

# Using Web Services

## Web Services Overview

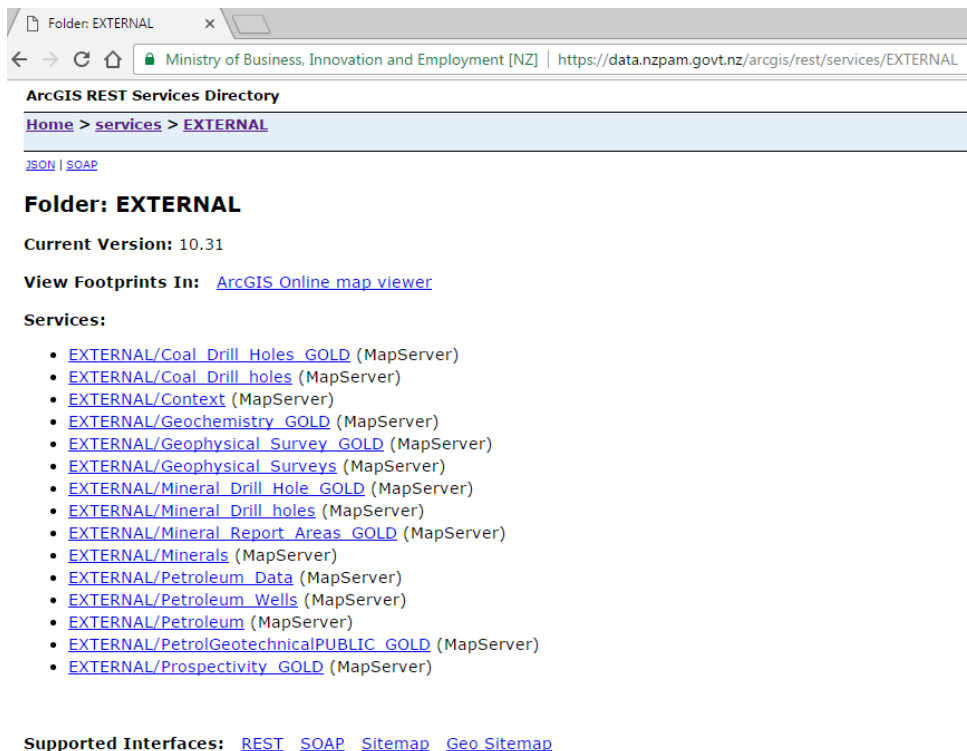
This user guide contains instructions on how to consume a range of services through a range of both web based and desktop GIS applications.

Web services are a live data stream and therefore require a fast and reliable internet connection. NZP&M publishes data as a web service using the [Open Geospatial Consortium](#) (OGC) Web Map Service (WMS) and Web Feature Service (WFS) standards, as well as [ESRI Feature Services](#).

OGC WMS/WFS are an open source standard of web service that can be used in a range of GIS applications. ESRI Feature Services are specific to the ArcGIS suite of applications.

The NZP&M web services directory URL is;

<https://data.nzpam.govt.nz/arcgis/rest/services/EXTERNAL>. Here you will find a range of permit and technical data for the petroleum and minerals.



The screenshot shows a web browser window displaying the ArcGIS REST Services Directory for the EXTERNAL folder. The browser address bar shows the URL: <https://data.nzpam.govt.nz/arcgis/rest/services/EXTERNAL>. The page title is "ArcGIS REST Services Directory" and the breadcrumb navigation is "Home > services > EXTERNAL". Below the breadcrumb, there are links for "JSON" and "SOAP". The main heading is "Folder: EXTERNAL" followed by "Current Version: 10.31" and "View Footprints In: [ArcGIS Online map viewer](#)". Under the "Services:" section, there is a list of 16 services, each with a link and "(MapServer)" in parentheses. At the bottom, the "Supported Interfaces:" section lists "REST", "SOAP", "Sitemap", and "Geo Sitemap".

**ArcGIS REST Services Directory**

[Home](#) > [services](#) > [EXTERNAL](#)

[JSON](#) | [SOAP](#)

**Folder: EXTERNAL**

**Current Version:** 10.31

**View Footprints In:** [ArcGIS Online map viewer](#)

**Services:**

- [EXTERNAL/Coal\\_Drill\\_Holes\\_GOLD](#) (MapServer)
- [EXTERNAL/Coal\\_Drill\\_holes](#) (MapServer)
- [EXTERNAL/Context](#) (MapServer)
- [EXTERNAL/Geochemistry\\_GOLD](#) (MapServer)
- [EXTERNAL/Geophysical\\_Survey\\_GOLD](#) (MapServer)
- [EXTERNAL/Geophysical\\_Surveys](#) (MapServer)
- [EXTERNAL/Mineral\\_Drill\\_Hole\\_GOLD](#) (MapServer)
- [EXTERNAL/Mineral\\_Drill\\_holes](#) (MapServer)
- [EXTERNAL/Mineral\\_Report\\_Areas\\_GOLD](#) (MapServer)
- [EXTERNAL/Minerals](#) (MapServer)
- [EXTERNAL/Petroleum\\_Data](#) (MapServer)
- [EXTERNAL/Petroleum\\_Wells](#) (MapServer)
- [EXTERNAL/Petroleum](#) (MapServer)
- [EXTERNAL/PetrolGeotechnicalPUBLIC\\_GOLD](#) (MapServer)
- [EXTERNAL/Prospectivity\\_GOLD](#) (MapServer)

**Supported Interfaces:** [REST](#) [SOAP](#) [Sitemap](#) [Geo Sitemap](#)

The method for accessing the data layers within a service differs slightly depending on the application you are using and the type of service you are trying to consume.

