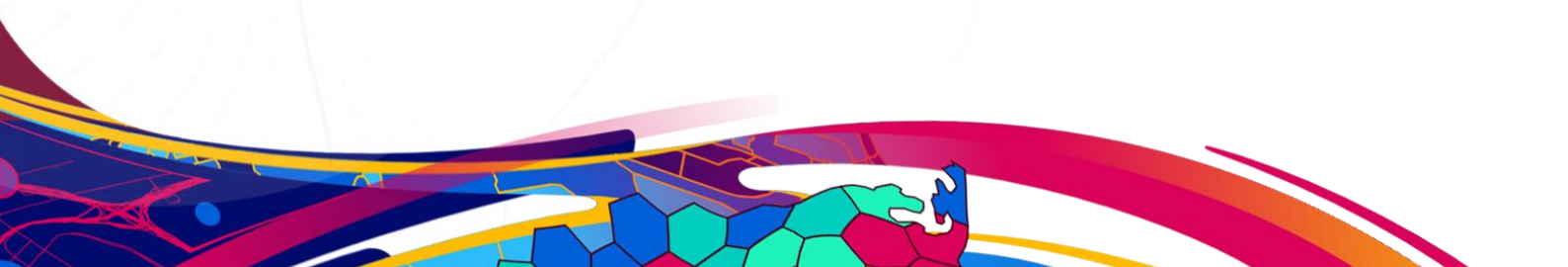




TRAINING SESSION :
Support Field Operations with ArcGIS Apps

Hands-on Guide

October 2023



Welcome the hands-on training session for Supporting Field Operation with ArcGIS Apps

You will be using the following Portal for your exercises.

<https://ucws.esri-southafrica.com/portal>

Please login with your unique credentials

Username	Password
ESAUC23Student001	ESAUC23Student001_

There are 30 accounts please use the correct allocation based on the code on your desk.

OBJECTIVE

Today we will focus on configuring a very basic workflow for capturing and inspecting fire hydrants within our area. As the presentation explained we will focus on creating the base data for the inspection as well as configuring ArcGIS Field Maps, ArcGIS Workforce and ArcGIS Dashboards to address the business the workflow.

After today's session you should be able to understand how the ArcGIS Apps integrate with one another in order to fulfill your business workflow. The following objectives will be handled:

- Verifying published hosted feature layers in ArcGIS Enterprise
- Confirm certain layer setting in Item Details of the service
- Configure a web map to support your field operations
- Configure the Field Maps project in Field Map Designer
- Understand the use of Smart Forms in the Designer
- Configure ArcGIS Workforce for Assignments allocation
- Configure a Dashboard to monitor the field progress

We have already provisioned the base data in a file geodatabase after we had user requirement discussions with the Head of Fire Services and Disaster Management. She indicated that the capturing and updating of all the fire hydrant is increasingly important as the fire season is drawing closer. Winter has passed and the local Fire Station Commander requested the data and spatial location of each fire hydrant to be capture, updated and verified. In addition the solution should effectively be able to provide a capability to support the serviceability of all hydrant by means of periodic inspections and conditional assessments.

Vhuyo, the local Super GIS Analyst, spend some time in creating the geodatabase schema for the fire hydrants as well as related tables for additional conditional assessments and inspections.

He also setup a project in ArcGIS Pro and created the initial map with data from the FGDB and symbolized it against the type of valve. He also added the wards data, receive from the curated author to add as reference data in his map.

After verifying the various functions he published the data to his local ArcGIS Enterprise for your usage. You, yes you.. have been identified to continue with the process of configuring the workflow within ArcGIS Enterprise to facilitate this process. You will start off by logging into the Portal and start configuring.

You will have 1 hour (60 minutes) to complete this process. Come on.. it's easy!

Ok let's GO!

1. Open the browser on the PC and type the Portal address in <https://ucws.esri-southafrica.com/portal>

Please login with your unique credentials

Username	Password
ESAUC23Student001	ESAUC23Student001_

There are 30 accounts please use the correct allocation based on the code on your desk.

