



Power BI shape maps

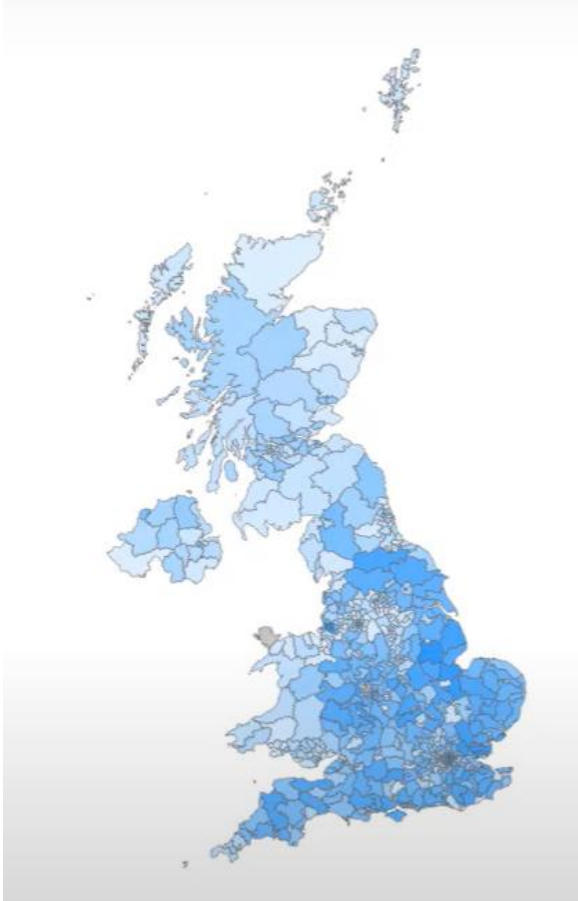
UK SHAPE MAP



Options for shape maps

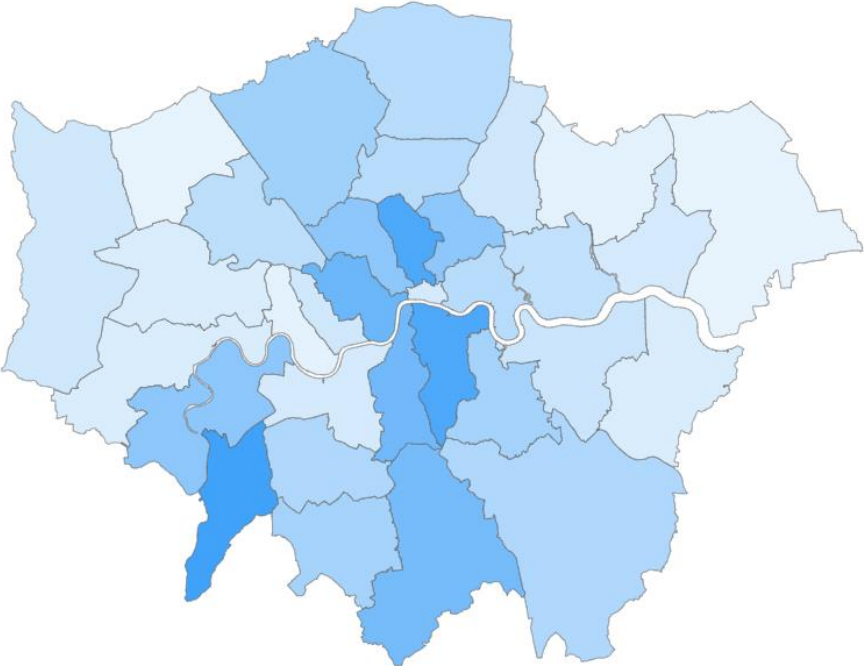
1

UK shape map



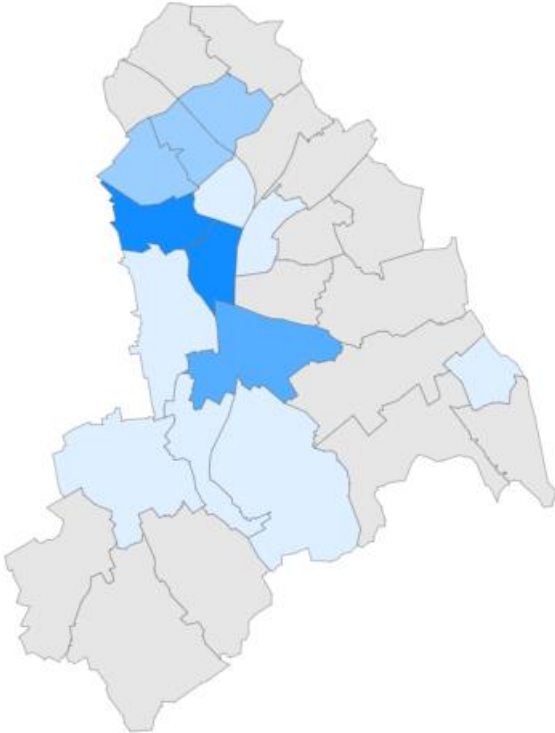
2

London boroughs shape map



3

Specific London borough(s) shape map (with wards)



