ArcGIS Field Maps: Taking Your Maps Offline

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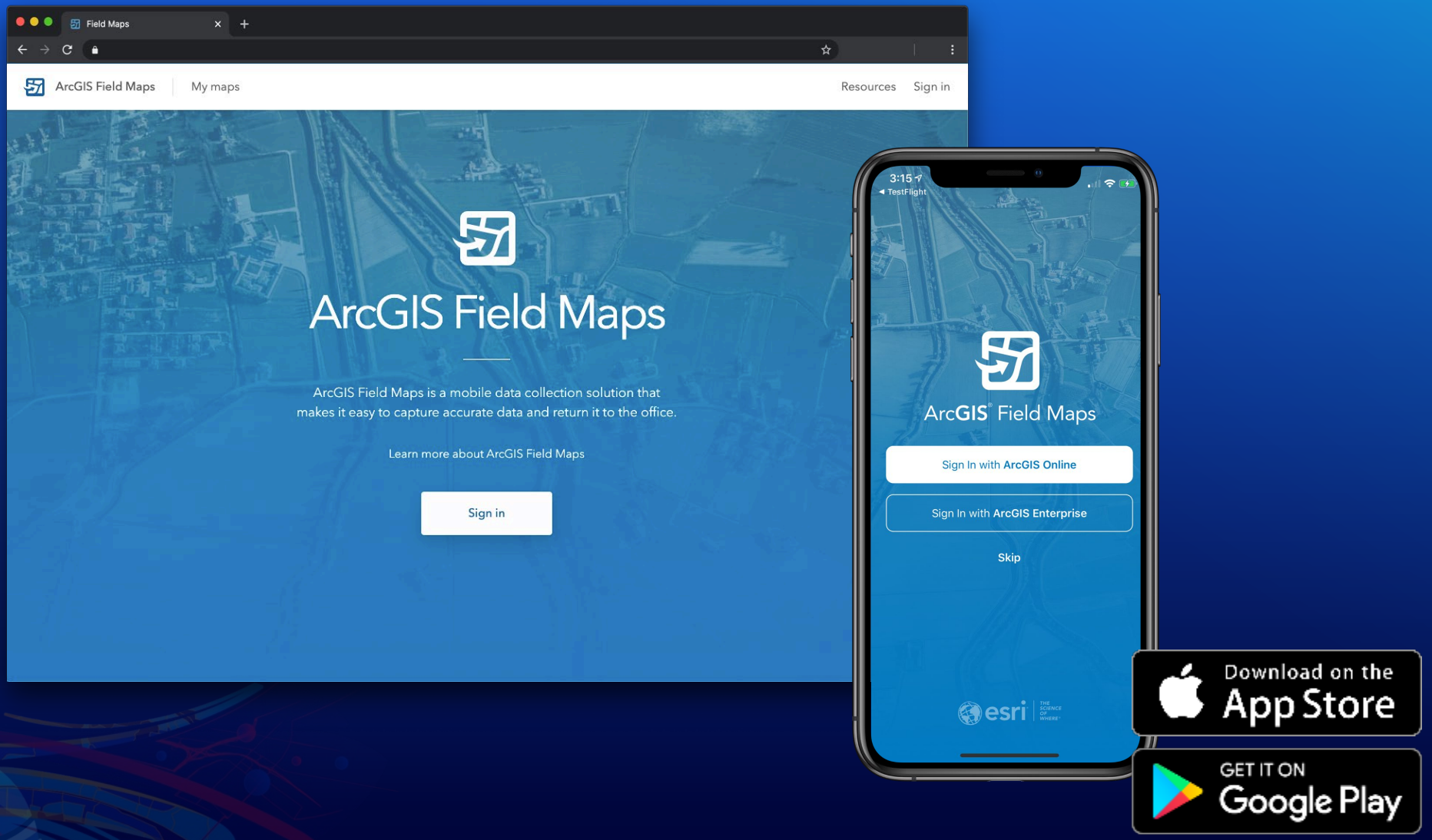
DEVELOPER SUMMIT

What we will cover today

- Field Operations strategy with the new Field Maps app
- How to take your maps offline with Field Maps
- Demos on offline capabilities
- Resources
- Q&A

What is Field Maps?



Esri Field Operations capabilities

Esri Field Operations capabilities in Field Maps

Esri Field Operations capabilities in Field Maps

RELEASE 1

- ArcGIS Workforce
- ArcGIS Collector
- ArcGIS Explorer
- ArcGIS Tracker
- ArcGIS Navigator

Survey123 & QuickCapture will continue to grow and can be integrated with Field Maps.

