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ArcGIS Field Maps: Overview and What's Coming

ArcGIS Field Maps

All in one map-centric mobile experience, everywhere

- Easy to use
- Streamlined data collection & editing
- Relevant location focused content
- Office and Field Synchronicity
- Connected and Offline
- Part of the ArcGIS System

ArcGIS Field Maps

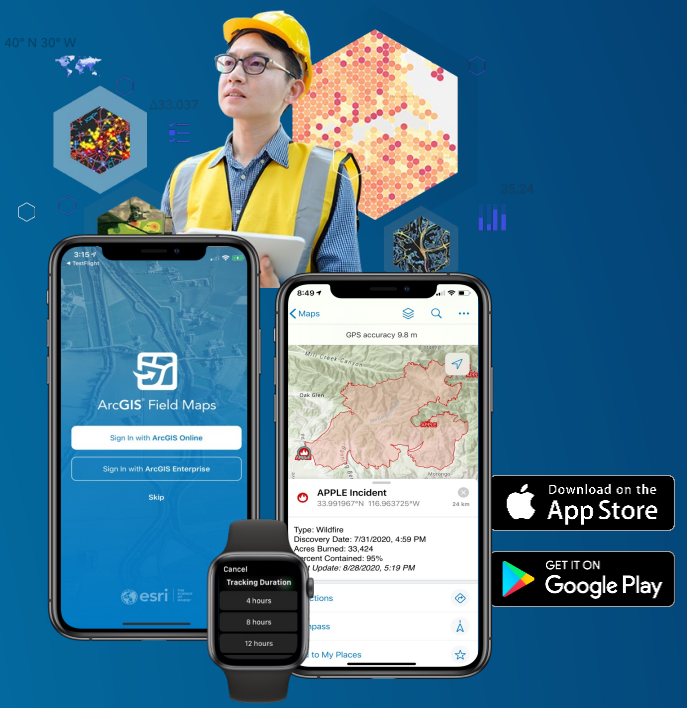
Components

Prepare Maps for the Field

Field Maps web app

Do Work in the Field

Field Maps mobile app



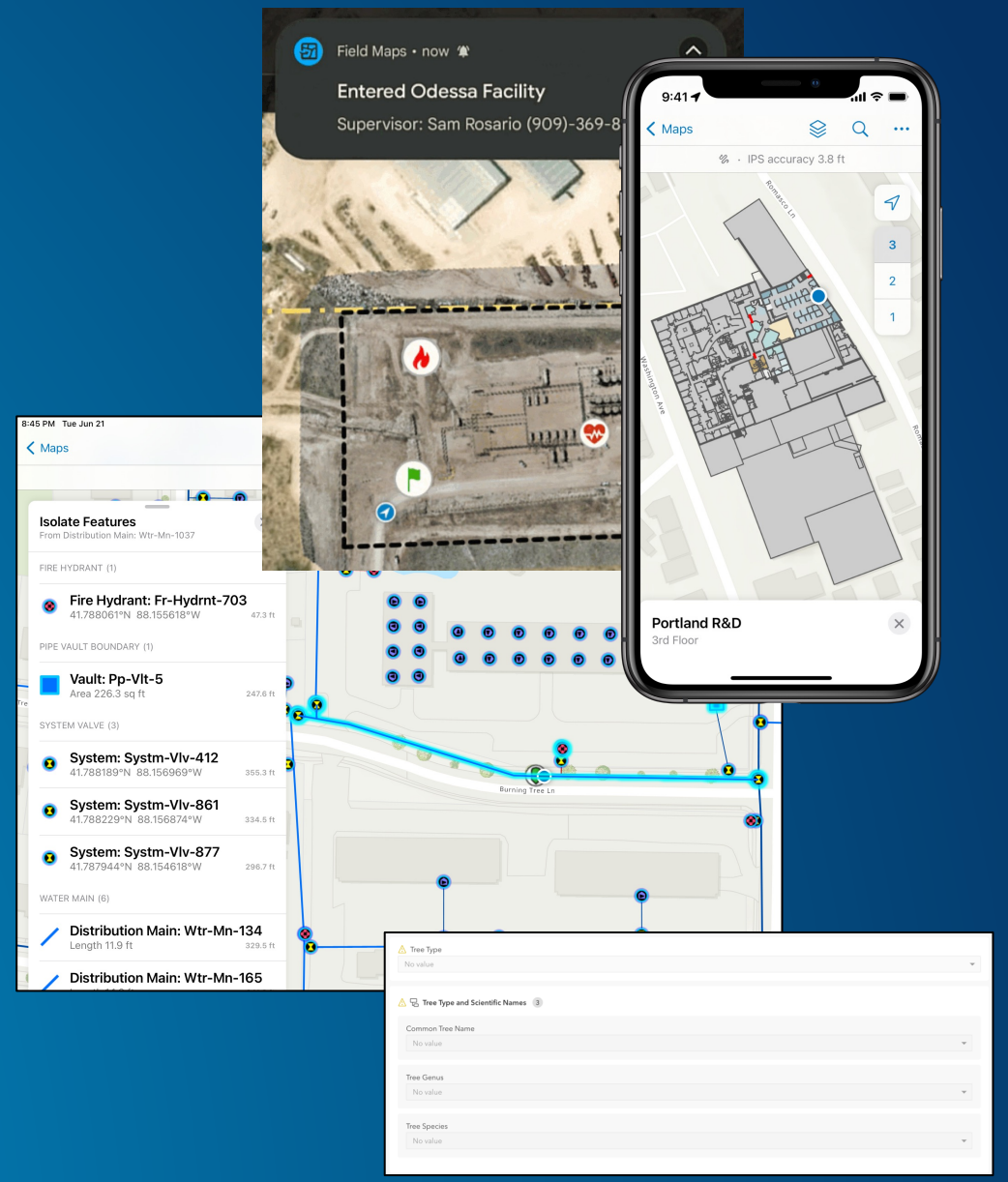
Map Viewing and Map Markup

Know what's around you, know where you are, locate assets and information about them, even in remote areas.

- Rich interactive maps
- Powerful map tools
- Accurate up-to-date information
- Location-aware
- Indoors and outdoors

Advanced Map Viewing Capabilities

- **Geofencing**
  - Location Alerts
- **Indoors**
  - Indoor Maps, Indoor Positioning Support (IPS)
- **Utility networks**
  - Connected support for view, trace, query
- **Linear referencing**
  - Find measurements along a route



Data Capture & Editing

Digitally transforming paper-based mobile workflows whilst accelerating data collection and the time it takes for data to be ready for decision making

