

CITING A NEW RESTAURANT

Coursera IBM Data Science Professional Certificate

Capstone Project



WK2- THE PROBLEM AND WHO IS INTERESTED

The problem

- The business problem to be tackled in this project relates to the siting of a new restaurant in London. London is notorious for being difficult to find commercial properties to rent. The market is fast moving and thus properties with applicable specifications are difficult to secure. Furthermore, the London restaurant market is highly saturated. This means that it can be difficult to find locations with less competition. The restaurant will be sited near a major transport hub in an effort to increase footfall.

Who is interested?

- Business owners and property managers would be particularly interested in this investigation due to the potential this report will have to find new business locations in a difficult market.

WK2 – DATA USED AND WHY

- Rightmove will be used to source data on potential sites for the restaurant. This will allow for suitable and importantly current locations to be found in close proximity to major transport hubs.
- Foursquare is a trusted provider of locations, events and business-related data. The Foursquare API will be used to source the businesses in the vicinity of the locations that have been chosen. The Foursquare API will provide helpful data such as lat-long coordinates, business categories, distance from the sites and the names of the business. These will be used to form the assessments of this report.

rightmove 
find your happy

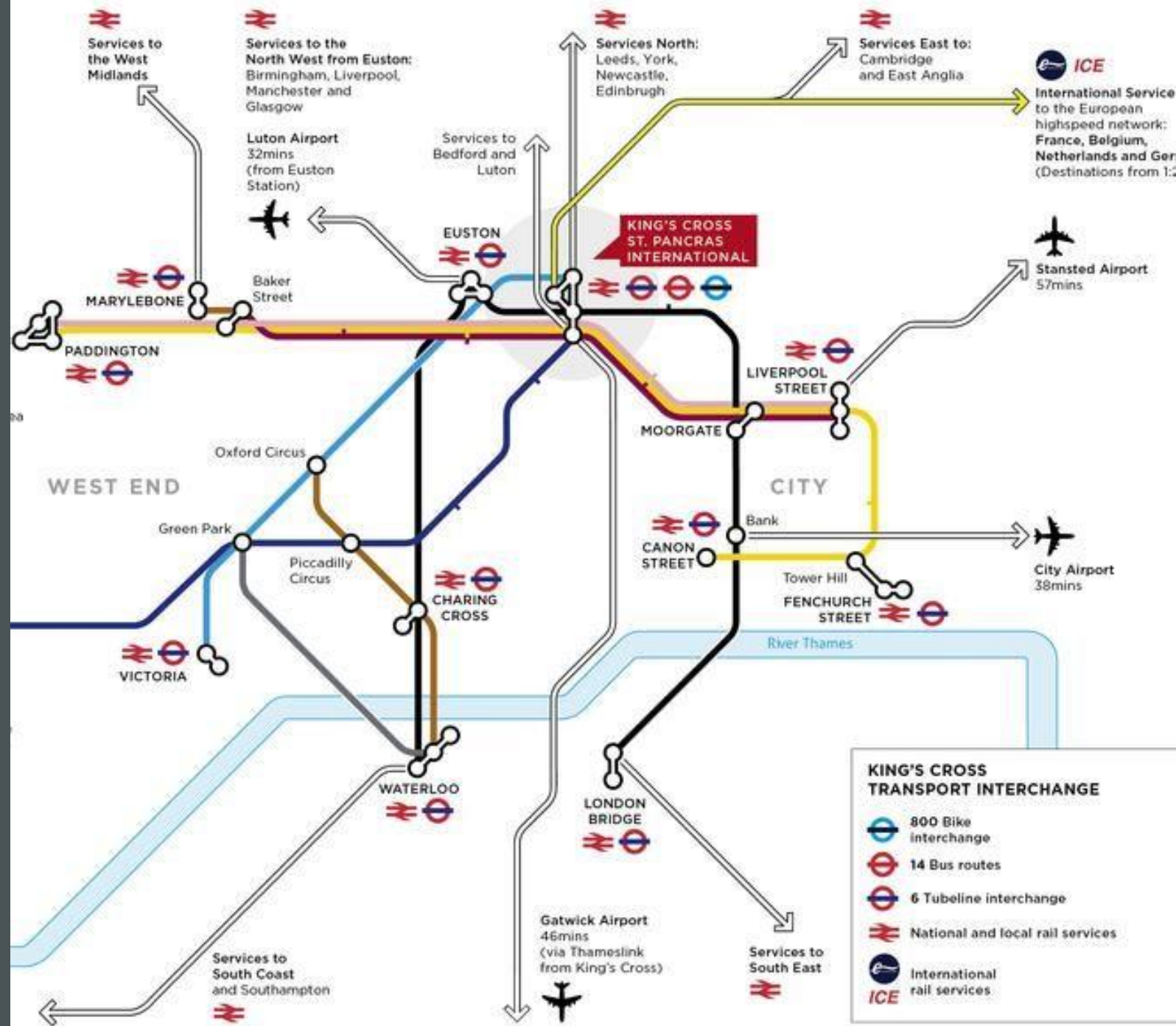


WK2 – METHODOLOGY

- First, major transport hubs in London were filtered to select appropriate locations to form the searches used on RightMove.

Prospective locations

- Victoria
- Waterloo
- London Bridge
- Paddington
- Euston
- Stratford
- Greenwich



A map of Greater London and surrounding areas, including parts of Essex, Kent, and Surrey. Numerous red dots are scattered across the map, representing prospective locations for a restaurant. The dots are concentrated in the central and eastern parts of London, particularly around the M25 and M4 corridors. A white rectangular box is overlaid on the map, containing the text 'WK2 - METHODOLOGY'.

