

Knowledge Sharing Event

Project EDMOND

16th March 2018



Knowledge Sharing Event

Project EDMOND

16th March 2018



Night Economy in London

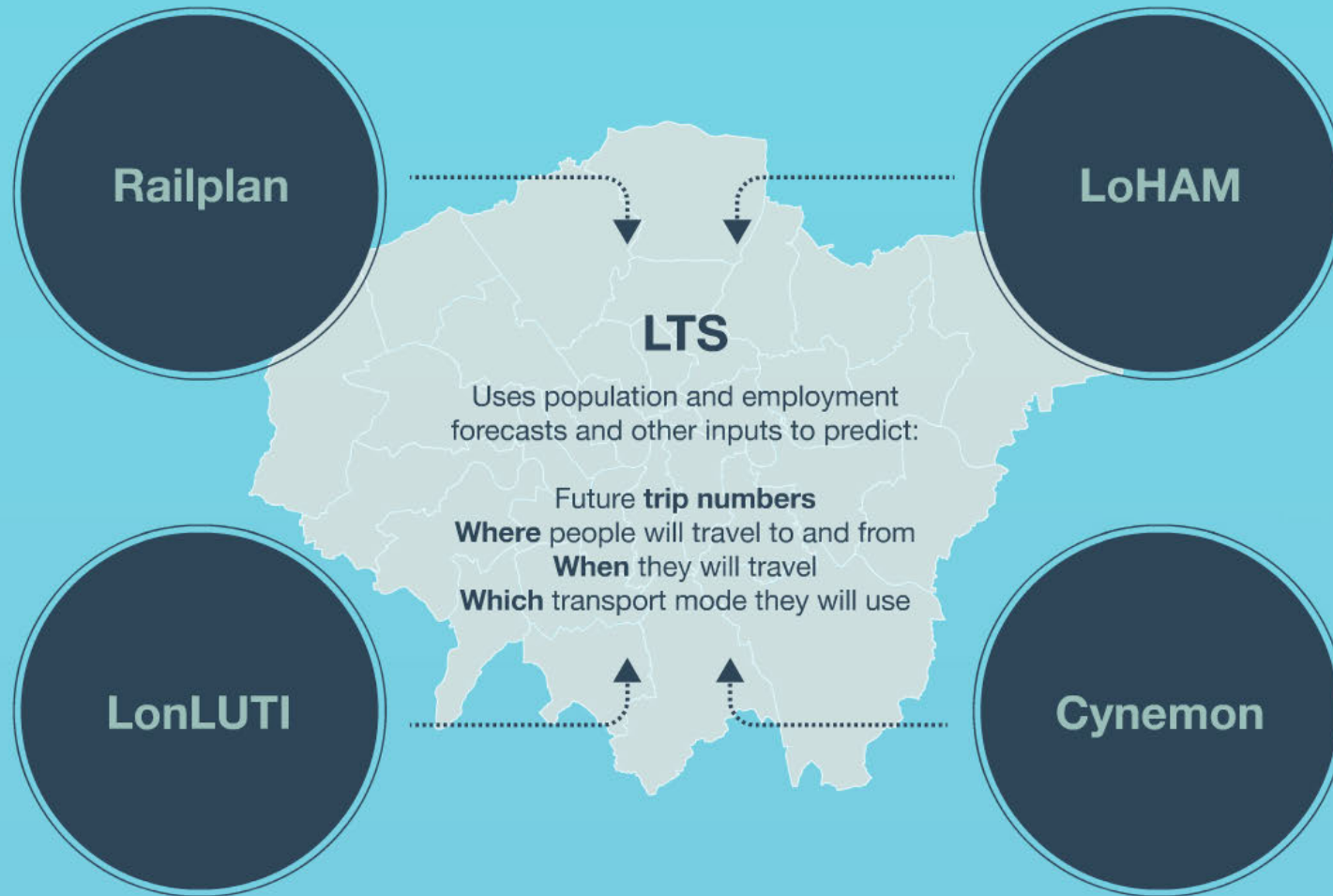
A typical road of London is 30m wide. It takes 100m to get to the next road.

Peak hour Travel

100m to get to the next road

Why do we need Project Edmond?

TfL has a multi-modal suite of models



The models need full origin and destination (OD) trip data for all modes of travel

EDMOND increases our sample size over LTDS

KEY



LTDS



EDMOND

DAYS



1



86

TOURISTS



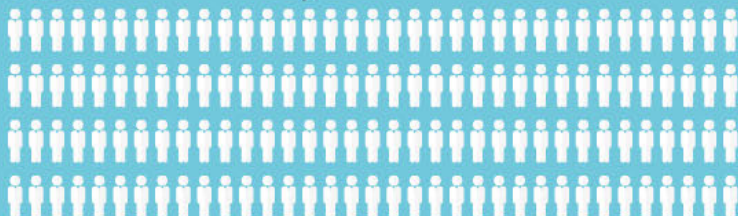
0

3,184,424

PEOPLE



18,000

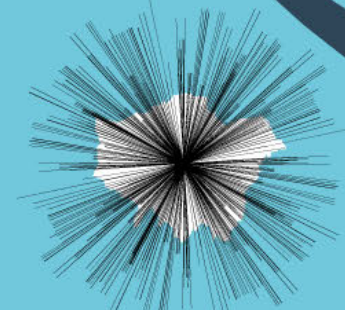


15,488,945

JOURNEYS

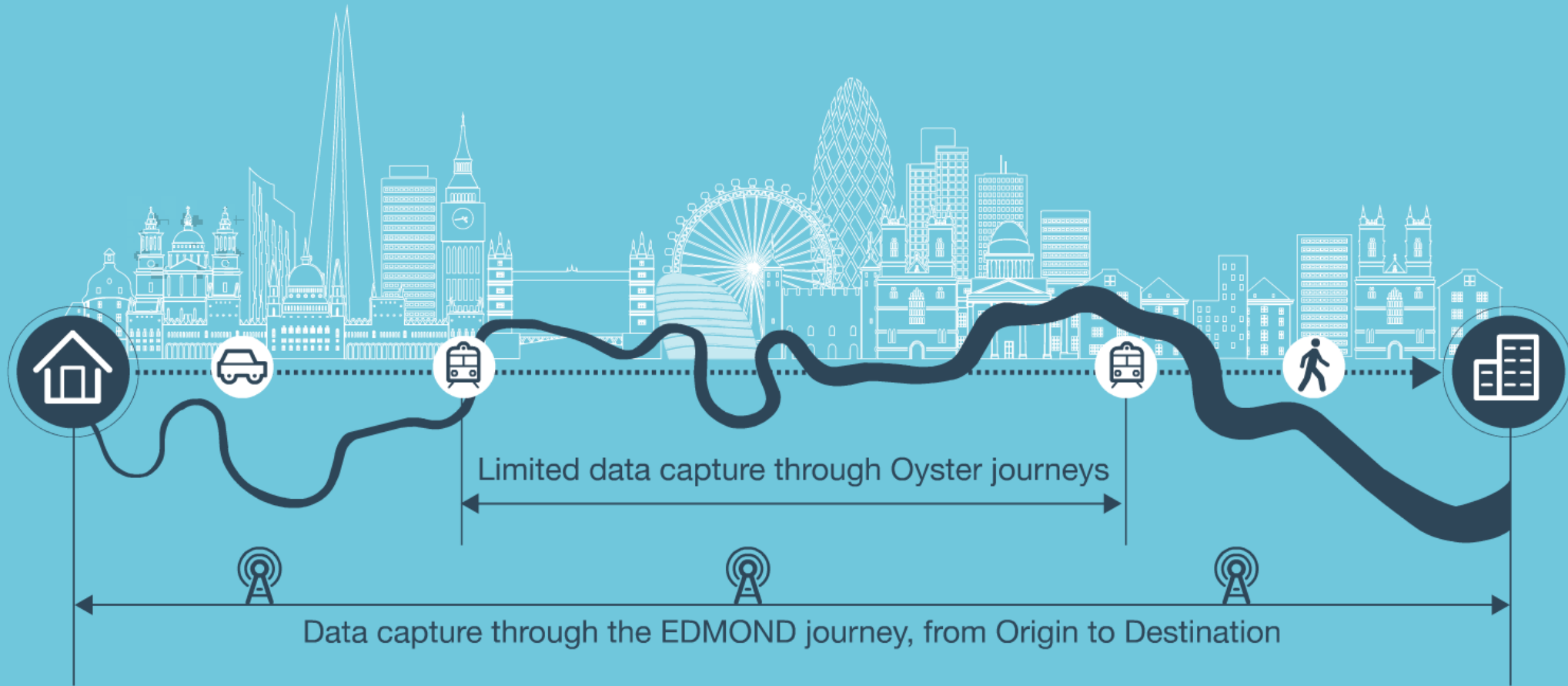


43,044



395,226,629

Oyster only provides a partial picture



We used to undertake Roadside Interview Surveys for highway trips ...

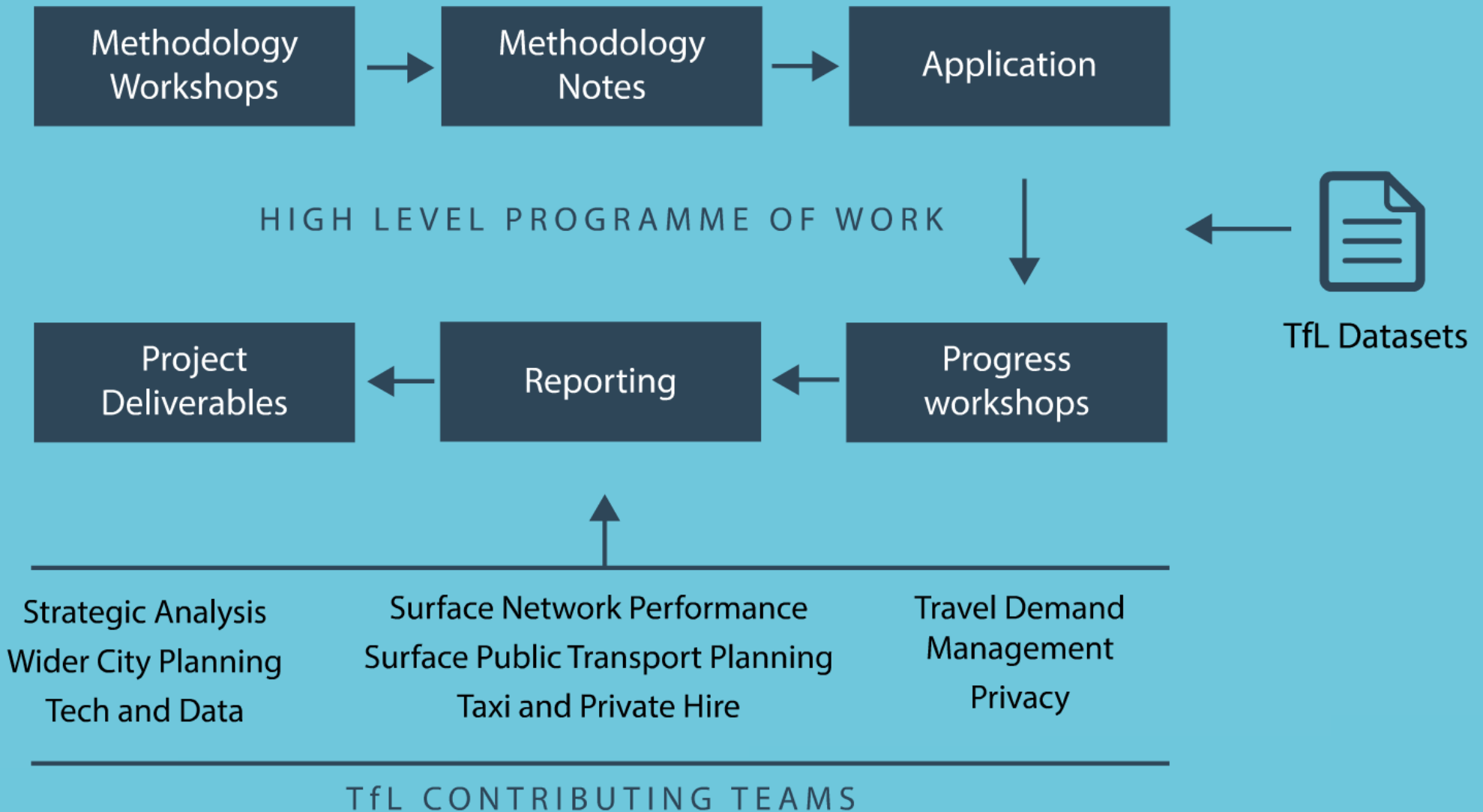


The advent of mobile data provides a new opportunity



Because of the challenge, we have
approached the project carefully

Our collaborative approach



The Presentation Team



EDMOND Project Leader
Jacobs



EDMOND Mobile Network
Data Expert **Telefonica**



EDMOND Matrix Development
and Data Fusion Expert, **Aecom**

METHODOLOGY

Mobile Data Collection, Opt-In Survey:

Mode Detection and Validation:

INSIGHTS

CLOSE OUT AND Q&A

METHODOLOGY

Mobile Data Collection, Opt-In Survey:

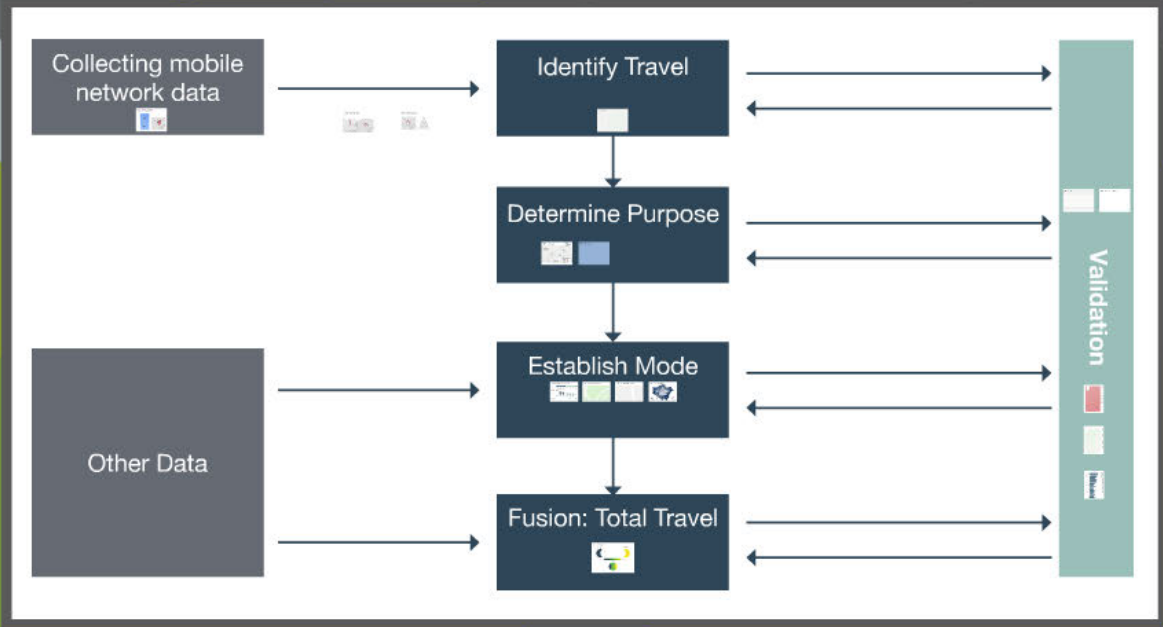
Mode Detection and Validation:

