

# esri



# ArcGIS Mobile Solutions

OKSCAUG User Group Meeting  
Edmond, OK  
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# Agenda

**ArcGIS – The Platform for Mobile GIS**

**Users of Mobile Technology**

**Benefits of Mobile Solutions**

**Mobile Options**

**Making Your Data Mobile**

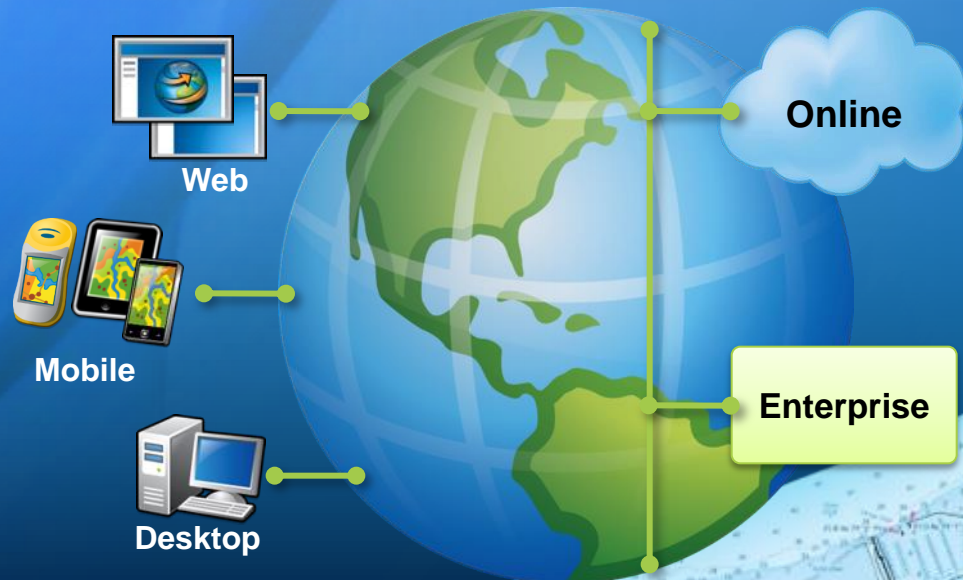
**Hands On – Using Mobile Apps**

**Q & A**



# ArcGIS Platform

- For Organizations to leverage the geographic approach
- Everyone can use it at any time, anywhere
- Combines building blocks and components that deliver geospatial capabilities
- An ecosystem for ...
  - Users
  - Partners
  - Vendors
  - Developers
  - Citizens / Public
  - Other GIS platforms





# ArcGIS Online (AGO)

## Create and Share Intelligent Web Maps & Apps



# Publishing Data to AGO

- ArcGIS Desktop Publishing
  - Shapefiles & Geodatabases with Domains
  - Hosted Feature Services
  - ArcGIS Server
- Publish an Excel CSV with Headers
- Make a Web Map
- Map a Web App





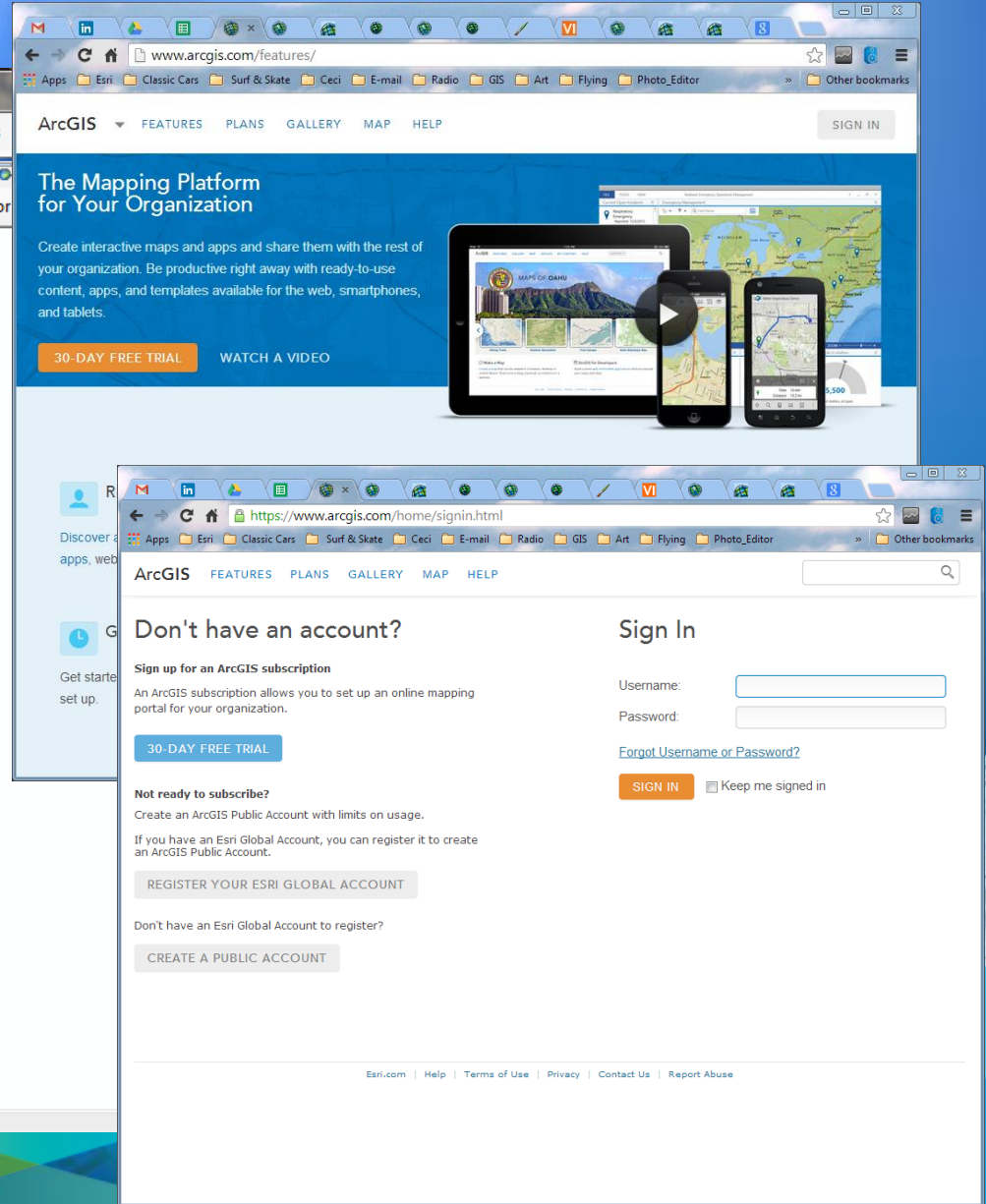
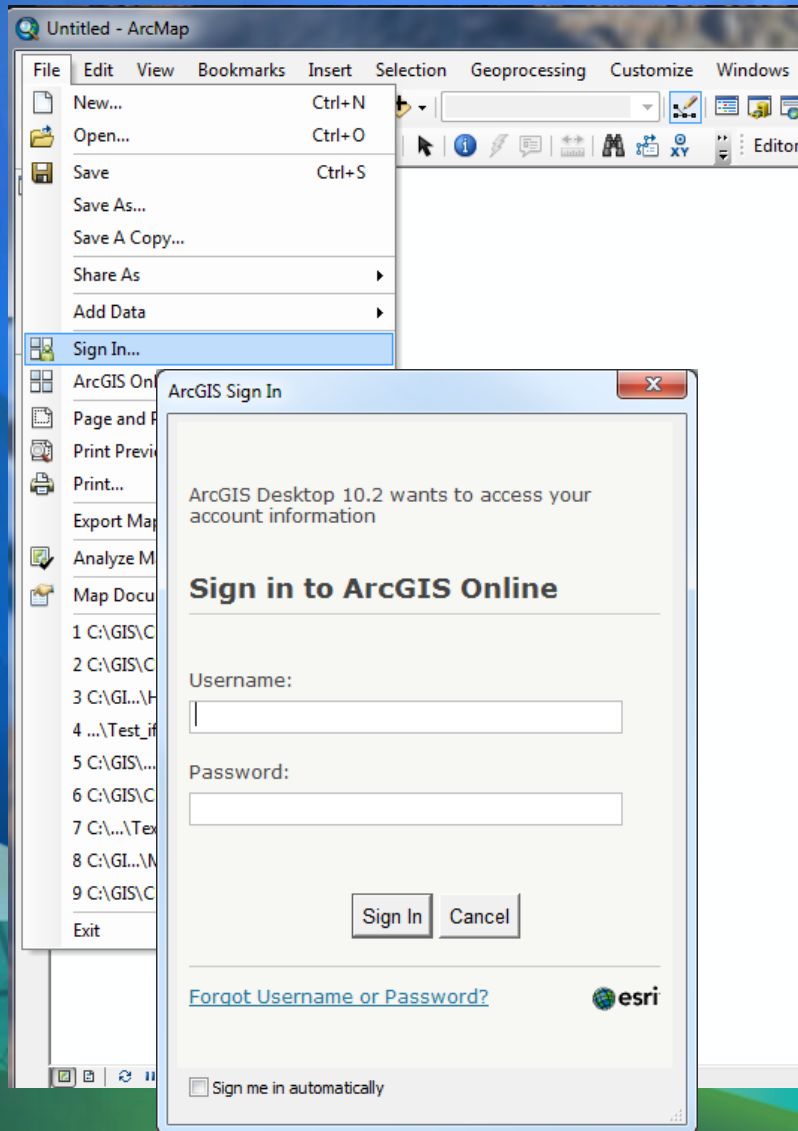
# Making Your Data Mobile

