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## 5. Local context **Urban character**

### **Introduction**

This section analyses Croydon's urban character, which refers to the orientations, continuity and connectivity of routes and spaces.

Different kinds of urban structure can result in different kinds of "character", the distinctive culture of place and its activities. Slight changes in the spatial structure can introduce differentiation, distinction and interest which define this character.

This section begins by introducing some methodological background. Croydon's urban character is then analysed in terms of directionality, connectivity, directness and continuity.

## 5. Local context **Urban character – street orientation of the pedestrian movement network**

### Urban character analysis

We see “urban structure” as the framework of routes and spaces that connect locally and more widely. This structure provides the basic plan from which all other aspects of form and use arise.

Different kinds of urban structure can result in different kinds of “character”, the distinctive culture of place and its activities. Slight changes in the physical structure can introduce differentiation, distinction and interest which define this character.

In order to assess this differentiation and analyse the impact which urban structure has on urban activity, it is necessary to use a representation that allows comparison of quite different systems.

Space Syntax does this by representing all publicly accessible space as a map, formed of the longest and fewest set of straight lines of ‘movement directions’, known as an “axial map”.

This map can be understood in two different ways; first, as a representation of the longest lines of direct sight, and second, as a map of possible lines of movement that can be quantitatively analysed. Both interpretations are useful for analysis, and represent all possible ways of “seeing” and “going”.

### Measuring urban structure

The axial map can be used to analyse urban structure in three ways:

1. Directionality
2. Connectivity
3. Directness and continuity

#### 1. Directionality

Measuring the geometry of the urban structure helps to establish the “character” of a place in terms of its directional characteristics, distribution, and trends. Long, straight streets in regular repetition provide a certain kind of character, while short streets of varying directions provide a very different kind.

Aside from the feel of a place, street geometry also has far reaching consequences. Not only on movement activity, but also on the orientation and solar access of a dwelling. This in turn can affect energy use for climate regulation purposes and natural lighting.

#### 2. Connectivity

Next, an analysis of how streets come together and form junctions provides information about the interface between different areas and neighbourhoods. This is expressed through the measure of connectivity, which depends on the number of lines intersecting each line.

#### 3. Directness and continuity

Finally, the persistence of direction along a route (known as “directness”) can be measured first by line lengths and then by the angle of incidence between lines. A strong interdependence between directness, connectivity and continuity has been found in past research, where longer lines are more likely to connect to other long lines with almost equal continuity.

Together, these three methods provide a more complete picture of the character of a place and its urban structure.

