Thames Tideway Tunnel
Thames Water Utilities Limited

Application for Development Consent

Application Reference Number: WWO10001

Transport Assessment

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Minor Work Sites

Main Report

APFP Regulations 2009: Regulation **5(2)(q)**

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Thames Tideway Tunnel

Creating a cleaner, healthier River Thames

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Thames Tideway Tunnel

Transport Assessment

Section 27: Minor work sites

List of contents

Page number

List of plates

Page number

List of tables

Page number

27 Minor work sites

27.1 Introduction

27.1.1 This site specific *Transport Assessment* (*TA)* presents the findings of the assessment of the transport issues of the Thames Tideway Tunnel project at the Bekesbourne Street site located within the London Borough (LB) of Tower Hamlets.

27.1.2 The assessment takes into consideration the changes as a result of all other Thames Tideway Tunnel project sites to ensure that results indicate the significance of each individual site in combination with construction works being undertaken at other sites.

27.1.3 The purpose of this *TA* is to identify the site context, development proposals and any transport implications arising from these proposals to ensure that appropriate mitigation measures are identified, where necessary.

27.1.4 The *TA* draws on a number of project-wide or common documents which include the Transport Strategy and the *Code of Construction Practice* (*CoCP*). Further detail on these documents which form the background to the *TA* can be found in Section 1 of the *TA*.

27.1.5 The *TA* structure is as follows:

a. Section 27.2 includes a description of the proposed development, detailing construction phasing, vehicle and person trip generation, construction traffic routing. It also provides details on transport during the operational phase.

b. Section 27.3 outlines the assessment methodology used for the *TA* for the construction and operational phases.

c. Section 27.4 details the baseline conditions on the transport network surrounding the Bekesbourne Street site, including survey data analysis and accident analysis.

d. Section 27.5 provides the assessment of the construction phase of the project, including a comparison between the construction base case and the construction development case.

e. Section 27.6 provides the assessment of the operational phase of the project.

f. Section 27.7 summarises the *TA* findings.

27.2 Proposed development

27.2.1 The proposed site is located on a private residential access and parking area along a stretch of Bekesbourne Street and on a smaller section of Ratcliffe Lane as shown in Figure 27.2.1 in the Bekesbourne Street *Transport Assessment* figures.

27.2.2 It is located approximately 70m south of the junction with Commercial Road (A13). The A13 forms part of the TLRN and connects to the A406 North Circular Road and M25 to the east, and to central London to the west. The Bekesbourne Street site is bordered by John Scurr House to the east and residential properties to the west.

27.2.3 A private road forms the site boundary to the south, and the junction of Bekesbourne Street and Ratcliffe Lane forms the boundary to the north. To the south of the Bekesbourne Street site is a small crossroads and the road splits into three residential parking and access areas.

27.2.4 The development at Bekesbourne Street comprises works to the Holloway Storm Relief sewer which would be undertaken from a site within the carriageway in the southern part of Bekesbourne Street. In addition, a small site on the northern side of Ratcliffe Lane just east of the junction with Bekesbourne Street is required for a short period to construct a ventilation column. This would be linked by a ventilation duct to the Bekesbourne Street site. Figure 27.2.1 indicates the site location. For the purposes of clarity, references to the 'site' relate to the Bekesbourne Street site only unless otherwise stated.

Construction

27.2.5 During construction at the Bekesbourne Street site, all materials would be transported by road.

27.2.6 Throughout the construction period, there would be a gated access to the Bekesbourne Street site with construction vehicles reversing into the site from Bekesbourne Street south of the junction with Ratcliffe Lane under supervision as necessary. Vehicles would exit in forward gear and route westbound along Ratcliffe Lane to Butcher Row (A126).

27.2.7 Construction at the Bekesbourne Street site is anticipated to last approximately eight months. There would be a number of construction phases associated with the works at the Bekesbourne Street site as detailed in paras 27.2.12 to 27.2.21.

27.2.8 The highway layout during construction plans are provided in the Bekesbourne Street *Transport Assessment* figures.

27.2.9 Stage 1 *Road Safety Audits* have been carried out on the illustrative highway layouts proposed for this site. The *Road Safety Audit* reports for this site are contained in Appendix D.

27.2.10 During construction it is anticipated that pedestrian routes, parking and highway layout and operation may be affected as a result of the additional construction traffic associated with the Bekesbourne Street site and other Thames Tideway Tunnel project construction sites; changes to the local pedestrian, cycle and highway environments; and additional public transport patronage from construction workers.

27.2.11 Additionally, to accommodate the construction works at the Bekesbourne Street site, 15 parking spaces (13 private parking spaces and two visitor/authorised contractor spaces) would be temporarily suspended from the southern section of Bekesbourne Street adjacent to John Scurr House.

Two of these spaces would be permanently removed due to the need to accommodate an electrical and control kiosk.

27.2.12 A number of different highway configurations would be implemented during the construction of the site. During phase 1 of the construction works, the existing private parking area off Bekesbourne Street just south of the junction with Ratcliffe Lane would be removed and the carriageway relocated to the eastern edge of the road adjacent to the existing footway. The temporary carriageway would accommodate traffic travelling in one direction at a time. This single lane would be controlled either by temporary traffic lights at the southern and northern ends of the temporary carriageway or by traffic marshals. Due to the removal of the existing parking area, pedestrians currently using this area as a route to residences to the south would be diverted onto the eastern footway between the car park and John Scurr House.

27.2.13 For phase 2 of the construction works, the main site compound would be moved to the east of the street adjacent to the John Scurr House footway. The temporary carriageway would be moved to the west of the construction site and would only accommodate traffic in one direction at a time. Either temporary traffic lights or traffic marshals would be employed to control movements.

27.2.14 During phase 3 of construction the main site compound would return to the west side of the street during the construction of the electrical and control kiosk. During this phase the carriageway would be arranged to accommodate two-way traffic.

27.2.15 The 15 parking spaces located on Bekesbourne Street just south of the junction with Ratcliffe Lane would be temporarily suspended during all three construction phases.

27.2.16 In addition to the three phases of works described above a further four phases of works (phases 2a to 2d) would be required to install the ventilation duct in Ratcliffe Lane, during which the main compound would be set out as per phase 2. A second smaller site compound would be erected on the Ratcliffe Lane footway and part of the carriageway just east of the junction with Bekesbourne Street for the construction of the ventilation column.

27.2.17 In phase 2a the main site compound would be set up as per phase two of the main works and the duct would be laid within the main worksite area with traffic management in Bekesbourne Street as described for phase 2. The northern footway on Ratcliffe Lane at the junction with Bekesbourne Street will be closed to pedestrians and the parking at this location will be suspended to accommodate the site compound for the ventilation column. Pedestrians would be diverted around the compound into the Ratcliffe Lane carriageway along a route protected from vehicular traffic by a barrier. To maintain adequate carriageway width during this phase the kerb buildout on the south side of Ratcliffe Lane (east) at the junction with Bekesbourne Street would need to be removed and replaced with carriageway. The phase 2a works could be undertaken simultaneously with phase 2.

27.2.18 During phases 2b to 2d a third site compound would be required in a different location in each phase as described in the following paras.

27.2.19 In phase 2b the duct would be laid in a narrow worksite compound extending to the north of the main phase 2 worksite area with a 3.0m wide traffic lane maintained to the west of the compound. Traffic operation would be as per phase two with traffic travelling in one direction at a time along the length of the main site compound and the extended duct site compound and movement controlled either by temporary traffic lights at the southern and northern ends of the temporary carriageway or by traffic marshals. Pedestrians would be diverted onto the eastern footway of Bekesbourne Street between the car park and John Scurr House. As with Phase 2a, pedestrians on the northern footway of Ratcliffe Lane at the junction with Bekesbourne Street would be diverted around the compound into the Ratcliffe Lane carriageway along a route protected from vehicular traffic by a barrier. The kerb buildout on the south side of Ratcliffe Lane (east) at the junction with Bekesbourne Street would need to be removed and replaced with carriageway and parking at this location would be suspended.

27.2.20 For phase 2c the duct would be laid in a narrow worksite compound within the Bekesbourne Street junction with Ratcliffe Lane. The kerb buildout on the north side of Ratcliffe Lane (east) at the junction with Bekesbourne Street would need to be removed and replaced with carriageway to give a carriageway width of approximately 4.5m. Parking at this location would be suspended. During this phase the left turn into Bekesbourne Street (south) from Ratcliffe Lane (east) would be prohibited. Pedestrians on the northern footway of Ratcliffe Lane at the junction with Bekesbourne Street would be diverted to the southern footway on Ratcliffe Lane.

27.2.21 In phase 2d the duct would be laid in a narrow worksite area in Ratcliffe Lane (east) at the junction with Bekesbourne Street. The right turn into Bekesbourne Street (north) from Ratcliffe Lane (east) would be prohibited. The kerb buildout on the southern side of Ratcliffe Lane at the junction with Bekesbourne Street would need to be removed and replaced with carriageway to give a carriageway width of 3.1m. Two parking bays on the south side of Ratcliffe Lane and three parking bays on the north side would need to be suspended during this phase of work. Pedestrians on the northern footway of Ratcliffe Lane at the junction with Bekesbourne Street would be diverted to the southern footway on Ratcliffe Lane. Parking on the northern side of Ratcliffe Lane at this location would be again be suspended. The buildout on the southern side of Ratcliffe Lane at the junction with Bekesbourne Street would be removed. A minimum footway width of 2.2m will be maintained.

27.2.22 Parking for five essential maintenance/operational vehicles will be required. No worker parking would be provided.

27.2.23 Construction details for the Bekesbourne Street site relevant to the construction transport assessment are summarised in Table 27.2.1.

Table 27.2.1 Construction traffic details

Description	Assumption
Assumed peak period of construction lorry movements	Site Year 1 of construction
Assumed average peak daily construction lorry vehicle movements and duration	10 movements per day (5 vehicle trips) 1 month
Types of lorry requiring access	Office delivery lorries Pipe/track/oils/grease lorries) Plant and equipment lorries readymix mixer lorries Steel reinforcement lorries Excavation lorries

Note: a movement is a construction vehicle moving either to or from the site. A Site Year is a 12 month period, one in a series of Site Years; Site Year 1 commences at the start of construction.

27.2.24 All construction material at the Bekesbourne Street site would be transported by road.

Construction routes

27.2.25 The highway layout during construction plans are provided in the Bekesbourne Street *Transport Assessment* figures.

27.2.26 Figure 27.2.2 in the Bekesbourne Street *Transport Assessment* figures shows the construction traffic routes for access to/from Bekesbourne Street. Construction routes have been discussed with both Transport for London (TfL) and the Local Highway Authority, the LB of Tower Hamlets.

27.2.27 Vehicle access to and from the Bekesbourne Street site would be on the northern side of the site, close to the junction of Bekesbourne Street and Ratcliffe Lane.

27.2.28 Construction vehicles would route to the site along Commercial Road (A13), Branch Road (A101) and then Ratcliffe Lane. Vehicles would turn north into Bekesbourne Street then reverse back through the junction with Ratcliffe Lane and into the site access. Vehicles would exit the site in forward gear and turn left into Ratcliffe Lane then turn right into Butcher Row (B126) to return to Commercial Road (A13).

27.2.29 Butcher Row (A126) and Commercial Road (A13) are part of the Transport for London Road Network (TLRN).

27.2.30 The main junctions along the construction traffic routes in the vicinity of the site are:

a. Commercial Road (A13) / Butcher Row (A126;
b. Commercial Road (A13) / Branch Road (A101);
c. Branch Road (A101) / Ratcliffe Lane;
d. Ratcliffe Lane / Bekesbourne Street
e. Ratcliffe Lane / Butcher Row (A126)

27.2.31 The exact routing depends on the material origin and destinations which are detailed in the *Project-wide TA (contained in Section 3)*.

Proposed construction flows

Construction vehicles

27.2.32 The proposed working hours are set out in the CoCP and vehicle movements would take place during the standard typical day shift of ten hours on weekdays (08:00 to 18:00) and five hours on Saturdays (08:00 to 13:00) .

27.2.33 Construction activity would occur twenty four hours a day for some periods but during such periods, construction vehicle movements would only occur during the ten and five hour periods stated above.

27.2.34 A limited number of extensions to working hours may be required to cover certain construction activities at Bekesbourne Street. However, construction vehicle movements would be limited to the hours stated in paragraph 27.2.29 other than in exceptional circumstances.

27.2.35 In exceptional circumstances HGV and abnormal load movements could occur up to 22:00 and later at night on agreement with the LB of Tower Hamlets.

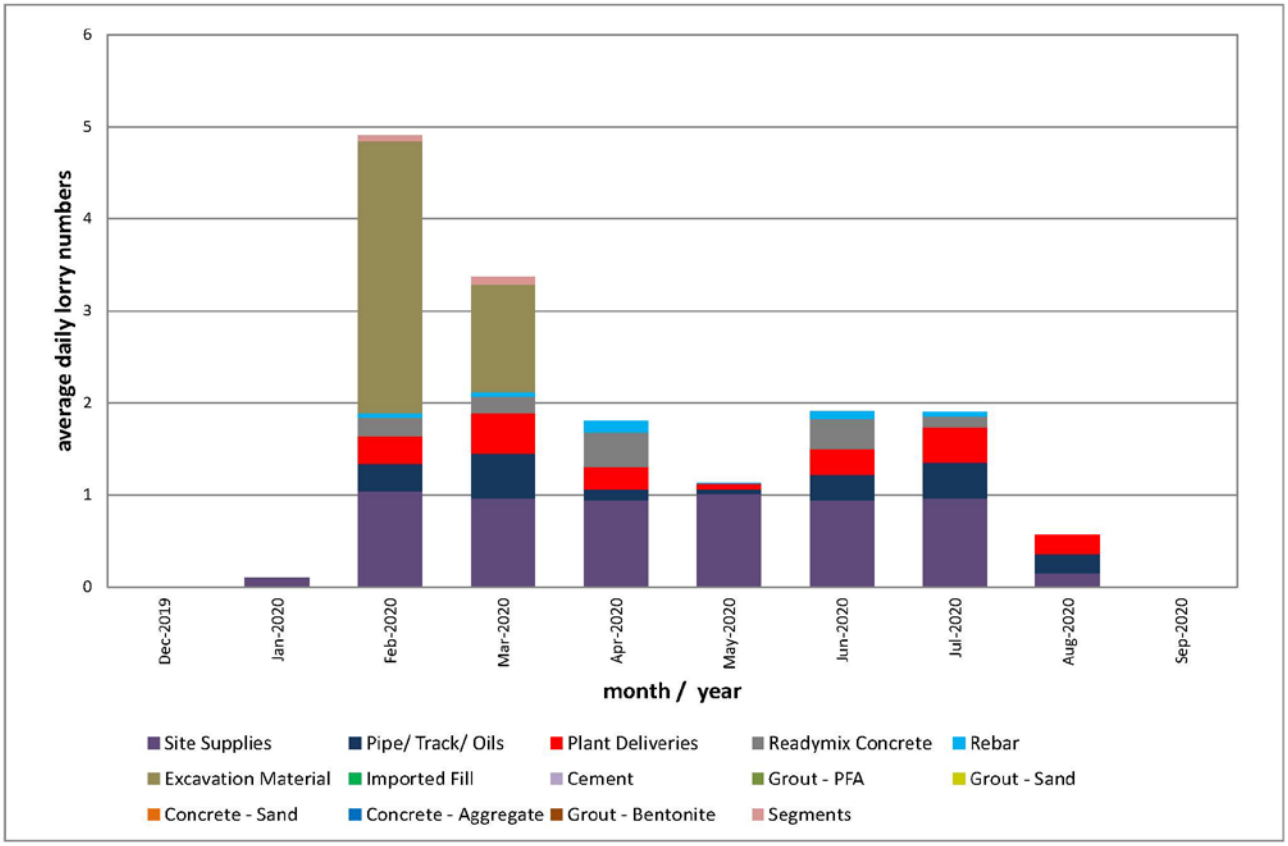
27.2.36 A site-specific peak construction assessment year has been identified. The histogram in Plate 27.2.1 shows that the peak site-specific activity at the Bekesbourne Street site would occur in Site Year 1 of construction. This site-specific peak is a year later than the overall project-wide construction peak activity year of 2019.

27.2.37 The assessment is based on 10% of the daily number of lorry journeys occurring in the peak hours, which has been agreed with TfL as a reasonable approach. It is recognised that it may be desirable to reduce the number of construction lorry movements in peak hours and the mechanisms for addressing this would form part of the *Traffic Management Plans (TMP)* which are required as part of the *CoCP*.

27.2.38 As detailed in Table 27.2.1, there would be ten average peak daily construction lorry vehicle movements. The AM and PM peak hours are assumed to be 08:00 to 09:00 and 17:00 to 18:00 respectively.

27.2.39 Plate 27.2.1 indicates the construction vehicle profile during construction.

Plate 27.2.1 Estimated construction lorry profile



Note: Plate shows approximate volumes and number of vehicle trips based upon assumed timings for the works. It is not a programme and remains subject to change.

27.2.40 The histogram in Plate 27.2.1 shows that, the number of vehicular movements would vary throughout the construction period with only one month containing more than ten HGV movements a day during the eight month construction programme.

