



# ArcGIS Apps for the Field: An Introduction

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Introduction	ArcGIS Field Maps	ArcGIS QuickCapture	ArcGIS Survey123	Conclusion
Field Operations Modernization	Overview Mobile & Web Demo 	Overview What's New Demo 	Overview What's New Demo 	Resources Questions

# Introduction

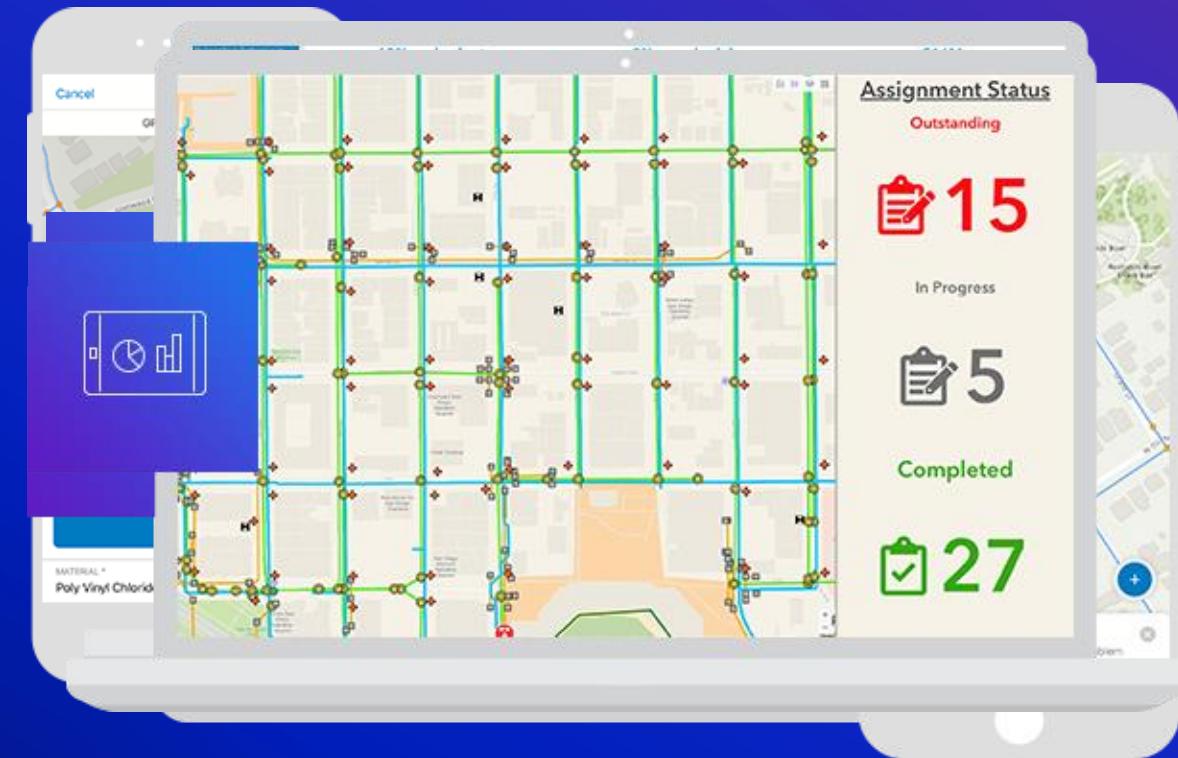
Field Operations

# Field Operations | Benefits of modernization



# Field Operations | Benefits of modernization

- Efficient and accurate data capture
- Cost effective
- Data management
- Monitor status



# Field Operations

Location-enable all phases of field work

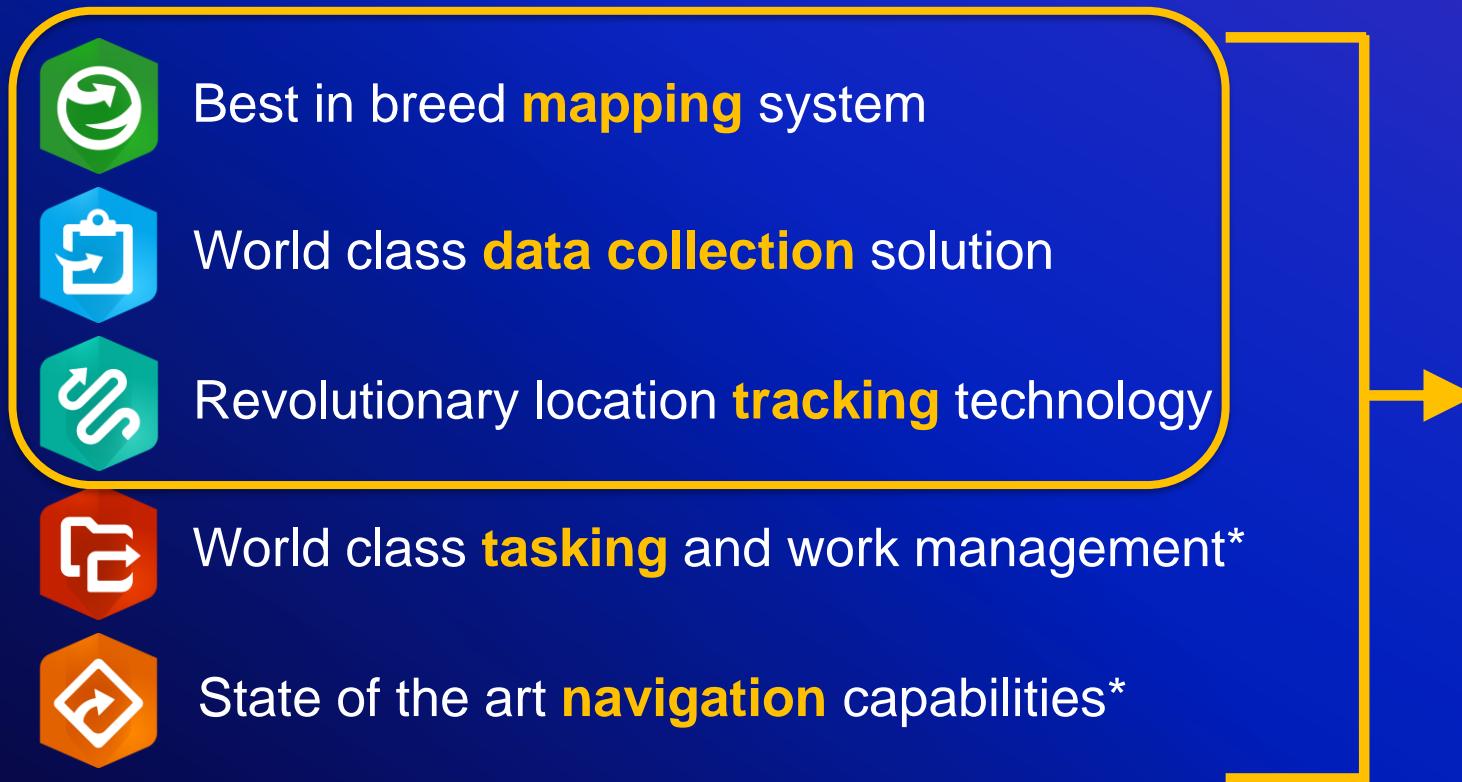


## Focused Apps

-  ArcGIS Workforce
-  ArcGIS Explorer
-  ArcGIS Navigator
-  ArcGIS Collector
-  ArcGIS Tracker
-  ArcGIS Survey123
-  ArcGIS QuickCapture



# ArcGIS Field Maps | The all-in-one app for fieldwork



Download on the  
App Store

GET IT ON  
Google Play

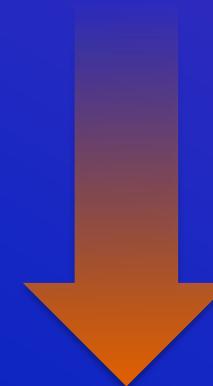
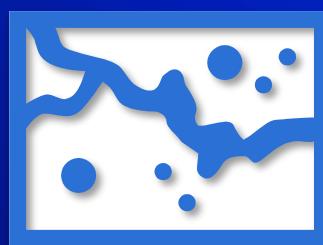
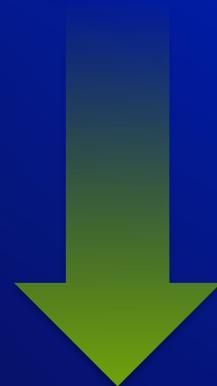
\*Capabilities will be included in future releases



# Field Operations | Which app do I choose?



# Field Operations | Which app do I choose?



# ArcGIS Field Maps

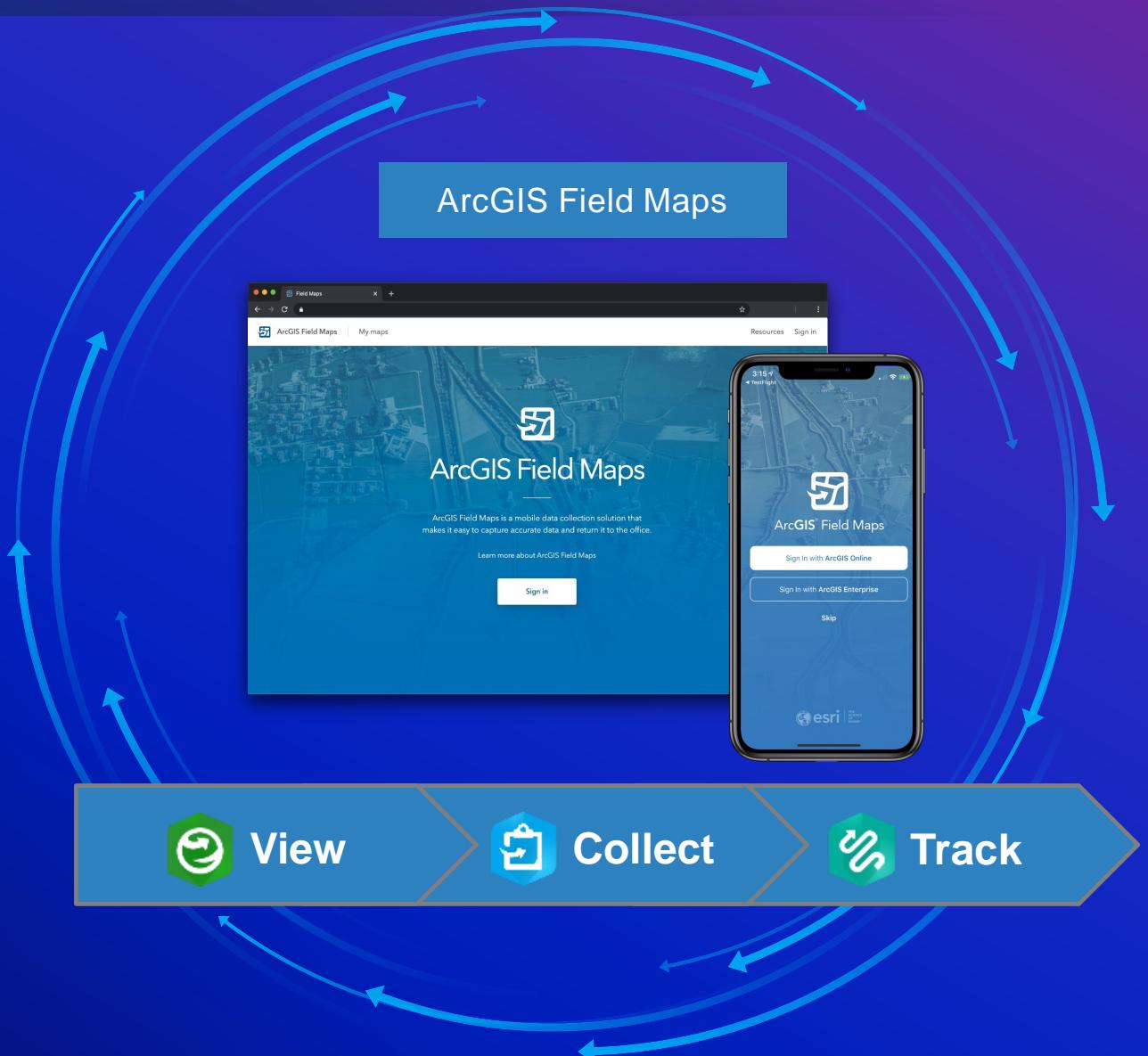
All-in one app for fieldwork





# ArcGIS Field Maps | 5 key capabilities in one app

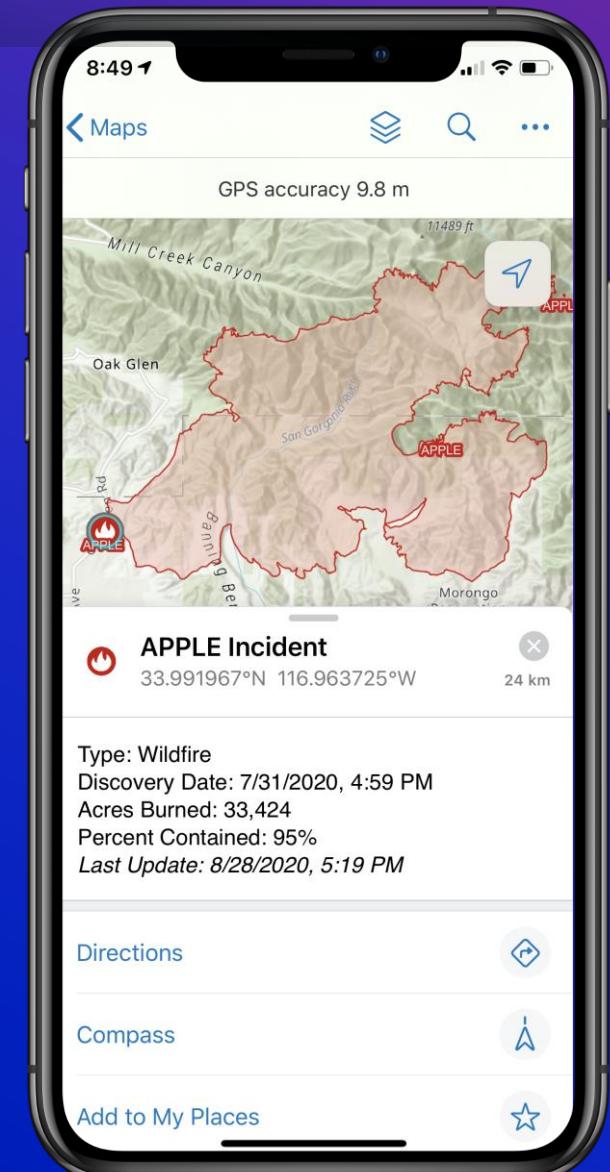
1. Map Viewing
2. Map Markup
3. Data Collection
4. Asset Inspection
5. Location Tracking





## Map Support

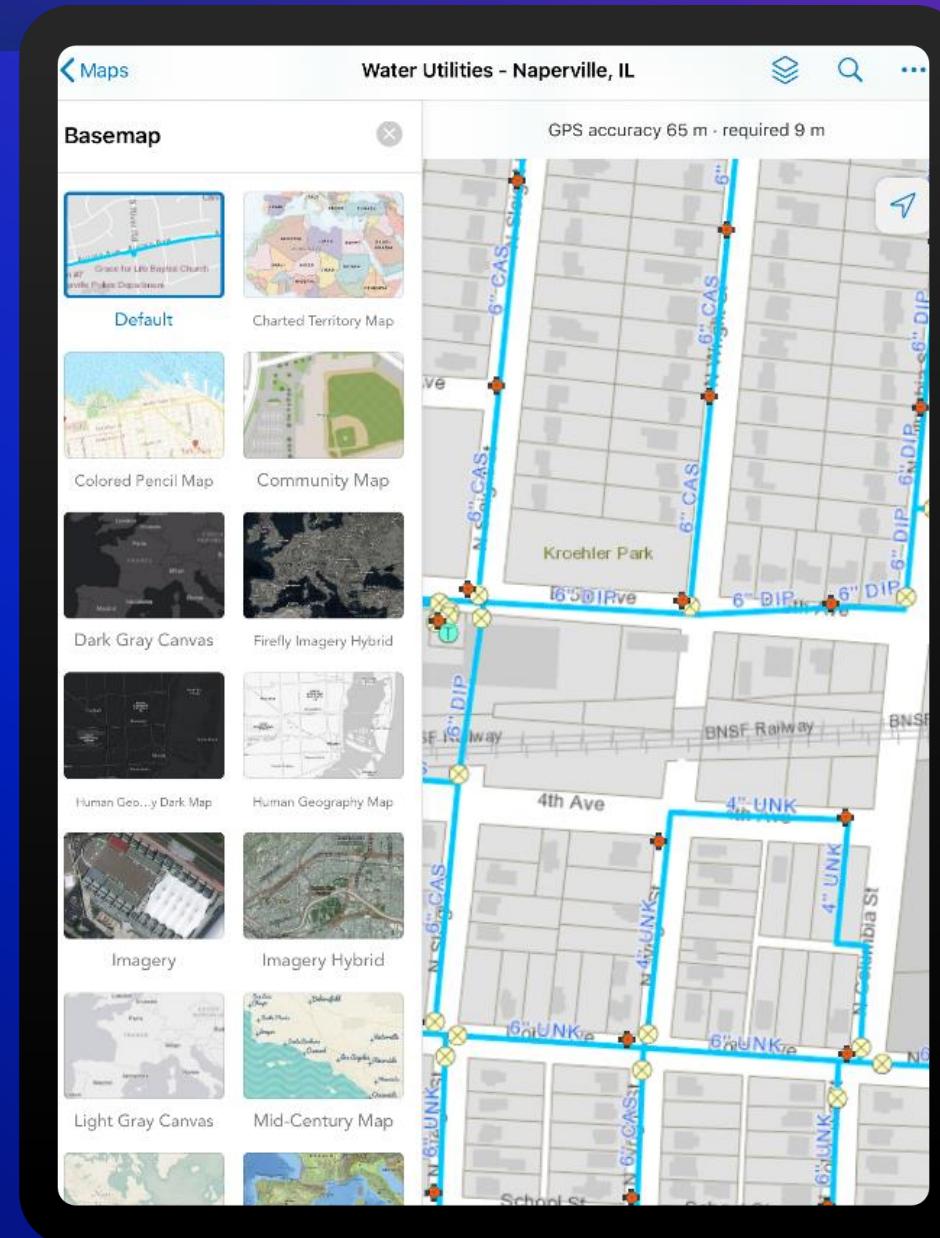
- Advanced symbology/labeling (w/ Arcade)
- Group layers, annotation
- Pop-ups (w/ Arcade including feature sets)
- Layer refresh for auto-updates