### Methodology

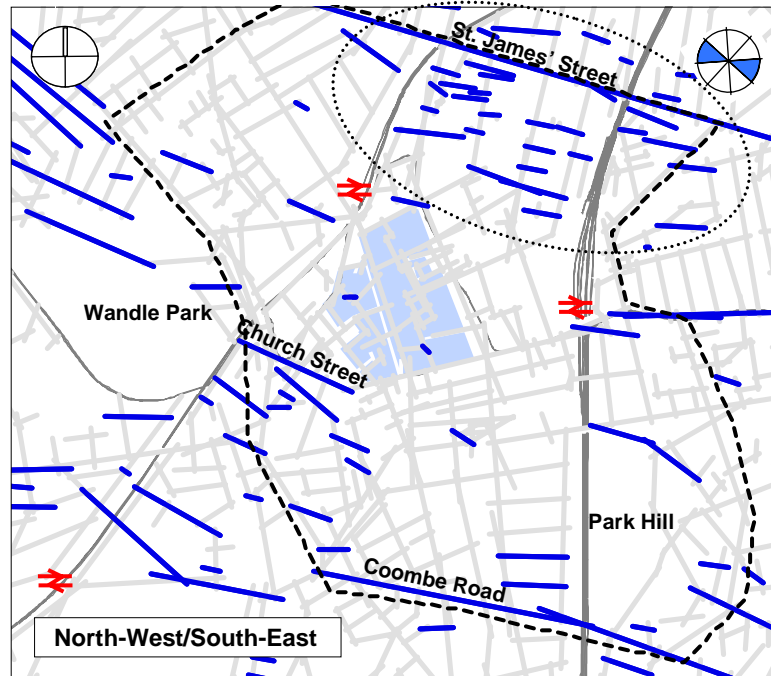
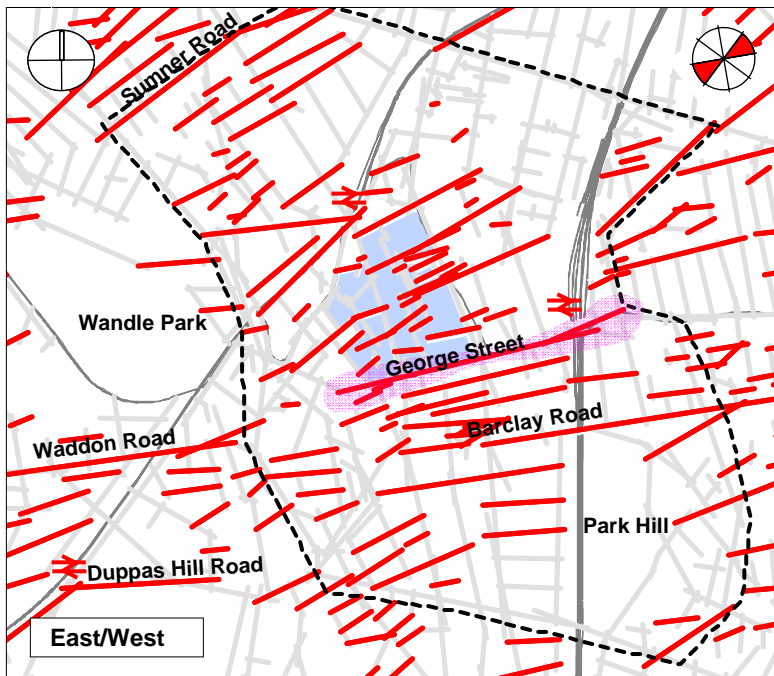
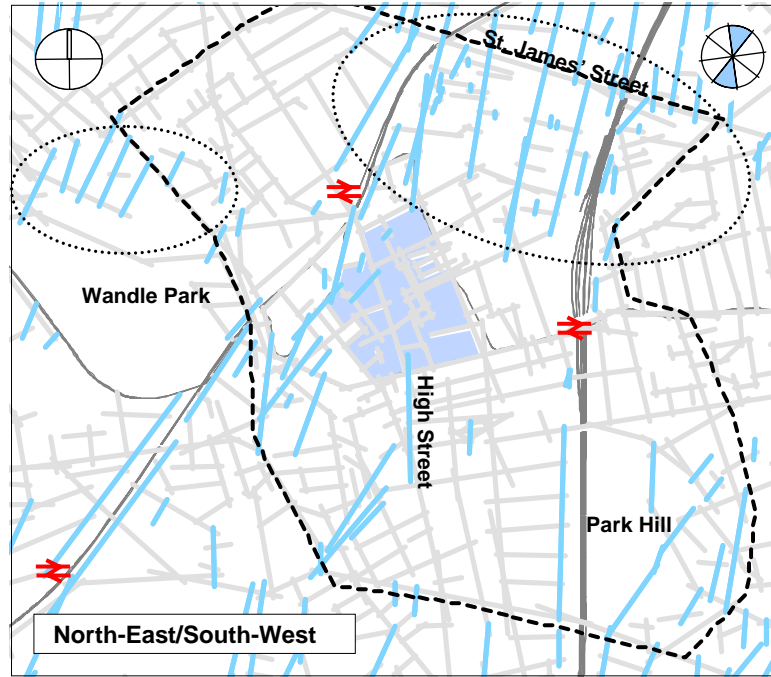
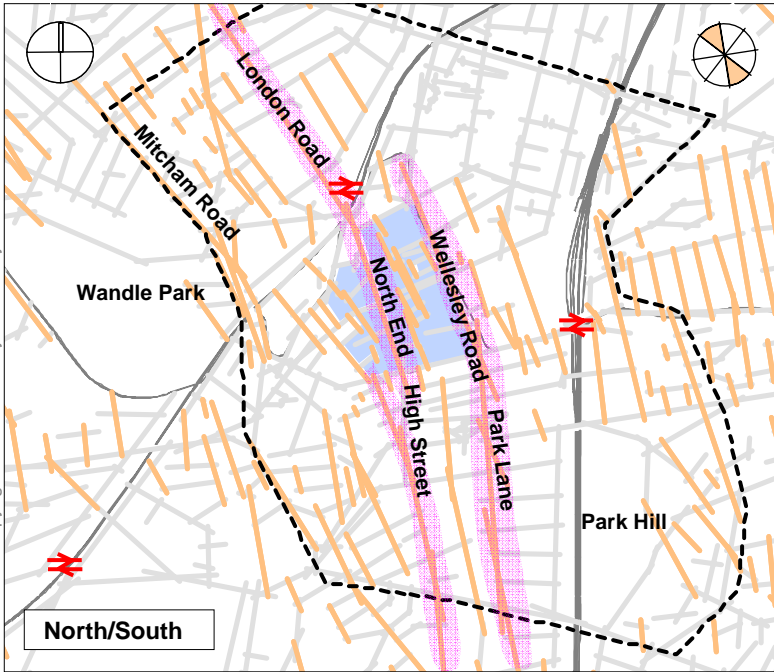
To measure urban geometry, the direction and angle of each line was measured and colour coded, based upon the 4 cardinal directions (North-South, East-West, NW-SE and NE-SW). Streets that were aligned with up to 22.5 degrees of one of these directions were then classified together. This provides a quick, powerful picture of the geometric relationships of different areas in the Croydon Town Centre.

