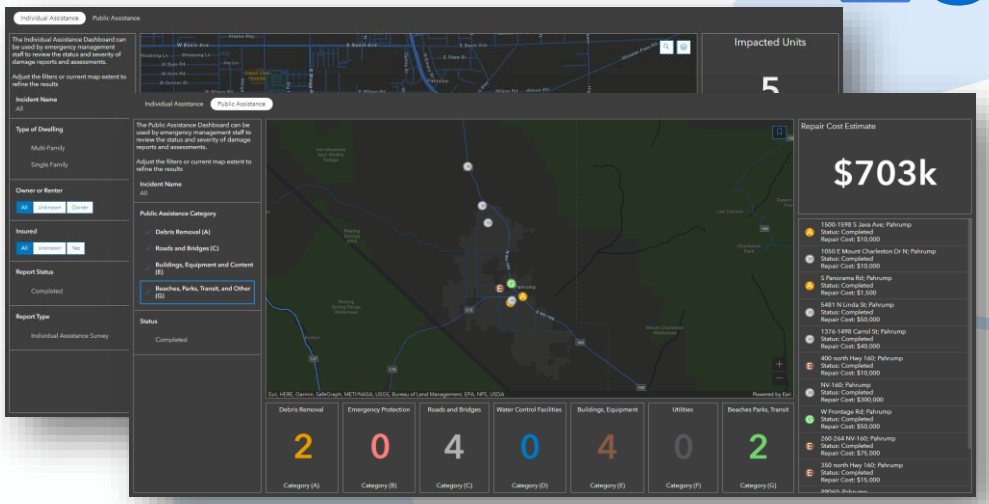
Data Filters **organize** and **visualize** the submitted data into 2 different dashboard views



Data Visualization

ArcGIS Experience Builder (Dashboard)

