

Northern Line Extension

Protocol for Monitoring Passenger Movements within Kennington Station

January 2016

Submitted to: London Borough of Southwark

1. Introduction

1.1 The Secretary of State set out a number of conditions in a letter dated 12 November 2014, Annex 1 pertaining to the granting of a Transport and Works Act Order (TWAO) for the Northern Line Extension (NLE).

1.2 TWAO Condition 19 is shown below, relating to the monitoring of passenger movements at Kennington station after the NLE becomes operational.

1.3 This protocol describes how TfL will fulfil Condition 19.

Scanned facsimile of Condition 19 from Annex 1

Monitoring passenger movements at Kennington Station

19. Before the commencement of the development a protocol for monitoring the passenger movements within Kennington Station must be submitted to, and approved by, the local planning authority. The approved protocol must be implemented following the opening of the development for use by the public. Should the results of the monitoring show more than a 10% increase from the levels of passenger movement within the station predicted by Transport for London, Transport for London must consult the Office of Rail Regulation and the London Fire and Emergency Planning Authority and submit details of their responses to the local planning authority.

Reason: In the interests of the public safety.

1.4 TfL will put in place a monitoring regime that checks the passenger movements at Kennington after the NLE enters service in 2020. The regime is described below.

2. Description of Monitoring Regime

2.1 Irrespective of the monitoring activity described below, if levels of congestion become unsafe (as per Station Planning Standard S1371) within the station (on platforms, in cross passages, in the ticket hall and lower lift lobbies) is observed, at any time, operational mitigations will be introduced to safeguard passengers and staff, for example, passenger flow management will be instigated.

2.2 To establish passenger movement baselines (before-NLE and after-NLE) TfL will undertake a count of passenger movements at Kennington station within six months prior to the NLE becoming operational and within six months of the NLE becoming operational. This will be in line with the standard type of passenger counts that LU undertake with regard to time of day and day of week.

2.3 TfL's longer term approach to monitoring passenger movements is to utilise a routine survey methodology referred to as the Rolling Origin and Destination Survey (RODS) to measure passenger movements at Kennington station. Under the RODS scheme a range of stations are surveyed each year. These utilise passenger questionnaires to ascertain passenger movements between platforms (amongst

other data) at interchange stations such as Kennington. A description of the methodology and output is shown in Appendix A.

2.4 TfL experience with the provision of new services is that utilisation of additional capacity evolves progressively over a three year period. By November 2021 the TfL RODS survey team will undertake passenger movement questionnaires at Kennington and enter the findings into the RODS database. An extract of the RODS database will be provided to LB Southwark, together with a quantitative comparison between the forecast passenger movements and actual movements. In due course the RODS survey for Kennington will become a routine part of the passenger surveys.

2.5 In November 2022 TfL will undertake a detailed analysis of the RODS data, in November 2023 a further analysis of RODS data will occur together with a physical count of passenger movements at Kennington station – the output will be submitted to LB Southwark. A timeline of monitoring activity is detailed in Appendix 2.

2.6 TfL is also considering interchange surveys at the station (manual/automated counts) on the cross passageways for a year or two.

2.7 In addition station staff at Kennington will be requested to record in the station log and to report to LU Operations any recurring and significant crowding issues relating to passenger interchange movements that are not the result of service disruptions or emergency events.

3. Actions if Movements Exceed Forecast

3.1 In the event that the RODS passenger movements exceed TfL forecasts for Kennington by more than 10% the following actions are taken:

- i. A physical count will be made of the passenger movements through the Kennington station cross passages (adits) and platforms for one day on two successive weeks – this will occur within two months of the RODS data becoming available; and
- ii. A preliminary risk assessment will be carried out based on the passenger counts and RODS data – operational mitigations to reduce risks as low as reasonably practicable (ALARP) will be introduced – these may take the form of passenger flow management and restricted access if the risk is not ALARP.

4. Approach to Mitigating Risk

4.1 The steps set out below are proposed on the basis of adverse results from the RODS survey:

- i. Where it is verified that passenger movements routinely exceed forecasts by more than 10% a formal quantified risk assessment and medium and long term mitigation plan will be drawn up by TfL to reduce risk as low as reasonably practicable (ALARP);
- ii. A mitigation plan and risk assessment will be submitted to LB Southwark and discussed in detail with the Office of Rail Regulation (ORR) and the London Fire and Emergency Planning Authority (LFEPA);
- iii. TfL will produce revised estimates for passenger movements at Kennington station to be agreed with the ORR, LFEPA and LB Southwark – these revised passenger movement forecasts will be a key driver for scoping a long term solution;

5. Passenger Movement Forecasts

5.1 The Transport and Works Act Order forecast passenger movements based on the anticipated 2031 demand are shown in Tables 1 and 2 below. For example, in the AM peak there is a forecast of 8,882 passengers interchanging northbound between the Bank branch and the Charing Cross branch (CX). The additional cross passages at Kennington are designed to cater for the additional passenger movements forecast for 2031.

