

Spatial NI

ArcGIS Online Services

ArcGIS Pro

Document Version

| Version | Purpose for Change | Date | | |
|---------|--------------------|---------------|--|--|
| 1.0 | Creation | 01 April 2019 | | |
| | | | | |
| | | | | |

Software Version

The guidance in this document has been written for use with ArcGIS Pro 2.3.0.



Ordnance Survey of Northern Ireland Lanyon Plaza | 7 Lanyon Place | Belfast | BT1 3LP https://www.spatialni.gov.uk

© Crown Copyright 2019

Contents

| About This Guide | 5 |
|---|----|
| What is Spatial NI? | 5 |
| What is ArcGIS Online? | 5 |
| Who can gain Access to Spatial NI Content via AGOL? | 5 |
| How to gain Access to the Spatial NI AGOL? | 6 |
| What is ArcGIS Pro? | 6 |
| New to using ArcGIS Pro? | 6 |
| Accessing Spatial NI | 7 |
| Licencing ArcGIS Pro | 7 |
| Connecting to Spatial NI via ArcGIS Online (AGOL) | 9 |
| Your AGOL credentials | 9 |
| Getting access to Spatial NI | 10 |
| Accepting a request notification | 11 |
| Accessing a group | 12 |
| Logging in from ArcGIS Pro | 13 |
| Creating a New Project | 14 |
| Saving a Project | 16 |
| Finding and Viewing Content | |
| Spatial NI Basemaps | 20 |
| Spatial NI Operational Content | 22 |
| Adding Content | 23 |
| Spatial NI Metadata | 24 |
| Using Spatial NI Services | 25 |
| Symbology | 25 |
| Types of Symbology | 26 |
| Customising Symbology | 27 |
| Querying | 29 |
| Selecting Manually | 29 |
| Select by Attributes | 32 |
| Select by Location | 34 |
| 3 Band Image Analysis | |
| 4 Band Image Analysis | 41 |

| 3D Analysis | 42 |
|------------------------|----|
| Configuring 3D Terrain | 42 |
| Creating a Scene | 44 |
| 3D Analysis Tools | 46 |
| OSNI Fusion Services | 54 |
| Querying | 54 |
| Snapping | 55 |
| Sharing Maps | 58 |
| Printing | 58 |
| Exporting | 59 |

About This Guide

This guide has been written to assist you when using web services from the Spatial NI ArcGIS Online (AGOL) in ArcGIS Pro.

Text highlighted in **bold** are actions that you will need to complete.

When you see this box...

Go Further Box:

Discover more amazing ways you can use the Spatial NI services, OR Top tips for using ArcGIS Pro.

What is Spatial NI?

Spatial NI is Ordnance Survey of Northern Ireland's web mapping platform. It provides you with access to not only Ordnance Survey's authoritative mapping data, but other geospatial information from multiple providers across the public and private sectors.

Components of Spatial NI:



Spatial NI Website

The Spatial NI website enables the public citizen to view and interrogate OSNI maps with other spatial data. It also contains a handy gallery of other mapping applications.



Spatial NI NIMA Portal Access the Spatial Data Infrastructure (SDI) available to all recipients of the Northern Ireland Mapping Agreement (NIMA) - (Login is required).



Spatial NI for INSPIRE Spatial NI for INSPIRE provides a network of spatial data, accessible under the INSPIRE Directive, that can be used to promote and support environmental protection

What is ArcGIS Online?

ArcGIS Online is a component of the Esri platform and is part of their geospatial cloud. It enables you to connect people, locations and data using interactive maps. You can work with smart, data driven styles, intuitive analysis tools that deliver location based intelligence and share your insights with the world or specific groups.

Who can gain Access to Spatial NI Content via AGOL?

Access to the Spatial NI content via AGOL is available to all NIMA participants who are unable to connect to the Spatial NI NIMA Portal.

How to gain Access to the Spatial NI AGOL?

You will need to have an AGOL account for your organisation and have access to administrative privileges. The data is exchanged via a group established on the Spatial NI AGOL, which is then shared with specific members of your organisation.

If after reading this document you would like to know more on how to configure this access, <u>email us</u> for advice.

What is ArcGIS Pro?

ArcGIS Pro is Esri's next-generation desktop GIS product which provides professional 2D and 3D mapping in an intuitive user interface. You can think of ArcGIS Pro as a software program that advances visualisation, analytics, image processing, data management and integration.

Easily mash up data from multiple sources to make maps that are as smart as they are beautiful. Use the powerful analytical tools to identify hidden patterns and trends in your data.

We recommend ArcGIS Pro as the optimal desktop software to interact with the Spatial NI NIMA Portal. All the analysis of ArcMap just with handy new features including: multiple portal connections, project organisation, ribbon based interface and multiple active panes. All of these allowing for quick and easy access to the content and tools you use. Pro is completely integrated with ArcGIS Online so sharing, viewing and accessing data from your online content will be much easier.

New to using ArcGIS Pro?

Complete <u>Esri's online training</u> to find out how you can make the most of ArcGIS Pro and all the new features it offers.

Accessing Spatial NI

Spatial NI contains a wealth of geospatial data from a diverse range of organisations. This information can be easily leveraged within ArcGIS Pro to help you complete analysis, identify trends and make informed decisions.

Spatial NI has facilitated two methods by which you can easily leverage content into ArcGIS Pro.

These are:

- Spatial NI NIMA Portal A high availability instance of ArcGIS Enterprise which offers you a single sign-on experience. This is facilitated by using Active Directory Federated Service (ADFS).
- ArcGIS Online (AGOL) Easily access content via your own organisations AGOL account. You will need to have a level 2 named user within your organisation to connect via this method.

Licencing ArcGIS Pro

ArcGIS Pro can be licenced via two methods:

- Standalone This licence is deployed during the install process. Once you launch ArcGIS Pro, the software will open and be ready for use.
- Concurrent The licence is taken from a licencing portal, either ArcGIS Enterprise or ArcGIS Online. A pop-up will prompt you for your credentials and you can check your login status from in the top right of the ArcGIS Pro window.

| A | Accessing <u>yo</u> | our AGOL from ArcGIS Pro: |
|---|---------------------|---|
| | | ArcGIS Pro, navigate to the Project tab on the ribbon. |
| | New | Portals |
| | Open | Available : Signed in as georgia.mcdowell Spatial_NI |
| | Save | Available - signed in as georgia.incuowen_spacial_rei |
| | Save As | |
| | Portals | |
| | Licensing | |
| | Options | |
| | Python | |
| | Add-In Manager | |
| | Help | Add Portal |

| Continued: |
|---|
| 2. In the dialogue box, enter the URL for your AGOL. Click OK. |
| Add Portal × Enter the URL of your portal Examples: ArcGIS Enterprise - https://webadaptorhost.domain.com/webadaptorname ArcGIS Online - https://www.arcgis.com or https://yourorg.maps.arcgis.com |
| |
| To Sign In → Right-click on the Spatial NI NIMA portal and select Sign in. Enter your AGOL account credentials into the pop-up window. This will change the status of the portal to Available: Signed in as Set your Active Portal → Only content from your active portal will be available in your ArcGIS Pro project. Right-click your AGOL from the list of added portals. Select Set as Active Portal. |
| New Portals Open Metric Save Save Save As Integr://spatialni.maps.arcgis.com/ Available : Signed in Signed in Signi in Set As Active Portal Edit Portal Connection Test Availability Remove Portal Connection |
| New Portals Open Save Save Image: Signed in as georgia.mcdowell Spatial_NI Save As Mtps://spatialni.maps.arcgis.com/ Available : Signed in as SpatialNIAdmin Portals Edit Portal Connection Test Availability Remove Portal Connection |
| *NOTE: This will place a green tick above the portal symbol indicating that it is active. This portal will remain the default active portal whenever signed into ArcGIS Pro, until manually changed. 5. <i>Remove a portal</i> → Navigate to the Project tab on the ribbon and select Portals. Hover the curser over the Portal link you want to remove. Click the red 'X' which appears on the right of the portal URL. |
| Image: https://spatialni.maps.arcgis.com/ × Available : Signed in as SpatialNIAdmin × |

Connecting to Spatial NI via ArcGIS Online (AGOL)

To connect to and leverage content from Spatial NI via ArcGIS Online, you will need to have a configured level 1 or a level 2 named user account within your organisations AGOL.

Your AGOL credentials

Your AGOL named user account will need to have certain privileges configured. To check this you may need to consult with your organisations AGOL administrator.