2. Login with the correct credentials
3. Go to Groups and find **Field Maps** group
4. Find the **Fire Hydrant for Field Maps** hosted Feature Layer and open the Item Detail

1 - 4 of 4 in Field Apps

Title	Modified
Fire Hydrants UC	19 Oct 2023
Fire Hydrants UC	19 Oct 2023
Fire Hydrants for Field Maps	18 Oct 2023
Fire Hydrants for Field Maps	18 Oct 2023

- 4.1. In the Setting tab please ensure that **editing is enabled**

Feature layer (hosted)

Editing

- Enable editing
- Keep track of changes to the data (add, update, delete features).
- Keep track of who edited the data (editor name, date and time).
- Enable Sync (required for offline use and collaboration).


• Who can edit features?
Share the layer to specific groups of people, the organization or publicly via the Share button on the Overview tab. This layer is currently shared with: Field Maps

• What kind of editing is allowed?

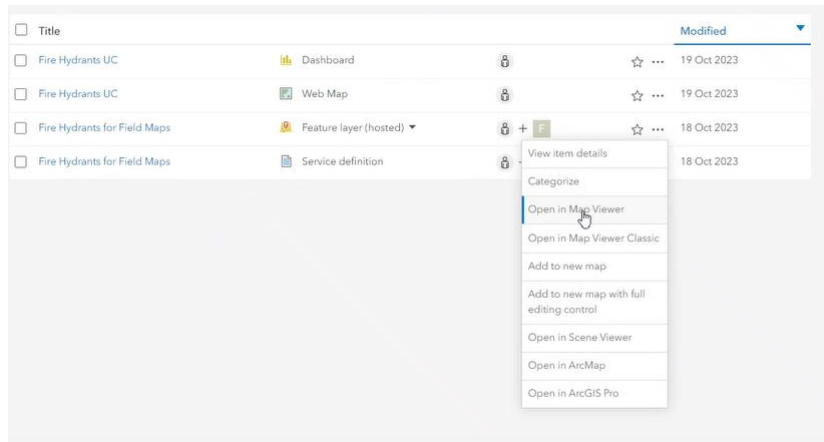
- Add
- Delete
- Update
- Attributes only
- Attributes and geometry

- 4.2. Uncheck the Keep track of changes to the data
- 4.3. The Setting will save automatically
- 4.4. Click on the Overview tab

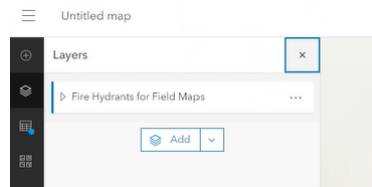
5. Now, you will create a web map from this service

5.1. Click on  and select Open in Map Viewer. Not Classic the new Map Viewer.

Alternatively you can open it from the Content page in the Group.