## Map Tools

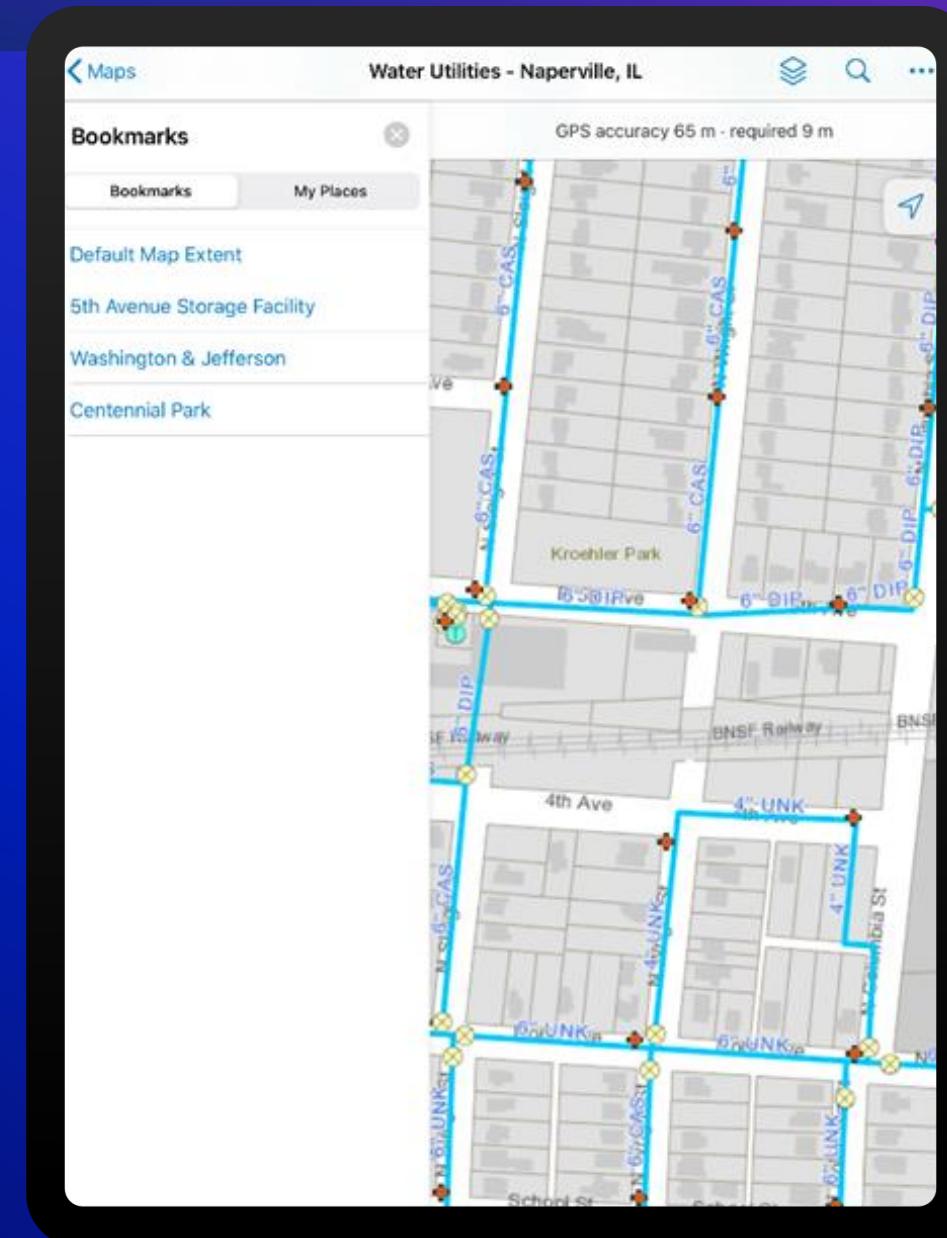
- Basemaps





## Map Tools

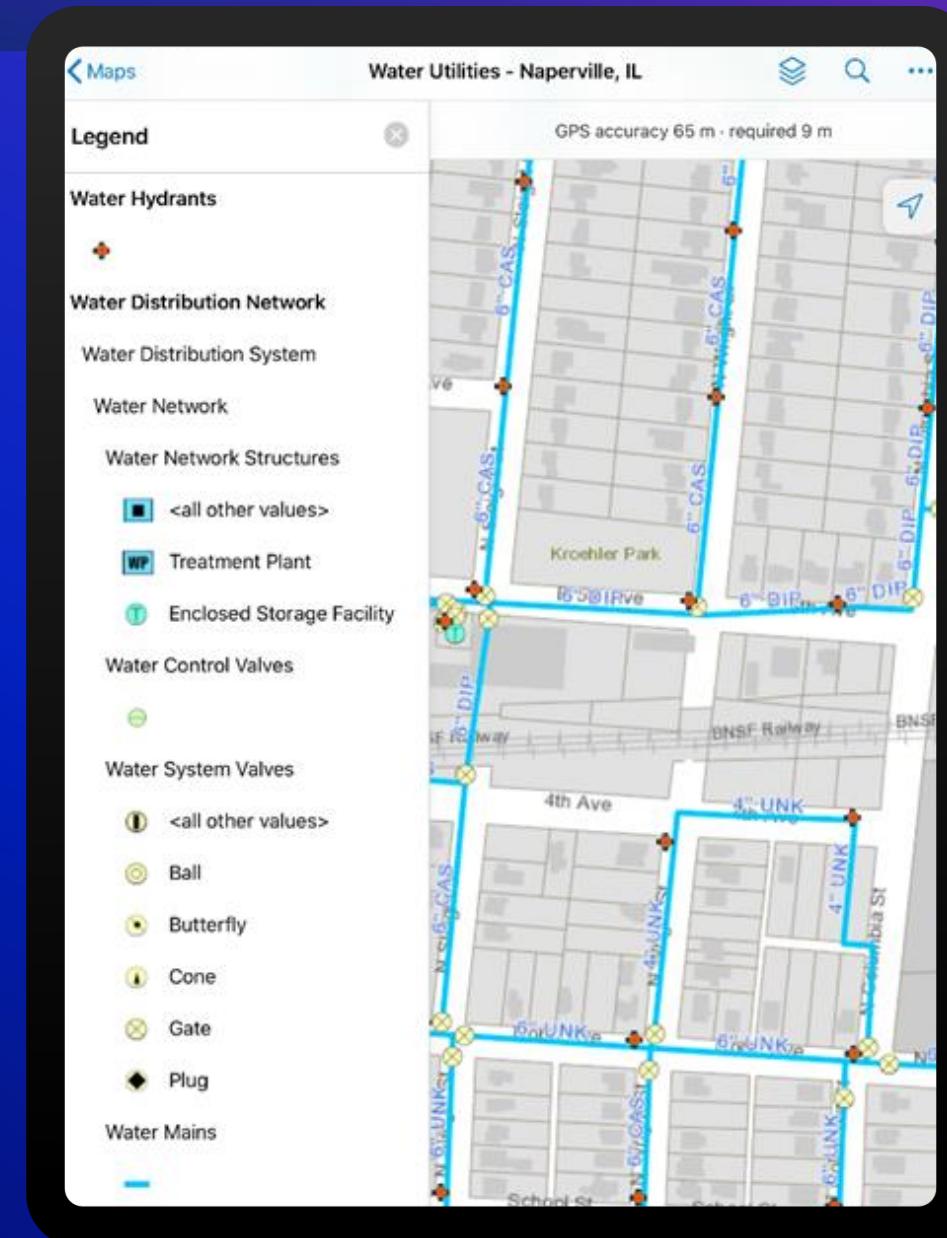
- Basemaps
- Bookmarks





## Map Tools

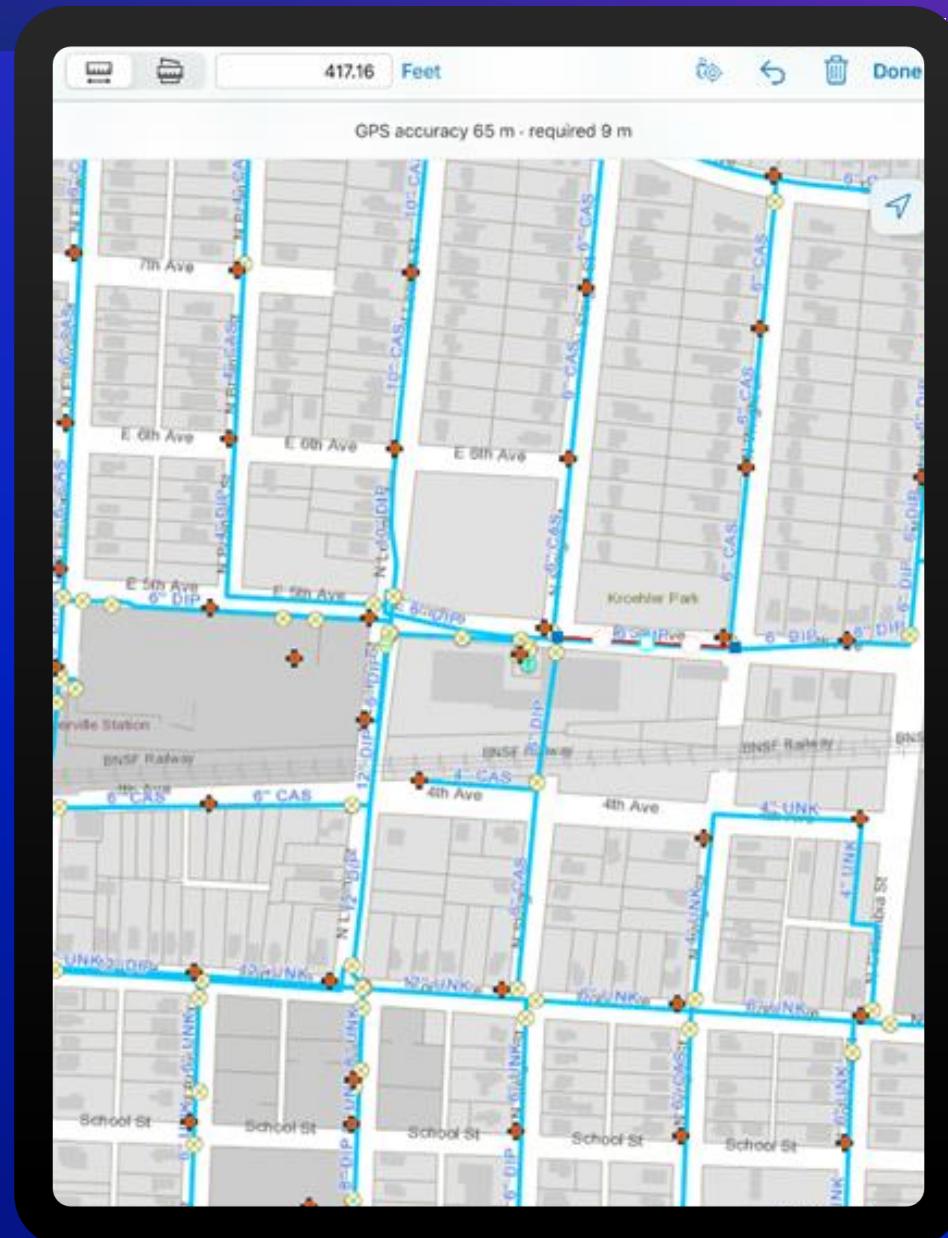
- Basemaps
- Bookmarks
- Legend





## Map Tools

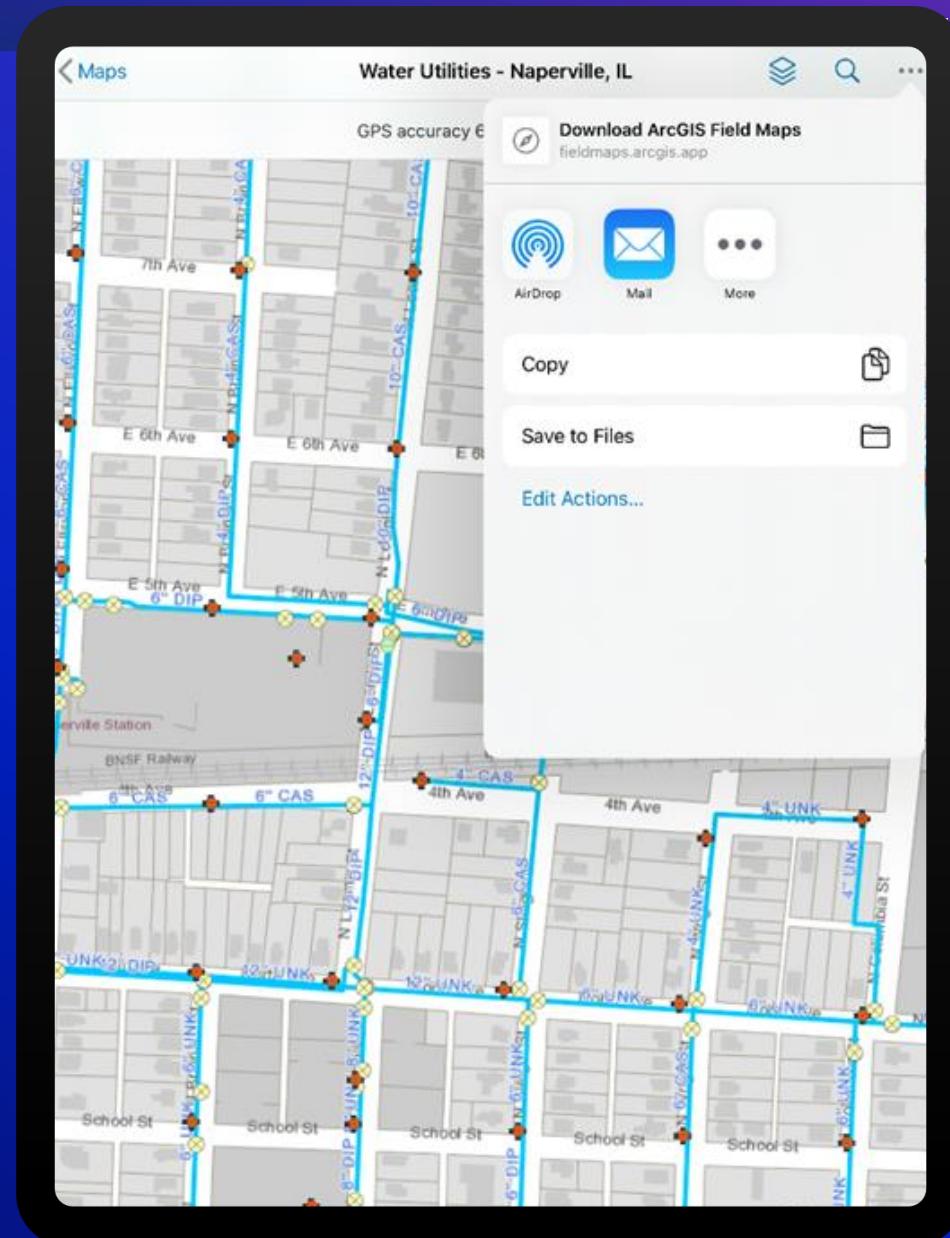
- Basemaps
- Bookmarks
- Legend
- Measure (lines, areas)





## Map Tools

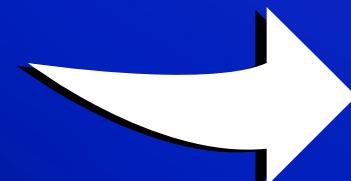
- Basemaps
- Bookmarks
- Legend
- Measure (lines, areas)
- Share Map





