

# Showcase Overview

## Web Service Showcase Project for QGIS

April 2024

Edition 1

---

Title:

Showcase Overview

Published by:

Board of Surveying and Spatial Information

346 Panorama Avenue

Bathurst NSW 2795

T: (02) 6332 8238

[www.bossi.nsw.gov.au](http://www.bossi.nsw.gov.au)

## Document Summary

### Document control

Document Details	
Status	For approval
Edition	1
Date	15 February 2024
Author	Spatial Information Committee of BOSSI
Owner	Board of Surveying and Spatial Information

### Change history and approval

Edition	Date	Authorised by	Change details

## Contents

1. Purpose.....	5
2. Disclaimer.....	5
3. About Open Data .....	5
4. Exemplar Open Data Workflow.....	5
5. Viewing Open Data in QGIS.....	<b>Error! Bookmark not defined.</b>
6. Loading Shared Files in QGIS.....	<b>Error! Bookmark not defined.</b>
7. Loading an XML File of Web Services.....	10
8. Appendix - About Open Data.....	<b>Error! Bookmark not defined.</b>

## 1. Purpose

- Initiative led by the BOSSI Spatial Information Committee.
- Focused on users with a survey background.
- Showcase the possibilities of Web Map Services (WMS) available in New South Wales (NSW) to the public.
- Gain insights into the potential applications and capabilities of these Web Map Services.
- Usage demonstrated with **QGIS** software, but other GIS platforms can be used.

## 2. Understanding Web Services

- A web service allows users to access data provided from a central server.
- Users always have access to the latest data.
- To use a web service, you need to:
  - Have tools capable of consuming the service
  - Configure the tool to access the required services.
- A Web Map Service (WMS) is a type of Web Service that provides access to geospatial map images.
  - Standard protocol published by OGC (Open Geospatial Consortium).
- WMS is a very basic type of Web Service and users should explore other possibilities:
  - Web Feature Service
  - REST API services.

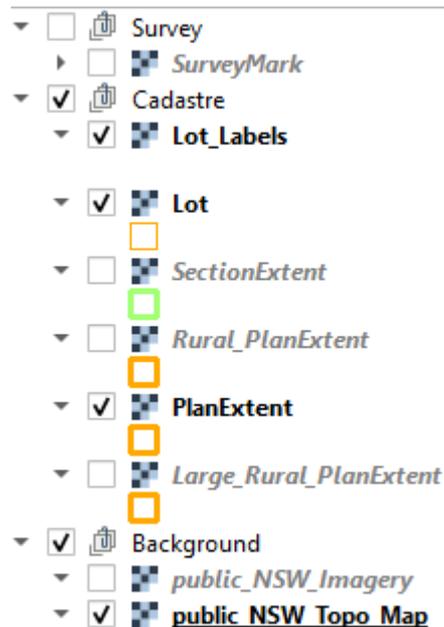
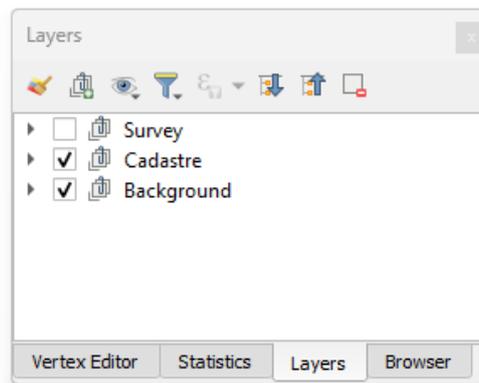
## 3. Steps to use this showcase

1. Download QGIS.
2. Recommendation: download and install the latest Long-Term Release (LTR) version of QGIS, as it offers stable performance. <https://www.qgis.org/en/site/forusers/download.html>



