

The Camden (Torrington Place to Tavistock Square) (Prescribed Routes, Waiting and Loading Restrictions and Loading Places) Traffic Order [2017]

PLANNING INSPECTORATE REFERENCE: DPI/X5210/17/8

Proof of Evidence - Camden Cycling Campaign

Witness: Professor George Coulouris

Title: Evidence Concerning Local Motor Journey Times

I am a Professor Emeritus in Computer Systems at Queen Mary, University of London (having held a full Chair in Computer Systems at the same institution between 1978 and 1999). I was subsequently a Visiting Professor in Residence at the Cambridge University Computer Laboratory between 1999 and 2016.

Purpose and sources of the evidence

My purpose is to present and explain some data that I have derived from an internet source concerning the potential impact of the scheme on some local journey times.

My evidence uses data obtained and used by Google to provide time estimates for drivers whenever they request a driving route between two points. Google generates these estimates taking account of traffic congestion and other time-dependent factors. The estimates are produced from a variety of data sources including measurements of actual journey times derived by observing the positions of mobile phones carried in vehicles.

Google have provided a software interface allowing third party software to access their journey planning service. With a fellow computer professional I have developed a software tool that exploits that interface to obtain journey time estimates for any specified journey repeatedly at fixed intervals throughout a day or several days. The tool organises and presents the results in the form of a graph.¹

All of the data presented in this evidence were obtained in the manner described.

Journey for consideration

Concern has been expressed about the potential impact of the scheme on journeys that some local residents have to make by taxi or car to University College Hospital. I have therefore chosen to concentrate in this instance on the example of a journey between the Brunswick Centre in Hunter Street and the main vehicle entrance to the hospital in Beaumont Place.

Figure 1 shows Google's recommended route for this journey at periods of low traffic (e.g. a Saturday afternoon).

¹ The Traffic Analysis Tool is available for all to use. It can be found at <https://traffictool.rgp.me.uk/>.



Figure 1: Journey via Euston Road from Hunter Street to the UCH vehicle entrance, light traffic estimate: 7 min

Effects of traffic congestion

Now let us consider the effects of congestion on that journey. As an initial experiment, I collected a day-long series of estimated journey times at 15 minute intervals on Monday, 21 November 2016 (a working day when schools and universities were fully operational). The results are shown in graphical form in Figure 2.

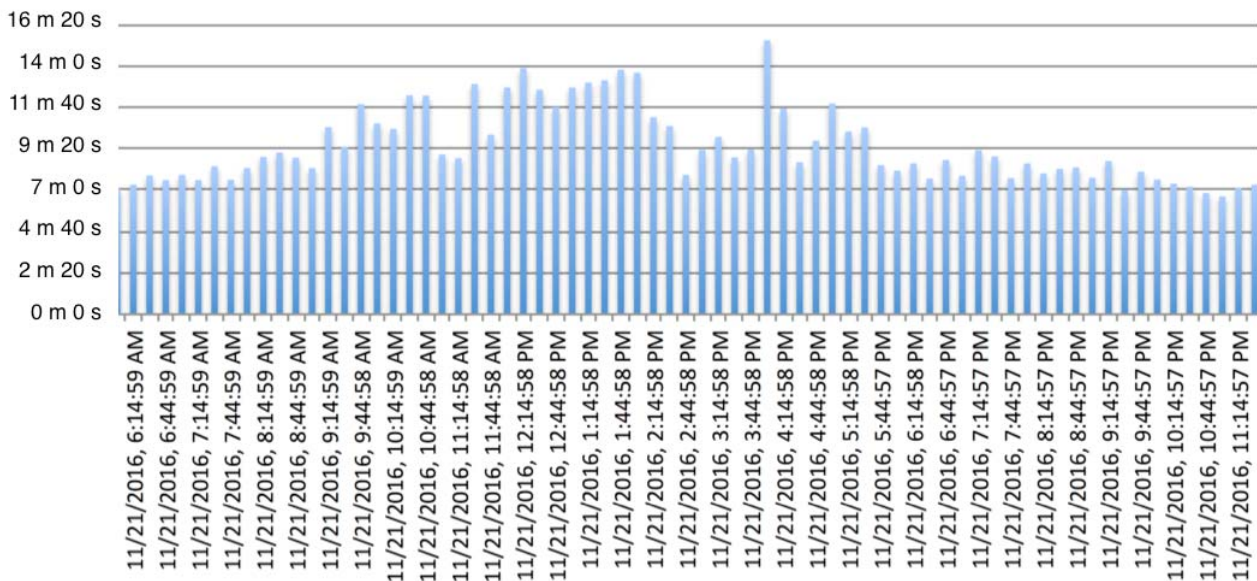


Figure 2: Google’s estimated times throughout the day on Monday 22 November 2016 for the journey in Figure 1

