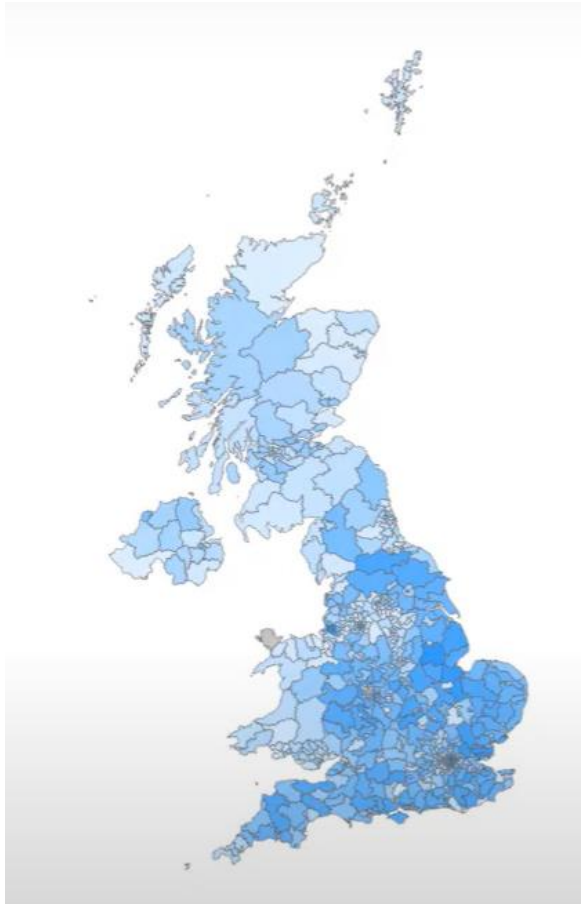
Power BI shape maps

LONDON (WITH BOROUGHS)

Options for London shape maps

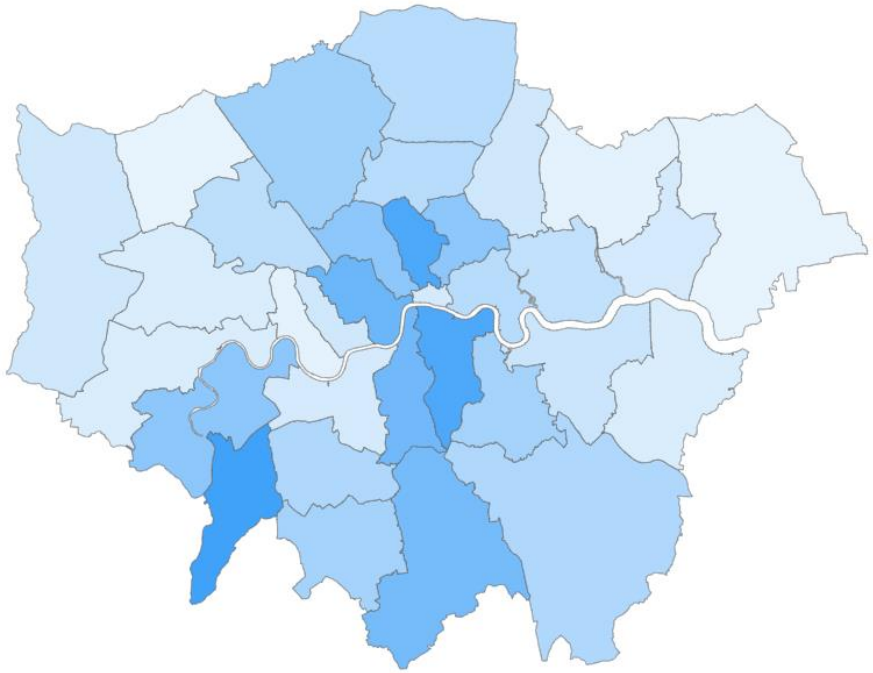
1

UK shape map



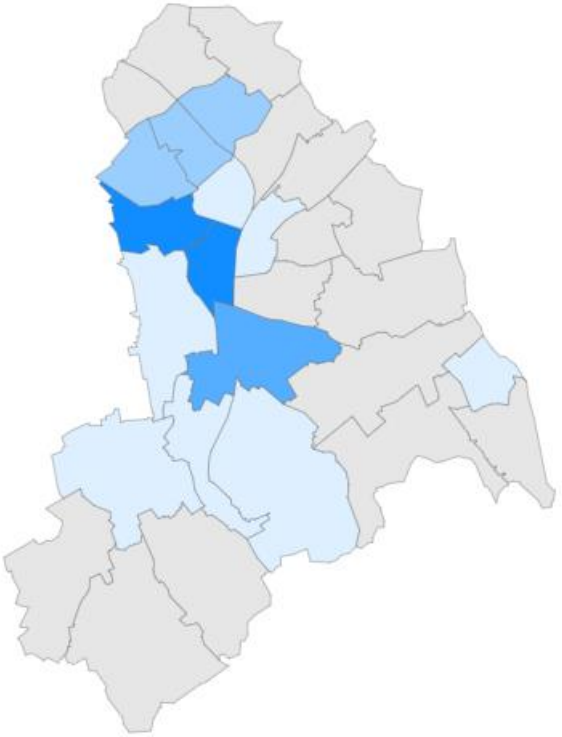
2

London boroughs shape map



3

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



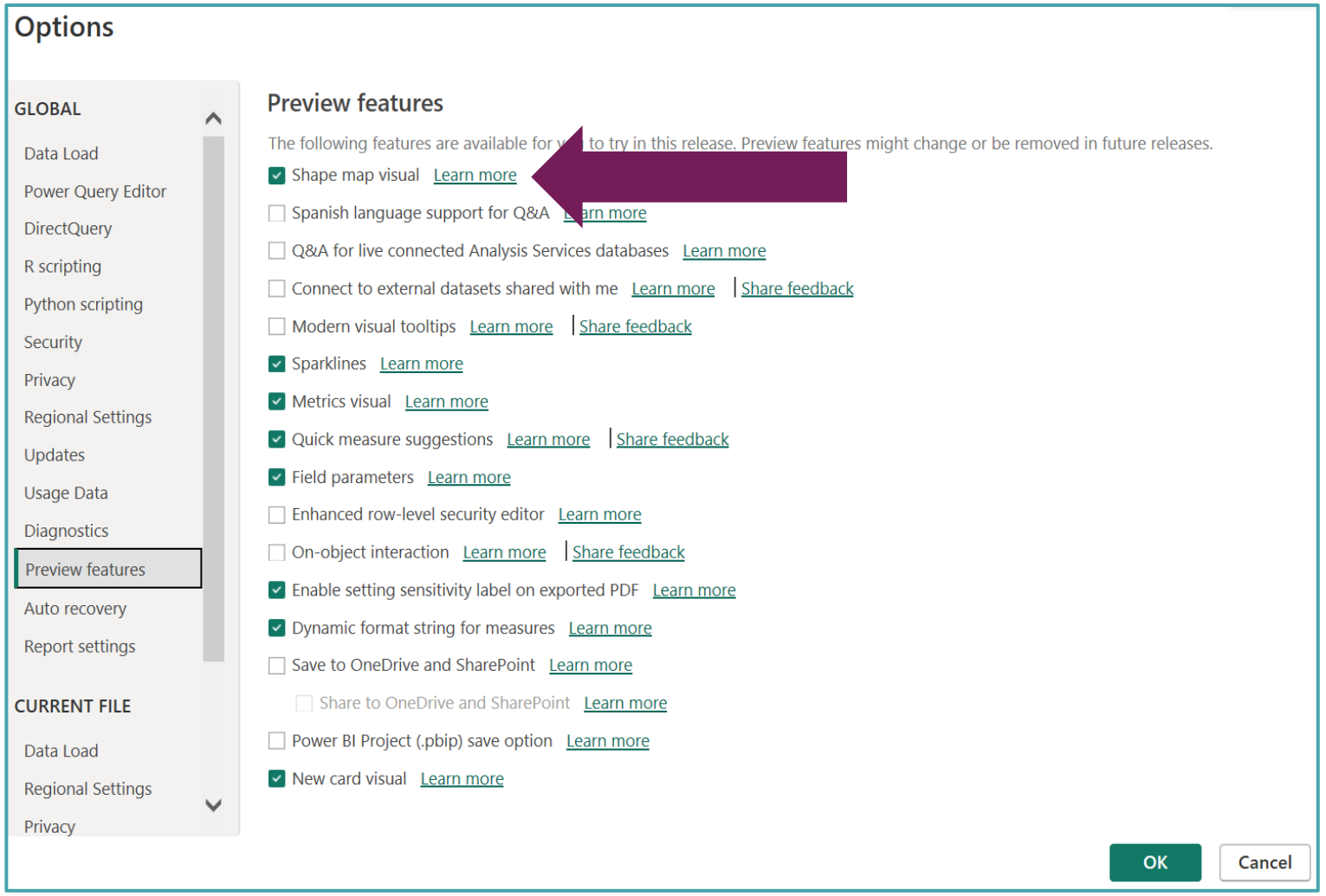
In this London shape map guide

- ✓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

Produced by Superhighways Sept 2023

Enable shape files in Power BI

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



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.