Connectivity was analysed by counting the number of lines that a street connected to, then colour coding it based on this factor. The higher the number of connections, the warmer (red) the colour.

Finally, route directness and continuity was measured by using a combination value of both route direction and connectivity.

## 5. Local context Urban character – directionality

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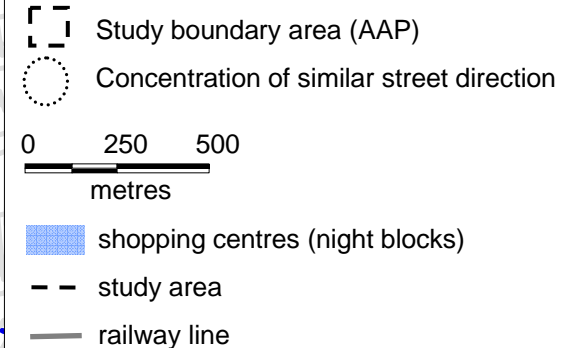


In the Croydon study area the dominant street direction is north-south (orange) - total length 19 km. The next most dominant direction is the east-west - total length 18 km. The highest average line length is also in the north-south direction (this is summarised in the table below). For the larger Croydon area this is also the case.

The analysis shows that the spatial continuity is relatively good within the Town Centre area in the two main directions, which form a strong north-south / east-west grid.

A small area around St. James' Street was found to distinguish itself from the two main directions by a rotated grid (blue colours), although with very fragmented E-W routes.

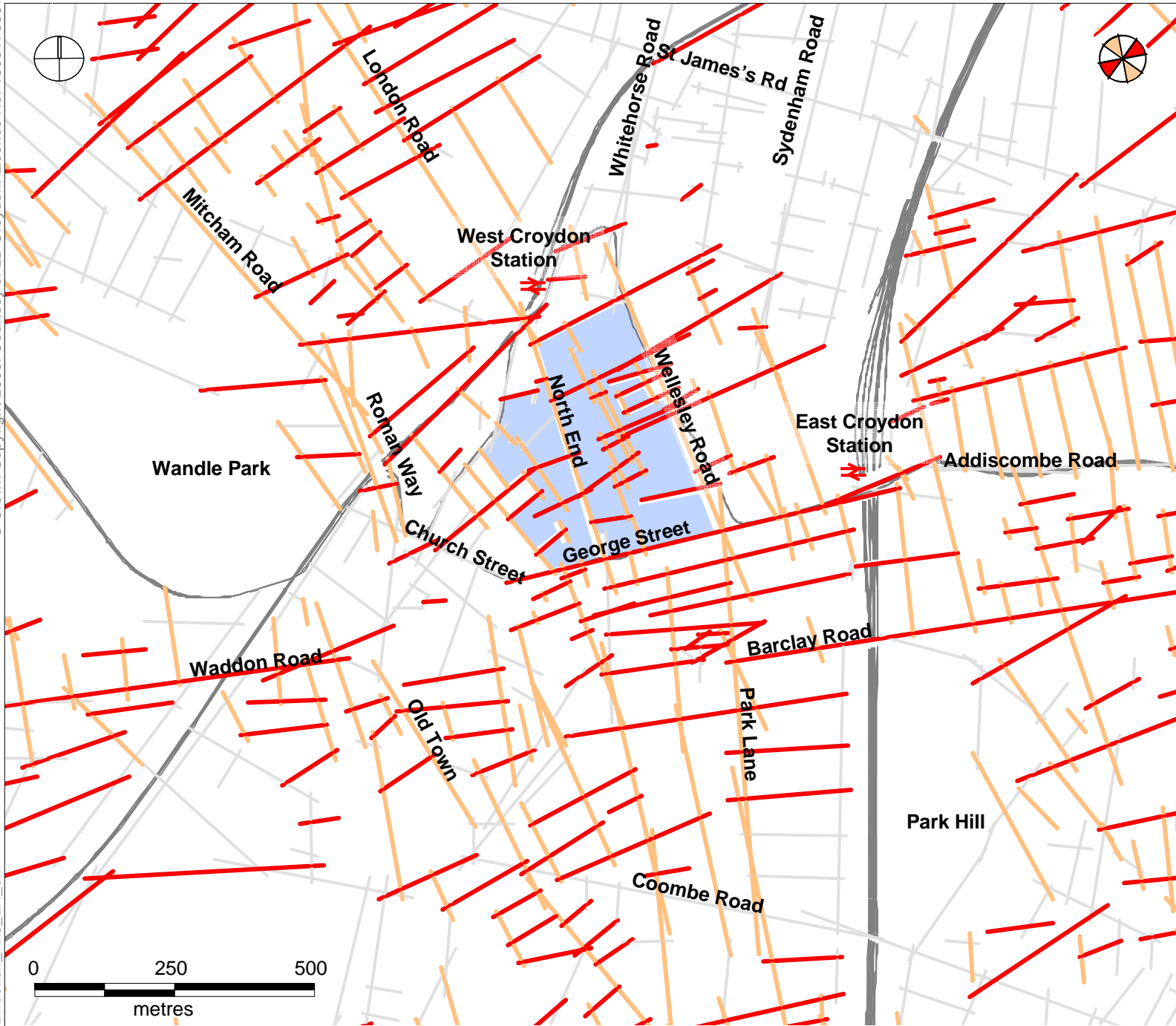
	N-S	E-W	NE-SW	NW-SE
sum line length	19km	18km	10km	9km
average line length	208m	191m	166m	180m