A user for connection to Spatial NI must have the following configuration:

Role: User (default)

| New member | |
|---|--|
| First name | Last name |
| Test | User |
| Email address | Username |
| tech.spatialni@finance-ni.gov.uk | TestUser1230 |
| User type | |
| Creator (formerly Level 2) 114 available | Compatible with all roles and licenses |
| Role | Temporary password |
| User V | |

Role privileges: Join external groups

| Role privileges | | | | |
|---|--------------------------------------|-----|---------------------------------------|-----|
| Import settings from an existing role or temp | ate Toggle all on Collapse all | | | |
| General Privileges | | | | |
| Members | [-] 🔲 Groups | [-] | Content | [-] |
| View | Create, update, and delete | | Create, update, and delete | |
| | Join organizational groups | | Publish hosted feature layers | |
| | 🗹 Join external groups | | Publish hosted tile layers | |
| | View groups shared with organization | | Publish hosted scene layers | |
| | | | View content shared with organization | |
| Sharing | [-] Premium Content | [-] | E Features | [-] |
| Share with groups | Geocoding | | Edit | |
| Share with organization | Network Analysis | | Edit with full control | |
| Share with public | Spatial Analysis | | | |
| Make groups visible to organization | GeoEnrichment | | | |
| Make groups visible to public | Demographics | | | |
| Make groups available to Open Data | Elevation Analysis | | | |
| Open Data | [-] | | | |
| Manage Open Data site(s) | | | | |
| | | | | |

Who can see your profile?: Everyone

| Test 's Profile | | | | | |
|----------------------------------|----------------------------------|------------------------------------|--|--|--|
| | First Name | Who can see your profile? | | | |
| | Test | Everyone (public) Organization | | | |
| | Last Name | O Private | | | |
| | User | Language | | | |
| Click thumbnail to change image. | New Email | English - English | | | |
| | tech.spatialni@finance-ni.gov.uk | Number and date format ⑦ | | | |
| | Confirm Email | US - US | | | |
| | | Region United Kingdom | | | |
| | Username | Units | | | |
| | TestUser1230 | Metric T | | | |

Getting access to Spatial NI

Once you have checked that your AGOL account has the correct permissions, you will need to select which Spatial NI groups you would like to access from the list below:

| Group Name | Description | Want to | Join? |
|------------------|--|--------------|-------|
| Environment | Contains current and historical environment feature layers, incl. NI designated sites. | \checkmark | × |
| Geology | Contains map image layers showing features of NI Geology. | \checkmark | × |
| Hydrology | Contains map image layers showing water distribution and flooding data. | \checkmark | × |
| OSNI: Elevation | Contains OSNI Terrain data. | \checkmark | × |
| OSNI: Historical | Contains historical line drawn and early digital maps of NI throughout the 20 th century. | \checkmark | × |
| OSNI: Fusion | Contains dynamic feature layers derived from the OSNI Fusion basemap. | \checkmark | × |
| OSNI: Imagery | Contains the current orthophotography mosaic and the individual imagery captured by year. | \checkmark | × |
| OSNI: Location | Contains pointer services, address information and boundaries for NI. | \checkmark | × |
| OSNI: Opendata | Contains the opendata offered by OSNI, including: boundaries, raster basemaps and transport network. | \checkmark | × |
| People and Place | Contains data for social interest including: schools playparks, police stations and public areas. | \checkmark | × |
| Statistics | Contains statistical data from the NI 2011 census and deprivation maps. | \checkmark | × |

Then contact the Spatial NI Support Team by email, providing the following details to be granted access to the correct groups.

- Your AGOL username
- The list of groups which you would like to access

Accepting a request notification

Once, the Spatial NI support team have confirmed your access permissions, you will need to accept the group invitation to join the group.

- 1. Login to your organisations AGOL.
- 2. Click the **notifications icon** on the top menu bar \rightarrow View your invitations

| Q | Û | Test User TestUser1230 |
|---|---------|-------------------------------|
| You have been invited to join AGOL Sharing Tes View your invitations a minute ago | t. × | |
| Dismiss all | | |
| | | |

3. From the list of invitations, select the AGOL group you wish to join → Click **Join this group**

| Invitations You have been invited to join the following groups: | | | | | |
|---|----------------|---|--|--|--|
| AGOL Sharing Test Invited by SpatialNI Admin on February 4, 2019 | | | | | |
| ✓ Join this group | ⊖ Decline | | | | |
| | | | | | |
| | | | | | |
| | Close | e | | | |
| | bruary 4, 2019 | bruary 4, 2019 ✓ Join this group ⊖ Decline | | | |

Accessing a group

The group will now appear in your My Groups tab, within Groups.

1. Click the **group name link** to enter the group page, and view content.

| Home Gallery Map Scene | Groups | Content | Organization | | | Q | ţ î | | Test User TestUser1230 |
|------------------------------|---------------|-------------------|--------------|------------|--------------------|----------------|------------|-------|---------------------------|
| Groups | | | | | My Groups | Featured Group | | My Or | ganization's Groups |
| E Create group | Q Search My C | Groups | | | | | | | = Title Filter |
| Filters | AG | GOL Sharing 1 | Tost | | | | | | +] Leave Group |
| Only show groups with new | A Own | ner: SpatialNIAdr | | Viewable b | y: 🕑 Everyone (pub | lic) | | | |
| ∽ Owner | | | | | | | | | |
| Owned by Me | | | | | | | | | |
| Owned by Others | | | | | | | | / | |
| ✓ Date Created | | | | | | | / | | |
| Today | | | | | | | | | |
| Yesterday | | | | | | | | | |
| Last 7 Days | | | | | | | | | |
| Last 30 Days Custom Range | | | | | | | | | |
| Custom Kange | | | | | | / | | | |
| | | | | | | | | | |

***NOTE**: Click **Leave Group** at any time you wish to remove yourself from the group. This will have no effect on the group or content within.

| Home | Gallery | Мар | Scene | Groups | Content | Organization | | Q | Û | | Q | Test User TestUser1230 |
|----------------|---|------------|----------------|----------------|---------|--|--------------------------|--|--------|-----------|---------|---------------------------|
| AGOL | Sharing To | est | | | | | | Overview | v | Conte | | Members |
| А | A brief sur owned by \$ | - | · · | not available. | | | | | | Sha | re | |
| Descri | ption | | | | | | | Details | | | | |
| An in-dep | oth descriptior | n of the g | group is not a | vailable. | | | | Created: J Viewable I Contribute | by: Ev | eryone (p | oublic) | er and managers |
| Latest | Content | | | | | | 🔯 View All Group Content | 🛓 2 🖸 | 3 | | | |
| - | Image: set of the set | * * | | | | | | Gwner | | | | |
| u n n 0 u u | m | * * | | | | | | Spa | tialNI | Admin | | |
| | e Grid - 50K atialNIAdmin | | Coverage | | | ansport 50K - Network lines by SpatialNIAdmin | | Membe | rshi |) | _ | 🖞 Leave Group |
| | Nov 20, 2018 | | Created: No | | | reated: Nov 21, 2018 | | 🗸 You are | e a m | ember | | |
| Updated: | Jan 25, 2019 | | Updated: Ja | in 25, 2019 | Up | odated: Jan 24, 2019 | | | | | | |
| View Cour | nt: 3 | | View Count: | 4 | Vi | ew Count: 6 | | Tags | | | | |
| | | њ | | ŝ | | G ··· | | TEST | | | | |
| | | | | | | | | | | | | |

Logging in from ArcGIS Pro

1. Within the **Portal Groups tab** in the **Catalog pane**, select the name of the AGOL Shared group from the list of available groups. This list of groups includes all groups of which you are a member on your own AGOL and shared groups from another organisations AGOL.

| Catalog | ≁ų× |
|----------------------------------|-----|
| Project Portal Favorites History | ≡ |
| ି 🙀 🦳 🝙 | |
| Groups | |
| 🔄 🏠 Search | - م |
| 🐴 Statistics | |
| 😤 Basemap Gallery | |
| 😤 OSNI: Historical | |
| 👸 OSNI: Elevation | |
| 😤 OSNI: Opendata | |
| 😤 Environment | |
| 😤 Geology | |
| 👸 People and Place | |
| 😤 OSNI: Imagery | |
| 👸 OSNI: Fusion | |
| 🐣 OSNI: Location | |
| 👸 Hydrology | |
| 🐴 Site Administration Group | |
| AGOL SHARED GROUP | |

2. **Double left-click** on the Group name to view only the content within this group. You can add the content to your current map by **right-clicking** and selecting **Add to current map**.

See section 'Adding Content from Spatial NI Portal' (**page 22**) for opening and adding Spatial NI content.

Creating a New Project

ArcGIS Pro allows you to store all map elements within one work area. A project contains maps, layouts, tasks, and connections to servers, databases, toolboxes, folders, styles, and much more. One project can contain multiple maps and scenes, and is able to display these at the same time, creating a dynamic workspace.

Follow the steps below to create a new project:

- 1. Upon launching; ArcGIS Pro will display any previously saved projects available to open OR the right-hand panel gives options to create a new project. Depending on the type of data you will be using, select either;
 - a. Scene (Global/Local) for 3D data
 - b. Map for 2D data
 - c. Blank will not automatically open a map or scene

| Existing Projects | Select a project template |
|------------------------|--|
| MyProject | Blank Global_Scene.aptx |
| 🚘 Open another project | Local_Scene.aptx Local_Scene.aptx Map.aptx Select another project template |

2. When creating a new project, assign a relevant name and storage location folder.

| Create a New Project | × |
|--|----------|
| Name MyProject1 | |
| Location C:\Users do and the factor of ArcGLOR de to | 6 |
| Create a new folder for this project | |
| OK Canc | el |

3. The new project will open, displaying the **Contents** and **Catalog** panes. These panes can be moved or closed.

Viewing Multiple Maps: In ArcGIS Pro it is possible to open multiple map and scene files within the same workspace. This is very useful when viewing the same location using various maps.

1. Insert a new map or scene, it will appear as a new tab.



2. The tabs can be separated by dragging the tab to the right/left of the map pane. This creates a duel viewing workspace.