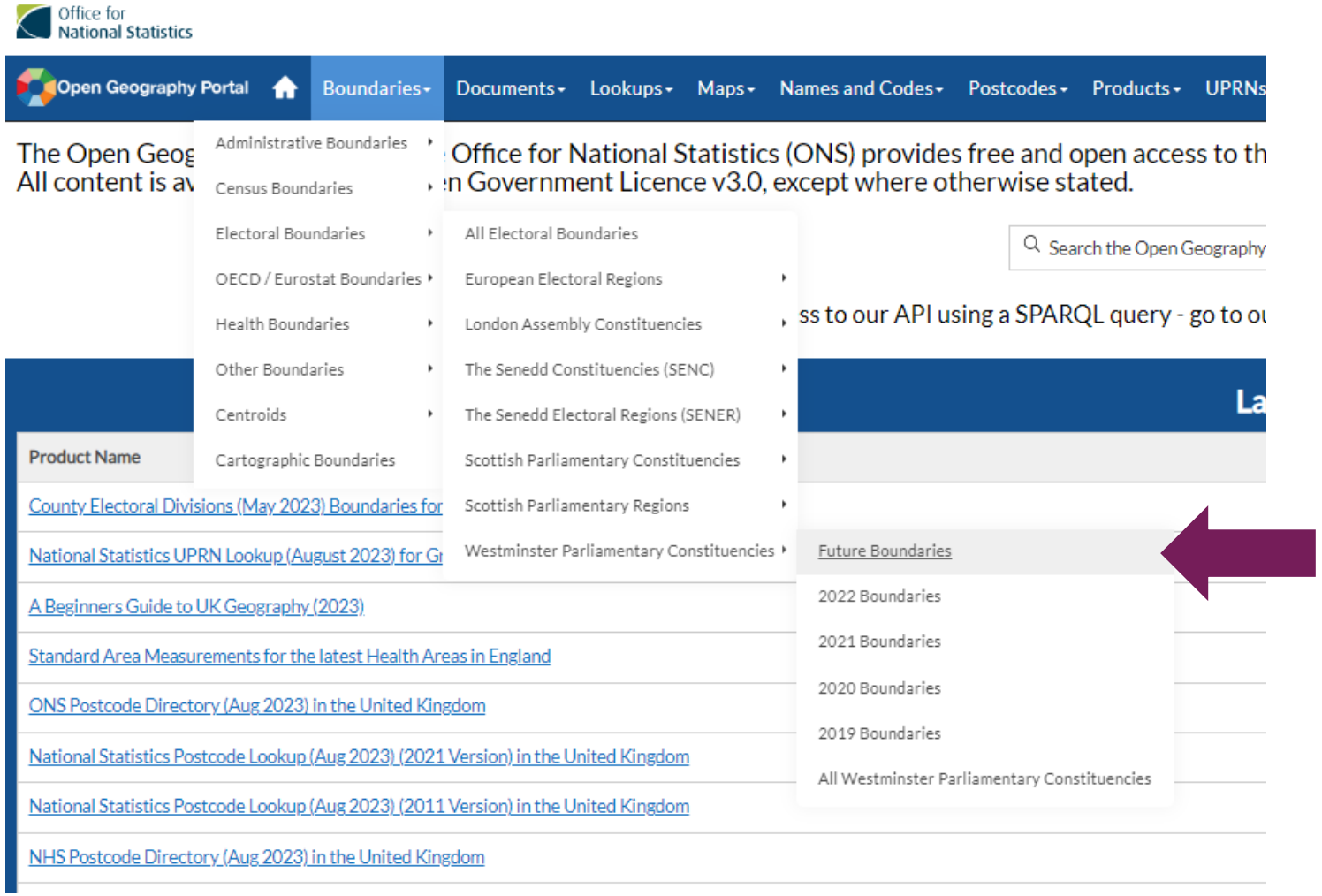
3. Pick which of the 3 types of map you want to generate – UK, London boroughs, Specific borough(s) and then follow the steps.

Office for National Statistics (ONS)

Open Geography Portal

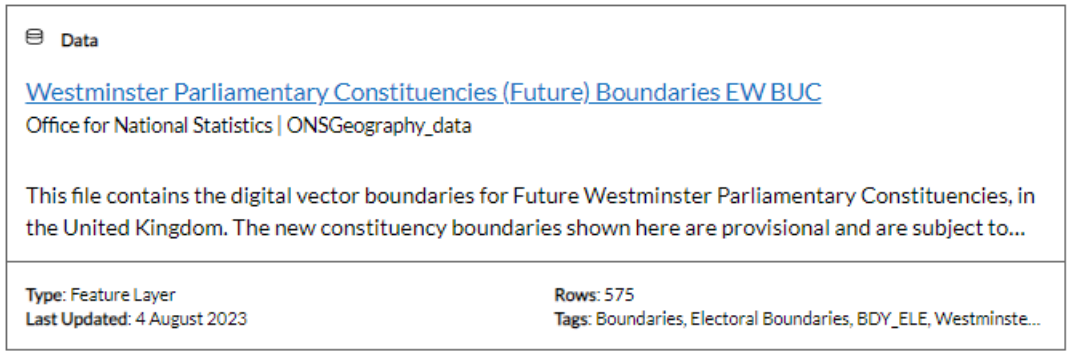
1. Go to https://geoportal.statistics.gov.uk/

2. Go to **Boundaries>Electoral Boundaries>Westminster Parliamentary Constituencies>Future Boundaries(2023)** (or the year that corresponds to the work you are reporting on)



Local Authority Districts Boundaries UK BUC

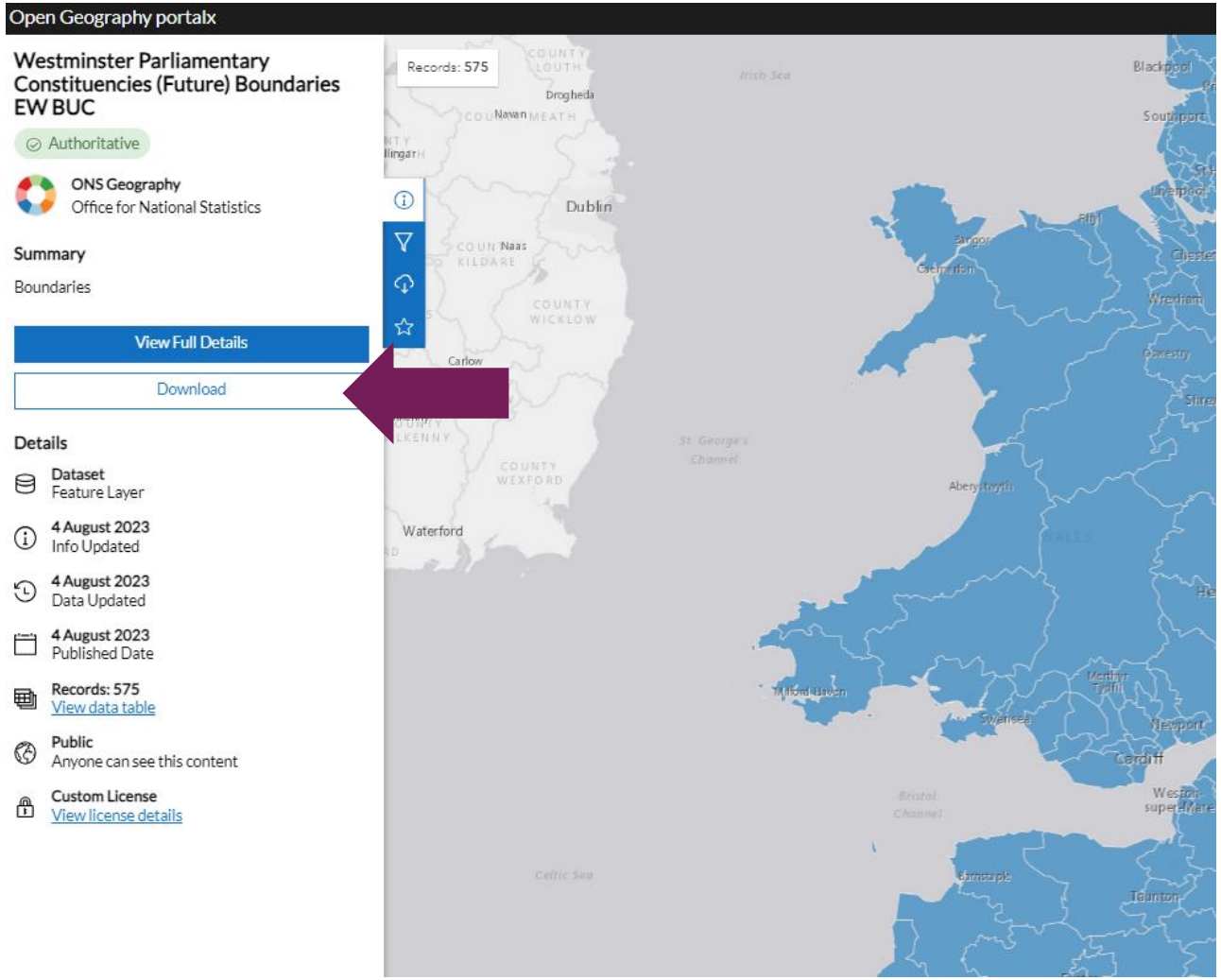
1. Scroll down through the list to find a link to Westminster Parliamentary Constituencies (Future) Boundaries EW BUC
2. Click on the link to open the map



