

HydroAdd Workflow

Michael Tinker 4/30/2020

The Hydrography Addressing Tool (HydroAdd) is a website built by the USGS National Geospatial Program (NGP). It is a platform which allows users to address (make coincident, or reference) their own data to the National Hydrography Dataset (NHD). Users must make their geospatial data available as a web feature service, either from their own server hardware or from a third-party service such as Esri ArcGIS Online (AGOL). The owner of the service layer grants editing permission to other users at the level of the service layer. For example, AGOL allows the owner of the service layer to grant editing permissions to specific users. HydroAdd honors the editing permissions set by the owner of the service layer. HydroAdd then 'consumes' the service from AGOL and displays it in the browser for editing, along with a read-only NHD layer. In this way, a team of users with editing permission can work on common projects with HydroAdd.

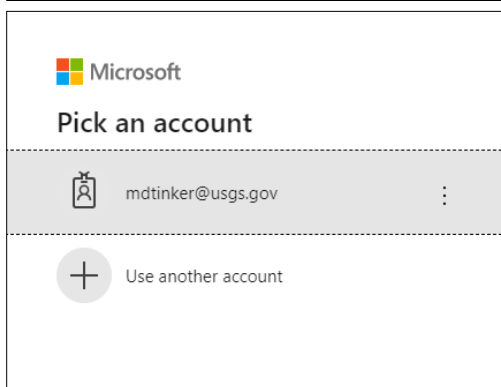
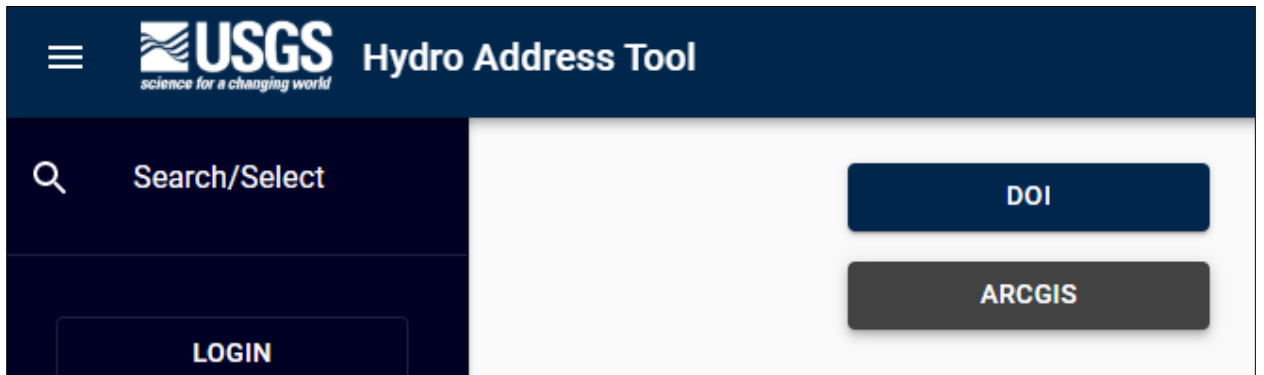
In summary, HydroAdd allows permitted users to update attributes and to edit the geometry of features in a service layer to be coincident with NHD features. Users cannot edit the NHD; it is only a reference layer for display in HydroAdd.

Users will be Federal employees, such as USGS or other DOI employees; or members of the public, such as state, academic, or other users with knowledge of GIS and knowledge of how to create a web feature service.


USGS HydroAdd Administrators are a limited group of the USGS NHD Partner Support Team. HydroAdd Administrators must be able to contact users directly in case there are issues with the functioning of HydroAdd that could affect the users' editing work, issues with their user role assignments, problems with their data, or other issues with HydroAdd.


Login

1. Users log in with an existing DOI or Esri ArcGIS Online account.



2. If a user has added a web feature service from Esri Arc GIS Online (AGOL), HydroAdd prompts the user for one additional authorization for Esri login credentials.