## Taking Your GIS into the Field

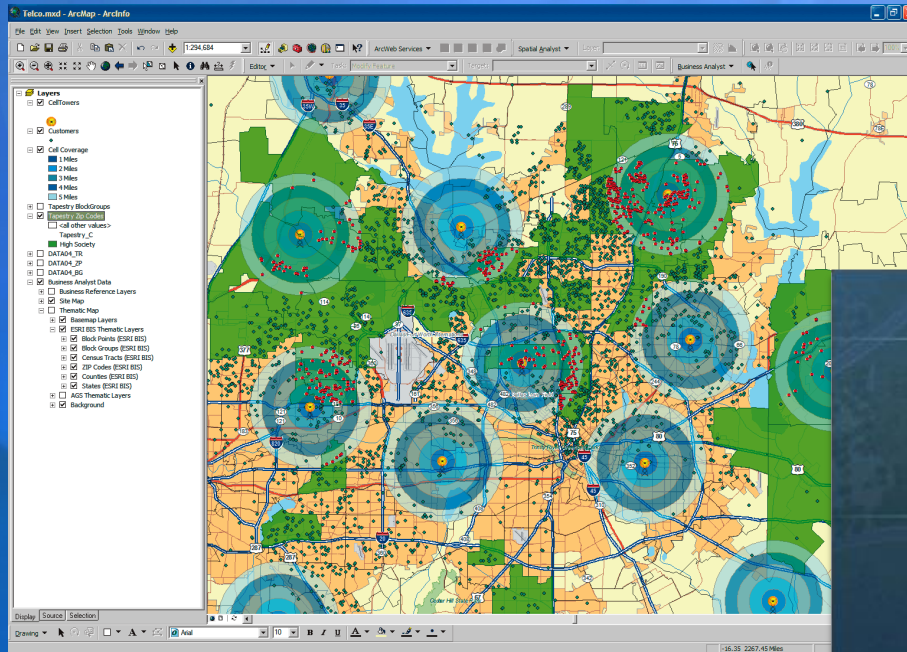




# Publishing Data to AGO



# Desktop ↔ AGO ↔ Mobile GIS





# Goals for a Mobile Solution





# Mobile Devices

## Hardware drives your decisions





# ArcGIS Mobile Platform Options

## Windows Mobile

### Apps

ArcGIS Mobile  
ArcPad

.NET



## Windows

### Apps

ArcGIS Desktop  
ArcGIS Mobile  
ArcPad  
Dashboard

WPF, Java



## Windows Phone

### Apps

ArcGIS App

XAML



## Apple iOS

### Apps

ArcGIS App  
Collector

Objective-C



## Android

### Apps

ArcGIS App  
Collector

Java



## Linux

ArcGIS  
Runtime  
Engine

Java, C++



## 2 Main Mobile Use Cases

- Every-Day Uses
- Field Data Collection & Editing





# Benefits of Field Editing Solutions

## Rapid Data Collection

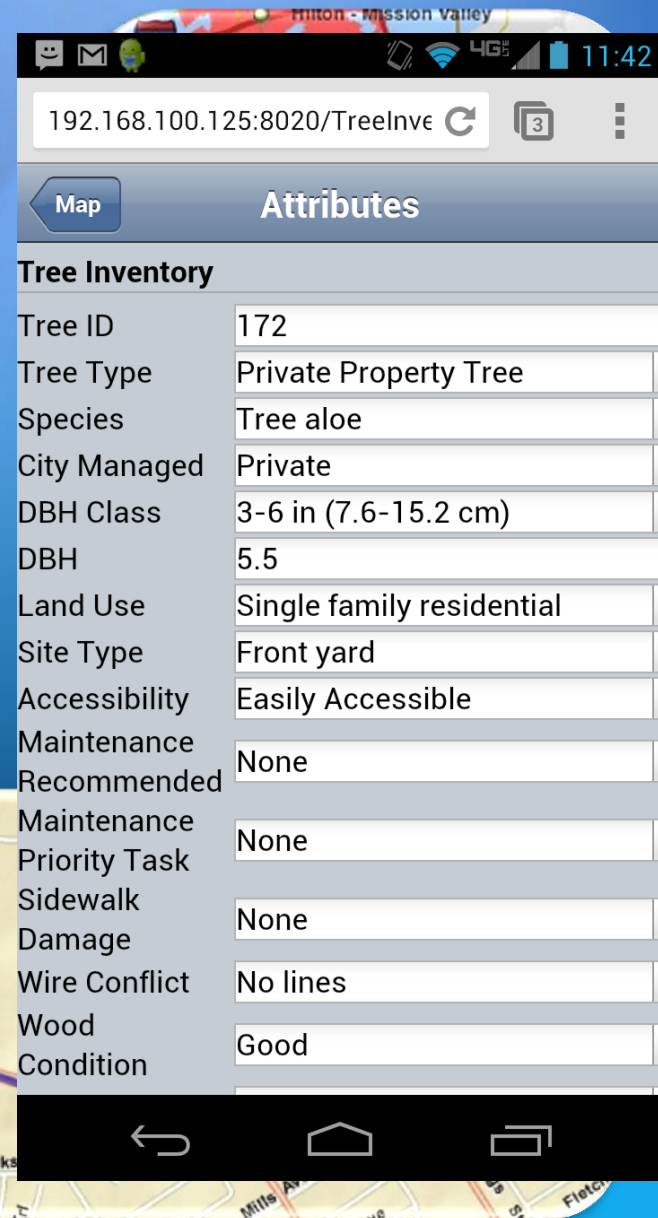
- Inspect Assets & Record Events
- Real-time Data Collection