3. It is possible to connect these two maps displaying the same location and/or scale. Click Link Views in the View tab and select your desired connection. This means as you move or zoom on one map, the other mirrors this change.

| Project Map Insert Analys | s View Edit Imagery Sha | are | |
|--|---|---------------------------|------------|
| Solution Solution <t< td=""><td>g Contents Python Tasks Reviewer Workfle Rules</td><td></td><td></td></t<> | g Contents Python Tasks Reviewer Workfle Rules | | |
| View Center | Windows | Thumbnail Animation Scene | Navigation |
| Contents | 🖡 🗙 🔣 Map 🗙 🔇 Scene | | 👻 🔣 Ma |
| Center And Sca | | Ballycastle | 125 |
| Y Search | | 1 le | Sec. |
| | | | 1.200.000 |

Saving a Project

When creating the project, a folder was created either to a custom location or by default in ArcGIS \rightarrow Projects. Any saves will update this folder and will include the following information:

- Items stored in the project such as maps, layouts, tasks, charts, geoprocessing history, and animations.
- Connections to items stored outside the project such as folders, databases, servers, toolboxes, locators, and custom styles.
- A list of the system styles available in the project.
- Which views are open, and which view is the active view.
- Your favourite geoprocessing tools and raster functions for the project.

To save your current project, navigate to the **Project tab** on the ribbon.

1. Select the **Save tab** to save to the current project folder, or **Save As** to save a new project.

| ¢ | | |
|--|-----------------------------------|---|
| New | New | |
| Open Save Save As | Computer | Computer ▲ System |
| Portals | | Global_Scene.aptx Local_Scene.aptx Map.aptx |
| Options Python Add-In Manager | | Documents Desktop |
| | | Browse |
| Quick save: To save changes to the quick access to | | elect the save project icon on |
| 😫 📾 🗟 ५ २ Project Map | • • Insert Analysis | View Edit Imagery Share |

2. To save a map independent of the project; **right-click** the **Map title** in the contents pane and select **Save as map file**.



ArcPro Theme:

You can change the theme of your ArcGIS Pro from the Light theme to the Dark theme. This can be good when mapping for long periods of time, to reduce eye strain.



Navigate to the **Project tab** \rightarrow **Options** \rightarrow **General** \rightarrow **Application Theme** \rightarrow Drop-down menu **Dark/Light.**



Finding and Viewing Content

Spatial NI provides OSNI and third party organisations data via AGOL shared groups. It is also possible to gain access to Spatial NI basemaps upon request.

Inserting a new map/scene:

1. To insert a New Map/Scene navigate to the **Insert tab** on the ribbon menu. Click the drop-down menu for **New Map**.

| 🖹 🖻 🗟 5 · C · · | | | | | A | rcGIS Pro - Serv | /ers - Map5 | |
|---|---|----------------------------|----------------------|---------------------|---------------------|------------------------|-------------|---------------|
| Project Map Insert | Analysis View Edit | Imagery S | hare | | | | | |
| New New New New New New New Toolbox • | p 🚰 Add Folder ns • 🗐 Task • Bri Map | ht Dark Map Notes Notes | Light Map Notes | Paired Map Notes | Pastel Map Notes | Red Green Map Notes | ▲ | Add Item • |
| New Map | | | Layer | Templates | | | Styles | Favorites |
| New Map New Global Scene New Local Scene New Stereo Map New Basemap | - # × P - Contraction | ONDERRY | Limavaty Dungiyen | | Y | BALLYMEN | 3 | LARNE |

- 2. To add a new map file to your project, select **New Map** within this drop menu. This type of workspace is primarily used for 2D data (no z values).
- 3. Select **New Global Scene** to open a workspace compatible with 3D data viewable on a global scale. Equally select **New Local Scene** for 3D data within a local view, for example a countrywide scale.

Rename Your Map:

Giving your map a descriptive name can make it easier to find appropriate content within your projects map storage folder.

Right-Click the map title within the Content pane, and select Properties.



F2 on the keyboard. Type the new name directly in the Contents pane.

Spatial NI Basemaps

ArcGIS Pro will automatically connect to the basemap gallery from your active portal/AGOL account. In most cases this will be the default Esri basemaps. Your AGOL administrator can check your basemap settings through the Organisation tab \rightarrow Settings \rightarrow Map. It is possible to request the gallery of Spatial NI basemaps to be configured for use in your own AGOL. Ask your AGOL Administrator to contact Spatial NI via <u>email</u>.

Spatial NI basemaps are a collection of non-editable cached maps, which display OSNI data in a variety of styles and scales. The basemap is the lowest layer of the map and is used to give spatial context to the feature layers above.

| Basemap Name | Description | Cache Scales |
|--------------------------------|---|--------------------------|
| (1:250,000) Colour | A coloured raster map of NI highlighting features such as: roads golf courses, settlements, and sites of interest. | 1:550,000 - 1:120,000 |
| (1:250,000) Outline | A black and white outline raster map of NI highlighting features such as: roads golf courses, settlements, and sites of interest. | 1:550,000 - 1:120,000 |
| 1:10,000 | A largescale derived raster map showing detailed information on features such as roads, fields, water and settlements. | 1:20,000 - 1:5,000 |
| Activity (1:25,000) | A series of raster maps tailored to outdoor leisure activities centred on six regions of NI (e.g. The Mournes). | 1:30,000 - 1:10,000 |
| Discoverer (1:50,000) | A mid-scale raster map giving full coverage of NI showing all roads, tourist information and relief. | 1:60,000 - 1:20,000 |
| Discoverer (1:50,000)(Grid) | A mid-scale raster map giving full coverage of NI showing all roads, tourist information and relief. This includes the Irish grid reference lines. | 1:60,000 - 1:20,000 |
| Fusion | A scalable basemap depicting detail from a NI scale to the most detailed (derived from OSNI Fusion). This includes data from Ordnance Survey Ireland. | 1: 2,000,000 - 1:500 |
| Fusion Light | A grayscale styling of the Fusion basemap. | 1: 2,000,000 - 1:500 |
| Orthophotography | High quality 3-band Ariel photography offering a detailed birds-eye view of the landscape. | 1: 2,000,000 - 1:500 |
| Streetmap | A detailed raster map showing clear street level information for towns and cities in NI. | 1:20,000 - 1:5,000 |

A selection of Spatial NI basemaps are available which are summarised below:

*This list is continually being updated as and when new data becomes available.



Spatial NI Operational Content

Spatial NI offers a range of OSNI and third party organisations data. This content can be either cached raster or editable vector data. You can add this data on top of a basemap in your map to visualise hidden patterns and trends or complete further detailed GIS analysis. This content is available to our AGOL customers via a shared group.

Location Units (Irish Grid):

Spatial NI's content is projected in Irish Grid. For navigation purposes it is important that the live location units displayed at the bottom of the map pane is in meters (m) East / North. By default the units are Decimal Degrees, to change the default units:

| Project | Set the units used in the | his project. | | | | |
|---------------------|-----------------------------------|----------------|---------------|--------|---------------------------------|---------|
| Current Settings | | . , | | | | |
| Jnits | > Distance Units | | | | | |
| asks | > Angular Units | | | | | |
| pplication | > Area Units | | | | | |
| ieneral | | | | | | |
| Map and Scene | ✓ Location Units | | | | | |
| Navigation | Code | Name | Plural | Abbrev | Format | Default |
| election | Meter | Meter | Meters | m | 12,345.10 12,345.10 | ۲ |
| diting | Foot | Foot | Feet | ft | 12,345.10 12,345.10 | 0 |
| eoprocessing | US Survey Foot | US Survey Foot | US Feet | ftUS | 12,345.10 12,345.10 | 0 |
| | Decimal Degree | Decimal Degree | Decimal Degre | dd | 118.4321000°W 34.1234000°N | 0 |
| aster and Imagery | Degree Minute Seco | Degrees Minu | Degrees Minu | dms | 118°25'56'W 34°7'24'N | 0 |
| Display | Degree Decimal Min | Degrees Deci | Degrees Deci | ddm | 118°25.9260000'W 34°7.4040000'N | 0 |
| ayout | MGRS | MGRS | MGRS | MGRS | 11SLT 67935 76764 | 0 |
| CAD | US National Grid | US National G | US National G | USNG | 115 LT 67935 76764 | 0 |
| Aetadata | UTM | UTM | UTM | UTM | 115 367935 3776764 | 0 |
| ndexing | <select code="" unit=""></select> | | | | | 0 |
| ocation Referencing | > Direction Units | | | | | |
| roofing | | | | | | |
| anguage | Page Units | | | | | |

Project \rightarrow Options \rightarrow Units \rightarrow Location Units. Click OK.

To change the location units for only the map pane displayed: At the bottom of the map pane, click the **drop-down menu** adjacent to the displayed units \rightarrow Select **Meters**.



Adding Content

To add data, you will need your **Map**, the **Contents pane** and the **Catalog pane** displayed.

1. If your **Catalog pane** is not displayed; navigate to the **View tab** on the ribbon and select **Catalog pane** from the **Windows section**.

| 😫 📾 | in s - | · ? • • | ÷ | | | | | | | Layer | |
|--|---------|-----------------|------------------|-----------------|-------------------|---------------|----------|-------------------|-----------------------|------------------------|-----------|
| Project | Ма | p Ins | ert / | Analysis | View | Edit | Imagery | Sha | re Ap | pearance | |
| ③ Global <u>À</u> Local []] Map | Convert | Link Views • | Reset Panes • | Catalog Pane | Catalog (View | Contents Pyth | on Tasks | Reviewer Rules | Workflow Manager • | °]≣ Create ↓ Import | |
| Vie | w | Link | | | | Windows | | | | Thumbnai | Animation |
| Conten | ts | | | • | - 4 × | Map5 × | 1.22. 2 | trony trony | - DLA | <u>~~~</u> | SALCON |

2. Within the **Catalog pane** select the **Portal tab**; displaying four options;

| Catalog | ≁ џ × |
|----------------------------------|--------------|
| Project Portal Favorites History | ≡ |
| <u> </u> | |

My Content: This contains content that you personally own with the connected portal.