5.2. In the New Map Viewer please select the Feature Layer



5.3. Expand by clicking on the triangle

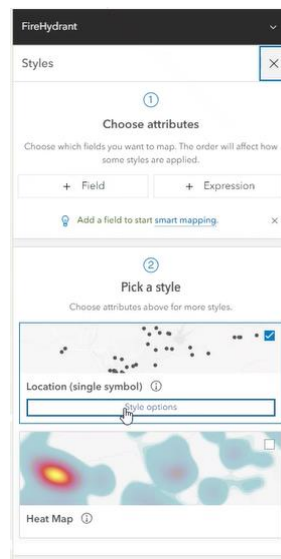
5.4. Two layers available

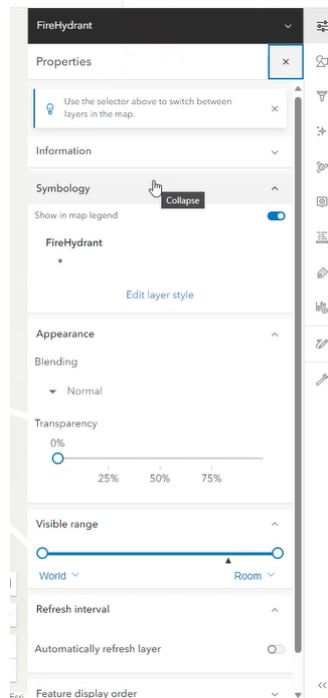
5.4.1. FireHydrant and

5.4.2. Wards

5.5. Select FireHydrant open the Properties

5.5.1. Click on field to select Field and field to be used for the symbology Select **HydrantType**





5.5.2. Click Add

5.5.3. Click on Style options and select a suitable symbol, click Done

5.5.4. Click Done

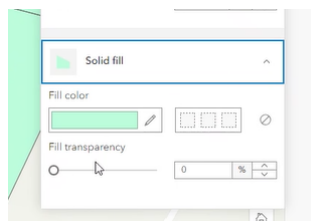
5.6. Now Select Wards

5.6.1. Open the Properties

5.6.2. Click Style Options

5.6.3. Click Symbols Style

5.6.4. Change to “no fill” under Solid fill



5.6.5. Change the outline

5.6.6. Click Done

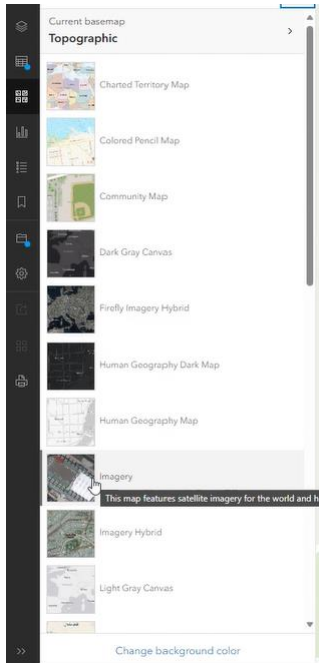
5.6.7. Click on Label on the side panel

5.6.8. Click on Add Label Class

5.6.9. Choos Label Field and Select Ward Number

5.6.10. Click Replace

5.7. Let’s change the basemap

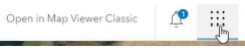


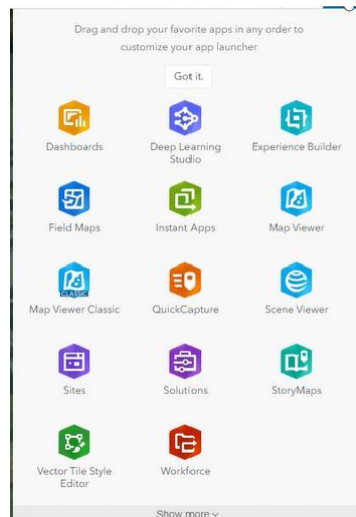
- 5.7.1. Select Imagery
- 5.8. Save the web map
- 5.9. Use your Name or project i.e. FireHydrant_Vhuyo
 - 5.9.1. Select Folder .. Root
 - 5.9.2. Add tags
 - 5.9.3. Add Summary
 - 5.9.4. Click save

Your web map is now ready for the next phase.

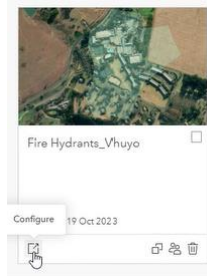
Configuring the Field Map in designer

6. Select the Field Map Designer form the Launch button

- 6.1. 



- 6.2. We are now going to create a field map
- 6.3. Select your newly saved web map...
- 6.4. Click on Configure



6.4.1. Click on Overview.... discuss content

6.4.2. Click on Forms

6.4.3. Select you **FireHydrant** layer

6.4.4. Select **FireHydrant**

6.4.4.1. Add all field from the right

6.4.4.2. Select Hydrant Number

6.4.4.3. Change formatting

Formatting ^

Display name*

Field name

Field type (i)

Input type

Placeholder

Description

Min. length Max. length

Field length* (i)