Field Maps & other apps

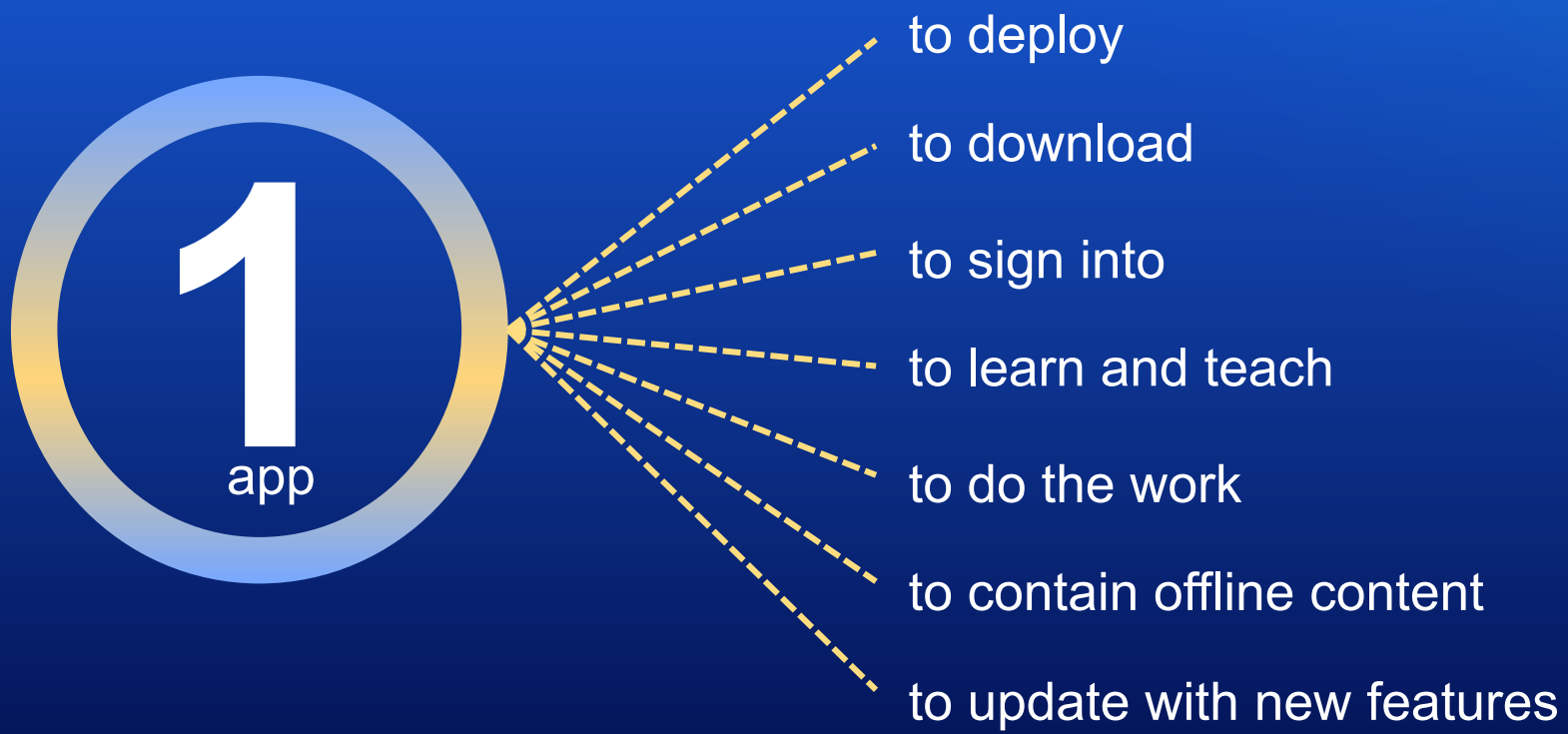
3rd party & specialized apps

Specialized Apps

ArcGIS Survey123
ArcGIS QuickCapture
ArcGIS Mission Responder
ArcGIS Indoors
ArcGIS Earth

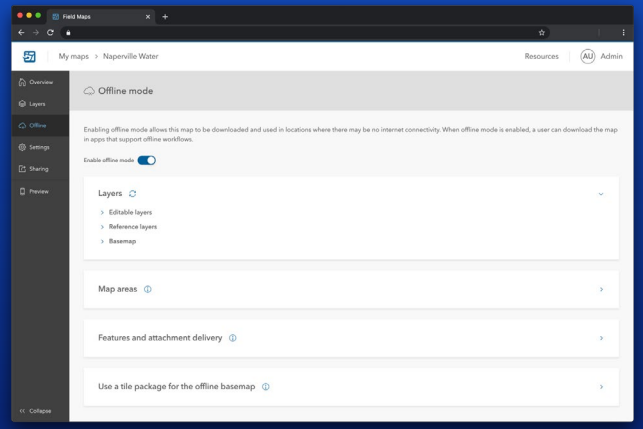
Custom App

The benefits of one mobile app



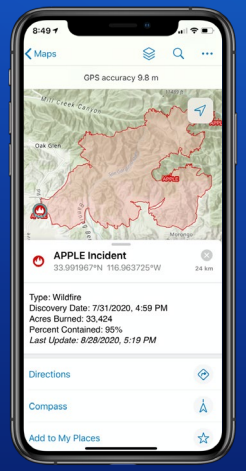
Field Maps components

Prepare Maps for the Field



Field Maps web app

Do Work in the Field



Field Maps mobile app

Download on the App Store

GET IT ON Google Play

Working offline in the field

All of your GIS available offline.

- Maps
  - Vector
  - Imagery
- GPS Location
- Feature Services
- Pop-ups

Data collected in the field syncs later when connected.

Three ways to take maps offline in Field Maps

Define offline areas as a part of the web map

Create offline areas in Field Maps mobile app

Create & download mobile map packages (MMPKs)

Define offline areas as part of the web map

1 Define offline area(s)

2 Save & package offline area(s)

3 Share & download

4 Use offline

- *ArcGIS Online*
- *ArcGIS Enterprise*
- *ArcGIS Field Maps web*

Define offline areas as part of the web map

Requirements

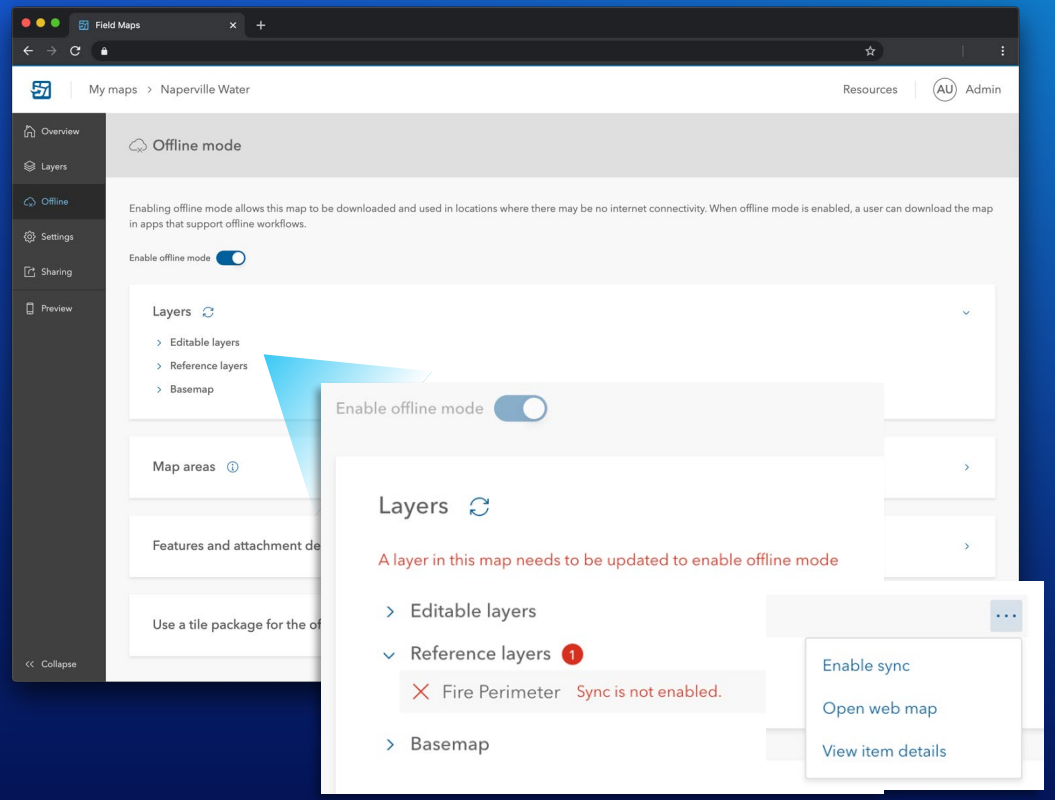
- Data must be set up properly. Centralized settings and feedback in Field Maps web app.