In this UK shape map guide

- ✓ How to enable Power BI for shape files
- ✓ What file type you'll need
- ✓ How to create that file type
- ✓ How to add that file to PowerBI
- ✓ How to generate a map using the shape file



Enable shape files in Power BI

In PowerBI go to File > Options and Settings > Options > Preview Features and tick the Shape map visual checkbox.

Options

GLOBAL

- Data Load
- Power Query Editor
- DirectQuery
- R scripting
- Python scripting
- Security
- Privacy
- Regional Settings
- Updates
- Usage Data
- Diagnostics
- Preview features**
- Auto recovery
- Report settings

CURRENT FILE

- Data Load
- Regional Settings
- Privacy

Preview features

The following features are available for you to try in this release. Preview features might change or be removed in future releases.

- Shape map visual [Learn more](#)
- Spanish language support for Q&A [Learn more](#)
- Q&A for live connected Analysis Services databases [Learn more](#)
- Connect to external datasets shared with me [Learn more](#) | [Share feedback](#)
- Modern visual tooltips [Learn more](#) | [Share feedback](#)
- Sparklines [Learn more](#)
- Metrics visual [Learn more](#)
- Quick measure suggestions [Learn more](#) | [Share feedback](#)
- Field parameters [Learn more](#)
- Enhanced row-level security editor [Learn more](#)
- On-object interaction [Learn more](#) | [Share feedback](#)
- Enable setting sensitivity label on exported PDF [Learn more](#)
- Dynamic format string for measures [Learn more](#)
- Save to OneDrive and SharePoint [Learn more](#)
 - Share to OneDrive and SharePoint [Learn more](#)
- Power BI Project (.pbip) save option [Learn more](#)
- New card visual [Learn more](#)

OK Cancel



What is a TopoJSON file?

A TopoJSON file is a type of data file that is used to store geographic information. It is specifically designed to be more efficient and compact than traditional geographic data formats like Shapefiles, making it easier to work with in PowerBI.

Power BI comes with some TopoJSON files pre-installed but if you're working in London and want a London boroughs map or a specific London borough map you will need to upload a TopoJSON file to PowerBI either for the whole of London or for just one borough.



Where to find the right TopoJSON file

1. Check the PowerBI user group Team site where we have a number of TopoJSON files available, if you find the one you need you can skip to the section on Uploading your JSON file.
2. If you can't find what you're looking for you can create your own using the following steps.
3. Pick which of the 3 types of map you want to generate – UK, London boroughs, Specific borough(s) and then follow the steps.



Create a TopoJSON file

Create a map of United Kingdom



Office for National Statistics (ONS)

Open Geography Portal

1. Go to <https://geoportal.statistics.gov.uk/>
2. Go to Boundaries>Administrative Boundaries>Local Authority Districts>2023 Boundaries

The screenshot shows the Office for National Statistics Open Geography Portal. The main navigation bar includes 'Open Geography Portal', 'Boundaries', 'Documents', 'Lookups', 'Maps', 'Names and Codes', and 'Postcodes'. The 'Boundaries' menu is expanded, showing a list of boundary types: Administrative Boundaries, Census Boundaries, Electoral Boundaries, OECD / Eurostat Boundaries, Health Boundaries, Other Boundaries, Centroids, and Cartographic Boundaries. A sub-menu for 'Administrative Boundaries' is also visible, listing various levels of administrative divisions from 'All Administrative Boundaries' to 'Wards / Electoral Divisions'. The '2023 Boundaries' link is highlighted with a purple arrow. Below the navigation, a list of product names is shown, including 'County Electoral Divisions (May 2023) Boundaries for...', 'National Statistics UPRN Lookup (August 2023) for Gr...', 'A Beginners Guide to UK Geography (2023)', 'Standard Area Measurements for the latest Health Ar...', and 'ONS Postcode Directory (Aug 2023) in the United Kin...'. The page footer includes the text 'Produced by Superhighways Sept 2023'.