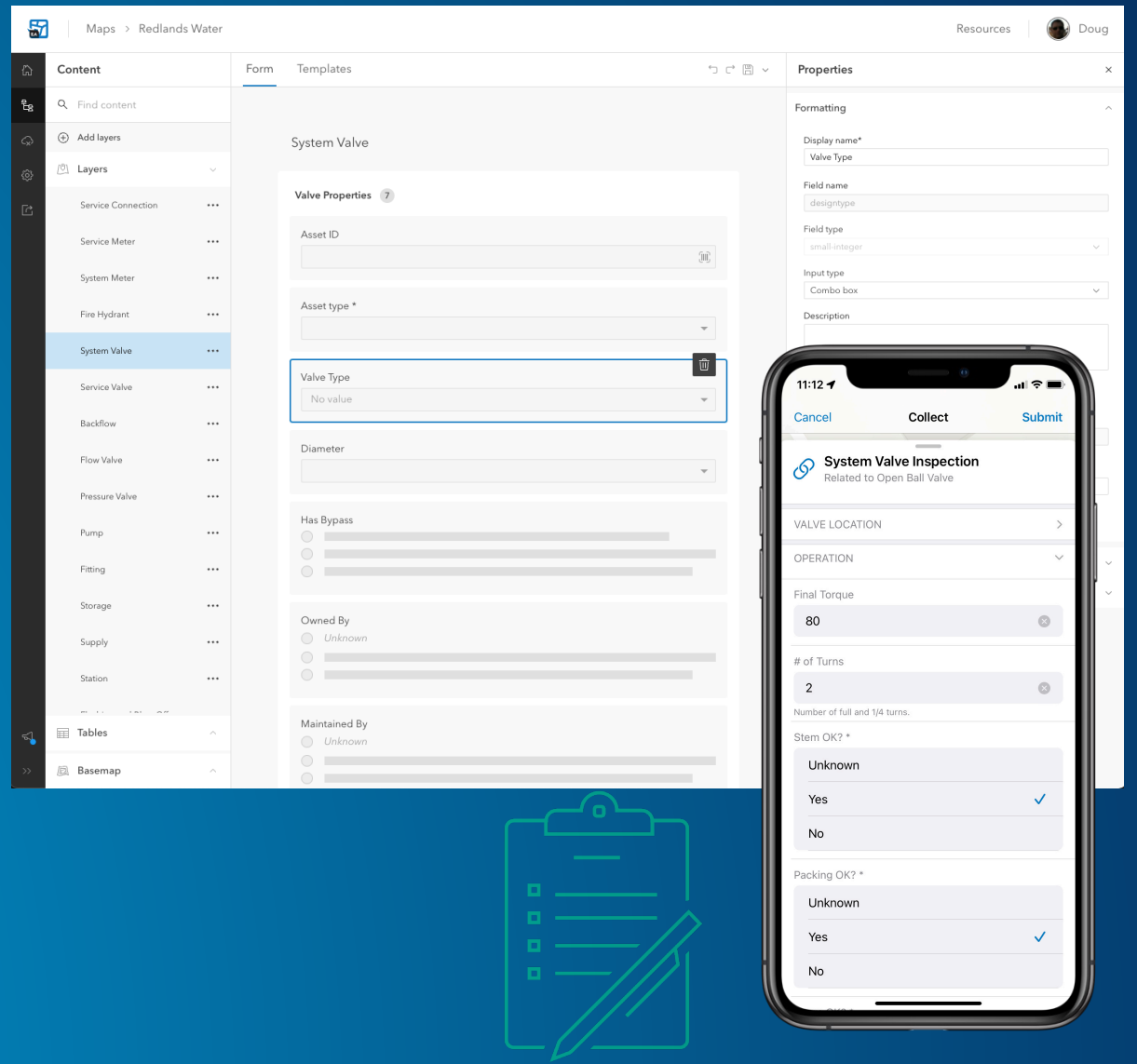
- Intuitive data collection tools
- Dynamic Smart Forms
- High accuracy capture
- Offline or Online
- Indoors and Outdoors

Build Smart Forms

Streamline data collection

Improve the way you collect and update data in the field with user-friendly map-centric smart forms.

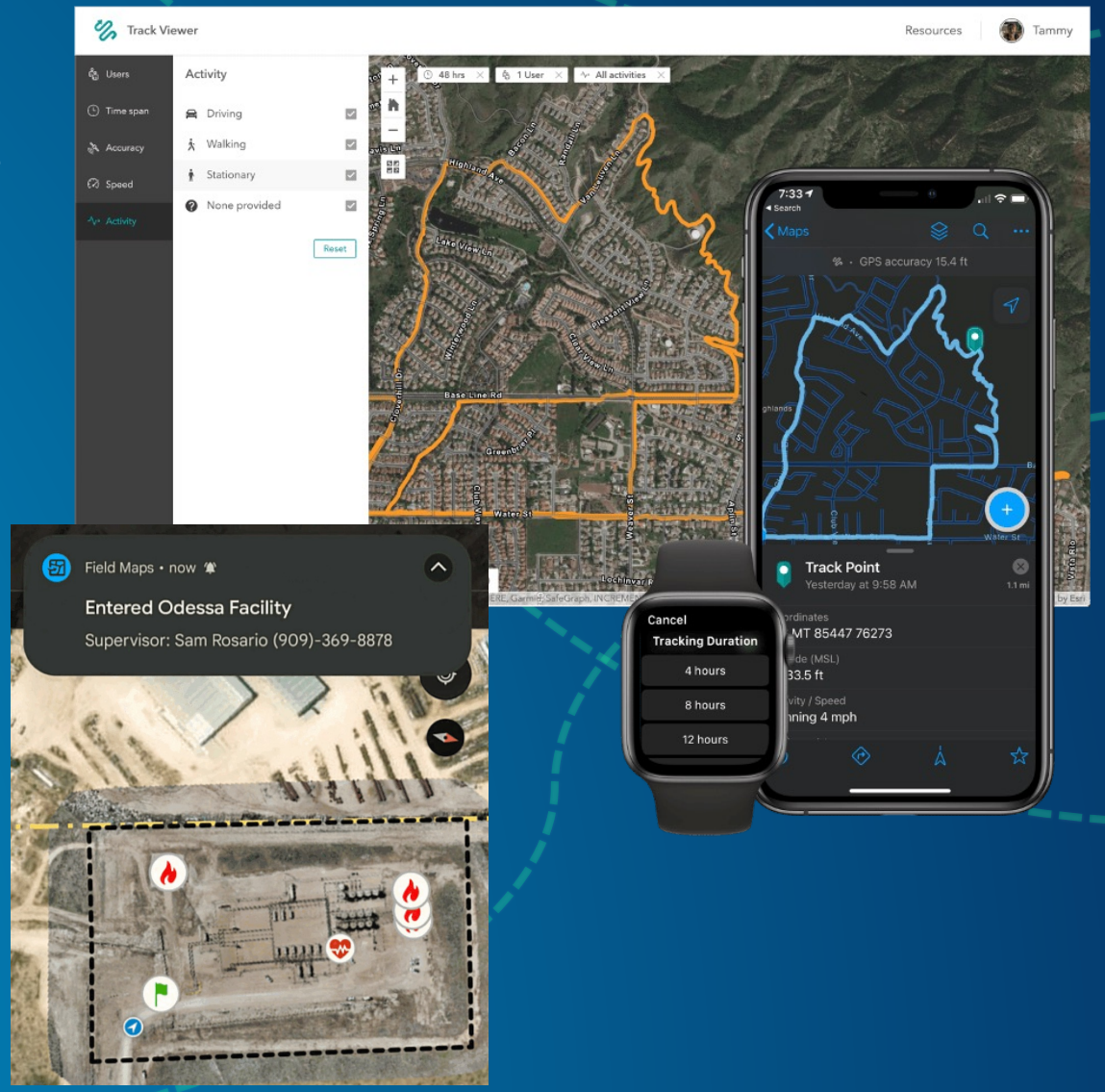
- System-wide capability
- Drag & drop design experience
- Multiple input types and field controls
- Advanced capabilities with Arcade



Operational Awareness

Providing situational awareness in the field and the back office. Mobile workers can receive location alerts and may share their location while doing work indoors or outdoors to:

