



Power BI shape maps

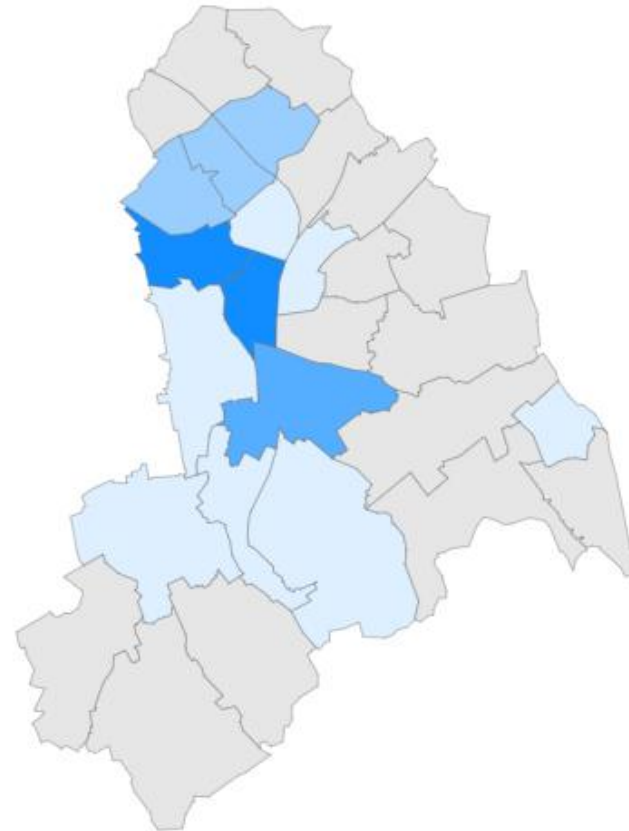
3. SPECIFIC LONDON BOROUGH(S) SHAPE MAP (WITH WARDS)