## 5. Local context Urban character – directionality

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Direction\_Ax5\_LR\_ex



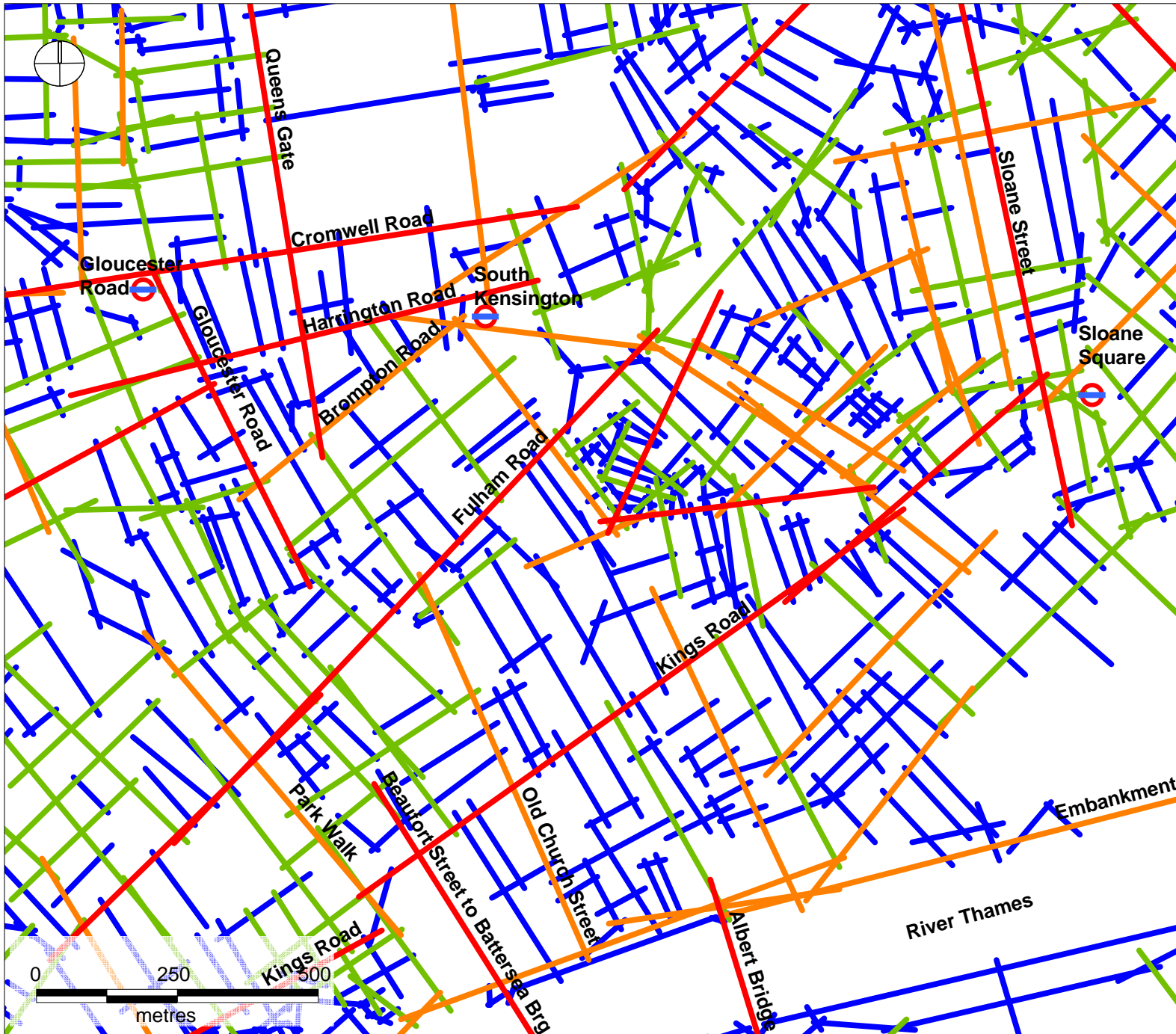
The overlay of the two main grid directions, north-south and east-west, shows the predominant directionality of Croydon Town Centre's grid.