Key Benefits

- Sync data between field and office
- Scalable, shared in organization
- Reference on-device basemaps

Limitations

- Data download limitations
- Limited to 15 offline areas
- Limited symbology capabilities in ArcGIS Online / Enterprise
- Once offline areas are created, can’t access original map in mobile device



Create offline areas in Field Maps mobile app

Create offline areas in Field Maps mobile app

Requirements

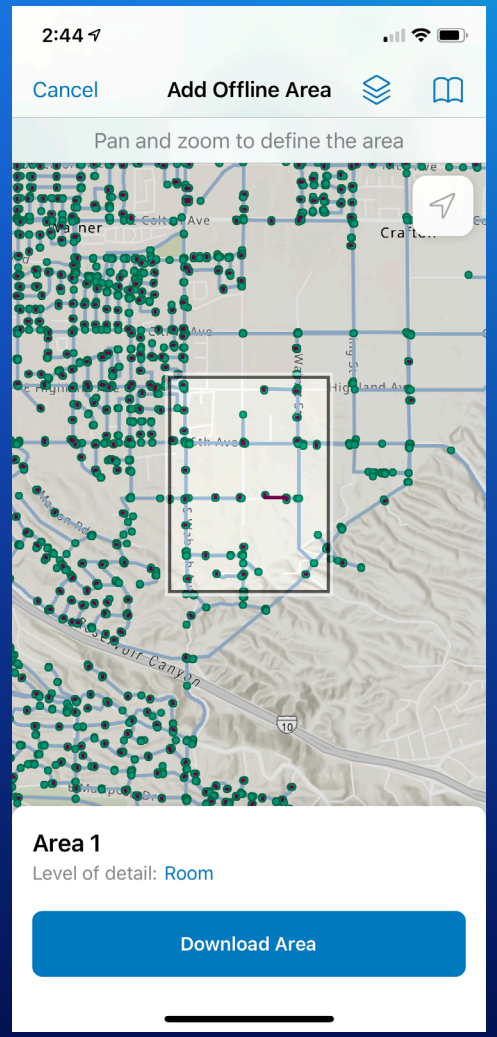
- Must have access to a web map

Key Benefits

- Flexibility for the field worker

Limitations

- Not scalable
- Impacts to server
- Limitations to download size



Create & download mobile map packages

1 Build Map in ArcGIS Pro

2 Save as a mobile map package file

3 Share & download

4 Use offline

Create & download mobile map packages

Requirements

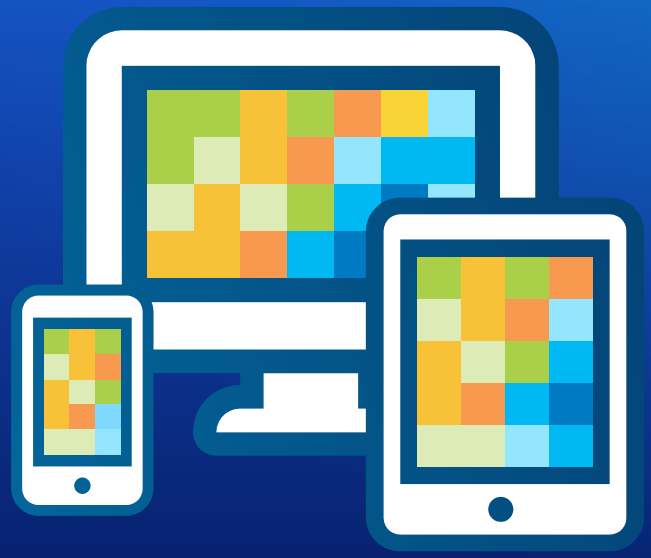
- Must use ArcGIS Pro to create map

Key Benefits

- Contains all of your map data
- No limitations on file size. Good for use with imagery.
- Advanced symbology
- Supports routing data
- Use local layers
- Include online layers (when connected)
- Anonymous use, with Publisher extension

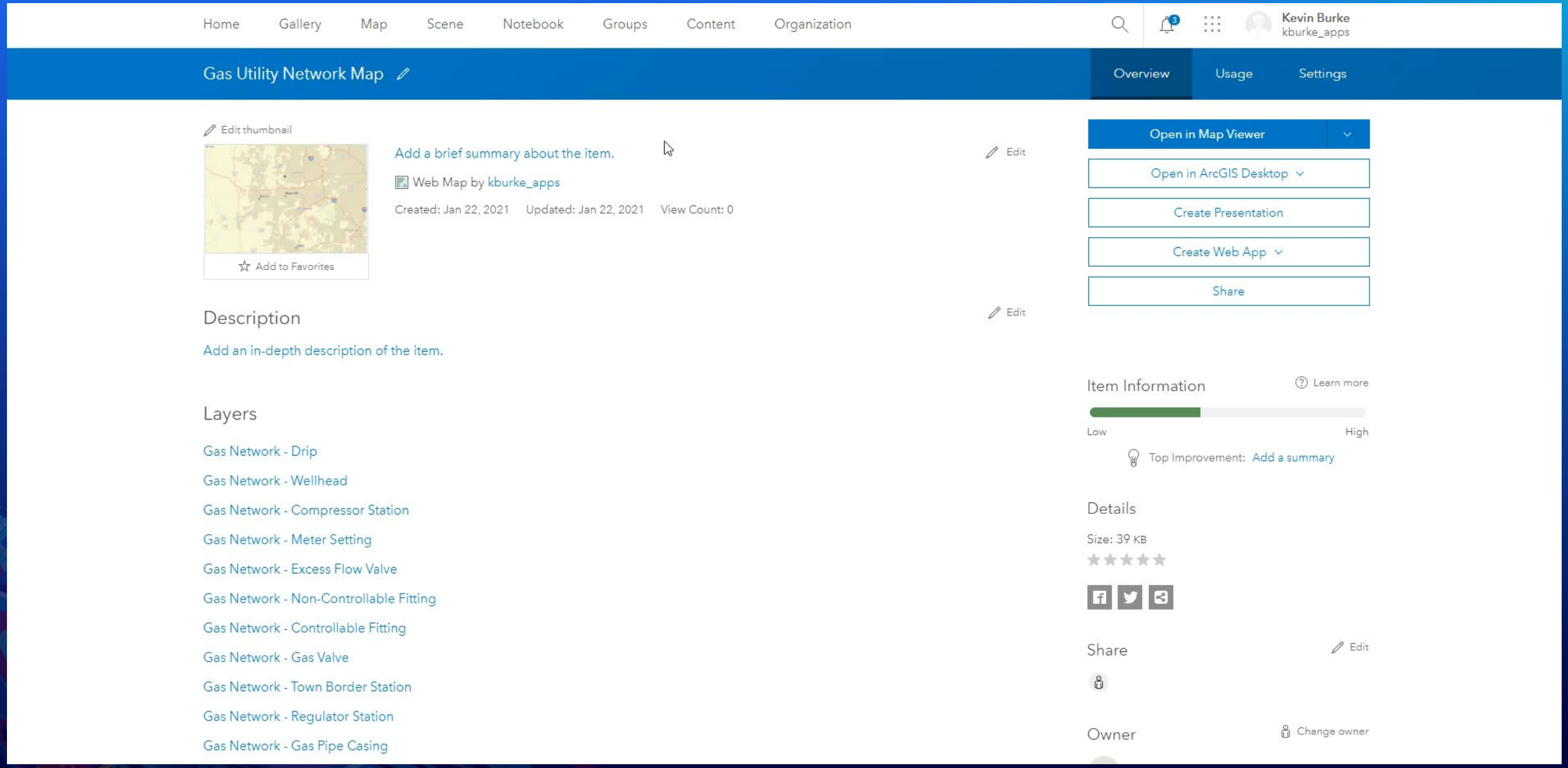
Limitations

- Maps are view-only, can’t be updated in field
- More effort to distribute updates

