

Ferry Lane Improvements - Summary of Traffic Study

Project	Ferry Lane Improvements	Job No.	9414
Subject	Traffic Study and Modelling Review	Issue	01
Prepared by	Alex Pinnock	Date	09.01.2024
Approved by	Ebenezer Harris	Date	11.01.2024

1. Introduction

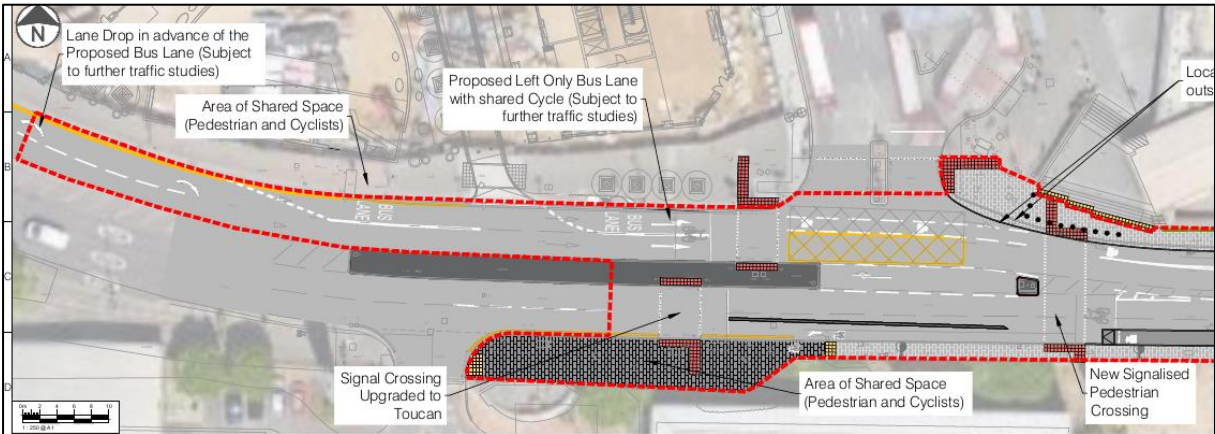
1.1 Background

The London Borough of Haringey on behalf of TfL have commissioned Project Centre to undertake a traffic study of the proposals that have been included in the planning submission (ref HGY/2023/3078) for the ‘Pedestrian and cycle network improvements on Ferry Lane associated with the Tottenham Hale Station upgrade’.

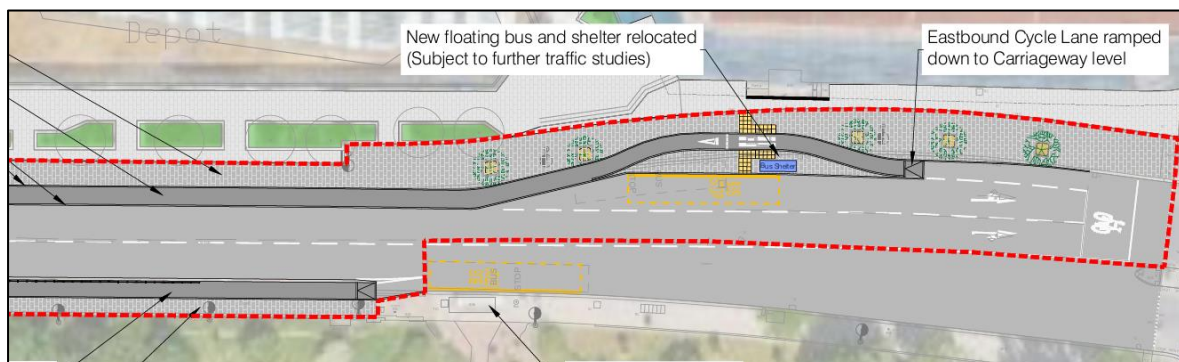
These proposals include reducing the number of lanes for general traffic on the Ferry Lane eastbound approach from 2 lanes to 1 and introducing toucan crossing at the junction. In addition, the proposals include a ‘Floating Bus Stop’ on the approach to Mill Mead Junction

The submitted proposals did indicate that further studies would be required to clarify the impact of these two elements of the scheme on the traffic flows or the capacity of the two junctions, and these studies have now been carried out.

