ESRI EXTERNAL

# ArcGIS Solutions: Archived help

## ArcGIS Enterprise 10.5 - 10.8

Updated November 2023

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# 3D Basemaps

This solution documentation has been archived and is no longer updated. Content and links may be outdated. The capabilities have been replaced with 3D Buildings and Tree Data Management.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
| --- | --- |

## Introduction to 3D Basemaps

3D Basemaps can be used to author and maintain a 3D basemap for your organization.

It provides a series of workflows that streamline the creation and maintenance of a 3D basemap that supports diverse information needs. This optimized approach allows organizations to use existing data (for example, lidar, building footprints, utilities) and generate 3D visualizations that increase understanding and community engagement. 3D Basemaps is typically implemented by planning departments, emergency management agencies, GIS departments, and utilities that want to use 3D basemaps to visualize the built environment.

The 3D Basemaps solution delivers a set of capabilities that help you use existing data (for example, lidar, building footprints, utilities), develop a standard set of 3D layers, and visualize your community in an immersive way.

## Requirements

The 3D Basemaps solution requires the following:

- ArcGIS Enterprise 10.6 - 10.8.1
- ArcGIS Pro 2.6 - ArcGIS Pro 2.9 (Advanced)
  - ArcGIS 3D Analyst extension
  - ArcGIS Spatial Analyst extension

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# Information products

3D Basemaps includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| 3D Basemaps | An ArcGIS Pro project used by GIS analysts and mapping technicians to create and maintain a 3D basemap for their organization | GIS Professional Advanced |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.2 | • Added an integrated mesh editing and maintenance workflow<br>• Added the ability to color trees in lidar point clouds<br>• Lidar class codes can now be preserved when classifying trees using deep learning<br>• Improved stability of footprint segmentation<br>• Fixed an issue with extracting tree points using cluster analysis |
| 1.1 | • Added deep learning for tree classification in lidar<br>• Added tree extraction using cluster analysis<br>• Significantly improved the performance and quality of building footprint extraction<br>• Added links to 3D analysis solutions that can use 3D basemaps layers<br>• Fixed an issue with building footprint extraction in ArcGIS Pro 2.6 |
| 1.0 | • First release of 3D Basemaps |

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# Use 3D Basemaps

The 3D Basemaps solution delivers a set of capabilities that help you leverage existing data (for example, lidar, building footprints, utilities), develop a standard set of 3D layers, and visualize your community in an immersive way.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

# Get to know 3D Basemaps

You will assume the role of a mapping technician responsible for creating a 3D basemap for your community. The 3D Basemaps ArcGIS Pro project includes a series of tasks to help guide you through these workflows. The first set of tasks will help you get to know 3D Basemaps.

1. Start the ArcGIS Pro application and open the 3D Basemaps project.
2. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
3. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **Getting to know 3D Basemaps** task and go through the various subtasks.

## Understand the 3D Basemaps solution

The 3D Basemaps solution uses existing data within the organization such as lidar, building footprints, power lines, and underground pipe features. Your 3D basemap can be created at different levels of detail (LOD) depending on the quality of the input lidar data. This first task will guide you through the data requirements and help you learn how you can utilize your 3D basemap in other workflows and applications.

## Download sample data

Sample data is provided to help you learn how to use the 3D Basemaps solution. Click to expand the **Getting to know 3D Basemaps** task group and double-click on **Download sample data** task. Click the **sample data** hyperlink to download sample data for Naperville and Philadelphia. Using the sample data the first time will help you learn how to use the tasks and how to organize your data.

## Start using 3D Basemaps

The 3D Basemaps project includes a task workflow that provides a structured sequence using tasks and steps. Follow the steps in this task to learn how to use the 3D Basemaps solution.

# Publish data for your 3D Basemaps

After you have reviewed the Get to know 3D Basemaps section, you can begin using the solution with your data. The following set of tasks will help you learn how to use 3D Basemaps.

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1. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
2. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **How to use 3D Basemaps** task and go through the various subtasks.

# Publish ground elevation surface

Detailed elevation layers can be automatically generated from the input lidar data. These layers are used to create buildings and vegetation layers. The ground elevation layer can be used to enhance the existing elevation in your 3D scene.

To publish your ground elevation surface, click the **Publish ground elevation surface** task and follow the steps provided.

## Extract elevation surfaces from LAS dataset

This task extracts three elevation surfaces from the LAS dataset: a ground elevation (dtm), a surface elevation (dsm), and a normalized surface elevation (ndsm). These surfaces are used to create buildings and vegetation layers. The ground elevation layer can also be used to improve the ground in your scene.

## Publish ground elevation

This task publishes the ground elevation layer to your organization. Reprojection to Web Mercator with height in meters is only required if you want to use the published layers in a global web scene.

# Publish buildings

Buildings with simple roof structures can be generated automatically from the lidar. Attributes such as building height, eave height, and the roof form are extracted from the lidar and added to the building footprints. Procedural rules are then used to create the 3D roof structures. High-density lidar (point spacing less than 3 feet) and building footprint segmentation are needed to model complex roof structures.

**Note:**

The quality of the roof structures is dependent on the quality of the input lidar and building footprint data. A lidar point spacing of 3 feet or less is required, 1 foot or less is recommended. Building footprints with one roof type within their boundary (for example, suburban areas) will produce higher-quality roof structures than footprints with multiple roof types (for example, city centers). These footprints require splitting, segmentation, and updating of the roof form attributes.

To publish your buildings, expand the **Publish buildings** group task and follow the steps provided.

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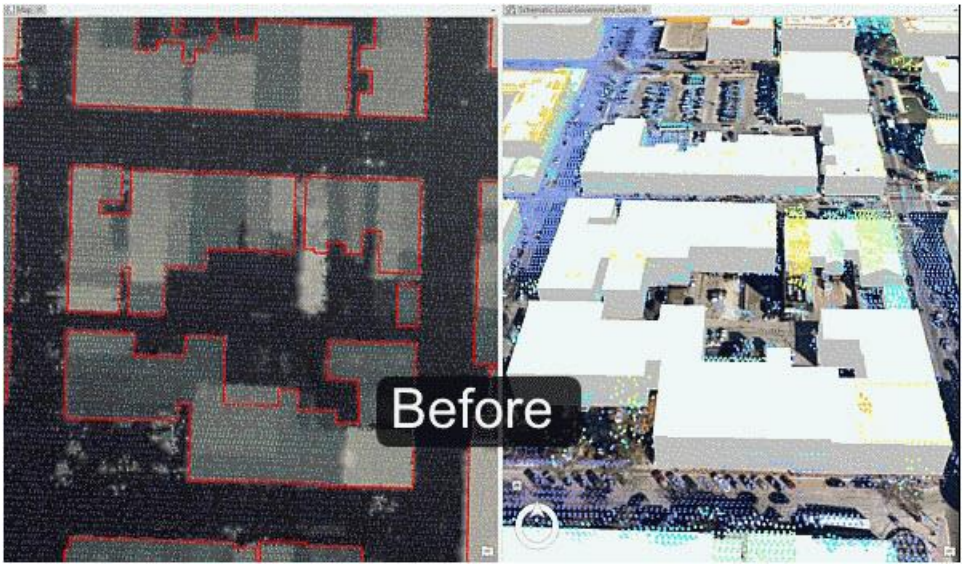
## Extract building footprints (optional)

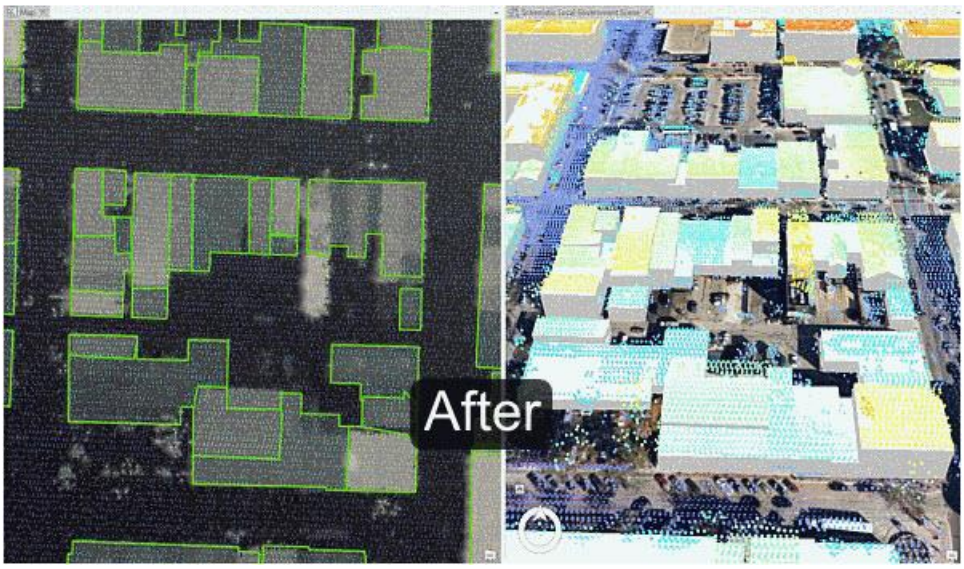
Run the **Extract building footprints** task to optionally extract building footprints from lidar. It is not required if you have an accurate footprint feature class.

## Preprocess building footprints (optional)

Run the **Preprocess building footprints** task to prepare the building footprints for a realistic 3D visualization. Some building footprints may contain several roof types and roof parts. To accurately represent these buildings, they need be split into their separate parts. Building footprints can be split with another feature class or by differences in elevation.




This image shows the result of building extraction before preprocessing of building footprints.

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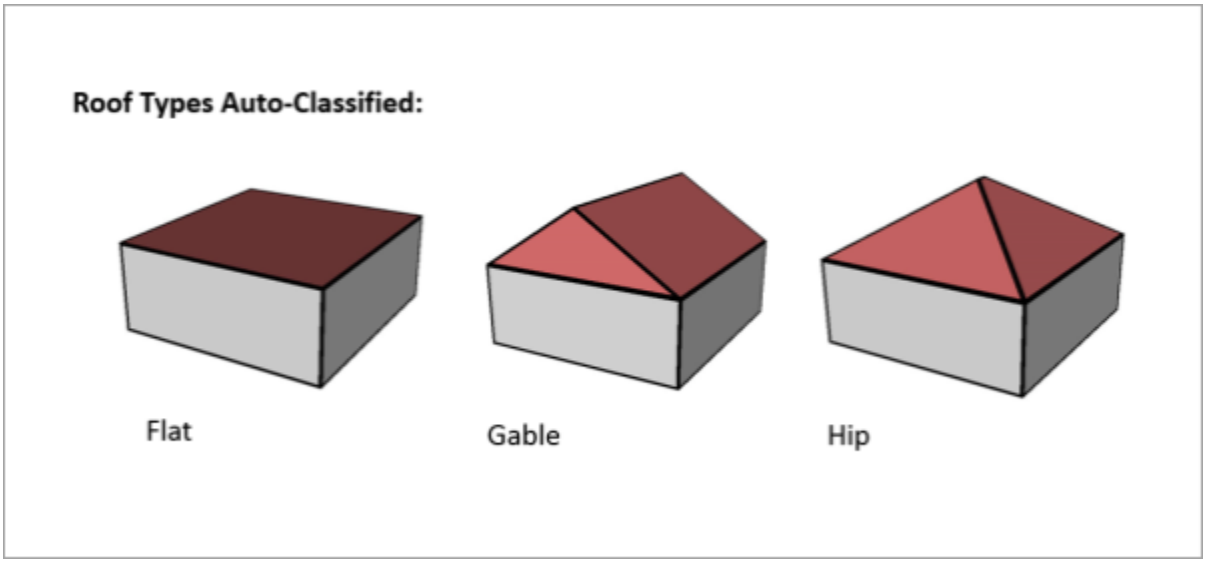
This image shows the result of building extraction after preprocessing of building footprints.

**Tip:**

Separate features of similar size into separate feature classes before running segmentation to improve segmentation quality. Use different spectral and spatial detail for each of these feature classes to tweak the roof segmentation for your data. Merge the feature classes when finished.

## Create buildings

Run the **Create buildings** task to create a 3D building layer. This task uses the elevation surfaces and building footprints to find both flat and sloped planar areas within a roof area of a building. It estimates a standard architectural form for the roof based on the attributes collected from these planar surfaces. These attributes are then used to inform a procedural rule that generates these features in 3D.




This image shows the roof types that will be automatically classified.

## Review buildings

Run the **Review buildings** task to inspect your building roof forms. The **Confidence Measurement** tool reports the following measurement (attribute added to the building footprints):

**Note:**

The **RMSE** field shows the root mean square error of the generated building multipatch to the underlying surface model. The higher this number, the more likely that the building creation encountered an error in classification. In general, a value of 1 meter (3 feet) or less

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is desirable, though this depends on the required application of the output features, and the resolution of the input data.

## Modify buildings

Use the **Modify buildings** task to further improve the quality of the building roof forms. The building roof form is driven by the attributes that are generated by the Create buildings task and by the underlying the building footprint. To refine the building roof form, modify the attributes or the building footprint.

**Tip:**

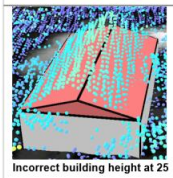
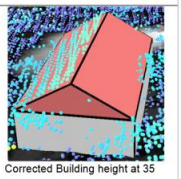
The attributes that control the roof form are building height, eave height, roof direction, and the type of roof are **BLDGHEIGHT,EAVEHEIGHT, ROOFFORM, RoofDirAdjust**. By editing these attributes, you can adjust your building models to better match the lidar data.

| BLDGHEIGHT | EAVEHEIGHT | ROOFFORM | BuildingFID | BASEELEV | ROOFDIR | RoofDirAdjust | RMSE |
|---|---|---|---|---|---|---|---|
| 14.604 | 9.651 | Shed | Building_11 | 676.0673 | 270 | 0 | 20.52087 |
| 20.3991 | 14.3113 | Shed | Building_5 | 676.4396 | 180 | 0 | 20.76236 |
| 12.0947 | 9.3237 | Shed | Building_12 | 675.0941 | 180 | 0 | 10.80013 |
| 40.7024 | 20.3622 | Gable | Building_4 | 675.0016 | 90 | 0 | 28.61115 |
| 23.9771 | 16.05 | Gable | Building_6 | 677.0032 | 90 | 0 | 22.10649 |
| 13.1209 | 8.4976 | Gable | Building_9 | 674.629 | 90 | 0 | 11.42449 |
| 12.7899 | 9.8137 | Shed | Building_17 | 676.435 | 0 | 0 | 12.90138 |
| 30.3233 | 8.9956 | Hip | Building_1 | 673.9857 | <Null> | 0 | 19.56937 |

Building footprint attributes that control the roof form.

### Building height

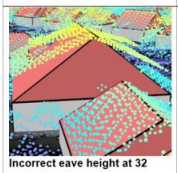
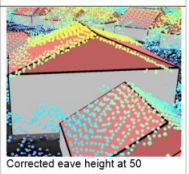
If the ridge of the building is not at the correct height, identify the elevation of a LAS point on the true ridge by clicking the LAS point while having the Explore tool active. You will need to subtract the BASEELEV value from the LAS elevation to get the correct BLDGHEIGHT value.

| Issue | Solution | Result |
|---|---|---|
|  Incorrect building height at 25 | Update the 'BLDGHEIGHT' field for the feature of interest |  Corrected Building height at 35 |

Results of manual updating of the BLDGHEIGHT attribute are shown.

### Eave height

Similar to building height, reference the lidar to obtain the correct eave height. You will need to subtract the BASEELEV from the lidar elevation to get the correct the EAVEHEIGHT value.

| Issue | Solution | Result |
|---|---|---|
|  Incorrect eave height at 32 | Update the 'EAVEHEIGHT' field for the feature of interest |  Corrected eave height at 50 |

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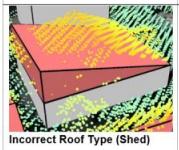
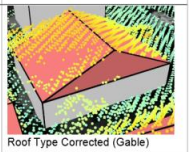
Results of manual updating of the EAVEHEIGHT attribute are shown.

### Roof form

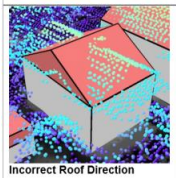
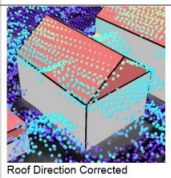
If your roof type does not match the lidar data, change the roof type by choosing the correct roof form from the drop-down list.

| Issue | Solution | Result |
| --- | --- | --- |
|  Incorrect Roof Type (Shed) | Update the 'ROOFFORM' field for the feature of interest to the correct type |  Roof Type Corrected (Gable) |

Results of manual updating of the ROOFORM attribute are shown.

### Roof direction

Adjust the direction of the roof by modifying the RoofDirAdjust field. The default value is 0. A value of 1 will rotate the roof counterclockwise 90 degrees, or a value of 2 will rotate it 180 degrees.

| Issue | Solution | Result |
| --- | --- | --- |
|  Incorrect Roof Direction | Input an integer value (0, 1, or 2) in the 'RoofDirAdjust' field to rotate the direction of the building model counter-clockwise. |  Roof Direction Corrected |

Results of manual updating of the RoofDirAdjust attribute are shown.

### Split roof segments

Some building footprints may contain several roof types and roof parts. To accurately represent these buildings, you can split the footprints into separate features manually and update the attributes for each feature accordingly.

To edit the building footprints, complete the following steps:

1. Select the feature you want to segment.
2. Use the **Split** tool in the Roof Segmentation task, or in the **Modify Features** pane to segment the selected feature.
3. Edit the attributes as needed with the new sections of the building footprint.

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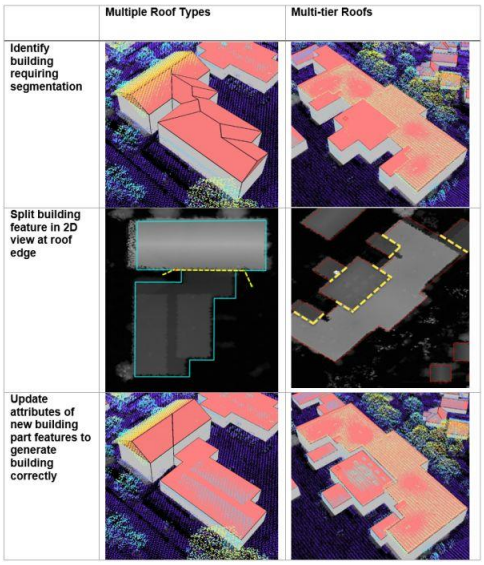


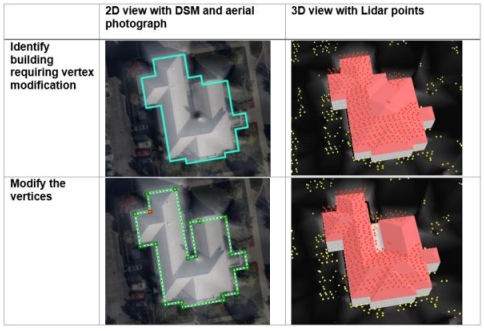

Results of manual splitting of buildings are shown.

### Modify building vertices

Sometimes building footprints may have been created incorrectly and do not represent the building adequately, resulting in lower-quality roof forms.

To edit the building footprints, complete the following steps:

1. Select the feature you want to modify.
2. Use the Vertices tool in the Modify Building Vertices task, or on the **Edit** tab to modify the selected feature.
3. Edit the attributes as needed with the modified building footprint.




Results of manual updating of building vertices are shown.

### Create cross gable roof forms

You can also use vertex editing to make cross gable roof forms. To do so, complete the following steps:

1. Select the feature you want to modify.

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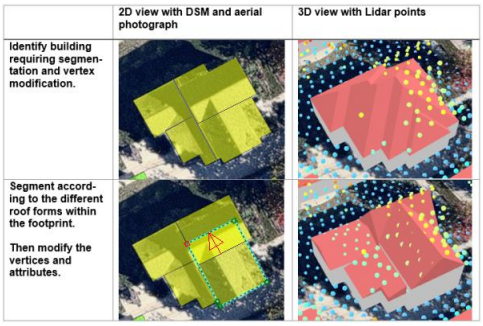
2. Use the **Split** tool in the Roof Segmentation task, or on the **Edit** tab to segment the building footprint according to the roof forms present within the footprint.
3. Use the **Vertices** tool in the Modify Building Vertices task, or in the **Modify Features** pane to extend one gable roof into the other one.
4. Edit the attributes as needed with the modified building footprint.




Results of manual updating of cross gable roof forms are shown.

## Fuse buildings

If you have segmented some building footprints into separate features, you can use the **Fuse buildings** task to fuse the building features that represent building parts back together in the resulting 3D building features.

> **Note:**
> Review and modification of buildings is done on the building footprint layer with procedural symbology. Fusing saves the modification to multipatch format for texture adding and publishing.

## Add textures to buildings (optional)

Use this task to add realistic textures to the previously extracted buildings.

> **Note:**
> Textures depict generic usage of buildings and are applied based on footprint size. Using high-resolution textures will result in large output, potentially leading to decreased visualization performance.

## Publish buildings layer

This task publishes the building layer to your organization. Reprojection to Web Mercator with height in meters is only required if you want to use the published layers in a global web scene.

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## Update buildings (optional)

Use this task if new lidar is available. It compares an existing 3D multipatch building layer with a new lidar dataset to verify whether there are any updates required due to new construction or demolition. If changes have been detected, these can then be merged back into the original 3D building layer.

To update your existing buildings, you will need the following data:

- Multipatch buildings
- Lidar with ground and buildings classified

The Update Buildings process accomplishes the following purposes:

- Detects changes between input 3D multipatch buildings and new lidar. The output is building update polygons where changes have been detected depending on the input parameters.
- Creates LOD2 update buildings using the building update polygons and the lidar.
- Merges the LOD2 update buildings with the existing 3D buildings.

# Publish floors

Building Floors can be created using the Publish floors task. The input is multipatch buildings, which can come from the Publish buildings task or from other sources such as CityEngine or third-party providers. The output is building floor plates and floor volumes. Floors can be created using a Building Space Use table where the building will be split into tiers or groups of floors, each with their own number of floors, floor height, space use, and color. Alternatively, building attributes such as number of floors, ground floor height, upper floor height, and roof height can be used to create the floors.

> **Note:**
> Splitting buildings into floors can take a long time to run, especially when the initial split failed, and a more time-intensive splitting algorithm must be used. Ensure you only split the buildings that are required. Also, factors such as building size and complexity will affect the processing time.

In the **Task Pane**, click the **Publish floors** task and follow the steps provided.

## Create building floors

This tool splits existing 3D buildings into floors based on building attributes. You can use the buildings created in the Publish buildings task or bring in your own buildings.

One option to create building floors is to use the building space use table to split the building into tiers or groups of individual floors with defined space use. The building space use table has several attributes that describe the different tiers within the building. Each tier has an attribute defining space use, number of floors, floor color, and floor height. The BuildingTypeName attribute is the identifier that links the Building Space Use table to the building features. An

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example building space use table can be found in the tables folder of the 3D basemaps ArcGIS Pro project.

### Create floor volumes

If you require floor volumes, use the Create floor volumes task to create floor volumes out of the 3D floor plates. The Extrude By Attribute geoprocessing tool requires a building feature class with space usage information that includes floor height.

## Publish trees

Tree location, size, and width can be extracted from ground classified lidar as point features. Tree point features are then symbolized using procedural rules and can be schematic or realistic. If trees are classified in the lidar, the quality of the tree extraction will improve.

In the **Task pane**, expand the **Publish trees** group task and follow the steps provided.

### Classify trees in lidar using deep learning

Run this tool to optionally classify trees in the lidar using a deep learning model. Classified trees will improve the vegetation extraction but keep in mind that deep learning is computationally very intensive, and a powerful GPU is needed to process large datasets faster. Depending on data size and available hardware, it can take hours to finish. Start with one LAS file to see processing time on your system.

To work with the deep learning tools in ArcGIS Pro, you need to install supported deep learning frameworks packages. See deep learning frameworks for ArcGIS.

A tree classification model trained by Esri can be downloaded from ArcGIS Living Atlas of the World or you can create your own model using the Training a Deep Learning model for Point Cloud Classification notebook that can be found in the notebooks folder of the 3D basemaps ArcGIS Pro project.

### Extract tree points using surface analysis

Use this tool to extract tree points from the lidar using surface analysis. This type of extraction is faster for large lidar datasets, but the results are less accurate than using cluster analysis for dense lidar (point spacing less than 1.5 feet/0.5 meters).

### Extract tree points using cluster analysis

Use this tool to extract tree points from the lidar using cluster analysis. This type of extraction is slower for large lidar datasets, but the results are more accurate than using surface analysis.

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When creating the 3D trees, make sure to verify the **Vegetation class code**. The correct class codes for vegetation is typically 5. The tool will verify whether your lidar has this code, but trees might be represented by other codes as well. Visually review your lidar and verify what class code tree points have by clicking a tree lidar point. If the vegetation has not been classified, enter the class code that represents the vegetation, for example, 0 or 1.

**Tip:**

Use the Extract tree points using surface analysis tool to create an initial vegetation layer. Run the Extract tree points using cluster analysis tool for lidar files for which you need detailed trees and replace the trees from the initial layer with the more detailed trees where needed.

### Create colorized lidar trees

Classified lidar can also be used directly to visualize trees. This step extracts just the tree points from the input lidar and uses aerial imagery to colorize them.

## Publish bridges

If bridge surfaces are classified in the lidar and the lidar is dense enough, it is possible to extract the bridge surfaces as 3D polygons. 3D bridges can then be created by applying procedural rules.

In the **Task pane**, expand the **Publish bridges** group task and follow the steps provided.

### Create bridges

In the Extract bridge surfaces from lidar step, enter the following:

- **Class Code**—The class code that represents the bridge surfaces.
- **Sampling Value**—Experiment with this value to improve processing speed and output quality.
- **Bridge Area**—This is the minimum area that defines a bridge surface.

**Note:**

The bridge surface should be a separate class code. If bridge surfaces are not classified in the lidar, you can interactively classify the bridge surfaces in ArcGIS Pro.

**Note:**

Only rectangular bridge surfaces and models are supported.

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# Publish power lines

Use your existing GIS data to visualize distribution and transmission lines in 3D. Procedural rules are used to create the 3D support structures and conductors. A wide variety of conductor and tower configurations are supported.

In the **Task pane**, expand the **Publish power lines** group task and follow the steps provided.

## Create transmission lines

Run the Create transmission lines task to create 3D transmission lines. Enter the following:

- **Voltage**—Select the voltage for the transmission line. The values for the voltage list are read from the TowerLUTable table located in the project tables directory. Change these values to modify conductor and tower features.
- **Tower configuration**—Experiment with these parameters to create the desired towers.

## Create distribution lines

Run the Create distribution lines task to create 3D distribution lines. Enter the following:

- **Pole configuration**—Experiment with these parameters to create the desired poles.

**Note:**

Both tools support line and point feature input. You can use existing features, features that have been extracted from lidar, or manually create features. In the case of line features, the vertex locations are used to create towers. In the case of point features, a line and tower attribute must be present. The line attribute should describe which line the points belong to and the tower attribute should describe the tower order per line. Connected lines are not supported.

**Note:**

This tool requires that the Microsoft Access Database Engine driver is installed.

# Publish underground pipes

You can turn your existing 2D underground utility features into 3D features using elevation attributes.

In the **Task pane**, expand the **Publish underground pipes** group task and follow the steps provided.

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### Create gravity mains

Run the Create gravity mains task to create 3D gravity-driven mains. The first time you run this step, you evaluate the current state of the gravity mains and highlight errors. After reviewing the errors and updating fields that are incorrect, run Interpolate gravity mains to calculate any remaining missing values.

### Create manholes

Run the Create manholes task to create 3D manhole features.

### Create laterals

Run the Create laterals task to create 3D lateral features.

### Create a surface trench

Run the Create a surface trench task to better visualize underground pipe features.

## Publish integrated mesh

An integrated mesh is a textured continuous meshed surface capturing a current state of an area or city. They are often derived from drone, aerial, or satellite imagery via photogrammetric processing.

In the **Tasks** pane, expand the **Publish integrated mesh** group task and follow the steps provided.

### Add integrated mesh

This step adds an integrated mesh to your scene. A mesh (.slpk) is typically created from photogrammetric sources, like imagery captured by drones and processed with Drone2Map or SiteScan. There are also several Esri partners that specialize in producing city-scale integrated mesh for purchase.

### Modify integrated mesh

Use this step to make a modification to an integrated mesh layer. You can create a new modification or import from an existing polygon feature layer. Mesh modifications are useful to be able to show other 3D layers such as buildings, trees or bridges together with the integrated mesh.

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### Publish integrated mesh layer

This step publishes the integrated mesh layer to your organization. Reprojection to Web Mercator with height in meters is only required if you wish to use the published layer in a global web scene.

Run **Share as new web scene** to publish the entire scene as web scene to your organization. Remove all the layers that you don't want to publish from the scene before publishing.

Run **Share as scene layer** if you need to add an integrated mesh to an existing web scene.

### Modify integrated mesh in web scene

This tool modifies an integrated mesh in a published web scene without having to republish the entire mesh as a new web scene.

## Publish 3D Basemaps

The 3D basemap is a web scene that can be used across the ArcGIS platform.

In the **Task pane**, expand the **Publish 3D basemap web scene** group task and follow the steps provided.

> **Tip:**
> For more information on creating a web scene, see Get started with scenes.

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# Address Data Management

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
| --- | --- |

# Introduction to Address Data Management

Address Data Management can be used to maintain an authoritative inventory of road centerlines with address ranges, valid road names, site addresses, and related mailing addresses.

It provides a series of workflows and standard address layers that streamline the maintenance of a central address repository that supports diverse information needs (for example, public safety, permitting, utility billing, assessment and taxation, and so on). This optimized approach allows organizations to capture the physical location of an address early in the development process and continuously improve the accuracy of address information over time. Address Data Management is typically implemented by planning departments, public safety agencies, GIS departments, and other local government organizations that want to develop and maintain an address repository that supports a variety of government functions.

The Address Data Management solution delivers a set of capabilities that help you maintain a standard set of address layers that incorporate national guidelines, streamline address data management workflows, and continuously improve the quality of address information.

# Requirements

Address Data Management requires the following:

- ArcGIS Enterprise or 10.7.1 - 10.8.1
- ArcGIS Pro 2.5 or later (Standard or Advanced)
  - ArcGIS Data Reviewer (optional)

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# Information products

Address Data Management includes the following information products:

| Item | Description | Minimum user type |
| --- | --- | --- |
| Address Data Management | An ArcGIS Pro project used to maintain an inventory of road centerlines, valid road names, site addresses, and related mailing addresses | GIS Professional Standard |

# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of Address Data Management |

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# Configure Address Data Management

Learn how to configure the Address Data Management solution to meet specific needs in your organization.

# Configure address data management project

The Address Data Management solution includes an ArcGIS Pro project and sample data you can use to explore data management workflows. When you are ready to configure the project, a series of tasks are included to help you review the schema, make modifications to the maps and layers, load your data, and optionally migrate into ArcGIS Enterprise.

1. Sign in to your ArcGIS organization and browse to the Address Data Management Desktop Application Template.
2. Open the item page and click **Download**.
3. Unzip and open the Address Data Management ArcGIS Pro project.
4. On the **View** tab, in the **Windows** group, click **Catalog Pane**.
5. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **Address Data Management** task.
6. In the **Tasks** pane, expand the **Configure Address Data Management** task group.

## Review schema

Included in the solution is a data dictionary that describes the feature classes, relationship classes, and domains included in the Address Data Management geodatabase.

To review the data dictionary, browse to the `Data Dictionary.htm` file included with the Address Data Management project and open in your default web browser.

## Define spatial reference

The Address Data Management project comes with two file geodatabases. Address Data Management Sample.gdb contains data designed to help test workflows supported in the solution.

Address Data Management.gdb is an empty geodatabase with the same schema and a spatial reference set to Web Mercator. You can use this geodatabase to define your spatial reference and load your data.

To define the spatial reference, follow the steps in the **Define spatial reference** task.

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## Configure maps, layers, and rules

The Address Data Management solution leverages preconfigured attribute rules to automate many of the editing workflows. For example, when you create an address point, a unique ID is automatically generated for the point.

In some cases, you may need to modify the default schema included with the solution to meet your organization's needs. If you need to remove or rename fields that are used in any of the attribute rules, you must first update the rule to remove the reference to the field. Adding new fields does not impact the rules. You may also want to add additional rules or configure the feature templates to set the default attributes applied when a feature is created.

To modify the schema, attribute rules, and feature templates of the layers, follow the steps in the **Configure maps, layers, and rules** task.

## Load your data

When you have completed any schema modifications, you can load your existing data into the Address Data Management layers by following the steps in the **Load your data** task.

## Load into ArcGIS Enterprise

While everything included with the Address Data Management solution is supported in a file geodatabase, some organizations may choose to manage this data in ArcGIS Enterprise.

To copy the Address Data Management schema into ArcGIS Enterprise, follow the steps in the **Load into ArcGIS Enterprise** task.

## Configure data validation

You can use Data Reviewer to validate, maintain, and improve the integrity of your address data. The Address Data Management map includes a collection of preconfigured checks that help you identify and resolve common errors in your address data. You can add, remove, or modify these checks to meet your organization's needs.

To modify the Data Reviewer checks, follow the steps in the **Configure data validation** task.

# Use logical block addressing

Logical block addressing uses the starting address, an interval or distance between unique addresses, and the length of the road segment to calculate the address range for the block. If your organization uses logical block addressing, you can configure attribute rules to automatically calculate the left and right to address from the left and right from address.

To enable the logical block addressing attribute rules, complete the following steps:

1. Start the ArcGIS Pro application and open the Address Data Management project.
2. In the **Contents** pane, right-click the **Local Streets** layer.

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3. From the **Design** menu, choose **Attribute Rules**.
4. In the **Attribute Rules** table, click the **Logical Block Addressing (Left)** rule.
5. In the **Expression Builder** update the value for the addressIntervalDistance and unit to the distance your community uses between unique addresses along a road.

```
// Specify the interval or distance between unique addresses
var addressIntervalDistance = 10;

// Specify the unity of measure. Valid options are feet, meters, yards,
miles, kilometers
var unit = "feet";
```

6. Click the **Save** button on the **Attribute Rules** tab.
7. Click **Enable Rule** in the **Attribute Rules** group on the ribbon.
8. Repeat steps 5 through 7 for the Logical Block Addressing (Right) rule.
9. Click **Save** button on the **Attribute Rules** tab.

# Pull information from an intersecting feature

You can configure additional attribute rules for the site address layer to automatically pull information from an intersecting feature when the address point is created or updated. For example, you can write the name of the municipality, ZIP Code, or the property identification number (PIN) the address falls within and write it to a field within the site address point.

To add an intersecting feature attribute rule to your site addresses layer, complete the following steps:

> **Note:**
> This rule requires both the site addresses feature class and the intersecting feature class be in the same database.

1. In ArcGIS Pro, from the **Contents** pane, right-click the **Site Addresses** layer.
2. From the **Design** menu, choose **Attribute Rules**.
3. From the **Attribute Rules** table, click the **Add Rule** drop-down arrow and choose **Add Immediate Calculation Rule**.
4. Provide a **Rule Name** and **Description** for your rule.
5. Click the **Field** drop-down arrow and choose a field in your Site Addresses layer where you want to write the attribute from the intersecting feature.
6. Click **Expression Builder** to open the Expression Builder dialog box.
7. Copy the code below and paste it into the Expression Builder.

```
// replace 'FeatureClassName' with the name of the feature class to pull
intersecting features from (ex. Cities, ZipCodes, Parcels)
var intersectingFeatures = Intersects(FeatureSetByName($datastore,
```

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```
"FeatureClassName"), $feature);
for (var feature in intersectingFeatures) {
     // replace 'fieldname' with the name of the field from the
intersecting feature to pull the value from
     var value = feature.fieldname;
      if (IsEmpty(value)) continue;
     return value;
}
return null;
```

8. In the code, find and replace the text `FeatureClassName` with the name of the feature class to pull intersecting features from (for example, `Cities`, `ZipCodes`, or `Parcels`).
9. In the code, find and replace the text `fieldname` with the name of the field from the intersecting feature to pull the value from.
10. Click the **Verify** button and click **OK** to close the Expression Builder dialog box.
11. In the details pane, under **Triggers**, check **Insert**. If you want the rule to run when the address is moved as well, check **Update**.
12. Click the **Save** button on the **Attribute Rules** tab.

    This button is unavailable if you have any pending feature edits. Save or discard your edits to enable the **Save** button.

    Note:

    The rule is now active. When you create a site address point, the rule runs and pulls the attribute of the intersecting feature into the field specified by the rule. Repeat the steps above to add additional rules for different feature classes and field values.

    Tip:

    The code above is configured to return null if no intersecting features are found, and if multiple intersecting features are found (overlapping polygons), it returns the first nonnull feature attribute found. Below are some additional code samples for other common scenarios.

## Return multiple intersecting feature values as a comma-delimited list

Copy this code and paste it into the Expression Builder dialog box to return a list.