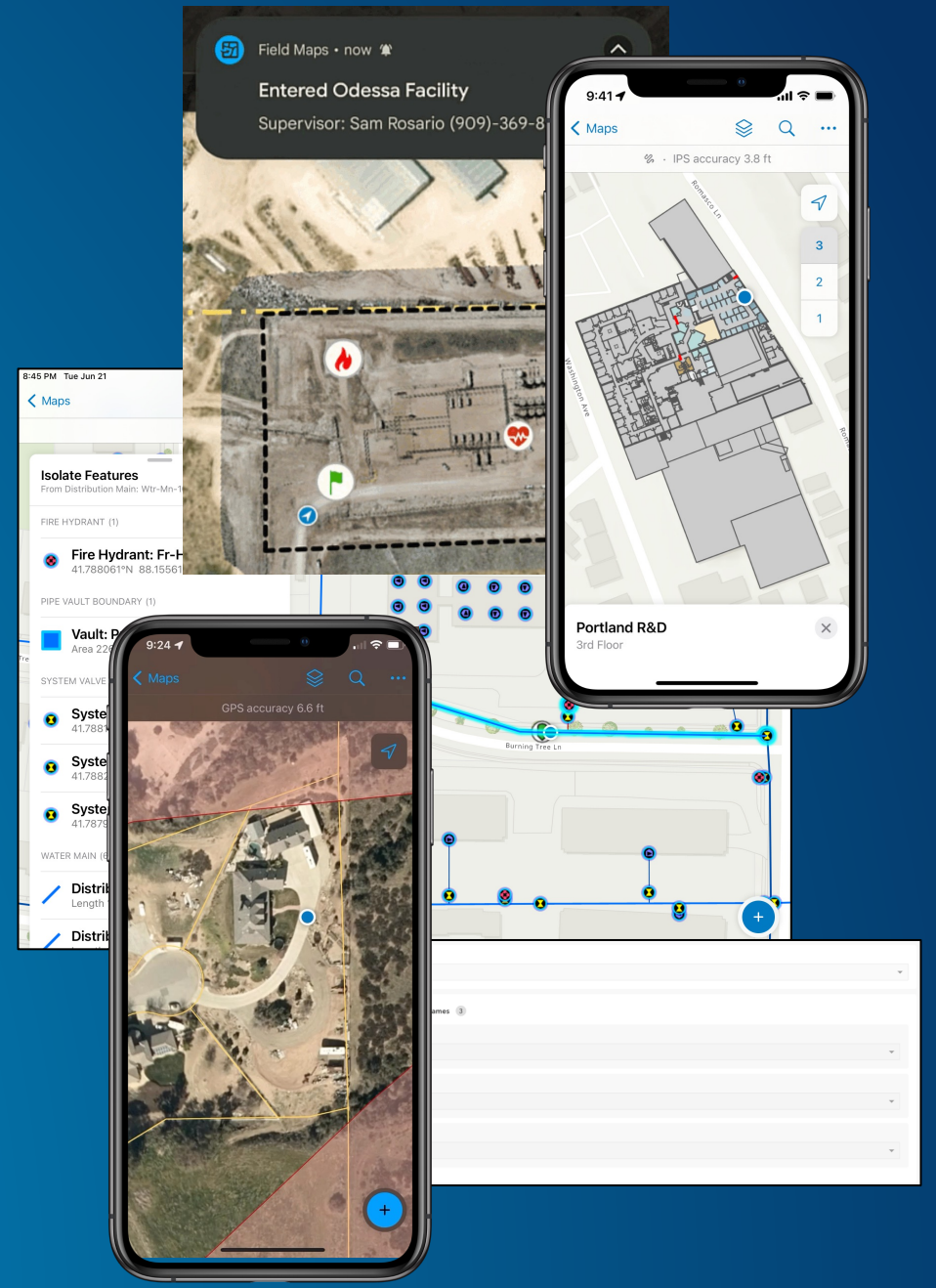
- Coordinate work based on proximity
- Improve response times
- Capture audit trails
- Manage events
- Improve worker safety



What's New

Highlights

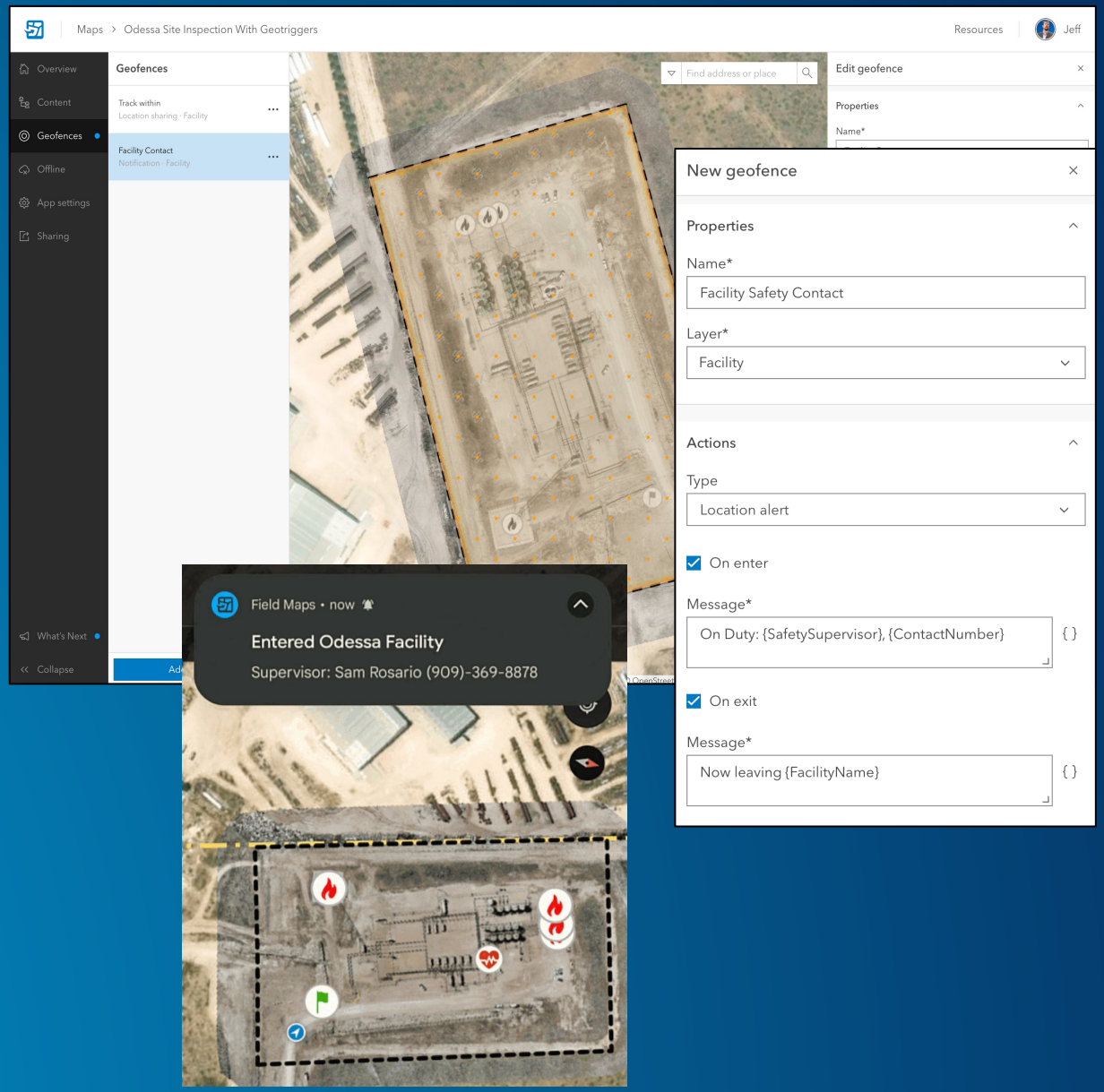
- **Geofencing**
  - Location Alerts, Location Sharing
- **Indoors**
  - Indoor Maps, Indoor Positioning Support (IPS)
- **Utility Networks**
  - Connected support for view, trace, query
- **GPS metadata for lines and polygons**
  - Summary level statistics
- **Smart Forms**
  - Calculated Expressions, Contingent Values
- **Webhooks**
  - Integromat/Make, PowerAutomate