Extract of proposals for the Bus Station junction is shown below.



Extract of Proposals for the Floating Bus Stop adjacent to the Mill Mead Junction



1.2 Objective of Traffic Study

This traffic study and associated traffic modelling assesses the impact that the proposals have on the operation of the Bus Station and the Mill Mead junctions during both the weekday AM and PM peak hours.

2. Bus Station Junction

2.1 Traffic Survey Data

Traffic surveys for the scheme were conducted on Wednesday, 22nd November 2023, by Matrix and provided PCL with the video footage, Manual Classified Turning Counts (MCTC), Automatic Traffic Counts (ATC) and Queue Length (QL) data which were used in the proposed model

2.2 Observations

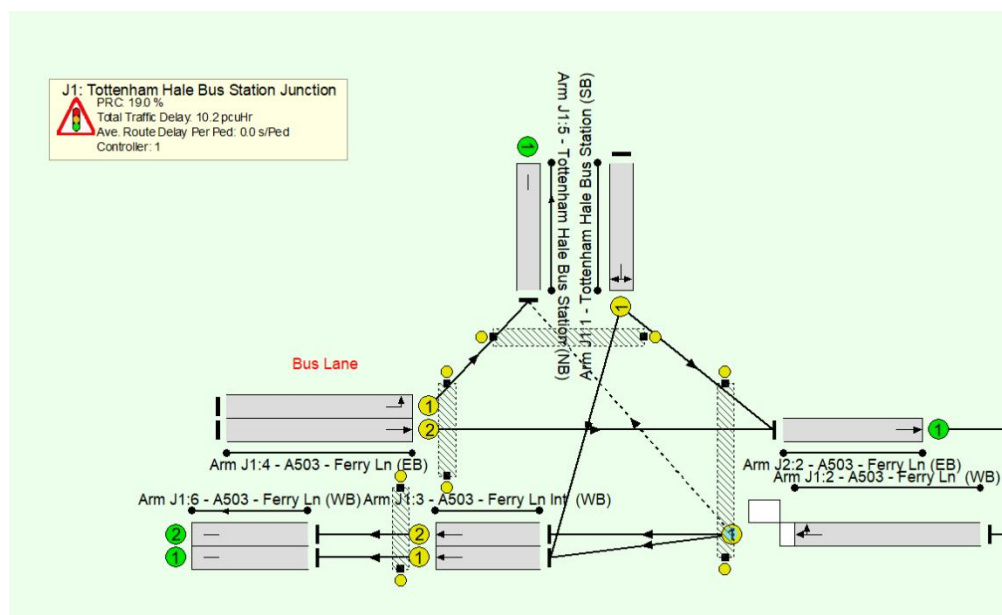
From watching the video footage of the junction in both the AM and PM peak, observations were made of the traffic conditions at the junction. For the Ferry Lane eastbound approach, the offside lane was used significantly more than the nearside lane, but despite this there were no issues with merging between the two lanes. For the westbound approach, it was noted that the two lanes in practice operated as one lane due to the cycle lane on the nearside. For the southbound approach, there was a lack of queuing due to only buses being able to use this approach.

2.3 LinSig Traffic Modelling

LinSig is a traffic modelling software tool used to assess the capacity of signalised junctions and small / medium sized networks PCL prepared a model utilising all the available traffic and survey data.

The LinSig structure for the proposal is shown in Figure 1, which shows the proposed change in lane structure at the junction and current lane usage based on video footage observations.

Figure 1- Ferry Lane Junction Proposed Structure



2.4 Traffic/Signal Data

The traffic flows used in the proposed model for the junction are shown in the flow diagram in Figure 2 which shows the AM and PM peak flows for all approaches. Signal data from TfL such as timing sheets and signal timings were analysed to get the phasing, staging, signal durations, intergreens and cycle times (88 seconds for both the AM and PM peak) for the model. Queue Length data was also analysed to establish the current queuing levels at the approach. The analysis indicates that the traffic queues on the main road (Ferry Lane) do not impact on the operations of the surrounding junctions during the peak periods. The maximum queue length occurs on the westbound approach during the PM peak hour with value of 16 PCUs, approximately 96 metres.

[illegible]

2.5 Modelling Results

The lane operating capacity or Degree of Saturation (DoS) in percentage (%) and Mean Maximum Queue (MMQ) in Passenger Car Units (PCU) outputs for the proposed option is shown in Table 1 .