27.2.41 The peak month in Site Year 1 of construction has been used for the assessment and 10% of the daily HGV construction movements in the peak month have been assumed to take place during the peak hours to give a busiest case assessment.

27.2.42 As the *Project-wide TA* explains, the TfL Highway Assignment Models (HAMs) used for the strategic highway modelling represent peak hours of 08:00 to 09:00 and 17:00 to 18:00 and these have been taken as being the network-wide AM and PM peak hours in the project-wide and site-specific assessments.

27.2.43 The 07:00 to 09:00 and 17:00 to 19:00 periods identified from the local traffic surveys are busier on the network in the weekday than those encountered at the weekends (this is discussed in Section 27.4). Whilst the AM and PM peak hours differ slightly from these network-wide peak hours, in practice the number of vehicle movements at this site would be low in comparison to base case traffic flows on the adjacent network and is expected to be constant throughout the day.

27.2.44 Hourly construction vehicle trips during the inter-peak period are not expected to exceed the hourly trips assumed for the 08:00 to 09:00 and 17:00 to 18:00 periods used in this assessment. The peak travel periods used for the modelling in this assessment are therefore the weekday periods between 08:00 and 09:00 and 17:00 and 18:00.

27.2.45 Other construction vehicle movements associated with site operation and contractor activities would be cars and light goods vehicles (LGVs). The construction worker vehicle movements expected to be generated by the Bekesbourne Street site are shown in Table 27.2.4.

Construction workers

27.2.46 The construction site is expected to require a maximum workforce of 24 workers on-site at any one time. The number and type of workers is shown in Table 27.2.2.

Table 27.2.2 Maximum estimated construction worker numbers

Contractor		Client
Staff*	**Labour****	**Staff*****
08:00-18:00	**08:00-18:00**	**08:00-18:00**
7	13	4

** Contractor Staff– engineering and support staff to direct and project manage the engineering work and site.*
*** Contractor Labour – those working on site doing engineering, construction and manual work*
**** Client Staff– engineering and support staff managing the project and supervising the Contractor.*

27.2.47 The worker mode split has been derived by taking the number of workers during the peak month and calculating the percentage of trips by mode using the 2001 Census[i] journey to work data for the area in the vicinity of the Bekesbourne Street site. The Census data shows that the predominant mode of travel is by car. However, it is considered unlikely that workers would travel to or from the site by car as there would be no parking provided within the site boundary for workers, parking on surrounding streets is also restricted, and measures to reduce car use would be incorporated into a site-specific *Travel Plan*.

27.2.48 The Census mode shares have therefore been adjusted to reflect increased levels of non-car use by workers at this site. The mode split outlined in Table 27.2.3 and indicates that the predominant mode of travel for journeys to work in this area would be by DLR and National Rail services. The mode split outlined in Table 27.2.3 has been used to assess the changes as a result of worker journeys on the highway and public transport networks.

27.2.49 On this basis, it is anticipated that workers would use the nearest DLR and National Rail station, Limehouse, located on Bekesbourne Street 35m walking distance north of the Bekesbourne Street site, or local bus services.

Table 27.2.3 Mode split

Mode	Percentage of trips to site	Equivalent number of worker trips (based on 24 worker trips)	
		AM peak hour	PM peak hour
Bus	16.2%	4	4
National Rail	17.6%	4	4
Underground / DLR	32.7%	8	8
Car driver	<1*%	0	0
Car passenger	<1*%	0	0
Cycle	4.4%	1	1
Walk	24.0%	6	6
River	1.1%	0	0
Other (taxi/motorcycle)	4.0%	1	1
Total	**100%**	**24**	**24**

Note: numbers have been rounded
** assuming to be zero for the purpose of this assessment*

[i] Based on 2001 Census. *This type of data had not been released from the 2011 Census at the time of the assessment.*

Vehicle movements summary

27.2.50 In addition to construction lorries, other construction vehicle movements associated with site operations and contractor activities would be cars and LGVs. The construction vehicle movements expected to be generated by the Bekesbourne Street site are shown in Table 27.2.4.

Table 27.2.4 Peak construction works vehicle movements

Vehicle type	Vehicle movements per time period				
	Total Daily	**0700 to 0800**	**0800 to 0900**	**1700 to 1800**	**1800 to 1900**
Construction lorry vehicle movements 10%*	10	0	1	1	0
Other construction vehicle movements**	36	4	4	4	4
Worker vehicle movements***	0	0	0	0	0
Total	**46**	**4**	**5**	**5**	**4**

** The assessment has been based on 10% of the daily construction lorry movements associated with materials taking place in each of the peak hours.*
*** Other construction vehicle movements includes cars and light goods vehicles associated with site operations and contractor activity.*
**** Worker vehicle numbers based on less than 1%% of workers driving on the basis that there would be no worker parking on site; on-street parking in the area is restricted; and Travel Plan measures would discourage workers from travelling by car. In practical terms, the would be close to zero.*

27.2.51 To ensure the assessment of the highway network is robust, it has been based on a combination of the peak hour of movements for construction and worker vehicle movements between 07:00–09:00 and 17:00-19:00. These have been applied to the peak hour to take into account the highest number of movements generated by the Bekesbourne Street site.

27.2.52 Based on the above, an average peak flow of 46 vehicle movements a day is expected during the months of greatest activity during Site Year 1 of construction at the Bekesbourne Street site. At other times in the construction period, vehicle flows would be lower than this average peak figure.

27.2.53 Table 27.2.4 shows that in the AM (07:00 – 09:00) and PM (17:00 – 19:00) peak periods, the Bekesbourne Street site would generate approximately nine vehicle movements.

Code of Construction Practice

27.2.54 Measures incorporated into the *Code of Construction Practice (CoCP) Part A* (Section 5) to reduce transport effects include:

a. Site specific *Traffic Management Plans* (TMP): to set out how vehicular access to the site would be managed so as to minimise impact on the local area and communicate this with the local borough and other stakeholders. This includes any works on the highway, diversion or temporary closure of the highway or public right of way

b. HGV management and control: to ensure construction vehicles use appropriate routes to the sites and the vehicle fleet and/or drivers meet current safety and environmental standards.

27.2.55 In addition to the above general transport measures within the *CoCP Part A*, the following transport measures have been incorporated into the *CoCP Part B* relating to the Bekesbourne Street site:

a. the site access would be from Commercial Road (A13) turning into Branch Road (A101) and right into Ratcliffe Lane. Vehicles would reverse into the site along Bekesbourne Street under supervision of a traffic marshal.

b. vehicles would exit the site in forward gear into Bekesbourne Street and left into Ratcliffe Lane and right into Butcher Row (B126).

c. existing parking on Bekesbourne Street is to be suspended during construction

d. parking on the northern side of Ratcliffe Lane and the junction with Bekesbourne Street is to be suspended during construction

e. parking on the southern side of Ratcliffe Lane and the junction with Bekesbourne Street is to be suspended during Phase 7 of construction

f. the access route to the properties on Bekesbourne Street south of the site would be maintained throughout the construction period unless agreed otherwise. The access route would be a single lane, but adequate for its use by residents and light goods vehicles. Appropriate signage would be provided to make road users aware of the width restriction and likely conflict with oncoming vehicles. A traffic light system or traffic marshals would be used to manage traffic flow

g. the realigned residential access route would be controlled either by signalised traffic control or by traffic marshals with ‘Stop, Go’ signs

h. the site is restricted and so the contractor would utilise small vehicles to reduce potential traffic conflicts and impacts

i. the pedestrian route along the eastern boundary adjacent to John Scurr House would be maintained throughout the construction period unless agreed otherwise and would be clearly and adequately signed and lit.

27.2.56 Based on current travel planning guidance including TfL’s ‘Travel Planning for new development in London[1]’, this development lies within the

threshold for producing a Strategic Framework Travel Plan. A *Project Framework Travel Plan* has been prepared based on the TfL ATTrBuTE guidance[2]. The *Project Framework Travel Plan* addresses project-wide travel planning measures including the need for a Travel Plan Manager, initial travel surveys during construction and a monitoring framework. It also contains requirements and guidelines for the development of site-specific *Travel Plans*. The site-specific travel planning measures of relevance to the *Project Framework Travel Plan* are as follows:

a. information on existing transport networks and travel initiatives for the Bekesbourne Street site

b. a mode split established for the Bekesbourne Street site construction workers to establish and monitor travel patterns

c. site-specific targets and interim targets would be established based on the mode share which would link to objectives based on local, regional and national policy

d. a nominated person with responsibility for managing the *Travel Plan* monitoring and action plans specifically for this site.

Other measures during construction

27.2.57 There are no other embedded design measures which are not outlined in the *CoCP* which are of relevance to the *TA* for the Bekesbourne Street site.

Operation

27.2.58 In the operational phase the transport networks around the Bekesbourne Street site would be reinstated to base case conditions, with the exception of the provision of an electrical and control kiosk that would result in the loss of two of the existing car parking spaces. Vehicles would enter the site from Branch Road (A101) and Ratcliffe Lane and exit the site via Ratcliffe Lane and Butcher Row (A126).

27.2.59 During operation it is anticipated that there would be no significant impacts on the transport infrastructure and operation within the local area because maintenance trips to the Bekesbourne Street site would be infrequent and short-term. On this basis, the only elements considered are:

a. effects on pedestrians

b. effects on car parking and servicing

c. effects on highway layout and operation.

27.2.60 There would be potential for some operational issues to arise as a result of the short-term changes to the physical aspects of access to the site for maintenance. These have only been considered qualitatively because the changes required to the highway network during maintenance activity would be minor and temporary, meaning that a quantitative assessment is not required. The scope of this analysis has been discussed with the LB of Tower Hamlets and TfL.

27.2.61 Access would be required for a light commercial vehicle on a three- to six-monthly maintenance schedule.

27.2.62 Additionally there would be more significant maintenance visits approximately every ten years. This would require access to enable a flatbed lorry with a loader crane to be brought to the site.

27.2.63 During operation, maintenance vehicles would enter the site from Branch Road (A101) and Ratcliffe Lane and exit the site via Ratcliffe Lane and Butcher Row (A126).

27.2.64 During maintenance visits it would be necessary to temporarily suspend a number of parking bays and provide other temporary traffic management measures such as diversion around maintenance work areas such as open access covers.

27.2.65 The highway layout during operation plans are provided in the Bekesbourne Street *Transport Assessment* figures and indicate the operational layout at the site.

27.3 Assessment methodology

Scoping and engagement

27.3.1 An extensive scoping and technical engagement process has been undertaken. All consultee comments relevant to this Bekesbourne Street site are presented in Volume 27 of the *Environmental Statement..*

27.3.2 Whilst the effects associated with transport for the operational phase have been scoped out of the *Environmental Statement*, the *TA* examines the operational phase in order to satisfy the relevant stakeholders that technical issues have been addressed (for example, those associated with access for maintenance activities).

Consultees

27.3.3 Throughout the scoping and technical engagement process, the key stakeholders with regards to transport, primarily TfL and the relevant local borough for each site, have been consulted. For Bekesbourne Street, the LB of Tower Hamlets has been consulted and the comments which have arisen relating directly to Bekesbourne Street have been recorded and responded to accordingly.

27.3.4 The LB of Tower Hamlets stated that the Council has no objection in principle to the proposals for this site. The key issue to arise from stakeholder engagement was the need for satisfactory highway management measures to ensure the safety of pedestrians, cyclists and highway users in the vicinity of the Bekesbourne Street site and that the construction impacts are minimised to an acceptable level.

27.3.5 The key technical issues raised have been addressed as far as is practicable at this stage within this *TA*, the *Project-wide TA* and the *Environmental Statement*, in consultation with both TfL and the LB of Tower Hamlets.

Construction

27.3.6 The assessment methodology for the construction phase follows that described in the *Project-wide TA* with the exception that local modelling

has not been undertaken for this site as the change in traffic flows resulting from construction at the Bekesbourne Street site would be very low and for a short period of time. However, survey results have been used to understand the existing capacity and operation of the local highway network in the baseline scenario. This site-specific variation to the methodology has been agreed with TfL.

27.3.7 The assessment undertaken is therefore qualitative based on professional judgement drawing on survey data and the strategic traffic modelling (which includes all Thames Tideway Tunnel project sites) as appropriate. This enables the effect of all other Thames Tideway Tunnel project sites on the area surrounding Bekesbourne Street site to be taken into account within the assessment of the peak year of construction at this site.

Construction Assessment Area

27.3.8 The assessment area for the Bekesbourne Street site includes the site access directly on Bekesbourne Street, the junction of Bekesbourne Street and Ratcliffe Lane and Ratcliffe Lane east of this junction.

27.3.9 These roads and junctions have been assessed for highway, cycle and pedestrian impacts. Effects on local bus services within 640m of the site and rail services within 960m of the site have also been assessed.

27.3.10 The assessment area also extends to the wider highway network, including Commercial Road (A13), Branch Road (A101) and Butcher Row (A126). The junctions of Commercial Road (A13) / Belgrave Street, Commercial Road (A13) / Branch Road (A101) and The Highway (A1203) / Butcher Row (A126) have also been assessed for safety in relation to construction vehicle movements and the current accident history at these locations.

27.3.11 The assessment for this site takes account of construction vehicle movements associated with Bekesbourne Street, together with construction traffic from other Thames Tideway Tunnel project sites that would use the highway network in the vicinity of this site being assessed in Year 1 of construction.

27.3.12 The extent of the assessment area for the local highway network modelling has been informed by considering the volume of construction traffic at this site and the degree of impact that would be experienced at the nearest junction of the construction vehicle route with the SRN or TLRN. Where the assessment shows that the forecast impacts at this junction would not be significant, junctions further afield on the strategic network have not been assessed. Where impacts are forecast to be significant, a wider area of the local network has been considered in the assessment.

Construction assessment year

27.3.13 To assess the busiest case scenario for the Bekesbourne Street locality, the peak construction traffic year has been identified. This ensures that the assessment for Bekesbourne Street takes into consideration the heaviest flow of construction vehicles at this site on local roads.

27.3.14 The site-specific peak construction traffic year at Bekesbourne Street is Site Year 1 of construction.

27.3.15 The assessment of the aggregated Thames Tideway Tunnel project construction traffic flows on the wider highway network is included within the *Project-wide TA*.

Highway network modelling

27.3.16 As indicated in paras. 27.3.6, 27.4.88 and 27.5.14 no local highway network modelling has been undertaken for the Bekesbourne Street site.

Operation

27.3.17 The assessment methodology for the operational phase follows that described in the *Project-wide TA*. There are no site specific variations for undertaking the operational assessment of the Bekesbourne Street site.

27.3.18 Given the level of transport activity associated with the Thames Tideway Tunnel during the operational phase, only the localised transport issues around the Bekesbourne Street site have been assessed. Other Thames Tideway Tunnel project sites would not affect the area around the Bekesbourne Street site in the operational phase and therefore they have not been considered in the assessment.

27.3.19 All committed developments identified within 1km of the site would be complete and operational by Year 1 of operation. As a result these developments have been included within the operational base case assessment.

Operational assessment area

27.3.20 The assessment area for the operational assessment remains the same as for the construction assessment, as set out in paras 27.3.8 to 27.3.12.

Operational assessment year

27.3.21 The operational assessment year has been taken as Year 1 of operation. As transport activity associated with the operational phase would be very low, there is no requirement to assess any other year beyond that date.

27.4 Baseline

27.4.1 This section sets out the baseline conditions on the local transport network in the vicinity of the Bekesbourne Street site in 2012, with the exception of the traffic survey data which was collected in 2011.

Policy review

27.4.2 The site is located within the LB of Tower Hamlets; the relevant national, regional and local policy documents have been reviewed and included within the *Project-wide TA*.

Existing land use

27.4.3 The Bekesbourne Street site is currently occupied by a shared surface access road, which includes 13 private parking spaces and two visitor / authorised contractor spaces. The surrounding area is predominantly residential in nature and the nearest residential buildings are immediately adjacent to the site boundary.

Existing access

27.4.4 The Bekesbourne Street site is accessed by vehicles via the Ratcliffe Lane / Bekesbourne Street junction. Pedestrian access is along Bekesbourne street using either the eastern footway of Bekesbourne Street or the carriageway, which has a 'shared surface' treatment.

Pedestrian network and facilities

27.4.5 The key pedestrian network to and from the site is directly related to local public transport services, primarily Limehouse DLR and National Rail station and local bus stops. The key pedestrian network and facilities in the vicinity of the site are shown in Figure 27.4.1 in the Bekesbourne Street *Transport Assessment* figures and comprise:

a. Bekesbourne Street – towards Limehouse DLR and National Rail station

b. Bekesbourne Street and Commercial Road (A13) – towards bus stops on Commercial Road

c. Ratcliffe Lane west and Butcher Row (A126) – towards the bus stops on Butcher Row (A126).

27.4.6 The existing pedestrian network and facilities in the vicinity of the Bekesbourne Street site are described below.

Thames Path

27.4.7 The Thames Path routes along the riverside approximately 200m to the south of the Bekesbourne Street site. It can be accessed via Narrow Street and Spert Street to the south of the Limehouse Link (A1203).