Dashboard



35

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

Review Individual Entries

Key information and photos can be viewed directly from the Dashboard

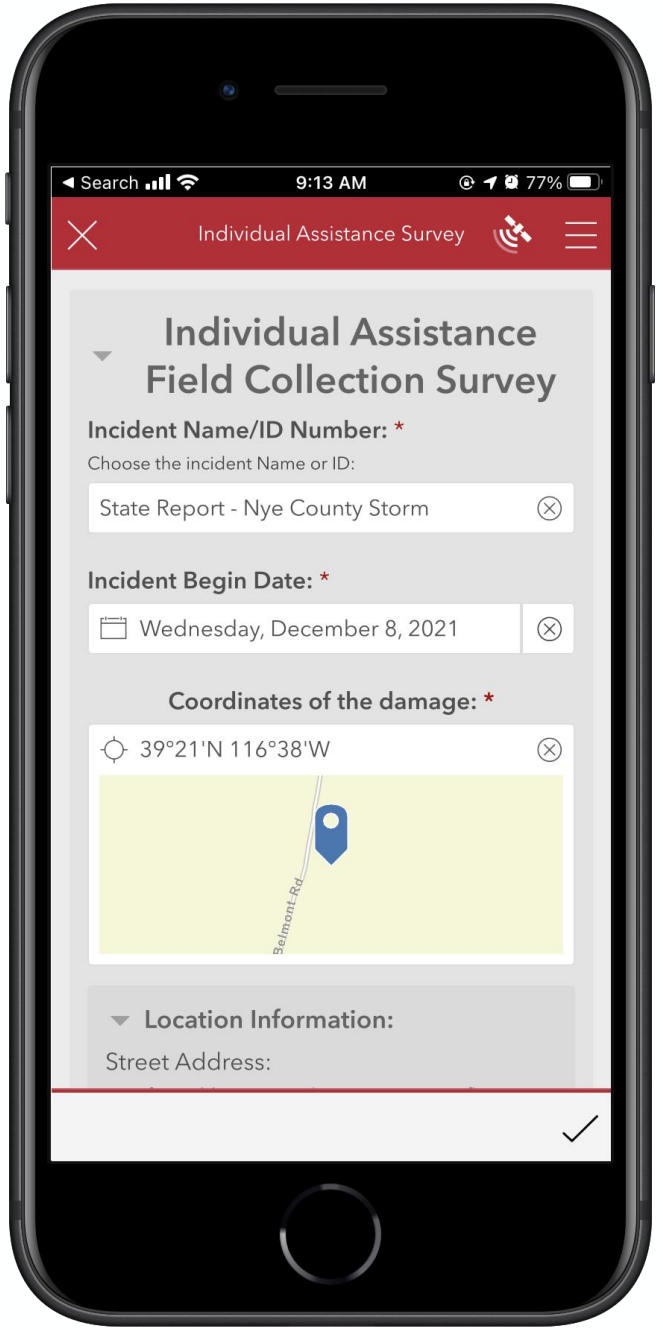
Survey123 for ArcGIS