WK2 - METHODOLOGY

- The prospective locations were narrowed down to the five most applicable to the business specification. This was based on available commercial property, locations suitable for a restaurant and the requirement for close proximity to a major transport hub.
- Stratford
- Victoria
- Euston
- Greenwich
- Paddington



FOURSQUARE

WK2 - METHODOLOGY

Foursquare API credentials were essential for this task therefore, it was necessary to procure a Foursquare developer account. Due to the fact that the query limit was 900/day, a trial version was deemed sufficient.

The query was built in a modular fashion as illustrated. This meant that it was possible to change variables without having to change the query. It also made the code easier to read.

The API call was constructed of five parameters. The longitude and latitude coordinates of the proposed locations were used to define the Foursquare search area. A radius of 500m was given as this was deemed to be an applicable range to define businesses who might be competitors. The search query term 'restaurant' was used to encapsulate both characteristics in the 'categories' section of the API return as well as 'name' return. This ensures that the search is narrow enough to address only eateries but wide enough to return a broad variety. Finally, a limit of 100 was placed on the returns to ensure that the data was manageable and concise. (None of the returns exceeded 100 results)

The data was called using the returns library. Returned data was then formatted into a tidy data and presentable form. Folium was used to visualize the data so that inferential analysis could be conducted.

Counts were run against the returns of the query for each location to understand the business saturation within the area. In addition, the average distance from the location was determined in order to assess the density of competitors to the location.