## Accessing OGC Services

To access OGC WMS and WFS open the service in the directory that you want to consume, and click on either 'WMS' or 'WFS'.



EXTERNAL/Mineral\_Drill\_holes (MapServer)

View In: [ArcGIS JavaScript](#) [ArcGIS Online map viewer](#) [Google Earth](#) [ArcMap](#) [ArcGIS Explorer](#)

View Footprint In: [ArcGIS Online map viewer](#)

Both will take you to a page showing xml query definition code. Copy the URL from this page into the application that you would like to consume the WMS or WFS in.



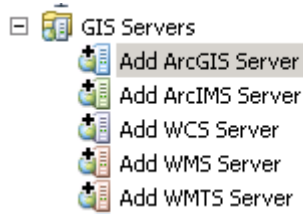
This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<?xml version="1.0" encoding="UTF-8" ?>
<WFS_Capabilities xmlns="http://www.opengis.net/wfs/2.0" xmlns:fes="http://www.opengis.net/fes/2.0" xmlns:ogc="http://www.opengis.net/ogc"
xmlns:gml="http://www.opengis.net/gml/3.2" xmlns:ows="http://www.opengis.net/ows/1.1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:EXTERNAL_Mineral_Drill_holes="https://nzpam-arcgis.wd.govt.nz:6443/arcgis/rest/services/EXTERNAL/Mineral_Drill_holes/MapServer/WFSServer" version="2.0.0"
xsi:schemaLocation="http://www.opengis.net/gml http://schemas.opengis.net/gml/3.2.1/gml.xsd http://www.opengis.net/ogc
http://schemas.opengis.net/filter/2.0/filter.xsd http://www.opengis.net/ows/1.1 http://schemas.opengis.net/ows/1.1.0/owsAll.xsd