Bekesbourne Street

27.4.8 Bekesbourne Street provides an access route to Limehouse station, John Scurr House, John Scurr Community Centre and other residential properties. It routes north-south and is intersected by Ratcliffe Lane, an east-west link between Butcher Row (A126) and Branch Road (A101).

27.4.9 North of Ratcliffe Lane, the footways on either side of Bekesbourne Street vary in width between 1.5m and 3.5m. This variation in footway width is due to parking and loading bays inset into the footways.

27.4.10 South of the junction with Ratcliffe Lane, a pedestrian footway just less than 2m wide, and segregated from the carriageway by a line of bollards and trees, routes on the eastern side of Bekesbourne Street adjacent to John Scurr House to another crossroads providing pedestrian access to residential properties and parking, the John Scurr Community Centre and St James Gardens. The surface material of the carriageway on this

section of Bekesbourne Street suggests shared operation between vehicles and pedestrians. South of this crossroads the definition between the footway and carriageway reduces further and there is a shared area for all users.

Plate 27.4.1 Bekesbourne Street footway looking south from the junction with Ratcliffe Lane

Ratcliffe Lane

27.4.11 The footways on Ratcliffe Lane are between 1.5m and 5m wide with a short section of the footway to the west of Bekesbourne Street underneath a railway bridge, segregated from the road on both sides.

27.4.12 The Bekesbourne Street / Ratcliffe Lane junction has a raised junction table treatment, providing a level surface to enable pedestrians to cross each arm of the junction. Additionally, dropped kerbs are provided at the junction of Bekesbourne Street / Commercial Road (A13), Ratcliffe Lane / Butcher Row (A126) and Ratcliffe Lane / Branch Road (A101).

27.4.13 A pedestrian crossing facility is located on Commercial Road (A13) at the junction with Butcher Row (A126) to aid north-south and east-west pedestrian movements.

Plate 27.4.2 Ratcliffe Lane looking east toward the junction with Branch Road

Cycle facilities and routes

27.4.14 The existing cycle network and facilities in the vicinity of the Bekesbourne Street site are described below and shown in Figure 27.4.1 in the Bekesbourne Street *Transport Assessment* figures.

27.4.15 The Bekesbourne Street site is also located close to National Cycle Network (NCN) Route 1 (on road). NCN Route 1 routes through east London, crossing the river at the Greenwich Foot Tunnel, continuing east along the southern bank of the River Thames. The closest approach of NCN Route 1 to the site is on Horseferry Road approximately 180m to the south.

27.4.16 An off-road cycle path is provided around Limehouse Basin and along the canal to the east and there are a number of quieter roads near to the Bekesbourne Street site recommended for use by cyclists. These are Caroline Street, Westport Street, Bromley Street, Belgrave Lane and Salmon Lane.

27.4.17 No advanced cycle stop lines are provided for cyclists in the immediate vicinity of the site. There are also no public cycle stands in the area immediately around the site.

Barclays Cycle Superhighways

27.4.18 The main cycle route within the area is Cycle Superhighway 3 (CS3) which routes between Barking and Tower Hamlets. The closest approach of CS3 to the site is along Cable Street, Narrow Road and Limehouse Causeway.

Barclays Cycle Hire scheme

27.4.19 The closest Cycle Hire docking stations are located approximately 300m to the west of the Bekesbourne Street site on Flamborough Street under the railway bridge.

Plate 27.4.3 Cycle Superhighway along Cable Street

Public transport

Public Transport Accessibility Level

27.4.20 The Public Transport Accessibility Level (PTAL) of the Bekesbourne Street site has been calculated using TfL's approved PTAL methodology[3] (analysis is included in Appendix B). The PTAL methodology assumes a walking speed of 4.8km/h and considers rail stations within a 12 minute walk (960m) of the site and bus stops within an eight minute walk (640m).

27.4.21 The site has a PTAL rating of 6b, rated as 'excellent' (with 1a being the lowest accessibility and 6b being the highest accessibility). The following sections detail the public transport services in the vicinity of the site. Figure 27.4.2 in the Bekesbourne Street *Transport Assessment* figures indicates the public transport services in the vicinity of the site.

Bus services

27.4.22 A total of four daytime bus routes operate within a 640m walking distance of the Bekesbourne Street site serving local destinations. There are also a total of three night bus routes which operate within a 640m walking distance of the site.

27.4.23 These bus routes operate from the following stops:

a. Limehouse Station bus stop, 110m north on Commercial Road (A13) - eastbound and westbound

b. Cable Street bus stop, 245m west on Butcher Row (A126) – eastbound and westbound

c. Lowell Street bus stop, 420m northeast on Commercial Road (A13) – eastbound and westbound

d. Stepney Methodist Church bus stop, 300m northwest on Commercial Road (A13) – eastbound and westbound

e. Marion Richardson School bus stop, 480m northwest on Commercial Road (A13) – eastbound only

f. Free Trade Wharf bus stop, 610m southwest on The Highway (A1203) – eastbound and westbound

27.4.24 These routes also serve other stops further from the site.

27.4.25 Table 27.4.1 provides a summary of the bus services and their frequencies during the weekday peaks.

Table 27.4.1 Existing daytime local bus services and frequency (number of buses per hour)*

Bus number	Weekday two-way frequency		Nearest bus stop to the site	Approximate distance from the site (m)	Origin - destination
	AM peak (08:00-09:00)	PM peak (17:00-18:00)			
15	15	14	Limehouse Station	110	Regent Street – Blackwall Station
115	14	12	Limehouse Station	110	Aldgate Bus Station – East Ham
135	12	12	Limehouse Station	110	Old Street – Crossharbour
D3	13	13	Limehouse Station	110	Crossharbour – Bethnal Green

**Transport for London (TfL) (2012) Timetables. Available at: www.tfl.gov.uk (last accessed December 2012)*

27.4.26 On average there are 59 bus services in total per hour in the AM peak and 59 bus services in total per hour in the PM peak within a 640m walking distance of the site.

27.4.27 There are approximately 16 night bus services per hour Monday to Friday between 00:00 – 06:00 and a total of 18 bus services per hour on Saturdays between 00:00 – 06:00 within a 640m walking distance of the Bekesbourne Street site.

London Underground and Docklands Light Railway

27.4.28 There are no London Underground stations located within a 960m walking distance of the Bekesbourne Street site. The nearest Underground station is Stepney Green on the District and Hammersmith and City lines, which is approximately 1.4km (18 minute walk) to the north of the site.

27.4.29 Limehouse Docklands Light Railway (DLR) station is located approximately 35m walking distance to the north of the Bekesbourne Street site. The location of this station is shown in Figure 27.4.2 in the Bekesbourne Street *Transport Assessment* figures.

27.4.30 The DLR services at Limehouse provide connections to Beckton, Lewisham and Woolwich Arsenal in the east and Bank and Tower Gateway in the west. Table 27.4.2 provides a summary of the DLR services and their frequencies during the weekday and weekend peaks.

27.4.31 In the AM peak and PM peak hours the frequency of services is approximately 24 and 27 trains per hour in the eastbound and westbound direction respectively (51 in total).

Table 27.4.2 Existing DLR services and frequency (number of services per hour)*

Line	AM peak (08:00-09:00)	PM peak (17:00-18:00)	Nearest London Underground station to the site	Approximate distance from the site (m)	Origin - destination
DLR	7	7	Limehouse	35	EB Tower Gateway – Beckton
DLR	7	7	Limehouse	35	WB Tower Gateway – Beckton
DLR	9	9	Limehouse	35	EB Bank – Lewisham
DLR	9	9	Limehouse	35	WB Bank – Lewisham
DLR	7	7	Limehouse	35	EB Bank – Woolwich Arsenal
DLR	7	7	Limehouse	35	WB Bank – Woolwich Arsenal

**Transport for London (TfL) (2013) Timetables. Available at: www.tfl.gov.uk (last accessed January 2013)*

London Overground

27.4.32 There are no London Overground stations located within a 960m walking distance of the Bekesbourne Street site. The nearest station is at Shadwell, approximately 1.4km (18 minute walk) to the west of the site. This provides London Overground services to New Cross, Crystal Palace and West Croydon to the south and to Dalston Junction and Highbury and Islington to the northwest.

National Rail

27.4.33 The closest National Rail station to the Bekesbourne Street site is Limehouse, located approximately 35m walking distance to the north, as shown in Figure 27.4.2 in the Bekesbourne Street *Transport Assessment* figures.

27.4.34 Limehouse station provides c2c services between London Fenchurch Street and Shoeburyness, via Grays and Southend Central. There are approximately five eastbound and 14 westbound services in the AM peak hour and 13 eastbound and five westbound services in the PM peak hour.

27.4.35 Table 27.4.3 provides a summary of the National Rail services and their frequencies during the weekday and weekend peaks.

Table 27.4.3 Existing National Rail services and frequency (number of services per hour)

National Rail station	Weekday two-way frequency		Approximate distance from the site (m)	Origin - destination
	AM peak (08:00-09:00)	PM peak (17:00-18:00)		
Limehouse	20	19	35	London Fenchurch Street - West Ham, Barking, Upminster, West Horndon, Laindon, Basildon, Pitsea, Benfleet, Leigh-on-Sea, Chalkwell, Westcliff, Southend Central, Southend East, Thorpe Bay, Shoeburyness

Source: c2c (2013) Timetables. Available at: www.c2c-online.co.uk (Accessed: January 2013)

Taxis

27.4.36 Taxis (black cabs) can either be booked in advance, hailed on the street or located at designated taxi ranks. There are no taxi ranks within a 640m walking distance of the site.

27.4.37 Outside Limehouse Station, towards the northern end of Bekesbourne Street, there are two drop-off bays for the general public. 'No waiting' is permitted in these bays between Monday and Friday 08:30 to 17:30.

River passenger services

27.4.38 There are no river passenger services within a 960m walk of the Bekesbourne site. The nearest pier is Canary Wharf, approximately 1.3km or a 16 minute walk to the southeast of the site. This provides river services between London Eye Millennium Pier in the west and Woolwich Arsenal Pier in the east.

Highway network and operation

27.4.39 Bekesbourne Street is a north-south road, intersected by Ratcliffe Lane. It is approximately 150m in length and has a 30mph speed limit. At the intersection with Ratcliffe Lane there is a priority junction, with priority given to the east to north movement. North of Ratcliffe Lane, Bekesbourne Street is a one-way northbound only link and south of Ratcliffe Lane it is a two-way residential private access.

27.4.40 Bekesbourne Street provides an access route to Limehouse station, John Scurr House, John Scurr Community Centre and other residential properties. It routes north-south and is intersected by Ratcliffe Lane, an east-west link between Butcher Row (A126) and Branch Road (A101).

27.4.41 Ratcliffe Lane is a 30mph road approximately 150m in length linking Branch Road (A101) and Butcher Row (A126). It is a one-way westbound only street between Branch Road (A101) and Bekesbourne Street, and two-way between Bekesbourne Street and Butcher Row (A126).

27.4.42 Butcher Row (A126) is a four lane carriageway with two lanes in each direction and a hatched central median which provides a link between Commercial Road (A13) and The Highway / Limehouse Link (A1203). The Limehouse Link is a tunnel which provides an underground connection to West India Quays and is subject to a 30mph speed limit.

27.4.43 Branch Road (A101) is a five lane carriageway with two lanes in the northbound direction and three lanes in the southbound direction. The road splits into two near to the Bekesbourne Street site and connects Commercial Road (A13) with the Rotherhithe Tunnel along one branch, and Horseferry Road along the other branch. Where the road splits, there is one lane in each direction for the Horseferry Road branch and two northbound and one southbound lane for the Rotherhithe Tunnel branch, both of which are subject to a 30mph speed limit.

27.4.44 There are signalised junctions between Butcher Row (A126) / Commercial Road (A13) and Branch Road (A101) / Commercial Road (A13) to the northwest and northeast of the site respectively.

27.4.45 Vehicular traffic on Bekesbourne Street and Ratcliffe Lane consists mainly of vehicles destined for or exiting from the residences on Bekesbourne Street. As a result Bekesbourne Street and Ratcliffe Lane are lightly trafficked and, although there is some queuing on Ratcliffe Lane at the junction with Butcher Row (A126) in the AM peak, the junctions all operate within capacity.

Parking

27.4.46 Figure 27.4.3 in the Bekesbourne Street *Transport Assessment* figures shows the locations of the existing car parking within the vicinity of the Bekesbourne Street site.

Existing on-street car parking

27.4.47 There are five parking bays for business and permit holders along the northern section of Bekesbourne Street along with two drop-off bays outside Limehouse station. Parking restrictions operate between Monday and Friday 08:30 to 17:30.

27.4.48 Ten residential permit holder on-street parking bays are located on Ratcliffe Lane. Restrictions which allow only permit holders to park operate between Monday and Friday 08:30 to 17:30.

27.4.49 No stopping is permitted at any time along the length of Branch Road (A101). Butcher Row (A126) has a combination of no stopping at any time at the northern and southern end of the road and no stopping between 07:00 and 19:00 in the middle section of the road.

27.4.50 Table 27.4.4 summarises the restrictions and number of parking spaces on the roads in the vicinity of the Bekesbourne Street site.

Table 27.4.4 Existing on-street car parking - capacity

Road name	Type of parking restrictions and number of bays			
	Double Red Bay	Double Yellow Bay	Single Yellow Bay	Resident Bays
Bekesbourne Street – north of Ratcliffe Lane	3	2	10	4
Ratcliffe Lane	7	8	32	8

Existing off-street/private car parking

27.4.51 The southern section of Bekesbourne Street has a total of 46 parking spaces. These are a mixture of spaces outside residential properties and numbered spaces for the residential flats. All these spaces are private spaces. There are a further four visitor / authorised contractor spaces and two spaces for use by the John Scurr Community Centre.

27.4.52 There are currently no public car parks within a 640m walking distance of the site.

Coach parking

27.4.53 There are currently no coach parking spaces within a 640m walking distance of the site.

Car clubs

27.4.54 Car clubs provide members with easy access to cars for short-term use. Cars are available as and when needed and allow members to access a car without the purchase, storage and operational costs associated with owning a private car.

27.4.55 There are a number of car club spaces located near to the Bekesbourne Street site. The closest space is provided by Zipcar and is located along Barnes Road approximately 80m walking distance to the north of the site.

27.4.56 Other spaces are located just off The Highway / Limehouse Link (A1203) on Heckford Street (one space), approximately 550m walking distance west of the site and Narrow Street (two spaces), approximately 600m walking distance southeast of the site.

Servicing and deliveries

27.4.57 Four 'authorised contractor' bays are located adjacent to John Scurr House. These are restricted to contractors for John Scurr House and the Bekesbourne Street residential dwellings. These spaces can also be used as visitor parking bays.

Baseline survey data

Description of Data

27.4.58 Five year accident data on the roads in the vicinity of the Bekesbourne Street site were obtained from TfL. This information is discussed in paras. 27.4.89 to 27.4.91.

27.4.59 Automatic Traffic Count (ATC) data for Commercial Road (A13, west of Lowell Street) was collected from TfL and was analysed to identify the traffic flows along this road in September 2011.

27.4.60 Baseline survey data were collected in May, July, and December 2011 to establish the existing transport movements in the area. Figure 27.4.4 in the Bekesbourne Street *Transport Assessment* figures shows the survey locations in the vicinity of the site. Appendix A of Section 3 of the *Transport Assessment* includes a *Baseline Data Report* which provides full detail of the surveys undertaken and the data collected.

27.4.61 The scope of the surveys in terms of location and time periods was considered to ensure that the data required for assessment was collected. In some cases ATC data was collected on links to validate the junction count data and provide information for noise and air quality assessments. Pedestrian and cycle count data was collected at locations where flows could be affected either through diversions or the generation of additional trips or where conflicts could occur with construction vehicles. Parking survey data was collected where parking suspensions would be necessary or where additional parking demand could be generated.

27.4.62 Pedestrian, cycle and vehicle movement surveys along Bekesbourne Street were undertaken in December 2011.

27.4.63 Traffic surveys were carried out on a weekday and a weekend to represent a weekly profile of traffic at particular locations. Where two weekly profiles are surveyed, the busiest survey was used.

27.4.64 The surveys undertaken and their locations are summarised in Table 27.4.5.

Table 27.4.5 Survey locations

Survey type and location	Dates
Junction survey (including pedestrian and cycle movements)	
Commercial Road (A13) / Branch Road (A101)	19th and 21st May 2011
Commercial Road (A13) / Butcher Row (A126)	19th and 21st May 2011
Butcher Row (A126) / Ratcliffe Lane	19th and 21st May 2011
Butcher Row (A126) / Cable Street (B126)	9th and 12th July 2011
Automatic Traffic Count (ATC)	
Commercial Road (A13) to the west of Lowell Street	21st May to 10th June 2011
Pedestrian and cycle surveys	
Pedestrian and cycle movements turning into Bekesbourne Street and trips to parking area.	26th November and 1st December 2011
Parking surveys	
Between Stepney Causeway to the west, Cranford Street to the south, Commercial Road to the north, and Butcher Row to the east	19th and 21st May 2011
Between Branch Road to the east, Bekesbourne Street to the south, Commercial Road to the north, and Butcher Row to the west	19th and 21st May 2011
Between Belgrave Street to the west, Salmon Lane to the north, Yorkshire Road to the east, and Commercial Road to the south	19th and 21st May 2011
Includes Narrow Street to river to the east , Horseferry Road	19th and 21st May 2011

27.4.65 Pedestrian and cyclist flow data from the surveys provided the baseline pedestrian and cycle traffic data sets which are set out in Table 27.4.6 and Table 27.4.7.