These data show that Google’s best estimated journey times were 7m 30s and they remained below 9 minutes until 9:15 am. There was a busy period between 9:15 am and 2:15 pm, during which estimated journey times varied between 9 and 14 minutes. They rose again between 4 pm and 5:30 pm but remained below 12 minutes apart from a single sample of about 16 mins.

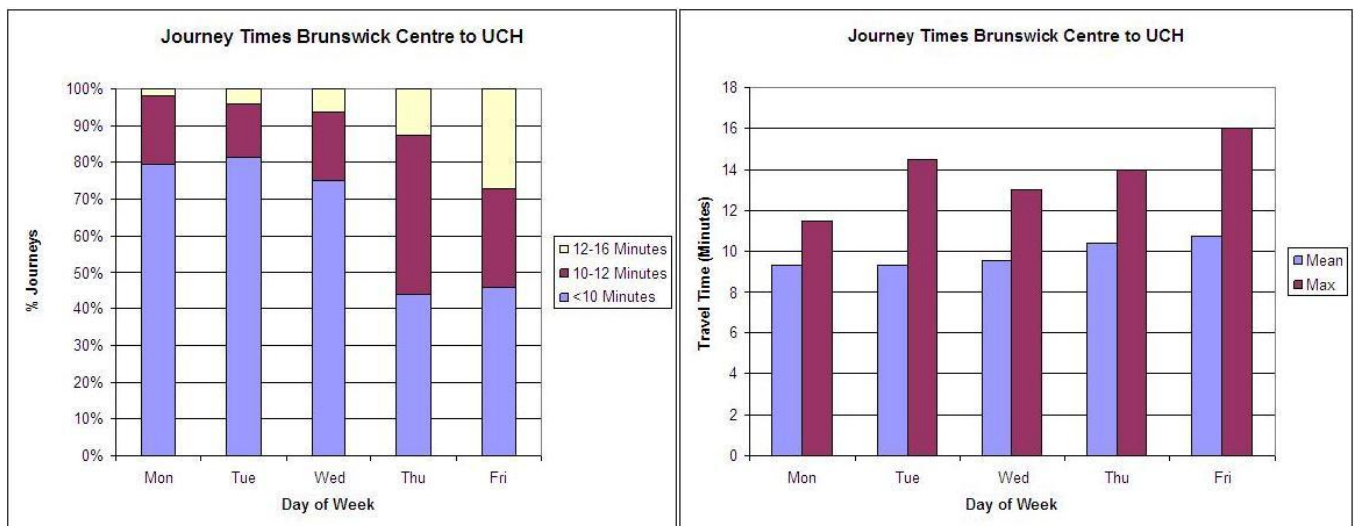


Figure 3: Route variation adopted by Google's Directions Service for a few journeys

It should be noted that this method for interrogating Google's service obtains the 'best time by any permitted route'. Google did make minor variations to the route shown in Figure 1 in order to achieve shorter journeys, especially between 3 pm and 5 pm. The most common variation was a diversion south of Euston Road following a route via Endsleigh Gardens and Gower Place as shown in Figure 3.

Data collected in September 2017

The Appendix shows journey time datasets in full for the journey between the Brunswick Centre and UCH covering a full week commencing 5 September 2017. Considering 7 am - 7 pm weekdays, the results can be summarised in these charts and in the table on the last page of Appendix:



Proportions of journey times by day of the week

Mean and maximum journey times by day of the week

We believe these data indicate that drivers can expect to complete this and similar journeys originating in adjacent areas to the east of the scheme in times that are only moderately greater than would be the case without the experimental scheme. The longest time for the journey in question was 16 minutes, observed on only one occasion. Most journey times were below 10 minutes.

Appendix: Further data collected September 2017

Figure 4: the dataset for Tuesday 5 September 2017. It shows a less congested pattern than the 21 November 2016 dataset, with journey times below 10 minutes up to 9:15 am and after 11 am, a 9:45 am to 11 am period with 11-12 minute journeys and a short peak of about 14 minutes and no afternoon or evening peak.