Sign in with 




ArcGIS login 

Keep me signed in

[Sign In](#)

[Forgot username?](#) or [Forgot password?](#)

Enterprise login 

 GitHub  Facebook  Google

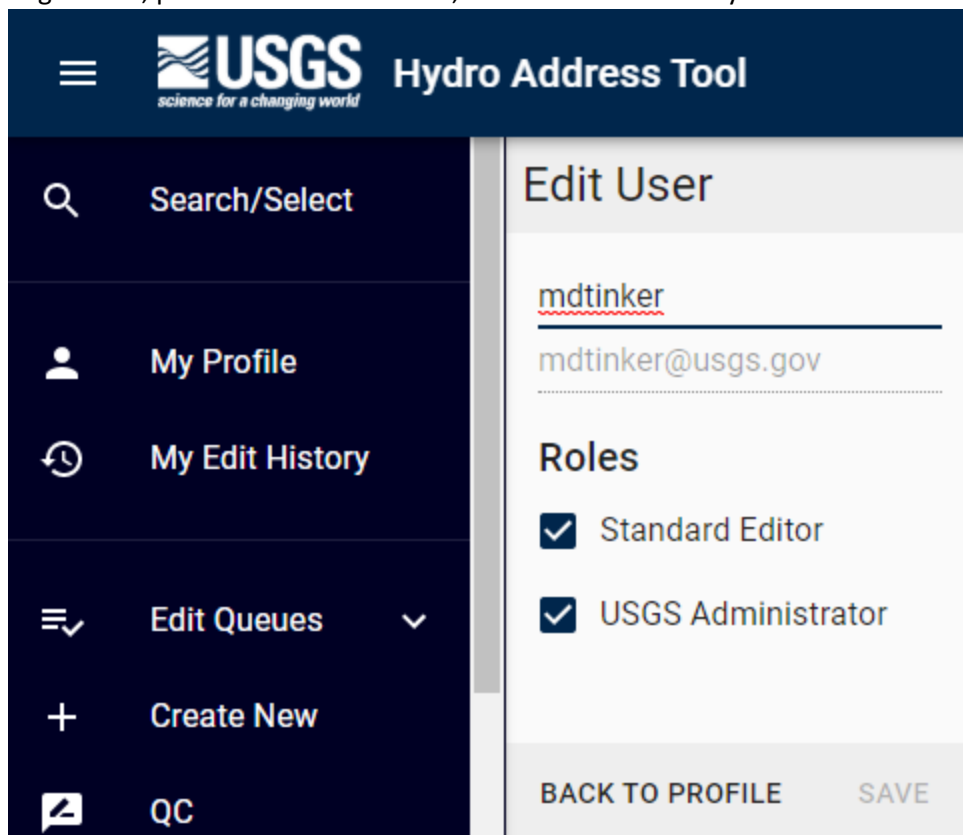
No account? [Create an account](#)

[Privacy](#)

User Profile

After login, users have the option to add a username to their user profile, but this is not required. Recommendation to users is to use a simple username, or nickname, but not full names.

- Standard Editors can view their own profile, but not the profiles of other users.
- Standard Editors can view the edits that have occurred in their service layer by other users but cannot determine which users performed the edits.
- USGS HydroAdd Administrators can view the profiles of all users.
- USGS HydroAdd Administrators can also view editing activity of all users, by username and email.
- USGS HydroAdd Administrators are a limited group of the USGS NHD Partner Support Team . HydroAdd Administrators must be able to contact users directly in case there are issues with the functioning of HydroAdd that could affect the users' editing work, issues with their user role assignments, problems with their data, or other issues with HydroAdd.



Workflow for creating or updating the web service layer with HydroAdd

HydroAdd allows users to address their own data to the NHD. HydroAdd displays the user's web feature service from AGOL, along with the NHD. Users update their own data with HydroAdd to make their data coincident to the NHD features. Users can only edit their own data as it exists in their own web feature service. Users cannot edit the NHD; it is only a reference layer for display in the HydroAdd.