INSIGHTS

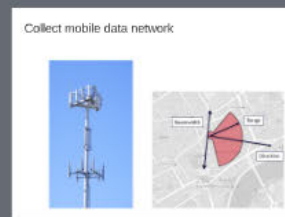
CLOSE OUT AND Q&A

Mobile Data Collection, Opt-In Survey

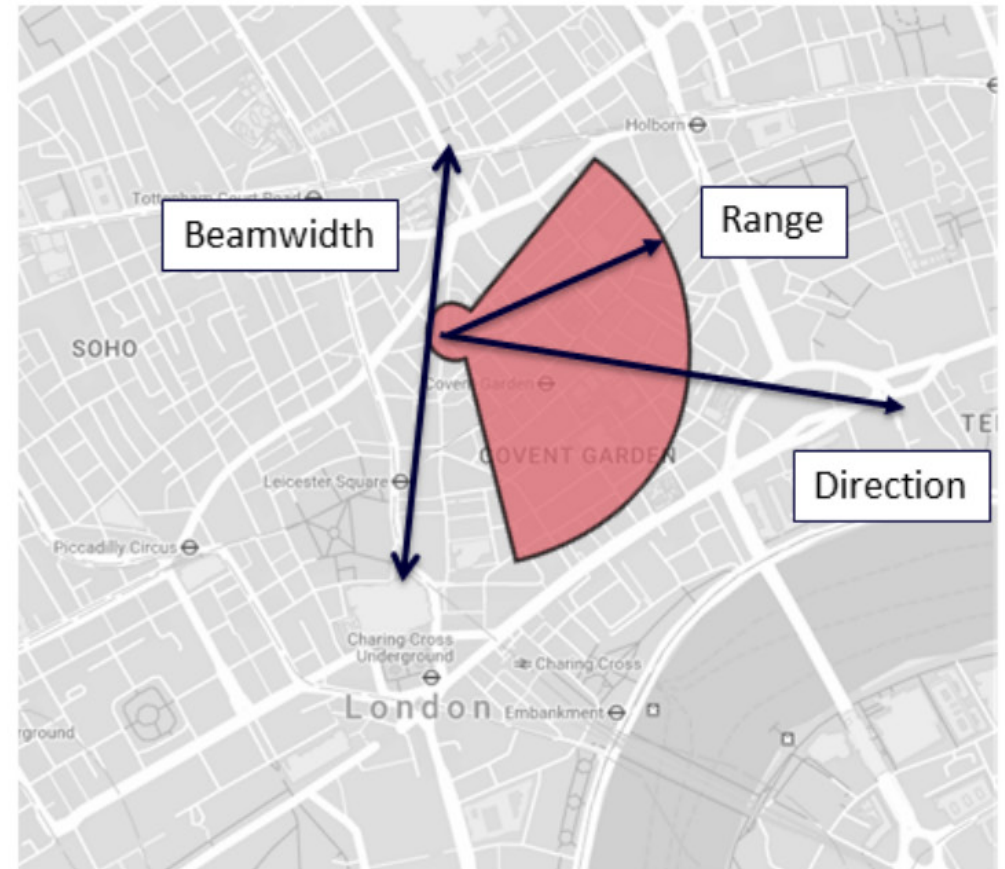




Collecting mobile network data



Collect mobile data network

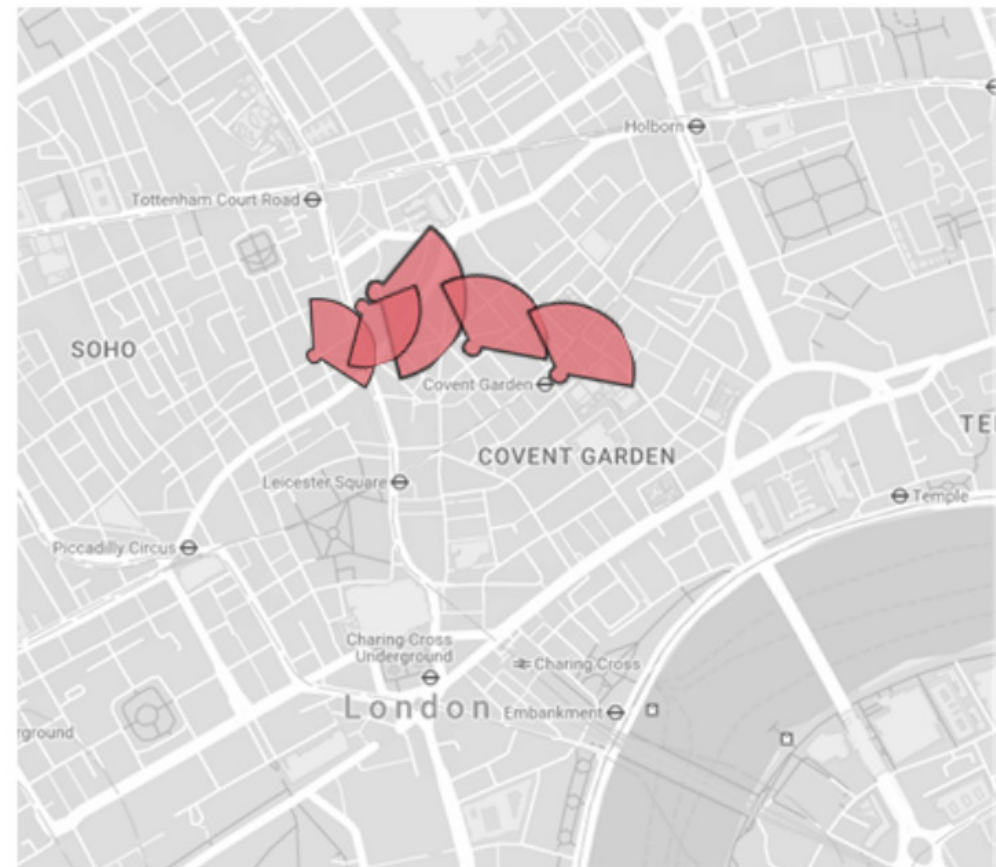


Collect mobile data network

Country wide

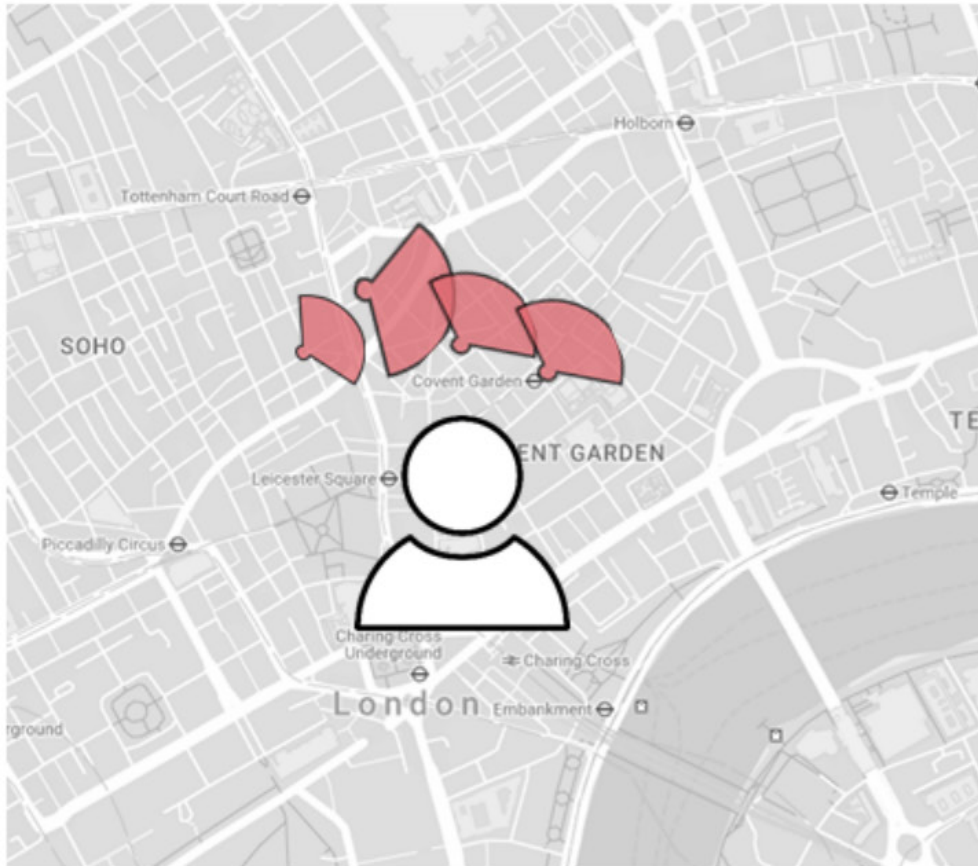


Down to 200m accuracy

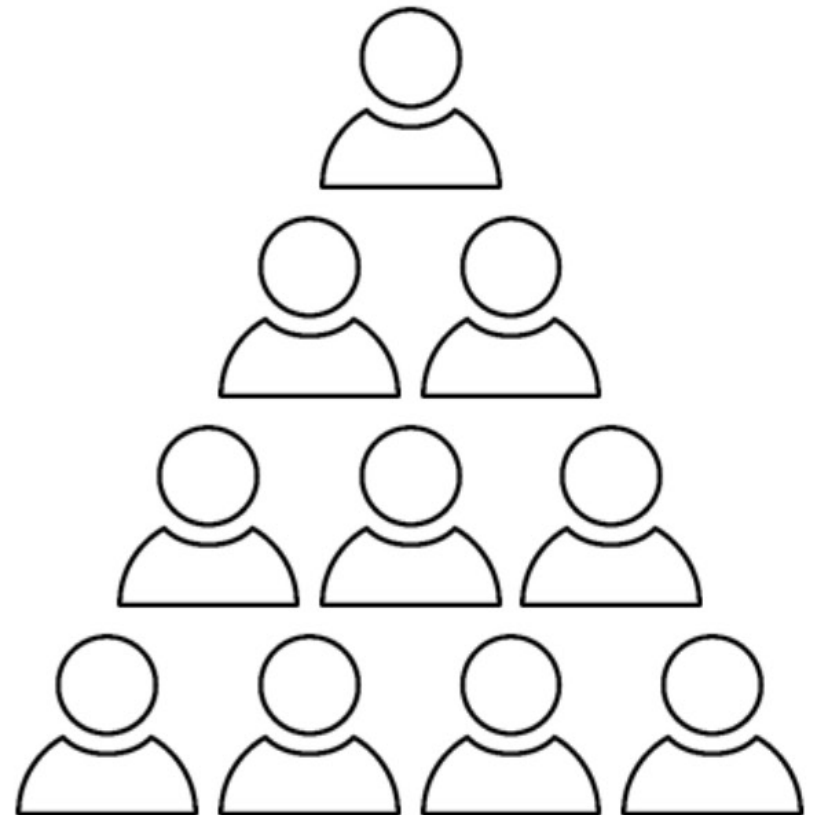


Collect mobile data network

Anonymised



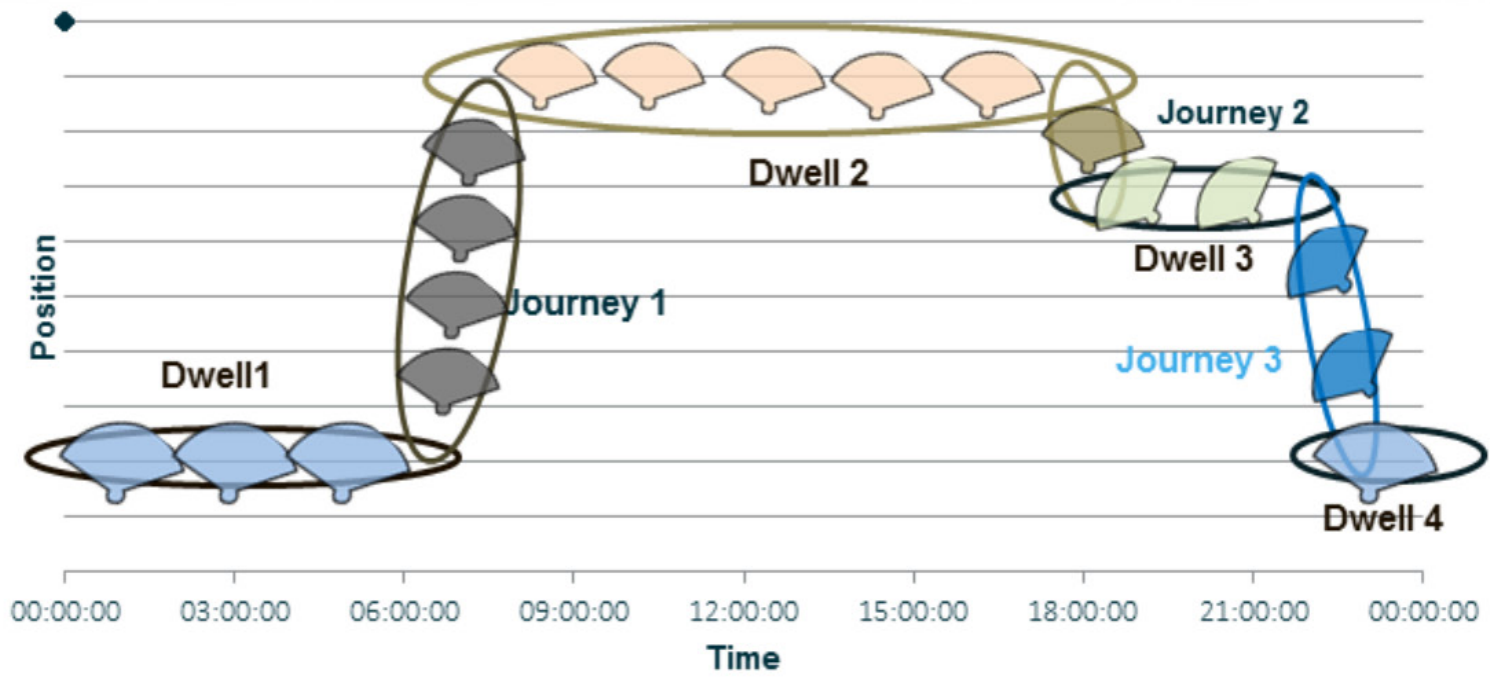
Aggregated



Identify Travel



Identify Travel





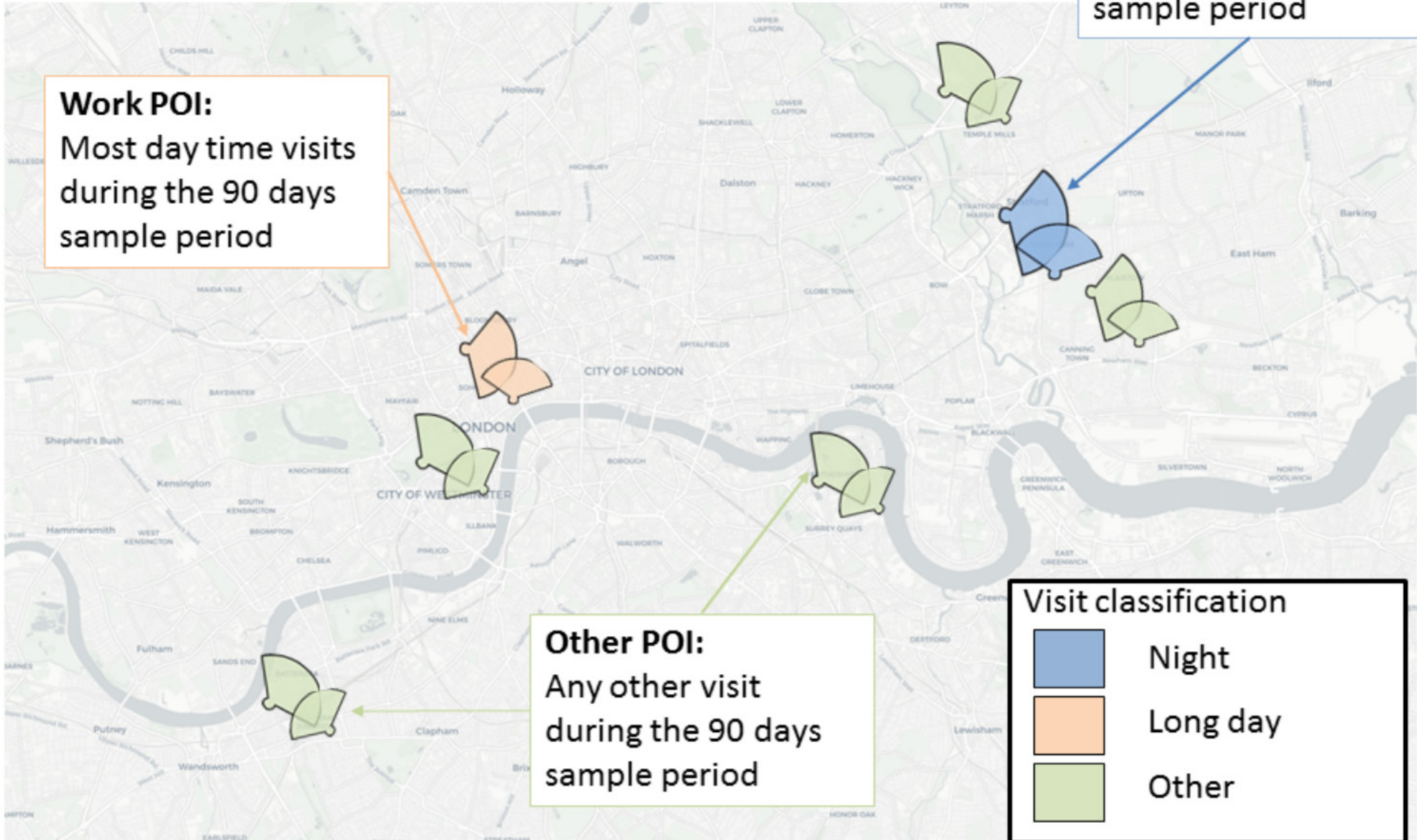
Determine Purpose






Determine Purpose

Home POI:
Most overnight visits during the 90 days sample period

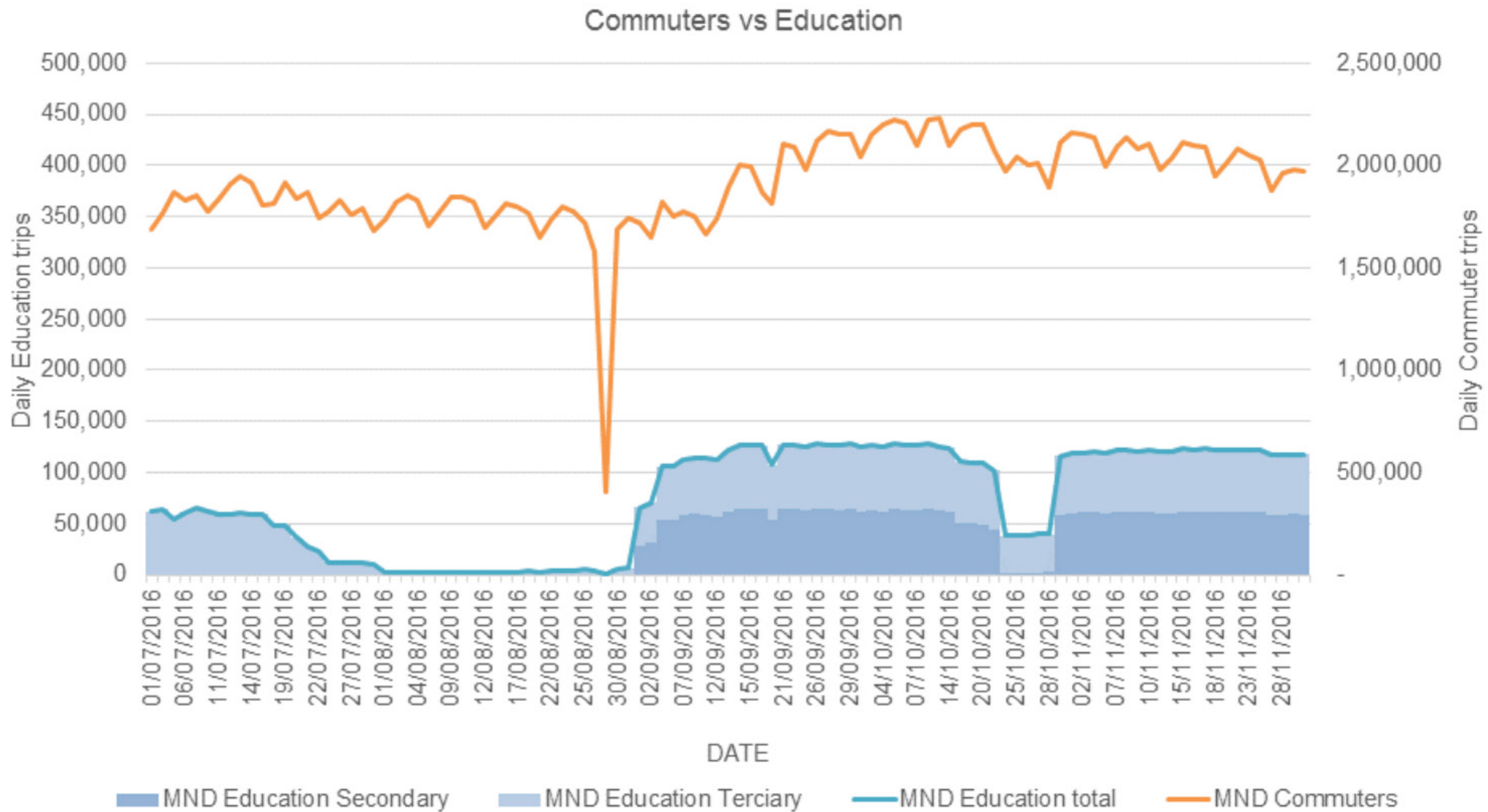
Work POI:
Most day time visits during the 90 days sample period



Other POI:
Any other visit during the 90 days sample period

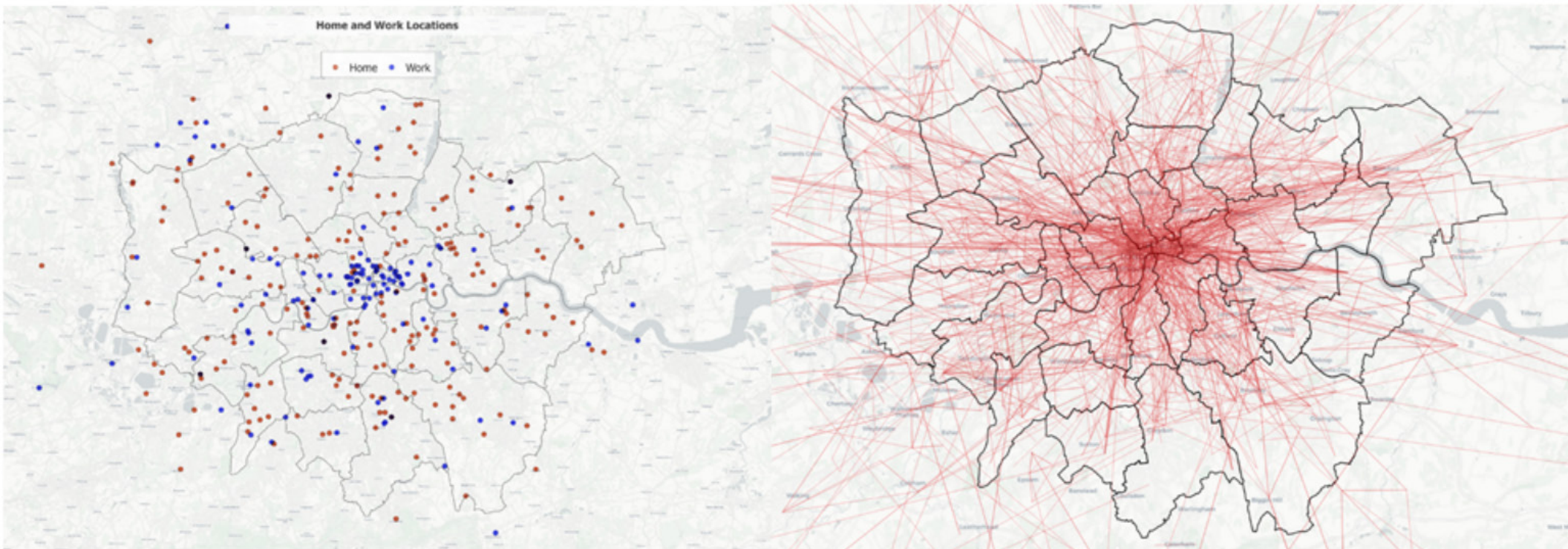
| Visit classification | |
|---|----------|
|  | Night |
|  | Long day |
|  | Other |

Determine Purpose

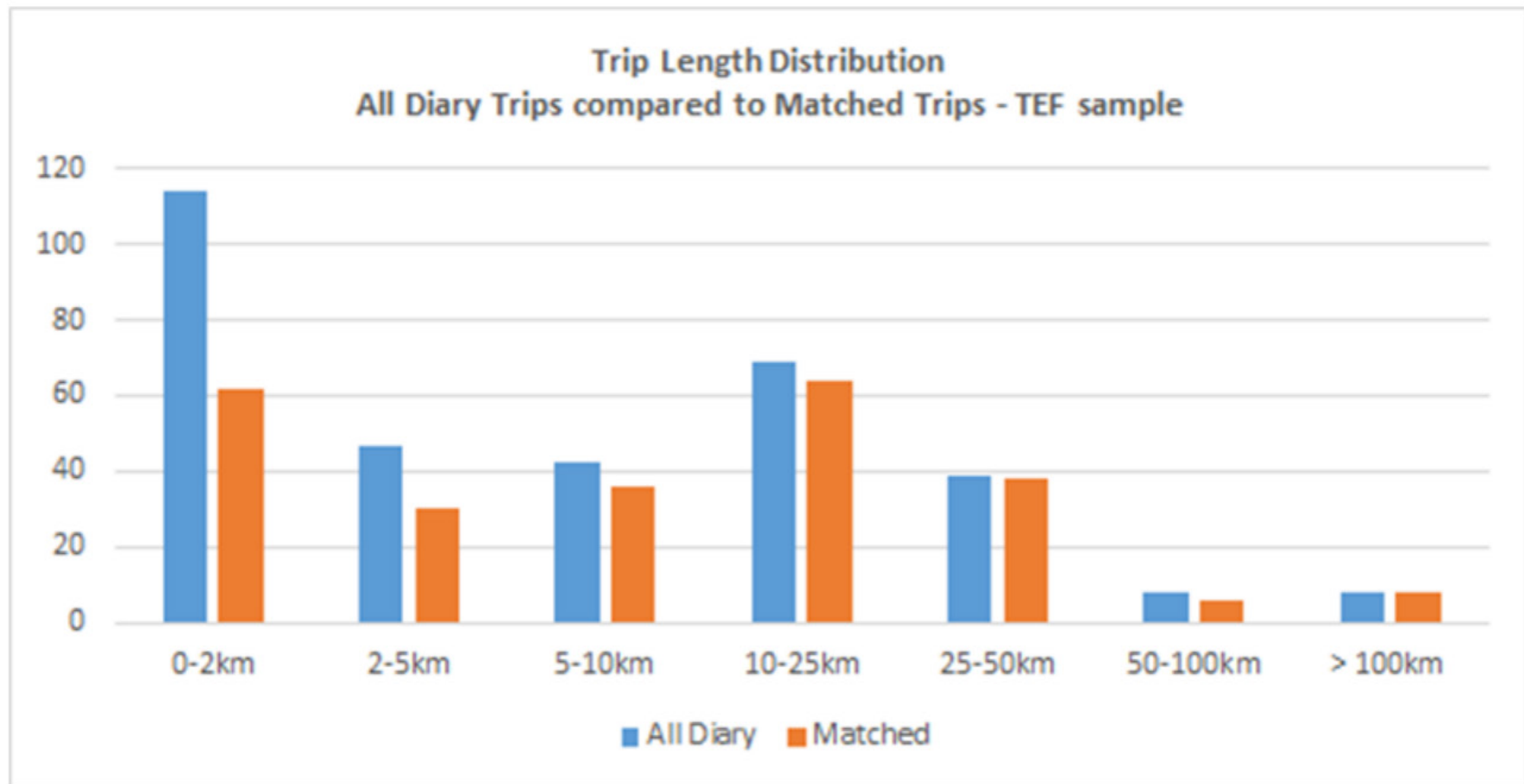


Opt-in survey

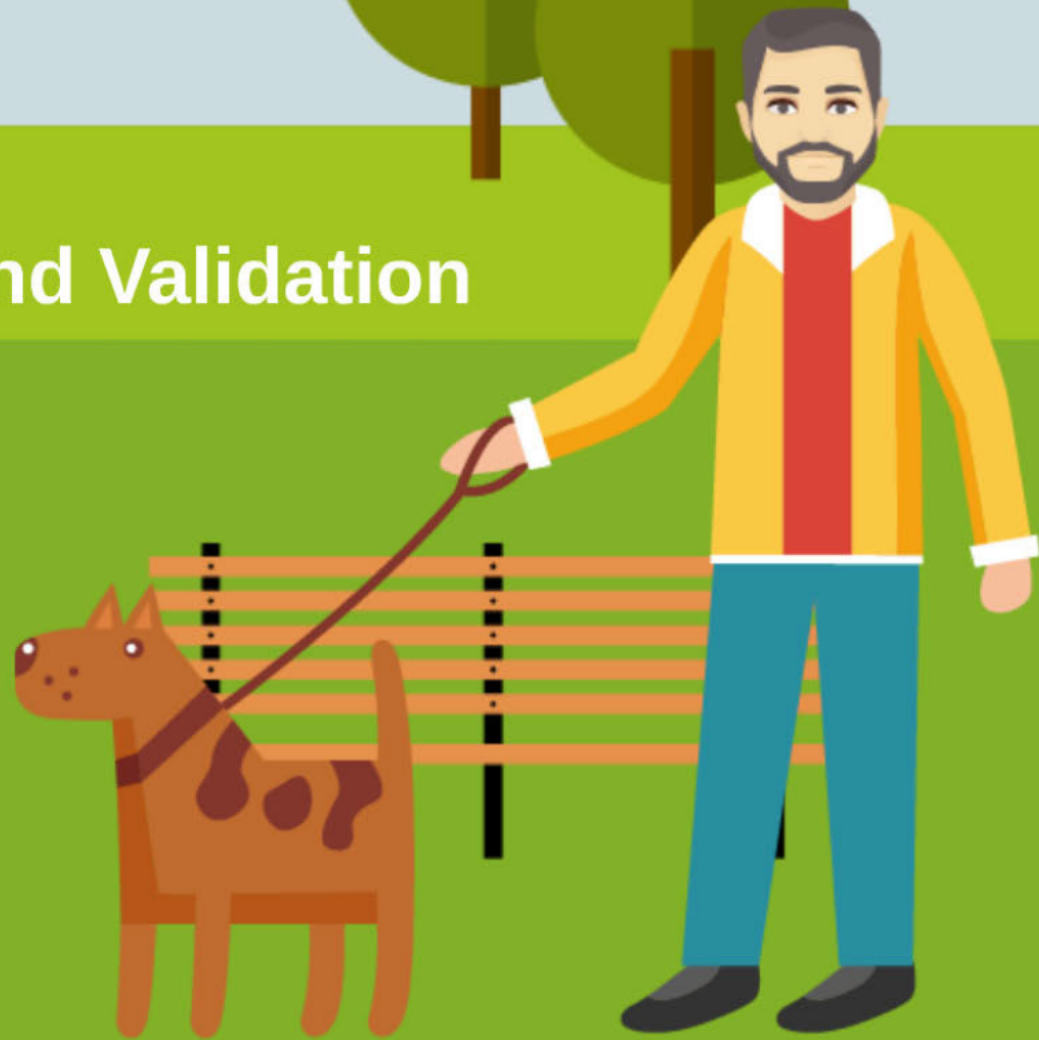
- 255 users
- 2,600 trips
- Statement of Home and work locations
- Users filled their trips and transport mode during 8 days