	name	categories	lat	lng	location.distance	venue.categories
0	Sobraine Russian Restaurant	[[{"id": "4bf58dd8d48988d1c4941735", "name": "R..."}, {"id": "4bf58dd8d48988d11a941735", "name": "O..."}]]	51.493744	-0.148131	199	Restaurant
1	Beyti Restaurant	[[{"id": "4bf58dd8d48988d11a941735", "name": "O..."}, {"id": "4bf58dd8d48988d16b941735", "name": "B..."}]]	51.495770	-0.143910	204	Other Nightlife
2	Brasilian Restaurant	[[{"id": "4bf58dd8d48988d16b941735", "name": "B..."}, {"id": "4bf58dd8d48988d109941735", "name": "E..."}]]	51.492446	-0.143875	216	Brazilian Restaurant
3	Jb's Restaurant	[[{"id": "4bf58dd8d48988d109941735", "name": "E..."}, {"id": "4bf58dd8d48988d16e941735", "name": "F..."}]]	51.494059	-0.141512	265	Eastern European Restaurant
4	Ten28 Bar & Restaurant	[[{"id": "4bf58dd8d48988d16e941735", "name": "F..."}, {"id": "52e81612bcb57f1066b7a05", "name": "E..."}]]	51.496420	-0.143080	295	Fast Food Restaurant
5	Bill's Restaurant	[[{"id": "52e81612bcb57f1066b7a05", "name": "E..."}, {"id": "4bf58dd8d48988d10f941735", "name": "I..."}]]	51.497236	-0.141139	448	English Restaurant
6	Paradise Restaurant	[[{"id": "4bf58dd8d48988d10f941735", "name": "I..."}, {"id": "4bf58dd8d48988d1c4941735", "name": "R..."}]]	51.491591	-0.139647	487	Indian Restaurant
7	BOMBAY CURRY RESTAURANT	[[{"id": "4bf58dd8d48988d10f941735", "name": "I..."}, {"id": "4bf58dd8d48988d1c4941735", "name": "R..."}]]	51.491471	-0.139024	530	Indian Restaurant
8	Palace Restaurant	[[{"id": "4bf58dd8d48988d1c4941735", "name": "R..."}, {"id": "4bf58dd8d48988d10f941735", "name": "I..."}]]	51.499152	-0.143294	572	Restaurant
9	Paradise Indian Restaurant	[[{"id": "4bf58dd8d48988d10f941735", "name": "I..."}, {"id": "4bf58dd8d48988d110941735", "name": "I..."}]]	51.492036	-0.139896	445	Indian Restaurant
10	Prezzo	[[{"id": "4bf58dd8d48988d110941735", "name": "I..."}, {"id": "4bf58dd8d48988d120951735", "name": "F..."}]]	51.494866	-0.145193	78	Italian Restaurant
11	Sky Lobby Caf�	[[{"id": "4bf58dd8d48988d120951735", "name": "F..."}, {"id": "4bf58dd8d48988d1c4941735", "name": "R..."}]]	51.494868	-0.145700	82	Food Court
12	Thyme	[[{"id": "4bf58dd8d48988d1c4941735", "name": "R..."}, {"id": "4bf58dd8d48988d149941735", "name": "T..."}]]	51.492669	-0.143136	225	Restaurant
13	Sri Suwoon	[[{"id": "4bf58dd8d48988d149941735", "name": "T..."}, {"id": "4bf58dd8d48988d110941735", "name": "I..."}]]	51.491534	-0.146524	304	Thai Restaurant
14	Santini	[[{"id": "4bf58dd8d48988d110941735", "name": "I..."}, {"id": "4bf58dd8d48988d16d941735", "name": "C..."}]]	51.496000	-0.147078	237	Italian Restaurant
15	Melissa Cafe	[[{"id": "4bf58dd8d48988d16d941735", "name": "C..."}, {"id": "4bf58dd8d48988d110941735", "name": "I..."}]]	51.492948	-0.149693	331	Caf�
16	Tozi	[[{"id": "4bf58dd8d48988d110941735", "name": "I..."}, {"id": "4bf58dd8d48988d10941735", "name": "I..."}]]	51.494094	-0.141335	277	Italian Restaurant
17	Zizzi	[[{"id": "4bf58dd8d48988d110941735", "name": "I..."}, {"id": "4bf58dd8d48988d1c4941735", "name": "R..."}]]	51.497503	-0.140648	493	Italian Restaurant
18	Old Masters	[[{"id": "4bf58dd8d48988d1c4941735", "name": "R..."}, {"id": "4bf58dd8d48988d110941735", "name": "I..."}]]	51.498237	-0.143222	476	Restaurant
19	Carrara At St James	[[{"id": "4bf58dd8d48988d110941735", "name": "I..."}, {"id": "4bf58dd8d48988d149941735", "name": "T..."}]]	51.498716	-0.142140	552	Italian Restaurant
20	Mango Tree London	[[{"id": "4bf58dd8d48988d149941735", "name": "T..."}, {"id": "4bf58dd8d48988d1c4941735", "name": "R..."}]]	51.498408	-0.147288	491	Thai Restaurant