## Map Tools

- Basemaps
- Bookmarks
- Legend
- Measure (lines, areas)
- Share Map
- Search
- Sync
- Directions
- Compass



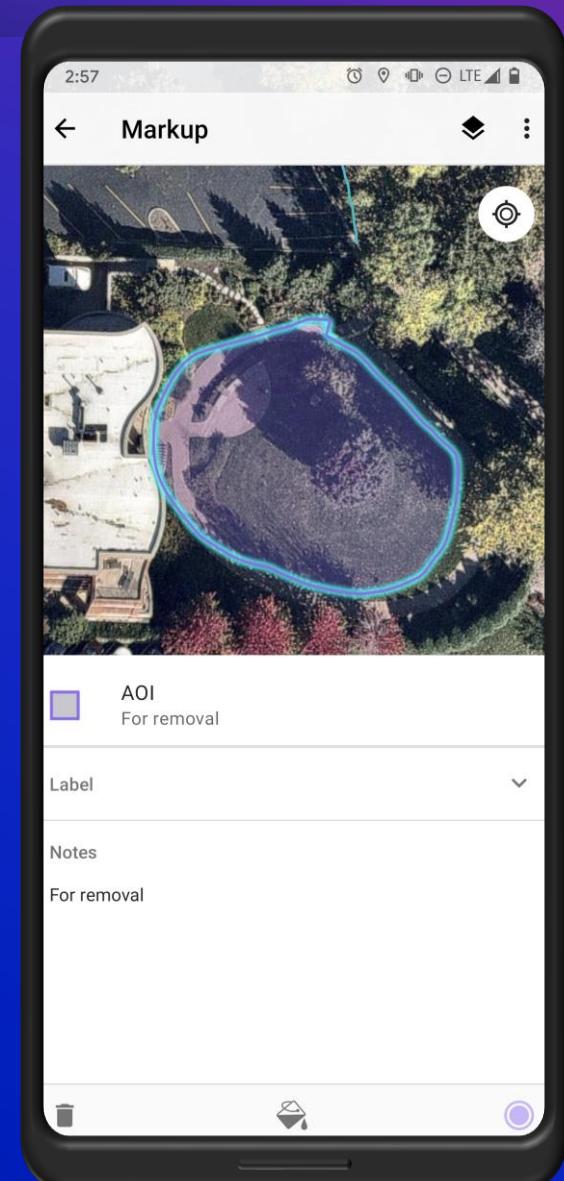


## Markup Tool

## Markup Layers

## Share Markup

- Place a marker
- Freehand sketch lines and areas
- Recognize shapes
- Move graphics





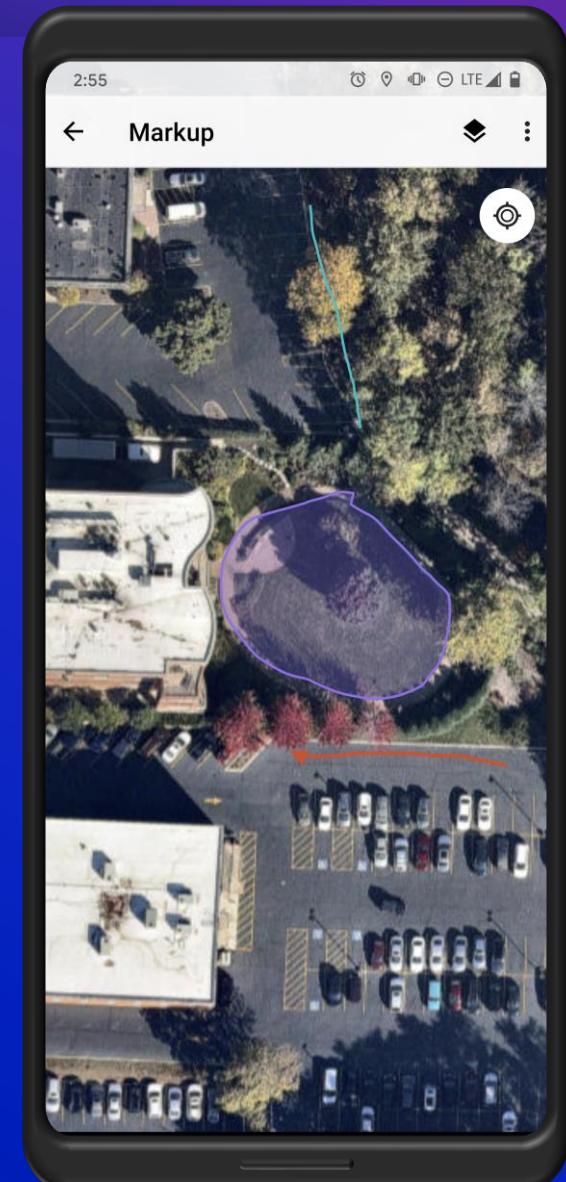
# ArcGIS Field Maps | Map markup capabilities

Markup Tool

Markup Layers

Share Markup

- Markers, lines, arrows, areas
  - Choose color
  - Label and note attributes
- Save markup in one or more layers
- Turn markup layers on/off with Layers tool

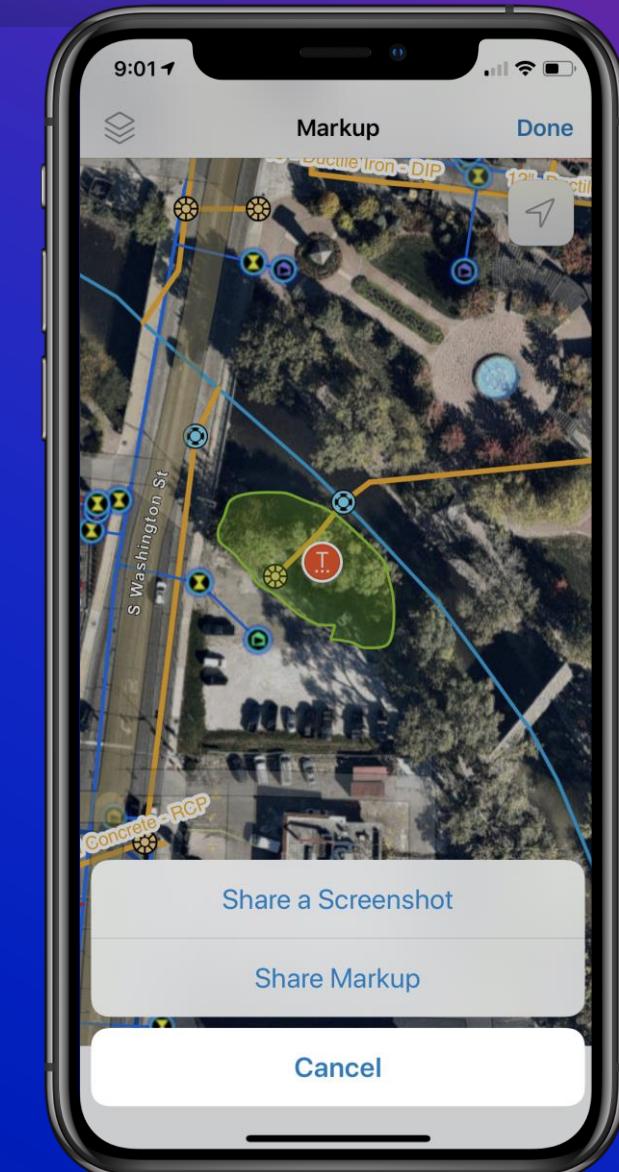




# ArcGIS Field Maps | Map markup capabilities



- OTA, by email, text message
- ArcGIS organization
  - Requires publishing privileges





# ArcGIS Field Maps | Data Collection – High Accuracy GPS/GNSS





# ArcGIS Field Maps | Data Collection – High Accuracy GPS/GNSS



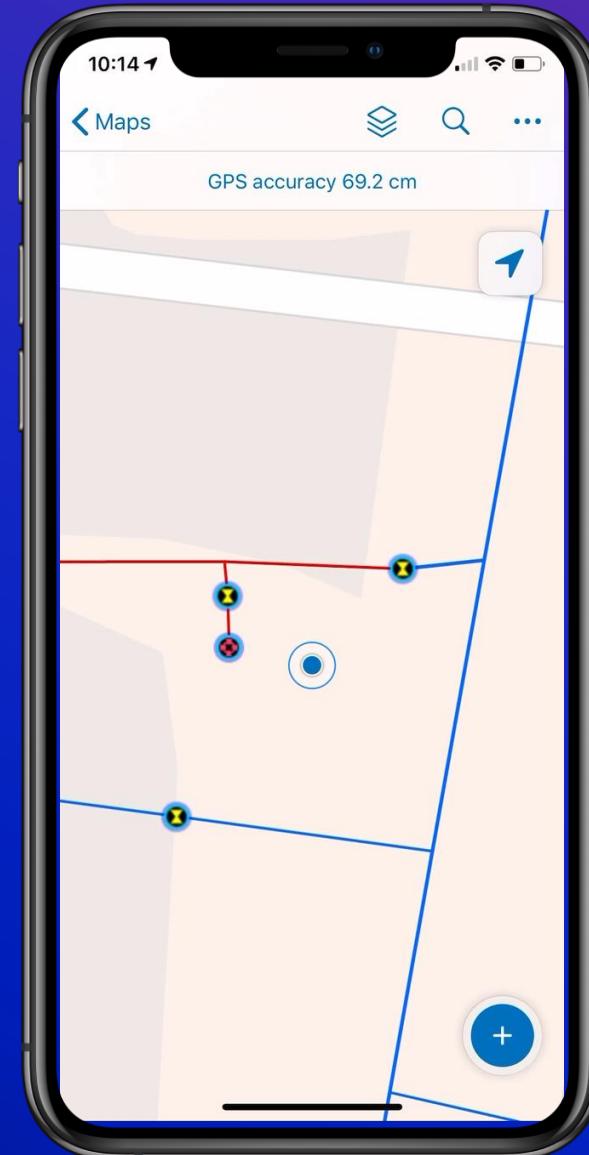


- **Need better GPS accuracy**
  - 1 – 3 meters for above ground assets
  - > 1 foot for below ground assets
  - Cm accuracy for construction projects
- **Key GNSS Partners**
  - Dual, Garmin
  - Eos Positioning Systems, Geneq, Bad Elf
  - Juniper, Trimble, Leica
- **Different ergonomic solutions**
  - Pole mount
  - Backpack
  - 3D-printed attachments and more



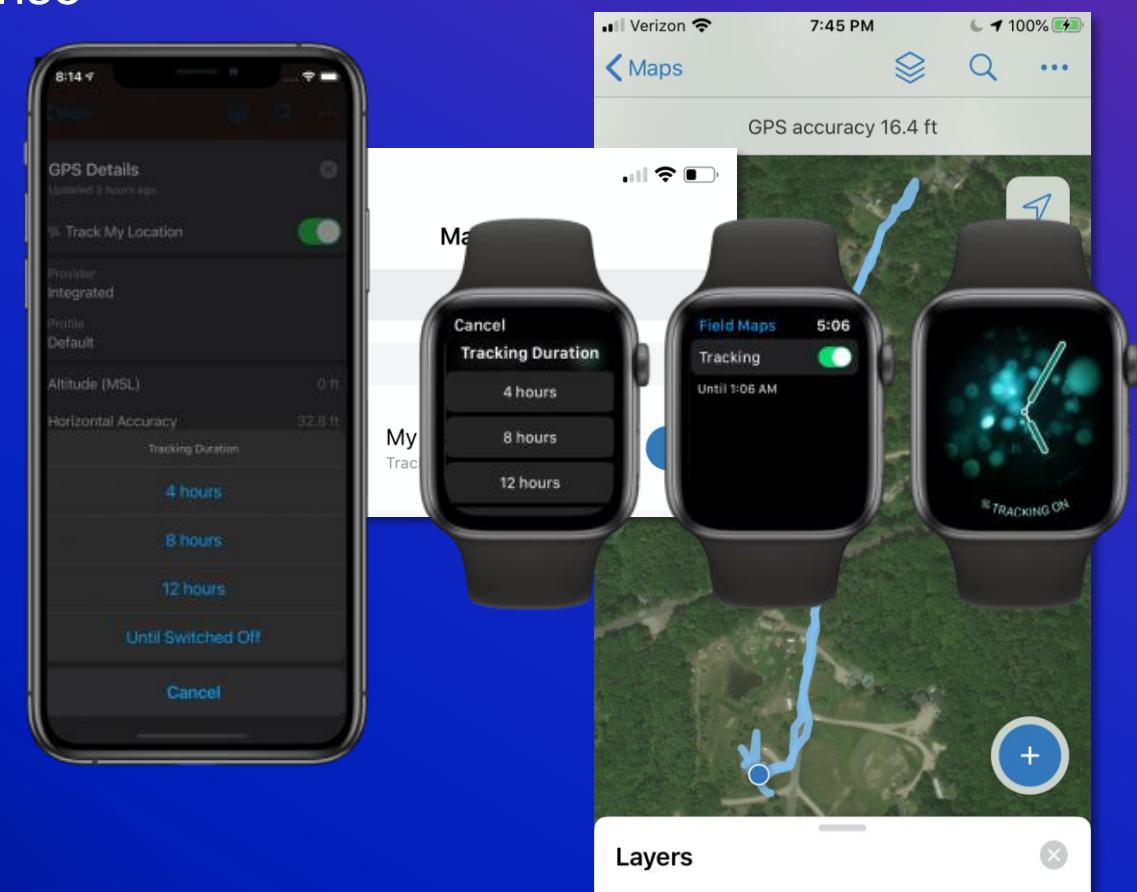


- Transaction model support
  - Non-versioned
  - Traditional versioning
  - Offline Branch versioning (10.8.1+)
- Historical inspections
  - Model using 1:M relationships
- Smart forms capability
  - Organize attributes
  - Conditional visibility
  - Pick lists
  - Required fields





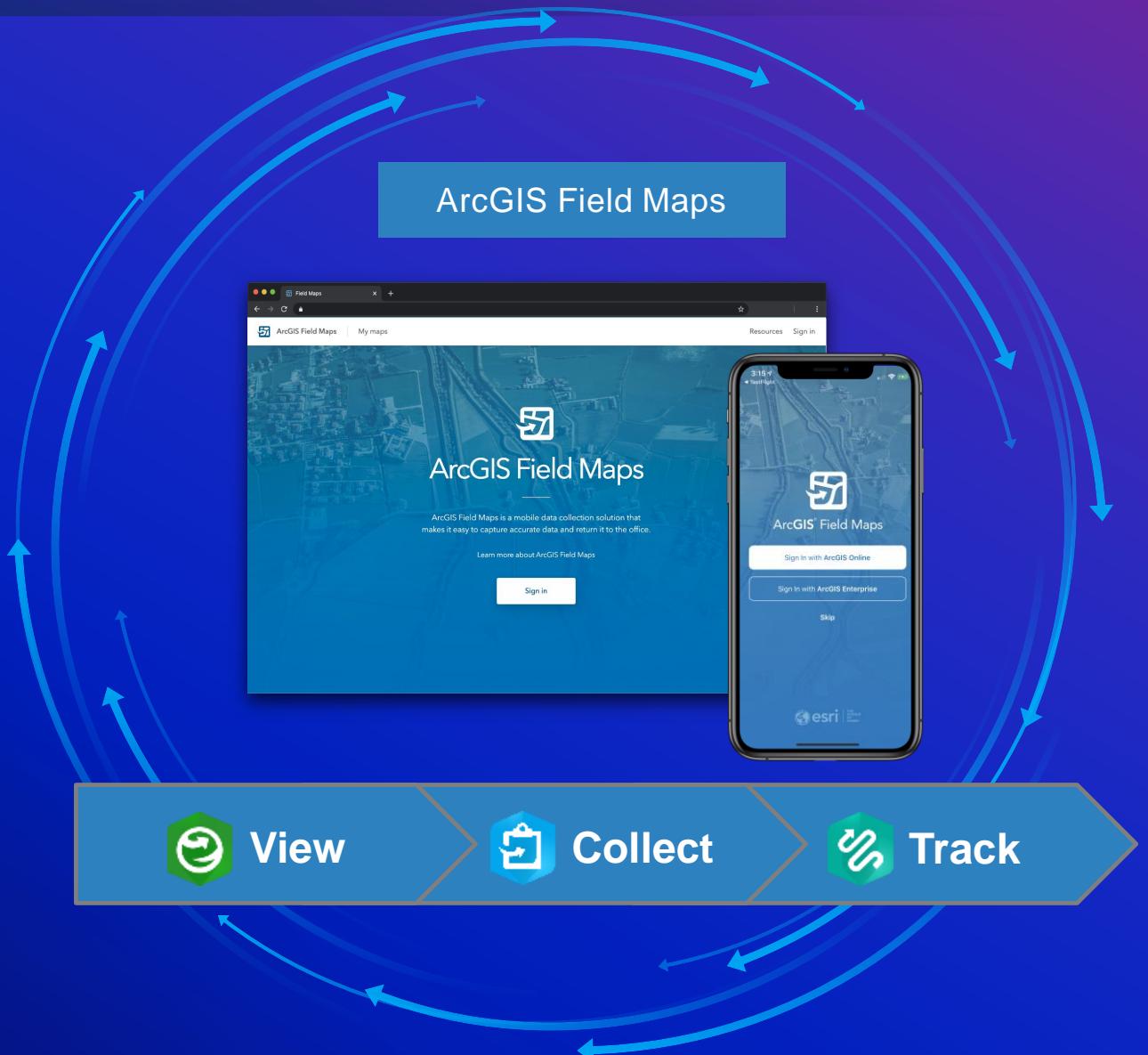
- Supports Viewer user type + ArcGIS Tracker license
- Battery savings location tracking capability
  - Driven by activity
- Switch tracking on/off
- View location tracks in any map (iOS/Android)
  - Turn tracks layer on/off
  - Set track duration
- Supported on Apple Watch