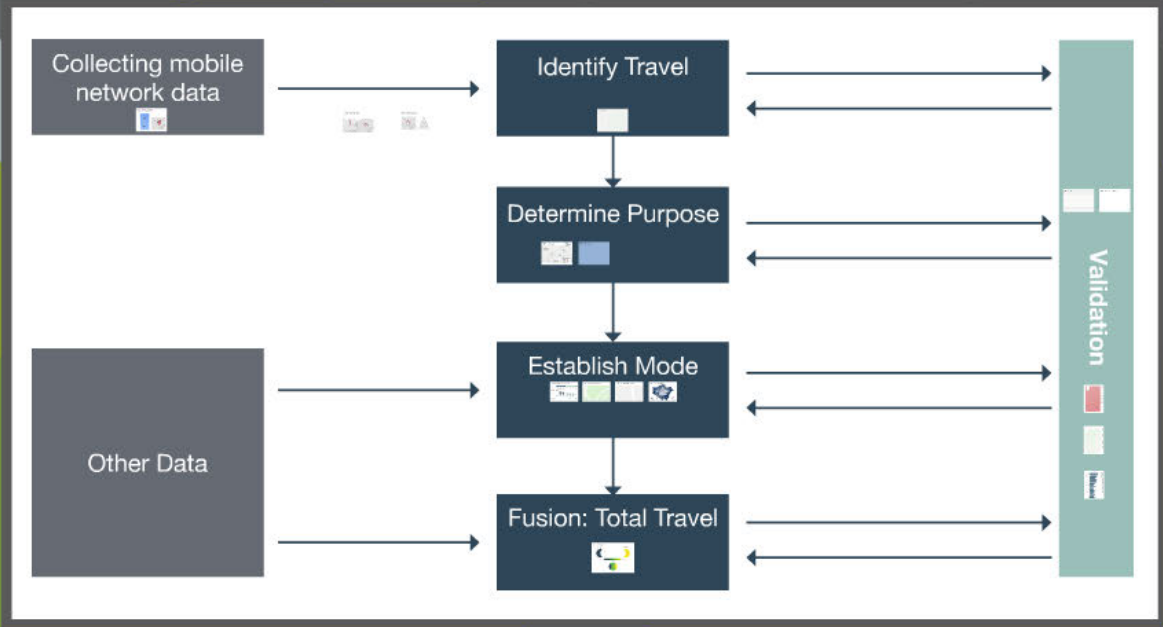


Opt-in survey: Trip matching



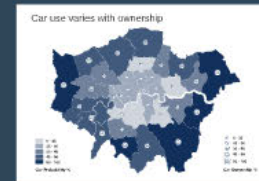
Mode Detection and Validation



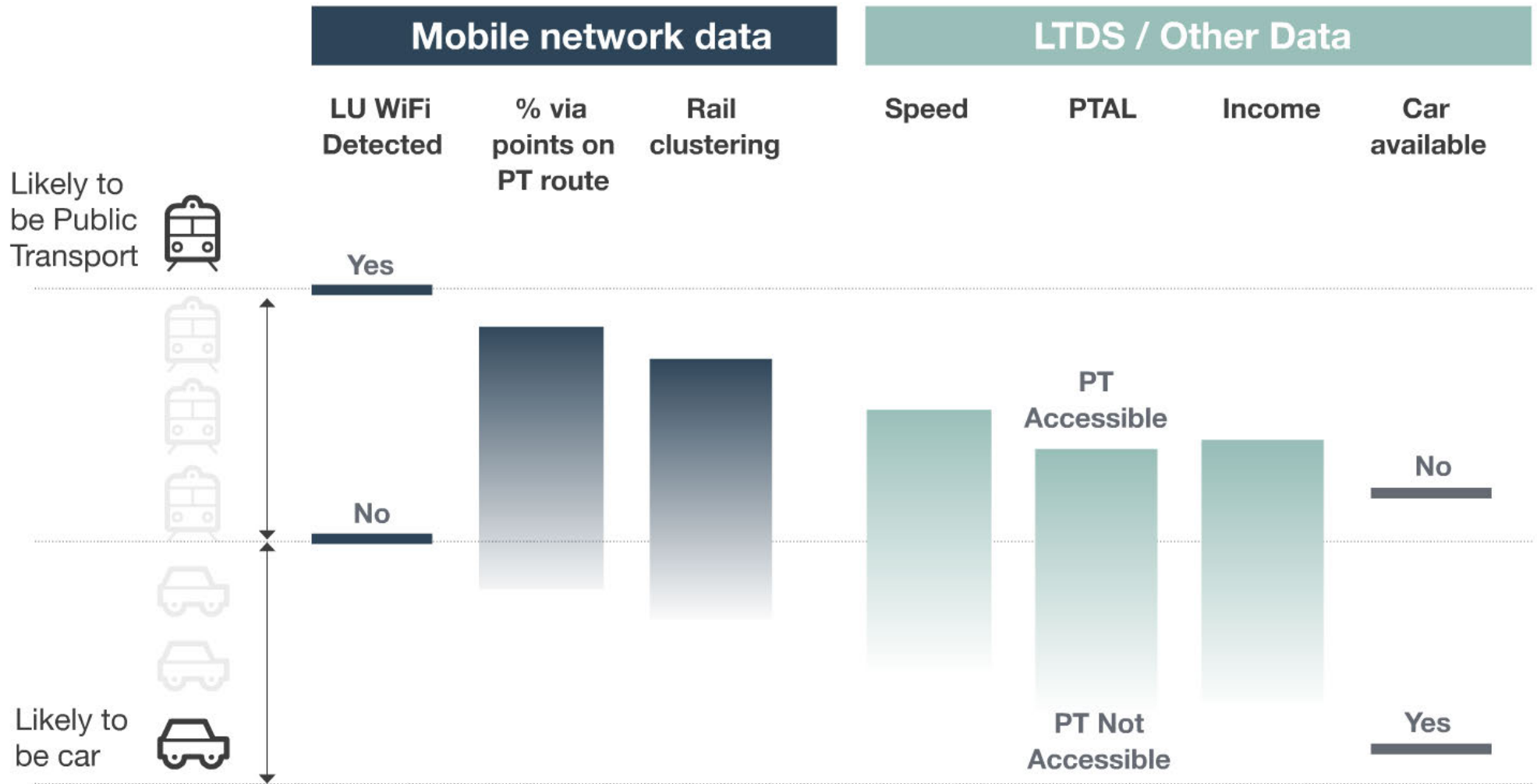




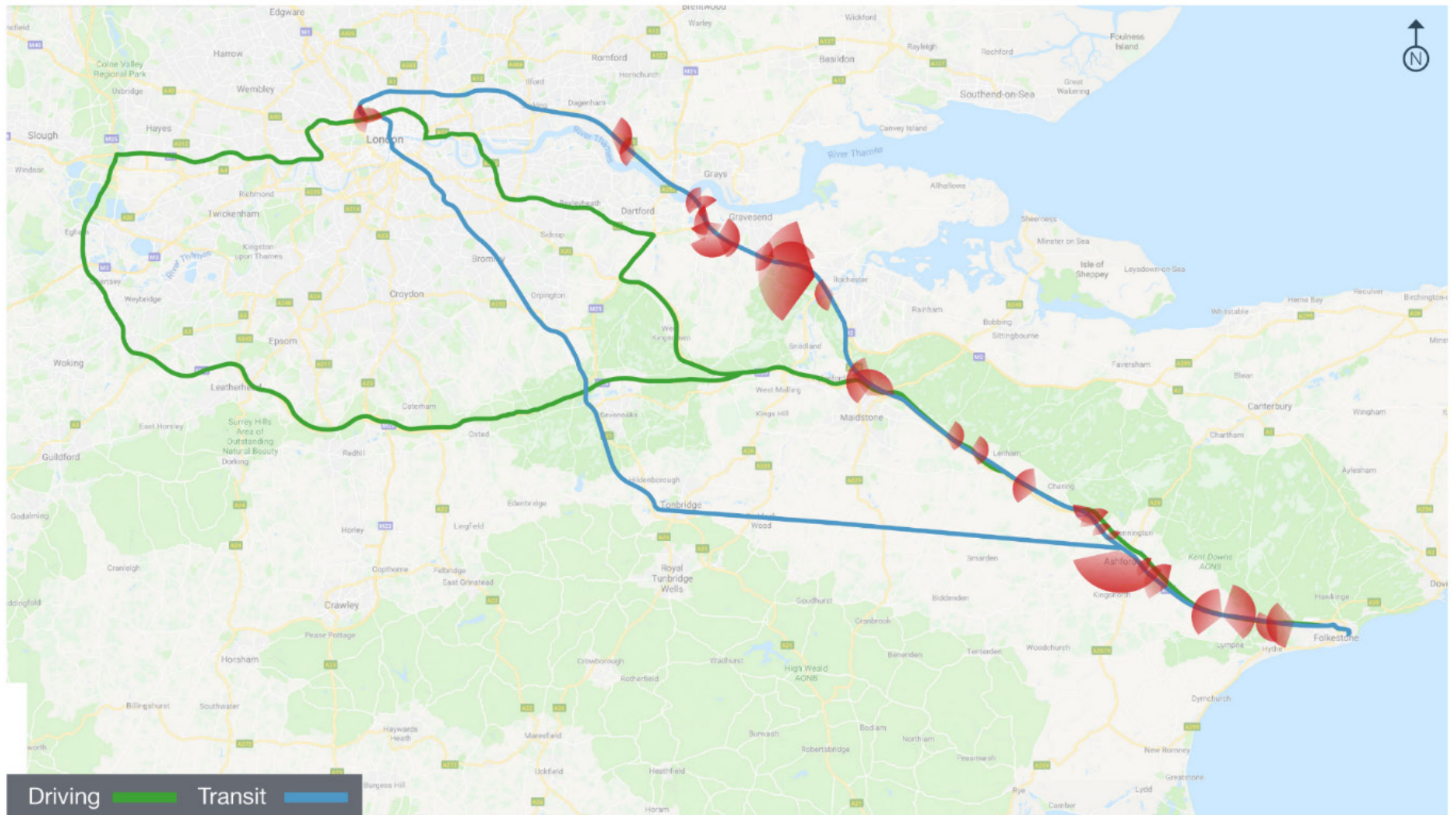
Establish Mode



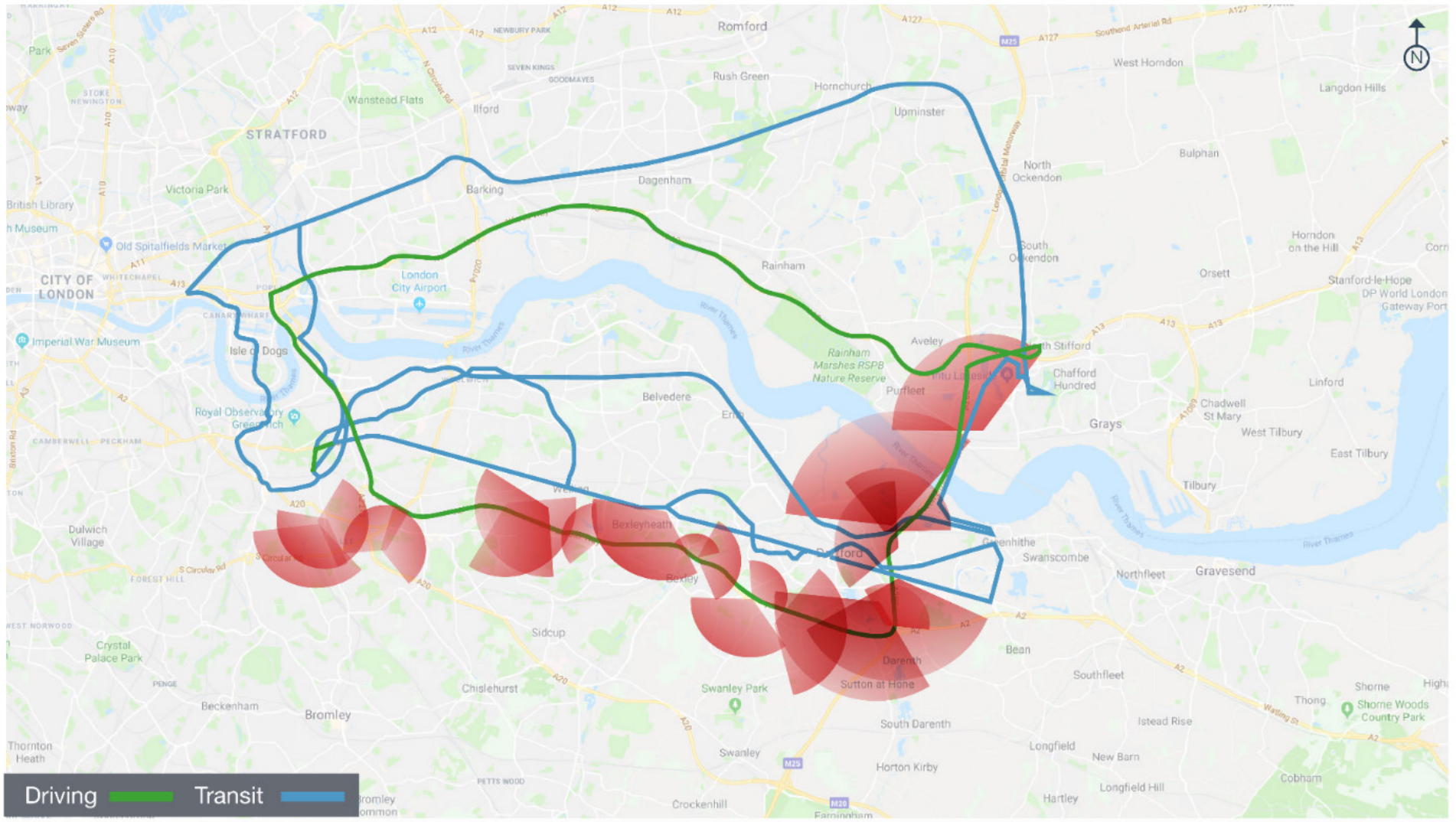
Journey characteristics indicate mode



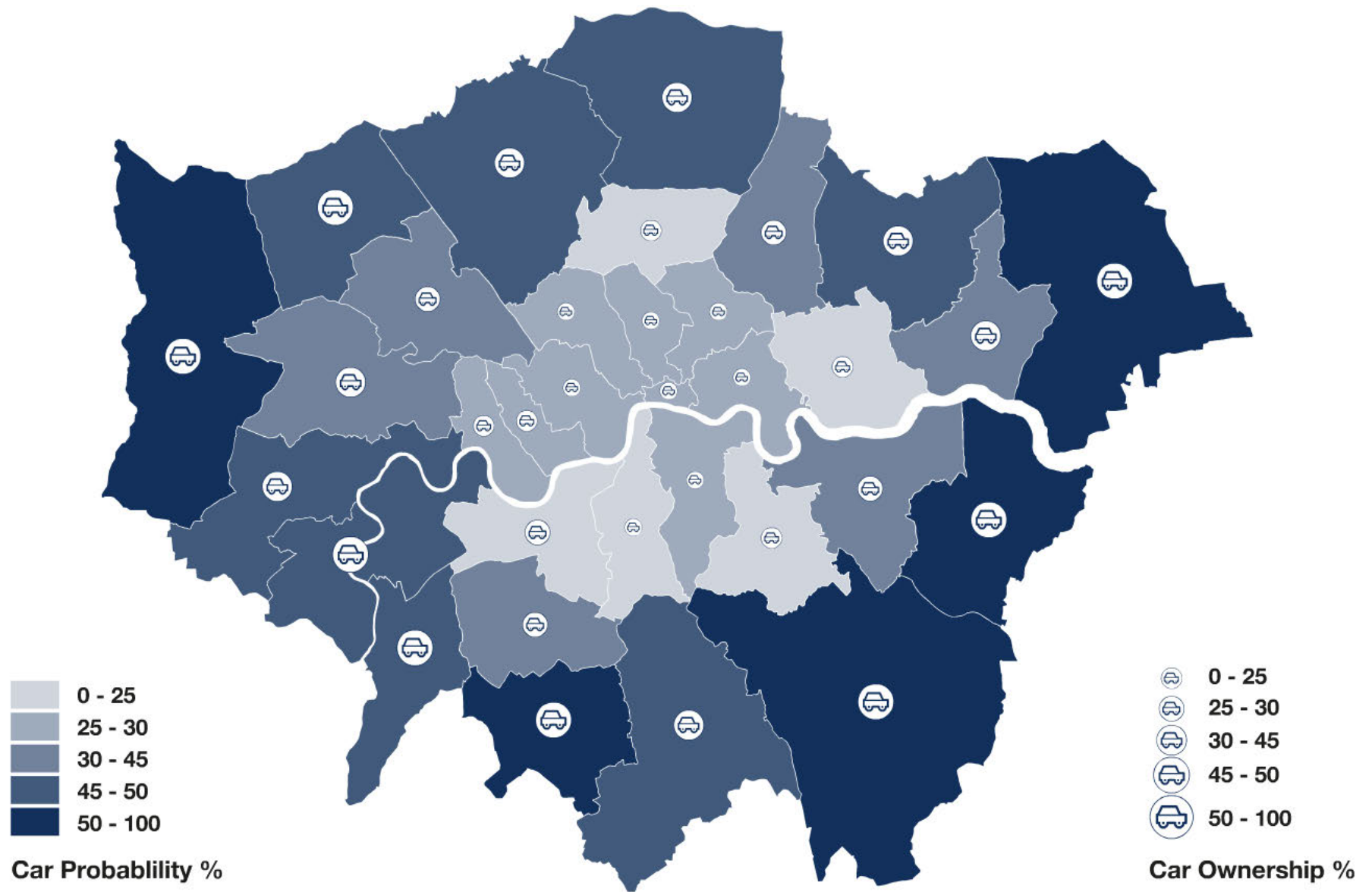
Journey via points strongly indicate PT



Journey via points weakly indicate car



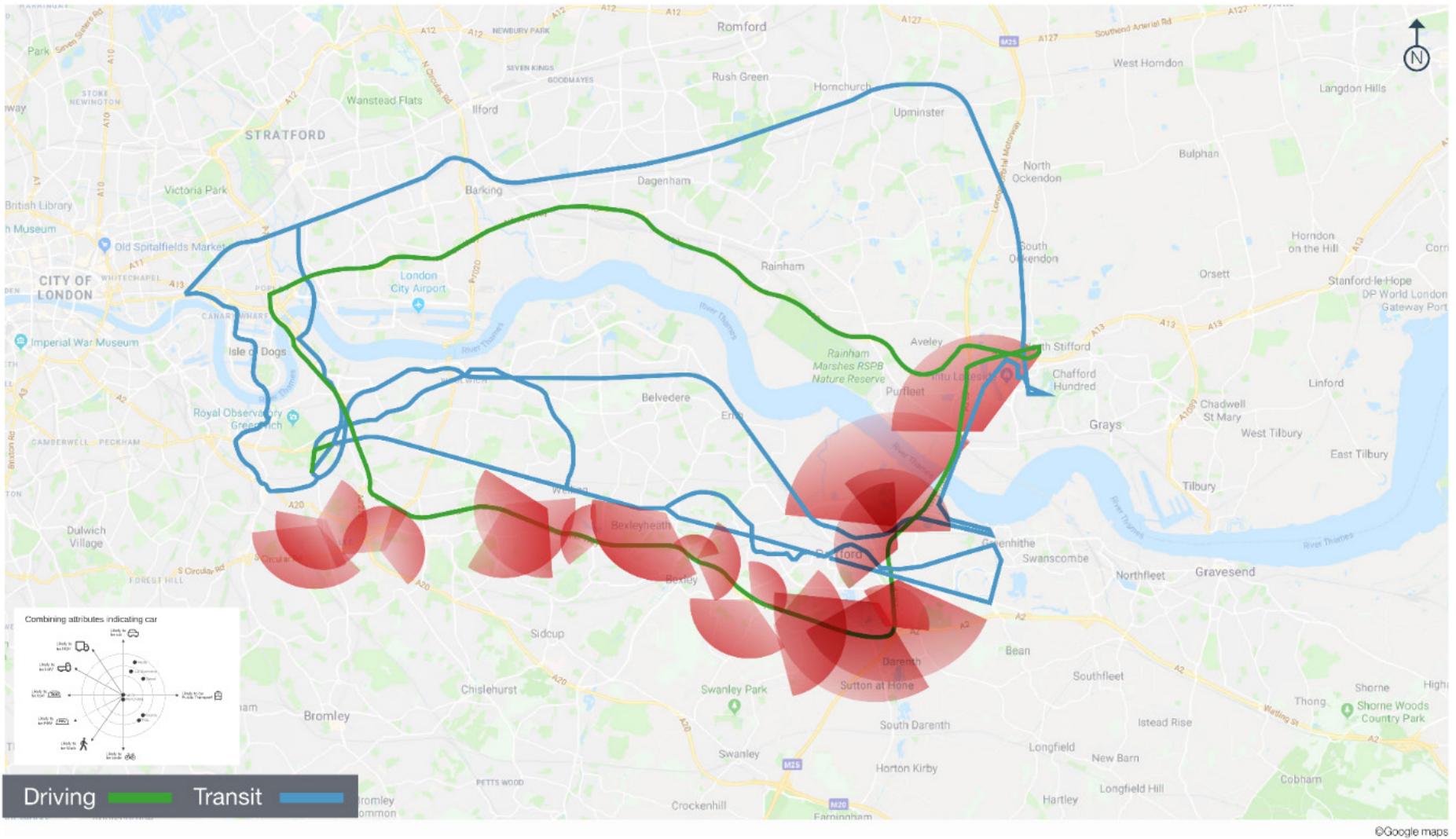
Car use varies with ownership



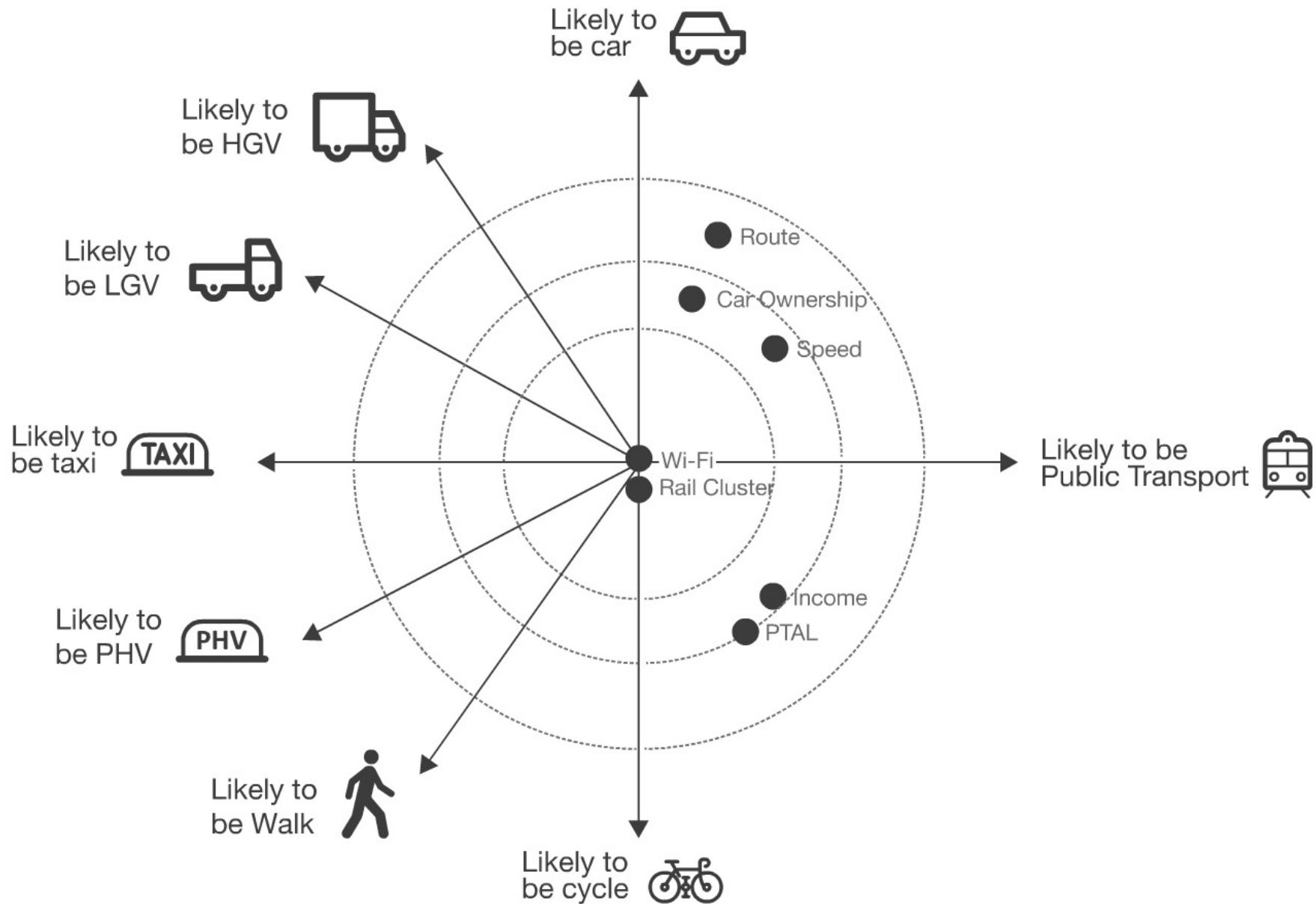
Validation



An observed car journey: 88% likely to be by Car



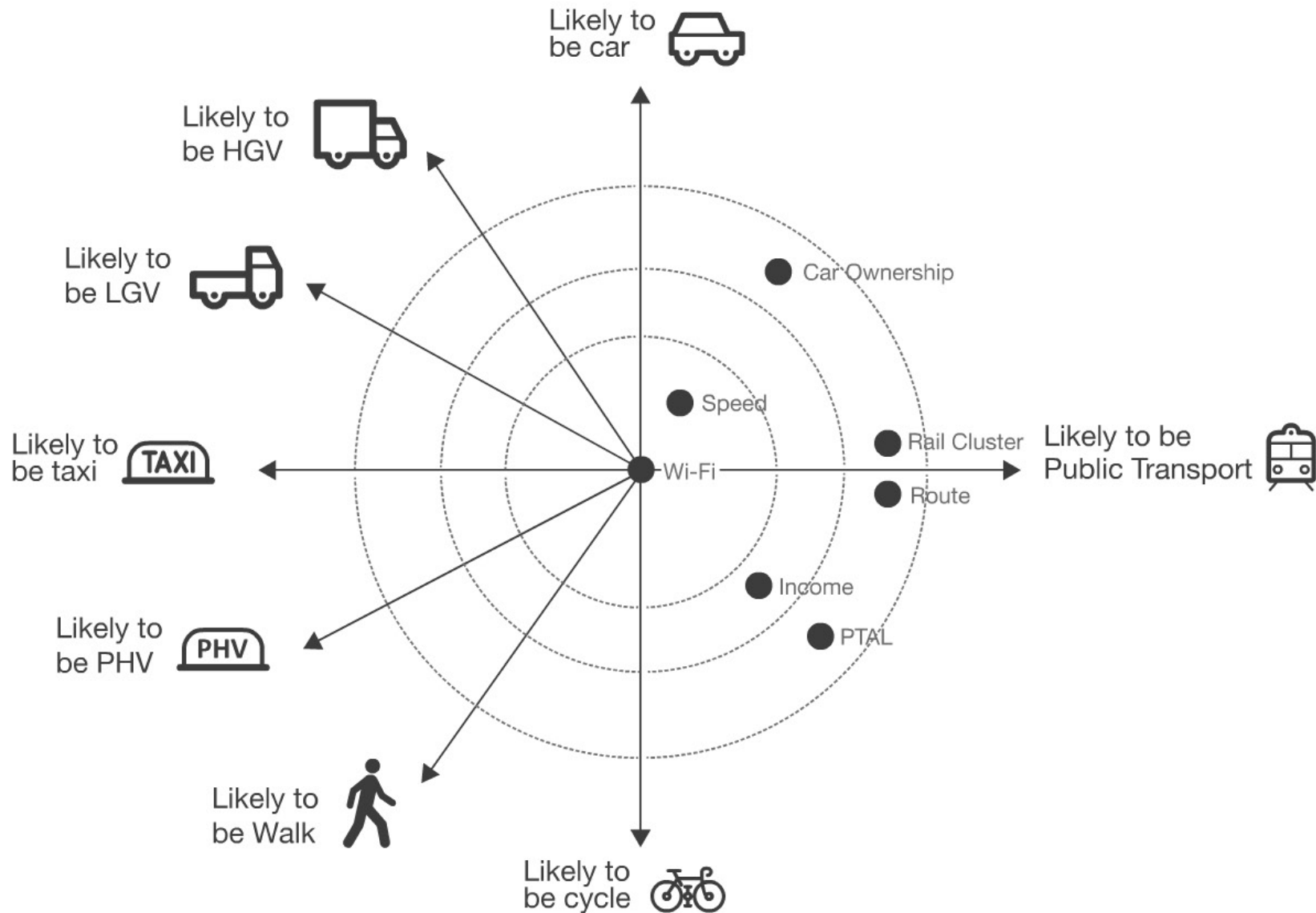
Combining attributes indicating car



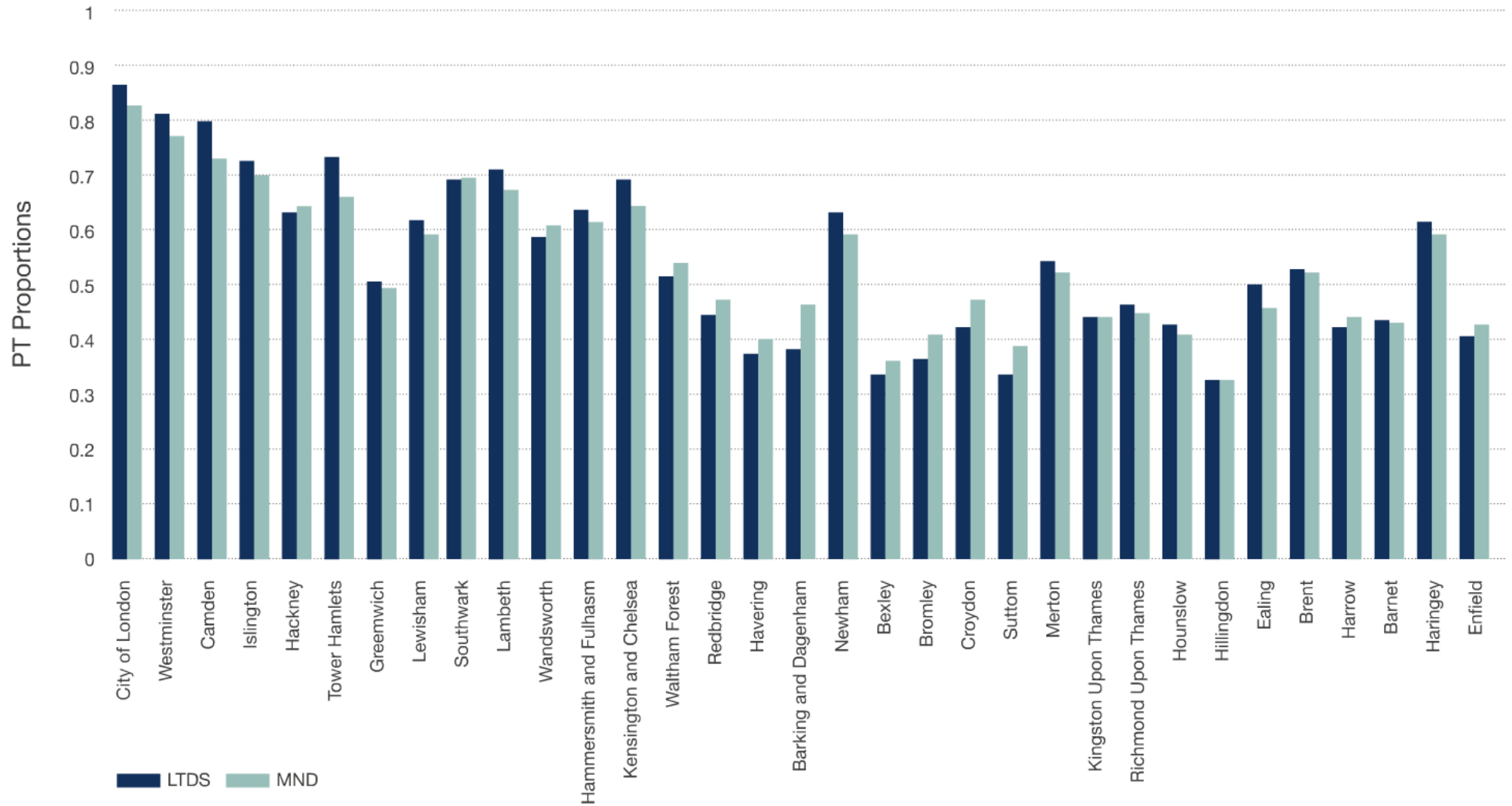
An observed PT journey: 99% likely to be PT