Groups: This contains content that has been shared to you via a group, this includes shared group from the Spatial NI AGOL. All groups that you have access to will be displayed in a list, double left-click on the group that contains the content you wish to add.

All Portal: This contains content that is shared within your organisation or that is shared with everyone. To see content you will need to search for a key word (tag) relating to the layer you want to add. Within a search it will also display anything within **My Content** or **Groups**.

Eving Atlas: This contains content owned and shared by Esri.

3. To add content from Spatial NI, Navigate to the groups tab of the portal and double-click on the title of the shared group you have been added to. From the list of displayed content; right-click on the desired layer and select Add to Current Map OR drag and drop the layer into the Map pane or Contents pane. The feature layer will appear as the top layer in the contents list along with any symbology.

| Catalog | ч×, |
|--|-----|
| Project Portal Favorites History | Ξ |
| ବ୍ର 🏤 🦳 🕋 | |
| All Portal | |
| 🛞 🟠 ni outline | ו |
| Search Results | |
| 🚇 Boundaries - NI Outli 🏥 🛛 Add To Current Map | |
| 🧕 Boundaries 50K - NI 🤇 🟥 🛛 Add To New | ٠ |

Spatial NI Metadata

Metadata provides information about mapping layers, including: owner, contact details, creation date, data origins, and legal restrictions of use.

Spatial NI uses the INSPIRE metadata standard for all hosted content. To view metadata for Spatial NI Content; access via your AGOL web interface, within the AGOL shared group. The content item page will contain the metadata from Spatial NI.

| Orthophotography 🖌 Edit | | | | | |
|--|---|--|------|--|--|
| Overview Settings | | The factor | /- | | |
| Edit Thumbnail | U.I. and a share between the | | | Open in Map Viewe | er 🗸 |
| INIOST recently availa | ilble orthophotography. | <i>,</i> ≉° Edi | rt | Open in Scene | Viewer |
| | Updated: 21 Feb 2019 View Count: 1 | | | | |
| Created: 8 Feb 2019 | Updated: 21 Feb 2019 View Count: 1 | | | Open in ArcGIS [| Desktop |
| * Add to Favorites | | | | Share | |
| Description | | 🖌 Edi | it | Metadata | 8 |
| orthophotographs are created from high quality view of the landscape. This secured orthophotog imagery. The flown_date indicates the date the i cover, hence when this occurs a previous ortho i dataset. This seamline dataset has been added a | s surface from which accurate measurements can be ta aerial images with distortions removed resulting in a graphy service is updated on a quarterly basis using th magery was collected. Some tiles may have instances mage may be stitched to the most recent. These are t as the footprint for this OSNIOrthophotography image a seamline is present. Data owner: Ordnance Survey cale thresholds - N/A Access and use constraints | scale-accurate bird's eye he latest ortho-rectified of anaomalies e.g. cloud racked using a seamline a service. As such, the | Low | m Information , ඒ Top Improvement: Add stails | Learn more High I a longer summary |
| Layers OSNIOrthophotography | | | Size | urce: Map Service e: 1 KB ared with: Everyone (publ * * * * | lic) |
| | | | Ov | vner | 🛓 Change Owner |
| Terms of Use | | 🖉 Edi | it 👤 | spatialniportaladmin | |
| Add any special restrictions, disclaimers, terms and | conditions, or limitations on using the item's content. | | | | |

Using Spatial NI Services

Spatial NI are aware that analysis is a central feature to any GIS project. For some of our operational services, we offer you the ability to complete additional GIS functions depending on the type of service being used. These functions are explained below.

| Service Type | | Description | Analysis |
|--------------|--------------------|--|--|
| | Tile Layer | Pre-rendered map raster tiles. | You will not be able to complete any analysis using these services. |
| | lmagery Layer | Dynamically displayed raster data. | You will be able to complete imagery based analysis on these services. |
| 0 | Feature Layer | A feature layer is a grouping of similar geographic features (e.g. buildings, land parcels or roads). Features can be points, lines or polygons. | You will be able to view, edit, analyse, and execute queries against features and their attributes. You will also be able to change the layers symbology. |
| | Map Image Layer | A collection of map cartography based on vector data. Map image layers are dynamically rendered image tiles. | You will not be able to complete any analysis using these services. |

Symbology

This is the symbols used to display data on a map, including: colour, size and format. Only the symbology of a feature layer is customisable. If you are using a map service or imagery layer from the portal you cannot change the symbology of any features.

To edit the symbology of a layer;

1. **Right-click** on the layer title in the contents pane. From the drop-menu select **Symbology**.



2. You can also, **left-click** on the displayed symbology (viewable when the layer is expanded within the contents pane). This will open the symbology pane.

| Contents - | τ× | | |
|--------------------------------|------------|--|--|
| T Search | <u>- م</u> | | |
| <mark>≒</mark> ⊖ ⊠ ∕ ӊ ⊘ Ш | | | |
| Drawing Order | | | |
| 🔺 🂽 Map1 | | | |
| ⊿ 📝 NI Outline | | | |
| | | | |
| ☑ OSNI - Fusion Basemap: Light | | | |

Types of Symbology

For basic use the tab labelled **Primary Symbology** is sufficient for customising the symbol and style. Within the **Primary symbology tab** you are given a drop-down menu to select the type of symbology that will best display your data. A brief descripting of each symbology type is outline below:

- **Single symbol** Single symbol symbology applies the same symbol to all features in a layer. This symbology is used for drawing a layer with just one category such as county boundaries.
- **Unique values** Unique values symbolize qualitative categories of values. Examples include habitat types, planning zones, voting preferences, and soil classifications.
- **Graduated colours** Graduated colour symbology is used to show a quantitative difference between mapped features by varying the colour of symbols. Data is classified into ranges that are each assigned a different colour from a colour scheme to represent the range.
- **Graduated symbols** Graduated symbols are used to show a quantitative difference between mapped features by varying the size of symbols. Data is classified into ranges that are each then assigned a symbol size to represent the range.
- **Unclassed colours** While graduated colours symbology distributes data into discrete classes with unique symbols, unclassed colours symbology distributes a colour scheme evenly across features.
- Heat Map (point feature layers only) Heat map symbology draws point features as a representative surface of relative density. Use heat map symbology when many points are close together and cannot be easily distinguished.
- **Proportional symbology** Proportional symbology is used to show relative differences in quantities among features.

- **Dot Density** (polygon feature layers only) Dot density symbology is one way to represent quantities within polygons on a map. With dot density symbology, the data you symbolize is not classified.
- **Dictionary renderer** Dictionary symbology is used to symbolize layers using a dictionary of symbols configured with multiple attributes. This approach is used when symbol specifications lead to many symbol permutations that would be inappropriate for unique value symbology.

Customising Symbology

After selecting the correct symbology type, ArcGIS Pro will categorise your data to match the format. Depending on the symbology chosen a unique set of options will appear. This example will focus on **single symbol** symbology.

To find help on how to configure any other type of symbology, explore the <u>ArcGIS Pro</u> <u>Symbology Help</u>.

Within the symbology pane:

- 1. Left-click on the current displayed symbol to edit the size/colour/shape.
- 2. A label is not required. However, if you would like a label to appear in the contents pane next to the symbol, enter it into the label box.

| Symbology | - NI Outline | ₩ 4 × |
|---------------|--------------|-------|
| | ₩ 16 | ≡ |
| Primary sym | bology | |
| Single Symbol | | - |
| Symbol | | |
| Label | | |
| Description | | |

3. Within the **Format Point/Polygon Symbol pane** the **Gallery tab** allows you to change the symbol itself. Default symbols are suggested for public map features such as an airport. If using 3D data there are also options for 3D symbols. As you change the symbol, the changes will automatically be updated in the map pane.



4. When your symbol has been selected you can fully customise it by selecting the **Properties tab**. Here you can change the fill and outline colour, symbol size, or insert your own symbol from file. Click **Apply** when all settings are correct to see the new symbology on the map.

| Symbology - NI Outline 🔹 🖣 🗙 |
|------------------------------|
| |
| Gallery Properties |
| 1 🗟 / |
| |
| Enable scale-based sizing |
| |
| Outline color |
| Outline width 1 pt |
| |
| |
| |
| |
| |
| |
| 000 |
| |
| |
| |
| |
| |
| |
| 100% - */ |
| Apply Cancel |

***NOTE:** The options within these panes will vary depending on the type of symbology selected and whether it is a point/line/polygon (single symbol).

Querying

Query expressions can be used on feature layers or on layers that contain attributes to select a subset of features according to information contained in the attribute table or from a spatial relationship.

Querying data can be a useful analysis tool as it can focus your target area by isolating records.

Selecting Manually

- 1. Navigate to the **Map tab** on the ribbon.
- 2. Within the **selection section**, click the **Select drop-down menu**. This allows you to manually select features by drawing on the map.



3. Choose the type of selection, and draw this shape on the map. Left-click and drag to enclose the targeted area. All the features within this area or that intersect with the selection boundary will be selected. This is indicated by a colour change to the features symbols.