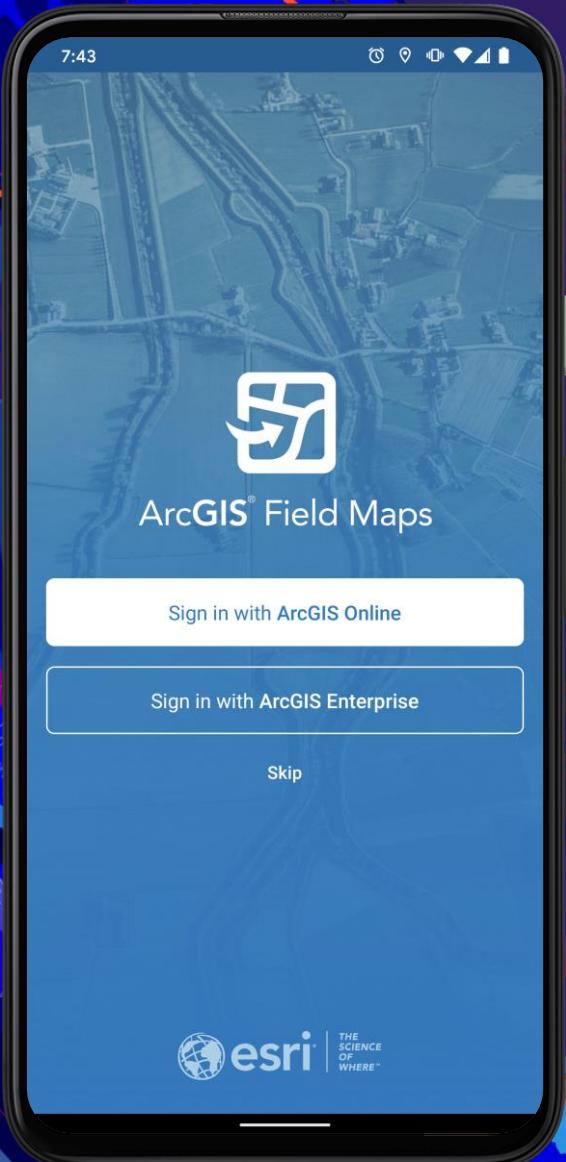




# ArcGIS Field Maps | 5 key capabilities in one app

1. Map Viewing
2. Map Markup
3. Data Collection
4. Asset Inspection
5. Location Tracking





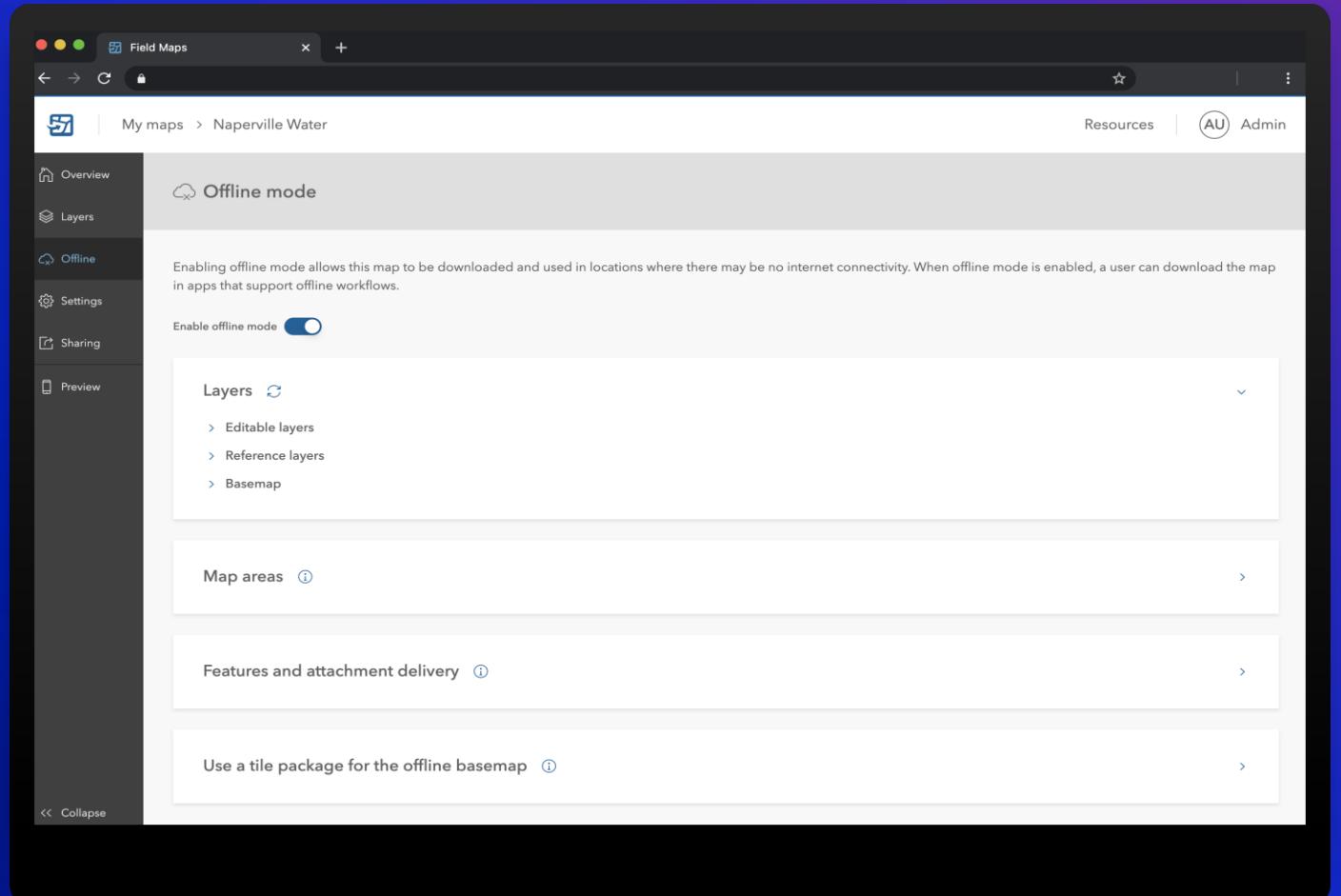
# Demonstration

## ArcGIS Field Maps

- Read-only map viewing
- Markup
- Tracking
- Capture

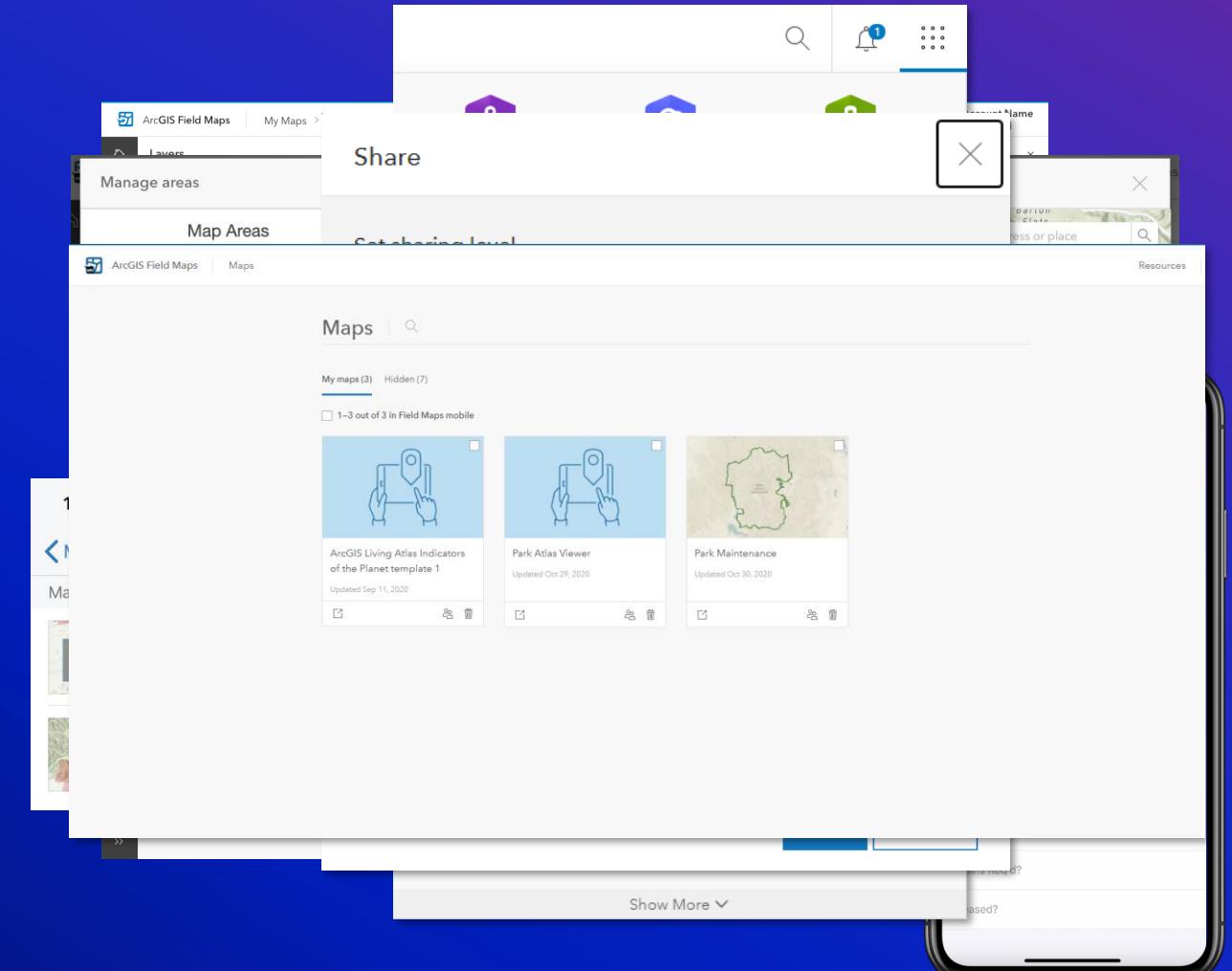


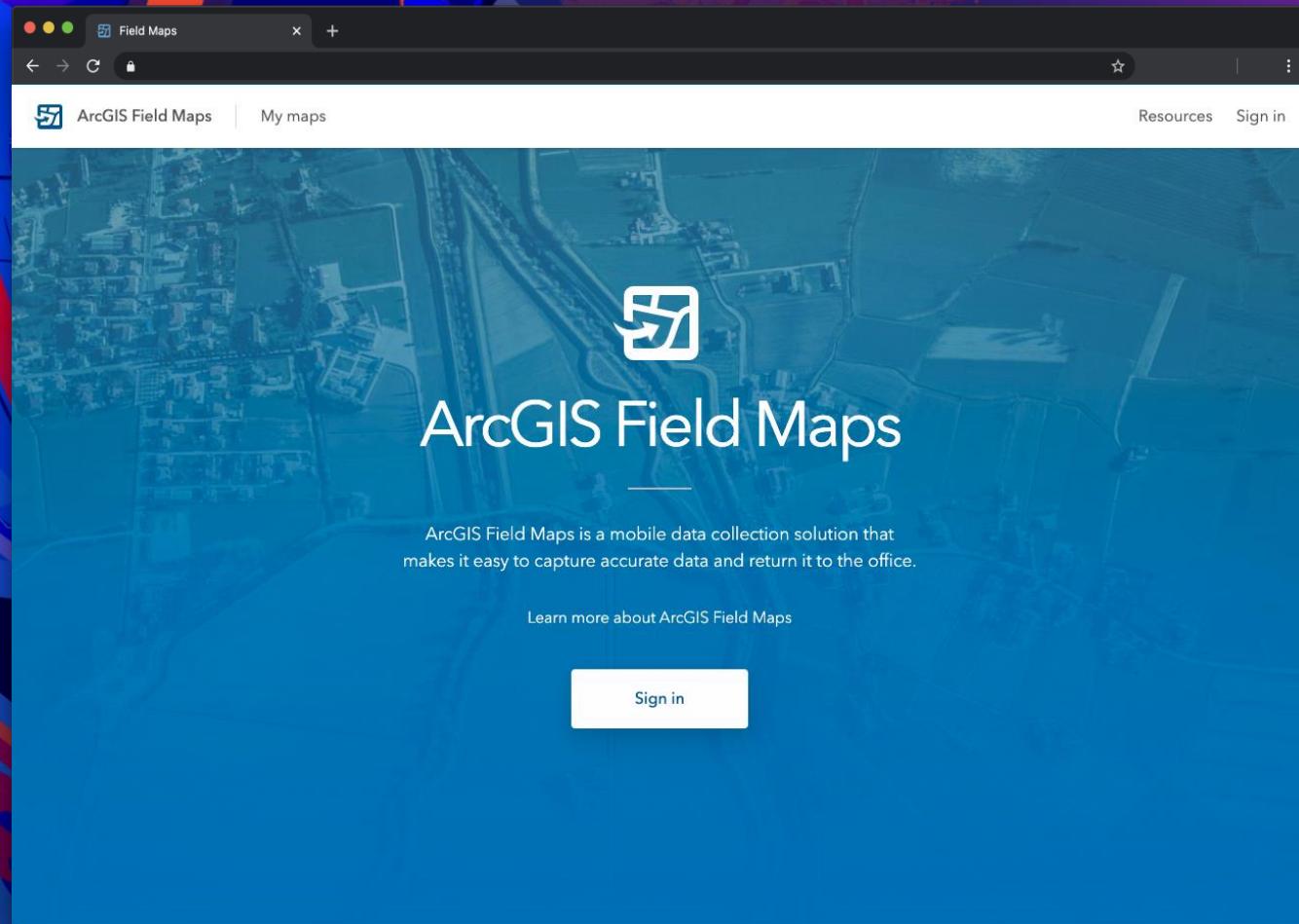
# Full-feature web authoring tool





- Integrated into App Launcher
- Centralized experience for deploying maps
- Configure map capabilities
- Manage offline capabilities
- Share and deploy





# Demonstration

## ArcGIS Field Maps

- Configure maps
- Create smart forms
- Configure offline
- Share



## If you have a...



**Field Worker, Creator, or GIS Pro named user**



**Viewer named user**



**ArcGIS Tracker premium app license**



**ArcGIS Collector app license**

## In Field Maps, you can...

Perform inspections, **create** or **update** your asset inventory, add photos/attachments, and simplify multi-app workflows

Achieve situational awareness workflows, **view** dynamic web maps, use **offline** maps, create **markup**

Enable **location tracking** workflows, report your location in real-time, record a 'breadcrumb' trail of your location history