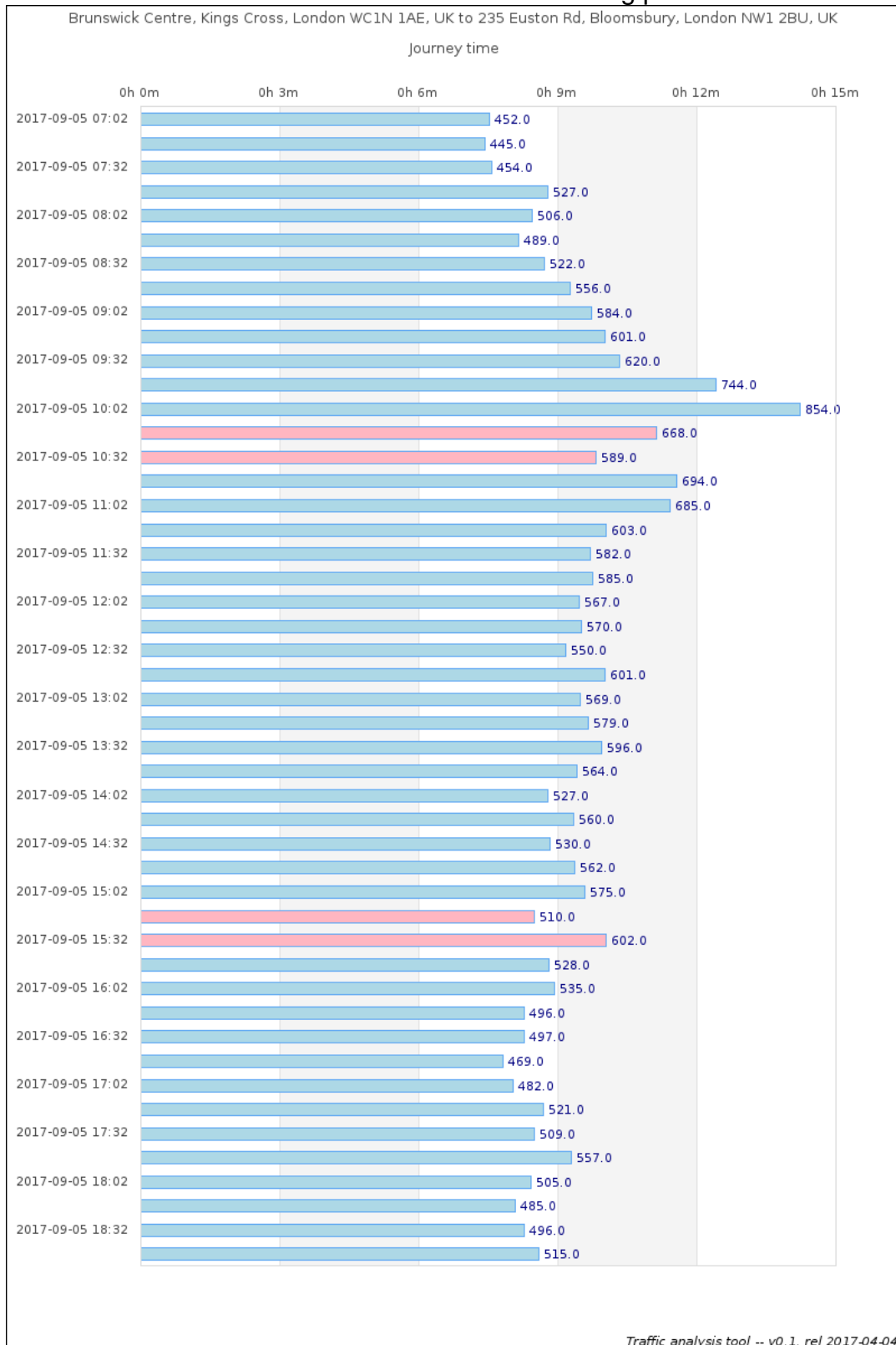


Figure 4: Google's estimated times throughout the day on Tuesday 5 September for the journey in Figure 1 (Figure 3 for the pink bars)

Figure 5: The dataset for Wednesday 6 September 2017. This shows a similar low - congestion pattern with journey times remaining below 11 minutes up to 11:45 am and throughout the afternoon and early evening and an 11:45 am to 12:30 pm period with 11-13 minute journeys.