Local Authority Districts Boundaries UK BUC

1. Scroll down through the list to find a link to [Local Authority Districts \(May 2023\) Boundaries UK BUC](#)
2. Click on the link to open the map

Data

[Local Authority Districts \(May 2023\) Boundaries UK BUC](#)
Office for National Statistics | ONSGeography_data

This file contains the digital vector boundaries for Local Authority Districts, in the United Kingdom, as at May 2023. The boundaries available are: (BUC) Ultra Generalised (500m) - clipped to the coastline (Me...

Type: Feature Layer	Rows: 361
Last Updated: 26 July 2023	Tags: Boundaries, Administrative Boundaries, BDY_ADM, Local...

For the curious amongst you: We could select any of the datasets on this page, but the BUC file is the smallest and so will run quickest in your PowerBI. If you want to find out more about datasets to understand which one to pick the ONS have a short guide to [Boundary dataset guidance](#)



Download the data set

1. The link will take you to a map preview page
2. Click on the Download button on the left hand side of the map

Local Authority Districts (May 2023)
Boundaries UK BUC

Authoritative

ONS Geography
Office for National Statistics

Summary
Boundaries

View Full Details

Download

Details

- Dataset
Feature Layer
- 26 July 2023
Info Updated
- 26 July 2023
Data Updated
- 26 July 2023
Published Date
- Records: 361
[View data table](#)
- Public
Anyone can see this content
- Custom License
[View license details](#)

Records: 361



Select the download type

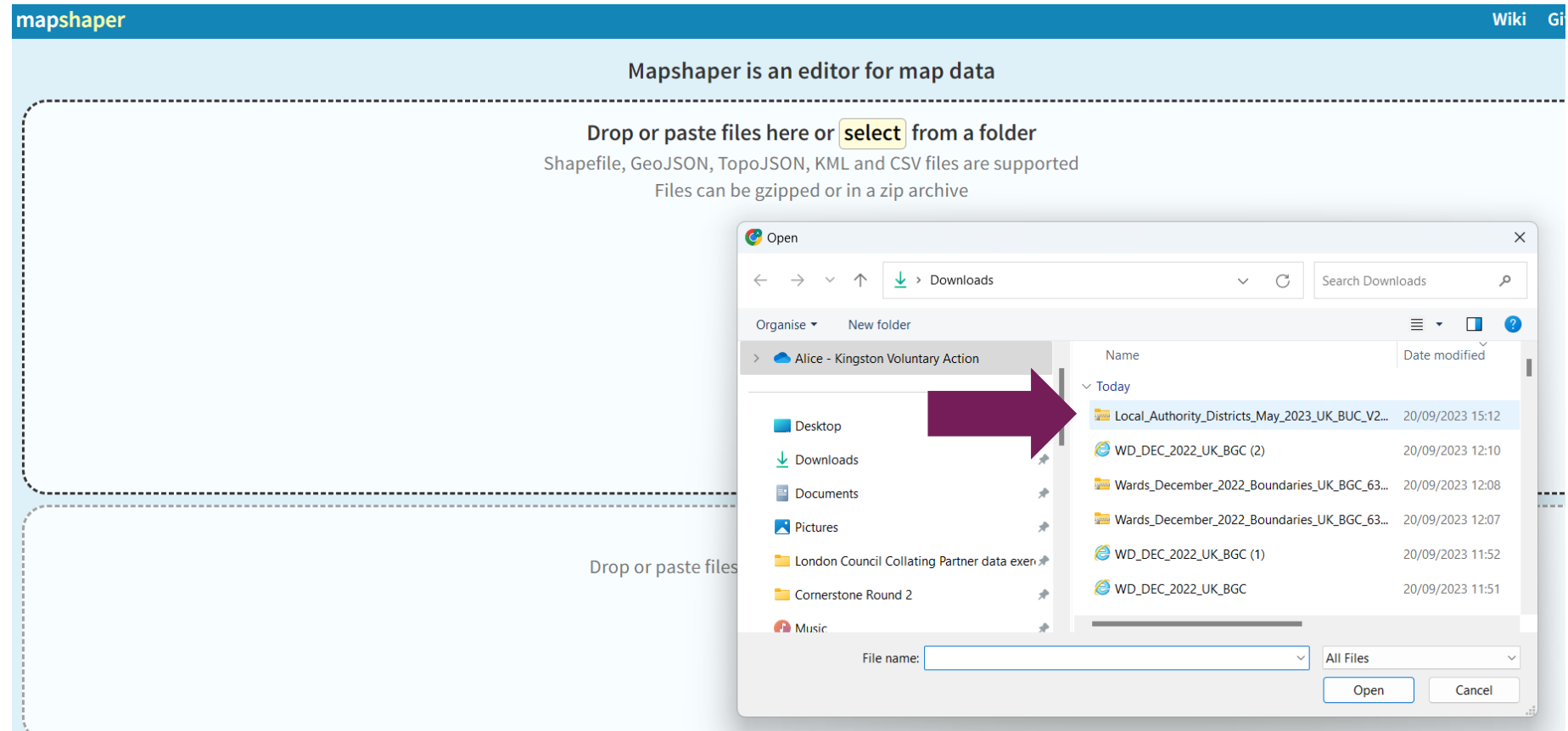
1. On the lefthand side of the map, click on **Download Shapefile**
2. Check a zip (compressed) file called **Local_Authority_Districts_UK_BUC_V2** has downloaded to your computer