```
// replace 'FeatureClassName' with the name of the feature class to pull
intersecting features from (ex. Cities, ZipCodes, Parcels)
var intersectingFeatures = Intersects(FeatureSetByName($datastore,
"FeatureClassName"), $feature);
var values = [];
for (var feature in intersectingFeatures) {
     // replace 'fieldname' with the name of the field from the intersecting
feature to pull the value from
     var value = feature.fieldname;
     if (IsEmpty(value)) continue;
     values [Count(values )] = value;
```

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```
}
return Concatenate(values, ", ");
```

### Return multiple intersecting feature values as a statistic (Mean, Min, Max, Sum)

Copy this code and paste it into the Expression Builder dialog box to return statistic values.

```
// replace 'FeatureClassName' with the name of the feature class to pull
intersecting features from (ex. Cities, ZipCodes, Parcels)
var intersectingFeatures = Intersects(FeatureSetByName($datastore,
"FeatureClassName"), $feature);
var values = [];
for (var feature in intersectingFeatures) {
     // replace 'fieldname' with the name of the field from the intersecting
feature to pull the value from
     var value = feature.fieldname;
     if (IsEmpty(value)) continue;
     values[Count(values)] = value;
}
return Mean(values);
```

## Publish address locators

You can author the address locators described below in ArcGIS Pro from the layers managed in the Address Data Management solution:

- Composite
- Dual Range
- Site address
- Road name

Once you have authored the locators, you can use them in ArcGIS Pro to locate places using addresses along the left or right side of a road, rooftop address locations, and road names. You can also share the locators with your organization and use them in many ArcGIS Solutions.

Learn how to create an address locator and more about the components of an address locator in the ArcGIS Pro help.

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# Use Address Data Management

The Address Data Management solution delivers a set of capabilities that help you maintain a standard set of address layers that incorporate national guidelines, streamline address data management workflows, and continuously improve the quality of address information.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

# Manage address data

You will assume the role of a mapping technician responsible for maintaining an inventory of road centerlines, valid road names, site addresses, and related mailing addresses. The Address Data Management ArcGIS Pro project includes a series of tasks to help guide you through these workflows.

1. Sign in to your ArcGIS organization and browse to the Address Data Management Desktop Application Template.
2. Open the item page and click **Download**.
3. Unzip and open the Address Data Management ArcGIS Pro project.
4. On the **View** tab, in the **Windows** group, click **Catalog Pane**.
5. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **Address Data Management** task.
6. In the **Tasks** pane, click the **How to Use Address Data Management** task group to expand the collection of tasks.

## Add new roads

Roads are line segments representing centerlines of all roadways or carriageways that support address geocoding and mapping. They are also a resource for the agencies responsible for the active management of the road network. Typically, this information is compiled from orthorectified aerial imagery and record drawings.

The road features leverage a valid list of road names that can be assigned to a road and subsequent site address. The Master Road Names table includes the unique elements of a road name (for example, direction, name, and type) and uses an attribute rule to create a full road name. To ensure data integrity, a road name index is derived from the Master Road Names table and used to populate official road names when creating new road centerlines and site addresses.

The feature classification and type schema for the roads is based on a functional classification of roads provided by the Federal Highway Administration (FHWA). Specific attributes and default values vary for each feature type.

To update the road name index and add new roads, follow the steps in the **Add new roads** task.

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## Add site addresses

Site addresses represent the location of a site or service delivery address assigned by a local government. Typically, site addresses are placed on top of the associated structure. Alternatively, they may be placed at the center of a parcel or in close proximity to the curb cut.

Site addresses are related to two other address layers:

- Address points that represent the location along the road network where the specific site or service delivery address has been assigned.
- Entrance points that represent the location where the public, or a service provider, gains access to the specific site address. In urban settings, an entrance point can represent a driveway for a home that is on a corner lot and the address is assigned off an adjacent road. In rural areas, an entrance point can represent a shared driveway that provides access to many homes. Entrance points are optional and can be added on a case-by-case basis.

Each site address may have one or more postal addresses associated with it. Postal addresses provide contact information for the owner or occupant of the building or buildings associated with a site address. The Owner / Occupant field indicates whether the postal address is for the owner, occupant, or both.

The feature classification and type schema for the site addresses is based on a status field. This status field allows local governments to identify pending, temporary, and current addresses.

To add a new site address and one, or more, related postal addresses and building entrances, follow the steps in the **Add site addresses** task.

## Update road names

Road names may change during the plan review process and as a result, pending road names must be updated. When updates are made to the Master Road Names table and road name index, the changes are pushed to the road and site address features to ensure data integrity is maintained.

To modify a pending road name and update related features, follow the steps in the **Update road names** task.

## Modify road and address parity

In some cases, roads were not drawn in the direction of ascending address ranges and the direction of the line must be flipped to improve address geocoding. This may also mean the address range parity is incorrect and must be flipped as well.

To modify the road direction or address parity, follow the steps in the **Flip roads and swap parity** task.

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## Create road intersections

When creating new roads, existing roads are split at intersections along the new road. An inventory of road intersections with the names of relevant crossroads is often required by 911 systems and to manage right-of-way assets.

To create road intersections, follow the steps in the **Create road intersections** task.

## Validate address integrity

You can use ArcGIS Data Reviewer to validate, maintain, and improve the integrity of your address data. The Address Data Management map includes a collection of preconfigured checks that help you identify and resolve common errors in your address data.

To validate address integrity, follow the steps in the **Validate address data** task.

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# Address Field Operations

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
| --- | --- |

# Introduction to Address Field Operations

Address Field Operations can be used to crowdsource missing address information from stakeholders, manage address fieldwork, and collect and verify address information while in the field.

Current and accurate address data is an essential requirement for a variety of functions, including emergency management, as well as administration, research, publications, mapping, routing, navigation, and many other purposes. Successful address authorities assign addresses early in the development life cycle and improve the integrity of their address repository with quality control procedures that incorporate feedback from stakeholders. Address Field Operations is typically implemented by planning departments, public safety agencies, GIS departments, and other local government organizations that want to continuously improve an address repository that supports a variety of government functions.

The Address Field Operations solution delivers a set of capabilities that help you solicit missing or inaccurate address information from internal and external stakeholders, verify these submissions in the office, or create work assignments and dispatch staff to verify and collect new address information from a mobile device in the field.

# Requirements

Address Field Operations requires the following:

- ArcGIS Enterprise 10.8 - 10.8.1
- ArcGIS Workforce
- ArcGIS Collector

# Information products

Address Field Operations includes the following information products:

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| Item | Description | Minimum user type |
| --- | --- | --- |
| Address Crowdsourcing | An ArcGIS Survey123 form used by addressing staff to crowdsource missing address information from stakeholders. | Editor |
| Address Assignments | An ArcGIS Workforce Classic project used by addressing staff to manage address field operations. Field users access the Address Assignments project using the Workforce for ArcGIS mobile app. | Field Worker |
| Address Field Inventory | An ArcGIS Collector map used by addressing staff to collect address information while in the field. | Field Worker |

# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of Address Field Operations |

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# Use Address Field Operations

The Address Field Operations solution delivers a set of capabilities that help you solicit missing or inaccurate address information from internal and external stakeholders, verify these submissions in the office, or create work assignments and dispatch staff to verify and collect new address information from a mobile device in the field.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

## Submit a missing address

You will first assume the role of an employee in the public works department. When attempting to issue a permit, you search for an address, but no result is returned. You will use the Address Crowdsourcing form to report the missing address.

1. Sign in to your ArcGIS organization and browse to the Address Crowdsourcing form.
2. Open the item page and click **Open in Survey123 > Open in browser**.
3. In the Address Crowdsourcing form, fill in the following details:

| Questions | Answers |
|---|---|
| **Address Number** | Type an address number. |
| **Full Road Name** | Type the name of a road. |
| **Municipality** | Type the name of your municipality. |
| **Select Location** | Zoom and pan in the map to the approximate location of the missing address. |
| **Full Name** | Type your name. |
| **Email** | Type your email address. |
| **Phone** | Type your phone number. |

4. Click **Submit**.

## Assign a missing address for verification

You will now assume the role of a supervisor at an addressing authority. As a supervisor, you are responsible for assigning field crews to verify missing or incorrect address reports from stakeholders. Using the Address Assignments ArcGIS Workforce Classic project, you will create a new assignment using the missing address report and assign it to one of your mobile workers.

1. Verify that you are signed in to your ArcGIS organization and click the **Apps** button in the header of the site.
2. From the app launcher, click **Workforce** to open the app.
3. Under **Classic projects**, click Address Assignments to open the project.

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Tip:

When implementing the Address Field Operations solution in your organization, you must add anyone responsible for verifying addresses in the field to the Address Assignments ArcGIS Workforce Classic project with a Mobile Worker role. You can add users and assign roles in the configuration settings of the project. To access configuration settings, hover over **Address Assignments** project and click **Configure**. Click the **Users** tab. For the purposes of this exercise, ensure your named user account is assigned as a dispatcher and as a mobile worker. Click **My Projects** tab to return to your projects.

4. On the map, select the address you created in the previous section and click the **+ Create Assignment** at the bottom of the pop-up window.
5. From the **Create Assignment** panel, fill in the following details:
   - For **Assignment Type**, choose **Verify Address**.
   - For **Assigned to**, choose a worker.
   - For **Priority**, choose **Medium**.
   - For **Due Date**, choose tomorrow.
6. Click **Create Assignment**.

# Verify missing addresses

You will now assume the role of a mobile worker at an addressing authority. As a mobile worker, you are responsible for verifying missing or incorrect address reports. Using the Address Assignments ArcGIS Workforce Classic project, you will review and update the status of your assignments and open the Address Field Inventory map in ArcGIS Collector to verify missing addresses.

1. Download Workforce for ArcGIS and ArcGIS Collector apps onto your mobile device.
2. Open the Workforce for ArcGIS app and sign in to your ArcGIS organization.
3. Tap the **Address Assignments** project.
4. Tap **Verify Address** from the **To Do** list.
5. Tap **Start**.
6. From the overflow menu, tap **Collect at Assignment**.

   This opens the Address Field Inventory map in ArcGIS Collector and defaults to the location of the assignment and drops a pin.
7. Tap **Close** to cancel the dropped pin.
8. Tap the missing address point at the same location.
9. Tap **Edit** to modify the details of the address.

   At this point, verify the details of the address and make any necessary changes to the attributes and location of the address.
10. Tap **Verified** and tap **Yes**.
11. Tap **Submit**.

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The address point changes from red to green and now reflects any edits you made during verification.

12. Return to the Workforce for ArcGIS app and tap **Finish** to complete the assignment.

# Collect new addresses

You will continue your role as a mobile worker at an addressing authority. You are responsible for collecting addresses for a new subdivision in the community. You will use the Address Field Inventory map in ArcGIS Collector to collect new addresses in the field.

1. From your mobile device, open the ArcGIS Collector app.

   Tap the back arrow, if necessary, to go back to the **Maps** list.

2. Tap the **Address Field Inventory** map.
3. Tap **Add**.
4. By default, the point is set at your current location. Adjust the location on the map as necessary and tap **Add Point**.
5. Swipe up and enter the details of the address.

   When adding multiple addresses, they may have common attributes such as the road name and municipality. You can create a copy of an existing address point by selecting it and tapping **Copy**.

6. Tap **Submit**.

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# Adopt-A-Catch Basin

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
| --- | --- |

# Introduction to Adopt-A-Catch Basin

Adopt-A-Catch Basin can be used to operate catch basin adoption programs that allow volunteers to adopt storm drains and clean them for the community.

Adopt-A-Catch Basin programs seek to improve water quality, decrease localized flooding, and reduce maintenance costs by leveraging individual volunteers and organizations to clean drains and keep water flowing. Program volunteers are typically asked to inspect their drains; remove leaves, trash, and other debris; and report damage or clogs at regular intervals. In some cases, they may even be asked to check on an adopted drain before a forecasted storm. This simple action has a big impact on the cleanliness of local waterways and reduces the chance of localized flooding during a storm. Adopt-A-Catch Basin is typically implemented by public works agencies or utilities that want to engage the community and maximize the capacity of operations staff.

The Adopt-A-Catch Basin solution delivers a set of capabilities that help you engage volunteers to keep catch basins clear of debris and functioning properly, manage participants, and monitor the adoption program.

# Requirements

Adopt-A-Catch Basin requires the following:

- ArcGIS Enterprise 10.7 - 10.8.1
- ArcGIS Pro 2.5 or later (Basic, Standard, or Advanced)
- ArcGIS Web AppBuilder (Developer Edition) 2.11 or later
- SMTP Server

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# Information products

Adopt-A-Catch Basin includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Adopt-A-Catch Basin | An ArcGIS Hub site used by the general public to learn how they get involved in the Adopt-A-Catch Basin program | Not required |
| Adopt-A-Catch Basin | An ArcGIS Pro project package used by stormwater personnel to configure the Adopt-A-Catch Basin app and publish supporting web tools to ArcGIS Enterprise | GIS Professional Standard with Web tool publisher permission |
| Adopt-A-Catch Basin Manager | A Crowdsource Manager app used by stormwater personnel to manage Adopt-A-Catch Basin participants | Editor |
| Adopt-A-Catch Basin Dashboard | An ArcGIS Dashboards app used by stormwater personnel to monitor the Adopt-A-Catch Basin program | Viewer |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | • First release of Adopt-A-Catch Basin |

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# Configure Adopt-A-Catch Basin

Learn how to configure the Adopt-A-Catch Basin solution to meet specific needs in your organization.

# Publish the Adopt-A-Catch Basin app

The Adopt-A-Catch Basin solution includes an ArcGIS Pro project used to publish the Adopt-A-Catch Basin app. When you are ready to publish the app, a series of tasks is included to help you get started.

## Get started

Use the ArcGIS Pro project to familiarize yourself with Adopt-A-Catch Basin.

1. Sign in to your ArcGIS organization and browse to the Adopt-A-Catch Basin Project Package.
2. Open the item page and click **Download**.
3. Browse to and open the Adopt-A-Catch Basin project.
4. On the **View** tab, in the **Windows** group, click **Catalog Pane**.
5. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **Adopt-A-Catch Basin** task.
6. In the **Tasks** pane, expand the **Getting to Know Adopt-A-Catch Basin** task group.
7. Double-click **Understanding Adopt-A-Catch Basin** task to review it.

## Configure Adopt-A-Catch Basin

Use the ArcGIS Pro project to set up Adopt-A-Catch Basin.

1. In the **Tasks** pane, expand the **Configure Adopt-A-Catch Basin** task group.
2. Use the **Configure Adopt-A-Catch Basin** task group to access several tasks that guide you through:
   - Load your catch basins into the CatchBasin feature layer deployed with the solution.
   - Set up a user table in ArcGIS Enterprise to store program participants.
   - Publish the authentication geoprocessing webtool.
   - Configure the Adopt-A-Catch Basin app.

## Contact participants

Use the ArcGIS Pro project to configure tools necessary for contacting participants in the Adopt-A-Catch Basin program.

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1. In the **Tasks** pane, expand the **Contact participants** task group.

   The **Contact participants** task group contains tasks help you contact program participants by sending bulk emails or contacting a selection of participants by local or attribute.

2. Follow the task instructions to configure the bulk email model with your SMTP server and contact participants.

# Configure the Adopt-A-Catch Basin site

The Adopt-A-Catch Basin solution includes the Adopt-A-Catch Basin ArcGIS Hub site that your organization can configure with your branding and can use to share information about participating in the Adopt-A-Catch Basin program with the public.

## Update with organizational information

After deploying the Adopt-A-Catch Basin solution, the Adopt-A-Catch Basin site layout only requires a few updates to fit your local context. Consider what information you already have and what you can most easily find. This information can include the following:

1. Verify that you are signed in to your ArcGIS organization and browse to the Adopt-A-Catch Basin site.
2. Open the item page and click **Configure App**.
3. Click the edit button to open the site editor.
4. Scroll to the **Statistics** section listed under the title of the website.

   The **Catch Basins Adopted**, **Cleaned This Month**, and **Clogged Catch Basins** statistics cards are already linked to the Adopt-A-Catch Basin solution's CatchBasins_public feature layer. These stats automatically update as participants adopt catch basins and report cleanings and issues using the Adopt-A-Catch Basin app.

5. Scroll to the **Adopt a Catch Basin** section, hover over the card and click settings button .
6. Click the **Adopt Catch Basin** button and click **Edit**.
7. Enter the Adopt-A-Catch Basin app published using the Adopt-A-Basin ArcGIS Pro project URL into the **Link Destination** text box and click **Add Link** button.

   Tip:

   Browse to the Adopt-A-Catch Basin app. Open the item page, click **View Application**, and copy the app URL.

8. Scroll to the **Frequently Asked Questions** section, hover over the card and click the settings button, and update the questions and answers.
9. Scroll to the **Stormwater Data** section, hover over the card and click the settings button, and in the site editor under **Data** update the category links using tags, categories, or groups that reference your open data.

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10. To modify your site's footer, click **Customize Toggle** on the side panel.
11. Click **Footer**.

    A custom footer is already provided, and in most cases, it needs to be updated with your organization's branding, contact information, and social media references.
12. Click the **HTML** text box.

    The **HTML** window appears.
13. Make the necessary changes and click **Apply**.
14. Click **Save**.

## Share items with the public

Several layer views, maps and apps included in the Adopt-A-Catch Basin solution must be shared with everyone so they can be accessed by the public on the Adopt-A-Catch Basin site. To share your adopt-a-catch basin items with everyone, use the guide below and complete the following steps:

1. Verify that you are signed in to your ArcGIS organization and browse to the Adopt-A-Catch Basin folder.
2. Check the check box next to each of the items below:

| Item | Name |
|---|---|
| Feature Layer (hosted, view) | CatchBasins_public |
| Web Map | Adopt-A-Catch Basin |
| Web Mapping Application | Adopt-A-Catch Basin |
| Site Application | Adopt-A-Catch Basin |

3. Click **Share**.
4. In the **Share** window, click **Everyone (public)** and click **Save**.

   The **Warning: Sharing editable layers publicly** message appears notifying you that you are sharing editable layers publicly.
5. Click **Update**.

## Deploy related solutions

This site references content from the Citizen Problem Reporter solution. To deploy the Citizen Problem Reporter solution, follow the steps in the Deploy an ArcGIS Solutions section.

## Update solution references

This site references a solution deployed in the previous section. To update your site, complete the following steps:

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1. Verify that you are signed in to your ArcGIS organization and browse to the Adopt-A-Catch Basin site.
2. Open the item page and click **Configure App**.
3. Click the edit button to open the site editor.
4. Scroll to the **Report a Problem** section.
5. Hover over the **Submit Report** card and click settings button .
6. Click on the **Submit Report** button and click **Edit**.
7. Enter the Citizen Problem Reporter app URL in the **Link Destination** text box and click **Add Link** button.

   Tip:

   Browse to the Citizen Problem Reporter app. Open the item page, click **View Application**, and copy the app URL.
8. Hover over the **Contact Call Center** card, click the settings button and edit the phone numbers in the card or remove if not applicable.
9. Click **Save**.

## Share items with the public

Several layer views, maps and apps included in the Citizen Problem Reporter solution must be shared with everyone so they can be accessed by the public on the Adopt-A-Catch Basin site. To share your citizen problem reporter items with everyone, use the guide below and complete the following steps:

1. Verify that you are signed in to your ArcGIS organization and browse to the Citizen Problem Reporter folder.
2. Check the check box next to each of the items below:

| Item | Name |
|---|---|
| Feature Layer (hosted, view) | CitizenProblems_health |
| Feature Layer (hosted, view) | CitizenProblems_utility |
| Feature Layer (hosted, view) | CitizenProblems_blight |
| Feature Layer (hosted, view) | CitizenProblems_road |
| Feature Layer (hosted, view) | CitizenProblems_animal |
| Feature Layer (hosted, view) | CitizenProblems_parktree |
| Feature Layer (hosted, view) | CitizenProblems_trash |
| Feature Layer (hosted, view) | CitizenProblems_landuse |
| Feature Layer (hosted, view) | CitizenProblems_snowice |
| Web Map | Health Problems |

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| | |
|---|---|
| Web Map | Water / Sewer Problems |
| Web Map | Blight Problems |
| Web Map | Road Problems |
| Web Map | Animal Problems |
| Web Map | Park / Tree Problems |
| Web Map | Trash Problems |
| Web Map | Land Use Problems |
| Web Map | Snow / Ice Problems |
| Web Mapping Application | Citizen Problem Reporter |

3. Click **Share**.
4. In the **Share** window, click **Everyone (public)** and click **Save**.

   The **Warning: Sharing editable layers publicly** message appears notifying you that you are sharing editable layers publicly.
5. Click **Update**.

# Adopta widget settings

The Adopt-A-Catch Basin app uses the Adopta widget with preconfigured settings and actions. Optionally, you can modify and expand the Adopta widget's settings to meet your organization's needs. Use the tables below to understand the Adopta widget's configuration settings and capabilities.

## Layer and Authentication settings

The Layer and Authentication settings allow you to configure behaviors as well as the look and feel of the user interface.

| Setting | Description |
|---|---|
| Asset nickname field | Field that stores the catch basin's nickname. |
| Login screen message | Message that appears when signing into the application. |
| Additional signup field | Fields in the UserTable to be displayed in the sign up form in addition to email—for example, add first and last name, address, and phone number. |
| Show asset address | Display the reverse geocoded address of a catch basin in the details view. |
| Asset highlight color | Color of selection symbol displayed around the catch basin symbol when it is selected on the map. |

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| | |
|---|---|
| Tolerance setting | New catch basins are created if no asset is found within the tolerance. |
| My asset symbol | Choose a symbol and set the size of user-adopted catch basins. |

## Actions

The primary actions used for the Adopt-A-Catch Basin app are assign (Adopt) and unassign (Opt out). You can configure additional actions as needed.

| Setting | Description |
|---|---|
| Assign status settings | Allows you to label the button (Adopt) in the asset detail view and specify additional actions that occur after clicking the assign status button. |
| Unassigned status settings | Allows you to configure the unassigned label (Abandoned) in the asset detail view and specify additional actions that occur after clicking the unassigned label. |
| Additional status settings | Allows you add additional actions you want adopters to report on—for example, a damaged catch basins. |
| Primary Status | Displays text and status buttons in the Adopta application—for example, Is the catch basin cleaned? |
| Before action image | Image that is displayed before performing an action. |
| After action image | Image that is displayed after performing an action. |

## Messages

The Adopt-A-Catch Basin app displays messages based on user interaction—for example, Thank you for adopting catch basin name. You can modify messages or create additional messages according to your organization's needs.

| Setting | Description |
|---|---|
| Assign | Message displayed when an asset is successfully assigned. Use '${assetTitle}', for example, to display the title of asset in message. |
| Unassign | Message displayed when an asset is successfully unassigned. |
| Action | Message displayed when action is successfully completed. Use '${actionName}', for example, to display the name of action in message. |
| Asset not found | Message displayed when asset is not found. |

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| | |
|---|---|
| Asset already assigned | Message displayed when asset is already assigned. Use '${assetTitle}', for example, to display the title of asset in message. |
| Unable to perform action | Message displayed when action is not successful. Use ${actionName}, for example, to display the name of the action message. |
| Asset creation | Message displayed when creating a new asset. Use ${layerName}, for example, to display the name of the layer in message. |
| Create asset failed | Message displayed when asset creating fails. |
| User token expired | Message displayed when user token is expired and generated. |
| Signup/Login success | Message displayed after successful sign up or log in. |
| Home screen (when logged in) | Message displayed in widgets home screen after user logs in to the application. |
| Cursor tooltip before login | Message displayed when the user hovers over the map with their pointer before signing in to the application. |
| Cursor tooltip after login | Message displayed when the user hovers over the map with their pointer after signing in to the application. |
| Nickname hint | The text displayed in the nickname hint text box. |

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# Use Adopt-A-Catch Basin

The Adopt-A-Catch Basin solution delivers a set of capabilities that help you engage volunteers to keep catch basins clear of debris and functioning properly, manage participants, and monitor the adoption program.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

**Note:**

Use your organization's data or configured apps to follow these workflows.

## Adopt a catch basin

You'll assume the role of a resident in the community who wants to participate in your city's adopt-a-catch basin program. You'll use the Adopt-A-Catch Basin app to adopt a catch basin near your home and report its condition.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Adopt-A-Catch Basin solution.
2. View the Adopt-A-Catch Basin site.
3. Scroll to the **Adopt a Catch Basin** section, and click the **Adopt Catch Basin** button to open the Adopt-A-Catch Basin app.
4. Enter your email in the **Enter email address** text box and click **Login/Sign Up** to sign up and begin the adoption process. Enter your contact details in the subsequent form and click **Sign Up**.

   The Adopt-A-Catch Basin app sends an email with program details and a link you will use to log in to the app.
5. In the email, click **Login**.

   Returning users also receive an email with a link used to sign in to the app.

   The Adopt-A-Catch Basin app opens in a browser with your newly created user authenticated. Notice the instructions to select a catch basin on map to adopt.
6. Select an available catch basin to adopt (the green symbols on the map). Optionally, add a nickname to your catch basin in the text box. Click **Adopt Catch Basin**.

   Adopt-A-Catch Basin displays a thank you message. The Adopt-A-Catch Basin pane displays your adopted catch basin and allows you to report the condition of the catch basin (for example, cleaned, clogged, or damaged), or abandon the catch basin. You can use the Adopt-A-Catch Basin app to regularly report cleanings and condition.

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# Manage adoptions and participants

You are now a public works agency employee managing the catch basing adoption program. You will use Adopt-A-Catch Basin Manager to resolve reported issues and contact program participants.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Adopt-A-Catch Basin solution.
2. View the Adopt-A-Catch Basin Manager app.
3. In the app, click the **Last Known Condition** column filter.
4. Click **Last Known Condition** drop-down arrow and choose **Damaged** to view all reported damaged catch basins.
5. Click one of the catch basins to view its details.

   Public Works has repaired the catch basin. You'll use the Adopt-A-Catch Basin Manager app to contact the adopter to let them know the catch basin has been repaired.
6. Click the **Email Adopter** button in the lower left corner of the app.

   Adopt-A-Catch Basin Manager opens your email client and presents a preformatted subject.
7. In the app, click the **Edit** button .
8. Click the **Last Known Condition** drop-down arrow to **No Issues**.
9. Click **Save**.
10. Optionally, click the **Manage User's Catch Basin** button to open the Adopt-A-Catch Basin app and manage the catch basins adopted by the selected user.

    You can use this workflow to remove an adopter from a catch basin, making it available for adoption.

# Monitor the program

You will continue your role as a public works employee, this time looking to monitor the Adopt-A-Catch Basin program. You will use the Adopt-A-Catch Basin Dashboard to review key metrics and trends.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Adopt-A-Catch Basin solution.
2. View the Adopt-A-Catch Basin Dashboard app.

   The Adopt-A-Catch Basin Dashboard displays new adoptions and cleaning charts by month and provides management a quick view of program activity over time.
3. On the **Overview** tab, review the high-level metrics.
4. Click the **Catch Basin** tab at the bottom of the dashboard.
5. Click the arrow on the left of the app to display additional filters.

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6. Use the filters in the left panel to explore catch basin status, condition, visibility and last cleaned.

   Tip:

   Dashboard charts are linked. If you click on a month in either **New Adoptions by Month** or **Cleanings by Month** charts, related details are filtered and updated in other elements in the dashboard.

7. Select a catch basin from the **Catch Basins** list or the map to view key details. Optionally, click the **Manage Asset** button in the pop-up to launch the Adopt-A-Catch Basin Manager app.

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# Adopt-A-Stop

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Adopt-A-Stop

Adopt-A-Stop can be used to operate stop adoption programs that allow volunteers to adopt transit stops and clean them for the community.

A transit ride begins and ends at a stop, and a rider's overall experience includes not only the ride, but their time spent at transit stops. Adopt-A-Stop programs seek to improve this experience and reduce maintenance costs by leveraging individual volunteers and organizations to clean transit stops. Program volunteers are typically asked to inspect their stops, remove trash, and report graffiti or serious damage at regular intervals. This simple action has a big impact on rider satisfaction, safety around the stop and the quality of life in a neighborhood. Adopt-A-Stop is typically implemented by transit agencies that want to engage the community and maximize the capacity of operations staff.

The Adopt-A-Stop solution delivers a set of capabilities that help you engage volunteers to keep transit stops clean, manage participants, and monitor the performance of the adoption program.

# Requirements

Adopt-A-Stop requires the following:

- ArcGIS Enterprise 10.7 - 10.8.1
- ArcGIS Web AppBuilder (Developer Edition) 2.11 or later
- ArcGIS Pro 2.5 or later (Basic, Standard, or Advanced)
- SMTP Server

Information products

Adopt-A-Stop includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Adopt-A-Stop | An ArcGIS Hub site used by the general public to learn how to get involved in the Adopt-A-Stop program | Not required |

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| | | |
|---|---|---|
| Adopt-A-Stop | An ArcGIS Pro project package used by transit personnel to configure the Adopt-A-Stop app and publish supporting web tools to ArcGIS Enterprise | GIS Professional Standard with Web tool publisher permission |
| Adopt-A-Stop Manager | A Crowdsource Manager app used by transit personnel to manage Adopt-A-Stop participants | Editor |
| Adopt-A-Stop Dashboard | An ArcGIS Dashboards app used by transit personnel to monitor the Adopt-A-Stop program | Viewer |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | • First release of Adopt-A-Stop |

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# Configure Adopt-A-Stop

Learn how to configure the Adopt-A-Stop solution to meet specific needs in your organization.

# Publish the Adopt-A-Stop app

The Adopt-A-Stop solution includes an ArcGIS Pro project used to publish the Adopt-A-Stop app. When you are ready to publish the app, a series of tasks are included to help you get started.

## Get started

Use the ArcGIS Pro project to familiarize yourself with Adopt-A-Stop.

1. Sign in to your ArcGIS organization and browse to the Adopt-A-Stop Project Package.
2. Open the item page and click **Download**.
3. Browse to and open the Adopt-A-Stop project.
4. On the **View** tab, in the **Windows** group, click **Catalog Pane**.
5. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **Adopt-A-Stop** task.
6. In the **Tasks** pane, expand the **Getting to Know Adopt-A-Stop** task group.
7. Double-click **Understanding Adopt-A-Stop** task to review it.

## Configure Adopt-A-Stop

Use the ArcGIS Pro project to set up Adopt-A-Stop.

1. In the **Tasks** pane, expand the **Configure Adopt-A-Stop** task group.
2. Use the **Configure Adopt-A-Stop** task group to access several tasks that guide you through:
   - Load your transit stops into the AdoptAStops feature layer deployed with the solution.
   - Set up a user table in ArcGIS Enterprise to store program participants.
   - Publish the authentication geoprocessing webtool.
   - Configure the Adopt-A-Stop app.

## Contact participants

Use the ArcGIS Pro project to configure tools necessary for contacting participants in the Adopt-A-Stop program.

1. In the **Tasks** pane, expand the **Contact participants** task group.

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The **Contact participants** task group contains tasks to help you contact program participants by sending bulk emails or contacting a selection of participants by local or attribute.

2. Follow the task instructions to configure the bulk email model with your SMTP server and contact participants.

# Configure the Adopt-A-Stop site

The Adopt-A-Stop solution includes the Adopt-A-Stop ArcGIS Hub site that your organization can configure with your branding and can use to share information about participating in the adopt-a-stop program with the public.

## Update with organizational information

After deploying the Adopt-A-Stop solution, the Adopt-A-Stop site layout only requires a few updates to fit your local context. Consider what information you already have and what you can most easily find. This information can include the following:

1. Verify that you are signed in to your ArcGIS organization and browse to the Adopt-A-Stop site.
2. Open the item page and click **Configure App**.
3. Click the edit button to open the site editor.
4. Scroll to the **Statistics** section listed under the title of the website.

   The **Stops Adopted** and **Cleaned This Month** statistics cards are already linked to the Adopt-A-Stop solution's AdoptAStops_public feature layer. These stats automatically update as participants adopt stops and report cleanings using the Adopt-A-Stop app.

   The Volunteers stat is provided in a text card but styled to resemble the **Summary Statistics** card; this allows you the option to manually enter a statistic of your choice, independent of the solution data. Update the **Volunteers** stat card with the number of program participants, a metric of your choice, or replace the text card with a **Summary Statistics** card and connect it to the AdoptAStops_public feature layer in a similar fashion to the other dynamic stat cards.

5. Update the **Volunteers** card, hover over the card, click the settings button , and then update the text. To add a **Summary Statistics** card onto the existing row, see Display key metrics section in the Insert charts, tables, and metrics topic. Once the card has been added to the row, hover over the existing **Volunteers** card and click the delete button .
6. Scroll to the **Adopt a Stop** section, hover over the card and click the settings button.
7. Click the **Adopt Stop** button and click **Edit**.
8. Enter the Adopt-A-Stop app URL published using the Adopt-A-Stop ArcGIS Pro project into the **Link Destination** text box and click **Add Link**.

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Tip:

Browse to the Adopt-A-Stop app. Open the item page, click **View Application**, and copy the app URL.

9. Scroll to the **Frequently Asked Questions** section, hover over the card and click the settings button, and update the questions and answers.
10. On the side panel, click **Footer**.

    A custom footer is already provided, and in most cases, it needs to be updated with your organization's branding, contact information, and social media references.
11. Click the **HTML** text box.

    The **HTML** window appears.
12. Make the necessary changes and click **Apply**.
13. Click **Save**.

## Share items with the public

Several layer views, maps and apps included in the Adopt-A-Stop solution must be shared with everyone so they can be accessed by the public on the Adopt-A-Stop site. To share your adopt-a-stop items with everyone, use the guide below and complete the following steps:

1. Verify that you are signed in to your ArcGIS organization and browse to the Adopt-A-Stop folder.
2. Check the check box next to each of the items below:

| Item | Name |
|---|---|
| Feature Layer (hosted, view) | AdoptAStops_public |
| Web Map | Adopt-A-Stop |
| Web Mapping Application | Adopt-A-Stop |
| Site Application | Adopt-A-Stop |

3. Click **Share**.
4. In the **Share** window, click **Everyone (public)** and click **Save**.

   The **Warning: Sharing editable layers publicly** message appears notifying you that you are sharing editable layers publicly.
5. Click **Update**.

## Deploy related solutions

This site references content from the Transit Outreach solution. To deploy the Transit Outreach solution, follow the steps in the Deploy an ArcGIS Solutions section.

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## Update solution references

This site references a solution deployed in the previous section. To update your site, complete the following steps:

1. Verify that you are signed in to your ArcGIS organization and browse to the Adopt-A-Stop site.
2. Open the item page and click **Configure App**.
3. Click the edit button to open the site editor.
4. Scroll to the **Report a Problem** section, hover over the card, and click the settings button .
5. Click the **Submit Report** button and click **Edit**.
6. Enter the Transit Rider Reporter app URL deployed in the Transit Outreach solution in the **Link Destination** text box and click **Add Link**.

   Tip:

   Browse to the Transit Rider Reporter app. Open the item page, click **View Application**, and copy the app URL.
7. Edit the phone numbers in the **Contact Call Center** section or remove if not applicable.
8. Click **Save**.

## Share items with the public

Several layer views, maps and apps included in the Transit Outreach solution must be shared with everyone so they can be accessed by the public on the Adopt-A-Stop site. To share your transit outreach items with everyone, use the guide below and complete the following steps:

1. Verify that you are signed in to your ArcGIS organization and browse to the Transit Outreach folder.
2. Check the check box next to each of the items below:

| Item | Name |
|---|---|
| Feature Layer (hosted, view) | TransitRiderReports_public |
| Form | Transit Rider Reporter |

3. Click **Share**.
4. In the **Share** window, click **Everyone (public)** and click **Save**.

   The **Warning: Sharing editable layers publicly** message appears notifying you that you are sharing editable layers publicly.
5. Click **Update**.

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# Adopta widget settings

The Adopt-A-Stop app uses the Adopta widget with preconfigured settings and actions. Optionally, you can modify and expand the Adopta widget's settings to meet your organization's needs. Use the tables below to understand the Adopta widget's configuration settings and capabilities.