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

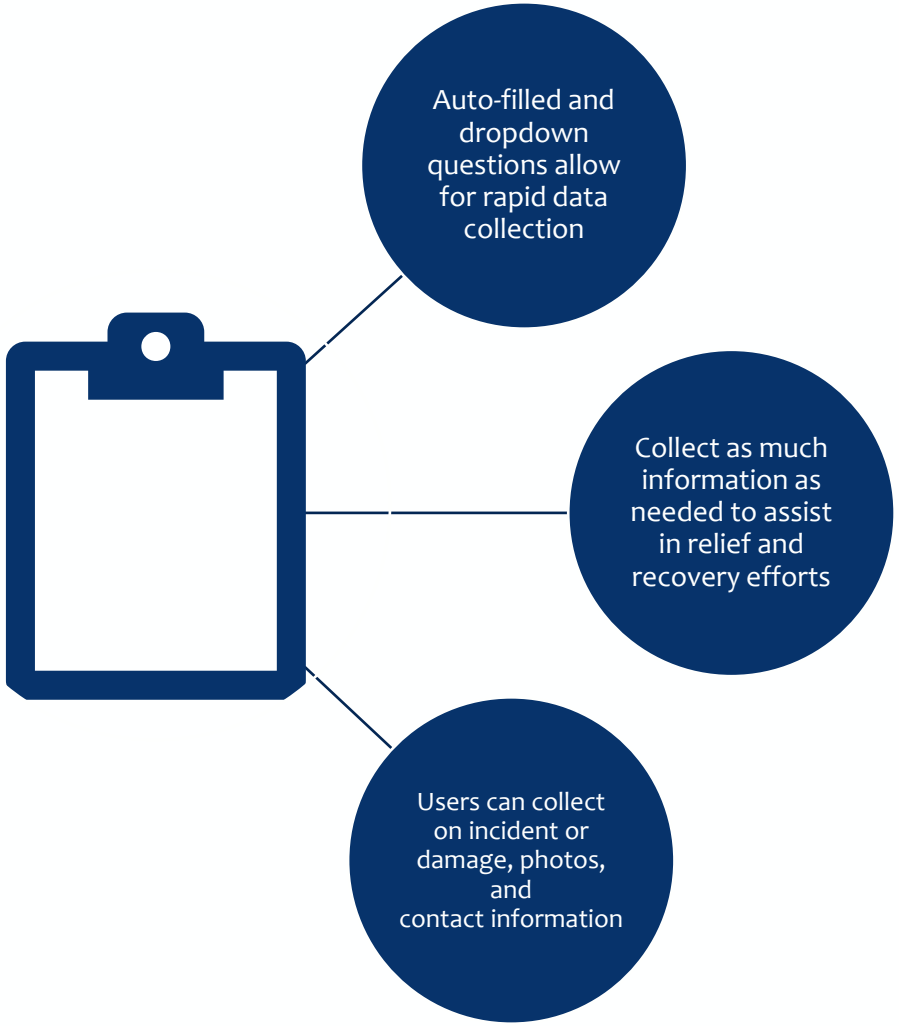
Uses GPS, Cell Signal, and Wi-Fi to help collect accurate location data

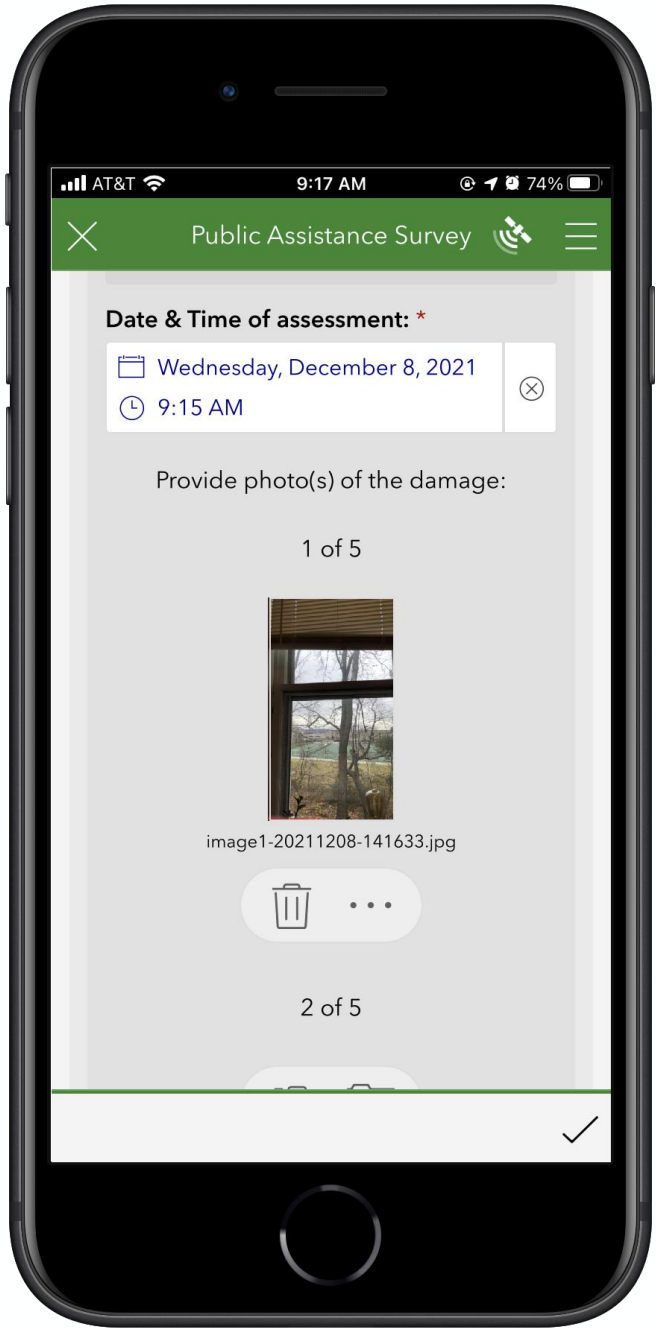
Users can use the location question to drop a point at precise location