## Improve Efficiency and Accuracy

- Use of Data Entry Forms
- Precise GPS Locations
- Routing & Drive Times

## Seamless Data Synchronization

- Sync



Tree Inventory	
Tree ID	172
Tree Type	Private Property Tree
Species	Tree aloe
City Managed	Private
DBH Class	3-6 in (7.6-15.2 cm)
DBH	5.5
Land Use	Single family residential
Site Type	Front yard
Accessibility	Easily Accessible
Maintenance Recommended	None
Maintenance Priority Task	None
Sidewalk Damage	None
Wire Conflict	No lines
Wood Condition	Good

# ArcGIS Mobile Applications Options

- ArcGIS for Windows Mobile
- ArcPad
- ArcGIS Online
  - ArcGIS App
  - Collector
  - Dashboard





# ArcGIS Mobile Applications Options

- **ArcGIS for Windows Mobile**

- ArcPad
- ArcGIS Online
  - ArcGIS App
  - Collector
  - Dashboard

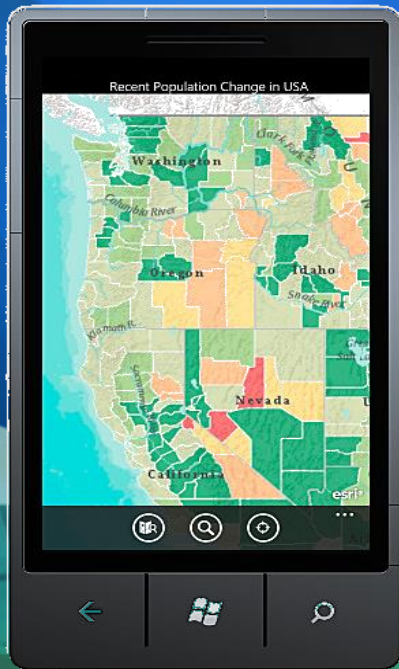




# ArcGIS for Windows Mobile \*

- Easy-to-Use, Ready-to-Deploy, Focused, Mobile Apps
- Works in a Connected or Disconnected Environment
- Collect, Edit, and Update GIS/GPS Data in Real-time
- Fully Configurable

\*Users typically need little training



\*Windows Mobile Handhelds & Windows 7/8 Tablets & Laptops

# ArcGIS for Windows Mobile

## Rapid Deployment during the BP Gulf Oil Spill



*"The Gulf oil spill, which began April 20, 2010 when BP's Deepwater Horizon drilling rig exploded, set the stage for the largest implementation of mobile GIS technology in history,"*  
Tom Patterson – Esri .

In order to track the spill and cleanup efforts, BP distributed 300 handhelds to government, military and commercial teams with little or no GIS experience.





The screenshot displays the ArcGIS Mobile application interface. At the top, the title bar reads "ArcGIS Mobile - DamageAssessmentTryItLive". Below the title bar, there is a "View Map" button and a scale bar indicating 350 yards. The main map area shows a city grid with streets, buildings, and green spaces. A yellow grid is overlaid on the map, dividing it into sections. The sections are labeled with "16T DM" and numbers: "16T DM 03 26", "16T DM 03 25", "16T DM 04 25", "16T DM 05 25", "16T DM 03 24", "16T DM 04 24", and "16T DM 05 24". The map also shows various landmarks, including "Quincy Lake", "Crown Point", and "Crown Point Park". A "Tasks" button is visible at the bottom center of the screen.

# ArcGIS Mobile Applications Options

- ArcGIS for Windows Mobile

- **ArcPad**

- ArcGIS Online
  - ArcGIS App
  - Collector
  - Dashboard

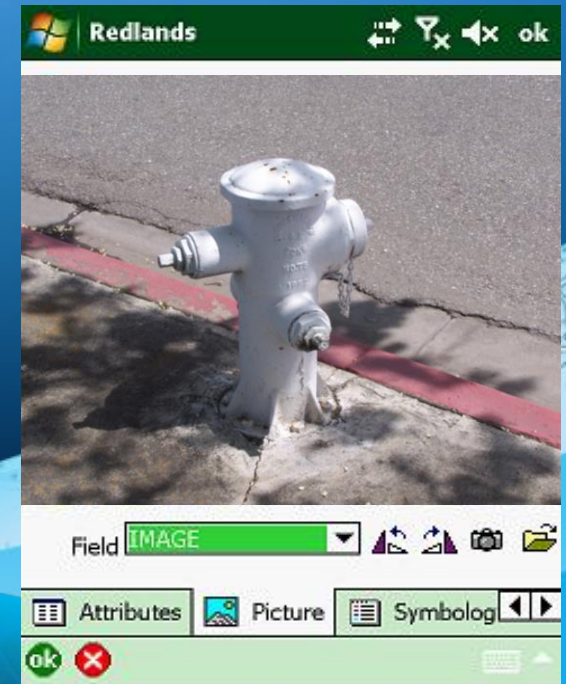




# ArcPad

- High-Accuracy GPS
- Fully Disconnected Tools
- Capture, Edit and Display Data & Images
- Customizable Field Data Collection

\*User typically needs GIS/GPS Training



# ArcGIS Mobile Applications Options

- ArcGIS for Windows Mobile
- ArcPad
- **ArcGIS Online - SaaS**
  - **ArcGIS App**
  - Collector
  - Dashboard