27.4.66 The following ATC and junction surveys are on construction traffic routes to and from the Bekesbourne Street site:

a. ATC on Commercial Road (A13) west of Lowell Street;

b. Junction survey - Commercial Road (A13) / Branch Road (A101)

c. Junction survey - Commercial Road (A13) / Butcher Row (A126)

d. Junction survey - Butcher Row (A126) / Ratcliffe Lane.

27.4.67 The *Baseline Data Report* presents the method for field survey data collection and data collected through other sources. Base case traffic flows for local junction models have been derived from the baseline data. These baseline flows have then been factored to reflect traffic growth between the baseline and base case periods.

Results of the surveys

27.4.68 The surveys inform the analysis of the baseline situation in the area surrounding the Bekesbourne Street site and are summarised in the following paras.

Pedestrians

27.4.69 Pedestrian surveys were undertaken close to the Bekesbourne Street site as indicated in Figure 27.4.4 in the Bekesbourne Street *Transport Assessment* figures during the AM and PM peak hours and on a Saturday.

27.4.70 The pedestrian count on Bekesbourne Street was undertaken south of the junction with Ratcliffe Lane in order to determine the existing movements that occur immediately around the project site.

27.4.71 Table 27.4.6 indicates the pedestrian flows surrounding the Bekesbourne Street site during the AM and PM peak hours.

Table 27.4.6 Existing pedestrian flows

Road/route	Direction	**Weekday**			**Weekend**
		AM peak hour (08:00-09:00)	**Inter-peak hour (12:00-13:00)**	**PM peak hour (17:00-18:00)**	**Saturday peak hour (13:00-14:00)**
Footpath east of Butcher Row (A126) - through green space	Eastbound	52	10	16	18
	Westbound	23	7	21	17
Bekesbourne Street – South of Ratcliffe Lane	Northbound	22	36	33	50
	Southbound	24	26	44	48
The Highway (A1203) / Butcher Row (A126) Junction Pedestrian crossing:					
The Highway (west arm)	Northbound	46	8	13	20
	Southbound	13	11	17	16
Butcher Row (A126) / Cable Street Junction Pedestrian crossings:					
Butcher Row (A126) - North arm	Eastbound	2	n/a	0	1
	Westbound	10	n/a	5	5
Cable Street – West arm	Northbound	11	n/a	21	16
	Southbound	16	n/a	25	5
Butcher Row (A126) / Ratcliffe Lane Junction Pedestrian crossing:					
Ratcliffe Lane – East arm	Northbound	9	16	15	22
	Southbound	16	21	19	15
Commercial Road (A13) / Butcher Row (A126) Junction Pedestrian Crossings:					
Commercial Road (A13) – East arm	Northbound	153	46	95	122

Road/route	Direction	**Weekday**			**Weekend**
		AM peak hour (08:00-09:00)	**Inter-peak hour (12:00-13:00)**	**PM peak hour (17:00-18:00)**	**Saturday peak hour (13:00-14:00)**
	Southbound	167	61	97	59
Commercial Road (A13) – West arm	Northbound	29	20	48	24
	Southbound	17	37	56	33
Butcher Row (A126) – South arm	Eastbound	77	63	88	80
	Westbound	105	76	89	58
Commercial Road (A13) / Branch Road (A101) Junction Pedestrian crossings:					
Branch Road (A101) – South arm	Eastbound	44	33	44	40
	Westbound	71	61	82	56
Commercial Road (A13) – East arm	Northbound	75	78	152	91
	Southbound	232	78	101	107
Yorkshire Road – North arm	Eastbound	50	59	73	83
	Westbound	82	91	67	72

27.4.72 The results for Bekesbourne Street surveys show that the north-south flow of pedestrians is low in the AM peak hour (46 pedestrians per hour). Pedestrian flow increases during the afternoon to a peak of around 100 per hour at around 15:00. The flow is approximately equal in each direction throughout the day. Between 5% and 10% of these pedestrians were identified as having walked to or from cars parked in the section of parking on Bekesbourne Street adjacent to the west of John Scurr House. Between half and two thirds of pedestrians use the dedicated pedestrian footpath adjacent to John Scurr House while the remainder route along the Bekesbourne Street carriageway/shared surface.

27.4.73 The pedestrian counts at junctions show high pedestrian usage on nearly all Commercial Road (A13) arms, the exception being the west arm of the Commercial Road (A13) / Butcher Row (A126) Junction. The heaviest recorded flows were on the Commercial Road (A13) / Branch Road (A101) junction, east arm south bound with 232 pedestrians routing through in the AM peak hour and 107 in the PM peak hour.

Cyclists

27.4.74 Table 27.4.7 indicates the flows of bicycles along the main routes surrounding the Bekesbourne Street site.

Table 27.4.7 Existing cycle flows

Road/route	Direction	Weekday			Weekend
		AM peak hour (08:00-09:00)	Inter-peak hour (12:00-13:00)	PM peak Hour (17:00-18:00)	Saturday peak hour (13:00-14:00)
Footpath east of Butcher Row (A126) - through green space part of CS 3	Eastbound	330	15	145	52
	Westbound	239	19	206	30
Bekesbourne Street – South of Ratcliffe Lane	Northbound	0	0	3	0
	Southbound	3	0	0	0
The Highway (A1203) / Butcher Row (A126) Junction (on carriageway):					
Butcher Row (A126) – North arm	Northbound	22	0	5	3
	Southbound	1	2	4	6
The Highway - West arm	Eastbound	29	0	2	5
	Westbound	1	2	8	6
Limehouse Link - East arm	Eastbound	7	0	1	3
	Westbound	0	0	8	1
Butcher Row (A126) / Cable Street Junction (on carriageway):					
Butcher Row (A126) - North arm	Northbound	13	n/a	42	4

Road/route	Direction	Weekday			Weekend
		AM peak hour (08:00-09:00)	Inter-peak hour (12:00-13:00)	PM peak Hour (17:00-18:00)	Saturday peak hour (13:00-14:00)
	Southbound	36	n/a	20	2
Cable Street – West arm	Eastbound	52	n/a	45	4
	Westbound	34	n/a	13	1
Butcher Row (A126) - South arm	Northbound	6	n/a	6	2
	Southbound	47	n/a	16	3
Butcher Row (A126) / Ratcliffe Lane Junction (on carriageway):					
Butcher Row (A126) - North arm	Northbound	10	9	42	11
	Southbound	31	7	16	7
Butcher Row (A126) - South arm	Northbound	12	10	53	12
	Southbound	42	7	22	9
Ratcliffe Lane – East arm	Eastbound	2	2	12	1
	Westbound	11	1	7	2
Commercial Road (A13) / Butcher Row (A126) Junction (on carriageway):					
White Horse Road (one way) – North arm	Northbound	4	1	9	4
Commercial Road (A13) – West arm					

Road/route	Direction	Weekday			Weekend
		AM peak hour (08:00-09:00)	Inter-peak hour (12:00-13:00)	PM peak Hour (17:00-18:00)	Saturday peak hour (13:00-14:00)
Butcher Row (A126) – South arm	Eastbound	56	14	73	23
	Westbound	77	21	63	17
Commercial Road (A13) – East arm	Northbound	8	7	37	12
	Southbound	19	6	18	8
	Eastbound	55	17	92	30
	Westbound	91	24	72	24
Commercial Road (A13) / Branch Road (A101) Junction (on carriageway):					
Yorkshire Road (one-way) – North arm	Northbound	6	0	12	3
Commercial Road (A13) – West arm	Eastbound	57	18	83	29
	Westbound	77	20	55	22
Branch Road (A101) – South arm	Northbound	11	1	8	4
	Southbound	13	3	15	6
Commercial Road (A13) – East arm	Eastbound	52	16	69	26
	Westbound	80	20	60	24

27.4.75 Table 27.4.7 shows that on Bekesbourne Street, six cycle movements were recorded routing along Bekesbourne Street during the survey period; three routing southbound in the AM peak and three routing northbound in the PM peak. All cyclists used the carriageway/shared surface.

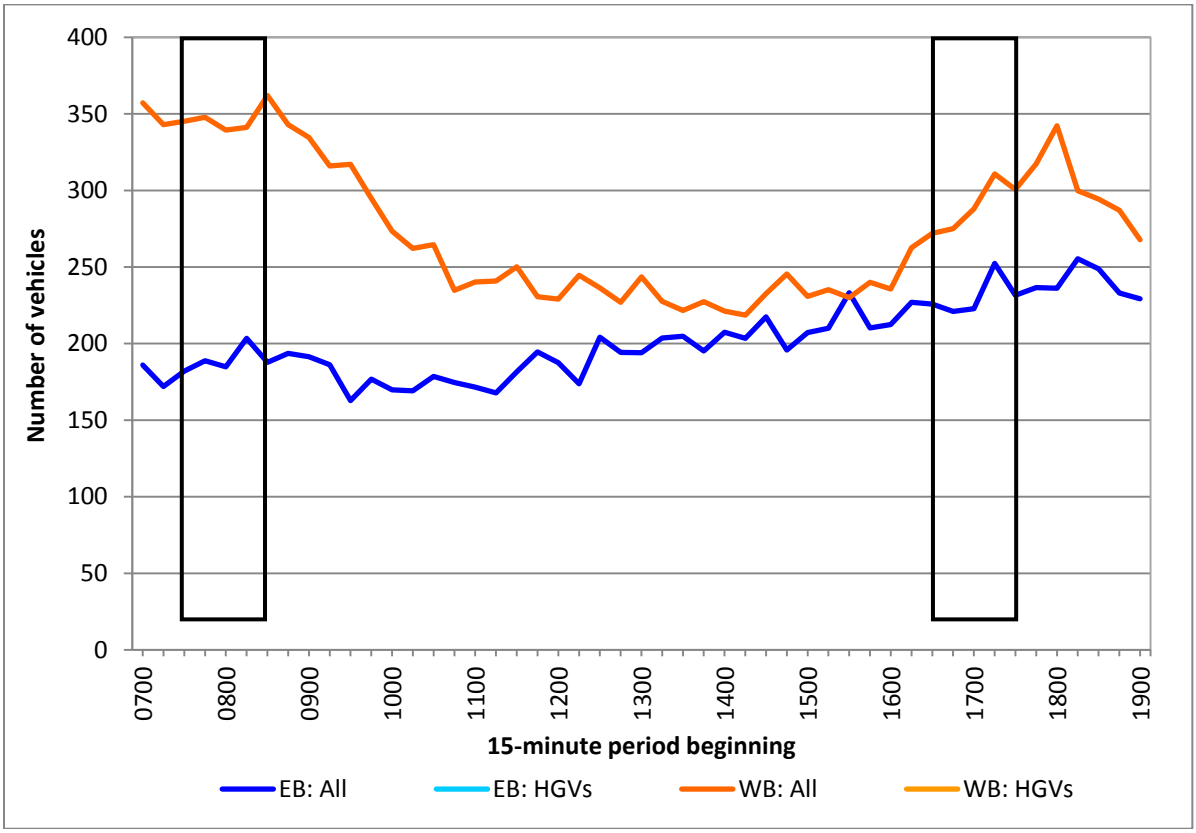
27.4.76 CS3 shows high usage with 330 cyclists routing eastbound and 239 westbound in the AM peak hour and 145 eastbound and 206 westbound in the PM peak hour. Bekesbourne Street provides a link to this from Limehouse station and Commercial Road (A13).

27.4.77 The next heaviest flow is the Commercial Road (A13) / Butcher Row (A126) Junction, Commercial Road (A13) east arm with 55 and 91 cyclists routing eastbound and westbound respectively in the AM peak hour and 92 and 72 in the PM peak hour.

Traffic flow data analysis

27.4.78 The ATC data has been analysed to identify the existing traffic flows along Commercial Road (A13). The weekday vehicle and HGV flows for a 12-hour period (0700-1900) are shown in Plate 27.4.4. Weekday flows are presented as this is when the greatest impacts from the project are likely to be experienced.

Plate 27.4.4 Existing traffic flow along Commercial Road (weekday ATC survey)



EB – East Bound, WB – West Bound. The black box represents the peak hour traffic flows used for the traffic assessment.

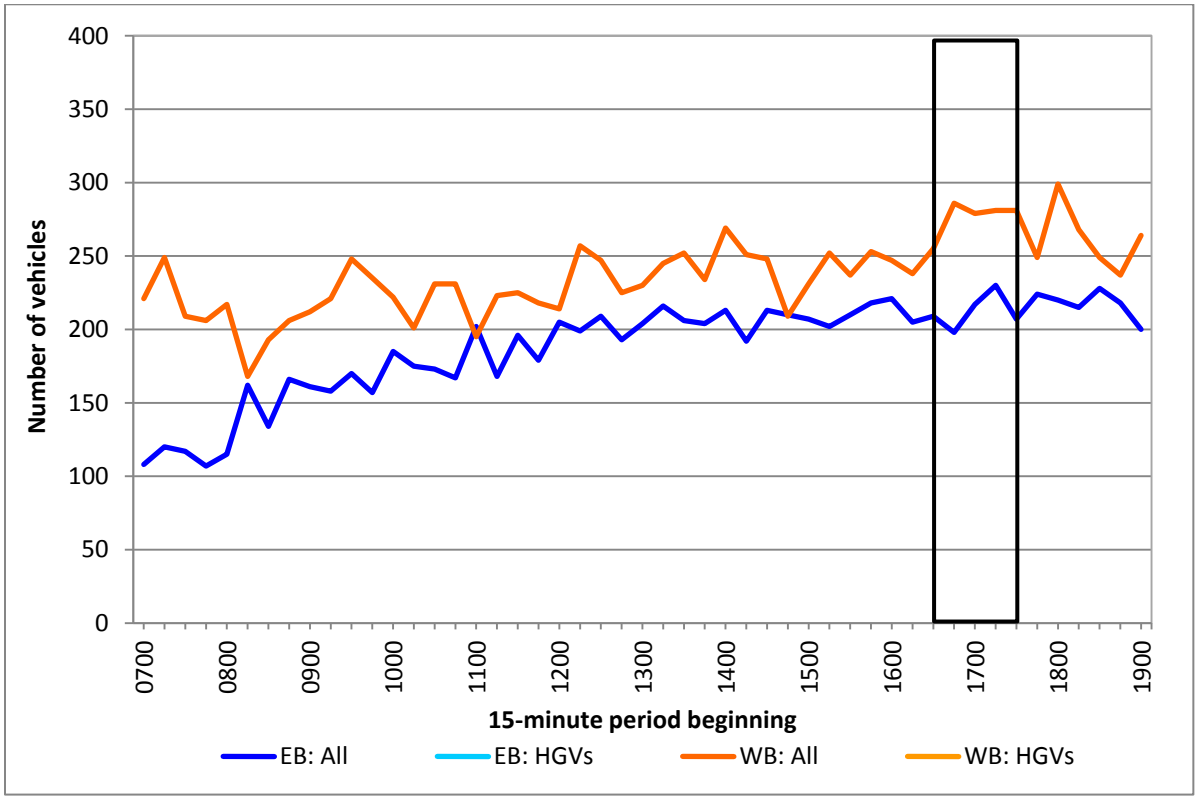
27.4.79 The weekday ATC data shows that between 08:00 – 09:00 there are approximately 2,155 two-way vehicle movements. The busiest 15 minute

peak period in this period occurred after 08:30 with approximately 188 eastbound vehicles and approximately 362 westbound vehicles.

27.4.80 For the period between 17:00 – 18:00 there are approximately 2,160 two-way vehicle movements. The busiest 15 minute peak period in this period occurred after 17:15 with approximately 252 eastbound vehicles and approximately 281 westbound vehicles.