Form information can be recorded both online and offline



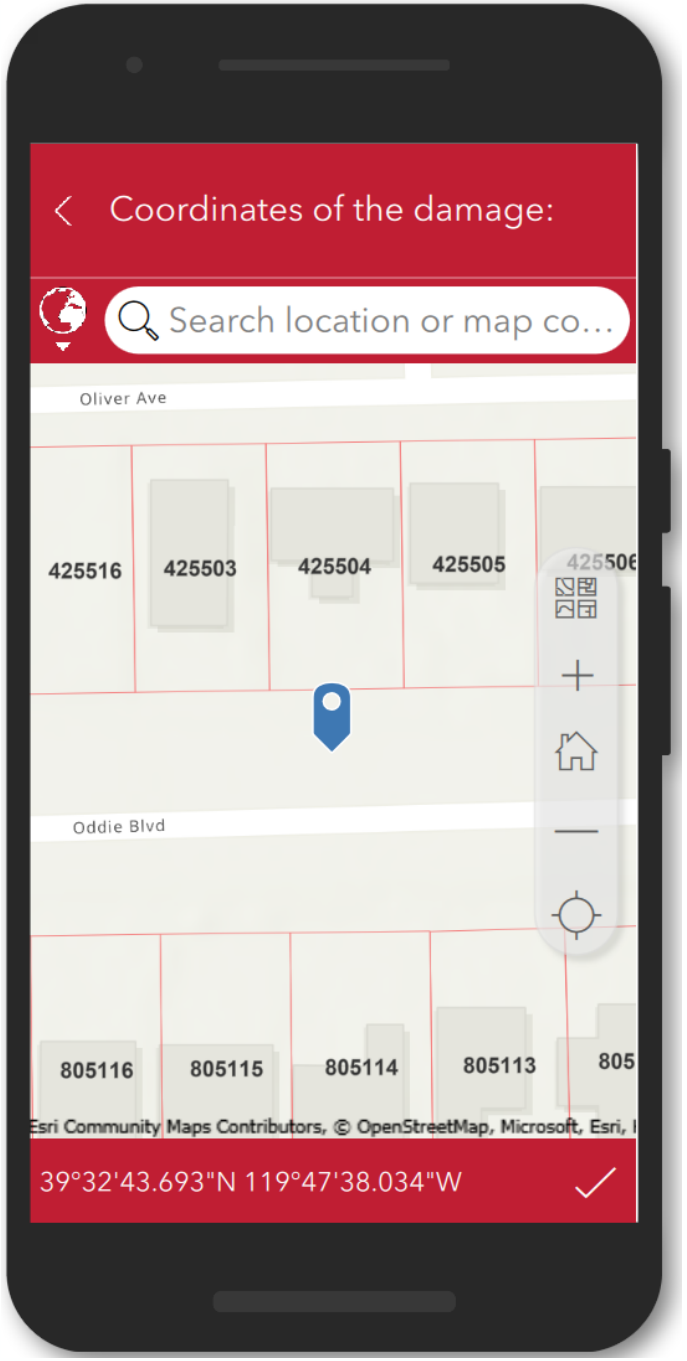
Survey123 for ArcGIS





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

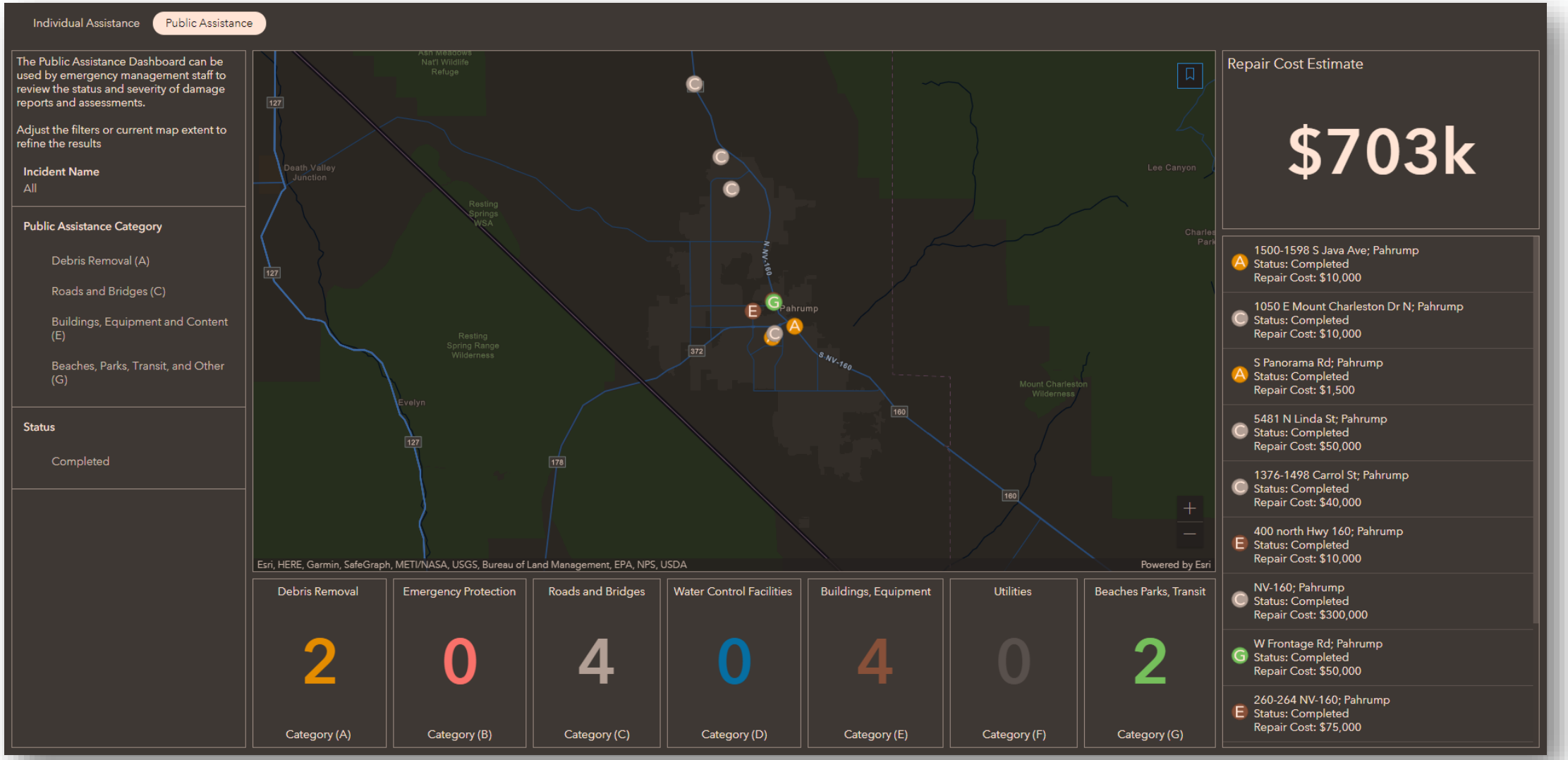
- Filters produce statistics on the fly for specific categories
  - i.e., how many incidents are classified as major
  - how many incidents occurred at uninsured residences
- View Dashboard
  - https://bit.ly/NDEM-PDA

