

To Lindsey Sokolich

Memo

Cc

From Oliver Russell

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Project Moorfields Eye Hospital NHS Foundation Trust Travel Time Analysis Project No. 22807704

Central Site Analysis

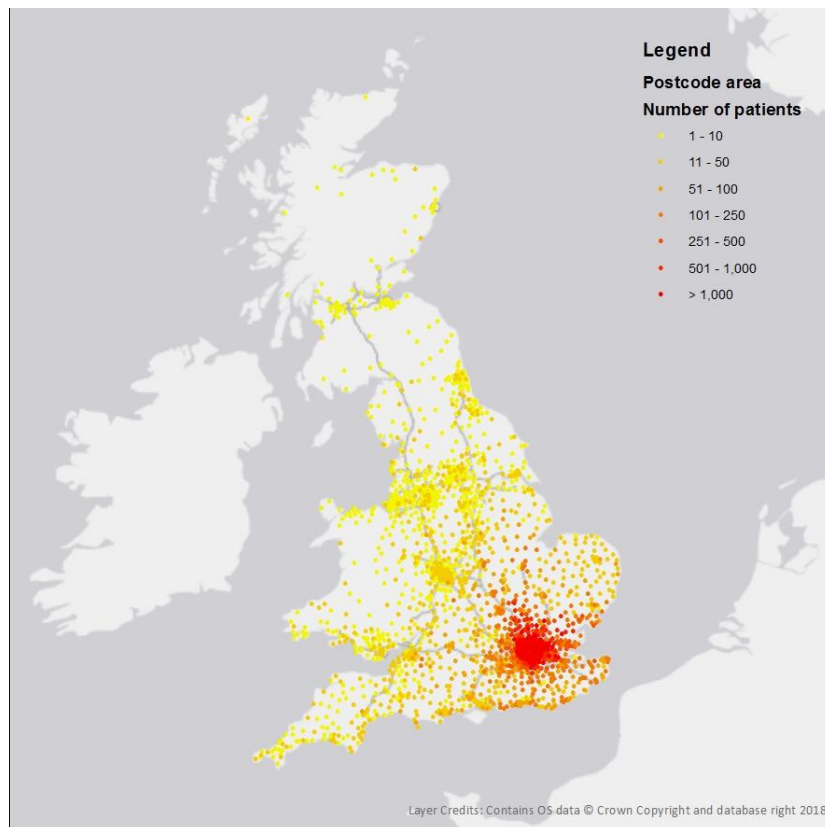
Introduction

1. Steer have been commissioned to undertake travel times analysis for patients who attend Moorfields Eye Hospital at City Road and compare travel times to a potential new site in St. Pancras.

Methodology

2. Patient data has been supplied to Steer at postcode area level showing which patients have attended the various Moorfields NHS foundation sites throughout their estate. Our central site analysis focuses on moving patients from the main City Road campus to a new Hospital at St. Pancras, NW1 OPE. Analysis has been undertaken for the most recent year patient data was available – 2017/18.
3. Steer have calculated a weighted public transport travel time from each postcode area based on the number of patients who live in the postcode area to each of the sites. Figure 1 below maps the distribution of patients at postcode area level throughout Britain.

Figure 1: Distribution of patients



Travel times

4. Public transport travel times have been calculated using a software package called TRACC. TRACC can be used to build bespoke multi-modal transport networks and can include future time table improvements. For this analysis we have include the Crossrail / Elisabeth line as well as the following modes:
 - National rail;
 - London Underground;
 - Light rail and Metro services;
 - Bus; and
 - Tram.
5. Travel times have been calculated in two distinct methods. For all patients with a postcode area that falls within a London Borough a full public transport and walk time was calculated from the postcode area to each of the sites at City Road and St. Pancras. For Non-London postcodes we calculated a drive time to the nearest national rail station and then combined this with a public transport time from the designated train station to each of the sites. Within TRACC the following parameters were used to get a representative travel time to each of the sites:
 - Distance to nearest public transport node was set to 1,000 metres;
 - Distance to destination was set to 1,000 metres;
 - Internal interchange distance was set to 500 metres;
 - Interchange penalty was set to 5 minutes; and
 - Travel times had to start after 07:00.
6. If a journey could not be completed within the above parameters it was assumed that there is no reasonable public transport route available. Across the UK only 58 postcode areas could not complete a reasonable journey to the sites, which amounts to only 194 patient records out of a total of 453,872 patient records that were analysed.

