



Cycle Enfield - A1010 North

Transport for London

A1010 North Bus Lane Removal Assessment

1.0

30 January 2019

Document history and status

Revision	Date	Description	By	Review	Approved
1.0	30/01/2019	Initial issue to TfL			

Distribution of copies

Revision	Issue approved	Date issued	Issued to	Comments
1.0	30/01/2019	30/01/2019	Gordon Sheppard (TfL)	For internal discussion

1. Introduction

This summary technical note details the findings of a bus lane removal impact assessment undertaken by Jacobs as part of the Cycle Enfield – A1010 North project.

2. Methodology

A PM Peak site visit was undertaken on Tuesday 29th January, with the AM Peak visit undertaken on Wednesday 30th January. This involved the recording of peak hour bus dwell times at Stop EJ and Stop EK, approximately located at the bus lane extents – Figure 2-1 – and both bus and general traffic journey times between the two stops.

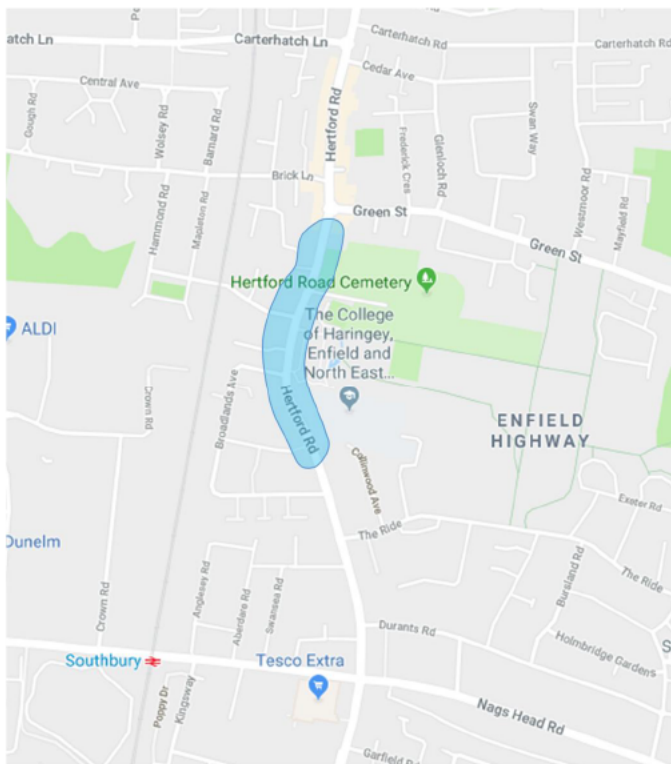


Figure 2-1: Bus Lane Extents

The bus lane as existing is operational during the PM Peak (16:00-19:00) only, however the AM Peak site visit was undertaken as a precaution to investigate out of hours usage.

Corridor peak periods, derived from traffic survey data, are as follows:

- AM 07:30-08:30
- PM 17:15-18:15

3. Results

3.1 Dwell Times

Bus dwell times were recorded at both northbound Stops – EJ (Enfield College) and EK (Green Street) – however are not critical to this analysis as they are assumed to remain constant following implementation of the scheme. Table 3-1 summarises the peak hour dwell times, these were calculated as an average of all services using each stop during the survey period.

Table 3-1: Bus Stop Dwell Times

Peak Period	Dwell Time (s)	
	Stop EJ	Stop EK
AM	14	31
PM	20	22

3.2 Journey Times

General traffic and bus journey times were recorded between the two bus stops. This therefore captures the northbound offside lane general traffic journey time, and the nearside bus lane journey time. Comparison of the two journey times allows the impact of the proposed removal of the bus lane to be calculated.

AM Peak journey times, presented in Appendix A, indicate no detriment to bus journey times should the bus lane be removed. The observed 12 second difference between general traffic and bus journey times is attributed to:

- higher free-flow speeds of general traffic relative to buses
- buses slowing down on approach to, and speeding up away from, the two bus stops.

It should also be noted that during the AM Peak, buses were observed regularly using the offside general traffic lane rather than the nearside bus lane.

Table 3-2 outlines the average observed PM Peak journey time between the two bus stops for both the nearside bus lane (existing) and offside general traffic lane (proposed).

Table 3-2: PM Peak Existing v Proposed Journey Times Between Stops

Existing	Proposed	Change
54 seconds	81 seconds	+27 seconds

Although indicating an approximate impact of 27 seconds to bus journey times, the benefits¹ realised through implementation of two proposed bus boarders have not been taken into account. A study published by TfL outlined the following benefits;

- the percentage of buses stopping closer to the kerb will increase;
- significantly fewer passengers will have to step into the road when boarding and alighting, leading to improved access to buses particularly for mobility impaired passengers;
- a slight reduction in boarding and alighting times by 0.1 seconds;
- fewer buses (between 5% and 18%) hemmed in by general traffic at full width boarders;
- between 0.5 and 2.5 second reduction in delays when pulling away from boarders relative to original kerbside stops;
- between 0.6 and 0.8 second reduction in time taken to re-enter corridor traffic flow; and,
- an overall reduction of 1.3 seconds to bus delays on road operating at 50%.

Comparison of bus journey times between stops is consistent over both peak periods. It is however likely that the proposed journey time of 81 seconds will be greater as the time taken by buses to slow down to and speed up from stops has not been included. The bus will however, have priority over general traffic as in-carriageway stops are proposed.

It is likely that buses will experience further delays on the approach to the Green Street roundabout – proposed for signalisation. LMAP5 approved modelling outputs indicate a northbound queue increase from 2 vehicles to approximately 16 vehicles during the PM Peak. The resulting delay has been captured within the *A1010 North Bus Journey Time Assessment v3.0* but this negates the journey time impacts resulting from bus lane removal on the immediate approach.