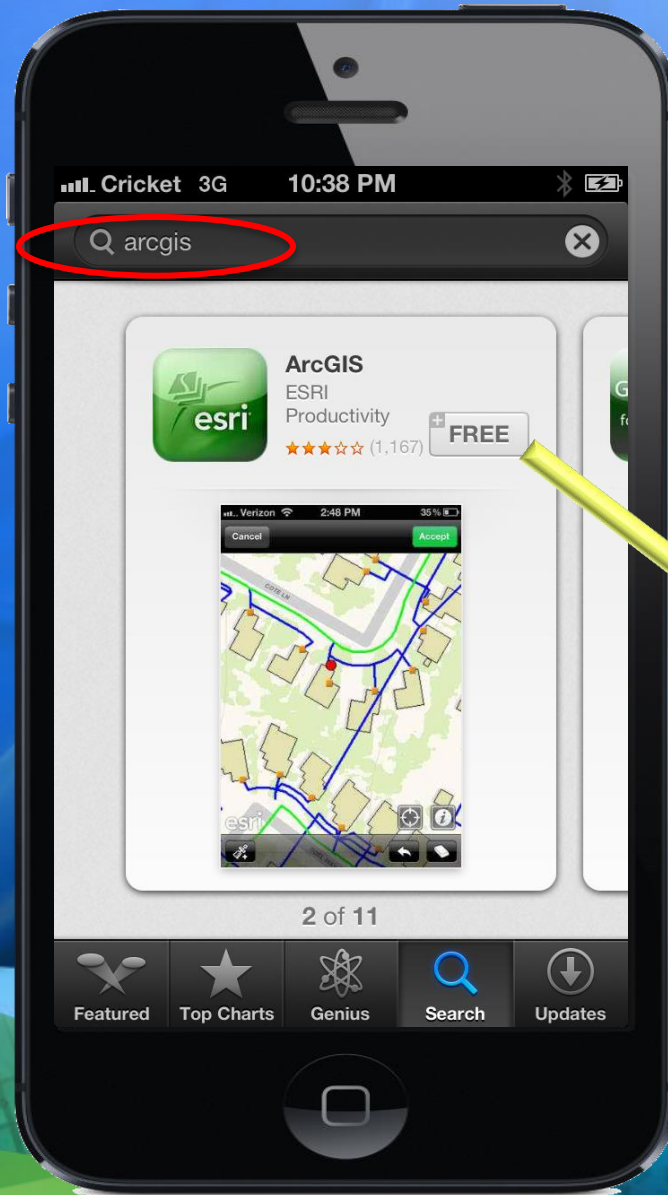
# ArcGIS App - "The Green App"

- Free – To View Public Webmaps
- Links to Your AGO Account
  - Publish Custom Maps
  - Add, Edit and Delete: Points, Lines & Polygons
  - Share Web Maps & Apps with Groups



# Download & Install the ArcGIS App

*iPhone, Android Phone devices*





# Demo the ArcGIS App



# ArcGIS Mobile Applications Options

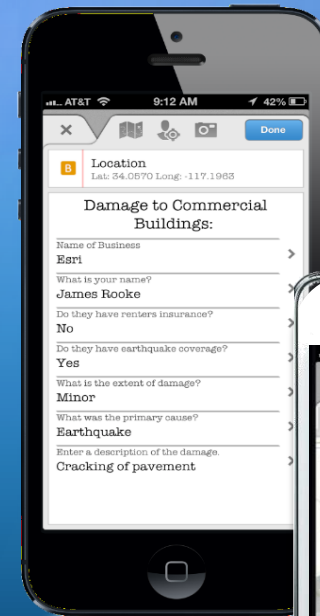
- ArcGIS for Windows Mobile
- ArcPad
- **ArcGIS Online - SaaS**
  - ArcGIS App
  - **Collector**
  - Dashboard





# Collector

- Available on iPhone and Android phones
- Targets Field Data Collection
- Free to download and use
- Integrated into the ArcGIS platform
- Configurable using ArcGIS Online and Portal for ArcGIS