## Layer and Authentication settings

The Layer and Authentication settings allow you to configure behaviors as well as the look and feel of the user interface.

| Setting | Description |
|---|---|
| Asset nickname field | Field that stores the stop's nickname. |
| Login screen message | Message that appears when signing in to the application. |
| Additional signup field | Fields in the UserTable to be displayed in the sign up form in addition to email—for example, add first and last name, address, and phone number. |
| Show asset address | Display the reverse geocoded address of a stop in the details view. |
| Asset highlight color | Color of selection symbol displayed around the stop symbol when it is selected on the map. |
| Tolerance setting | New stops are created if no asset is found within the tolerance. |
| My asset symbol | Choose a symbol and set the size of user-adopted stops. |

## Actions

The primary actions used for the Adopt-A-Stop app are assign (Adopt) and unassign (Opt out). You can configure additional actions as needed.

| Setting | Description |
|---|---|
| Assign status settings | Allows you to label the button (Adopt) in the asset detail view and specify additional actions that occur after clicking the assign status button. |
| Unassigned status settings | Allows you to configure the unassigned label (Abandoned) in the asset detail view and specify additional actions that occur after clicking the unassigned label. |

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| | |
|---|---|
| Additional status settings | Allows you add additional actions you want adopters to report on—for example, damaged stops. |
| Primary Status | Displays text and status buttons in the Adopta application—for example, Is the stop cleaned? |
| Before action image | Image that is displayed before performing an action. |
| After action image | Image that is displayed after performing an action. |

## Messages

The Adopt-A-Stop app displays messages based on user interaction—for example, Thank you for adopting `stop name`. You can modify the messages or create additional messages according to your organization's needs.

| Setting | Description |
|---|---|
| Assign | Message displayed when an asset is successfully assigned. Use '${assetTitle}', for example, to display the title of asset in message. |
| Unassign | Message displayed when an asset is successfully unassigned. |
| Action | Message displayed when action is successfully completed. Use '${actionName}', for example, to display the name of action in message. |
| Asset not found | Message displayed when asset is not found. |
| Asset already assigned | Message displayed when asset is already assigned. Use '${assetTitle}', for example, to display the title of asset in message. |
| Unable to perform action | Message displayed when action is not successful. Use ${actionName}, for example, to display the name of the action message. |
| Asset creation | Message displayed when creating an asset. Use ${layerName}, for example, to display the name of the layer in message. |
| Create asset failed | Message displayed when asset creating fails. |
| User token expired | Message displayed when user token is expired and generated. |
| Signup/Login success | Message displayed after successful sign up or log in. |
| Home screen (when logged in) | Message displayed in widgets home screen after user logs into the application. |
| Cursor tooltip before login | Message displayed when the user hovers over the map with their pointer before logging in to the application. |

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| | |
|---|---|
| Cursor tooltip after login | Message displayed when the user hovers over the map with their pointer after logging in to the application. |
| Nickname hint | The text displayed in the nickname hint text box. |

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# Use Adopt-A-Stop

The Adopt-A-Stop solution delivers a set of capabilities that help you engage volunteers to keep transit stops clean, manage participants, and monitor the performance of the adoption program.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

**Note:**

Use your organization's data or configured apps to follow these workflows.

## Adopt a stop

First, you'll assume the role of a transit rider who wants to participate in your local transit agency's adopt-a-stop program. You'll use the Adopt-A-Stop app to submit an adoption request and report the stop is clean.

1. In a browser, from the Adopt-A-Stop solution, view the Adopt-A-Stop site.
2. Scroll to the **Adopt-A-Stop** section, and then click **Adopt Stop** to open the Adopt-A-Stop app.
3. In the panel on the right, type your email address, and then click **Login/Sign Up** to sign up and begin the adoption process.
4. In the form, type your contact details, and then click **Sign Up**.

   The Adopt-A-Stop app sends an email with program details and a link that you will use to log in to the app.
5. In the email, click **Login**.

   Returning users also receive an email with a link used to sign in to the app.

   The Adopt-A-Stop app opens in a browser with your newly created user authenticated. Notice the instructions to select a stop on map to adopt.
6. Select an available stop to adopt (the gray symbols on the map). Optionally, add a nickname to your stop in the text box. Click **Adopt**.

   Adopt-A-Stop displays a thank you message. The Adopt-A-Stop pane displays your stop as Adoption Pending and allows you to report if the stop is clean or to opt out of adopting the stop. You can use the Adopt-A-Stop app to regularly report cleanings.

## Manage adoptions and participants

You are now a transit agency employee managing the stop adoption program. You will use the Adopt-A-Stop Manager app to approve adoption requests and contact program participants.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Adopt-A-Stop solution.
2. View the Adopt-A-Stop Manager app.

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Pending and adopted stop requests are listed in the table at the top. The table can be sorted and filtered in various ways.

3. In the table, click the **Adoption Status** column filter, and then for **Status is**, choose **Pending**.
4. Click the **Date Adopted** column header and choose **Sort in descending order**.

   The pending adoption requests are now listed with the most recent request at the top.
5. Select a pending adoption request from the table.

   The map selects the stop and zooms to the appropriate location, and the request details open at the bottom left.
6. Review the details.
7. In the details, click the participant's email address to share information about your Adopt-A-Stop program with the participant.

   Adopt-A-Stop Manager opens your email client and presents a preformatted subject.

   After contacting the participant, you are ready to approve the adoption request.
8. In the Adopt-A-Stop Manager app, in the request details, click the **Edit record** button .
9. For **Adoption Status**, choose **Adopted**.
10. Optionally, modify the nickname to ensure it is appropriate to be displayed in Adopt-A-Stop app.
11. Click **Save**.
12. Optionally, click a record in the table, and then in its details, click **Manage Adopter's Stops** to launch the Adopt-A-Stop app and manage the stops adopted by the selected user.

    You can use this workflow to remove an adopter from a stop, making it available for adoption.

# Monitor the program

You will continue your role as a transit agency employee, this time looking to monitor the Adopt-A-Stop program. You will use the Adopt-A-Stop Dashboard to review key metrics and trends.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Adopt-A-Stop solution.
2. View the Adopt-A-Stop Dashboard app.

   The Adopt-A-Stop Dashboard displays new adoptions and cleaning charts by month and provides management a quick view of program activity over time.
3. On the left, adjust filters to explore transit stop status, type, date adopted and last cleaned.

   Note:

   Dashboard charts are linked. If you click a month in either **New Adoptions by Month** or **Cleanings by Month** charts, related details are filtered and updated in other elements in the dashboard.

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4. On the right, select a stop from the list to view key details. Alternatively, click a stop on the map.
5. Optionally, in a pop-up, click **Manage Stop** in the pop-up to launch the Adopt-A-Stop Manager app.

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# Business Resilience

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Business Resilience

Business Resilience can be used to better understand the current status of asset locations.

Organizations focus on allowing key leaders to have constant awareness of threats to the organization. Security and risk teams must be able to have one location that visually communicates information to allow decision makers to take action when a threat occurs or a status changes at a location. Analysts must create assessment reports based on threats or changes to the facility and be able to share these assessments with key leadership at the facility level and up to the C-suite level for actionable decision making. Business Resilience is typically implemented by organizations that want to take a proactive, data-driven approach to plan, manage, and enhance current business operations.

The Business Resilience solution delivers key leadership the ability to share the status of retail stores, manufacturing plants, and other facilities. The solution provides the ability to understand and update the current status and review and share operational assessments to key leaders.

# Requirements

Business Resilience requires the following:

- ArcGIS Enterprise 10.7.1 - 10.8.1
- ArcGIS Survey123 Connect

# Information products

Business Resilience includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Business Resilience Web App | An ArcGIS Web AppBuilder app used by analysts to understand, manage, and maintain the operational status of an organization | Editor |

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| | | |
|---|---|---|
| Operational Assessment Survey | An ArcGIS Survey123 form app used by facility managers to report the facility status | Editor |
| Facility Manager | An ArcGIS Web AppBuilder app used by analysts to maintain an organization's facility information | Editor |
| FacilitySource | An Excel document used to load and validate an authoritative list of facilities into ArcGIS | Not required |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.1 | • An update to the Operational Assessment Survey to support multiple images and automates contact data entry.<br>• An update to the facility layer symbology.<br>• An update to the facility and operational assessment layer schemas. |
| 1.0 | • First release of Business Resilience |

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# Configure Business Resilience

In this topic, you will learn how to configure the Business Resilience solution to meet specific needs in your organization.

## Load data

Organizations can use Business Resilience as a source of information to understand risk to their company's critical infrastructure.

Facility information must be loaded before using the app. Use the FacilitySource file to organize facility information before loading it into ArcGIS. Ensure that you populate the Facility ID column with unique values in the FacilitySource file.

> **Note:**
> Each row in the FacilitySource Excel document must have a unique facility ID; otherwise, your data will not load correctly.

In some cases, you may already have an inventory of facilities in ArcGIS. If you do, review the layers provided with the solution and determine what, if any, source data you would like to load. Then, load your existing data into the layers provided with the ArcGIS Solution before sharing the maps or applications.

> **Note:**
> If you need to load data into the solution, you may want to develop a source-target matrix to track how your source data will be loaded into the target layer or layers used in the solution.

To load your facilities from a spreadsheet, complete the steps below:

1. If necessary, sign in to your ArcGIS organization and browse to the FacilitySource item.
2. Open the item details page.
3. Click **Download**.
4. Edit the Excel file and populate your facility information in the document.

   Note:

   At a minimum, you need to provide a unique facility ID and the latitude and longitude for each facility in the FacilitySource file. If you don't have a unique ID, you can edit the Excel file and copy this formula into the first row of the facilityid column: =CONCATENATE("Facility-", TEXT(ROW(A1),"00000")). You can then drag the right corner of the cell downward to fill the formula for all facilities, giving each a unique ID.
5. In your ArcGIS organization, at the top of the site, click **Content**.
6. On the **My Content** tab, type `facilities` in the search box.
7. On the left under **Folders**, click the folder Business Resilience was deployed to.
8. Click the item title for **Facilities** to view its details.

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9. Click **Update Data** and click **Append Data to Layer**.
10. Under **Filename**, choose your spreadsheet.
11. Click **Upload and Continue**.
12. Under **Choose the layer from FacilitySource.xlsx that contains the updated data**, choose the spreadsheet **Input Data**.
13. Uncheck **Update existing features**

    Note:

    If features exist in the layer that you would like to update, do not uncheck.
14. Click **Show field matching** to map the fields.

    Note:

    While field matching is auto mapped ensure that the fields are properly mapped.
15. Click **Apply Updates**.

# Configure the survey form

To show your facility information in the survey form, you will use ArcGIS Survey123 Connect to make necessary updates. Adding your facility information to the form enables an extra level of data validation to ensure that facility information is correct and the respondent's questions are associated with the correct facility.

## Open the form using ArcGIS Survey123 Connect

If Survey123 Connect is not already downloaded, you can find the download link on the ArcGIS Survey123 Resources page.

1. If necessary, sign in to your ArcGIS organization.
2. At the top of the site, click **Content**.
3. On the **My Content** tab, type `Operational Assessment Survey` in the search box.
4. On the left under **Folders**, click the folder Business Resilience was deployed to.
5. Click the item title for Operational Assessment Survey to view its details.
6. Click **Open in Survey123** and click **Edit in Survey123 Connect**.

   ArcGIS Survey123 Connect opens.

   Note:

   If this is your first time opening ArcGIS Survey123 Connect, you may need to add your organization's portal and sign in. To add the URL, click **Settings**. Then, in the **Settings** window, click **Add Connection** and paste the URL. Click **OK**. After adding the connection, click **Sign in** to sign in to your organization. Verify that the active connection is set to the correct URL.
7. Click the Operational Assessment Survey form to download the survey.

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8. Click the Operational Assessment Survey form again to open the survey.

## Add the facility list

The survey form in ArcGIS Enterprise can be configured to restrict available answers to a list of valid values. This level of data validation mitigates errors due to misspellings. Furthermore, questions will be populated based on the facility selected using the built-in pulldata function.

1. In the left pane, click **Open XLSForm Spreadsheet**.

   An Excel window appears where you are presented with survey property settings. In the row with the label name **survey_facility_id** of the **survey** worksheet, the choice list named **FacilityID** is referenced to prefill a value associated with the facility identifier question.

2. Go to the **external_choices** tab and add a row for each facility ID.

   The tab comprises all the selectable options for the Facility Identifier question.

   Note:

   The **name** column specifies the value of a choice. The selected value is read by the other items in the Business Resilience solution, such as the Facilities layer and the web app. These values cannot include special characters. The **list name** column specifies which question the answer choices belong to. In this case, you will be referencing the Facility Identifier question using the **FacilityID** list name. The **label** column displays the answer choice exactly as it will appear on the form and does not have formatting or special character restrictions like the **name** column. The **externalFilter** attribute must be set to yes for all rows.

3. Save the Microsoft Excel spreadsheet and close it.

## Add the contact data

To prepopulate questions based on the selected facility ID in ArcGIS Enterprise, you can preload a CSV file with data with pertinent facility information. This enables setting the facility ID to automatically populate the manager name, contact information, and facility location.

1. In the left pane of the application, click **Open Survey Content Folder**.

   The file explorer window opens with access to the media subfolder.

   Learn more about how the CSV file prepopulates answers in Survey123

2. Browse to the **media** folder and open **Facilities.csv**.
3. The first column represents the facility ID value that appears in the Facilities layer.

   Note:

   The facility ID in this column connects the facility ID that you added to the survey choices to the facility data. This is the information that appears when a user chooses a facility for the Facility Identifier question.

4. Append the facility information into the corresponding columns.
5. Save the CSV file and close it.
6. In the left pane of the application, click **Update Survey Form**.

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The survey refreshes with the information added to the form.

7. In the form preview in ArcGIS Survey123 Connect, expand the **Facility Location Details** group to reveal the **Facility Identifier** question.
8. Click the drop-down menu to preview the information.

   The available list of values in the drop-down menu is based on the concatenated values you previously calculated.
9. In ArcGIS Survey123 Connect, click **Publish** in the left pane to publish the changes.

# Update the survey URL fields

The Facilities feature layer is used in the Business Resilience Web App to map your facilities, display their data contained in the attribute table, and connect to the Operational Assessment Survey. Complete the steps below to add the survey URLs as attributes in the Facilities layer.

## Acquire the URL of the survey

To get the URL of the survey, complete the following steps:

1. If necessary, sign in to your ArcGIS organization.
2. At the top of the site, click **Content**.
3. On the **My Content** tab, type `Operational Assessment Survey` in the search box.
4. On the left under **Folders**, click the folder Business Resilience was deployed to.
5. Click the item title for Operational Assessment Survey to view its details.
6. Click **Open in Survey123 > Open in Survey123 app**.

   Note:

   A new tab opens, prompting you to open into Survey123 app. Click **Cancel** and remove "&open=native" from the URL to open survey directly into the browser.
7. In the address bar of the browser, copy the survey URL, including the question mark and portalURL= statement.

   Note:

   For example, if the URL is as follows:

   ```
   https://survey123.arcgis.com/share/aee97bcef4d24c9187da9590ec86b67c?portalUrl=https://LearnGIS.maps.arcgis.com
   ```

   This URL will be used to populate the survey URL attributes for the Facilities layer.
8. Paste the URL into a plain text document to keep it available.

## Populate the Base Survey URL field

To populate the **Base Survey URL** field, complete the following steps:

1. If necessary, sign in to your ArcGIS organization.

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2. At the top of the site, click **Content**.
3. On the **My Content** tab, type `Facilities` in the search box.
4. On the left under **Folders**, click the folder Business Resilience was deployed to.
5. Click the item title for Facilities to view its details.
6. Click the **Data** tab.

   A table view of the layer appears.
7. Scroll to the right until you see the **Base Survey URL** field. Click **Base Survey URL** and click **Calculate**.
8. In the **Calculate Field** pane, click Arcade.
9. In the Arcade calculator, type the following:

   ```
   var BaseURL = ””
   ```
10. Copy the URL of the survey from your text document and paste it between the quotation marks.
11. Add a new line and type the following:

    ```
    return BaseURL
    ```
12. Click **OK**.

    The string is added to each record in the Facilities layer's **Base Survey URL** field.

    Note:

    This calculation must be manually run when new features added to the Facilities layer.

## Populate the Assessment Survey URL field

To populate the **Assessment Survey URL** field, complete the following steps:

1. Scroll to the right until you see **Assessment Survey URL**. Click **Assessment Survey URL** and click **Calculate**.
2. In the **Calculate Field** pane, click Arcade.
3. Copy and paste the Arcade expression into the expression box:

   ```
   var BaseURL = $feature["base_survey_url"]
   var JoinedURL = BaseURL + "&field:survey_facility_id=" +
   UrlEncode($feature["facility_id"])
   return JoinedURL
   ```
4. Click **OK**.

   The **Assessment Survey URL** field is populated with URLs that also have the field parameter set to the corresponding facility's ID value.

   Note:

   This calculation must be manually run when new features added to the Facilities layer.

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# Enable live data fields

The Business Resilience Web App utilizes live data feeds that provide information about major hazards, such as severe weather, earthquakes, or hurricanes, that would likely impact assets, and it provides real-time content about these natural disasters. To use these feeds in the app, you first need to enable them in the app.

**Note:**

Real-time data is hosted in ArcGIS Living Atlas, an authoritative data catalog maintained by Esri. You can read more about live feeds in ArcGIS Living Atlas in the Putting the "Live" in Living Atlas of the World blog post.

1. If necessary, sign in to your ArcGIS organization.
2. At the top of the site, click **Content**.
3. On the **My Content** tab, type `Business Resilience Web App` in the search box.
4. On the left under **Folders**, click the folder Business Resilience was deployed to.
5. Click the item title for Business Resilience Web App to view its details.
6. Click **Edit Application**.

   ArcGIS Web AppBuilder opens in edit mode.
7. In the left pane, click the **Attributes** tab.
8. In the **Attribute** pane, click **Subscriber Content Access**.

   The map layers listed are all premium subscriber content that your organization has access to. Enabling this content consumes credits. Learn more about ArcGIS Online information on credits.
9. Check each layer to enable the content.
10. Click **Save**.

    Now that the app is configured, you can view the live feeds.
11. Click **Launch** to view the app.

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# Use Business Resilience

In this topic, you will learn how to use the Business Resilience solution and the set of capabilities and features that it provides.

**Note:**

Use your organization's data or configured apps to follow these workflows.

# Visualize hazards

There are a variety of hazards, such as severe weather, fires, earthquakes, and hurricanes, that have the potential to affect your facilities. Many organizations have large geographic footprints and may be impacted by a diverse array of natural hazards and threats. The Business Resilience solution allows an analyst in an operation center to monitor hazards that may threaten your facilities.

To use the Business Resilience solution to visualize hazards, complete the following steps:

1. In a browser, open the Business Resilience Web App.

   On the right side of the app, the layers pane is divided into the following sections:

   - **Organizational Assets**
   - **Weather Layers**
   - **Drought and Wildfires**
   - **Natural Disasters**

   In the **Organizational Assets** section of the **Layers** pane, the Operational Assessment Survey and Facilities layers are turned on by default.

   Facilities are represented by point features that appear on the map and are symbolized to indicate their status.

   The Operational Assessment Survey layer shows results of surveys that have been submitted by facility managers.

2. In the upper right of the **Weather Layers** section, click the options menu and click **Turn all layers on**.

   These layers contain real-time weather feeds, many of which are published by the National Weather Service. Use these layers to track potential severe weather threats to your facilities.

   To see the symbology for these layers, you can expand them individually by clicking the arrows to the left of the layer visibility check boxes.

3. To optionally view more details on each layer, click the options button and click **Show item details**. Otherwise, in the upper right of the **Weather Layers** section, click the options menu and click **Turn all layers off**.

   Tip:

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You can also use keyboard shortcuts to turn groups of layers on or off and expand or collapse them. Press the Ctrl key and check the layer check box to turn layers on or off in the same level. Press the Ctrl key and click the arrow to expand or collapse a layer in the same level.

4. In the upper right of the **Wildfires and Active Fires** section, click the options menu and click **Turn all layers on**.

   These layers contain the latest up-to-date information on current and ongoing fire-related incidents. Areas suffering drought conditions may be at greater risk of wildfire, so these areas may pose an elevated risk to your facilities. Use these layers to track potential fire-related threats to your facilities.

   To see the symbology for these layers, you can expand them individually by clicking the arrows to the left of the layer visibility check boxes.

5. To optionally view more details on each layer, click the options button and click **Show item details**. Otherwise, in the upper right of the **Droughts and Wildfires** section, click the options menu and click **Turn all layers off**.

6. In the upper right of the **Natural Disasters** section, click the context menu to expand and click **Turn all layers on**.

   These layers contain real-time feeds of the latest natural hazards, such as hurricanes and earthquakes.

   To see the symbology for these layers, you can expand them individually by clicking the arrows to the left of the layer visibility check boxes.

7. To optionally view more details on each layer, click the options button and click **Show item details**. Otherwise, in the upper right of the **Natural Disasters** section, click the options menu and click **Turn all layers off**.

   Tip:

   When you configure the Business Resilience Web App, you can include your own sections, groups, and layers. For example, if you are tracking threats to coastal facilities, you can create another section named **Coastal Threats** and include layers from the National Weather Service, such as **High Surf Advisory**, **Areal Flood Warning**, and **Coastal Flood Watch**.

# Send an assessment survey

The role of an analyst in the operations center is to watch over the multitude of threats that may impact one or more assets within your organization. When a threat has been detected to potentially impact one or more facilities, it is imperative to alert the facility administrators of the possible impact and understand the potential effects of the even on the facility to minimize disruption. The Business Resilience Web App is configured to allow you to quickly send out an assessment to the facility manager.

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## Send an assessment to a single facility

In this workflow, you will take on the role of an analyst who has be alerted to an event that is threatening a facility. You will be sending an assessment form to gather relevant information from the facility manager at the threatened facility.

1. In a browser, open the Business Resilience Web App app if you do not have it open already.
2. Select a facility of interest from the list on the left side of the application or zoom to the location of the facility and click the facility.

   In the pop-up window, general details about the facility are provided.
3. On the pop-up, in the **Notes** section, click the Click here to send **Operational Assessment to Facility Administrator** link.

   An email opens in your email client. It is populated with the email address of the facility manager, the name of the manager, text requesting information about the event, and a hyperlink to a survey that the manager can use to reply with status information.
4. Select the **[INSERT EVENT DESCRIPTION AND DETAILS HERE]** text in the email and add any other information that may be useful to the facility manager in evaluating the threat.
5. Send the email to the manager.

## Send an assessment to multiple facilities

In this workflow, you will take on the role of an analyst who has identified a hurricane event that is threatening multiple facilities. You will be sending assessments form to gather relevant information from the facility manager at the threatened facilities.

1. In a browser, open the Business Resilience Web App if you do not have it open already.
2. Select the **Create Assessment Report** widget in the upper right of the application, above the layers pane.
3. With the Create Assessment Report widget open, define an area of interest by searching for a location in the **Place Name** tool or using the **Draw** tool. Click the **Draw** tool and click the **Select by Rectangle** button.
4. Click **Choose selectable layers** to expand the layer list and select **Hurricane Irma Example – Forecast Cone**. Uncheck all other layers.

   You can use the **Choose selectable layer** list to define the layers that are selectable on the map.
5. On the map, drag a small box on the Hurricane Irma forecast cone feature. This selects the feature from the service, just as it would select a feature in a live Hurricane Forecast feed.
6. Optionally, set a **Buffer distance** value to select facilities that are also within a distance from the selected feature, and click **Report**.

   The report of facilities within the buffer around the forecast cone is generated.
7. In the **Create Assessment Report** pane, click the **Expand** button next to **Facilities** to expand the list.

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The report contains information about each facility, including the facility ID, a survey link, the number of employees at the location, and the manager's name and email address.

8. If you would like a CSV file of selected facilities, click the **Download** button.
9. If you want a PDF report, click the **Print** button, choose a report layout size, and click the **Print** button to generate the report.
10. In the header section of the report web page, click **Print** to save.

    Tip:

    You can get a list of all the email addresses from the downloaded CSV file of selected facilities. Find the email column and copy the facility manager email address to your clipboard, and paste it into your email client to send a report.

# Submit an assessment survey

For an organization to assess impacts, facility managers can share relevant information about the operational status of their facility and the impact of a likely event. The Operational Assessment Survey allows facility managers to submit this information back to the operations center. The survey contains assessment questions about the exterior, interior, and employee vulnerability. This information allows decision makers to understand the threat, prioritize aid, and allocate supporting resources throughout the organization.

In this workflow, you will take on the role of a facility manager at a threatened facility and use the survey link to send status information to the operations center.

1. In a browser, open the Operational Assessment Survey.

   This is a link to the survey for Facility #104.

   Note:

   The URL for the survey includes the facility ID. This ties the survey to a specific facility location and allows the survey to be populated with information about the facility, saving the manager time.

   The survey opens in a browser tab. The **Potential Impact Assessment** section is open with a number of questions that you can answer to communicate your facility's status back to the operations center.
2. Click the header for the top section, **Facility Location Details**.

   The details for your facility are prepopulated in the survey.
3. Complete the **Potential Impact Assessment** section.

| Parameter | Value |
| --- | --- |
| **External Vulnerablity** | Select **Low**. |
| **Interior Vulnerablity** | Select **Negligible**. |
| **Employee Vulnerablity** | Select **Moderate**. |
| **Employee Vulnerablity Extent** | Select **25% to 50%**. |

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| | |
|---|---|
| **Do you foresee the need to possibly temporarily close this location due to this event?** | Select **Maybe/Not Sure**. |
| **Is there a potential need for local evacuation?** | Select **No**. |
| **Describe any relevant information, thoughts, strategies, or issues** | Type relevant information. |

4. Optionally, upload pictures of the facility and of any vulnerability concerns in the **Media** group to provide further context.
5. Once the survey is completed, click the **Submit** button.

# Review assessments

Upon submission of assessment reports, they appear as points on the map. The feedback in the survey is key to assessing the potential impact to the health and safety of customers, employees, and assets while also understanding how to facilitate resources and minimize interruptions.

In this workflow, you will take on the role of the analyst in the command center reviewing an open submission by a facility manager.

1. In a browser, open the Business Resilience Web App app.
2. In the **Facilities** pane on the left side of the Business Resilience web app, expand the **Assessment Status** section if it is not already expanded.

   This group contains a list of assessments by status with the latest submission at the bottom.
3. Click the latest submission in the list.

   The assessment is selected, and the pop-up appears on the map.
4. On the pop-up, in the lower right corner, click the **Options** button and click **Smart Editor**.

   The **Review Assessments** pane appears. You can see the responses the facility manager sent, describing the probable impact of the event on the facility.
5. Review the information provided by the facility manager.
6. Optionally, change the status from **Open** to **Under Review**.
7. Click **Save** and close the **Review Assessments** pane.

   The assessment status changes to **Under Review** on the map and in the **Assessment Status** group. Once the review status is set to **Closed**, the assessment is removed from the list and the map.

# Modify operational status

Upon review of an assessment, an analyst can modify the status of one or more facilities in the organization to reflect its current state for visual awareness. This is important when working with a team that needs to keep track of the overall operational impact to an organization and share the latest information with an executive audience.

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In this workflow, you will take on the role of the analyst in the command center updating the operational status of facilities to reflect their current state.

1. In a browser, open the Business Resilience Web App if you do not have it open already.
2. Zoom in on the map to the facility you want to update.
3. Select the **Modify Facility Status** widget from the upper right of the application, above the layers pane.
4. In the **Modify Facility Status** pane, click the **Select by Rectangle** button.
5. Drag a box around the facility you want to modify.

   The **Modify Facility Status** window appears with multiple drop-down buttons.

   Note:

   You can also select and update multiple facilities at the same time.
6. Enter the following values for the parameters:

| Parameter | Value |
|---|---|
| **Notes** | Manager reports local flooding with the power and gas service out. |
| **Operating Status** | Select **Impacted**. |
| **Electric Service Status** | Select **Impacted**. |
| **Fire System Status** | Select **Operating**. |
| **HVAC Status** | Select **Operating**. |
| **Gas Service Status** | Select **Impacted**. |
| **Water Service Status** | Select **Operating**. |

7. Click **Save**.

   The change in status updates the symbology of update facilities on the map as well as the **Facilities** list on the left side to reflect the current count of facilities by status.

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# Coronavirus Force Readiness

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
| --- | --- |

# Introduction to Coronavirus Force Readiness

Coronavirus Force Readiness can be used to understand force availability and share authoritative information with decision makers during the Coronavirus Disease 2019 (COVID-19) pandemic.

The solution provides units with information regarding which personnel can report for duty and an understanding of their capacity to respond to a request for assistance during the COVID-19 pandemic. Units may be requested to assist in setting up alternate care facilities, detection testing sites, supporting food distribution, and so on. Having personnel perform a routine check-in or having someone from the armory or unit provide the readiness status of a group of personnel gives units clarity into a unit's readiness during the pandemic. Coronavirus Force Readiness is typically implemented by the National Guard, Air National Guard, and other service branches that want to take a data-driven approach to understanding force availability during COVID-19.

The Coronavirus Force Readiness solution delivers a set of capabilities that help you to understand the operational capacity of a force, monitor the status of units, and communicate capabilities and disruptions to commanders and administrative staffs during the COVID-19 pandemic.

# Requirements

Coronavirus Force Readiness requires the following:

- ArcGIS Enterprise 10.7.1 - 10.8.1
- ArcGIS Survey123

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# Information products

Coronavirus Force Readiness includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Admin Dashboard | An ArcGIS Dashboards app used by administrative NCOs to monitor personnel availability. | Viewer |
| Personnel Readiness Dashboard | An ArcGIS Dashboards app used by any unit member to track and monitor personnel readiness and availability. | Viewer |
| Commander's Dashboard | An ArcGIS Dashboards used by commanders to quickly assess the overall unit readiness. | Viewer |
| Personnel Readiness Report | An ArcGIS Survey123 form used by a military unit member to report availability. | Not required |
| Personnel Readiness Batch Report | An ArcGIS Survey123 form used by an NCO or armory clerk to report the availability of their personnel. | Not required |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | First release of Coronavirus Force Readiness |

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# Configure Coronavirus Force Readiness

In this topic, you will learn how to configure the Coronavirus Force Readiness solution to meet specific needs in your organization.

# Extend force readiness surveys

The Coronavirus Force Readiness solution includes a series of surveys that can be used to understand the capacity of your workforce.

Review the preconfigured questions and adjust as necessary to remain in compliance with your organizational policies and any applicable laws. Additionally, ensure that you secure the survey and underlying layers and only share the content with appropriate members of your organization.

## Update feature layer views

The Coronavirus Force Readiness solution includes a series of views created from the Personnel Readiness feature layer. The feature layer is used in the surveys and the subsequent views are used in the dashboards. Organizations may modify the Personnel Readiness Report survey and ultimately add new fields to the feature layers. When doing so, the new fields must be exposed in the appropriate views.

To add one or more fields to a layer and re-create the views, complete the following steps:

1. Browse to the view in your contents.
2. Click the **Visualization** tab.
3. Click the **Options** button ••• on the appropriate layer or table, then click **Set View Definition**.
4. Click **Define Fields**.
5. Scroll to the newly created field and check the box. Click **Apply**.

   The new field is added to the view's definition.
6. Repeat steps 1 through 5 for the Personnel Readiness Dashboard.
7. Update the Personnel Readiness Dashboard to account for the new fields you added to the layers.

## Modify readiness surveys

To modify a Coronavirus Force Readiness survey, complete the following steps:

1. Install ArcGIS Survey123 Connect.
2. Start ArcGIS Survey123 Connect and sign in to your ArcGIS organization.
3. Click Personnel Readiness Report to download the survey.
4. Click the Personnel Readiness Report again to open the survey.

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5. In the left pane, click **Open XLSForm Spreadsheet**.
6. In the Microsoft Excel spreadsheet, click the **Choices** tab. This tab comprises all of the selectable options for survey questions.
7. Revise the survey to reflect your personnel readiness needs.
8. Save the Microsoft Excel spreadsheet and preview your changes in ArcGIS Survey123 Connect.
9. In ArcGIS Survey123 Connect, click **Publish** in the left pane to publish your changes.

# Configure echelons

The dashboards are preconfigured to display four battalions and four companies under each battalion. Follow the steps below to add or remove battalions or companies from your dashboard.

## Add a battalion

To add battalions or companies to the dashboard, complete the following steps:

1. Sign in to your Portal for ArcGIS organization.
2. Browse to the Personnel Readiness Dashboard and open the item details page.
3. Click **Edit Dashboard**.
4. Select the last battalion tab while in edit mode.
5. Go to the editing tool within this element and select **Duplicate**.
6. Drag the newly created copy and position it below the last battalion tab.
7. Reference duplicated battalion settings, text, and configuration.
8. Add a new name, for example, `5th BN`, to the new component.
9. Save your application.

## Remove a battalion tab

To remove a battalion or companies from the dashboard, complete the following steps:

1. Sign in to your Portal for ArcGIS.
2. Browse to the Personnel Readiness Dashboard and open the item details page.
3. Click **Edit Dashboard**.
4. Select the battalion tab you want to delete while in edit mode.
5. Click the **Delete** button to delete the selected battalion.
6. Save your application.

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## Configure alternate reporting periods

The dashboards are preconfigured to display individuals reporting within the last 24 hours. The dashboard owner can configure the dashboard to display alternate reporting periods. The **Personnel List** is the most commonly configured element in regard to its contents and time frame.

To modify the reporting period, complete the following steps:

1. Sign in to your Portal for ArcGIS.
2. Browse to the Personnel Readiness Dashboard and open the item details page.
3. Click **Edit Dashboard**.
4. Go to the editing tool within the **Personnel List** element and select **Configure**.
5. Below Battalion, select the **And** option and add **Date Reported** from the drop-down list. You can now select from any of the available options and time frames.
6. Click **Done** and save your application displaying the new reporting period.

## Add readiness tabs for new battalions and companies

The dashboards are preconfigured to display four battalions and four companies and their applicable total force/unit size. This tab also contains the availability based on survey submissions and percentage of readiness.

To add percentages of readiness to the dashboard, complete the following steps:

1. Sign in to your Portal for ArcGIS.
2. Browse to the Personnel Readiness Dashboard and open the item details page.
3. Click **Edit Dashboard**.
4. Select the **3rd Battalion** tab while in edit mode
5. Go to the editing tool within the **Personnel List** element and select **Duplicate**.
6. Drag the newly created copy and position it below the **3rd Battalion** tab. Reference the 3rd Battalion settings, text, and configuration.
7. Add a new name, such as `5th BN`, to the new component and save your application.
8. Go to the **Reference** section within the configuration tool and add the unit size below **Fixed Value**.

   This number will provide the available value and percentage of readiness.
9. Follow the previous step and enter your current **Total Force** for each unit level.
10. If you need to remove a battalion tab, click the **Delete** button .
11. Save your application.

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# Use Coronavirus Force Readiness

The Coronavirus Force Readiness solution delivers a set of capabilities that help you to understand the operational capacity of a force, monitor the status of units, and communicate capabilities and disruptions to commanders and administrative staffs during the COVID-19 pandemic.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

# Monitor force readiness

The Coronavirus Force Readiness solution includes a Personnel Readiness Report survey that collects information from personnel, including their duty type, location, MOS (military occupational specialty), unit they belong to, and wellness information. Units deploying Coronavirus Force Readiness should review the preconfigured questions and adjust as necessary to remain in compliance with policies and applicable laws of your state or unit. In addition, ensure that you secure the survey and underlying layers and only share the content with appropriate members of your unit.

Some organizations may find it more efficient to have an individual, such as someone from the armory, check their unit member in using the Personnel Readiness Batch Report survey. If a unit decides to use the batch survey, follow the same general steps below with the Personnel Readiness Batch Report survey and the Personnel Readiness Dashboard.

## Complete individual readiness report

You will start by assuming the role of a military unit member. You are asked to use the Personnel Readiness Report survey to share your availability status each morning.

1. In a browser, go to your Personnel Readiness Report survey.
2. In the Personnel Readiness Report survey, fill in the following details:

| Parameter | Value |
|---|---|
| **State** | Select **California**. |
| **Battalion** | Select **1st Battalion**. |
| **Company** | Select **A Company**. |
| **Rank** | Select **E-4/CPL**. |
| **MOS** | Type `12W`. |
| **Select Duty Type** | Select **State Active Duty**. |
| **First Name** | Type your first name. |
| **Last Name** | Type your last name. |
| **Commander** | Type your commander's name. |

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| | |
|---|---|
| **Provide Location** | Select your location on the map or provide your address. |
| **Can you report for duty?** | Select **No**. |
| **Is it health related?** | Select **Yes**. |
| **Is it your health or someone else's?** | Select **Self**. |
| **Is it COVID-19 related?** | Select **Yes**. |
| **Select your status** | Select **Quarantined**. |
| **Select date quarantine started** | Select a date within 14 days of today. |
| **Check completed by:** | Select **Self**. |

3. Click **Submit**.

## Monitor personnel readiness

Now, you will assume the role of the Readiness NCO in the same unit. You are asked to monitor the readiness of your unit and are looking to see whether your unit is available to be assigned to a mission. You will view the overall readiness of your workforce.