Add a service layer from ArcGIS Online

1. User adds a service layer from AGOL

Add a New Service

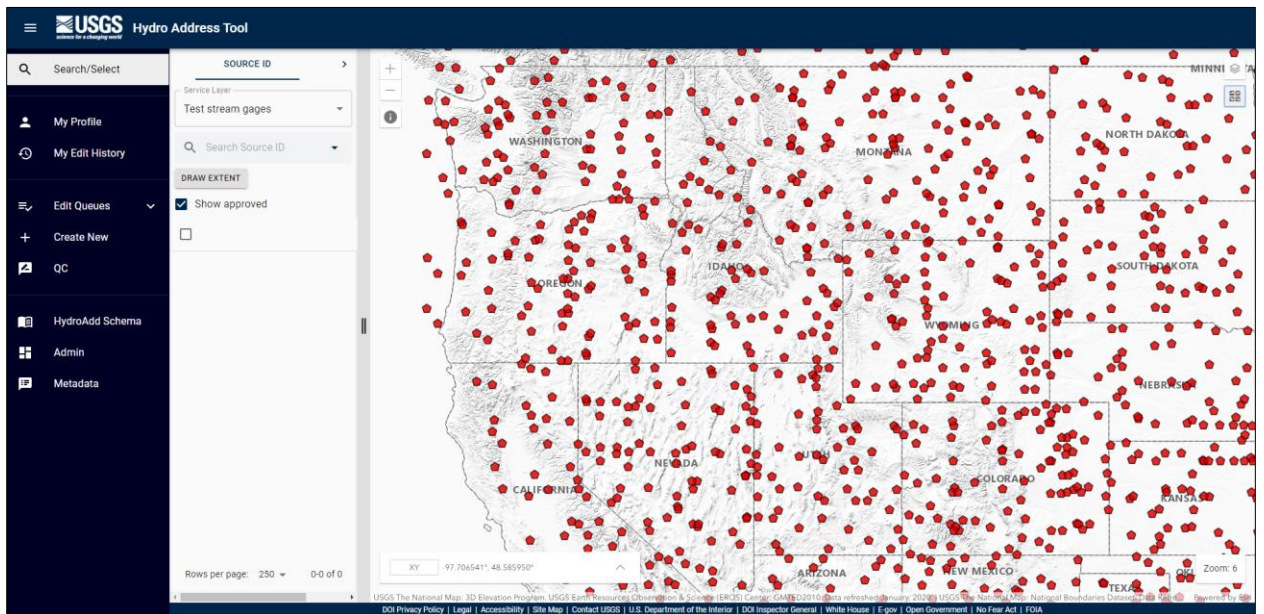
Nickname *
Test stream gages

Service URL *
https://services.arcgis.com/v01gqwM5QqNysAAi/arcgis/rest/services/

Visible

CANCEL SUBMIT

2. User's AGOL service layer data becomes visible in HydroAdd.



3. Users select data they wish to add to an edit queue.

USGS science for a changing world **Hydro Address Tool**

Search/Select

- My Profile
- My Edit History
- Edit Queues
- Create New
- QC
- HydroAdd Schema
- Admin
- Metadata

SOURCE ID

Service Layer: Test stream gages

Search Source ID

DRAW EXTENT CLEAR EXTENT

Show approved

<input type="checkbox"/>	2020		
<input type="checkbox"/>	25	Edit	
<input type="checkbox"/>	2599		
<input type="checkbox"/>	4667		
<input type="checkbox"/>	4699		

The map displays a terrain view with several red pentagons scattered across the landscape. A zoomed-in view of an orange rectangular area is shown in the bottom right, containing several green circles and one blue circle. The interface includes a search bar, a service layer dropdown, and a list of source IDs with associated edit and delete actions.

Edit Service Layer

1. Users then edit the items in the queue.

The screenshot shows the USGS Hydro Address Tool interface. On the left is a navigation menu with options: Search/Select, My Profile, My Edit History, Edit Queues (selected), Create New, QC, HydroAdd Schema, Admin, and Metadata. The main panel displays the 'Edit Queue Name: Test gages' and 'Service Layer: Test stream gages'. Below this is a 'DELETE EDIT QUEUE' button and a search filter for 'Filter by Source ID'. A list of items in the queue is shown, each with a checkbox and a 'Test gages' label. The items are:

Item	Source ID
2020 Test gages	09CB002
2597 Test gages	09CB002
2599 Test gages	09CB002
4667 Test gages	09CB002
4699 Test gages	09CB002
4701 Test gages	09CB002
4967 Test gages	09CB002

At the bottom of the list, it says 'Rows per page: 10' and '1-7 of 7'. To the right is a map of the Pacific Northwest region, showing counties like MASON CO, THURSTON CO, PIERCE CO, GRAYS HARBOR CO, LEWIS CO, WASHINGTON, PACIFIC CO, WAHIAKUM CO, COWLITZ CO, CLATSOP CO, SKAMAWIA CO, OREGON, and CLARK CO. A red dot on the map indicates the location of the selected item. The map includes a coordinate display: 'XY -123.562864°, 46.562905°'.