Combining attributes indicating PT



Validation: Aggregate variation in mode shares is reproduced



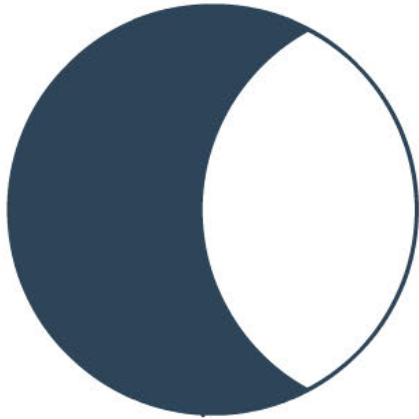


Fusion: Total Travel

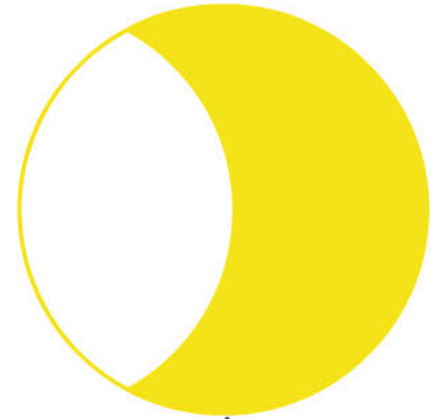


Travel Matrices

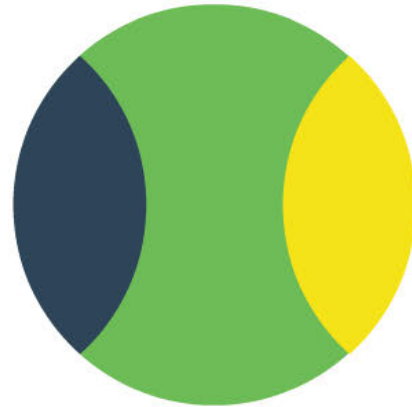
Mobile data



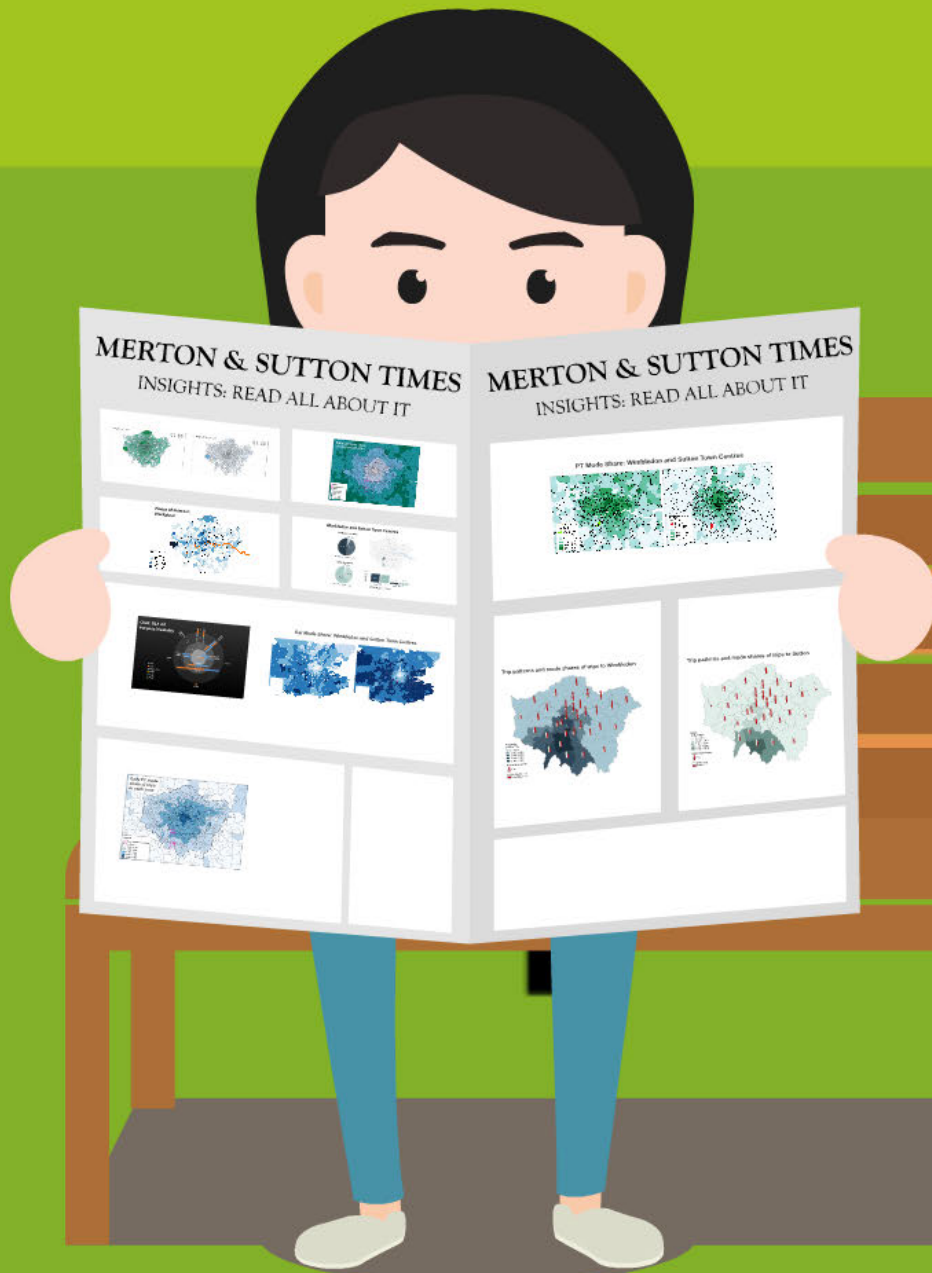
Other Data



Data Fusion

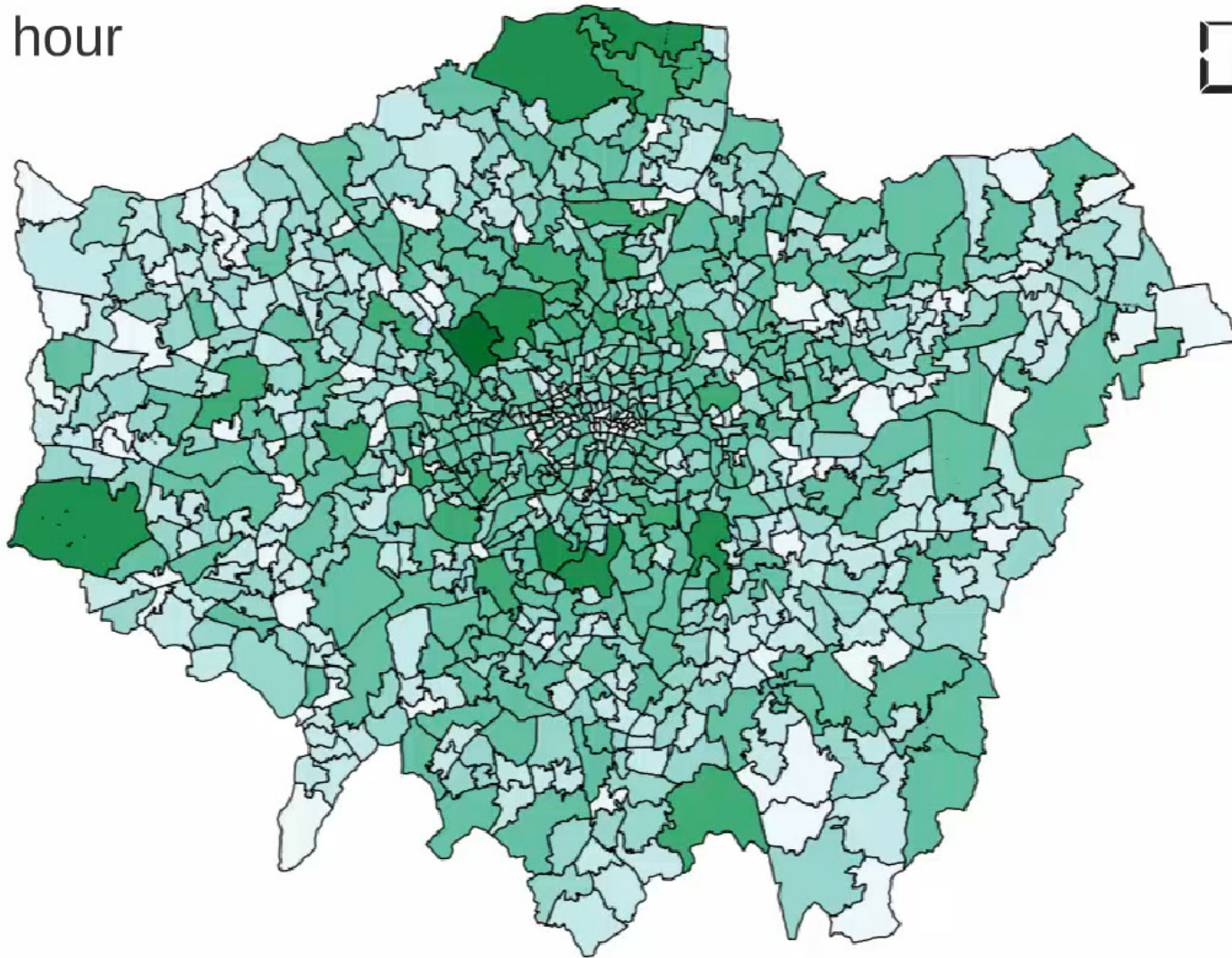






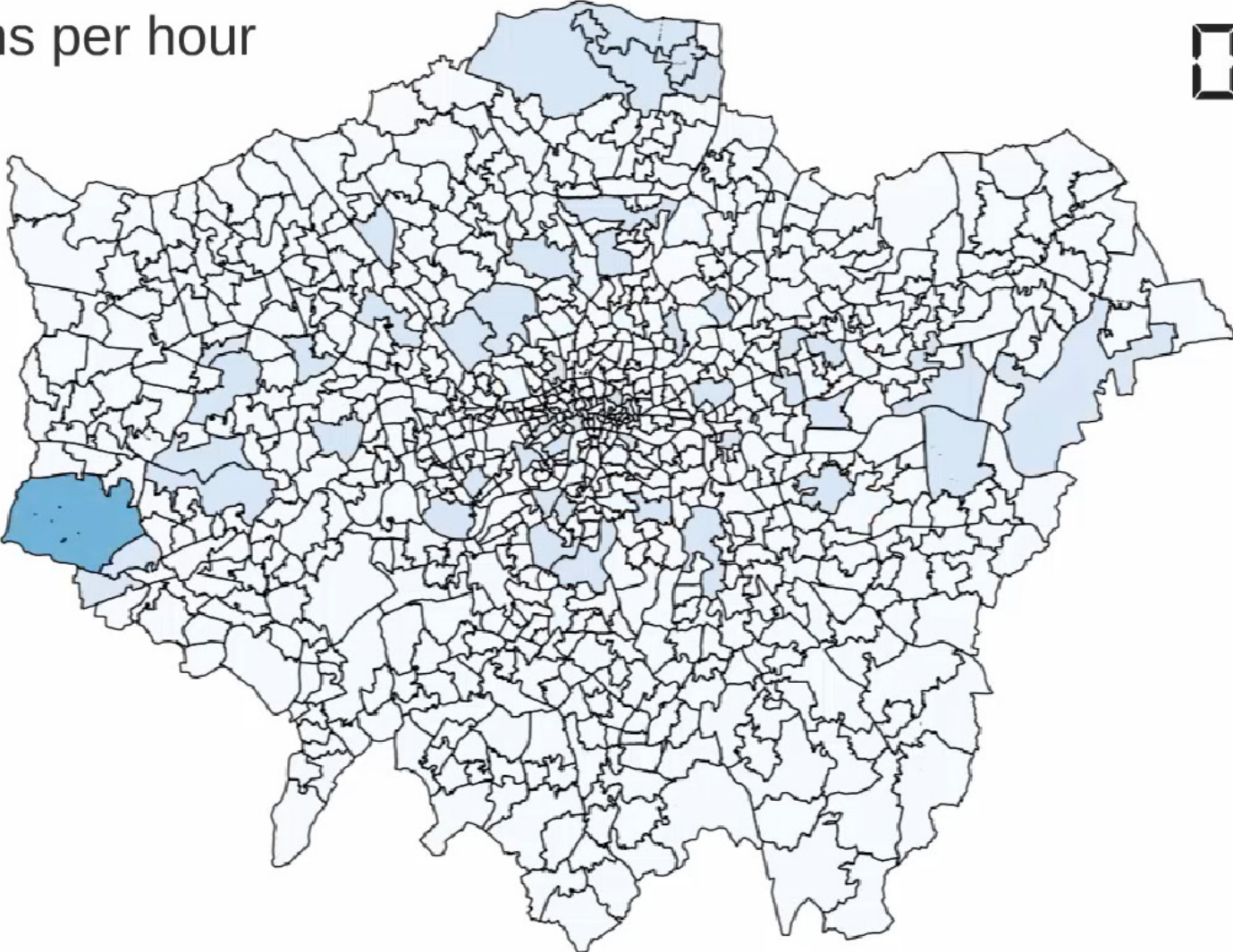
Origins per hour

09:00

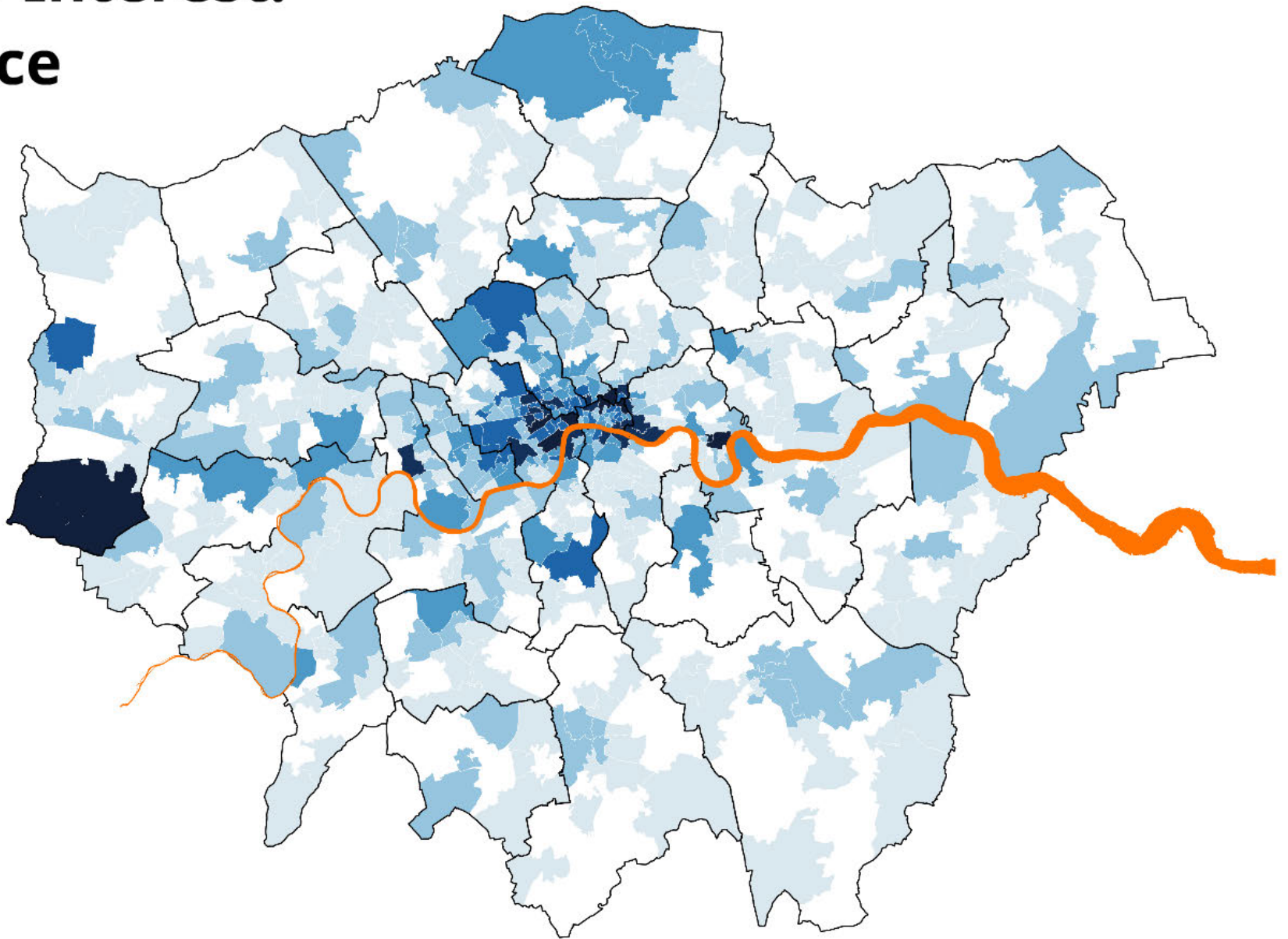


Destinations per hour

03:00

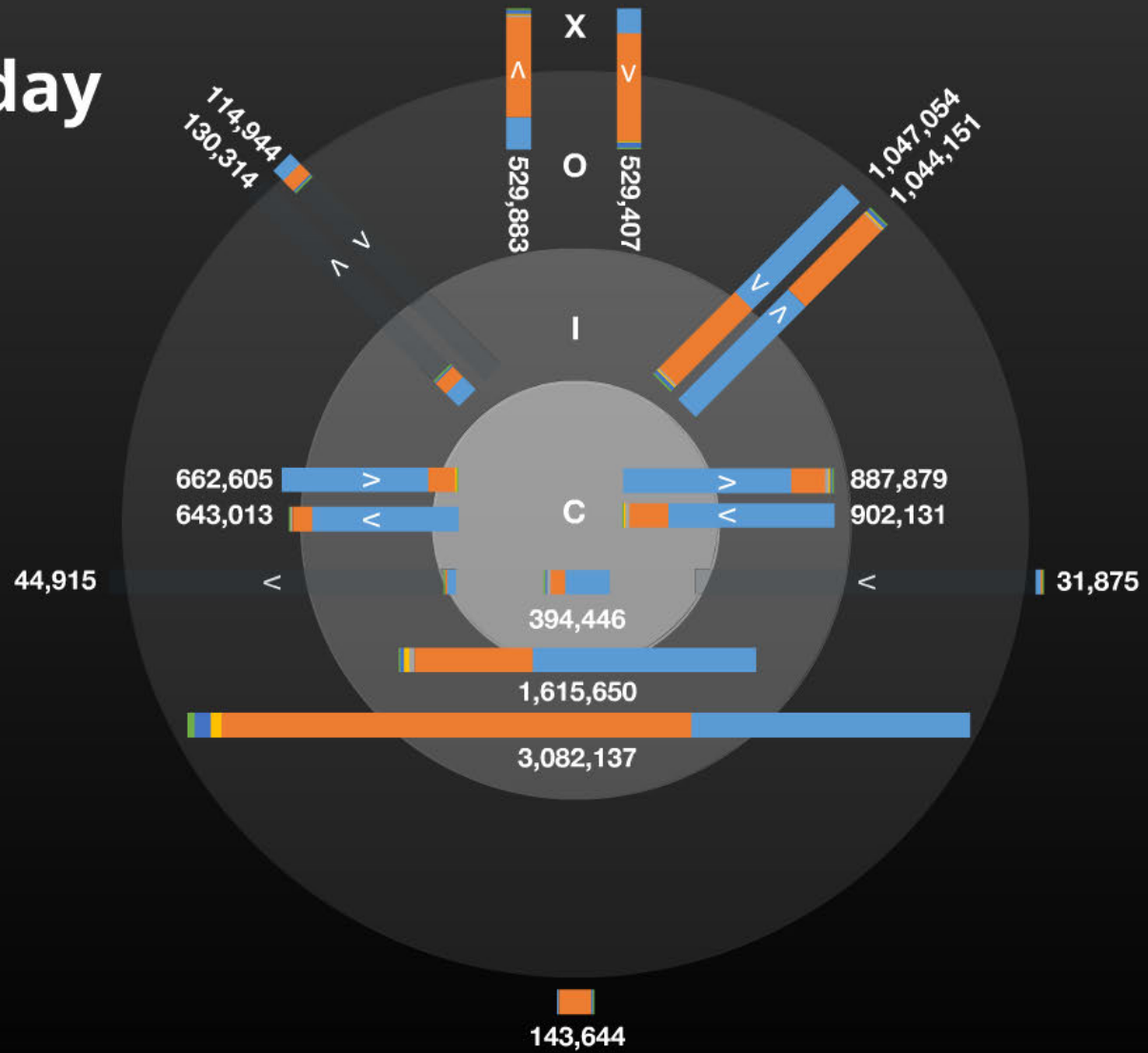


Places of Interest: Workplace

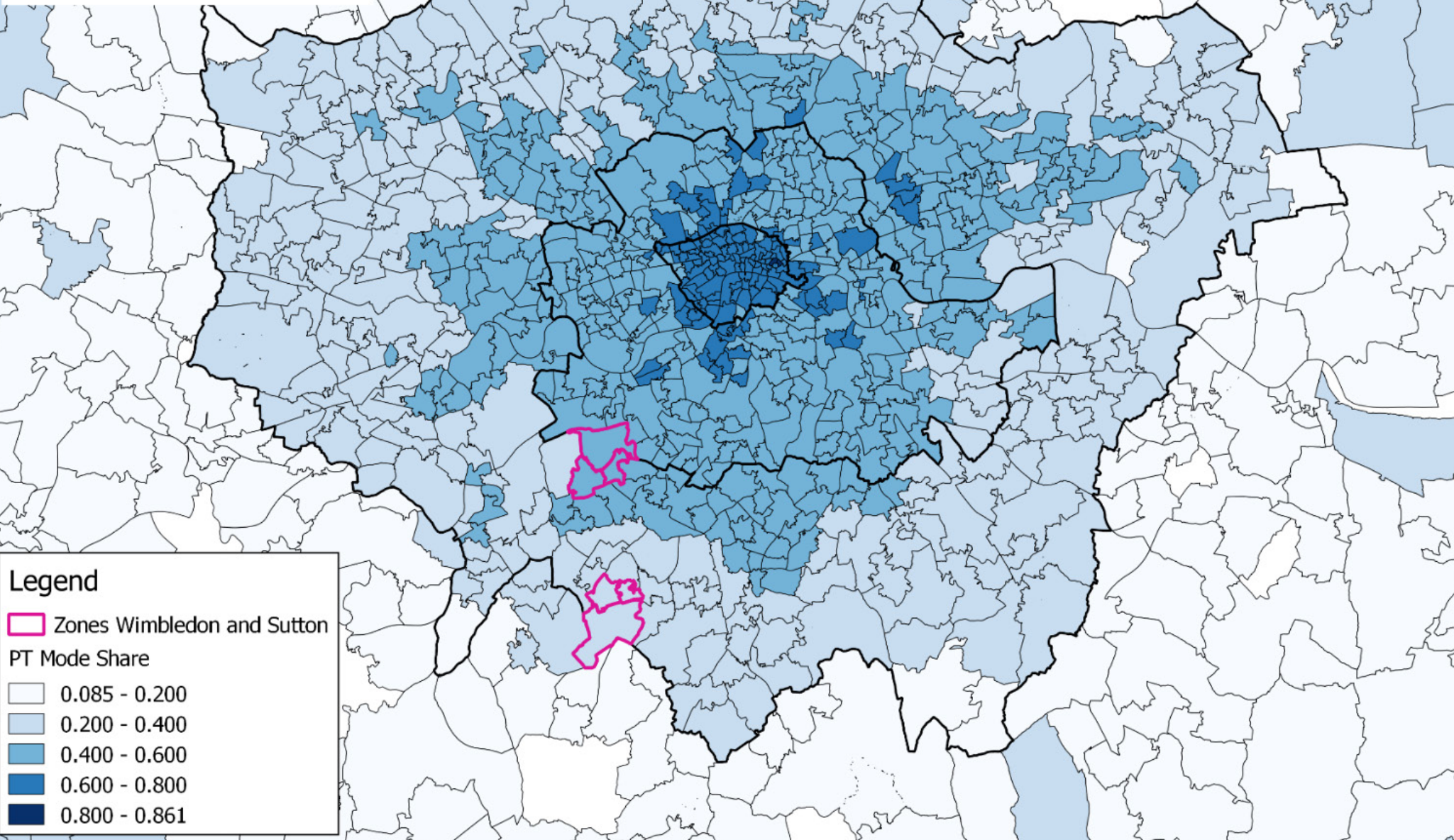


CIOX: GLA All Purpose Weekday

- PT
- Car
- BlackCab
- PHV
- LGV
- HGV








Daily PT mode share of trips to each zone



Legend


 Zones Wimbledon and Sutton

PT Mode Share






-  0.085 - 0.200
-  0.200 - 0.400
-  0.400 - 0.600
-  0.600 - 0.800
-  0.800 - 0.861

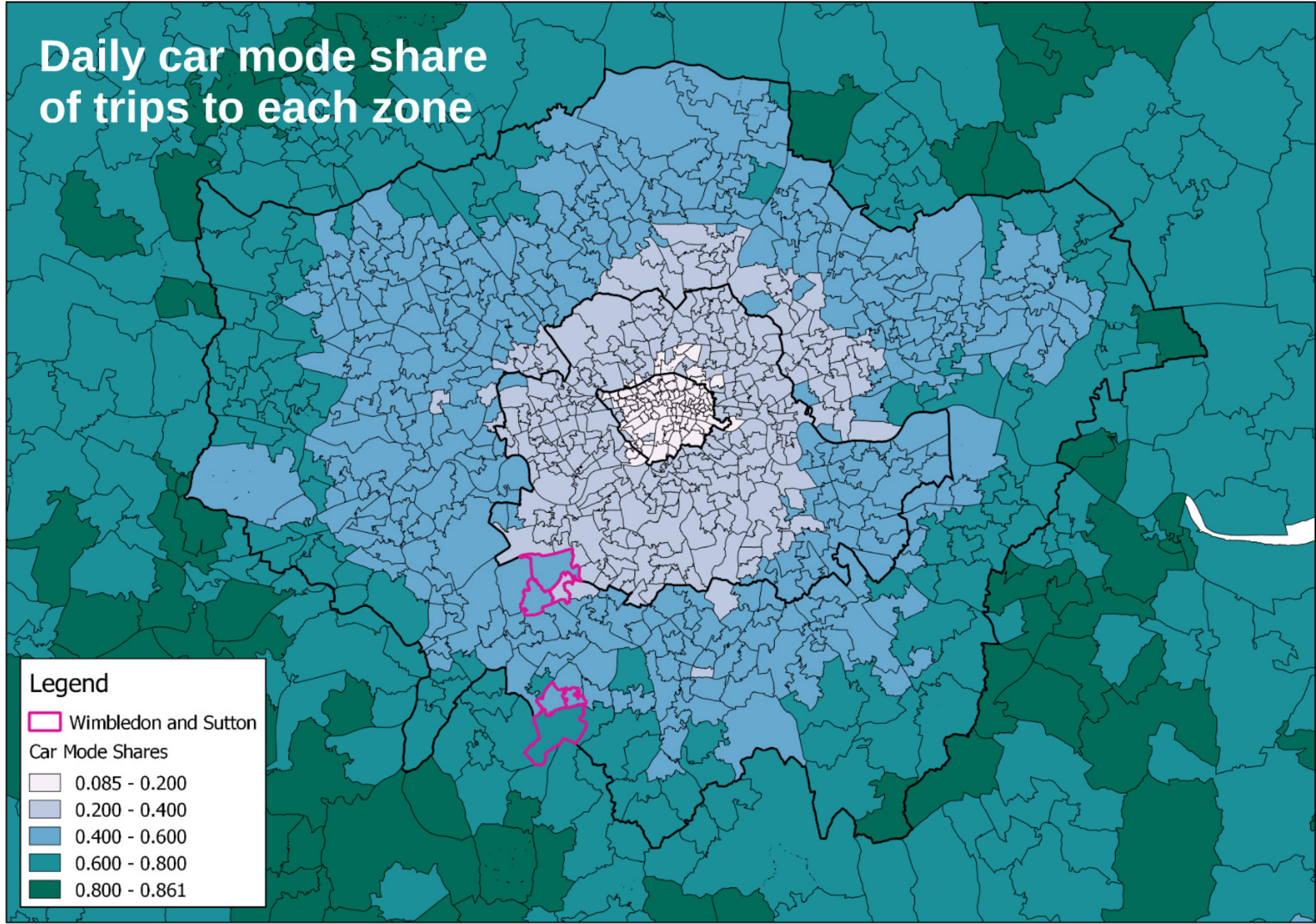
Daily car mode share of trips to each zone

Legend

 Wimbledon and Sutton

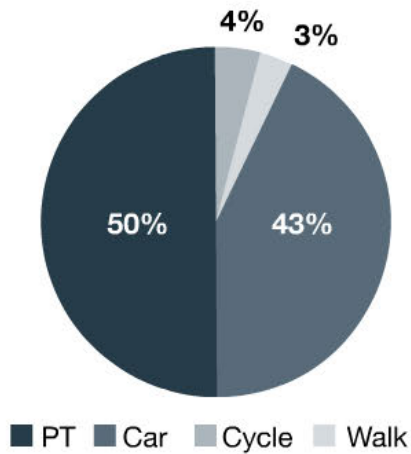
Car Mode Shares

| | |
|--|---------------|
|  | 0.085 - 0.200 |
|  | 0.200 - 0.400 |
|  | 0.400 - 0.600 |
|  | 0.600 - 0.800 |
|  | 0.800 - 0.861 |

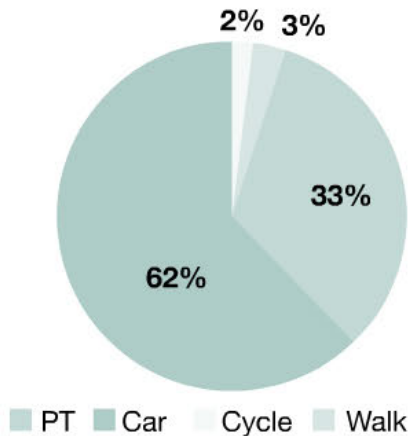


Wimbledon and Sutton Town Centres

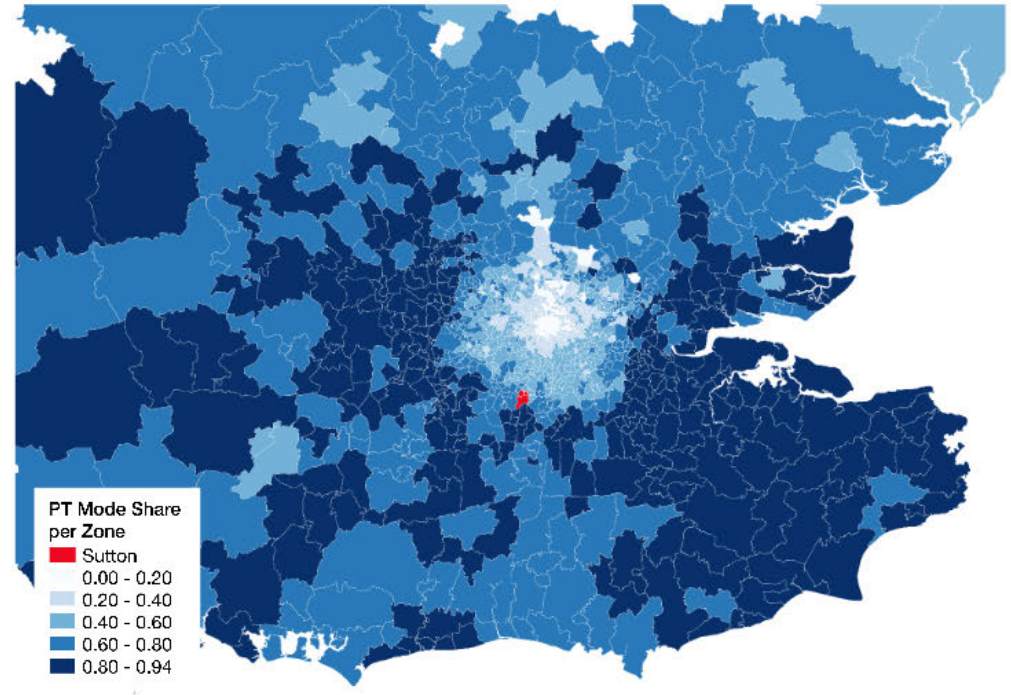
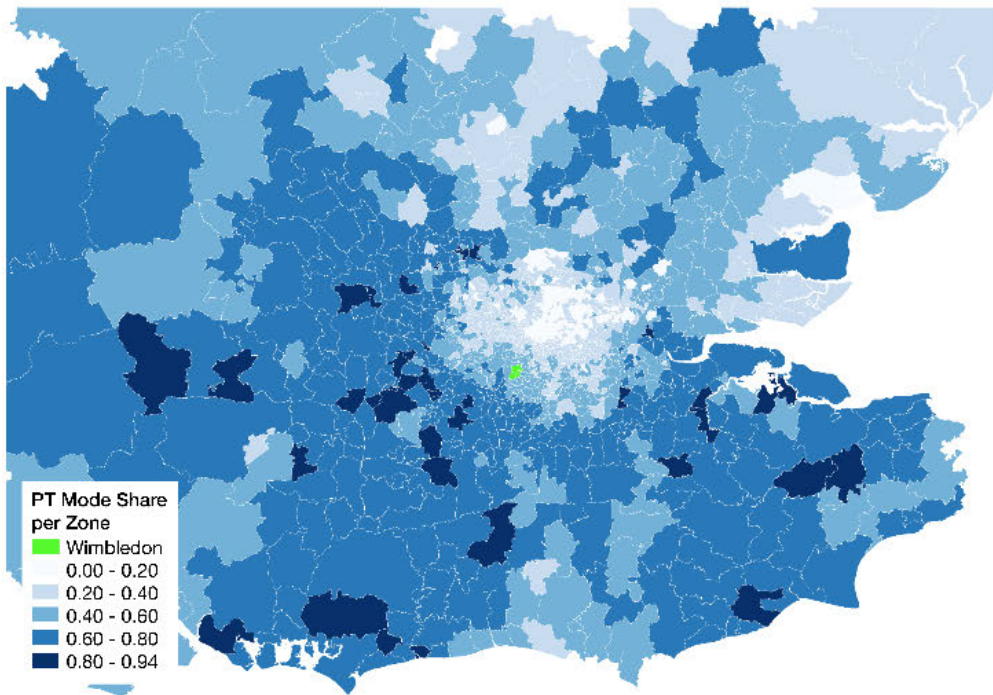
Wimbledon Town Centre