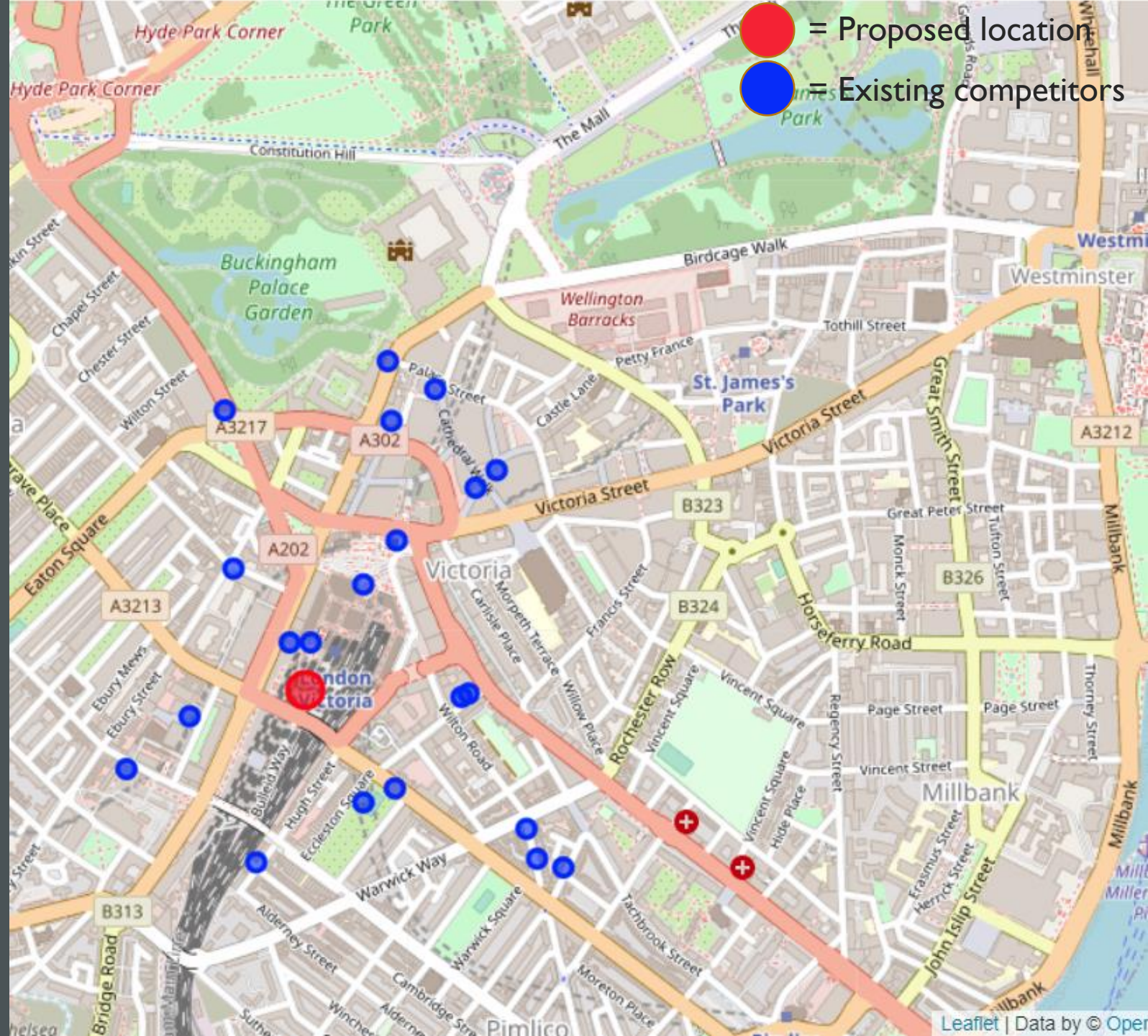
WK2 – RESULTS

Victoria

A property near the Victoria station was chosen on Rightmove.

Victoria returned 21 restaurants within the local area. Whilst the density isn't too high the volume of restaurants in the area is too high. 25% of the returns were Italian restaurants.

The average dispersion of properties from the Victoria location is the highest in this report at 343.2m.



