# **OPEN DATA USER GUIDE**

National Monuments Service

# Version 2 – 24/01/2024

This is a step by step user guide to using the National Monuments Service (NMS) Open Data

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# NMS Open Data User Guide

# GIS Web Services Guide

You can access the API ArcGIS REST web services by clicking on the links on https://data.gov.ie/

SMR & SMRZones <u>https://data.gov.ie/dataset/national-monuments-service-archaeological-survey-</u> of-ireland

NIAH https://data.gov.ie/dataset/national-inventory-of-architectural-heritage-niah-national-dataset

#### Highlighted in the screenshot below

GIS Web Service APIs (live views):

For users with access to GIS software please note that the Archaeological Survey of Ireland data is also available spatial data web services. By accessing and consuming the web service users are deemed to have accepted the Terms and Conditions. The web services are available at the URL endpoints advertised below:

SMR; https://services-eu1.arcgis.com/HyjXgkV6KGMSF3jt/arcgis/rest/services/SMROpenData/FeatureServer

SMRZone; https://services-eu1.arcgis.com/HyjXgkV6KGMSF3jt/arcgis/rest/services/SMRZoneOpenData/FeatureServer

Historic Environment Viewer - Query Tool

The "Query" tool can alternatively be used to selectively filter and download the data represented in the Historic Environment Viewer. The instructions for using this tool in the Historic Environment Viewer are detailed in the associated Help file: https://www.archaeology.ie/sites/default/files/media/pdf/HEV\_UserGuide\_v01.pdf

(Screenshot of Data.gov Archaeology survey website page indicating the ArcGIS REST Services Directory links)

Clicking on the link will take you to the ArcGIS REST Services Directory, where you can copy the Url or API to insert the live service in your ArcMap, ArcPro or QGIS project

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<ul> <li>C 🙃 📩 https://services-eu1.arcgis.com/HyjXgkV6KGMSF3jt/arcgis/rest/services/SMROpenData/</li> <li>A<sup>A</sup> 🛄 ☆ 印</li> </ul>	£= @
🝥 HEV 🕼 NMS Internal Map V. 🎱 ArcGIS Assistant 🛄 OneNote 👫 SharePoint 🔈 OGCIO IT 🔓 Google 🧳 FileShare 🚺 NMS 👯 NIAH	🖉 My Fik
ArcGIS REST Services Directory	
Home > services > SMROpenData (FeatureServer)	API Re
25011	
SMROpenData (FeatureServer)	
View In: Map Viewer	
Service Description: This Archaeological Survey of Ireland dataset is published from the database of the National Monume and Monuments Record (SMR). Open Data Bulk Data Downloads (version date: 23/06/2023)	nts Servi

(Screenshot of the ArcGIS REST Services Directory indicating SMR url)

The url highlighted in the screenshot above can be added to a GIS project, this will add all the map server layers to the project

Layers:	
• <u>SMR</u>	Located (3)
• <u>SMR</u>	Unlocated (0)
• <u>SMR</u>	RedundantRecords (1)

(Screenshot of the ArcGIS REST Services Directory indicating SMR map layers)



## ArcGIS REST Web service in ArcGIS Pro

This will open the "Add Data From Path" dialogue box (See screenshot below)

Paste layer url/API into it

Londonderry	
Add Data From Path	×
Add data using a path for a service URL, portal item, data file, Path	or catalog path.
Learn more about adding data from paths	Add Cancel
" A A A A	

(Screenshot of add data from path dialogue box in ArcPro)

Further to note if you have successfully added the REST services to your project but they are not visible in your map pane, check the contents pane to see if the visibility tick is grey'ed out (see screenshot below) indicating that a visibility range has been set

Drawing Order
🔺 🂽 Map
SMROpenData
MR_Located
■ wik_Uniocated
SMR_RedundantRecords
•

(Screenshot of contents pane illustrating grey'ed out tick)

You can either zoom in to see the data or you can change the "Out beyond (minimum scale)" to none in the layer properties dialogue box (see screenshot below)

Layer Properties: NM/NationalMonuments			$\times$
General	Name		
Metadata	NM/NationalMonuments		
Source			
Elevation	Visibility range		
Display	Do not show layer when zoomed		
Cache	In beyond (maximum scale)		
Custom Parameters	<none> •</none>		
	Out beyond (minimum scale)          1:100,000         Layer should be refreshed periodically         1         Seconds		
	ОК	Cano	el

(Screenshot of layer properties dialogue box in arc pro indicating the visibility range of the layer)