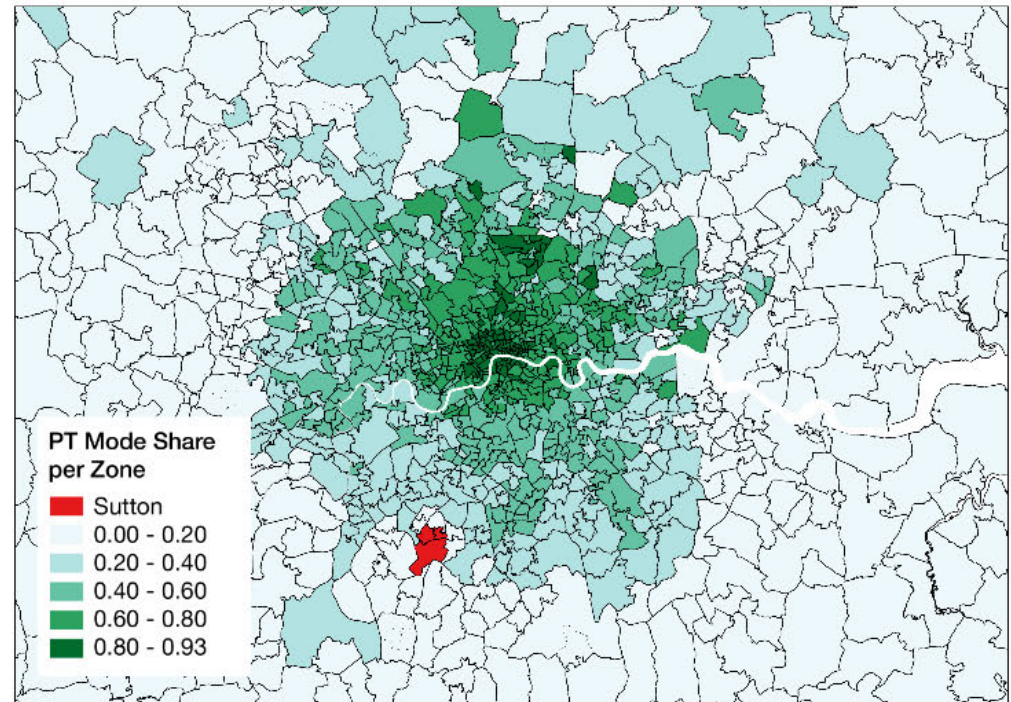
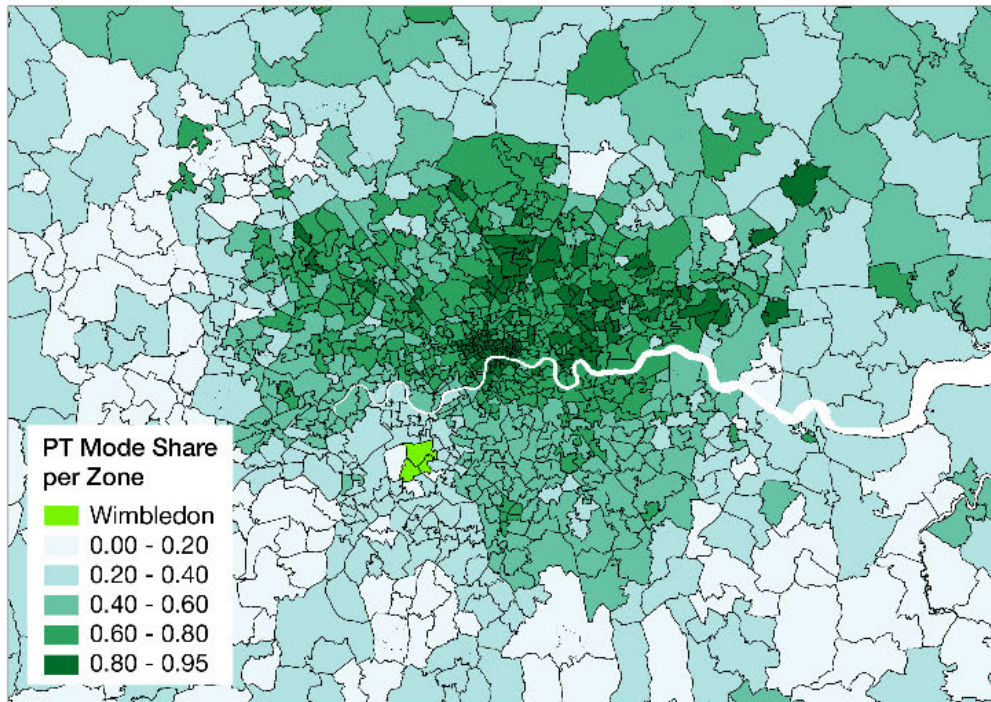
Sutton Town Centre



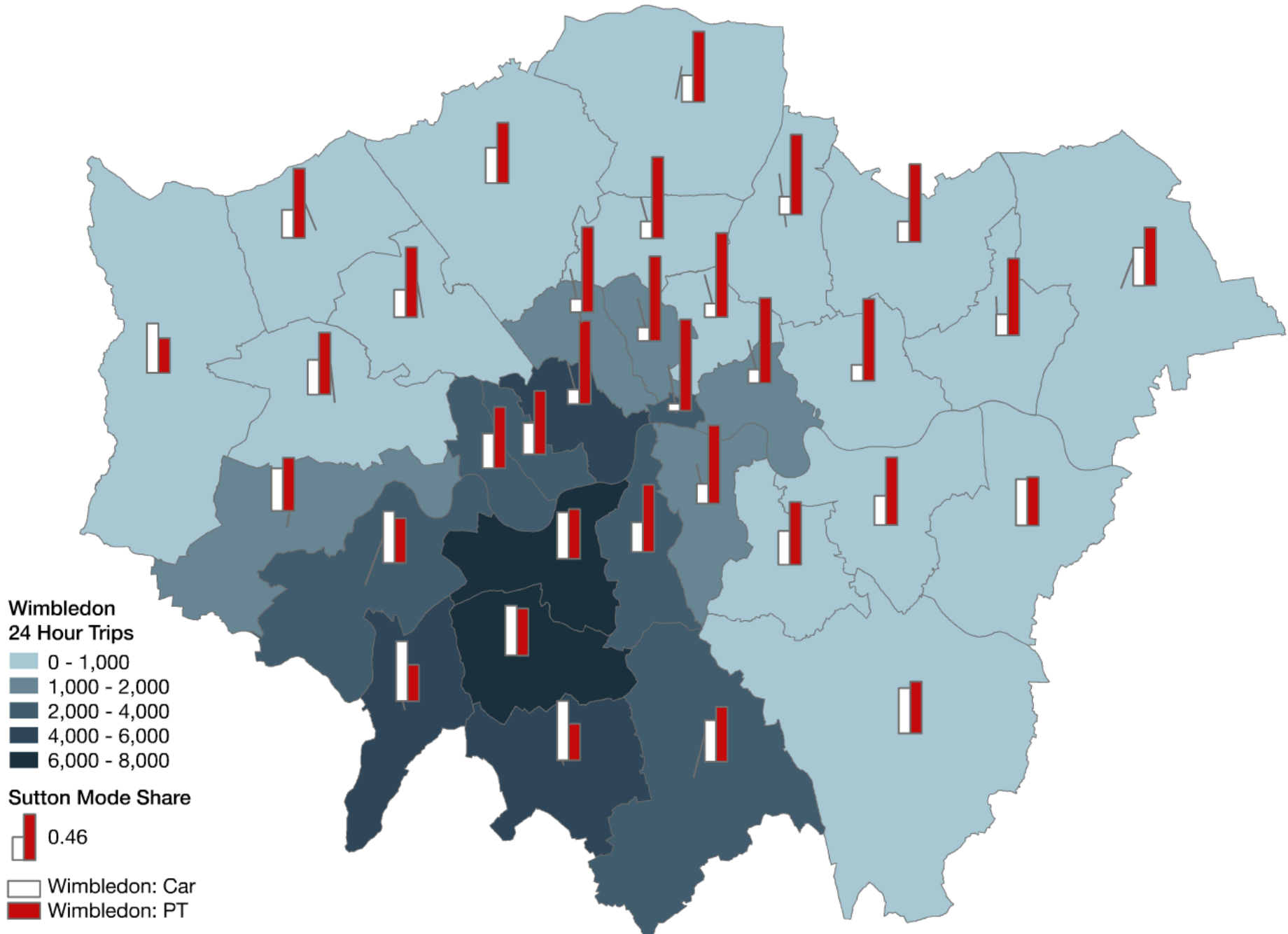
Car Mode Share: Wimbledon and Sutton Town Centres



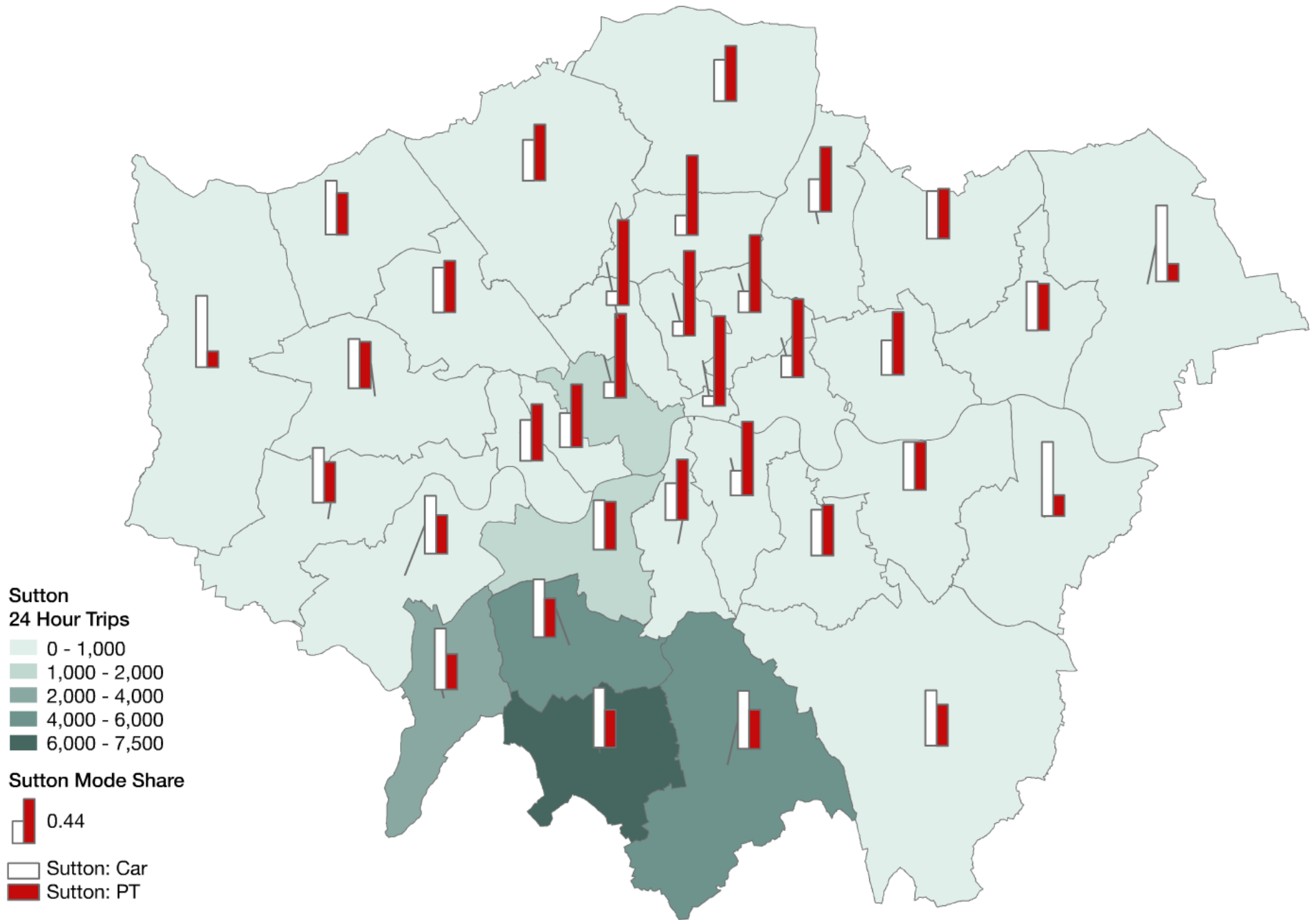
PT Mode Share: Wimbledon and Sutton Town Centres



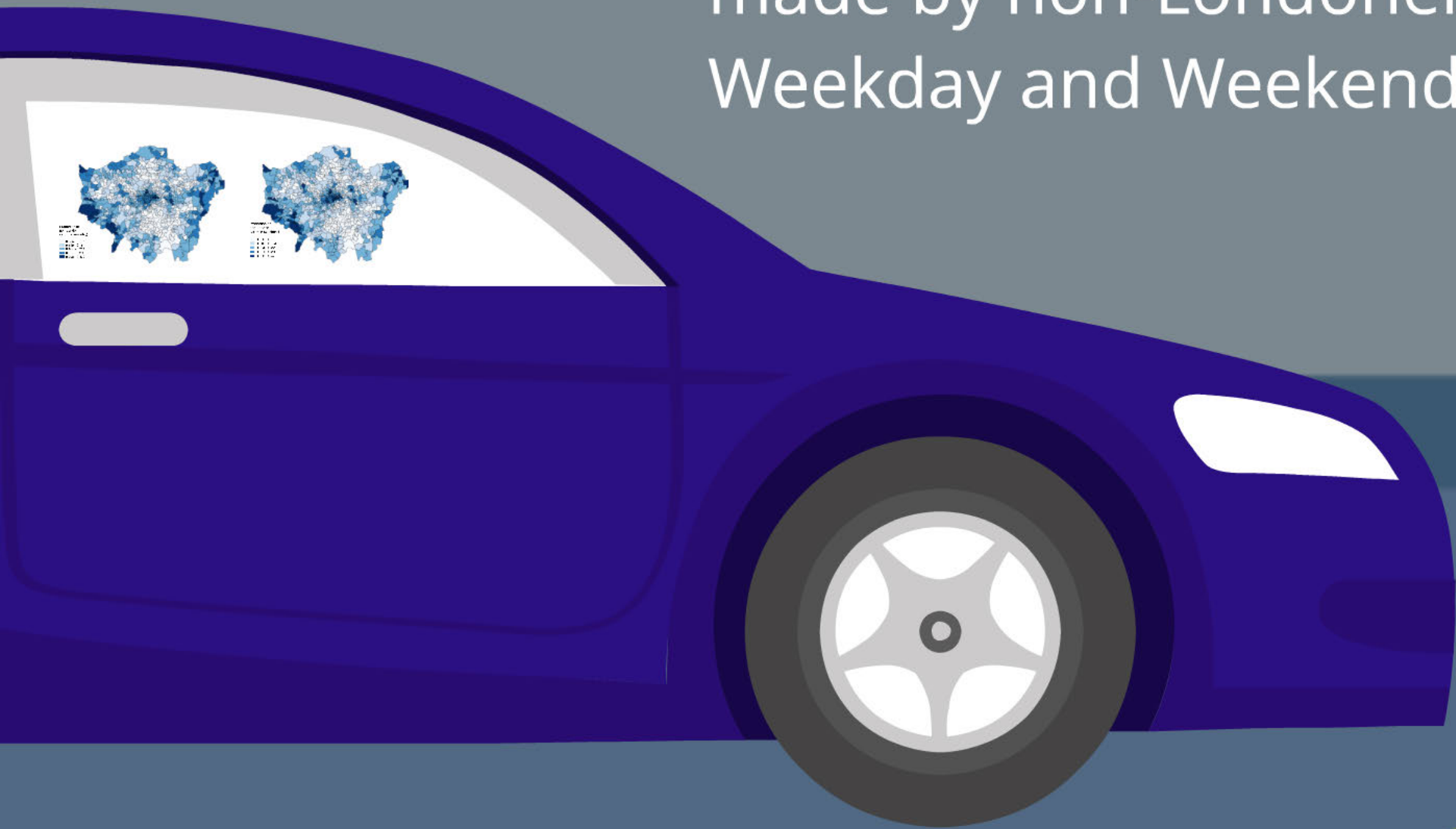
Trip patterns and mode shares of trips to Wimbledon

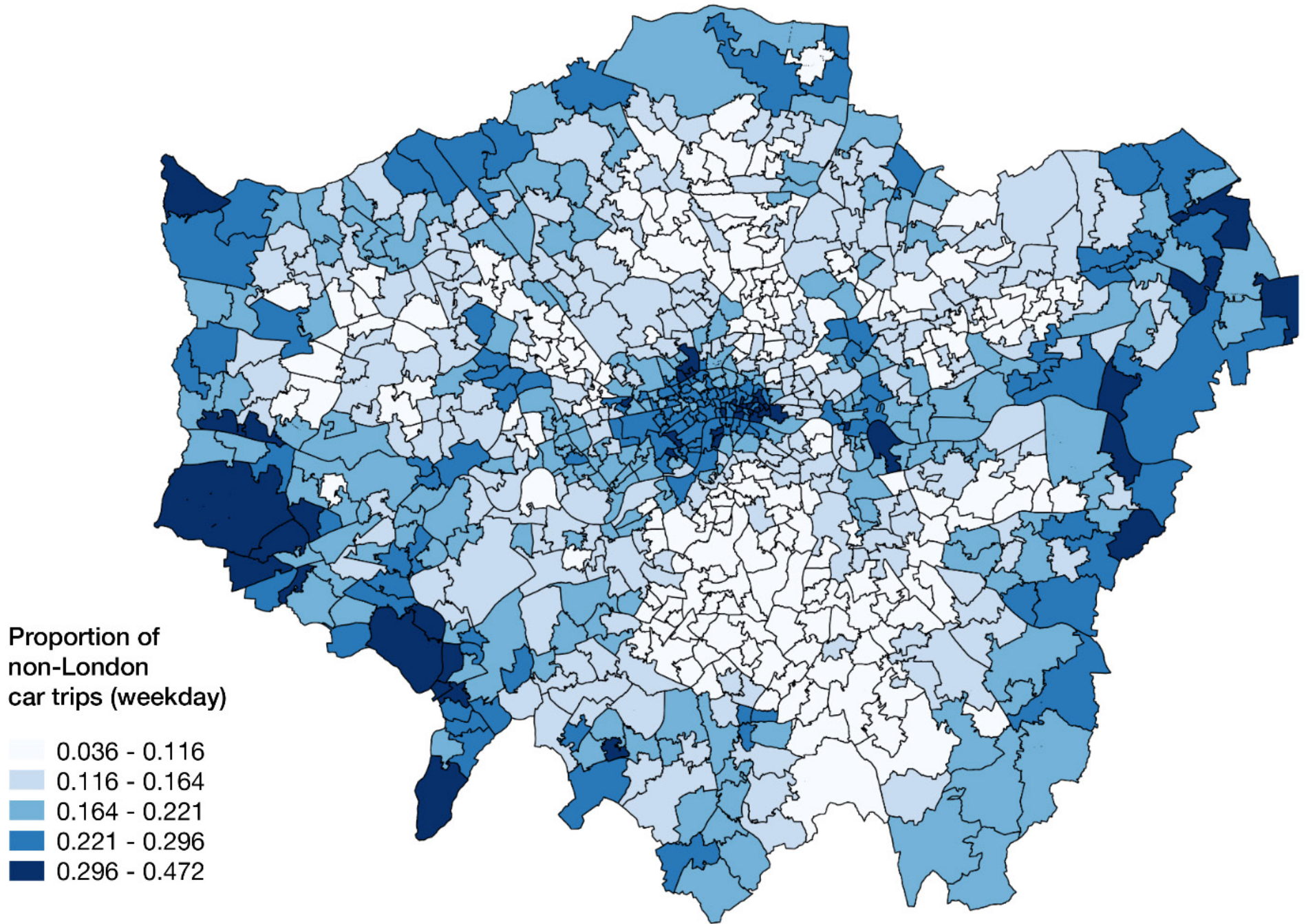


Trip patterns and mode shares of trips to Sutton

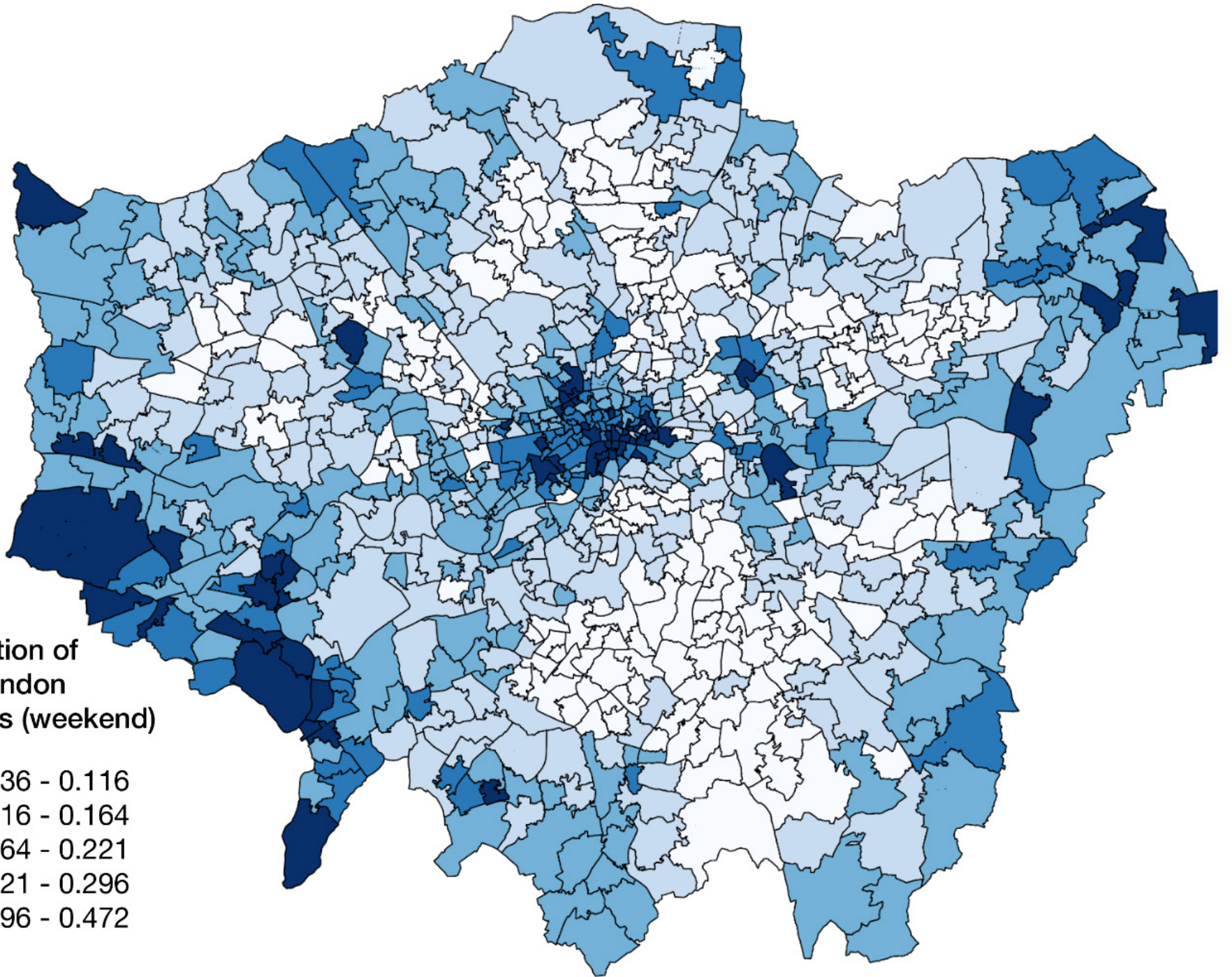
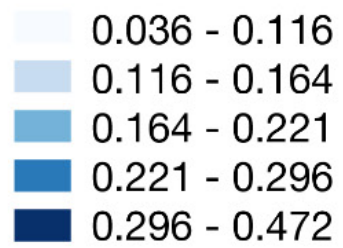


Proportion of car trips made by non-Londoners Weekday and Weekend

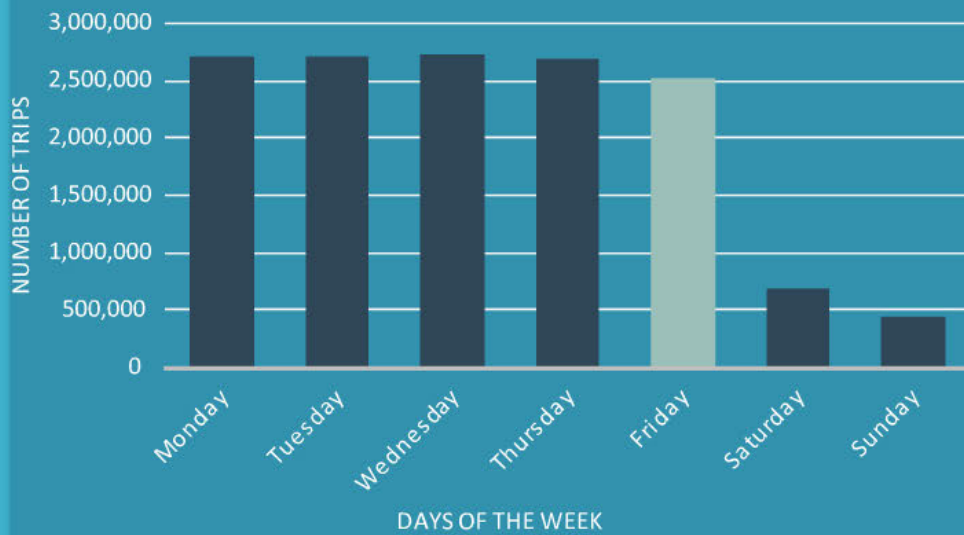


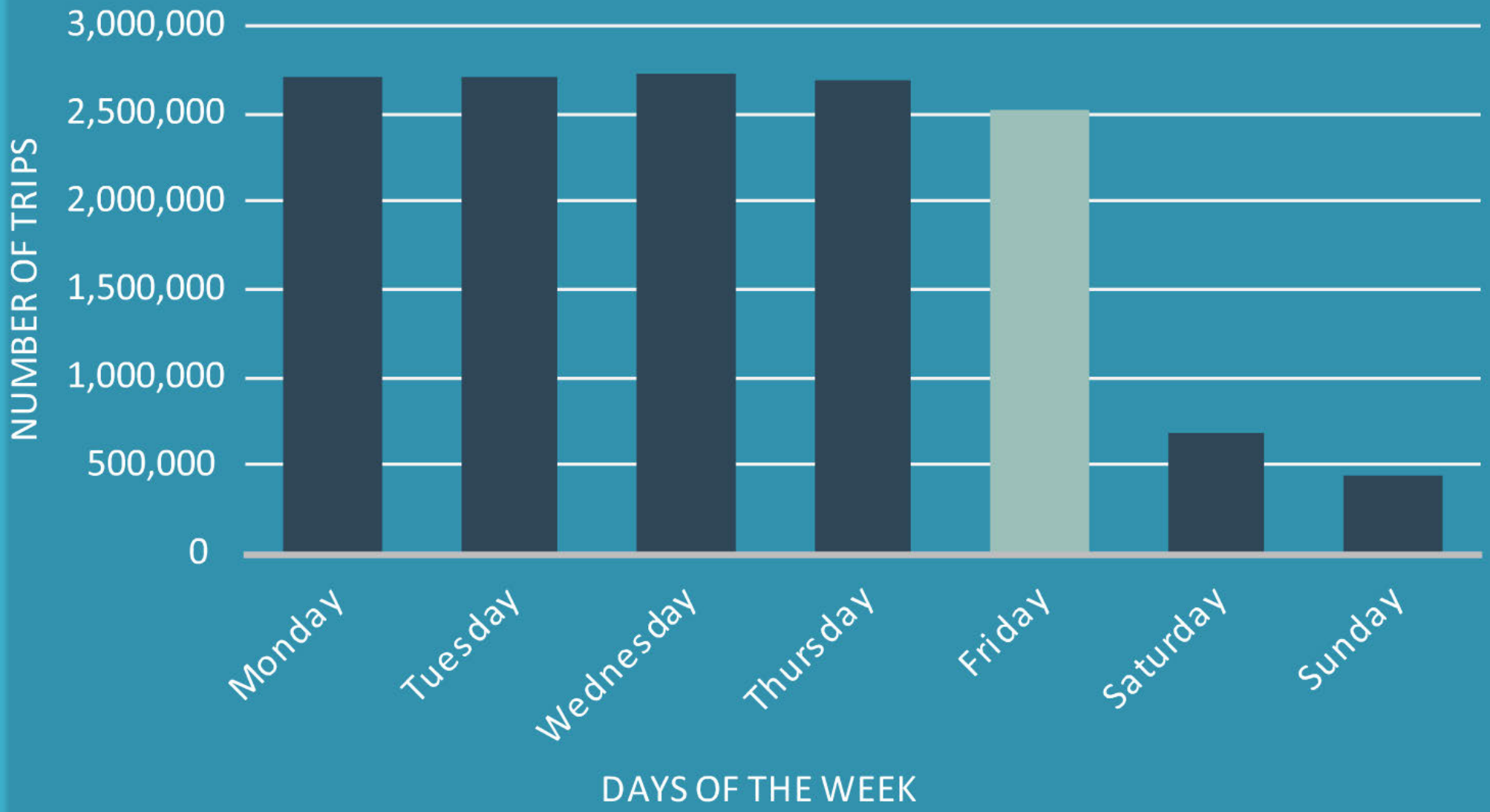


Proportion of
non-London
car trips (weekend)