Default value

Default values can be set on the Templates tab

6.4.4.4. Check the box Required

6.4.5. Select next field

6.4.5.1. Nearest Address leave unchanged as this will later be populated by Workforce

6.4.5.2. HydrantType

6.4.5.2.1. Select Manage 4, this will display the current domain values, you may change them else leave unchanged

6.4.5.2.2. Click Done

6.4.5.3. Ensure the field is Editable, Required and Visible

6.4.6. Owner field ensure it is editable

6.4.7. Installation Date

6.4.7.1. Add in the Description a sentence explaining what to do if no date appears

6.4.7.2. Ensure editing is on

6.4.7.3. Ensure required is checked

6.4.8. Last inspection field

6.4.8.1. Click on Calculate expression

6.4.8.1.1. Add expression, Arcade expression window will open

6.4.8.1.2. Type today()



6.4.8.1.3. Click Test

Result	Value
Result	19 Oct 2023 12:00:00 am
Type	Date

6.4.8.1.4. Click OK

6.4.9. Select Last Reported Condition

6.4.9.1. Ensure it is a required field

6.4.9.2. Allow editing

6.4.10. Assigned To field

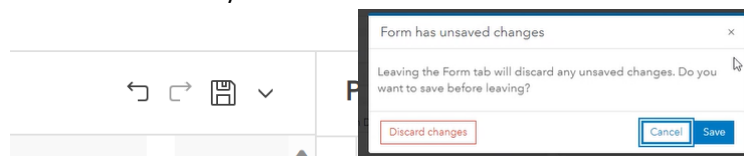
6.4.10.1. Disable editing

6.4.11. Select the Work Order ID field

6.4.11.1. Uncheck the editable box

6.4.11.2. Click and drag the field right to the top of the form

6.4.12. Save the form for FireHydrants



6.5. Select Wards layer in the Forms section

6.5.1. For the Wards layer we are not going to do nothing as we not going to edit this layer

6.6. Select Tables and expand the list

6.6.1. Select Inspections

6.6.1.1. Add all 14 fields to the form



6.6.2. Select inspection date

6.6.2.1. Add calculated expression

6.6.2.1.1. Type today()

6.6.2.1.2. Click Test

6.6.2.1.3. Click Ok

6.6.2.1.4. Click Done

6.6.3. Select Condition Checklist

6.6.3.1. Uncheck Visibility

6.6.4. Select No obstruction on or around the hydrant

6.6.4.1. Include “No value”

6.6.4.2. Allow editing

6.6.5. Select Minimum of 15” clearance between outlet and ground

6.6.6. Change display name to Is there 30cm clearance below the valve?

6.6.7. Select Inspector

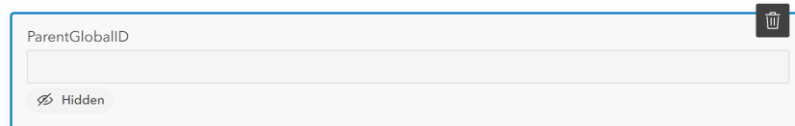
6.6.7.1. Uncheck Visibility

6.6.8. Select Condition

6.6.8.1. Click and Drag to the top

6.6.8.2. Check Editable and Required

6.6.9. Select Parent GlobalID and delete from form

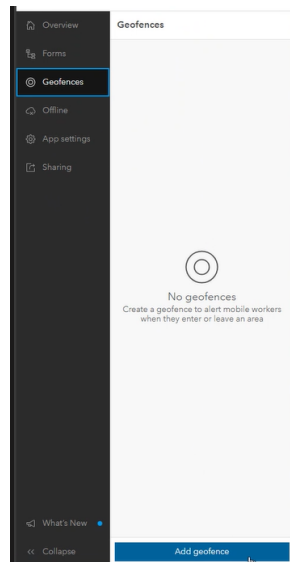


A screenshot of a form field labeled "ParentGlobalID". The field is empty and has a trash can icon in the top right corner. Below the field is a checkbox labeled "Hidden" which is currently unchecked.

