



Northern Line Extension

Kennington Station - Report on dynamic modelling outputs – AM peak

1 Changes from Appendix C4

Following refinement of the modelling, the work presented in Appendix C4 of the Environmental Statement has been revised. This does not change any of the conclusions of the original work and any changes presented are marginal and have no effect on the original conclusions. These are set out on the following pages.

2 Background and objectives

2.1.3 Kennington station operation

Figure 1A replaces Figure 1.

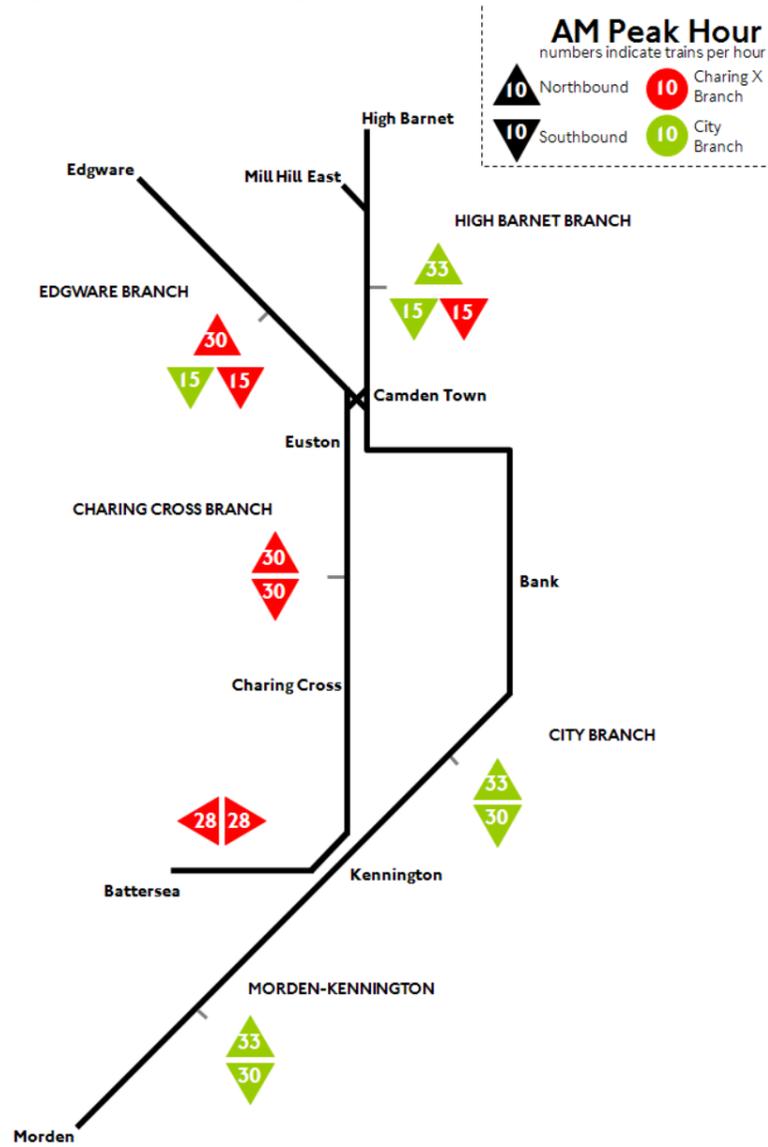


Figure 1A – Train service patterns post NLU2 and with Northern Line Extension

4 Modelling inputs and assumptions

4.1 Passenger demand

4.1.2 Future year (2031) origin-destination matrix

4.1.2.1 Railplan scenarios

The text is modified as follows

NX242 NX292: 2031 demand without NLE

NX243 NX324: 2031 demand with NLE

4.1.2.2 Forecasted 2031 demand levels

The sentence is modified as follows:

The demand shown in Table 3A is after the application of the demand forecasting formula on the Railplan output from scenario NX242 NX292 for 2031 without NLE.

Tables 3A replaces Table 3.

2031 without NLE Forecasted AM Peak Demand	KENNINGTON CITY NB	KENNINGTON CITY SB	KENNINGTON CX NB	KENNINGTON CX SB	KENNINGTON EXITS	TOTAL
KENNINGTON CITY NB			9,395		231	9,625
KENNINGTON CITY SB			639		878	1,517
KENNINGTON CX NB						
KENNINGTON CX SB	158	1,915			1,073	3,146
KENNINGTON T H	1,794	594	3,362			5,750
TOTAL	1,952	2,509	13,396		2,182	20,039

Table 3A – 2031 without NLE origin-destination matrix

Tables 4A replaces Table 4.