> **Note:**
> The steps below are the same if you are an administrative NCO and will be using the Admin Dashboard to monitor the readiness of your team. The Admin Dashboard will contain personal information about the individual unit members.

1. In a browser, go to the Personnel Readiness Dashboard app.
2. The Personnel Readiness Dashboard opens with an overview of the overall readiness of the brigade and each battalion in the brigade.

   The overview displays key metrics. This information gives leadership a quick overview of the number of unit members available. Statistics related to the availability of your unit are also shown.
3. In the filter at the top of the dashboard, click **Last 24 Hrs** to see a complete list of the submissions from the last 24 hours.
4. Filter by **Time frame**, **MOS by Battalion**, and **MOS by Company**. Review the list of personnel and their locations in the map.
5. Click each of the **Battalion** tabs to see the availability for each company in that battalion.
6. Adjust the slider in the **Quarantined (Start Date) - Last 14 Days** chart to adjust the time period you want to review.

In the lower left corner of the dashboard, you can review the **COVID-19 Status** submitted by individual unit members.

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# Crime Analysis

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Crime Analysis

Crime Analysis can be used to enhance public safety, identify emerging trends, organize law enforcement operations and plan crime-prevention strategies.

It improves productivity of crime analysts with specialized tools and a tailored desktop GIS interface for mapping data and performing spatial analysis, making it easier to quickly generate high-quality crime analysis map products. Improved crime analyst productivity helps law enforcement decision-makers optimize resource allocation, solve cases, and implement more effective crime reduction strategies. Crime Analysis is typically implemented by law enforcement agencies that want to use data-driven strategies to reduce crime and improve police operations.

The Crime Analysis solution delivers a set of capabilities to help you manage incident data, conduct tactical and strategic analysis, perform investigative analysis and share web-based or hardcopy information products with decision-makers.

# Requirements

Crime Analysis requires the following:

- ArcGIS Pro 2.7 - 2.9 (Basic, Standard, or Advanced)
- ArcGIS Spatial Analyst (optional)

# Information products

Crime Analysis includes the following information products:

| Item | Description | Minimum User Type |
|---|---|---|
| CrimeAnalysis.esriAddInX | An ArcGIS Pro add-in used to map, identify, and communicate geospatial patterns in law enforcement data. | ArcGIS Desktop Basic or GIS Professional Basic |
| CrimeAnalysisSolution | An ArcGIS Pro project that leverages the capabilities included in the Crime Analysis | ArcGIS Desktop Basic or GIS Professional Basic |

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| | | |
|---|---|---|
| | add-in to generate a standard set of crime maps. | |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 2.0 | • The latest release of the Crime Analysis Add-In (2020.12.17) includes a new ribbon design and analysis gallery.<br>• The following capabilities have been added: Add Graphics Layer, Colocation Analysis tool, Density-based Clustering tool, Link Charts, and Reports.<br>• Existing tools have been updated to simplify parameters, streamline licensing and increase performance. In some cases, tool names have also been changed. See Crime Analysis tool updates for more details. |
| 1.0 | • Crime Analysis is now available in the ArcGIS Solutions app.<br>• The Crime Analysis Add-In (2019.10.16). |

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# Configure Crime Analysis

The Crime Analysis solution can be downloaded. After downloading, install and configure it to meet the needs in your organization.

# Download and install Crime Analysis solution

The Crime Analysis solution includes the Crime Analysis Add-In, ArcGIS Pro project, sample data and maps you can use to explore common crime analysis workflows. Before you begin, you will need to download the CrimeAnalysis.zip file containing the ArcGIS Pro project and Crime Analysis add-in. After this file is downloaded to your computer and extracted, you can install the add-in and open the ArcGIS Pro project.

If you your upgrading from a previous version (2018.6.26 through 2019.10.16) of the Crime Analysis Add-In, then skip to the **Upgrade Crime Analysis Add-In (optional)** section. If you are using it for the first time, follow the steps below to download and install the Crime Analysis solution.

1. Browse to a folder on your computer where the CrimeAnalysis.zip was downloaded to.
2. Extract CrimeAnalysis.zip.
3. Browse to the CrimeAnalysis folder where you extracted the CrimAnalysis.zip file.
4. Double-click CrimeAnalysis.esriAddInX to run the installer.
5. Click the **Install Add-In** button.

# Upgrade Crime Analysis add-In (optional)

The current version of the Crime Analysis add-in includes significant updates from versions 2018.6.26 through 2019.10.16. If you are migrating from one of these versions, you will need to get familiar with the Crime Analysis ArcGIS Pro project and the Crime Analysis Add-In. See the **Migration workflows from previous version** section below to understand these changes prior to installing the new version.

**Note**: When you upgrade, the previous version of the add-in and tools will be removed. You will need to update any automated scripts or documented workflows. You can install the new version of the Crime Analysis Add-In on another computer to limit the impact to your daily work while you are updating any automated scripts or workflows. Learn more about how to remove your add-in here

## Confirm your current version

Before you upgrade to Crime Analysis version 2020.12.17 or later you will need to confirm the version you have currently installed.

To verify the version currently installed use the following steps:

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1. Open any ArcGIS Pro project and click the Project tab on the ribbon. Alternatively, on the ArcGIS Pro start page, click Settings in the lower left corner.
2. Click Add-In Manager then click on Crime Analysis.
3. In the Add-Ins tab of the Add-In Manager. The Add-Ins tab will provide the version information.

   If your version is 2018.6.26 through 2019.10.16 then you will also need to consider migrating your scripts and workflows using the **Migrate workflows from previous version** section.

### Install new Crime Analysis add-in

To upgrade from a previous version of the Crime Analysis add-in that is installed on your computer, you will need to follow the steps below to overwrite the installed add-in with the new add-in.

1. Close all ArcGIS Pro applications.
2. Browse to the CrimeAnalysis folder
3. Double-click CrimeAnalysis.esriAddInX to run the installer.
4. Click the **Install Add-In** button.
5. Open ArcGIS Pro.

## Migrate workflows from previous version

Crime Analysis add-in (2020.12.17) has a significant number of updates. Specifically, several geoprocessing tools have been replaced, new tools have been added, and the solution user interface has changed. Review the changes below before migrating your workflows from a previous version.

### User interface updates

The Crime Analysis ribbon now uses the analysis tool gallery interface design to organize all analytical geoprocessing tools in the solution. Within the gallery area, the tools retain their groupings (for example, tactical and strategic analysis) from previous version of the solution. The new ribbon design allows more space-efficient presentation of additional analytical tools on the Crime Analysis solution ribbon.

### Geoprocessing tool updates

Many of the customized geoprocessing tools originally deployed with Crime Analysis solution have been updated to use system tools that are installed with ArcGIS Pro. These tools can now be found in the Crime Analysis and Safety toolbox in the geoprocessing pane, and are available to all users of ArcGIS Pro. As part of that process, the names and functions of tools have

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changed slightly to conform to ArcGIS Pro standards. In addition, several new system tools that are relevant to crime analysis workflows have been added to the solution.

## Crime Analysis tool updates

The chart below outlines the names of the original tools available with the Crime Analysis add-in version 2018.6.26 through 2019.10.16, that have been migrated to new tools in version 2020.12.17, and available in the updated Crime Analysis add-in.

| Old Tool | New Tool | New Tool Changes |
|---|---|---|
| 80-20 Analysis | 80-20 Analysis (Crime Analysis and Safety toolbox) | Labeling is no longer applied by default.<br>The parameter minimum cluster size is no longer configurable.<br>The parameter attributes to preserve is replaced by output fields in the new tool. |
| Extract Date Parts to Field | Add Date Attributes (Crime Analysis and Safety toolbox) | Updated and simplified parameters. |
| Import Cell Records | Cell Phone Records to Feature Class (Crime Analysis and Safety toolbox) | Updated and simplified parameters. |
| Import Cell Sites | Cell Site Records to Feature Class (Crime Analysis and Safety toolbox) | Updated and simplified parameters. |
| Features To 3D By Time | Feature to 3D By Time (Crime Analysis and Safety toolbox) | The tool licensing requires ArcGIS Desktop Basic, Standard, or Advanced license. The 3D Analyst licensing has been removed. |
| Space Time Comparison | Find Space Time Matches (Crime Analysis and Safety toolbox) | Labeling is no longer applied by default.<br>Updated and simplified parameters. |
| Repeat Call Patterns | Generate Call Links (Crime Analysis and Safety toolbox) | Labeling is no longer applied by default.<br>Updated and simplified parameters. |
| Incident Path | Generate Origin Destination Link (Analysis toolbox) | Updated and simplified parameters.<br>Different default symbology. |

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| | | |
|---|---|---|
| | | Descriptive Statistics Charts are automatically created. |
| Generate Sector Lines | Generate Sector Links (Crime Analysis and Safety toolbox) | Updated parameter names. |
| Append Attributes From Polygon | Join Attributes from a Polygon (Crime Analysis and Safety toolbox) | Updated and simplified parameters.<br><br>The overwrite matching fields in Target Point Features parameter is no longer available. |
| Density Change | Minus (Spatial Analyst Toolbox) | The Minus tool is part of the Spatial Analyst toolbox requires a Spatial Analyst license and applies a different default symbology. |
| Incident Sequence | Points to Track Segments (Intelligence Toolbox) | Updated and simplified parameters.<br><br>Output features are time enabled by default.<br><br>Sequence points are no longer created default. Output sequence points location is an optional parameter.<br><br>The Grouping Field parameter has been renamed to Group Field. |
| Select by Date and Time | Select Layer by Date and Time (Crime Analysis and Safety toolbox) | Updated and simplified parameters. |
| Incident Count | Summarize Incident Count (Crime Analysis and Safety toolbox) | Added support for point in the Input Features parameter<br><br>Labeling is no longer applied by default.<br><br>The Category Field parameter has been renamed to Group Field and now requires an ArcGIS Desktop Basic license.<br><br>The tool licensing requires ArcGIS Desktop Basic, Standard, or Advanced license. Parameter specific licensing has been removed. |

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| | | |
|---|---|---|
| Percent Change | Summarize Percent Change (Crime Analysis and Safety toolbox) | Added support for point features in the Input Features parameter.<br><br>Labeling is no longer applied by default.<br><br>The tool licensing requires ArcGIS Desktop Basic, Standard, or Advanced license. Parameter specific licensing has been removed. |
| Configure Record Import (Addresses), Configure Record Import (XY), Import Records | Update Features With Incident Records (Crime Analysis and Safety toolbox) | The Update Features With Incident Records includes all of the functionality of the Configure Record Import (Addresses), Configure Record Import (XY), and Import Records tools. |

**Note**: The Export Near Repeat Calculator Table tool, Repeat and Near Repeat Classification tool, and Calculate Prediction Zones tool have not changed and are installed as part of the Crime Analysis add-in and have not been migrated into ArcGIS Pro.

# Automate Geoprocessing Tools (optional)

All geoprocessing tools can be scheduled to run automatically on your computer using the scheduling capabilities in ArcGIS Pro or Windows Task Scheduler. Scheduling frequently run tools can improve productivity by reducing manual steps the analyst has to take during their daily work or in creating routine products. For example, by scheduling the Update Features With Incident Records tool to run nightly, their main datasets can get geocoded and updated into a web layer overnight, so the analyst has fresh data ready to use when they arrive in to work. Likewise, for analysts preparing monthly Compstat reports, Kernel Density or other hotspot tools can be automated to run on a monthly schedule to simplify the process of preparing the Compstat report.

# Disable the Crime Analysis ribbon

The Crime Analysis ribbon is automatically added to your projects when you install the Crime Analysis add-in. To disable the Crime Analysis ribbon, follow these steps.

1. From an open project, click the **Project** tab on the ribbon. Alternatively, on the ArcGIS Pro start page, click Settings in the lower left corner.
2. Click **Options** then click on Crime Analysis.
3. Disable the Show Crime Analysis tab, click OK and the back arrow.

When the Crime Analysis ribbon is disabled it will no longer appear in ArcGIS Pro, but the tools will appear contextually in various locations throughout the ArcGIS Pro user interface. For

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example, on the Analysis ribbon, users will see a Crime Analysis button listing all the solution tools.

**Note:**
Learn more about how to remove an add-in.

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# Use Crime Analysis

The Crime Analysis solution delivers a set of capabilities to help you manage incident data, conduct tactical and strategic analysis, perform investigative analysis and share web-based or hardcopy information products with decision-makers.

In this topic, you'll learn how to use the Crime Analysis solution by exploring the Crime Analysis ArcGIS Pro project and key crime analysis workflows it supports.

## Review the Crime Analysis project

Crime Analysis includes an ArcGIS Pro project with the Crime Analysis add-In. The project includes the Crime Analysis tab and ribbon that can be used to conduct a series of key analytical functions to support crime analysis. Before using the Crime Analysis tools with your data, familiarize yourself with the contents of the Crime Analysis project.

1. Browse to the CrimeAnalysis folder and open the CrimeAnalysisSolution.aprx ArcGIS Pro project.
2. On the ribbon, click the Crime Analysis tab. You will see the ribbon includes five groups of tools: Data Management, Selection, Analysis Tools and Information Products.
3. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
4. In the **Catalog** pane, expand **Maps** and review the sample maps and **notes** provided.

### Manage incident data

To perform analysis, crime analysts must first import data from disparate record systems and prepare it for use in GIS. Data import and management activities like geocoding, date field transformations, and appending of spatial data must be performed daily. These time consuming but necessary activities leave little time for actual analysis, limiting analyst productivity. Crime Analysis provides tools to help analysts automate data import and simplify common data management activities.

To learn more about managing data using Crime Analysis, go to the CrimeAnalysisSolution ArcGIS Pro project and open the following maps:

- **Enhance Attributes map**
- **Import Incidents (Update Features With Incident Records)**

### Focus on specific incidents

Crime analysts ask a wide variety of analytical questions on behalf of the organizations they support, requiring them to query their data from a variety of date-based, spatial, and field attribute perspectives that can be challenging to perform without the use of GIS. Crime Analysis provides selection tools that can be used individually or in tandem to interrogate incident data and focus on specific problem subsets.

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To learn more about performing selections using Crime Analysis, go to the CrimeAnalysisSolution ArcGIS Pro project and open the following maps:

- **Summarize Percent Change and Select Layer by Date and Time**
- **Kernel Density and Minus**

## Conduct tactical and strategic analysis

Crime analysts support the data-driven crime reduction efforts of law enforcement agencies by using tactical analysis methods to identify short-term crime patterns, and strategic analysis methods to support the identification and evaluation of long-term crime problems and trends. Central to these methods are spatial analysis, specifically hotspot identification, but analysts can be challenged with understanding which techniques are available and are appropriate to the type of analysis they are trying to perform. Crime Analysis curates new and traditional spatial analysis tools appropriate for tactical and strategic crime analysis, making it easy for analysts to discover the right tool for the job.

To learn more about conducting tactical and strategic analysis using Crime Analysis, go to the CrimeAnalysisSolution ArcGIS Pro project and open the following maps:

- **80-20 Analysis**
- **Colocation Analysis**
- **Density-based Clustering**
- **Kernel Density and Minus**
- **Optimized Hotspot and Calendar Heat Chart**
- **Summarize Incident Count**
- **Summarize Percent Change and Select Layer by Date and Time**
- **RNR-Calculate Prediction Zones**
- **RNR-Export Near Repeat Calculator Table**
- **RNR-Repeat and Near Repeat Classification 2D**
- **RNR-Repeat and Near Repeat Classification 3D**

## Perform investigative analysis

Crime analysts support investigations by using data to explore the relationships between people, events, and locations. Investigative analysis helps investigators uncover criminal networks and understand suspect activity patterns through analysis of cell phone records, financial transactions, and other investigative data sources. These forms of analysis have previously required specialized, expensive, single-purpose software programs. Crime Analysis provides a set of analytical tools to support common investigative workflows such as cell phone analysis, financial analysis, temporal sequencing of GPS or incident data, and visualizing spatial relationships such as between locations of motor vehicle thefts with where those vehicles are recovered.

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To learn more about performing investigative analysis using Crime Analysis, go to the CrimeAnalysisSolution ArcGIS Pro project and open the following maps:

- **CPA-2D Cell Phone Points to Track Segments**
- **CPA-3D Cell Phone Points to Track Segments**
- **CPA-Cell Site Records to Feature Class**
- **CPA-Cell Phone Records to Feature Class**
- **CPA-Dissolve**
- **CPA-Find Space Time Matches**
- **CPA- Generate Call Links**
- **CPA-Generate Sector Lines**
- **Origin Destination Links (MV Theft to Recovery)**
- **Origin Destination Links (Financial Crime)**
- **Origin Destination Links and Link Chart (Gang Turf to Member Homes)**
- **Points to Track Segments**

## Share maps and reports

To share their work with stakeholders and decision makers, crime analysts prepare information products summarizing their results. Analysts get requests to deliver these products in both hardcopy and interactive forms. To support the needs of their customers, analysts need flexible options to deliver the results of their analysis in a wide array of forms. Crime Analysis provides a set of information product options include hardcopy map layouts, a rich charting library, tabular reports, link analysis charts, and the ability to publish layers and maps into web mapping applications in ArcGIS Enterprise or ArcGIS Online.

To learn more about sharing maps and reports using Crime Analysis, go to the CrimeAnalysisSolution ArcGIS Pro project and open the following maps:

- **Optimized Hotspot and Calendar Heat Chart**
- **Origin Destination Links and Link Chart (Gang Turf to Member Homes)**

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# Crime Analysis Tool Reference

The Crime Analysis solution delivers a set of capabilities to help you manage and query incident data, conduct tactical, strategic, and investigative analysis, and share web-based and hardcopy information products with decision-makers.

In this topic, you'll learn how to use the Crime Analysis solution by exploring the Crime Analysis navigating the Crime Analysis Add-In, and reviewing the Repeat and Near Repeat tools.

## Crime Analysis tools

The Crime Analysis Solution contains many tools to support key analytical functions to manage data, select crime incidents, conduct tactical and strategic analysis, investigate crime patterns and share information with other law enforcement personnel. These tools are accessed using the Crime Analysis tab and ribbon which is automatically added to your projects when you install the Crime Analysis add-in. The following sections contain a list of the tool groups in the ribbon with details for each tool in chronological order according to a typical crime analysis process.

**Note**: You will need to ensure the Crime Analysis add-in is installed before you can review the Crime Analysis tools. See Configure Crime Analysis for more information.

## Data Management tools

Crime Analysts can import data from disparate record systems in order to perform spatial analysis using ArcGIS Pro. In many cases, the data must also be geocoded and prepared for analysis by appending information about police operational boundaries, transforming date values, or other transformation functions. The Data Management group includes a series of tools that can be used for manual or automatic data import, geocoding, and enhancing of data for use in crime mapping and spatial analysis.

The following tools and commands are included in the Data Management group of the Crime Analysis ribbon.

| Name | Description |
|---|---|
| Add Data | An ArcGIS Pro menu command that references data management tools that adds data to the map. |
| Add Graphics Layer | An ArcGIS Pro menu command that provides a way to include simple notations on a map or layout that highlight particular areas or label places. |
| Import Records | An ArcGIS Pro Crime Analysis and Safety toolbox that converts a nonspatial table to point features based on x,y-coordinates or street addresses and updates an existing dataset with the new or updated record information from the table. |
| Convert Time Field | An ArcGIS Pro Data Management tool that converts time values stored in a string or numeric field to a date field. |

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| | |
|---|---|
| Feature To 3D By Time | An ArcGIS Pro Crime Analysis and Safety toolbox that creates a 3D feature class using date values from input features. |
| Convert Coordinate Notation | An ArcGIS Pro Data Management tool that converts coordinate notations contained on one or two fields from one notation format to another. |
| Add Date Attributes | An ArcGIS Pro Crime Analysis and Safety toolbox that adds fields containing date or time properties from an input date field, for example, day full name, day of the month, month, and year. |
| Join Attributes From Polygon | An ArcGIS Pro Crime Analysis and Safety toolbox that joins attributes from input polygon features to input point features. |
| Enrich | An ArcGIS Pro Analysis tool that enriches data by adding demographic and landscape facts about the people and places that surround or are inside data locations. |

# Selection

Before applying spatial analysis methods, crime analysts use queries to select subsets of data related to their topic of analysis. The Selection group in the ribbon includes a series of tools to perform spatial, temporal, or location-based queries of your data.

The following tools and commands are included in the Selection group of the Crime Analysis ribbon.

| Name | Description |
|---|---|
| Explore | An ArcGIS Pro command that allows you to explore maps and scenes, you can zoom in and out, move around, and in the case of scenes, move up, down, and look around. |
| Select | An ArcGIS Pro commands that provide interactive feature selection involves clicking a single feature in the view or digitizing a shape to select a set of features. |
| Select By Attributes | An ArcGIS Pro Data Management tool that adds, updates, or removes a selection on a layer or table view based on an attribute query. |
| Select By Location | An ArcGIS Pro Data Management tool that selects features in a layer based on a spatial relationship to features in another dataset. |
| Select Layer By Date and Time | An ArcGIS Pro Crime Analysis and Safety toolbox used to select records based on date and time ranges or date properties, for example, single date, time range, time period, days of the week, month, or year. |
| Attributes | An ArcGIS Pro command that displays the Attribute pane. |

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| | |
|---|---|
| Clear | An ArcGIS Pro command that clears the current selection in the active map. |
| Layer From Selection | An ArcGIS Pro command that creates on new layer based on a selected set of features in an existing layer. |

# Analysis Tools

Crime Analysts perform many types of analyses to support the needs of law enforcement decision-makers in their organization. The Analysis Tools group includes a gallery of tools that can be used to perform a variety of hotspot detection techniques and other spatial methods that can be applied as part of tactical or strategic crime analysis projects. The gallery also includes tools to apply spatial methods in support of investigations, like cell phone analysis, crime series sequencing, or motor vehicle theft to recovery linking.

The following tools and commands are included in the Analysis Tools group of the Crime Analysis ribbon.

| Name | Description |
|---|---|
| Summary Statistics | An ArcGIS Pro Analysis tool that calculates summary statistics for field(s) in a table. |
| Buffer | An ArcGIS Pro Analysis tool that creates buffer polygons around input features to a specified distance. |
| 80-20 Analysis | An ArcGIS Pro Crime Analysis and Safety toolbox used to conduct an 80/20 analysis of features and determines cluster locations by creating a graduated symbol layer based on the number of incidents occurring at each location. |
| Summarize Incident Count | An ArcGIS Pro Crime Analysis and Safety toolbox used to create a feature class with coincident point counts. Coincident point counts for line and point features are determined by a specified maximum distance. Point counts for polygon features are determine by whether point features or portions of features overlap with the polygon feature. |
| Summarize Percent Change | An ArcGIS Pro Crime Analysis and Safety toolbox used to calculate the percent change for features that correspond with point features representing two equal comparison time periods. |
| Optimized Hotspot | An ArcGIS Pro Spatial Statistics tool that creates a map of statistically significant hot and cold spots using the Getis-Ord Gi* statistic. |
| Kernel Density | An ArcGIS Pro Spatial Analyst tool that calculates a magnitude-per-unit area from point or polyline features using a kernel function to fit a smoothly tapered surface to each point or polyline. This tool requires a Spatial Analyst license. |

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| Minus | An ArcGIS Pro Spatial Analyst tool that subtracts the value of the second input raster from the value of the first input raster on a cell-by-cell basis. |
| Create Space Time Cube | An ArcGIS Pro Space Time Pattern Mining tool that summarizes a set of points into a netCDF data structure by aggregating them into space-time bins. |
| Emerging Hot Spot | An ArcGIS Pro Space Time Pattern Mining tool that identifies trends in the clustering of point densities. |
| Colocation Analysis | An ArcGIS Pro Spatial Statistics tool that measures local patterns of spatial association, or colocation, between two categories of point features using the colocation quotient statistic. |
| Density-based Clustering | An ArcGIS Pro Spatial Statistics tool that finds clusters of point features within surrounding noise based on their spatial distribution. |
| Points To Tracks Segments | An ArcGIS Pro Spatial Statistics tool that converts a series of output paths from time-enabled sequences of input point data, such as GPS points. |
| Generate Origin-Destination Links | An ArcGIS Pro Spatial Statistics tool that generates connecting lines from origin features to destination features. This is often referred to as a spider diagram. |
| Cell Site Records to Feature Class | An ArcGIS Pro Crime Analysis and safety tool used to creates cell site points and sector polygons based on input latitude, longitude, azimuth, beamwidth, and radius information from a cell site table. |
| Cell Phone Records to Feature Class | An ArcGIS Pro Crime Analysis and Safety toolbox used to imports cell phone records from wireless network providers and associates those records with a cell site and sector feature classes as generated by the Cell Site Records To Feature Class tool based on identifier fields. |
| Generate Call Links | An ArcGIS Pro Crime Analysis and Safety toolbox used to creates line features that represent the call links between phones, using cell site points or cell site antenna sectors, based on the start date and time of the call. |
| Find Space Time Matches | An ArcGIS Pro Crime Analysis and Safety toolbox that identifies matches between two feature classes based on proximity, time extent, or both. |
| Generate Sector Lines | An ArcGIS Pro Crime Analysis and Safety toolbox used to create line features that represent the extent of cell site antenna sectors. |
| Dissolve | An ArcGIS Pro Data Management tool aggregates features based on specified attributes. |
| Export Near Repeat Calculator Table | A Repeat and Near Repeat tool that creates a CSV file in the format required by the Near Repeat Calculator from an input feature class. The Near Repeat Calculator is a tool published by Temple University for |

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| | |
|---|---|
| | examining the statistical significance of repeat and near repeat patterns in a dataset. |
| Repeat and Near Repeat Classification | A Repeat and Near Repeat tool that identify areas at risk of repeat and near repeat incidents by specifying the spatial and temporal range of influence of past incidents. |
| Calculate Prediction Zones | A Repeat and Near Repeat tool that identify areas at risk of repeat and near repeat incidents by specifying the spatial and temporal range of influence of past incidents. |

# Information Products

After the analysis is complete, Crime Analysts often prepare hard copy maps and web-based information products to help their organizations make data-driven decisions. The Information Products group includes a series of tools to create information products for analysis consumers, including link charts, hard-copy maps, charts, and reports, and publishing of maps and layers to organizational web GIS portals.

The following tools and commands are included in the Information Products group of the Crime Analysis ribbon.

| Name | Description |
|---|---|
| Create Chart | An ArcGIS Pro command that creates a chart to visualize categories, distribution, change and relationships in your data. |
| New Link Chart | An ArcGIS Pro command used to generate a link chart to visualize relationships between entities in your data and is a complementary view to the map. |
| New Report | An ArcGIS Pro command used to generate a report to share a well-formatted, multipage representation of your data. A report can contain a tabular list of attributes, summary information, or both. |
| New Layout | An ArcGIS Pro command that creates a new layout and add it to the project. |
| Web Map | An ArcGIS Pro command used to share the active map as a web map to your organization. |
| Web Layer | An ArcGIS Pro command used to share all data layers in the active map as a new web layer to your organization. |

# Repeat and Near Repeat Analysis Tools

Repeat Victimization is an empirically observed phenomenon where when a location becomes the victim of a specific type of crime, that location has an elevated risk of subsequent victimization, a risk which drops precipitously over time. A corollary phenomena is known as Near-Repeat Victimization, whereby locations immediately around a location that has been

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victimized are at elevated risk, a level that drops both as time passes, and as the distance from the originating victim increases. Repeat and Near Repeat patterns have been observed across a wide variety of crime types, are believed to be spatial artifacts of serial offending behaviors, and thus have important implications for crime prevention and investigations.

The Crime Analysis solution includes three custom geoprocessing tools to support analyses relative to Repeat and Near Repeat Victimization patterns. The Export Near Repeat Calculator Table tool can be used with Temple University's Near Repeat Calculator to identify statistically significant patterns of Repeat and Near Repeat Victimization. The Near Repeat Classification tool can be used to identify historical patterns of repeat and near-repeat victimization, which can support investigative efforts to connect and clear cases that were not otherwise known to be part of a pattern. The Calculate Prediction Zones tool can be used to generate daily tactical crime risk predictions based on Repeat Victimization and Near-Repeat Victimization risk for recent crime locations. These risk predictions can be used to inform police operational strategies for crime reduction.

The tools in the Crime Analysis solution related to Repeat and Near Repeat Victimization (Export Near Repeat Calculator Table, Repeat and Near Repeat Classification, and Calculate Prediction Zones) were developed in cooperation with Spencer Chainey, Ph.D., Associate Professor in Security and Crime Science at the Jill Dando Institute of Security and Crime Science, University College London.

## Export Near Repeat Calculator Table Tool

The Near Repeat Calculator is a tool published by Temple University for examining the statistical significance of repeat and near repeat patterns in a dataset. When a statistically significant repeat or near repeat pattern is found, the spatial and temporal bandwidths of the pattern can then be used as parameters for analyses involving the Repeat and Near Repeat Classification Tool and the Calculate Prediction Zones tool. of This tool creates a comma-separated values (CSV) file in the format required by the Near Repeat Calculator from an input feature class.

### Usage

- Input features must have a date field.
- The output comma-separated values (CSV) file does not contain any field headers as these are not supported by the Near Repeat Calculator. The output fields are, in order: X, Y, Date.

### Syntax

ExportNearRepeatCalculatorTable_crime (Input_Feature_Class, Output_Table, Date_Field)

| Parameter | Explanation | Data Type |
|---|---|---|

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| | | |
|---|---|---|
| Output Table | Specify the path and file name of output comma-separated values (CSV) file. | File |
| Date Field | The field in the input feature class containing the date on which each incident occurred. If the date of the incident spans a range (for example, date information is recorded in two fields representing the from and to dates), choose the date field you consider to be most appropriate. This will usually be the date at the beginning of the date range. | Field |

**Licensing information:**

- ArcGIS Desktop Basic: Yes
- ArcGIS Desktop Standard: Yes
- ArcGIS Advanced: Yes

## Repeat and Near Repeat Classification tool

Use a series of distance and time values to classify incidents as originators, repeats, or near-repeats, and to identify potential spatial and temporal relationships between incidents.

**Usage**

- The Input Features must be a point feature class or shape file with a date field, representing the locations of incidents.
- The tool will use all points with date values. Incidents without valid dates will be excluded and a warning message will print to the screen listing the skipped incidents.
- This tool will honor a selected set of features. When the Input Features contain a selection, only the selected features will be considered when classifying features and building connections.
- Incidents are classified as O (Originator), NR (near-repeat), or R (repeat) according to their proximity to each other in space and time using each combination of the specified spatial and temporal band values, and the specified repeat distance.
- Incidents are classified as originators if they are the originator of at least one other incident and have no preceding incidents within the current spatial and temporal ranges.
- Incidents are classified as near-repeat incidents when they follow a previous repeat, near-repeat, or originating incident within the current spatial and temporal ranges, and do not meet the criteria to be classified as a repeat incident.
- Incidents are classified as repeat incidents when they occur within the specified repeat distance and the current temporal range. An incident that meets the requirements for both a repeat and a near-repeat incident is classified as a repeat.
- Incidents that do not meet the criteria for any of the above are left unclassified.
- This tool creates the following three outputs:

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- A copy of the input incident features with classification fields added. These fields are populated with the classification values for each incident within each set to spatial and temporal ranges. For example, if a repeat distance of 1 map unit (Feet), spatial bands of 100 and 200 map units (Feet), and temporal bands of 7 and 14 days are specified, the tool will append 6 fields with the following field names and aliases:
    - sb0tb1 (1 ft / 7 Days): Classification of incidents that are originators of repeat incidents occurring no more than 7 days later, and incidents that occurred within the repeat distance and 7 days of a previous incident.
    - sb0tb1 (1 ft / 14 Days): Classification of incidents that are originators of repeat incidents occurring no more than 14 days later, and incidents that occurred within the repeat distance and 14 days of a previous incident.
    - sb1tb1 (100 ft / 7 Days): Classification of incidents that are originators of repeat and near-repeat incidents occurring no more than 7 days later, and incidents that occurred within 100 map units and 7 days of a previous incident.
    - sb1tb2 (100 ft / 14 Days): Classification of incidents that are originators of repeat and near-repeat incidents occurring no more than 14 days later, and incidents that occurred within 100 map units and 14 days of a previous incident.
    - sb2tb1 (200 ft / 7 Days): Classification of incidents that are originators of repeat and near-repeat incidents occurring no more than 7 days later, and incidents that occurred within 200 map units and 7 days of a previous incident.
    - sb2tb2 (200 ft / 14 Days): Classification of incidents that are originators of repeat and near-repeat incidents occurring no more than 14 days later, and incidents that occurred within 200 map units and 14 days of a previous incident.
    - The tool also appends a field called ZVALUE with values representing the number of days between each incident and the smallest date value in the dataset. These values can be used to visualize the time sequence of incidents in ArcGIS Pro so that oldest incidents appear near the ground and more recent incidents appear further from the ground.
- A line feature class that is populated with z-enabled line features representing the potential relationships between repeat and near-repeat incidents and their originators. The z values for each vertex correspond to the ZVALUE field value for the incident that occurs at that vertex.
- A comma-separated values (CSV) file summary report with the number of incidents processed, the counts and proportions of incidents that fall within each spatial and temporal band combination, and the estimated half-life and half-distance values which can be used as inputs for the Calculate Prediction Zones tool.

- All distances are calculated using geodesic measurements.

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**Syntax**

RepeatNearRepeatClassification_crime (Input_Feature_Class, Output_Incident_Points, Output_Incident_Connection_Lines, Output_Summary_Report_Location, Date_Field, Repeat_Incident_Distance, Spatial_Bands, Temporal_Bands)

| Parameter | Explanation | Data Type |
|---|---|---|
| Input Feature Class | Feature class containing points representing the location of incidents to classify. The data contained in the features class will typically cover a long time period (e.g., one year). The feature class must have a date field (in date format) and all features must have date values. | Feature Layer |
| Output Incident Points | Output feature class containing calculated classification values. | Feature Layer or Feature Class |
| Output Summary Report Location | The results from the analysis of repeats and near repeats will be written into a Summary report (csv file format) for review. The report can be found in this folder after the tool has completed successfully. The results are also written to the Messages section of the Results window. | Folder |
| Date Field | The field in the input feature class containing the date on which each incident occurred. If the date of the incident spans a range (e.g., date information is recorded in two fields representing the from and to dates), choose the date field you consider to be most appropriate. This will usually be the date at the beginning of the date range. Values in the date field are used to calculate the number of days between each incident. | Field |
| Repeat Incident Distance | Maximum distance in the units of the input feature class where adjacent incidents are considered repeats rather than near repeats. A value of 0 is exact to the accuracy of the coordinate system. If the geocoding of the input feature class is likely to very slightly vary it is recommended this value is set to 1 (i.e., incidents will be classified as repeats if the distance between them is less than or equal to 1 map unit). | Double |
| Spatial Bands | Distance in the units of the input feature class to classify near incidents. Multiple bands can be entered. For example, bands of 200m and 400m will classify features that are located up to and including 200m from a previous incident, and up to and including 400m of a previous incident. | Multiple Value |
| Temporal Bands | Number of days to classify near incidents. Multiple bands can be entered. For example, bands of 7, 14 and 21 days will | Multiple Value |

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| | | |
|---|---|---|
| | classify features that took place up to and including 7 days, 14 days, and 21 days of a previous incident. | |

**Licensing information:**

- ArcGIS Desktop Basic: No
- ArcGIS Desktop Standard: No
- ArcGIS Advanced: Yes

## Calculate Prediction Zones tool

Identify areas at risk of repeat and near repeat incidents by specifying the spatial and temporal range of influence of past incidents.

