WSDOT Online Map Center User Guide

Washington State Department of Transportation
Transportation Data, GIS & Modeling Office
January 2020

Table of Contents

Background 1
Access Management 1
Membership 4
Costs and Service Credits 4
Creating and Sharing Content 5
Sharing Permission Requirements 5
Managing Content 10
Appendix A – Terms, Definitions, and Acronyms 11
Appendix B – Additional Resources 15

Background

The WSDOT Online Map Center is built on the ArcGIS Online (Esri) platform and is administered by the Transportation Data, GIS and Modeling Office. ArcGIS Online (AGO) is a collaborative, cloud-based platform that lets members of an organization create, share, and access maps, applications, and data, including authoritative basemaps published by Esri. Through AGO, subscription holders can access Esri's secure cloud, where they can manage, create, store, and access hosted web services. Because AGO is an integrated part of the overall Esri ArcGIS system, it can be used to extend the capabilities of ArcGIS for Desktop, ArcGIS applications, and other related ArcGIS products. AGO also provides access to ready-to-use apps for making maps, monitoring activities and events through a common operating picture, and creating and sharing maps in the field.

The remainder of this manual provides guidance in the form of policies, processes, and protocols for all levels of users of the WSDOT Online Map Center application. While this manual does not include training or "how to" materials, references to practical user training and information is provided at the end of the manual.

If you have questions about the information presented in this user guide or questions about the WSDOT Online Map Center or ArcGIS Online in general, the WSDOT Online Map Center Team is happy to help. Please feel free to contact us at Online Map Support.

Access Management

WSDOT maintains a subscription to AGO which drives the WSDOT Online Map Center. This subscription provides the agency with a limited number of members who can create content in the WSDOT Online Map Center. WSDOT employees are granted membership on an as-needed basis.

AGO has a wide range of constantly expanding functionality, some of which can incur additional costs to WSDOT. New WSDOT Online Map Center members are assigned roles based on their business requirements and GIS skill level. Please see Table 1 below for a list of Online Map Center roles and privileges.

Table 1. Online Map Center User Roles and Privileges

Role Permissions		*WSDOT User*	*WSDOT Publisher (Basic)*	*WSDOT Publisher (Advanced)*	*WSDOT EOC Publisher*	*WSDOT Administrator (Basic)*	*WSDOT Administrator*
Groups	Create, Update and Delete Groups		√	√	√	√	√
	Join Organizational Groups	√	√	√	√	√	√
	Join External Groups	√	√	√	√	√	√
	Create groups with update capabilities		√	√			√
Content	Create, Update and Delete Content	√	√	√	√	√	√
	Publish Hosted Feature Layers		√	√	√	√	√
	Publish Hosted Tile Layers		√	√	√	√	√
Sharing	Share with Groups	√	√	√	√	√	√
	Share with Organization			√	√	√	√
	Share with Public				√		√
	Make Groups Visible to Organization		√	√	√	√	√
	Make Groups Visible to Public						√
GeoServices	Geocoding		√	√	√	√	√
	Network Analysis		√	√	√	√	√
	Spatial analysis		√	√	√	√	√
	GeoEnrichment		√	√	√	√	√
	Demographics		√	√	√	√	√
	Elevation Analysis		√	√	√	√	√
Features	Edit Features	√	√	√	√	√	√
Admin	Members: View All					√	√
	Members: Update						√
	Members: Delete						√
	Members: Invite						√
	Members: Disable						√
	Members: Change Roles						√
	Groups: View All					√	√
	Groups: Update						√

Role Permissions		WSDOT User	WSDOT Publisher (Basic)	WSDOT Publisher (Advanced)	WSDOT EOC Publisher	WSDOT Administrator (Basic)	WSDOT Administrator
	Groups: Delete						√
	Groups: Reassign Ownership						√
	Groups: Assign Members						√
	Content: View All					√	√
	Content: Update						√
	Content: Delete						√
	Content: Reassign Ownership						√
	Manage Licenses						√

Membership

An Online Map Center administrator will work with you to set up a membership that will meet your specific business needs. Membership may be requested by contacting Online Map Support. Please be prepared to discuss the following topics to help assess your membership needs.