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

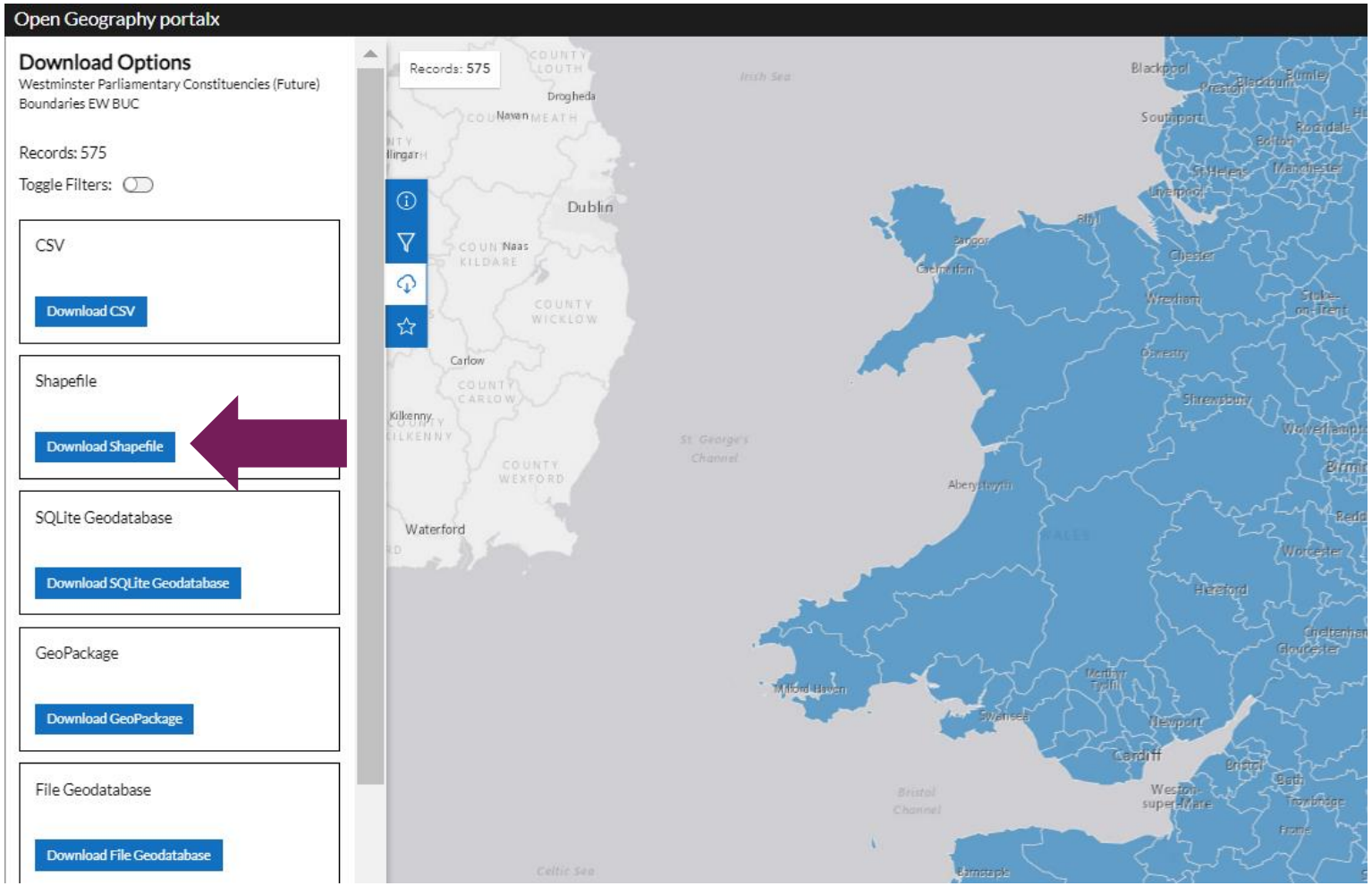
Download the data set

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



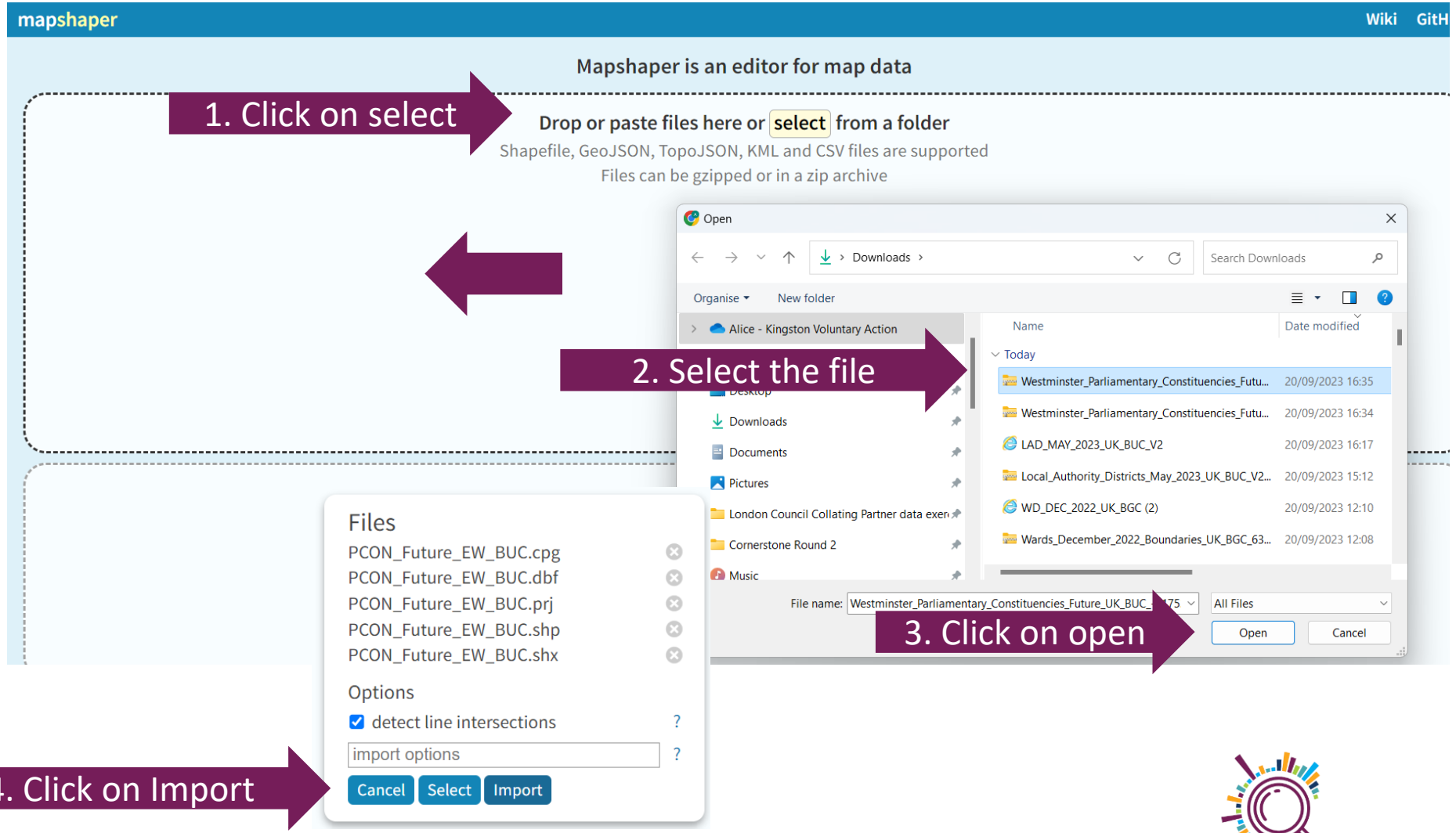
Select the download type

1. On the lefthand side of the map, click on **Download Shapefile**
2. Check a zip (compressed) file called **Westminster Parliamentary Constituencies (Future) Boundaries EW BUC**
3. has downloaded to your computer



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 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**