Wellesley Road-Park Lane crosses most of the central area, as well as North End High Street and George Street in the east-west direction.

In between these longer lines, forming almost a ladder like structure, the grid is interrupted by shorter lines which vary in direction.

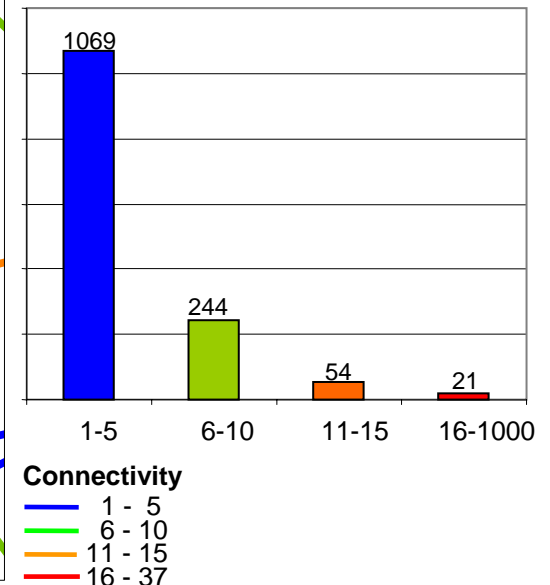
- shopping centres (night blocks)
- study area
- railway line