Results

7. The results of our patient travel times to a central site are shown in an excel file called Central Sites - Travel time analysis. Table 1 shows that the average public transport travel times to City Road for patients is 55 minutes and 54 seconds, whilst the average to St. Pancras is 59 minutes and 29 seconds. This means on average patient journeys will increase by 3 minutes and 35 seconds if Moorfields Eye Hospital moves from City Road to the site in St Pancras, however this does need to be seen in the context of factors including:
 - The quality of public transport provision. This is much better at Kings Cross St Pancras which has been recently improved and has step-free access throughout. By comparison, Old Street station does not have step-free access; and
 - The quality of the pedestrian environment. Again, a much higher quality pedestrian environment can be provided between the station and the St Pancras Site than is possible at the current City Road site.

Table 1: Average travel times to Central Sites (hh:mm:ss)

Average Travel times to City Road	Average Travel times to St Pancras	Difference from St Pancras to City Road
00:55:54	00:59:29	00:03:35

8. Table 2 shows travel time intervals for both the sites at City Road and St. Pancras. It shows that for the City road site 12,579 more patients live within the 0 to 20 minutes travel time band and 31,244 additional patients live within the 20 – 40 minutes band. However, with the next band 40 – 60 minutes 20,083 patients will live closer to the proposed site in St. Pancras when compared with City Road.

9. This is most likely due to City Road being nearer to high density residential areas, whilst St Pancras has more mixed use and business properties in its immediate vicinity.

Table 2: Number of patients by travel time interval.

Travel time interval	City Road Patients	% of patients	St Pancras Patients	% of patients
0 - 20	24,325	5.58%	11,746	2.70%
20 - 40	120,113	27.57%	88,869	20.40%
40 - 60	140,458	32.24%	160,541	36.85%
60 - 80	91,299	20.96%	102,519	23.53%
80 - 100	27,842	6.39%	40,899	9.39%
100 - 120	11,751	2.70%	11,900	2.73%
120 - 140	6,673	1.53%	6,509	1.49%
140 - 160	4,575	1.05%	4,267	0.98%
160 - 180	2,978	0.68%	2,688	0.62%
More than 180	5,664	1.30%	5,740	1.32%
No time	194	0.04%	194	0.04%
Total (with travel time)	435,678	100.00%	435,678	100.00%

10. Another way at looking at the impact of the move is looking at the difference in travel times between the two sites. Table 3 below shows the difference in travel times by difference intervals. It shows that overall a relatively small number of patients (less than 1.5% will see travel times increase by more than 20 minutes, with the maximum increase being 25 minutes on a journey that is adjacent to the existing site. The map in figure 4 shows that most of the increases are postcode areas that are to the East of London.

Table 3: Number of patients by travel time impact intervals

Travel time interval	Number of patients	% of Patients
< - 10	41,533	9.53%
- 10 to - 5 mins	17,847	4.10%
-5 to -2.5 mins	33,566	7.70%
-2.5 to -1 mins	23,176	5.32%
-1 to 1 mins	29,693	6.82%
1min to 2.5mins	32,694	7.50%
2.5 to 5 mins	32,201	7.39%
5 to 10mins	115,958	26.62%
10 to 20 mins	102,890	23.62%
> 20 mins	6,120	1.40%
No time	194	0.04%
Total (with travel time)	435,678	100.00%