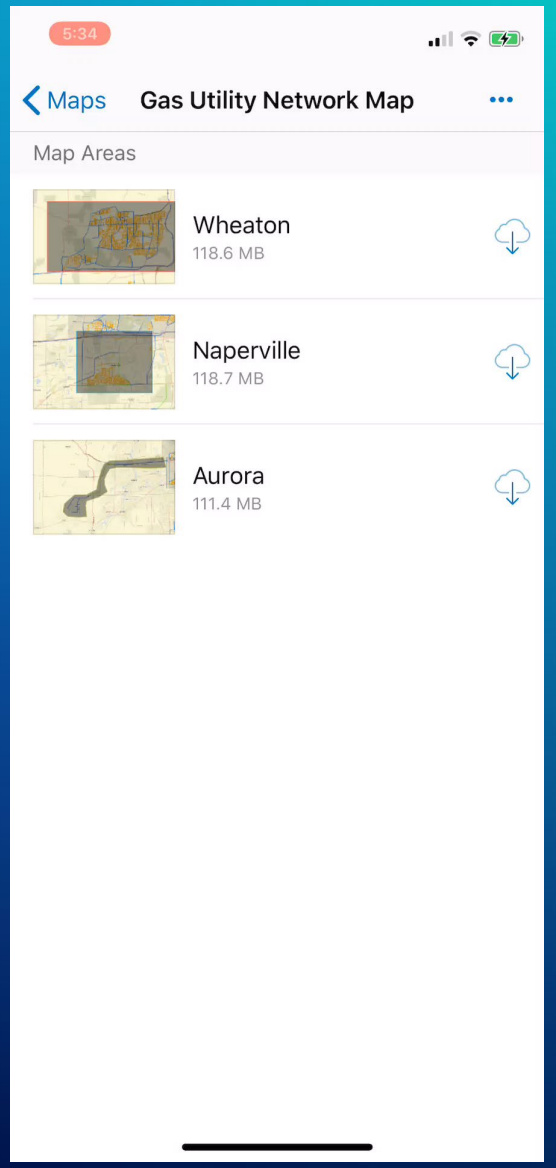


Working with Map Areas Defined in the Web Map

Creating Map Areas from the Web Map

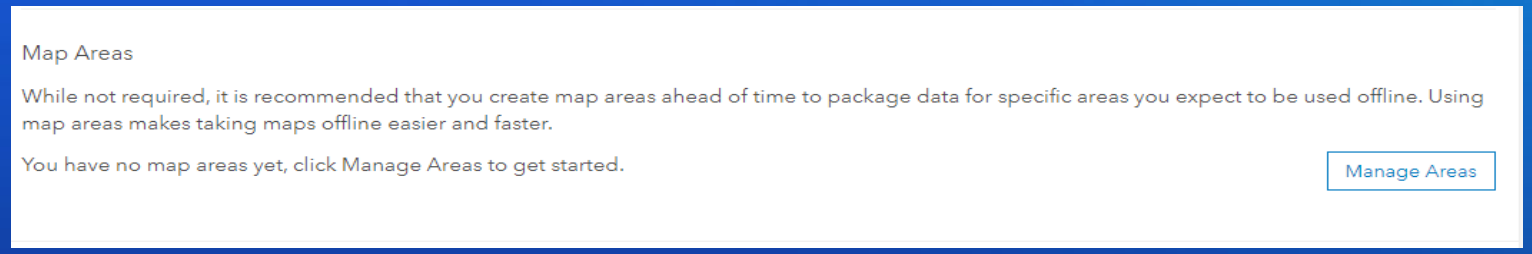


Using Map Areas in the App

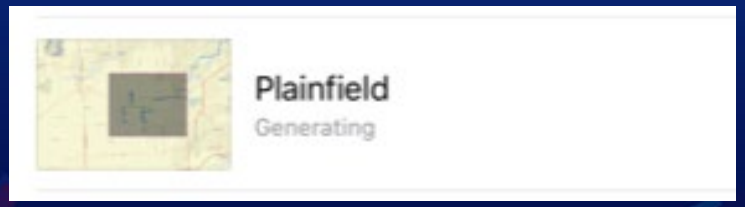


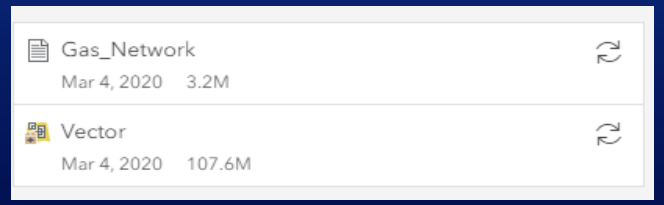
General Information

- Available via the web map settings in the Offline section under Manage Areas for the following apps:
  - ArcGIS Field Maps Web App
  - ArcGIS Online
  - ArcGIS Enterprise 10.7+

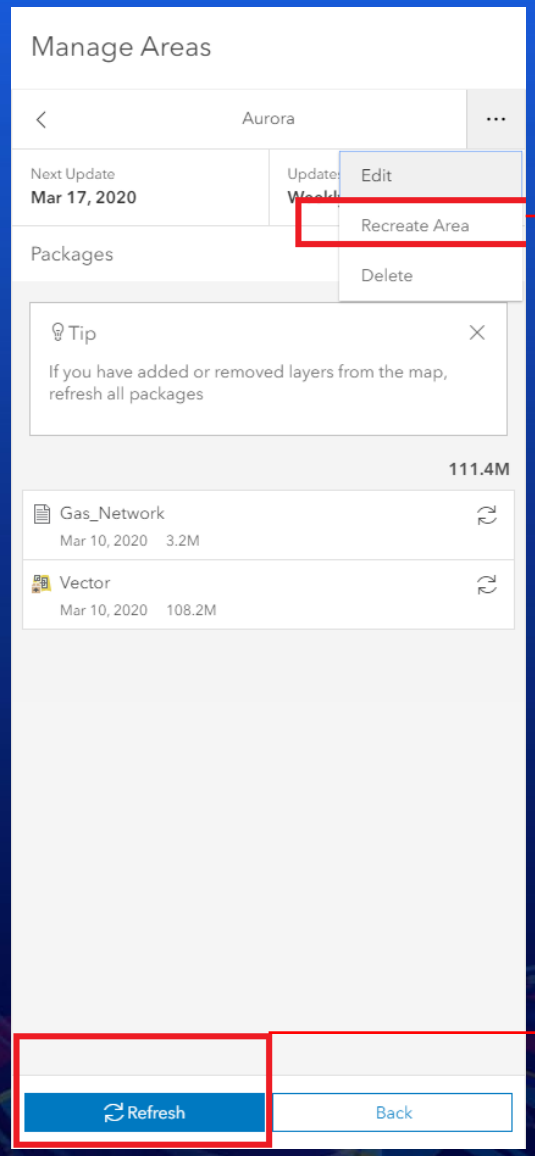


- Create up to 16 areas per web map
- Construct each area as a rectangle or as an irregularly shaped polygon
- During the construction of new areas, Field Maps displays 'Generating` next to that area until it's ready to be downloaded once all file components for that area have been constructed such as:



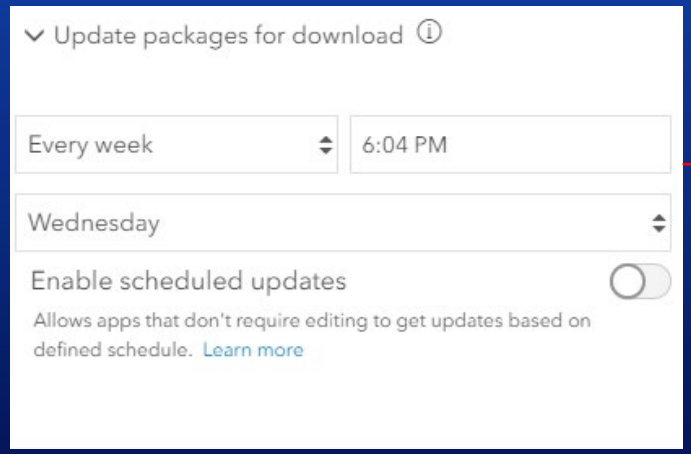


Updating Existing Map Areas



Use when:

- **Fields have been added or removed from a layer**
- **Domains or feature templates have been modified**
- **NOTE: All existing packages will be deleted and new packages will be created. Users will need to redownload the new packages.**



Use when:

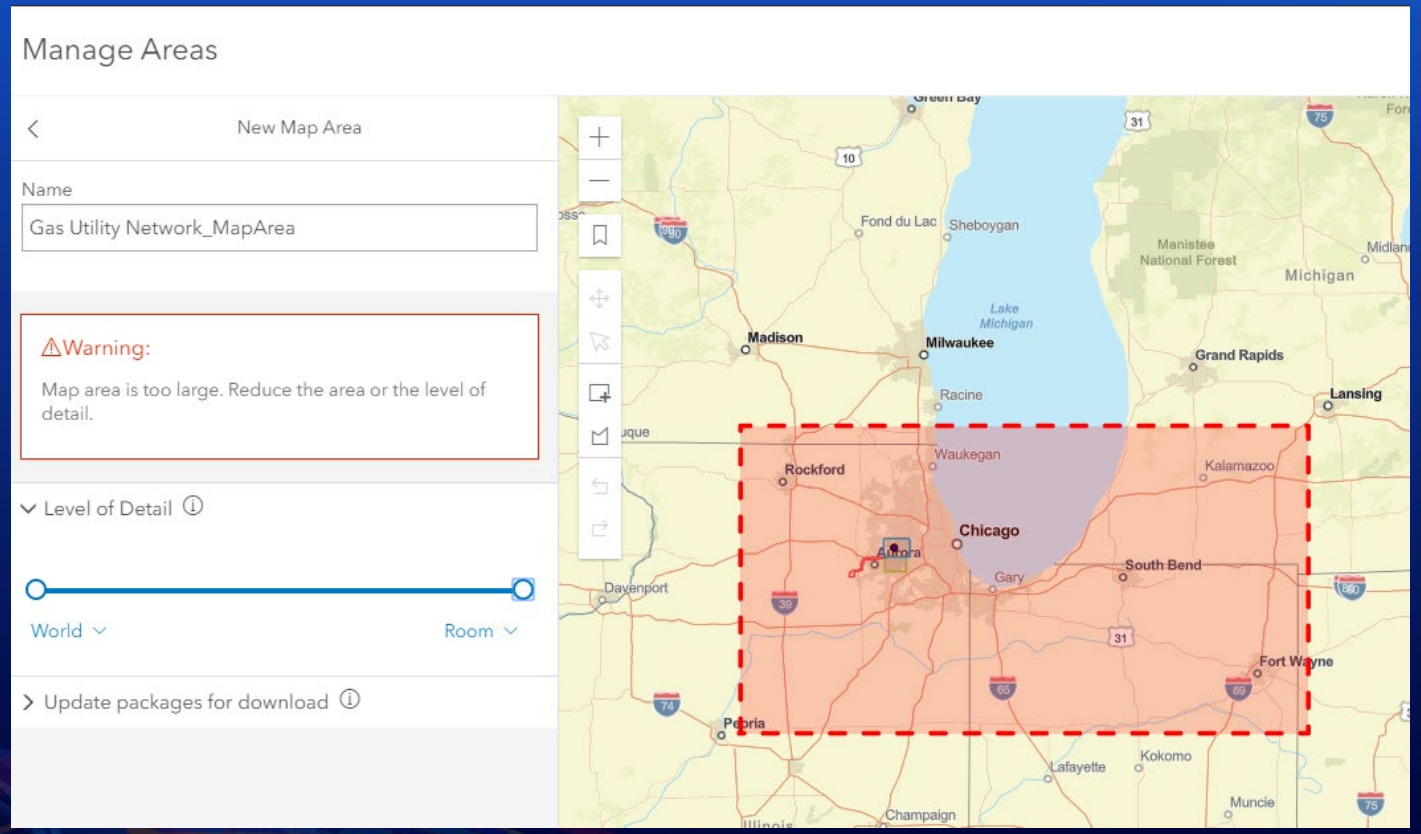
- **Field users require regularly updated read-only content**
- **This is not supported with editing workflows. i.e. one-way update**

Use when:

- **Layers have been added or removed from the map**
- **The data for one or more feature layers have changed significantly since it was last packaged**
- **When using scheduled updates**