## 5. Local context **Urban character – connectivity comparison King's Road**

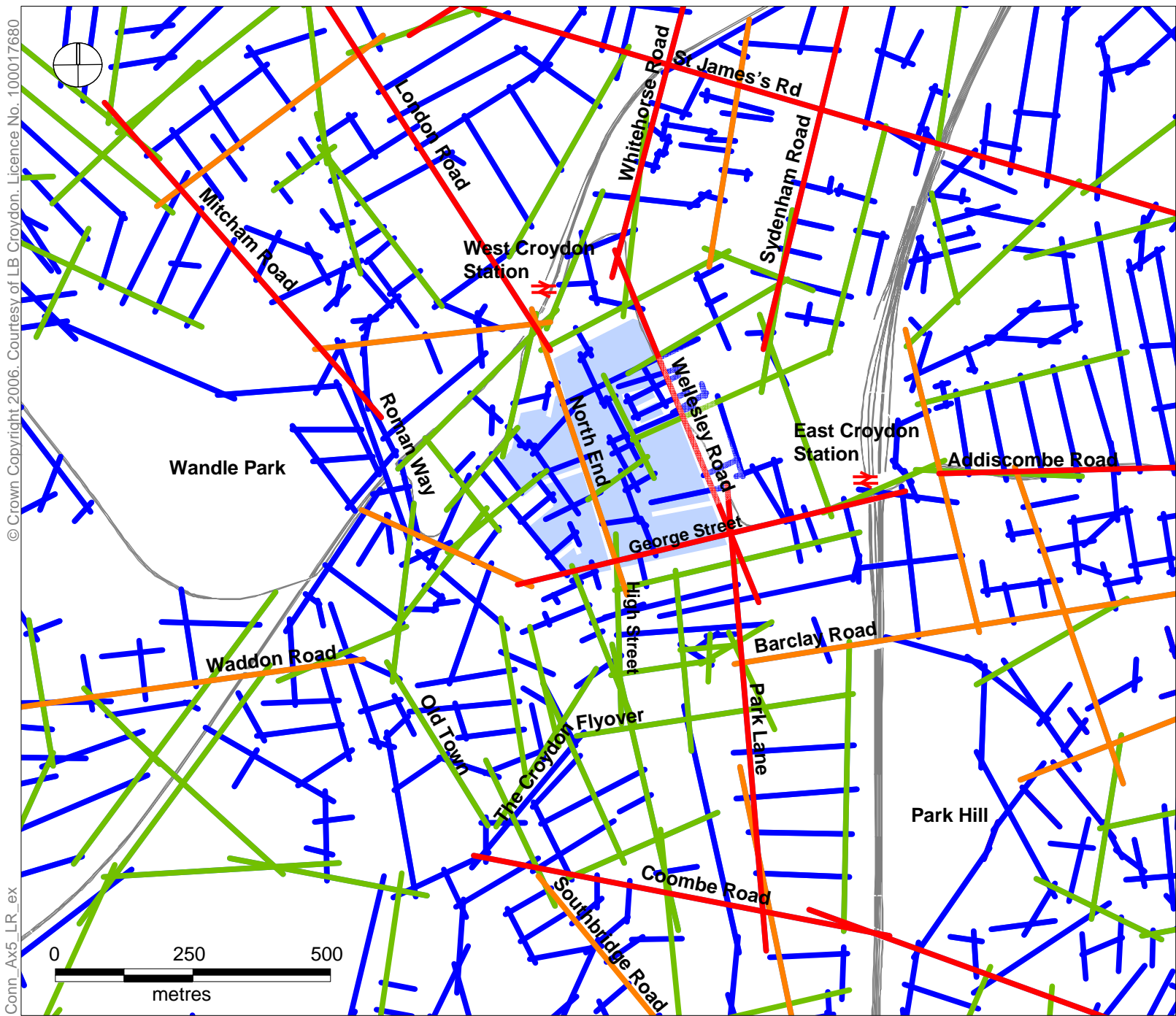


The block size map to the left, highlights King's Road in South Kensington, Central London. The area displayed is on a comparable scale to the following images for Croydon.

The King's Road shows a mixture of highly connected lines and lines with few connections. Long lines make up a grid and tend to be very well connected.



## 5. Local context Urban character – connectivity

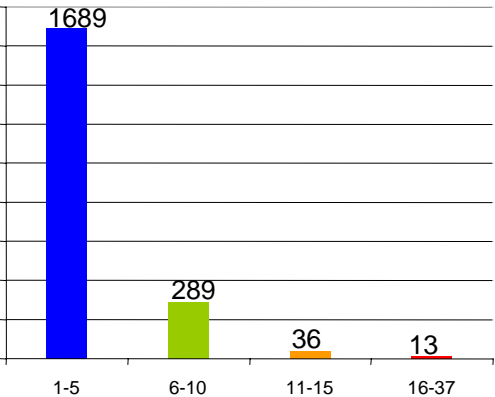


Aside from general character definition, connectivity and directness analysis can provide a higher level of information about Croydon Town Centre.

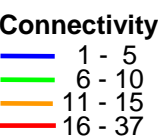
The analysis reveals a very small number of highly connected streets and a high number of medium to low connectivity ones.

The more connected streets also tended to be longer and served to link the Town Centre to its wider context. Smaller, less connected streets functioned as neighbourhoods or local movement routes.

Connectivity Range	Croydon TC	Kings Rd TC
1 - 5	83%	77%
6 - 10	14%	18%
11 - 15	2%	4%
16 - 37	< 1%	2%