Edit the map projection

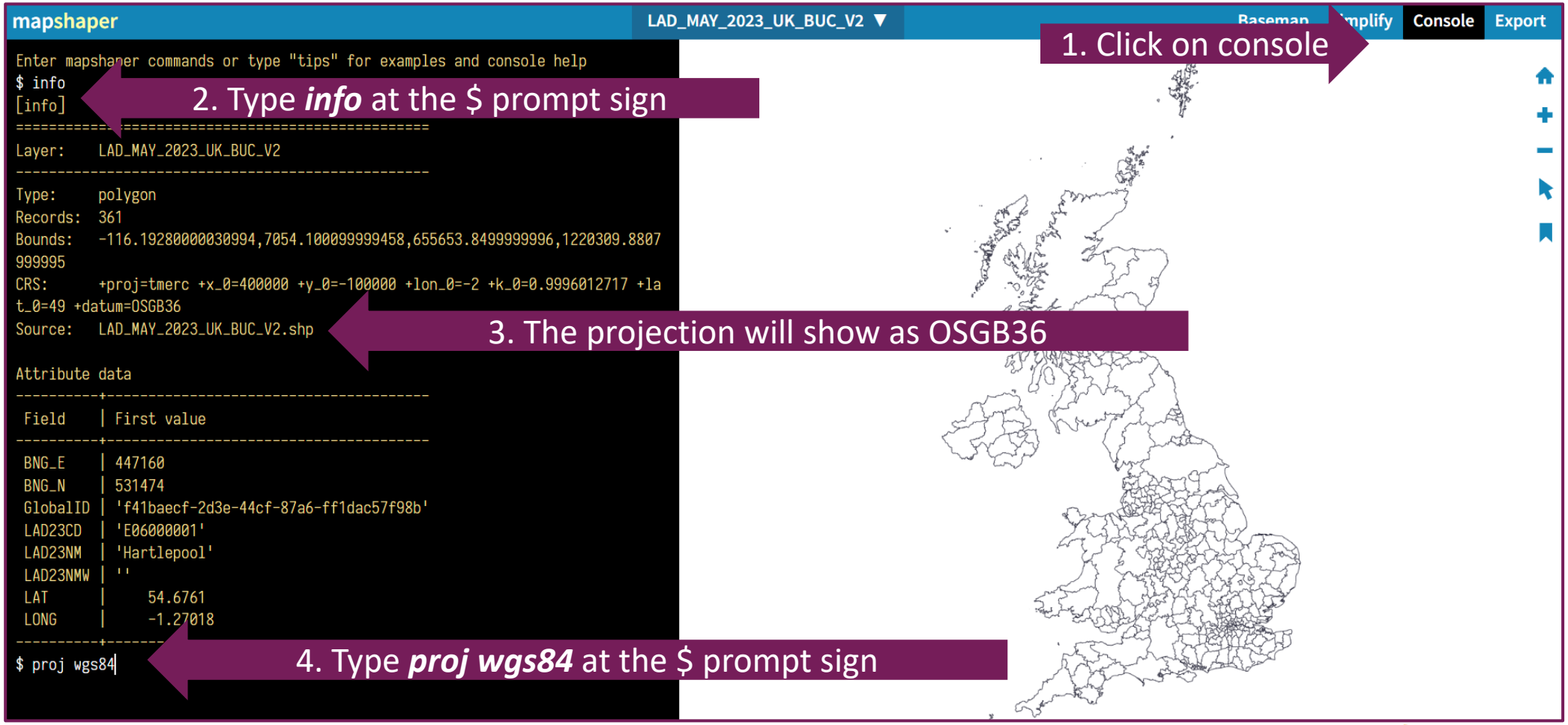
OSGB36 to WGS84

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

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

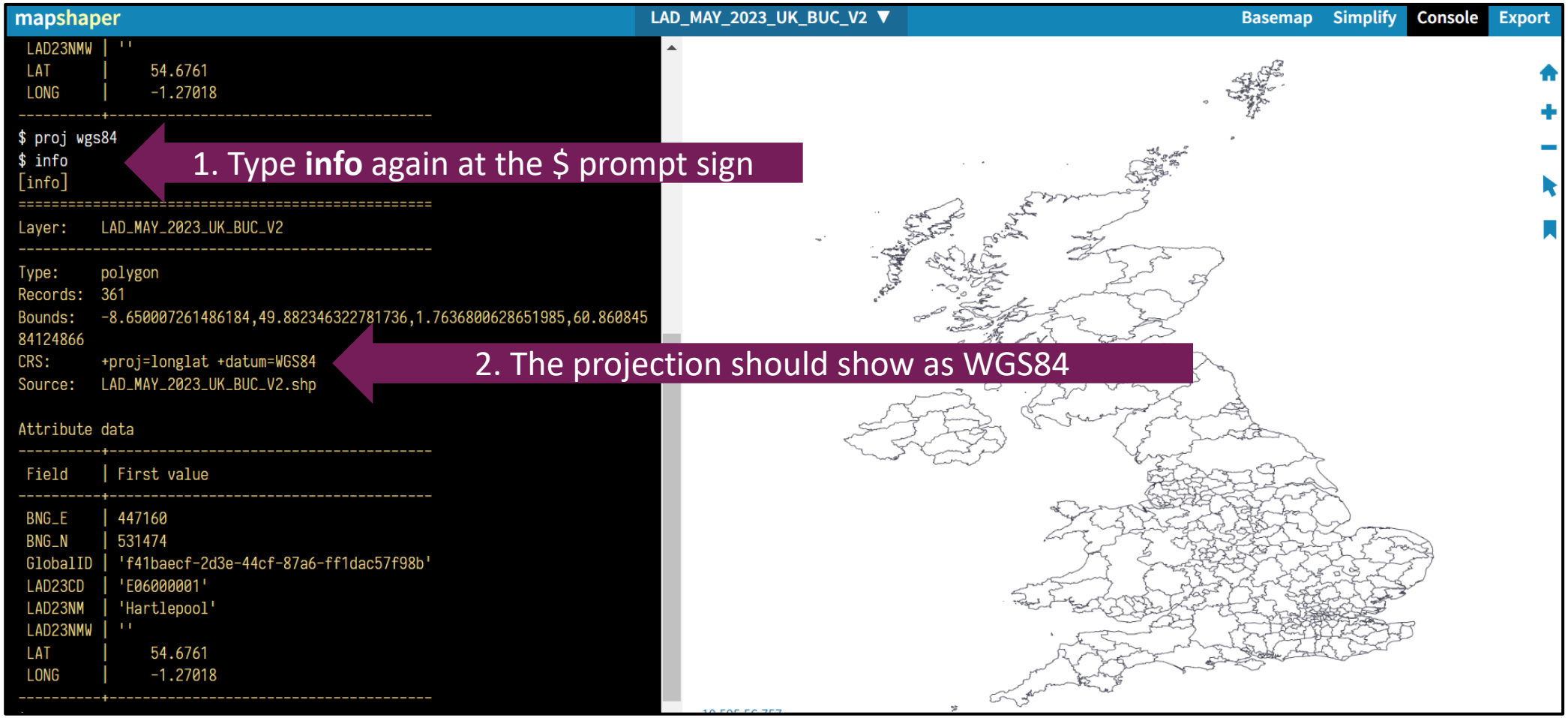
Change the projection in Mapshaper.org

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



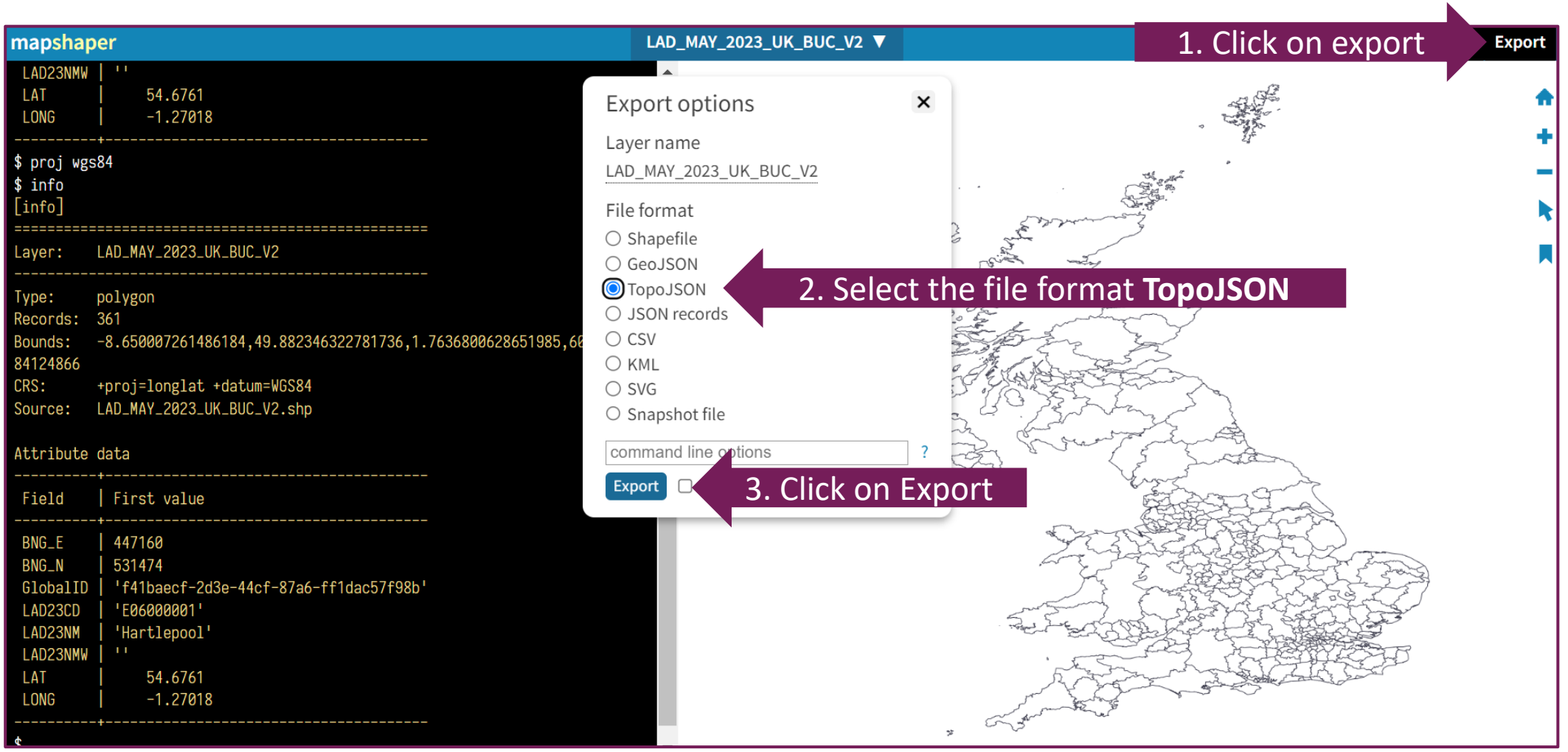
Check the new projection

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



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

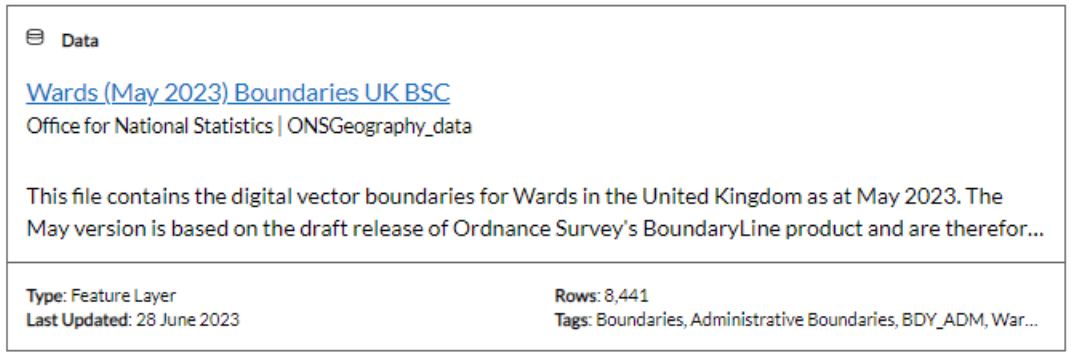


Create a TopoJSON file

Specific map of London borough(s) at ward level

Ward Boundaries UK BSC

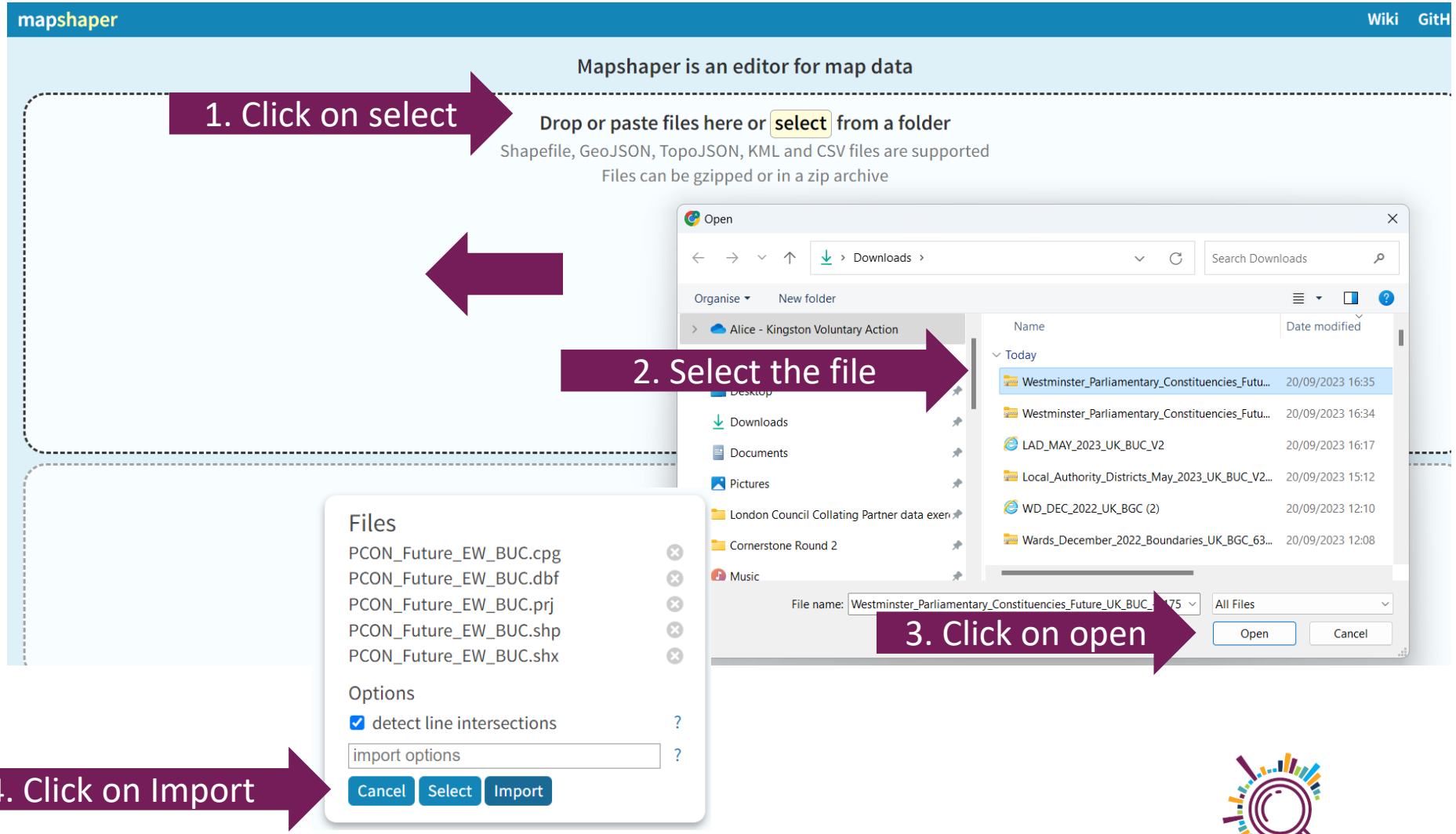
1. Scroll down through the list to find a link to Wards (May 2023 Boundaries UK BSC