Individual Assistance Dashboard

Individual Assistance Dashboard

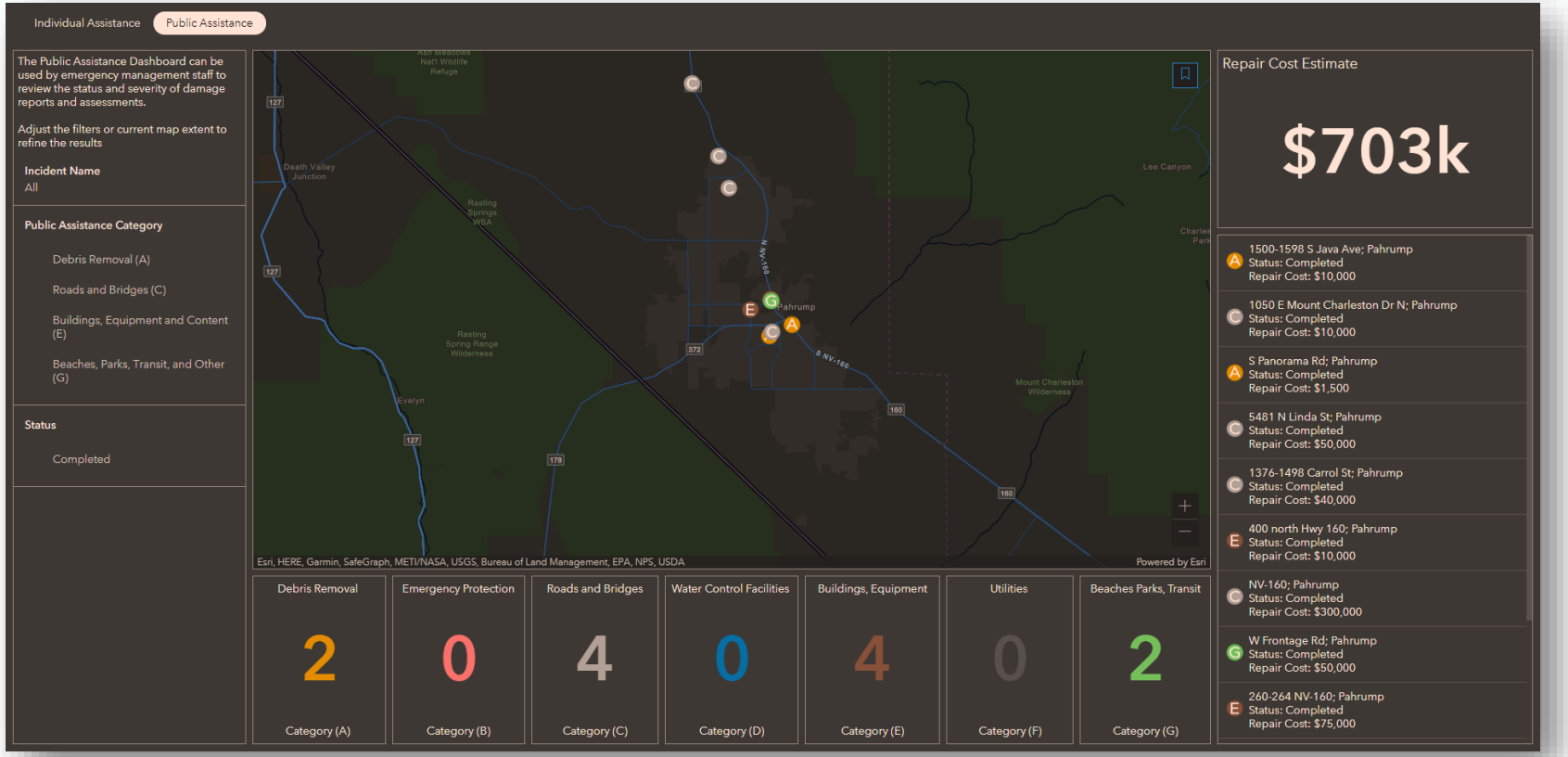
- Visualize spread of logged incidents
- Identify the nature of the incident (e.g., major, minor)
- Filter by:
  - Owner or renter
  - Insured status