**Create** and **edit** GIS data from your **mobile device** with high accuracy, add attachments, work offline

## Key Benefits



Single app

Sign-in  
once

Small  
Footprint

Consistency

Reduce  
duplication

# ArcGIS QuickCapture

Field Operations

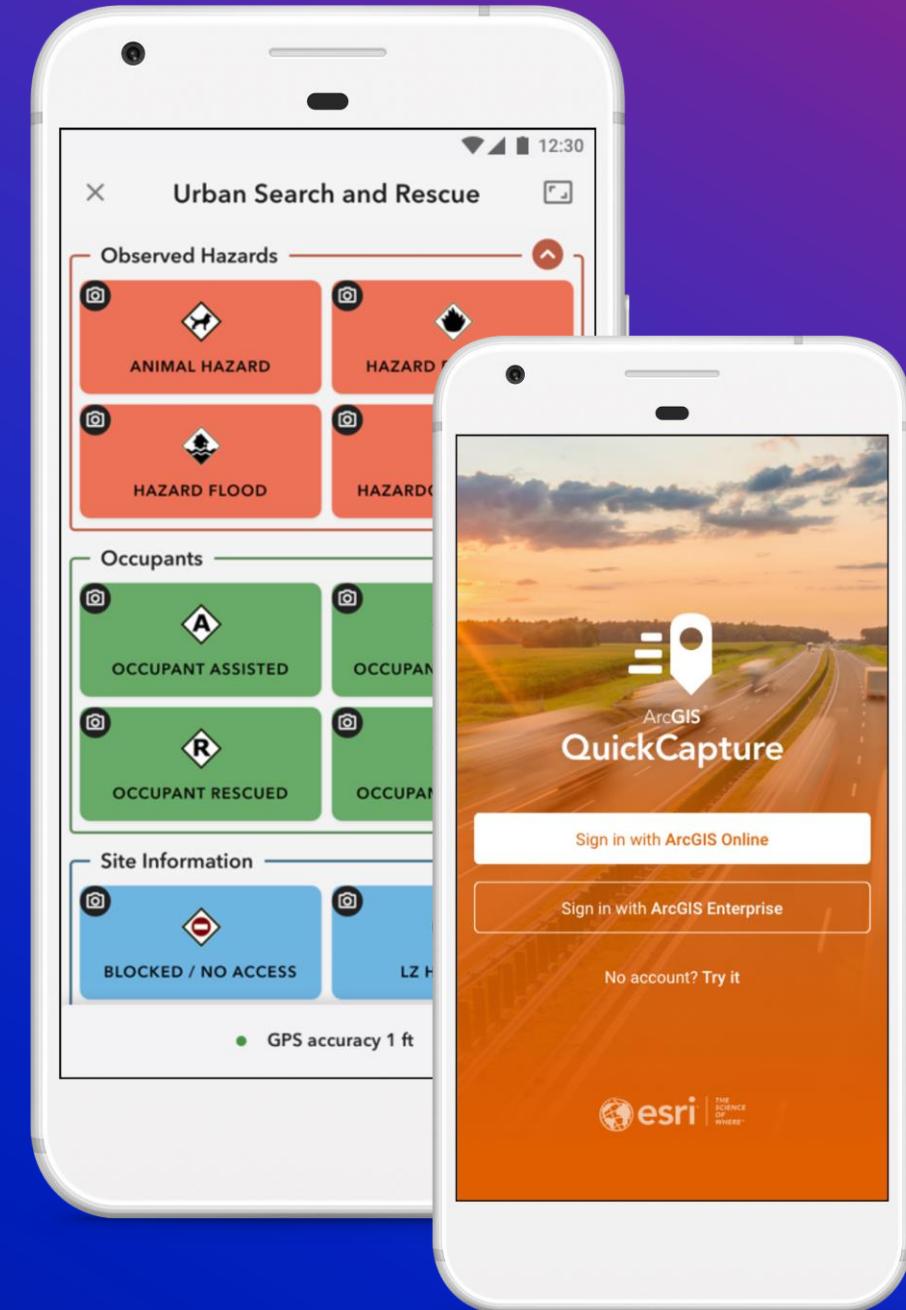
# ArcGIS QuickCapture

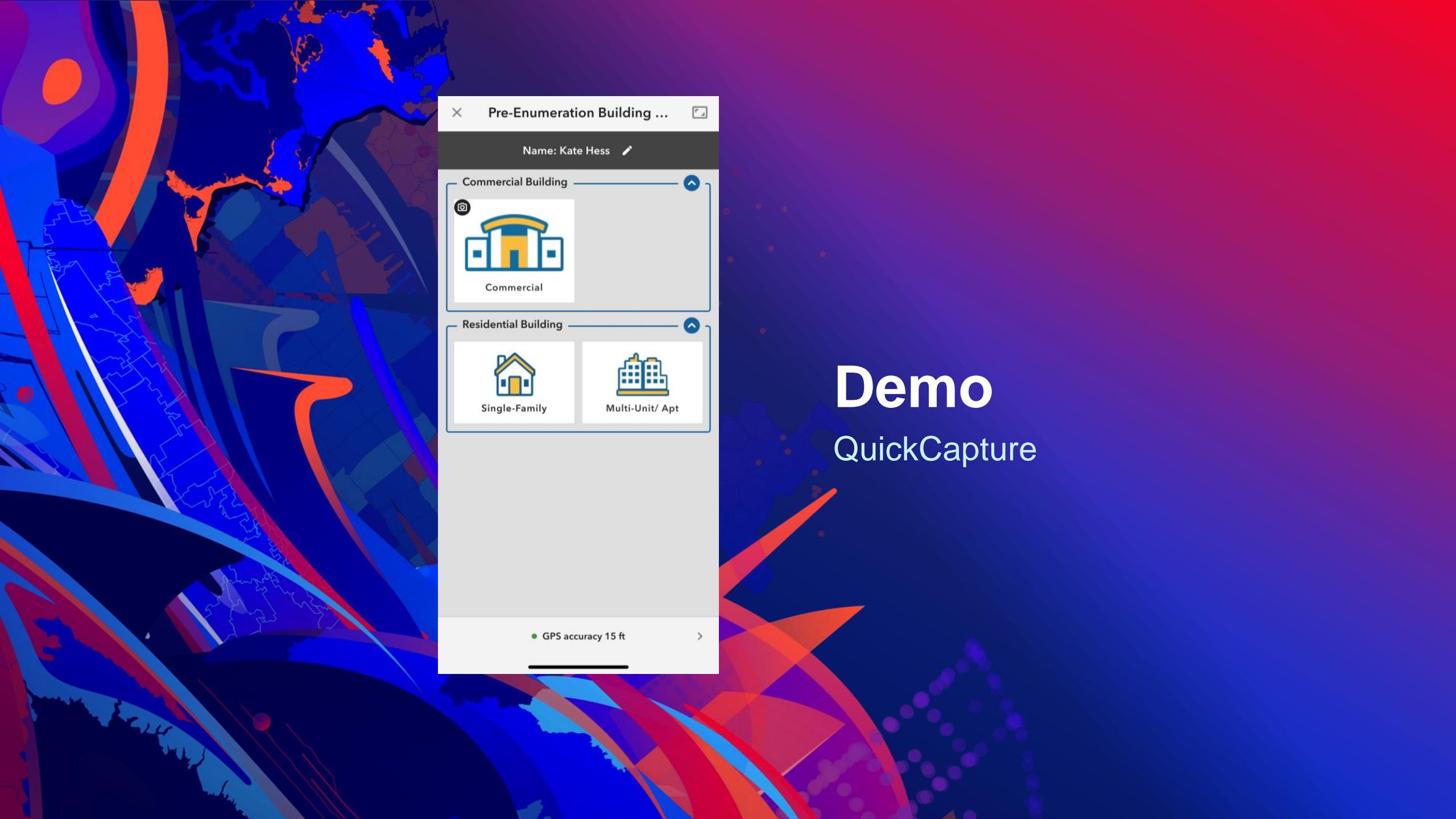
*The rapid data collection app*

A “big button” mobile app

Simplest way to capture field observations

At-speed data collection workflows





# Demo

## QuickCapture

# Statistics Use Case: Pre-enumeration Building Census



- Capture building locations



- Identify zoning



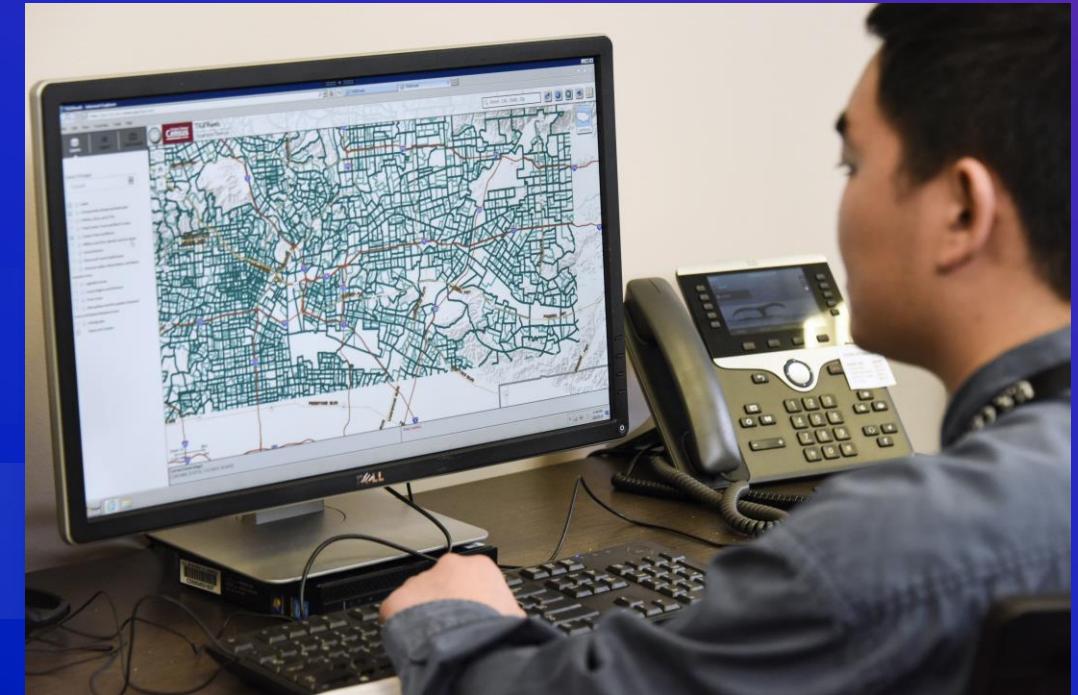
- Plan enumeration

# Benefits of QuickCapture

Real time data transfer

Reduce training costs

Increase efficiency



# Reference Deployment

## ArcGIS QuickCapture



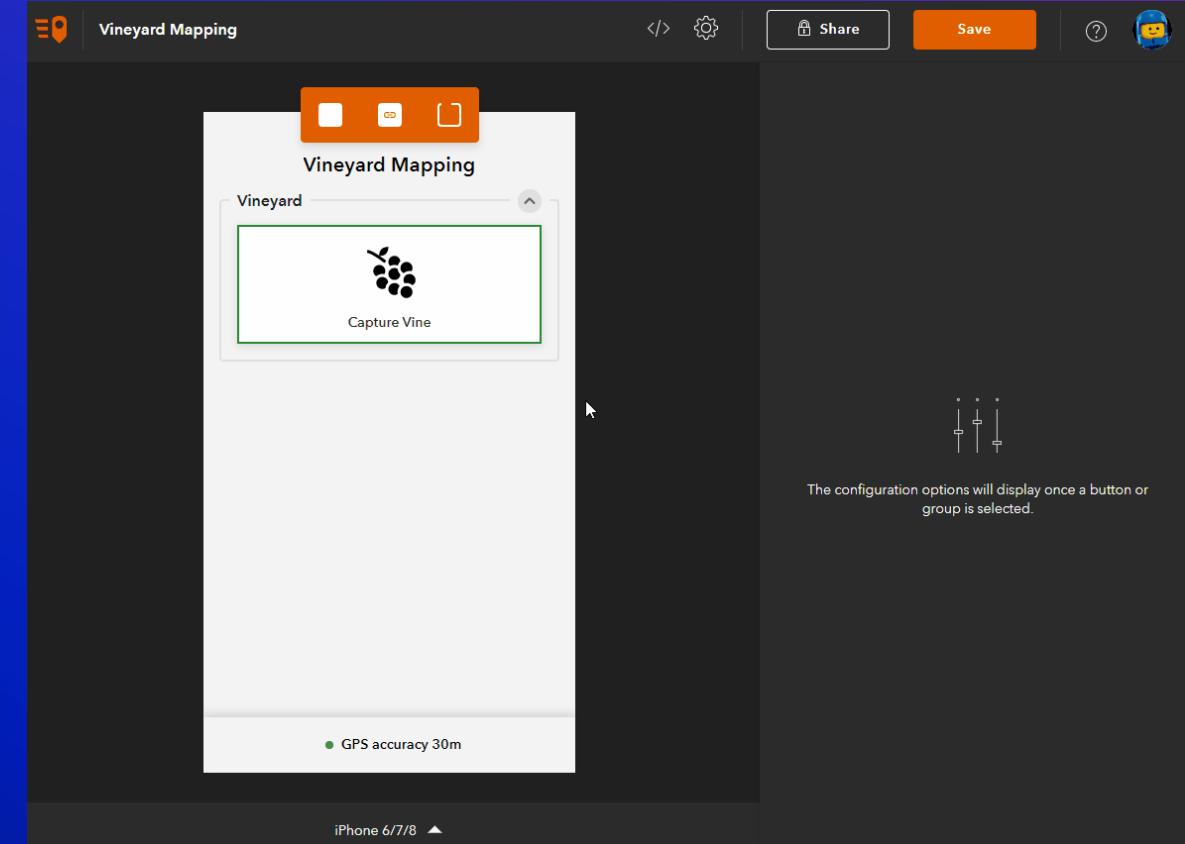
# ArcGIS QuickCapture designer

*Configure your own big button apps*

Configure your own big button apps

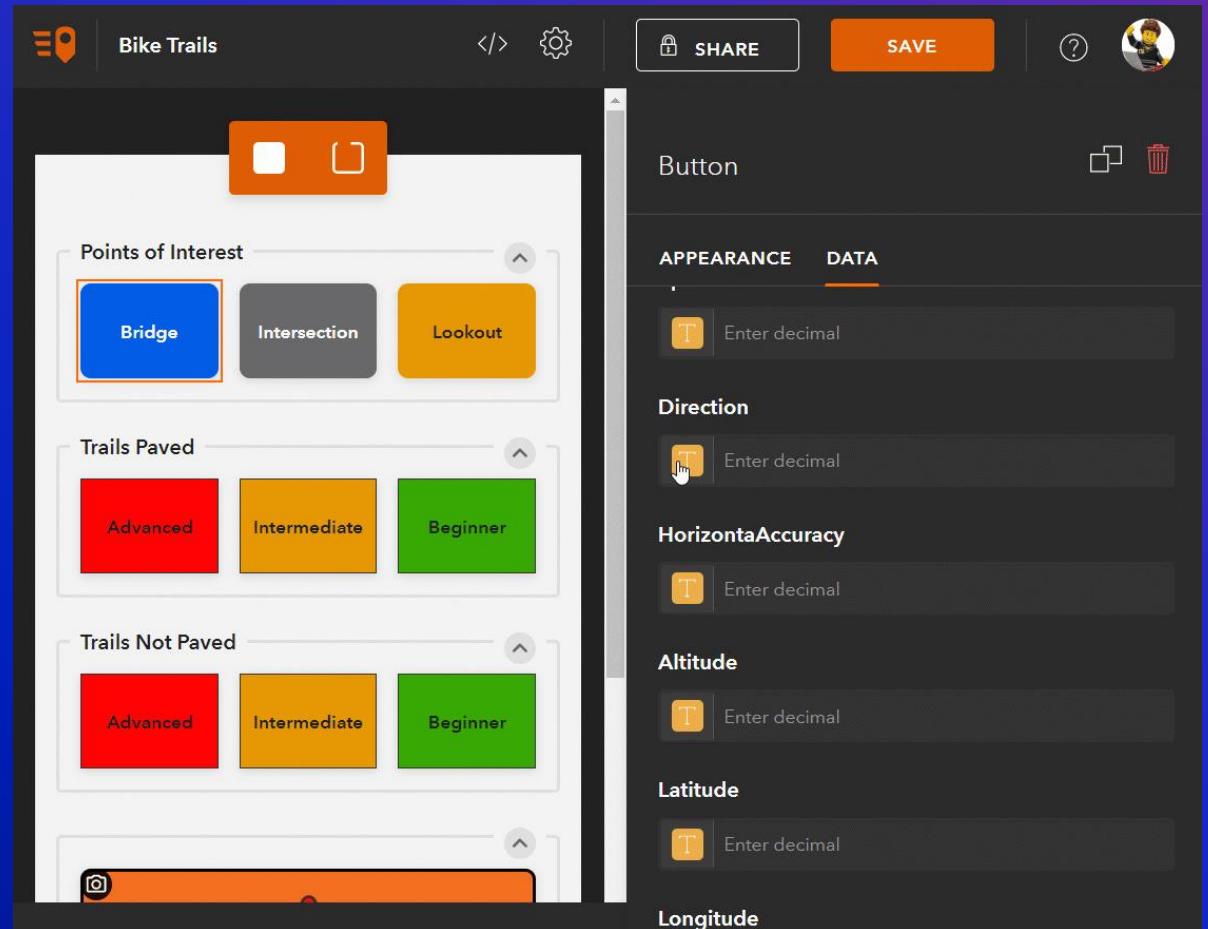
From your web browser

No-code



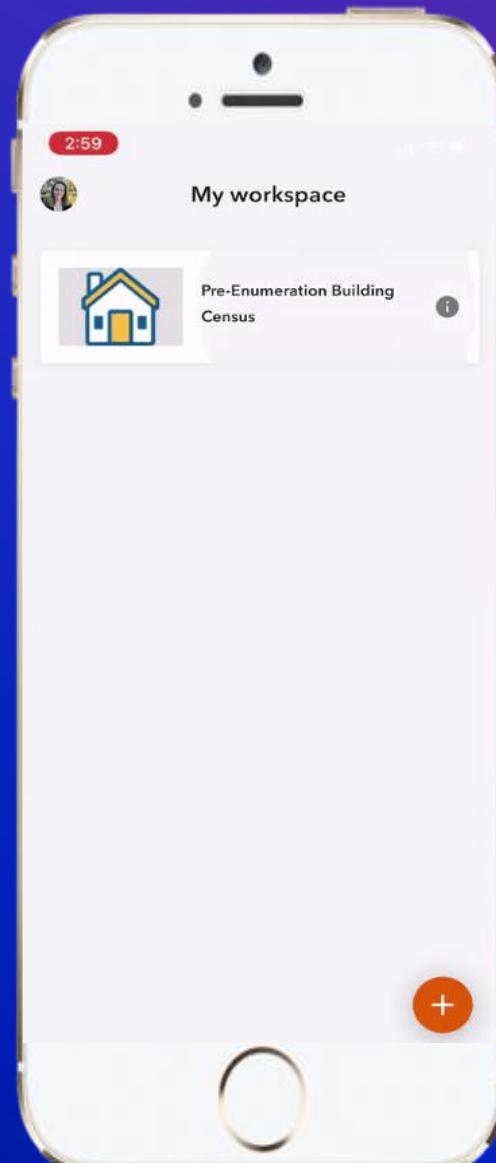
# Device Variables

- Use them to automatically calculate GIS attributes when a feature is captured
  - Speed
  - Direction of travel
  - Time of capture
  - Etc.
- Over 40 variables