The screenshot shows the 'Open Geography portalx' interface. On the left, there is a 'Download Options' panel for 'Local Authority Districts (May 2023) Boundaries UK BUC'. The panel displays 'Records: 361' and a 'Toggle Filters' switch. Below this, there are five download options, each with a blue button: 'Download CSV', 'Download Shapefile' (highlighted with a red arrow), 'Download SQLite Geodatabase', 'Download GeoPackage', and 'Download File Geodatabase'. To the right of the panel is a map of the United Kingdom showing local authority districts in blue. A vertical toolbar on the left side of the map contains icons for information, zoom, download, and favorite. A 'Records: 361' label is visible at the top of the map area.



Create your TopoJSON in Mapshaper.org

1. The Shapefile which you have downloaded now needs to be converted into a TopoJSON file with the correct resolution
2. Go to [Mapshaper.org](https://www.mapshaper.org) to convert the file
3. Click on the select button and then upload the zip file from your downloads



Create your TopoJSON in Mapshaper.org

1. The Shapefile which you have downloaded now needs to be converted into a TopoJSON file with the correct resolution
2. Go to [Mapshaper.org](https://www.mapshaper.org) to convert the file
3. Click on the select button and then upload the zip file from your downloads
4. Click on **Open** and then **Import**

mapshaper Wiki Gi

Mapshaper is an editor for map data

Drop or paste files here or **select** from a folder
Shapefile, GeoJSON, TopoJSON, KML and CSV files are supported
Files can be gzipped or in a zip archive

1. Click on select

2. Select the file

3. Click on open

4. Click on Import

Files

- LAD_MAY_2023_UK_BUC_V2.cpg
- LAD_MAY_2023_UK_BUC_V2.dbf
- LAD_MAY_2023_UK_BUC_V2.prj
- LAD_MAY_2023_UK_BUC_V2.shp
- LAD_MAY_2023_UK_BUC_V2.shx

Options

- detect line intersections

import options

Cancel Select Import

File name: All Files

Open Cancel

Produced by Superhighways Sept 2023



Edit the map projection

OSGB36 to WGS84

The Shapefile from the ONS you've downloaded uses a OSGB36 (Ordnance Survey Great Britain 1936) projection.

Unfortunately, Power BI requires a WGS84 (World Geodetic System) projection otherwise it won't render properly



Change the projection in Mapshaper.org

1. Click on **Console**
2. Type the word **info** at the prompt to bring up the map information
3. Review the projection which will show as OSGB36
4. At the \$ prompt type **proj wgs84**
5. Press enter on your keyboard

mapshaper LAD_MAY_2023_UK_BUC_V2 Baseman Simplify Console Export

Enter mapshaper commands or type "tips" for examples and console help

\$ info

[info]

=====
Layer: LAD_MAY_2023_UK_BUC_V2
=====
Type: polygon
Records: 361
Bounds: -116.1928000030994,7054.100099999458,655653.8499999996,1220309.8807999995
CRS: +proj=tmerc +x_0=400000 +y_0=-100000 +lon_0=-2 +k_0=0.9996012717 +l a t_0=49 +datum=OSGB36
Source: LAD_MAY_2023_UK_BUC_V2.shp

Attribute data

Field	First value
BNG_E	447160
BNG_N	531474
GlobalID	'f41baecf-2d3e-44cf-87a6-ff1dac57f98b'
LAD23CD	'E06000001'
LAD23NM	'Hartlepool'
LAD23NMW	''
LAT	54.6761
LONG	-1.27018