**Usage**

- The Input Features must be a point feature class or shape file with a date field, representing the locations of incidents.
- The tool will use all points with date values in the Temporal Range of Influence preceding the Initial Processing Date. Features with date values outside this range and features with null or invalid date values will not be processed.
- This tool will honor a selected set of features. When the Input Features contain a selection, only the selected features will be considered when building the prediction zones.
- Incidents that occur closer in time to the Initial Processing Date will have more influence over the prediction zones than older incidents. Areas nearer to incidents will be considered to have a greater risk of future incidents, up to the Spatial Range of Influence. Use the Spatial Half Distance and Temporal Half Life parameters to modify the rate of decay of influence.
- The following fields are populated in the output feature class:
  - CREATEDATE: Text field populated with the date and time the features are created.
  - STARTDATE: The Initial Processing Date, or the calculated date if TODAY or YESTERDAY is the input value.
  - TIMEBAND: The Temporal Range of Influence used to generate the features.
  - SPACEBAND: The Spatial Range of Influence used to generate the features.
  - RISKRANGE: The classification of risk for the area defined by that polygon. Higher values have a higher level of risk ang lower values have a lower value of risk based on the location and dates of nearby incidents.
- This tool creates up to two outputs:
  - A raster representation of the levels of risk over the area covered by the incidents.
  - Polygons generated by binning the raster values into a number of Risk Ranges are appended to the Output Prediction Zones Feature Class as described above.

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- While storing the output raster in a geodatabase is supported, it is recommended to store the raster in a folder rather than a geodatabase, especially if this tool will be run as a scheduled task.
- All distances are calculated using geodesic measurements.
- This tool requires the Spatial Analyst extension.

**Syntax**

CalculatePredictionZones_crime (Input_Features, Output_Prediction_Zones_Raster, Output_Prediction_Zones_Feature_Class, Date_Field, Initial_Processing_Date, Spatial_Range_of_Influence, Spatial_Half_Distance, Temporal_Range_of_Influence, Temporal_Half_Life, Risk_Calculation_Method, Number_of_Risk_Ranges)

| Parameter | Explanation | Data Type |
|---|---|---|
| Input Features | Feature class containing points representing the location of incidents and from which prediction zones will be calculated. The feature class must have a date field (in date format) and all features must have date values. | Feature Layer |
| Point Join Features | Point features coincident with the input polygon or line features. | Feature Layer |
| Output Prediction Zones Raster | Output prediction zone raster. | Raster Layer |
| Output Prediction Zones Feature Class | Output feature class with polygons representing the prediction zones. | Feature Class or Feature Layer |
| Date Field | The field in the input feature class containing the date on which each incident occurred. If the date of the incident spans a range (for example, date information is recorded in two fields representing the from and to dates), choose the date field you consider to be most appropriate. This will usually be the date at the beginning of the date range. Values in the date field are used to calculate the level of future risk based on a combination of when the incident occurred, the Initial Processing Date and the temporal decay in risk (determined from the Temporal Range of Influence and the Temporal Half Life). | Field |
| Initial Processing Date | The date to use from the Input Feature Class for creating the prediction zones. | Date |

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|---|---|---|
| Spatial Range of Influence | This value determines the size of the prediction zones around each incident (in the units of the coordinate system of the Input Feature Class). The value refers to the maximum distance from an incident that the incident is estimated to have on influencing the risk of future incidents taking place. Additionally, this value can be based on the area around an incident that is considered to be practical for resource targeting and deployment (for example, the area to which additional patrols are targeted). | Double |
| Spatial Half Distance | The distance from an incident at which the risk is estimated to be half that of another incident taking place (a near-repeat). This value is used to calculate the exponential rate of decay in the spatial risk of a near-repeat incident and must be lower than the value for the Spatial Range of Influence. Distance units are the units of the coordinate system of the input feature class. A useful initial value to apply is half the value of the Spatial Range of Influence. | Double |
| Temporal Range of Influence | This value refers to the number of days before the Initial Processing Date that incidents are estimated to have an influence on the risk of future incidents taking place. More recent incidents have the greatest level of influence on future risk. Incidents that took place between the Initial Processing Date and the value for the Temporal Range of Influence are used for creating prediction zones. For example, if this value was set to 3, only incidents for the Initial Processing Date and the two days prior would be used for creating prediction zones. Incidents that took place 3 days ago would have less of an influence on the risk of future incidents than those that took place on the Initial Processing Date. | Double |
| Temporal Half Life | The number of days before the Initial Processing Date on which the risk is estimated to be half that of further incidents taking place immediately after the Initial Processing Date (for example, incidents that took place on the Initial Processing Date are considered to have the greatest influence on the risk of future incidents taking place. Incidents before the Initial Processing Date have less of an influence on future risk). This value is used to calculate the exponential rate of decay in the temporal risk of a repeat and near-repeat incident and must be lower than the value for the Temporal Range of Influence. A useful initial value to apply is half the value of the Temporal Range of Influence. | Double |
| Risk Calculation Method | Choose the method for calculating the predictive risk. | String |

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| | | |
|---|---|---|
| | 'CUMULATIVE' (default) creates prediction zones where the value of each cell is the sum of any prediction zone cells that overlap.<br><br>'MAXIMUM' creates prediction zones where the value of each cell is the maximum value of any prediction zone cells that overlap | |
| Number of Risk Ranges | Integer value representing the number of ranges that will be used in the polygon version of the output for representing the variation in predicted risk (for example, if this value was set to 2, two Risk Ranges would determine areas of primary risk from areas of secondary risk). | Long |

**Licensing information:**

- ArcGIS Desktop Basic: Requires Spatial Analyst
- ArcGIS Desktop Standard: Requires Spatial Analyst
- ArcGIS Advanced: Requires Spatial Analyst

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# Daily Activity Dashboard

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Daily Activity Dashboard

Daily Activity Dashboard can be used to visualize calls for service and incidents sourced from computer-aided dispatch or records management systems and monitor daily activity.

The solution improves operational awareness for supervisors in law enforcement agencies and allows them to rapidly identify emerging incident patterns and diagnose response problems. The increased operational awareness helps command staff allocate law enforcement resources and monitor the performance of officers under their command. Daily Activity Dashboard is typically implemented by law enforcement agencies that want to take a data-driven approach to resource allocation and crime reduction strategies.

The Daily Activity Dashboard solution allows you to source incident records from computer-aided dispatch or records management systems, visualize law enforcement incidents, and monitor trends or patterns.

## Requirements

Daily Activity Dashboard requires the following.

- ArcGIS Enterprise 10.6.1 - 10.8.1
- ArcGIS Pro 2.7 or later (Basic, Standard, or Advanced) (optional)

## Information products

Daily Activity Dashboard includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Daily Activity Dashboard | An ArcGIS Dashboards app used by law enforcement command staff to monitor calls for service, crimes, and arrest data sourced from computer-aided dispatch or records management systems | Viewer |

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# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of the Daily Activity Dashboard |

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# Configure Daily Activity Dashboard

The Daily Activity Dashboard solution can be configured to meet the specific needs in your organization. In this topic, you will learn how to use the **Update Features with Incident Records** tool to automatically load data from records management systems (RMS) and computer-aided dispatch systems (CAD) into the layers in your Daily Activity Dashboard, and modify or remove dashboard elements unsupported by your data schema.

## Load data

The layers can be loaded with data using ArcGIS Pro. Optionally, you can automated the current RMS or CAD incident data to run on a schedule to ensure you are reviewing the most up-to-date information while using the dashboard.

### Load data using ArcGIS Pro

In some cases, you may already have this information in ArcGIS or another mapping system. Review the layers provided with the solution and determine what source data you want to load. Then, load your existing data into the layers provided with the solution before sharing the maps or apps.

1. In ArcGIS Pro, and ensure you are signed into your ArcGIS organization where the Daily Activity Dashboard solution is deployed.
2. Click **View**, and then click **Catalog Pane**.
3. In the **Catalog Pane**, click **Portal**, click **My Content** and choose the folder containing the solution.
4. Add the LawEnforcementDistricts layer, Crimes layer, CallsforService layer, and Arrests layer to the map.
5. Click **Analysis**, then navigate to the **Append** tool, open the tool, use the tool to load the districts layer of the LawEnforcementDistricts layer.
6. Navigate to the Update Features With Incident Records tool, open the tool and use it to load data into the Crimes layer. Then use the tool to load data for the CallsforService layer, and Arrests layer.

### Automate incident data updates

You can use the ArcGIS Pro and the Update Features With Incident Records tool to update incident layers on a regular interval. Scheduled updates ensure users have access to current information to support more dynamic decision making.

To update crimes, calls for service, arrests data on a schedule, use the Update Features With Incident Records tool with the **Update Existing Target Features** parameter enabled. Once the tool is configured to use your dynamic incident data, follow the schedule geoprocessing tools documentation to learn how to run the tool on a schedule.

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# Configure dashboard elements

When loading data from your RMS or CAD system into the layers of the Daily Activity Dashboard(Crimes, Calls for Service, Arrests), you may find that your source data does not contain specific fields (Day of Week, Hour of Day) used in the charts or filters. Since the Daily Activity Dashboard is a configuration of ArcGIS Dashboards, all elements can be reconfigured to point to different fields, or deleted entirely, as the schema of your data necessitates.

See Configuring ArcGIS Dashboard elements for more information.

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# Use Daily Activity Dashboard

The Daily Activity Dashboard solution allows you to source incident records from computer-aided dispatch or records management systems, visualize law enforcement incidents, and monitor trends or patterns.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

# Understand recent patterns of activity

Daily Activity Dashboard allows supervisors to use data about recent trends and patterns to make smarter resource deployment decisions within their scope of control.

In this workflow, you will earn how to use the Daily Activity Dashboard solution to explore recent crime, call for service, and arrest data to discover patterns of interest for operational responses.

## Visualize recent activity

Follow these steps to visualize recent activity by precinct:

1. In a browser, go to the Daily Activity Dashboard app.
2. In the panel on the left side, click the **Date** drop-down list, and select **Last 28 days**.

   The map now displays all calls, crimes, and arrests from the previous day. Calls for service will appear as blue circles with a phone icon, arrests will appear as gray circles with a handcuff icon, and crimes will appear in multiple colors—navy for violent crime, gold for property crime, and light gray for lesser crimes. Each crime type has its own unique symbol type.
3. Select a precinct from the **Precinct** drop-down list.

   The indicator elements on the right side display totals for each layer based on the filter selected.

   Note:

   You may continue to apply as many filters as you want—the filters will continue to narrow down the incidents displayed on the map based on the parameters you specify in your filter. To cancel your filter, click any filter and select **All**.
4. Click one of the incident points on the map. A pop-up in the upper left corner of the map will appear, displaying key facts about the incident, including the date, location, and incident type.

   Note:

   Crimes, calls for service, and arrests layers all have slightly different fields. So the specific fields you observe in the pop-up may differ depending on the type of incident layer that you clicked.
5. Click **Zoom in** to zoom in to an incident on your map using the scroll wheel on your mouse forward. Reversing the scroll wheel zooms the map out. Alternatively, you may click the

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zoom in and zoom out buttons located in the lower left corner of the map to control zoom level.

6. Select the **basemap icon** in the upper right corner of the map that looks like four maps. Then select the Imagery Hybrid basemap to see the imagery near the incident.
7. When finished, reset each filter to **All**.

## Explore calls for service activity

In this workflow, you will be preparing for a meeting with a neighborhood association. The group is particularly concerned about Friday night quality of life issues such as vice, drugs, alcohol complaints, and loud parties.

1. Click the **Calls for Service** tab in the lower middle of the dashboard.
2. Select a precinct from the Precinct filter list.
3. In the Day of Week filter, select a day of the week.

   You can now see the number of calls for service in your selected precinct, as well as a breakdown of the day of week, hour of day, and call for service type.
4. Browse the Call for Service list to find any report of Vice/Alcohol/Narcotics or Loud Party Or Noise. Click the first record you find.

   As you click, the map will zoom to the location of the call and flash a pink halo around the location.
5. Click the point to open a map pop-up to get the specific location of the call, the officer who responded, date of call, call type, and call ID.
6. When finished, reset all filters to the **All**.

## Explore crime activity

You have just received grant funding to implement addition patrols in problem areas for burglary. To identify where and when to run these patrols, you would like to review all Burglaries year to date.

1. Click the **Crimes** tab in the lower middle of the dashboard.
2. Select **Year to date** in the Date filter.
3. Select **Burglary** in the Activity Type filter.

   The results on the dashboard will show all Burglaries year to date. In the Days of Week chart at the bottom of the dashboard, we can see that Burglaries peak slightly on certain days of the week. Additionally, you can see the Hour of Day when burglaries appear to be most active.
4. Click any bar in the bar charts to filter the map for just the burglaries occurring in that period.

   This filtering capability helps you to search for unique time-specific spatial patterns that may indicate the work of a serial offender.
5. When finished, reset all filters to **All**.

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**Note:**
To deactivate a filter from a chart, click the chart bar again.

## Explore arrest activity

Your first shift sergeant has recommended a commendation for an officer who has made several recent high-profile arrests. To consider the commendation, you need to review the recent arrests made by the officer.

1. Click the **Arrests** tab in the lower middle of the dashboard
2. Select the officer's id number from the Officer filter

   You can now see all arrests made by the officer. Zoom in to the extent of the arrests.

   Note:

   The number in the Officer filter refers to each officer’s badge number.
3. Click one of the arrest records in the list.

   As you click, the map will zoom to the location of the arrest and flash a pink halo around the location.
4. Click the arrest point to open a map pop-up to get the specific location of the arrest, the officer who responded, date of arrest, arrest type, and arrest ID.
5. When you are done, close the Daily Activity Dashboard.

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# Damage Assessment

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Damage Assessment

Damage Assessment can be used to collect initial property damage and other impacts immediately after a natural disaster or catastrophic incident.

The solution provides a rapid damage assessment that helps government agencies prioritize activities undertaken by emergency management agencies to stabilize critical infrastructure, minimize health and safety threats, and restore services in a community. The initial damage assessment precedes the Joint Preliminary Damage Assessment (PDA) conducted with federal, state, and local officials after a disaster declaration is made. Damage Assessment is typically implemented by emergency management agencies that want to quickly understand the impact of a natural disaster or catastrophic incident and immediately assign resources to appropriate response and recovery activities.

The Damage Assessment solution allows you to conduct an initial damage assessment and monitor the impact on residential buildings, commercial structures, and public facilities.

# Requirements

The Damage Assessment solution requires the following:

- ArcGIS Enterprise 10.7 - 10.8.1
- ArcGIS Survey123

# Information products

Damage Assessment includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Damage Assessment Dashboard | An ArcGIS Dashboards app used to monitor field assessments and determine whether damage costs exceed state or federal declaration thresholds | Viewer |

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| | | |
|---|---|---|
| Damage Assessment: Commercial Buildings | An ArcGIS Survey123 form used by field inspectors to conduct initial damage assessments for commercial buildings in a connected or disconnected environment | Field Worker |
| Damage Assessment: Public Facilities | An ArcGIS Survey123 form used by field inspectors to conduct initial damage assessments for public facilities in a connected or disconnected environment | Field Worker |
| Damage Assessment: Residential Buildings | An ArcGIS Survey123 form used by field inspectors to conduct initial damage assessments for residential buildings in a connected or disconnected environment | Field Worker |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | • First release of Damage Assessment |

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# Use Damage Assessment

The Damage Assessment solution delivers a set of capabilities to collect and monitor damage to local structures including residential, commercial buildings, and public facilities.

**Note:**

In the United States, the Federal Emergency Management Agency (FEMA) manages two programs to assist recovery and restoration, the Public Assistance and Individual Assistance programs. If the results of the initial damage assessment are significant, a Joint Preliminary Damage Assessment (PDA) may be conducted. For more information on the FEMA Preliminary Damage Assessment (PDA) process, see Damage Assessment Operations Manual. Esri has created surveys using ArcGIS Survey123 to support both the FEMA Individual Assistance and Public Assistance programs. For more information on these surveys, see Esri Community blog post.

# Conduct field surveys

Immediately after the emergency response and rescue operations are completed, initial damage assessments can be conducted by emergency management field personnel to determine the impact of the incident. Using field apps with location-based information helps emergency management personnel prioritize recovery efforts.

Initial damage assessment can be conducted for commercial, residential and public infrastructure using ArcGIS Survey123 field app on a mobile device in a connected or disconnected environment.

**Note:**

The Survey123 field app is available from Google Play, the App Store, and the Microsoft Store. You can install Survey123 directly onto your device from these stores.

## Submit damage assessments for commercial buildings

In some cases, local emergency managers may assign field inspectors who are experienced in assessing damages for commercial properties such as hotels, office parks, or shopping centers. The Damage Assessment: Commercial Buildings solution is a configuration of ArcGIS Survey123 that can be used by field inspectors to collect initial damage assessments on a mobile device in a connected or disconnected environment.

In this workflow, you'll assume the role of a field inspector who has been assigned to collect local damage assessments; you will assume you are at the field location collecting the necessary information.

1. Sign in to the ArcGIS Survey123 app, and choose Damage Assessment: Commercial Buildings.
2. Enter an **Incident Number**, **Incident Name**, **Inspection Date**, and **Time**.

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3. Click the **Set Location** button. In the map search box, enter `22 W. Chicago Ave. Naperville, IL`.
4. Scroll down the list and enter site information for the commercial property.
5. Select **Yes** for the **Is the Business Open** option, enter values for the **Estimated $ Loss Structure** and **Estimated $ Loss Contents** parameters.
6. For the **Extent of Damage**, select **Minor** and for the **Primary Cause of Damage**, select **Flood**.
7. Continue scrolling down the list to enter a **Description of Damage**, **Impact to Jurisdiction**, and **Additional Comments**.
8. Under **Photos**, attach a picture or diagram to make it easy to see the extent of damage.
9. Scroll down and enter the **Inspectors Information** to make it easy to follow up with any questions.
10. Click **Yes** for **Is the Owner or Occupant Present** to open a cascading list of Owner/Occupant Information.

    Note:

    If the owner is present, the field inspector can capture contact and insurance information, which will help expedite the damage assessment process.
11. Enter all the necessary **Owner/OccupantInformation**, then scroll down.
12. Enter all the necessary **Insurance Information**.
13. Click **Submit** to complete the damage assessment survey for the commercial property.

## Submit damage assessments for public facilities

In this workflow, you'll assume the role of a field inspector who has been assigned to public facilities such as schools, water and sewer, or transportation infrastructure.

1. Sign in to the ArcGIS Survey123 app, and choose Damage Assessment: Public Facilities survey.
2. Enter an **Incident Number**, **Incident Name**, **Inspection Date**, and **Time**.
3. Click the **Set Location** button. In the map search box, enter `Naperville Central High School, 440 Aurora Ave, Naperville, IL`.
4. Scroll down the list and enter **Site**, **Facility**, and **Address** information for the facility.
5. For the **Damage Category** option, select **CAT E – Public Buildings**.
6. Enter a **Description of Damage**, **Impact to Jurisdiction**, and **Impacted Department**.
7. Enter values for the **CostEstimate** and **County's CostEstimate, Percent Complete** and any **Additional Comments**.
8. Under **Photos**, attach a picture or diagram to make it easy to see the extent of damage.
9. Scroll down and enter the **Inspectors Information** to make it easy to follow up with any questions.
10. Click **Submit** to complete the damage assessment survey for the Public Facility.

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## Submit damage assessments for residential buildings

In this workflow, you'll assume the role of a field inspector who has been assigned to assess damage to residential structures.

1. Sign in to the ArcGIS Survey123 app, and choose Damage Assessment: Residential Buildings survey.
2. Enter an **Incident Number**, **Incident Name**, **Inspection Date**, and **Time**.
3. Click the **Set Location** button. In the map search box, enter `23 E Hillside Rd, Naperville, IL`.
4. Scroll down the list and enter **Site** and **Parcel** information for the residence.
5. Under **Type of Home**, select **Detached Home**.
6. Enter the **Address** information.
7. For the **Extent of Damage**, select **Minor**, and for the **Primary Cause of Damage**, select **Flood**.
8. Enter a **Description of Damage**, enter values for the **Estimated $ Loss Structure** and **Estimated $ Loss Contents** parameters.
9. Enter an **Impact to Jurisdiction** and any **Additional Comments** such as the number of floors damaged, basement, or garage.
10. Under **Photos**, attach a picture or diagram to make it easy to see the extent of damage.
11. Scroll down and enter the **Inspectors Information** to make it easy to follow up with any questions.
12. Select **No** for the **Is the Owner or Occupant Present** option.

    Note:

    In many cases, the owner or occupant may have left to seek shelter in another location.
13. Click **Submit** to complete the damage assessment survey for the residential building.

# Monitor damage assessment reports

Initial damage assessment reports can be used by local officials to determine the severity and magnitude of a natural disaster or catastrophic incident. The information from the reports is then analyzed to determine whether the disaster-related costs and damages could qualify for any state and/or federal assistance.

The Damage Assessment Dashboard can be used to monitor damage assessments as they are submitted by field inspectors and determine whether damage costs exceed state or federal declaration thresholds.

1. In a browser, sign in to your ArcGIS Enterprise organization, navigate to your the Damage Assessment Dashboard item, then choose view dashboard.
2. Click the **Residential Buildings** tab in the lower left corner of the dashboard.
3. Review the number of residential buildings in each extent of damage category.

   Note:

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The damage assessment categories are Destroyed, Major, Minor, Affected, and Inaccessible.

4. Review the total sum of damage assessments in the upper right corner of the dashboard.
5. Click one of the residential damage estimates in the list.

   The map zooms in to the selected residential damage estimate location and a pop-up window appears in the upper left corner of the dashboard with information and options to flash the selected feature.
6. Click the **Commercial Buildings** tab in the lower left corner of the dashboard.
7. Review the number of commercial buildings in each damage category.
8. Review the total sum of damage assessments in the upper right corner of the dashboard.
9. Click one of the commercial damage estimates in the list.

   The map zooms in to the selected residential damage estimate location and a pop-up window appears in the upper left corner of the dashboard with information and options to flash the selected feature.
10. Click the **Public Facilities** tab in the lower left corner of the dashboard.

    Note:

    The public facilities don't have the same damage categories as residential or commercial buildings but instead have symbols indicating the damage category.
11. Review the total sum of damage assessments in the upper right corner of the dashboard.
12. Click one of the damaged public facility estimates in the list.

    The map zooms in to the selected residential damage estimate location and a pop-up window appears in the upper left corner of the dashboard with information and options to flash the selected feature.
13. Close the Damage Assessment Dashboard.

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# Emergency Management Operations

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Emergency Management Operations

Emergency Management Operations can be used to manage incident operations and maintain situational awareness during emergency response and recovery phases.

The solution provides an integrated suite of role-based apps that helps emergency response personnel (for example, duty officers, field operations, incident commanders, and public information officers) share information as they perform the unique tasks required to accomplish incident objectives. Emergency Management Operations is typically implemented by emergency management agencies that want to use shared information during emergency response and recovery operations.

The Emergency Management Operations solution delivers a set of capabilities that help you to identify an emergency incident, define the impact, allocate resources, and communicate status to internal and external stakeholders.

## Requirements

The Emergency Management Operations solution requires the following:

- ArcGIS Enterprise 10.7 - 10.8.1
- ArcGIS Pro 2.7 - 2.9 (Basic, Standard, or Advanced)

## Information products

Emergency Management Operations includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Situational Awareness Viewer | An ArcGIS Web AppBuilder app that can be used by emergency management personnel to understand the impact of an incident on public infrastructure and human populations | Editor |

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| | | |
|---|---|---|
| Operations Response | An ArcGIS Web AppBuilder app used by emergency management personnel to understand the status of emergency facilities and response teams | Editor |
| Incident Status Dashboard | An ArcGIS Dashboards app used by emergency management personnel to monitor response activities and measure progress on incident objectives | Viewer |
| Incident Briefing | An ArcGIS StoryMaps app used by emergency management personnel to brief key stakeholders during an incident or event | Viewer |
| Public Information | A Nearby app used by the public to review authoritative information and understand the status of an incident or event | Not required |
| Emergency Management Maps | An ArcGIS Pro project used by mapping technicians to create a standard set of briefing and response maps | GIS Professional Basic |
| Damage Assessment Dashboard | An ArcGIS Dashboards app used to monitor field assessments and determine whether damage costs exceed state or federal declaration thresholds | Viewer |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | • First release of Emergency Management Operations |

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# Configure Emergency Management Operations

The Emergency Management Operations solution includes several data layers that use facility information to support emergency response activities. Below is a list of facility types that are used in those data layers.

- Emergency Facilities—Police and fire
- Industrial Facilities—Factories, utilities
- Commercial Facilities—Shopping centers and businesses
- Medical Facilities—Hospitals and clinics
- Educational Facilities—Schools

If you do not have an inventory of facility information in ArcGIS Enterprise, you may have them in a spreadsheet or another system you can export to a spreadsheet. Once you have created a spreadsheet for each facility type, you can load the data into the facility layers provided with the solution.

## Load emergency management facilities

To load your facilities information from a spreadsheet, complete the following steps:

1. If necessary, sign in to your ArcGIS Enterprise organization.
2. At the top of the site, click **Content**.
3. On the **My Content** tab, type `Emergency Management Operations` in the search box.
4. Under **Item Type**, click **Layers**, then click **Feature Layers**.

   Note:

   Some of the feature layers have a suffix added such as **public**. These are layer views of the of the original source feature layer. These layer views are used to share information with the public without showing all the details or allowing the public to edit the layers. The original source layers do not have a suffix.
5. Click the title of the original source layer into which you want to load data to view the item details.
6. Click **Update Data**, then click **Append Data to Layer**.
7. Under **Filename**, choose your spreadsheet.
8. Click **Upload**, then click **Continue**.
9. Click **Show field matching** to match the fields from the spreadsheet to the fields in the selected feature layer.
10. After you have matched the fields, click **Apply Updates**.
11. Click the **Data** tab on the banner of the item page to confirm your data has loaded successfully.

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# Configure the incident briefing app

Incident Briefing is a configuration of the Story Maps Series application. The application references Esri's sample application: Situational Awareness Viewer, Operations Response, and Incident Status Dashboard and Damage Assessment Dashboard. To configure the Incident Briefing story map, complete the following steps:

1. Sign in to your ArcGIS Online organization and browse to the application.
2. On the application item page, click **Configure App**.
3. Click the **Introduction** tab, then click the **Edit** button.
4. On the **Edit** tab, click the back button.
5. Click the **Upload** button, then click the **browse for an image** button and browse to the image you want to display, and click **Save**.
6. Update the introduction text as necessary for your incident briefing application.
7. In the upper right corner of the application, click the **Fix** button.
8. Click the **Confirm** button to authorize the subscriber content for public viewers. For more information, see What is subscriber content.
9. Click the **Close** button.
10. Click the **Situational Awareness** tab, then click the **Edit** button.
11. On the **Edit** tab, click the back button and paste the URL for your Situational Awareness Viewer application in the Web Page link, then click **Configure > Save**.
12. Repeat step 6 through 7 for the **Operations Response**, and **Incident Status Dashboard** tabs to reference the applications in your organization.
13. For ArcGIS Enterprise deployments, repeat step 6 through 7 for the **Damage Assessment Dashboard** tab to reference the applications in your organization.
14. Make additional changes that are necessary to the Incident Briefing story map, then click **Save** in the upper right corner to save all your configuration changes.
15. Edit the item details.

# Configure the Public Information app

The Public Information app requires access to display the National Weather Service watches, warnings, and advisories layer publicly. Follow the steps below to allow access to the layer and, optionally, configure directions to be used in the app.

## Configure the National Weather Service watches, warnings, and advisories

To configure the ArcGIS Living Atlas layers from the National Weather Service, which are included in the deployed map, and to share this app publicly, you will need to allow access to these layers through your subscription. Follow the steps below to enable the layers in the app.

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1. Sign in to your ArcGIS Enterprise organization and browse to the Public Information app.
2. View the app and identify changes you may want to make to it to support specific business needs in your organization.
3. On the app item page, click **Edit Application**.
4. On the **Attribute** tab, click **Subscriber content access**.
5. Select the ArcGIS Living Atlas layers to allow public users to access them through your subscription.
6. Click **Save** to save the app and edit the item details.

### Configure directions

Optionally, the Public Information app can be configured to provide directions to the nearest facilities.

This configuration draws routes and provides directions using the ArcGIS Online World Route Service. This service requires authorization to consume premium content as it consumes credits. Learn more about credit usage when creating simple routes.

Follow the steps below to connect to a routing service and configure the app to enable directions.

1. If necessary, sign in to your ArcGIS Online organization.
2. Browse to the web app item page and click **Configure App**.
3. In the left panel, click **Interactivity**.
4. Click the slider to enable **Show directions**.
5. Click **Publish**.
6. Click **Confirm**.

   The **Authorize premium content** dialog box appears, indicating this functionality will consume credits.
7. Click **Authorize**.
8. Click **Launch** and explore the capabilities of enabling directions.

## Configure Situational Awareness Viewer for ArcGIS Enterprise

For ArcGIS Enterprise deployments, Situational Awareness Viewer requires the USA Block Groups in the ArcGIS Living Atlas. Follow the steps below to add the USA Block Groups layer to your map, and configure the widget to use in the application.

**Note:**
This is a required workflow for ArcGIS Enterprise 10.7, 10.8, and 10.8.1 deployments.

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## Add USA Block Groups layer

To add the USA Block Groups layer to the Situational Awareness Viewer map, complete the following steps:

1. Sign in to your ArcGIS Enterprise organization and browse to the map.
2. Click the **Open in Map Viewer** button and click **Web Map Settings**.
3. Click the **Add** button and choose **Browse Living Atlas Layers**.
4. Type `USA Block Groups`, press the Enter key, and choose **USA Block Groups**.
5. To close the search pane when you are finished, click the back button.
6. Click the **Add to Map** button.
7. In the contents pane, next to the USA Block Groups layer, click the more options button, and choose **Remove Pop-up**.
8. Change the style of the layer by choosing no color.
9. Save the map.

## Configure the Potential Impact widget

To configure the Situational Awareness Viewer application to use USA Block Groups, complete the following steps:

1. Sign in to your ArcGIS Enterprise organization.
2. Browse to the ArcGIS Web AppBuilder application item page and click **Edit Application**.
3. Click the **Widgets** tab, then click **Set the widget in this controller**.
4. Hover over the **Potential Impact** widget, and click **Configure this widget**.
5. In your **Potential Impact** widget, add a potential impact tab to display summarized information from the USA Block Groups layer in the map by clicking **Add Tab**.
6. Choose the USA Block Groups layer in the **Layer** column, choose **Summary** in the **Analysis Type** column, and type `Potential Impact` in the **Label** text box.
7. Under the **Action** column, click the **Edit** tool to open the **Select Fields** window, then add the following fields, labels, and types:

| Field | Label | Type |
|---|---|---|
| POP2012 | Total Population | SUM |
| AGE_UNDER5 | Children Under 5 | SUM |
| AGE_85_UP | Adult Over 85 | SUM |

8. Click **OK**.
9. Save the application and share it with everyone.
10. Start your application.

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# Use Emergency Management Operations

The Emergency Management Operations solution delivers a set of capabilities that help allows you to identify the potential threat, define the area affected, and quickly determine the impact to population, facilities, and infrastructure.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

# Assess the impact of an incident

Situational Awareness Viewer can be used by emergency management personnel to understand the impact of an incident on public infrastructure and human populations. Situational Awareness Viewer includes incident information used in a suite of related emergency operations solutions essential to maintaining situation awareness.

In this workflow, you will assume the role of a duty watch officer responsible for assessing the incident impact and sharing that information with other users in the EOC.

## Define the incident area

The incident area can be defined by selecting an existing incident, weather warning area, or storm report from Active Incidents and Warnings. An incident can also be created by creating a buffer around a point, line, or polygon.

To define the incident area using the sample data, complete the following steps:

1. In a browser, from the Emergency Management Operations solution, view the Situational Awareness Viewer.
2. From the **Active Incidents and Warnings** list, click an incident perimeter.

   Note:

   You can also define an incident area by clicking any existing polygon.
3. Click the more options button in the lower right corner of the pop-up window and choose **Set Location** to define the incident area.

   The Situation Awareness widget will open at the bottom of the screen with the impact of a one-mile buffer around the incident.

   Note:

   The point, line, and polygon icons can be used to create another incident area by specifying a buffer distance around another location. This can be useful for accidents, chemical spills, tornado paths, wildfires, or any other type of incident.
4. Click the **Save** button in the Situation Awareness panel at the bottom of the screen to save the incident location in the Incident layer.

   A pop-up will appear allowing you to enter parameters for this incident.
5. Enter an incident number, name, type, then click **Done**.

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## Assess the potential impact

After the incident area has been defined, the impact to population, facilities, and infrastructure can be determined. Using the incident area defined in the previous workflow, follow the steps below to determine the potential impact of an incident.

1. To determine the potential impact to the population, select the **Potential impact** tab in the Situation Awareness panel at the bottom of the screen.

   The estimated potential impact to vulnerable populations in the incident area is displayed by age group.

2. To further understand the impact to population, select the **Special Needs** tab.

   This tab displays a list of residents, if any, who have registered for assistance during an emergency.

3. To determine the impact to facilities, select the **Schools**, **Shelter**, and **Hospitals** tabs. Each tab displays the number of facilities in the incident area.

4. To determine the impact to road infrastructure, select the **Road Closures** tab. This tab displays the number of Road Closures in the incident area.

5. Click the Incident tab, then click the **Download** button to download all the incident information into a CSV file.

   Note:

   This CSV file can be given to the emergency management staff or volunteer coordinators.

6. Click the **Print** button to create a report of the potential impacted facilities, infrastructure, and human populations. In the properties window, enter a title, orientation, page size, and any comments, then click **OK**.

   Note:

   This report can be printed or saved electronically to share with emergency management staff.

7. The **Snapshot** button can be used to create a time-stamped folder in your ArcGIS organization containing a map and feature layers. The map and feature layers can be used for after-action reports or other analysis.

   Note:

   The **Snapshot** button is enabled when deployed in your organization and is enabled.

8. Close the Situation Awareness Viewer app.

# Understand operational needs

After the incident area has been defined and the impact has been determined, the operations personnel can plan and assign response activities. The Operations Response app can be used by emergency management personnel to understand the status of emergency facilities and response teams.

In this workflow, you will assume the role of the operations section personnel responsible for locating and assigning emergency response resources.

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## Find resources near an incident

Operations response begins by identifying the incident area and finding nearby resources to support tactical operations. You can search for an address or place to find a given location to help plan response activities near that location.

1. In a browser, from the Emergency Management Operations solution, view the Operations Response app.
2. In the search box, type an address.
3. Click the more options button in the lower right corner of the search result pop-up window.
4. Choose **Set Location** to define the incident area and specify a buffer distance of 1 mile.
5. Click the **MRP Deployments** tab to display a list of mission-ready packages within the specified buffer.
6. Click the **Response Facilities**, **Road Closures**, and **Closest Hospitals, Schools, Shelters** tabs to find other resources.
7. Click the **Incident** tab, then click the **Download** button on the left side and open the CSV file to see the list of resources.

   Note:

   This information can be shared with other agencies or saved for an after-action report.
8. Explore other methods of defining incident boundaries by using the line tool to locate a linear incident, such as a train derailment along the train tracks, and use a buffer distance of 1 mile to see the impact area.
9. Click the **Start Over** button to remove the selected incident area, if necessary.

## Locate teams assigned to response activities

Mission teams that have been assigned to response activities can be located on the map with attributes and symbology for each type of response team. These locations and attributes can then be updated from the field as teams change or complete assignments.

1. Click the **Add Resources** widget in the upper right corner to view the resource that can be assigned to this incident.
2. In the **Search Templates** box, type `Emergency` to see a list of resources with that name.
3. Select **Emergency Medical Services** to add a point on the map near the point of the incident address.
4. In the **Add Resources** list, for **Mission Ready Packages**, add the following attributes:

| Parameter | Value |
|---|---|
| Name | EMS 1 |
| MRP Type | medical |
| MRP Status | Acceptance of Mission |
| MRP Description | public requested assistance |

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| | |
|---|---|
| NIMS Resource | Medical/Public Health System Assessment Team |
| NIMS Discipline | Emergency Medical Services |
| NIMS Resource Kind | Team/Equipment |
| NIMS Type | III |

Leave the remaining attributes blank for now and close the **Add Resources** widget.

5. Use the **Directions** widget to get directions from the incident location to the nearest hospital.
6. Click the **Print** button in the Directions widget to print a map of the route with directions.

   Note:

   Operations Response can be used on a mobile device or printed directions can be sent to a mobile device if necessary.
7. Click **Clear** to clear the directions from the map.

### Archive incidents

After the incident or event is over and operational features in the map are ready to be archived, the **Archive Incidents** widget updates the active incident flag to archive data quickly and efficiently. The features are no longer visible in the app but will continue to be stored in the associated feature layers. This system design allows you to manage multiple incidents from a single app and allows you to access your archived data from the associated feature layers for after-action analysis or reporting.

1. Click the **Archive Incidents** widget to view the operational layers available to be archived.
2. Check the check boxes next to the layers to be archived.
3. Click one of the **Drawing** tools, and select the features on the map.
4. Choose the **Active Incident** drop-down list, then choose **No**, and click **Save**.
5. Close the Operations Response app.