2031 with NLE Forecasted AM Peak Demand	KENNINGTON CITY NB	KENNINGTON CITY SB	KENNINGTON CX NB	KENNINGTON CX SB	KENNINGTON EXITS	TOTAL
KENNINGTON CITY NB			8,863	172	226	9,261
KENNINGTON CITY SB			563	1,666	873	3,102
KENNINGTON CX NB	2,623	178			231	3,032
KENNINGTON CX SB	139	1,190			1,039	2,369
KENNINGTON T H	1,724	544	3,089	411		5,768
TOTAL	4,486	1,912	12,515	2,249	2,369	23,531

Table 4A – 2031 with NLE origin-destination matrix

The sentence is modified as follows:

Similarly, demand for the 2031 with NLE scenario in Table 4 is the output of the application of the demand forecasting formula on Railplan scenario ~~NX243~~ NX324 for 2031 with NLE.

4.1.3 Access, egress, interchange demand comparison

Figure 2A replaces Figure 2.

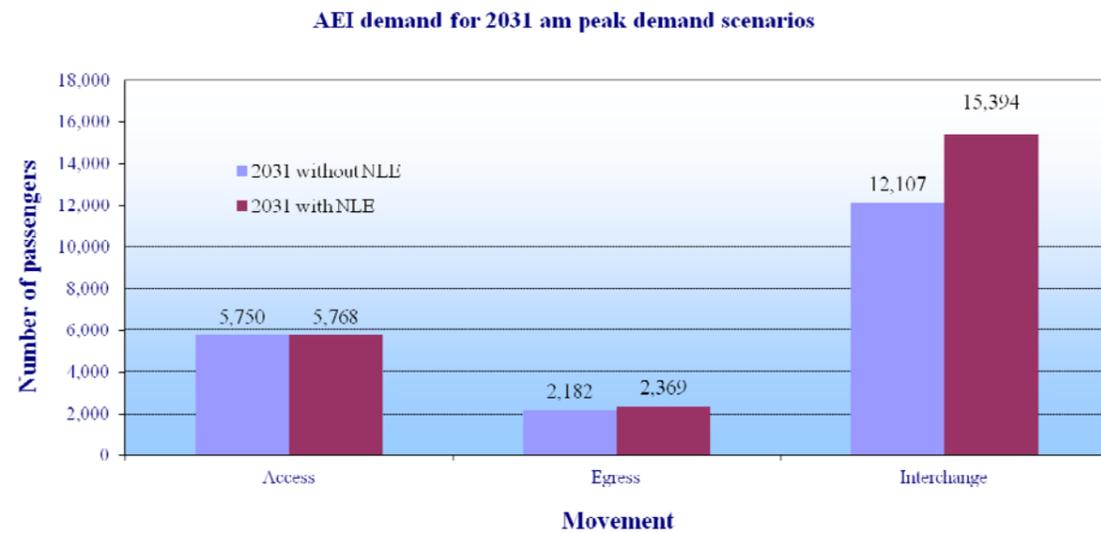


Figure 2A – 2031 access, egress and interchange demand without and with NLE

The sentences have been modified as follows:

The introduction of two new stations post-NLE results in a ~~23%~~ 27% increase on total interchange demand compared to the 2031 demand scenario without NLE.

The additional interchange demand from platform 1 (Charing Cross NB) to platform 3 (Bank NB) movement is for the 2031 with NLE scenario ~~2,552~~ 2,623 passengers during the three hours in the AM peak.

For the busiest 15 minutes¹, this is an additional ~~335~~ 318 passengers² using the 4 passageways from platform 1 to platform 3.

¹ Based on RODS 2011, the busiest 15 minutes have been identified to be between 08:30-08:45

² Station Planning Standards and Guidelines, Section 2.2 for the calculation of peak 15 minute demand based on a three hour total

5 Dynamic modelling outputs

5.2 Modelling output results

5.2.1 Cumulative mean density (CMD) maps

5.2.1.4 CMD map 2031 without NLE

Figure 8A replaces Figure 8.