Basic information about you:

1. What office do you belong to?
2. How would you describe your experience using ArcGIS products (ArcMap, ArcCatalog, ArcGIS Online)?

Basic information about your project:

1. Tell us about what you would like to use ArcGIS Online to accomplish.
2. Do you plan to create and share content?
   - What types of content (data/maps/apps)?
   - Large datasets (more than 1,000 features per dataset?)
   - How often is this data updated?
   - Could your content be considered sensitive data? See *OCIO Standard No. 141.10 – Securing Information Technology Assets.*
   - Are you the data author/owner?
3. What kinds of tools do you expect to need? (directions, measure, find locations, locate SRMP, print, add data, analyze data, filter data)

Basic information about your audience:

1. Who is your intended audience (just you, a small group, your office, all of WSDOT, other agencies, ***public***)
2. What is your estimated # of users (internal and external)?
3. Does your intended audience already have an ArcGIS Online Organizational Account?

Costs and Service Credits

WSDOT maintains a subscription to ArcGIS Online which provides the agency a limited number of members and service credits. Currently membership is free of charge to WSDOT employees. This policy is subject to change and membership may require a nominal fee in the future.

By default, all members receive access to 100 service credits. Credit allocation can be adjusted depending on need. Service credits pay for cloud data storage and spatial data analysis like geocoding, routing, buffering and hot spot analysis. For more information on service credits and how they are consumed through analytics, please refer to Service Credits Overview.

Creating and Sharing Content

Once you've created content in the WSDOT Online Map Center it can be shared with Groups, the Organization, or with the Public. Member sharing abilities are managed through the member's assigned role. "WSDOT Users" and "WSDOT Publisher Basic" can share to Groups. Sharing to groups is most appropriate when working on a project that requires review by multiple team members. Sharing content to the Organization requires a user role of "WSDOT Publisher Advanced". In general, only a "WSDOT Administrator" can share content with the public. A "WSDOT EOC Publisher" can also share content with the public in emergency response situations. All other content that is intended to be shared to the public must first be reviewed and approved by a WSDOT Map Center administrator. All WSDOT enterprise data shared to the WSDOT Online Map Center will also be available for download from the WSDOT Geospatial Open Data Portal. Contact an administrator at Online Map Support for questions about sharing content to the public or member roles and abilities.

Each level of sharing carries specific considerations and attention to documentation that must be met before granting these sharing permissions. The matrix below will help you identify the requirements that must be met when sharing your content. Definitions and WSDOT standards for each requirement category follow.

Sharing Permission Requirements

Table 2. Sharing Permission Requirements

Requirement	Groups	Organization	Public	
			Final Data/Enterprise Data	Temporary/Draft Data
Is Not Confidential	Required	Required	Required	Required
Item Details	Recommended	Required	Required	Required
Original Author		Recommended	Recommended	Recommended
Thumbnail	Good Practice	Required (Blue)	Required (Green)	Required (Blue)
Archive	Good Practice	Recommended	Required	Recommended
Meets DMS Data Sharing Requirements			Required	Required
Communications Review			Required	Required

Is Not Confidential:

The WSDOT Online Map Center uses Esri's cloud storage technology, which is listed as an approved Cloud Hosting Service by the Washington State Department of Enterprise Services. However, WSDOT prohibits cloud storage of Category 3 and Category 4 data. Some Category 2 data which has been deemed as "sensitive" may also be prohibited from cloud storage. Familiarize yourself with the Data Security Categories in Section 4.1 of *OCIO Standard No. 141.10 – Securing Information Technology Assets* before publishing **any** content to the WSDOT Online Map Center. If you are unsure of the data security level of the content you plan to publish, please contact Tim Crabb, IT Data Management Services Manager, for assistance categorizing your data.

Item Details:

The item details page provides users with information about your data such as the intended use, limitations on use, how the data was compiled, when it was created, etc. If FGDC or ArcGIS formatted metadata is available for data shared publicly or with the organization, the metadata will be used to populate the item details page. If metadata is not available, the data steward will work with the WSDOT Map Center administrator to provide the information below. A good example of a detailed Item Description can be found on the WSDOT – Park and Ride Item Details page.