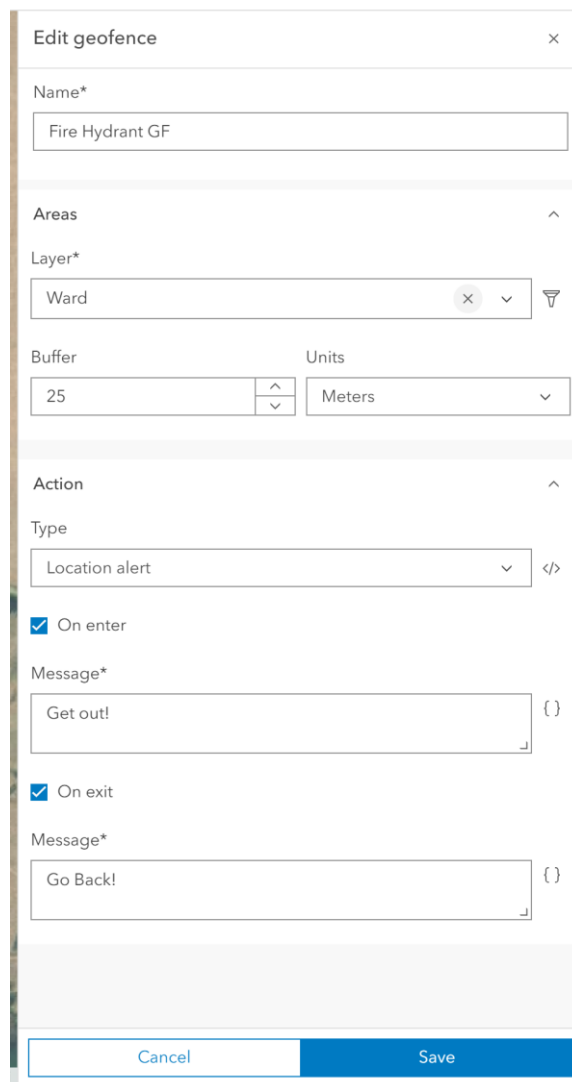
6.6.10. Save the form

6.7. Geofence

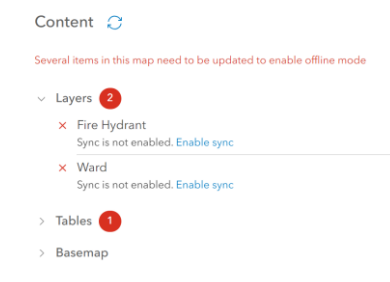
6.7.1. Add geofence



6.7.2. Provide name of the geofence on the right



- 6.7.3. Select the layer and Select Ward from the list
- 6.7.4. Add a buffer of 25m
- 6.7.5. Add an Action
 - 6.7.5.1. Select Location Alert from the dropdown
 - 6.7.5.2. Check on On Enter and add your own message
 - 6.7.5.3. Check on On Exit and add your own message
- 6.7.6. Click Save
- 6.8. Select Offline
 - 6.8.1. Expand Layers
 - 6.8.2. See the error for data not been configured to take offline

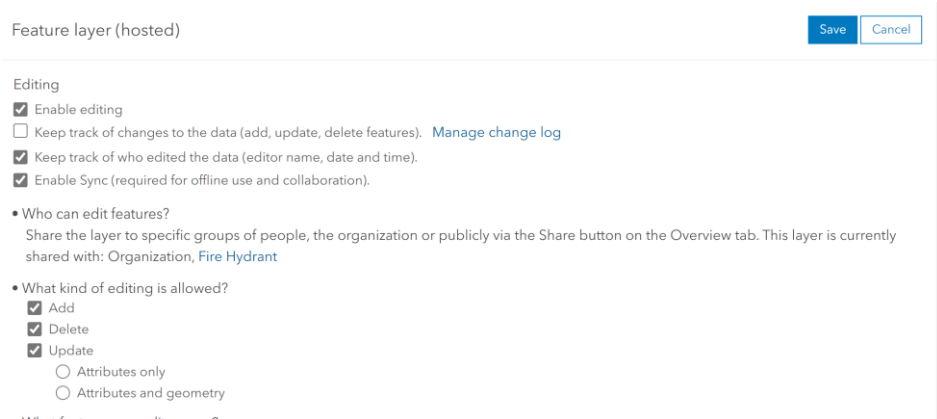


- 6.8.3. To rectify the data and enable it for offline purpose, click on Enable Sync else
- 6.8.4. Open Feature Layer Item details page in another tab DO not close your field map designer!