## Visualize incident status

As the incident unfolds, it is important for incident commanders to monitor response activities as they occur in real time. Typically, the county or state Emergency Operations Center displays the incident status on a big screen so all command staff can monitor events and make informed decisions.

### Monitor incident status

The Incident Status Dashboard can be used by emergency management staff to monitor response activities in the Emergency Operations Center and measure progress toward the incident objectives.

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In this workflow, you will assume the role of the incident command personnel responsible for monitoring the status of the incident and emergency response activities.

1. In a browser, from the Emergency Management Operations solution, view the Incident Status Dashboard app.

   Note:

   The Incident Status Dashboard is designed to be a passive dashboard, meaning no interaction is necessary since it typically will be viewed on a big screen in the Emergency Operations Center.

2. Review the number of Active Incidents and Weather Warnings on the left side of the dashboard. As the active incidents increase, so does the demand on resources.
3. Review the number of Open Shelters and Shelter Occupancy on the right side of the dashboard. Each green symbol on the map indicates both the location and status of shelters. Closed shelters will appear in red. As the shelter occupancy increases past 75 percent, the gauge will turn red, indicating additional shelters will need to be opened to meet the demand.
4. Review the indicators at the bottom of the screen.
   - MRPs Deployed indicates the number of Mission Ready Packages that have been assigned or deployed. An MRP type describes a specific capability that has been developed, trained, and equipped to respond to a unique incident or situation.
   - Road Closures indicates the number of road closures within the current map extent.
   - PODs indicate the number of Points of Distribution where public safety agencies can distribute critical supplies to the public.
5. After you are done reviewing the information, close the Incident Status Dashboard.

# Brief key stakeholders

During an incident, emergency management personnel must provide key decision makers with accurate and current information that communicates the scope of the emergency incident, the status of operational response, and resource availability. Using digital maps to brief key stakeholders ensures clear communication across all command levels and enables effective executive-level decision-making.

## Report current situation

In this workflow, you will play the role of the incident command staff who is responsible for conducting the incident briefing. The briefing is conducted using a series of interactive apps in the Incident Briefing app.

1. In a browser, from the Emergency Management Operations solution, view the Incident Briefing app.
2. Review information in the **Introduction** tab to see how the briefing app can be used.
3. Click the **Situational Awareness** tab to see active incidents and warnings.

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Note:

The Situational Awareness app is embedded in the Incident Briefing app to provide an interactive map showing the status of the incident. You can select an active incident to show the current situation and impact to the community.

4. Click the **Operations Response** tab to see current emergency response activities.

   Note:

   Questions often arise during an incident briefing such as how many teams are currently deployed or how many roads are closed. Because the Operations Response is embedded in the Incident Briefing app, questions such as this can be quickly answered with current information.

5. Click the **Incident Status** tab to see the overall picture of the current situation.
6. Close the **Incident Briefing** app when done reviewing.

# Inform the public

Citizens need access to information before, during, and after an incident to assess their personal risk and determine when to act. The Public Information app can be used by the public to review authoritative information and understand the status of an incident or event.

## Locate incident information

Follow the steps below to get incident information using the sample data.

1. In a browser, from the Emergency Management Operations solution, view the Public Information app.
2. In the **Public Information** pane, drag and use the buffer distance slider to set a distance of 3 miles.

   The slider allows a user to define a distance once an address is entered or a location is identified on the map.

3. In the **Public Information** pane under **Search for an address or locate on map**, type an address.
4. Click the **Expand All** button to review all the incident information near the specified address.
5. Scroll down the list of incident information to review the local incidents, open shelters, evacuation notices, and weather warnings.
6. Click **Open Shelter** to review additional information about the selected shelter.
7. Close the Public Information app when you are done reviewing the incident information.

# Produce emergency maps

Often, field support personnel don't have access to the internet or real-time maps on devices during an emergency incident. Therefore, it may be necessary to produce paper maps of the

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current situation quickly. Emergency Management Maps can be used by emergency management mapping technicians to update the data sources with local incident data, share maps and data, and create standard hard copy briefing and response maps.

In this workflow, you will assume the role of a mapping technician supporting an emergency incident.

## Use your data

Emergency Management Maps is a desktop application template that includes a series of tasks that have been designed to support planning and response activities. It can be used to update source data for the current incident which can be used in the other apps that are part of the Emergency Management Operations solution.

1. In a browser, go to your ArcGIS Online organization and click **My Contents**.
2. Locate the Emergency Management Operations folder.
3. Download the **Emergency Management Maps** desktop application template.
4. Start the ArcGIS Pro application and open the project package from the active portal.
5. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
6. In the **Catalog** pane, expand the **Using your data** task group.
7. Click the **Update data sources** task and follow the instructions to update the ArcGIS Pro project to reference hosted feature layers.
8. Click the **Append your data** task and follow the instructions to add your data to the existing data schemas provided with the project.
9. Click the **Use existing geodatabase** task and follow the instructions to source layers with your data or published web layers.
10. Click the **Use Esri Demographic data** task and follow the instructions to use data included in ArcGIS Living Atlas of the World.

## Share with your organization

Some situations require sharing data and maps with other people within the organization. After you resource the data in the previous workflow, you can share layers and maps with your data. You can also share the desktop application template with other mapping technicians.

1. In the tasks panel, expand the **Share with your organization** task group.
2. Click **Share Layers** and follow the task instructions to publish your data as a web layer.
3. Click **Remap layer to use published layers** to replace layers in the project with the new published layers.
4. Click **Share maps** to share the maps as web maps with your organization after referencing web layers in the project maps.
5. Click **Create Shared Map Package** to create a map package that can be shared with other people in your organization to edit data and create map books.

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## Create map books

One way to deliver standard hard copy briefing and response maps to field personnel is in the form of a map book. The map book can be either a series of the same map with individual pages covering the geographic extent of the incident or a collection of different maps with the same extent.

1. In the tasks panel, expand the **Create map books** task group.
2. Click **Create a field reference map series** and follow the task instructions to create a map series with pages of different extents of the same map.
3. Click **Create an incident map book** and follow the task instructions to create an incident map book with different maps of the same extent.

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# Fire Hydrant Inspection

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>July 2022 - June 2024 | Retired phase<br>July, 2024 |
| --- | --- |

# Introduction to Fire Hydrant Inspection

Fire Hydrant Inspection can be used to perform fire hydrant inspections and ensure that every hydrant in a district performs reliably when an emergency occurs.

The solution provides a comprehensive inventory of fire hydrants, and their status that can be accessed in a station or the field. The hydrant inventory can be used by fire service agencies to prioritize inspection activities and quickly locate operational hydrants when an emergency occurs. This approach reduces staff time necessary to perform routine inspections, and ultimately increases the effectiveness of fire suppression efforts. Fire Hydrant Inspection is typically implemented by fire service agencies that want to take a data-driven approach to preparedness and response activities.

The Fire Hydrant Inspection solution delivers a set of capabilities that help you inventory fire hydrants, collect operational status on a regular schedule, and monitor the progress of firefighters performing routine hydrant inspections.

# Requirements

Fire Hydrant Inspection requires the following:

- ArcGIS Enterprise 10.6.1 - 10.8.1 (Standard or Advanced)
- ArcGIS Collector

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# Information products

Fire Hydrant Inspection includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Fire Hydrant Inspection Dashboard | An ArcGIS Dashboards app used by fire personnel to monitor fire hydrant inspections occurring in a community | Viewer |
| Fire Hydrant Inspection | An ArcGIS Collector web map used by fire personnel to inspect fire hydrants and ensure that every hydrant in a district performs properly and reliably when an emergency occurs | Field Worker |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | • First release of Fire Hydrant Inspection |

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# Configure Fire Hydrant Inspection

The Fire Hydrant Inspection solution can be used by fire personnel to perform inspections and ensure that every hydrant in a district performs properly and reliably when an emergency occurs. In some cases, you may already have fire hydrant location and attribute data in ArcGIS or a spreadsheet. To load your fire hydrant data into the solution, follow the instructions appropriate for the form of your data.

## Load fire hydrant data from a spreadsheet

To load fire hydrant data from a spreadsheet, complete the following steps:

1. If necessary, sign in to your ArcGIS Online organization
2. At the top of the site, click **Content**.
3. On the **My Content** tab, type `fire hydrant` in the search box.
4. Click the Feature Layer item named **FireHydrants**.
5. Click the **Data** tab.
6. Click the **Fields** toggle button to display a view of all fields in the **FireHydrants** layer.
7. Right-click the **Overview** tab, and open a new window.
8. Click the **Update Data** button, then click **Append Data to Layer**.
9. Click the **Choose File** button and select your spreadsheet.
10. Click **Upload and Continue**. The spreadsheet may take several seconds to upload.
11. Click the **Show field matching** link.
12. Match the fields in your data to the appropriate corresponding field in the **FireHydrants** layer.

    **Tip:**

    Your spreadsheet must have fields containing the latitude and longitude coordinates of the fire hydrant location, and these fields must be matched to the Latitude and Longitude fields in the **FireHydrants** layer.
13. Click **Apply Updates**.

## Load fire hydrant data

If you have fire hydrant data you can load it into the fire hydrant layer to conduct the inspections.

To load features from a shapefile into the hydrants layer, complete the steps below

1. If necessary, sign in to your ArcGIS organization
2. At the top of the site, click **Content**.
3. On the **My Content** tab, type `fire hydrant` in the search box.

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4. Click the Feature Layer item named **FireHydrants**.
5. Click the **Data** tab.
6. Click the **Fields** toggle button to display a view of all fields in the **FireHydrants** layer.
7. Review the display names of all fields in the layer and consider how the fields in your data relate. In a later step, you will need to match the fields in your dataset to the associated field in the **FireHydrants** layer, so it is helpful to leave this page open for reference.
8. Right-click the **Overview** tab, and open a new window.
9. Click **Choose File** and browse to a `.zip` containing the shapefile with your fire hydrants and then click **Open**.
10. Click **Upload and Continue**. The file may take several seconds to upload.
11. Click the **Show field matching** link.
12. Match the fields in your data to the appropriate corresponding field in the **FireHydrants** layer.
13. Click **Apply Updates**.

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# Use Fire Hydrant Inspection

The Fire Hydrant Inspection solution delivers a set of capabilities that helps firefighters perform hydrant field inspections and helps supervisors monitor the progress of inspections from the office.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

# Collect fire hydrant data

Fire Hydrant Inspection allows firefighters in the field to collect data about fire hydrants from a smartphone or tablet.

In this workflow, you'll learn how to use the Fire Hydrant Inspection web map in ArcGIS Collector to document the inspection of a fire hydrant and to capture information about a new hydrant.

## Perform a fire hydrant inspection in the field

You will assume the role of a firefighter. You are asked to use the ArcGIS Collector mobile app to access your Fire Hydrant Inspection map and document fire hydrant inspections you were assigned to perform in the field.

1. Download ArcGIS Collector onto your mobile device.
2. Open the app on your mobile device, and sign in to your ArcGIS organization.
3. Choose the **Hydrant Inspection Map**.
4. Search for **Naperville, IL**, then click **Naperville** when it appears in the list of **Places** to zoom to that location on the map.
5. Click a **Fire hydrant**.
6. Scroll up to see the attributes for this hydrant.
7. Click the edit button to edit the record.
8. Set the question **Will Not Flow or Pump** to **Yes**.
9. Set the question **Operable** to **No**.
10. Click **Submit**.
11. In the map, the color of the hydrant now turns from red to black.

## Capture information about a new fire hydrant

You will stay in the role of a firefighter in the field and will now use the Fire Hydrant Inspection map in ArcGIS Collector to capture information about a new fire hydrant that needs to be added to the map.

1. Download ArcGIS Collector onto your mobile device.

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2. Open the app on your mobile device, and sign in to your ArcGIS organization.
3. Choose the Fire Hydrant Inspection map.
4. To add a new hydrant, click the add button.
5. Use the map to select the exact placement of the hydrant. By default, the app will use the GPS location of your device.
6. Select **Yes** to indicate the hydrant is operable.

   Note:

   This step sets the default symbol for the hydrant based on the operable condition.
7. Click the **Add Point** button.
8. Scroll up to view all hydrant attribute fields.
9. Set the question **Flow Rate (GPM)** to **600**.
10. Set the question **Pressure (PSI)** to **15**.
11. Click **Submit**.
12. In the map, the new hydrant can be seen in red to indicate that it is operable.

# Monitor progress of fire hydrant inspections

You will now assume the role of fire command staff and will use the Fire Hydrant Dashboard from your office to monitor the progress of those inspections.

1. In a browser, go to the Fire Hydrant Dashboard.
2. Click **Fire Station #9** on the left side of the dashboard, under the Fire Stations header.

   You can now see all fire hydrants in your district on the map. On the right side of the dashboard, you can see the total number of hydrants, the number of inoperable hydrants, and the number of hydrants inspected in the last 365 days. Your inspection process will be completed when the number of hydrants inspected in the last 365 days is the same as the total number of hydrants.
3. Click **Last 30 Days** from the **Inspection Date** drop-down list on the left side of the dashboard.

   You can now see how many hydrants have been inspected in the last 30 days.
4. Click **All** from the **Inspection Date** drop-down list to clear the **Last 30 Days** filter.
5. Select **Between the dates** from the **Inspection Date** drop-down list, then enter a start date and end date to filter by a specific date range.
6. Click **All** from the **Inspection Date** drop-down list to clear the **Between the dates** filter.
7. Click the **Inoperable** button under Hydrant Status on the left side of the dashboard to see only the inoperable fire hydrants.
8. Click the **Inoperable** button again to view all hydrants.
9. Close the app.

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# Fire Incident Dashboard

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Fire Incident Dashboard

Fire Incident Dashboard can be used to visualize fire and emergency medical service (EMS) incidents sourced from computer-aided dispatch or records management systems and monitor associated response times.

It improves operational visibility for supervisors in a fire service agency and allows them to rapidly identify emerging incident patterns and diagnose response problems. This increased operational awareness ensures accreditation standards are being met and community safety standards are satisfied. Fire Incident Dashboard is typically implemented by fire service agencies that want to proactively monitor response times and detect incident patterns quickly.

The Fire Incident Dashboard solution delivers a set of capabilities that help you source incident records from computer-aided dispatch or records management systems, visualize fire and EMS incidents, and monitor trends or patterns.

## Requirements

Fire Incident Dashboard requires the following:

- ArcGIS Enterprise 10.7 - 10.8.1
- ArcGIS Pro 2.7 - 2.9 (Basic, Standard, or Advanced) (Optional)

## Information products

Fire Incident Dashboard includes the following information products:

| Name | Description | Minimum user type |
|---|---|---|
| Fire Incident Dashboard | An ArcGIS Dashboards application used by fire command staff to monitor fire and EMS incidents sourced from computer aided dispatch or records management data | Viewer |

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# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of Fire Incident Dashboard |

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# Configure Fire Incident Dashboard

The Fire Incident Dashboard solution can be configured to meet the specific needs in your organization. In this topic, you will learn how to use the **Update Features with Incident Records** tool to automatically load data from records management systems (RMS) and computer-aided dispatch systems (CAD) into the layers in your Fire Incident Dashboard, and modify or remove dashboard elements unsupported by your data schema.

## Load data

The layers can be loaded with data using ArcGIS Pro. Optionally, you can automated the current RMS or CAD incident data to run on a schedule to ensure you are reviewing the most up-to-date information while using the dashboard.

### Load data using ArcGIS Pro

In some cases, you may already have this information in ArcGIS or another mapping system. Review the layers provided with the solution and determine what source data you want to load. Then, load your existing data into the layers provided with the solution before sharing the maps or apps.

1. In ArcGIS Pro, and ensure you are signed into your ArcGIS organization where the Fire Incident Dashboard solution is deployed.
2. Click **View**, and then click **Catalog Pane**.
3. In the **Catalog Pane**, click **Portal**, click **My Content** and choose the folder containing the solution.
4. Add the FireServiceDistricts layer and FireIncidents layer to the map.
5. Click **Analysis**, then navigate to the **Append** tool, open the tool, use the tool to load the districts layer of the FireServiceDistricts layer.
6. Navigate to the Update Features With Incident Records tool, open the tool and use it to load data into the FireIncidents layer.

### Automate incident data updates

You can use the ArcGIS Pro and the Update Features With Incident Records tool to update incident layers on a regular interval. Scheduled updates ensure users have access to current information to support more dynamic decision making.

To update crimes, calls for service, arrests data on a schedule, use the Update Features With Incident Records tool with the **Update Existing Target Features** parameter enabled. Once the tool is configured to use your dynamic incident data, follow the schedule geoprocessing tools documentation to learn how to run the tool on a schedule.

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# Configure dashboard elements

When loading data from your RMS or CAD system into the layers of the Fire Incident Dashboard, you may find that your source data does not contain specific fields used in the charts or filters. Since the Fire Incident Dashboard is a configuration of ArcGIS Dashboards, all elements can be reconfigured to point to different fields, or deleted entirely, as the schema of your data necessitates.

See Configuring ArcGIS Dashboard elements for more information.

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# Use Fire Incident Dashboard

The Fire Incident Dashboard solution delivers a set of capabilities that help you source incident records from computer-aided dispatch or records management systems, visualize fire and EMS incidents, and monitor trends or patterns.

**Note:**

Use your organization's data or configured apps to follow these workflows.

# Understand recent trends

In this topic, you'll assume the role of a fire chief who will use the Fire Incident Dashboard to explore response times to citywide fire incidents in the last 30 days, examine response-time performance on EMS calls year-to-date, and compare fire response times by station.

## Explore response times to incidents

Follow these steps to examine the fire department's overall response-time performance.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Fire Incident Dashboard solution.
2. View the Fire Incident Dashboard app.
3. On the left, in the filter panel, click the **Call Date** drop-down list and choose **Last 30 days**.

   The map filters to display all citywide fire incidents from the past 30 days.
4. On the right, review each gauge element for average turnout time, average travel time, and average total response time.

   Note:

   Values in the green range are within or below the acceptable range for that metric. Values in the red range are outside of the acceptable range for that metric. The National Fire Protection Association (NFPA) standard is shown below each corresponding gauge. For example the, NFPA standard average turnout time is 80 seconds. If the gauge shows that the citywide average turnout time is 1.1 minutes, or 70 seconds, citywide average turnout is barely acceptable because the standard average turnout time for incidents must be 80 seconds or fewer.
5. On the map, click any incident.

   In the top-left corner of the map, a pop-up appears. It displays key facts about the incident, including which unit and shift responded, the incident type, the unit's response times, and the incident location.
6. Below the map, review the chart.

   The chart displays the number of incident responses by each fire station and unit. You have already filtered for the last 30 days, so the chart shows which fire stations had the most responses in that time period.

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7. In the chart, click the blue bar for one of the fire stations.

   The map and gauges update to show only that fire station's incident responses and response times.

8. In the chart, click the blue bar again to deselect the fire station.
9. On the left, in the filter panel, click the **Call Date** drop-down list and choose **All** to clear the date filter.

   Note:

   You can apply as many filters as you want. The filters continue to narrow the number of incidents displayed on the map based on the parameters that you specify. To cancel a filter, click any filter and select **All**.

## Examine response-time performance by call type

Response-time performance varies depending on the type of unit responding to the call. You can filter the calls by type to get a more accurate assessment of response-time performance.

Follow these steps to examine response-time performance by call type.

1. On the left, in the filter panel, click the **Call Type** drop-down list and choose **EMS and Rescue**.
2. Click the **Call Date** drop-down list and choose **Year to date**.

   The map updates to show only citywide EMS calls year to date.

3. On the right, review the gauges to determine if the average response times are within appropriate ranges.
4. In the **Responses by Station and Unit** chart, click the bar for one of the fire stations, and then review that station's EMS-incident response time.
5. Click the bar again to deselect that fire station.
6. Follow these steps to review each station's EMS-incident response time.
7. Reset all filters to **All**.

## Compare fire response times by fire station

Response-time performance may vary depending on the station or unit responding. You can compare response time using the station and call-type filters.

Follow these steps to examine the response-time performance for each station.

1. On the left, in the filter panel, select a fire station.

   The map and gauge elements filter to reflect only the incidents that the selected fire station responded to. Filtering for a single fire station allows you to review the incident types that the fire station responded to so that you can determine if future calls can be covered by another station.

2. Click the **Call Type** drop-down list and choose each call type one at a time, noticing the differences in response-type performance for each call type.

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3. After you finish, reset all filters to **All**.
4. Repeat this process with the incidents in other fire stations to make help you make a data-driven decision on each station's performance.

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# Fire Service Maps

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
| --- | --- |

# Introduction to Fire Service Maps

Fire Service Maps can be used to produce wall maps and run books that are placed in a fire station or apparatus to assist with response activities.

Fire personnel must understand their communities and quickly respond to calls for service. Delayed response times could result in the loss of life and property. While maps have made their way on to public safety mobile data computers (MDC), two primary hardcopy maps are still produced for reference in the fire service. Station wall maps are generally small scale maps hung on the wall of each fire station to help new personnel become more familiar with the service area. Run Books, on the other hand, are large scale maps that include a series of map pages along with a street index. They are combined in to a single map book and are placed in each apparatus to supplement maps provided on the MDC. Having an efficient way to produce station wall maps or run books ensure each hardcopy map product reflects changes that may occur in a community. Fire Service Maps is typically implemented by fire departments that want to quickly produce a standard set of hardcopy maps for their community.

The Fire Service Maps solution delivers a set of capabilities that help you produce station wall maps and run books for each fire response district and combine them in single map book when necessary.

# Requirements

Fire Service Maps requires the following:

- ArcGIS Enterprise 10.7 - 10.8.1
- ArcGIS Pro 2.7 or later
- ReportLab 3.4.0 or later

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# Information products

Fire Service Maps includes the following information products:

| Fire Service Maps | Description | Minimum user type |
| --- | --- | --- |
| Fire Service Maps | An ArcGIS Pro project used by fire fighters to produce wall maps and run books that are placed in a fire station or apparatus to assist with response activities. | GIS Professional Basic |

# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | First release of Fire Service Maps |

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# Configure Fire Service Maps

In this workflow, you will learn how to configure the Fire Service Maps solution to meet specific needs in your organization.

# Configure Fire Service Maps project

The Fire Service Maps solution includes an ArcGIS Pro project and sample data you can use to explore the sample data schema and a set of tools. When you are ready to configure the project, a series of tasks are included to help you review the data, make modifications to the maps and layers, load your data, and set the data sources to your data.

1. Start ArcGIS Pro and open the Fire Service Maps project.
2. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
3. In the **Catalog** pane, expand the **Tasks** folder, and double-click the Fire Service Maps task item.
4. In the **Task Pane**, click the **Configure Fire Service Maps** task group to expand the collection of tasks.

## Review schema

The Fire Service Maps project contains two geodatabases.

- Fire Service Maps Sample.gdb contains sample data for learning how to use the tools.
- Fire Service Maps.gdb contains empty layers fields that can be used to create Fire Run Books and Fire Station Wall Maps with your data.

Use this task to review the geodatabase schema, layers, and fields to determine what changes you will need to make to use your data. See Fields, domains, and subtypes to learn more about how to edit the feature layer schema.

## Define spatial reference

The Fire Service Maps.gdb is an empty geodatabase with the same schema and a spatial reference set to Web Mercator. This geodatabase can be used to define your spatial reference and load your data.

Use this task to define the spatial reference for your data. See Specify a coordinate system to learn more about coordinate systems for your data.

## Load data

After you have completed any necessary schema modifications, you can add your data layers to the map and load them into the empty Fire Service Maps geodatabase by following the steps in the **Load data** task. This task contains steps to load your data into the following layers:

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| Layer name | Description |
| --- | --- |
| **Site Addresses** | Used to label building addresses in the fire service maps |
| **Roads** | Used to label road names and address ranges along a road. It is also used to create the street index report. |
| **Fire Response Restrictions** | Used to display the location of access restrictions such as gates, narrow roads, and blocked roads that would delay or preclude a fire truck in response to an incident |
| **Fire Map Index** | Used to create individual pages in Fire Run Books |
| **Response Areas** | Used to display administrative and response districts |

As you load your data into each layer, you will be given the option to use the field map capabilities to map your data fields to the predefined fields in the empty feature layers.

## Set data sources

Use this task to replace the sample data with your data for each layer in the Fire Service Maps project.

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# Use Fire Service Maps

The Fire Service Maps solution delivers a set of capabilities that help you produce station wall maps and run books for each fire response district and combine them in single map book when necessary. Fire Station Wall Maps can be produced for individual fire stations or combined into a single station wall map. Run books can also be produced for individual fire stations or combined into a single run book for the entire fire department.

In this topic, you'll learn how to use the Fire Service Maps solution by assuming the role of the user and performing these workflows.

# Understand Fire Service Maps

While maps have made their way on to public safety mobile data computers (MDC), two primary hardcopy maps are still produced for reference in the fire service. Station wall maps are generally small scale maps hung on the wall of each fire station to help new personnel become more familiar with the service area. Run Books, on the other hand, are large scale maps that include a series of map pages along with a street index. They are combined in to a single map book and are placed in each apparatus to supplement maps provided on the MDC.

To learn more about the elements contained in each fire service map, follow these steps:

1. Sign in to your ArcGIS organization and browse to the Fire Service Maps Desktop Application Template.
2. Open the item page and click **Download**.
3. Unzip and open the Fire Service Maps ArcGIS Pro project.
4. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
5. In the **Catalog** pane, expand the **Tasks** folder, and double-click the Fire Service Maps task item.
6. In the **Task Pane**, click the **Getting to know Fire Service Maps** task group to expand the collection of tasks.
7. Click on the **Understand Fire Service Maps** task and follow the steps provided.

# Install ReportLab

ReportLab is a third-party Python library that can be used to create a street index in PDF format. The street index makes it easy to look up an address or street name and find the correct map page in a Fire Run Book. To install ReportLab, follow these steps:

1. Open the Fire Service Maps ArcGIS Pro project.
2. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
3. In the **Catalog** pane, expand the **Tasks** folder, and double-click the Fire Service Maps task item.
4. In the **Task Pane**, click the **Getting to know Fire Service Maps** task group to expand the collection of tasks.

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5. Click on the **Install Report Lab** task and follow the steps provided.

# Create fire run book

Fire Run Books include a cover page, several map pages, and a street index for each fire response district. They can be printed, placed in each apparatus, and used en-route to a call.

You will assume the role of a fire fighter responsible for producing a fire run book for your response district or fire department. The Fire Service Maps ArcGIS Pro project includes a series of tasks to help guide you through this workflow.

1. Open the Fire Service Maps ArcGIS Pro project.
2. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
3. In the **Catalog** pane, expand the **Tasks** folder, and double-click the Fire Service Maps task item.
4. In the **Task Pane**, click the **Create fire run book** task group to expand the collection of tasks.
5. Click on the **Create cover page** task. Follow the steps provided in this task and all subsequent ones.

# Create station wall map

Station Wall Map are large-format wall maps that can be printed for each fire response area and hung near an engine or apparatus. The printed wall maps are used by fire personnel for route navigation before leaving the station.

You will assume the role of a fire fighter responsible for producing a station wall map for your response district. The Fire Service Maps ArcGIS Pro project includes a series of tasks to help guide you through this workflow.

1. Open the Fire Service Maps ArcGIS Pro project.
2. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
3. In the **Catalog** pane, expand the **Tasks** folder, and double-click the Fire Service Maps task item.
4. In the **Task Pane**, click the **Create station wall map** task group to expand the collection of tasks.
5. Click on the **Create station wall map** task. Follow the steps provided in this task and all subsequent ones.

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# Flood Impact Analysis

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Flood Impact Analysis

Flood Impact Analysis can be used to develop localized flooding scenarios and visualize the impact of flooding on public infrastructure, critical facilities, and vulnerable populations.

The solution allows you to understand and visualize the impact of flooding on the community by using flood depth and elevation data to analyze the impact of river flooding, storm surge, tidal surge, and sea level rise scenarios. The results of the analysis can be used to plan road closures, prioritize evacuation areas, and develop mitigation strategies. Flood Impact Analysis is typically implemented by emergency management, public works, and planning organizations that want to prepare for future flooding to protect their communities.

The Flood Impact Analysis solution allows you to prepare flood depth and elevation data, define flood impact areas, visualize the flood in 3D, and share the information with the public or other organizations.

## Requirements

The Flood Impact Analysis solution requires the following:

- ArcGIS Enterprise 10.7 - 10.8.1
- ArcGIS Pro 2.5 - 2.9 (Advanced)
- The ArcGIS Spatial Analyst extension
- The ArcGIS 3D Analyst extension

## Information products

Flood Impact Analysis includes the following information products:

| Item | Description | Minimum User Type |
|---|---|---|
| FloodImpactAnalysis.ppkx | An ArcGIS Pro project package used by mapping technicians to create flood impact maps | GIS Professional Advanced |

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# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of Flood Impact Analysis |

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# Use Flood Impact Analysis

The Flood Impact Analysis solution delivers a set of capabilities that help you to prepare flood depth and elevation data, define flood impact areas, visualize the flood in 3D, and share the information with the public or other organizations.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

# Get to know Flood Impact Analysis

You will assume the role of a mapping technician responsible for analyzing the potential flood impact for your community. The Flood Impact Analysis ArcGIS Pro project includes a series of tasks to help guide you through these workflows. The first set of tasks will help you get to know Flood Impact Analysis.

Get to know Flood Impact Analysis by completing the following steps:

1. Start ArcGIS Pro and open the Flood Impact Analysis project.
2. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
3. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **Getting to know Flood Impact Analysis** task and go through each subtask.

## Understand the Flood Impact Analysis solution

Flood Impact Analysis supports a series of workflows that streamline the process of developing flooding scenarios to help plan for a flood event. These workflows include preparing the data for analysis, defining the flood impact area and the impact on infrastructure, facilities and buildings, sharing the flood impact information, visualizing the flood impact in 3D, and sharing the impact in 3D.

This task will introduce you to the capabilities, data requirements to analyze flood impact, and visualization in 3D.

## Download sample data

Sample data is provided to help you learn how to use the Flood Impact Analysis solution. A link is provided to download sample data for Baltimore. Using the sample data the first time will help you learn how to use the tasks and how to organize your data.

## Start using Flood Impact Analysis

The Flood Impact Analysis project includes a task workflow that provides a structured sequence using tasks and steps. Follow the steps in this task to learn how to use the Flood Impact Analysis solution.

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# How to use Flood Impact Analysis

You will assume the role of a mapping technician responsible for creating the flood impact analysis and sharing the results with emergency management, public works, and planning agencies. The Flood Impact Analysis ArcGIS Pro project includes a series of tasks to help guide you through the workflows below.

To conduct the flood impact analysis, complete the following steps:

1. Start ArcGIS Pro and open the Flood Impact Analysis project.
2. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
3. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **How to use Flood Impact Analysis** task.
4. In the **Task Pane**, click the **How to use Flood Impact Analysis** task group to expand the collection of tasks.
5. Follow the steps in each task.

# Prepare flood depth and elevation data

Accurate analysis and visualization of the flood impact analysis will depend on several factors such as: availability of flood depth data in the form of raster, ground elevation data such as Digital Terrain Model (DTM) or lidar, and features describing the assets to be analyzed such as roads, bridges, and buildings. The data preparation workflow includes a series of tasks to help prepare the data for analysis. A description for each task in this group is listed below.

## Prepare flood depth rasters

Flood depth data is necessary to determine flood impact to the community at each flood stage. Flood depth grids or raster files contain a flood depth value within each cell in the raster. Flood depth at a given point can help determine the impact to buildings, roads, or bridges.

The risk value for each raster is read from the riskTypeTable for the chosen risk type. You can find the riskTypeTable in the FloodImpactAnalysis.gdb. You can use the existing risk types, modify them, or you can add another entry.

To remove negative values, extract flooded areas, and create the flood depth geodatabase, follow the steps in the **Prepare flood depth rasters** task.

## Prepare a water surface elevation raster

Water surface elevation (WSE) includes a value within each raster grid cell. However, the value describes the elevation of the water surface within each grid cell and is a measurement from a fixed zero elevation such as provided in the NAVD88 vertical datum. Water surface elevation data can be used to calculate bridge heights above flood stages and to visualize the flood stages as 3D surfaces.

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To create a water surface elevation raster, extract flooded areas, and crate the water surface elevation input geodatabase, follow the steps in the **Prepare water surface elevation raster** task.

# Define flood impact

Effective flood response planning begins with a better understanding of the potential flood impact. This task is designed to step through a standardized process to create and analyze the impact of each flood scenario on your community. A flood scenario can be defined in the risk type table as a percent chance of flooding, historical average such as 100 year, or number of feet above normal. A description for each task in this group is listed below.

## Create flood impact areas

The flood impact area defines the geographic extent for each flood depth scenario. The flood depth data prepared in the **Prepare flood depth and elevation data** task group will be used to create the flood impact area. These flood impact areas will be the foundation for analyzing impact to buildings, roads, or bridges in each of the subsequent tasks.

To create flood impact areas and add them to the map, follow the steps in the **Create flood impact areas** task.

## Analyze roads

This task allows you to analyze impacted roads by calculating depth of flooding for each road segment for any number of flood levels. The flooded roads can be an impediment to successful evacuations for first responders and community members when it is unknown which roads will be impacted. You can also symbolize the impacted roads for each flood impact area. The result will be a new feature class representing road segments with a depth attribute for each flood scenario.

To analyze impacted roads and symbolize the impact, follow the steps in the **Analyze roads** task.

## Analyze low water crossings

This task allows you to calculate depth of flooding for each low-level crossing for each flood scenario. The result can be used to identify watch points for observers to report flood depth during the flooding event. The parameters for this step are similar to the road flood depth except for the buffer distance. If this distance is specified to be greater than zero, the analysis will run against the buffered input features. This parameter helps you find points within the buffer distance that have been misplaced. You can then symbolize the low-level crossings by flood depth.

To identify low water crossings and symbolize the impact, follow the steps in the **Analyze low water crossings** task.

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## Analyze bridges

Use this task to calculate the bridge height above flood water surface for each flood scenario. Some bridges may have one side that is lower than the other. The bridge geometry is needed to calculate the height above the water surface instead of a single point along the bridge. Therefore, the bridge needs to be a 3D polygon feature instead of a 2D feature. This task will extract bridge surfaces from a lidar point cloud as 3D polygons, so they can be used in the next task to determine the height above flood level.

**Note:**

This task requires lidar point data stored in a LAS dataset . The bridge surfaces must have a separate class code in the LAS dataset.

**Note:**

This task requires that you have a water surface elevation (WSE) geodatabase as described in the **Prepare flood depth and elevation data** task.

**Tip:**

The result of this task is a new point feature with the minimum height above water surface for each water level in the WSE geodatabase. You can label the point with the minimum height attribute value to show how much clearance there will be below the bridge or how deep the water will be over the bridge if the height above water has a negative value.

To analyze impacted bridges and symbolize the impact, follow the steps in the **Analyze bridges** task.

## Analyze buildings

Understanding building exposure to flooding can help response personnel prioritize evacuations and stage equipment where it can be used effectively. It can also help mitigation planners understand buildings that are good candidates for purchase and removal. Use this task to calculate flood exposure on building polygons or 3D building multipatch feature layers. The tool will use your water depth geodatabase and the specified risk type to calculate the flood depth exposure to each building within the flood impact area. You can then symbolize the features according to the calculated flood exposure attribute such as the flood depth. Using a graduated color ramp will allow you to illustrate the severity of the building exposure.

To analyze impacted buildings and symbolize the impact, follow the steps in the **Analyze buildings** task.

# Share flood impact information (optional)

Once the analysis is completed, share the results with community stakeholders who can use the information to begin flood response or mitigation planning. Use this task to choose which flood

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impact layers to share, such as the flood impact area, impacted roads, bridges, and buildings for each flood scenario. Share the results for each flood scenario.

> **Note:**
> These tasks require ArcGIS Online or ArcGIS Enterprise 10.5 or later.

To allow others to see the results of the analysis, follow the steps in the **Share flood impact information** task.

# Visualize flood scenarios in 3D (optional)

The best way to communicate the impact of a flood scenario is to show how it will impact homes, streets, bridges, and neighborhoods. Visualizing the flood scenario in a 3D scene is a compelling way to communicate the potential flood impact in your community.

> **Note:**
> These tasks require ArcGIS Online or ArcGIS Enterprise 10.5 or later.

## Show flood impact map in 3D

This task allows you to convert the map containing the results of the flood impact analysis to a 3D scene using 3D symbology and scene elevation. A digital terrain model (DTM) raster can be added to the 3D scene to provide a realistic scene for illustrating the impact of the flood.

## Create 3D flood levels from raster

This task allows you to create 3D flood levels from raster input data. The result is a 3D version of the 2D raster data. For example, you may want to show a flood impact area at 5 feet against a building to illustrate the depth of flood on the building.