# User Inputs

- **Update attributes on new features**
  - Enter input after button is pushed
  - Or when the project starts
- **Can be required or optional**
- **Supports data validation rules**



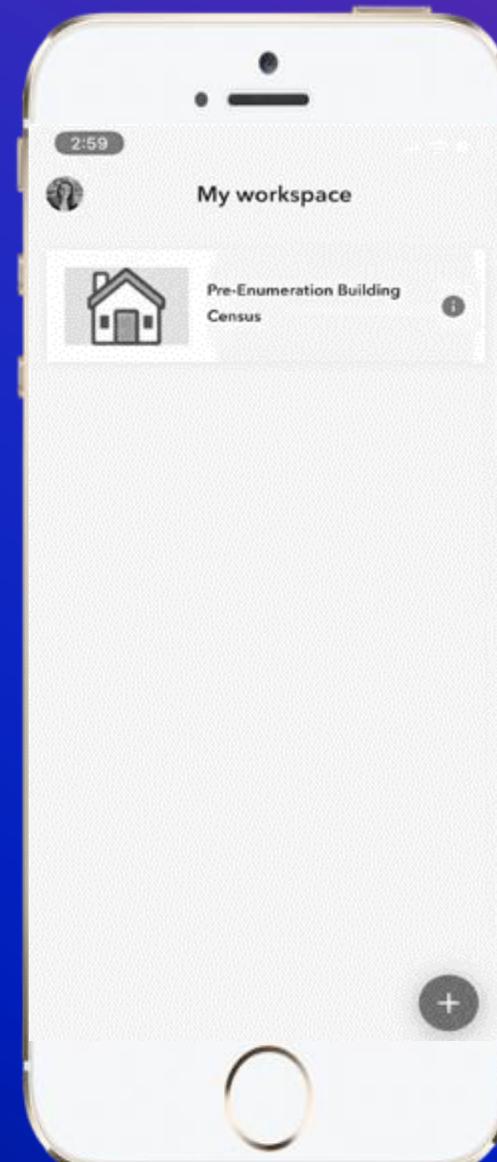
Project  
User Input



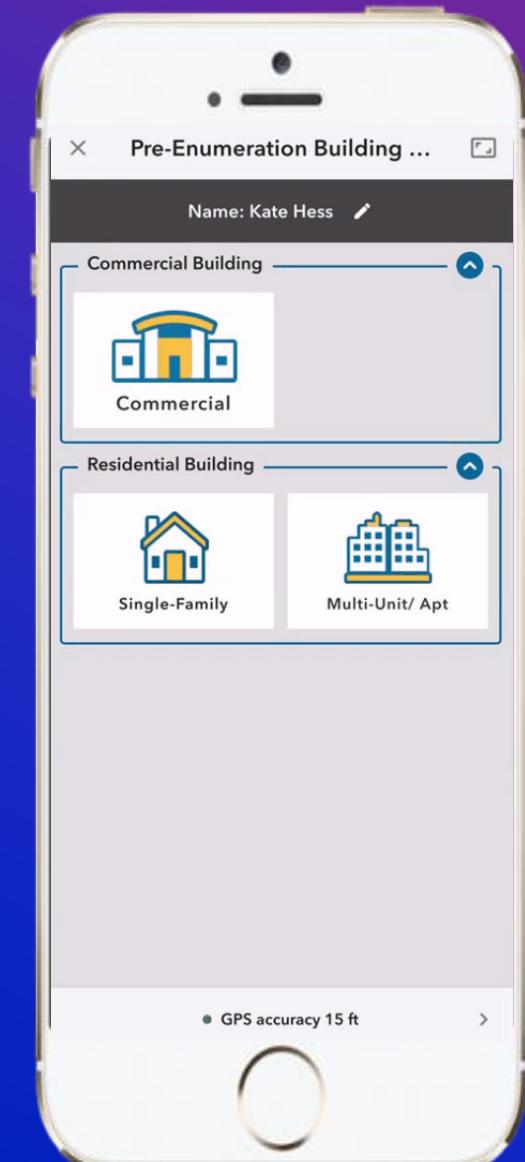
Button  
User Input

# User Inputs

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Project  
User Input

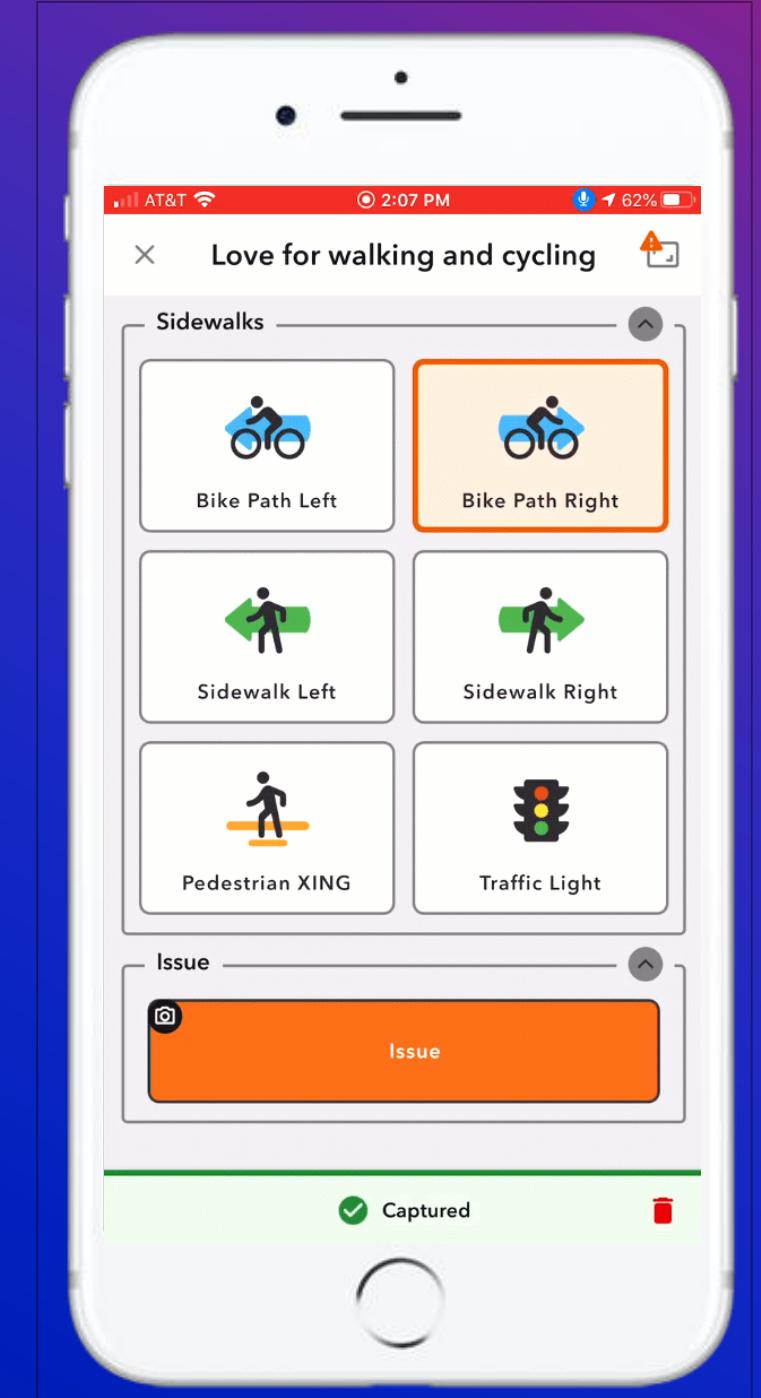


Button  
User Input

# Nested Data Capture

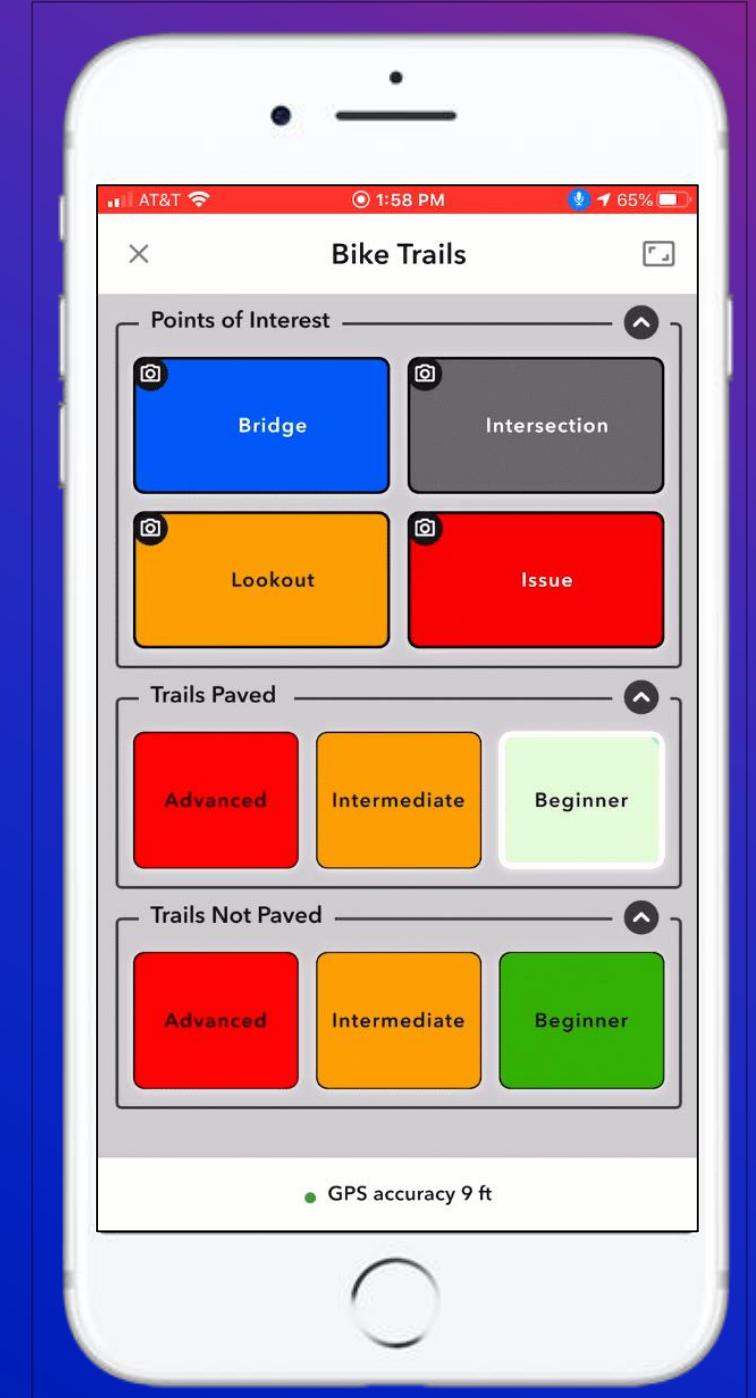
- QuickCapture supports capturing multiple observations at the same time:

- Bike trail on the right side
- Also on the left side
- ...



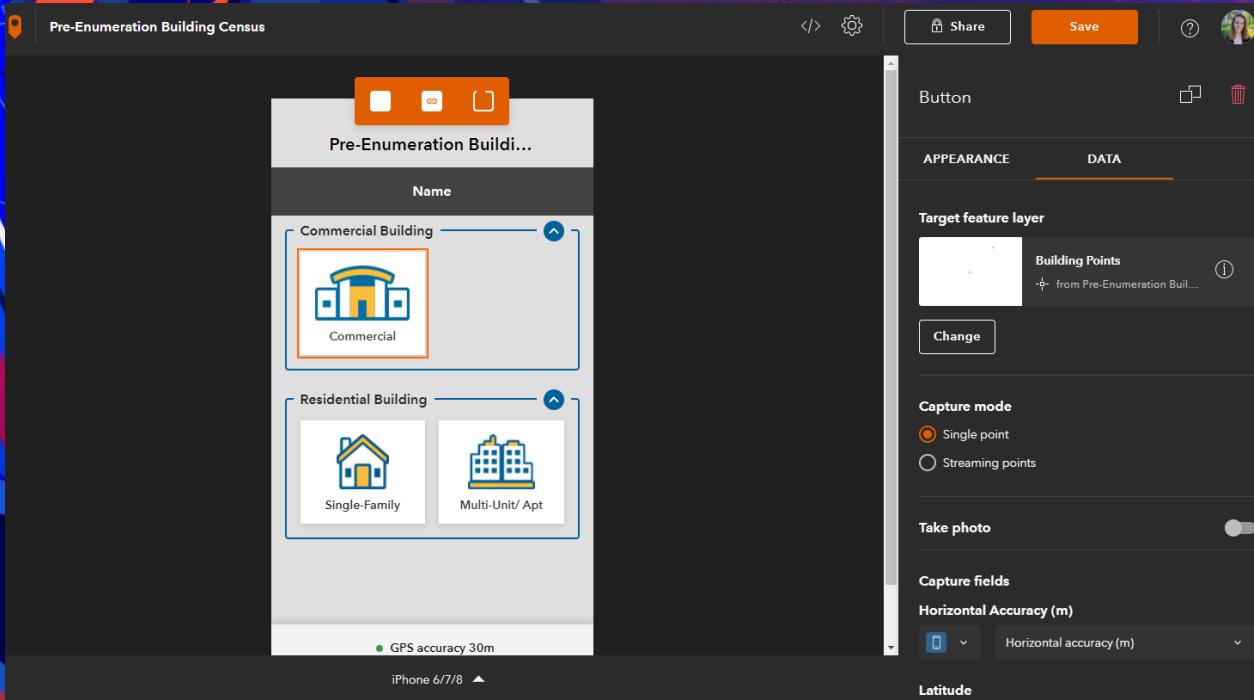
# Exclusive Groups

- You can also group buttons to capture information in a mutually exclusive manner:
  - Pavement condition good vs bad
  - Beginner trail vs intermediate