27.4.81 The Saturday vehicle and HGV flows for a 12-hour period (07:00-19:00) are presented in Plate 27.4.5.

Plate 27.4.5 Existing traffic flow along Commercial Road (Saturday ATC survey)

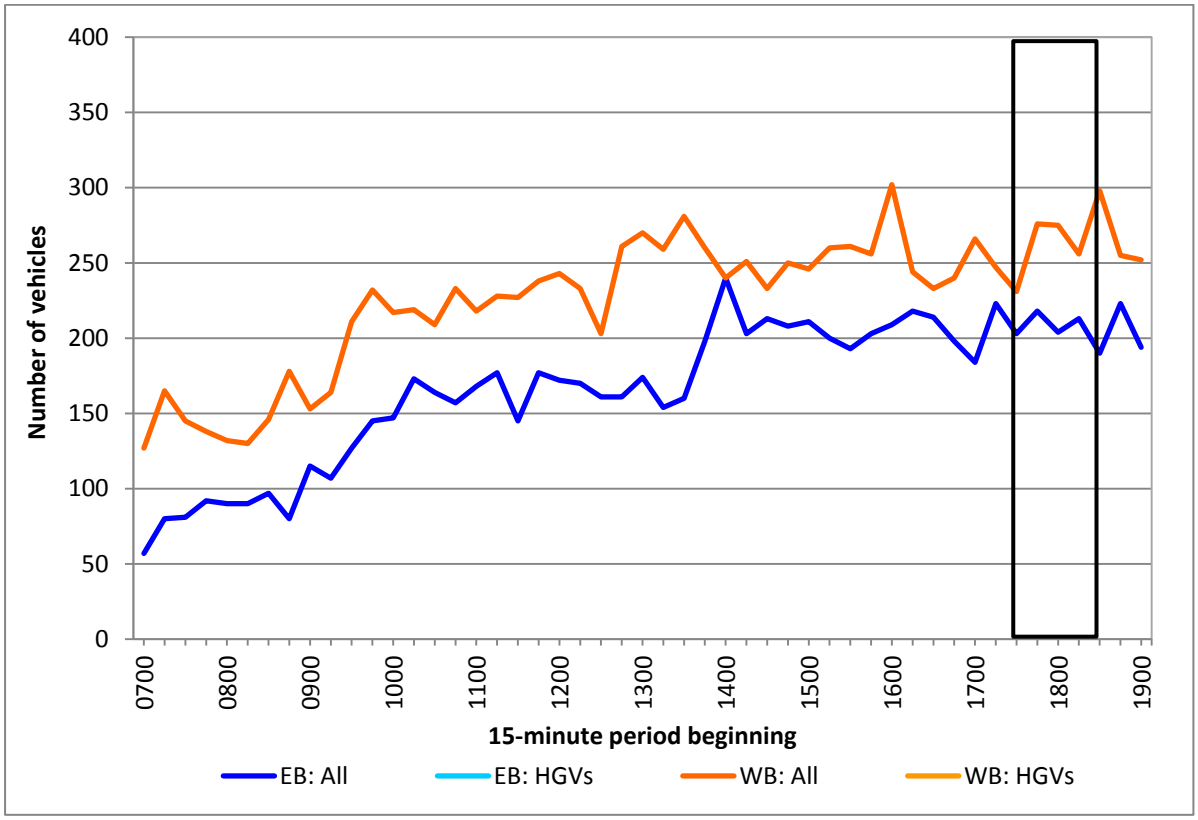


EB – East Bound, WB – West Bound. The black box represents the peak hour traffic flows used for the traffic assessment.

27.4.82 Analysis of the data showed that the Saturday peak travel period occurred between 16:30 – 17:30 with 1,979 two-way vehicle movements recorded. This is less than the AM and PM weekday two-way traffic flows and the period falls outside of the normal weekend construction works vehicle movements period of between 08:00 – 13:00.

27.4.83 The Sunday vehicle and HGV flows for a 12-hour period (07:00-19:00) are presented in Plate 27.4.5.

Plate 27.4.6 Existing traffic flow along Commercial Road (Saturday ATC survey)



EB – East Bound, WB – West Bound. The black box represents the peak hour traffic flows used for the traffic assessment.

27.4.84 Analysis of the data showed that the Sunday peak travel period occurred between 17:30 - 18:30 with 1,930 two-way vehicle movements recorded. This is less than the AM and PM weekday two-way traffic flows and the period falls outside of the normal weekend construction works vehicle movements period of between 08:00 – 13:00.

Parking

27.4.85 Table 27.4.8 shows the overall usage of parking facilities in the immediate area surrounding the Bekesbourne Street site at peak times.

Table 27.4.8 Existing on-street car parking – Availability and usage

Road name	Type of parking restrictions and number of bays			
	Double Red Line	**Double Yellow Line**	**Single Yellow Line**	**Resident Bays**
Bekesbourne Street – north of Ratcliffe Lane				
Capacity	**3**	**2**	**10**	**4**
Weekday occupancy				
08:00 – 10:00	1	2	1	3
12:00 – 14:00	1	0	1	2
17:00 – 19:00	1	0	2	4
Saturday occupancy				
12:00 – 14:00	0	0	1	2
Ratcliffe Lane				
Capacity	**7**	**8**	**32**	**8**
Weekday occupancy				
08:00 – 10:00	0	0	3	8
12:00 – 14:00	0	0	6	8
17:00 – 19:00	0	1	0	8
Saturday occupancy				
12:00 – 14:00	0	0	7	8

27.4.86 Plate 27.4.7 shows a histogram of the car parking in the area surrounding Bekesbourne Street during the AM, interpeak, PM and weekend peak periods. Plate 27.4.8 shows a histogram of the car parking on Ratcliffe Lane.

Plate 27.4.7 Existing on-street car parking – availability and usage - Bekesbourne Street

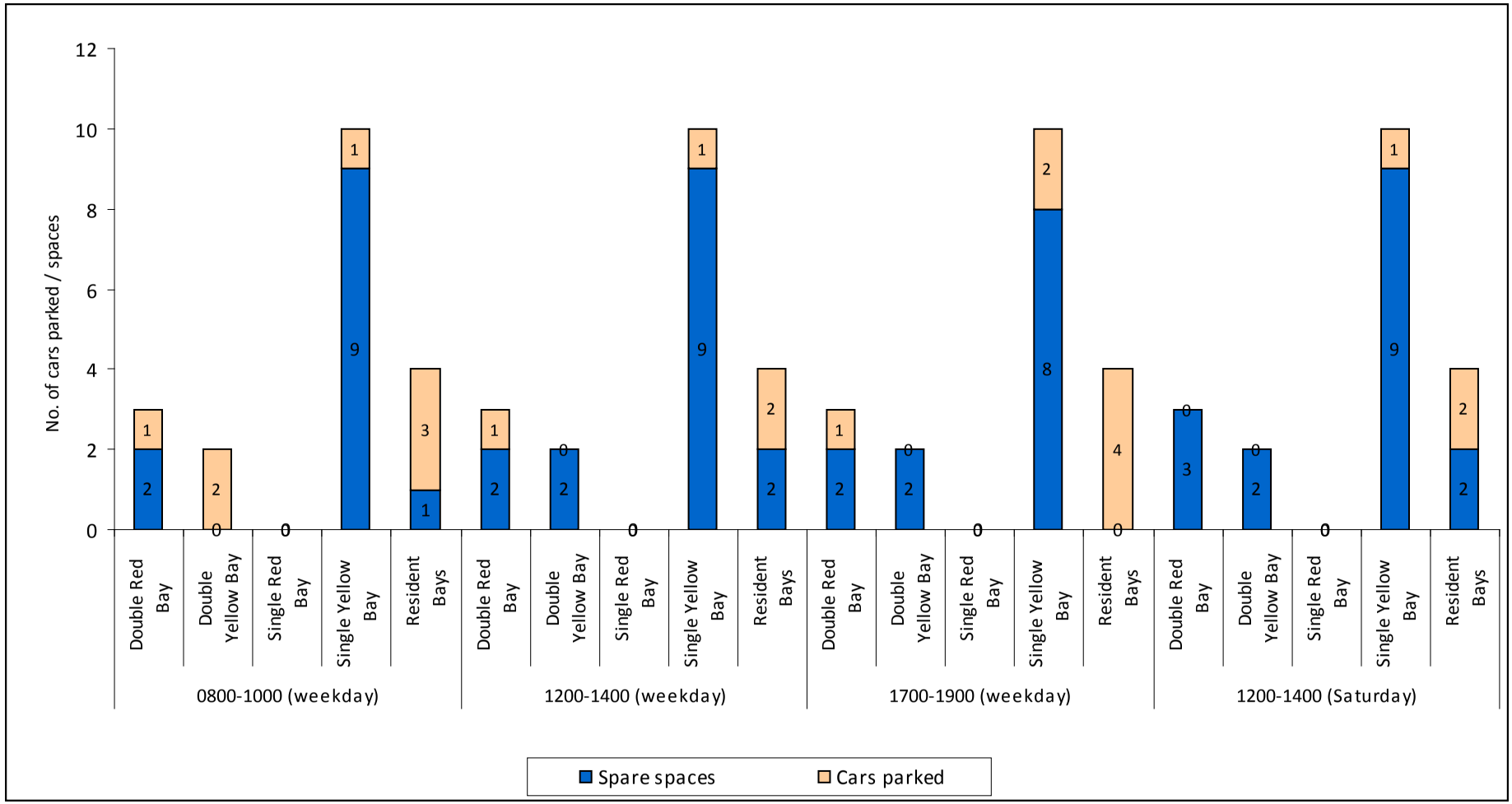
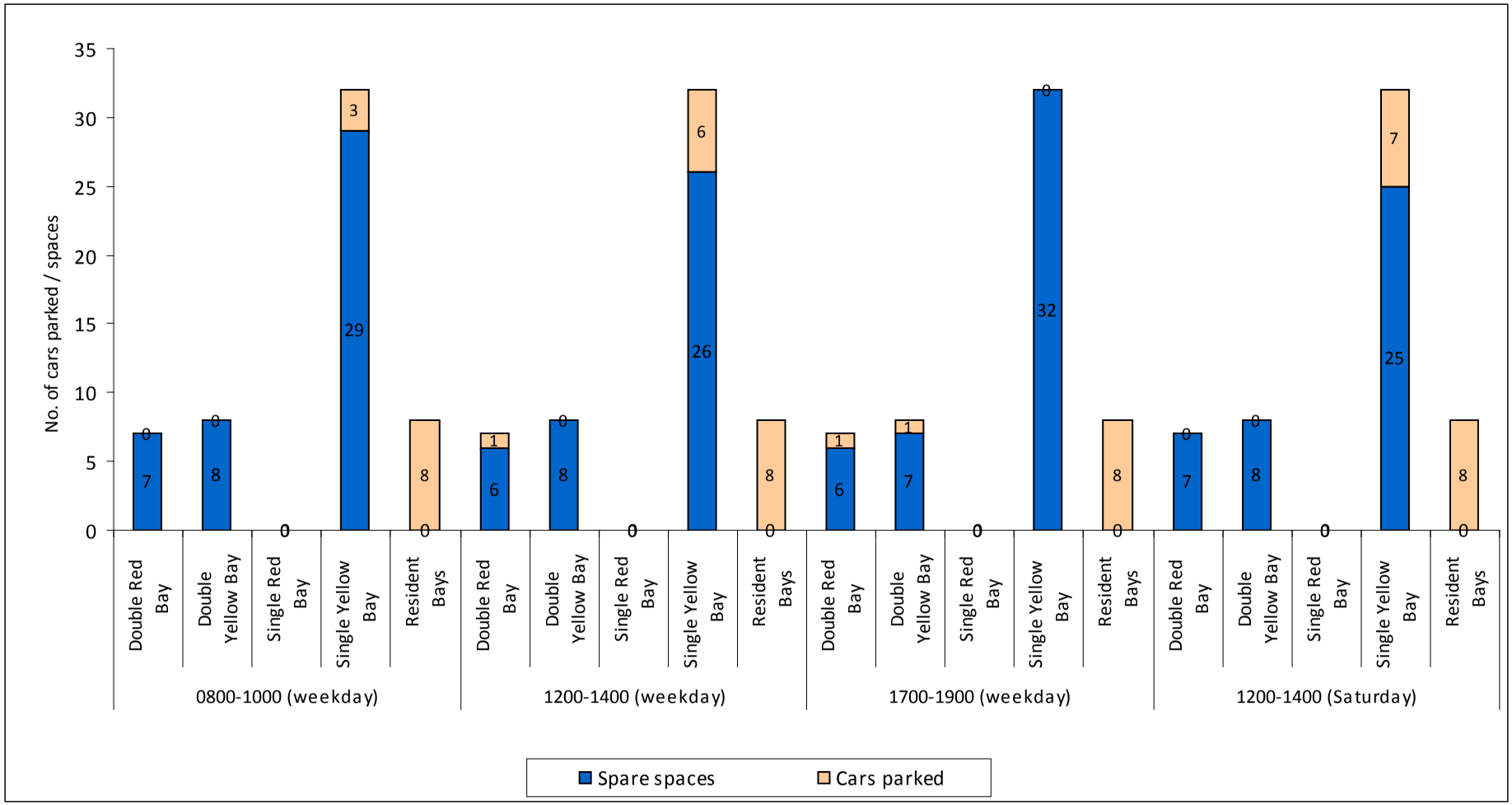


Plate 27.4.8 Existing on-street car parking – availability and usage – Ratcliffe Lane



27.4.87 The results of the parking surveys on Bekesbourne Street (north of Ratcliffe Lane) and Ratcliffe Lane show that utilisation of residential parking spaces is high during weekdays and at weekends.

Local highway modelling

27.4.88 It has been discussed with TfL and the LB of Tower Hamlets that given the low levels of base case traffic and the limited activity expected at the Bekesbourne Street site during construction, local highway modelling was not required for the assessment of this site.

Accident analysis

27.4.89 Accident data were obtained for a five year period up to March 2011. Figure 27.4.5 in the Bekesbourne Street *Transport Assessment* figures shows the extent of the study area which has been reviewed. The following roads and junctions have been analysed:

a. Commercial Road (A13)
b. Commercial Road (A13) / Barnes Street junction
c. Commercial Road (A13) / Bekesbourne Street junction
d. Commercial Road (A13) / Belgrave Street junction
e. Commercial Road (A13) / Branch Road (A101)
f. Commercial Road (A13) / Brunton Place
g. Commercial Road (A13) / Butcher Row (A126) junction
h. Commercial Road (A13) / White Horse Road junction
i. Commercial Road (A13) / Yorkshire Road junction
j. The Highway (A1203)
k. The Highway (A1203) / Butcher Row (A126) junction
l. The Highway (A1203) / Limehouse Link (A1203) junction
m. Butcher Row (A126) / Cable Street junction
n. Butcher Row (A126) / Ratcliffe Lane junction
o. Butcher Row (A126) / Rotherhithe Tunnel Northern Approach junction
p. Limehouse Link (A1203)
q. Limehouse Link (A1203) / Butcher Row (A126)
r. Bekesbourne Street / Ratcliffe Lane
s. Rotherhithe Tunnel Approach / East India Dock Road junction

27.4.90 Rotherhithe Tunnel Approach / Commercial Road (A13) junction. Table 27.4.9 summarises the accidents that have occurred within the vicinity of the Bekesbourne Street site.

Table 27.4.9 Accident severity from 2006 to 2011

Location	Slight	Serious	Fatal	Total
Commercial Road (A13)	6	0	0	6
Commercial Road (A13) / Barnes Street junction	2	1	0	3
Commercial Road (A13) / Bekesbourne Street junction	4	0	0	4
Commercial Road (A13) / Belgrave Street junction	10	0	0	10
Commercial Road (A13) / Branch Road (A101)	13	0	0	13
Commercial Road (A13) / Brunton Place	3	1	0	4
Commercial Road (A13) / Butcher Row (A126) junction	6	3	0	9
Commercial Road (A13) / White Horse Road junction	3	1	0	4
Commercial Road (A13) / Yorkshire Road junction	3	1	0	4
The Highway (A1203)	4	0	0	4
The Highway (A1203) / Butcher Row (A126) junction	19	2	0	21
The Highway (A1203) / Limehouse Link (A1203) junction	1	5	0	6
Butcher Row (A126) / Cable Street junction	3	0	0	3
Butcher Row (A126) / Ratcliffe Lane junction	4	0	0	4
Butcher Row (A126) / Rotherhithe Tunnel Northern Approach junction	1	0	0	1
Limehouse Link (A1203)	4	0	0	4
Limehouse Link (A1203) / Butcher Row (A126)	3	0	0	3
Bekesbourne Street / Ratcliffe Lane	1	0	0	1
Rotherhithe Tunnel Approach / East India Dock Road junction	0	1	0	1
Rotherhithe Tunnel Approach / Commercial Road (A13) junction	2	0	0	2
Total	**92**	**15**	**0**	**107**

27.4.91 Appendix C provides a full analysis of accidents within the local area surrounding the Bekesbourne Street site.

27.4.92 The records show during the five year period of accident data analysed, a total of 107 accidents occurred within the assessment area. Of these accidents, 92 were categorised as slight and 15 were serious with the majority of accidents occurring at the junctions of Commercial Road (A13) / Belgrave Street, Commercial Road (A13) / Branch Road (A101) and The Highway (A1203) / Butcher Row (A126).

27.4.93 In general, the accidents largely involved cars and motorcyclists. Three of the accidents involved HGVs, of which two were rated as slight and one was serious, while Medium Goods Vehicle (MGVs) were involved in four accidents, of which all were rated as slight.

27.4.94 Of the serious accidents, seven occurred each on Commercial Road (A13) and The Highway (A1203), while one occurred at the junction between Rotherhithe Tunnel Approach and East India Dock Road.

27.4.95 Of the total accidents along The Highway (A1203), seven were classified as serious. There is a cluster of five accidents at the junction with Limehouse Link (A1203). Another of the serious accidents occurred at its junction with Butchers Row (A126).

27.4.96 In summary, none of the accidents recorded in the area were attributed to the geometry and / or infrastructure of the highway network.