# ArcGIS REST Web service in QGIS

In QGIS click "Layer", then "Add Layer" then "Add ArcGIS REST Server Layer..." highlighted in screenshot below



(Screenshot of add layer in QGIS highlighting steps)

This will open the data source manager select new (see screenshot below)



(Screenshot of Data Source manager, ArcREST Server with "new" highlighted)

This will open the "Create a New REST Server Connection" Dialogue box

Give the connection a name and paste in the URL/API like in ArcGIS then click okay (highlighted in screenshot below)

Create a New ArcGIS F	EST Server Connection X
Connection Details	
Name SMR 1.	2.
URL 'services-eu1.arcgi	s.com/HyjXgkV6KGMSF3jt/arcgis/rest/services/SMROpenData/FeatureServer
ArcGIS Portal Details	
Community endpoint URL	https://mysite.com/portal/sharing/rest/community/
Content endpoint URL	https://mysite.com/portal/sharing/rest/content/
Authentication	
Configurations Basic	
Choose or create an authe	ntication configuration
No Authentication 💌	
Configurations store encry	oted credentials in the QGIS authentication database.
ITTP Headers	
Referer	
Advanced	
	3. OK Cancel Help

(Screenshot showing "Create a New REST Server Connection" Dialogue box adding url steps)

😡 😡 Data Source Manager   ArcGIS REST Server		_		×
Delimited <sup>•</sup> Server Connections        + Text          1				_
GeoPackage 2. Connect New Edit Remove Refresh		Load	Save	
GPS GPS				
SpatiaLite				
PostgreSQL				
MS SQL Server				
<b>Q</b> Oracle				
Virtual Layer				
SAP HANA				
C wms/wmts				
WFS / OGC API - Features				
t wcs				
Only request features overlapping the current view extent XYZ Image Encoding				
Vector Tile				
ArcGIS REST Coordinate Reference System				
GeoNode	d with Filter	Add	He	əlp

(Screenshot showing "ArcGIS REST Server" Dialogue box)

Under server connections select the name you just selected in the Create a New REST Server Connection dialogue box, in this instance it is SMR.

#### Click connect.

🔇 Data Source Man	ager   ArcGIS REST Server			-		×
Delimited	Server Connections					
GeoPackage	SMR					•
UPS	Connect New Edit Remove Refresh			Load	Save	
<ul> <li>F</li> <li>SpatiaLite</li> </ul>	٩					
PostareSOI	▼ -< SMR					
MS SQL Server	SMR_EdundantRecords					
📮 Oracle						
🏹 Virtual Layer						
SAP HANA						
🚰 wms/wmts						
WFS / OGC API - Features						
terrer wcs						
XYZ	Only request features overlapping the current view extent					
Vector Tile	Image Encoding					
ArcGIS REST	Coordinate Reference System					
Server	EPSG:2157					
GeoNode		Add with Filter	Close	<u>A</u> dd	Н	elp

(Screenshot showing "ArcGIS REST Server" Dialogue box with a server connection added)

Highlight the layers that you wish to add to your man, in this instance all three layers are selected, then click add.

They should now appear in the layers' pane on the bottom left of your map space



(Screenshot showing the layers pane)

Alternatively, once you have made the server connection you can add it from the browser pane under "ArcGIS REST services" by just dragging the item down to the layers pane or onto the map space



(Screenshot showing Browser pane and added ArcGIS REST services)

# CSV Guide

The csv can be analysed in spreadsheet programs like excel or it can be used in spatial software programs like QGIS and ArcPro to generate shapefiles.

# CSV in ArcPro

Add the csv to a project. Right click on the csv file in the contents pane then click on "display XY data", as highlighted in the screenshot below.

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Project <mark>Map</mark> In:	sert Analysis View Edit I	magery
Copy Paste ☐ Copy Copy Path		Add ata v
Clipboard	Navigate 🛛	Laye
Contents	~ ₽ X 🔣 Map X	4. Maril 19 1
Search	🖞 Сору	2 0.00
t 🖸 🖌 / H	× Remove	1
Denvine Orden	📚 Group	
	Open Open	
ITM Basemap Public	Data Engineering Ctrl+Shift+E	
Standalone Tables	Add Error Layers	
1. MMS_OpenData_202:	Data Design	>
	Create Chart	>
	🗎 New Report	
	Joins and Relates	> 🔳
2.	🙀 Display XY Data	_03
	着 Geocode Table	on
	Display Route Events	

(Screenshot of display XY data in ArcPro)

This will open the "Display XY Data" dialogue box highlighted in screenshot below. In the output field (1.) navigate to the folder where you would like to save your new shapefile and name the new file appropriately.

