



ArcGIS Field Maps

An Introduction & What's New

D'Maia Curry, Jeff Shaner, Brent Pierce

Field Operations | Focused apps for each activity...



Field Operations | ArcGIS Field Maps





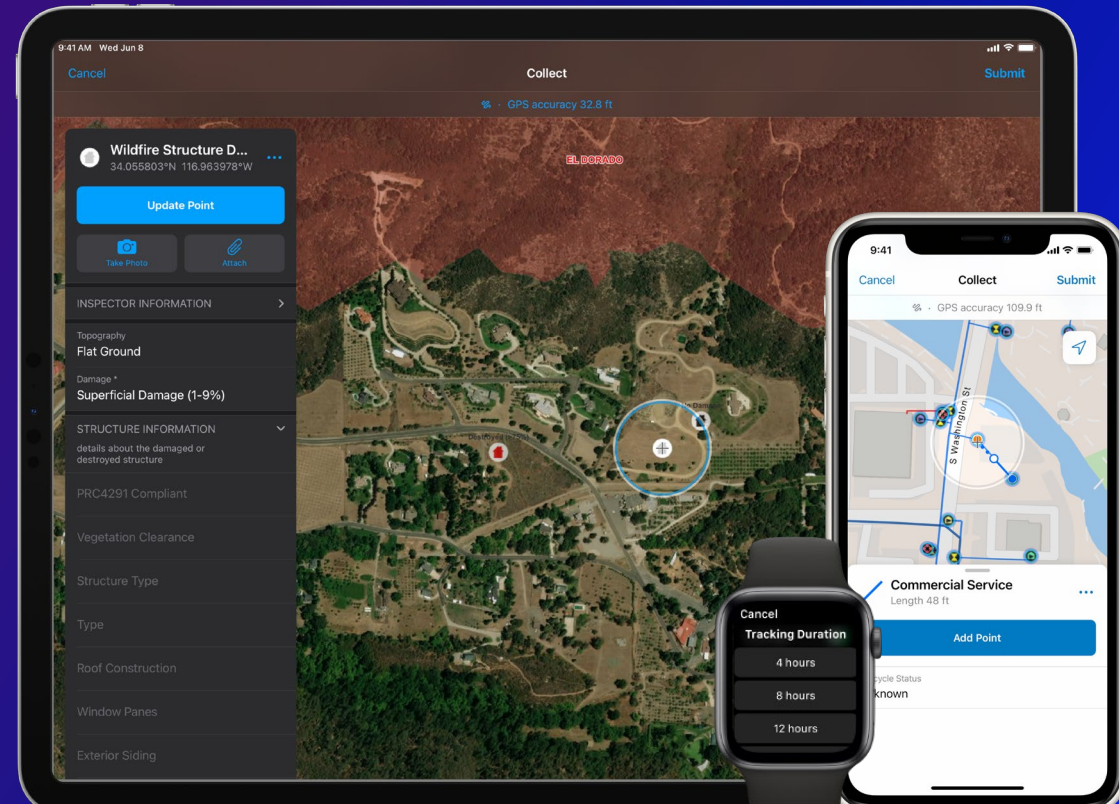
ArcGIS Field Maps

The foundational app for your mobile workforce enables you to:

- Perform inspections
- Collect & edit data with high-accuracy
- Work with maps, even offline
- Markup maps and share markup
- Record location history

 Download on the
App Store

 GET IT ON
Google Play





ArcGIS Field Maps | Mobile app strategy



Best in breed mapping system



World class data collection solution



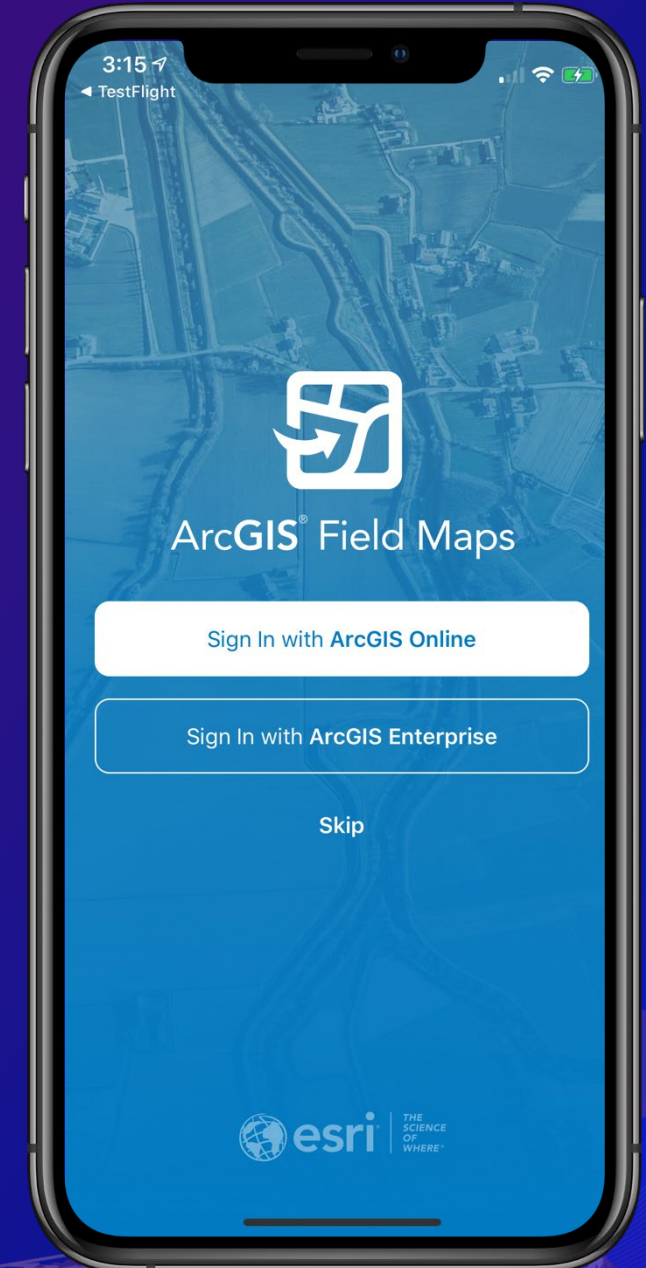
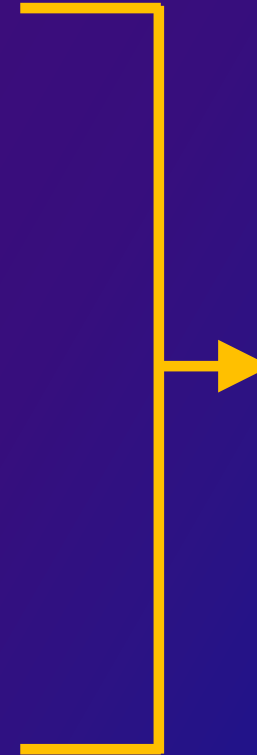
Revolutionary location tracking technology



World class tasking and work management



State of the art navigation capabilities



Capabilities coming in future releases



ArcGIS Field Maps | 5 key benefits

1. One app to deploy + learn
2. Sign-in to ArcGIS only once
3. Eliminate duplication of offline content
4. Smaller aggregate app footprint/download
5. Consistency across apps