Public Assistance Dashboard



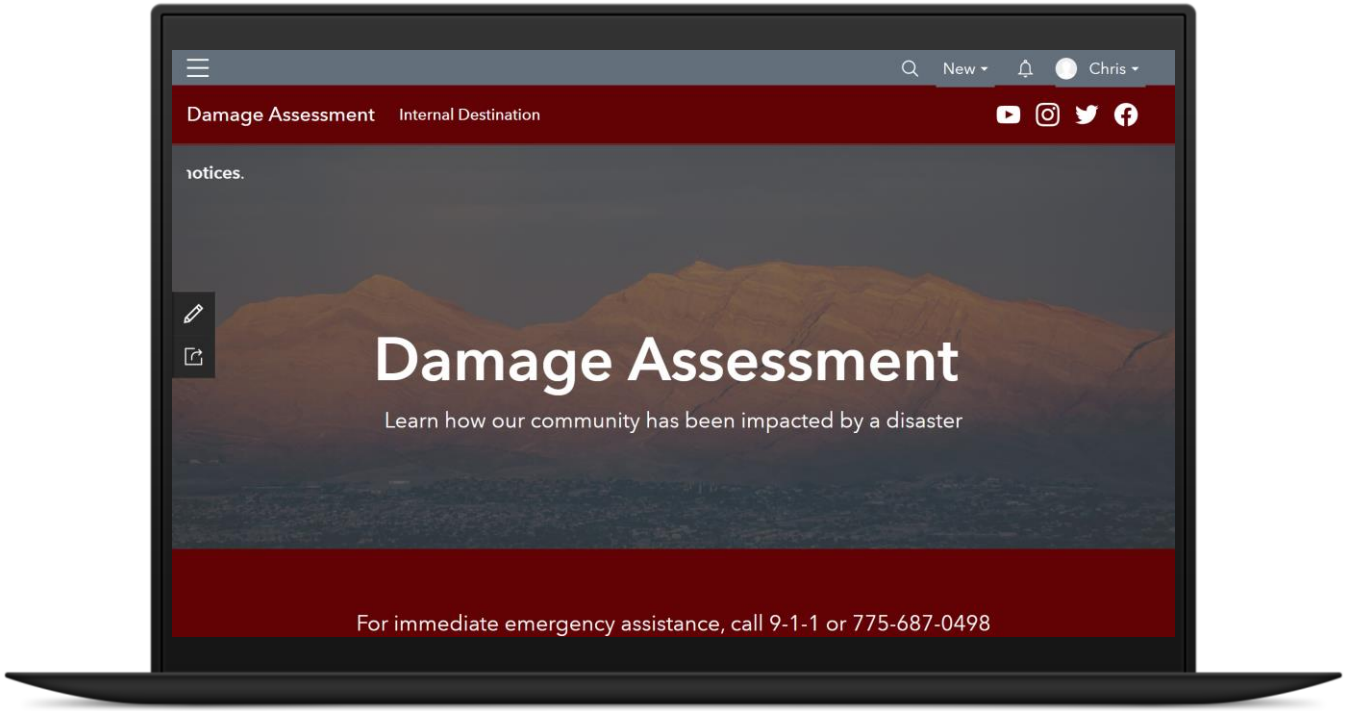
Public Assistance Dashboard

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

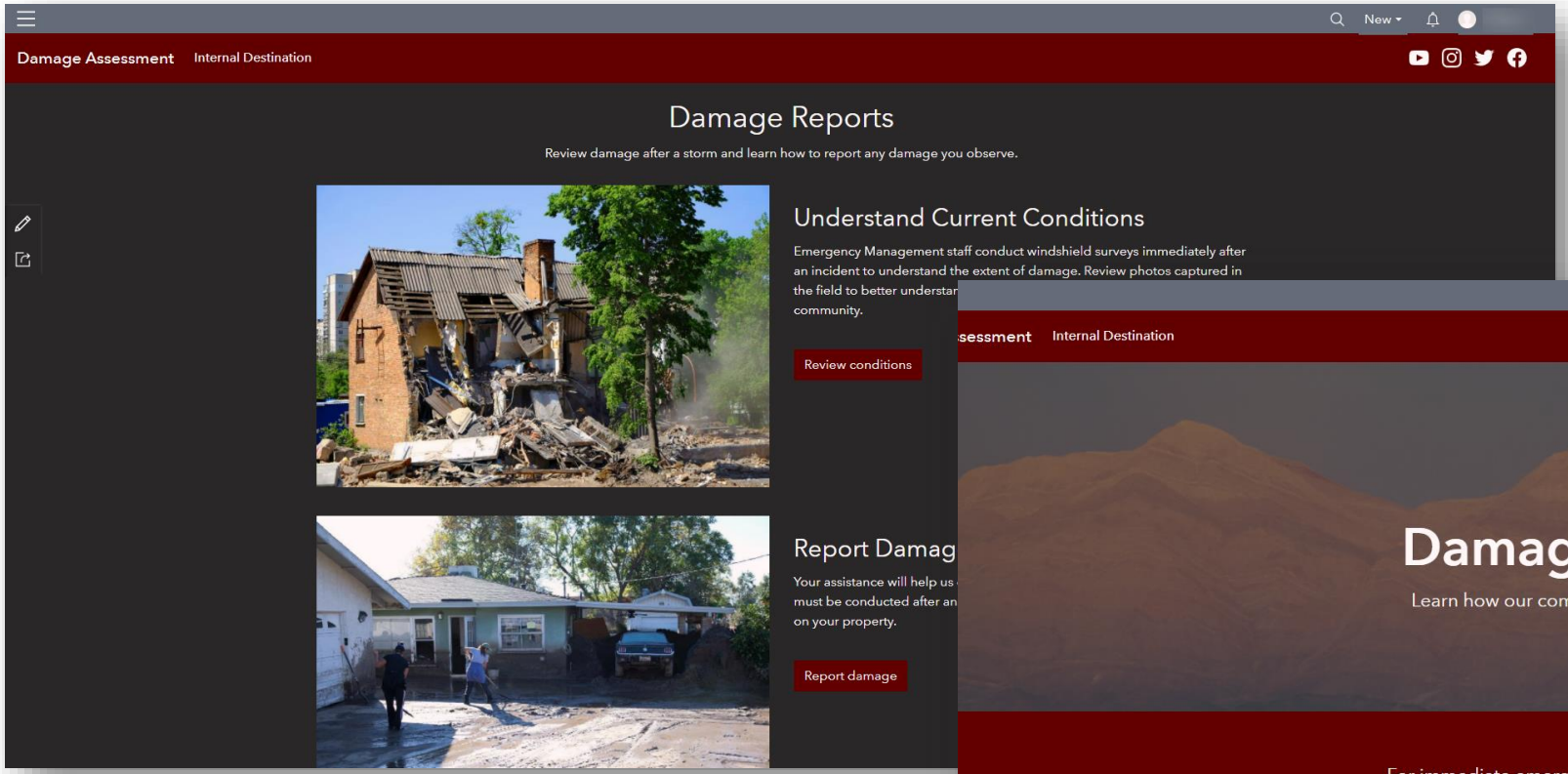