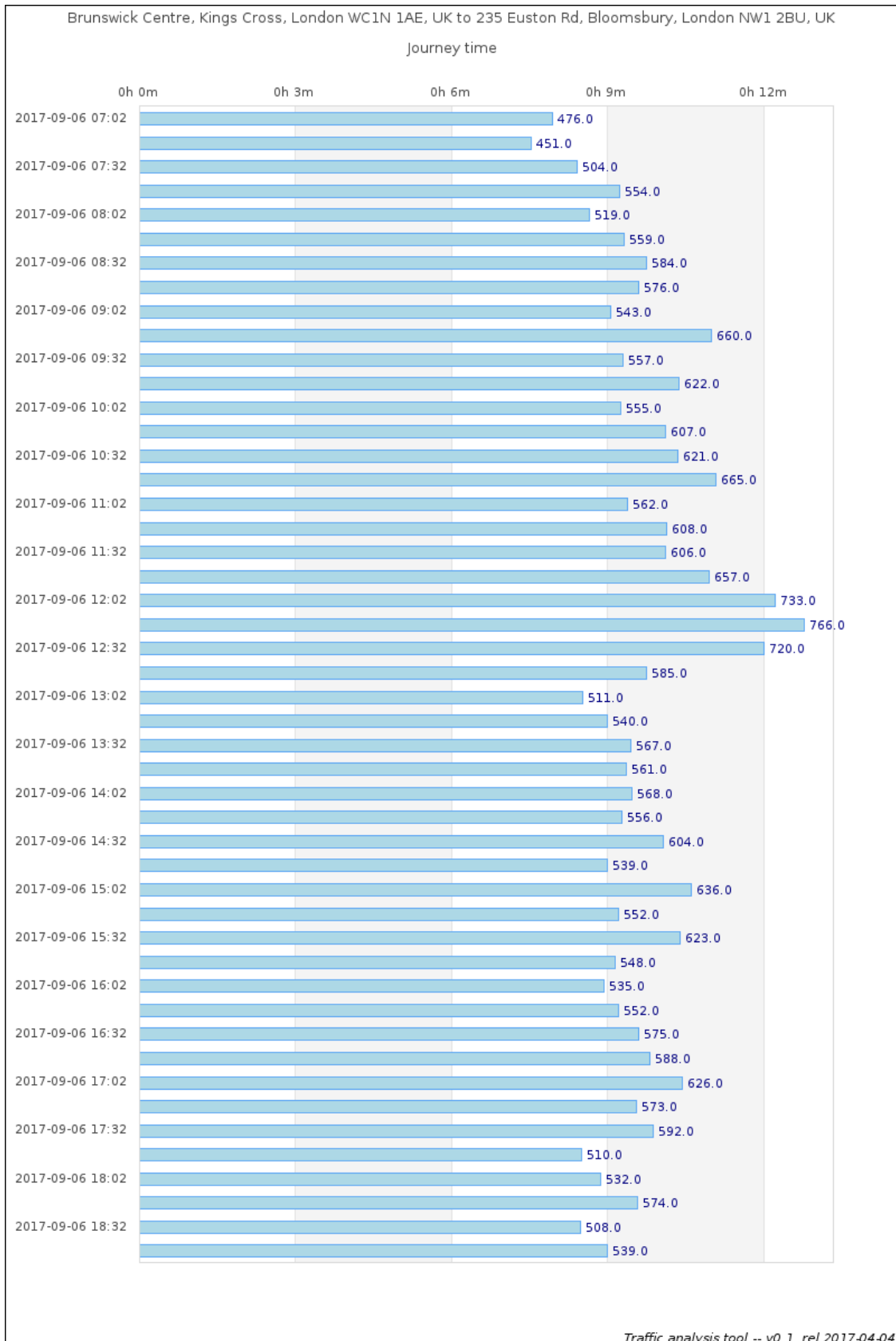


Figure 5: Google's estimated times throughout the day on Wednesday 6 September for the journey in Figure 1

Figure 6: the dataset for Thursday 7 September 2017. This continues to show a low-congestion pattern with journey times below 11 mins until 11:00 am. In the mid-day peak 11:15 am-12:45 pm there is a maximum journey time of 14 mins. During the afternoon, all the journey times stay below 12 mins and from 4:30 pm on, they remain below 10 mins.