http://www.opengis.net/wfs/2.0 http://schemas.opengis.net/wfs/2.0/wfs.xsd http://www.opengis.net/fes/2.0
http://schemas.opengis.net/filter/2.0/filterAll.xsd">
  <ows:ServiceIdentification>
    <ows:Title>EXTERNAL_Mineral_Drill_holes</ows:Title>
    <ows:Abstract/>
    <ows:Keywords>
      <ows:Keyword/>
    </ows:Keywords>
    <ows:ServiceType>WFS</ows:ServiceType>
    <ows:ServiceTypeVersion>2.0.0</ows:ServiceTypeVersion>
    <ows:Fees/>
    <ows:AccessConstraints/>
  </ows:ServiceIdentification>
  <ows:ServiceProvider>
    <ows:ProviderName/>
  </ows:ServiceProvider>
</WFS_Capabilities>
```

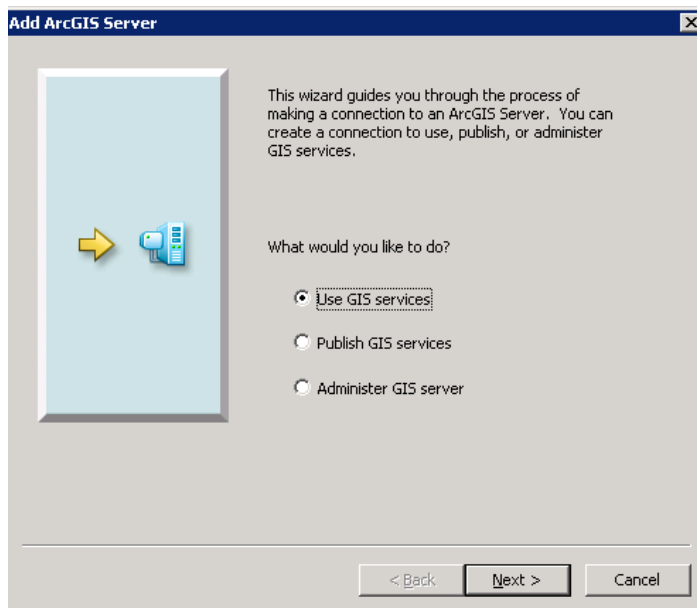
## ArcGIS Desktop

This guide uses ArcGIS Desktop version 10.1.

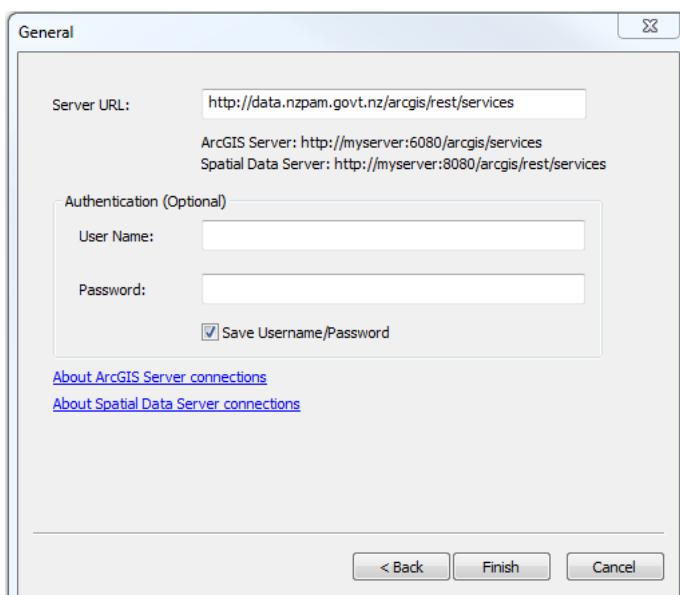
Open the 'Catalog' window in ArcMap and select 'Add ArcGIS Server'.



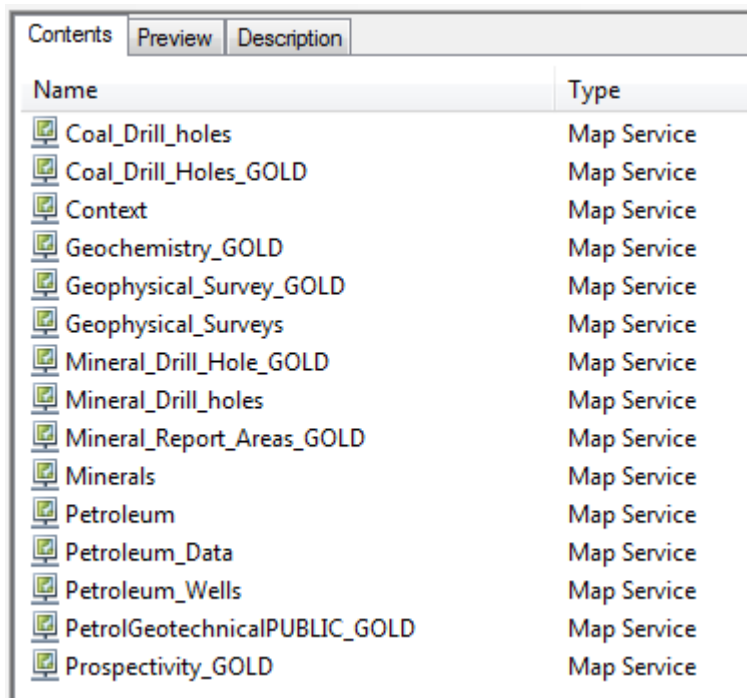
On next screen select 'Use GIS Services'


















Enter the following 'Server URL' - <http://data.nzpam.govt.nz/arcgis/rest/services/EXTERNAL>, and press 'Finish'.



Once connected you should see the list of all the data services that are available



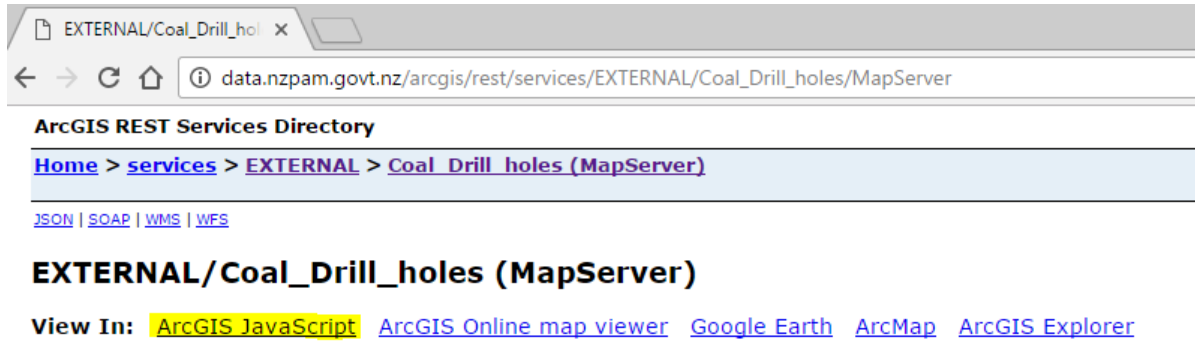
Name	Type
 Coal_Drill_holes	Map Service
 Coal_Drill_Holes_GOLD	Map Service
 Context	Map Service