*iOS & Android Devices*

# What You Can Do With Collector

- **Find**

Find places and points of interest around you

Get driving directions to places and to your features

- **Measure**

Calculate distance and area on the map

Enable Location Tracking to record your location

- **View**

Open bookmarked locations

Switch basemaps

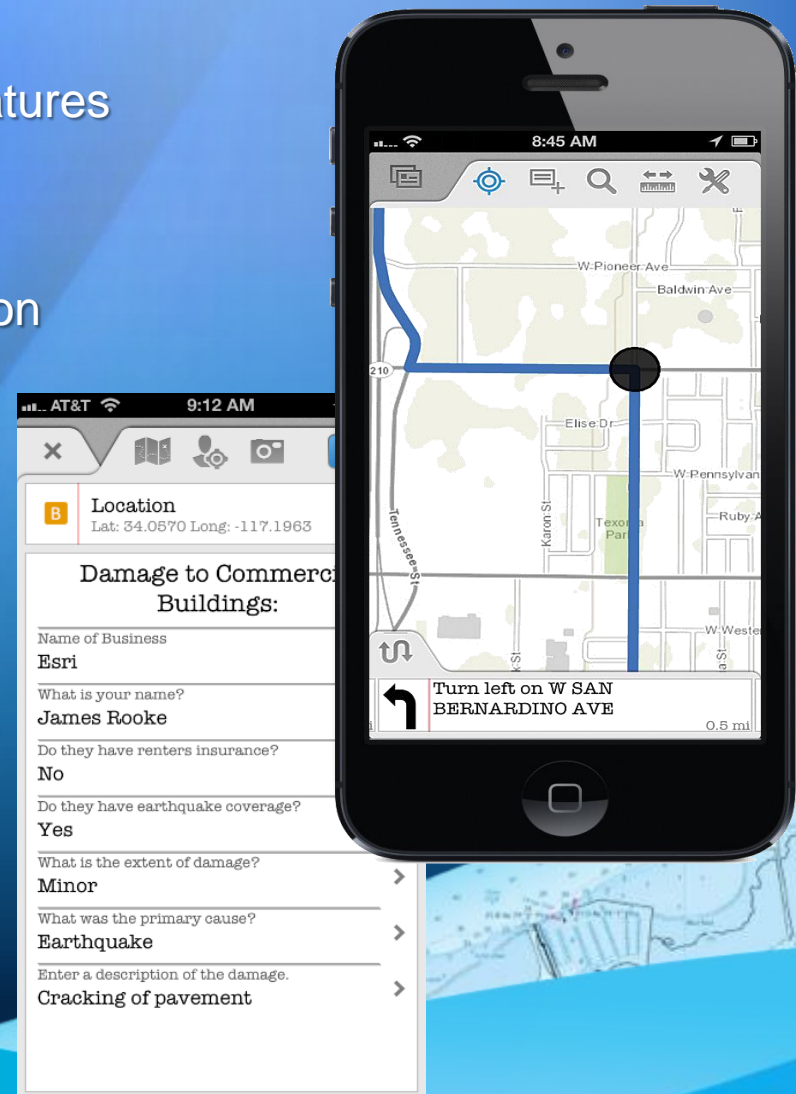
Turn on/off map layers

- **Collect**

Capture & Edit features using the map or GPS

Complete intelligent data entry forms

Attach photos

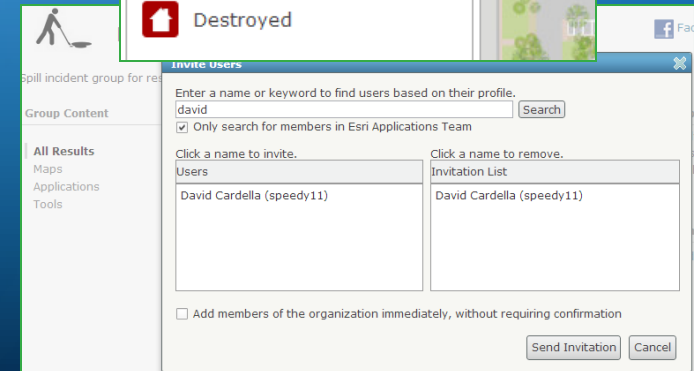
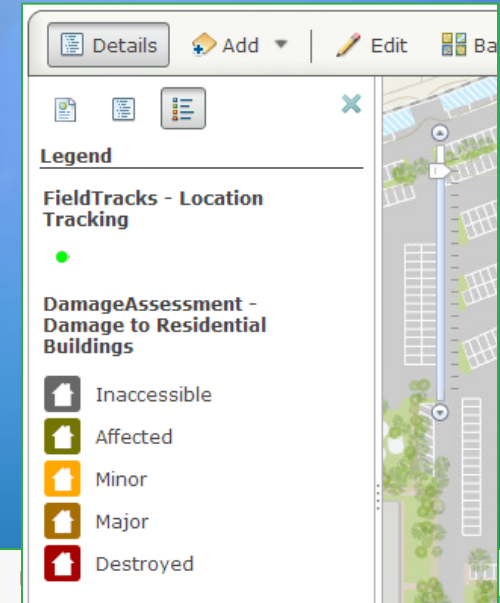


***Disconnected Editing Coming Soon!***



# Creating a map in AGO for data collection

- Publishing
  - Point, Line and Polygon feature service layer (editable)
  - Location Tracking layer (optional)
- Sharing
  - Share maps with Groups
  - Create Named Users for each Field Worker
  - Invite Field Workers into Groups



# Feature Services

- Supported Types
  - ArcGIS Online (Hosted)
  - ArcGIS Server (On Site)
  - Must include an editable layers
- Ways to create one:
  - Publish from ArcMap
  - Reference from ArcGIS Server
  - Create using ArcGIS Online
    - Create Service
    - From existing content (SHP, CSV)
- Configure Popups and fields

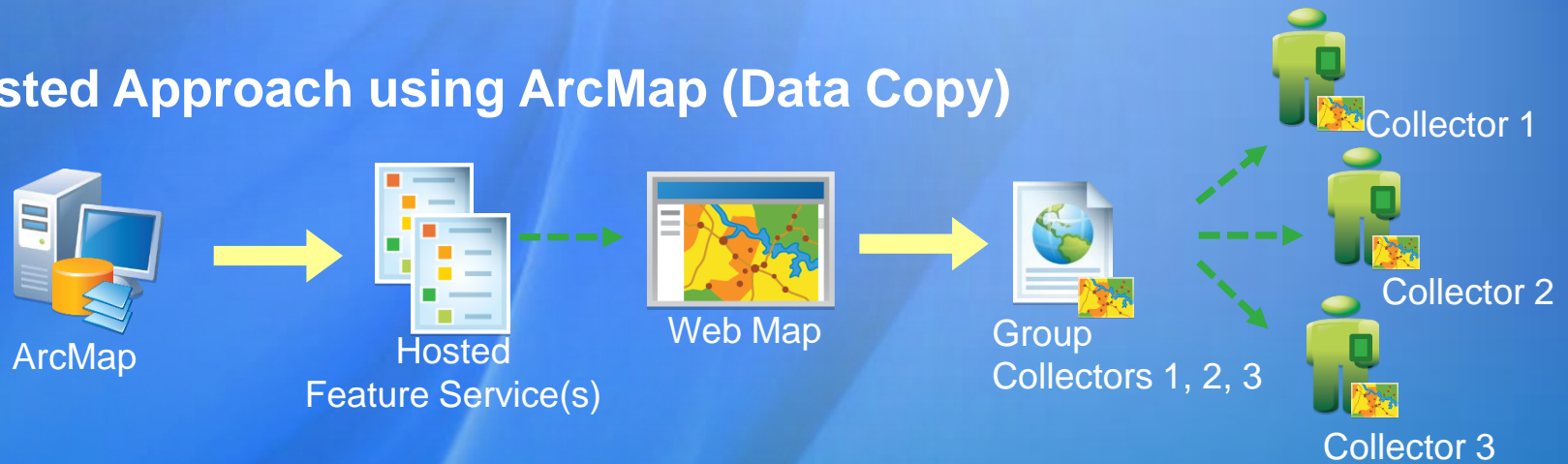
The 'Add Item' dialog box is shown with the title 'Add Item'. Below the title is the instruction 'Add an item from your computer or reference an item on the Web.' The 'The item is:' dropdown is set to 'On the web'. There are two radio button options: 'ArcGIS Server web service' (selected) and 'OGC (WMS)'. To the right of these are two more radio button options: 'KML' and 'Document'. The 'URL:' field contains the text 'http://sampleserver6.arcgisonline.com/arcgis/rest/services/DamageAss'. Below the URL field is a link 'Supported Items'. The 'Title:' field contains 'DamageAssessment'. The 'Tags:' field contains 'Emergency Management, Damage Assessment, Public Safety'. Below the tags is a link 'Choose from your tags'. At the bottom right are two buttons: 'Add Item' and 'Cancel'.

The 'Pop-up Properties' dialog box is shown. It has a title bar 'Pop-up Properties'. Below the title bar is the text 'Pop-ups display information about features in the layer. Define the pop-up below.' The 'Pop-up Title' section has a text field containing 'Damage to Residential Buildings: {REPRESENT}' and a '+' button. The 'Pop-up Contents' section has a 'Display:' dropdown set to 'A list of field attributes'. Below this is the text 'These field attributes will display:'. There is a list of field attributes: 'Owner / Occupant {REPRESENT}', 'Habitable {HABITABLE}', 'Number of Occupants {NUMOCCUP}', and 'Structure Insured {STRINSUR}'. To the right of the list are up and down arrow buttons. Below the list is a link 'Configure Attributes'. At the bottom is a checkbox 'Show feature attachments as links' which is checked. At the very bottom is a section titled 'Pop-up Media'.