Power BI shape maps

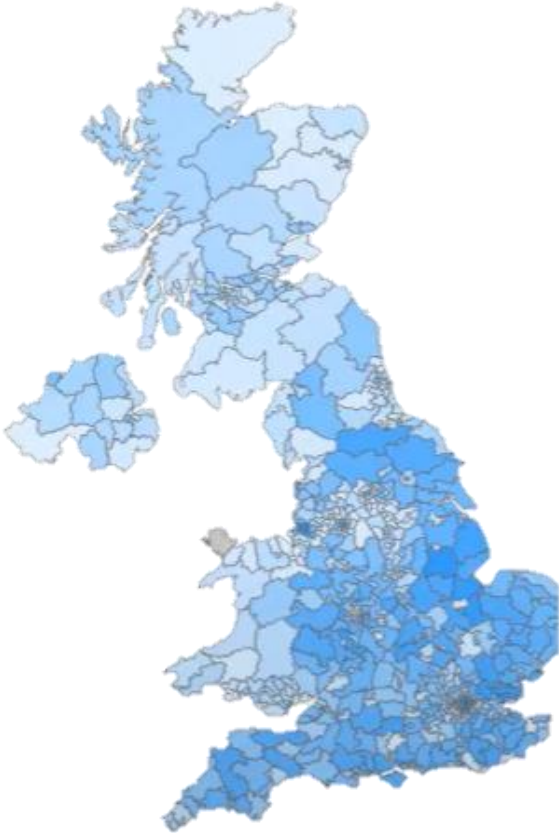
SPECIFIC LONDON BOROUGH



Options for shape maps

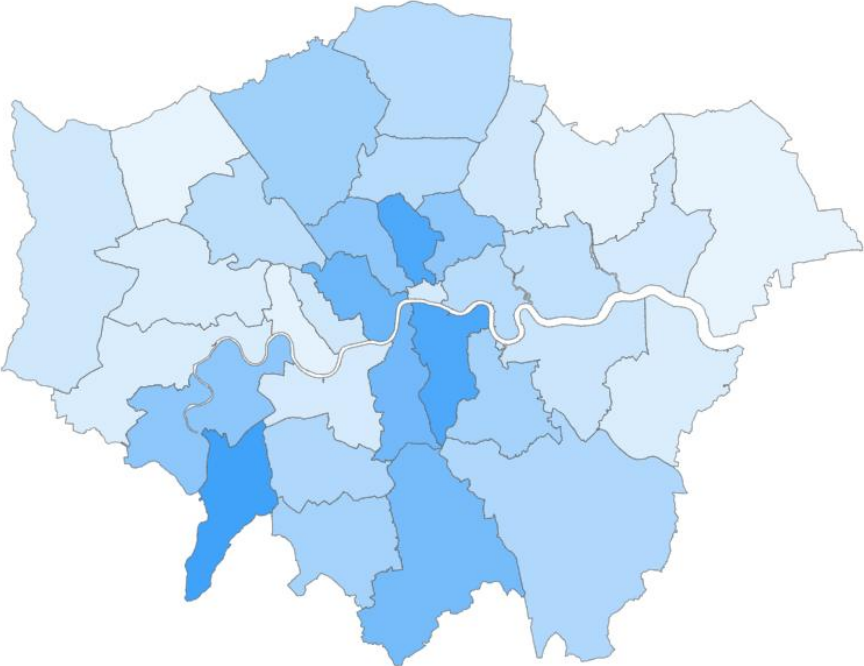
1

UK shape map



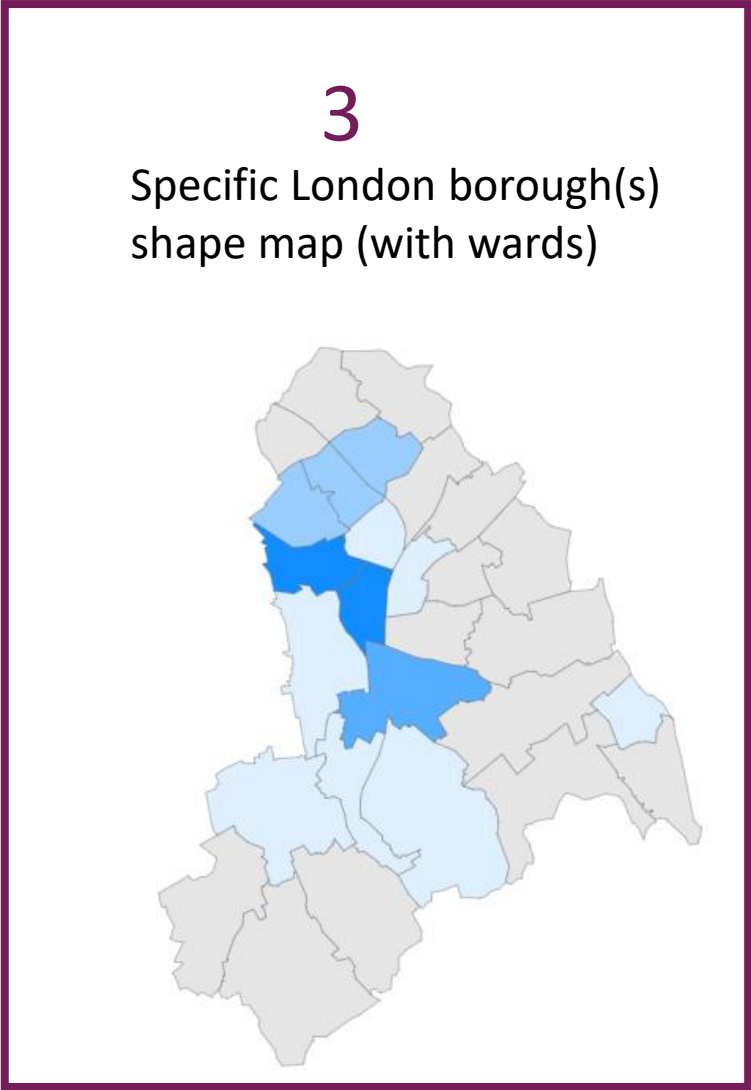
2

London boroughs shape map



3

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



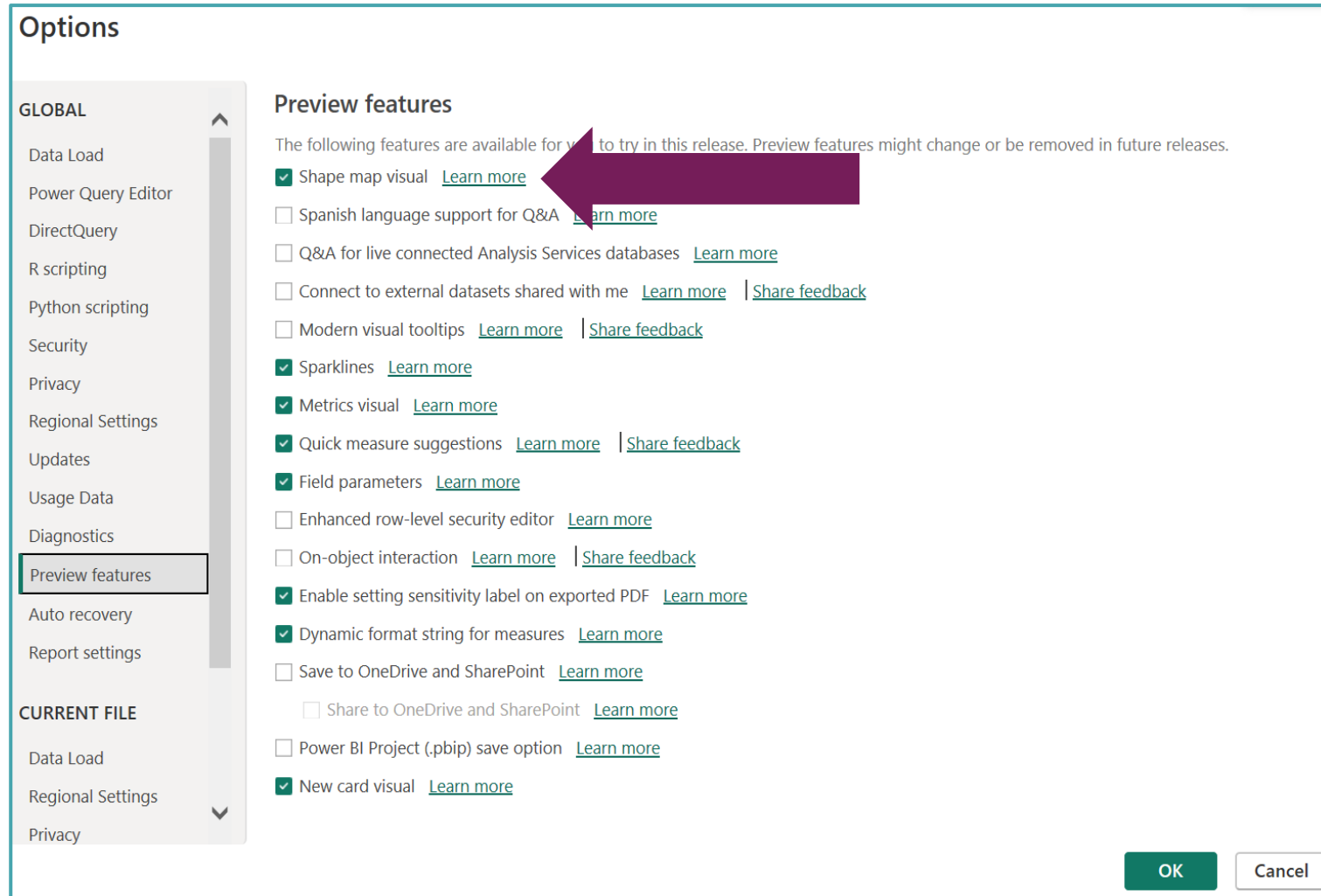
In this London shape map guide

- ✓ 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

Specific map of London
borough(s) at ward level



Ward Boundaries UK BSC

1. Scroll down through the list to find a link to https://geoportal.statistics.gov.uk/datasets/627ae9540e3a4e199f4594a727b35724_0/explore?location=54.578354%2C-3.313841%2C5.82
2. Click on the link to open the map

 Dataset ...

[Wards \(December 2024\) Boundaries UK BFE](#)

Office for National Statistics

Boundaries

Type: **Feature Service** Date updated: 12/16/2024

Tags: **Boundaries, Administrative Boundaries, BDY_ADM, ...** Categories: **ONS Geography Open Data, 2024**

For the curious amongst you: We could select any of the datasets on this page, but the BSC 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](#)



Filter the data set

1. Click on the filter icon & the column headings will appear as possible filters on the lefthand side
2. Tick the filter LAD23NM, this is the Local Authority Name column
3. Type the name of the Local Authority you want into the filter box

TIP: If you want more than one borough or ward simply add them to the selection in the filter

Open Geography portalx

Filters
Wards (December 2024) Boundaries UK BFE

Filters Styling

Filter as map moves

Records: 8,396

LAD24NM
kingston upon thame
Kingston upon Thames

Select attribute filters (12)

