



Power BI shape maps

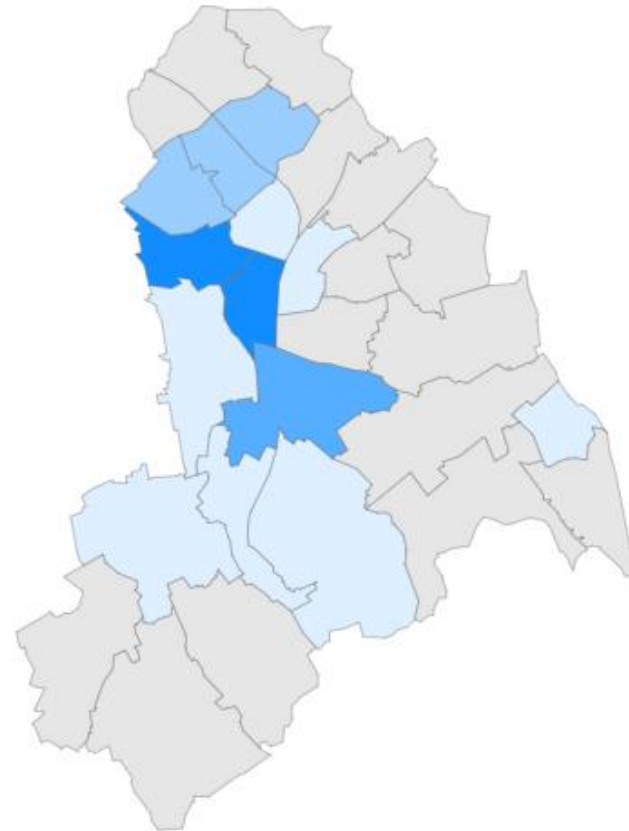
1. UK SHAPE MAP





Power BI shape maps

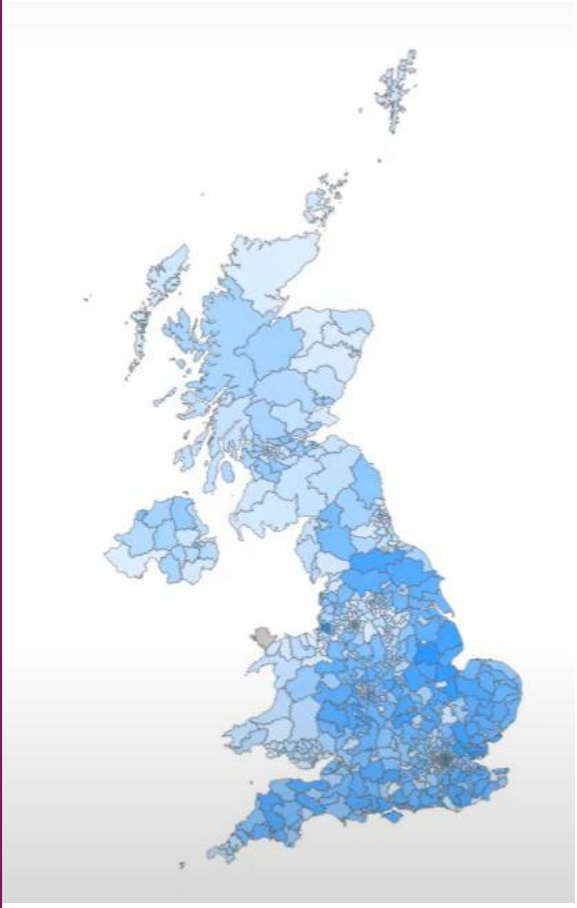
SPECIFIC LONDON BOROUGH



Options for London shape maps

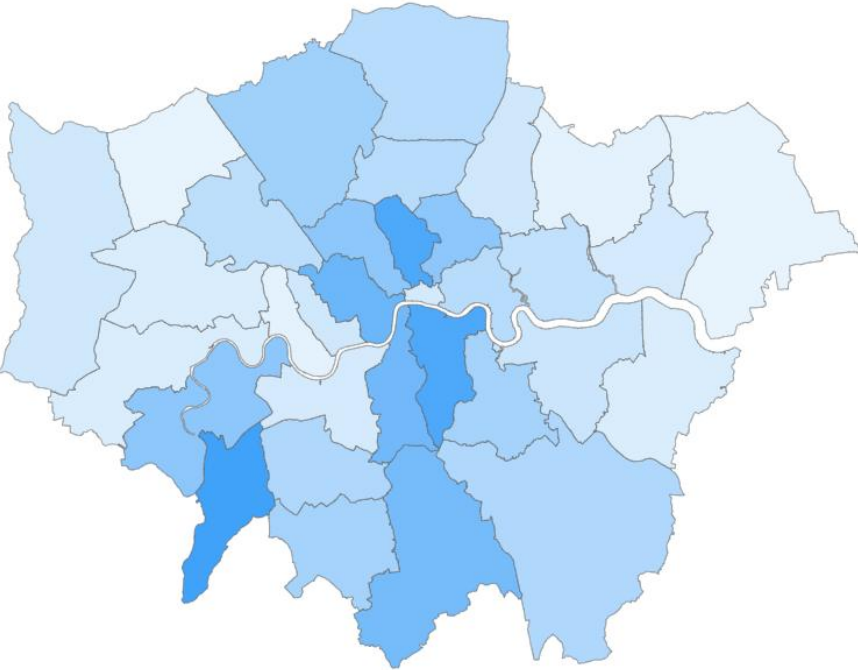
1

UK shape map



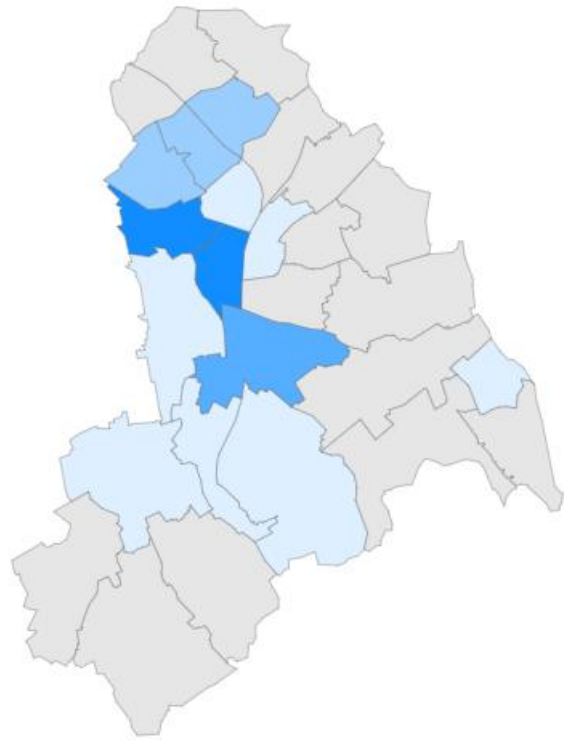
2

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.



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>2024 Boundaries** (or the year that corresponds to the work you are reporting on)

The screenshot shows the website geoportal.statistics.gov.uk. The main navigation bar includes: Open Geography Portal, Boundaries, Documents, Lookups, Maps, Names and Codes, Postcodes, Products, UPRNs, Video, and All Data. The 'Boundaries' menu is expanded, showing a list of categories: Administrative Boundaries, Census and Related Boundaries, Electoral Boundaries, Grid Boundaries, OECD / Eurostat Boundaries, Health Boundaries, Other Boundaries, Centroids, Cartographic Boundaries, and Isochrones. The 'Administrative Boundaries' sub-menu is further expanded to show: All Administrative Boundaries, Combined Authorities, Counties, Counties and Unitary Authorities, Countries, County Electoral Divisions, Local Authority Districts, Local Planning Authorities, Metropolitan Counties, Parishes, Parishes and Non-Civil Parished Areas, Regions, Upper Tier Local Authorities (UTLA), and Wards / Electoral Divisions. The 'Local Authority Districts' sub-menu is expanded to show: 2024 Boundaries, 2023 Boundaries, 2022 Boundaries, 2021 Boundaries, 2011 Boundaries, and All Local Authority Districts. A red arrow points to the '2024 Boundaries' link. Below the navigation, there is a search bar and a section for 'Latest Releases'.