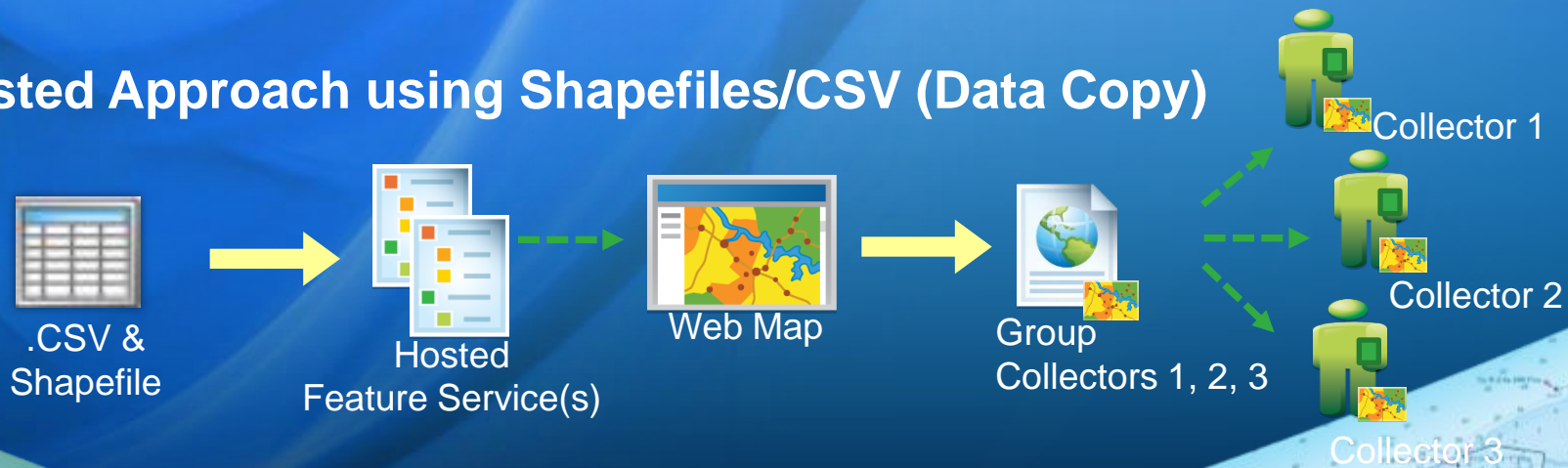


# Publishing Workflows

## Hosted Approach using ArcMap (Data Copy)

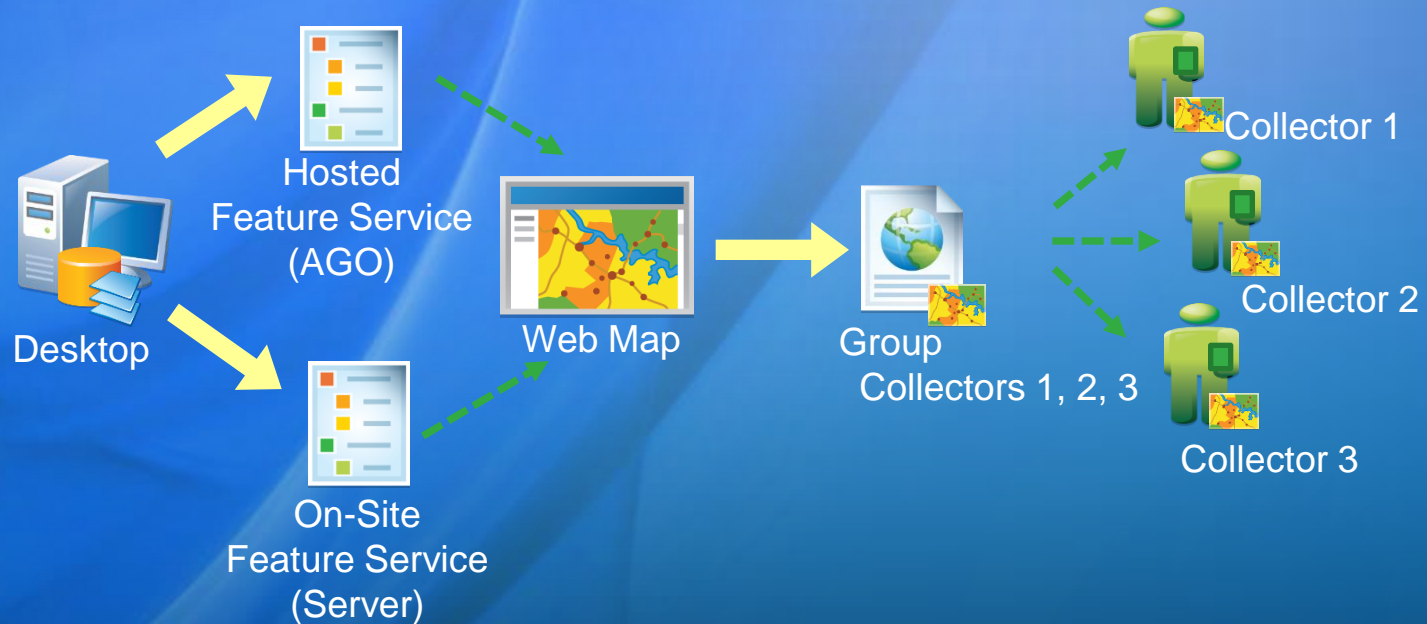


## Hosted Approach using Shapefiles/CSV (Data Copy)



# Publishing Workflows

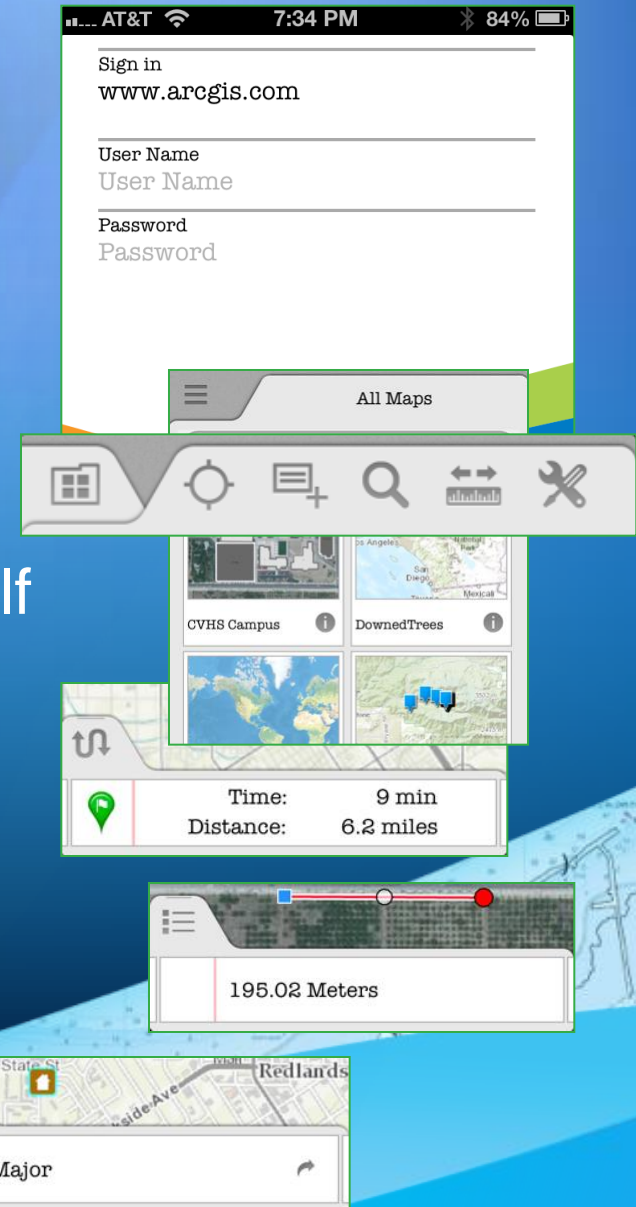
## Hybrid Approach (Data Reference)