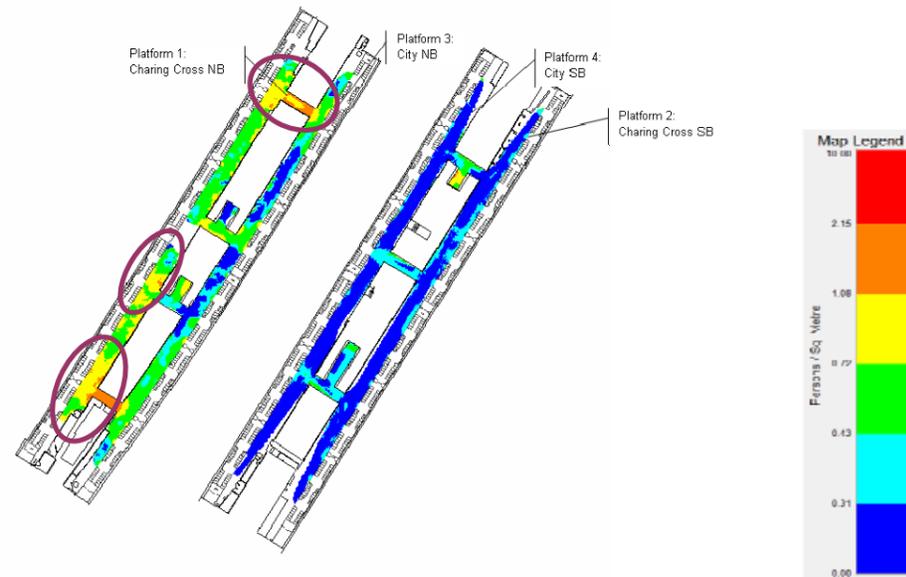


Figure 8A – CMD map 08:30-08:45, 2031 without NLE

5.2.1.5 CMD map 2031 with NLE and current infrastructure

Figure 9A replaces Figure 9.

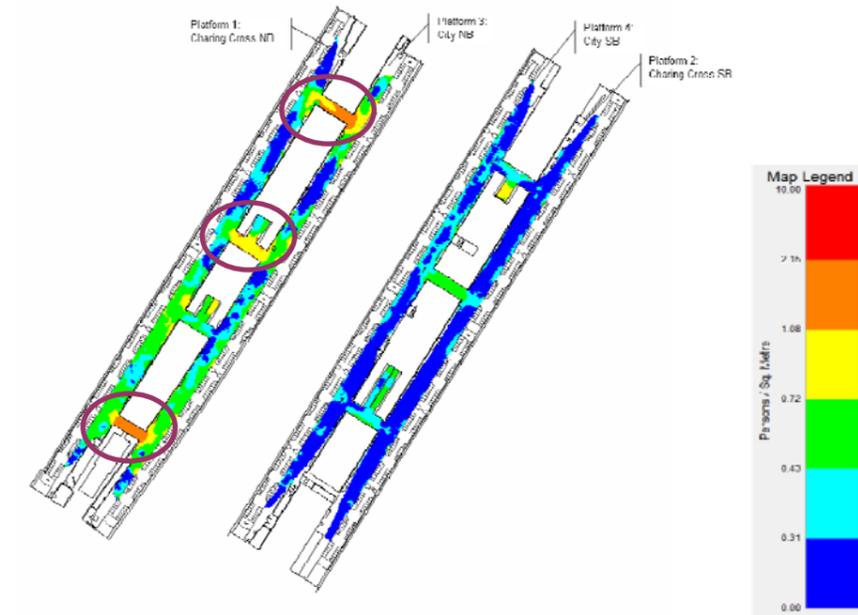


Figure 9A – CMD map 08:30-08:45, 2031 with NLE

5.2.1.6 CMD map 2031 with NLE and added passageways

Figure 10A replaces Figure 10.