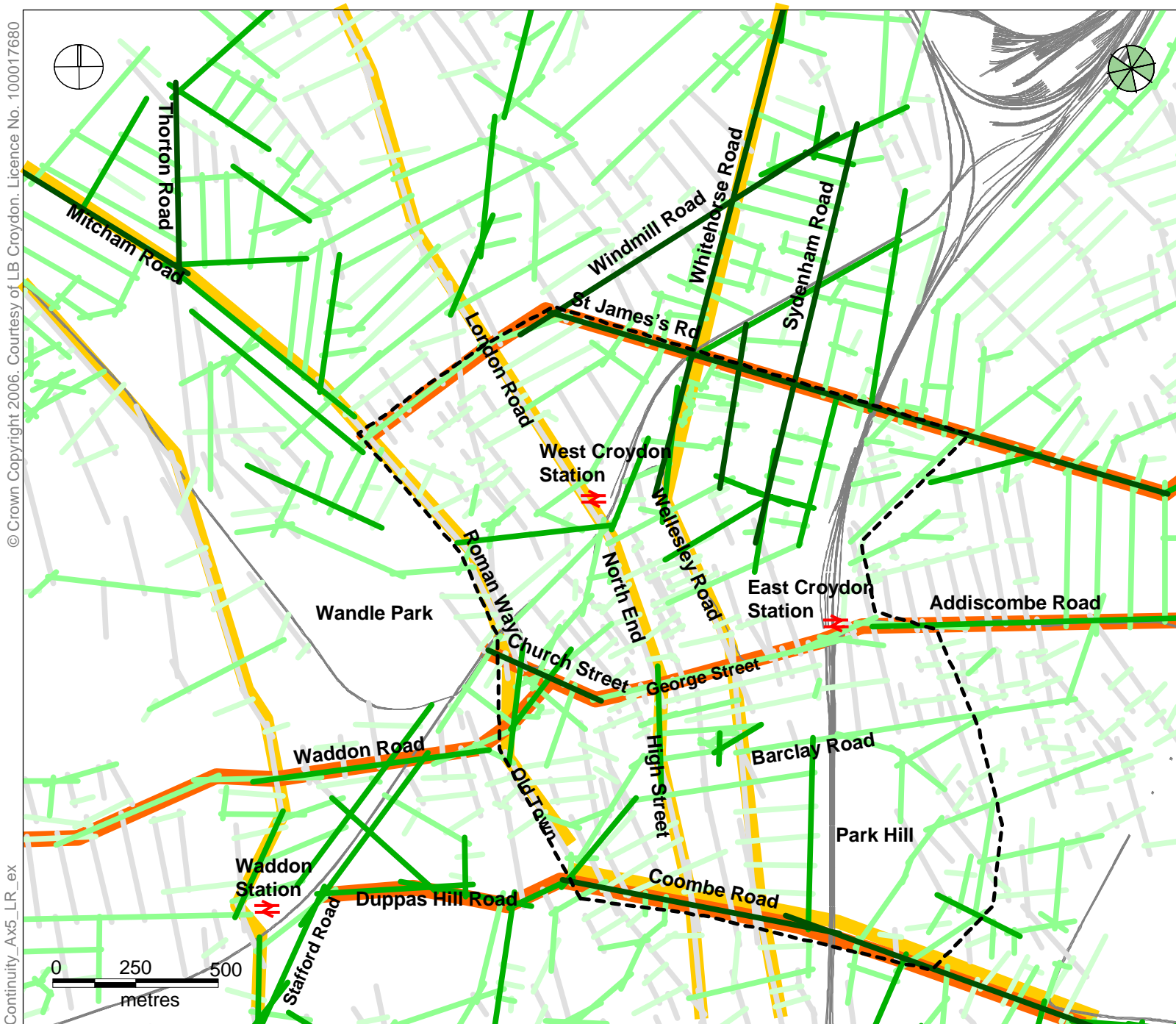


Shopping centres (night block)



## 5. Local context Urban character – directness and continuity

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Separate analysis of the connectivity of the three major street directions in Croydon Town Centre reveals a critical lack of direct connectivity and continuity with its immediate surroundings. It also shows a general fragmentation in both directions, and lower continuity from east to west.

East-west continuity analysis highlighted the importance of Church Street-George Street, unfortunately blocked by the railway tracks towards Wandle Park to the west, deviating south to find Waddon Road.