The screenshot shows the USGS Hydro Address Tool interface with the details of a specific hydro address. The left navigation menu is the same as in the previous screenshot. The main panel displays the details for the selected item:

Hydro Address ID		Address Date
0/40		4/29/2020 8:48:14 am
FeatureType	On Network	Source ID *
57003	No	09CB002
5/60		7/130
Source Agency	Source Dataset	Source Feature URL
WATER SURVEY OF CANAD.	HYDAT Database, format : n	https://wateroffice.ec.gc.ca
37/130	70/130	64/255
Catchment	HU	Reach Code
	0/16	19070402020109
Measure	Reach SM Date	
72.77861	10/22/2018 4:31:09 am	14/14
Original Reach Code	Original Measure	Original RC Match
0/14		
Snap Tolerance	Snap Distance	In Snap Tolerance
0	0	No
QC Tolerance	In QC Tolerance	QC Approved
0	No	Yes

On the right is a map showing a blue river network with a red dot indicating the location of the selected item.

- When the user is done editing their data with HydroAdd, they can retrieve their data from AGOL.

The screenshot displays the ArcGIS Online interface for a user named Michael Tinker (mdtinker_USGS). The browser address bar shows the URL: usgs.maps.arcgis.com/home/item.html?id=26e54e6a513345bf954141add79b648f. The main content area shows the item details for 'HydroAddQC2', which is a Feature Layer (hosted) by mdtinker_USGS. The item was created on Mar 22, 2020, updated on Mar 23, 2020, and has a view count of 30. The 'Layers' section lists two layers: 'HydroAddressPointswithQC2500RandomV10' and 'HydroAddressPoints5000RandomV9'. Both layers have an 'Export To' dropdown menu highlighted with a red box. On the right-hand side, a vertical menu contains several options, with 'Export Data' also highlighted with a red box. Other options in the menu include 'Open in Map Viewer', 'Open in Scene Viewer', 'Open in ArcGIS Desktop', 'Publish', 'Create View Layer', 'Update Data', 'Share', and 'Metadata'. The 'Item Information' section shows a progress bar and a 'Top Improvement' suggestion to 'Add a longer summary'. The 'Details' section provides metadata: Source: Feature Service, Created from: HydroAddQC2, Service Definition Data Last Updated: Apr 3, 2020, 12:37:11 PM, Size: 2 MB, and a five-star rating.

Administrator Functions

USGS Administrators of HydroAdd can view all user profiles in the Admin panel, including username, user email, and their associated service layers.

The screenshot shows the USGS Hydro Address Tool Admin panel. The top navigation bar includes the USGS logo and the title 'Hydro Address Tool'. Below the navigation bar, there are four summary cards: '10 Total Users', '35 Feature Additions', '615 Feature Edits', and '11 Feature Deletions'. The main content area is divided into two sections. The top section is a table of feature modifications, and the bottom section is a table of user profiles.

Feature Modification	Date	Source ID	User	Service Uri
Edit	03-03-2020	13270800	Alex	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAdd_data/FeatureServer/0
Edit	03-03-2020	13270800	Alex	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAdd_data/FeatureServer/0
Edit	03-03-2020	13270800	Alex	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAdd_data/FeatureServer/0
Edit	03-03-2020	13289500	Alex	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAdd_data/FeatureServer/0
Edit	03-03-2020	12334510	mdtinker_gmail	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAddDC/FeatureServer/0
Edit	03-03-2020	12340000	mdtinker_gmail	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAddDC/FeatureServer/0
Edit	03-04-2020	12334000	mdtinker	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAddDC/FeatureServer/0
Edit	03-04-2020	1000562	mdtinker	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAddDC/FeatureServer/3
Edit	03-04-2020	1000562	mdtinker	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAddDC/FeatureServer/3
Edit	03-05-2020	4700992	mdtinker	https://services.arcgis.com/v01ggwM50qNysAAI/arcgis/rest/services/HydroAddDC/FeatureServer/3

User Display Name	Contact Email	Created At	Last Login Time
mdtinker_gmail	mdtinker@gmail.com	03-03-2020	04-30-2020
michaeltinker	michaeltinker@outlook.com	03-24-2020	03-26-2020
mdtinker	mdtinker@usgs.gov	03-04-2020	04-30-2020
joe-gov	jpantoga@usgs.gov	03-03-2020	04-23-2020

Administrators can also search for users by username.

The screenshot shows the USGS Hydro Address Tool Admin panel with the 'USERS' tab selected. A search bar is visible with the text 'Search users'. Below the search bar, a table lists the user profiles.

Display name	Created
mdtinker_gmail	Tue, Mar 3, 2020 1:40 PM
michaeltinker	Tue, Mar 24, 2020 3:18 PM
mdtinker	Wed, Mar 4, 2020 8:23 AM
joe-gov	Tue, Mar 3, 2020 8:25 AM