Content shared with the Public or the Organization must be well documented. The WSDOT Online Map Center administrators reserve the right to revoke sharing permissions for data, services, maps and applications with missing or inadequate information.

1. Title: A descriptive yet concise title. (Titles given to hosted feature services should not be altered after publication – this disrupts the ability to overwrite the hosted feature service at a later date.)
2. Summary: Use this section to briefly describe the nature of the content. This gives the user a few lines of information that will help them determine if this is something they might want to consider looking at more closely. This information is shown to the user when viewing search results. *Example of a good summary: Level of Service Standard for Washington State Routes and Ferry Routes operated by the State*.
3. Description: This section should provide a detailed explanation of the item being shared, similar to metadata. It should address the description, purpose, accuracy standard, timeliness, attribute descriptions, and contact information for the item. Draft content that is shared with the public should also include a date for when the content will no longer be available.
4. Access and Use Constraints: This provides a place for the publisher to list what, if any limitations, there might be associated with a given data set, web service, or web map application, including intended use. For all items shared with the public, WSDOT has standard text that can be added to this section:

   "*Data provided here is used by the Washington State Department of Transportation's transportation partners, government entities, schools, private businesses, and the general public. The Washington State Department of Transportation shall not be liable for any activity involving*

these data, including, but not limited to, lost profits or savings or any other economic or consequential damages. Nor does the Department warrant the fitness of the data for use for a particular purpose, or the installation of the data, its use, or the results obtained."

Add the following standard text for draft/temporary content that is available to the public:

"This is temporary, draft data provided by the Washington State Department of Transportation to facilitate stakeholder review for a specific project. The data is available for viewing in ArcGIS Online only and is not to be downloaded or redistributed. Once the review process is completed on, (insert date), the data will no longer be available.

The Washington State Department of Transportation shall not be liable for any activity involving these data, including, but not limited to, lost profits or savings or any other economic or consequential damages. Nor does the Department warrant the fitness of the data for use for a particular purpose, or the installation of the data, its use, or the results obtained."

5. Tags: Tags are words or short phrases that describe an item in AGO. Tags are important since they determine if a group, service, map, etc. shows up in the search results when someone enters a keyword that matches one of the associated tags**.** Some tags are required to identify items as WSDOT content, while others are elective so that your content can be discovered by more people. All content to be shared with the public MUST have the following tags: ***WSDOT, WA, Washington, Department, State, DOT, Transportation***.

   In addition, consider adding tags that are appropriate to your content. Think about the terms somebody else may use to search for content related to this subject and include those search terms in your tags.

Original Author:

"Original Author" means that you are the original source of the data and that you are responsible for its quality, update cycle, and you are the point of contact for all questions concerning the data.

While there are no technical restrictions on publishing someone else's data, professional courtesy and applicable data use agreements, dictates that you work with the owner of the data before you publish content. This ensures that your representation of the data is timely, includes the best available information, is appropriate for your intended use, is properly documented, and is not sensitive or prohibited by WSDOT cloud storage standards.

When publishing someone else's data it is recommended that you included information about the original data source including appropriate contact information.

Thumbnail:

Adding a thumbnail image to your shared items helps a user to identify content that is authoritative and trusted. WSDOT has standard thumbnail overlays that can be added to any image. These image

overlays identify whether the item is intended for public (external) or organization (internal) viewing, and the item's content type (map service, web map, web application, or pdf document). Image overlays can be created using the WSDOT Online Map Center Thumbnail Generator in the WSDOT Online Map Center. **All content shared to the public or the organization requires a thumbnail image with a WSDOT overlay**. Thumbnail images must be 200 pixels wide by 133 pixels tall. For more assistance with creating content thumbnails, contact Online Map Support.



Figure 1. Example of a "blue" thumbnail. Used for content shared to the Organization

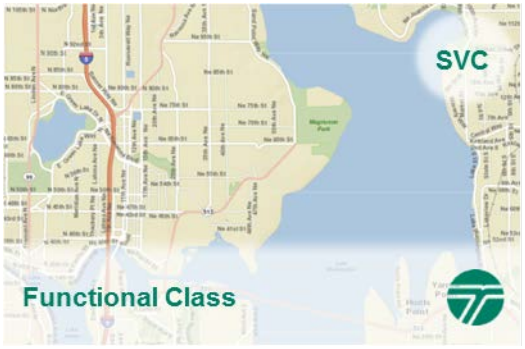


Figure 2. Example of a "green" thumbnail. Used for content shared to the Public.