Field Maps Mobile

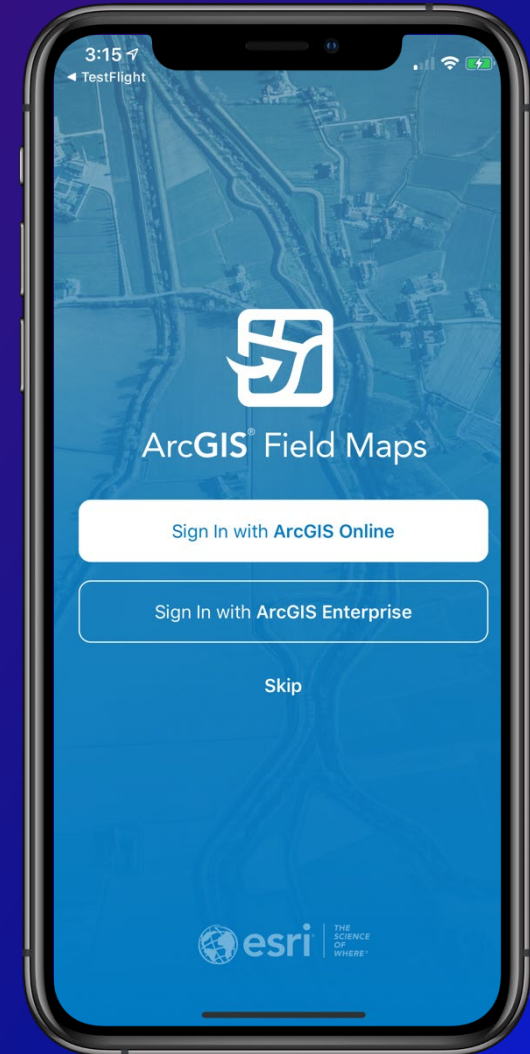
The background is a vibrant, abstract composition. It features large, flowing shapes in shades of purple, magenta, and pink. In the upper left corner, there are smaller, more intricate shapes in blue and cyan. A faint, stylized map or topographic overlay is visible in the upper right, showing contour lines and a grid pattern. A bright yellow curved line sweeps across the right side of the image, adding a dynamic element to the design.



ArcGIS Field Maps mobile | Key Capabilities

Key capabilities

- Map viewing
 - View rich cartographic maps, update in real-time
 - Search location, addresses, features
 - Support for Indoor maps
- Map markup
 - Freehand sketch, marker placement
 - Share peer-to-peer, by email, to organization
- High accuracy data collection
 - Capture point, line, area features
 - Use external GPS or map
- Robust smart form editing
 - Simplified form management, conditional visibility, required fields
- View, record and share location tracks
 - Apple watch support, track for duration



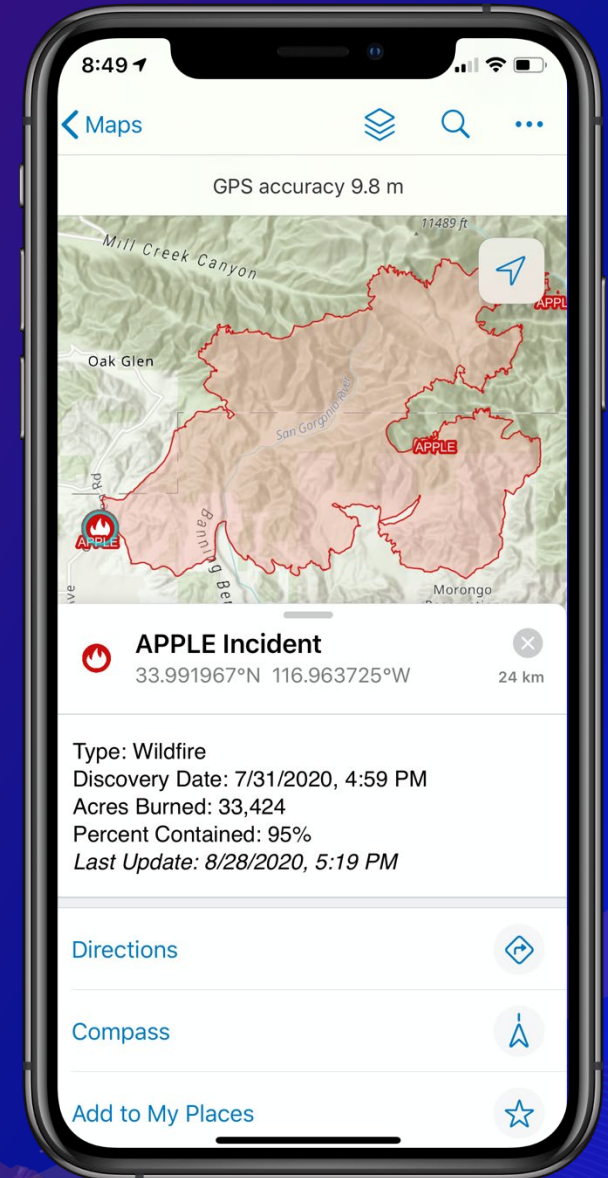
Field Maps requires iOS 13.5, Android 8 (API 26)

Map Support

- Advanced symbology/Labeling (w/Arcade)
- Group layers, Annotation
- Popups (w/Arcade including feature sets)
- Layer refresh for auto-updates

Map Tools

- GPS (rotate using compass)
- Basemaps, Bookmarks, Layers, Legend
- Measure (lines, areas)
- Search (locations, coordinates, features)
- Share Map
- Sync map changes (when offline)
- Directions (Navigator, Google Maps, Apple Maps)
- Compass





ArcGIS Field Maps mobile | Map markup capabilities

Markup Tool

- Freehand sketch lines and areas
- Add markers, lines, arrows, areas
- Shape Recognition
- Turn markup layers on/off with Layers tool

Share Markup

- OTA, by email, text message
- ArcGIS organization





ArcGIS Field Maps mobile | High-accuracy data collection

- 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
 - Back-pack
 - 3D printed attachments...





ArcGIS Field Maps Mobile | High-accuracy data collection

- GPS Capture capabilities
 - Single Point/vertex capture (w/ Z-value)
 - Streaming data capture (lines/areas)
 - Averaging
- Understanding Accuracy
 - GPS bar
 - GPS metadata
 - Required accuracy
 - Confidence level
- Connecting to Receiver
 - Location Provider
 - Location Profile

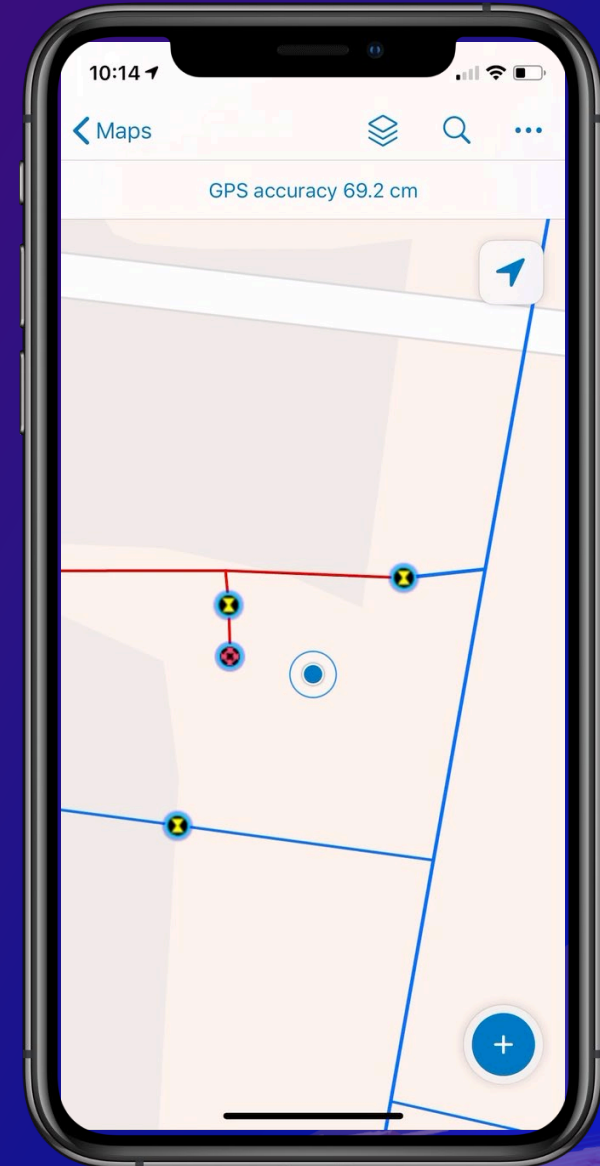
The image displays five overlapping screenshots from the ArcGIS Field Maps Mobile application, illustrating various settings for high-accuracy data collection.