6.8.5. Go to portal content and edit the item details of the hosted feature layer

6.8.5.1. Go to Setting in Item Details

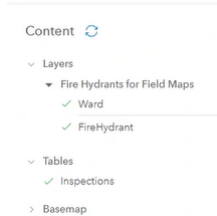
6.8.5.2. Enable Sync



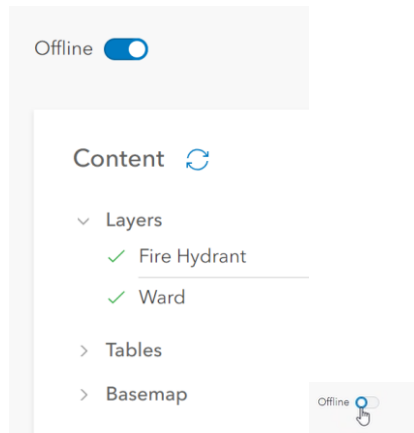
6.8.5.3. Confirm success

6.8.6. Go back to File Map designer tab and Refresh your map design tab in your browser

6.8.7. Once refreshed

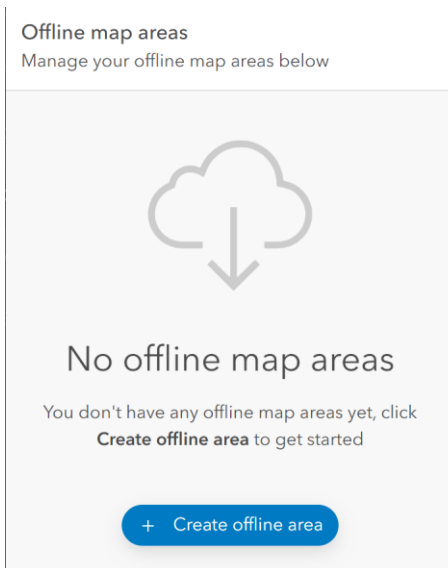


6.8.8. Toggle the slider to Offline



6.8.9. Click Manage Areas

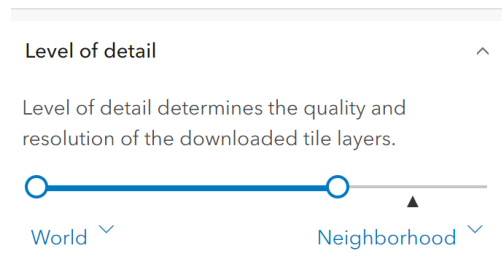
6.8.9.1. Create Offline area



6.8.9.2. From the select button draw a rectangle to select the area that require offline packaging



6.8.9.3. Select Level of detail

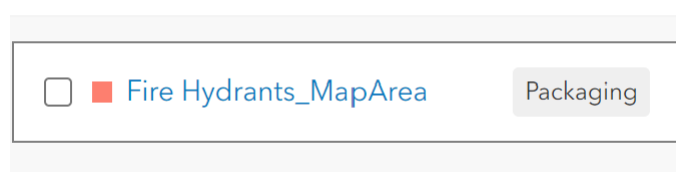


6.8.9.4. Slide the slider to the far right Room level

6.8.10. For info explore Packaging Schedule

6.8.11. Click Save

6.8.12. Should be packaging now...



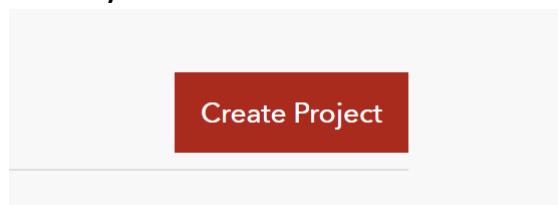
6.8.13. Close the map area X top right

- 6.8.14. Feature and attachment delivery
 - 6.8.14.1. Leave unchanged
- 6.9. App setting on the Left
 - 6.9.1. Open Collection
 - 6.9.1.1. Change the accuracy to 20m
 - 6.9.1.2. Enable GPS averaging
 - 6.9.1.2.1. Change to 5 points to avg
 - 6.9.1.3. No streaming as this is not lines
 - 6.9.2. Feature Action
 - 6.9.2.1. Leave unchanged
 - 6.9.3. Layer filters
 - 6.9.3.1. Leave unchanged
 - 6.9.4. Location sharing... for tracking your field crew in Tracker with Trackviewer app
 - 6.9.5. Leave the rest unchanged
- 6.10. Save the project
- 6.11. Click on Sharing
 - 6.11.1. Explore the sharing and close