Geofencing

Real-time Location Alerts

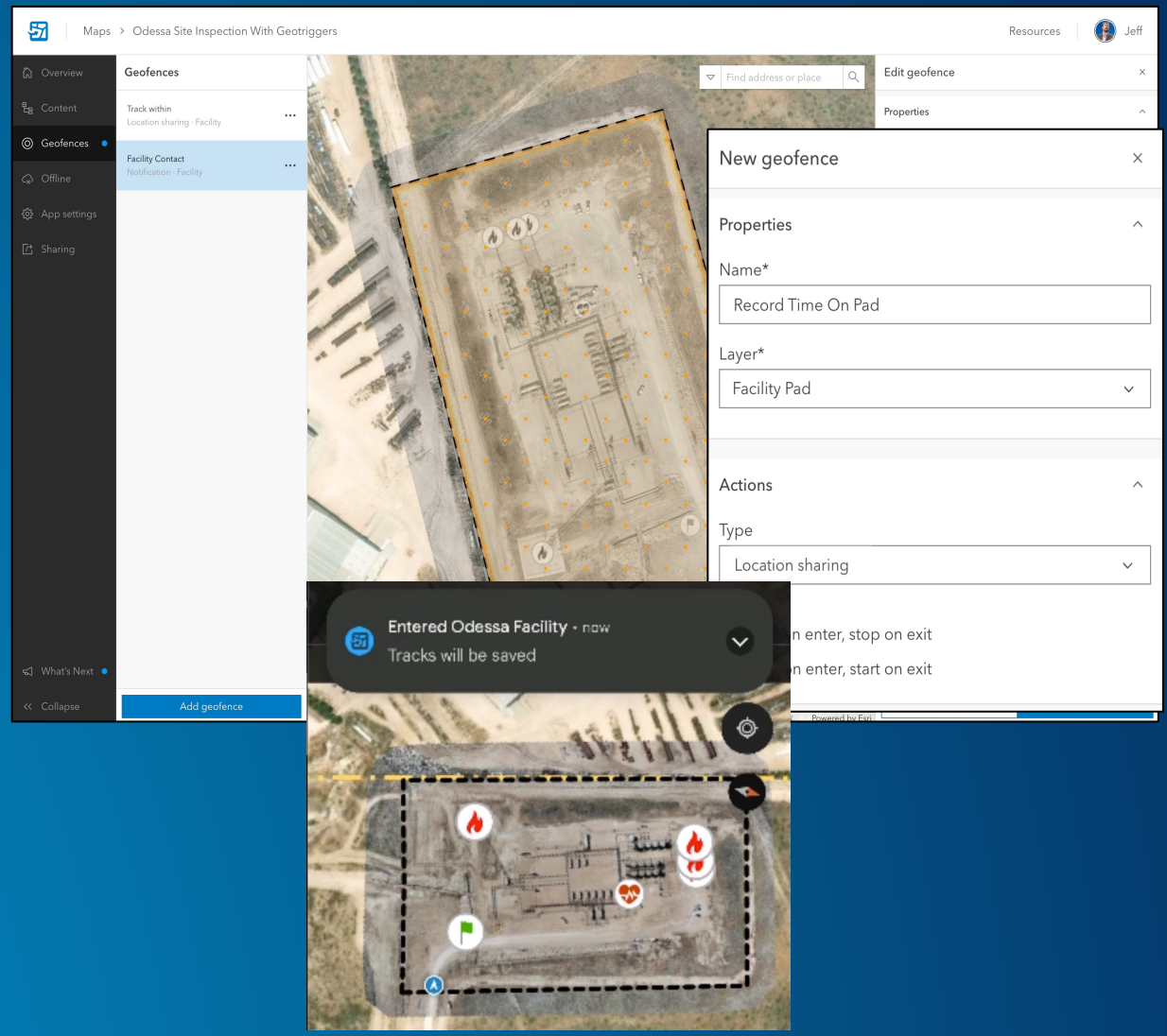
- Notify mobile workers
  - When they enter or exit a location
  - Supported online or offline
  - When app is backgrounded
- Author Geofences
  - From an existing map layer
- Location Alert Includes
  - Name
  - Map Layer
  - Message (text and field values)
  - Supports On Enter and/or On Exit



Geofencing

Control location sharing

- Automatically start/stop location sharing
  - Supported online or offline
  - When app is backgrounded
- Author geofence action
  - From an existing map layer
  - Sharing behavior includes
    - Start on enter, stop on exit
    - Stop on enter, start on exit



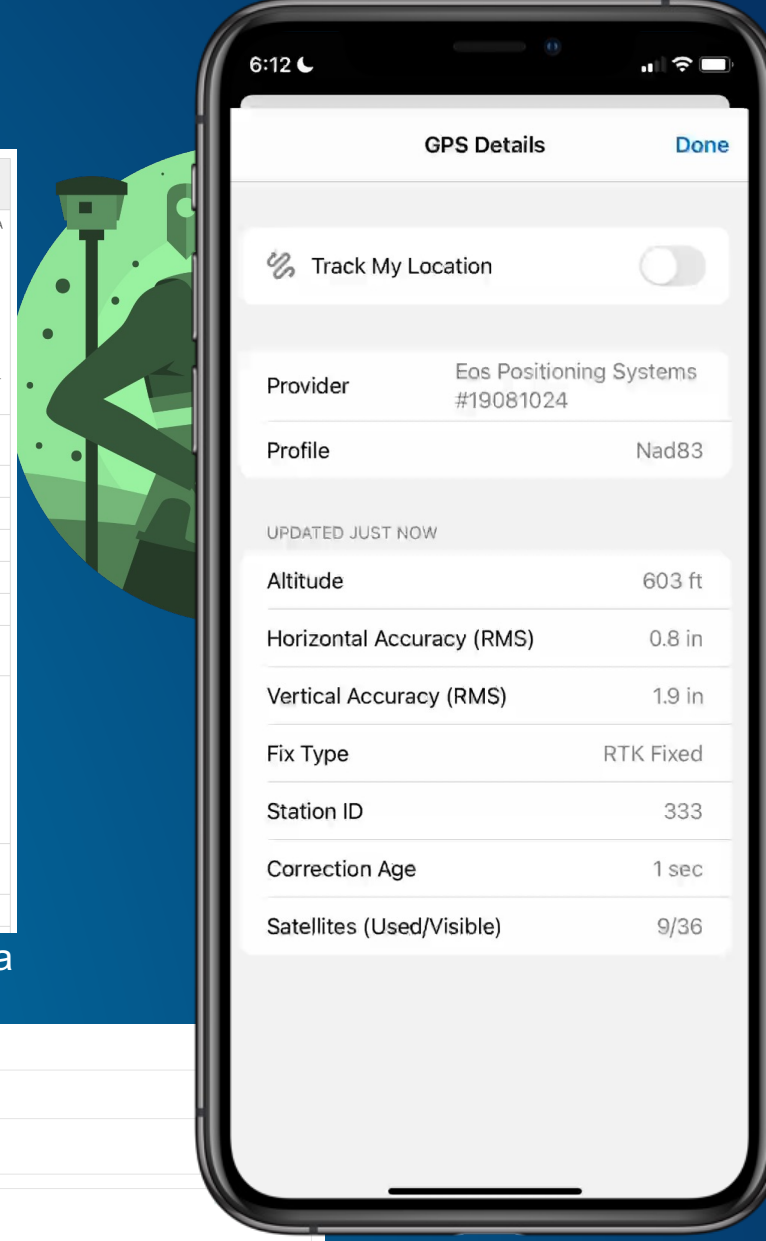
High Accuracy Data Collection

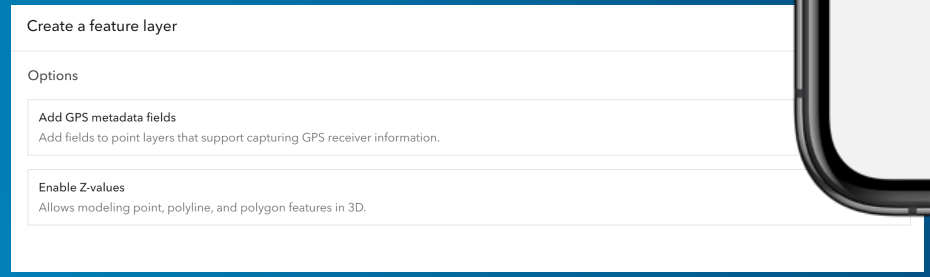
GPS metadata

- Point, line, and polygon support
  - Fields hidden during collection
  - Fields not directly editable in Field Maps
- Summary statistics (line, polygon)
  - Average/worst horizontal and vertical accuracy
  - Worst fix type
  - Number of manual locations
- Adding GPS metadata fields
  - When creating new layers
  - Existing layers
    - ArcGIS Pro
    - Python notebooks (https://github.com/Esri/field-maps-scripts/)