 Geochemistry_GOLD	Map Service
 Geophysical_Survey_GOLD	Map Service
 Geophysical_Surveys	Map Service
 Mineral_Drill_Hole_GOLD	Map Service
 Mineral_Drill_holes	Map Service
 Mineral_Report_Areas_GOLD	Map Service
 Minerals	Map Service
 Petroleum	Map Service
 Petroleum_Data	Map Service
 Petroleum_Wells	Map Service
 PetrolGeotechnicalPUBLIC_GOLD	Map Service
 Prospectivity_GOLD	Map Service

There are two types of services available for each dataset;

- **Map Service** – This service provides the data as a base map and allows you to view the data with symbology and query the data with the ‘i’ tool.
- **Feature Service** – This service provides the data as features and like the Map Service allows you to view the data with symbology and query the data with the ‘i’ tool. Additionally it provides access to the Attribute Table and the layer Properties. Feature Services acknowledge the feature geometry. This means that when editing your own data you can clip against and snap to this data, this data can also be selected and exported to create a local copy of this data.

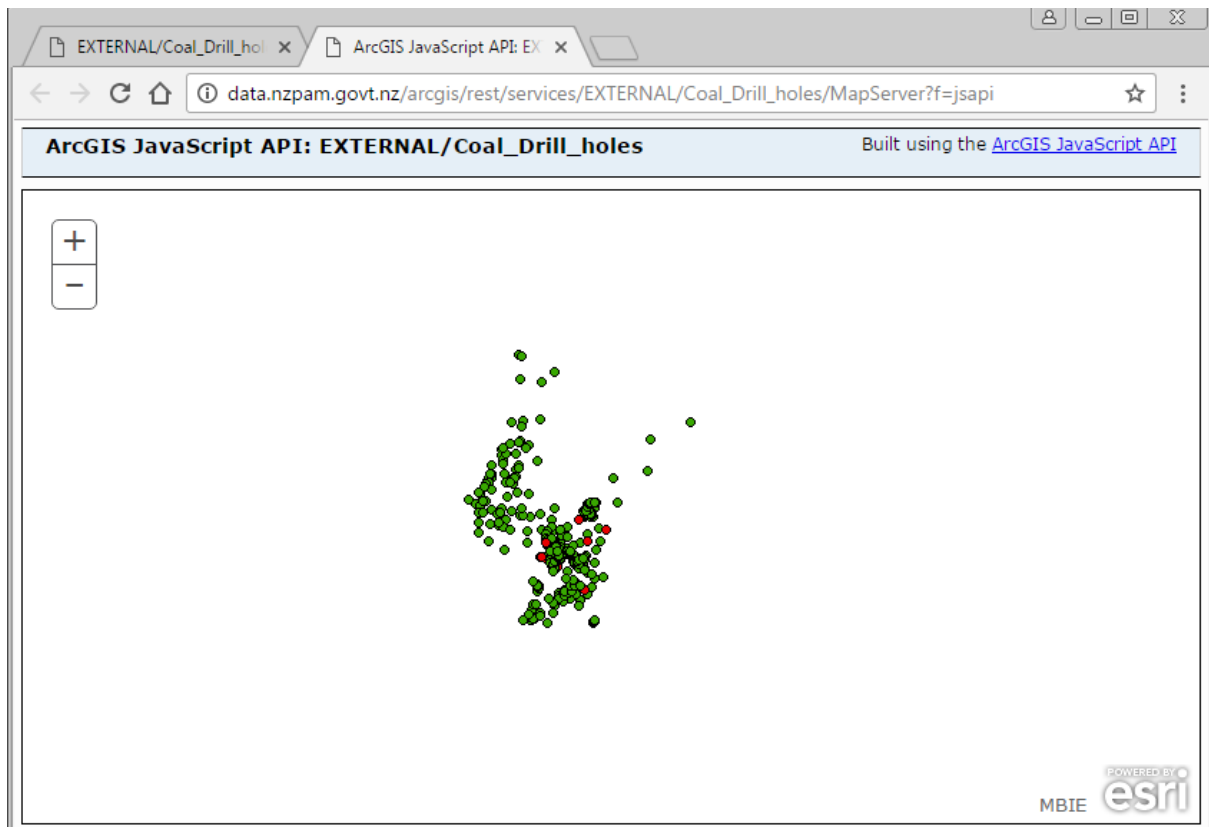
## ArcGIS JavaScript Viewer

This viewer can be accessed through the link highlighted below.