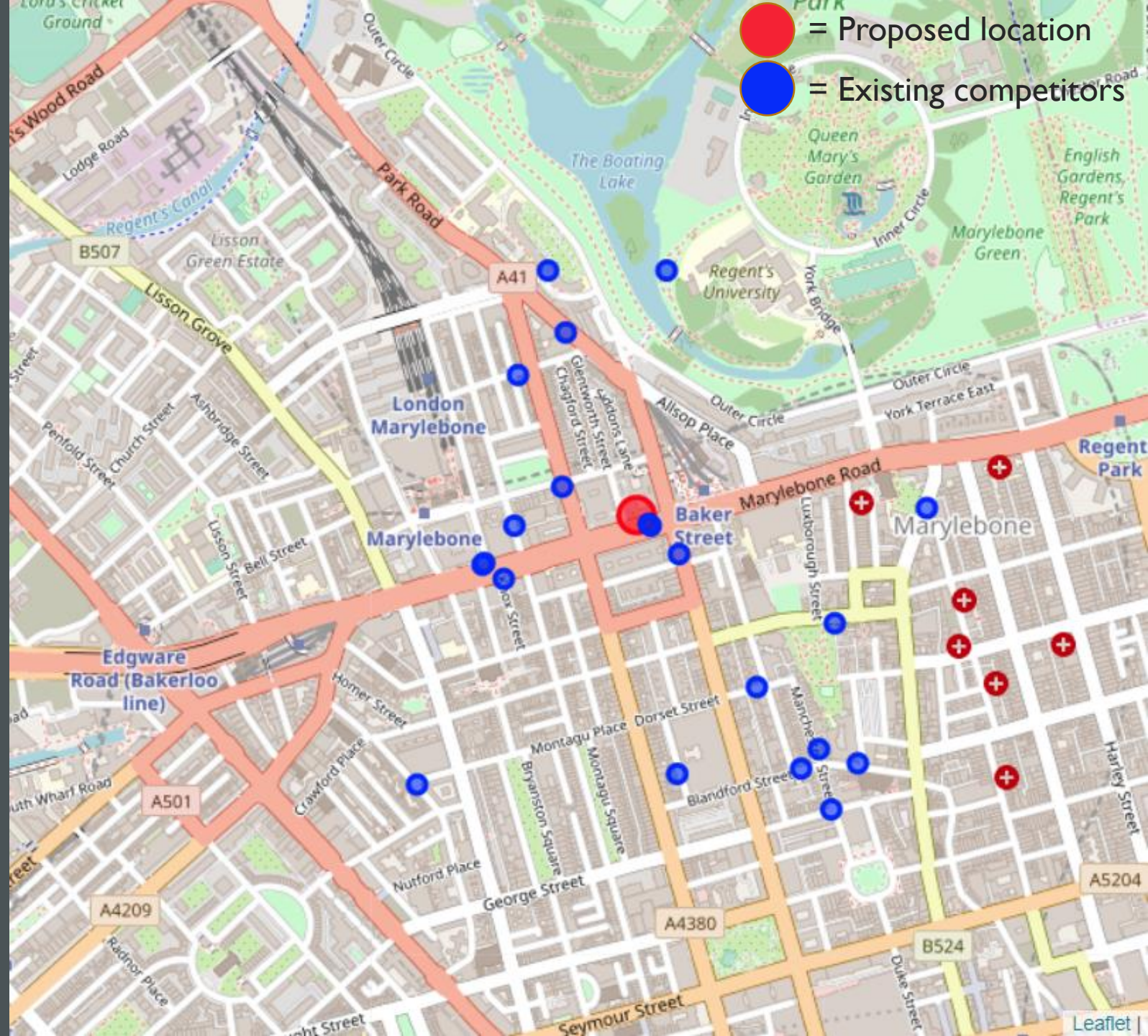
WK2 – RESULTS

Euston

A Rightmove property near Euston station was chosen.

Euston also returned 21 local restaurants with four Indian restaurants present within the 500m radius. Whilst the dispersion is high, the number of restaurants within the vicinity of the location means that it is not suitable.

The average dispersion from the Baker Street location is high at 340.4m.