- Accuracy**: A settings screen with a back arrow and 'Profile' label. It shows 'Distance (centimeters)' set to 5, a note 'Set required location accuracy for data collection.', 'Centimeters' selected with a blue checkmark, 'Meters' as an option, and '95% Confidence' with a toggle switch.
- Streaming**: A settings screen with a back arrow and 'Profile' label. It shows 'Time' as an option, 'Distance' selected with a blue checkmark, 'Distance (meters)' set to 3, and a note 'Set how often to collect a new point while streaming.'
- GPS Details**: A screen titled 'GPS Details' with a close button. It shows 'Updated Just Now' and various metrics: Provider (R2, 5544S01871: Trimble), Altitude (HAE) (1,183.9 ft), Horizontal Accuracy (RMS) (0.6 in), Vertical Accuracy (RMS) (1 in), Fix Type (RTK Fixed), Station ID (--), Correction Age (1 sec), Satellites (Used/Visible) (13/31), Current Location Profile (Esri base station), Correction Source (NTRIP), and Battery (52 %).
- GPS Averaging**: A settings screen with a toggle switch for 'GPS Averaging' (turned on) and 'Points to Average' set to 5. It includes a note: 'Set the number of points you would like to average. Minimum number of points is 2.'
- Add Provider**: A screen with a 'Cancel' button and an 'Add Provider' title. It shows a list item 'Bad Elf #145285' with an 'Add' button next to it. At the bottom, it says: 'To pair a new receiver to your device, go to Bluetooth Settings.'



ArcGIS Field Maps mobile | Inspections

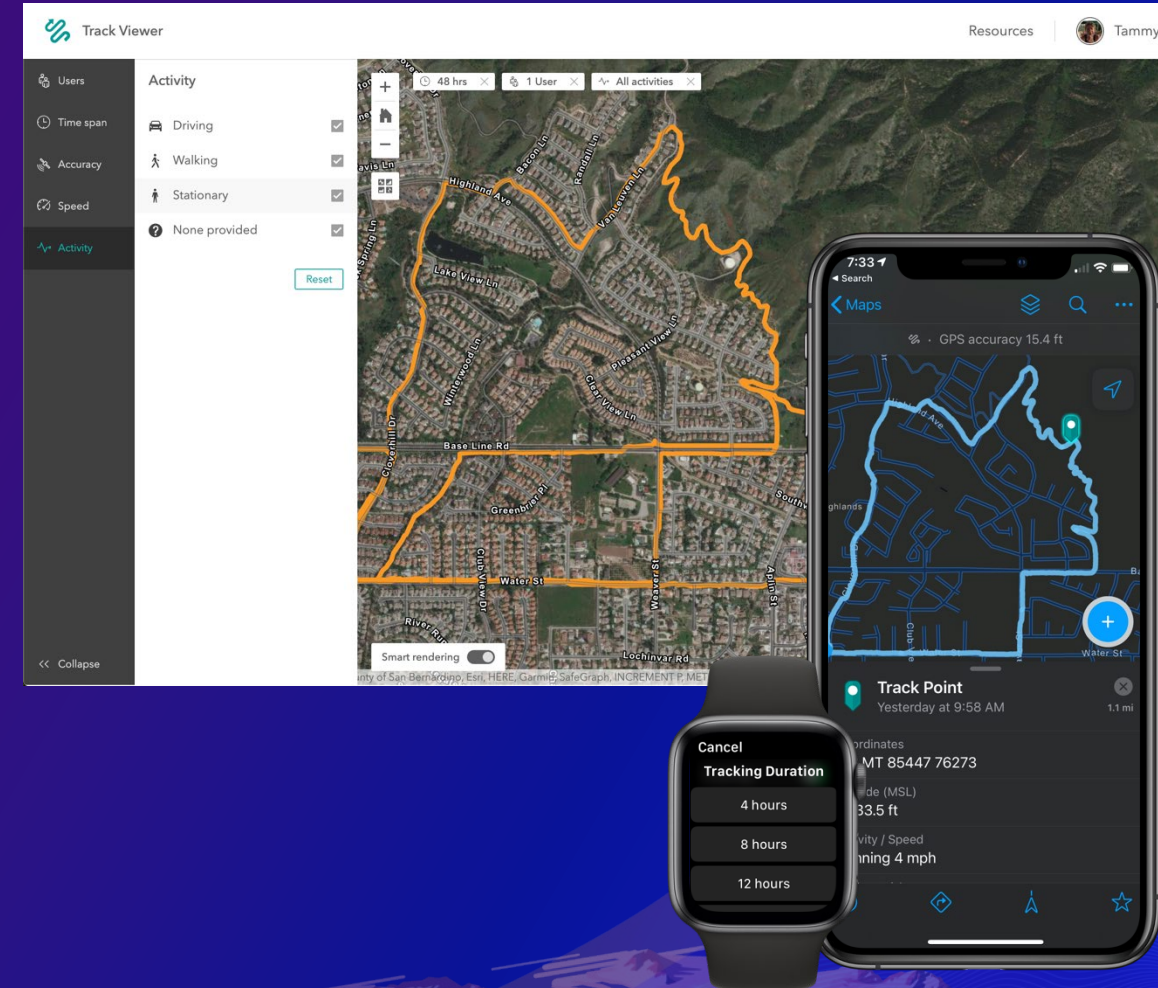
- Transaction model support
 - Non-versioned
 - Traditional versioning
 - Offline Branch versioning (10.8.1+)
- Inspection types
 - Feature inspections (new feature, update attributes on existing)
 - Historical, tabular inspections (model using 1:M relationships)
- Smart forms supported on layers and tables
 - Group fields, apply conditional visibility
 - Use pick lists, required and read-only fields





ArcGIS Field Maps mobile | Location Tracking

- Licensing Change
 - ArcGIS Tracker add-on license **included** with Field Worker user type
 - Battery savings location tracking capability, driven by activity
- Switch tracking on/off for all maps from maps screen or within a map
 - Track for a duration
- View location tracks in any map (iOS/Android)
 - Turn tracks layer on/off
 - Set track duration
- Supported on Apple Watch
- Use Track Viewer to share tracks with others
- New Track lines layer for improved viewing