<input type="checkbox"/>	WD24NMW 752 values	tT
<input type="checkbox"/>	LAD24CD 361 values	tT
<input checked="" type="checkbox"/>	LAD24NM 361 values	tT
<input type="checkbox"/>	LAD24NMW 23 values	tT
<input type="checkbox"/>	BNG_E 10,133 to 654,365	123
<input type="checkbox"/>	BNG_N 7,974 to 1,192,719	123
<input type="checkbox"/>	LONG	123

1. Click on the filter icon

2. Tick the LAD23NM filter option

3. Type the name of the Local Authority you want into the filter box



Filter the data set

1. Flip the Toggle Filters switch on.

If you don't do this it will export a shape file with ALL data not just the boroughs you have selected

Open Geography portalx

Filters
Wards (December 2024) Boundaries UK BFE

Filters Styling

Filter as map moves

LAD24NM

- Richmond upon Thames 0.21%
- Sutton 0.24%
- Waltham Forest 0.26%
- City of London 0.30%
- Camden 0.24%
- Hackney 0.25%
- Hammersmith and Fulham 0.25%
- Islington 0.20%
- Tower Hamlets 0.24%
- Lambeth 0.30%
- Greenwich 0.27%
- Southwark 0.27%
- Bexley 0.20%
- Brent 0.26%
- Westminster 0.21%
- Lewisham 0.23%
- Haringey 0.25%
- Harrow 0.26%

Records: Filtering 704 of 8,396

5013808

Zoom to

FID	4707
WD24CD	E05013808
WD24NM	West End
WD24NMW	
LAD24CD	E09000033
LAD24NM	Westminster
LAD24NMW	
BNG_E	528787



Download the data set

1. Flip the Toggle Filters switch on.

If you don't do this it will export a shape file with ALL data not just the boroughs you have selected

2. Download the Shapefile

Open Geography portalx

Download Options
Wards (May 2023) Boundaries UK BSC

Records: Filtering 19 of 8,441

Records: (Filtered) 19

Toggle Filters:

Creating a new file with your filters will take some time

CSV

Downloading an updated file may take some time.

Download

KML

Downloading an updated file may take some time.

Download

Shapefile

Downloading an updated file may take some time.

Download

1. Flip the Toggle Filters switch to on

2. Click on Download Shapefile



Export the data set

1. Click on the info icon
2. Click on Download

Open Geography portalx

Download Options Hosted Downloads

Records: Filtering 704 of 8,396

Records: (Filtered) 704
Toggle Filters:

CSV
Download

Shapefile
Download

GeoJSON
Download

KML
Download

WD24CD: W05001494

E05013808

WD24CD	E05013808
WD24NM	West End
WD24NMW	
LAD24CD	E09000033
LAD24NM	Westminster
LAD24NMW	
BNG_E	528787

1. Click on the download icon

2. Switch it on, if you have filtered

3. Click on Download



Create your TopoJSON in www.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**

1. Click on select

2. Select the file

3. Click on open

4. Click on Import



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

This can be done in a free online tool called [Mapshaper.org](https://www.mapshaper.org)



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

The screenshot shows the Mapshaper.org interface. At the top, there is a blue header with the 'mapshaper' logo. Below it, a white 'Import files' dialog box is open, featuring a red border and a purple arrow pointing to it. The dialog has a checked box for 'with advanced options' and text that says 'Drop, paste or select files to import. Shapefile, GeoJSON, TopoJSON, KML and CSV formats are supported. Files can be zipped or unzipped.' Below this, a file explorer window is open, showing a list of files in the 'Downloads' folder. A purple arrow points to the file 'Wards_December_2024_Boundaries_UK_BFE_-7722884526381885719'. In the foreground, another 'Import files' dialog is shown, listing the files from the explorer: 'WD_DEC_24_UK_BFE.cpg', 'WD_DEC_24_UK_BFE.dbf', 'WD_DEC_24_UK_BFE.prj', 'WD_DEC_24_UK_BFE.shx', and 'WD_DEC_24_UK_BFE.shp'. It includes an 'import options' field and a 'Submit' button.