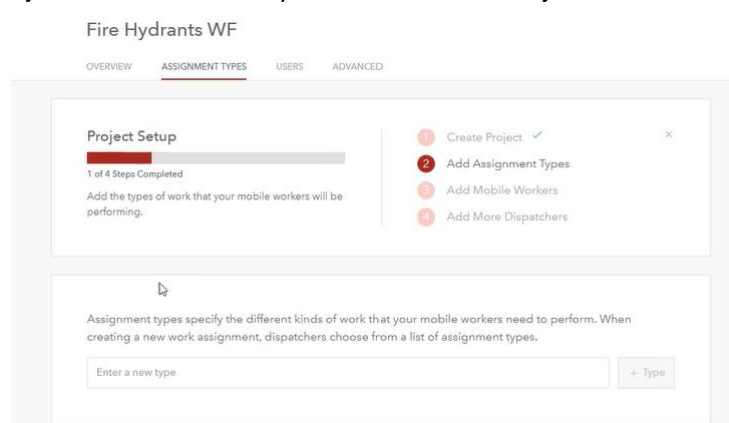
Click on Maps top left to navigate back to main menu, where you will find your new Field Map ready for field work

Now we going to setup workforce project with assignment and field crew. Once that has been completed we will integrate the Workforce project with the previously configured Field Maps project to send attributes between them.

- 7. From the portal homepage click on launch button and open WorkForce
 - 7.1. Create a new project i.e. **Fire Hydrant WF**



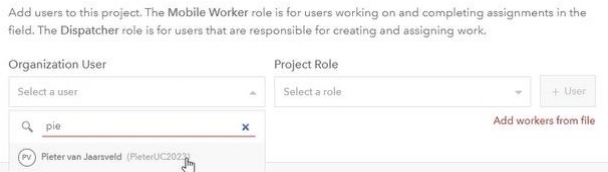
- 7.2. Provide a project name And summary and Click to Create Project



- 7.3. Enter a new Assignment Type.. e.g Inspect Fire Hydrant
 - 7.3.1. Click + Type
- 7.4. Add another Assignment e.g. Capture New Fire Hydrant
 - 7.4.1. Click + Type

7.5. Select Users at the top

7.5.1. From the dropdown select the team crew members

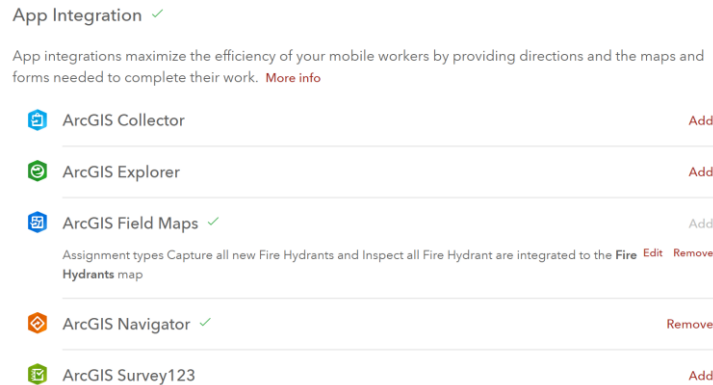


7.5.2. Select their role and add the member e.g. Dispatcher vs mobile worker

7.5.3. Click + User

7.6. Select Advance from the top

7.6.1. Select Add from the ArcGIS Field Maps



7.6.2. Click Add

7.6.2.1. Select Open Field Maps with a specific map

7.6.2.2. Click Next

7.7. Step 1

7.7.1. Select you own web map created at the beginning of the exercise

7.7.1.1. Click Next

7.8. Step 2

7.8.1. Check the boxes for all your Assignments which applies to this project

7.8.1.1. Click Next

7.9. Step 3

7.9.1. Select for the Workforce Field select from the dropdown **Work Order ID**

7.9.2. Select for the Field Maps Layer the **Fire Hydrant**

7.9.3. And for the Field Maps Field select **Work Order ID**

7.9.4. Hit the +

7.9.5. Do the same for **Location** in Workforce Field and **Nearest Address** for Field Maps Field , remember the layer remain Fire Hydrant

7.9.6. Hit +

7.9.7. Lastly **Worker ID** from Workforce Field to **Assigned To** in Field Maps Field

7.9.8. Hit+

Your results should look something like this... Your will therefore pass the attributes between the Workforce project and Field Maps project as per the field mapping below.

Step 3 of 3: Integrate ArcGIS Field Maps ✕

Select the information you would like Workforce to pass to Fire Hydrants.