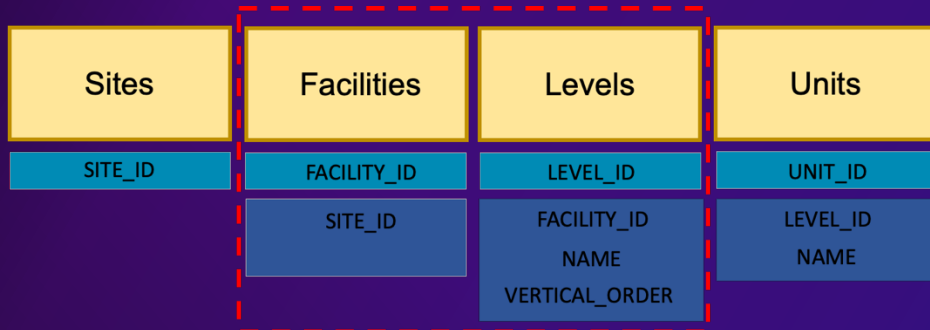




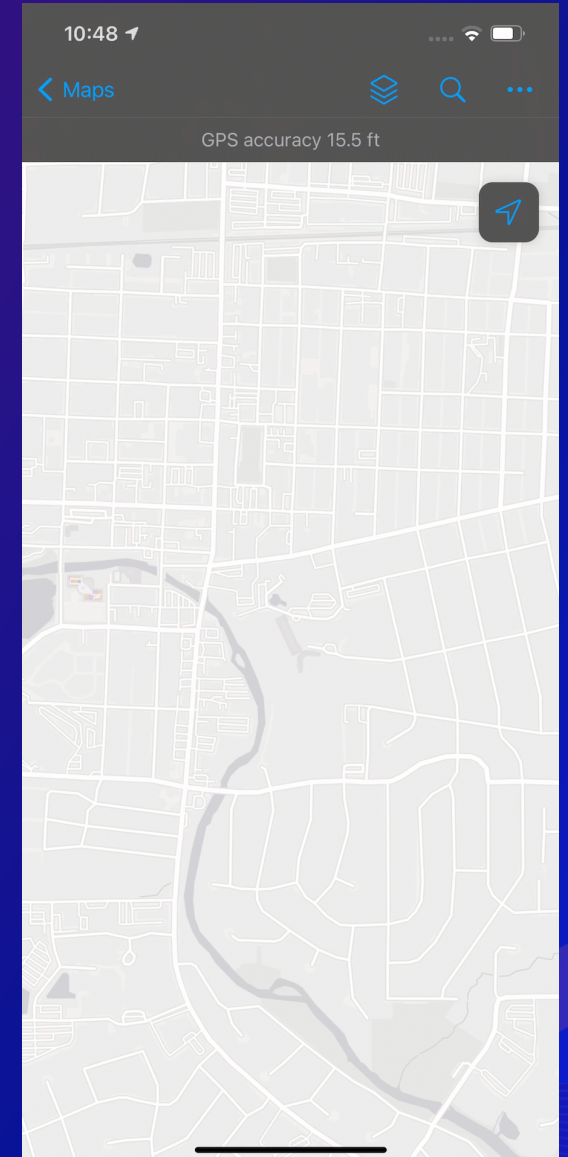
ArcGIS Field Maps mobile | Indoor Mapping

ArcGIS Field Maps supports the Indoors information model

- Map packages
- Web maps
- Floor tool available when Facilities, Levels layers are present in the map



- Additional layers that conform to the model will also be filtered.
 - Including editable feature layers





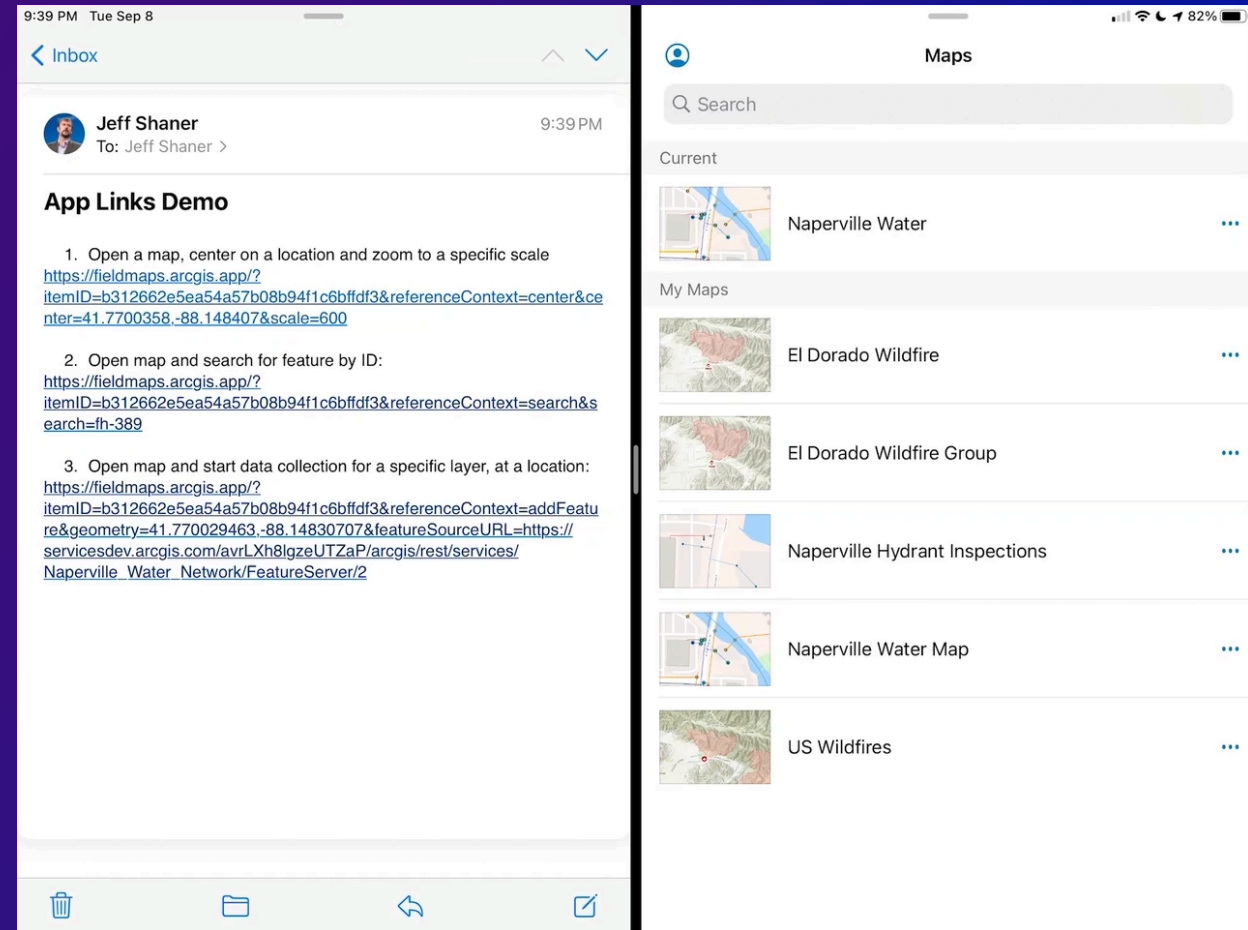
ArcGIS Field Maps mobile | Universal app links

Remotely control Field Maps using App Links

- From another app
- From an email or text message

App Link capabilities include:

- Opening a map or map package
- Centering a map at a certain location/scale
- Searching a map using coordinates, locations, feature attributes
- Starting data collection (with a location, spatial reference, collection of attributes)
- Updating attributes of an existing feature
- Callback to another application