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

The screenshot shows the Mapshaper.org web interface. At the top, the 'Console' button is highlighted with a red box and a purple arrow pointing to it with the text '1. Click on console'. Below the console, the text '\$ info' is highlighted with a red box and a purple arrow pointing to it with the text '2. Type info at the \$ prompt sign'. The console output shows map information for a layer named 'WD_DEC_24_UK_BFE', including its type (polygon), records (704), bounds, CRS, and source. The CRS is listed as '+proj=merc +x_0=400000 +y_0=-100000 +long_0=-2 +k_0=0.9996012717 +lat_0=49 +datum=OSGB36'. The 'datum=OSGB36' part is highlighted with a red box and a purple arrow pointing to it with the text '3. The projection will show as OSGB36'. Below the console output, a table of attribute data is shown. At the bottom of the console, '\$ proj wgs84' is highlighted with a red box and a purple arrow pointing to it with the text '4. Type proj wgs84 at the \$ prompt sign'. The background of the screenshot shows a map of London with a street grid.

```
mapshaper WD_DEC_24_UK_BFE Console Basemap Simplify Export
Enter mapshaper commands or type "tips" for examples and console help
$ info
[info]
=====
Layer: WD_DEC_24_UK_BFE
-----
Type: polygon
Records: 704
Bounds: 503571.5,155854.30000000075,561957.4961999999,200933.62270000018
CRS: +proj=merc +x_0=400000 +y_0=-100000 +long_0=-2 +k_0=0.9996012717 +
lat_0=49 +datum=OSGB36
Source: WD_DEC_24_UK_BFE.shp

Attribute data
-----+-----+
Field | First value
-----+-----+
BNG_E | 532171
BNG_N | 181720
GlobalID | '0e8de231-53c5-423a-921f-ed5018b3276d'
LAD24CD | 'E09000001'
LAD24NM | 'City of London'
LAD24NMW | ''
LAT | 51.519
LONG | -0.09642
WD24CD | 'E05009288'
WD24NM | 'Aldersgate'
WD24NMW | ''
-----+-----+
$ proj wgs84
```

Field	First value
BNG_E	532171
BNG_N	181720
GlobalID	'0e8de231-53c5-423a-921f-ed5018b3276d'
LAD24CD	'E09000001'
LAD24NM	'City of London'
LAD24NMW	''
LAT	51.519
LONG	-0.09642
WD24CD	'E05009288'
WD24NM	'Aldersgate'
WD24NMW	''



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**

TIP: The map should now look a little flattened, but it will look fine once in Power BI.

The screenshot shows the Mapshaper application interface. The console window on the left displays the following output:

```
mapshaper WD_DEC_24_UK_BFE Console Basemap Simplify
WD24NMW
$ proj wgs84
$ info
[info]
-----
Layer: WD_DEC_24_UK_BFE
-----
Type: polygon
Records: 704
Bounds: -0.5103261557974356,51.286791801195214,0.3340154695885707,51.691872768876294
CRS: +proj=longlat datum=WGS84
Source: WD_DEC_24_UK_BFE.shp
-----
Attribute data
-----
Field | First value
-----
BNG_E | 532171
BNG_N | 181720
GlobalID | '0e8de231-53c5-423a-921f-ed5018b3276d'
LAD24CD | 'E09000001'
LAD24NM | 'City of London'
LAD24NMW | ''
LAT | 51.519
LONG | -0.09642
WD24CD | 'E05009288'
WD24NM | 'Aldersgate'
WD24NMW | ''
-----
```

Two purple callout boxes with arrows point to specific parts of the console output:

- The first callout points to the '\$ info' command and its output '[info]', with the text: "1. Type info again at the \$ prompt sign".
- The second callout points to the 'datum=WGS84' line in the CRS information, with the text: "2. The projection should show as WGS84".

The right side of the interface shows a map of London with a grid overlay, indicating the current projection.



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 **WD_DEC_24_UK_BFE-.json** has downloaded

mapshaper WD_DEC_24_UK_BFE

```
$ proj wgs84
$ info
[info]
=====
Layer:   WD_DEC_24_UK_BFE
=====
Type:    polygon
Records: 704
Bounds:  -0.5103261557974356,51.286791801195214,0.3340154695885707,51.62768876294
CRS:     +proj=longlat +datum=WGS84
Source:  WD_DEC_24_UK_BFE.shp

Attribute data
-----+-----+-----
Field  | First value
-----+-----+-----
```

Export options

Layer name
WD_DEC_24_UK_BFE

File format

Shapefile JSON records
 GeoJSON CSV
 TopoJSON KML
 Snapshot file SVG

command line options ?