## Source 3D basemap data (optional)

Visualization of 3D flood levels is more powerful when shown together with other 3D layers such as 3D buildings, 3D trees, and detailed elevation. Use your organization's 3D basemap to complement your flood impact map. If your organization does not have a 3D basemap, use 3D Basemaps to create your own 3D buildings, trees, and elevation surface.

## Create a depth elevation raster

A depth elevation raster can improve the visualization of flood impact in 3D scenes, particularly in flood scenarios with very shallow flooding. Use the **Create depth elevation raster** task to create the depth elevation raster. You can repeat this task for every water surface elevation (WSE) raster.

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To convert the map to a 3D scene and add the depth elevation raster, follow the tasks in the **Visualize flood scenarios in 3D** task group.

# Publish a 3D flood impact scene (optional)

Once the task to visualize 3D flood scenarios is completed, you can publish a 3D web scene for your flood impact scenarios. The 3D web scene can be shared with stakeholders who are responsible for flood response planning and flood mitigation planning.

> **Note:**
> These tasks require ArcGIS Online or ArcGIS Enterprise 10.5 or later.

# Publish a 3D flood impact scene

Use this task to set the coordinate system and publish the new 3D scene to ArcGIS Online or your organization.

## Share the depth elevation raster

Use this task to share the depth elevation raster that was created previously to help improve the visualization of the 3D scene.

To share the flood impact in 3D, follow the tasks in the **Share 3D flood impact scene** task group.

After you have shared the 3D scene and depth elevation raster, you can view the results of the Flood Impact Analysis in a Scene Viewer in ArcGIS Online or ArcGIS Enterprise. Share the scene with your colleagues to help them understand the impact of local flooding on your community.

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# Multi Source Data Feeds

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2021 - Oct 2023 | Retired phase<br>Nov, 2023 |
|---|---|

# Introduction to Multi Source Data Feeds

Multi Source Data Feeds solution can be used to visualize global incidents in ArcGIS.

Businesses need access to critical information with confidence, to enable organizational response to incidents at different levels and across different business units. This is needed to allow organizations to see beyond the horizon and react to real-time incidents across the globe. Round-the-clock access to incident data is at the cornerstone of this need. Multi Source Data Feeds is typically implemented by organizations that rely on event feeds to understand incidents across the globe.

The Multi Source Data Feeds solution delivers a set of capabilities that provides awareness in near real time to incidents around the globe. This access is enabled by Esri business partners that curate event information into one location and allow consumption through the business partner APIs.

## Requirements

Multi Source Data Feeds requires the following:

- ArcGIS Enterprise 10.7.1 - 10.8.1
- ArcGIS Pro 2.6 - 2.8 (Basic)

## Information products

Multi Source Data Feeds includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Dataminr Alerts Dashboard | An ArcGIS Dashboards app used to visualize and interact with incidents from Dataminr | Viewer |
| Factal Incidents Dashboard | An ArcGIS Dashboards app used to visualize and interact with incidents from Factal | Viewer |

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| | | |
|---|---|---|
| Multi Source Data Feeds Desktop | An ArcGIS Pro project package used to connect and ingest data feeds from a variety of data providers | GIS Professional Basic |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.1 | • Shortened the field length for all fields to cut down on storage.<br>• Added support to store credentials in Credential Manager. |
| 1.0 | • First release of Multi Source Data Feeds |

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# Configure Multi Source Data Feeds

In this topic, you will learn how to configure the Multi Source Data Feeds solution to meet specific needs in your organization.

## Review the Multi Source Data Feeds project

The Multi Source Data Feeds solution includes an ArcGIS Pro project. Before configuring the solution and using the workflows with your data, familiarize yourself with the contents of the Multi Source Data Feeds Desktop project.

To review, complete the following steps:

1. Start ArcGIS Pro.

   **Note:**
   Ensure that you are signed in to the user name with which Multi Source Data Feeds was deployed.

2. In the lower right corner, click **Open another project**.
3. In the left pane under **Portal**, click **My Content** and browse to the folder where Multi Source Data Feeds was deployed. Select Multi Source Data Feeds Desktop and click **OK** to open.
4. Click the **View** tab along the top of the ribbon.
5. Click **Tasks** in the **Windows** group to open the Multi Source Data Feeds Tasks to configure, manage, and automate the data feeds.

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# Use Multi Source Data Feeds

The Multi Source Data Feeds solution delivers a set of capabilities that provides awareness in near real time to incidents around the globe. This access is enabled by Esri business partners that curate event information into one location and allow consumption through the business partner APIs.

> **Note:**
> To view content from premium providers, API keys must be acquired from the data provider.

In this topic, you will learn how to use the Multi Source Data Feeds solution and the set of capabilities and features that it provides.

# Explore the Dataminr dashboard

1. In a browser, sign in to your ArcGIS organization and click the **Content** tab.
2. On the left side, under **Folders**, click Multi Source Data Feeds.
3. Click the Dataminr Alerts Dashboard to open into the item description page, then click **View Dashboard**.
4. Zoom in to an area of interest in the United States.

   Note:

   Holding the Shift key on your keyboard enables the area selection tool in the map. This will zoom in to the extent of the selected area.

   Notice as you zoom in or pan around, the set of metrics along the bottom of the application and the alerts in the list on the left side dynamically update. This map-driven capability provides context into what is within your view.
5. Along the bottom of the map are a set of tabs; click **Data Overview**.

   This tab contains a set of metrics to provide context into the magnitude of alerts over time and by category. The metrics are based on alerts within your view.
6. Switch to the **Map Overview** tab and in the **Publisher Category** drop-down list, select a value.

   Notice that with this filter enabled, the set of metrics along the bottom of the application, the alerts in the list on the left side, and the map automatically update.
7. Click an incident in the list. This will zoom to the selected feature and open the pop-up with additional alert details.
8. Scroll to the bottom of the pop-up and click the link to view more details on this alert in Dataminr by signing in to your Dataminr account.

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# Explore the Factal dashboard

1. In a browser, sign in to your ArcGIS organization and click the **Content** tab.
2. On the left side, under **Folders**, click Multi Source Data Feeds.
3. Click the Factal Incidents Dashboard to open into the item description page, then click **View Dashboard**.
4. In **Filter Incidents by**, click **This Week**.

   Notice that with this filter enabled, the inset map and the set of metrics along the right side of the application, the locations in the list on the left side, and the map automatically update.
5. Zoom in to an area of interest in the United States.

   Note:

   Holding the Shift key on your keyboard enables the area selection tool in the map. This will zoom in to the extent of the selected area.

   Notice as you zoom in or pan around, the set of metrics along the right side of the application and the locations in the list on the left side dynamically update. This map-driven capability provides context into what is within your view.
6. Along the bottom of the map are a set of tabs; click **Data Overview**.

   This tab contains a set of metrics to provide context into the magnitude of incidents over time. The metrics are based on incidents within your view.
7. Switch to the **Map Overview** tab and click on an incident in the list. This will zoom to the selected feature and open the pop-up with additional incident details.

   Notice the inset map on the right side of the application zooms in and centers on the incident. This map provides regional context and awareness of where other incidents have appeared.
8. Scroll to the bottom of the pop-up and click the link to view more details on this incident in Factal by signing in to your Factal account.

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# My Trash Services

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to My Trash Services

My Trash Services can be used to share waste pickup schedules and recycling information with the general public.

It provides 24/7 access to an organization, and the location-enabled search helps residents quickly find waste pickup schedules and recycling centers and learn what materials are accepted. This transparent approach improves communication with the public and addresses one of the most frequently asked questions in a community. My Trash Services is typically implemented by public works agencies and other local government organizations that want to educate the public and promote waste and recycling services available in their community.

The My Trash Services solution delivers a set of capabilities that help you share typical waste pickup schedules with the public, highlight schedule changes, and promote nearby recycling centers and the materials accepted.

## Requirements

My Trash Services requires the following:

- ArcGIS Enterprise 10.6.1 - 10.8.1

## Information products

My Trash Services includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| My Trash Services | An ArcGIS Web AppBuilder app used by the general public to locate recycling centers and obtain information about curbside trash services | Not required |

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# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of My Trash Services |

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# Configure My Trash Services

In this topic, you'll learn how to configure the My Trash Services solution to meet specific needs in your organization.

# Load data

In some cases, you may already have this information in ArcGIS or another mapping system. Review the layers provided with the solution and determine what source data you want to load. Then, load your existing data into the layers provided with the solution before sharing the maps or apps.

Once you have determined what source data must be loaded, complete one or more of the data loading workflows below.

## Load data from a shapefile

Load data into the PublicWorksDistrict and TrashRecyclingFacilities layers from a shapefile by completing the following steps:

1. Create a `.zip` file of your shapefile.
2. Sign in to your ArcGIS organization and browse to the feature layer you want to populate.
3. Open the item page and click **Update Data > Append Data to Layer**.
4. Click **Choose File** and browse to your `.zip` file, and click **Open**.
5. Click **Upload and Continue**.
6. Click **Choose the layer that you wish to append data into** drop-down arrow and choose the layer that contains the updated data.
7. Uncheck **Update existing features**.
8. Click **Show field matching** and map the fields between the two layers.
9. Click **Apply Updates**.

# Configure directions

Follow the steps below to connect to a routing service and configure the widget to enable directions in the app.

## Configure widget

To configure an app to use routes and provide directions, complete the following steps:

1. Sign in to your ArcGIS organization and browse to the ArcGIS Web AppBuilder app.
2. Open the item page and click **Edit Application**.

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3. Click the **Widget** tab and click **Set the widget in this controler** to open the page for an in-panel widget.
4. Hover over the **Near Me** widget and click the **Configure this widget** button to open the widget configuration window.
5. Check the **Enable Directions** check box if it is not checked.
6. Click the **Direction Settings** tab, click **Set**, and choose a routing service.
7. Click **Next** and choose one or more route layers, click **OK**, and click **OK** again.
8. Save the app and share it with everyone.
9. Open the app.

## Esri premium content

The app draws routes and provides directions using the ArcGIS Online World Route Service. This service requires subscriber access because it consumes credits. See Configure Living Atlas content to enable access to premium content.

Learn more about credit usage when creating simple routes

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# Use My Trash Services

The My Trash Services solution delivers a set of capabilities that help you share typical waste pickup schedules with the public, highlight schedule changes, and promote nearby recycling centers and the materials accepted.

**Note:**

Use your organization's data or configured apps to follow these workflows.

## Find recycling centers and curbside service information

You will assume the role of a resident in the community, and you want to know when your next trash pickup day is and find nearby recycling centers.

1. In a browser, sign in to your ArcGIS organization, and then browse to the My Trash Services solution.
2. View the My Trash Services app.
3. In the **Locate Services** widget, under **Search for an address or locate on map**, type an address in the community and press Enter.
4. Optionally, click and slide the search buffer by distance.

   Note:

   The list updates to display recycling centers and trash, recycling, and yard waste pickup details.
5. Click **Recycling Facilities** and click one of the facilities.

   The **Information** tab displays details about the recycling facility, including materials accepted, location, hours of operation, and contact details.
6. Click the **Directions** tab. The tab displays turn-by-turn directions from the searched address to the closest recycling facility.
7. Click the **Recycling Facilities** button once to return to the list of recycling facilities, and click it again to return to the full list of trash and recycling services.
8. Click **Trash Pickup** and review information and directions about trash pickup.
9. Click the **Back** button to return to the full list of trash and recycling services. Repeat step 6 to view recycling and yard pickup details.

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# Operations Management

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Operations Management

Operations Management can be used to respond to an event and manage resulting missions.

The solution allows military organizations to capture real-time data related to the event and mission development. Command leadership can collect and review reports submitted by operations personnel from any connected device. The solution enables immediate interaction between the technology and military personnel, allowing for rapid information dissemination and intelligent decision-making. Operations Management is typically implemented by organizations, such as the Army National Guard, that want to take a data-driven approach to plan, manage, and understand current missions associated with events.

The Operations Management solution delivers a set of capabilities that help you to capture and update event and mission details, allocate resources, and gain situational awareness of resources and tasks against designated missions.

Learn more about the Operations Management solution.

# Requirements

Operations Management requires the following:

- ArcGIS Enterprise 10.7.1 - 10.8.1
- ArcGIS Survey123

# Information products

Operations Management includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Operations Dashboard | An ArcGIS Dashboards app with embedded ArcGIS Survey123 forms that provides a dynamic method for input of events, missions, status reports, and field reports. | Viewer |

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| | | |
|---|---|---|
| Operations Management Dashboard | An ArcGIS Dashboards app used by command personnel to monitor events, missions, status reports, and field reports. | Viewer |
| Operations Manager | An ArcGIS Dashboards app used by operations personnel to manage events and missions. | Editor |
| Event Entry | An ArcGIS Survey123 form that can be used by a liaison or LNO to enter events. | Not required |
| Mission Entry | An ArcGIS Survey123 form used by a liaison or LNO to enter missions. | Not required |
| Field Report | An ArcGIS Survey123 form used by an LNO or military unit member to report on events in the field. | Not required |
| Status Report | An ArcGIS Survey123 form used by a liaison or LNO to provide updates regarding the status of a mission. | Not required |
| Operations Events | An ArcGIS Survey123 form that can be referenced as a master schema for all included surveys in Operations Dashboard. | Not required |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | First release of Operations Management |

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# Configure Operations Management

In this topic, you will learn how to configure the Operations Management solution to meet specific needs in your organization. The apps included with the Operations Management solution come with Survey123 reports. When launched using Portal for ArcGIS, the forms will have ItemIDs already assigned. Your solution deployment will include additional Survey123 forms that need to be synced with newly deployed dashboards and web apps. Follow the steps below to configure the solution.

# Configure solution

Once Operations Management has been deployed, the Survey123 ItemIDs must be updated for your data to be displayed in the applications. Follow the steps below to configure the Operations Dashboard and the Operations Manager applications.

## Configure Operations Dashboard

To use the Operations Dashboard to enter events, missions, status reports, and field reports, complete the following steps to update the itemIDs:

1. Sign in to your Portal for ArcGIS.
2. Browse to the Event Entry survey and open the **Item Details** page.
3. Copy the **Application ID**

into a text editor. An example application ID is highlighted in the preceding image.
4. Do the same for the Mission Entry, Status Report, andField Report surveys.
5. Browse to the Operations Dashboard and select **Edit Dashboard**.
6. Click the **Events** tab.
7. Click **Configure** for the Event Entry survey.
8. In the **URL** section, replace the existing `replaceitemid` text with the one retrieved in step 3.
9. Add `portalUrl=https://<yourportal>.esri.com/arcgis` to the end of the URL.

   This value will need to be replaced with your specific portal URL. The complete structure for the Event Entry survey URL will look similar to `https://survey123.arcgis.com/share/a37dc89e02334ce3aa6656e58df6e334?portalUrl=https://<yourportal>.esri.com/arcgis`.
10. Click **Done**.
11. Repeat steps 6 through 8 for the Mission Entry, Status Report, and Field Report surveys.
12. For these surveys, add the following value to the end of the URL: `&portalUrl=https://<yourportal>.esri.com/arcgis`.

    The complete structure for the Mission Entry survey will look similar to `https://survey123.arcgis.com/share/a37dc89e02334ce3aa6656e58df6e334?field`

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`:parentglobalid={globalid}&field:event_id={event_id}&portalUrl=https://exampleportal.esri.com/arcgis`.

13. Click **Done**.
14. Click **Save**.

## Configure Operations Manager

To use the Operations Manager to manage events and missions, complete the following steps to update the itemIDs for the Operations Manager map pop-ups:

1. Browse to the Mission Entry survey and open the **Item Details** page.
2. Copy the **Application ID** into a text editor.
3. Do the same for the Status Report and Field Report surveys.
4. Browse to the **Operations Manager Map** and click **Open in Map Viewer**.
5. Click the **Content** tab to show the map contents.
6. Click **Events**.
7. Click the **More Options** button ••• and select **Configure Pop-up**.
8. Click the **Configure** button to open the **Custom Attribute Display** window.
9. Highlight the **Submit a Mission** hyperlink to activate the **Create Link** button.
10. Click the **Create Link** button and replace the `replaceitemid` text with the itemID copied in step 2.
11. Add `&portalUrl=https://<yourportal>.esri.com/arcgis` to the end of the URL. Make sure to replace the portal URL portion with your portal.
12. Click **Update** and click **OK**.
13. Save your application.
14. Click **Missions**.
15. Click the **More Options** button ••• and select **Configure Pop-up**.
16. Click the **Configure** button to open the **Custom Attribute Display** window.
17. Repeat steps 9 through 13 to replace the itemIDs within the hyperlinks for the Status Report and Field Report itemIDs copied in step 3.
18. Save your application.

## Configure the Search widget

To use the Search widget within Operations Manager, complete the following steps:

1. Open the Operations Manager web app in editing mode.
2. Click to open the **Widget** tab and select the Search widget.
3. In the **Layer Source** section, select **Set** and browse to the current Events and Missions layer in the **Portal for ArcGIS** option.

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  - Alternatively, copy the updated Events and Missions map service URL and paste it in the **Service URL** option.
4. Browse to **Add Search Source**.
5. Click **Feature Layer** and select **Events and Missions**.
6. Configure the rest of the widget and save your application.

# Add data sources

The Operations Management solution allows operations management personnel to enter details about events and missions supporting events. It can be helpful to add additional data to provide context for feature entry and management.

The layers listed below can be added to the map to provide further context when entering new events, missions, status reports, and field reports.

Learn more about how to add layers to a map.

- State and county layers
  - States map service
  - Counties map service
  - COVID-19 cases data feed
- ArcGIS Living Atlas layers
  - National Weather Service Severe Events
  - National Weather Service Extreme Events
- NOAA Web Services
  - NOAA Base Reflectivity Radar

# Extend the Operations Management Dashboard

The Operations Management Dashboard is preconfigured to display all units under the **Assigned To** section within the Survey123 form. It also displays default mission statuses. You may need to configure the dashboard to align with your organization.

## Add a battalion

To add additional battalions or companies to the dashboard, complete the following steps:

1. Browse to the Operations Management Dashboard and click **Edit Dashboard**.
2. In the **Mission Assignment/Status** element, click the **Configure** button .
3. Go to the **Data** tab, select the **Filter** window, and under the **Assigned To** window, select **Include**. At this point, you will add only the units of interest and nothing else will be included.

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4. Save your application.

## Modify mission status

The dashboards are preconfigured to display various statuses. The statuses can be modified or removed. If your organization uses a status that is not included, ensure a new category is added to the Survey123 form before adding it to the Operations Management Dashboard. To modify the mission statuses, complete the following steps:

1. Select any Mission Status element and go to **Editing Features**.
2. Click the **Duplicate** button to copy the setting of the existing indicator elements to add a new category. Make sure that the new category has been added to the Survey123 form first.
3. Remove the status element by clicking the delete button.
4. Save your application.

## Modify lists

The dashboards included in this solution come with preselected and basic fields within their appropriate lists. Additional fields can be turned on when configuring your solution to better address your organization's needs. To modify lists, complete the following steps:

1. Click the **Configure** button for any of the list components within the dashboard.
2. Select the **List** tab and click **Insert** {} to see the field options available.
3. Select one or multiple fields to be added to the display.
4. Add a label in front of your field item.
5. Click **Done**.
6. Save your application.

# Extend Operations Manager

The Operations Manager web application includes a Summary widget that provides a clustering feature that can be enabled. This feature will perform groupings of the features on the map indicating potential hot spots. The Operations personnel can use this clustering information to begin deploying assets and resources to areas that show high concentrations.

## Enable clustering

To enable clustering in the Summary widget, complete the following steps:

1. Access the Operations Manager web app while in editing mode.
2. Go to the **Widget** tab and select the **Configure this Widget** option for the Summary widget.

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3. Check **Display as Summary Clusters**.
4. Click **OK** and save the application.

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# Use Operations Management

The Operations Management solution delivers a set of capabilities that help you to capture and update event and mission details, allocate resources, and gain situational awareness of resources and tasks against designated missions.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

# Manage missions

The Operations Dashboard provides the LNO or mission manager a single interface to submit events, missions, status updates for missions, and field reports. Operations Manager allows the operations personnel the freedom to filter data, modify or move events, and find specific information within a few seconds. Finally, command leadership can remain aware of current and historical missions in the Operations Management Dashboard. New events and missions can be added as frequently as needed.

## Enter a new event

You will start by assuming the role of the event or mission manager. You have just received a request for assistance from Miami-Dade County in response to a hurricane. You will use the Event Entry survey to capture a new event.

To capture a new event using the Event Entry survey, complete the following steps:

1. In a browser, go to your Operations Dashboard.
2. Select the **Events** tab in the lower right and fill in the following details:

| Parameter | Value |
|---|---|
| **Event ID** | Type `EVENT001`. |
| **Begin Date** | Select the date **09/08/2020**. |
| **End Date** | Select the date **09/15/2020**. |
| **Location** | Draw a polygon along the Miami-Dade County area. |
| **Event Type** | Select **Weather**. |
| **Event Sub Category ID** | Select **Hurricane**. |
| **Event Description** | Type `Hurricane Olga is moving at 15 mph with high winds of 175 mph. Hurricane Olga is approaching the Miami-Dade County geographical area and is located approximately 300 miles from the Florida coastline.` |

3. Click **Submit**.

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## Enter a new mission

You have now been asked to start capturing the missions related to Hurricane Olga. You will use the Mission Entry survey to capture mission information.

To capture information about a new mission, complete the following steps:

1. In a browser, go to your Operations Dashboard or refresh your current browser if you have just entered the event.
2. Select the Hurricane Olga event from the events list widget.
3. Select the **Missions** tab in the lower right. Notice that the `EVENT001` event ID is automatically showing as part of the new Mission Entry.
4. In the Mission Entry survey, fill in the following details:

| Parameter | Value |
|---|---|
| **Mission ID** | Type `MISSION001`. |
| **Location** | Type `LAT: 25.79496 LON: -80.12594`. |
| **Start Date** | Select the date **09/08/2020**. |
| **End Date** | Select the date **09/12/2020**. |
| **Mission Type** | Select **Personnel Support**. |
| **Mission Description** | Type `150 personnel are needed to fill sandbags and place them in designated areas.` |
| **COVID related** | Select **No**. |
| **Mission Status** | Select **Pending Approval**. |
| **Mission Priority** | Select **Medium**. |
| **Assigned to ID** | Select **1st Battalion**. |
| **Personnel Information ID** | Select **Yes**. |
| **Personnel Details** | Select **Other**. |
| **Enter # of Other Personnel** | Type `150`. **Total Personnel** will automatically fill. |
| **Vehicle Information** | Select **Yes**. |
| **Vehicle and Aircraft Details** | Select **Yes**. |
| **Land Vehicle Type** | Select **Utility Truck** and type `5` for the **Quantity**. |
| **Estimate Cost** | Select **Yes**. |
| **Estimate Mission Cost/Day** | Type `5000`. |
| **Submitter POC Details** | Enter your name and contact information. |

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| | |
|---|---|
| **Ground Commander POC Details** | Enter commander point of contact details. |

5. Click **Submit**.

## Monitor missions

Now, you will assume the role of the Operations Manager. You are asked to monitor the missions of your unit. You will review the missions of your workforce.

To monitor a specific mission, complete the following steps:

1. In a browser, go to the Operations Manager application. You will see an overview of the events and missions that have been entered.
2. Click the **Item details** button ⓘ. After reviewing the content, close the window.
3. Type % in the Search widget.
4. Select **MISSION001** from the results.

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# Plans and Drawings

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Plans and Drawings

Plans and Drawings can be used to index the geographic extent of record plans and drawings and provide access to a catalog of source documents in the office or the field.

Design drawings, construction plans, as-builts, and other source documents contain vital information that is used daily by engineers and field staff to make infrastructure improvements. Many times, these drawings have been automated and are cataloged in a document management system, but some drawings may only exist in hardcopy format and be stored in an office file cabinet. And while each of these record drawings may represent a given geography, understanding the extent of the record drawing and whether it contains the information you are looking for can be quite time consuming. Plans and Drawings is typically implemented by public works agencies and utilities that want to simplify access to record drawings and ensure that engineers and field staff understand what drawings exist at a given location.

The Plans and Drawings solution delivers a set of capabilities that help you index record drawings, associate a geographic extent with each drawing, and provide access to a catalog of plans and drawings in the office or the field.

# Requirements

Plans and Drawings requires the following:

- ArcGIS Enterprise 10.7.1 - 10.8.1

# Information products

Plans and Drawings includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Plan Catalog | An ArcGIS Web AppBuilder app used by public works staff to access a catalog of record drawings, as-builts, and other source documents | Viewer |

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| | | |
|---|---|---|
| Plan Index | An ArcGIS Web AppBuilder app used by public works staff to index the geographic extent of record plans and drawings | Editor |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | • First release of Plans and Drawings |

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# Use Plans and Drawings

The Plans and Drawings solution delivers a set of capabilities that help you index record drawings, associate a geographic extent with each drawing, and provide access to a catalog of plans and drawings in the office or the field.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

**Note:**

Use your organization's data or configured apps to follow these workflows.

## Index plans and drawings

First, you will assume the role of a public works engineer. You need to index a record drawing submitted for a recent project.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Plans and Drawings solution.
2. View the Plan Index app.

   The **Index Plan** widget allows you to create a geographic extent for your project.
3. To create a new plan, click the **Plans and Drawings** template.
4. Click the map to draw the geographic extent around the project location, and then double-click to finish drawing the polygon.

   Note:

   You can use the **Search** widget to quickly update the map extent to desired addresses, place-names, or locations of existing projects.
5. After you draw the geographic extent, you are prompted with a Plans Index form.
6. Complete the form with as much information as possible.

   Tip:

   In the **Document Path** text box, type a URL or other resolvable file path to your organization's existing document repository solution.

   In the **Document Location Description** text box, describe the physical location if documents are not stored in a digital format with a resolvable document path, link, or URL. For example, type `Public Works Building, 2nd Floor in the 2022 Projects cabinet`.
7. Scroll to the **Attachments** option.

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**Note:**
The **Attachments** option is useful for uploading before-and-after photos related to the project and other relevant project media.

8. Optionally, add attachments.
9. Click **Save** to complete the indexing workflow.

# View plans and drawings

After they are indexed, record drawings can be accessed from the office or the field. Now, you will assume the role of an engineer at a local utility who needs to access pertinent plans and drawings while in the field on a site visit to a new infrastructure project.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Plans and Drawings solution.
2. View the Plan Catalog app.

   The app opens with the **Filter Plans** widget open on the right. Filters are active by default; filtering by project type or date automatically updates the results in the map.
3. In the **Filter Plans** widget, adjust the filters to refine the results.
4. On the map, click a project extent.

   A pop-up with more information about the project appears. In addition to providing project information, the pop-up includes a **Document ID** link, if available.
5. If available, click the **Document ID** link to open the referenced plan or drawing associated with this project.

   The link opens in a new browser tab.

# Share a record drawing link

A colleague has requested information about the record drawing for a bridge project that you recently indexed. You will use the Plan Catalog to create a direct link to the project details and share with your colleague.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Plans and Drawings solution.
2. View the Plan Catalog app.
3. At the upper right, click the **Share** button to open the widget.

   In the **Share** widget, under **Share a link to this app**, there is a pregenerated link. By default, this short link uses your app's current map extent. In the following steps, you will construct a query within the share link so that it opens a specific project detail when opened.
4. Click **Link Options**.
5. Click **Query a feature and zoom to it**.

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The drop-down lists that appear must be completed to generate a project-specific app link.

6. Click the first drop-down arrow and choose **Plans and Drawings**.
7. Click the second drop-down arrow and choose **projname**.
8. Click the third drop-down arrow and search for or choose the project that you want to share.
9. At the top of the widget, click the **Back** arrow.

   The sharing short link is now updated using your project query information.
10. Below the short link, click the **Email** button to launch a pregenerated email with your custom app link.

    A draft email opens in your device's default email handler. Alternatively, you can copy the short link from the **Share a link to this app** text box. If you have accessed the Plan Catalog app from a mobile device, you can use this link to share a record by text message or other messaging app.

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# Readiness Management

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Readiness Management

Readiness Management can be used to understand and communicate comprehensive unit and force readiness.

It provides leaders and decision makers an understanding of available personnel resources and allows them to share authoritative data of assigned and attached forces. Units may be requested to assist in setting up traffic control points, helping with debris removal, preparing alternate care facilities, supporting food distribution, and so on. Having personnel perform a routine check-in or having someone from the armory or unit provide the readiness status of a group of personnel gives units clarity about force readiness. Readiness Management is typically implemented by the National Guard, Air National Guard, and other service branches that want to take a data-driven approach to understanding force availability.

The Readiness Management solution delivers a set of capabilities that help you understand the operational capacity of a force, monitor the status of units, and communicate capabilities and disruptions to commanders and administrative staff.

Learn more about the Readiness Management solution.

# Requirements

Readiness Management requires the following:

- ArcGIS Enterprise 10.7.1 - 10.8.1
- ArcGIS Survey123

# Information products

Readiness Management includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Admin Dashboard | An ArcGIS Dashboards app used by administrative NCOs to monitor personnel availability | Viewer |

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| | | |
|---|---|---|
| Readiness Dashboard | An ArcGIS Dashboards app used by any unit member to track and monitor personnel readiness and availability. | Viewer |
| Personnel Readiness Report | An ArcGIS Survey123 form used by a military unit member to report availability. | Not required |
| Personnel Readiness Batch Report | An ArcGIS Survey123 form used by an NCO or armory clerk to report the availability of their personnel. | Not required |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | First release of Readiness Management |

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# Configure Readiness Management

In this topic, you will learn how to configure the Readiness Management solution to meet specific needs in your organization.

# Extend readiness surveys

Included with Readiness Management are a series of surveys that can be used to understand the capacity of your workforce.

Review the preconfigured questions and adjust as necessary to remain in compliance with your organizational policies and any applicable laws. Additionally, ensure that you secure the survey and underlying layers and only share the content with appropriate members of your organization.

## Update feature layer views

The Readiness Management solution includes a series of views created from the Personnel Readiness feature layer. The feature layer is used in the surveys, and the subsequent views are used in the dashboards. Organizations can modify the Personnel Readiness Report surveys and ultimately add new fields to the feature layers. When doing so, the new fields must be exposed in the appropriate views.

To add one or more fields to a layer and re-create the views, complete the following steps:

1. Browse to the view in your contents.
2. Click the **Visualization** tab.
3. Click the **Options** button ••• on the appropriate layer or table and click **Set View Definition**.
4. Click **Define Fields**.
5. Scroll to the newly created field and check the box. Click **Apply**.

   The new field is added to the view's definition.
6. Repeat steps 1 through 5 for the Readiness Dashboard.
7. Update the Readiness Dashboard to account for the new fields you added to the layers.

## Modify readiness surveys

To modify a Readiness Management survey, complete the following steps:

1. Install ArcGIS Survey123 Connect.
2. Start ArcGIS Survey123 Connect and sign in to your ArcGIS organization.
3. Click **Personnel Readiness Report** to download the survey.
4. Click the Personnel Readiness Report again to open the survey.

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5. In the left pane, click **Open XLSForm Spreadsheet**.
6. In the Microsoft Excel spreadsheet, click the **Choices** tab. This tab contains the selectable options for survey questions.
7. Revise the survey to reflect your personnel readiness needs.
8. Save the Microsoft Excel spreadsheet and preview your changes using the ArcGIS Survey123 Connect form preview.
9. In ArcGIS Survey123 Connect, click **Publish** in the left pane to publish your changes.

To modify the **Battalion** or **Company** names in the Personnel Readiness Report or Personnel Readiness Batch Report, you will need to also account for the modification of the calculation in the `choice_filter` column of the Survey123 Connect XLSForm. The `choice_filter` column controls the cascading select functionality associated with each of the battalions and companies that fall within it.

For example, in the Personnel Readiness Report, if you select `1st Battalion`, the next question asking for Company will be limited to only those companies in the 1st Battalion (A–D). Likewise, if you select `2nd Battalion`, you see companies in the 2nd Battalion (E–H).

Learn more about how to work with cascading selects.

# Configure echelons

The dashboards are preconfigured to display four battalions and four companies under each battalion. Follow the steps below to add or remove battalions or companies from your dashboard.

## Add a battalion

To add additional battalions or companies to the dashboard, complete the following steps:

1. Sign in to your ArcGIS Online organization.
2. Browse to the Readiness Dashboard and open the item details page.
3. Click **Edit Dashboard**.
4. Select the last battalion tab while in edit mode.
5. Go to the editing tool in this element and select **Duplicate**.
6. Drag the newly created copy below the last battalion tab.
7. Reference duplicated battalion settings, text, and configuration.
8. Add a new name, for example, `5th BN`, to the new component.
9. Save your application.

## Remove a battalion tab

To remove battalions or companies from the dashboard, complete the following steps:

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1. Sign in to your Portal for ArcGIS.
2. Browse to the Readiness Dashboard and open the item details page.
3. Click **Edit Dashboard**.
4. Select the battalion tab you want to delete while in edit mode.
5. Click the **Delete** button to delete the selected battalion.
6. Save your application.

## Configure alternate reporting periods

The dashboards are preconfigured to display individuals reporting within the last 24 hours. The dashboard owner can configure the dashboard to display alternate reporting periods. The **Personnel List** parameter is the most commonly configured element related to its contents and time frame.

To modify the reporting period, complete the following steps:

1. Sign in to your Portal for ArcGIS.
2. Browse to the Readiness Dashboard and open the item details page.
3. Click **Edit Dashboard**.
4. Go to the editing tool in the **Personnel List** element and select **Configure**.
5. Below **Battalion**, select the **And** option and add **Date Reported** from the drop-down list.

   You can now select from any of the available options and time frames.
6. Select **Done** and save your application to display the new reporting period.

## Add readiness tabs for new battalions and companies

The dashboards are preconfigured to display four battalions and four companies and their applicable total force or unit size. This tab also contains their availability of personnel based on survey submissions and percentage of readiness.

To add additional percentages of readiness to the dashboard, complete the following steps:

1. Sign in to your Portal for ArcGIS.
2. Browse to the Readiness Dashboard and open the item details page.
3. Click **Edit Dashboard**.
4. Select the **3rd Battalion** tab while in edit mode.
5. Go to the editing tool in the **Personnel List** element and select **Duplicate**.
6. Drag the newly created copy below the **3rd Battalion** tab. Reference the 3rd Battalion settings, text, and configuration.
7. Add a new name, such as `5th BN`, to the new component and save your application.
8. Go to the **Reference** section in the configuration tool and add the unit size below **Fixed Value**.

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This number provides the available value and percentage of readiness.

9. Follow the previous step and enter the current **Total Force** value for each unit level.
10. If you need to remove a battalion tab, click the **Delete** button .
11. Save your application.

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# Use Readiness Management

The Readiness Management solution delivers a set of capabilities that help you understand the operational capacity of a force, monitor the status of units, and communicate capabilities and disruptions to commanders and administrative staff.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

# Monitor force readiness

Some organizations may find it more efficient to have an individual, such as someone from the armory, check in their unit member using the Personnel Readiness Batch Report survey. If a unit decides to use the batch survey, follow the same general steps below with the Personnel Readiness Batch Report survey and the Readiness Dashboard.

## Complete an individual readiness report

You will start by assuming the role of a military unit member. You are asked to use the Personnel Readiness Report survey to share your availability status each morning.

1. In a browser, go to your Personnel Readiness Report survey.
2. In the Personnel Readiness Report survey, fill in the following details:

| Parameter | Value |
|---|---|
| **Battalion** | Select **1st Battalion**. |
| **Company** | Select **A Company**. |
| **Select which Guard you are a member of** | Select **ARNG**. |
| **ARNG Rank** | Select **E-4/CPL**. |
| **MOS** | Type `12W`. |
| **Select Duty Type** | **State Active Duty** |
| **First Name** | Type your first name. |
| **Last Name** | Type your last name. |
| **Commander** | Type your commander's name. |
| **Provide Location** | Select your location on the map or provide your address. |
| **Can you report for duty** | Select **Yes**. |
| **Check Completed By** | Select **Self**. |

3. Click **Submit**.

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## Complete a readiness batch report

Alternatively, you will start by assuming the role of a readiness NCO. You are asked to use the Personnel Readiness Batch Report survey to submit availability of troops.