\$ proj wgs84

1. Click on console

2. Type **info** at the \$ prompt sign

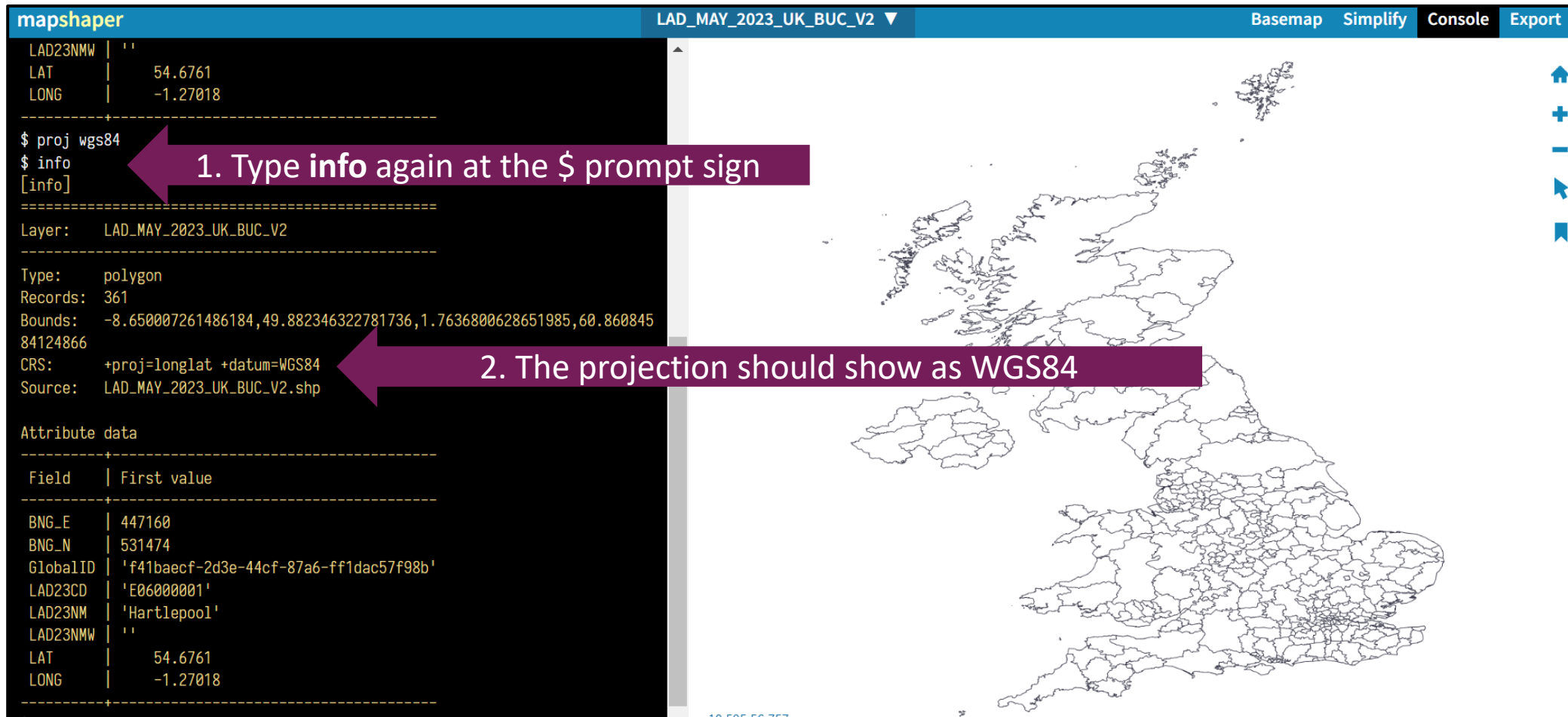
3. The projection will show as OSGB36

4. Type **proj wgs84** at the \$ prompt sign



Check the new projection

1. Type the word **info** at the prompt to bring up the map information again
2. The projection should now show as **WGS84**
3. The map should now look a little flattened



