CRTY 1030

Thematic Project

Centre of Geographic Sciences
COGS | nscc

The thematic project was a culmination of the skills and learning in the Cartography & Geovisualization program thus far. The goal for this thematic project was to visualize the areas in Greater London that are most accessible via public transport. The final raster graphic was produced by overlapping 10-minute transit isochrones for each Transport for London (TfL) station located in Greater London. Isochrones were created using the Valhalla online mapping engine, and raster analysis was performed in ArcGIS Pro to determine the number of TfL stations that could be used to access a region within a 10-minute transport journey. This raster was supplemented with additional vector data, and added to a poster that provided a wider context on the issue of transport in London. The data was analyzed to determine which boroughs were most accessible by transport. Additionally, the poster explored a borough undergoing transport developments aimed at increasing accessibility.

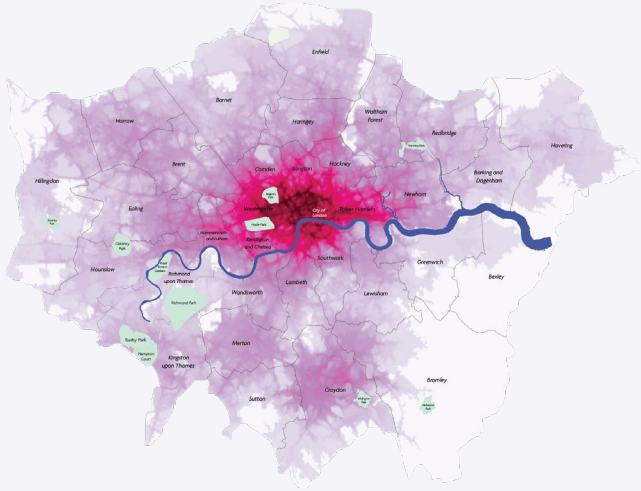
Utilized the **Valhalla** mapping engine to produce 10-minute transport isochrones for all 533 Transport for London stations.

Automated geoprocessing tasks with **ArcGIS Pro ModelBuilder** to rasterize polygons, save new files, and input raster files into cell statistics tools.

Performed cell statistics in **ArcGIS Pro** on raster files to determine areas where there was a high overlap of cells.

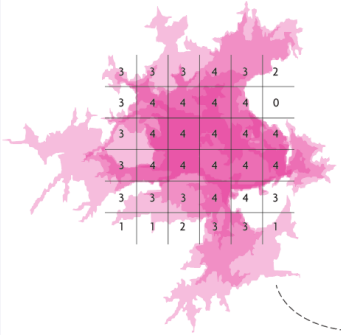
Analyzed resulting data using **Microsoft Excel** and **Python** to determine boroughs that were least/most accessible via public transport and created resulting data visualizations.

Designed a balanced and informative poster in **Adobe Illustrator** featuring the map alongside contextual information and surrounding graphics.



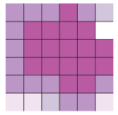
Points of Access

Isochrone: a visual representation of which areas can be reached by a certain transportation method within a given distance or time.



To measure public transit connectivity, 10 minute isochrones were developed for all 553 Transport for London (TfL) stations within the boundaries of Greater London.

Isochrones were overlayed with one another, and raster analysis was performed to determine the **number of TfL stations that could be used to access a region within a 10 minute transport journey.**



Access by Borough

Central London boroughs including Westminster, City of London, and Islington have the highest **average number of access points per 1 km² area.** Outer boroughs have comparitively lower averages.

The **City of London**, the smallest of the boroughs in the Greater London Area, is the most connected via public transport. Each 1 km² area has an average of **54 points of access** within a 10 minute public transport journey. The borough of **Westminster** has an average of 41 access points. The borough of **Islington** has an average of **36** access points to each area.

The outer boroughs of Bexley, Greenwich, and Hillingdon have an average of 1, 2, and 4 points of access per square kilometer, suggesting an **intense need for greater public transport connectivity.**