The screenshot shows a web browser window with the URL `data.nzpam.govt.nz/arcgis/rest/services/EXTERNAL/Coal_Drill_holes/MapServer`. The page title is "ArcGIS REST Services Directory". The breadcrumb navigation is "Home > services > EXTERNAL > Coal\_Drill\_holes (MapServer)". Below the breadcrumb, there are links for "JSON", "SOAP", "WMS", and "WFS". The main heading is "EXTERNAL/Coal\_Drill\_holes (MapServer)". Underneath, the "View In:" section lists several options: "ArcGIS JavaScript" (highlighted in yellow), "ArcGIS Online map viewer", "Google Earth", "ArcMap", and "ArcGIS Explorer".

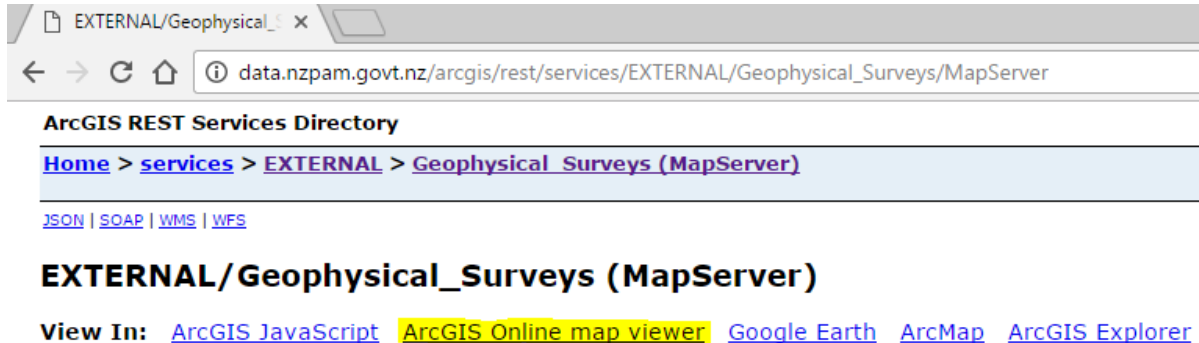
The ArcGIS JavaScript viewer opens in a new browser instance and allows you the standard JavaScript navigation through the roller wheel of your mouse for zoom in and out and clicks hold and drag for pan.



The screenshot shows a web browser window with the URL `data.nzpam.govt.nz/arcgis/rest/services/EXTERNAL/Coal_Drill_holes/MapServer?f=jsapi`. The page title is "ArcGIS JavaScript API: EXTERNAL/Coal\_Drill\_holes" and it includes the text "Built using the ArcGIS JavaScript API". The main content area is a map showing a cluster of green dots representing coal drill holes, with a few red dots interspersed. On the left side of the map, there are zoom in (+) and zoom out (-) buttons. In the bottom right corner, there is a logo for "POWERED BY esri" and the text "MBIE".