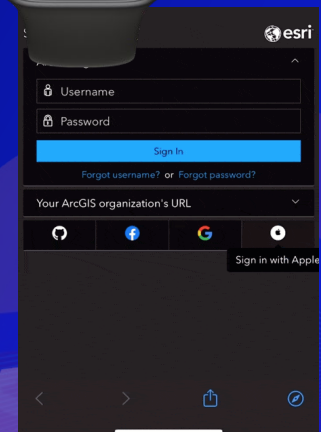
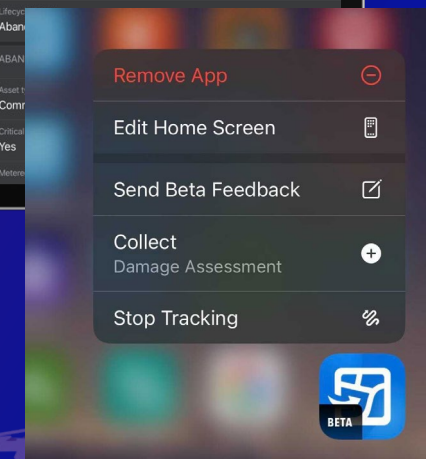
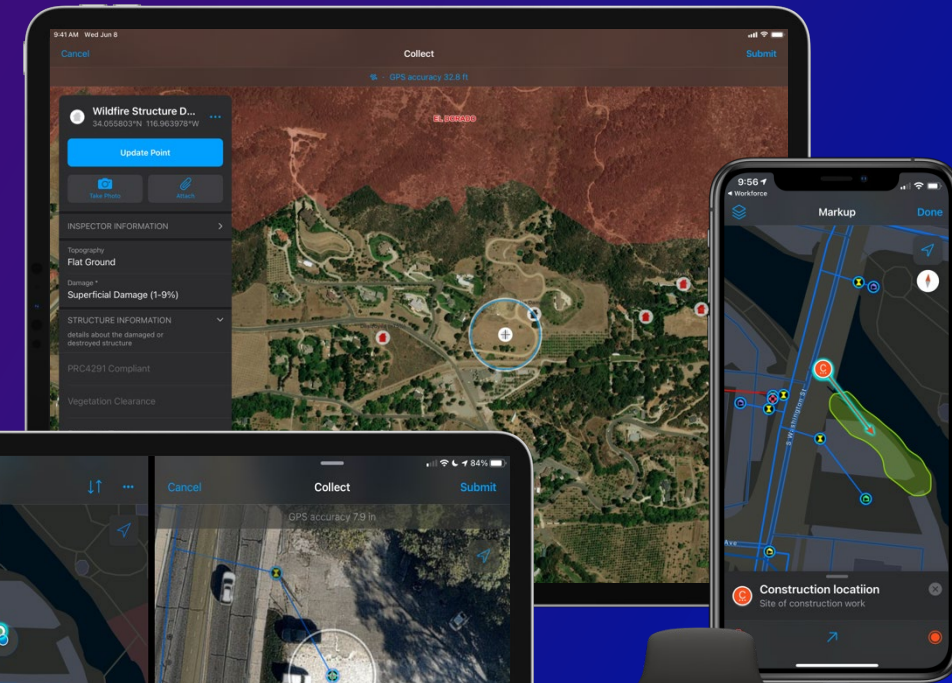
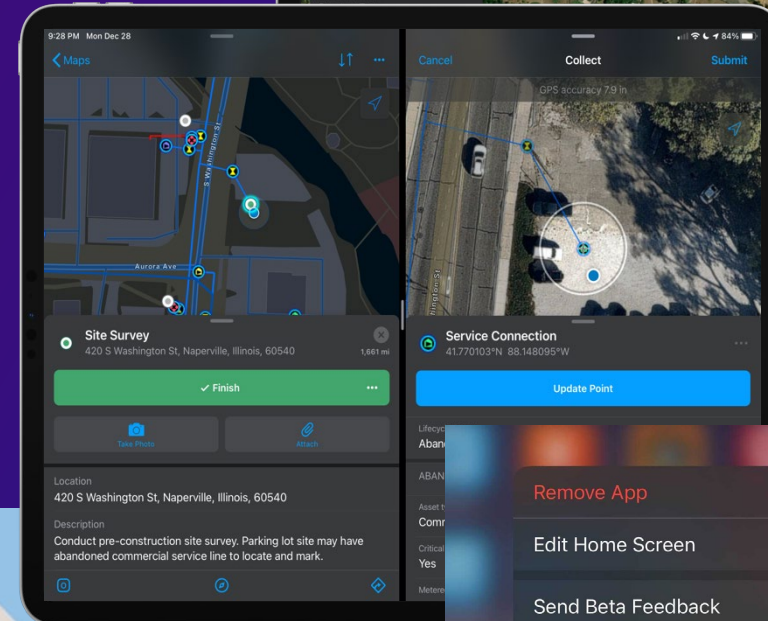
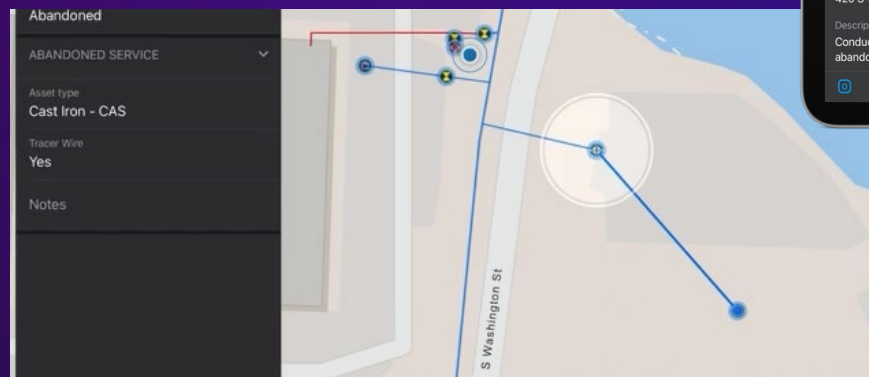
<https://fieldmaps.arcgis.app/>



ArcGIS Field Maps mobile | iOS Specific Features

Several Field Maps features unique to iOS devices include:

- Sign in with Apple
- Dark Mode support
- Split View on iPad
- Scribble support on iPad
- Apple Watch support for location tracking
- Quick actions



Benefits

- Easily manage devices in your organization
- Improve efficiency of app deployments
- Keep apps and data secure
- Active monitoring for malware and other threats

Field Maps capability

- Application configuration keywords
 - portalURL key/value pair
 - anonymousAccess key/value pair
- App-level VPN

Field Maps - Assignment

Application Configuration

EMM Managed Access
Only devices enrolled in EMM will be allowed to install the app and receive policies below.

Managed Access ☒

Send Configuration ☒ ⓘ

[UPLOAD XML](#) ⓘ

Configuration Key	Value Type	Configuration Value	
portalURL	String	https://myportal.mycompany.com/arcgis	×
anonymousAccess	Boolean	true	×

+ ADD





Mobile Demo

D'Maia Curry

Field Maps Web

The background is a vibrant, abstract composition. It features large, flowing shapes in shades of purple, magenta, and pink. In the upper left corner, there are smaller, more intricate shapes in blue and cyan. A faint, stylized map or topographic overlay is visible in the upper right, showing contour lines and a grid pattern. A bright yellow arc curves across the right side of the image, adding a dynamic element to the design.



ArcGIS Field Maps Web | Web app

Who is it for?

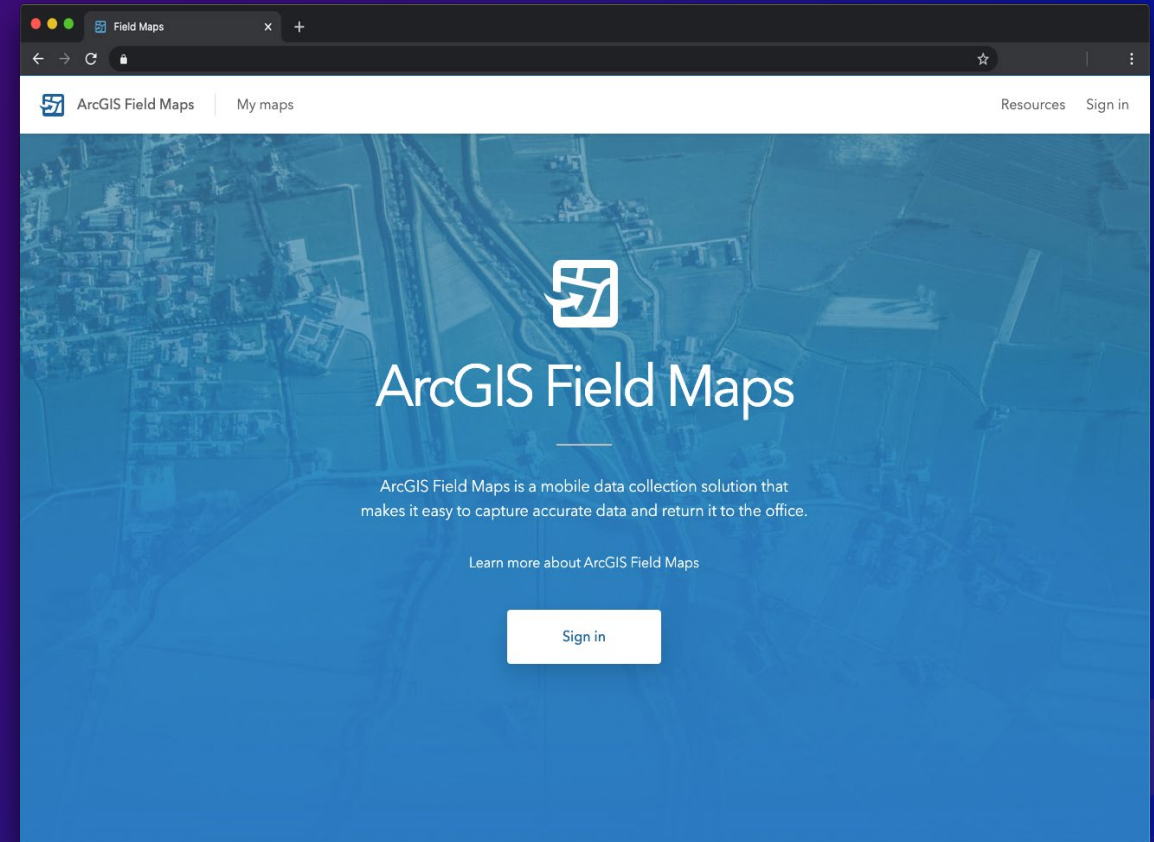
- GIS Analysts – configure and deploy maps