Number of commuting trips

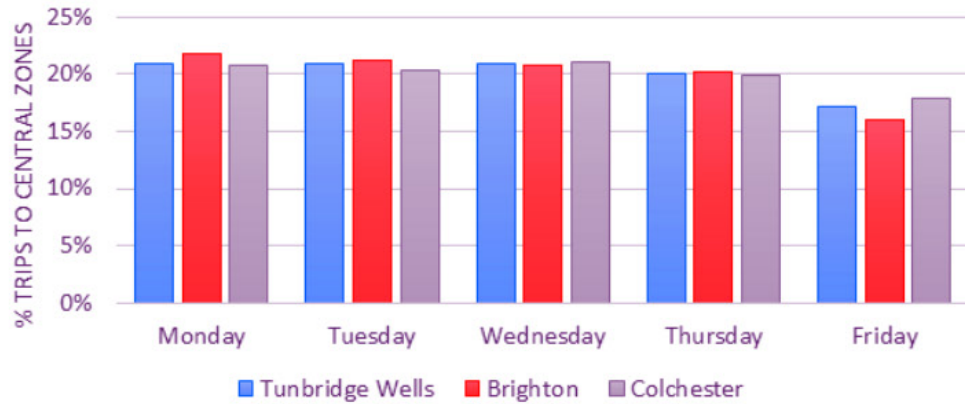




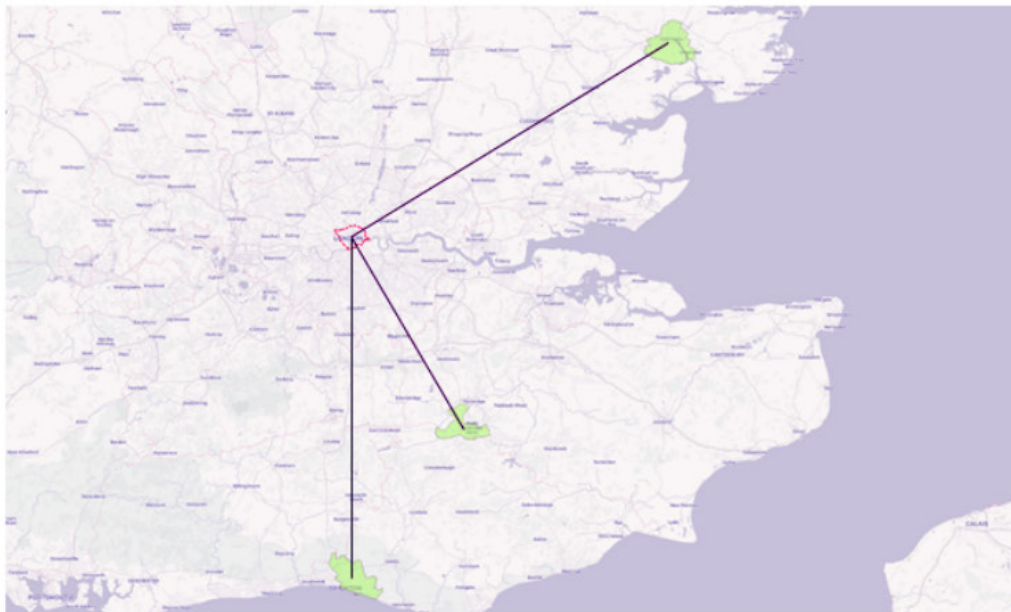
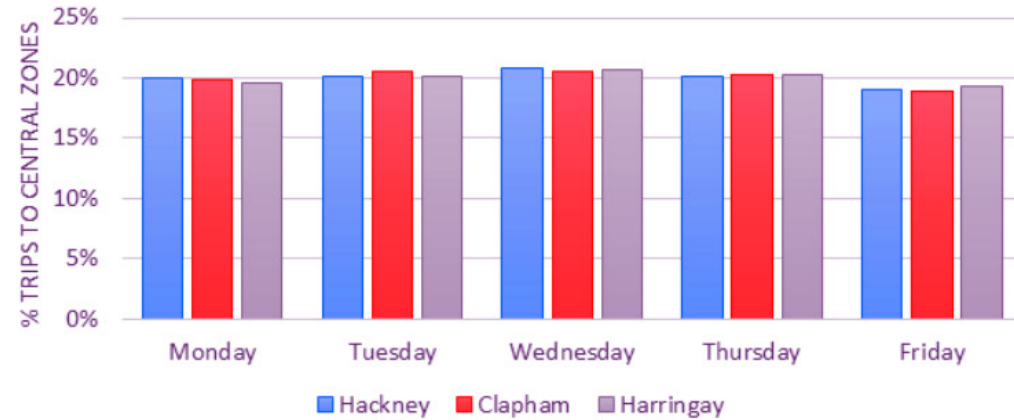
A comparison of home trips to Central London from within inner / outer London and outside the M25



OB HBW Trips to Central London
Examples zones outside M25



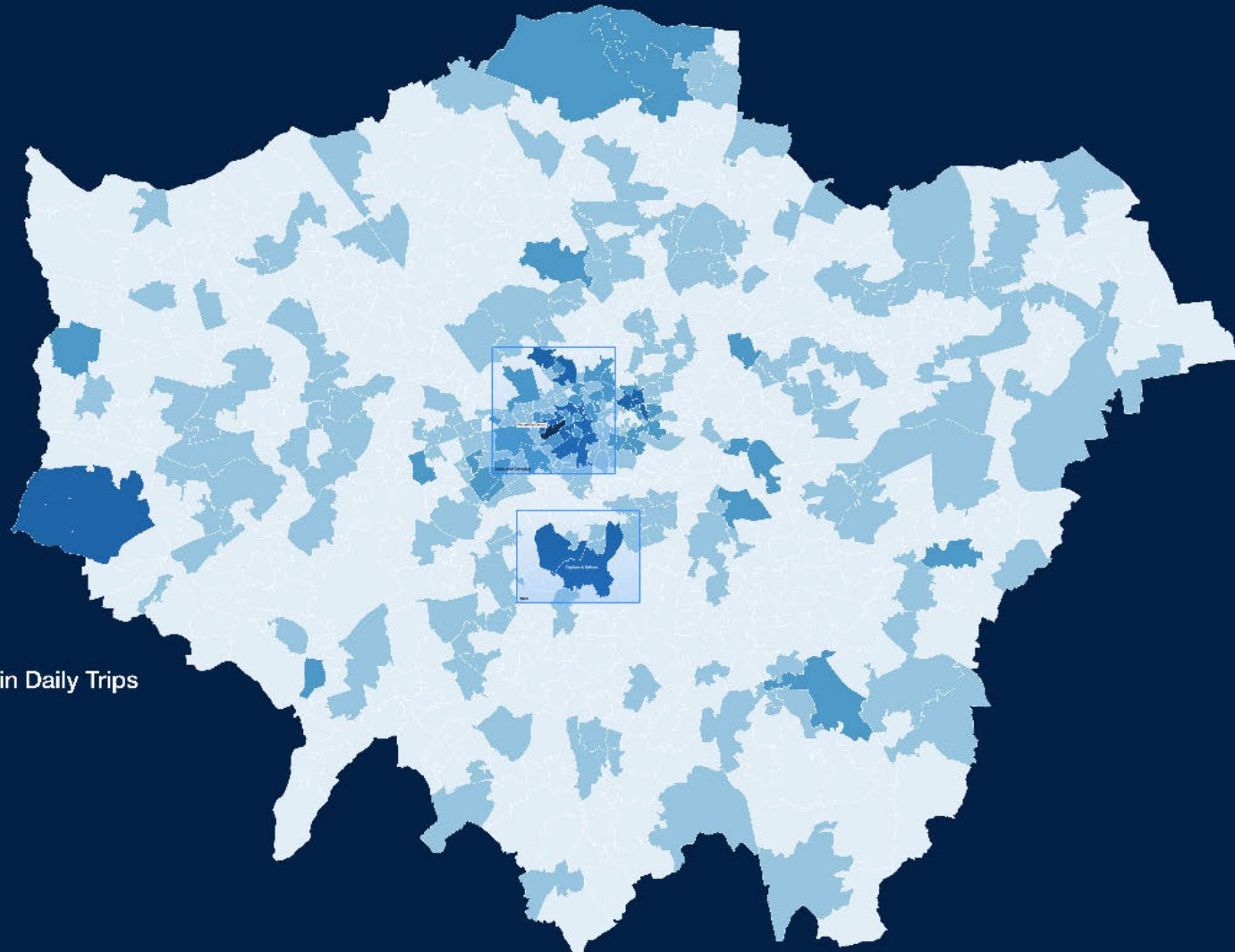
OB HBW Trips to Central London
Example zones in inner/outer London



Night Economy in London

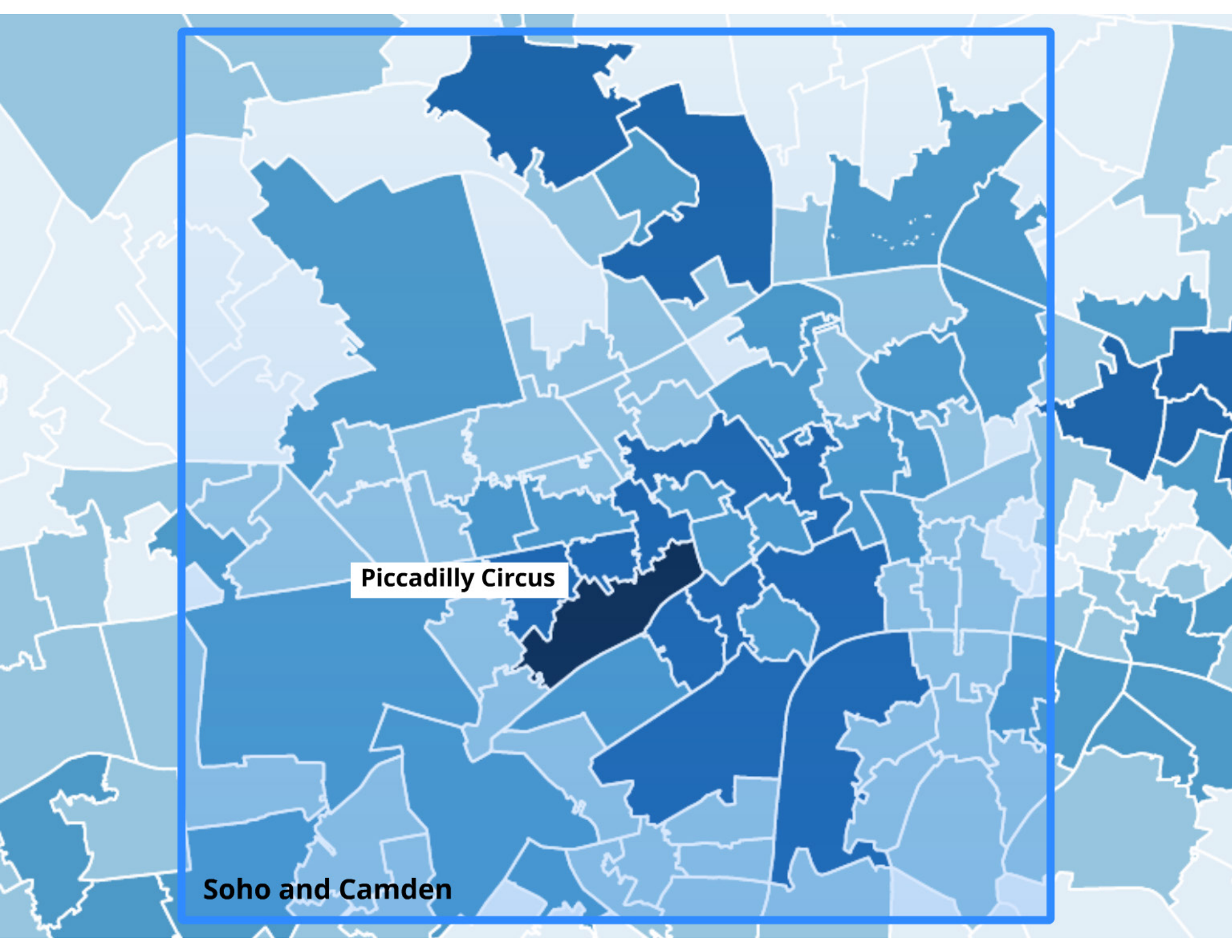


Nighttime hotspots: Thursday and Friday



Night (7pm - 12pm) Change in Daily Trips
Mon-Wed to Thurs-Fri





Piccadilly Circus

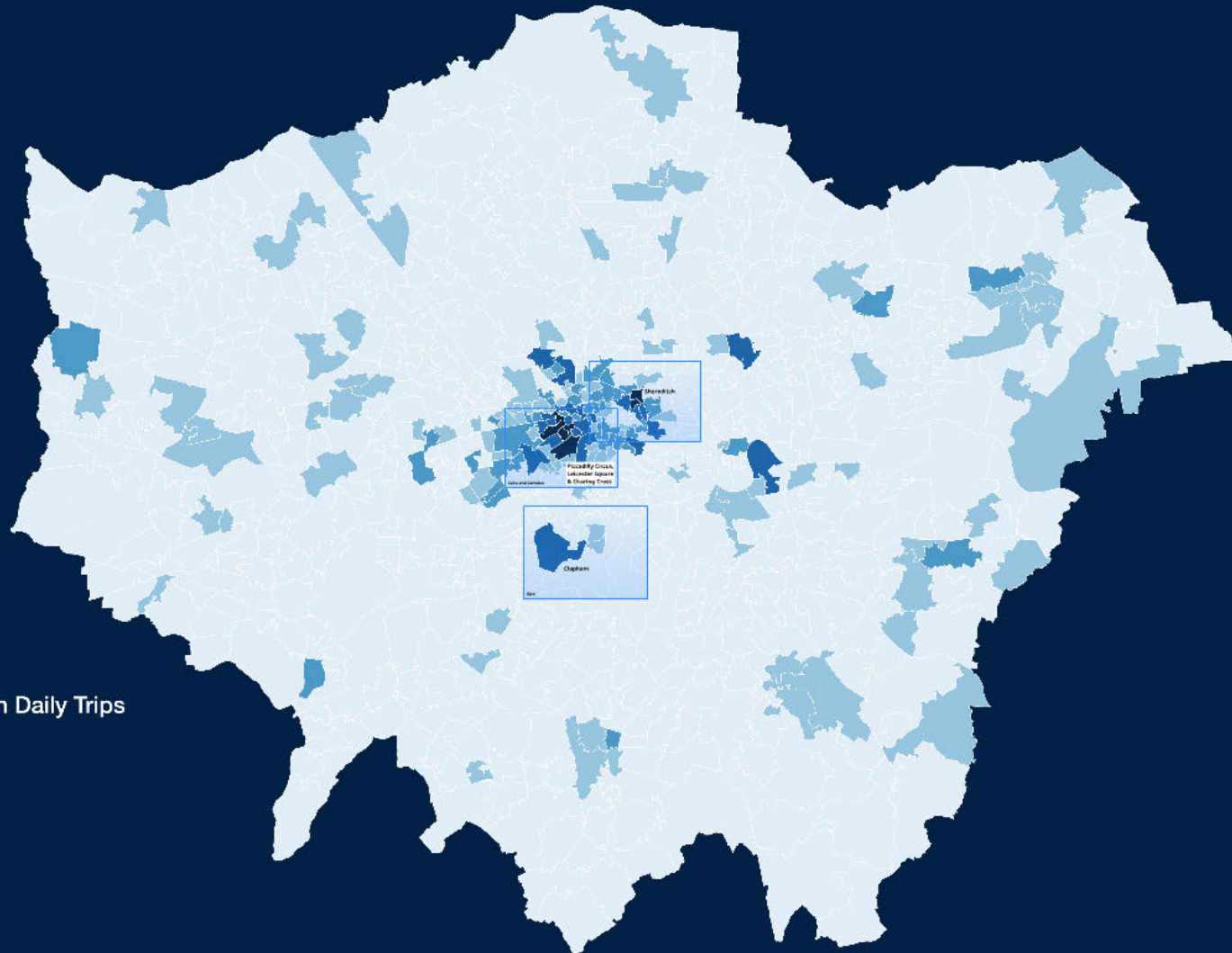
Soho and Camden

A map showing the Clapham & Balham constituency in London. The constituency is highlighted in a dark blue color, while the surrounding areas are in a lighter blue. The map shows the irregular boundaries of the constituency, including parts of Clapham and Balham.

Clapham & Balham

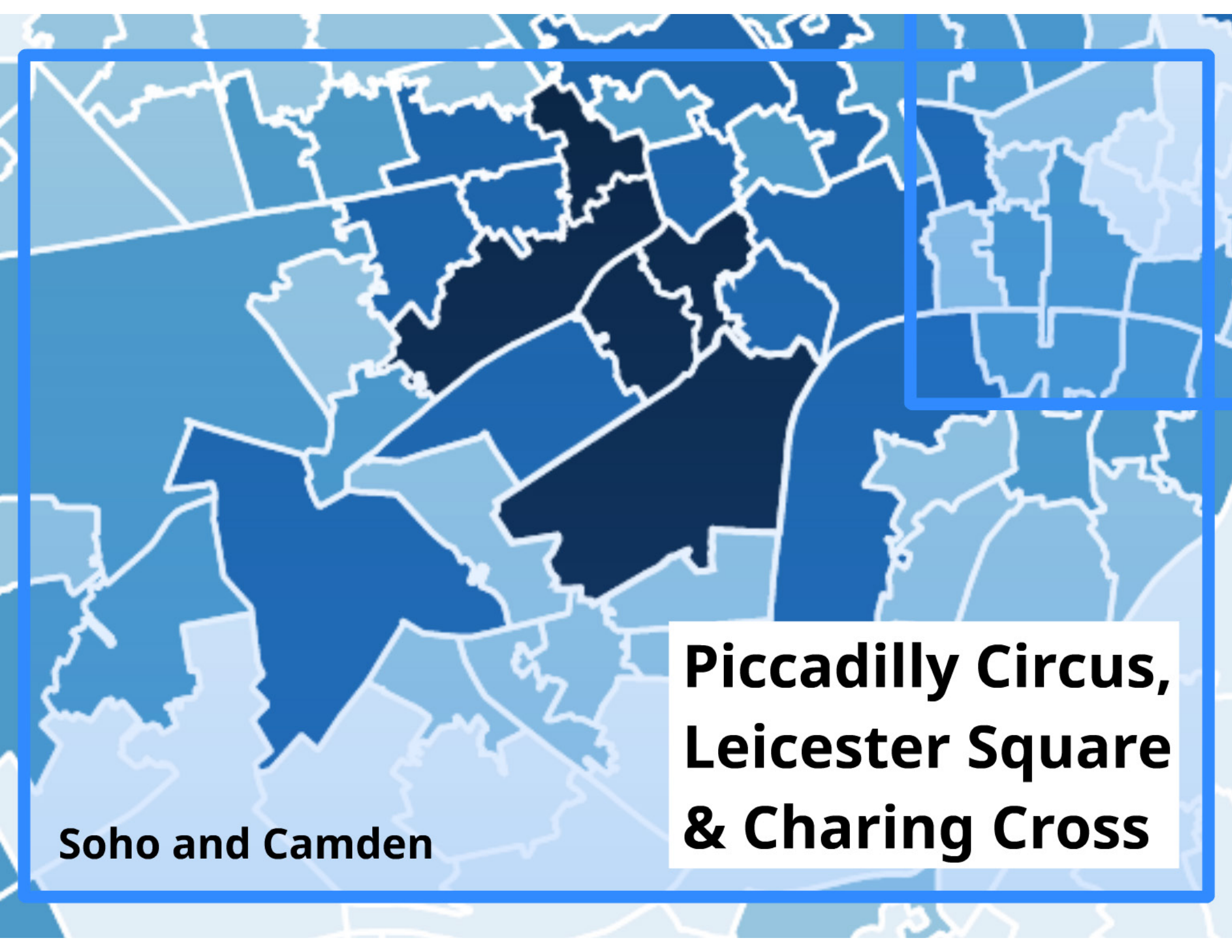
SW4

Nighttime hotspots: Saturday



Night (7pm - 12pm) Change in Daily Trips
Mon-Wed to Saturday

- 3,237 - 313
- 313 - 766
- 766 - 1,757
- 1,757 - 4,378
- 4,378 - 13,052



Soho and Camden

**Piccadilly Circus,
Leicester Square
& Charing Cross**

A map of the Shoreditch area in London, showing various districts outlined in white. The word "Shoreditch" is written in bold black text in the center-right. A large blue border frames the entire map. A smaller blue-bordered rectangle highlights a specific area in the bottom-left corner of the map.

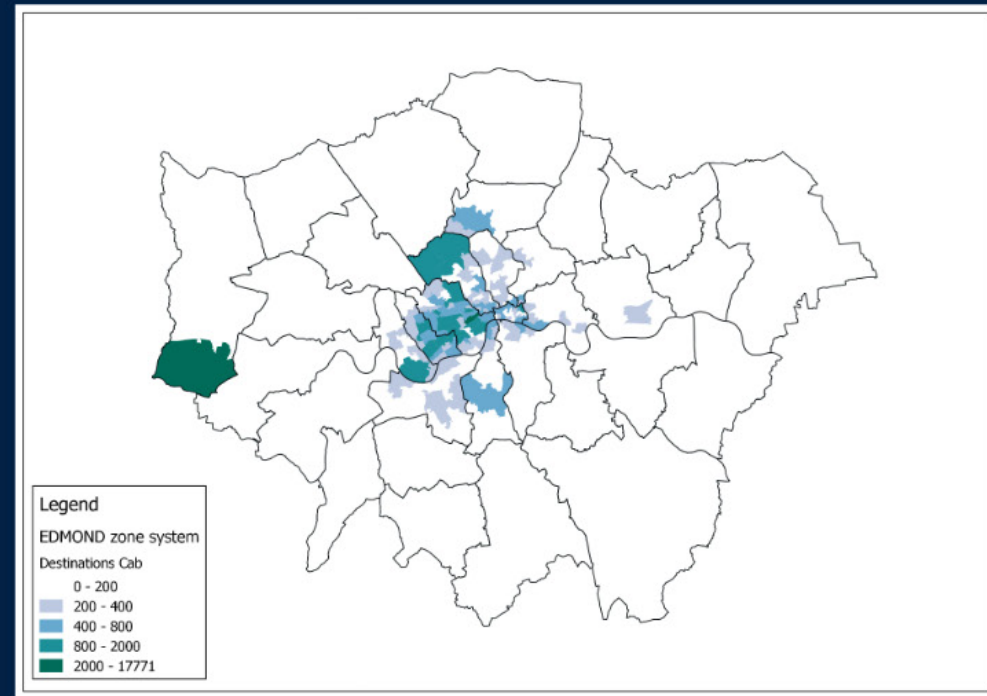
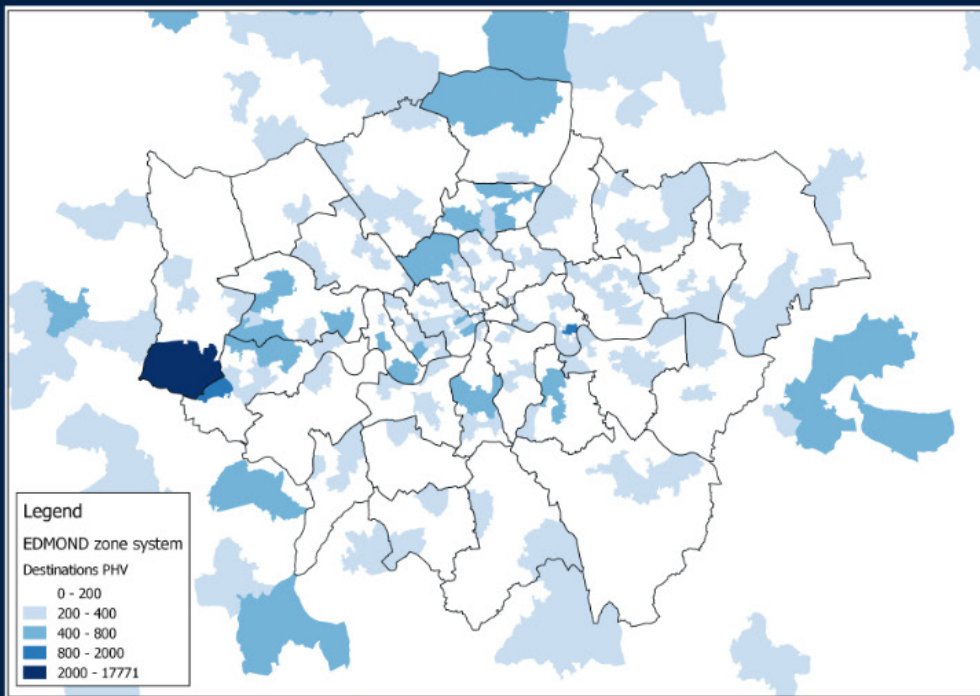
Shoreditch

A map showing the Clapham area with a dark blue highlighted region. The map includes a light blue background with white outlines of various regions. A dark blue area is highlighted in the center-left, and a medium blue area is highlighted in the top-right. The word "Clapham" is written in bold black text in the center of the dark blue area.

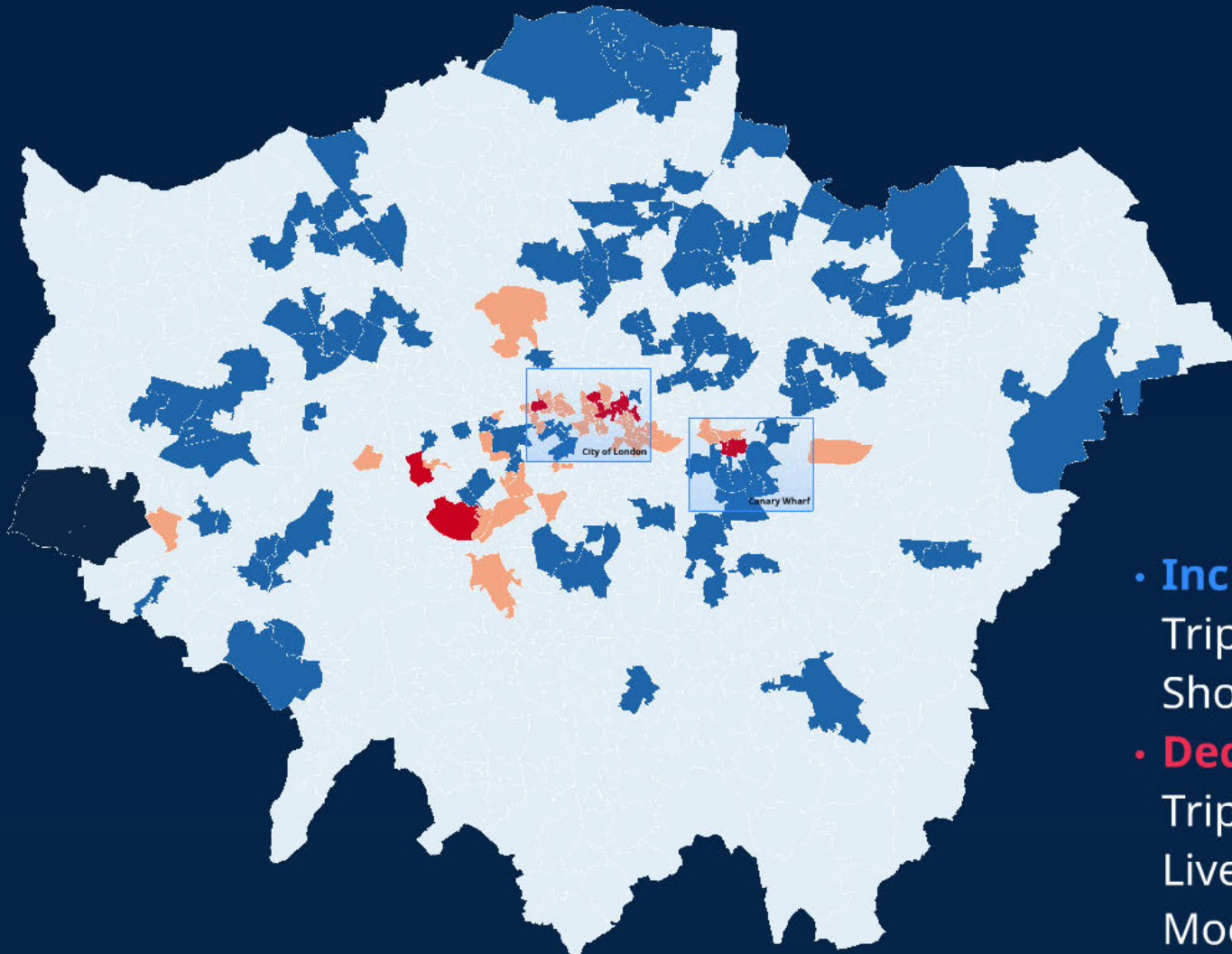
Clapham

SW4

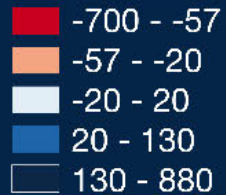
Daily trips patterns of PHV and black cab trips to each zone