choose output directory
 save to clipboard

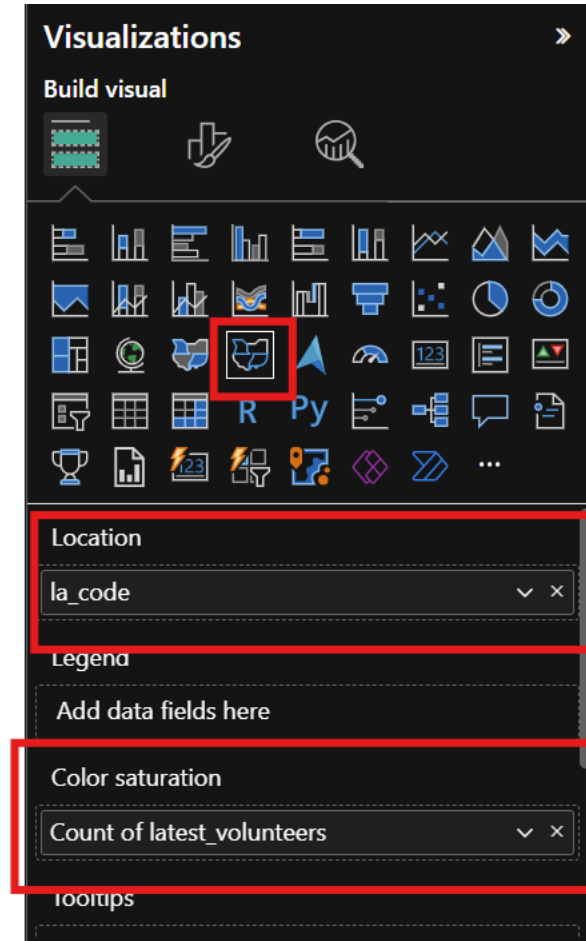
Export

WD_DEC_24_UK_BFE-Filtered-London.json
Type: JSON File
Date modified: 10/02/2025 12:42
Size: 2.01 MB



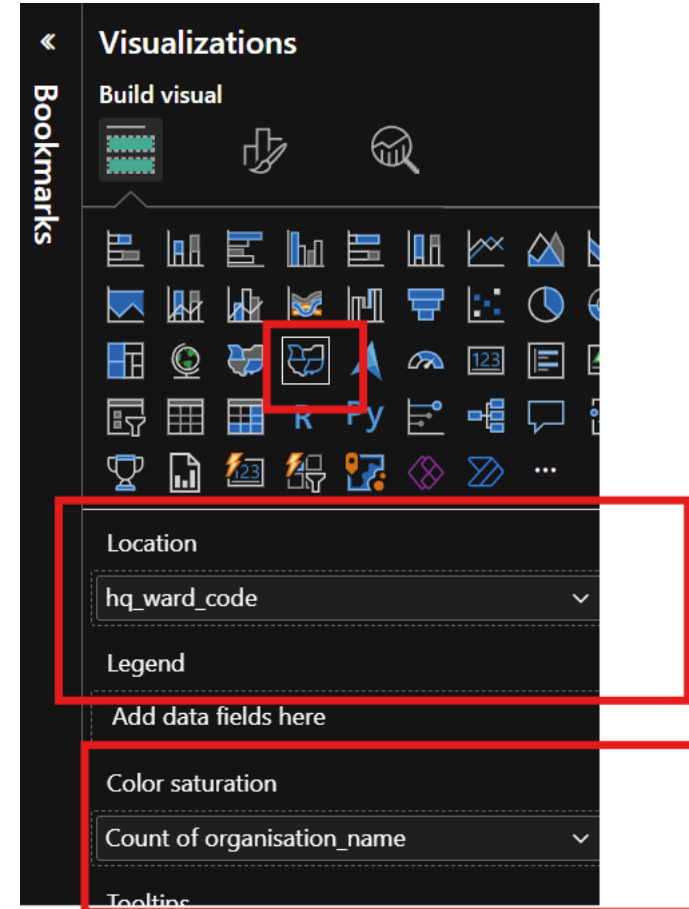
Upload your JSON file to Power BI

1. Open Power BI, create a new report, and upload the data which has a borough or ward name or code
2. Create a Shape map visual
3. In the Build visual, add **your location column** to **Location** & any other column such as number of volunteers to **Colour Saturation**



Upload steps continued

6. In **Format Visual**, click on the 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](#))