4. You can then view the attributes of the selected features within the attribute table. To view the selected features; **Right-click** on the **feature layer** in the contents pane and select **Attribute table**.

| 😫 🗟 🗟 5· d· : | | ArcGIS Pro - Serv | ers - Map5 | | Fe | ature Layer | |
|---|----------------|-------------------|------------------------------|---------------------------|---|--------------|----------------------------|
| Project Map Ins | ert Analysis | View Edit | Imagery | Share | Appearance | Labeling | Data |
| Paste Transformed Copy Path | Bookmarks | Basema To XY | p Add Add Data • Preset • | Select Se At | elect By Select By tributes Location | E Attributes | Infographi |
| Clipboard | Navigate | 5 | Layer | | Selection | G | |
| Contents | • | 4 🗙 🔣 Map | × | | | | |
| Search Landow Downing Order | Copy | • • • | | A | | BALLYMENA | Sundry Sundry Sundry |
| Drawing Order | Group | | and and | Shutery . | X YA | | Maximud |
| ▲ 💽 Map5 ▲ 🗸 Wards 2012 | Attribute Tabl | e | | Y-C | Course Course | -07 | - L-s |
| | Add Error Lay | ers | John | H | Margie | XXX | ्र |
| ✓ OSNIFusionBasemap | Design | • | Durne 2 | | RANDALST WH | 2 day | - Nerspate |
| | Create Chart | × 1 | 1/mor | Astrona C | 2.20 | AT FUM | - Service |
| | 🗎 New Report | | The las | 12 | 1/ | - Jasta | X |
| | Joins and Rela | ites 🔸 | rang | 1 | \mathbf{V} | The starter | Alai Ma |
| | 🙇 Zoom To Laye | | my | Mantoler See Dagend | | 1 | A |

5. The bottom left corner of the attribute table shows the number of selected attributes as part of the total. Click the highlighted symbol to only display the selected attributes.



6. Further options are available from the **Selection menu**, **Right-click** the feature layer within the contents pane, and select **Selection**. The highlighted option allows you to create a new layer containing only the selected features, including the content within the attribute table.



Select by Attributes

Select by Attributes allows you to select features based on an expression of desired parameters.

1. Click **Select by Attributes** from the **Selection** menu in the **Map ribbon tab**. A new pane will open, titled Geoprocessing.



| Geoprocessing | ≁ t × |
|---|-----------|
| Select Layer By Attribute | ÷ |
| Parameters Environments | ? |
| Input Rows | |
| Wards 2012 | - 🧰 |
| Selection type | |
| New selection | - |
| Expression | |
| 🚰 Load 🛛 🔚 Save 🛛 📎 Clear | |
| Clause SQL \leftarrow \rightarrow | ~ |
| Click Add Clause to begin building your query or click SQL to w expression directly. | rite your |
| + Add Clause | |

2. Within the Parameters tab, check the Input Rows is set to the correct layer and Selection Type is also correct. To build an expression click Add Clause. An expression is a good way to isolate features with similar data or for data between certain threshold values. Example expression:

| Clause SQL ← → | ~ | | |
|--------------------------------------|---|--|--|
| Where WARDNAME T is equal to T ABBEY | ▼ | | |
| + Add Clause | | | |

This expression will select all attributes with 'ABBEY' within the 'WARDNAME' field. This could be combined with another expression to refine the search further.

3. Click **Add**, then **Run** when expressions are completed. If your expression has run correctly you will see the successful completion notice at the bottom of the pane, and the results will be displayed on the map.

| 1 | Select Layer By Attribute completed. | | | | |
|---|--------------------------------------|--|--|--|--|
| • | View Details Open History | | | | |

х

Select by Location

The **Select by Location** tool lets you select features based on their location relative to features in another layer. To use this tool you need at least two feature layers.

1. Click **Select by Location** from the **Selection** menu in the **Map ribbon tab**. A new pane will open, titled Geoprocessing.

| | Feature Layer | | | | |
|---------------------------------------|----------------|----------------|-----------|---------------------|--|
| Share | Appearance | Labeling | Data | | |
| Select Sele + Attri | ct By butes | E Attributes | Infograph | mics Measure Locate | |
| | Selection | Fa | | Inquiry | |
| Geoproce | ssing | | | ≁ ₽ × | |
| © | - | ct Layer By Lo | ocation | \oplus | |
| Parameters | s Environmer | nts | | ? | |
| Input Featu | ures 😔 | | | | |
| Wards | Wards 2012 | | | | |
| · · · · · · · · · · · · · · · · · · · | | | | | |
| Relationsh | ip | | | | |
| Intersect | | | | • | |
| Selecting F | eatures | | | | |
| T 7 | | | | | |
| Search Distance | | | | | |
| Selection type | | | | | |
| New selection 👻 | | | | | |
| Invert spatial relationship | | | | | |

2. For example, I have selected a ward and want to know the names of all the townlands that are completely within this ward boundary.



| Geoprocessing • 4 × | | | | | |
|------------------------------|----------------------------|----------|--|--|--|
| \odot | Select Layer By Location | \oplus | | | |
| Parameters Enviro | Parameters Environments (? | | | | |
| Input Features 😔 | | | | | |
| Wards 2012 | | - | | | |
| | | - | | | |
| Relationship | | | | | |
| Within - | | | | | |
| Selecting Features | | | | | |
| Townlands | | - 🖊 | | | |
| Search Distance | | | | | |
| | Meters | • | | | |
| Selection type | | | | | |
| Add to the current selection | | | | | |
| Invert spatial relationship | | | | | |

The **Select by Location pane** would be configured as follows:

3. Within the townlands **attribute table** I am able to see that five records have been selected. These are the townlands that are completely within the selected ward boundary.

This example can be applied to many types of datasets. Another example would be finding an amount of data points within a boundary.

| | Townlands × | | | | | |
|-----|--|-------------------|-----------|----------|---------|-----------------------------------|
| Fie | Field: 📰 👮 🔄 Selection: 🍕 🚏 🗐 💭 🖶 Highlighted: 🚏 🚏 💐 🤻 쀁 📃 💭 🛛 🔳 | | | | | |
| ⊿ | Townland ID | Name | Area SqKM | OBJECTID | SHAPE | |
| | 3439 | BOLTNACONNELL | 2.111132 | 1271 | Polygon | |
| | 3328 | KILCROSS | 2.803318 | 3201 | Polygon | |
| | 3432 | BALLYHILL LOWER | 2.341074 | 3466 | Polygon | |
| | 3360 | BALLYMATHER UPPER | 0.878519 | 3663 | Polygon | |
| | 3420 | BALLYHILL UPPER | 1.637894 | 7514 | Polygon | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | 5 of 9520 | selected | | | | Filters: 🕒 🖏 🏗 🗘 - — 🕇 + 100% 🔹 🔀 |

Selected attributes can be exported to a new layer.

- 1. Right-click the layer that has selected attributes within the Contents pane. Hover over **Selection→**, then click **Make Layer From Selected Features**.
- 2. A new layer will appear in the Contents pane. This can be renamed appropriately.

3 Band Image Analysis

'OSNI - Orthophotography (3 Band)' is a dynamic service derived from all the available orthophotography, with the capability to query.

The orthophotography is structured with seamlines which includes information for the year and specific date that a single image was taken. To query this information in ArcGIS Pro:

1. Add the image layer 'OSNI - Orthophotography (3 Band)' located within the group 'OSNI: Imagery'. Right-click and select Add to Map.

| Catalog | ₩ 4 × | | |
|-------------------------------------|--------------|-----|-----------|
| Project Portal Favorites History | ≡ | | |
| A A A | | | |
| | | | |
| Groups | | | |
| E Search | - م | | |
| 👸 Basemap Gallery | | | |
| 👸 Site Administration Group | | | |
| 🐴 OSNI: Historical | | | |
| 👸 OSNI: Elevation | | | |
| 👸 OSNI: Opendata | | | |
| 🔒 Environment | | | |
| 🔒 Geology | | | |
| 🔒 People and Place | | | |
| 🔒 OSNI: Imagery | | | |
| 👸 OSNI: Fusion | | | |
| 👸 OSNI: Location | | | |
| 👸 Hydrology | | | |
| 🐴 AGOL SHARED GROUP | | | |
| 😤 1- App Gallery - Historical | | | |
| 😤 Featured Maps and Apps | | | |
| 😤 Map Gallery | | | |
| 👸 Statistics | | | |
| Catalog | - ₽ × | | |
| Project Portal Favorites History | = | | |
| A A A | _ | | |
| Groups | | | |
| € h Search | <u>-</u> م | | |
| 🔠 OSNI - Orthophotography (Current) | | | |
| 🔁 OSNI - Orthophotography (2003) | | 📇 A | Add To Cu |
| OSNI - Orthophography (3Band) | | | Add To Ne |
| OSNI - Orthophotography (4Band) | | | |
| 🔠 OSNI - Orthophotography (2004) | | | |
***NOTE:** To view this layer the map must be at **1:20,000 scale** or below.

To query this layer you can either add a **definition query** or **select by attributes**.