11. Figures 2 and 3 map the distribution of travel times across Britain.

Figure 2: Public transport travel times to Moorfields Hospital at City Road

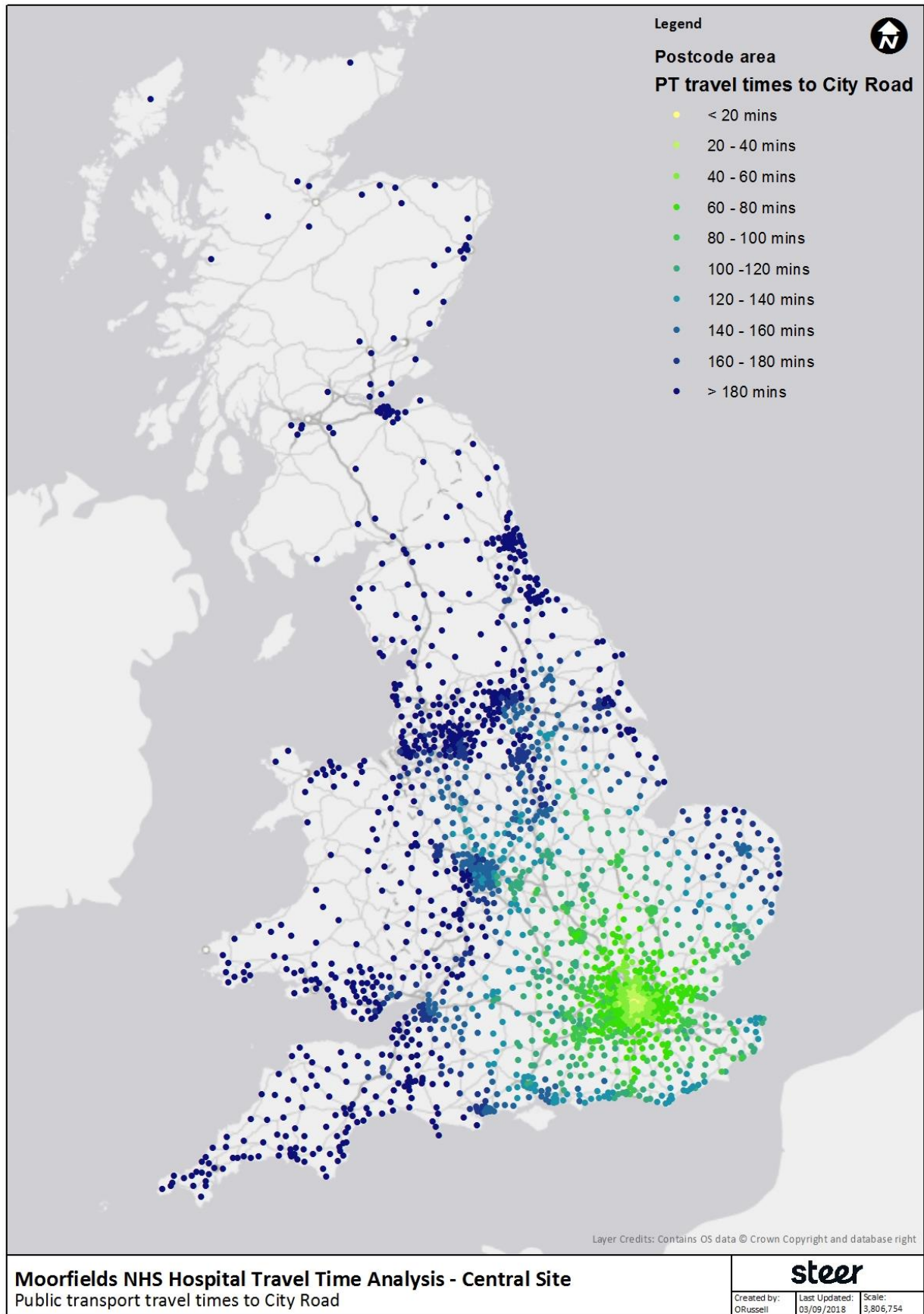


Figure 3: Public transport travel times to Moorfields Hospital at St. Pancras

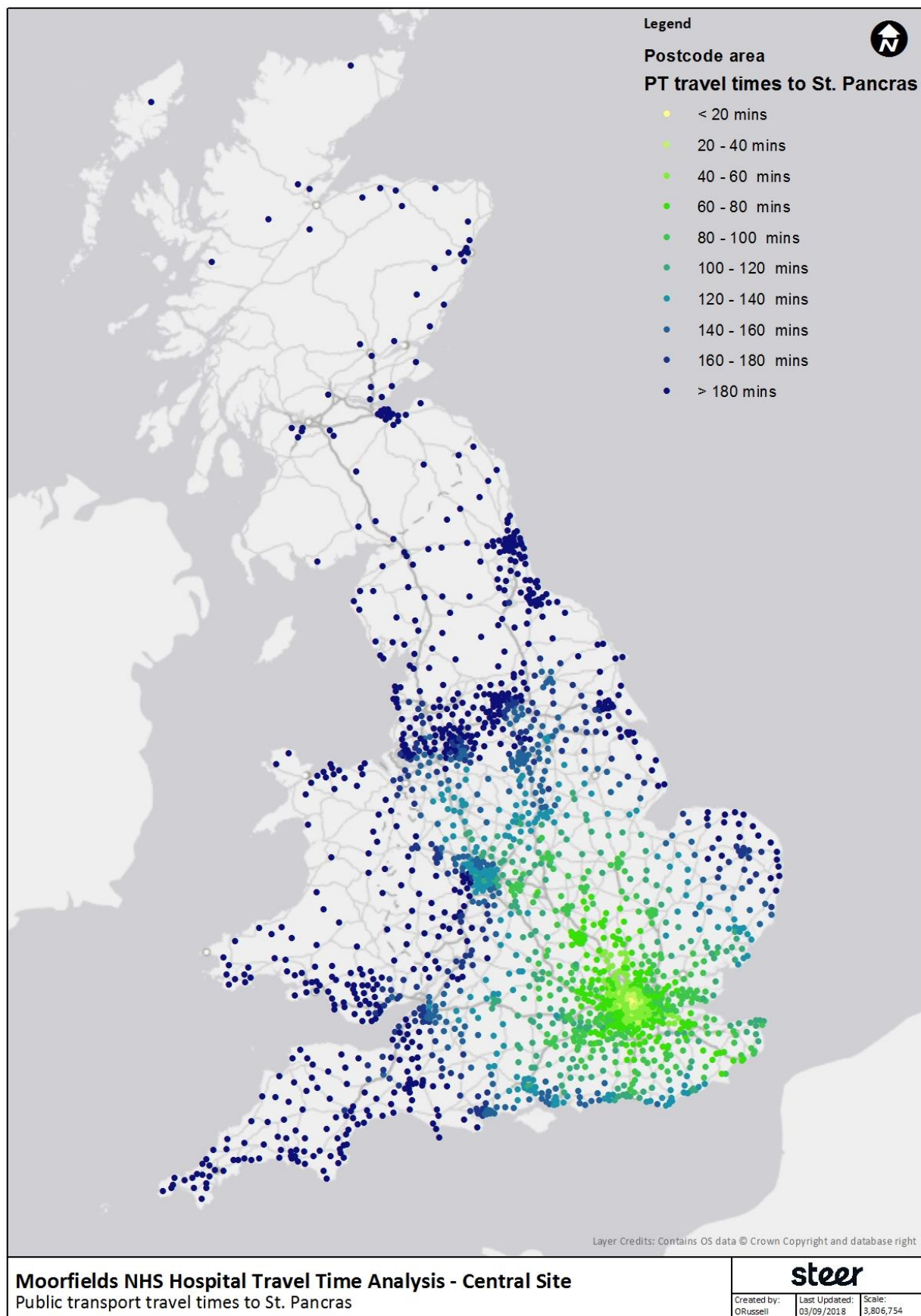
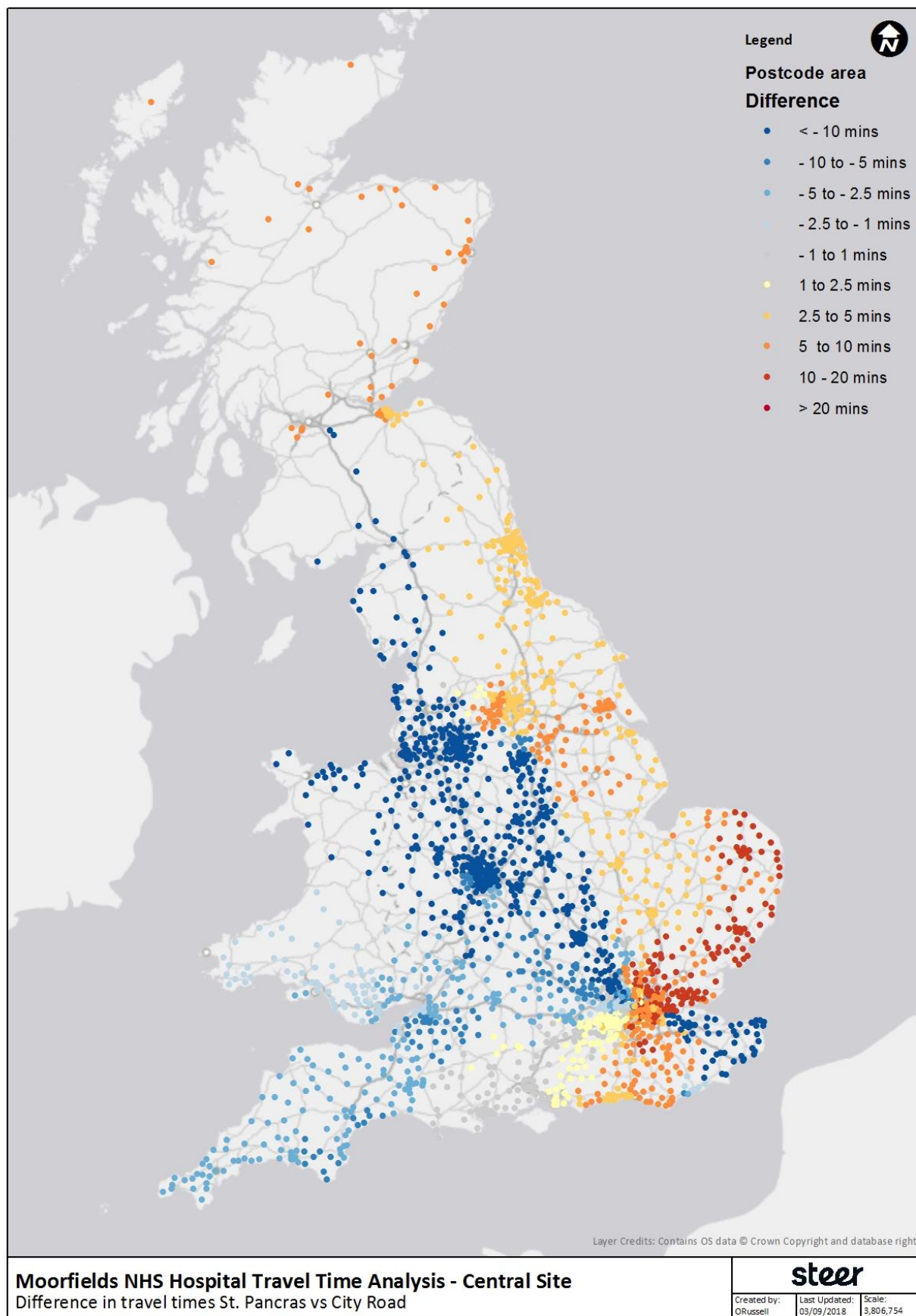


Figure 4: Difference in travel times St. Pancras vs City Road



Conclusion

12. With the data supplied and the new method applied the travel time impact has reduced from our original analysis to now stand at an increase in average travel times of 3 minutes and 35 seconds if the main Hospital moves from City Road to St. Pancras.
13. Those that see the biggest increase in travel times either live immediately South or East of the existing site at City Road.
14. These relatively minor increases in travel times need to be set against the advantages of the St Pancras site when compared to the City Road site. These include:
 - Comprehensive step-free access at Kings Cross St Pancras interchange
 - A much higher quality of pedestrian environment at St Pancras.