The screenshot shows the QGIS interface with the console on the left and a map of the UK on the right. The console displays the following information:

```
mapshaper LAD_MAY_2023_UK_BUC_V2 ▾ Basemap Simplify Console Export
LAD23NMW | ''
LAT | 54.6761
LONG | -1.27018
-----
$ proj wgs84
$ info
[info]
-----
Layer: LAD_MAY_2023_UK_BUC_V2
-----
Type: polygon
Records: 361
Bounds: -8.650007261486184,49.882346322781736,1.7636800628651985,60.86084584124866
CRS: +proj=longlat +datum=WGS84
Source: LAD_MAY_2023_UK_BUC_V2.shp
-----
Attribute data
-----
Field | First value
-----
BNG_E | 447160
BNG_N | 531474
GlobalID | 'f41baecf-2d3e-44cf-87a6-ff1dac57f98b'
LAD23CD | 'E06000001'
LAD23NM | 'Hartlepool'
LAD23NMW | ''
LAT | 54.6761
LONG | -1.27018
-----
```

Two purple arrows point to the console output:

- Arrow 1 points to the '\$ info' command and its output, with the text: "1. Type info again at the \$ prompt sign".
- Arrow 2 points to the 'CRS: +proj=longlat +datum=WGS84' line, with the text: "2. The projection should show as WGS84".

The map on the right shows the outline of the United Kingdom, including Great Britain and Ireland, with a grid overlay. The map appears to be in a standard projection, consistent with the WGS84 CRS mentioned in the console.



Export the map as a TopoJSON file

1. Click on **Export**
2. Select the format option **TopoJSON**
3. Click on the **Export** button
4. Check the file **LAD_MAY_2023_UK_BUC_V2** has downloaded

mapshaper LAD_MAY_2023_UK_BUC_V2

```
LAD23NMW | ''
LAT | 54.6761
LONG | -1.27018
```

```
$ proj wgs84
$ info
[info]
```

Layer: LAD_MAY_2023_UK_BUC_V2

Type: polygon
Records: 361
Bounds: -8.650007261486184,49.882346322781736,1.7636800628651985,60.84124866
CRS: +proj=longlat +datum=WGS84
Source: LAD_MAY_2023_UK_BUC_V2.shp

Attribute data

Field	First value
BNG_E	447160
BNG_N	531474
GlobalID	'f41baecf-2d3e-44cf-87a6-ff1dac57f98b'
LAD23CD	'E06000001'
LAD23NM	'Hartlepool'
LAD23NMW	''
LAT	54.6761
LONG	-1.27018

Export options

Layer name
LAD_MAY_2023_UK_BUC_V2

File format

- Shapefile
- GeoJSON
- TopoJSON
- JSON records
- CSV
- KML
- SVG
- Snapshot file

command line options ?