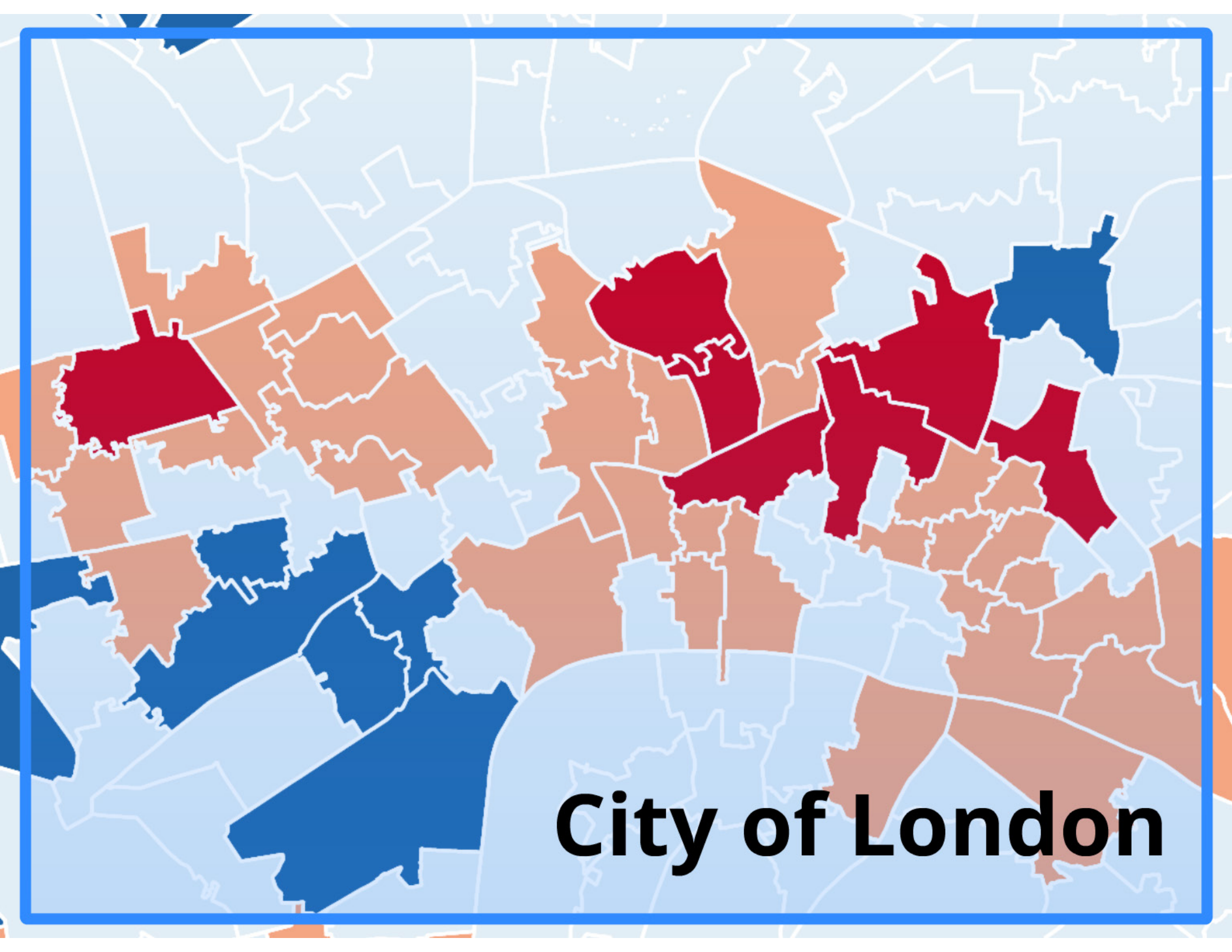
Change in PHV Daily trips from Weekend and Weekday



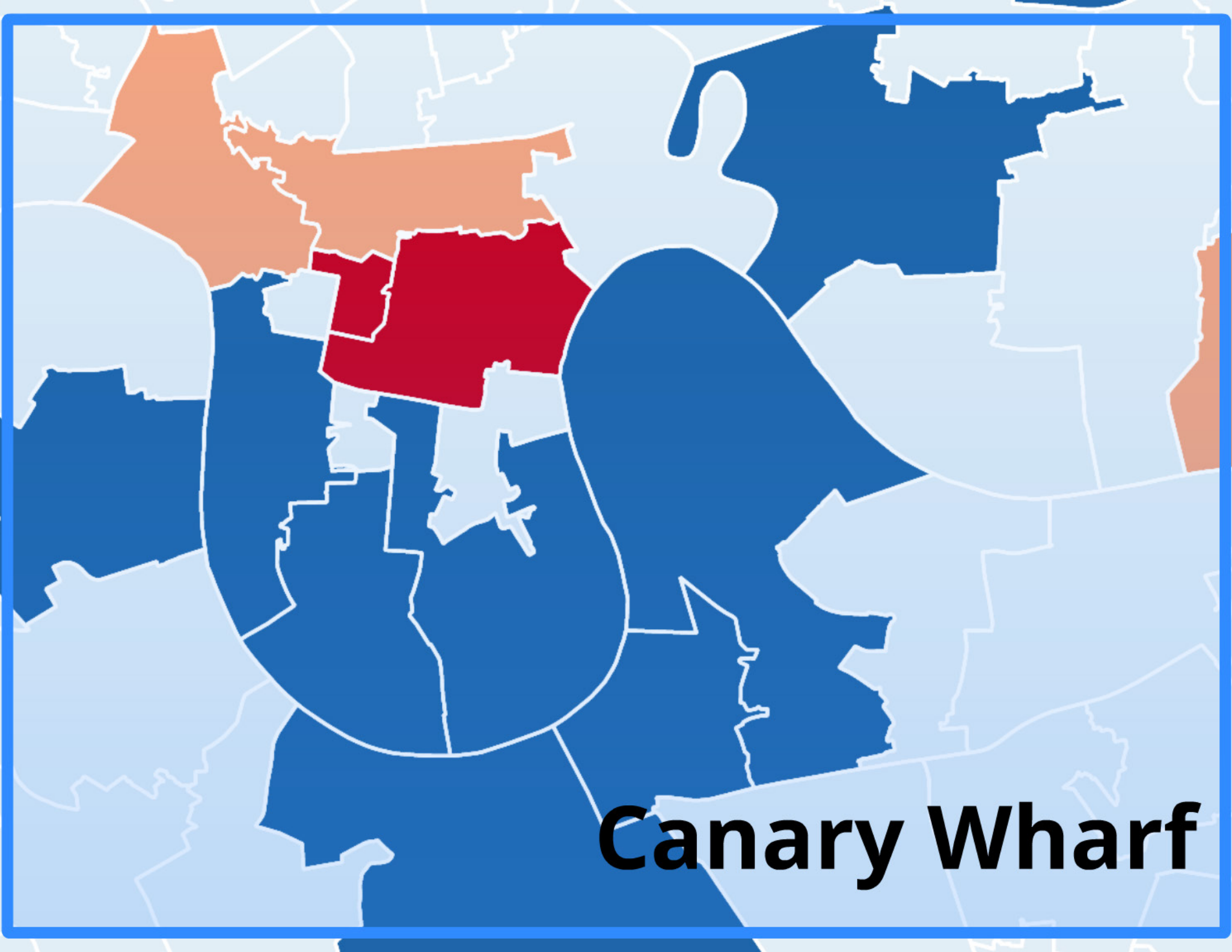
PHV Trips Change



- **Increase** in PHV Trips in Shoreditch
- **Decrease** PHV Trips Bank, Liverpool Street, Moorgate

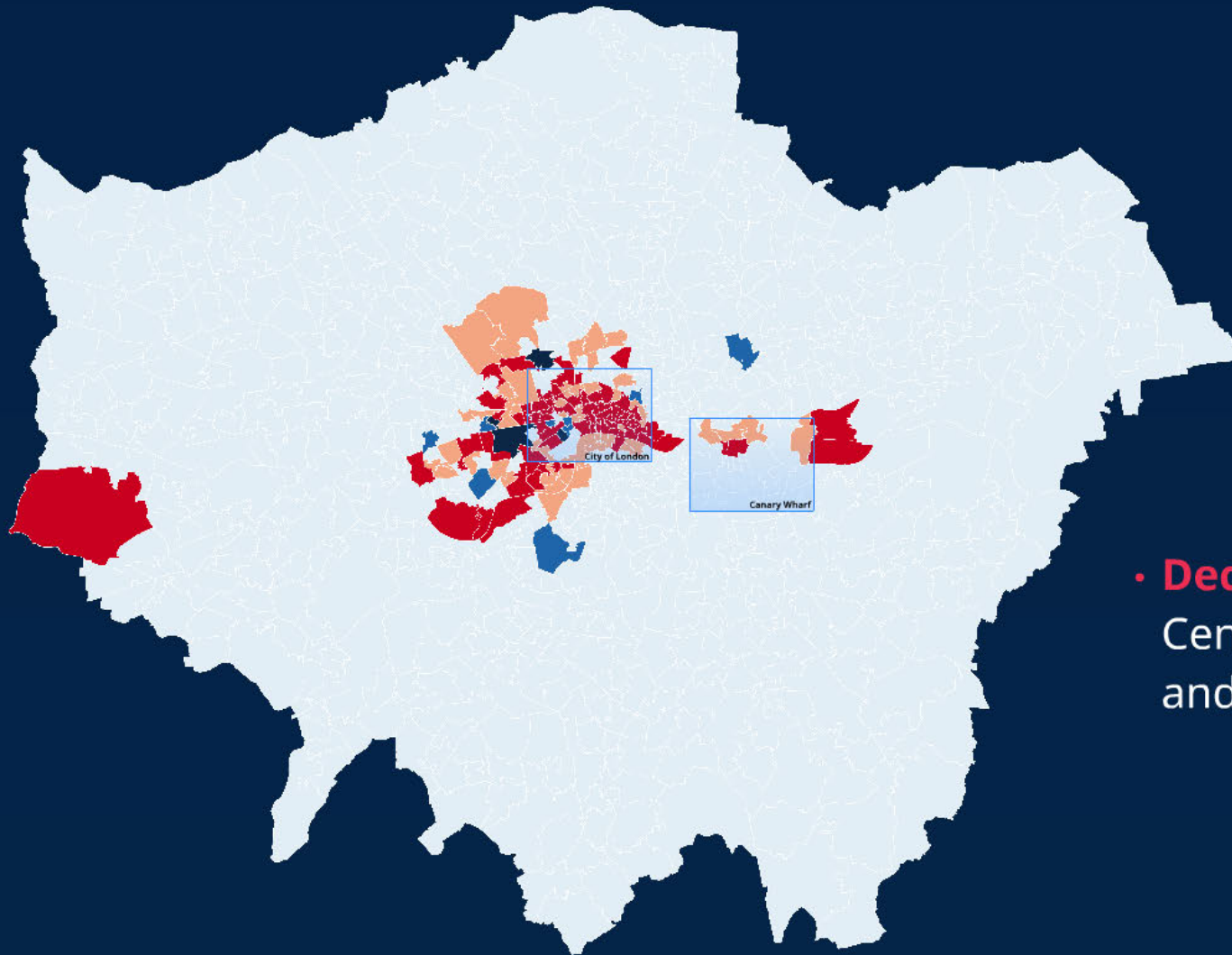


City of London



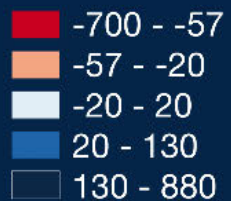
Canary Wharf

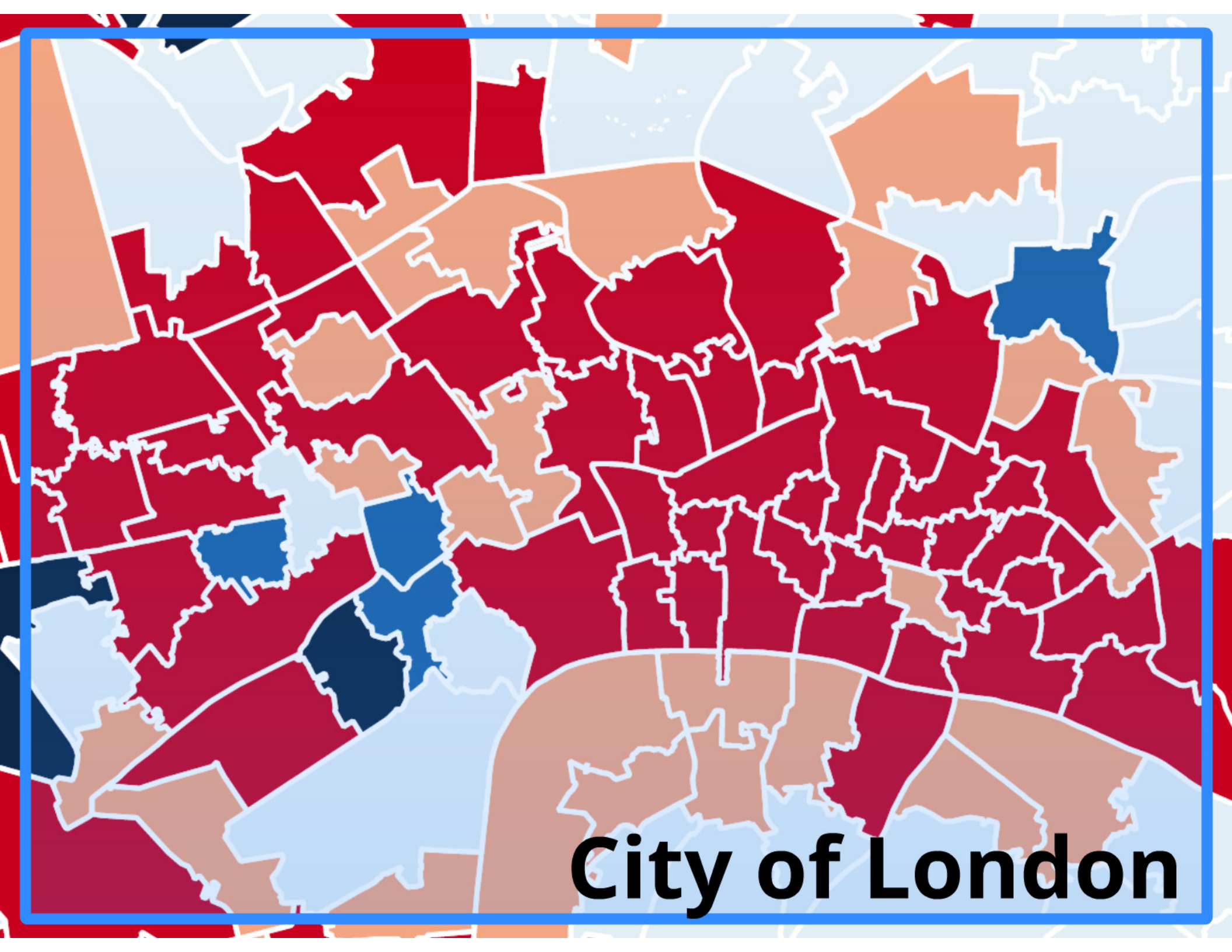
Change in Taxi Daily trips from Weekend and Weekday



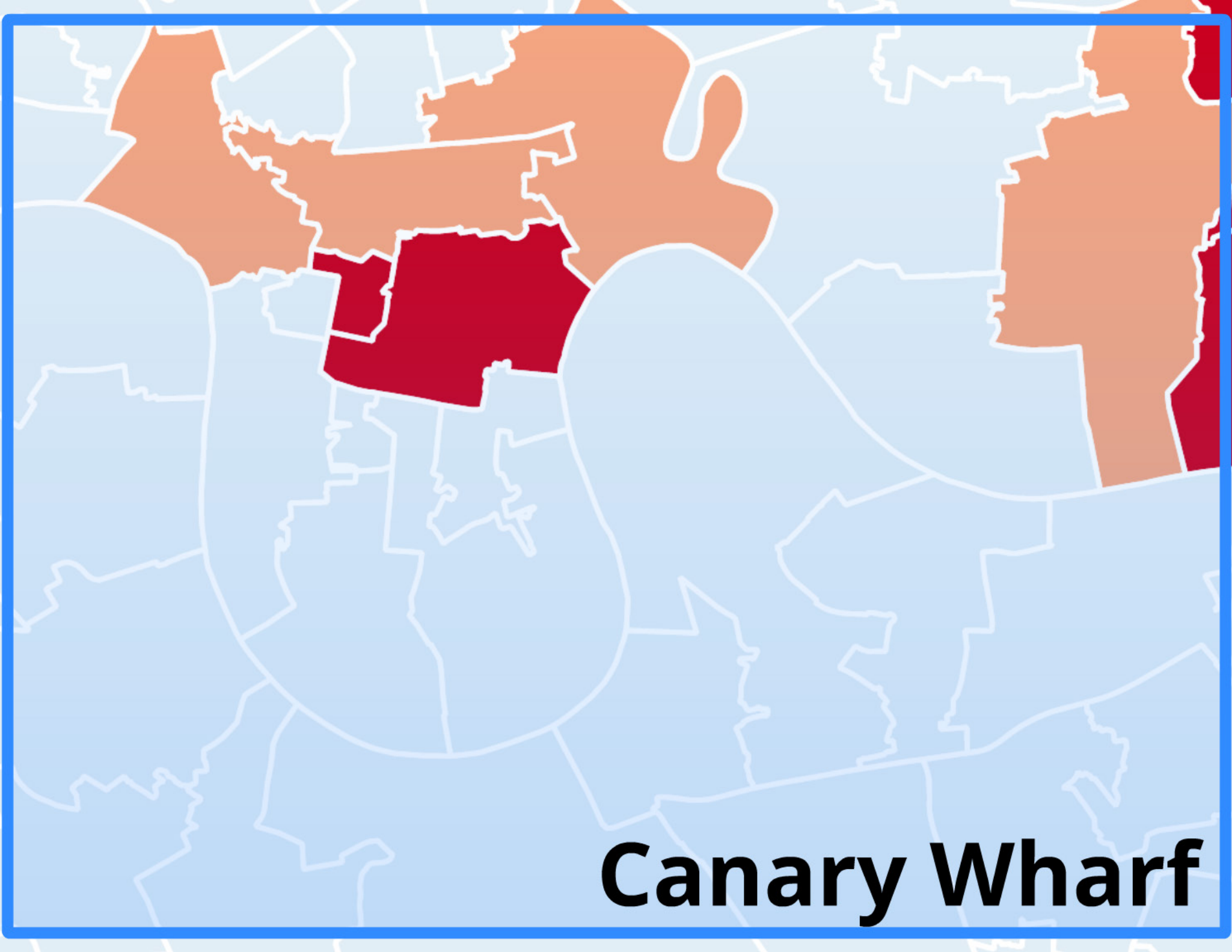
- **Decrease** Taxi in Central London and the City

Taxi Trips Change





City of London

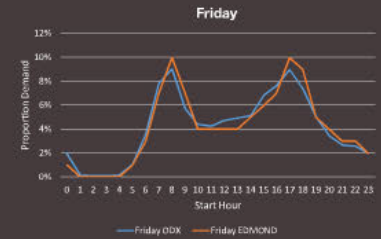
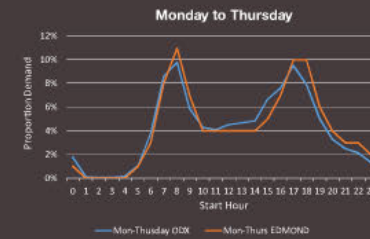


Canary Wharf

Peak hour Travel

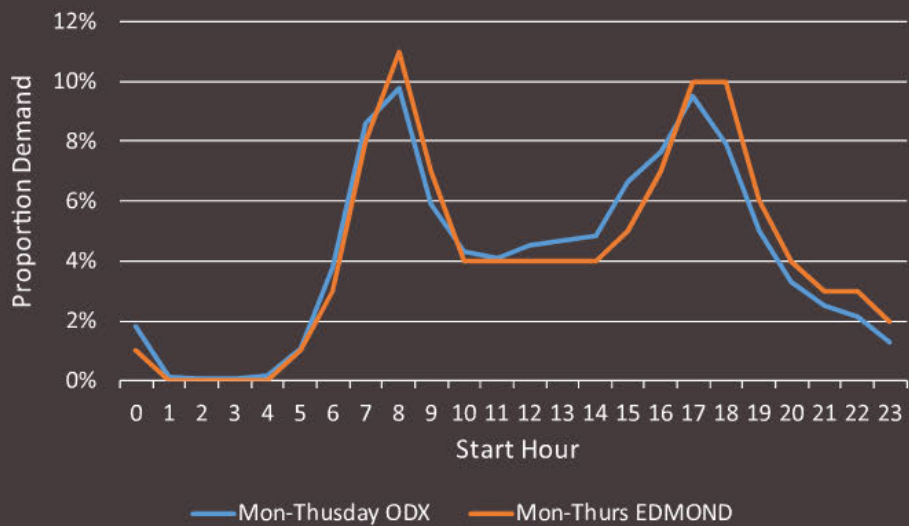
EDMOND confirms ODX PT Peak Hours

EDMOND Confirms ODX PT Peak Hours

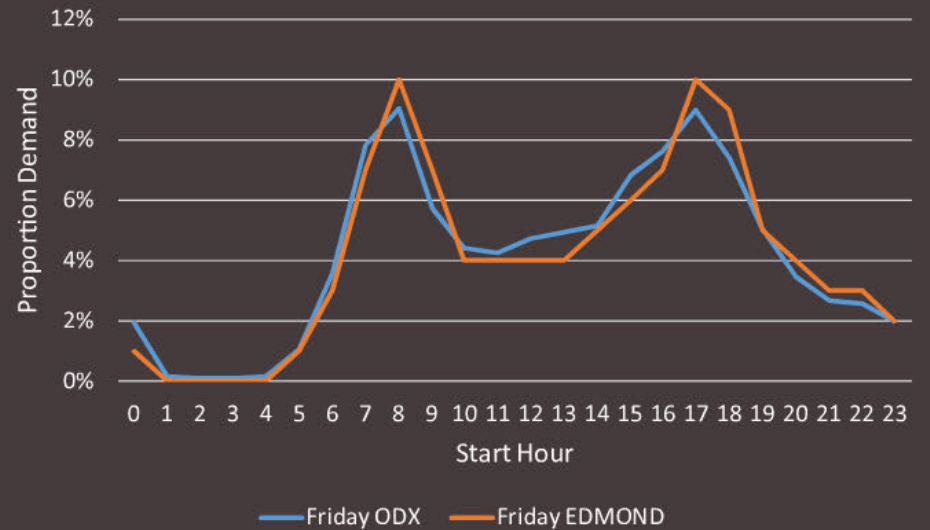


EDMOND Confirms ODX PT Peak Hours

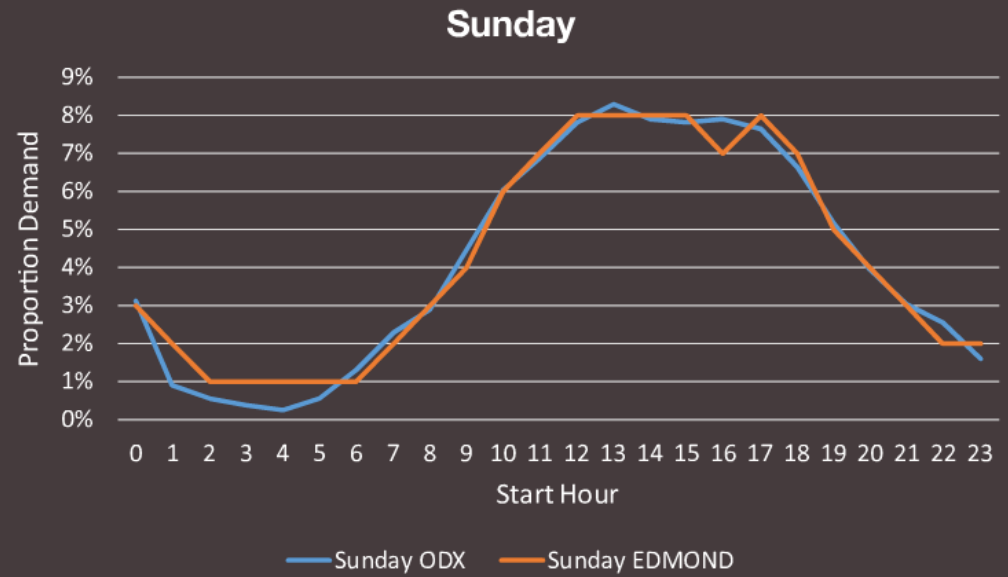
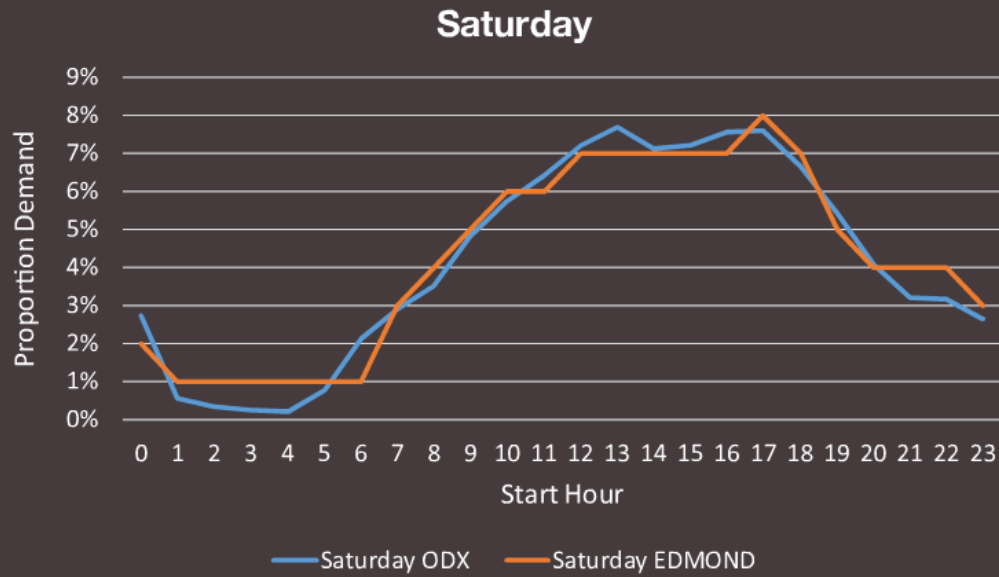
Monday to Thursday



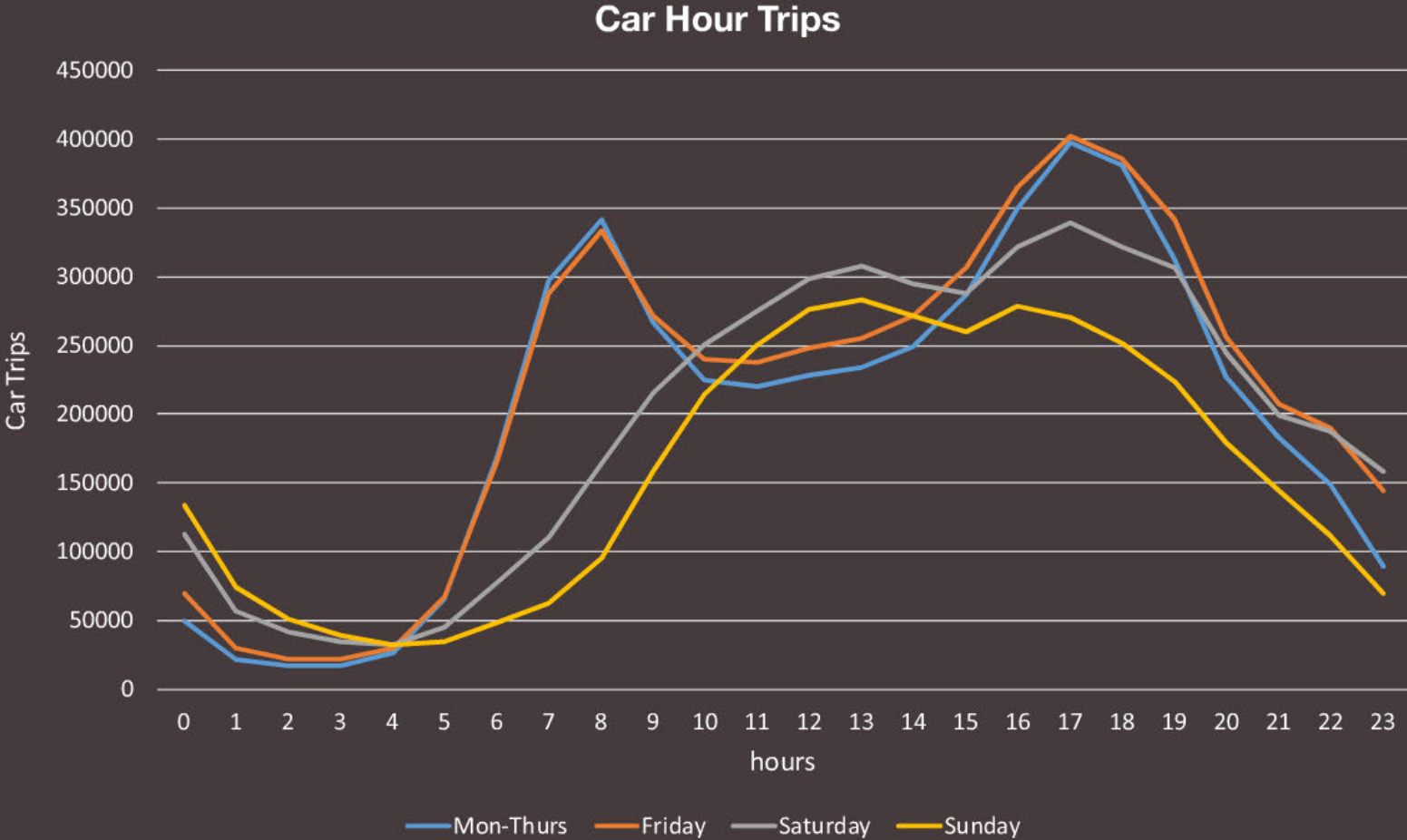
Friday



EDMOND Confirms ODX PT Peak Hours

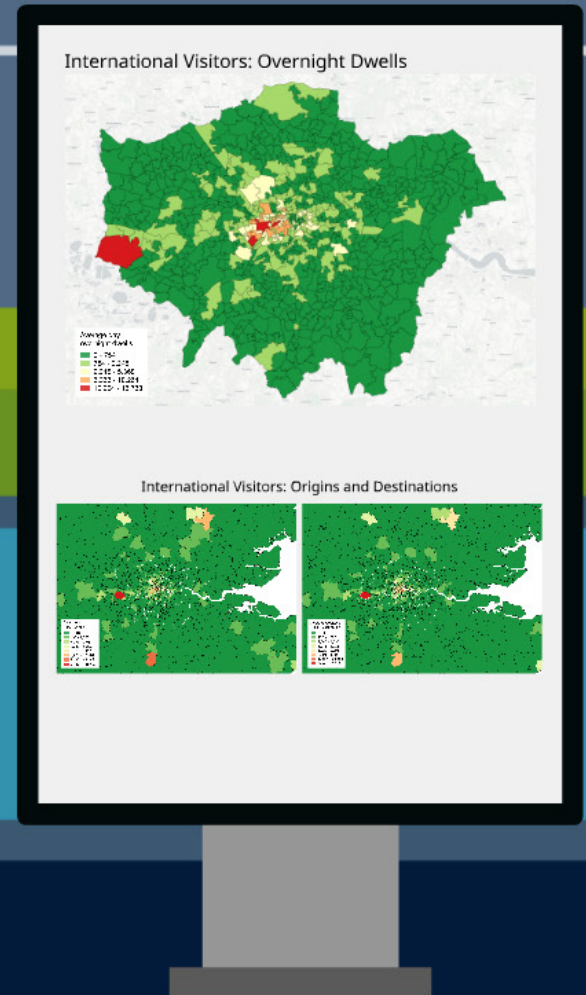


EDMOND Shows high level of inter-peak travel for Car Trips



High Levels of trips during the weekends

Inbound Visitors (Roamers)