Workforce Field

Select field

Field Maps Layer ⓘ

Fire Hydrant

Field Maps Field

Select field

+

Workforce Field	Field Maps Layer	Field Maps Field	
Work Order ID	Fire Hydrant	Work Order ID	✕
Location	Fire Hydrant	Nearest Address	✕
Worker ID	Fire Hydrant	Assigned To	✕

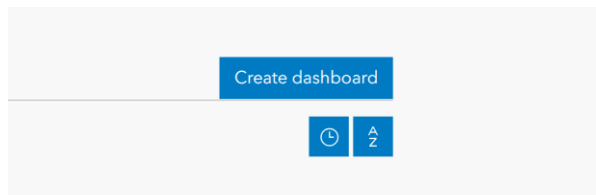
Done

Cancel

7.9.9. Click Done

Now we ready for configuring your operational dashboard to monitor field exercise and data capture progress

8. From the Portal home page select the launch button and click on Dashboard
- 8.1. Create a new dashboard



- 8.2. Provide a Title, some Tags and a Summary and add it to chosen folder Click Create Dashboard
- 8.3. Click on the + in the middle of the page to add a new web map to your dashboard



Visualize, monitor, and share information

Click the ⊕ button to start building your dashboard.
Need some inspiration first? Check out the links below.

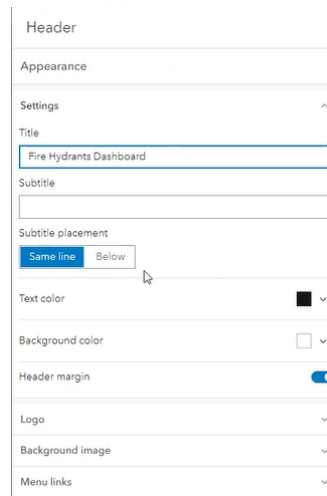


- [Read documentation](#)
- [Learn how to create a dashboard](#)
- [Dashboards gallery](#)

- 8.4. Select your initial web map you created right in the beginning
- 8.5. Select Map
 - 8.5.1. Toggle on all the options
 - 8.5.2. Click Done
- 8.6. Top Left panel select Layout
 - 8.6.1. Click on Header

8.6.2. Add header

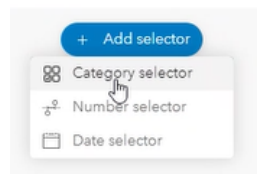
8.6.3. Provide a Title and so on



8.6.4. Click Done

8.7. Add Selector

8.7.1. Select Category Selector



8.7.1.1. Select Grouped Values

8.7.1.2. Select the FireHydrant layer in the drop down and select Fire Hydrants

8.7.1.3. Select the category field and select Hydrant Type

8.7.2. Select Selector on the left panel;

8.7.2.1. Add a Label

8.7.2.1.1. Select Hydrant Type

8.7.2.1.2. Add Multiple

8.7.3. On Action

8.7.4. Select Filter and select the FireHydrant layer and toggle the switch to on

8.7.5. Select the HydrantType field

8.7.6. Select and toggle Indicator and Pie Chart

8.7.7. Click done

8.8. Click Body

8.8.1. Add Element

8.8.1.1. Add Indicator

8.8.1.2. Add the layer Firehydrant from the layer list

8.8.1.3. For Indicator add top text .. Number of Hydrants

8.8.1.4. Click Done

8.8.2. Resize the widget by dragging the column width to 30 %

8.9. Add Elements

8.9.1. Add Pie Chart

8.9.1.1. Select the FireHydrant layer again

8.9.1.2. Select Grouped Layer

8.9.1.3. For Category Field select Hydrant Type

8.9.2. Add Action

8.9.2.1. Click Filter

8.9.2.2. Toggle on all accept Wards

8.9.3. Click Done

8.10. Drag the new widget and dock it under the indicator widget

8.11. Click Save

8.12. Click Done



Well done! You've managed to complete the field support project by configuring Field Maps with supportive Assignment in Workforce. You also configured an ArcGIS Dashboard to monitor and evaluate the field progress.

Ask the Trainer to demonstrate the integrated solution.

Thanks for your attendance.