27.4.97 Figure 27.4.6 in the Bekesbourne Street *Transport Assessment* figures shows the pedestrian and cyclist accidents by severity.

27.4.98 The records show that there were 16 accidents involving pedestrians and cyclists within the assessment area. Inspection of the data showed that seven of these occurred at junctions with signalised control facilities, with the remaining accidents occurring at locations without signal control.

27.4.99 In the context of the HGV movements associated with the Bekesbourne Street site, the accident risk to these modes of travel will be managed by providing pedestrian and cyclist awareness training for commercial drivers associated with the construction works as set out in the Construction Management Plan. For sections of road affected by roadworks, the risk to all road-users will be managed by the contractor(s) in accordance with the provisions made under the Traffic Signs Manual Chapter 8 - Traffic Safety Measures and Signs for Road Works[4] .

27.5 Construction assessment

27.5.1 The assessment, including both qualitative and quantitative analysis, has been undertaken drawing on discussions with TfL and the Local Highway Authorities and their knowledge of the transport networks and their operational characteristics in the vicinity of each site and knowledge of the construction programme, duration and levels of construction activity.

27.5.2 The construction assessment compares a construction base case, which represents transport conditions in the assessment year without the Thames Tideway Tunnel project, with a construction development case,

which represents conditions with the Thames Tideway Tunnel under construction. The construction base case does not include any traffic related to the Thames Tideway Tunnel, whether from the Bekesbourne Street site or from other sites.

Construction base case

27.5.3 As described in Section 27.3, the construction assessment year for transport effects in relation to the Bekesbourne Street site is Site Year 1 of construction.

Pedestrians and cyclists

27.5.4 There are no proposals to change the cycle or pedestrian network by Site Year 1 of construction and the network will operate as indicated in the baseline description in Section 27.4.

Public transport

27.5.5 In terms of the public transport network, it is expected that as a result of the TfL London Underground Upgrade Plan[5] there will be a capacity increase compared to the current baseline for many of the London Underground lines. As part of the Upgrade Plan, the Hammersmith and City line is expected to see a capacity increase of 65%, although it is clear that a significant proportion of this increase is attributed to the revised service patterns implemented in 2009, which will already be reflected in the baseline data. The District Line is expected to see a capacity increase of 24%. Given that the nearest underground station is Stepney Green, which is 1.4km from the Bekesbourne Street site, it is unlikely that a significant proportion of journeys to and from the site would be made using London Underground services.

27.5.6 The London Overground extension between Dalston Junction and Clapham Junction (via Surrey Quays) opened in 2012 and provides better connections between stations in southeast London. However, considering the nearest London Overground station is Shadwell, approximately 1.4km from the Bekesbourne Street site, it is not expected that a significant proportion of journeys to and from the site would be made using London Overground services.

27.5.7 At the time of writing this assessment there were no committed proposals to enhance the DLR.

27.5.8 It is anticipated that patronage on public transport services may change between the baseline situation and Year 1 of construction. Future patronage changes on bus and rail networks will be driven by a range of complex factors and there are inherent uncertainties in setting a patronage level for a future year. Therefore, in order to ensure that a busiest case scenario is addressed in the assessment, the capacity for London Overground, London Underground and other public transport services in the construction base case has been assumed to remain the same as capacity in the baseline situation. This ensures a robust assessment.

Highway network and operation

27.5.9 Strategic highway network modelling has been undertaken at a project-wide level using the TfL HAMs, which include forecasts of employment and population growth in line with the London Plan[6]. Growth factors have been derived at individual borough level by comparing the 2008/9 base and 2021 forecast years in the HAMs, as described in the *Project-wide TA*.

27.5.10 For the Bekesbourne Street site, the TfL ELHAM model has been used. The model provides factors for the increase in vehicle kilometres in the LB of Tower Hamlets between the base year and 2021. The factors equate to 11% growth in vehicle kilometres over this period, which is equivalent to approximately 1% per annum.

27.5.11 It should be noted that these represent growth over the period to 2021, which is beyond Year 1 of construction at Bekesbourne Street and this therefore ensures that the construction base case for the highway network is robust. However, as local highway network modelling has not been required for this site, these growth factors provide contextual background for the qualitative assessment of the potential effects on the local highway network.

Committed developments

27.5.12 The construction base case takes into account traffic growth and new developments within the local area by Site 1 Year of construction. The committed developments in the immediate vicinity of the site are:

a. Former land bounded by Schoolhouse Lane, Cable Street and Glasshouse Fields,

b. Ocean Estate development and

c. John Bell House development

27.5.13 The strategic highway modelling has taken these committed developments into consideration.

Local highway modelling

27.5.14 It was agreed with TfL and the LB of Tower Hamlets that no modelling would be required for this site.

Construction development case

27.5.15 This section summarises the findings of the assessment undertaken for the peak year of construction at the Bekesbourne Street site (Site Year 1 of construction).

Pedestrian routes

27.5.16 The highway layout during construction plans are provided in the Bekesbourne Street *Transport Assessment* figures and shows the effect on the pedestrian footways during construction.

27.5.17 To assess a busiest case scenario, it has been anticipated that all worker trips would finish their journeys by foot. As a result, the 24 worker trips generated by the Bekesbourne Street site have been added to the construction base case pedestrian flows during the AM and PM peak hours.

27.5.18 During construction the location of the main site compound site would prevent pedestrians from walking through the existing car park on Bekesbourne Street and instead they would be diverted onto the eastern footway between the car park and John Scurr House.

27.5.19 However, it is anticipated that there would be no delay to pedestrians as a result of the changes to the pedestrian routes around the construction site, as the eastern footway of Bekesbourne Street would remain open at all times.

27.5.20 During phases 4 to 7 of construction the footpath on the northern side of Ratcliffe Lane (east) at the junction with Bekesbourne Street would be closed. During phases 4 to 6 it will be possible to create a barrier-protected pedestrian route in the Ratcliffe Lane carriageway around the ventilation column site compound. During phase 7 this will not be possible due to the extension of the vent duct work compound into the carriageway at this location, therefore pedestrians would be able to use the southern side of Ratcliffe Lane (east).

27.5.21 In phase 7 of construction the footway on the southern side of Ratcliffe Lane (east) at the junction with Bekesbourne Street would be narrowed to provide adequate carriageway width. However, a footway width of 2.2m would be maintained for pedestrians. Pedestrians wishing to route from Ratcliffe Lane (east) to Limehouse station during this phase would be required to route across Bekesbourne Street (south), Ratcliffe Lane (west) then Bekesbourne Street (north) in order to traverse around the worksite area.

27.5.22 With regards to accidents and safety, the Bekesbourne Street site would generate fewer than four construction HGV vehicle movements per hour. In addition, the site access is not directly onto a strategic road and the proposals would not result in pedestrians having to make any additional road crossings. On this basis it is considered that the risk of increased accidents would be very low.

27.5.23 During all construction work and on any section of road subject to temporary diversions or restrictions imposed by roadworks associated with the Bekesbourne Street site, the risk to all road-users would be managed by the contractor(s) in accordance with the provisions made under the Traffic Signs Manual Chapter 8 - Traffic Safety Measures and Signs for Road Works[7]. This would include compliance with the Equality Act 2010[8] to ensure safe passage for mobility and vision impaired pedestrians.

Cycle routes

27.5.24 Cyclists could experience a delay to journey time as a result of the need to introduce alternate one-way working using temporary traffic lights or traffic marshals at the temporary access road on Bekesbourne Street. However, cyclists routing along this section of Bekesbourne Street would

have the option to dismount and walk along the footpath thus avoiding the temporary traffic control.

27.5.25 Although cyclists would not be required to make any additional road crossings as a result of the carriageway adjustments they would be restricted to using the temporary carriageway and sharing this with vehicles accessing the residential properties and Community Centre. Given that cyclists can dismount and wheel their cycles past this site there is unlikely to be a significant impact on road safety in the immediate vicinity of the Bekesbourne Street site.

27.5.26 In addition, the very low number of construction vehicles expected at the Bekesbourne Street site would present an insignificant risk of increased accidents involving cyclists.

27.5.27 Measures set out in the *CoCP* Part A and B (Section 5) include marshalling of traffic at the site access. During all construction work and on any section of road subject to temporary diversions or restrictions imposed by roadworks associated with the Bekesbourne Street site, the risk to all road-users would be managed by the contractor(s) in accordance with the provisions made under the Traffic Signs Manual Chapter 8 - Traffic Safety Measures and Signs for Road Works[9]. This would include compliance with TfL guidance (Cyclists at Roadworks - Guidance [10]) to ensure safe passage for cyclists.

27.5.28 During the construction period, the operation and overall layout of the road network would not change. A minimum carriageway width of either 4m (where HGVs can safely overtake cyclists) or 3.25m (where HGVs cannot overtake cyclists) would be retained for traffic in each direction. Where necessary, carriageway widths of less than 3.25m would be agreed with the LB of Tower Hamlets prior to execution of any works.

Bus routes and patronage

27.5.29 No bus services run immediately past the Bekesbourne Street site.

27.5.30 Given the low number of vehicle movements expected at the Bekesbourne Street site, there would be no additional delay on the nearby bus routes using The Highway (A1203), Commercial Road (A13) or other connecting routes.

27.5.31 As a result of construction workers using bus services it is expected that there would be approximately four additional bus passenger journeys during both the AM and PM peak hours. Based on the numbers of bus services within a 640m walking distance of the site, this small increase in bus passengers would have a negligible impact on bus patronage.

DLR and National Rail and patronage

27.5.32 Limehouse National Rail and DLR station is the closest station, approximately 35m from the Bekesbourne Street site. It is anticipated that approximately 12 construction workers and labourers would use DLR and National Rail services to access the site each day.

27.5.33 The expected 12 additional trips anticipated to be made by National Rail or DLR during the AM and PM peak hours would result in less than one

worker trip per DLR / National Rail service (based on a service of 78 trains during the AM and PM peak hours respectively within a 960m walking distance). This would result in a negligible impact on DLR and National Rail services.

Parking

27.5.34 The highway layout during construction (phases 1-7) plans are provided in the Bekesbourne *Transport Assessme*nt figures and show the proposed suspension and removal of parking bays associated with the construction works at the Bekesbourne Street site.

27.5.35 Measures would also be taken for this site to discourage workers from travelling by car, instead promoting the use of public transport, walking or cycling. These measures are included in the *Project Framework Travel Plan* and *CoCP*.

27.5.36 To accommodate the construction works at the Bekesbourne Street site 15 parking spaces would be temporarily suspended on the southern section of Bekesbourne Street adjacent to John Scurr House. Two of these spaces would be permanently removed due to the need to accommodate the electrical and control kiosk.

27.5.37 In addition, the two shared visitor/authorised contractor bays would also be suspended for the duration of the construction works.

27.5.38 During phase 7 of construction a total of five parking spaces in Ratcliffe Lane would need to be suspended.

27.5.39 Parking for one essential maintenance vehicle would be provided on site. No worker parking would be provided. In addition parking on surrounding streets is restricted and site-specific *Travel Plan* measures would discourage workers from travelling by car to and from the site. There would therefore be no impact on local parking from construction workers.

Highway assessment

Highway layout

27.5.40 The highway layout during construction (phases 1-3) plans are provided in the Bekesbourne Street *Transport Assessment* figures and show the highway layouts during construction of the proposed Bekesbourne Street site.

27.5.41 The site would be accessed from Ratcliffe Lane and the highway layout during construction vehicle swept path analysis (phases 1-3) plans in the Bekesbourne Street *Transport Assessment* figures, which show that construction vehicles would be able to safely enter and leave the site. Traffic marshal control would be used to supervise vehicles reversing into the site.

27.5.42 During phase 1 of construction the existing parking area would be removed and the carriageway relocated to the eastern edge of the road adjacent to the existing footway. The temporary carriageway would only be capable of accommodating traffic travelling in one direction at a time. This single lane would be controlled either by temporary traffic lights at the southern and northern ends of the temporary carriageway or by traffic marshals.

27.5.43 During phase 2 of construction the working area would be moved to the east of the street adjacent to the John Scurr House footway. The temporary carriageway would be moved to the west of the working area and would accommodate traffic in one direction at a time. Temporary traffic lights or traffic marshals would be employed to control vehicle movements.

27.5.44 For phase 3 of construction the working area would be moved back to the west and the carriageway relocated to the east adjacent to the existing footway. The temporary carriageway would only be capable of accommodating traffic travelling in one direction at a time.

27.5.45 During phases 2a and 2b the working area would be moved back to the eastern side of the car park with the carriageway again located to the west of the working area. The carriageway on Bekesbourne Street would accommodate flow in one direction at a time.

27.5.46 It would be necessary to extend the working area northwards into the junction with Ratcliffe Lane during phases 2b to 2d of the ventilation duct works. During Phase 2c of construction the left turn into Bekesbourne Street (south) from Ratcliffe Lane (east) would be prohibited. During Phase 7 of construction the right turn into Bekesbourne Street (north) from Ratcliffe Lane (east) would be prohibited. Vehicles wishing to access these sections of Bekesbourne Street during these periods would do so via Butcher Row (A126) and Ratcliffe Lane (west).

27.5.47 During Phase 2c the buildout on the north side of Ratcliffe Lane (east) would need to be replaced with carriageway. The width of carriageway on Ratcliffe Lane (east) would be reduced to 4.5m during this period.

27.5.48 During Phase 2d the build-out on Ratcliffe Lane at the junction with Bekesbourne Street would need to be removed to maintain a carriageway width of 3.1m.

27.5.49 Throughout the construction period there would be a gated access to the site with construction vehicles reversing into the site from Bekesbourne Street south of the junction with Ratcliffe Lane under supervision as necessary. Vehicles would exit in forward gear and travel westbound along Ratcliffe Lane to Butcher Row (A126).

27.5.50 With the highway layout changes described above, access to the residential areas and Community Centre would be maintained throughout the construction phases.

Highway network

27.5.51 Construction lorry movements would be limited to the day shift only (08:00 to 18:00). In exceptional circumstances HGV and abnormal load movements could occur up to 22:00 for large concrete pours and later at night on agreement with the LB of Tower Hamlets.

27.5.52 Table 27.2.4 shows the vehicle movement assumptions for the local peak traffic periods based on the peak months of construction activity at this site.

27.5.53 Table 27.2.4 shows an average peak flow of 46 vehicle movements a day is expected during the months of greatest activity during Site Year 1 of construction at the Bekesbourne Street site. At other times in the construction period, vehicle flows would be lower than this average peak figure.

27.5.54 The busiest peak in the AM and PM period for each type of movement (construction lorries and other construction vehicles) has been combined in the development case and assessed against the peak hour operation of the highway network. In reality not all peaks for these movements would occur concurrently and the peak for worker trips would be outside of the highway network peak hour, therefore the assessment is considered to be robust.

27.5.55 The *Project-wide TA* explains the method used to assign construction traffic to the HAMs, from which the likely changes in turning movements at local junctions have been identified and added to the construction base case flows.

27.5.56 The assignment of construction lorry trips has been undertaken using OmniTransii software, which enables a fixed assignment to be created for these trips in order to ensure that they are assigned only to the proposed construction routes. The OmniTrans outputs also identify lorry traffic which would be associated with the Bekesbourne Street site, or with other Thames Tideway Tunnel project sites, that would use routes in the vicinity of the Bekesbourne Street site. Figure 27.5.1 in the Bekesbourne Street Transport Assessment figures shows the OmniTrans plot for the local road network around the Bekesbourne Street site.

27.5.57 Localised changes to the highway network during construction and the additional construction traffic generated by the project may lead to local changes in traffic flow and capacity. However, given that base case traffic flows in this area would be very low, and that the number of construction vehicle movements, even during times of peak activity, would be small, there would be no significant change to the way in which the local highway network operates.

[ii] *OmniTrans* is a software package used for multi-modal transport network modelling and in this case has been used to produce assignments of construction traffic across the proposed network of routes to be used for the project

27.5.58 It is anticipated that the changes to highway layout and temporary traffic controls would have a negligible impact on road network delay, given that traffic flows in Bekesbourne Street are very low and temporary traffic signals, if required, could operate on a short cycle time. Alternatively, control by traffic marshals would allow quick response to vehicles waiting to pass through Bekesbourne Street past the site.

Construction mitigation

27.5.59 The project has been designed to limit the issues arising on transport networks as far as possible and many measures have been embedded directly in the design of the project. These measures have been taken into account in the assessment and are summarised in Table 27.5.1.