Archiving:

Content stored in the WSDOT Online Map Center is stored in the cloud. Feature services shared in the WSDOT Online Map Center are created from ArcMap documents and feature classes within those documents. We recommend storing all data files relative to the publication of feature services in a secure project folder on a WSDOT drive, especially the MXD used to publish the feature service. Give the MXD the same name as the feature service being published. The MXD can be used to overwrite the feature service when an update to the feature service is required – or in the occurrence of an accidental deletion.

Meets WSDOT Data Management Services (DMS) Data Sharing Requirements:

All spatial data shared to the public, *and intended for use longer than one year* in the WSDOT Online Map Center, must meet DMS data sharing requirements. In general terms this means that the data must:

1. Be WSDOT information.
   - WSDOT does not distribute or present data produced by other organizations to the public without explicit agreement from the source organization.
2. Be administered within WSDOT as a corporate data asset.
   - For more information, please contact WSDOT ITD Data Management Services.
3. Have metadata that meets or exceeds the *OCIO Standard No. 161.02–Spatial Metadata Standard*.
4. Not include confidential information or information intended for internal agency use only.
   - As per Section 4.1 in *OCIO Standard No. 141.10 – Securing Information Technology Assets*.
5. Be available for download via the WSDOT GIS Data Download website. Please note that exceptions to this rule exist. For example, content (map services) that draws from a dataset that is updated nightly may not have a corresponding download file that can be accessed from the GIS Data Download website. In this case, a copy of the metadata—with information on how to obtain a copy of the dataset—is made available from the Download website.

In special circumstances, content that is in a draft form or undergoing a review by external stakeholders may be shared to the public. In these special cases, the content must:

1. Not include confidential information or information intended for internal agency use only. As per Section 4.1 in *OCIO Standard No. 141.10 – Securing Information Technology Assets*.
2. Meet the same standards for item documentation as any other dataset that is shared to the public via the Online Map Center. The item description page should contain information about the intended use of the data, contact information for the data author, and a date that the data will no longer be publicly available.
3. Be removed from public view after the study, event, or project review is complete.

Communications Review:

WSDOT Online Map Center members creating web maps, apps, or story maps to share with the public, will coordinate with the WSDOT Communications Office and an Online Map Center Administrator early in the process to ensure consistency of WSDOT messaging and branding. For more information about this process, please contact Online Map Support.

Managing Content

Online Map Center members are encouraged to create folders to organize and manage their content.

Members that create apps to share to the public or organization, such as Story Maps and Web AppBuilder apps, will put the app and all the content used in the app (e.g. feature layers, web maps, images, etc.) in one folder. This will facilitate review of the content by an Online Map Center Administrator.

WSDOT Online Map Center members that create content in the site are responsible for following the guidelines outlined in this user guide. This includes:

- Providing basic details and contact information on the item details page for the items that they create in the site
- Ensuring that their content is accurate and current
- Deleting old, outdated or unused content

The WSDOT Online Map Center site Administrators will periodically audit the site to check for orphaned or expired data, inactive user accounts, broken links, etc. If the Administrator finds a problem with your data, they will work with you to correct the problem.

Please be advised that the software that powers the WSDOT Online Map Center is managed by Esri. Updates occur approximately quarterly and WSDOT is not responsible for changes that those updates bring. Site administrators monitor and relay information about these changes through the WSDOT Online Map Center Newsletter.

Appendix A – Terms, Definitions, and Acronyms

AGO means ArcGIS Online for Organizations. Through an AGO subscription, organizations can manage some or all of their geographic content in Esri's secure, cloud-based environment. In this environment, organizations and their role-based users can publish their hosted services to AGO; manage maps, apps, and data; invite members to join the organization in a particular role-based capacity that can include the ability to share and save information and data within the organization's site; and customize an AGO home page.

Basemap means a map depicting background reference information such as landforms, roads, landmarks, and political boundaries, onto which other thematic information is placed.