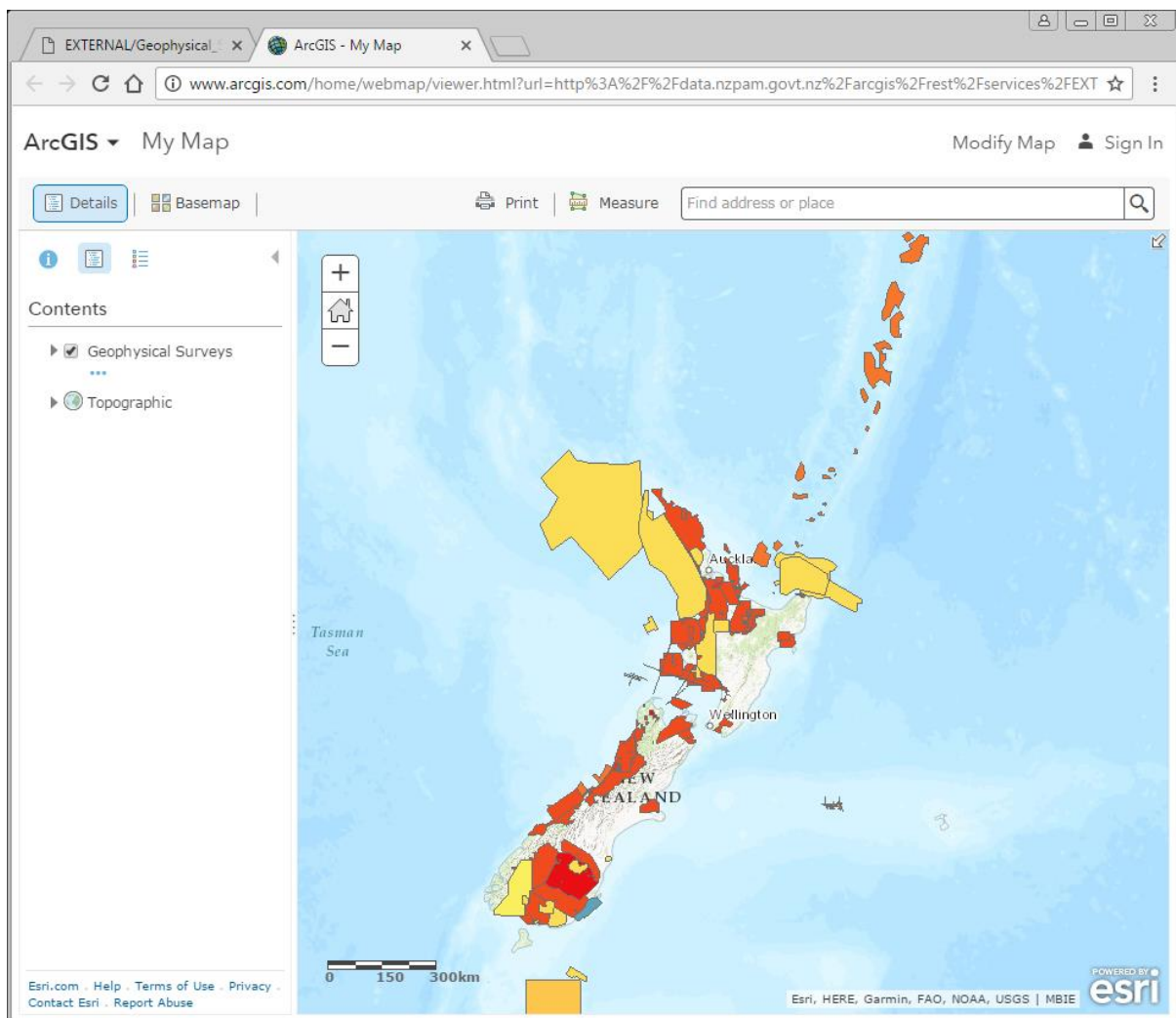
## ArcGIS Online

ArcGIS Online is a free to use web based mapping service provided by ESRI. Clicking on the ArcGIS.com Map link, highlighted below, opens the chosen service in an ArcGIS online map template.



The screenshot shows a web browser window with the URL `data.nzpam.govt.nz/arcgis/rest/services/EXTERNAL/Geophysical_Surveys/MapServer`. The page title is "ArcGIS REST Services Directory". The breadcrumb navigation is "Home > services > EXTERNAL > Geophysical Surveys (MapServer)". Below the breadcrumb, there are links for "JSON", "SOAP", "WMS", and "WFS". The main heading is "EXTERNAL/Geophysical\_Surveys (MapServer)". Underneath, there is a "View In:" section with links for "ArcGIS JavaScript", "ArcGIS Online map viewer" (highlighted in yellow), "Google Earth", "ArcMap", and "ArcGIS Explorer".

There is a range of data viewing and querying functionalities available through ArcGIS Online, including the ability to view the tabular data and filter the data based on attributes. If you click 'Modify Map' then the option to add additional data to the map is made available. You can add other web services, your own zipped up shapefiles or annotate directly onto the map.