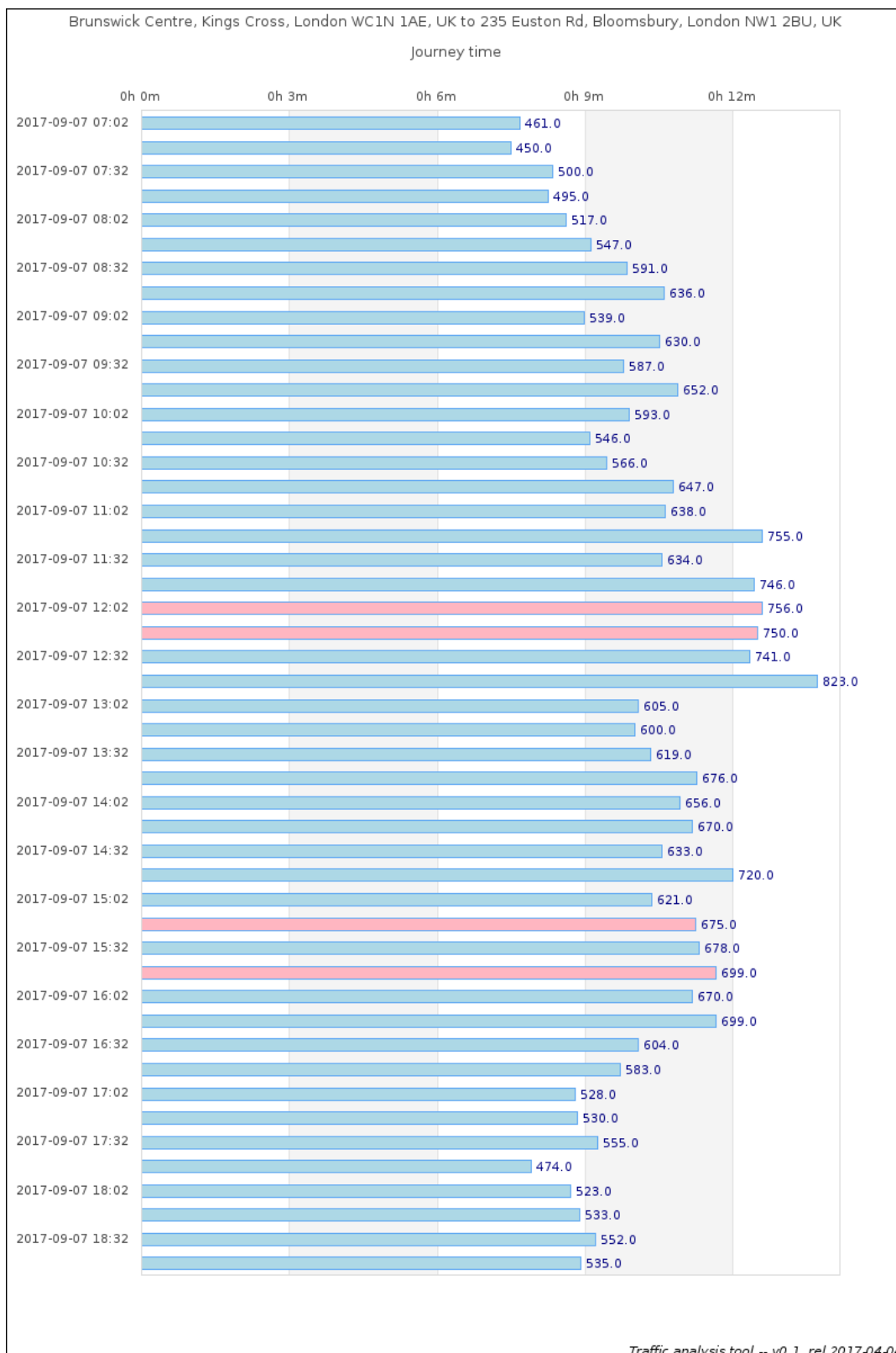


Figure 6: Google’s estimated times throughout the day on Thursday 7 September for the journey in Figure 1 (Figure 3 for the pink bars).

Figure 7: the dataset for Friday 8 September 2017. A slightly more congested day with journey times remaining below 12 mins until 11:15 am. In the mid-day peak 11:15 am-3:00 pm the journey times were in the range 12-15 minutes with one sample of just less than 17 mins. During the afternoon, all the journey times stay below 12 mins and from 4:30 pm on, they remain below 10 mins.