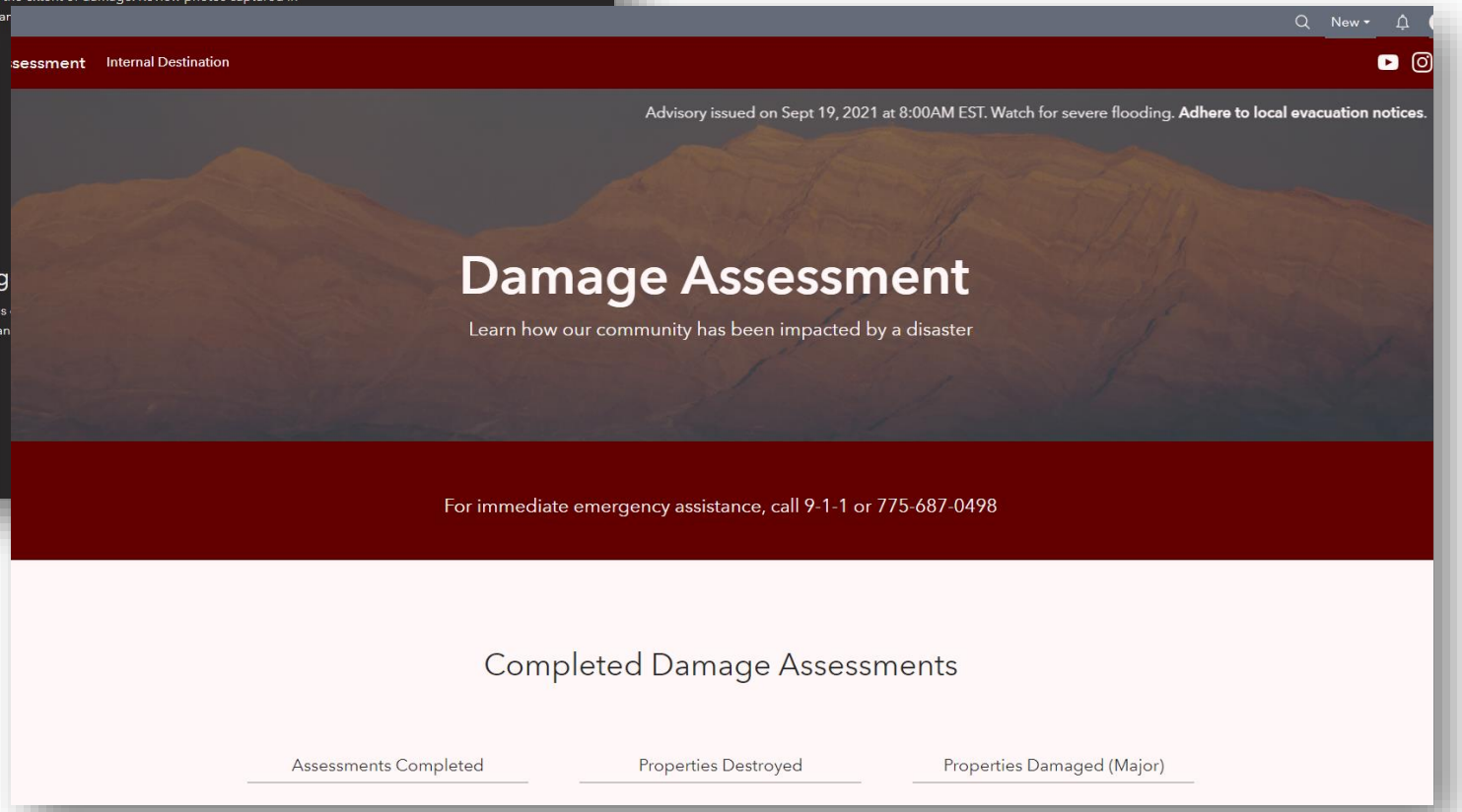
Preliminary Damage Assessment Hub

- 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



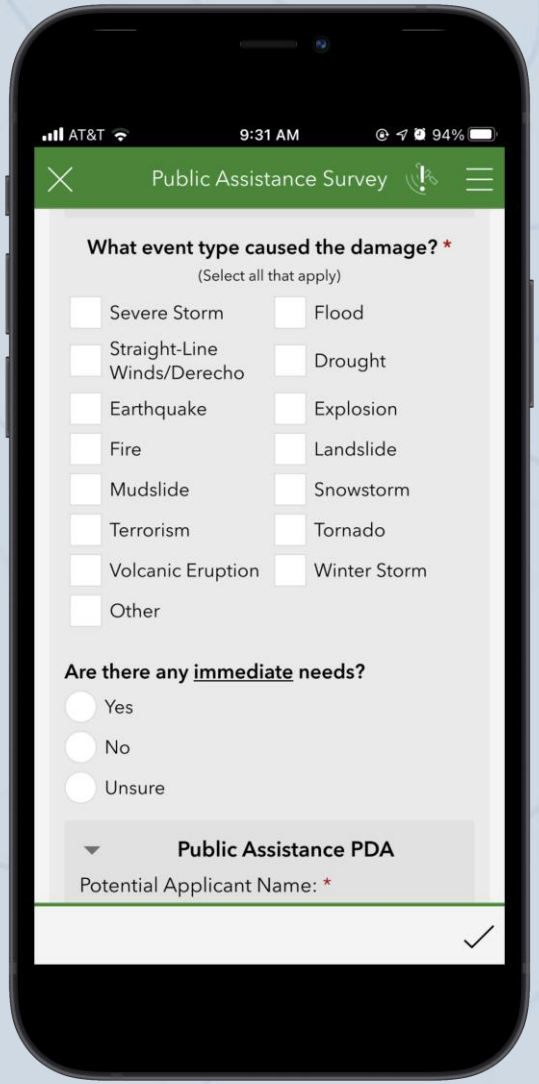


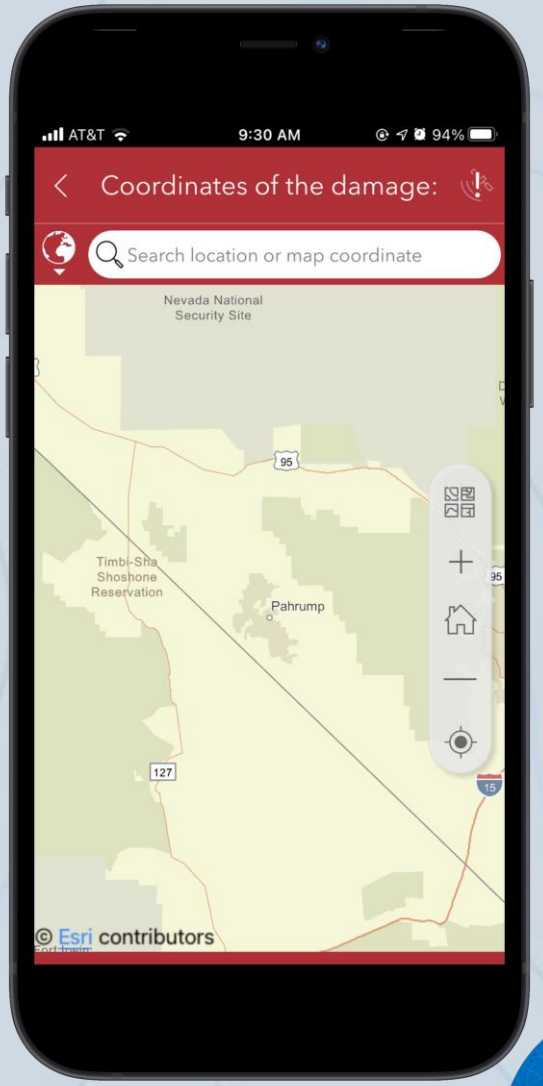