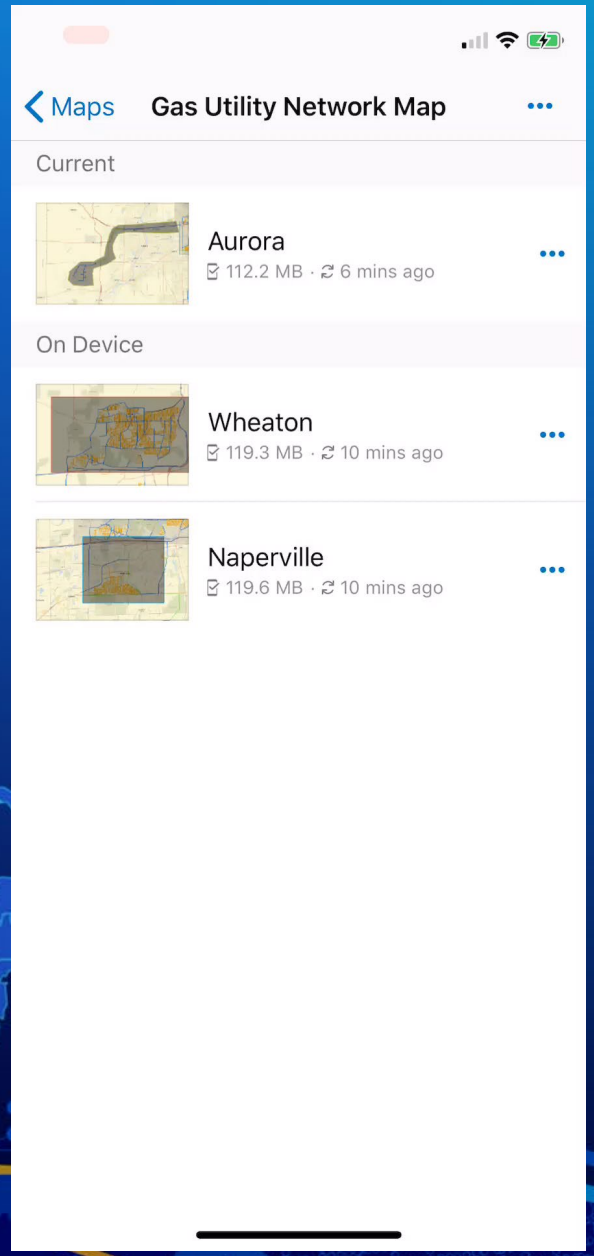
Basemap Tile Export Limits

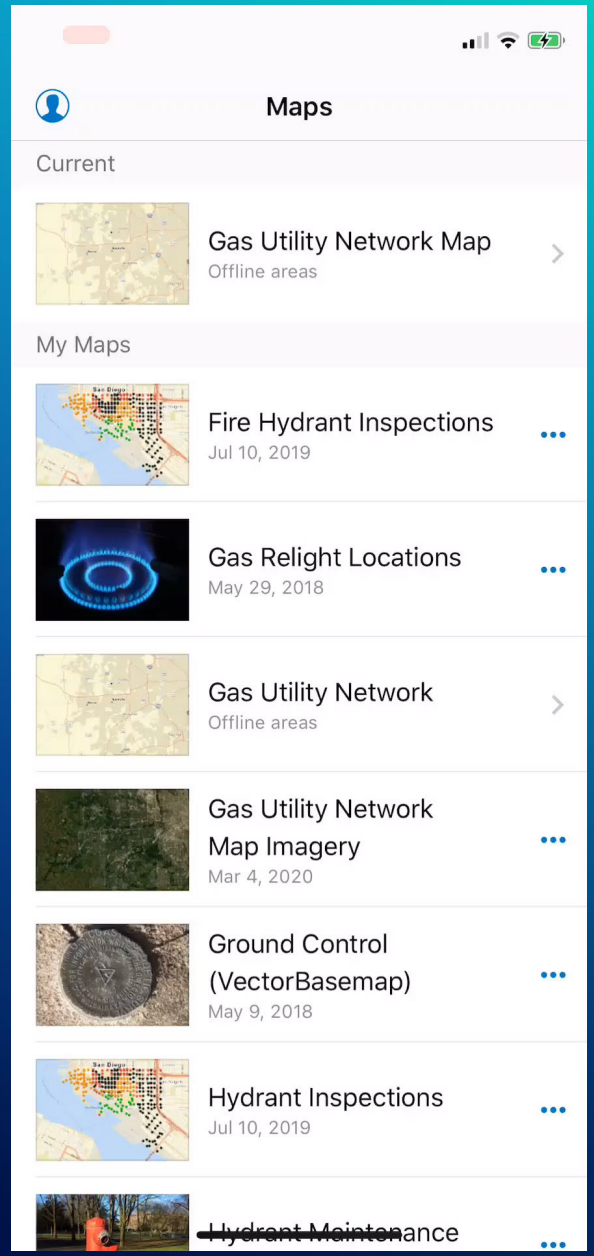
- Esri raster tiled basemaps = limited to 150,000 tiles
- Esri vector tiled basemaps = limited to 10,000 tiles
- When the maximum tile limit has been exceeded, the following error will be presented:



Working with Map Areas Defined in the App

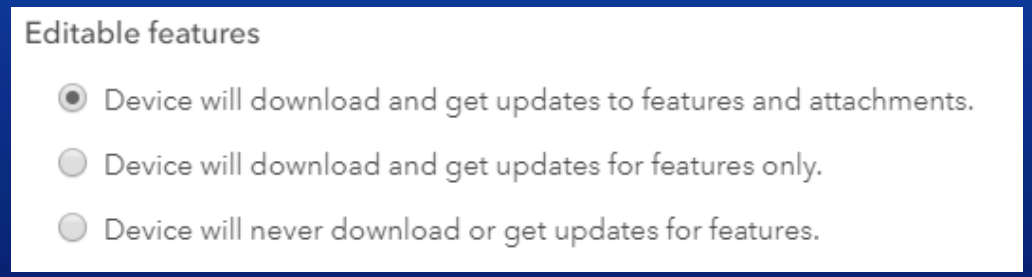
Creating Map Areas in the App

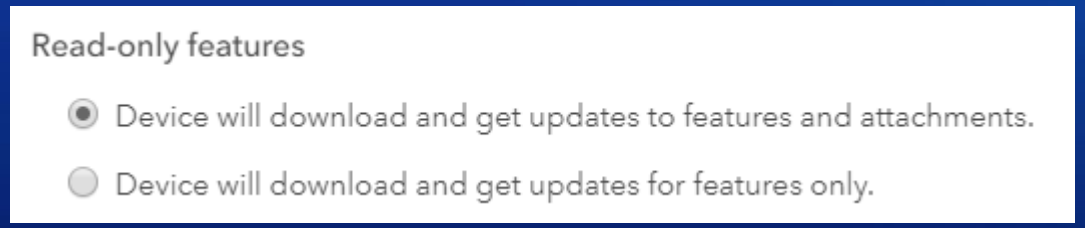




Advanced Offline Options

- Utilize Advanced Offline Options in the web map settings to control the downloading of feature geometry and/or attachments with offline areas.
- Different options are available for both editable and read-only layers in the web map:

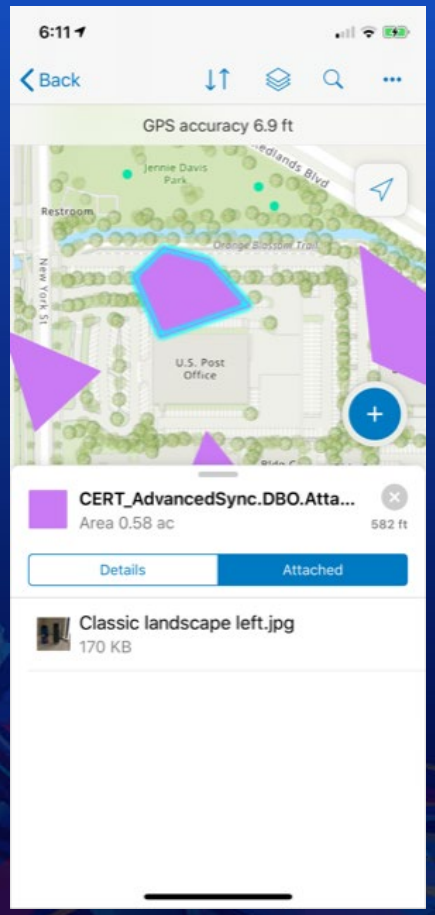




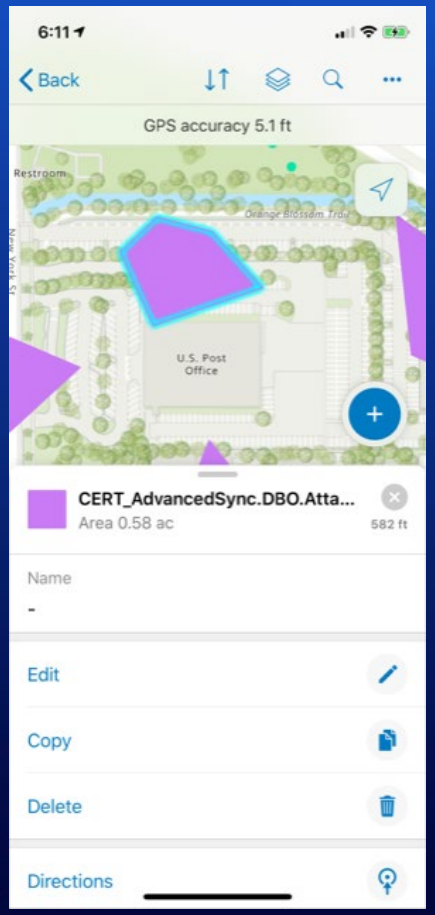
Using Advanced Offline Options with Editable Features

- Examples of each Advanced Offline Option for editable features:

Features + Attachments



Features Only

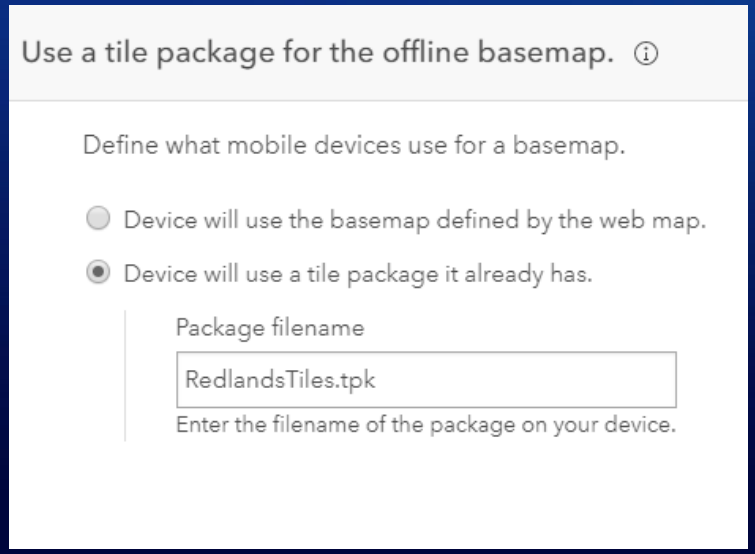


Schema Only

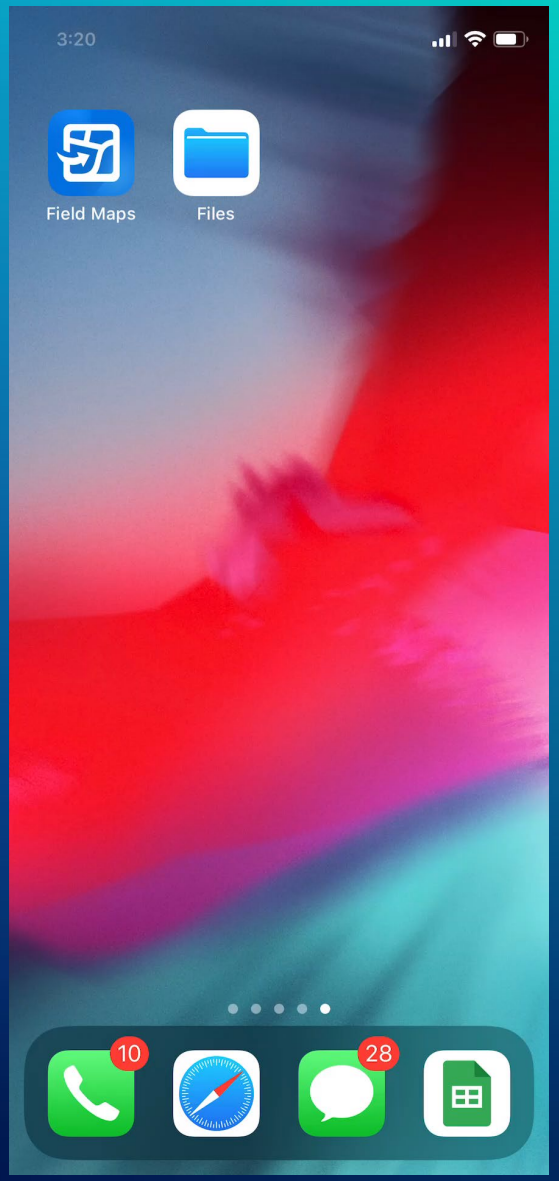
Working with Local Basemaps

Working with Local Basemaps

- Often referred to as ‘Sideloaded’ basemaps
- Includes file types such as TPK, TPKX, and VTPK
- Two ways to utilizing sideloaded basemaps:
  - Switching between different basemaps using the Basemap tool from an opened map (online or offline area)
  - Applying a sideloaded basemap as the default basemap to a new offline map area (Basemap by Reference)
- The main reason for wanting to utilize a sideloaded basemap as oppose to publishing it as a tiled service and downloading it with the offline map area, is often due to the size and complexity of the basemaps.
- Multiple methods for sideloading basemaps onto devices:
  - Manually over a USB connection between the device and PC/MAC (iOS)
  - Using a third party sharing app such as Google Drive, iCloud drive (iOS), etc.
- Switching between sideload basemap in offline areas requires:
  - The SR of the default basemap in the web map must match the SR of the local basemap.
  - The offline map extent must intersect with the extent of the local basemap.
- Basemap by Reference workflow requires:
  - Specifying the file name for the sideloaded basemap within the Advanced Offline Options:



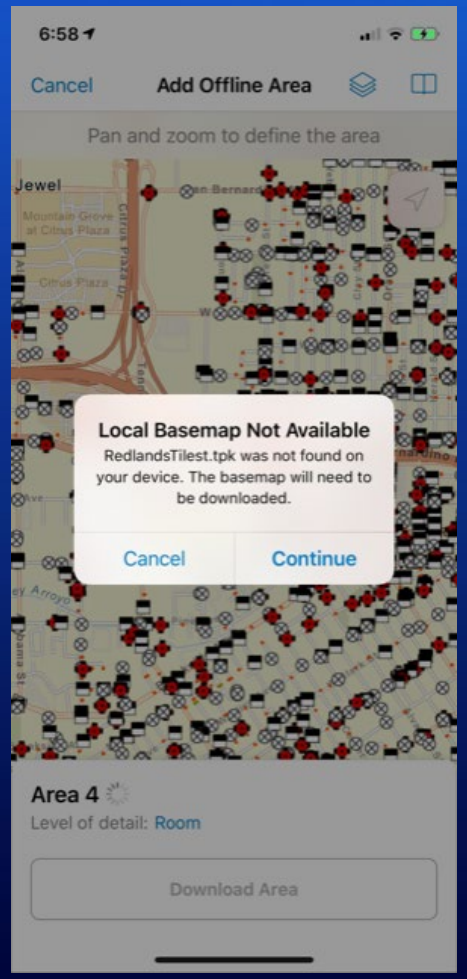
Basemap by Reference Workflow



Basemap by Reference Workflow – Additional Information

- In this case, choosing ‘Continue’ proceeds with the download but uses the default basemap defined in the web map.

TPK not found on local device



Wrap up

Three ways to take maps offline

- **Mobile map packages (MMPKs)**
  - Side load large map files
  - Include advanced symbology and data
  - Requires full download to update

- **Map areas defined in the mobile app**
  - Flexibility for mobile workers
  - Define necessary extent and scale
  - Increases load on the server

- **Map areas defined in the web app**
  - Prepare ahead of time
  - Streamlined experience for mobile worker
  - Optimized and scheduled updates
  - Scalability

The Road Ahead for Offline Capabilities

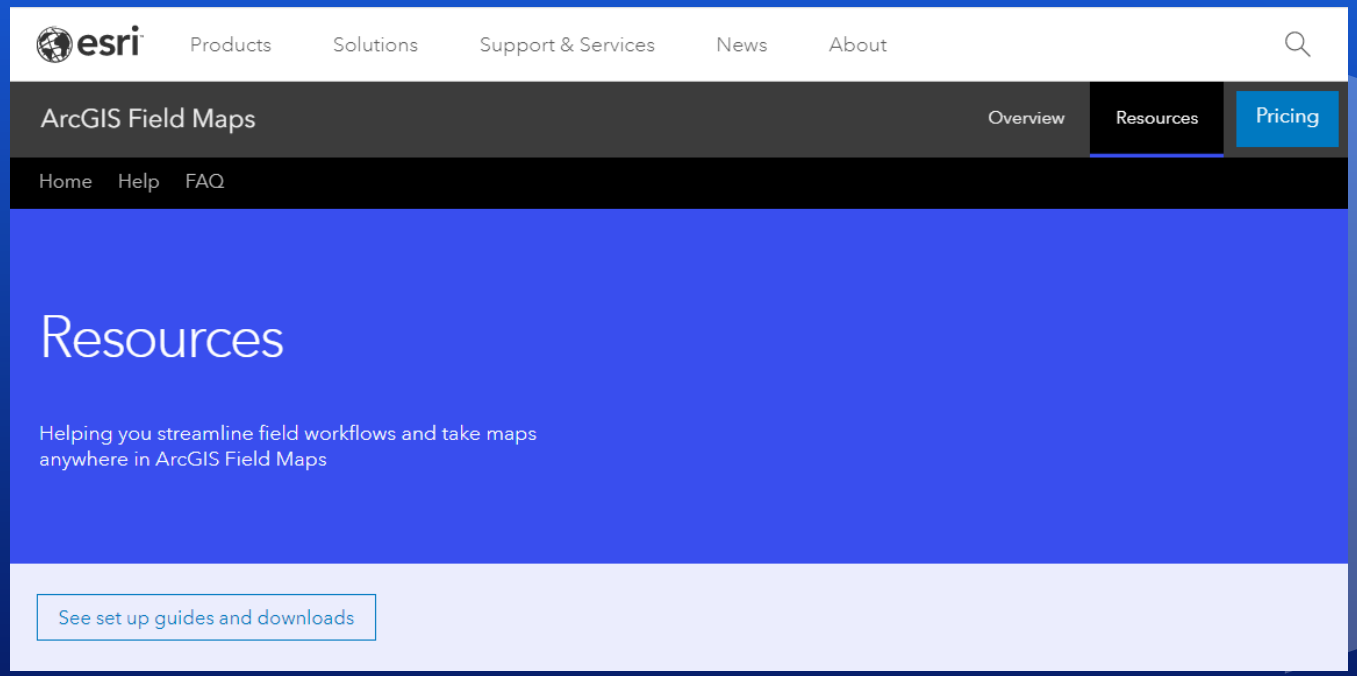
- Additional offline settings
- Improved support for irregular map areas
  - Esri basemaps
- ArcGIS Workforce capabilities are coming to Field Maps
  - Worker map is downloaded before opened
  - Remove map from your device when finished
  - Create a map area for the Worker map to optimize download

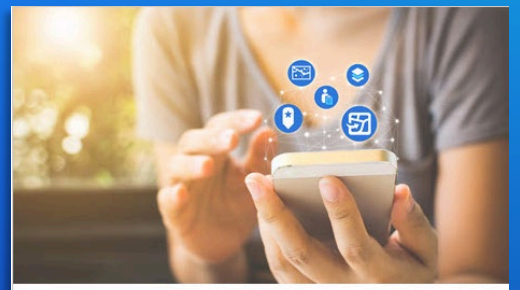
Resources

- **Take Your Web Maps Offline (Guide)**

Scan to access the Offline Guide!

Resources

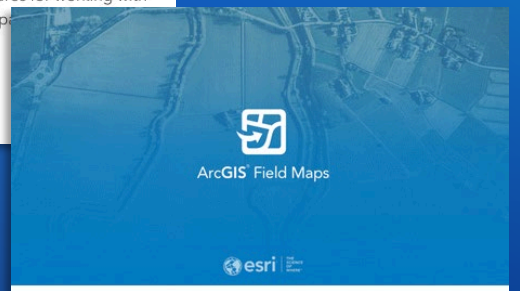




5 things to try in Field Maps

ArcGIS Field Maps offers a variety of features for working with maps in the field. Check out these five cap… started.

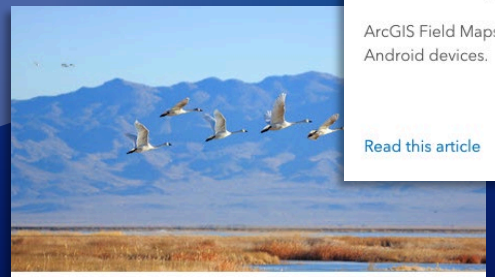
Read this article



Announcing ArcGIS Field Maps

ArcGIS Field Maps is Esri's new premier maps app on iOS and Android devices.

Read this article



Migrate to ArcGIS Field Maps

Resources for migrating to ArcGIS Field Maps from ArcGIS Collector, ArcGIS Explorer, and ArcGIS Tracker.

Read this article →

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