Table 27.5.1 Bekesbourne Street site design measures

Phase	Issues	Design measures
Construction	Safe passage for pedestrians and cyclists	• Provision of hoarding to segregate the site from public footpath and vehicular traffic • Due to the removal of the existing parking and parts of the shared surface area, pedestrians would be diverted onto the eastern footway between the car park and John Scurr House. • Protected pedestrian footway diversion to be provided during construction phases 2b to 2c.
	Street parking	• 15 parking spaces (13 private parking spaces and two visitor/authorised contractor spaces) would be temporarily suspended from the southern section of Bekesbourne Street adjacent to John Scurr House. Extension of hours of operation of single yellow line parking restriction would be required. • Parking on the northern side of Ratcliffe Lane (east) at the junction with Bekesbourne Street would be suspended during phases 2b to 2d of construction • Parking on the southern side of Ratcliffe Lane (east) at the junction with Bekesbourne Street would be suspended during phase 2d of construction

Phase	Issues	Design measures
	Movement of construction and other traffic on the local highway network	• Single lanes requiring alternate direction working would be controlled either by temporary traffic lights at the southern and northern ends of the temporary carriageway or by traffic marshals • During phase 2c of construction the footway build-out on the northern side of Ratcliffe Lane (east) at the junction with Bekesbourne Street would be removed to facilitate traffic movement. However, the left-turn from Ratcliffe Lane (east) into Bekesbourne Street would be prohibited for all traffic during this phase. • During phase 2d of construction the footway build-out on the southern side of Ratcliffe Lane (east) at the junction with Bekesbourne Street would be removed to facilitate traffic movement. However, the right-turn from Ratcliffe Lane (east) into Bekesbourne Street would be prohibited for all traffic during this phase.

27.5.60 The outcomes indicate that with these measures in place the changes to be expected in the transport networks are not significant and therefore no additional measures are required for the construction phase.

27.6 Operational assessment

27.6.1 This section summarises the findings of the assessment undertaken for Year 1 of operation at the Bekesbourne Street site.

27.6.2 The assessment of the operational phase is limited to the physical issues associated with accessing the site from the highway network. This has been discussed with LB of Tower Hamlets and TfL.

Operational base case

27.6.3 The operational assessment year for transport is Year 1 of operation.

27.6.4 The elements of the transport network that would be affected during operation are pedestrian routes, parking, servicing and highway layout and operation. For the purposes of the operational base case, it is anticipated

that the highway layout and operation will be as indicated in the construction base case.

Operational development case

27.6.5 The operational assessment has taken into consideration those elements that would be affected, which primarily comprise the short-term impacts on the pedestrian and cycle network, car parking and on the highway layout and operation when maintenance visits are made to the Bekesbourne Street site.

27.6.6 The transport demands created by the development in the operational phase would be extremely low and limited to maintenance visits every three to six months. A light commercial vehicle, typically a transit van, would be required to service the site. On occasion there may be a consequent need for small flatbed vehicles to access the site. Larger vehicles may be required to access the site on a very infrequent basis, approximately once every ten years.

27.6.7 The permanent highway layout plan in the Bekesbourne Street *Transport Assessment* figures indicates the operational phase permanent works.

27.6.8 As outlined in Section 27.2, with the exception of the provision of an electrical and control kiosk that would result in the loss of two of the existing car parking spaces, during the operational phase the transport networks in the area around the Bekesbourne Street site would be reinstated to base case conditions.

Pedestrians and cyclists

27.6.9 During routine inspections every three to six months the carriageway width on Bekesbourne Street is likely to be reduced and pedestrians would be encouraged to use the footpath between the car park and John Scurr House instead of walking across the shared surface area in Bekesbourne Street.

27.6.10 It is anticipated that the minor nature of the diversions required would present a negligible impact on levels of pedestrian and cycle delay.

27.6.11 With regards to accidents and safety the Bekesbourne Street site would generate a very small number of maintenance vehicle journeys on a limited and infrequent number of occasions. In addition the site access is not directly onto a strategic road and the proposals would not result in pedestrians having to make any additional road crossings.

Parking

27.6.12 Two parking spaces would be permanently removed to accommodate an electrical and control kiosk.

27.6.13 During routine inspections it may be necessary to temporarily suspend car parking on Bekesbourne Street in order to gain access to the kiosk or to manhole covers.

27.6.14 When large vehicles are required to service the site a temporary parking suspension would be put in place along Bekesbourne Street. This

temporary suspension would be on an infrequent basis. As a result any disruption caused would be minimal and temporary.

Highway layout and operation

27.6.15 When larger vehicles are required to service the site during the ten-yearly inspections, there may be some temporary, short-term delay to other road users while manoeuvres are made into Bekesbourne Street. However it is anticipated that the arrival of vehicles would normally be scheduled to take place outside of the peak hours to minimise the effect on the local highway network.

27.6.16 The permanent highway layout vehicle swept path analysis plans in the Bekesbourne Street *Transport Assessment* figures show the swept path movements during operation and demonstrate that entrance and exit could be safely achieved.

27.6.17 Vehicle access to the residences and Community Centre to the south of the operational phase area would be maintained during routine inspections. If any works were to be carried out that required opening an access cover, then the access cover arrangement would be designed such that access is maintained.

27.6.18 As maintenance activities would take place infrequently and would be of short duration, there is anticipated to be no significant change in the operation of the surrounding highway network.

Operational mitigation

27.6.19 As there would be no significant changes to transport during the operational phase, no mitigation is required.

27.7 Summary of site specific Transport Assessment

27.7.1 The key findings of this *TA* are summarised in Table 27.7.1.

Table 27.7.1 Bekesbourne Street Transport Assessment results

Phase	Mode of transport	Key Findings
Construction	Pedestrians	No significant delay to pedestrians as a result of the changes to the pedestrian routes around the construction site, as the eastern footway of Bekesbourne Street would remain open at all times
	Cyclists	No proposed changes or impact on the cycle network.
	Bus patronage and operators	Approximately four worker trips would be made by bus during the peak hour which could be easily accommodate on base case services. No additional delays to bus services would occur.
	DLR and National Rail patronage	Approximately eight worker trips would be made by DLR during the peak hour. Approximately four worker trips would be made by National Rail during the peak hour. In both cases these additional journeys could be accommodated on base case services.
	Parking	13 car parking bays on Bekesbourne Street would be temporarily suspended. Two spaces would be permanently lost to accommodate the electrical and control kiosk. Two shared visitor/authorised contractor bays on Bekesbourne Street would also be removed for the duration of the construction works During the ventilation duct works, a total of five parking spaces in Ratcliffe Lane would need to be suspended
	Highway network and operation	Vehicle access to the southern section of Bekesbourne Street would be managed by either temporary traffic signals or traffic marshals, with a set of signals located both to the north and south of the site. Delays to traffic would be minimal as traffic flows are very low. A maximum of approximately 46 additional daily vehicle movements would be produced by the construction works at Bekesbourne Street.

Phase	Mode of transport	Key Findings
Operation	Parking	Two spaces would be permanently lost in order to accommodate an electrical and control kiosk. Parking bays may require temporary suspension when large cranes require access to the site, approximately every ten years.
	Highway layout and operation	Some temporary, short term delays while manoeuvres are made into Bekesbourne Street.

References

[1] Transport for London, *Travel Planning for new development in London,* 2011

[2] Assessment Tool for Travel Plan Building Testing and Evaluation, (ATTrBuTE) is a web based travel planning tool, which ensures that Travel Plans are in accordance with Transport for London's published guidance on travel planning for new development in London, http://www.attrbute.org.uk/.

[3] Transport for London (TfL) Planning Information Database (http://www.webptals.org.uk/)

[4] Department for Transport (DfT) *Traffic Signs Manual Chapter 8 – Traffic Safety Meausre and Signs for Road Works and Temporary Situations,* 2009.

[5] Transport for London, *London Underground Upgrade Plan*, February 2011 (http://www.tfl.gov.uk/corporate/projectsandschemes/18072.aspx)

[6] Greater London Authority, *The London Plan – a spatial development strategy for London*, 2011.

[7] Department for Transport, 2009. See citation above.

[8] HM Government, *Equality Act 2010*

[9] Department for Transport, 2009. See citation above.

[10] Department for Transport (DfT), *Traffic Advisory Leaflet 15/99 – Cyclists at Road Works*, December 1999

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Thames Tideway Tunnel
Thames Water Utilities Limited

Application for Development Consent

Application Reference Number: WWO10001

Transport Assessment

Doc Ref: **7.10.24**

Minor Work Sites

Appendices

APFP Regulations 2009: Regulation **5(2)(q)**

Hard copy available in

Box **53** Folder **B**
January 2013

Thames Tideway Tunnel

Creating a cleaner, healthier River Thames

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Thames Tideway Tunnel

Transport Assessment

Section 27 Appendices: Minor works sites

List of contents

Page number

List of tables

Page number

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Appendix A – Policy review

A.1 Introduction

A.1.1 There are a number of documents containing planning policies that are relevant to transport matters for the proposed development at Bekesbourne Street. This includes national, regional and local policies relevant to the site.

A.1.2 This section reviews current documents relevant to the proposed development which is situated within the Royal Borough (RB) of Kensington and Chelsea.

A.2 National Policy

National Planning Policy Framework (March 2012)

A.2.1 The Department for Communities and Local Government published the National Planning Policy Framework (NPPF) in March 2012. The NPPF replaces a variety of existing planning guidance, most notable the following document, Planning Policy Guidance 13: Transport (November 2010).

A.2.2 The key objective of the NPPF is to create a policy context to support economic growth. The principle of the guidance is to place an emphasis on sustainable development, where environmental conditions should be considered alongside economical and social matters.

A.2.3 It outlines the importance of local development plans and notes that where development accords with an up to date development plan then the proposals should be approved. Moreover, it suggests that local authorities should follow the approach of the presumption in favour of sustainable development.

A.2.4 With particular reference to transport matters the documents states:

"*In preparing local plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, and facilitates the use of sustainable modes of transport.*"

A.2.5 The guidance goes on to advise at paragraph 32:

"All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:

- *the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;*
- *safe and suitable access to the site can be achieved for all people; and*

- *improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe."*

A.2.6 The document also states that:

"Plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people". Therefore:

"A key tool to facilitate this would be a Travel Pan. *All developments which generate significant amounts of movement should be required to provide a Travel Plan".*

National Policy Statement for Waste Water (March 2012)

A.2.7 The National Policy Statement for Waste Water was published by the Department of Environment, Food and Rural Affairs in March 2012. This National Policy Statement (NPS) sets out Government policy for the provision of major waste water infrastructures. The NPS does not recognise the Thames Tideway Tunnel project within the original thresholds which is contained within the Planning Act. However the document indicates that *"the Government has already stated its intention that the project should be considered at a national level"*.

A.2.8 The Secretary of State announced that development consent for the Thames Tideway Tunnel project should also be dealt with under the regime for nationally significant infrastructure projects under the Planning Act 2008.

A.2.9 The Waste Water NPS seeks a sustainable long term solution to address the untreated sewage discharged into the river Thames and Thames Tideway Tunnel has been considered as the preferred solution.

A.2.10 With particular reference to transport matters the document states:

"The ES should include a transport assessment, using the NATA/WebTAG methodology stipulated in Department for Transport (DfT), or any successor to such methodology. Applicants should consult the Highways Agency and/or the relevant highway authority, as appropriate, on the assessment and on mitigation measures. The assessment should distinguish between the construction, operation and decommissioning project stages as appropriate".

A.2.11 The document states that the impacts on the surrounding transport infrastructure should be mitigated and where the mitigation measures are not sufficient the requirements to mitigate adverse impacts on transport networks should be considered.

A.2.12 Therefore it is advised to prepare a travel plan which includes demand management measures to mitigate transport impacts, and *"to provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts".*

A.2.13 The Waste Water NPS prefers water-borne or rail transport over road transport and where there is likely to be substantial HGV traffic, the following measures should be looked:

- *"control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements;*
- *make sufficient provision for HGV parking, either on the site or at dedicated facilities elsewhere, to avoid 'overspill' parking on public roads, prolonged queuing on approach roads and uncontrolled on-street HGV parking in normal operating conditions; and*
- *ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force".*

A.2.14 The proposed development is located at a relatively moderate accessible transport hub and the proposed location has a Public Transport Accessibility Level (PTAL) rating of 3, rated as 'moderate'. It is assumed that construction workers would not travel by car to and from the site on the basis that there would be no worker parking on site; on-street parking in the area is restricted; and site-specific Travel Plan measures will discourage workers from travelling by car. Information regarding the travel arrangements of the workers associated with the site will be included in the *Project Framework Travel Plan* and site-specific Travel Plan documents.

A.3 Regional policy

The London Plan (July 2011)

A.3.1 The London Plan 2011 is produced by the Greater London Authority (GLA) and sets out the strategic planning guidance for London planning authorities. The Mayor of London is responsible for strategic planning and the production of a Spatial Development Strategy called The London Plan. The London plan sets out the integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The Plan takes the year 2031 as its formal end date and its over-arching vision is supported by six detailed objectives for London:

- A city that meets the challenges of economic and population growth;
- An internationally competitive and successful city;
- A city of diverse, strong, secure and accessible neighbourhoods;
- A city that delights the senses;
- A city that becomes a world leader in improving the environment; and
- A city where it is easy, safe and convenient for everyone to access jobs, opportunities and facilities.

A.3.2 The last objective of the plan relates specifically to transport. Policies within the London Plan of relevance to the proposed development are outlined as follows:

A.3.3 **Policy 6.1 – Strategic Approach** advises that the mayor will work with all relevant partners to encourage the closer integration of transport and development by:

- Encouraging patterns and nodes of development that reduce the need to travel, especially by car;
- Seeking to improve the capacity and accessibility of public transport, walking and cycling, particularly in areas of greater demand;
- Supporting development that generates high levels of trips at locations with high public transport accessibility and/or capacity, either currently or via committed, funded improvement;
- Seeking to increase the use of the Blue Ribbon Network, especially the Thames, for passenger and freight use;
- Facilitating the efficient distribution of freight whilst minimising its impacts on the transport network;
- Supporting measures that encourage shifts to mode sustainable modes and appropriate demand management; and
- Promoting greater use of low carbon technology so that carbon dioxide and other contributors to global warming are reduced.

A.3.4 **Policy 6.2 – Providing public transport capacity and safeguarding land for transport** which notes that development proposals that do not provide adequate safeguarding for the schemes should be refused.

A.3.5 **Policy 6.3 – Assessing effects of development on transport capacity** outlines that development proposals should ensure that impacts on transport capacity and the transport network, at both a corridor and local level, are fully assessed. Development should not adversely affect safety on the transport network. Where existing transport capacity is insufficient for the travel generated by proposed developments, and no firm plans exist for an increase in capacity, boroughs should ensure that the development proposals are phased until it is known that these requirements can be met. The policy notes that the use of Travel Plans and addressing freight issues can help reduce the impact of development on the transport network.

A.3.6 **Policy 6.7 – Better streets and surface transport** notes that high levels of priority should be provided to bus routes and there should be direct, secure, accessible and pleasant walking routes to stops. The development would include provision of transport to and from public transport nodes where sites are at a distance from public transport services.

A.3.7 **Policy 6.9 – Cycling** presents measures to increase cycling mode share in London to 5 percent by 2026. Measures include completing the Cycle Super Highways and expanding the London cycle hire scheme. To support this, developments should provide cycle parking to at least the

minimum standards, provide showers and changing facilities and facilitate the major cycling schemes in London (Super Highways / Cycle Hire).

A.3.8 **Policy 6.10 – Walking** recommends the use of shared space principles with simplified streetscape, de-cluttering and access for all. Developments should therefore ensure high quality pedestrian environments and emphasise the quality of pedestrian and street space. It points to the 'Legible London' pedestrian wayfinding system as a successful measure to support walking journeys.

A.3.9 **Policy 6.13 – Parking** outlines the need to seek an appropriate balance between promoting new development and preventing excessive car parking provision that can undermine cycling, walking and public transport use. As such, car parking should reduce as public transport accessibility (measured by PTAL) increases. The policy advises that Transport assessments and travel plans for major developments should give details of proposed measures to improve non-car based access, reduce parking and mitigate adverse transport impacts.

A.3.10 **Policy 6.14 – Freight** notes that freight distribution should be improved and movement of freight by rail and waterway should be promoted. To support this, developments that generate high number of freight movements should be located close to major transport routes. In addition, the Freight Operators Recognition Scheme, construction logistics plans and delivery and servicing plans should be promoted. The policy also advises the increase in the use of the Blue Ribbon Network for freight transport.

The Mayors Transport Strategy (GLA, 2010)

A.3.11 In addition to the London Plan, the Mayor has prepared a number of strategies that are essentially an extension of the London Plan. Published by the GLA in 2010, the Mayor's Transport Strategy (MTS) (Greater London Authority, May 2010) envisages *"London's Transport system excelling among that of global cities, providing access to opportunities for all people and enterprises while achieving the highest environmental standards and leading the world in its move towards tackling the urban transport challenges of the 21st century"*.

A.3.12 The MTS sets out a number of policy commitments or requirements which have implications for TfL and a range of other delivery partners including the GLA and the London boroughs. The policies that are relevant to the proposed development are:

- **Policy 4** indicating that the Mayor will seek *"to improve people's access to jobs, business' access to employment markets, business to business access, and freight access by seeking to ensure appropriate transport capacity and connectivity is provided on radial corridors into central London";*
- **Policy 5** seeks *"to ensure efficient and effective access for people and goods within central London";*
- **Policy 8** supports *"a range of transport improvements within metropolitan town centres for people and freight that help improve*

connectivity and promote the vitality and viability of town centres, and that provide enhanced travel facilities for pedestrians and cyclists";

- **Policy 9** states that the Mayor *"will use the local and strategic development control processes";*
- **Policy 11** specifies that the Mayor will *"encourage the use of more sustainable, less congesting modes of transport, set appropriate parking standards, and aim to increase public transport, walking and cycling mode share";*
- **Policy 12** states that the Mayor *"will seek to improve the distribution of freight through the provision of better access to/from Strategic Industrial Locations, delivery and servicing plans, and other efficiency measures across London"; and*
- **Policy 15** and **Policy 16** indicate that the Mayor will seek to reduce emissions of air pollutants and noise impacts from transport respectively.