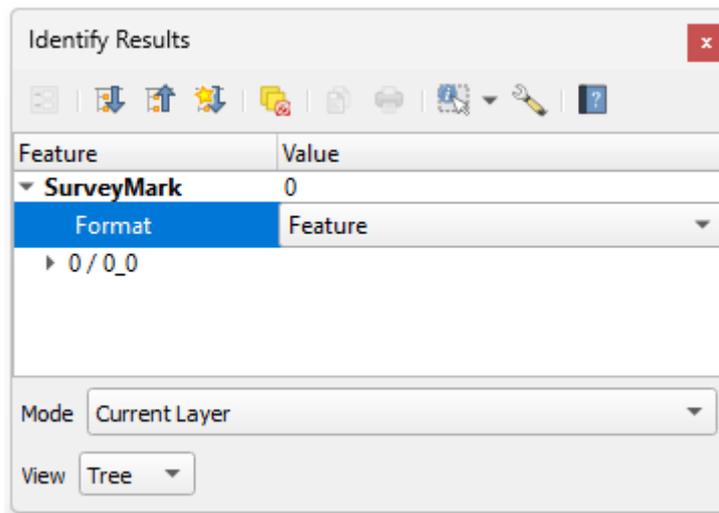
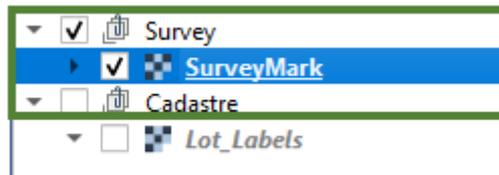
3. Next, download the project file from this link.

4. Unzip the file, you will have the following files:
  - a. NSWWMS.qgz (this is the QGIS showcase file).
  - b. NSW\_WMS.xml (this is a comprehensive WMS connections file).
5. Open QGIS
  - a. Import the project file (NSWWMS.qgz) into QGIS by dragging and dropping it on the map canvas. You can also use [Project] > [Open] from the menus.
6. In the left-hand pane of the QGIS interface, locate and select the 'Layers' tab to access the layer management functionality.
7. Note: this project is organised into groups.
8. You can explore the group contents by navigating through the contents tree.
9. Explore the available layers by selectively enabling or disabling them. This will allow you to visualise and interact with different datasets.
10. Utilise the zoom and pan functions to navigate and explore the data.