Requirements

- ArcGIS Online or ArcGIS Enterprise 10.8.1+
- Supported browsers (minus IE 11)
- Create privilege required
- Maps you own or in a shared update group

Capabilities

- Configure
 - Map properties
 - Smart Forms Experience
 - Content (layers, tables) and settings
- Manage offline experience
- Share and deploy maps





ArcGIS Field Maps Web | Map Settings Configuration

- Map Tools, Feature Actions
 - Edit Multiple
 - Collect Here
 - Copy
- Collection settings
 - Location accuracy
 - Photo size
 - Show Related Types
 - Snapping
 - GPS Averaging
 - GPS Streaming
- Collection settings are now available when capturing data.

Map Tools

Edit Multiple ☒

Allow multiple features to be edited at the same time.

Feature Actions

Collect Here ☒

Allow a new feature to be created from the location of an existing feature, place, or dropped pin.

Copy ☒

Allow feature attributes to be copied to a new feature.

Map Tools, Feature Actions

Collection

Accuracy

Set required location accuracy for data collection.

Distance

Report horizontal and vertical accuracy at a higher confidence level.

95% Confidence ☒

GPS Averaging ☐

Set the number of points you would like to average.

Points to Average

Streaming ☒

Set how often to collect a new point while streaming.

☒ Distance Meters

☐ Time

Photo Upload Size

Limit the size of photo attachments. Smaller attachments sync faster.

Photo Size

Show Related Types ☐

Enforces the relationship between features. Turn on to show features for all types during collection.

Snapping ☒

Snapping automatically centers the map on the location of a nearby feature.

Collection settings

10:21

Collection Settings Done

Use Map Defaults ☒

Accuracy 10 m >

GPS Averaging Off >

Streaming Distance 10 m >

Snapping Off >

Collection Settings

Undo

Wildfire Inspection Report

34.117283°N 117.172915°W

Update Point



ArcGIS Field Maps Web | Feature Templates

- Unique types of features you create in a feature layer using the map or GPS
- Include a symbol, name, description, and set of values
- Configuration Capabilities
 - Order Feature Templates and Types
 - Alter name and description
 - Apply default values per template
 - Delete templates
 - Duplicate templates

The screenshot displays the ArcGIS Field Maps Web interface for a map titled 'El Dorado Fire - Templates'. The 'Damage Assessments' feature layer is selected in the left sidebar. The 'Templates' tab is active, showing a list of feature templates. A blue arrow points from the text 'Feature templates' to the 'Minor Damage (10-25%)' template in the list. Another blue arrow points from the same text to a dropdown menu that is open, showing a list of damage assessment categories: 'Destroyed (>75%)', 'No Damage', 'Superficial Damage (1-9%)', 'Minor Damage (10-25%)', 'Moderate Damage (26-50%)', and 'Major Damage (51-75%)'. The 'Minor Damage (10-25%)' option is highlighted in the dropdown. The right sidebar shows the 'Properties' panel for the selected template, including fields for 'Display name', 'Description', 'Default Values', and 'Review Status'.

My maps > El Dorado Fire - Templates > Damage Assessments

Resources | (FM) Field Maps

Layers

- Find layer
- Editable layers
- Damage Assessments
- Reference layers
- Basemap

Templates

- Destroyed (>75%)
- No Damage
- Superficial Damage (1-9%)
- Minor Damage (10-25%)

Form

Save templates

Properties

Formatting

Display name

Destroyed (>75%)

Description

Destroyed structures

Default Values

Find Attributes

☒ Only show attributes in the form

Review Status

Not Reviewed

LFIRE Unit

DU - San Bernardino Unit

Ident Number

14

Ident Name

Dorado

Image

Destroyed (>75%)

Filter

DAMAGE ASSESSMENTS

- Destroyed (>75%)
- No Damage
- Superficial Damage (1-9%)
- Minor Damage (10-25%)
- Moderate Damage (26-50%)
- Major Damage (51-75%)



ArcGIS Field Maps Web | Smart Forms

- New way to create and edit attributes in ArcGIS
 - Included in the [web map specification](#)
 - Supported in Map Viewer
 - Simplifies field editing experience
- Design experience in Field Maps web app

Key capabilities

- Use groups to organize fields
- Apply conditional visibility to fields
- Format your form and it's fields
- Qualify required and read-only fields

Much more to come in future phased releases...

- **Descriptive text properties**

- Field Name
- Description
- Caption

Description

Choose Yes only if vegetation is greater than 30 feet from the structure

- **Read-only fields**

- Visible in form but not editable
- Example “In Service Date”

Lifecycle Status

In-Service Date

Range end

☐ Required

☐ Allow mobile users to edit

Lifecycle Status
In Service

In-Service Date
1/1/20, 4:16 PM

- **Required Fields**

- Must enter a field value before you can submit edits
- Only required when visible

Hydrant Flush Details 3

Flow Rate *

Input type

Text box

☒ Required

☒ Allow mobile users to edit

HYDRANT FLUSH DETAILS *

Complete details when hydrant flush is required.

Flow Rate *



Input Types

- Defines constraints and method for entry
 - TextBox | TextArea
 - Date | Date and time
 - Combo box | Radio Button
 - Barcode Scanner
 - Switch – **New for June Release**
- Can optimize data entry
- Options based on field data type



Use Groups to organize fields

- Order and group fields the way that information needs to be filled out
- Provide a name and meaningful description for groups
- Collapse and expand groups to save space on forms

A screenshot of a form titled "Inspector Information" with a count of 4 items. The form contains four fields: "CALFIRE Unit *" (a text input with a placeholder "Choose your CALFIRE unit"), "Collector Name *" (a text input), "Collection Date and Time *" (a date and time picker), and "Comments:" (a large text area with a placeholder "Focus notes on structure details"). A yellow arrow points from the group title to the "Display name" field in the adjacent panel.

A screenshot of the "Inspector Information" group in a collapsed state. The group title "INSPECTOR INFORMATION *" is at the top, followed by a description: "Pick your assigned unit, enter name and date, and add structure details." Below the description are the fields: "CALFIRE Unit *" (showing "BDU - San Bernardino Unit"), "Collector Name *" (showing "Jeff Shaner"), "Collection Date and Time *" (showing "11/30/20, 11:59 PM"), and "Comments:". A yellow arrow points from the group title to the "Initial state" field in the adjacent panel.

A screenshot of the "Formatting" panel for the "Inspector Information" group. The panel has a title "Formatting" with a dropdown arrow. It contains three sections: "Display name" with a text input field containing "Inspector Information"; "Description" with a text input field containing "Pick your assigned unit, enter name and date, and add structure details."; and "Initial state" with a checked checkbox labeled "Expanded". Below these sections is a "Conditional Visibility" section with a dropdown arrow and a "+ Add expression" link. A yellow arrow points from the "Initial state" checkbox to the "Expanded" option.