# Adding ITM Coordinates;

In the X Field (2.) add "ITM\_E" in the Y field (3.) add "ITM\_N", you can leave the Z Field blank. In the Coordinate System (4.) field click on the globe icon to search available coordinate systems this will open the "Coordinate System" dialogue box.

Display XY Data	?	$\times$
Parameters Environments		?
Input Table NMS_OpenData_2023_03_23.csv	~	
Output Feature Class 1.           NMS_OpenData_2023_03_23_XYTableToPoint.shp		
X Field 2.		~
Y Field 3.		~
Z Field		~
Coordinate System 4. IRENET95_Irish_Transverse_Mercator	~	
5.	OK	

(Screenshot of display XY data dialogue box in ArcPro)

In the "Coordinate System" dialogue box highlighted in screenshot below search "Irish" in the search box (1.) press enter. Next expand "Projected Coordinate Systems", "National Grids", "Europe". Select "IRENET95 Irish Transverse Mercator" (2.), Click okay (3.). This will close the "Coordinate System" dialogue box and return you to the "Display XY Data" dialogue box, Finally click "okay" (5.).

Coordinate System					$\times$
Select the Coordinate System to v	iew the availat	ole options.			
Current XY	Details	Current Z			
IRENET95 Irish Tranve Mercator	rse		<none></none>		
XY Coordinate Systems Available	1. Irish		× ×	~	₫ •
Geographic Coordinate System	n				^
Projected Coordinate System	_				
A National Grids					
Europe					
2. 🛞 IRENET95 Irish Tr	anverse Merca	itor			
🛞 Irish National Gri	d				
OSNI 1952 Irish 1	National Grid				
TM75 Irish Grid					~
			3. ОК	C	ancel

(Screenshot of Coordinate System dialogue box in ArcPro)

The new shapefile will automatically appear in the contents pane and display on your map.

# Adding Latitude Longitude Coordinates;

As above open the "Display XY Data" Dialogue box. In the X Field (2.) add "Longitude" in the Y field (3.) add "Latitude", you can leave the Z Field blank. In the Coordinate System (4.) field click on the globe icon to search available coordinate systems this will open the "Coordinate System" dialogue box, see screenshot below.

Display XY Data	?	$\times$
Parameters Environments		?
Input Table		
NMS_OpenData_2023_03_23.csv	~	
Output Feature Class	11.	
NMS_OpenData_2023_03_23_XYTableToPoint_WGS84.shp		
X Field 2.		
LONGITUDE		~
Y Field 3.		
LATITUDE		~
Z Field		
		~
Coordinate System 4.		
GCS_WGS_1984	~	
5.	OK	

(Screenshot of display XY data dialogue box in ArcPro)

In the "Coordinate System" dialogue box highlighted in screenshot below search "84" in the search box (1.) press enter. Next expand "Geographic Coordinate Systems" and "World". Select "WGS 1984" (2.), Click okay (3.). This will close the "Coordinate System" dialogue box and return you to the "Display XY Data" dialogue box, Finally click "okay" (5.).

Coordinate System					×
Select the Coordinate System to view the available options.					
Current XY	Details	Current Z			
WGS 1984			<none></none>		
XY Coordinate Systems Available	1. 84		× ~ 1	6 ×	₲ •
Geographic Coordinate Syst	tem				^
▷ 3D					
▷ Asia					
Australia and New Zeala	nd				
▷ Europe					
Pacific Ocean					
Spheroid-based					
<ul> <li>World</li> </ul>					
@ WGS 1984 7	ŧ 2.				~
		3	ок	Ca	ancel

(Screenshot of Coordinate System dialogue box in ArcPro)

The new shapefile will automatically appear in the contents pane and display on your map.

## CSV in QGIS

To display the csv in QGIS, first select "layer" (1.), then "add layer" (2.) and then "add delimitated text layer..." (3.) as highlighted in the screenshot below.

🔇 *HowTo_QGIS — Q	GIS 1.				
Project <u>E</u> dit <u>V</u> iew	Layer Settings Plugins Vector Raster	<u>D</u> atabase <u>W</u>	<u>/eb M</u> esh Pro <u>c</u> essing <u>H</u> elp		
🗈 🗁 🔒 💽	🕊 Data Source Manager	Ctrl+L	🗓 🧠 👢 🛯 🕓 🌫 🗏 - 🖻		
1 🚛 🐼 V. 🖉 🖉	Create Layer 2.				
- 🏹 🌾 V 🛛 🖉	Add Layer		<ul> <li>V<sup>o</sup> Add Vector Layer</li> </ul>		
Browser	Embed Layers and Groups		📲 Add Raster Layer		
	Add from Layer Definition File		Add Mesh Layer 3.		
Oracle	井 Georeferencer		🎝 Add Delimited Text Layer		
✓ Image: wms/wmts	Copy Style	🗣 Add PostGIS Layers			
	Construction of Charles deliver to the second				

(Screenshot of "Add delimitated text layer ..." pathway in QGIS)

This will open the "Data Source Manager | Delimited Text" Dialogue box highlighted in the screenshot below.