Legend:

Location	Description	Direction of Travel
Kennington Bank NB	Northbound Bank Branch	From Morden direction
Kennington CX NB	Northbound Charing Cross Branch	Towards Edgware and High Barnet
Kennington CX SB	Southbound Charing Cross Branch	From London Bridge direction
Kennington Bank SB	Southbound Bank Branch	Towards Morden direction

Table 1: Forecast Movements Morning Peak (0700-1000hrs)

2031 with NLE Forecasted AM Peak Demand	KENNINGTON BANK NB	KENNINGTON BANK SB	KENNINGTON CX NB	KENNINGTON CX SB	KENNINGTON EXITS	TOTAL
KENNINGTON BANK Northbound			8,882	165	230	9,277
KENNINGTON BANK Southbound			558	2,181	871	3,610
KENNINGTON CX Northbound	2,623	178			231	3,032
KENNINGTON CX Southbound	120	1,082			1,064	2,266
KENNINGTON Ticket Hall	1,741	544	3,093	419		5,797
TOTAL	4,484	1,804	12,533	2,765	2,369	23,982

Table 2: Forecast Movements Afternoon Peak (1600-1900hrs)

2031 with NLE Forecasted PM Peak Demand	KENNINGTON BANK NB	KENNINGTON BANK SB	KENNINGTON CX NB	KENNINGTON CX SB	KENNINGTON EXITS	TOTAL
KENNINGTON BANK Northbound			3,853	197	510	4,560
KENNINGTON BANK Southbound			301	1,822	1,012	3,135
KENNINGTON CX Northbound	1,582	300			242	2,124
KENNINGTON CX Southbound	351	6,910			1,985	9,246
KENNINGTON Ticket Hall	1,469	488	1,970	208		4,135
TOTAL	3,402	7,698	6,124	2,227	3,749	23,199

5.2 The additional adits, between platforms, to be installed at Kennington station are designed to cater for the anticipated demand in 2031.

5.3 The trigger point values for referring the passenger movements to the ORR and LFEPA are based on the total movements for the AM and PM peaks; these are set out in table 3 below.

Table 3: Trigger Points for Reporting Adverse Passenger Movements

Description	Forecast Movements	Trigger Point Value
AM Peak	23,982	26,381
PM Peak	23,199	25,520

5.4 The calculation of the trigger point value is based on the following formula:

$$\text{Trigger Point Value} = \text{Forecast} * 1.1 + 1$$

5.5 Thus in AM peak if the total passenger movements are at 26,381 or above and it is subsequently shown that this figure is routinely met or exceeded referral to LB Southwark, the ORR and LFEPA as per Section 4 is actioned.

Appendix 1: Outline RODS Process and Sample Data

1A: Process

Methodology

Self-completion questionnaires are handed out to passengers at the entry to the system with the RODS interviewers giving a short introduction to the survey where possible. The completed questionnaires are returned by Freepost.

The standard fieldwork day for the RODS survey is from 07:00 to 24:00 weekdays, avoiding atypical days (for example, industrial action, Fridays and Mondays where engineering works have taken place the night before). There are 19 survey questions in total, with topics including:

- Address of start and end of journey
- Journey purpose
- Interchanges within the journey
- Ticket type
- Frequency of the particular journey
- Demographics
- Car ownership

Fieldwork takes place during the autumn, as this time of year is seen as normal in terms of volume, type of passenger and weather. These factors could impact on the responses received. The data is loaded into a bespoke computer system. Aggregated data can then be used in the planning of the train and station services.

1B: Data Sample: Number Passengers Interchanging Platforms at Kennington

start node	start platform	end node	end platform	AM peak	Midday period	PM Peak	Evening
8455	KENNINGTON CITY NB	8457	KENNINGTON CX NB	6216	4102	2399	1330
8456	KENNINGTON CX SB	8455	KENNINGTON CITY NB	74	406	96	213
8456	KENNINGTON CX SB	8458	KENNINGTON CITY SB	595	3297	3803	5077
8457	KENNINGTON CX NB	8455	KENNINGTON CITY NB	365	66	56	43
8458	KENNINGTON CITY SB	8457	KENNINGTON CX NB	193	242	50	20
			Total interchanges	7443	8113	6404	6683

Note: Only shows platform interchange numbers, based on 2013 figures

LEGEND:

RODS Data	Description	Direction of Travel
Kennington City NB	Northbound Bank Branch	From Morden direction
Kennington CX NB	Northbound Charing Cross Branch	Towards Edgware and High Barnet
Kennington CX SB	Southbound Charing Cross Branch	From London Bridge direction
Kennington City SB	Southbound Bank Branch	Towards Morden direction

Appendix 2: Timing of Activities

The below indicates the timing of the passenger monitoring activities.

Monitoring Timeline

Activity	Date	Comment
Northern Line Extension Operational	2020	Start of NLE service
Pre-NLE Passenger Baseline	2020	Baseline passenger movements before the NLE become Operation
Post-NLE Passenger Baseline	2020 - 2021	Physically count movements including new NLE service – add into RODS data
First RODS Kennington survey	2021	Formally include in RODS survey with the NLE service in place – hand out of questionnaire
Northern Line Upgrade 2 (NLU2) service increase	2021/2022	Additional train frequency planned on Northern line
RODS Kennington data analysis	2022	Analysis of the dataset
RODS Kennington data analysis with a physical count	2023	Analysis of the dataset, passenger count at the station
Ongoing business as usual RODS surveys	2023	End of additional Kennington RODS monitoring