Field alias	Field name	Field type	Domain
Position source type	ESRIGNSS_POSITIONSOURCETYPE	Short	ESRI_POSITIONSOURCETYPE_DOMAIN 0–Unknown 1–User defined 2–Integrated (System) Location Provider 3–External GNSS Receiver 4–Network Location Provider
Receiver Name	ESRIGNSS_RECEIVER	String (50)	
Latitude	ESRIGNSS_LATITUDE	Double	
Longitude	ESRIGNSS_LONGITUDE	Double	
Altitude	ESRIGNSS_ALTITUDE	Double	
Horizontal Accuracy (m)	ESRIGNSS_H_RMS	Double	
Vertical Accuracy (m)	ESRIGNSS_V_RMS	Double	
Fix Time	ESRIGNSS_FIXDATETIME	Date	
Fix Type	ESRIGNSS_FIXTYPE	Short	ESRI_FIX_TYPE_DOMAIN 0–Fix not valid 1–GPS 2–Differential GPS 4–RTK Fixed 5–RTK Float
Correction Age	ESRIGNSS_CORRECTIONAGE	Double	
Station ID	ESRIGNSS_STATIONID	Short	

Point layer metadata





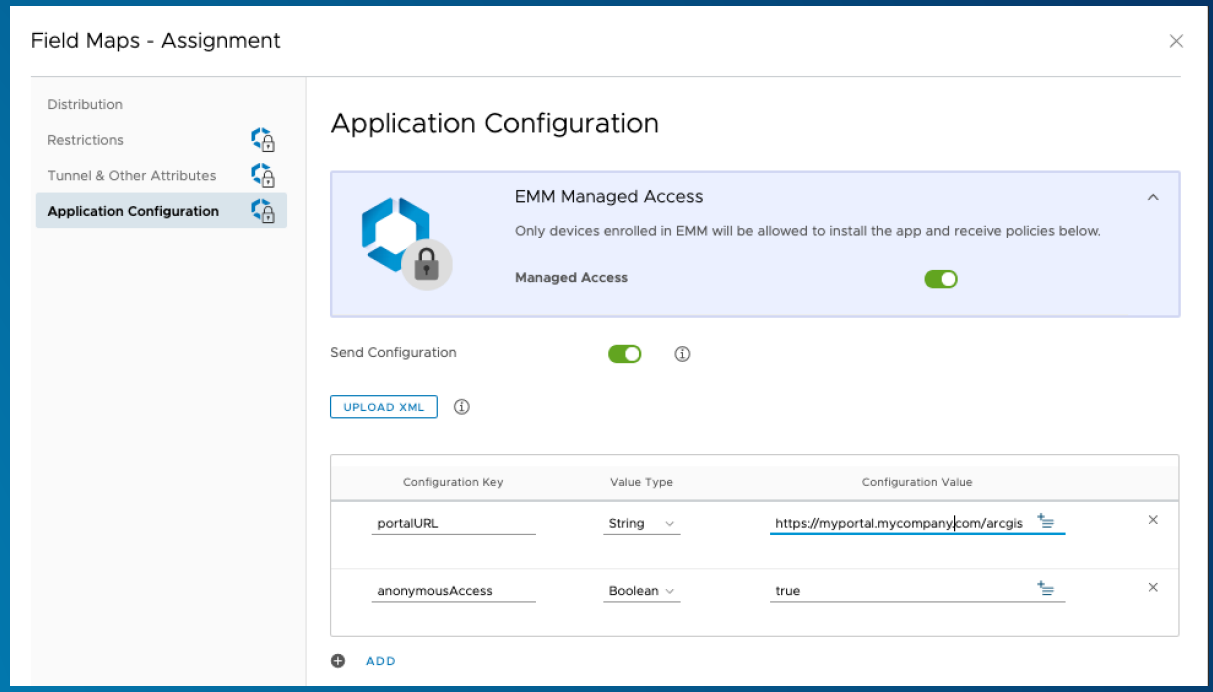
Add GPS metadata fields to all layer types

Full list of current GPS values

High Accuracy Setup

Using Mobile Device Management

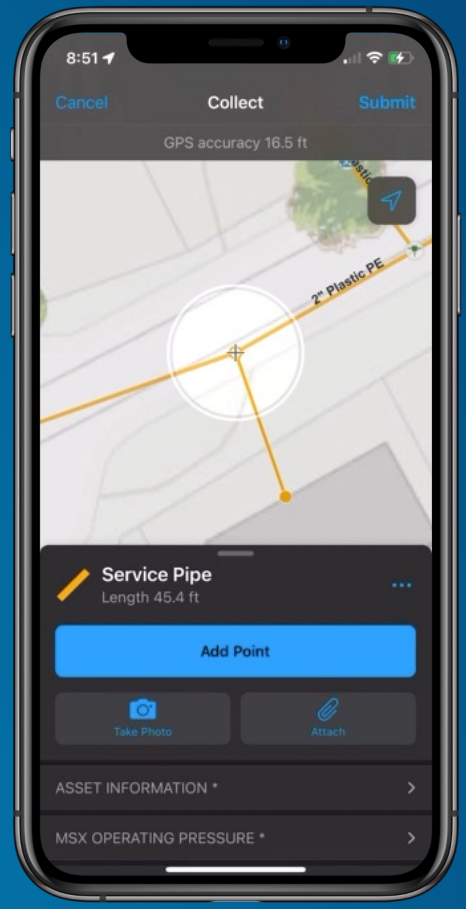
- Configure and deploy your Location Profile through an MDM
  - Can define one or more location profiles
- Takes the Location Profile configuration out of the mobile user's hands
  - Streamline configuration
  - Eliminate errors



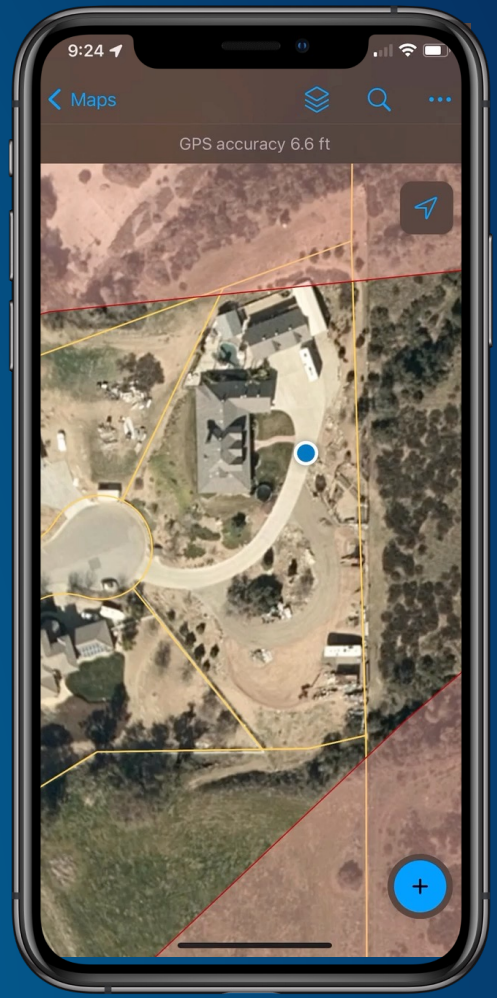
Calculated Expressions

Increase efficiency and minimize errors

- Provide immediate feedback to mobile worker
- Calculations can use
  - Geometry, Attributes
  - Additional layers and tables in the map
  - Portal connection (user information, etc)
- Calculations can control
  - Required fields
  - Conditional visibility