Apply conditional visibility

- Use Arcade expressions to control field visibility
- Apply visibility to fields or groups
- Uses the [Arcade Constraint profile](#)
 - Evaluates for True or False
- Apply a name and test your expression

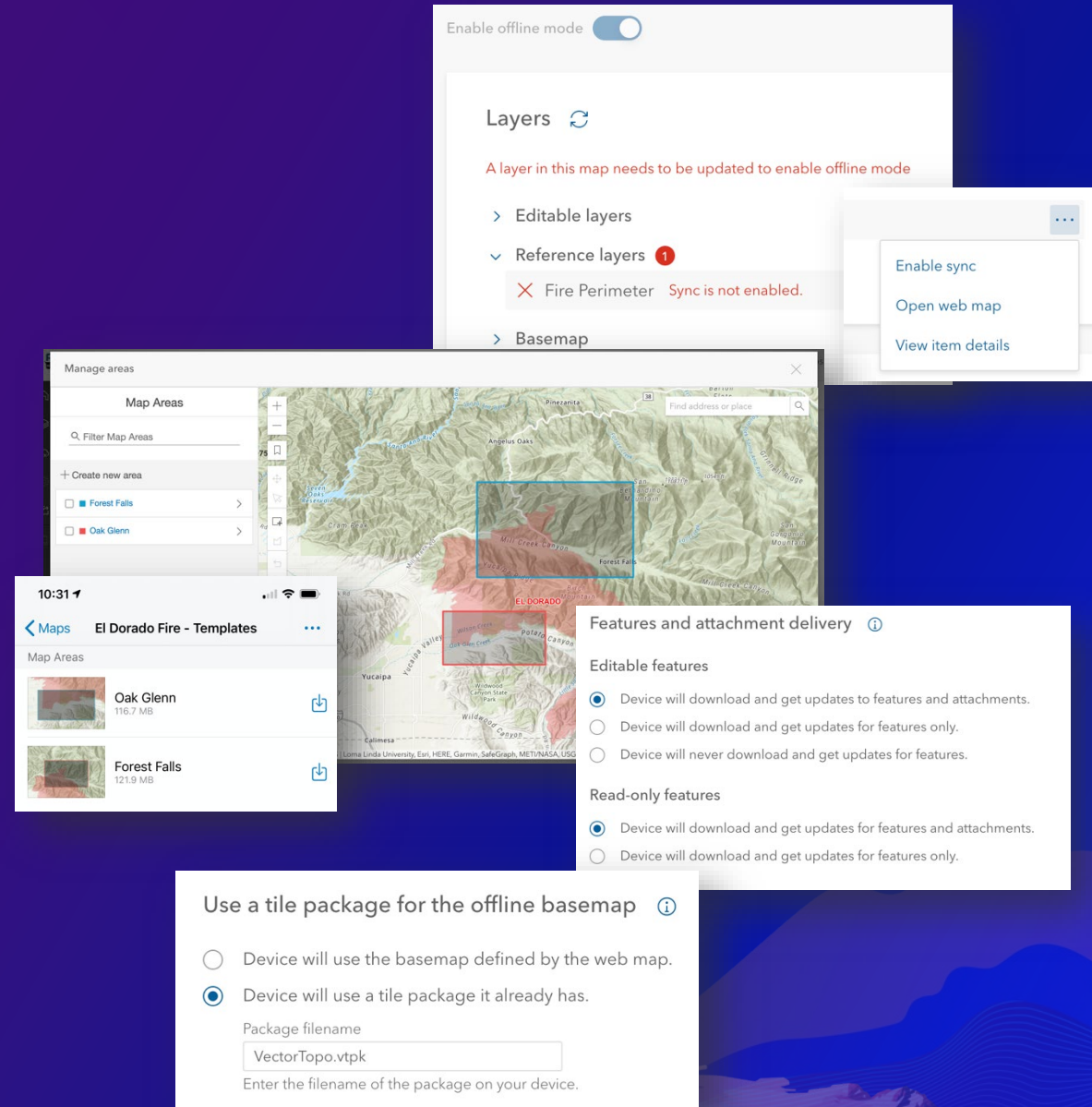
The screenshot illustrates the process of applying conditional visibility in ArcGIS Field Maps Web. It shows three main components:

- Structure Information Group:** A form group titled "Structure Information" with a "Structure Type" field. A yellow arrow points from this group to the "Conditional Visibility" section.
- Conditional Visibility Section:** A panel titled "Conditional Visibility" containing an "Evaluate Damage" section with an "expr0" field. A yellow arrow points from this section to the "Evaluate Damage" editor.
- Evaluate Damage Editor:** A panel titled "Evaluate Damage" showing the expression: `DomainName($feature, "Damage") != "No Damage"`. A yellow arrow points from this editor back to the "Evaluate Damage" field in the "Conditional Visibility" section.

Below the "Structure Information" group, a dark grey box shows the "Damage *" field with the value "Destroyed (>75%)". Below this, a section titled "STRUCTURE INFORMATION *" contains the instruction: "Provide details about the damaged or destroyed structure that you have inspected."

Manage Offline Map Capabilities

- Enable/Disable offline mode
- Diagnose and fix map layer issues
- Create and manage offline map areas
- Adjust delivery of features and attachments
- Reference offline basemaps



The collage includes several screenshots of the ArcGIS Field Maps Web interface:

- Enable offline mode:** A toggle switch is turned on.
- Layers:** A list of layers is shown. A red message states: "A layer in this map needs to be updated to enable offline mode". The layers are categorized into Editable layers, Reference layers (with a red '1' next to 'Fire Perimeter' and a message 'Sync is not enabled.'), and Basemap.
- Manage areas:** A map view showing a terrain map with a red polygon area labeled 'EL DORADO'. A sidebar on the left lists 'Map Areas' with a search filter and a list of areas: 'Forest Falls' and 'Oak Glenn'.
- Features and attachment delivery:** A settings panel with two sections: 'Editable features' and 'Read-only features'. Each section has three radio button options: 'Device will download and get updates to features and attachments.' (selected), 'Device will download and get updates for features only.', and 'Device will never download and get updates for features.'.
- Use a tile package for the offline basemap:** A settings panel with two radio button options: 'Device will use the basemap defined by the web map.' and 'Device will use a tile package it already has.' (selected). Below this is a text input field for 'Package filename' containing 'VectorTopo.vtpk' and a note: 'Enter the filename of the package on your device.'



Web Demo

D'Maia Curry

ArcGIS Licensing

Viewer



Editor



Field Worker



Creator



GIS Professional



Viewing

Editing

Authoring

Available in ArcGIS Online and Enterprise

Field Maps Licensing

Field Worker



Includes everything currently in the Field Maps mobile app:

- Map viewing
- Markup creation
- Collect new features
- Edit existing features
- Smart forms & asset inspections
- Share last known location
- Share location history

Available in ArcGIS Online and Enterprise

Field Maps Licensing

If you have a...

In Field Maps, you can...



Viewer named user

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



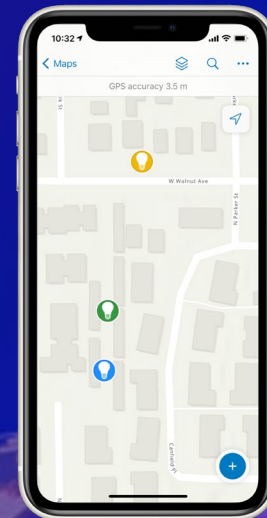
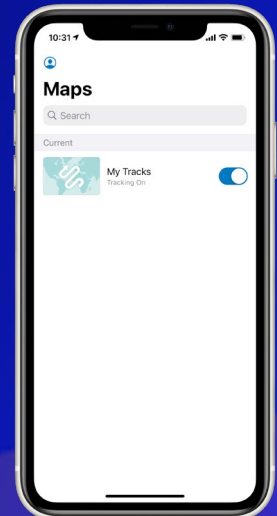
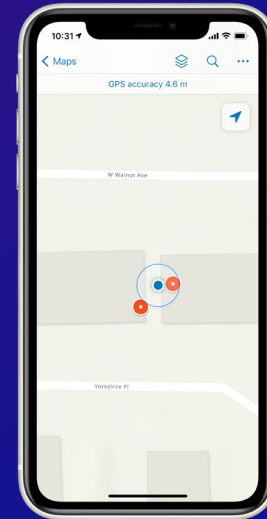
**ArcGIS Tracker app license +
Viewer user type**

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



**ArcGIS Collector app license +
Editor user type**

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



What's New

July 2021



ArcGIS Field Maps mobile | June 2021 Release

Smart form improvements

- New Switch input type
- "No value" option for nullable fields
- **Description** text for fields
- Renamed hint text to placeholder

Input type
Switch

Switch values

☐ Non-Compliant

☒ Compliant

☒ Required

☒ Allow editing

STRUCTURE INFORMATION *

Provide details of the damaged or destroyed structure inspected.