The screenshot shows the ArcGIS Online map viewer interface. The browser address bar displays the URL `www.arcgis.com/home/webmap/viewer.html?url=http%3A%2F%2Fdata.nzpam.govt.nz%2Farcgis%2Frest%2Fservices%2FEXT`. The page title is "ArcGIS - My Map". The interface includes a "Details" tab, a "Basemap" button, and a search bar with the placeholder text "Find address or place". The "Contents" panel on the left shows a list of layers: "Geophysical Surveys" (checked) and "Topographic". The main map area displays a map of New Zealand with geophysical survey data overlaid in red and yellow. The map includes a scale bar (0, 150, 300km) and the Esri logo. The footer contains the text "Esri.com - Help - Terms of Use - Privacy - Contact Esri - Report Abuse" and "Esri, HERE, Garmin, FAO, NOAA, USGS | MBIE".

# Google Earth

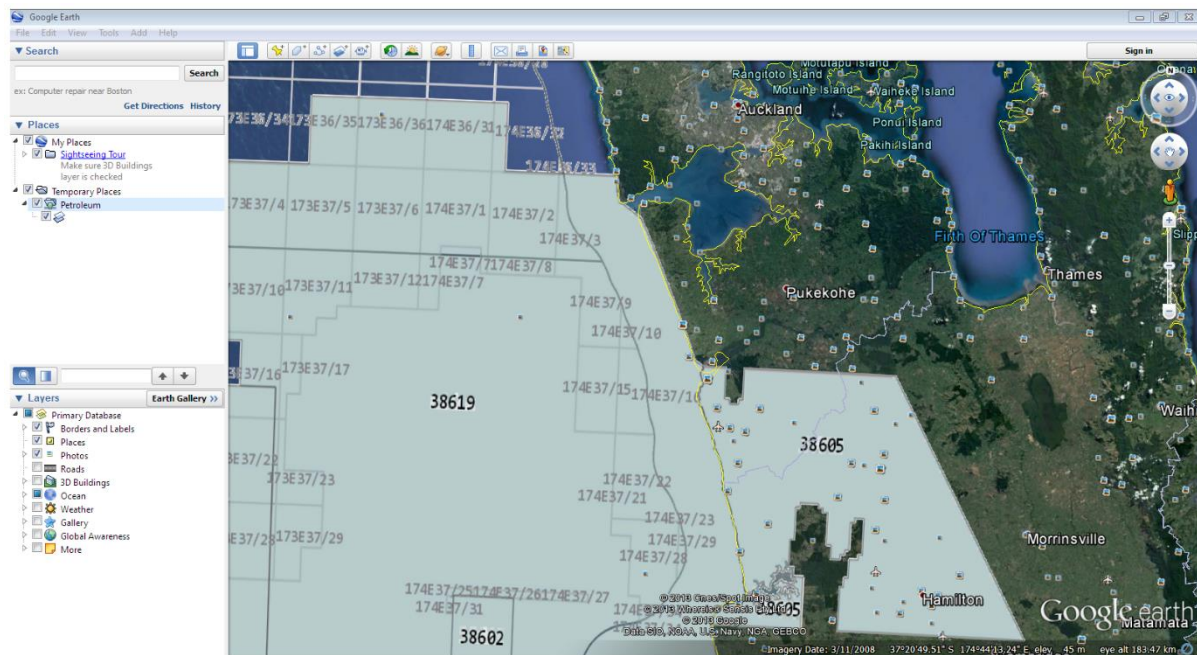
If you have Google Earth installed on your machine, click Google Earth, it will download a .kmz.

EXTERNAL/Geophysical\_Surveys (MapServer)

View In: [ArcGIS JavaScript](#) [ArcGIS Online map viewer](#) [Google Earth](#) [ArcMap](#) [ArcGIS Explorer](#)

View Footprint In: [ArcGIS Online map viewer](#)

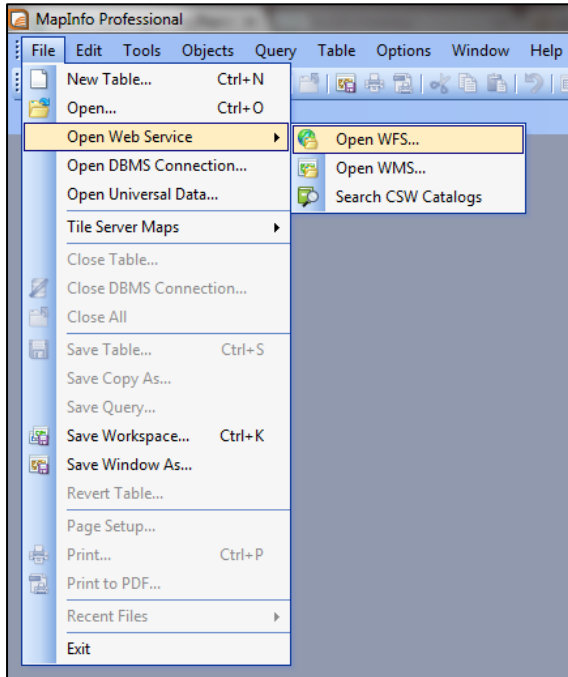
The .kmz opens the Google Earth application and allows you the standard Google Earth navigation through the roller wheel of your mouse for zoom in and out, clicks hold and drag for pan and clicks hold on the mouse wheel for perspective change.