2. Click on the link to open the map



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

Create your TopoJSON in www.mapshaper.org

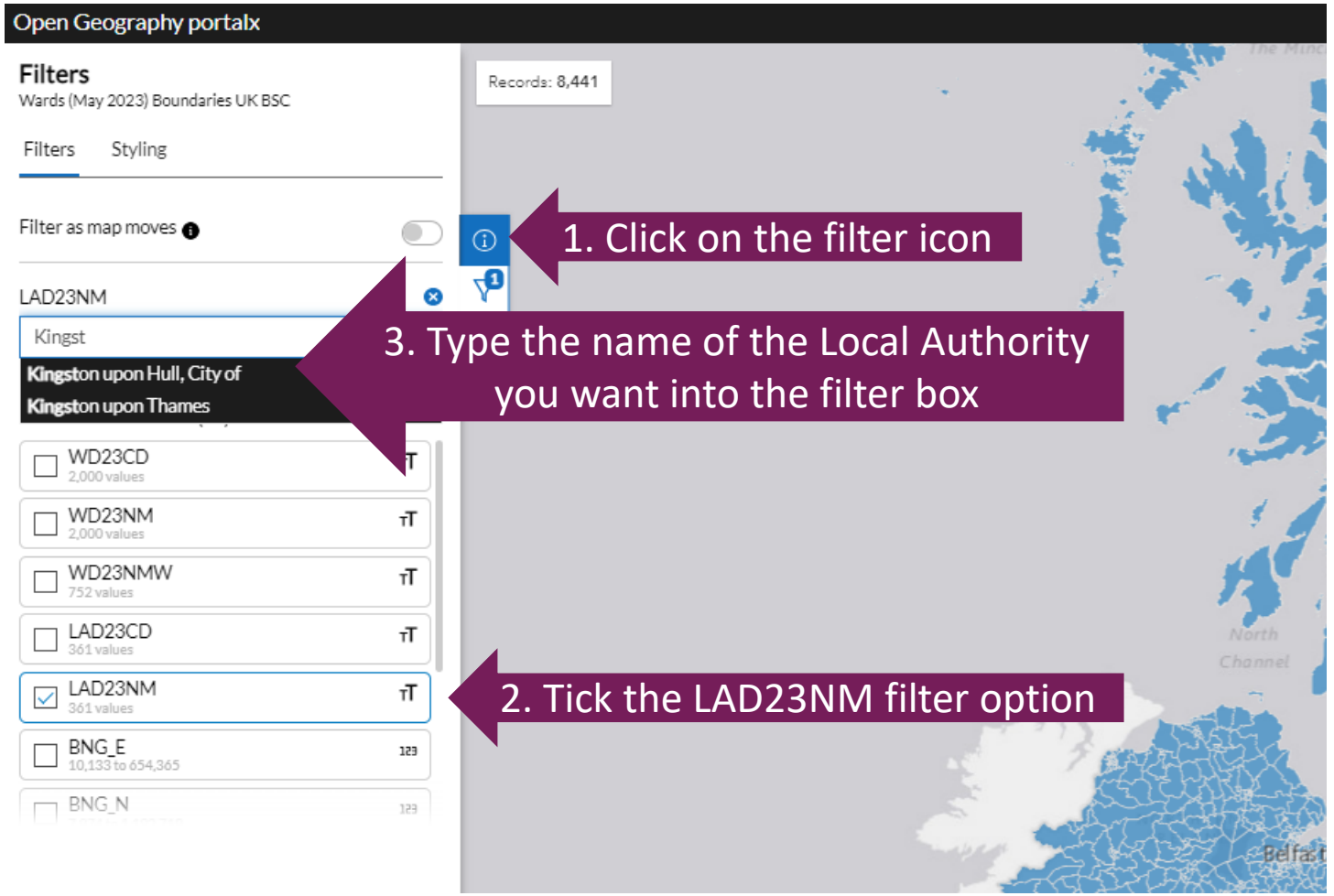
1. The Shapefile which you have downloaded now needs to be converted into a TopoJSON file with the correct resolution
2. Go to Mapshaper.org to convert the file
3. Click on the select button and then upload the zip file from your downloads
4. Click on **Open** and then **Import**



Filter the data set

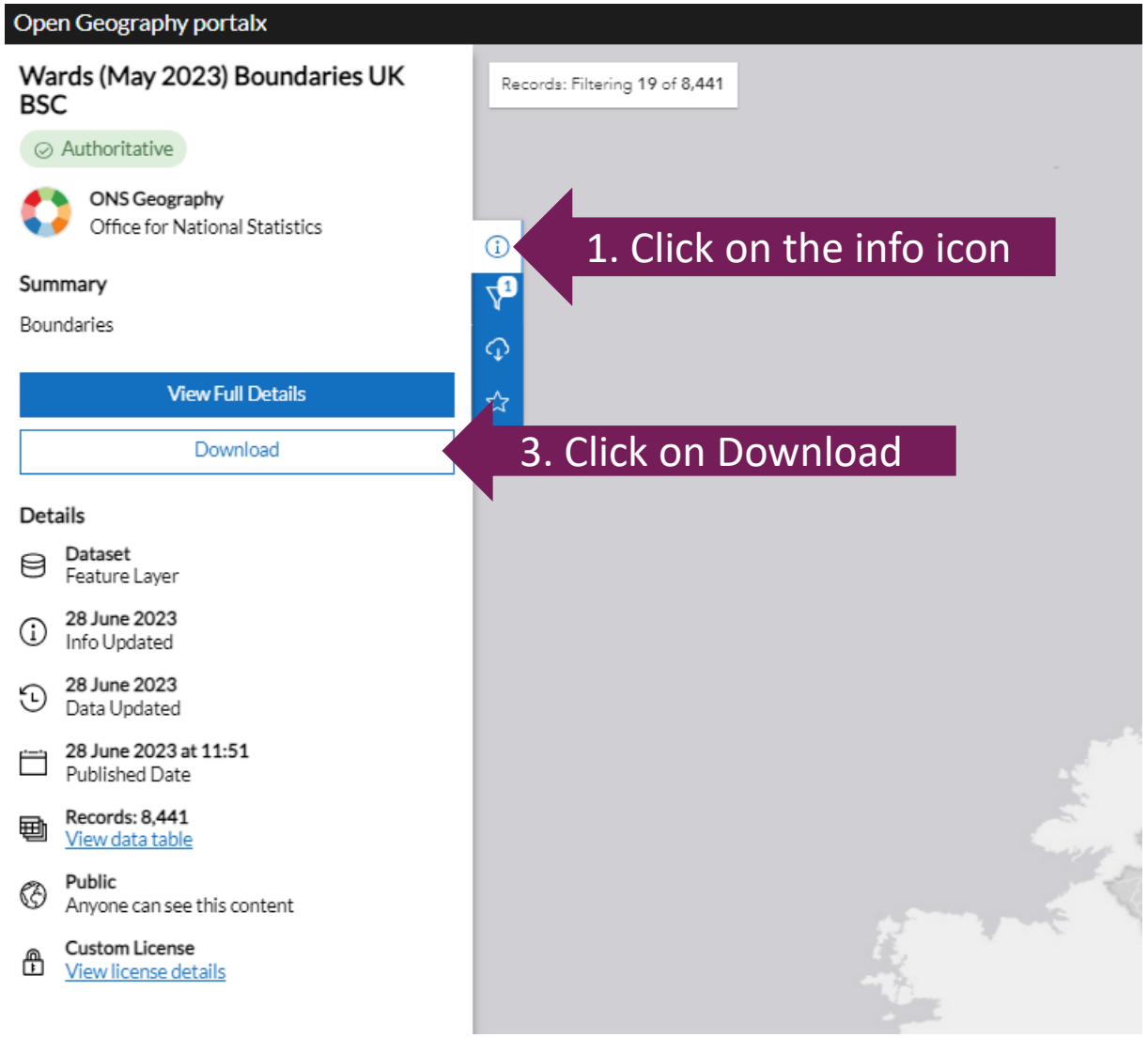
1. Click on the filter icon & the column headings will appear as possible filters on the lefthand side
2. Tick the filter LAD23NM, this is the Local Authority Name column
3. Type the name of the Local Authority you want into the filter box