Decode barcode



Fields from other layers

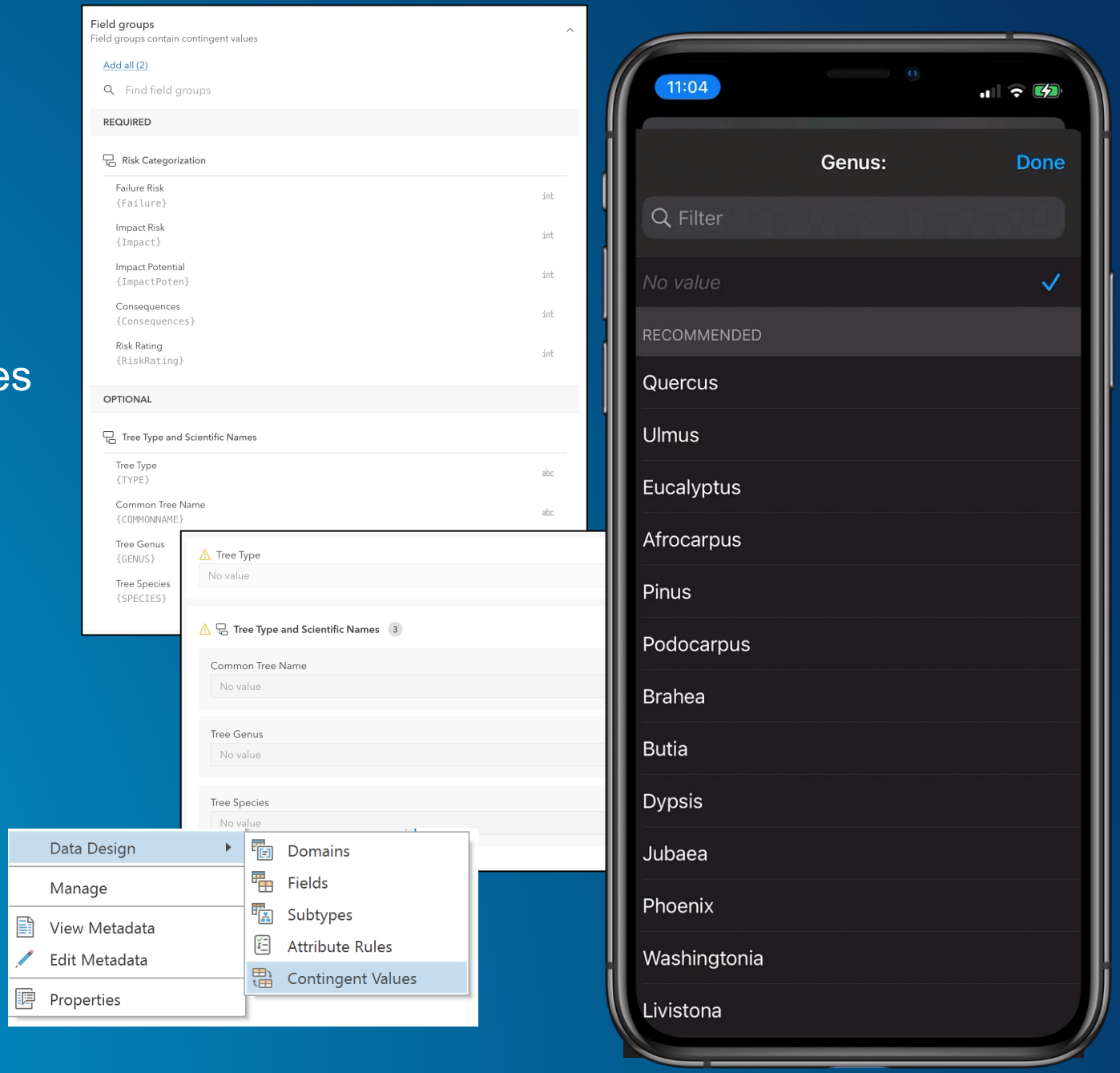
Work online and offline

Contingent Values

Using Field Groups

- Improve form entry using contingencies
  - Asset Manufacturer > Model
  - Genus > Species > Common Name
- Author in ArcGIS Pro
  - Design Fields/Field Groups in ArcGIS Pro
- Configure in Field Maps web
  - Place and organize field groups

Supported offline



What’s coming next

November 2022 release

Getting Started with Field Maps

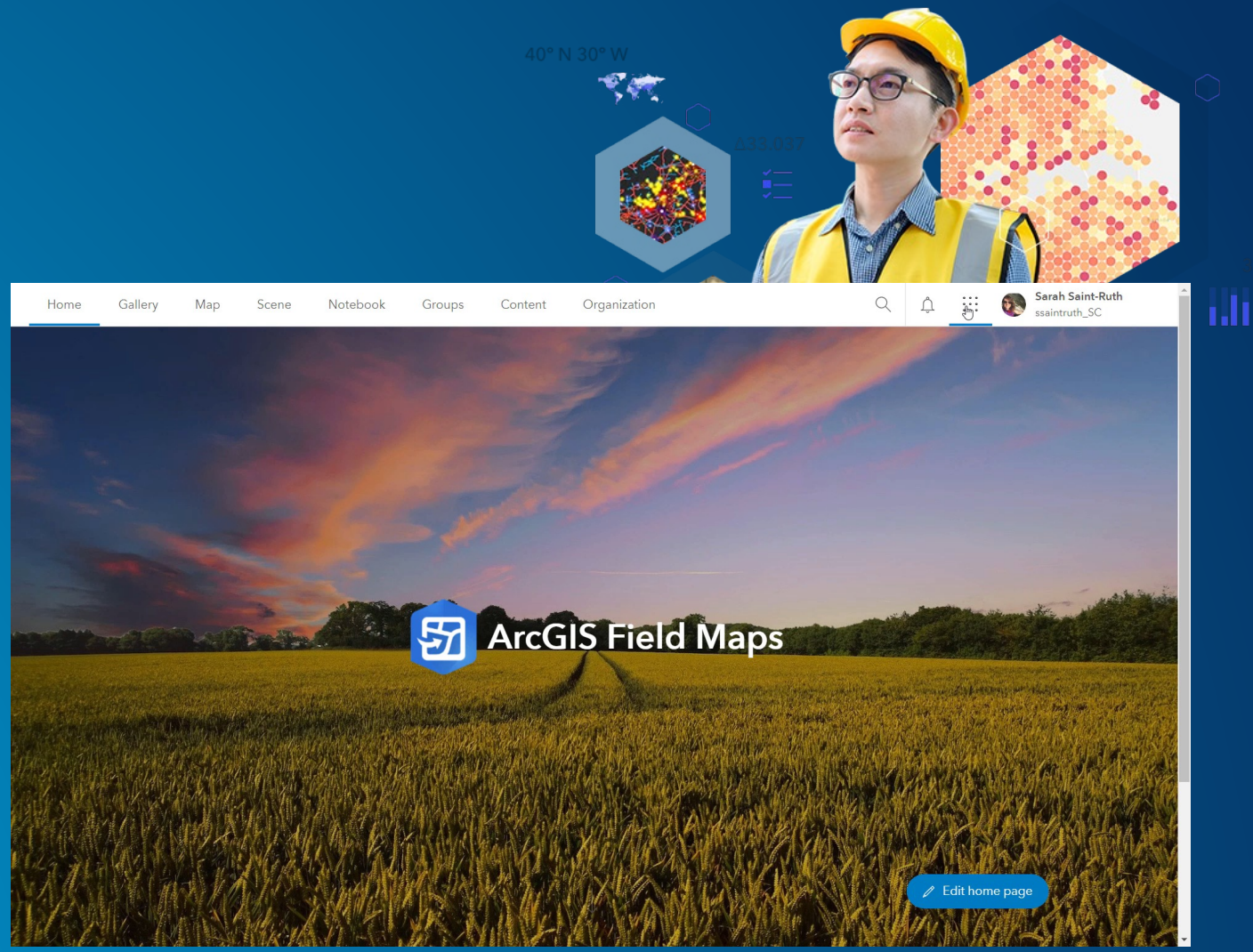
Simplifying the map authoring experience