Local Authority Districts Boundaries UK BUC

1. Scroll down through the list to find a link to <https://geoportal.statistics.gov.uk/datasets/e00959b3cb35408db26e89e08036d8c00/explorer>
2. Click on the link to open the map

 **Dataset** ...

[Local Authority Districts \(December 2024\) Boundaries UK BFC](#)

Office for National Statistics

Boundaries

Type: **Feature Service** Date updated: 1/9/2025

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

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. We have filtered the London boroughs by clicking on the filter->LAD24NM

The screenshot shows the 'Open Geography portalx' interface. On the left, under 'Download Options', there are five download buttons: CSV, Shapefile, GeoJSON, KML, and File Geodatabase. The 'Shapefile' button is highlighted with a red box, and a purple arrow points to it from the right. Above the buttons, it says 'Records: (Filtered) 361' and 'Toggle Filters: [ON]'. The right side of the interface shows a map of the United Kingdom with the London area highlighted in blue. A 'Records: 361' box is visible in the top right of the map area. The map includes labels for various cities and regions like Edinburgh, Glasgow, Newcastle upon Tyne, Belfast, Douglas, Dublin, IRELAND, London, Manchester, Liverpool, Nottingham, Birmingham, Bristol, and English Channel.



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_December_2024_Boundaries_UK_BFC** has downloaded to your computer

Download Options ☆ Hosted Downloads
Local Authority Districts (December 2024)
Boundaries UK BFC

Records: 361
Toggle Filters:

CSV
Download

Shapefile
Download

GeoJSON
Download

KML
Download

File Geodatabase

Records

Information, Filter, **Download**, Star



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 Submit

Import files

with advanced options

Drop, paste or **select** files to import.
Shapefile, GeoJSON, TopoJSON, KML and

Open

Downloads

Name	Date modified	Type	Size
Today			
Power BI Map resource - How to create a London shape map-2025	11/02/2025 11:27	Microsoft PowerPoint...	6,1
Yesterday			
ICB_APR_2023_EN_BFC.json	10/02/2025 15:40	JSON File	
Integrated_Care_Boards_April_2023_EN_BFC_3273725794577290237	10/02/2025 15:40	Compressed (zipped)...	
LAD_DEC_24_UK_BFC (1).json	10/02/2025 15:28	JSON File	
Local_Authority_Districts_December_2024_Boundaries_UK_BFC_913196132711269...	10/02/2025 15:27	Compressed (zipped)...	1

Import files

LAD_DEC_24_UK_BFC.cpg

LAD_DEC_24_UK_BFC.dbf

LAD_DEC_24_UK_BFC.prj

LAD_DEC_24_UK_BFC.shx

LAD_DEC_24_UK_BFC.shp

import options ?

Submit



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_DEC_24_UK_BFC Console Masemap Simplify Exp

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

```
$ info
[info]
=====
Layer: LAD_DEC_24_UK_BFC
-----
Type: polygon
Records: 361
Bounds: -116.19280000030994,5336.966000000015,655653.8499999996,1220301.5020000003
CRS: +proj=tmwarp +x_0=400000 +y_0=-100000 +lon_0=-2 +k_0=0.9996012717 +lat_0=49 datum=OSGB36
Source: LAD_DEC_24_UK_BFC

Attribute data
-----+-----
Field | First value
-----+-----
BNG_E | 447161
BNG_N | 531473
GlobalID | '360c992d-5b53-4286-a891-21085a50ab7e'
LAD24CD | 'E06000001'
LAD24NM | 'Hartlepool'
LAD24NMW | ''
LAT | 54.6761
LONG | -1.27017
-----+-----

$ 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 window open. The console displays the following text:

```
mapshaper LAD_DEC_24_UK_BFC Console Basemap Simpli
LAD24NMW | Hartlepool
LAD24NMW | ''
LAT | 54.6761
LONG | -1.27017
$ proj wgs84
$ info
[info]
-----
Layer: LAD_DEC_24_UK_BFC
-----
Type: polygon
Records: 361
Bounds: -8.650007261486184,49.8646735925971,1.7636800628651985,60.86076645558653
CRS: +proj=longlat +datum=WGS84
Source: LAD_DEC_24_UK_BFC.shp
-----
Attribute data
-----
Field | First value
-----
BNG_E | 447161
BNG_N | 531473
GlobalID | '360c992d-5b53-4286-a891-21085a50ab7e'
LAD24CD | 'E06000001'
LAD24NM | 'Hartlepool'
LAD24NMW | ''
LAT | 54.6761
LONG | -1.27017
$
```

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

- 1. Type **info** again at the \$ prompt sign
- 2. The projection should show as **WGS84**

The map on the right shows the outline of the United Kingdom, appearing significantly flattened compared to the top map, which is a standard Mercator projection. The top map shows a more elongated and curved shape for the UK, while the bottom map shows a more compact, flattened shape.



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_DEC_24_UK_BFC.json** has downloaded

The screenshot shows a web application interface with a map of the UK. The map title is 'LAD_DEC_24_UK_BFC'. An 'Export options' dialog box is open, showing the following settings:

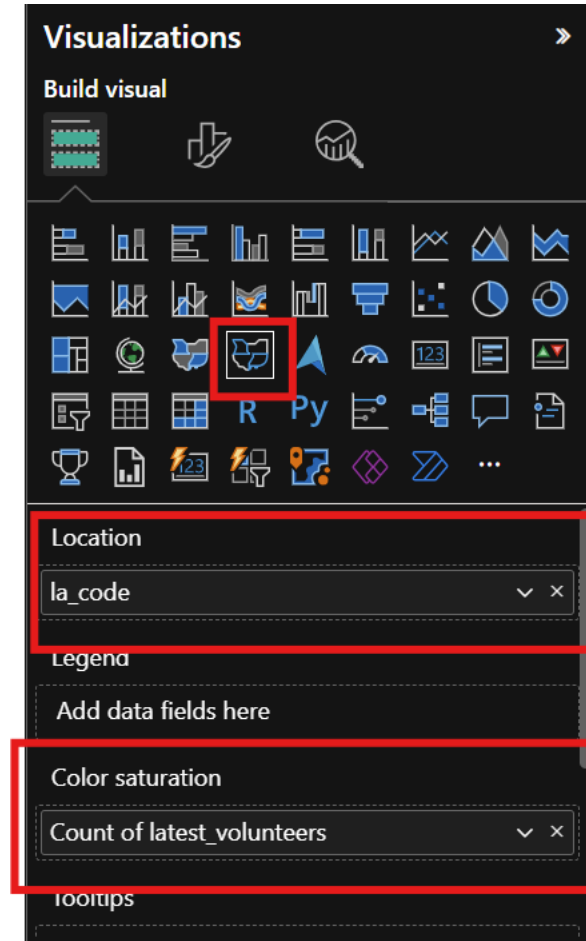
- Layer name: LAD_DEC_24_UK_BFC
- File format: TopoJSON (highlighted with a red box)
- Other options: Shapefile, JSON records, GeoJSON, CSV, KML, SVG, Snapshot file
- command line options: [text input field]
- checkboxes: choose output directory, save to clipboard
- Export button: [button highlighted with a red box]

Three purple arrows point to the 'Export' button in the top right, the 'TopoJSON' radio button, and the 'Export' button in the dialog box. A file download bar at the bottom shows 'LAD_DEC_24_UK_BFC (1).json'.



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

The screenshot displays the Power BI 'Format Visual' pane. On the left, the 'Filters' pane is visible with sections for 'Filters on this visual', 'Filters on this page', and 'Filters on all pages'. The 'Format Visual' pane is divided into 'Visual' and 'General' tabs. Under the 'Visual' tab, the 'Map settings' section is expanded, showing 'Map type' set to 'Custom map'. Below this, the 'Add a map type' field contains the file 'LAD_DEC_24_UK_BFC (1).json'. The 'Projection' is set to 'Mercator'. A red box highlights the 'Map type' dropdown and the 'Add a map type' field.



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](#))