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



Export the data set

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

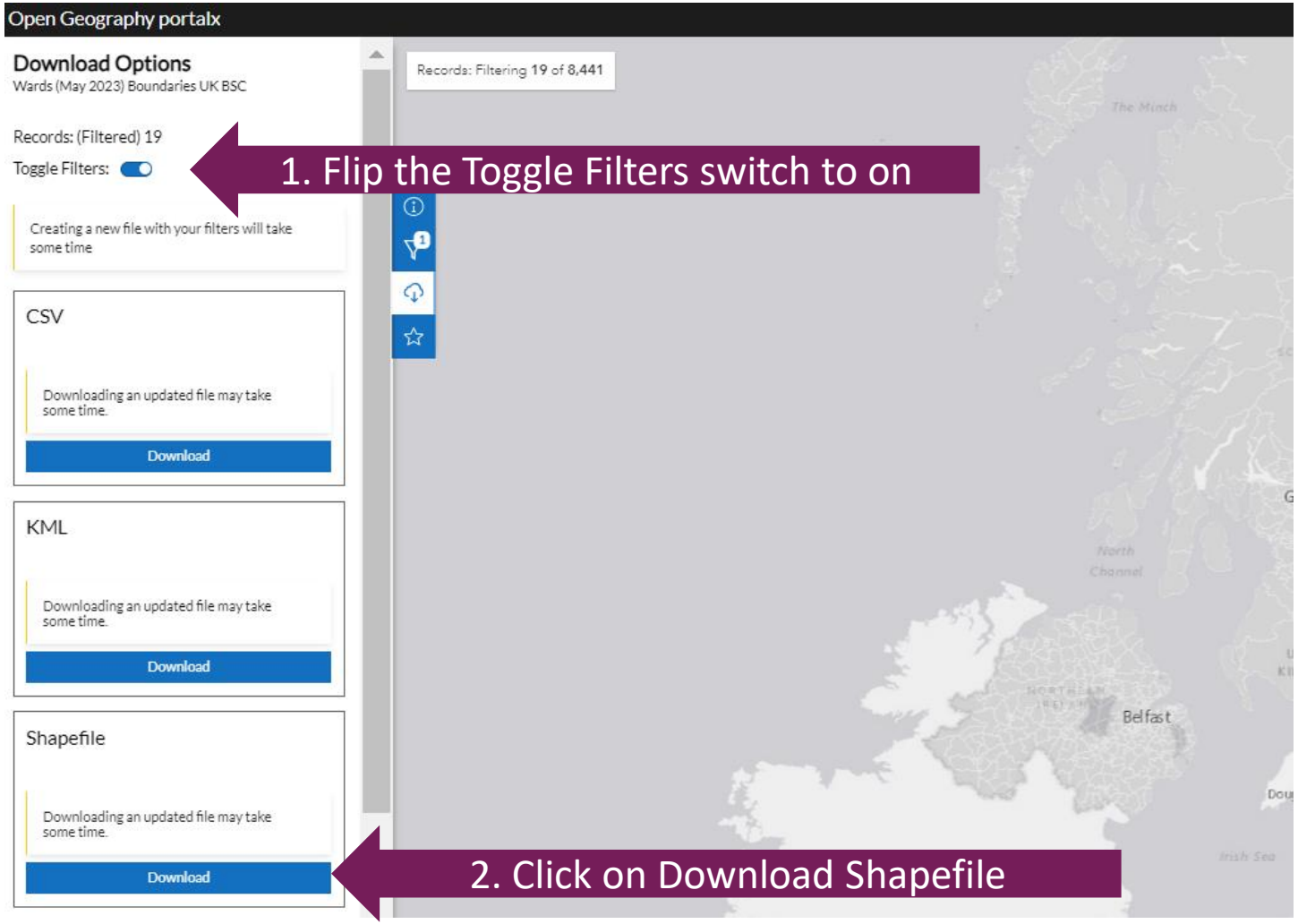


Download the data set

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



Edit the map projection

OSGB36 to WGS84

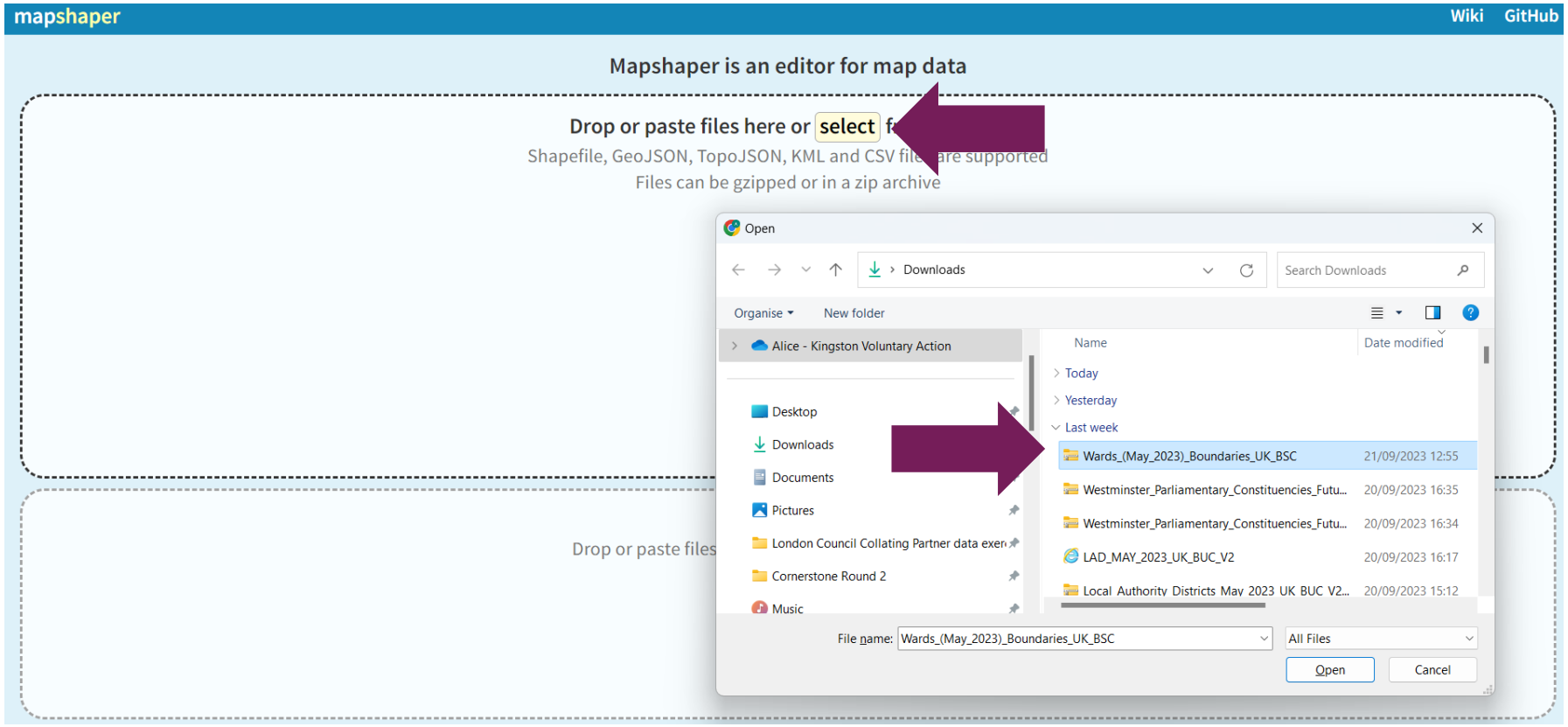
The Shapefile from the ONS you've downloaded uses a OSGB36 (Ordinance Survey Great Britain 1936) projection.

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

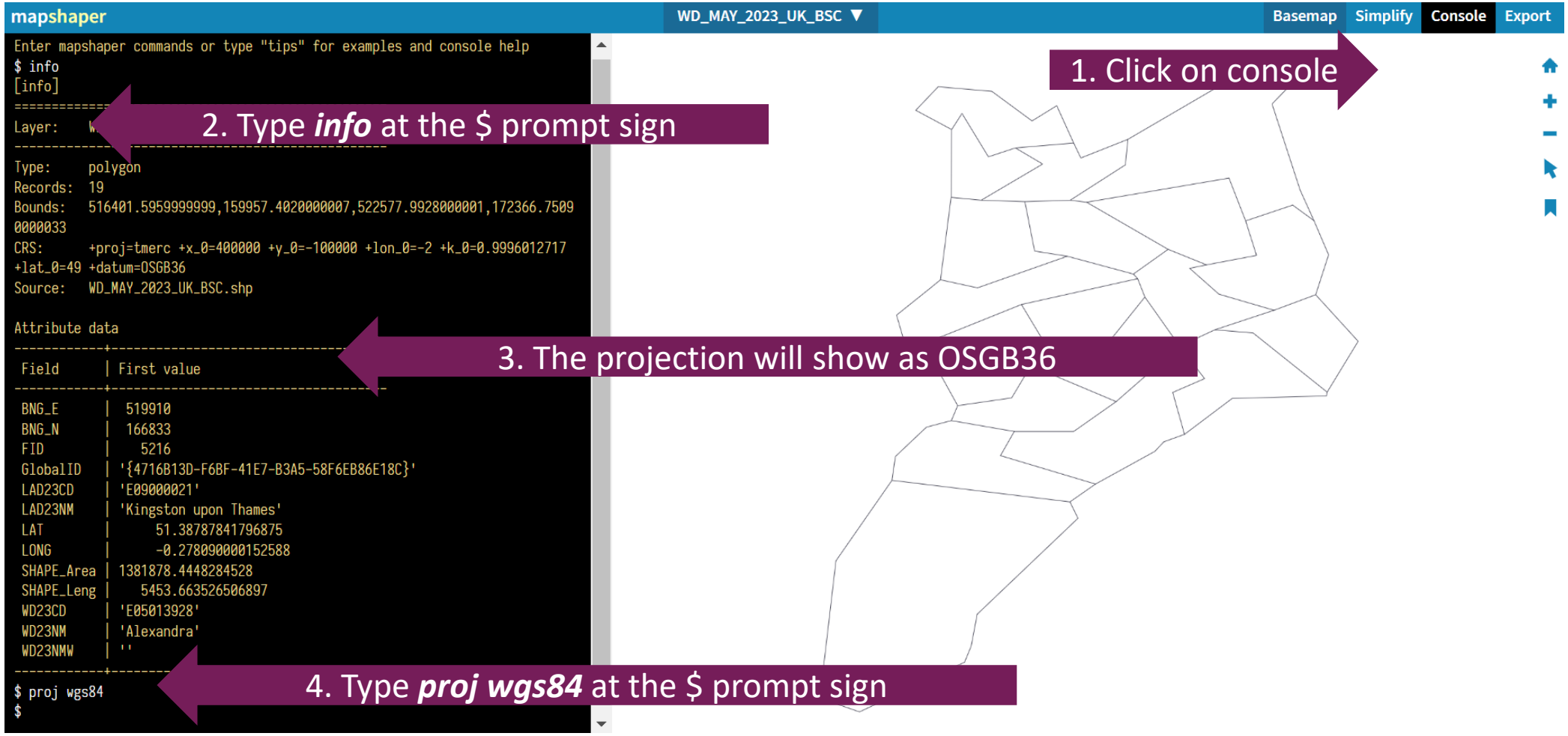
Create your TopoJSON in Mapshaper.org

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 to convert the file
3. Click on the select button and then upload the zip file from your downloads