Table 1 - Proposed Option – DoS and MMQ (AM and PM)

Arm	Lane	AM		PM	
		DoS (%)	MMQ (PCU)	DoS (%)	MMQ (PCU)
Ferry Lane N/S (EB)	4/1	2.8	1	1.4	1
Ferry Lane O/S (EB)	4/2	48.9	7.6	75.6	14.5
Ferry Lane (WB)	2/1	88.5	10.7	74.6	7.5
Tottenham Hale Bus Station (SB)	1/1	30.5	1.7	29.7	1.6

2.6 Conclusion

The modelling carried out on the proposals for the Ferry Lane / Tottenham Hale Bus Station have indicated.

- For the AM peak, the highest DoS value was 88.5% with an associated Mean Max Queue (MMQ) of 10.7 PCU
- For the PM peak the highest DoS value was 75.6% with an associated MMQ of 14.5 PCU (similar to existing condition).

All DoS values are below practical capacity (90%) and all MMQ values do not impact upon surrounding junctions.

This Linsig model along with the survey and video footage was reviewed by the TfL Network Performance team where they confirmed that reducing the existing 2 lanes for general traffic to one lane (offside lane) and a dedicated left turn bus lane on Ferry Lane eastbound approach would have minimal impact on the capacity of the junction.

3. Mill Mead Junction

3.1 Observations

From reviewing the flows and queue lengths on the eastbound approach to the Mill Mead junction, it is observed that vehicles utilise both eastbound lanes.

The Queue Length Surveys report indicates:

Maximum queue lengths:

- 12 PCUs in AM Peak (4 PCUs in lane 1 and 8 in lane 2)
- 11 PCUs in PM Peak (7 PCUs in lane 1 and 4 in lane 2)

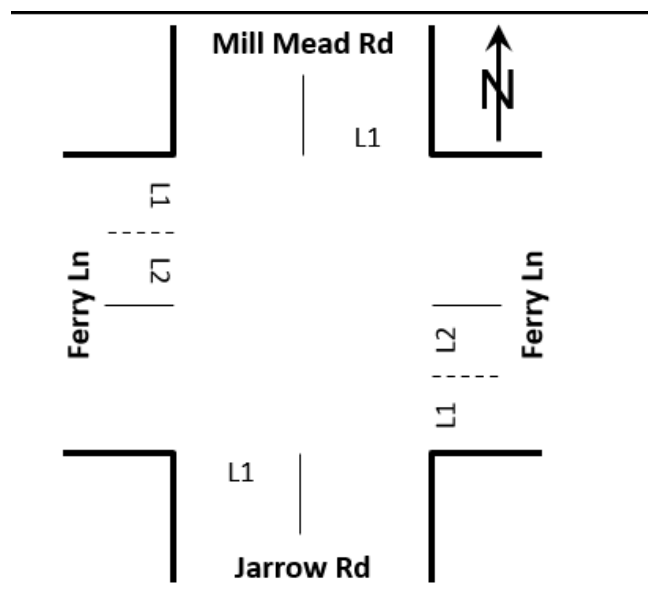
Mean Maximum queue length:

- 3 PCUs in the AM peak (with mean of 1 PCU in lane 1)
- 2 PCUs in the PM peak (with mean of less than 1 PCU in lane 1)

It is further noted that when the maximum queue length of 7 PCUs is observed in lane 1 there is minimal queueing in lane 2.

- Max Queue length in lane 1 in AM Peak is 7 PCUs with 1 PCUs in lane 2
- Max Queue length in lane 1 in PM Peak is 7 PCUs with 4 PCUs in lane 2

Lane references shown below:



3.2 Impact of Proposals

The proposals for the Floating Bus stop do not impact on the current length of lane 1 or lane 2 with the only change from the current layout is that the bus cage is relocated 5m further east. The impact of the proposals when the bus cage is occupied is a reduction of queueing capacity in lane 1 of 1 PCU, however it is observed that when maximum queueing occurs in lane 1 there is sufficient capacity in lane 2 for queueing vehicles.

3.3 Conclusion

It is therefore considered that the proposals do not have an impact on the capacity of the junction and that no further studies or modelling is required.