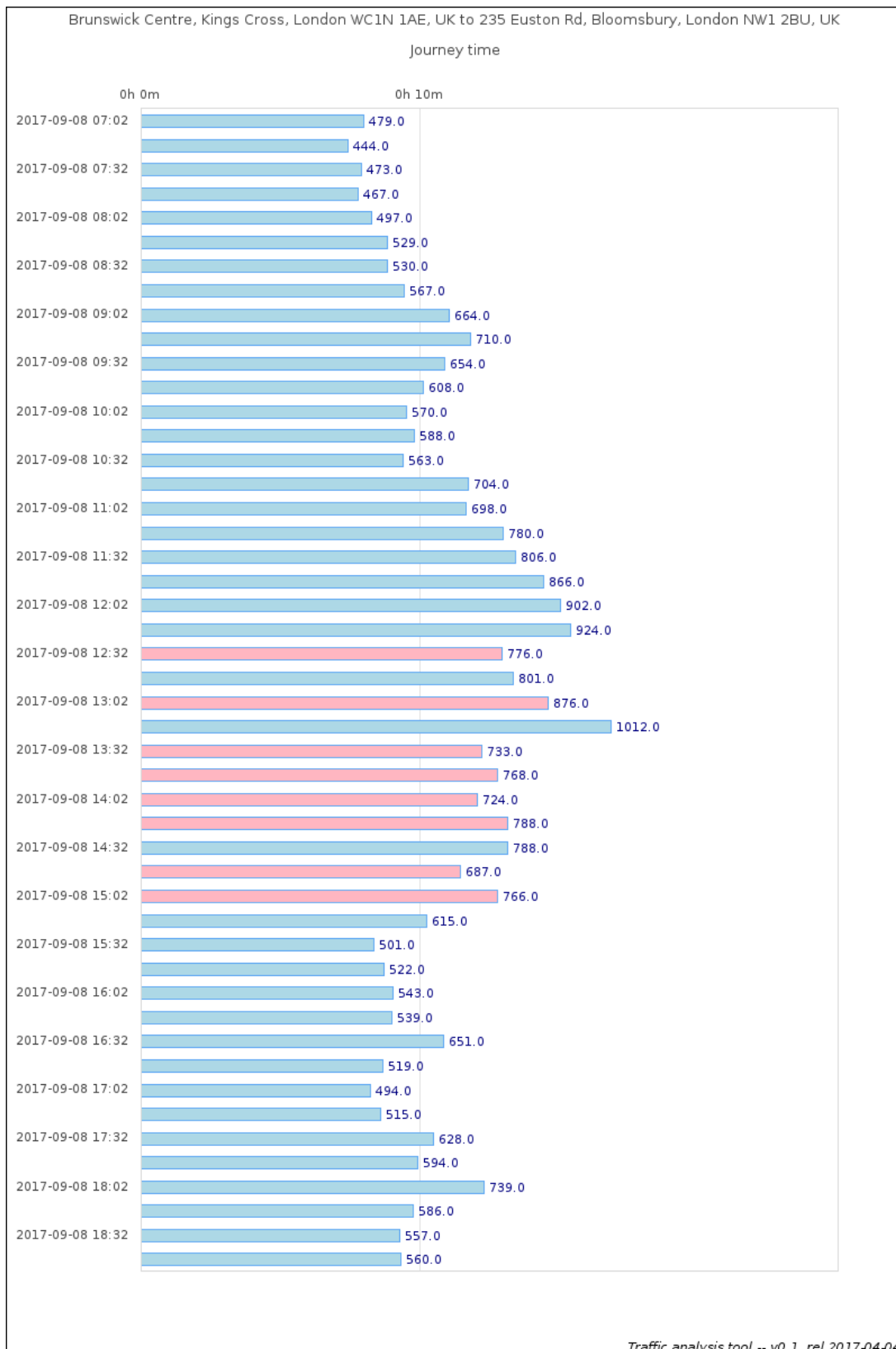


Figure 7: Google's estimated times throughout the day on Friday 8 September for the journey in Figure 1 (Figure 3 for the pink bars).