 Definition query – This will clip the orthophotography images that identify with the query parameters. The images can be queried against flight date or year. **Right-click** the orthophotography (3Band) in the **Contents pane**. Select **Properties**.

| Contents | | - ↓ × [] N |
|--------------------------------|----------|---------------------------|
| Search | _ | اللغة الأقار |
| <u>t</u> 0 0 / | Ē | |
| Drawing Order | | |
| 🔺 🌄 Map5 | | |
| OSNI - Orthoph | ſ | Сору |
| RGB | E× | Remove |
| Red: Band_1 | | Group |
| Green: Band_1- Blue: Band_3 | | Attribute Table |
| | լլլ | Create Chart + |
| ✓ OSNI - Fusion B ⁻ | 1 | New Report |
| - | Q | Zoom To Layer |
| | 57 | Zoom To Make Visible |
| | 1:1 | Zoom To Source Resolution |
| - | | Use Service Cache |
| - | | Selection + |
| - | 1 | Symbology |
| - | ! | Disable Pop-ups |
| | 5 | Configure Pop-ups |
| - | | Data 🕨 |
| | | Sharing + |
| - | Ð | View Metadata |
| | / | Edit Metadata |
| | P | Properties |

3. Select the **Definition Query tab**, then click **New definition query**.

| Layer Properties: OS | NI - Orthophography (3Band) × |
|---|--|
| General Metadata Source Elevation Selection Display Cache Definition Query Time Range Mosaic Processing Templates | There are no definition queries defined. New definition query 🔹 |
| | OK Cancel |

4. Write your query expression within the drop-menus, click **Add**, then either add another clause or click **Apply**.

| Layer Properties: OSN | II - Orthophography (3Band) | х |
|-----------------------|--|----------|
| General | | |
| Metadata | Definition Query 1 | |
| Source | Clause SQL 🗲 🗦 🗸 Apply Cancel | וור |
| Elevation | | |
| Selection | Where Year vis equal to v 2017 v | |
| Display | Add Cancel | |
| Cache | | 4 |
| Definition Query | + Add Clause | |
| Time | | |
| Range | | |
| Mosaic | | |
| Processing Templates | | |
| | New definition query * Active definition query: Definition Query 1 | <u>a</u> |
| | | |
| | OK | :el |

5. Click **OK** to finish. The query will run automatically and display only the images that match the definition query. These records will also be the only ones shown within the attribute table.

| Layer Properties: OS | NI - Orthophography (| 3Band) × |
|----------------------|------------------------|---|
| General | | |
| Metadata | Definition Query 1 | |
| Source | Year = 2017 | 🖉 Edit |
| Elevation | | |
| Selection | | |
| Display | | |
| Cache | | |
| Definition Query | | |
| Time | | |
| Range | | |
| Mosaic | | |
| Processing Templates | New definition query * | Active definition query: Definition Query 1 🗏 |
| | New definition query | Active definition query. Definition Query 1 🚈 |
| | | |
| | | OK Cancel |

6. Select by Attributes – This will isolate the records that match the query expression within the attribute table and highlight them on the map. Click **Select by Attributes** within the **Map tab**.

| Pro | oject | Мар | Insei | rt A | Analysis | View | Edit | Ima | agery | Share | App | earance | Data | |
|-------|----------|-----|-------|------|-----------|-----------------|---------|---------------|-----------------|-------|-------------------------|---------|------|-----|
| Paste | | | | | Bookmarks | Go To XY | Basemap | Add Data + | Add Preset * | | Select By Attributes | | | tes |
| | Clipboar | d | | Navi | gate | Fai | | Layer | | | Se | lection | | G. |

7. Within the **Geoprocessing pane**, select OSNI Orthophotography (3Band) as the **Input row**. **Add** an appropriate expression for the Clause and click **Run**.

| Geoprocessing 👻 🖣 🗙 |
|--|
| ⓒ Select Layer By Attribute ⊕ |
| Parameters Environments (?) |
| Input Rows |
| OSNI - Orthophography (3Band) 🔹 🦳 |
| Selection type New selection |
| Expression |
| |
| 🗁 Load 🛛 🔚 Save 🔌 Clear |
| Clause SQL 🔄 🗦 |
| Where Year Vear Vear |
| + Add Clause |
| Run 🕟 |

8. **Right-click** on the layer within the Contents pane and select the **Attribute Table.** Show selected records. Records matching the expression will be highlighted.



- Map5 -Flash Zoom To Sen Pan To Pop-up 5.8971775°W 54.4102257°N 🗸 | ⊕ Selected Features: 16844 | ▮▮ ii) Pinned Pop-up Select/Unselect Highlighted: 📑 📑 🦪 📑 Ξ Highlight/Unhighlight MinPS MaxPS LowPS HighPS Category Tag GroupName Manage Attachments me -01 0 5.3 0.16 0.64 Primary Dataset Delete Row ý. 01 0 5.3 0.16 0.64 Primary Dataset 140794 Polygon Raster 204-02 0 5.3 0.16 0.64 Primary Dataset 140795 204-01 0.16 Polygon Raster 0 5.3 0.64 Primary Dataset 140796 0.64 Primary Polygon Raster 204-02 0 5.3 0.16 Dataset -16844 of *2000 selected Load All Filters: 10 + 100% 2 •
- Right-click the box to the left of the record you are interested in viewing. From here you can Pan To the specific image and select a Pop-up to view the information about the image in a pop-up window.

4 Band Image Analysis

Similar to the 3Band orthophotography layer, OSNI – Orthophotography (4Band) is a service derived from all the available 4Band orthophotography, which can be queried. To query this layer when added to ArcGIS Pro follow the same steps as the 3 Band Image Analysis. 4Band ortho-photos are multispectral images that can show the near infrared band, with the added ability to run analysis, such as Normalised Difference Vegetation Index (NDVI).

1. To view the orthophotography infrared bands, Navigate to the **Appearance tab** within the **Image service layer** (this only appears when the image service is selected in the Contents pane). Click the drop-down menu **Band Combination**, and select **Colour Infrared**.



2. The Infrared band can distinguish between healthy and unhealthy vegetation, urban areas, crop types, bodies of water and forested areas.

*NOTE: An unsupervised classification can be used to easily separate these categories. <u>Find out more</u>.



3D Analysis

Spatial NI have developed a terrain service for Northern Ireland. This shows the elevation of the bare Earth without structures, such as buildings. The 'OSNI Terrain' layer is a 1m resolution surface which has been derived from the enhanced 60m DTM.

The terrain layer only contains elevation data, to add context an imagery layer will need to be draped over the terrain. This can be done using an ArcGIS Pro scene.

Configuring 3D Terrain

1. Insert a New Local Scene to begin building a 3D map. Click the **drop-down menu** for **New Map** within the **Insert tab**.



2. By default the scene will include the default basemap in 2D Layers and will set the ground as WorldElevation3D/Terrain3D. Remove both of these layers from the scene. **Right-click** the **layer title** in the Contents pane and click **Remove**.



3. To add the OSNI terrain, a new surface needs to be added. **Right-click** Elevation Surfaces in the **Contents pane** and select **Add Elevation Surface**.

| Contents | → ₽ × | |
|--------------------|-------------------------|--|
| Search | - م | |
| | 타 🔊 | |
| Drawing Order | | |
| ⊿ 🟦 Scene2 | | |
| 3D Layers | | |
| 2D Layers | | |
| Elevation Surfaces | | |
| Ground | Paste | |
| oround | + Add Elevation Surface | |
| | | |

4. Right-click Surface 1 within the Contents pane and select Add Elevation Source.



5. Make sure you are connected to the **NIMA portal**. A pop-up window will allow you to search the portal to find the **OSNI Terrain** imagery layer, which is held in the 'OSNI: Elevation' group. When selected click **OK**.

| Add Elevation Source | | | × |
|----------------------|------------------------------|-----------------------------|----------|
| € ∋ 🛧 💽 ► Portal | I ▶ Groups ▶ OSNI: Elevation | ▶ ▼ ⑦ Search Groups | ÷ ۵ |
| Organize 🔻 New Item | • | | \$ 500 |
| 🔺 📩 Project | Name | Туре | Date |
| 🥫 Databases | 🔳 OSNI - Terrai | n Imagery Layer | 25/02/20 |
| 🗐 Servers | | | |
| 😽 Folders | | | |
| 🔺 🙆 Portal | | | |
| My Content | | | |
| 😪 Groups | | | |
| 🛆 All Portal | | | |
| 💿 Living Atlas | | | |
| ▲ 📴 Computer | • | Find more items | |
| | Name OSNI - Terrain | Elevation Surfaces (All Typ | oes) * |
| | | ОК | Cancel |

Creating a Scene

The OSNI Terrain is now set as Surface 1 in the Contents pane. At this stage nothing will appear in the map pane. Add imagery to complete your 3D map.

- 🖞 spatialni (SpatialNI NIMA Portal) + 🇘 🖌 View Appearance Analysis Edit Imagery Share Millimport Map Add Fo Connections • D Task • New Report • Toolbox • Add Folder 1 🤹 Add • 🎲 New • Pastel Map Notes Red Green Notes Map Notes = ☆ Add - ☆ Add ☆ New - ☆ Add ☆ Import Dark Map Notes . 1 . Light Map Paired Notes Map Notes New Bright Map Notes Laver Templates Project • # × 🔣 Map5 Contents Catalog φ× Y Search ρ. Project Portal Favorites Histo = Groups 100/40 Drawing Order € 🛍 Se A Scene2 3D Layers 🔠 OSNI - Orthoph 2D Layers B OSNI - Orthophotograph B OSNI - Orthophography (3B Ground 📴 OSNI - Orthophotography (2004) B OSNI - Orthophotography (2005 Elevation/OSNITerrain B OSNI - Orthophotography (2006) B OSNI - Orthophotography (2007) SI OSNI - Orthophoto (2008 B OSNI - Orthophotography (2009 B OSNI - Orthophot B OSNI - Orthophotography (2011) B OSNI - Orthophotography (2012) B OSNI - Orthophotography (2013) B OSNI - Orthophotography (2014) ^ 📴 OSNI - Orthophotography (2015 B OSNI - Orthophotography (2016) 🙆 OSNI - Orthophotography (2017) Ē 01112 · | 타 🖄 🖩 273,586 n
- 1. Add the OSNI Orthophotography from the NIMA portal via the Catalog pane.

2. To drape the orthophotography over the terrain you need to set the layers ground source to be the OSNI Terrain. Right-click the orthophotography layer title in the **Content pane** and select **Properties**.