¹ TfL Accessible Bus Stop Design Guidance – Appendix B: Effects of Introducing Bus Boarders

Appendix A.

Observed Data																										
Bus																										
AM Peak - 07:30-08:30												PM Peak - 17:15-18:15						General Traffic								
EJ			EK			Journey Time Between Stops	EJ			EK			Journey Time Between Stops	AM Peak - 07:30-08:30		PM Peak - 17:15-18:15			AM Peak - 07:30-08:30		PM Peak - 17:15-18:15					
Arrival	Departure	Dwell	Arrival	Departure	Dwell		Arrival	Departure	Dwell	Arrival	Departure	Dwell		Arrival	Departure	Dwell	Arrival	Departure	Dwell	Crossing Time EJ	Crossing Time EK	Journey Time Between Stops	Crossing Time EJ	Crossing Time EK	Journey Time Between Stops	
07:31:27	07:31:38	00:00:11	07:32:26	07:32:41	00:00:15				17:23:52	17:24:04	00:00:12	17:25:04	17:25:32	00:00:28				07:34:01	07:34:33		00:00:32	17:19:42	17:21:26		00:01:44	
07:38:32	07:38:32	00:00:00	07:39:10	07:39:25	00:00:15				17:26:28	17:27:01	00:00:33	17:28:00	17:28:27	00:00:27				07:35:14	07:35:54		00:00:40	17:21:50	17:22:44		00:00:54	
07:39:04	07:39:14	00:00:10	07:40:03	07:40:19	00:00:16				17:27:46	17:28:02	00:00:16	17:29:00	17:29:15	00:00:15				07:41:23	07:41:55		00:00:32	17:35:53	17:36:30		00:00:37	
07:43:55	07:44:09	00:00:14	07:45:11	07:45:52	00:00:41				17:28:46	17:29:07	00:00:21	17:29:55	17:30:08	00:00:13				07:42:37	07:43:10		00:00:33	17:36:52	17:37:37		00:00:45	
07:44:39	07:44:39	00:00:00	07:45:26	07:45:39	00:00:13				17:29:45	17:30:04	00:00:19	17:30:49	17:31:07	00:00:18				07:52:35	07:53:10		00:00:35	17:59:10	18:00:11		00:01:01	
07:45:07	07:45:10	00:00:03	07:46:09	07:46:14	00:00:05				17:33:24	17:33:39	00:00:15	17:34:30	17:34:51	00:00:21				07:53:51	07:54:30		00:00:39	18:07:14	18:08:21		00:01:07	
07:45:30	07:45:42	00:00:12	07:46:49	07:47:14	00:00:25				17:41:14	17:41:24	00:00:10	17:42:14	17:42:45	00:00:31				07:55:09	07:55:46		00:00:37	18:08:09	18:09:53		00:01:44	
07:49:22	07:49:35	00:00:13	07:50:19	07:50:30	00:00:11				17:45:19	17:45:22	00:00:03	17:46:07	17:46:31	00:00:24				08:14:53	08:15:27		00:00:34	18:09:00	18:10:53		00:01:53	
07:49:55	07:49:55	00:00:00	07:50:43	07:51:33	00:00:50				17:46:00	17:46:57	00:00:57	17:47:51	17:48:23	00:00:32				08:16:55	08:17:55		00:01:00	18:10:54	18:12:54		00:02:00	
07:57:44	07:57:54	00:00:10	07:58:38	07:59:01	00:00:23				17:49:20	17:49:36	00:00:16	17:50:32	17:50:53	00:00:21				08:18:12	08:18:56		00:00:46	18:12:05	18:13:34		00:01:29	
08:01:18	08:01:33	00:00:15	08:02:26	08:02:56	00:00:30				17:54:10	17:54:40	00:00:30	17:55:45	17:56:09	00:00:24				08:19:12	08:19:52		00:00:40	18:12:47	18:14:19		00:01:32	
08:01:13	08:02:13	00:01:00	08:03:04	08:03:59	00:00:55				17:56:17	17:56:36	00:00:19	17:57:31	17:57:47	00:00:16				08:24:04	08:25:05		00:01:01	18:14:18	18:16:08		00:01:50	
08:07:57	08:08:11	00:00:14	08:09:09	08:09:59	00:00:50				17:59:45	18:00:00	00:00:15	18:00:54	18:01:06	00:00:12				08:24:46	08:25:22		00:00:36	18:15:10	18:16:42		00:01:32	
08:09:46	08:10:26	00:00:40	08:11:15	08:11:48	00:00:33				18:02:59	18:03:12	00:00:13	18:04:16	18:04:45	00:00:29				08:26:04	08:26:43		00:00:39	18:16:14	18:17:42		00:01:28	
08:11:46	08:11:57	00:00:11	08:13:00	08:13:27	00:00:27				18:05:10	18:05:26	00:00:16	18:06:16	18:06:34	00:00:18				08:26:40	08:27:13		00:00:33	18:19:49	18:20:23		00:00:34	
08:13:42	08:13:42	00:00:00	08:14:27	08:15:20	00:00:53													08:27:55	08:28:33		00:00:38					
08:21:02	08:21:24	00:00:22	08:22:14	08:22:52	00:00:38													08:29:41	08:30:24		00:00:43					
08:21:17	08:21:39	00:00:22	08:22:41	08:23:37	00:00:56																					
		00:00:14			00:00:31	00:00:52					00:00:20			00:00:22	00:00:54					00:00:40					00:01:21	

Results			
	Existing	Proposed	Change
AM	00:00:52	00:00:40	-00:00:12
PM	00:00:54	00:01:21	00:00:27