Export

1. Click on export

2. Select the file format TopoJSON

3. Click on Export

Export

LAD_MAY_2023_UK_BUC_V2


20/09/2023 16:17

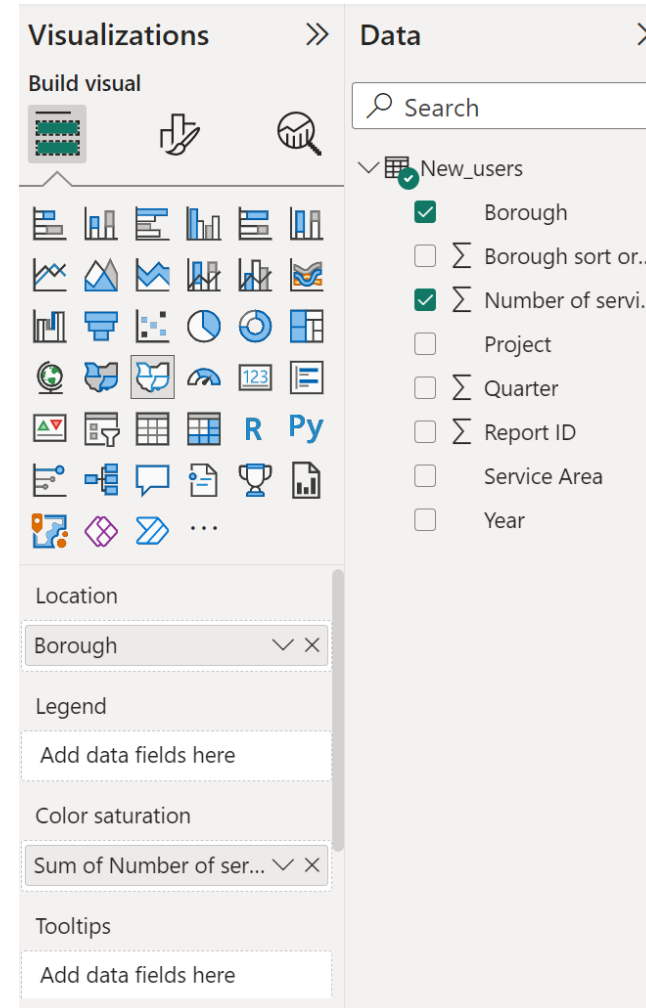
JSON File

288 KB



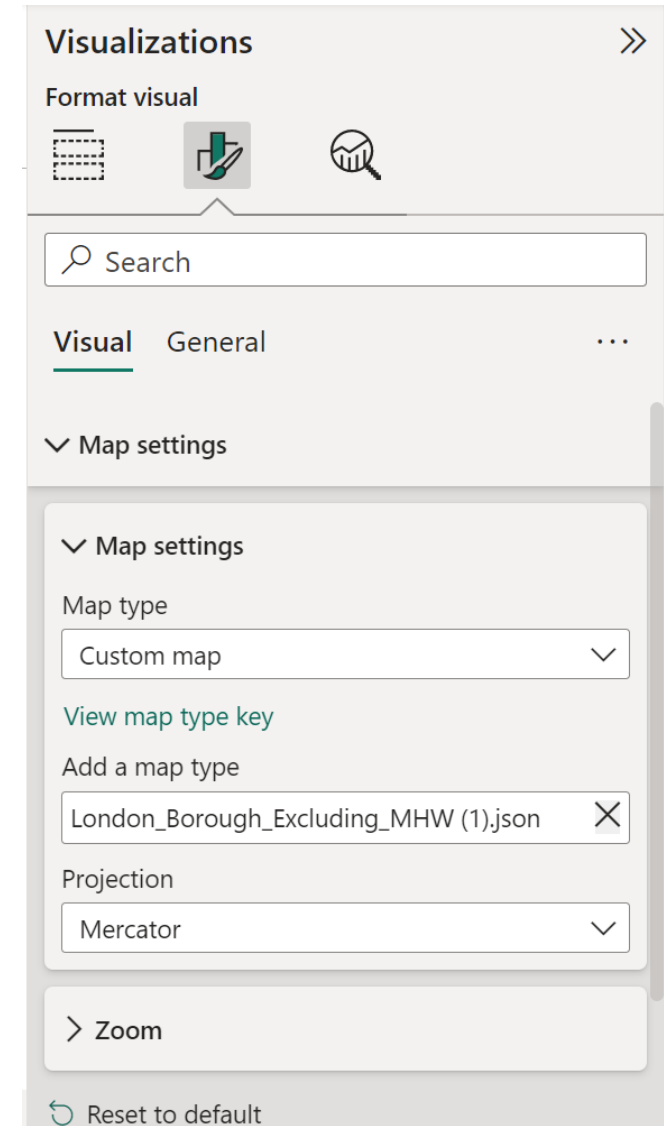
Upload your JSON file to Power BI

1. Open Power BI, create a new report and upload the New User data from the Excel file
2. Create a Shape map visual 
3. In Build visual, add **Borough** to **Location & Number of Service users to Colour Saturation**



Upload steps continued

6. In **Format Visual**, click on downwards arrow next to **Map settings** & under **Map type** select **Custom map**
7. Click into the **Add a map type** field and upload the London boroughs JSON file



Common questions & issues

My map is showing areas in grey when I know there is data in that area

The borough or ward names have to be identical to the ones used by the ONS.

The easiest workaround is to make sure your names match. The most common errors occur around the boroughs with “and” in their names e.g. Hammersmith and Fulham (ONS spelling) and Hammersmith & Fulham (a common spelling in data sets). Obviously in an ideal world you would change the spelling in your data source but that’s not always feasible in the short term if your data is coming from a database so a quick fix is to use Find & Replace in a Query so that as data is uploaded with the wrong spelling it will automatically replace the ones with incorrect spelling.

Another workaround is to use the borough or ward code instead of name, but this does require you to have the borough or ward code in your data. If you don’t have the codes in your data but would like to set it up so they are there you can use our resource on [How to map postcodes to ONS Geodata.pptx](#)



Common questions & issues

How do I create a shape map for more than one London borough?