# Adding ITM Coordinates;

In the X Field (1.) add "ITM\_E" in the Y field (2.) add "ITM\_N", you can leave the Z Field blank. In the Geometry CRS (3.) field click on the globe icon to search available coordinate systems this will open the "Select CRS" dialogue box. CRS stands for Coordinate Reference System.

Q	Data Source	Manag	ger   Delimited Text							-		$\times$
	Browser	File n	ame cts\MyProject\HowTo	\HowTo\DataIn\ASI_OpenD	ata_2023_03_23\ASI_	_OpenD	Data_2023_03_	23\NMS_0	penData	_2023_03_	23.csv	◙
$\sim$	Vector	Layer name NMS_OpenData_2023_03_23 Encoding UTF-8									•	
<u>.</u>	-	▼ Fi	ile Format									
	Raster	۲	CSV (comma separated va	lues)								
	Mesh	O Regular expression delimiter										
	Point     Custom delimiters											
9	Delimited Record and Fields Options											
	GooDockad	▼ G	eometry Definition									
	Сеораскац	۲	Point coordinates	1. X field ITM_E			▼ Z field					Ŧ
2+	GPS	0	Well known text (WKT)	2. Y field ITM_N			▼ M field					•
1	SpatiaLite DMS coordinates 3.											
<b>P</b> _	PostgreSQ	SQ										
MA	MS SQL Layer Settings											
<i>µ</i> .	Server	Sam	ple Data									
	Oracle		OID_	OID1	OBJECTID		ENTITY	_ID	C	LASS_COE	ЭE	<b>A</b>
	Virtual		123 Integer (32 bit) 💌	abc Text (string) 🔹 🔻	123 Integer (32 bit)	-	abc Text (strin	g) 🔻	abc Te	xt (string)	•	abc
•	Layer	1	1		1	(	CL00557		WETO			CL0
•	SAP	2	2		2	(	CL00558		WETO			CL0
		3	3		3	0	CL00559		NOAN			CL0
64	WMS/ WMTS	4										Þ
~	WFS /									4.		
Ð	OGC API -							Cle	ose	<u>A</u> dd		Help

(Screenshot of the "Data Source Manager | Delimited Text" Dialogue box)

In the "Geometry CRS" dialogue box highlighted in screenshot below search "Irish" in the search box. Select "IRENET95 Irish Transverse Mercator", Click okay. This will close the "Geometry CRS" dialogue box and return you to the "Data Source Manager | Delimited Text" dialogue box, Finally click "okay" (4.).

🔇 Select CRS	×
Predefined CRS	•
Filter Q	
Recently Used Coordinate Reference Systems	
Coordinate Reference System	Authority ID
IRENET95 / Irish Transverse Mercator	EPSG:2157
WGS 84	EPSG:4326
Predefined Coordinate Reference Systems	Hide deprecated CRSs
Coordinate Reference System	Authority ID
IGC 1962 / Congo TM zone 28	EPSG:3326
IGC 1962 / Congo TM zone 30	EPSG:3327
IGCB 1955 / Congo TM zone 12	EPSG:3339
IGCB 1955 / Congo TM zone 14	EPSG:3340
IGCB 1955 / Congo TM zone 16	EPSG:3341
IDENIETO5 / Irich Transverse Marcator	EDCG-2157
IRENET95 / Irish Transverse Mercator Properties Units: meters Static (relies on a datum which is plate-fixed) Celestial body: Earth Method: Transverse Mercator	the second second
	OK Cancel Help

(Screenshot of the "Select CRS" Dialogue box)

The CSV will now be displayed in the layers pane and the points on the map space. To save the displayed csv as a shapefile, right click on the layer in the layers pane (1.), next click "export" (2.) and then click "Save Feature as..." (3.) as highlighted in the screenshot below.



(Screenshot of "Save feature as ..." pathway in QGIS)

This will open the "Save Vector layer as ..." dialogue box as highlighted in the screenshot below.