Cloud means hardware, software, or a service offering made available through the Internet.

Content refers collectively and generically to the various ways data can be used, shared or represented in AGO, including feature services, shapefiles, layers, basemaps, web maps, web mapping applications, data sets for direct upload, etc.

Data Steward is a person responsible for the management and fitness of a dataset. The data steward's responsibility is to ensure that their data is current, fit for use, and well-documented.

Esri is the abbreviation for Environmental Systems Research Institute, Inc. According to the company, Esri is pronounced as a word, 'ez-ree'.

Extensible Markup Language (XML) means data formatted with tags, normally delivered as Internet web services.

Feature Service also called a hosted feature service, is an XML mapping service that streams geospatial data from a web server to a client application. The geospatial data may be derived from an original shapefile or a feature class stored in a database. Feature services enable you to make vector data available for display, query, and editing on the web. Hosting a feature service on ArcGIS Online is an easy way to share data with an Internet audience. Hosted feature services can be added to web maps by anybody that has been granted view access.

Feature services are most appropriate for operational layers that go on top of reference layers such as a basemap. For example, a feature layer might contain information about the street signs in your neighborhood. Each feature (street sign) might include the sign name, date installed, and a website URL for reporting problems to your local street department.

Online Map Center members with publishing permissions can publish hosted feature services. The data in feature services are stored on an Esri server in the cloud. WSDOT and the State of Washington have specific rules governing the storage of electronic data in the cloud. Publishers must be familiar with the sharing standards outlined in the "Creating and Sharing Content" section before creating feature services.

The most common way to publish a hosted feature service is through ArcMap, although there are many other ways to also publish data to the WSDOT Online Map Center. For more information about publishing feature services, please see the ArcGIS Online article about publishing features.

FGDC is the abbreviation for Federal Geographic Data Committee.

Geocoding is the process of finding associated geographic coordinates (often expressed as latitude and longitude) from other geographic data, such as street addresses, or ZIP codes (postal codes). With geographic coordinates the features can be mapped and entered into Geographic Information Systems (GIS), or the coordinates can be embedded into media such as digital photographs via geotagging.

Geoprocessing is a GIS operation used to manipulate spatial data. A typical geoprocessing operation takes an input dataset, performs an operation on that dataset, and returns the result of the operation as an output dataset. Common geoprocessing operations include geographic feature overlay, feature selection and analysis, topology processing, raster processing, and data conversion. Geoprocessing allows for definition, management, and analysis of information used to form decisions.

GIS means Geographic Information System (older) or Geospatial Information System (newer).

Group means a grouping of users focused on a particular collection of information, data or other items usually related to a specific area of interest. Any Publisher or Administrator can create groups as a way to organize their items. Group creators can: (i) set the visibility of the group for particular role-based access, (ii) configure the group to enable other users to request to join the group, (iii) identify who can contribute content to the group, and (Iv) create a group with update capabilities.

Layer means the visual representation of a geographic dataset in any digital map environment. Conceptually, a layer is a slice or stratum of the geographic reality in a particular area, and is more or less equivalent to a legend item on a paper map. On a road map, for example, roads, national parks, political boundaries, and rivers might be considered different layers.

Metadata is information about the data such as, when and how the data was created, the accuracy of the data, data steward contact information, restrictions associated with using and sharing the data, etc.

Organization means WSDOT Online Map Center Members.

Public means any person or organization that is not a member of the WSDOT Online Map Center. The Public can access “publicly shared” WSDOT GIS information on AGO.

Service Credits are the currency of AGO subscriptions and each account comes with an annual amount of credits included. Certain actions such as cloud data storage, geospatial analytics, and access to ‘Premium’ content costs credits. Go to ArcGIS Online Service Credits Overview for more information about credit consumption.

Viewers (Non-WSDOT members) have an AGO account (enterprise or private) but they are not members of the WSDOT Online Map Center. Viewers can access and use maps and feature services from the ArcGIS Online global community including WSDOT content that is shared with the public. Viewers can also access this same AGO content in ArcMap. Viewers cannot save or share content in the WSDOT Online Map Center. Viewers who have an account in another ArcGIS Online Organization can be invited to join a group created by a WSDOT Online Map Center member and access data that is made available to the group.