Follow the steps for creating a shape map for a specific London borough and when applying the filter add additional boroughs

Open Geography portalx

Filters
Wards (May 2023) Boundaries UK BSC

Records: Filtering 37 of 8,441

Filters Styling

Filter as map moves

LAD23NM

- Kingston upon Thames 0.23%
- Richmond upon Thames 0.21%

Search 359 more values

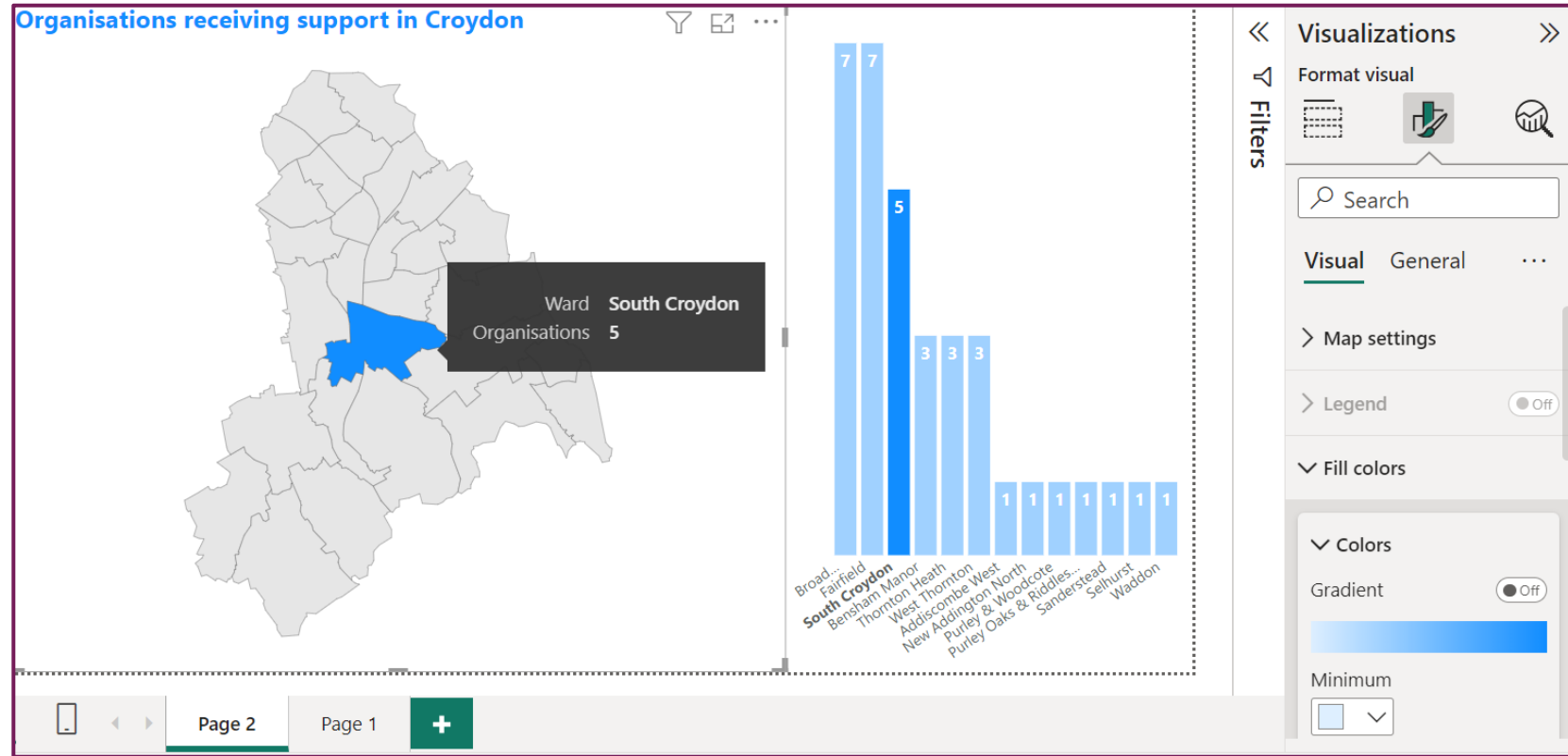
Select attribute filters (11)

- WD23CD 2,000 values tT
- WD23NM 2,000 values tT
- WD23NMW 752 values tT
- LAD23CD 361 values tT
- LAD23NM 361 values tT
- BNG_E 10,133 to 654,365 123
- BNG_N 123



Potential next steps

- ✓ Change the title to something a little more user friendly ([Format visual-Title](#))
- ✓ Refine the field names for the Tool tips ([Build visual](#))
- ✓ Change the colours using Themes ([View-Themes](#)) or by changing the fill colours ([Format visual-colours](#))
- ✓ Change the colour gradients ([Format visual – colours](#))
- ✓ Add visual or a slicer to create filters for users
- ✓ Send a visual to the back if it's overlaying another one ([Click on visual, Format menu](#))



Potential next steps