To create a shapefile select "ESRI Shapefile" In the Format field (1.), In the File name (2.) field navigate to where you wish to save your new shapefile and name it as desired. In the Geometry CRS (3.) field click on the globe icon to search available coordinate systems this will open the "Select CRS" dialogue box.

Format ESRI S	hapefile		
File name ect\HowTo\HowTo\DataIn\shp\NMS_OpenData_2023_03_23_ITM.shp 🔕 🗌			
Layer name			
CRS EPSG:2	2157 - IRENET95 / Irish Transverse Mercator		
Encoding	UTF-8		
	ad fasturas		
Orle of Golde to			
Select fields to	export and their export options		
<ul> <li>Persist layer met</li> </ul>	tadata		
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Force multi-typ Tinclude z-dime  Extent (cur	pe ension rrent: none)		
Force multi-typ     Include z-dime     Extent (cur     Layer Options	pe ension rrent: none)		
Force multi-typ Include z-dime  Extent (cur  Layer Options RESIZE NO	pe ension rrent: none)		
Force multi-typ Force multi-typ Include z-dime  Layer Options RESIZE NO SHPT	pe ension rrent: none)		
Force multi-typ Force multi-typ Force multi-typ Extent (cur Layer Options RESIZE NO SHPT	pe ansion rrent: none)		
Force multi-typ  Force multi-typ  Layer Options  RESIZE NO SHPT  Custom Options	pe ansion rrent: none) *		

(Screenshot of "Save Vector Layer as ..." dialogue box in QGIS)

In the "Geometry CRS" dialogue box highlighted in screenshot below search "Irish" in the search box. Select "IRENET95 Irish Transverse Mercator", Click okay. This will close the "Geometry CRS" dialogue box and return you to the "Save Vector layer as …" dialogue box, Finally click "okay" (4.).

🔇 Select CRS	×
Predefined CRS	•
Filter Q	
Recently Used Coordinate Reference Systems	
Coordinate Reference System	Authority ID
IRENET95 / Irish Transverse Mercator	EPSG:2157
WGS 84	EPSG:4326
•	► Hide deversated (PSe
	nue deprecated Cross
Coordinate Reference System	Authority ID
IGC 1962 / Congo TM zone 28	EPSG:3326
IGC 1962 / Congo TM zone 30	EPSG:3327
IGCB 1955 / Congo TM zone 12	EPSG:3339
IGCB 1955 / Congo TM zone 14	EPSG:3340
IGCB 1955 / Congo TM zone 16	EPSG:3341
IDENIETOS / Irich Transvorso Moreator	EDCC-2157
IRENET95 / Irish Transverse Mercator         Properties         • Units: meters         • Static (relies on a datum which is plate-fixed)         • Celesital body: Earth         • Method: Transverse Mercator	and the second
	OK Cancel Help

(Screenshot of the "Select CRS" Dialogue box)

The SHP will now be displayed in the layers pane and the points on the map space.

# KML Guide

#### Opening KML in Google Earth

Google Earth Pro is the free desktop version of Google Earth and Google Earth Web is the browser version.

Google Earth Pro is available for download here; <u>https://www.google.com/earth/versions/#earth-pro</u>

Google Earth Web is available to access on a web browser here; <a href="https://earth.google.com/web/">https://earth.google.com/web/</a>

If you have trouble accessing Google Earth Web through your browser try a different browser.

To add a KML or KMZ file to Google Earth Web, first open Google Earth Web on a web browser. Open the "projects option" highlighted in the screenshot below.



(Screenshot showing Google Earth with the Projects option highlighted)

Next select the "Open" option highlighted in the screenshot below.



(Screenshot showing Google Earth with the "Open" option in Projects highlighted)

Then select the "Import KML file from computer" option highlighted in the screenshot below.



(Screenshot showing Google Earth with the "Import KML file from computer" option in Projects highlighted)

Navigate to you desired KML/KMZ folder and add it to the project.

# Opening KML in Google Maps

First sign into google maps (a Gmail account is required for this) then select the menu button highlighted in the screenshot below.



(Screenshot showing Google Maps with the "Menu" option highlighted)

Click into the saved options highlighted in the screenshot below.



(Screenshot showing Google Maps with the "Saved" option highlighted)

On the saved tab, first select "Maps" the select "Create Map" as highlighted in the screenshot below.



(Screenshot showing Google Maps with the "Maps" option and "Create Map" highlighted) Choose the "Import" option as highlighted in the screenshot below.



(Screenshot showing Google Maps with the "Import" option highlighted)

Navigate to you desired KML/KMZ folder and add it to the map. Note the maximum size of kml that can be added to Google Maps is 5 MB.