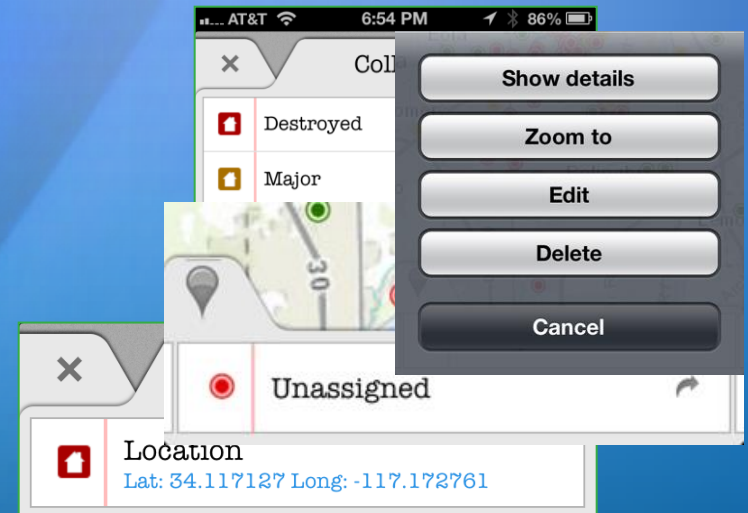
# Getting Started with Collector

- Logging in (User Identity)
  - Required for use
  - Find maps shared for collection
- Finding your work location
  - Use GPS to find where you are
  - Search Places and Addresses
  - Get directions to navigate yourself
- Exploring the map
  - Tap on the map to learn more
  - Measure distances and area
  - Manage layers and basemaps



# Collecting and updating data

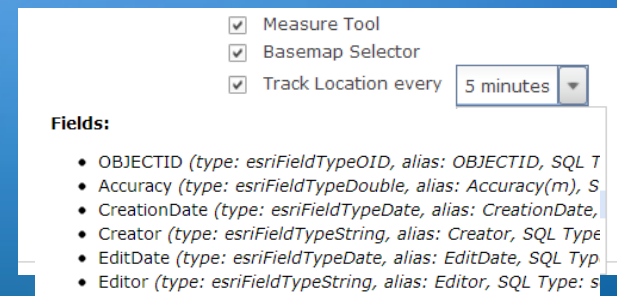
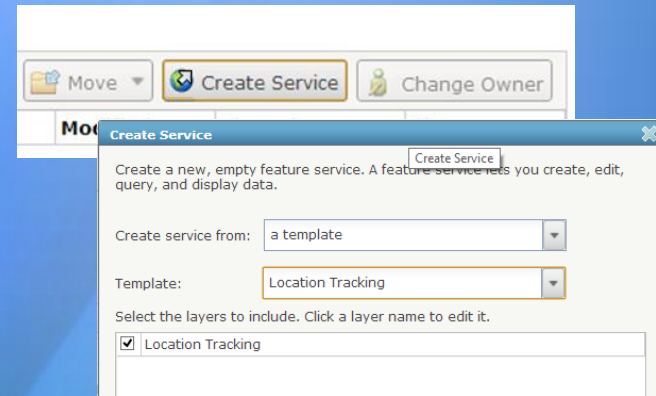
- Choosing what you collect
  - Tap Collect and choose what you want to collect
- Choosing what you update
  - Tap on a feature and then edit it
- Set the location
  - Use your current location
  - Using the map
- Complete the form
  - Tap a field and set its value (Domains)
  - Tap the camera and take a photo/video

A screenshot of a mobile application interface showing a form titled 'Extent of Damage'. The form has a 'Cancel' button on the left and a 'Done' button on the right. The form contains a list of options: 'Destroyed', 'Major' (which is selected, indicated by a blue checkmark), 'Minor', and 'Affected'.



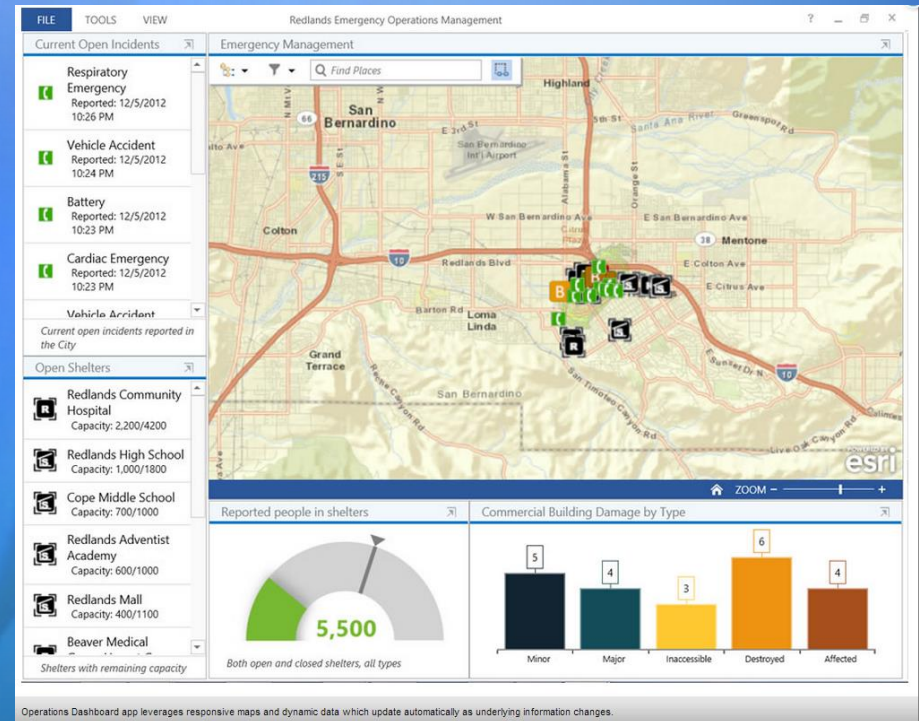
# Location Tracking Service

- Hosted Feature Service only!
- Create one or more per field team
- Add to web map and configure capture interval
- Schema automatically captures:
  - Accuracy – GPS accuracy in meters
  - Creator – username for named user account
  - Creation Date – Date/Time at point of creation



