OWP | OFFICE OF WATER PREDICTION

National Weather Service Flood Inundation Mapping

Application Programming Interface Access Instructions

The National Weather Service (NWS) provides access to its Flood Inundation Mapping (FIM) services through a public Application Programming Interface (API). This API allows users to interact directly with the data behind FIM products— separate from the standard visual displays available through platforms like the National Water Prediction Service or the NWS National GIS Map Viewer.

These FIM services are hosted within the **Hydrologic Visualization and Information Services (HydroVIS)** platform, which is part of the NWS Enterprise Geographic Information System (EGIS). HydroVIS is built on Esri's ArcGIS Enterprise software, enabling access to mapping layers and features through familiar RESTful and OGC-standard interfaces.

By using the API, users can:

- Integrate FIM services into their own web or GIS applications
- Query and extract specific data for custom analysis or visualization
- Work with both Esri-native and Open Geospatial Consortium (OGC) standards such as Web Map Services (WMS) and Web Feature Services (WFS)

NAVIGATING THE API DIRECTORY

https:maps.water.noaa.gov/server/rest/services

When you access the API link, you'll see a list of top level folders that organize the available services. For Flood Inundation Mapping (FIM) data, focus on the following two folders:

- nwm — Contains FIM services derived from the National Water Model (NWM)
- rfc — Contains FIM services derived from River Forecast Center (RFC) forecasts

Once inside either folder, you'll find a list of individual FIM services that can be viewed, queried, or integrated into your GIS or web application.

Figure 1: *Folder structure for NWC Visualization Services and NWS FIM Services*

For more information on NWS geospatial services, visit: weather.gov/owp/operations

ACCESS METHODS

FIM services can be accessed using both **Esri-native** APIs and **Open Geospatial Consortium** (OGC) standard interfaces, depending on your application needs. These standards allow integration with a broader range of GIS tools beyond the Esri ecosystem.

Esri APIs

You can interact with the services using Esri's ArcGIS REST API to:

- Display FIM layers in a web map or application
- Query specific features or attributes
- Extract data for analysis or export

OGC Standard Interfaces

Each mapping service also supports OGC-compliant access through:

- Web Map Service (WMS) – for rendering maps
- Web Feature Service (WFS) – for retrieving feature data

To use these, navigate to an individual service endpoint. Then, in the upper-left corner of the page, you'll find links to the WMS and WFS interfaces as shown in Figure 2.

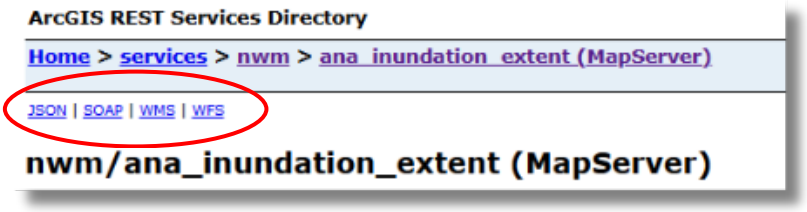

Figure 2: *Links to WMS and WFS*

Below are direct links to the NWS FIM mapping and feature service APIs that can be used to integrate FIM data into your own tools or applications.

- Mapping Service APIs – For rendering FIM layers in maps
- Feature Service APIs – For querying and retrieving specific feature data

Folder	Description	End Point	
	CONUS 5-Day Forecast	FeatureServer	MapServer
nwm	CONUS Analysis and Assimilation	FeatureServer	MapServer
	Puerto Rico & US Virgin Islands 48-hr Forecast	FeatureServer	MapServer
	Puerto Rico & US Virgin Islands Analysis & Assimilation	FeatureServer	MapServer
	Hawaii 48-hour Forecast	FeatureServer	MapServer
	Hawaii Analysis and Assimilation	FeatureServer	MapServer
	Alaska 5-Day Forecast	FeatureServer	MapServer
	Alaska Analysis and Assimilation	FeatureServer	MapServer
rfc	RFC 5-Day Forecast	FeatureServer	MapServer

For more information on mapping service queries and feature service queries please visit Esri's development documentation.