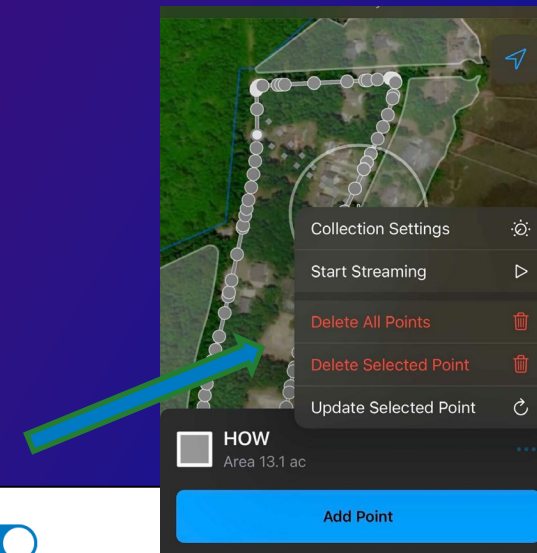
PRC4291 Compliant *

Vegetation Clearance *

60-100 feet

Data collection and editing improvements

- Enhanced copy feature experience
 - Copy the location of a feature
 - Copy the location and attributes of a feature
- Delete All Points
 - delete all points within a line or area shape.



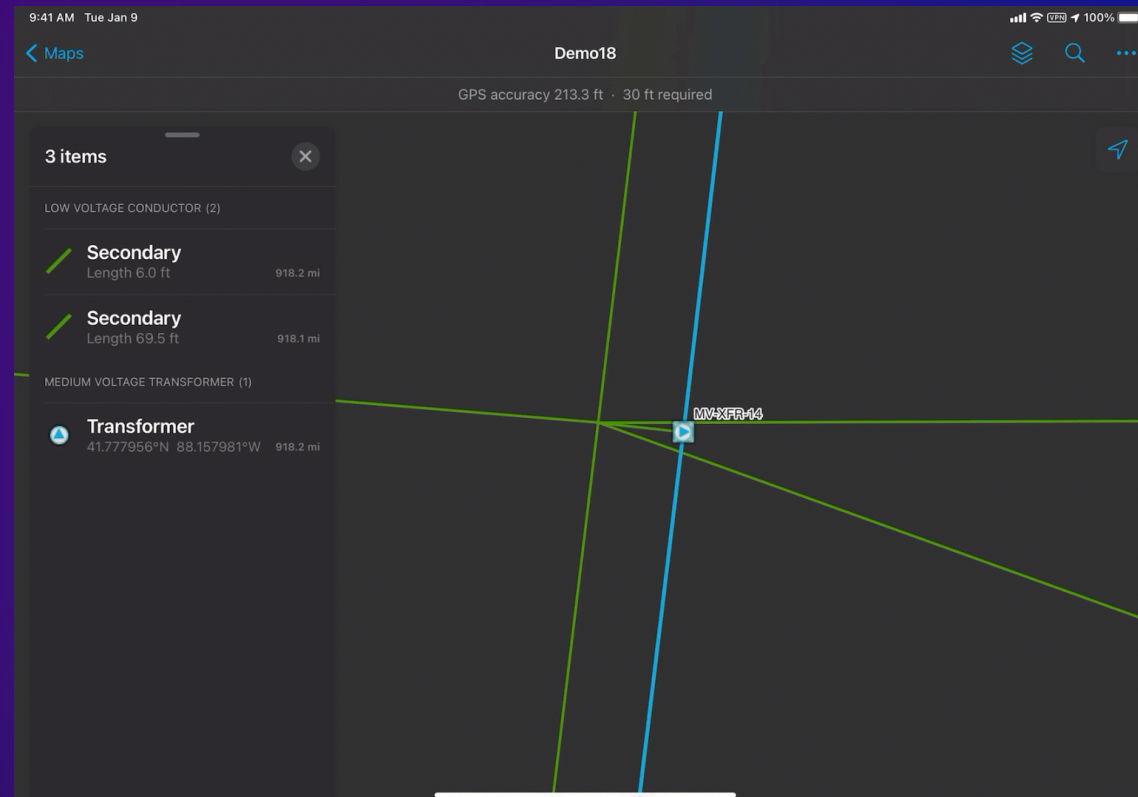
Delete All Points ☒

Discard all points in line or polygon during collection or editing.



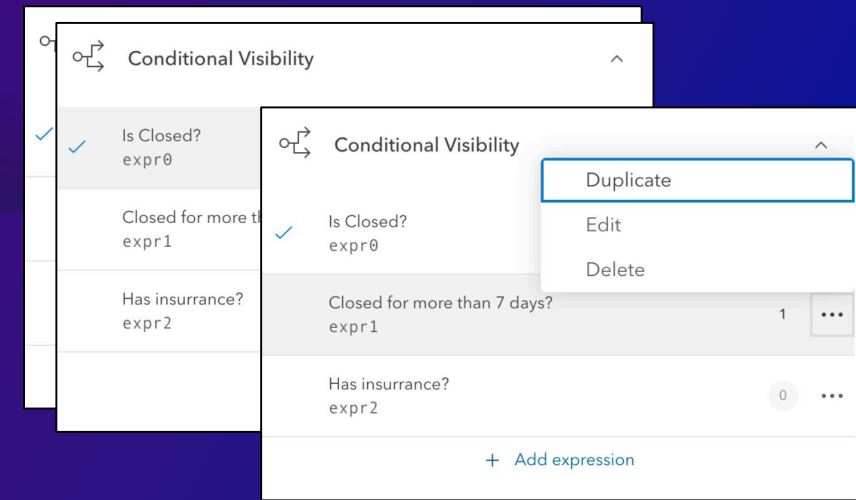
ArcGIS Field Maps mobile | Utility Network Support

- Support for Utility Network is in Beta right now
- Support for viewing Containment, Connectivity and Structural Attachment
- Tracing supported through trace configurations

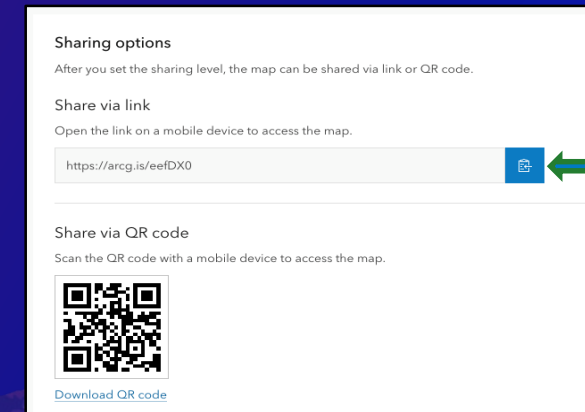




ArcGIS Field Maps Web | June 2021 Release



- Save Arcade expressions and apply them to multiple groups and attributes in the form.
- View and configure maps that are included in your shared update groups.
- Configure the sharing level for the map and share it via link or QR code from the Sharing page.
- Require location tracking when map is opened



Copy Link





We want your feedback

Click on the [Session Survey link](#)
below this video window



esri®

THE
SCIENCE
OF
WHERE®