# ArcGIS Mobile Applications Options

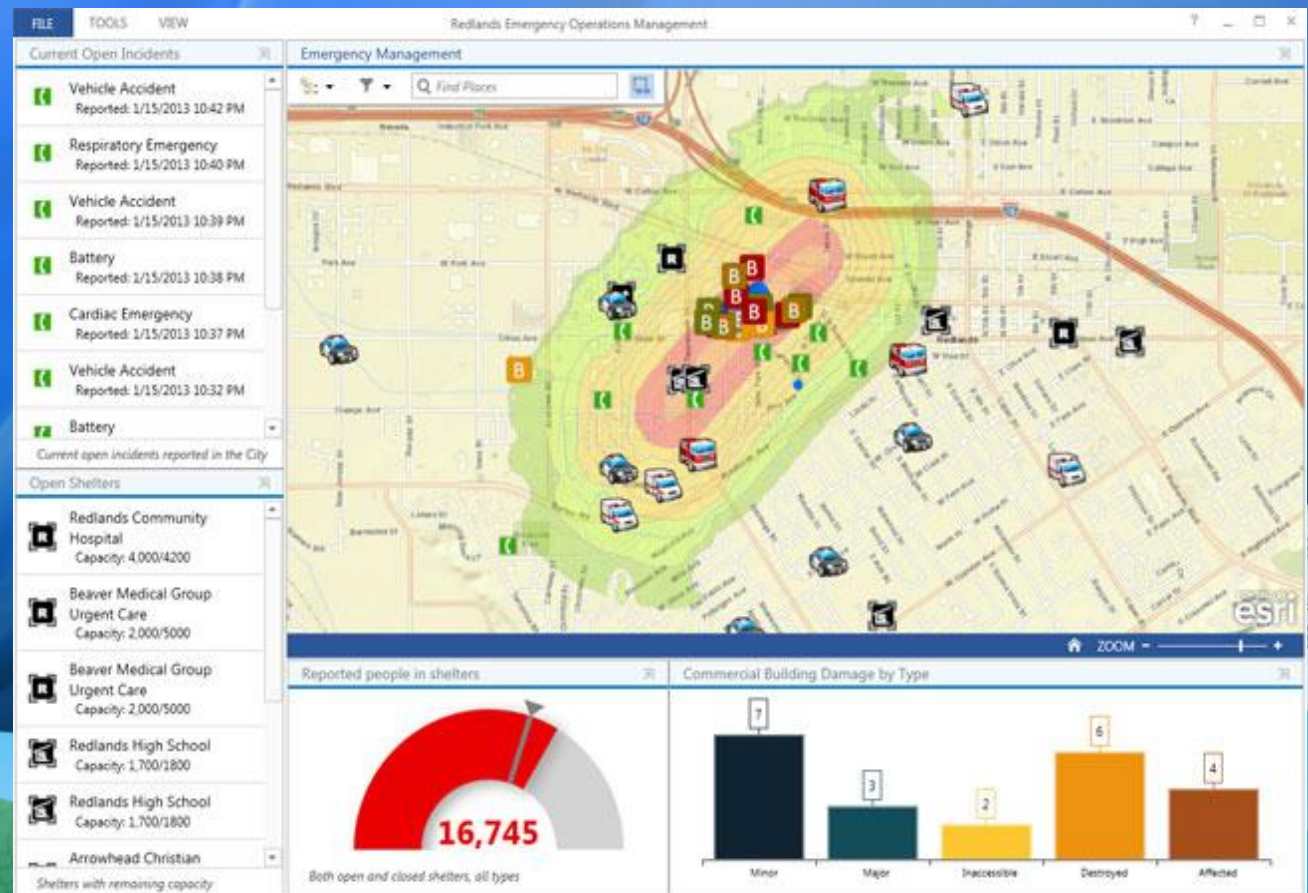
- ArcGIS for Windows Mobile
- ArcPad
- **ArcGIS Online**
  - ArcGIS App
  - Collector
  - **Dashboard**





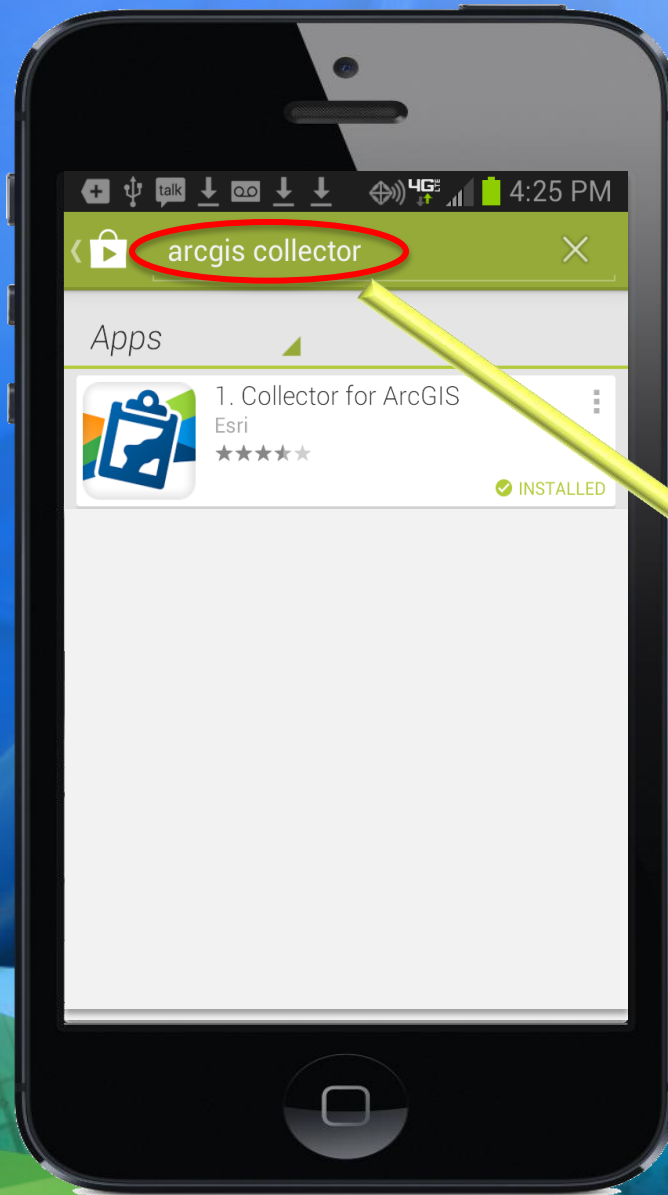
# Operations Dashboard

- Gives “Executive View” on Laptops, Touch-screen Devices
- Monitor Day-to-day Operations or Specific Events
- Role-based Access, Configurable
- Widgets
  - Histograms
  - Bar Charts
  - Indicators
  - Gauges
  - Details
  - Lists



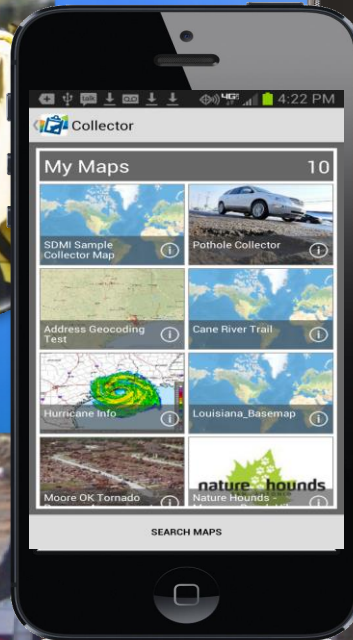
# Download & Install Collector

*iPhone & Android Devices*





# Collector & Dashboard Demo



SCAUG



MARCH 10-14, 2014

THE WOODLANDS

Texas





# Questions?



# Understanding Our World



**esri**

G2LI