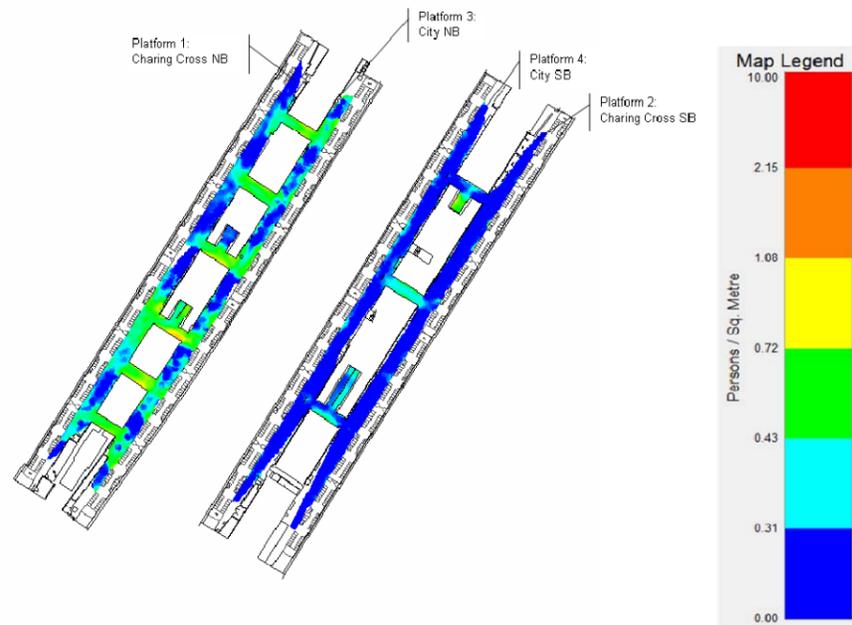


Figure 10A – CMD map 08:30-08:45, 2031 with NLE and added passageways

5.2.2 Cumulative high density (CHD) maps

5.2.2.2 CHD map 2031 without NLE

Figure 12A replaces Figure 12.

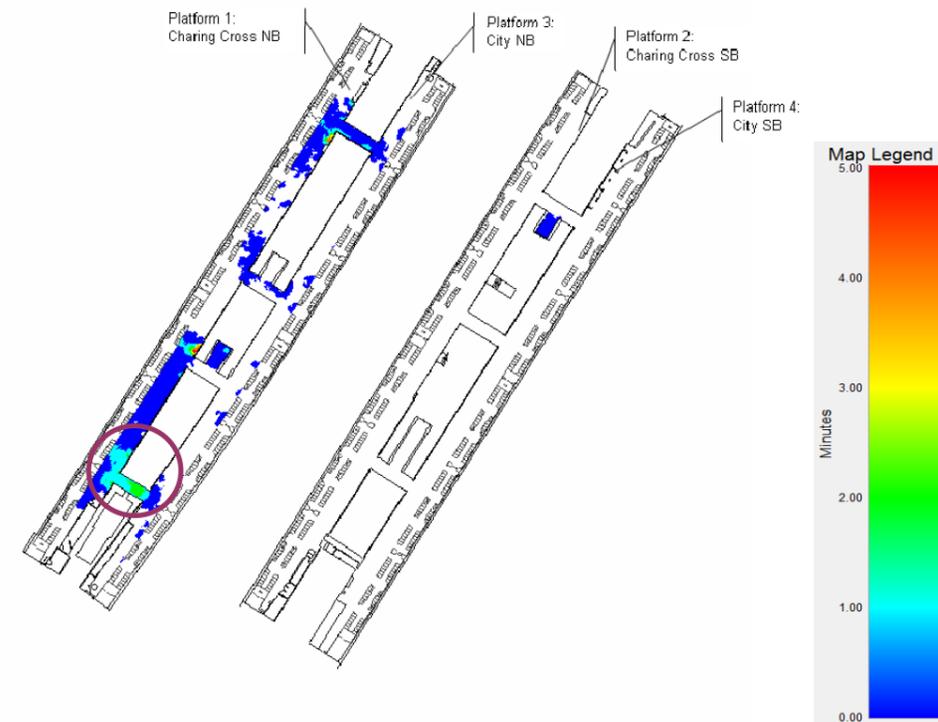


Figure 12A – CHD map 08:30-08:45, 2031 without NLE

5.2.2.3 CHD map 2031 with NLE and current infrastructure

Figure 13A replaces Figure 13.