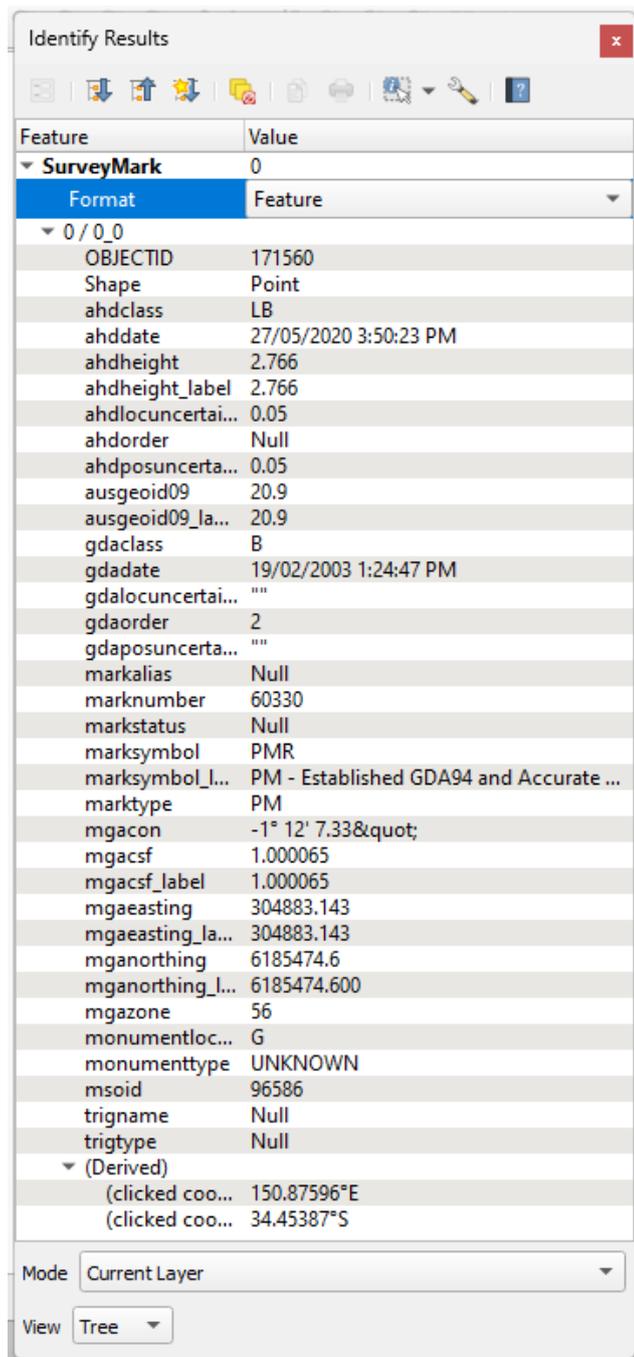


11. You can also query certain WMS layers to obtain attribute information.
12. Turn off all layers except the 'SurveyMark' layer.

13. Highlight the 'SurveyMark' layer by selecting it.
14. Locate and select the 'Identify Features' tool.
15. Click on any of the survey marks on the map. This will display the 'Identify Results' window.
16. Ensure the format is set to 'Feature'.
17. Expand the details section to review the attributes.



## 4. Survey Mark Attributes



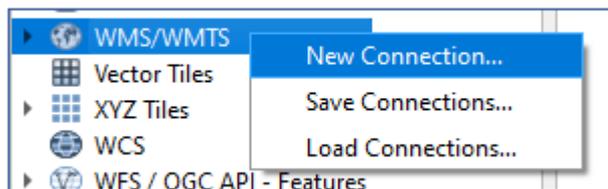
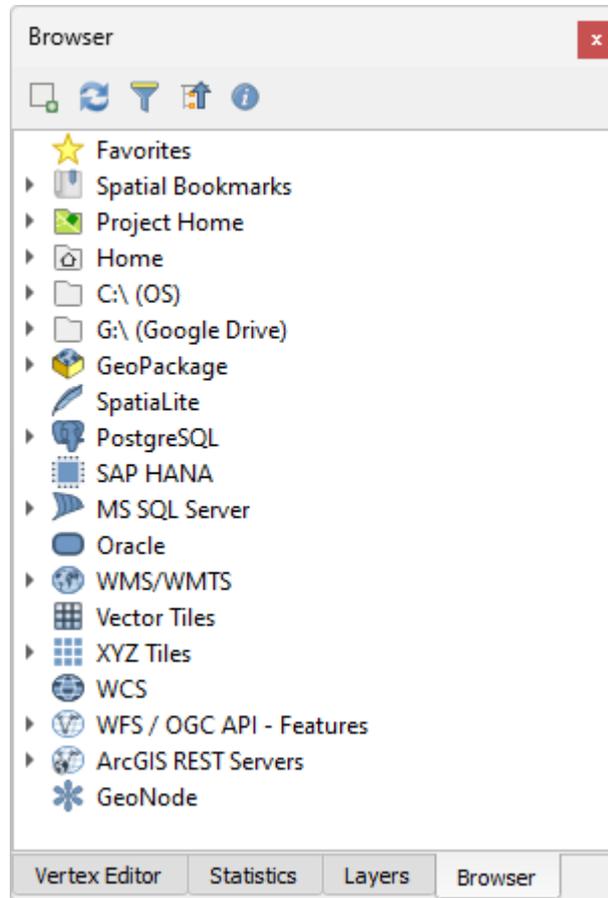
The screenshot shows the 'Identify Results' window in QGIS. The window title is 'Identify Results' and it has a close button (X) in the top right corner. Below the title bar is a toolbar with various icons. The main area is a table with two columns: 'Feature' and 'Value'. The table is expanded to show a 'SurveyMark' feature. The 'Format' column is set to 'Feature'. The table lists various attributes and their values, including OBJECTID, Shape, ahdclass, ahddate, ahdheight, ahdheight\_label, ahdlocuncertai..., ahdorder, ahdposuncerta..., ausgeoid09, ausgeoid09\_la..., gdaclass, gdate, gdalocuncertai..., gdaorder, gdaposuncerta..., markalias, marknumber, markstatus, marksymbol, marksymbol\_la..., marktype, mgacon, mgacsf, mgacsf\_label, mgaeasting, mgaeasting\_la..., mganorthing, mganorthing\_la..., mgazone, monumentloc..., monumenttype, msoid, trigname, and trigtype. There is also a '(Derived)' section with two rows showing coordinates: (clicked coo... 150.87596°E and (clicked coo... 34.45387°S). At the bottom of the window, there are two dropdown menus: 'Mode' set to 'Current Layer' and 'View' set to 'Tree'.