Creating New Maps

- Create new maps and layers from scratch

QoL improvements

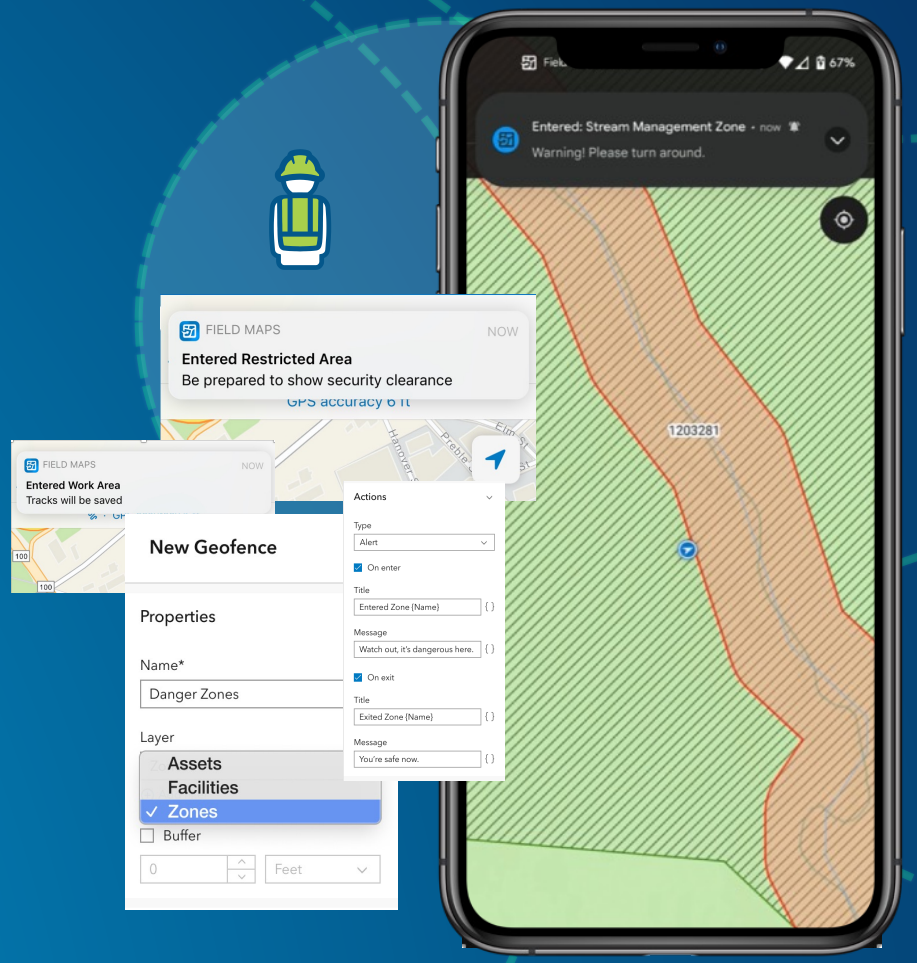
- Nested group layers
- UX updates
- State management



Geofencing

Improving location alerts and location sharing

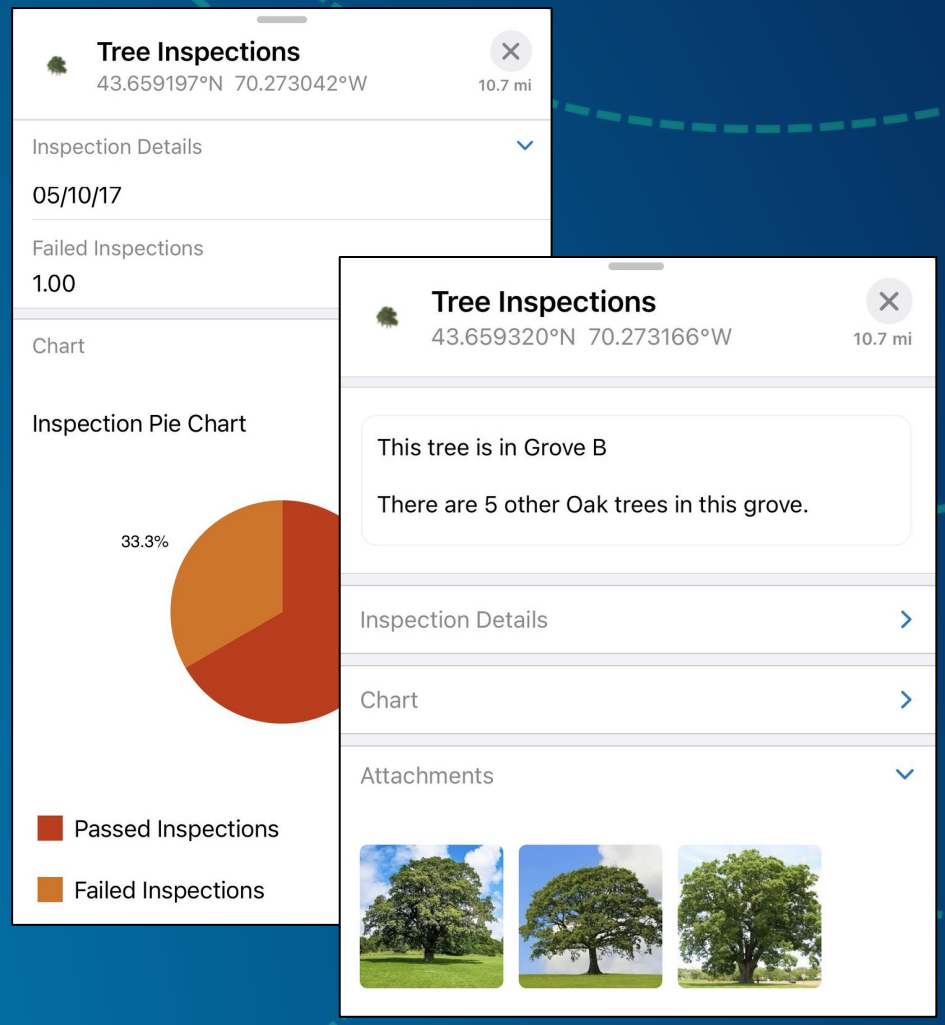
- Support for point and line layers
- Filter map layers



Next Generation Pop-ups

Support for pop-up elements

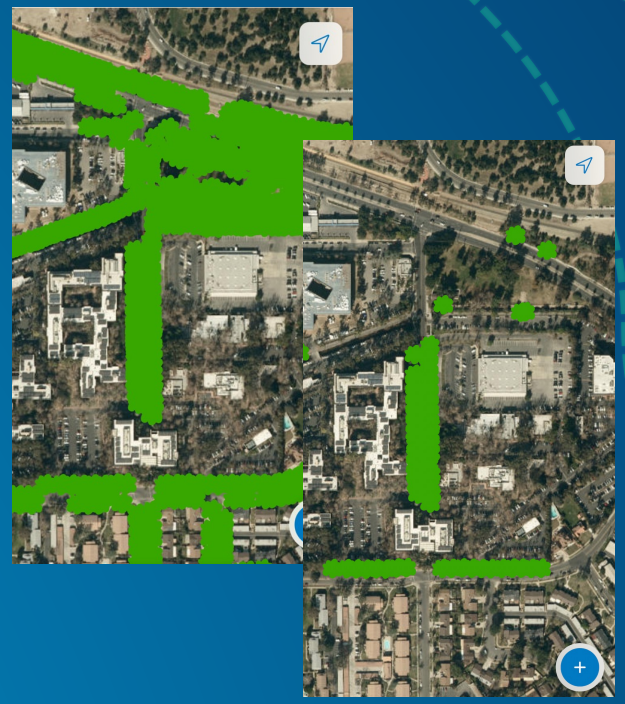
- Provide content rich information
- Use Arcade to provide dynamic content
- Use new elements like charts for an enhanced experience