3. Within the **Properties window**, navigate to the **Elevation tab** and click the **'Features are'** drop-down menu. Select **On Custom Elevation Surface**.

| Layer Properties: OSI | VI - Orthop | hotog | raphy (Current) × |
|-------------------------------|---------------------------|----------|---|
| General Metadata Source | Features are | On the g | round On the ground These features belong on the ground, such as trees. |
| Elevation Cache | | _ | On custom elevation surface These features belong on a surface that is not the ground, such as where a well site intersects on top of a geologic body. |
| | Cartograph Elevation u | | 0.00 🗘 Meters 🔹 |
| | L | | OK Cancel |

4. Set **Custom Surface** to **Surface 1**, which contains the OSNI Terrain layer. Click **OK**.

| Layer Properties: OS | NI - Orthophotography (Current) | × |
|----------------------|--|---|
| General Metadata | Features are On custom elevation surface 🔹 | |
| Source | Custom Surface Surface 1 | |
| Elevation | | |
| Cache | Cartographic offset 0.00 🗘 Elevation units Meters 🔹 | |
| | OK | |

5. Zoom in to a scale below 1:20,000 to activate the terrain.



***NOTE:** Because these layers are now linked, the orthophotography may not draw at scales beyond 1:20,000. If you need to reposition your map, temporally turn off the Terrain layer and the orthophotography will redraw.

3D Analysis Tools

The OSNI terrain data can be used to analyse the height of the bare earth above sea level at any given point, due to its Z value. Outlined below are a few techniques that can be used in ArcGIS Pro to enhance/analyse 3D data.

Contour Lines \rightarrow A line on a map joining points of equal height.

1. Before adding contour lines, add the OSNI:Terrain raster service to your **Contents pane**, then **Order** as shown below:



2. Navigate to the Analysis tab on the ribbon and select Raster Functions.



3. Within the **Raster Functions pane**→ **System**, select the **Surface** drop-down menu



4. Select **Contour** for the list of available surface tools.



5. Within the Contour Properties pane; set the Raster as OSNI – Terrain, Contour Type as Contour Lines, Contour Interval as 10 (m), and Nth Contour Line in Bold as 5. These settings will draw a contour line every 10 meters and will highlight in Bold every 50 meters. When complete click Create new layer.

| Raster Functions | | ? ↓ ╄ × |
|--------------------------|--------------------|--------------------|
| € Co | ntour Properties | |
| General Parameters | | |
| Raster | | |
| OSNI - Terrain | | - 💾 |
| Adaptive Smoothing | | |
| 2.5 | | |
| Contour Type | | |
| Contour lines | | * |
| Z Base | | |
| 0 | | |
| Number Of Contours | | |
| 0 | | |
| Contour Interval | | |
| 10 | | |
| Nth Contour Line In Bold | | |
| 5 | | |
| Z Factor | | |
| 1 | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | Create new layer 🔹 | Cancel |
| | create new layer . | Cancer |

6. The Contour layer will appear in the **Contents pane**, make sure that it is the uppermost layer. **Right-click** the Contour layer and click **Properties**. In the **Layer Properties pane** navigate to the **Elevation tab** and set the custom elevation surface to **Surface 1** (OSNI Terrain). Click **OK**.

| Layer Properties: Co | ntour_OSNI - Terrain × |
|----------------------|--|
| General Metadata | Features are On custom elevation surface * |
| Source Elevation | Custom Surface 1 |
| Display | |
| Cache Joins | |
| Relates | |
| | Cartographic offset 0.00 |
| | |
| | OK Cancel |

7. The contour will now appear draped over the elevated orthophotography. The contour symbology can be changed to personal preference via the Symbology pane.



Hillshade \rightarrow A greyscale 3D representation of the surface, with the sun's relative position taken into account.

1. Follow **steps 1-3** of Contour lines. Then select **Hillshade** from the list of available surface tools.



 Within the Hillshade Properties pane; set the Raster as OSNI – Terrain, and customise the Azimuth and Altitude according to the purpose for analysis. The example layer below has set the suns position to 45° above the horizon and from NW. Then click Create New Layer.

***NOTE:** Altitude is the sun's angle of elevation above the horizon and ranges from 0 to 90 degrees. A value of 0 degrees indicates that the sun is on the horizon. Azimuth is the sun's relative position along the horizon (in degrees). This position is indicated by the angle of the sun measured clockwise from due north. An azimuth of 0 degrees indicates north.

| Raster Functions | ? - ₽ × |
|--|--------------------|
| Hillshade Properties | |
| General Parameters | |
| Raster | |
| OSNI - Terrain | - 💾 |
| Hillshade Type | |
| Traditional | * |
| Azimuth | |
| 315 | |
| Altitude | |
| 45 | |
| Scaling | |
| None | * |
| Z Factor | |
| 1 | |
| Disable default edge pixel interpolation | |

Multidirectional Hillshade:

Multidirectional hillshade improves terrain visualization. It combines light from **six different directions** to represent an enhanced visualization of the terrain and to improve the appearance of regions with low relief. It improves the balance between the over-exposed and shadow areas of the map.

Traditional hillshade result:

Multidirectional hillshade result:



 The Hillshade needs to be configured to drape over the terrain. Right-click the Hillshade layer and click Properties. In the Layer Properties pane navigate to the Elevation tab and set the custom elevation surface to Surface 1 (OSNI Terrain). Click OK.

| Layer Properties: Hillshade_OSNI - Terrain × | | | | | | | |
|--|--|--------|--|--|--|--|--|
| General Metadata | Features are On custom elevation surface * | | | | | | |
| Source | Custom Surface 1 🔹 | | | | | | |
| Elevation | | | | | | | |
| Display | | | | | | | |
| Cache | | | | | | | |
| Joins | | | | | | | |
| Relates | | | | | | | |
| | | | | | | | |
| | Cartographic offset 0.00 | | | | | | |
| | | | | | | | |
| | Elevation units Meters * | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | ОК | Cancel | | | | | |

4. Order the **Contents pane** as below to view the Hillshade for analysis. Note that the hillshade is only visible with the Orthophotography if the layer is made partially transparent.



Slope \rightarrow Represents the rate of change of elevation from one pixel value to its neighbours. It's the first derivative of a DEM/DTM. By default, the slope appears as a grayscale image. This can be modified to a colormap representation.

1. Follow **steps 1-3** of Contour lines. Then select **Slope** from the list of available surface tools.



2. Within the **Slope Properties** pane; set the **Raster** as OSNI – Terrain. Then click **Create New Layer**.

*NOTE: Scaling options \rightarrow Degree: The inclination of slope is calculated in degrees. The values range from 0 to 90. Scaled: The inclination of slope is calculated the same as Degree, but the z-factor is adjusted for scale. It uses the Pixel Size Power and Pixel Size Factor values, which account for the resolution changes (scale) as the viewer zooms in and out. Percent Rise: The inclination of slope is output as percentage values. The values range from 0 to essentially infinity. A flat surface is 0 percent and a 45-degree surface is 100 percent.

| Raster Functions | ? * ₽ × | | | | |
|--|--------------------|--|--|--|--|
| 🕞 Slope Properti | es | | | | |
| General Parameters | | | | | |
| DEM | | | | | |
| OSNI - Terrain | ÷ 🔁 | | | | |
| Scaling | | | | | |
| Degree | * | | | | |
| Z Factor | | | | | |
| 1 | | | | | |
| Disable default edge pixel interpolation | | | | | |

 The Slope needs to be configured to drape over the terrain. Right-click the Slope layer and click Properties. In the Layer Properties pane navigate to the Elevation tab and set the custom elevation surface to Surface 1 (OSNI Terrain). Click OK.

| Layer Properties: Slope_OSNI - Terrain × | | | | | | | | |
|--|--|----|--|--|--|--|--|--|
| General Metadata | Features are On custom elevation surface 🔻 | | | | | | | |
| Source | Custom Surface 1 🔹 | | | | | | | |
| Elevation | | | | | | | | |
| Display | | | | | | | | |
| Cache | | | | | | | | |
| Joins | | | | | | | | |
| Relates | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | Cartographic offset 0.00 | | | | | | | |
| | Elevation units Meters * | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | OK Cano | el | | | | | | |

4. The slope layer will default in greyscale, however analysis lends itself better to a colour ramp with multiple classifications. See below for styling and layer order.



OSNI Fusion Services

The dynamic OSNI Fusion services are individual feature classes derived from OSNI Fusion. These individual feature classes can be added to ArcGIS Pro, queried and used for editing purposes. The services are available within the **OSNI:Fusion** group.

*NOTE: The dynamic Fusion services are only viewable at 1:5,000 scale or below.

You can choose to add an individual layer that you wish to query. However, this may appear out of context and it may be more beneficial to add all the individual layers before editing. For viewing purposes it is important that these layers are listed in the correct order in the Contents pane. List as follows (uppermost – lowest):

- OSNI Fusion: Feature Perimeter
- OSNI Fusion: Buildings
- OSNI Fusion: Structures Line
- OSNI Fusion: Structures Polygon
- OSNI Fusion: Transport Casing
- OSNI Fusion: Transport Non-Vehicular
- OSNI Fusion: Water Tidal Measure
- OSNI Fusion: Water Course Line
- OSNI Fusion: Water Course Polygon
- OSNI Fusion: Standing Water Line
- OSNI Fusion: Standing Water Polygon
- OSNI Fusion: Ground Cover (Vegetation)
- OSNI Fusion: Ground Cover (Man-made)
- OSNI Fusion: Ground Cover (Bare Soil)
- OSNI Fusion: Land Parcel
- OSNI Fusion: Geographic Extent
- OSNI Fusion: Ireland Sea

Querying

All the dynamic Fusion services can be queried according to a field within the attribute table. Select the desired layer in the Contents pane and right-click to open the Attribute table. Change to the field view to see the data available to query.