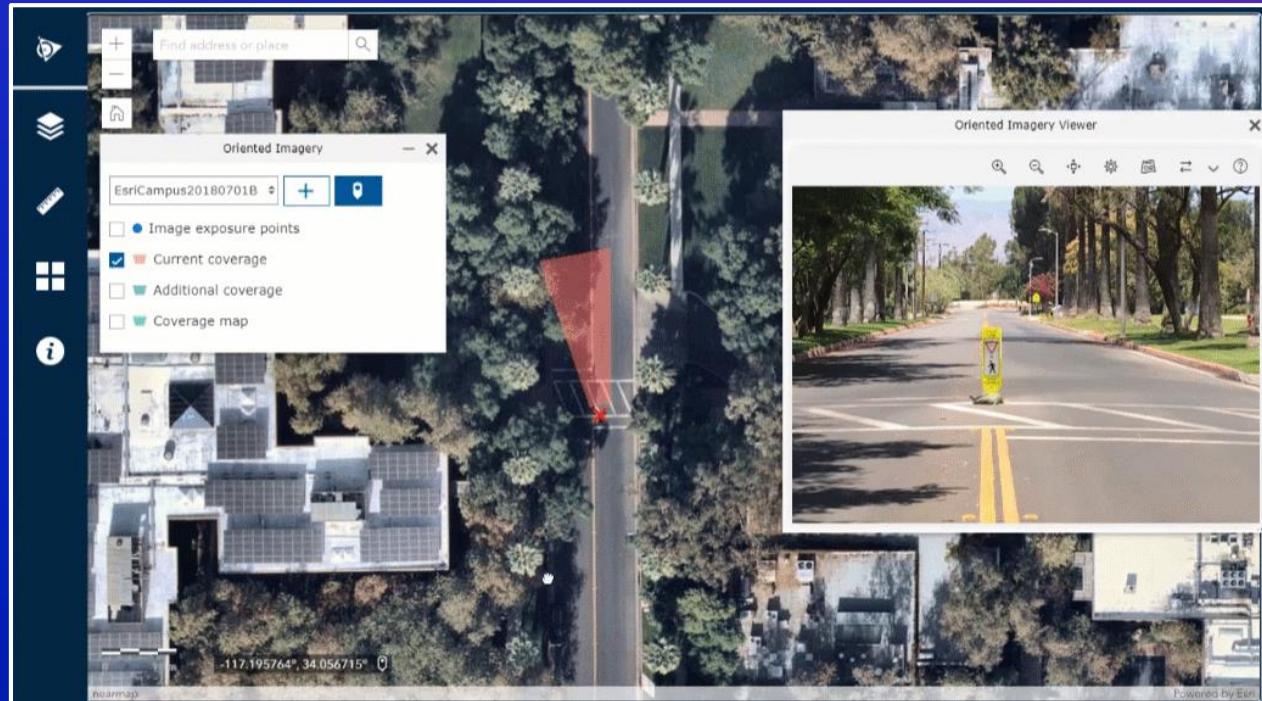
# Demo

## QuickCapture Designer



# Field data collection meets oriented imagery

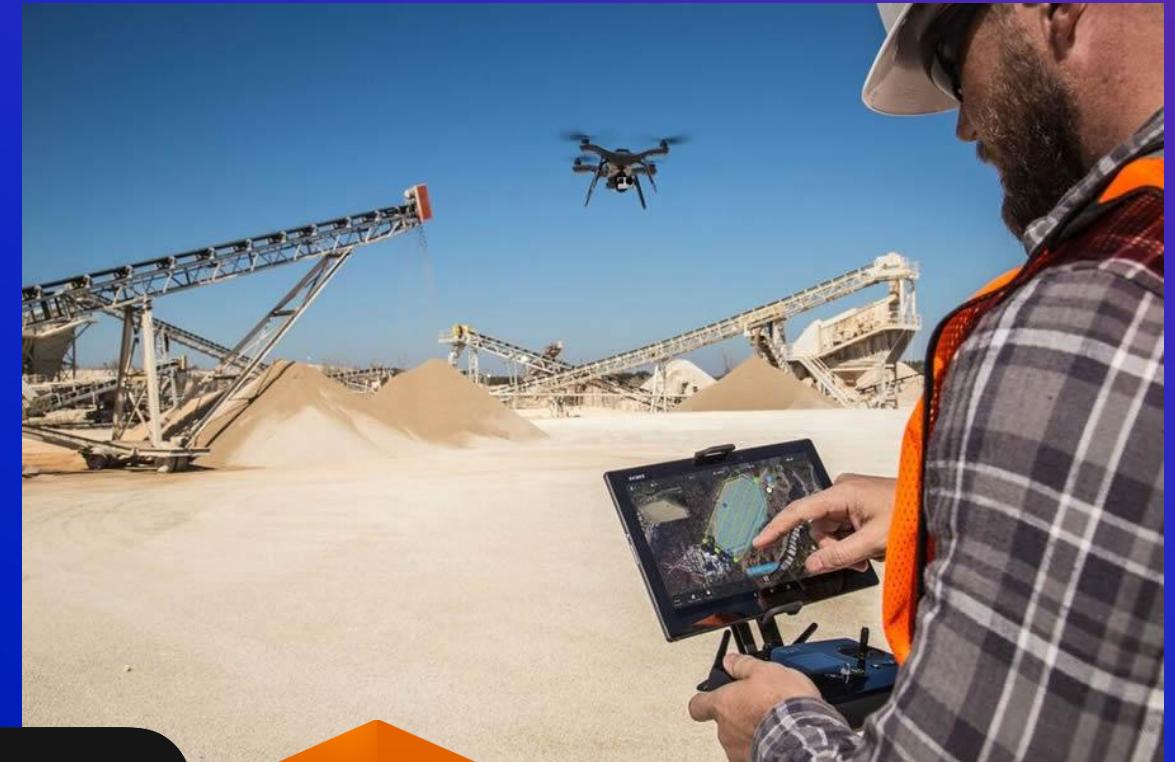
- Snap photos with the app as usual
- Explore field photos like never before
- Damage assessments
- Document construction
- Asset inventory and inspections
- Code violation reports
- Field observations



# Eyes in the Sky

*Field data collection with Site Scan and QuickCapture*

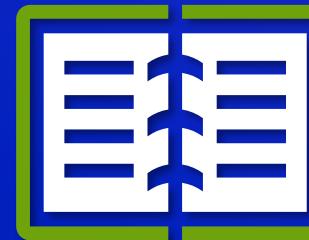
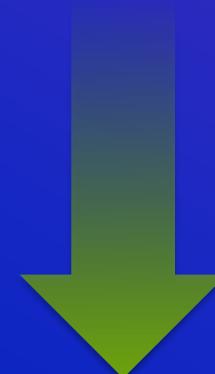
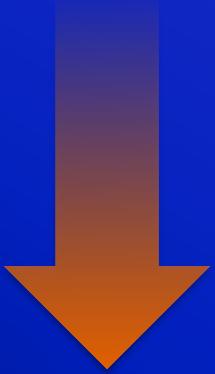
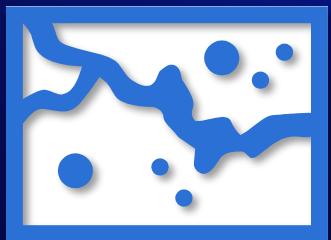
- Leverage real time imagery and location of your UAV to collect data from QuickCapture
- Quick field observations:
  - Search & Rescue and Emergency response
  - Powerline and pipeline inspections
  - Agriculture



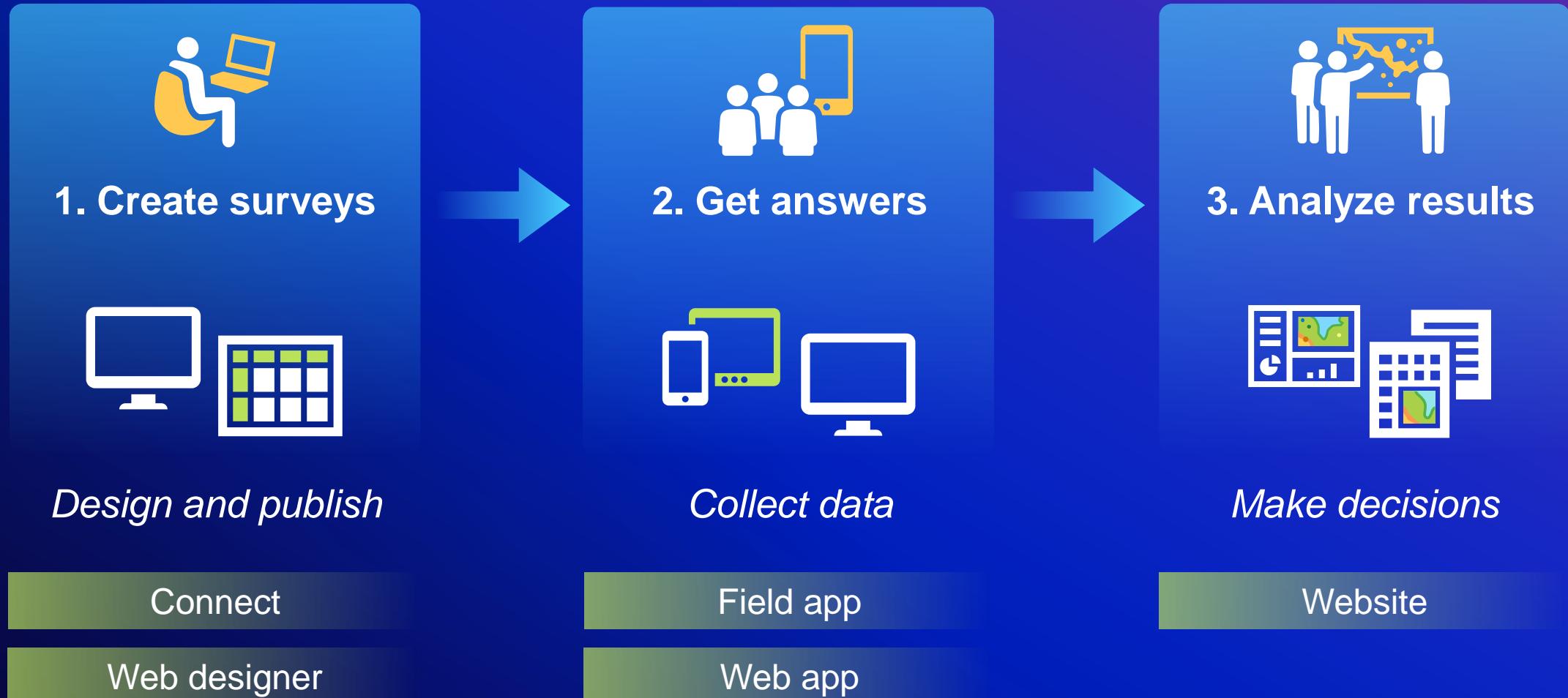
# ArcGIS Survey123

Form-centric workflows

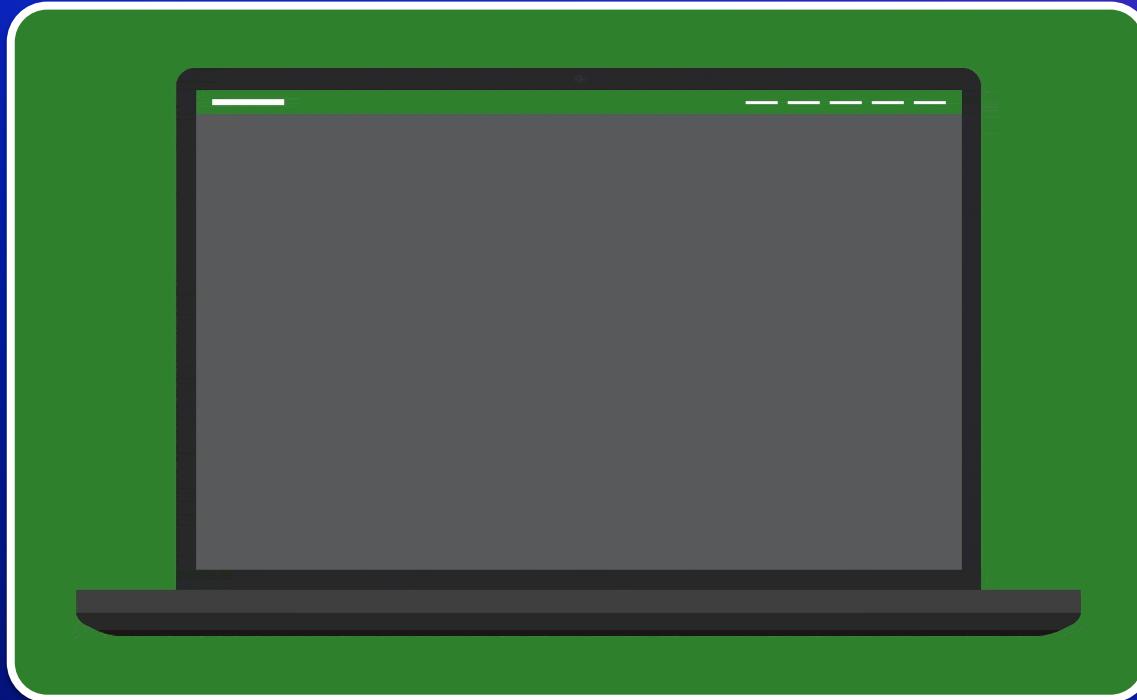
# Field Operations | Which app do I choose?



# Survey123 workflow



# A complete form-centric system



# Make forms smart!

- Boost data capture efficiency
- Data collected in the field is available in the office in real-time
- Reduce errors
- Prepopulate responses
- Guide the respondent through the form

The image shows a mobile application interface for a "Individual Assistance Field Collection Survey (Express)". The top section is titled "Incident Information" and includes a field for "Incident Begin Date" with the value "6/10/2020". Below this is a map showing a residential area with house numbers and street names like "Mesquite Avenue" and "Gham Drive". A blue dot marks a specific location with coordinates "Lat: 34.03833" and "Lon: -117.194". The bottom section is titled "Evaluation" and contains a table for reporting building condition. The table has columns for "Minor / None", "Moderate", and "Severe". Under "Collapse", "Minor / None" is selected. Under "Building leaning", "Moderate" is selected. Under "Structural damage", "Minor / None" is selected. Under "Falling hazards", "Minor / None" is selected. Under "Ground slope movement", "Minor / None" is selected. There is also a "Comments" field and a section for "Estimated Building Damage" with a dropdown set to "None". A green "Save" button is at the bottom right.

Minor / None	Moderate	Severe
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Create a survey

- **Survey123 web designer**
  - Runs in web browser
  - Drag-and-drop visual form builder
  - Easy to get started

Census Interview Form

Overview   Design   Collaborate   Analyze   Data   Settings

**Single Choice**

Label: What is (NAME)'s relationship to the head of household?

Hint: Tell user how to fill this question

Choices (Batch Edit):

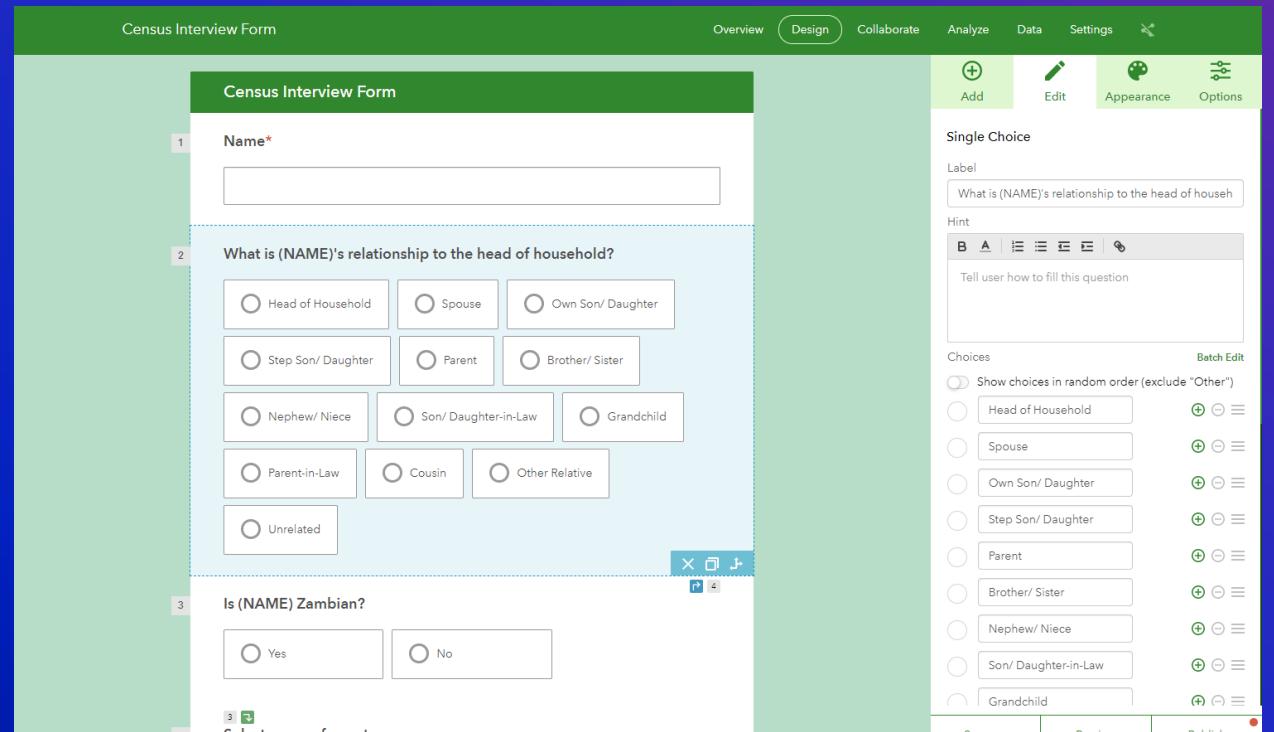
- Show choices in random order (exclude "Other")
- Head of Household
- Spouse
- Own Son/ Daughter
- Step Son/ Daughter
- Parent
- Brother/ Sister
- Nephew/ Niece
- Son/ Daughter-in-Law
- Grandchild
- Parent-in-Law
- Cousin
- Other Relative
- Unrelated