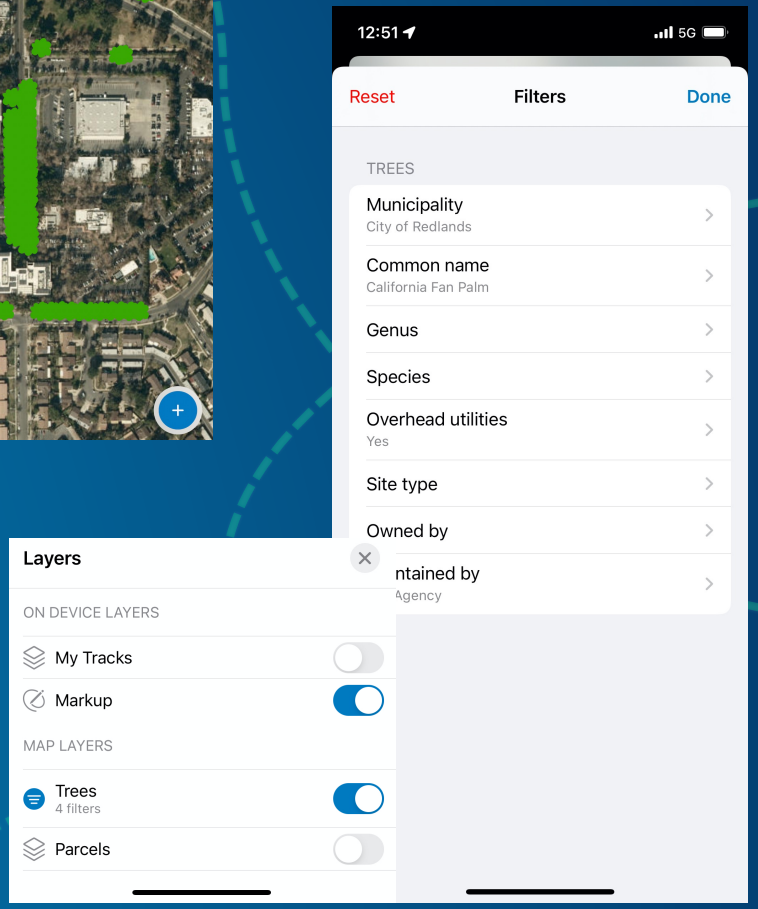


Layer Filters

Dynamic filtering of map layers

- Text and numeric fields support
  - With and without domains
- Map author can:
  - Enable support for layer filtering
  - Choose fields used for filtering
- Mobile user can apply filters to layers
  - Using an AND query





What’s Coming Next

QoL Improvements for November 2022 release

Focused quality of life improvements reported by customers and partners

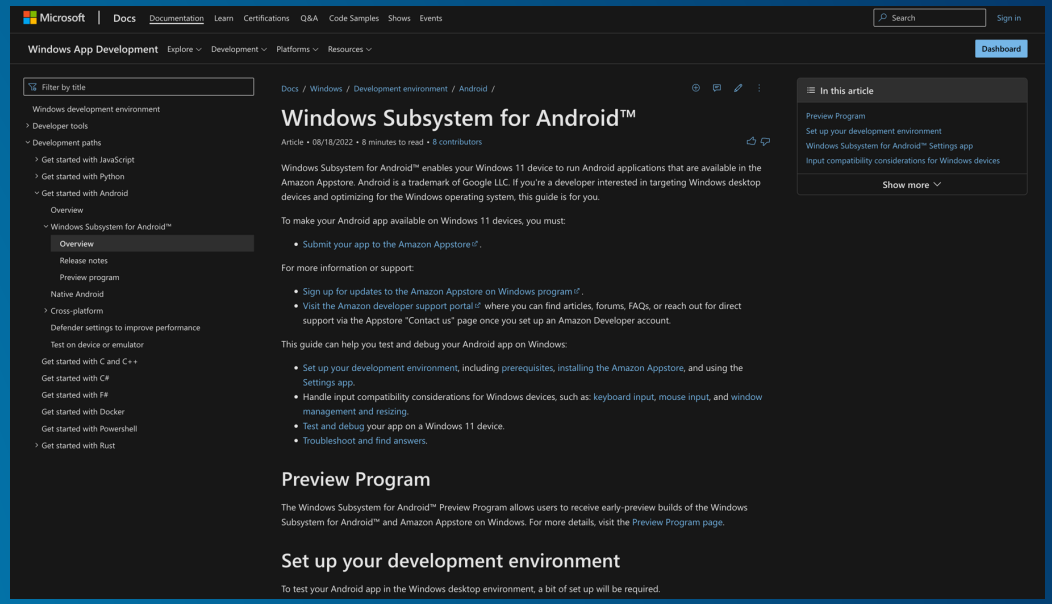
- One map used for online and offline workflows
- GPS metadata enhancements
- Form logic improvements with conditional fields
- Improving repetitive GPS collection workflows
- Improving app integration workflows
- iOS CAC card reader support

Supporting Field Maps on Windows 11

Embracing the Windows platform

Windows Subsystem for Android

- Expected release October 2022



ArcGIS® Field Maps Roadmap

Near-term

- Layer Filtering
- Pop-up elements
- Geofencing
  - Line and point support, Filtering
- Indoors
  - Indoor aware data capture and editing
  - Location Sharing, Indoor geofencing
- Creating layers and maps from scratch
- Quality of life improvements
  - Offline maps improvements
  - Form improvements
  - GPS capture and metadata updates
  - App linking
- Navigator update
- Windows 11 support

Mid-term

- Workforce coordination
  - Add personalized to-do lists to any map
  - Create and self-assign work in the mobile app
  - Use forms to complete work
- Smart Forms
  - Support for signatures, multi-select question
  - System/Device/Location variables
  - Relationships & attachments within form
  - Sensor integrations (LRF, others)
- Data Collection
  - Orthometric heights (inc. vertical transformations)
  - Multiple drawing modes
  - Nested data collection, photo markup
  - Rapid data collection, improved map-based collection
  - Offset data capture using Laser Range Finders

Long-term

- Camera and Lidar capabilities
  - Augmented Reality
  - Measurement and offset data capture
  - Data capture (including Machine Learning)
- Navigation capabilities
  - Offline routing and voice guidance
  - Real-time weather and traffic
  - Real-time barriers
- Push notifications
- Smart watch capabilities
  - Compass, data capture,…

ArcGIS Field Maps releases with ArcGIS Online, details and timeline subject to change

Improving Accuracy of GIS Data

Key benefits

- Improves safety for the community and organization’s mobile staff
- Improves efficiency of field tasks
- Improves integrity analysis
- Increases revenue
- Ensures regulatory and legal compliance

Entire Organization Needs to Know "Where"

Asset Development

- Planning
- Rights of Way
- Engineering
- Design
- Construction

Asset Operations

- Inspection
- Maintenance
- Network Control
- Emergency Management

Health, Safety & Environment

- Health
- Safety
- Environmental Management

Business Management

- Tax Accounting
- Business Intelligence
- Revenue Protection
- Human Resources
- Legal

Customers & Regulators

- Marketing
- Sales
- Customer Service
- Regulatory Compliance