Figure 8: the dataset for Saturday 9 September 2017. This Saturday data shows a largely different pattern. Journey times are below 10 minutes throughout the day apart from a short lunchtime increase to a peak 12.5 minutes and a somewhat more significant peak.

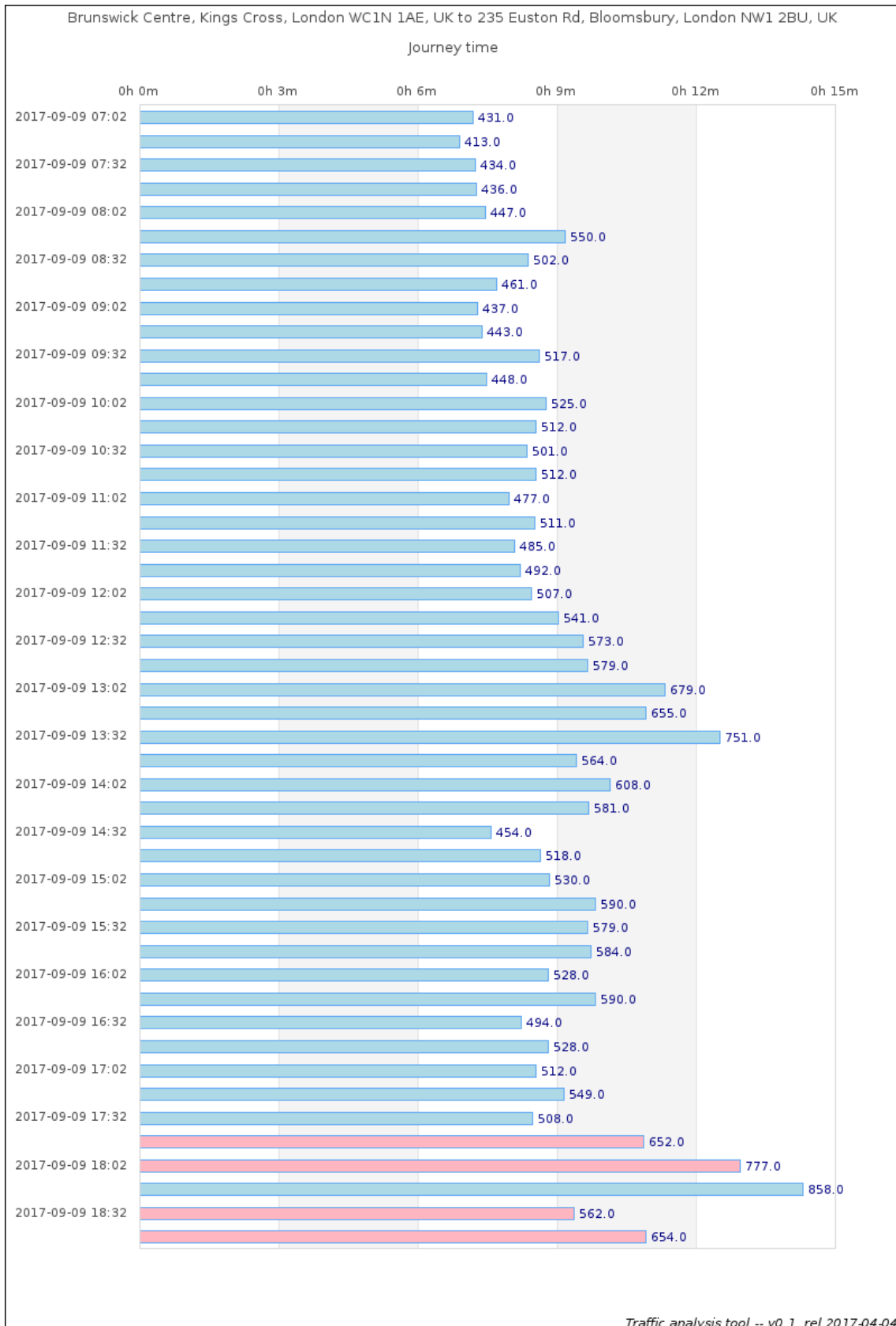


Figure 8: Google's estimated times throughout the day on Saturday 9 September for the journey in Figure 1 (Figure 3 for the pink bars).

Figure 9: the dataset for Monday 11 September 2017. This shows a similar low - congestion pattern with all journey times remaining below 11.5 minutes all day.