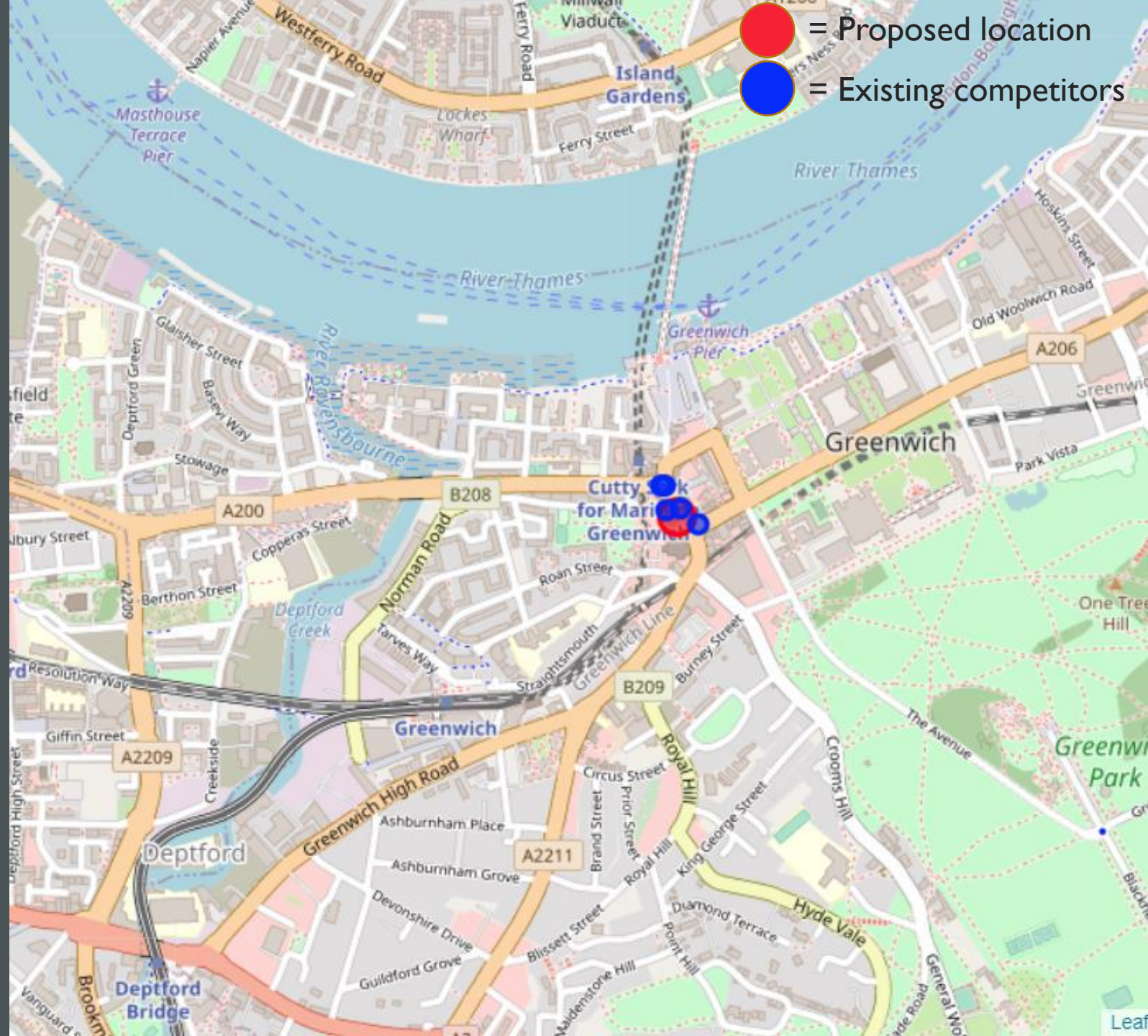
WK2 – RESULTS

Greenwich

Greenwich was chosen as a good location for a restaurant as it is located at a central hub between DLR and rail networks.

Whilst Greenwich only returned 5 competitor locations, the locations are extremely densely located. This means that a new restaurant might struggle to gain market share in such a densely covered area.

The average dispersion of competitors from the proposed location is low at 37.8m. This means that despite there not being much competition, Greenwich is not a suitable location.