Change the projection in Mapshaper.org

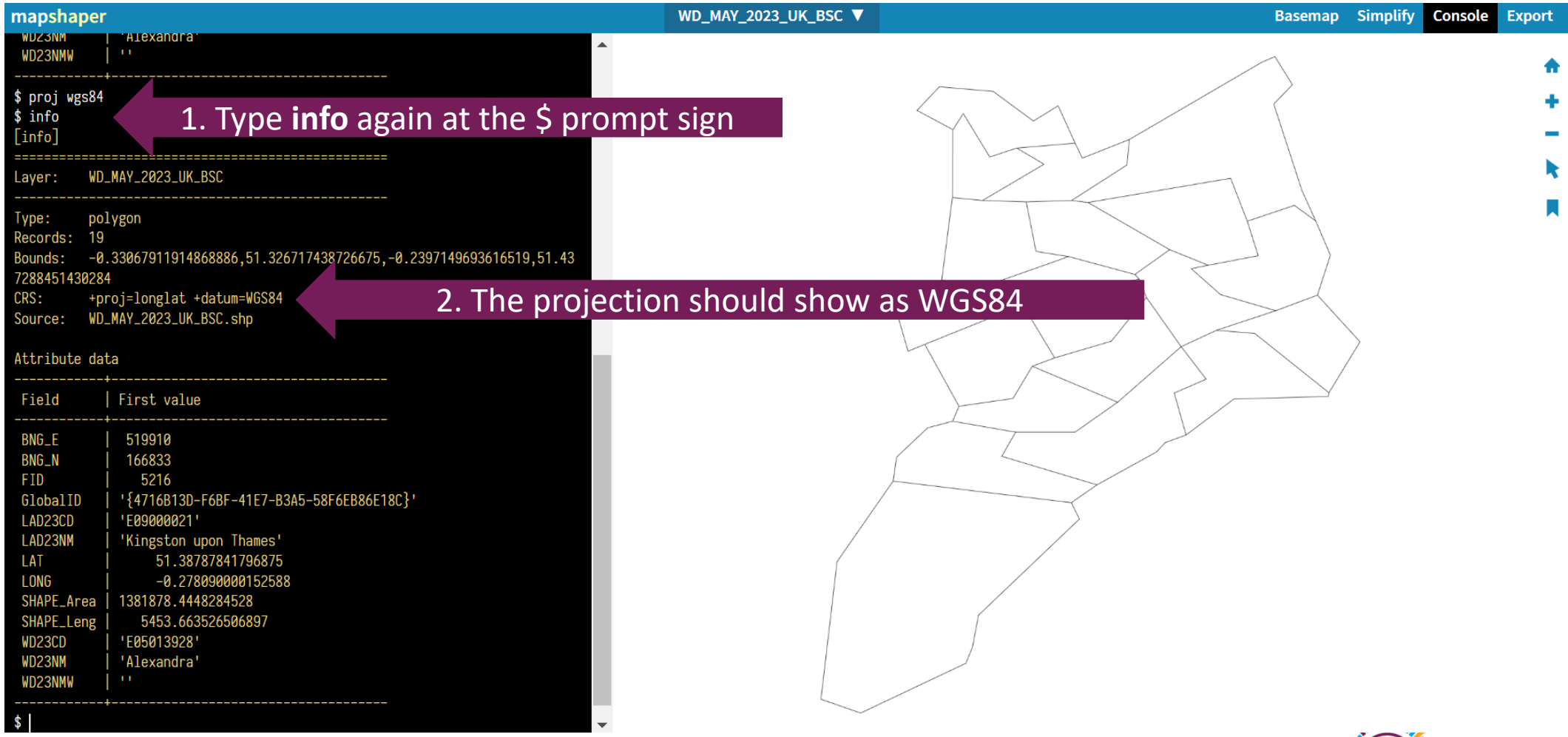
1. Click on **Console**
2. Type the word ***info*** at the prompt to bring up the map information
3. Review the projection which will show as OSGB36
4. At the $ prompt type ***proj wgs84***
5. Press enter on your keyboard



Check the new projection

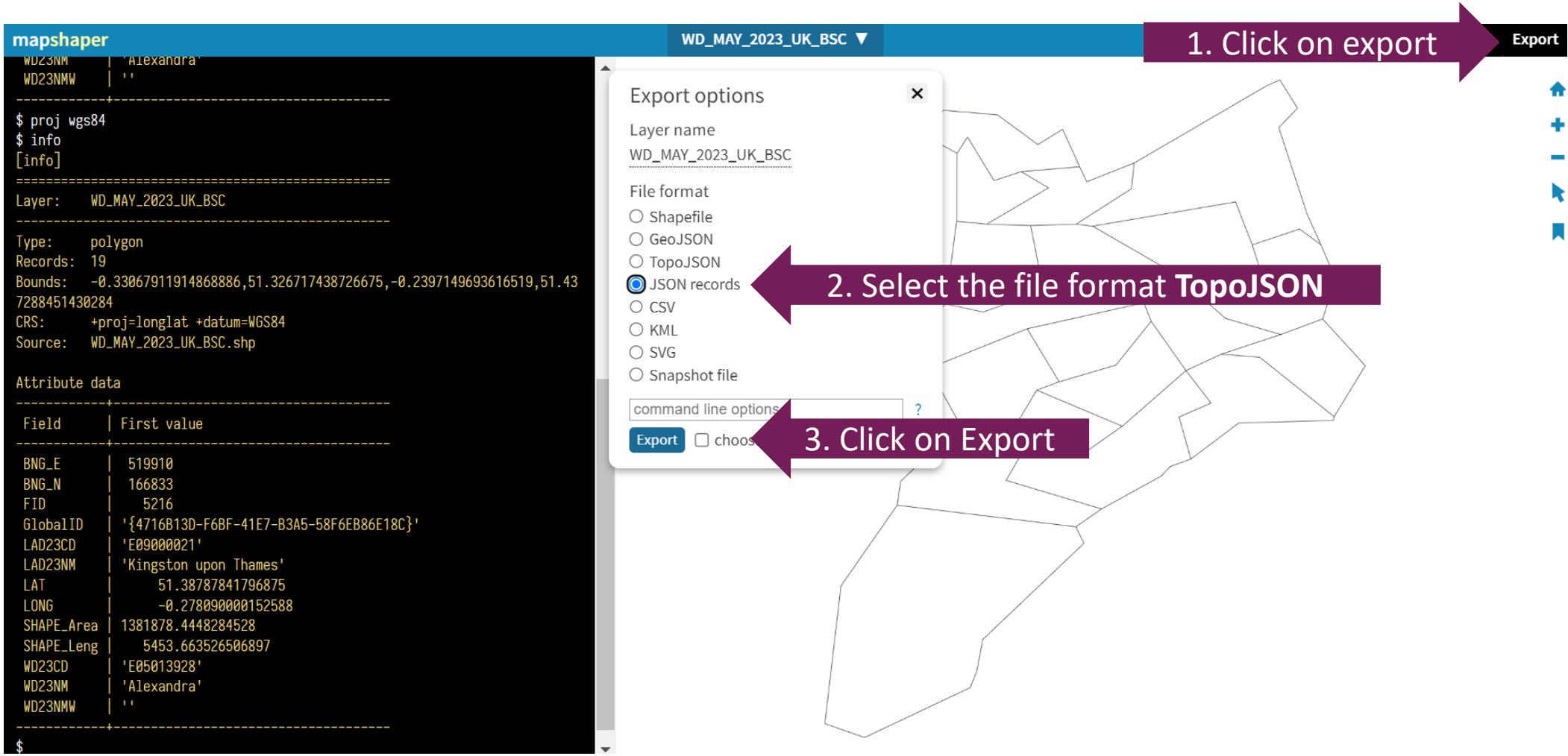
1. Type the word **info** at the prompt to bring up the map information again
2. The projection should now show as **WGS84**