Interactive Training

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

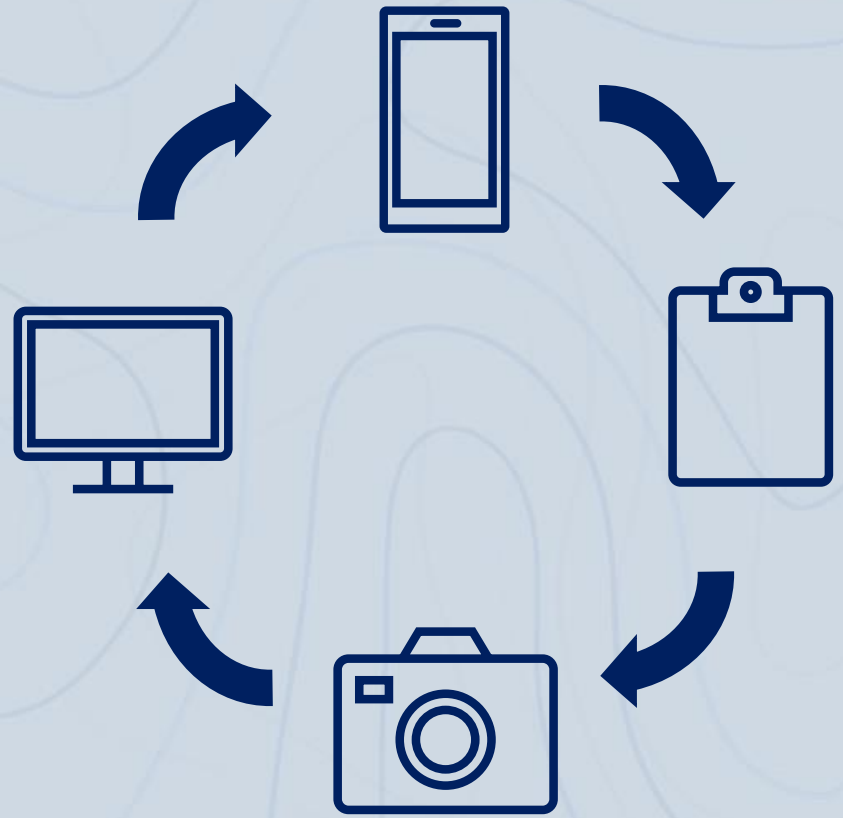
Field Preparation





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