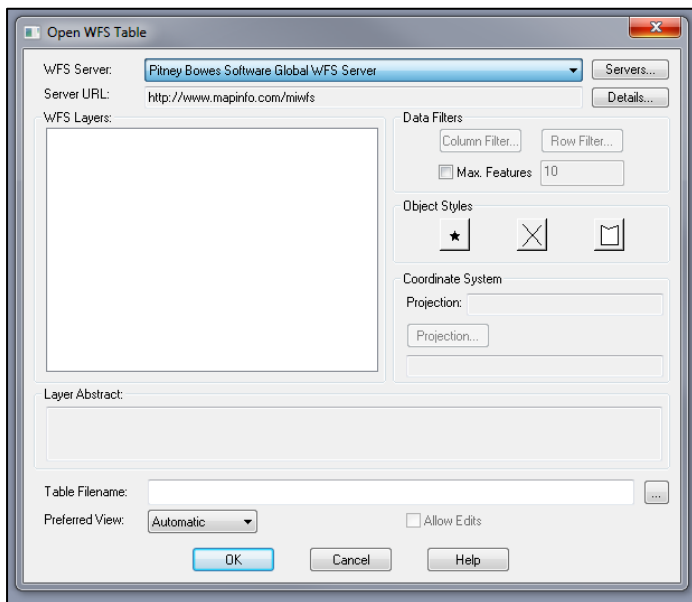
# MapInfo

This guide uses MapInfo Professional version 12.0.

Navigate to 'File' > 'Open Web Service' > 'Open WFS...'

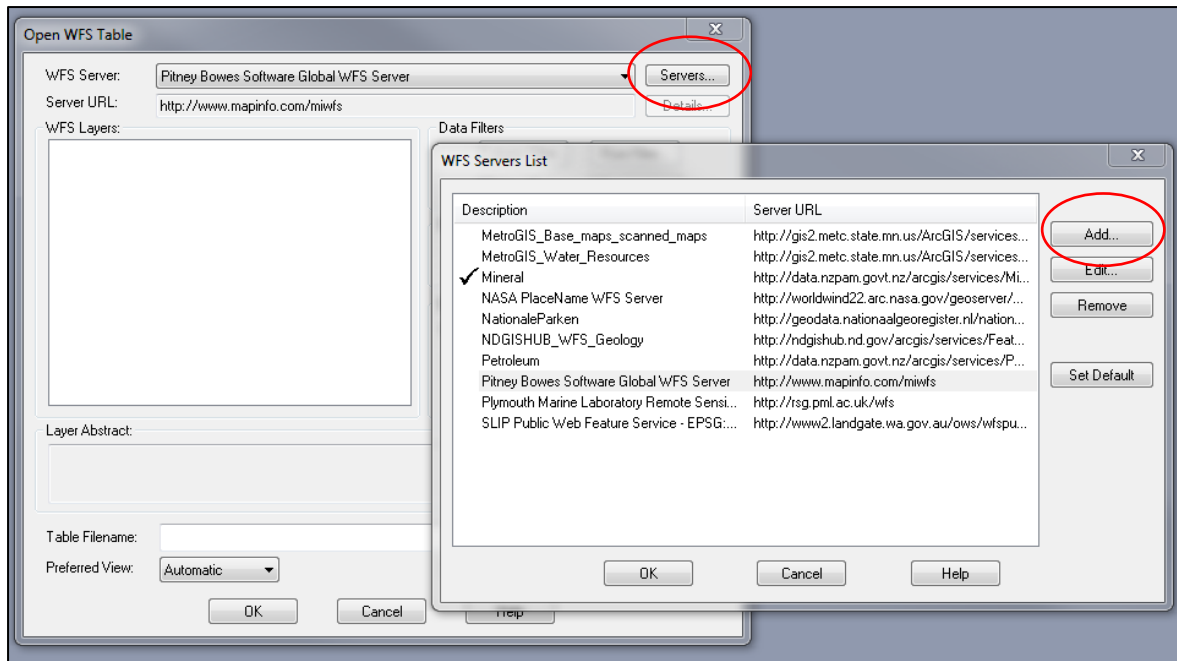


Add a new WFS service connection by clicking on 'Servers....'

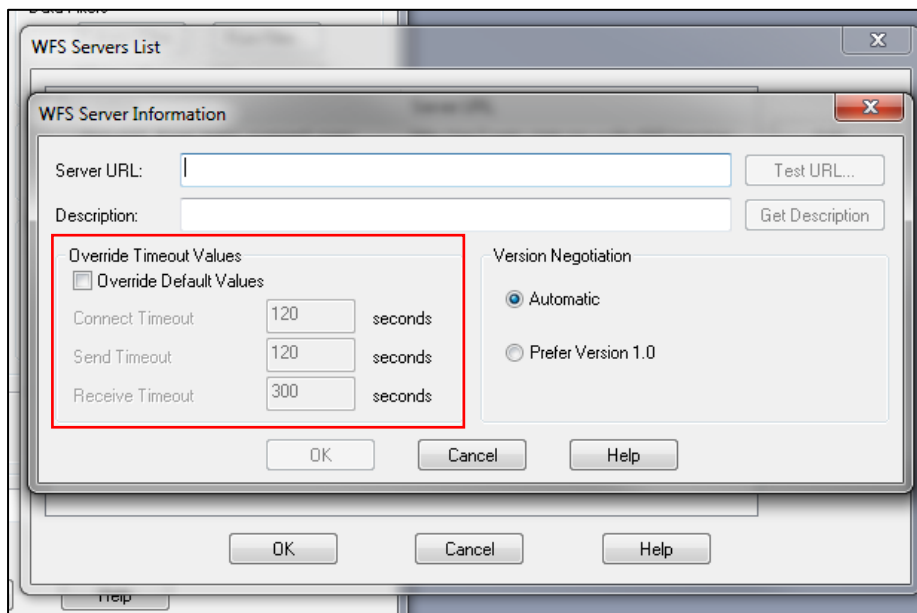


Click 'Add...'

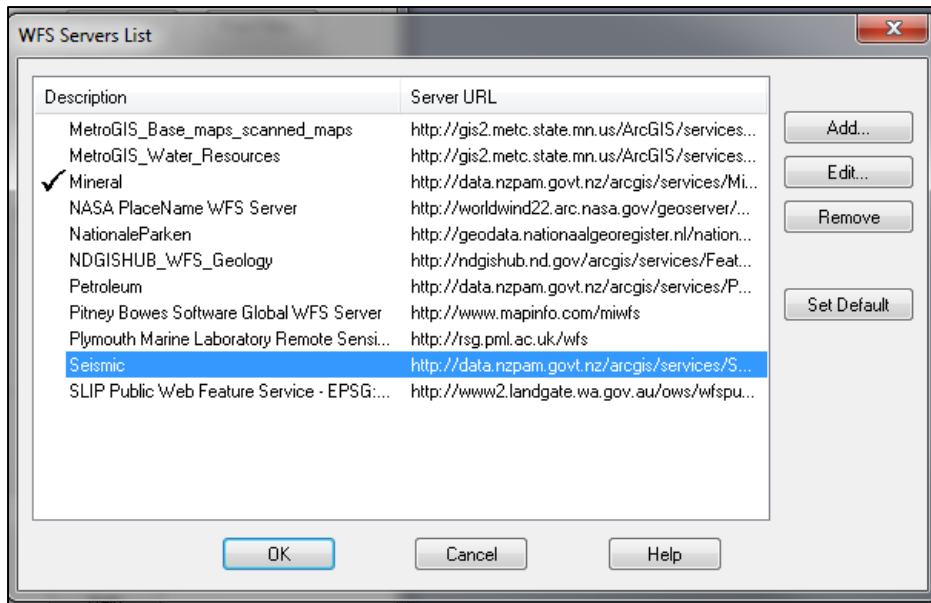




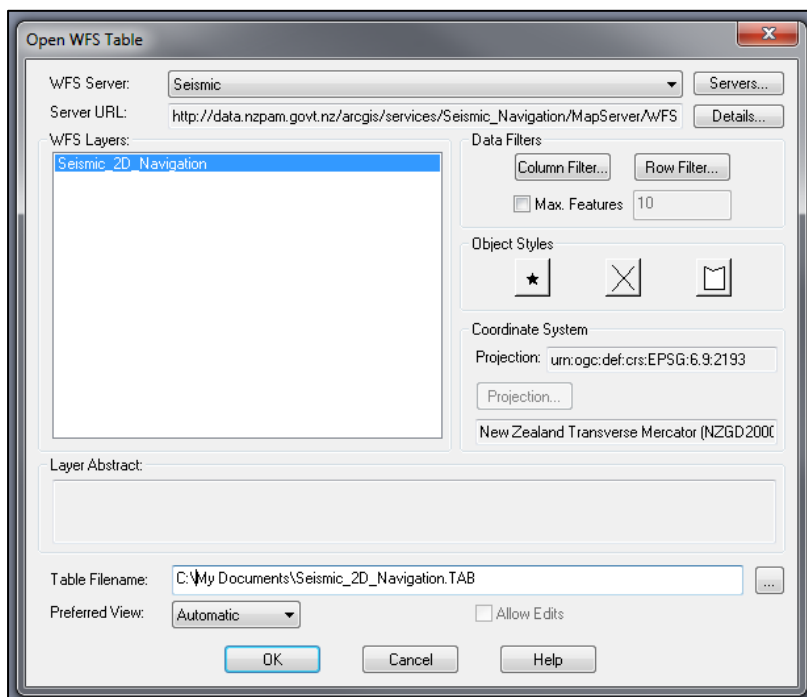
Enter the URL of the WFS service (see 'Accessing OGC Services' on page 2 above) and a meaningful description of the dataset. It is suggested that you select to 'Override Default Values' and change them all to 300.



The service should now appear in the WFS Servers List, select it and press 'OK'



The service should be listed under 'WFS Layers'. This method of accessing a WFS takes a copy of the data and stores it locally. Choose the name, and the location you want the data table to be stored under 'Table Filename'. Select the layer and press 'OK'



To update the data stored at the above location, right-click the layer in the 'Table List' and press 'Refresh'. This recalls the data from the WFS and replaces what you have stored locally with the updated data.