Duppas Hill Road-Coombe Road is also blocked the near Waddon Station

- Predominant axes west-east
- Predominant axes north-south

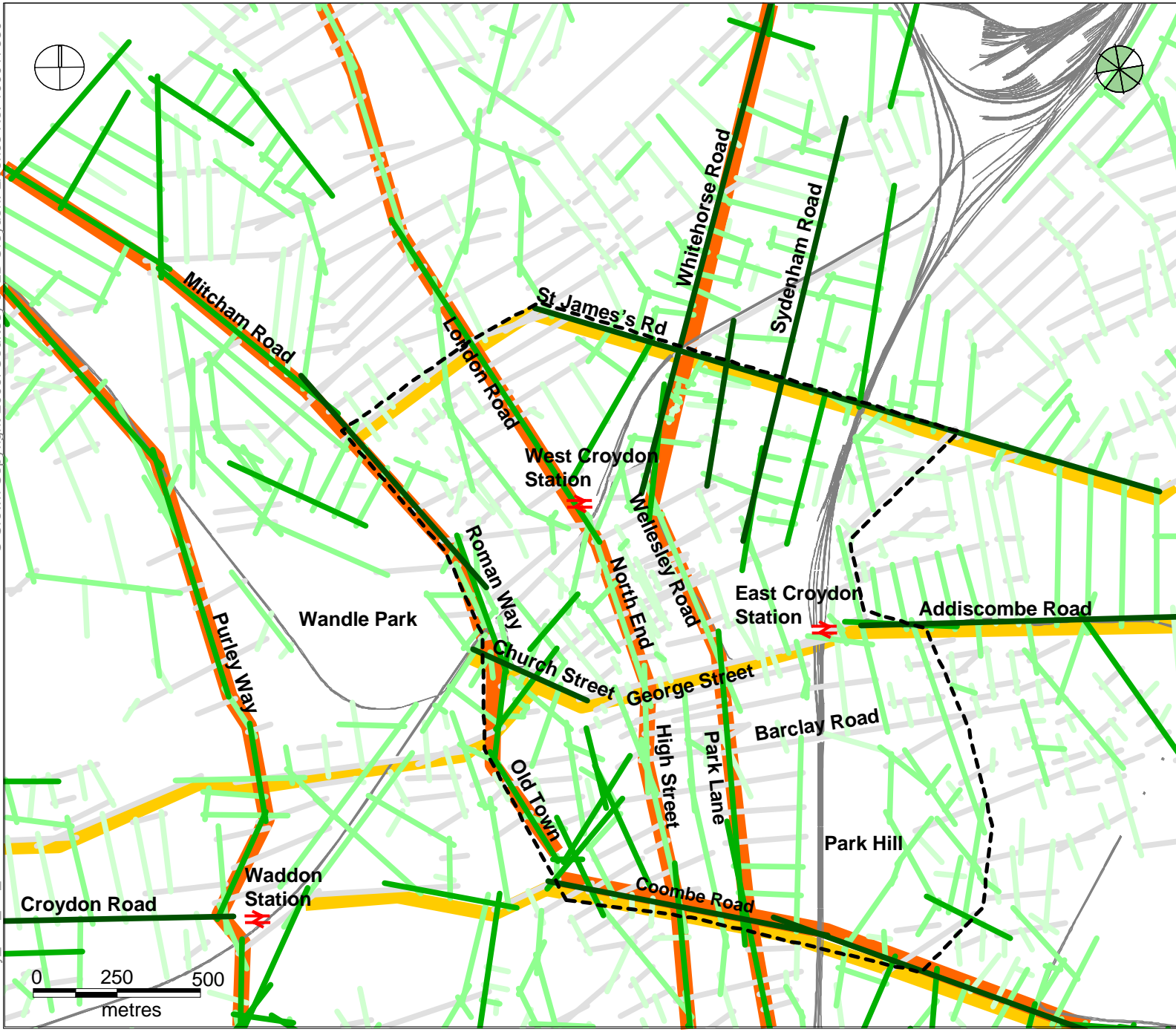
### Connectivity

- 0 to 2
- 3 to 5
- 6 to 10
- >= 11
- study area
- railway

Continuity\_Ax5\_LR\_ex

## 5. Local context **Urban character – directness and continuity**

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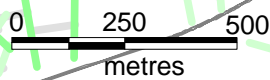


North-south continuity analysis highlighted the importance of Roman Way-Old Town, London Road-North End-High Street, Wellesley Road-Park Lane and Purley Way as the most continuous and direct routes.

The routes highlighted in orange and yellow on the two maps, with the exception of the High Street form part of hierarchy of the London Road Network. Their directness and continuity allows them to play a role in the larger scale movement network.

- Predominant axes north-south
- Predominant axes west-east

- Connectivity**
- 0 to 2
  - 3 to 5
  - 6 to 10
  - >= 11
  - study area
  - railway



## 5. Local context **Urban character: key findings and recommendations**

### Key findings

- The predominant street direction in Croydon is north-south followed closely by the east-west direction. The highest average line length is also found on the north-south direction.
- These two line directions overlay to generate a strong grid resulting in fine spatial continuity.
- Sumner Road - St. James' Street and Poplar Walk-Bedford Park – Bedford Place are important links of two distinct grid directions (southwest-northeast and northwest-southeast)
- There are a lot of non-continuous, small segments giving the town centre a sense of fragmentation between the different areas of New Town, Old Town and the prime retail centre.
- In terms of connectivity, Croydon has a small number of highly connected lines and a high number of medium to low connected ones. Longer lines help connect to the larger context.
- Older residential areas tend to connect well with these highly connected links reaching out to the wider context and reaching in to the town centre.

### Recommendations

Development opportunities should pursue the increase of continuity (north-south and east-west) to reinforce continuous linkage to the wider context and within the town centre between the New Town, the Old Town and the prime retail area.

The current development 'pods' of the centre need to become better integrated with each other and the wider context in order to facilitate high permeability and land use mixing within the central area.

The continuous local routes between the Old and New Towns must either lead to or become the lines that connect the centre to its wider context. This will improve the relation between 'movement within' and movement 'to and from'.

'Movement within' can be helped further by making the more continuous routes break the coarse grain of the shopping centre and train station.