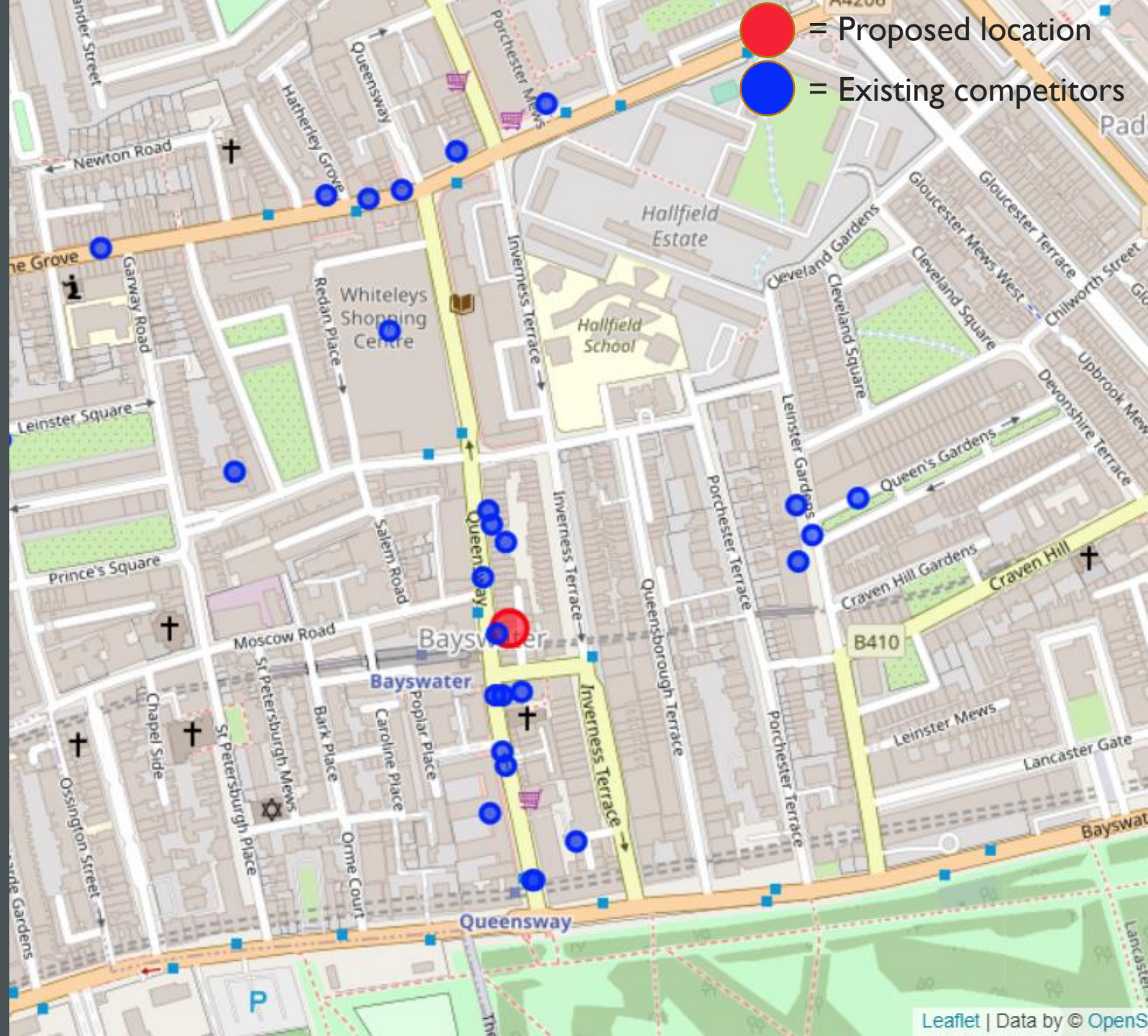


WK2 – RESULTS

Paddington

The location at Paddington was chosen as it is situated near the Paddington rail station. Paddington returned 26 competitors within a 500m radius. Whilst the number of competitors is high, the dispersion is quite good. 5 chinese restaurants are situated in close proximity to the proposed location. The number of competitors likely makes this location unsuitable.

The Paddington location has an average dispersion of 223.7m.