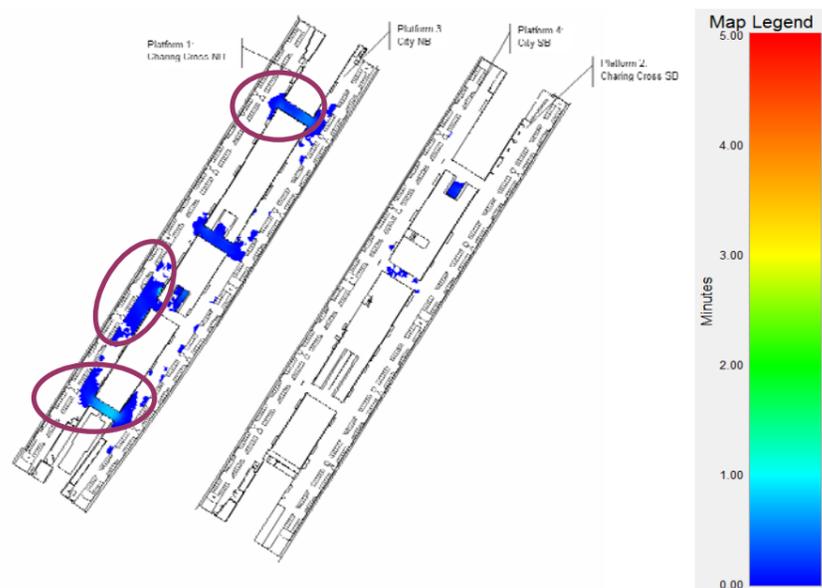


Figure 13A – CHD map 08:30-08:45, 2031 with NLE

The following paragraph is modified as follows:

More specifically, for the 2031 with NLE model scenario crowding on the interchange passageways is sustained above the SPSG normal operation criteria for an average of 2.3 minutes in the worst case and an average of 2 minutes for the two passageways at the north end side of the northbound platforms. These areas are circled in Figure 13A.

5.2.2.4 CHD map 2031 with NLE and added passageways

Figure 14A replaces Figure 14.

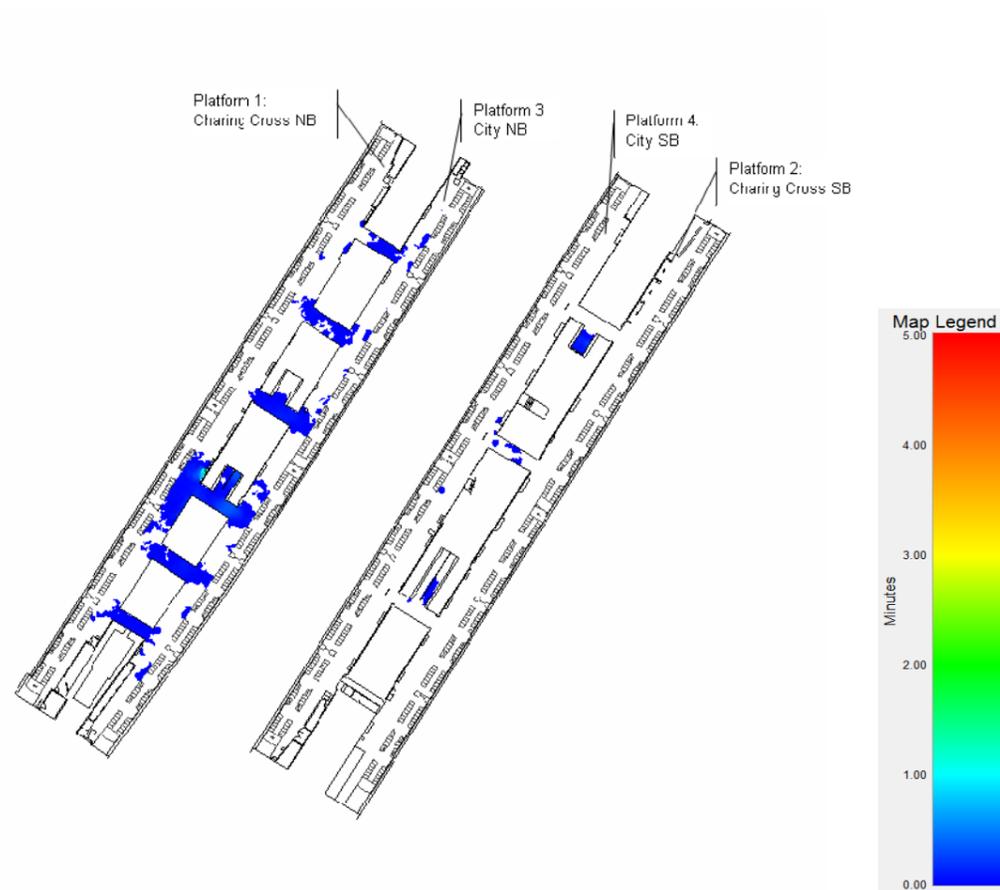


Figure 14A – CHD map 08:30-08:45, 2031 with NLE and added passageways

6 Summary and conclusion

The following paragraph is modified as follows:

Analysis of the cumulative mean density and cumulative high density maps for the current year model (Figure 7) and the future year (2031) model without NLE (Figures 8 and 12) showed that crowding levels on the cross passages (northbound platforms) are ~~sustainably high~~ above desirable LoS thresholds during the peak 15 minutes (08:30-08:45).