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



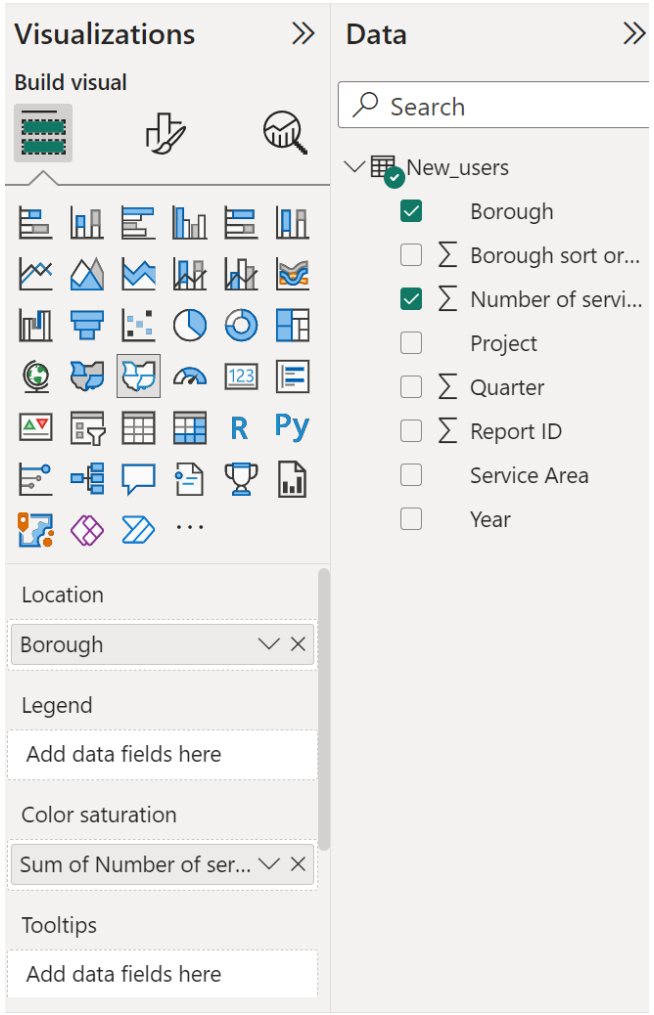
Export the map as a TopoJSON file

1. Click on **Export**
2. Select the format option **TopoJSON**
3. Click on the **Export** button
4. Check the file **WD_MAY_2023_UK_BSC_V2** has downloaded



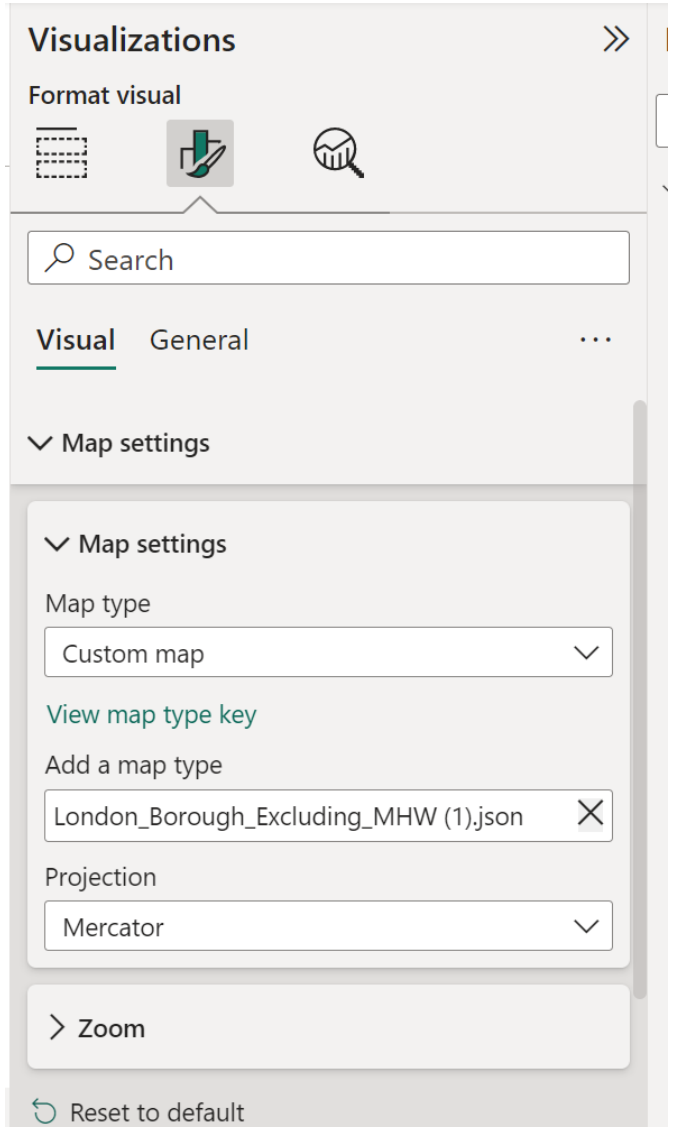
Upload your JSON file to Power BI

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.

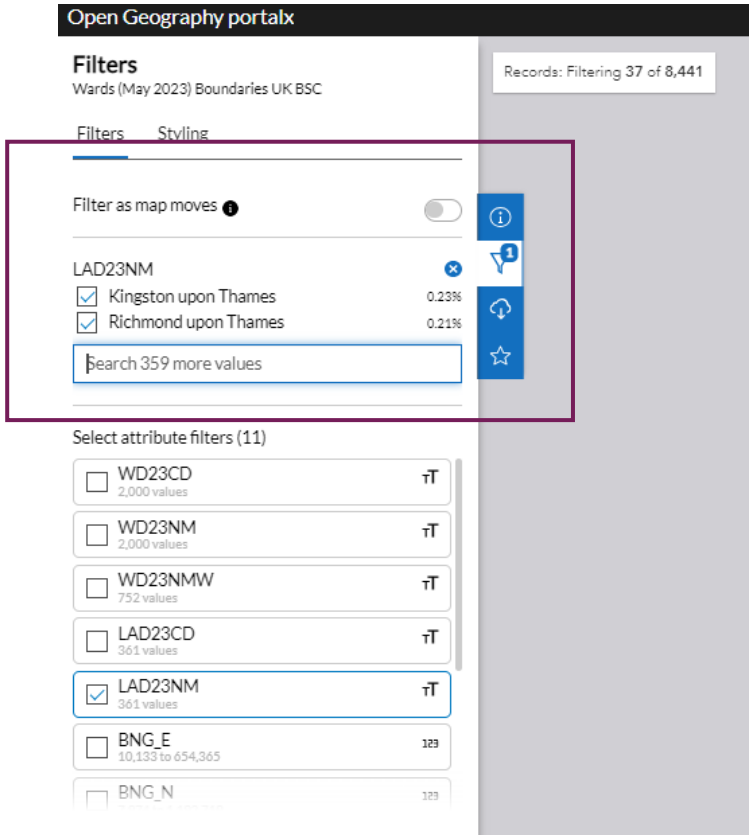
The easiest workaround is to make sure your names match. The most common errors occur around the boroughs with “and” in their names e.g. Hammersmith and Fulham (ONS spelling) and Hammersmith & Fulham (a common spelling in data sets). Obviously in an ideal world you would change the spelling in your data 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

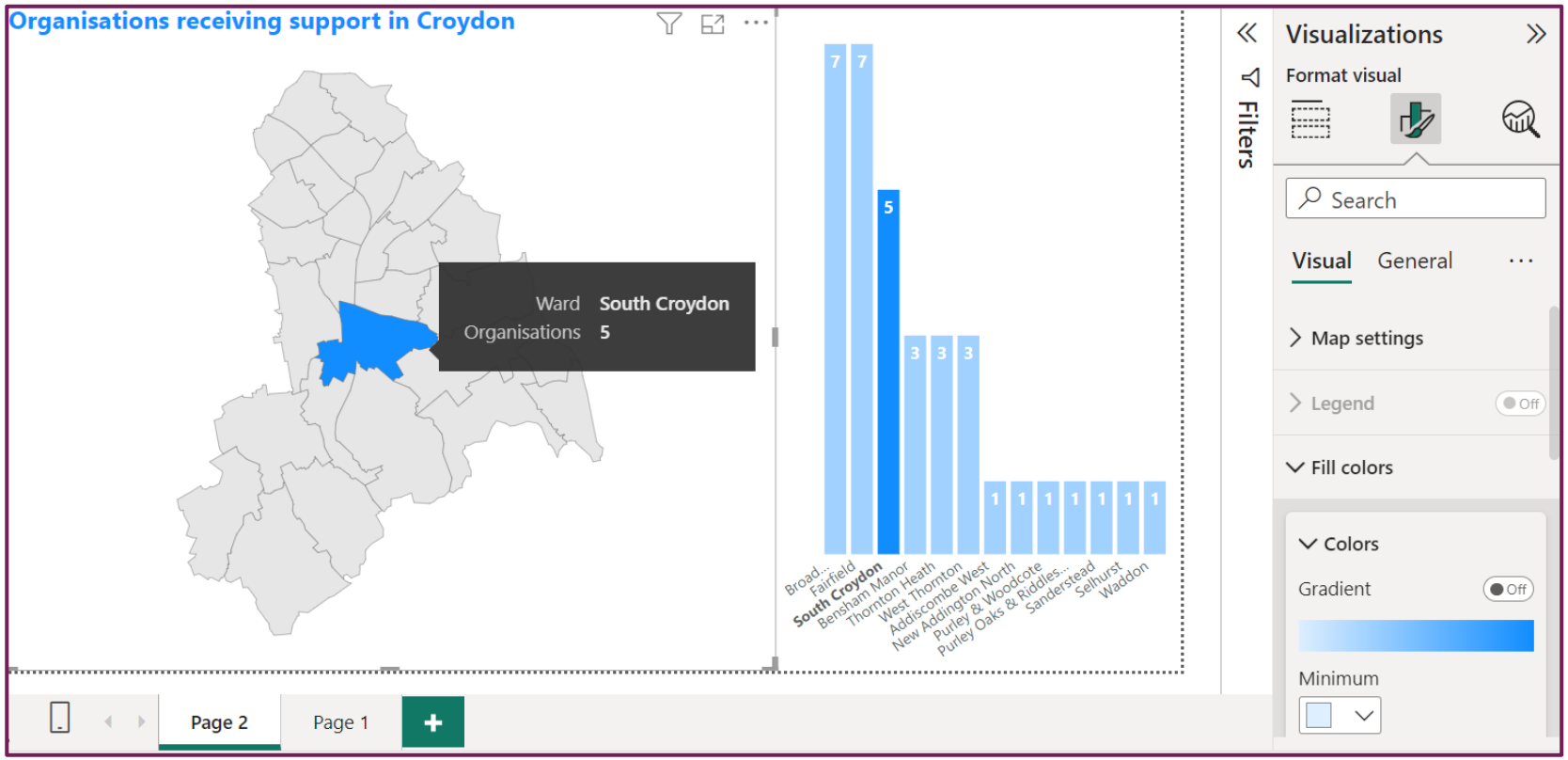
How do I create a shape map for more than one London borough?

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



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