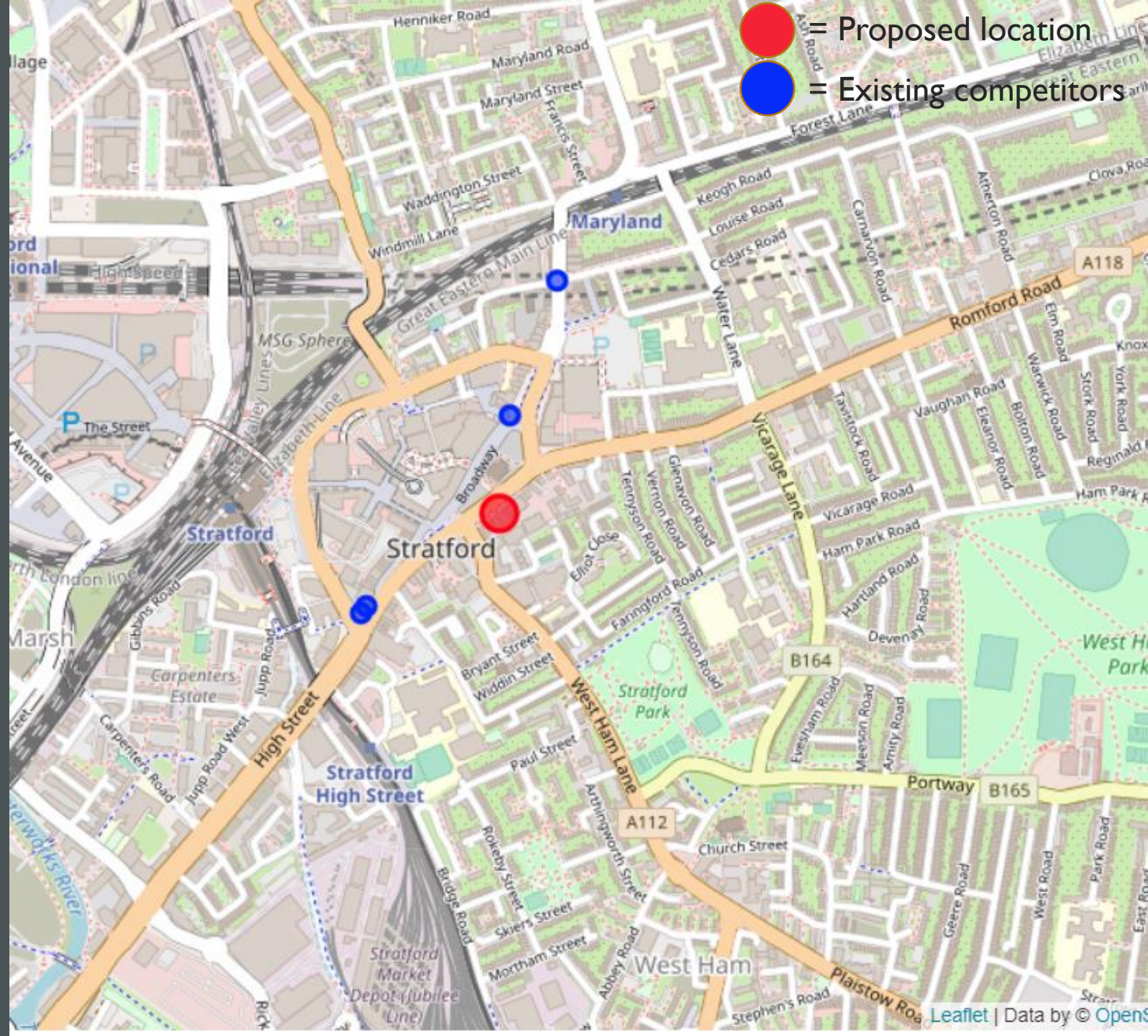
WK2 – RESULTS

Stratford

The Stratford RightMove location was chosen as it is a major transport hub that links the underground, DLR and rail network. There are only four competitors within the 500m radius.

The average dispersion of competitors from the Stratford location is reasonably high at 284.3m.

These factors make Stratford the best choice of the sourced locations.



WK2 – OBSERVATIONS AND RECOMMENDATIONS

Based on the results of the investigation, Stratford was selected to be the best place to cite a new restaurant. This is because it has a low density of competitors in the immediate (500m) area and a relatively high dispersion of competitors. It is also suitably located near a major transport hub.

Broadly, the baseline assessments that founded the investigation were proven to be true. London is a very competitive market for restaurants with a high density of places to eat near major transport links.

Further, more detailed, observations were made in the results section.





WK2 - CONCLUSIONS

- This report identified a problem, proposed an approach, gathered evidence, explained the findings and gave a recommendation based on the evidence presented.
- If the report was repeated, it might be handy to web scrape a number of locations from RightMove to give a broader set of data to work with.
- This style of investigation/ methodology could be applied to other business propositions.