1. In a browser, go to your Personnel Readiness Batch Report survey.
2. In the Personnel Readiness Batch Report survey, fill in the following details:

| Parameter | Value |
|---|---|
| **Enter Location** | Select your location on the map or provide your address. |
| **Battalion** | Select **1st Battalion**. |
| **Company** | Select **A Company**. |
| **Select which Guard you are a member of** | Select **ARNG**. |
| **ARNG Rank** | Select **E-7/SFC**. |
| **MOS** | Type `25W`. |
| **Select Duty Type** | Select **State Active Duty**. |
| **First Name** | Type your first name. |
| **Last Name** | Type your last name. |
| **Commander** | Type your commander's name. |
| **Select which Guard(s) you would like to submit entries for** | Select **ARNG (Army National Guard)**. |
| **ARNG Available Troops** | Enter the number of troops available to report for duty. |
| **ARNG Unavailable Troops** | Enter the number of troops not available to report for duty. |
| **Would you like to input details for each ARNG duty type?** | `Yes` |
| **ARNG Duty Type Details** | Enter the number of troops under each duty type, the number of troops entered must equal the number of troops available to report for duty. |
| **Total Available Troops** | Updated automatically. |
| **Total Unavailable Troops** | Updated automatically. |

3. Click **Submit**.

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## Monitor personnel readiness

Now you will assume the role of the Readiness NCO in the same unit. You are asked to monitor the readiness of your unit and are looking to see if your unit is available to be assigned to a mission. You will view the overall readiness of your workforce.

> **Note:**
>
> The steps below are the same if you are an administrative NCO and will be using the Admin Dashboard to monitor the readiness of your team. The Admin Dashboard will contain personal information about the individual unit members.

1. In a browser, go to the Readiness Dashboard application.

   The Readiness Dashboard opens with an overview of the overall readiness of the brigade and each battalion within the brigade.

2. In the filter at the top of the dashboard, the **Last 24 Hrs** tab is automatically selected to view a list of submissions within the last 24 hours. The **Last 48 Hrs** and **Last 72 Hrs** options can also be selected.

3. Activate the **Date Range** filter by first selecting **All** in the **Time frame** filter and then providing a **Start** and **End** date. Review the list of personnel and their locations in the map.

4. Click each of the battalion tabs to see the availability for each company in that battalion.

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# Road Closures

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| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Road Closures

Road Closures can be used to maintain an inventory of road closures and communicate closures and detours to travelers.

Public works and public safety departments close roads for construction activities, special events, and public safety incidents, often creating detours for drivers. Proactively managing and communicating closure and detour information helps residents and drivers navigate an altered road landscape and avoid unnecessary congestion. Road Closures is typically implemented by public works and public safety agencies that want to have a single catalog of roads impacted by construction activities, events, and incidents and share this information with the public.

The Road Closures solution delivers a set of capabilities that help you inventory road closures and related detours, communicate closures and detours with the public, and share authoritative closure information with consumer applications, such as Waze.

# Requirements

Road Closures requires the following:

- ArcGIS Enterprise 10.7.1 - 10.8.1

# Information products

Road Closures includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Road Closures | An ArcGIS Web AppBuilder app used by public works and public safety staff to maintain an inventory of road closures and communicate closures, blocks, and detours to travelers | Editor |

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# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of Road Closures |

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# Configure Road Closures

Learn how to configure the Road Closures solution to meet specific needs in your organization.

## Create a public road closure map

Focused road closure maps and information can be embedded in your website so they can be accessed by the general public. Maps can be focused on public safety incidents or specific events occurring in a community, or they can be more general road closure maps used during road construction season.

To create a public road closure map, complete the following steps:

1. Sign in to your ArcGIS organization.
2. Create a map that can be used by the general public to view road closures by doing the following:
    a. Choose a basemap.
    b. Add the RoadClosures_public layer to the map and remove RoadClosures_public from the layer names.
    c. Save the map as `Public Road Closures`.
3. Share the map with your organization and everyone.
4. Embed the Public Road Closures map in your public works website.

## Share with Waze

Sharing your road closure information allows consumer navigation and traffic companies, such as Waze, to leverage the information in apps used daily by the general public. Sharing up-to-date information with these apps helps minimize the impact of road closures, ease congestion, and enhance driver safety in your community. The road closures layer complies with the Common Internet File Structure (CIFS) for road closures but must be configured, as shown below, to capture required information.

### Share road closure information

To share your road closure information with Waze, complete the following steps:

1. Verify that you are signed in to your ArcGIS organization.
2. When assigning a Creative Commons License to your RoadClosures layer, choose the following options:
    - For **Allow adaptations of your work to be shared**, choose **Yes**.
    - For **Allow commercial uses of your work**, choose **Yes**.
3. In the **Have a web page** area, copy the HTML that is generated by the Creative Commons site.

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4. In your ArcGIS organization, browse to your RoadClosures_public layer.
5. Open the item details page.
6. Click **Edit** to edit the item details.
7. Scroll to the **Terms of Use** section and click **Edit**.
8. Click **View HTML Source**.
9. Paste the HTML copied from the Creative Commons site into the **Terms of Use** text box.
10. Click **Save**.

    Note:

    You must use a license that allows international commercial use and allows shared adaptations or a license placing your data in the public domain.

11. Enroll in the Waze for Cities program.

    When you share your road closure information with Waze for Cities, new road closures added by your community in ArcGIS will be added to Waze every minute.

## Add your organization reference

To share your road closures with Waze, you must store your organization reference with every road closure. This field is used by Waze to identify which organization the road closure data is coming from. The reference name must be a maximum of either 10 capital letters or 12 lowercase letters. The reference is your Waze for Cities program ID.

To add your organization reference, complete the steps below:

1. Verify that you are signed in to your ArcGIS organization and browse to the Road Closures map.
2. Open the item page and click **Open in Map Viewer**.
3. Click **Edit**.
4. Click **Manage**.
5. Click the **Layer** drop-down arrow and choose the **Road Closures** layer.
6. Click the drop-down arrow next to the **Both Directions** feature template and choose **Properties**.
7. In the **Properties** window, scroll to **Organization** and enter your organization reference.
8. Click **Done**.
9. Repeat steps 6 through 7 for the One Direction feature template layer properties.
10. Click **Save Changes**.

## Set required fields

To share your road closures with Waze, some information is required. You must change the fields indicated below as required so all road closures that are created capture the information needed by Waze.

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To set fields transmitted to consumer apps as required, complete the following steps:

1. Verify that you are signed in to your ArcGIS organization and browse to the Road Closures app.
2. Open the item page and click **Edit Application**.
3. Click the **Widget** tab and click **Set the widget in this controller** to open the page for an in-panel widget.
4. Hover over the **Create New Closure** widget and click the **Configure this widget** button to open the widget configuration window.
5. Click the **Smart Actions** tab.
6. Click **Add New**.
7. In the **Group Name** text box, type `Required Fields`.
8. Click the **Layer for Expression** drop-down arrow and choose **Road Closures**.
9. Click the **Edit Expression** button.
10. Click **Add expression** and set the expression to OBJECTID is not blank.
11. Click **OK**.
12. Expand the Road Closure layer and check the check box for following fields as required:
    - **Street Name**
    - **Reason**
    - **Description**
    - **Direction**
    - **Start Time**
    - **End Time**
13. Click **OK** twice.
14. Save the app.

## Configure the Road Closures layer to share with Waze

One of the partners that your community can share data with is Waze through the Waze for Cities program. To share your data with Waze, follow the steps found in the Waze partners Overview page. To share your feed, you must create a JSON request from the Public Road Closures feature layer.

To create the request URL required by Waze, follow the steps below:

1. Verify that you are signed in to your ArcGIS organization and browse to the RoadClosures_public item.
2. Open the item page and click the **Road Closures** layer under **Layers**.
3. From the layer URL, click **Copy**.
4. Paste the URL into a text editor.

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5. Copy the code below and paste it into the text editor at the end of the URL you pasted in the previous step.

```
/query?where=1%3D1&outFields=OBJECTID,street,subtype,description,direction,starttime,endtime,type,reference&outSR=4326&returnZ=false&f=geojson
```

Tip:

For more information on querying a feature layer, see Query a feature layer.

6. Provide the URL to Waze.

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# Use Road Closures

The Road Closures solution delivers a set of capabilities that help you inventory road closures and related detours, communicate closures and detours with the public, and share authoritative closure information with consumer applications, such as Waze.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

**Note:**

Use your organization's data or configured apps to follow these workflows.

## Create road closures

You will assume the role of an employee in the public works department. You have received plans for streets that will need to be closed. You will draw the closures on the map, place the road blocks, and identify the detour routes.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Road Closures solution.
2. View the Road Closures app.

   The Road Closures app opens with the **Create New Closure** widget open on the right.
3. In the **Create New Closure** widget, check the **Use Preset Values (new features only)** check box.
4. Type the contact information for the closure in the appropriate text boxes.
5. In the **Identifier** text box, type a unique ID.

   Note:

   This information will be added to each closure, road block, and detour you create to associate it with the same event.
6. On the map, use the search field or pan and zoom to the closure location.
7. In the widget, click the **Both Directions** template.
8. Click the map and begin to draw a line at an intersection; click to add a vertex and double-click to finish the closure line.

   After you finish drawing the closure on the map, a Road Closures form appears on the right.
9. Complete the form with as much information as possible.
10. Click **Save**.
11. Click the **Road Blocks** template.
12. On the map, click the intersection on one side of the closure.

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**Note:**
The road block is automatically populated with the information from the closure it intersects, so you don't have to reenter it.

13. Click **Save**.
14. Click the **Road Detours** template.
15. On the map, sketch the alternate route around the closure and double-click to finish drawing the line.

    Note:

    If the detour intersects the closure at the start and end, it automatically pulls the details from the closure.
16. Click **Save**.

# Update closure details

You will continue as an employee in the public works department. Dates for a road closure have been extended. You will update the end date of the closure and its associated road blocks and detour.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Road Closures solution.
2. View the Road Closures app.
3. In the upper right of the app, click the **Update Existing Closures** button to open the widget.
4. In the **Update Existing Closures** widget, click the **Extent** tool.
5. On the map, drag a box around the road closure, including the associated road blocks and detour.
6. In the **Update Existing Closures** pop-up, click the **End Time** drop-down arrow and choose a new date.
7. Click **Save**.

   Closures that are no longer active, with an end date that is before today, will continue to show on the map but will have a transparency applied. This feature is helpful when you have reoccurring events; for example, past closures can be selected and updated with new dates.

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# Road Network Data Management

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Road Network Data Management

Road Network Data Management can be used to maintain an authoritative inventory of roads, intersections, and physical road characteristics and track legal agreements executed with a public works agency.

It provides a series of workflows and standard road layers that streamline the maintenance of a public road repository, their physical characteristics, and legal agreements defining maintenance services provided by the organization. Road Network Data Management is typically implemented by public works and transportation departments that want to develop and maintain a public road repository that supports a variety of maintenance functions.

The Road Network Data Management solution delivers a set of capabilities that help you maintain a standard set of public road layers, streamline road data management workflows, track maintenance agreements, and continuously improve the quality of public road information.

## Requirements

Road Network Data Management requires the following:

- ArcGIS Enterprise 10.7.1 - 10.8.1
- ArcGIS Pro 2.5 or later (Standard or Advanced)

## Information products

Road Network Data Management includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Road Network Data Management | An ArcGIS Pro project used by mapping technicians to maintain an authoritative inventory of public roads, road intersections, and physical road characteristics | GIS Professional Standard |

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# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of Road Network Data Management |

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# Use Road Network Data Management

The Road Network Data Management solution delivers a set of capabilities that help you maintain a standard set of public road layers, streamline road data management workflows, track maintenance agreements, and continuously improve the quality of public road information.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

**Note:**

Use your organization's data or configured apps to follow these workflows.

# Manage road network data

You will start by assuming the role of a mapping technician responsible for maintaining an inventory of public roads, road intersections, and physical road characteristics. The Road Network Data Management ArcGIS Pro project includes a series of tasks to help guide you through these workflows.

1. In a browser, sign in to your ArcGIS organization, and then browse to the Road Network Data Management solution.
2. Download the Road Network Data Management desktop application template, and then unzip the folder.
3. From the unzipped folder, open the Road Network Data Management ArcGIS Pro project in ArcGIS Pro.
4. In the **Catalog** pane, expand the **Tasks** folder, and then double-click the Road Network Data Management task item.

   Note:

   If you do not see the **Catalog** pane, from the **View** tab, in the **Windows** group, click **Catalog Pane**.
5. In the **Tasks** pane, expand the **How to use Road Network Data Management** task group to see the collection of tasks.

## Add roads

Roads are line segments representing centerlines of all public roadways or carriageways that support asset management and mapping. Typically, this information is compiled from authoritative road centerlines maintained for addressing purposes.

1. To add new public roads, follow the steps in the **Add roads** task.

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## Add intersections

When creating new roads, existing roads are split at intersections along the new road. An inventory of road intersections with the names of relevant crossroads is often required by 911 systems and to manage right-of-way assets.

1. To add new road intersections, follow the steps in the **Add intersections** task.

## Add road characteristics

A series of map layers is used to track the characteristics (for example, ownership, functional classification, speed limit, physical characteristics, and special routes) of each public road. The feature classification and type schema for the roads is based on a functional classification of roads provided by the Federal Highway Administration (FHWA). Specific attributes and default values vary for each feature type.

1. To add new road characteristics, follow the steps in the **Add road characteristics** task.

# Track maintenance agreements

You will now assume the role of an engineer or operations staff at a public works agency. You are responsible for managing the legal agreements defining maintenance services provided by the agency for assets within the public right-of-way.

1. In a browser, from the Road Network Data Management solution, view the Road Maintenance Agreements app.

   The app opens with the **Create Maintenance Agreement** open on the right.
2. In the **Create Maintenance Agreement** widget, choose a template.
3. Click the map to start a sketch.
4. Click the map to add additional vertices and double-click to finish the sketch.

   After you finish the sketch, the **Road Maintenance Agreements** legal agreement form opens in the **Create Maintenance Agreement** widget.
5. Complete the details of the legal agreement.
6. Click **Save**.
7. At the top right, click the **Filter Maintenance Agreement** button to open the widget.
8. Filter for the asset type that you just added.
9. On the map, select an agreement to view its details.

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# ROW Permitting

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to ROW Permitting

ROW Permitting can be used to manage permit applications required to construct, operate, use, or maintain a facility within the public right-of-way.

It provides a single destination for right-of-way permit applications and supports comprehensive right-of-way permit review workflows in a community. Capturing the location of proposed work along with other permit information streamlines the permit review process and helps communicate where work is occurring in the public right-of-way. ROW Permitting is typically implemented by public works agencies and other local government organizations that want to reduce the time to apply for and receive approval for a right-of-way permit.

The ROW Permitting solution delivers a set of capabilities that help you collect and organize permit applications, coordinate the permit review process, gather feedback during permit review, and share approved permits with internal and external stakeholders.

# Requirements

ROW Permitting requires the following:

- ArcGIS Enterprise 10.6.1 - 10.8.1

# Information products

ROW Permitting includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| ROW Permit | An ArcGIS Survey123 form used by contractors and property owners to apply for a permit to construct, operate, use, or maintain a facility within the right-of-way | Editor (required if form is used for internal purposes only) |
| ROW Permit Manager | A Crowdsource Manager app used by public works agencies to facilitate the right-of-way permit process and manage the status of a permit application | Editor |

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| | | |
|---|---|---|
| ROW Permit Review | A Crowdsource Polling app used by government agencies to review right-of-way permit applications and offer comments during the review process | Editor |
| ROW Permit Public Comment | A Crowdsource Polling app used by the general public and interested parties to review permit applications and comment on proposed construction activity | Not required |
| ROW Permit Locator | An ArcGIS Web AppBuilder app used by the general public and other interested parties to locate pending and approved right-of-way permits in their community | Not required |
| ROW Permit Dashboard | An ArcGIS Dashboards app used by public works executives to monitor the status of right-of-way permits in their community | Viewer |

# Release notes

The following are the release notes:

| Version | Description |
|---|---|
| 1.0 | • First release of ROW Permitting |

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# Use ROW Permitting

The ROW Permitting solution delivers a set of capabilities that help you collect and organize permit applications, coordinate the permit review process, gather feedback during permit review, and share approved permits with internal and external stakeholders.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

**Note:**

Use your organization's data or configured apps to follow these workflows.

## Submit a permit application

First, you will assume the role of a resident in the community. You want to host a block party in your neighborhood and close the street for the weekend.

1. In a browser, from the ROW Permitting solution, view the ROW Permit form.
2. In the **Applicant Information** section, provide your contact information.
3. Leave the **Contractor Information** section blank, as this work does not require a contractor.
4. In the **Job Information** section, search for the street that you want to close, and then place the point along that street.
5. For **Type**, choose **Temporary Use**.
6. For **Subtypes**, check the **Neighborhood Festival** check box.
7. For **Description**, provide a brief description.
8. For **Site Plan \ Construction Drawings**, if applicable, upload a drawing of where the road blocks should begin and end.
9. For **Proposed Start Date** and **Proposed Completion Date**, choose dates for the closure.
10. For **Lane Closure Required**, choose **No**.
11. Sign the form, and then click **Submit**.

## Manage permit status

You will now assume the role of a supervisor in the public works department. It is your job to review and triage permit requests and ensure the permit application is reviewed by the correct people.

1. In a browser, sign in to your ArcGIS organization, and then browse to the ROW Permitting solution.

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2. View the ROW Permit Manager app.

   All permit applications are listed in the table at the top. The table can be sorted and filtered in various ways.

3. Click a permit with a status of **Submitted**.

   The permit application details open at the lower left.

4. On the **Details** tab, review the permit application information, and then click the **Edit Record** button .

5. For **Status**, choose **StaffReview**.

6. Click **Save**.

   The permit is now displayed in the ROW Permit Review app and can be shared with other departments or agencies to provide their feedback and approval. After all departments have approved the permit, you'll change the status in the ROW Permit Manager app to **BoardReview**.

7. Click the **Edit Record** button again.

8. For **Status**, choose **BoardReview**.

9. Click **Save**.

   The permit is now displayed in the ROW Permit Public Comment app and can be shared with the general public for feedback. If public feedback is positive and you are ready to approve the permit, you'll change the status to **Approved**.

10. Click the **Edit Record** button again.

11. For **Status**, choose **Approved**.

12. Click **Approved/Denied Date** and choose the current date.

13. For **Approved State Date** and **Approved Completion Date**, specify values that signify the dates that the permit is valid.

14. Click **Save**.

# Conduct internal review

You will now assume the role of a supervisor in the public safety department. A permit application requesting a street closure has been submitted. You will review the permit details to confirm that all the necessary information is provided and that you don’t have any concerns.

1. In a browser, sign in to your ArcGIS organization, and then browse to the ROW Permitting solution.

2. View the ROW Permit Review app.

3. On the right, click a permit application in the list.

   Tip:

   If no permit applications are listed, return to the previous workflows and ensure that at least one permit application has a status of **StaffReview**.

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4. Review the details, and then click the **Add a comment** button.
5. For **Organization**, choose **Public Works**.
6. Provide your name and comments.
7. For **Action Taken**, choose **Approved**.
8. Click **Submit**.

# Find approved and pending permits

As an engaged resident, you are interested in learning more about the active and planned work in the community.

1. In a browser, from the ROW Permitting solution, view the ROW Permit Locator app.

   The app opens with the **Locate ROW Permit** widget open on the right.
2. In the **Locate ROW Permit** widget, search for an address; alternatively, click the location on the map.

   Any permits that are pending or approved appear at the bottom of the widget.
3. If necessary, use the slider to increase the search distance and view additional permit applications.
4. Click **Pending** or **Approved**, and then explore the permits that are within the specified search distance of the address.
5. At the top of the list, click the **Back** button to return to the permit list and continue exploring nearby permits.

> **Note:**
> Pending permits have a **Comment** hyperlink that opens the ROW Permit Public Comment app. This app can be used by the general public to provide their feedback or concerns on the proposed work.

# Provide public comments

Many communities have statutory public notice requirements that community members must be given the opportunity to express concerns about proposed developments and work within the public right-of-way. As a concerned resident, you will review the pending permits in the community and provide feedback instead of attending a council or commission meeting.

1. In a browser, from the ROW Permitting solution, view the ROW Permit Public Comment app.
2. Click a permit application in the list.

   Tip:

   If no permit applications are listed, return to the previous workflows and ensure that at least one permit application has a status of **BoardReview**.

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3. Review the details, and then click the **Add a comment** button.
4. Provide your name, address, and comments.
5. Click **Submit**.

# Monitor permit applications

Finally, you will assume the role of a supervisor in the public works department. It is your job to ensure that permits are moving through the application process and being approved or denied in a timely manner.

1. In a browser, sign in to your ArcGIS organization, and then browse to the ROW Permitting solution.
2. View the ROW Permit Dashboard app.
3. On the left, adjust the filters to refine the results.
4. On the right, in the **Permits** panel, click a permit application to view a pop-up with application details; alternatively, click a permit on the map.

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# School Locator

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to School Locator

School Locator can be used to share district and attendance zone boundaries with the general public.

It provides 24/7 access to an organization, and the location-enabled search helps residents quickly find which school district their household is assigned to and understand which schools their children will attend. This transparent approach improves communication with the public and saves many parents time because they do not need to call the district for school assignments. The solution also helps residents and home buyers make important decisions when considering where, and when, to make a real estate move. School Locator is typically implemented by government agencies and school districts that want to educate the public and promote public education resources available in their community.

The School Locator solution delivers a set of capabilities that help you share school district and attendance zone boundaries; highlight school performance; and promote available elementary, middle, and high school educational resources.

# Requirements

School Locator requires the following:

- ArcGIS Enterprise 10.6 - 10.8.1

# Information products

School Locator includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| School Locator | An ArcGIS Web AppBuilder app used by the general public to locate elementary and secondary schools and view school districts and attendance zone boundaries | Not required |

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# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of School Locator |

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# Configure School Locator

In this topic, you'll learn how to configure the School Locator solution to meet specific needs in your organization.

# Load data

In some cases, you may already have this information in ArcGIS or another mapping system. Review the layers provided with the solution and determine what source data you want to load. Then, load your existing data into the layers provided with the solution before sharing the maps or apps.

Once you have determined what source data must be loaded, complete one or more of the following data-loading workflows.

## Load data from a shapefile

Load data into the SchoolDistricts layer from a shapefile by completing the following steps:

1. Create a `.zip` file of your shapefile.
2. Sign in to your ArcGIS organization and browse to the feature layer you want to populate.
3. Open the item page and click **Update Data > Append Data to Layer**.
4. Click **Choose File** and browse to your `.zip` file, and click **Open**.
5. Click **Upload and Continue**.
6. Click **Choose the layer that you wish to append data into** drop-down arrow and choose the layer that contains the updated data.
7. Uncheck **Update existing features**.
8. Click **Show field matching** and map the fields between the two layers.
9. Click **Apply Updates**.

# Configure directions

Follow the steps below to connect to a routing service and configure the widget to enable directions in the app.

## Configure widget

To configure an app to use routes and provide directions, complete the following steps:

1. Sign in to your ArcGIS organization and browse to the ArcGIS Web AppBuilder app.
2. Open the item page and click **Edit Application**.
3. Click the **Widget** tab and click **Set the widget in this controler** to open the page for an in-panel widget.

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4. Hover over the **Near Me** widget and click the **Configure this widget** button to open the widget configuration window.
5. Check the **Enable Directions** check box if it is not checked.
6. Click the **Direction Settings** tab, click **Set**, and choose a routing service.
7. Click **Next** and choose one or more route layers, click **OK**, and click **OK** again.
8. Save the app and share it with everyone.
9. Open the app.

## Esri premium content

The app draws routes and provides directions using the ArcGIS Online World Route Service. This service requires subscriber access because it consumes credits. See Configure Living Atlas content to enable access to premium content.

Learn more about credit usage when creating simple routes

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# Use School Locator

The School Locator solution delivers a set of capabilities that help you share school district and attendance zone boundaries; highlight school performance; and promote available elementary, middle, and high school educational resources.

**Note:**

Use your organization's data or configured apps to follow these workflows.

# Find schools and attendance zones

You will assume the role of a resident in the community and want to learn more about schools and attendance zone boundaries in your area.

1. In a browser, sign in to your ArcGIS organization, and then browse to the School Locator solution.
2. View the School Locator app.
3. In the **Locate School** widget, under **Search for an address or locate on map**, type an address in the community and press Enter. You can also click the map to set a location.

   The list updates to display school attendance zones that serve the location entered.
4. Review the list of school attendance zones.

   Using the list, you can see information related to which school your child will attend, enrollment numbers, the school district, and directions.
5. In the school attendance zones results list, click **Elementary School Attendance Zone**.

   The map zooms to corresponding school attendance zone boundaries and highlights the associated school your child will attend based on your searched address.

   The **Information** tab displays details regarding which school your child will attend, current enrollment numbers, and the name and size of the school district.
6. Click the **Directions** tab.

   The tab displays turn-by-turn directions from the searched address to the school location.
7. Click the **Back** button to return to the school attendance zones results list.
8. Repeat step 4 for both **Middle School Attendance Zone** and **High School Attendance Zone**.

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# Shelter Locator

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
|---|---|

# Introduction to Shelter Locator

Shelter Locator can be used to share emergency shelters activated during an incident or event.

It provides continuous access to an organization, and the location-enabled search helps residents quickly find shelter information. This transparent approach improves communication with the public and promotes efficient use of transportation and shelter resources. Shelter Locator is typically implemented by emergency management agencies that want to avoid unnecessary travel when conditions require residents to seek protection outside of their homes.

The Shelter Locator solution delivers a set of capabilities that help you share shelter locations and promote the current operating status of shelters when an incident or event occurs.

## Requirements

Shelter Locator requires the following:

- ArcGIS Enterprise 10.7 - 10.8.1

## Information products

Shelter Locator includes the following information products:

| Item | Description | Minimum user type |
|---|---|---|
| Shelter Locator | An ArcGIS Web AppBuilder app used by the general public to locate emergency shelters activated during an incident or event and understand their current operating status | Not required |

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# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | • First release of Shelter Locator |

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# Configure Shelter Locator

Learn how to configure the Shelter Locator solution to meet specific needs in your organization.

## Load emergency shelters

You may have emergency shelters that you want to use in the Shelter Locator solution. To accomplish this objective, you will need to load your data into the EmergencyShelters layer provided with the app.

> **Note:**
> To append your data, it must be in either a shapefile format.

To load your facilities information from another data source, complete the steps below:

1. If necessary, sign in to your ArcGIS organization.
2. At the top of the site, click **Content**.
3. On the **My Content** tab, type `Shelter Locator` in the search box.
4. Under the **Item Type**, click **Layers** and click **Feature Layers**.

   Note:

   Some of the feature layers have a suffix added, such as **public**. These are layer views of the of the original source feature layer. These layer views are used to share information with the public without showing all the details or allowing the public to edit the layers. The original source layers do not have a suffix.
5. Click **Emergency Shelters** to view the item details.
6. Click **Update Data** and select **Append Data to Layer**.
7. Under **Filename**, choose your shapefile.
8. Click **Upload** and click **Continue**.
9. Click **Show field matching** to match the fields from the spreadsheet to the fields in the selected feature layer.
10. After you have matched the fields, click **Apply Updates**.
11. Click the **Data** tab in the banner of the item page to confirm your data has loaded successfully.

> **Tip:**
> When the Emergency Management Operations solution and the Shelter Locator solution are deployed by the same user, the EmergencyShelters layer is shared between the solutions. This allows the emergency shelter status to be updated using the Operations Response app. The shelter status is then visible in the Shelter Locator and other apps that are part of the Emergency Management Operations solution.

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# Use Shelter Locator

The Shelter Locator solution delivers a set of capabilities that help you share shelter locations and promote the current operating status of shelters when an incident or event occurs.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

## Locate an emergency shelter

You will assume the role of a resident in the community and want to learn more about available shelters in your area.

Follow the steps below to locate a shelter using the sample data.

1. In a browser, sign in to your ArcGIS organization, browse to the Shelter Locator item, and choose view application.
2. In the **Locate Shelter** pane, drag and use the buffer distance slider to set a distance of 3 miles.

   The slider allows a user to define a distance once an address is entered or a location is identified on the map.
3. In the **Locate Shelter** pane, under **Search for an address or locate on map**, type an address.
4. In the **Locate Shelter** pane search results, click a shelter to review its information, such as its address, hours of operation, status, and contact information.
5. In the **Locate Shelter** pane, click the **Information** tab and review additional information about the selected shelter.

   The information in the pop-up varies by location, depending on the services offered by each shelter.

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# Target Hazard Analysis

This solution documentation has been archived and is no longer updated. Content and links may be outdated.

| Mature phase<br>Nov 2023 - Oct 2025 | Retired phase<br>Nov, 2025 |
| --- | --- |

# Introduction to Target Hazard Analysis

Target Hazard Analysis can be used to identify properties and buildings that could result in a loss of life, or have a negative impact on the community, if a fire were to occur.

Many fire departments are taking proactive steps to assess risk and mitigate the impact of a fire in their community. The first step in this risk assessment is the identification of buildings or properties that may harm the community if a fire were to occur. Occupancy, size, life safety and economic impact are some of the criteria used to assess the risk of a building or property. Understanding risk can be a time consuming process and reducing the time it takes to conduct an assessment saves fire departments money. It also allows them to evaluate their community on a regular basis and measure the effectiveness of mitigation strategies. Target Hazard Analysis is typically implemented by fire departments that want to understand risk in their community and use the assessment to prioritize preplanning activities, fire inspections and other community risk activities.

The Target Hazard Analysis solution delivers a set of capabilities that help you calculate a hazard score for each building or property and understand where a fire may negatively impact a community.

# Requirements

Target Hazard Analysis requires the following:

- ArcGIS Enterprise 10.7 - 10.8.1
- ArcGIS Pro 2.5 or later (Basic, Standard or Advanced)

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# Information products

Target Hazard Analysis includes the following information products.

| Item | Description | Minimum user type |
| --- | --- | --- |
| Target Hazard Analysis | An ArcGIS Pro project package used by fire service personnel to identify properties and buildings that could result in a loss of life, or have a negative impact on the community, if a fire were to occur. | GIS Professional Basic |

# Release notes

The following are the release notes:

| Version | Description |
| --- | --- |
| 1.0 | First release of Target Hazard Analysis |

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# Use Target Hazard Analysis

The Target Hazard Analysis solution delivers a set of capabilities to calculate a hazard score with user-defined criteria such as occupancy type, life safety, building size, economic impact, and fire flow requirements.

In this topic, you'll learn how to use the solution by assuming the role of a user and performing the workflows below.

## Understand hazard criteria

Before using Target Hazard Analysis it is important to understand the criteria used, tools and tasks provided, and the data requirements. Gaining this understanding before you begin will help you use it effectively and produce target hazard results. To conduct a target hazard analysis, it is necessary to determine the evaluation criteria. The criteria are used to assess the potential impact of a fire on each building. The greater the potential impact, the greater the target hazard score. Certain attributes are required to perform a target hazard analysis of buildings or parcels. Information is provided to describe the minimum attributes you will need for each property.

To learn more about the criteria contained in Target Hazard Analysis, follow these steps:

1. Sign in to your ArcGIS organization and browse to the Target Hazard Analysis Desktop Application Template.
2. Open the item page and click **Download**.
3. Unzip and open the Target Hazard Analysis ArcGIS Pro project.
4. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
5. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **Target Hazard Analysis** task item.
6. In the **Task Pane**, click the **Getting started** task group to expand the collection of tasks.

## Perform building analysis

This workflow uses occupancy, life safety, floor area, height, fire flow, and economic impact to calculate a hazard score on all buildings. Choose this workflow when the minimum attribute information is available in your buildings layer. If some of the required attributes are in your parcels layer, you can transfer the required attributes from a parcel layer to a buildings layer as part of this workflow.

You will assume the role of a fire fighter responsible for conducting a target hazard analysis on all buildings in your community. The Target Hazard Analysis ArcGIS Pro project includes a series of tasks to help guide you through this workflow.

1. Open the Target Hazard Analysis ArcGIS Pro project.
2. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.

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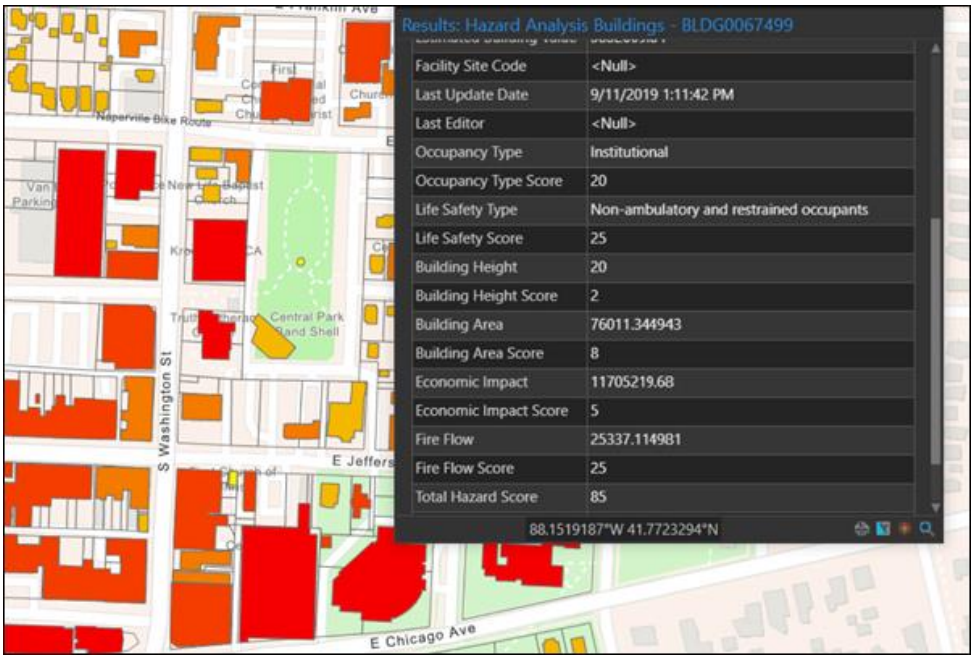
3. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **Target Hazard Analysis** task item.
4. In the **Task Pane**, click the **Perform target hazard analysis with buildings** task group to expand the collection of tasks.
5. Click on each task and follow the steps provided.




# Perform parcel analysis

This workflow uses occupancy, life safety, floor area, height, fire flow, and economic impact to calculate a hazard score on all parcels. Choose this workflow if you do not have building information and all of the necessary information is available in your parcel layer.

You will assume the role of a fire fighter responsible for conducting a target hazard analysis on all parcels in your community. The Target Hazard Analysis ArcGIS Pro project includes a series of tasks to help guide you through this workflow.

1. Open the Target Hazard Analysis ArcGIS Pro project.
2. On the **View** tab, in the **Windows** group, click **Catalog**, and click **Catalog Pane**.
3. In the **Catalog** pane, expand the **Tasks** folder, and double-click the **Target Hazard Analysis** task item.
4. In the **Task Pane**, click the **Perform target hazard analysis with parcels** task group to expand the collection of tasks.
5. Click on each task and follow the steps provided.

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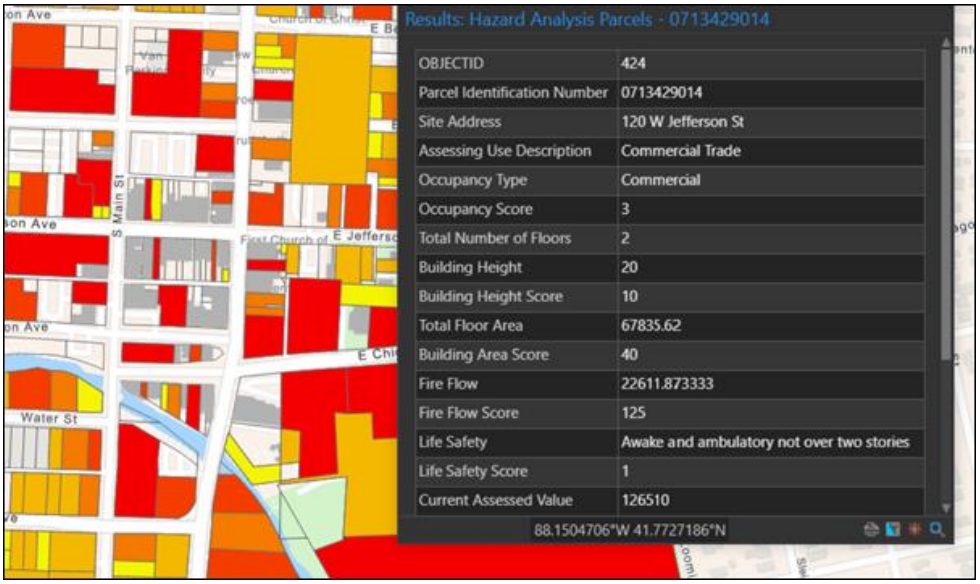


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