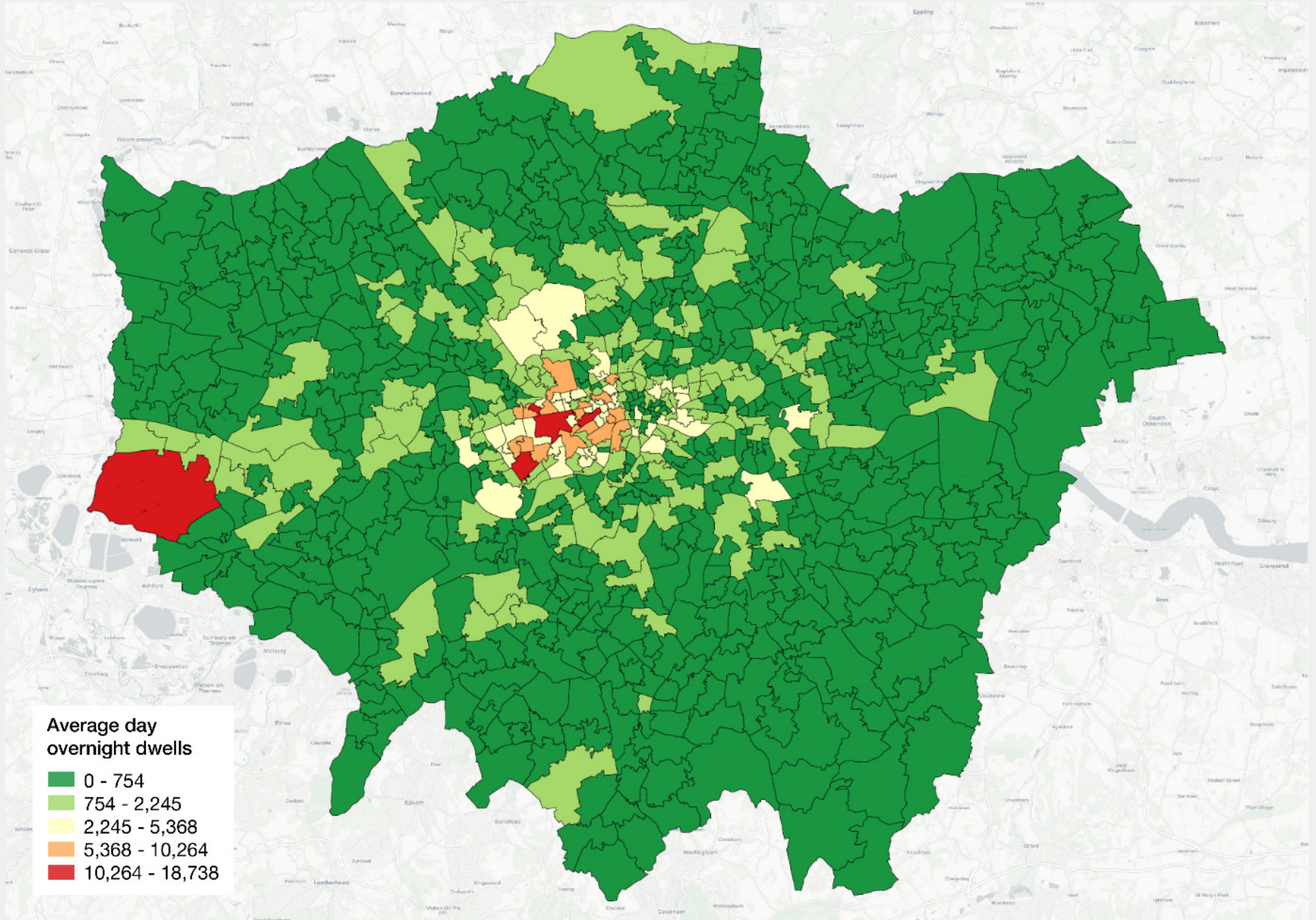
EDMOND Shows high level of inter-peak travel for Car Trips

Car Hour Trips



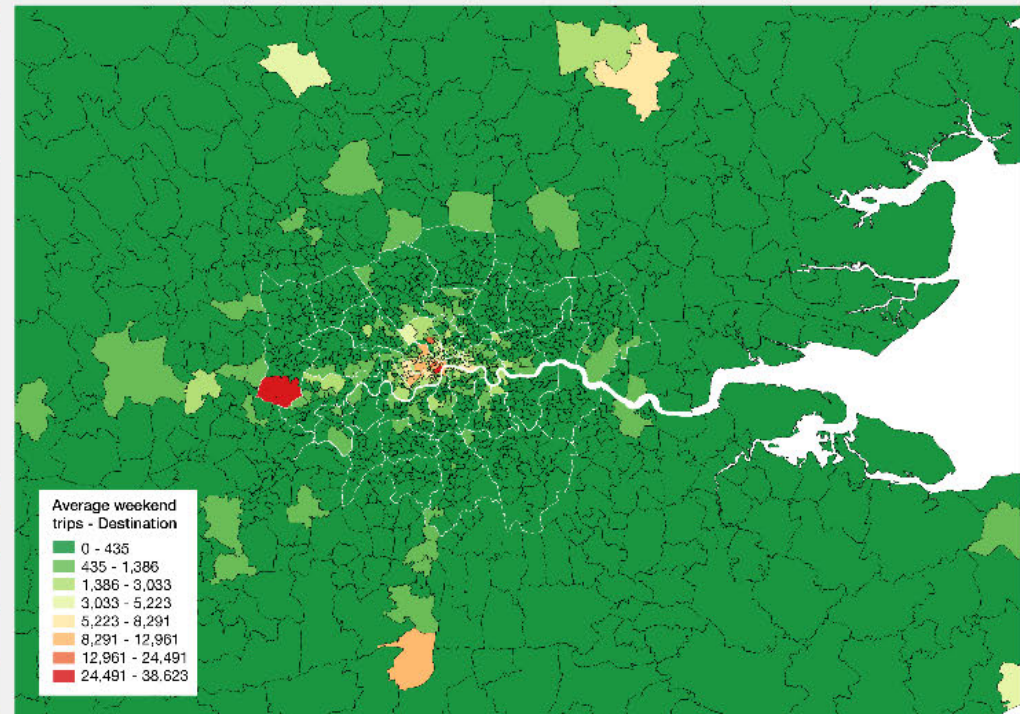
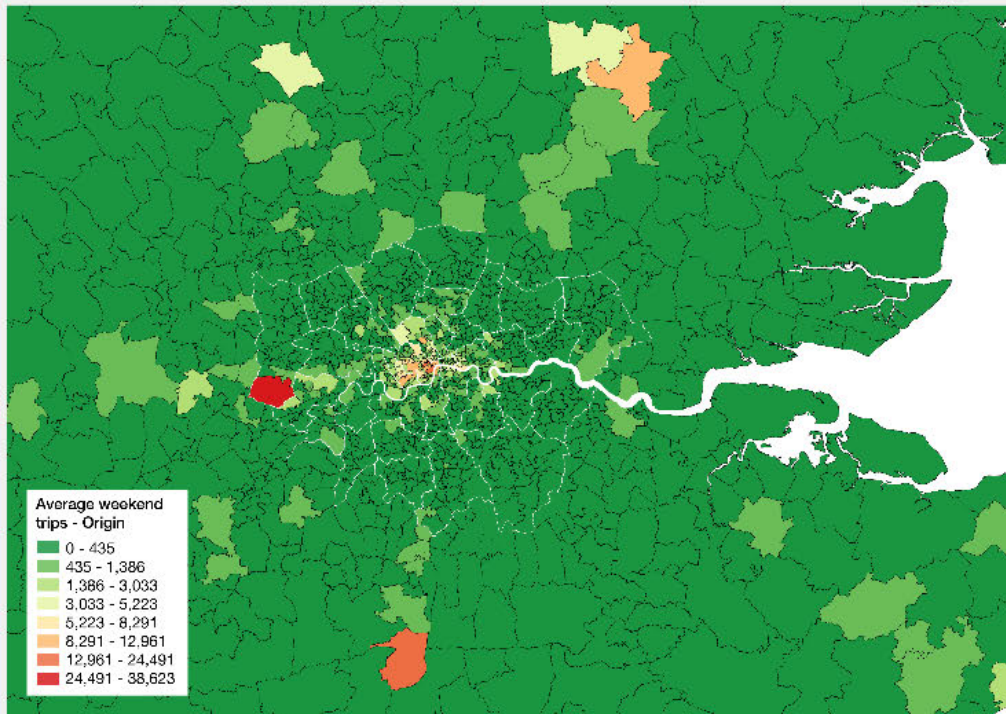
High Levels of trips during the weekends

International Visitors: Overnight Dwells





International Visitors: Origins and Destinations

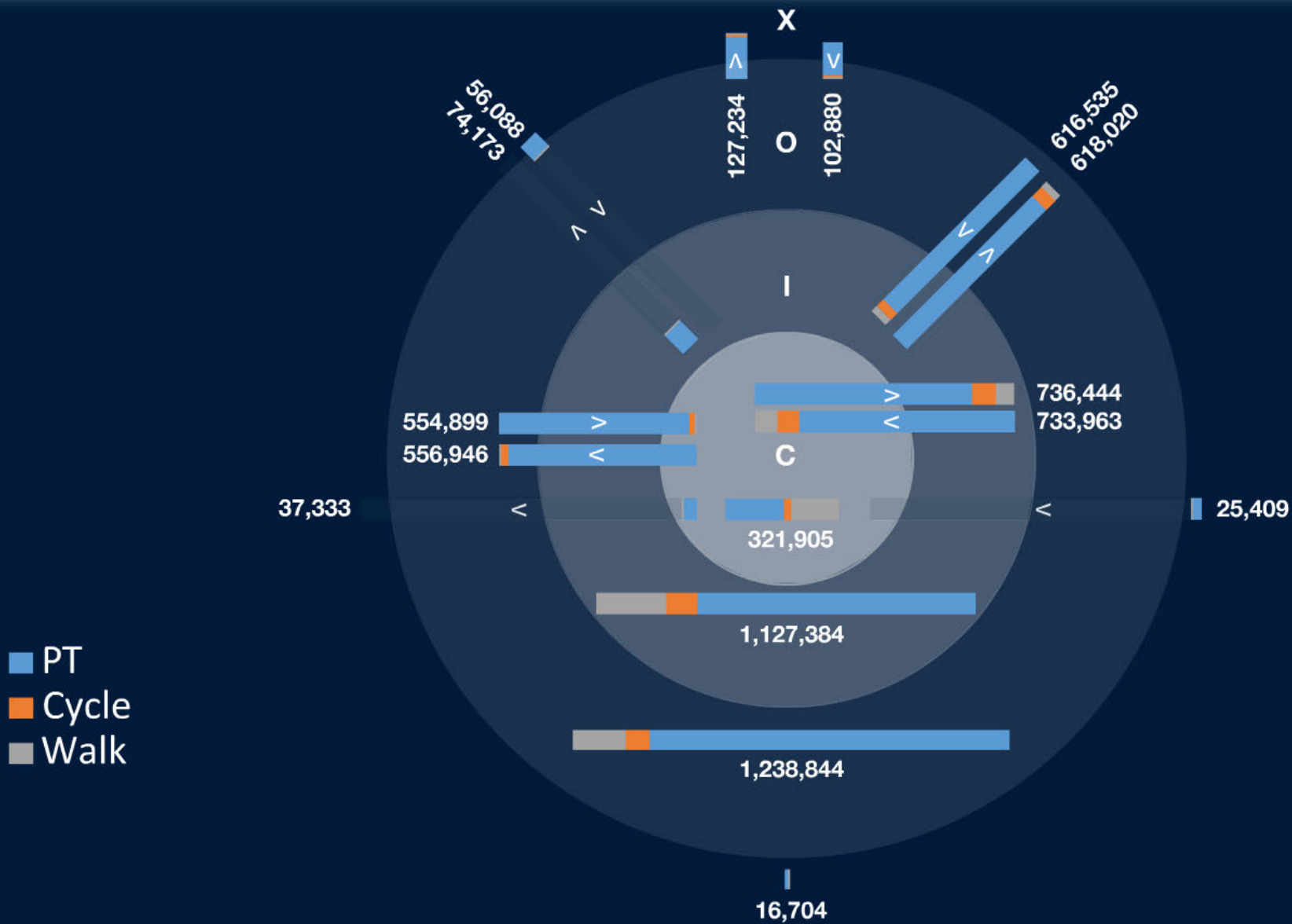


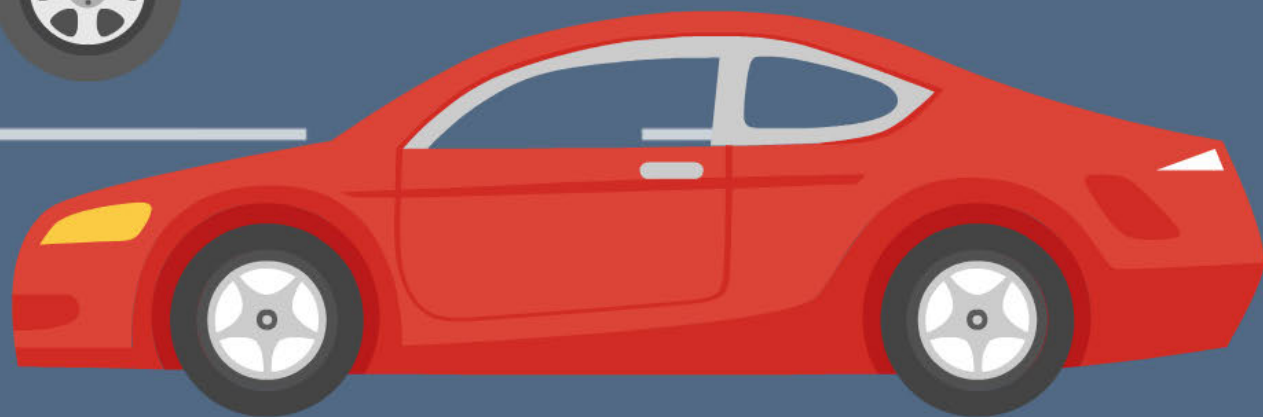
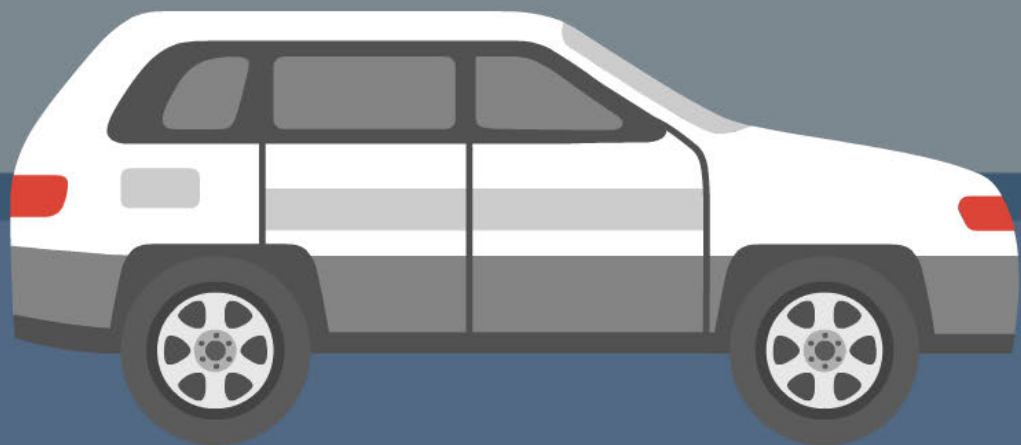


Active Modes



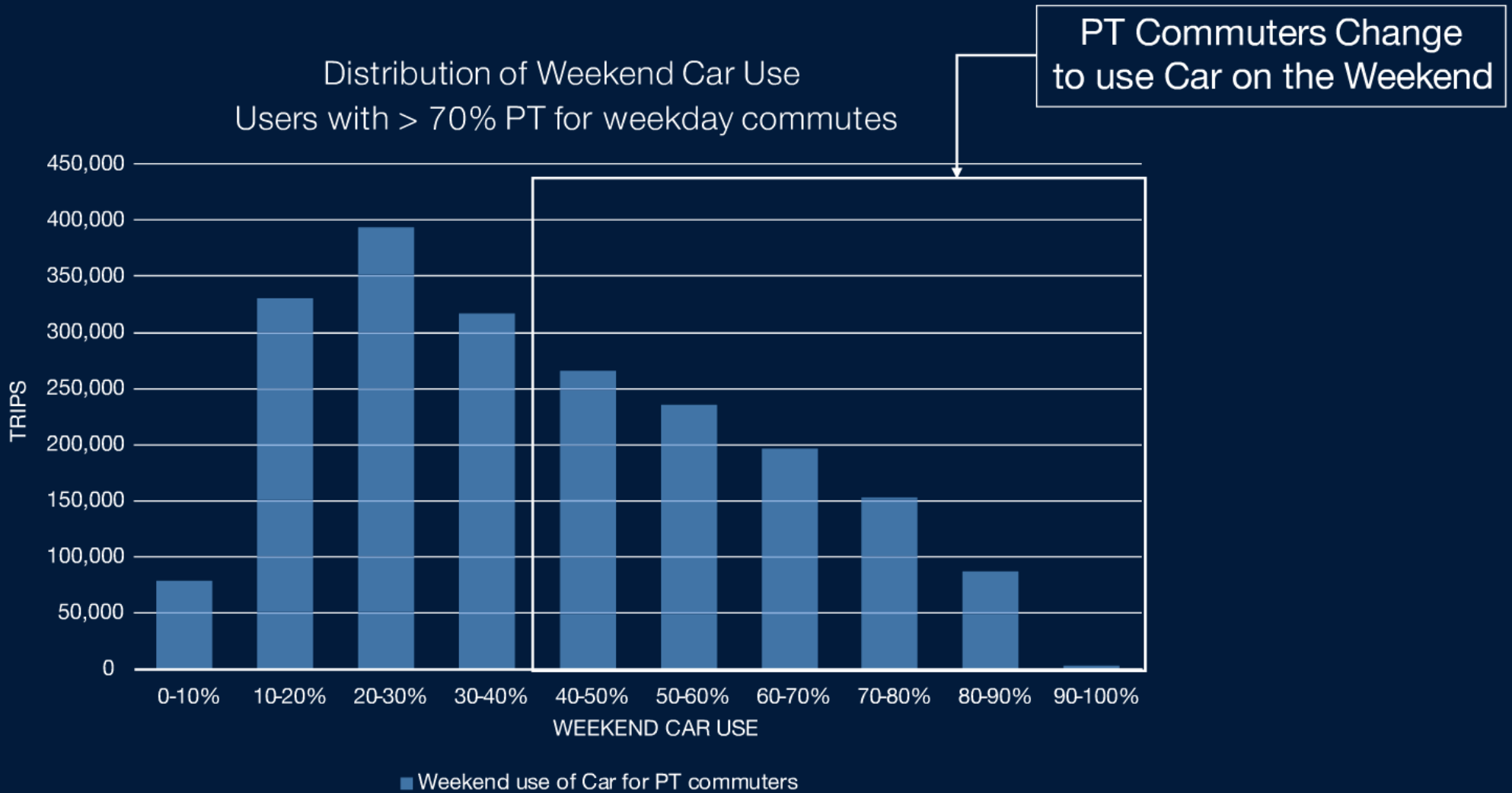
CIOX: Active Modes: walking and cycling





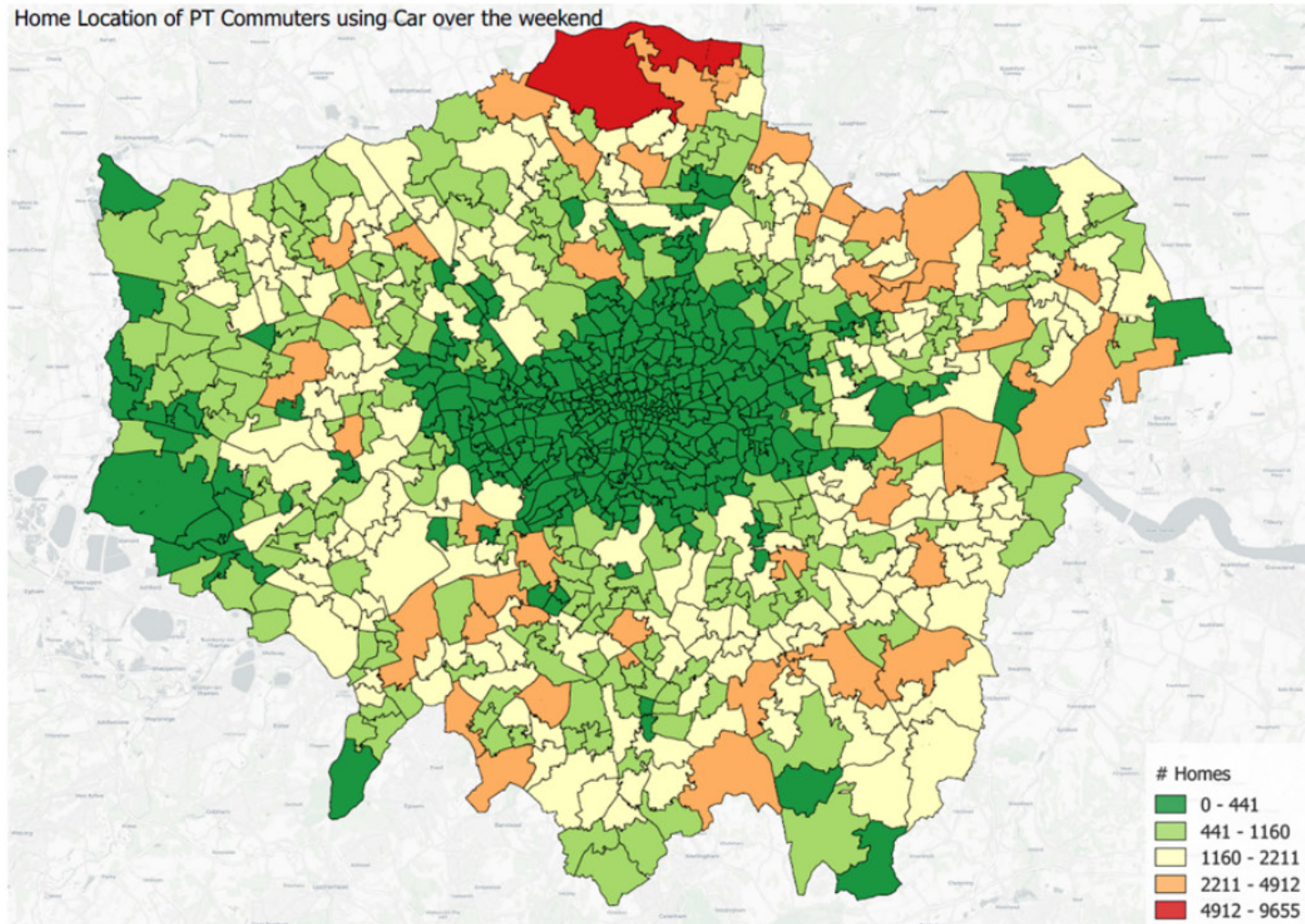
Commuters'
weekend travel

Public Transport Commuters on the weekend



Home location of Public Transport commuters using the car over the weekend

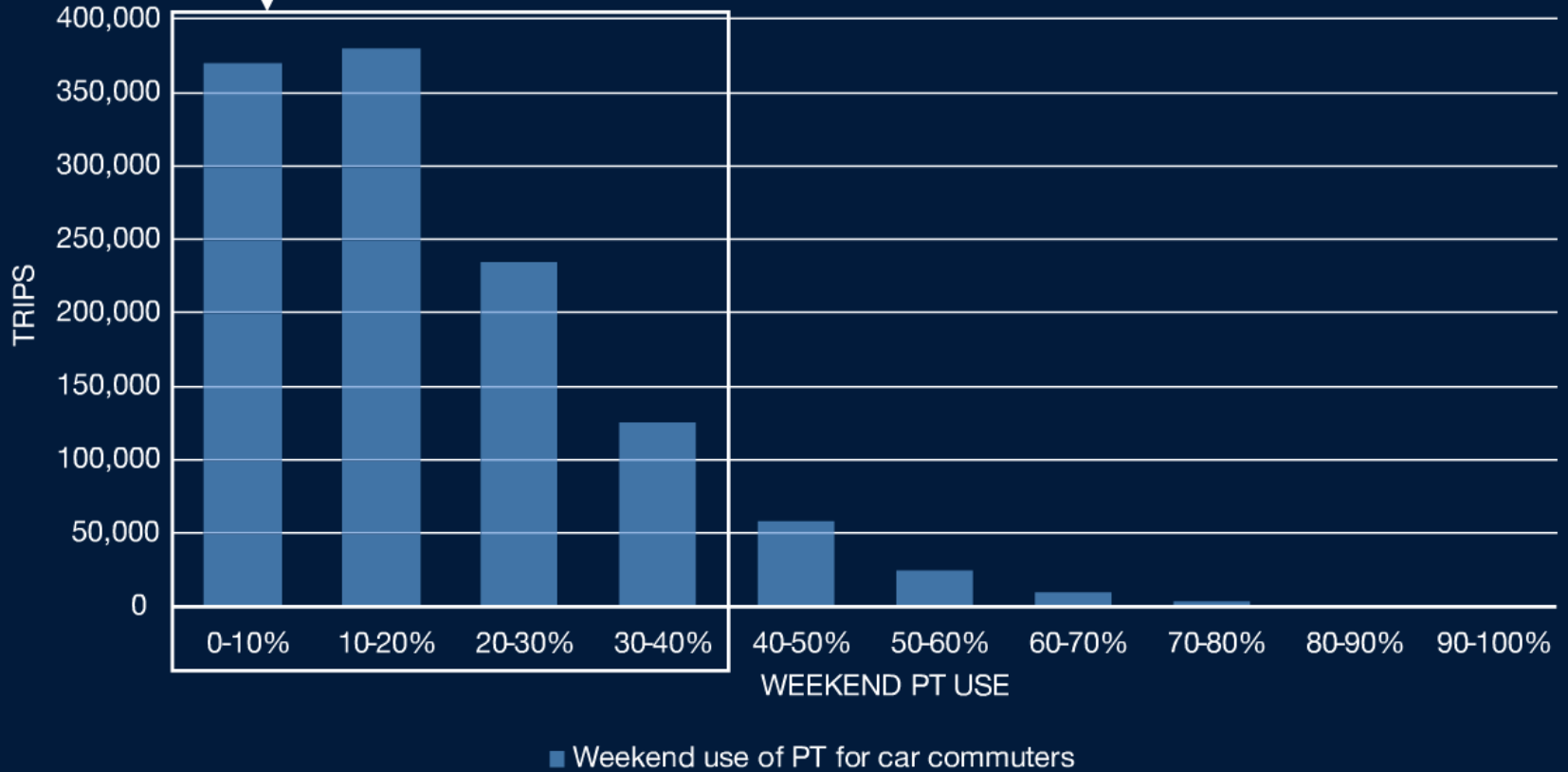
Home Location of PT Commuters using Car over the weekend



Car commuters on the weekend

Still use Car on the Weekend

Distribution of Weekend PT Use
Users with > 70% Car for weekday commutes



Final word and Q&A

Knowledge Sharing Event

Project EDMOND

16th March 2018