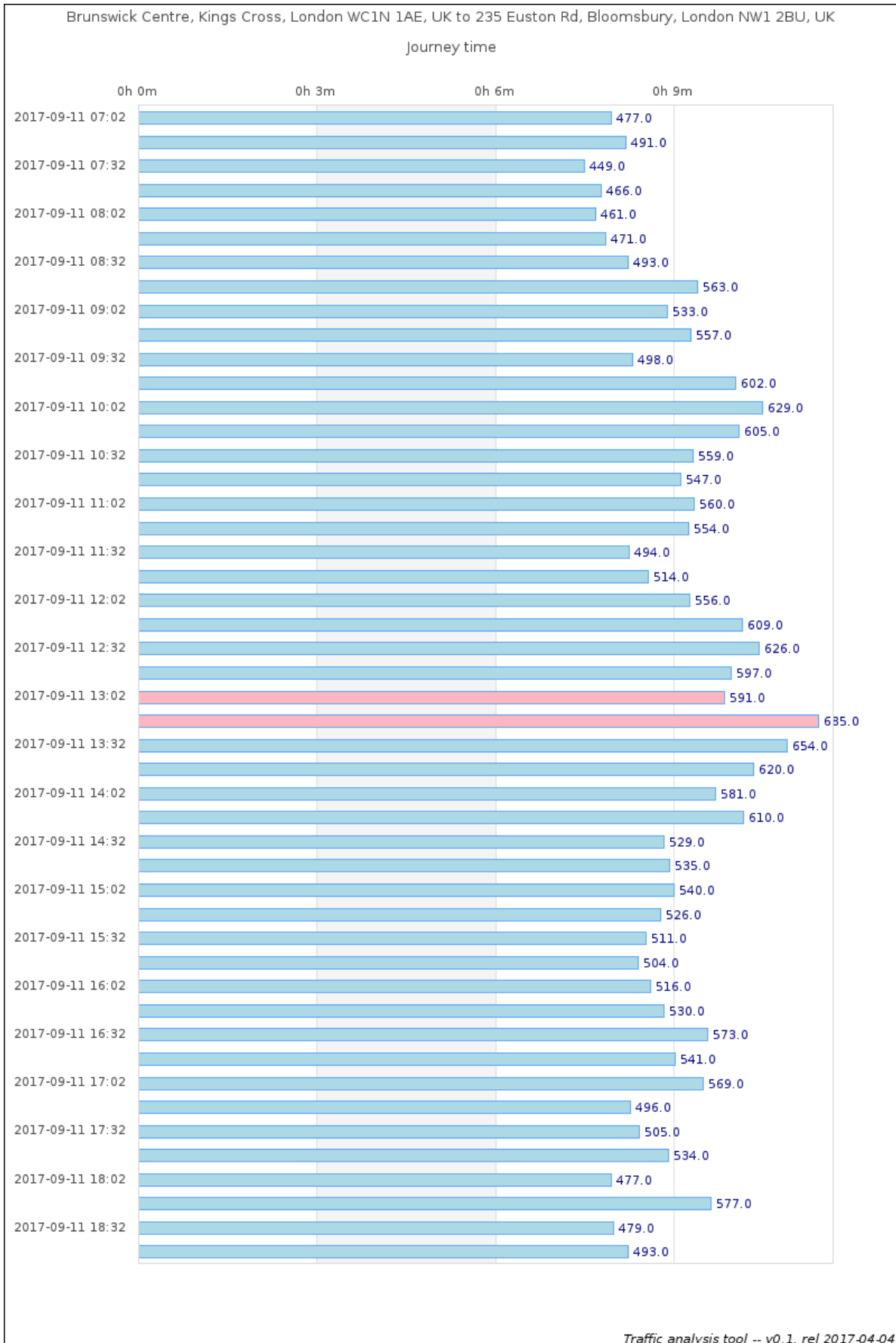


Figure 9: Google's estimated times throughout the day on Monday 11 September for the journey in Figure 1 (Figure 3 for the pink bars).

Summary Table

	samples		samples		samples		largest sample
	< 10 mins	%	>10 mins	%	>12 mins	%	mins
Tue	39	81	9	19	2	4	14.5
Wed	36	75	12	25	3	6	13
Thu	21	44	27	56	6	13	14
Fri	22	46	26	54	13	27	16
Mon	39	81	9	19	1	2	11.5
Totals	157	65	83	35	25	10	max 16 m