Web Map means an interactive display of geographic information that you can use to tell stories and answer questions. The WSDOT Online Map Center is equipped with a built-in map viewer and constructor, allowing everybody to create web maps in the WSDOT Online Map Center. Web maps consist of various map layers, such as hosted feature services and map services, added through the WSDOT Online Map Center's map viewer.

Members of the WSDOT Online Map Center can save web maps and share those web maps with other members of the organization, or use them to build web mapping apps. Web maps provide an interactive viewing experience, allowing the user to pan and zoom around the map, click on map features to obtain additional information, change the basemap, and perform basic map analysis. For more information about creating web maps, please see the ArcGIS Online article about creating web maps.

Web Mapping Applications means web applications (apps) that include one or more web maps. Web mapping apps provide users with focused views and tools to interact with web maps. They can provide additional context to web maps, allowing for additional descriptive text, photos and tools. You can use web mapping templates to create applications and publish them directly to the Esri cloud. ArcGIS Online is stocked with a number of different configurable web mapping app templates, which offer various bits of functionality, such as different layouts and color schemes, editing and identify tools, story-telling capabilities, and side-by-side map viewers. For more information about creating web mapping apps, please see the ArcGIS Online article about creating web mapping apps. Note: Publishing a WSDOT app to the public requires internal reviews by TDGMO, ITD, and Communications.

WSDOT means the Washington State Department of Transportation.

WSDOT Administrator is a user role, responsible for the administration and the day to day management of the WSDOT Online Map Center. A WSDOT AGO Administrator has the following responsibilities:

1. Administration - Responsible for management of licenses, group security and credit usage. Oversees publishing of web applications, map services, feature servers and shapefiles. Work with System Administration to create services using ArcServer, SQL, etc.
2. Data management – Responsible for management and review of all data that is published and shared to the Organization or the Public.
3. Public Interface - Responsible for publishing and maintaining the Web page and applications.

WSDOT Administrator (Basic) is a user role that allows members to view all content within the Organization. WSDOT Administrator (Basic) cannot share content to the public.

WSDOT Emergency Operation Center (EOC) Publisher is a user role that can publish hosted feature services to AGO, create Groups, share the services with Groups, the Organization or the Public, and invite Users and Viewers to join their Groups. The WSDOT EOC Publisher role is intended to be use by EOC GIS personnel in emergency response situations.

The WDOT Online Map Center is the WSDOT AGO website based upon a single, AGO subscription based license for WSDOT, which the WSDOT Transportation Data and GIS Office administers on behalf of licensees and their users.

WSDOT Publisher (Advanced) is a user role that can publish hosted feature services to AGO, create Groups, share the services with Groups or with the Organization, and invite Users and Viewers to join their Groups.

WSDOT Publisher (Basic) is a user role that can publish hosted feature services to AGO, share the services with Groups, create Groups, and invite Users and Viewers to join the Groups. The WSDOT Publisher (Basic) user role cannot share content to the Organization.

WSDOT User is a basic user role that can view, create, modify, share, save and otherwise manipulate all WSDOT Online Map Center feature layers and data and publicly available AGO feature layers and data.

Appendix B – Additional Resources

Below are a number of online resources to help you learn about ArcGIS Online and troubleshoot any issues that arise using the platform. Additionally, you can contact the Headquarters IT Help Desk and ask to log an ArcGIS Online ticket. Your request will be directed to the appropriate WSDOT staff that can assist you.

ArcGIS Online Help
https://doc.arcgis.com/en/arcgis-online/

ArcGIS Online Short Training Videos
https://doc.arcgis.com/en/arcgis-online/reference/videos.htm

ArcGIS Online User Forum
https://geonet.esri.com/community/gis/web-gis/arcgisonline

ArcGIS Online Blog
http://blogs.esri.com/esri/arcgis/category/arcgis-online/

Collector for ArcGIS
http://doc.arcgis.com/en/collector/

ArcGIS Online Courses
http://training.esri.com/gateway/index.cfm?fa=main.arcgisonlinetraining

ArcGIS Online Learn Path
https://learn.arcgis.com/en/paths/try-arcgis-online/