Either add a definition query to the feature layer or select by attributes to isolate a select set of records. See 'Querying – 3 Band Image Analysis' page 36 - 40 to get a step by step guide.

Snapping

Snapping is a tool used to assist drawing features on a map, in relation to existing points, lines or polygons. To create new features you first need to create a new file geodatabase and feature class (see Go Further Box). The new feature can be set to snap to a features: point, end, vertex, edge, mid-point, intersection or tangent.

1. To turn snapping on, highlight your new feature class in the **Contents pane**. Navigate to the **Edit tab** on the ribbon and select the **Snapping drop-down menu**. Click the icon for Turn snapping on.



The highlighted icons show the active snapping functions. Click and icon to select/deselect the function.

2. To create a new feature, click **Create** within the **Edit tab** on the ribbon.

| Project | Мар | Insert | Analysis | View | Ec | dit Ima | gery | Share | e Ap |
|----------|-----|------------|--|------|----|----------|-------------|---------|-------------|
| Paste | | Save Disca | ✓ ^{III} No Top of ^{III} Status III Error In: | | • | Snapping | E Create | Nodify | X Delete |
| Clipboar | rd | | Manage Edits | | Es | Snapping | F | eatures | Fa |

3. The available features will appear in the **Create Features pane**. Shown below is the icon to **create a polygon**.



4. In the **Map pane**, hover over the edges or corners of a map feature to see the snapping possibilities. This will display the name of the layer you are targeting and the type of snap.

| Project | Мар | Insert | Analysis | View | Edit | Ima | agery | Share | A | ppearance | Labelir |
|-----------|---------|--------------|------------------------------------|----------|-------|--------|--------|-------------------------|-------------|---------------|------------------------|
| Paste | | Save Discard | K No Topo Status R Error Ins | | • E | | Create | Modify | X Delete | Select | tributes ear |
| Clipboar | d | N | lanage Edits | | 😼 Sna | apping | F | eatures | G | Selection | 1 2 |
| Contents | | | • | 4 × 🚦 | Map5 | × | | | | | |
| | | / 🕂 🖉 | | D | | | | | | | |
| Drawing | Order | | | | | | | | \wedge | | |
| 🔺 🌄 Map5 | | | | | | | | | | \sim | |
| ▲ ▼ TEST | | | | | | | | $\langle \cdot \rangle$ | | | |
| | | | | | | | | | | | |
| ▲ 🗸 PE_PE | RIMETER | | | | | | | | LBUILD |)ING : Vertex | |
| - | | | | | | | | - | | | |
| ⊿ 🗸 BU_BU | JILDING | | | | | | | | | | |
| | | | | | | | | | | | |

5. When drawing a feature you can use these snap points to seamlessly connect your new feature with an existing map feature.

| Project | Мар | Insert | Analysis | View | E | dit In | nagery | Share | A | ppearance | Labelin |
|--|-------|------------|---------------|-------|----|----------|--------|----------|------------|-----------|---------------------|
| Paste | | Save Disca | rd 👯 Error In | | • | Snapping | Create | Modify D | × elete | Select | Attributes Clear |
| Clipboa | rd | | Manage Edits | | G. | Snapping | i f | eatures | G | Selectio | n 🖬 |
| Contents | | | • | 4 × 🚦 | Ma | ap5 × | | | | | |
| Search Search Drawing Map5 Map5 TEST PE_PI BU_B | Order | ∕ ₽₊ ∅ | | | < | | | | | | |

Creating a New File Geodatabase:

A file geodatabase is stored within your current project in ArcGIS Pro. It is a type of database that allows you to create your own feature classes and content within.



Right-click Databases within the **project tab** of the **Catalog pane** and select **New file Geodatabase**. A pop-up window will require you to enter a name for the new geodatabase, then click **Save**.

| Catalog • # × | New File Geodatabase | × |
|--|---|--|
| Project Portal Favorites History | (c) (c | . م |
| Search Maps Toolboxes Databareer | Organize New Item Project Name Type Folders Folders Folder Encomputer Desktop Documents Downloads | © EII Date 01/03/2t 25/02/2t base 01/03/2t |
| Control Add Database Control Add Database | Windows (C) (D) Vge-colbyh-rad0T\spatia Name TEST File Geodatabases Save | • Cancel |

Click the **drop-menu** for Databases to see the new geodatabase (.gdb).

| Catalog | ₹ Ū × |
|----------------------------------|------------|
| Project Portal Favorites History | ≡ |
| 🛞 🟠 Search | <u>ہ</u> م |
| 🖻 📷 Maps | |
| 🖻 🗃 Toolboxes | |
| Databases | |
| Servers.gdb | |
| TEST.gdb | |

To create features within this gdb, Right-click the geodatabase name and select New \rightarrow Feature Class.

| | • | Catalog | | | ųΧ |
|---|---|---------------------|------------------|---------|----|
| | | Project | Portal Favorites | History | Ξ |
| | | ⊕ | Search | | Q |
| | | Þ 📷 M | laps | | |
| | | Þ 🗃 To | oolboxes | | |
| | | ▲ 🛜 D | | | |
| | | | Servers.gdb | | _ |
| | | ⊳ <mark>⊡</mark> La | Make Defau | ılt | - |
| ₽ | Feature Datas | | New | • | |
| M | Feature Class | | E Import | • | |
| | Table | | Export | • | |
| | Vie <u>w</u> | | Manage | • | |
| | R <u>e</u> lationship (Raster Dataset | | Domains | | |
| | | | 1 | | |

Sharing Maps

Within ArcGIS Pro data can be shared as a complete map package containing originating data links or as exported individual maps.



Printing

See below for printing services within ArcGIS Pro:

1. To print a snapshot of you map as its current view within the map pane, select **Print** from the **Share tab** on the ribbon menu. This will open a basic print configuration window linked to your default printer.

| 🖹 🗟 🗟 🕤 • 🗟 • 🔹 | | ArcGIS Pro - Servers - Map | 5 |
|---|---|--|---|
| Project Map Insert Analy: | sis View Edit Imagery | Share | |
| 🔂 🛃 🛃 🔊 | 🛃 🎽 🗞 🗂 💼 | | |
| Project Map Mobile Layer Geoprocessing Map | Web Web Web Locator Web Map Layer Style Tool | Jobs Data Project Map Layer Task Map Map Stores Template File File Item | |
| Package | Share As | Status Manage Save As Print Export | |

2. To print or export your map embedded within a layout; navigate to the **Insert tab** on the ribbon menu, and select **New Layout** within the **Project section**.



How to configure a map layout Esri.

Exporting

After you've created a map or layout, you can export to several industry-standard file formats.

- Vector Formats: EMF, EPS, PDF, SVG, and SVGZ
- Image Formats: BMP, JPG, PNG, TIFF, TGA, and GIF
- 1. To export only the view within the map pane, as one of the raster image formats;



2. Enter the file name, then set the File Type, Resolution and Colour Mode. Click **Export**.

| File name: | Map5 | | ~ |
|---------------|-------------------------|---------------------|------------------------------------|
| Save as type: | PNG (*.png) | | ~ |
| | Resolution (DPI): 96 | Create a World File | Color Mode: 32-bit with Alpha V |
| e Folders | | | Export Cancel |

To export a package that contains both the layer(s) and the data/properties embedded, your data can be exported as a project, map, or layer package. To find out more about these and what information is shared follow the Link.

1. To export a project as a project package; navigate to the share tab and click Project.



2. To export a project as a map package; navigate to the share tab and click Map. Make sure that your workspace is currently highlighting the map and data that you are wanting to export.

| Project Map Insert Analysi | s View Edit Imagery | Share |
|--|---|--|
| Project Map Package | Web Web Web Locator Web Tool+ Share As | Jobs Data Stores Template File Layer Task Status Manage Save As Print Export |
| The second se | | Sates manage Sate As Third Export |
| Contents | - ↓ × 🛃 Map5 × | |
| Search Image: Search | | |
| ▲ Map5 ▲ ✓ County Boundaries □ ☑ OSNI - Ireland North 250K Outline | | |

A new pane will open when exporting a package, to allow configuration of settings.

| Package Map ? 👻 🕂 🗙 | | | |
|--|--|--|--|
| Share Map5 As A Map Package | | | |
| Package Attachments | | | |
| Start Packaging | | | |
| Upload package to Online account Save package to file | | | |
| Item Details | | | |
| Name | | | |
| Map5 | | | |
| * Summary | | | |
| | | | |
| * Tags | | | |
| | | | |
| Options | | | |
| 🗌 Include Enterprise and UNC Path Data 🕚 | | | |
| Location | | | |
| Portal Folder | | | |
| Select or create folder 🔹 🦳 | | | |
| Share with | | | |
| Evenione T | | | |
| Finish Packaging | | | |
| ✓ Analyze Package | | | |

Exporting directly to your AGOL:

Publish a map to your AGOL. The data layers will be published as new web layers and will be included in a web map service along with the selected basemap and any pre-published layers.



Map Insert Analysis View Edit Imagery Share -8- \rightarrow -10 + Project Map Mobile Layer Geoprocessing Map Web Map Project Map Template File Web Jobs Data Task Map Map Web Locator Web Layer File Layer - Style -Stores Tool -Item Package Share As Status Manage Save As Print Export

A new pane will open to configure export settings.

***Note:** To do this you must be signed into you AGOL as the Active Portal, and your profile must have permissions to publish content.