Feature	Value
SurveyMark	0
Format	Feature
0 / 0_0	
OBJECTID	171560
Shape	Point
ahdclass	LB
ahddate	27/05/2020 3:50:23 PM
ahdheight	2.766
ahdheight_label	2.766
ahdlocuncertai...	0.05
ahdorder	Null
ahdposuncerta...	0.05
ausgeoid09	20.9
ausgeoid09_la...	20.9
gdaclass	B
gdate	19/02/2003 1:24:47 PM
gdalocuncertai...	""
gdaorder	2
gdaposuncerta...	""
markalias	Null
marknumber	60330
markstatus	Null
marksymbol	PMR
marksymbol_la...	PM - Established GDA94 and Accurate ...
marktype	PM
mgacon	-1° 12' 7.33&quot;
mgacsf	1.000065
mgacsf_label	1.000065
mgaeasting	304883.143
mgaeasting_la...	304883.143
mganorthing	6185474.6
mganorthing_la...	6185474.600
mgazone	56
monumentloc...	G
monumenttype	UNKNOWN
msoid	96586
trigname	Null
trigtype	Null
(Derived)	
(clicked coo...	150.87596°E
(clicked coo...	34.45387°S

## 1. Add New Web Services

1. In the left-hand pane of the QGIS interface, locate and select the 'Browse' tab to look for other data sources.
2. Right-click on the WMS/WMTS item.
3. Select 'New Connection'.
4. In the 'Name' field enter the text (any name will do), for example: NSW Hydrography.

- In the URL fields enter this text:  
[http://maps.six.nsw.gov.au/arcgis/services/public/NSW\\_Hydrography/MapServer/WMSServer](http://maps.six.nsw.gov.au/arcgis/services/public/NSW_Hydrography/MapServer/WMSServer)
- Now right-click on your new connection and select 'Connect'.



- Expand the object tree under the new service to find HydroArea\_Main
- Double-click this to add it to your project.
- Review the data, then add a few others and explore these as well.



An additional file has been provided - NSW\_WMS.xml. This file contains a comprehensive list of available web services.

- To load the file, right-click the WMS/WMTS tree item and select 'Load Connections'.
- Navigate to the unzipped file and select.
- You will see that a lot of connections will be added to your WMS/WMTS tree.
- Happy exploring!

From June 2023, all listed services were operational. However, it is important to note that service providers may have varying approaches to maintaining or updating these services. Consequently, certain services may be removed or become temporarily unavailable.

It is strongly recommended to test your web services to ensure their functionality. In case you encounter any issues with a specific web service, it is advisable to communicate with the source organisation for assistance and resolution.

## 7. Further information

- All Australian Government agency web services will publish their data services on the **data.gov.au** portal.
- The portal should be the starting point if you have any issues with a dataset, or if you are looking for more data.
- It is truly amazing to have access to vast amounts of data through web services and it is easy to get carried. Note that every time you add a web service, it will have an impact on your computer's resources as well as your data bandwidth.
- Be careful how many web services you have displayed at any time.