1. Name\*

2. What is (NAME)'s relationship to the head of household?

3. Is (NAME) Zambian?

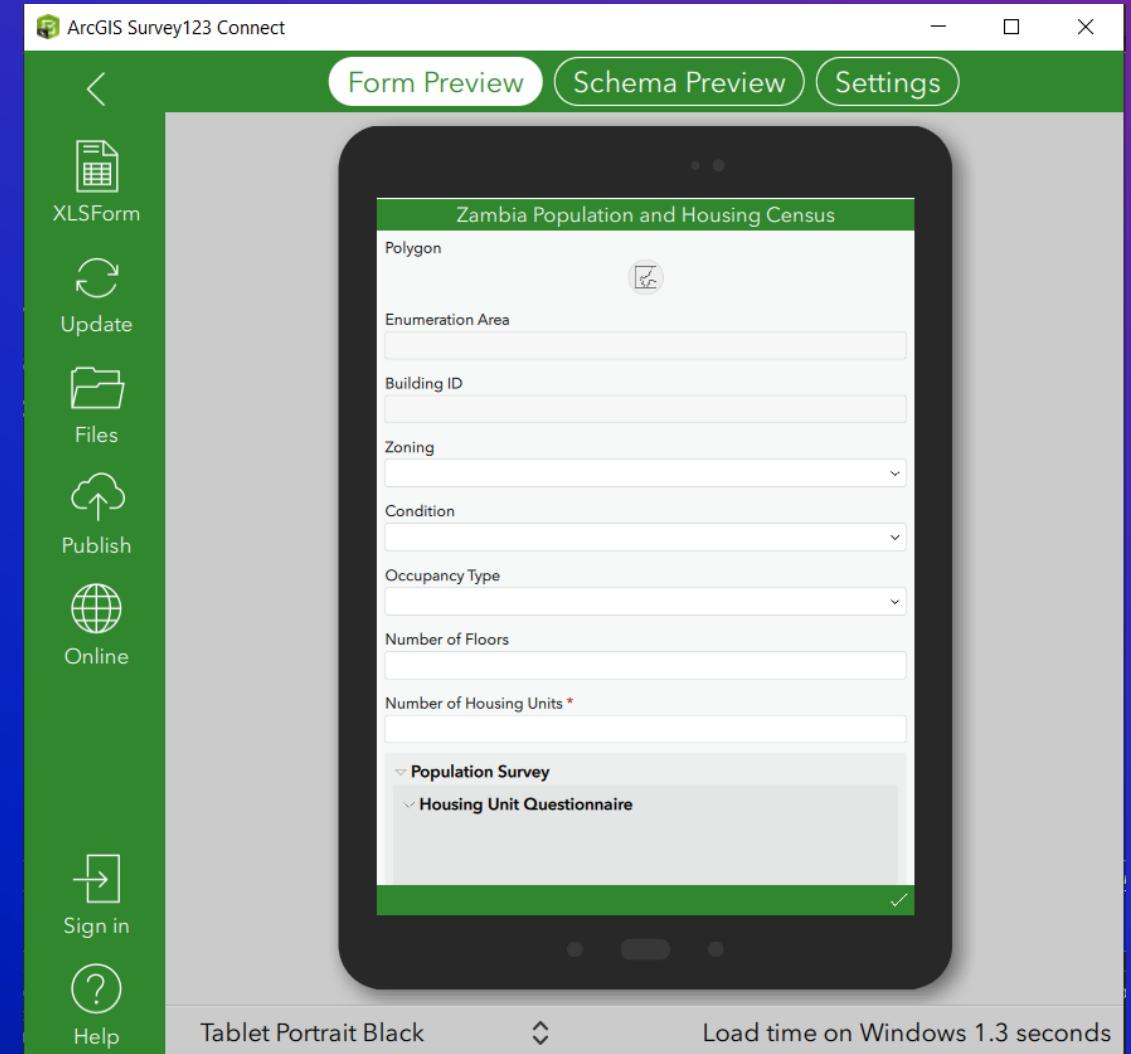
3.3.1. Select a response



# Create a survey

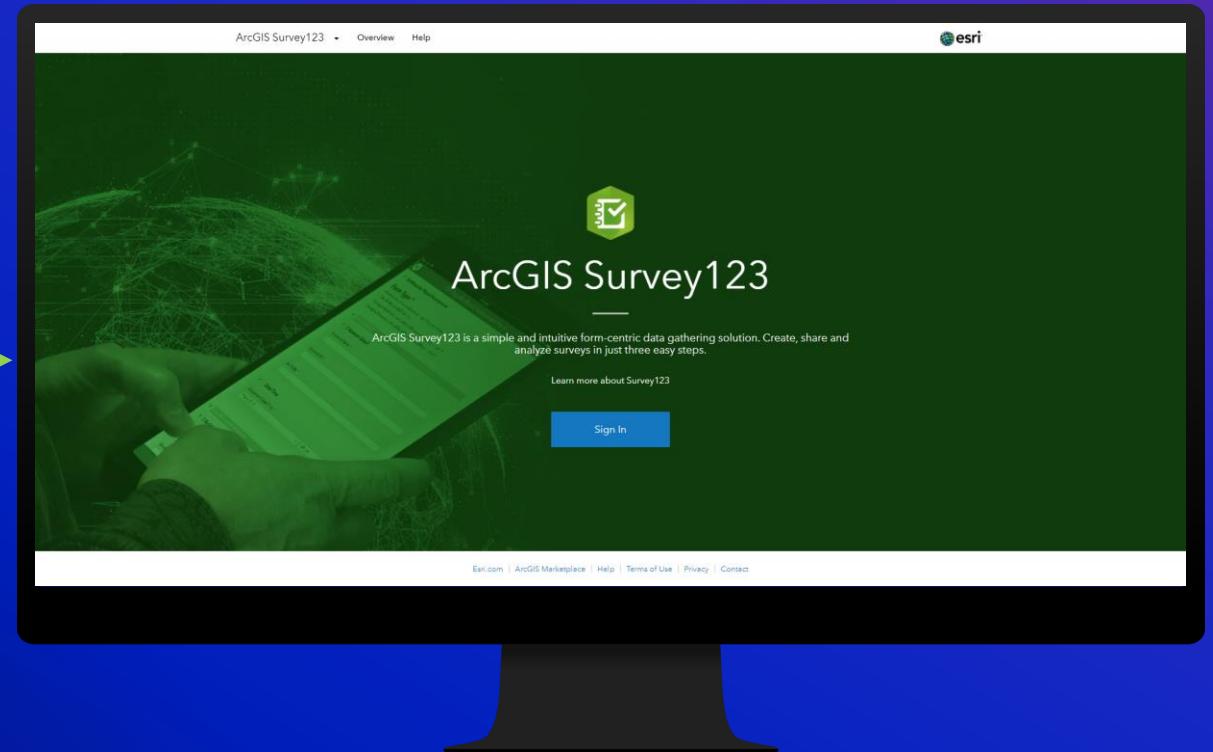
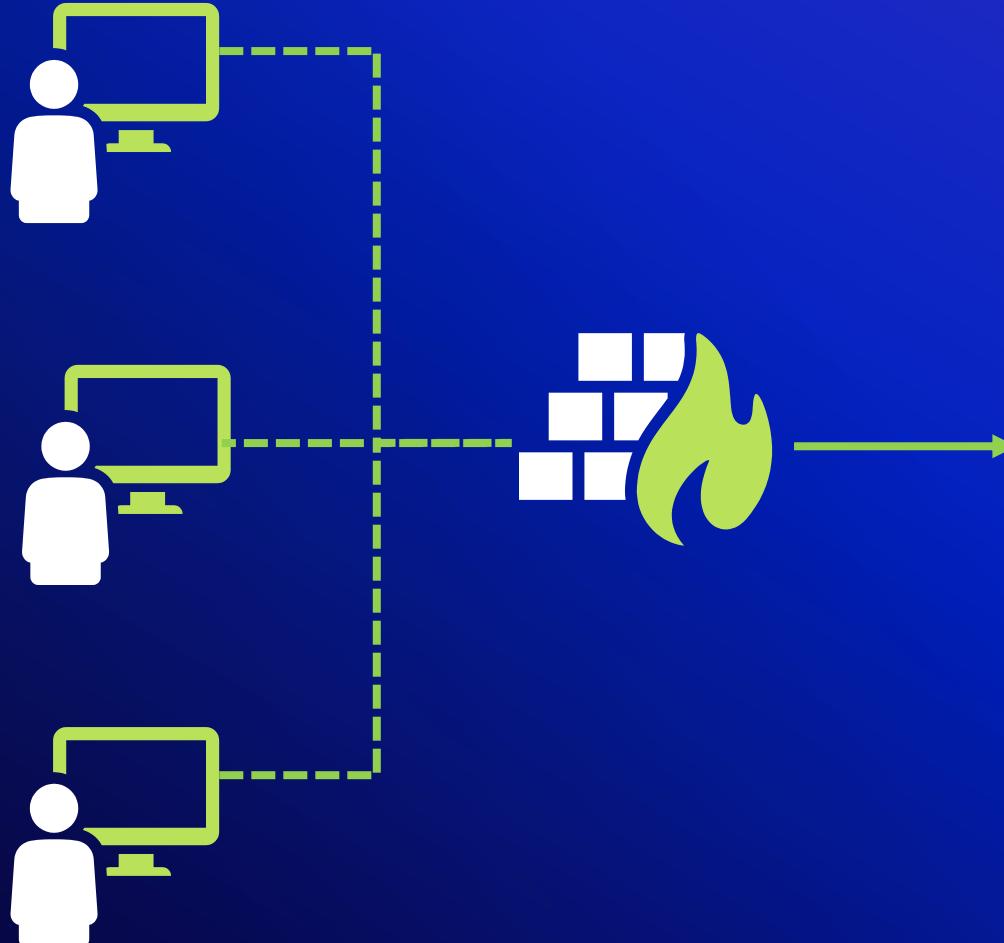
- **Survey123 Connect**

- Desktop application used in combination with Microsoft Excel
- Define the content, look, and behavior of the smart form
- Maximum level of control over form design



# ArcGIS Survey123

## *Local Website Installer*



# Demo

## Survey123 Web Designer

Census Interview Form

Overview   Design   Collaborate   Analyze   Data   Settings

Census Interview Form

1 Name\*

2 What is (NAME)'s relationship to the head of household?

3 Is (NAME) Zambian?

Single Choice

Label: What is (NAME)'s relationship to the head of househ

Hint: Tell user how to fill this question

Choices

Batch Edit

Show choices in random order (exclude "Other")

- Head of Household
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- Parent
- Brother/ Sister
- Nephew/ Niece
- Son/ Daughter-in-Law
- Grandchild
- Parent-in-Law
- Cousin
- Other Relative
- Unrelated

3   

Collect responses   

# Share your survey

- **Private surveys**

- Shared with a well-known group of users (secured access)
- Requires one ArcGIS account per field user
- Can use editor tracking capabilities
- Ideal for sensitive data and for tracking survey submissions and edits



# Share your survey

- **Public surveys**

- Shared with everyone
- No need for ArcGIS accounts – anyone can submit data
- Ideal for crowdsourcing initiatives



# XLSForm

*Expanded support*

Robust and proven specification for designing smart forms.

The conceptual foundation for the smart form capabilities in Survey123 and other smart form solutions in the market.

## XLSForm common features:

- Rich set of question types
- Conditional visibility of questions and groups
- Multi-page surveys
- Grid layouts
- Multilingual surveys
- Filtered lists
- Calculations
- Constraints...

type	name	label	hint	readonly	default	calculation	con
geoshape	lusakabuildingpoly_polygon						
integer	ealnum	Enumeration Area		yes			
integer	buildingid	Building ID		yes			
select_one Zoning	zoning	Zoning					
select_one Condition	condition	Condition					
select_one OccupancyType	occupancytype	Occupancy Type					
integer	numfloors	Number of Floors					
integer	numunits	Number of Housing Units					
begin repeat	popsurvey_r	Population Survey					
begin repeat	housingunits_r	Housing Unit Questionnaire					
integer	unitno	Unit/ Apt Number					
text	total_persons	How many people are usual residents of this household?					
begin repeat	householdroster_r	Household Roster					
note	rosternote	Add all household members to roster before proceeding to the next page					
text	last_nam	Last Name					
text	first_nam	First Name					
end repeat	householdroster_r						
begin repeat	indivqs_r	Individual Questionnaire					
hidden	person1	person1					pulldata('@javascript', 'Country_fam')
hidden	person2	person2					pulldata('@javascript', 'Country_fam')
hidden	person3	person3					pulldata('@javascript', 'Country_fam')
hidden	person4	person4					pulldata('@javascript', 'Country_fam')
hidden	person5	person5					pulldata('@javascript', 'Country_fam')
hidden	person6	person6					pulldata('@javascript', 'Country_fam')
hidden	person7	person7					pulldata('@javascript', 'Country_fam')
hidden	person8	person8					pulldata('@javascript', 'Country_fam')
hidden	person9	person9					pulldata('@javascript', 'Country_fam')
hidden	person10	person10					pulldata('@javascript', 'Country_fam')
hidden	count_me	count_me					1
calculate	position	position					once(count_1{\$count_me})
calculate	thisname	thisname					pulldata('@javascript', 'Country_fam')
select_one service_8915fc41c1194ab8a5196024b742eb2a_cvd_relationship	relationship	What is \${thisname}'s status within the household?					
select_one service_8915fc41c1194ab8a5196024b742eb2a_cvd_relationship	relationship_pers1	How is \${thisname} related to \${person1}?					
select_one service_8915fc41c1194ab8a5196024b742eb2a_cvd_relationship	relationship_pers2	How is \${thisname} related to \${person2}?					
select_one service_8915fc41c1194ab8a5196024b742eb2a_cvd_relationship	relationship_pers3	How is \${thisname} related to \${person3}?					
		How is \${thisname} related to					

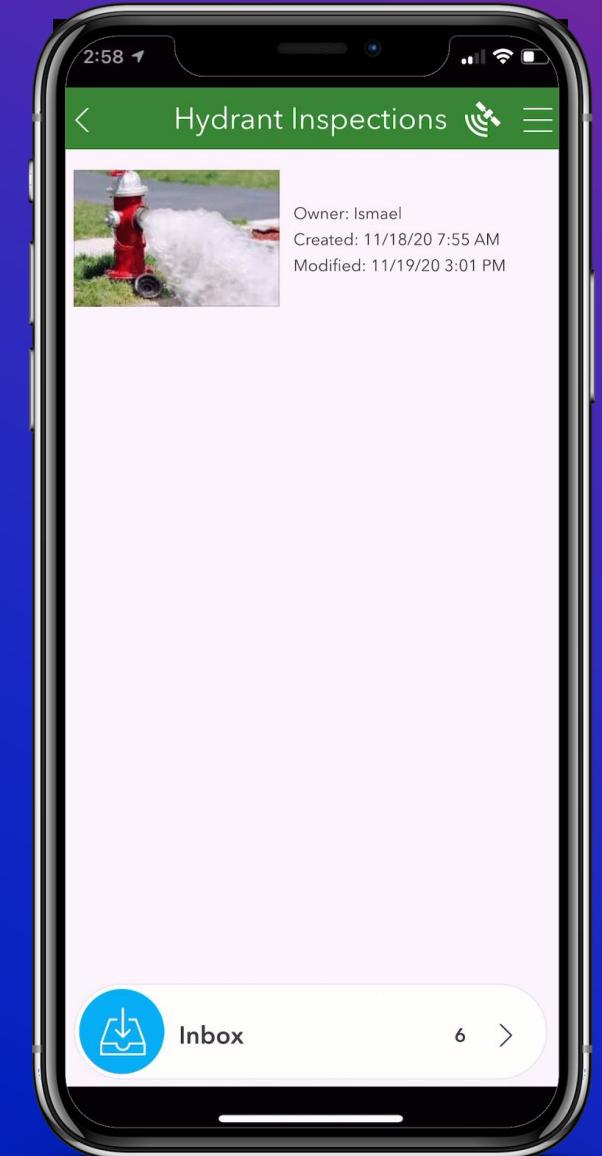
# Inbox

Allows you to:

- Use a map and a list to explore existing data
- Model a to-do list (assignments) within the Survey123 app
- Navigate to existing assets or assignments

What's new:

- Use the Inbox to view and/or edit data
- Copy record from Inbox
- New search and barcode filter
- Direction and distance indicators
- Faster



Zambia Population and Housing Census

Polygon 

Enumeration Area

Building ID

Zoning  Residential

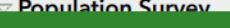
Condition  Good Condition

Occupancy Type

Single Household  
 Multiple Housing Units  
 Non-Residential  
 Vacant

Number of Floors

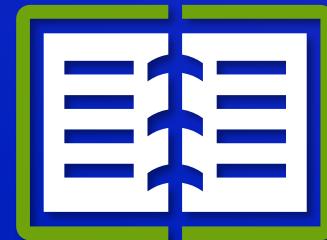
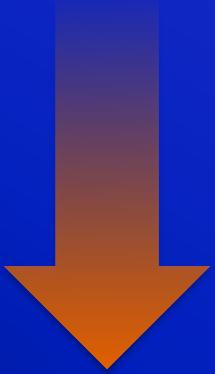
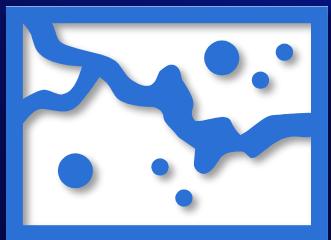
Number of Housing Units \*

 Population Survey 

# Demo

## Census with Survey123 Connect

# Field Operations



# Resources

## ArcGIS Field Maps

[Get to know ArcGIS Field Maps](#)

[5 things to try with ArcGIS Field Maps](#)

[ArcGIS Field Maps Migration Guide](#)

## ArcGIS QuickCapture

[Get started with ArcGIS QuickCapture](#)

[Create a project](#)

[Capture a record](#)

## ArcGIS Survey123

[Get started with ArcGIS Survey123](#)

[Create your first survey](#)

[XLSForm essentials](#)





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