A.3.13 The *London Freight Plan, Sustainable Freight Distribution: a Plan for London* (TfL, June 2008) sets out the steps that have to be taken over the next five to ten years to identify and begin to address the challenge of delivering freight sustainably in the capital. Principles set in that document are expected to be relevant to the consideration of the construction logistics strategy for the proposed development.

A.4 Local policy

A.4.1 The London Borough of Tower Hamlets has a number of policies relevant to transport within the Local Development Framework (LDF), the Unitary Development Plan (UDP), the Development Control Plan Interim Planning Guidance (IPG) and within Supplementary Planning Guidance (SPG) and Advice documents.

Local Development Framework - Core Strategy (LB of Tower Hamlets, September 2010)

A.4.2 The emerging LDF aims to guide and manage development and regeneration in the borough until 2025. The Core Strategy of the LDF, adopted in September 2010, now forms part of the statutory planning guidance for the borough, together with the IPG and the saved policies of the UDP.

A.4.3 Transport policies within the Core Strategy focus on ensuring improvements are made to the environment and open spaces, reducing carbon emissions, encouraging the use of sustainable transport and interconnecting within the borough.

A.4.4 **Policy SO1- Delivering Tower Hamlets' regional role** requires that all large developments maximise the social benefits for the borough and help to ensure that the *"borough develops as a sustainable, liveable and healthy area of inner London."*

A.4.5 **Policy SO3 - Achieving wider sustainability** states that any existing or new infrastructure should enhance health benefits (such as providing access to open spaces), reduce development related carbon emissions, protect and enhance the natural environment by reducing land, air, noise and water pollution and ensure that the capacity of new development is sufficient to support growth.

A.4.6 **Policy SP03 - Creating healthy and liveable neighbourhoods** aims to achieve active and healthy lifestyles by providing quality walking and cycling networks, promoting sustainable modes of travel and reducing noise and air pollution in the borough.

A.4.7 **Policy SP04 - Creating a Green and Blue grid** identifies how existing and new green and blue spaces should be protected, developed and enhanced to create connected and publically accessible areas.

A.4.8 **Policy SO14 - Dealing with Waste** outlines the borough's plan to manage and minimise waste, reducing the amount that is sent to landfill.

A.4.9 **Policy SP05 - Dealing with Waste** categorizes the waste management hierarchy of reuse, recycle and reduce and requires all developments to reduce and reuse waste from construction and demolition.

A.4.10 **Policy SO20 - Creating attractive and safe streets and spaces** requires that streets and spaces are well designed, safe, attractive and accessible by sustainable modes of travel.

A.4.11 **Policy SO21 - Creating attractive and safe streets and spaces** aims to create places and spaces that promote social inclusion and interaction.

A.4.12 **Policy SP09 - Creating attractive and safe streets and spaces** recognises to put pedestrians first and *"promote streets, both as links as movements and places in their own right," "minimise on-street and off-street parking provision, particularly in areas of good public transport"* and ensure that *"new development has no adverse impact on the safety and capacity of the road network."*

A.4.13 **Policy SO24 - Working towards a zero carbon borough** sets a target to "*achieve a zero carbon borough in the 21st century, with a 60% reduction in carbon emissions by 2025."*

A.4.14 **Policy SP11 - Working towards a zero carbon borough** outlines the borough's strategy to reduce carbon emissions to meet the target set in Policy SO24.

A.4.15 **Policy SO25 - Deliver place making** identifies the need to create distinctive and well-designed places which interconnect and integrate with the wider London area.

A.4.16 **Policy SP12 - Deliver place making** identifies ways to improve, enhance and develop a network of sustainable, connected, and well designed areas across the borough.

Unitary Development Plan (LB of Tower Hamlets, December 1998)

A.4.17 The UDP was adopted by the London Borough of Tower Hamlets in December 1998. Due to the emerging LDF and the adoption of the Core Strategy, a number of policies have been deleted from the UDP.

A.4.18 The relevant transport policies set out in this document focus on environmental protection (including reducing levels of pollution within the borough), the provision of strategic riverside walkways, sustainable travel, the use of waterways for freight and the borough's criteria for the development of public utilities and services.

A.4.19 The relevant UDP policies which have been saved since September 2007 are outlined below.

A.4.20 **Policy DEV2 – Environmental requirements** aims to reduce detrimental impacts of development on the environment by:

- Safeguarding the amenity of residents and the environment from the effects of pollution;
- Ensuring that adjoining buildings are not negatively affected by loss of privacy and the daylight and sunlight conditions;
- Protecting and enhancing areas of significance for nature conservation and sites of local importance; and
- Integrating sustainable development into development, such as incorporating energy efficient measures.

A.4.21 **Policy DEV48 – Strategic riverside walkways and new development** indicates that developments with a water frontage should "provide a walkway to an acceptable standard except where the walkway would conflict with commercial or transport interests."

A.4.22 **Policy DEV49 – Moored vessels and structures** states that development incorporating moored vessels or structures within or over rivers, canals or dock areas will only be granted if it is fundamental to the movement of passengers/goods by water and/or if it would increase water recreational use.

A.4.23 **Policy DEV57 – Development affecting nature conservation areas** indicates that development should not be permitted where unnecessary harm would be caused to sites of conservation importance or the Green Chain.

A.4.24 **Policy DEV64 – Strategic riverside walkway designation** describes the Strategic Riverside Walkway.

A.4.25 **Policy DEV65 – Protection of existing walkways** specifies that existing walkways would be protected from development that would have an impact on existing access and character.

A.4.26 **Policy DEV66 – Creation of new walkways** identifies a network of pedestrian footpaths, with consideration to the Green Chains and the Strategic Riverside Walkway.

A.4.27 **Policy T16 – Traffic priorities for new development** focuses on the proposed operational use and the impact of development associated traffic. The borough will consider the development proposals in terms of:

- Danger or inconvenience to other road users such as pedestrians and cyclists;
- Emergency access obstruction;
- Detrimental impacts on the public transport network; and
- Negative impacts in the environment or residential/other sensitive areas.

A.4.28 **Policy T26 – Use of the waterways for freight** encourages "a maximum feasible use of the waterways for the movement of freight and bulky goods."

A.4.29 **Policy U1 – Considerations regarding new public utility development.** This policy highlights the following criteria for the development of public utilities and services:

- *"The need for the service to be located in the borough,*
- *The likely effects of the operation upon traffic generation, pollution, noise and nuisance, and*
- *The likely effects of the operation upon residential amenity."*

Core Strategy and Document Control Plan Interim Planning Guidance (LB of Tower Hamlets, October 2007)

A.4.30 The IPG was adopted by the London Borough of Tower Hamlets in October 2007. This document considers policies that have not yet been superseded by the Core Strategy. Policies within this document largely focus on accessibility, sustainable transport, transport assessments & travel plans.

A.4.31 **Policy DEV 3 - Accessibility and Inclusive Design** outlines the design requirements for new developments.

A.4.32 **Policy DEV 4 - Safety and security** outlines a number of safety and security measures that should be put in place to support new developments.

A.4.33 **Policy DEV 12- Management of Demolition and Construction** requires the submission of Demolition and Construction Environmental Management Plans to minimise the impact on local amenity.

A.4.34 **Policy DEV 16 - Walking and Cycling routes and facilities** aims to improve and enhance pedestrian and cycle facilities by integrating development with pedestrian and cycle routes, ensuring accessibility for all, providing cycle parking and changing facilities and maintaining and enhancing Strategic Walkways and the Tower Hamlets Cycle Network.

A.4.35 **Policy DEV 17 - Transport Assessments** requires developments to provide adequate and safe servicing and circulation proposals, identify the impact of the development on the transport network and provide

appropriate mitigation where required, justify parking and promote sustainable travel.

A.4.36 **Policy DEV 18- Travel Plans** requires the submission of a Travel to support any major development.

A.4.37 **Policy OSN 3- Blue Ribbon Network and the Thames Policy Area** considers the impact of development on or next to the Blue Ribbon Network, including the Thames Policy Area. Policy requirements include:

- Appropriate access to the water and enjoyment for all;
- Proposals for moored vessels and structures should not interfere with navigation, create siltation issues, affect river walls and flood defences, cause accessibility issues or negatively impact on the amenity of nearby users;
- Proposals for non-residential moored vessels and structures in or over river, canal or dock areas will only be supported if they improve movement of goods and passengers and increase the recreational use; and
- Any major development adjacent to the Blue Ribbon Network, including developments within the Thames Policy Area, should be supported by an assessment covering impacts to access, permeability and biodiversity.

Supplementary Planning Guidance (SPG)

A.4.38 The borough has a number of Supplementary Planning Guidance/Advice documents to support the Development Plan.

A.4.39 Transport policies within the identified documents below are concerned with ensuring improvements are made to encouraging the use of sustainable transport, riverside waterways and river/canal transport within the borough.

A.4.40 **Leaside Area Action Plan (LB of Tower Hamlets, October 2007)** aims to promote more sustainable transport, improve public transport within Leaside, encourage accessibility and movement and promote river transport use.

A.4.41 **Riverside Walkways SPG (LB of Tower Hamlets, December 1998)** seeks to safeguard and promote the provision of walkways along the riverside.

A.4.42 **Canalside Developments SPG (LB of Tower Hamlets, December 1998)** provides further guidance for designing developments along the borough's canals.

A.4.43 **Limehouse Cut Conservation Area Statement and Appraisal Management Plan (LB of Tower Hamlets, April 2011)** outlines the management plan for the conservation of this designated area, which consists of the Limehouse Cut, the former Poplar Employment Exchange and industrial buildings located on Dod Street.

A.4.44 **Wapping Wall Conservation Area Statement and Appraisal Management Plan (LB of Tower Hamlets, November 2009)** provides detail on the conservation and regeneration of this designated area. King Edward Memorial Park forms part of this conservation area. Focus is given to maintaining the character of the area and the preservation of trees and listed structures.

A.4.45 **York Square Conservation Area Statement and Appraisal Management Plan (LB of Tower Hamlets, November 2009)** recognizes that "*Commercial Road is a busy road within York Square Conservation Area and indeed across the borough and is a principal route between the East End and City."* Emphasis is also placed on improving pedestrian and cycle lanes along this route and adjoining side streets.

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Appendix B – PTAL analysis

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PTAI Study Report File Summary

PTAI Run Parameters

PTAI Run	20120110170924
Description	20120110170924
Run by user	PTAL web application
Date	01/10/2012

Walk File Parameters

Walk File	PLSQLTest
Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
BUS Walk Access Time (mins)	8
BUS Reliability Factor	2.0
LU LRT Walk Access Time (mins)	12
LU LRT Reliability Factor	0.75
NATIONAL_RAIL Walk Access Time (mins)	12
NATIONAL_RAIL Reliability Factor	0.75
Coordinates:	536090, 181059

Mode	Stop	Route	Distance (metres)	Frequency (vph)	Weight	Walk time (mins)	SWT (mins)	TAT (mins)	EDF	AI
BUS	LIMEHOUSE STATION	115	101.02	9	1	1.26	5.33	6.6	4.55	4.55
BUS	LIMEHOUSE STATION	135	101.02	6	0.5	1.26	7	8.26	3.63	1.82
BUS	LIMEHOUSE STATION	15	101.02	7.5	0.5	1.26	6	7.26	4.13	2.07
BUS	LIMEHOUSE STATION	D3	101.02	6	0.5	1.26	7	8.26	3.63	1.82
LU LRT	Limehouse	Docklands Light Railway Bank to Lewisham DLR	42.42	15	1	0.53	2.75	3.28	9.15	9.15
NATIONAL_RAIL	LIMEHOUSE BR	STANFORD-LE-HOPE to LONDON FENCHURCH STREET BR	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	SOUTHEND CENTRAL to LONDON FENCHURCH STREET BR	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	GRAYS to LONDON FENCHURCH STREET BR	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	THORPE BAY to LONDON FENCHURCH STREET BR	86.37	0.67	0.5	1.08	45.53	46.61	0.64	0.32

Mode	Stop	Route	Distance (metres)	Frequency (vph)	Weight	Walk time (mins)	SWT (mins)	TAT (mins)	EDF	AI
NATIONAL_RAIL	LIMEHOUSE BR	SHOEBURYNESS to LONDON FENCHURCH STREET BR	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	SHOEBURYNESS to LONDON FENCHURCH STREET BR	86.37	0.67	0.5	1.08	45.53	46.61	0.64	0.32
NATIONAL_RAIL	LIMEHOUSE BR	GRAYS to LONDON FENCHURCH STREET BR	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	GRAYS to LONDON FENCHURCH STREET BR	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	SHOEBURYNESS to LONDON FENCHURCH STREET BR	86.37	0.67	0.5	1.08	45.53	46.61	0.64	0.32
NATIONAL_RAIL	LIMEHOUSE BR	PITSEA to LONDON FENCHURCH STREET BR	86.37	1.33	0.5	1.08	23.31	24.39	1.23	0.62
NATIONAL_RAIL	LIMEHOUSE BR	LONDON FENCHURCH STREET BR to GRAYS	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	LONDON FENCHURCH STREET BR to SHOEBURYNESS	86.37	2	0.5	1.08	15.75	16.83	1.78	0.89
NATIONAL_RAIL	LIMEHOUSE BR	PITSEA to LONDON FENCHURCH	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16

Mode	Stop	Route	Distance (metres)	Frequency (vph)	Weight	Walk time (mins)	SWT (mins)	TAT (mins)	EDF	AI
		STREET BR								
NATIONAL_RAIL	LIMEHOUSE BR	LAINDON to LONDON FENCHURCH STREET BR	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	SOUTHEND CENTRAL to LONDON FENCHURCH STREET BR	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	LAINDON to LONDON FENCHURCH STREET BR	86.37	2.33	1	1.08	13.63	14.71	2.04	2.04
NATIONAL_RAIL	LIMEHOUSE BR	THORPE BAY to LONDON FENCHURCH STREET BR	86.37	0.67	0.5	1.08	45.53	46.61	0.64	0.32
NATIONAL_RAIL	LIMEHOUSE BR	SHOEBURYNESS to LONDON FENCHURCH STREET BR	86.37	1.3	0.5	1.08	23.83	24.91	1.2	0.6
NATIONAL_RAIL	LIMEHOUSE BR	PITSEA to LONDON FENCHURCH STREET BR	86.37	0.33	0.5	1.08	91.66	92.74	0.32	0.16
NATIONAL_RAIL	LIMEHOUSE BR	LONDON FENCHURCH STREET BR to SOUTHEND CENTRAL	86.37	1	0.5	1.08	30.75	31.83	0.94	0.47

Mode	Stop	Route	Distance (metres)	Frequency (vph)	Weight	Walk time (mins)	SWT (mins)	TAT (mins)	EDF	AI
NATIONAL_RAIL	LIMEHOUSE BR	SHOEBURYNESS to LONDON FENCHURCH STREET BR	86.37	1	0.5	1.08	30.75	31.83	0.94	0.47

Total AI for this POI is 27.54.

PTAL Rating is 6a.

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Appendix C– Accident analysis

C.1 Existing highway safety analysis

C.1.1 Details of road traffic accidents within the vicinity of the site have been obtained from Transport for London (TfL) and have been reviewed to determine whether there are particular issues or trends on the local highway network.

C.1.2 Data on accidents for 5 years until the end of March 2011 has been analysed for the following junctions and surrounding roads:

a. A13 Commercial Road,

b. A13 Commercial Road / Belgrave Street,

c. A13 Commercial Road / Branch Road,

d. A13 Commercial Road / Butcher Row Junction Junction, and

e. A1203 The Highway / Butcher Row Junction,

C.1.3 Based on the DfT Design Manual for Roads and Bridges, Volume 13 Economic Assessment of Road Schemes, accidents have been analysed according to the method outlined in this guidance which states that accidents that have occurred within 20m of each junction are associated with that specific junction, and the remaining accidents are grouped to the relevant links.

C.1.4 The area of interest together with the locations of the recorded road traffic accidents are indicated in the table below.

Table C.1 Summary of accidents recorded

Location	Slight	Serious	Fatal	Total
A13 Commercial Road;	6	0	0	6
A13 Commercial Road / Barnes Street Junction,	2	1	0	3
A13 Commercial Road / Bekesbourne Street Junction,	4	0	0	4
A13 Commercial Road / Belgrave Street Junction,	10	0	0	10
A13 Commercial Road / Branch Road,	13	0	0	13
A13 Commercial Road / Brunton Place,	3	1	0	4
A13 Commercial Road / Butcher Row Junction Junction,	6	3	0	9
A13 Commercial Road / White Horse Road Junction,	3	1	0	4
A13 Commercial Road / Yorkshire Road Junction,	3	1	0	4

Location	Slight	Serious	Fatal	Total
A1203 The Highway	4	0	0	4
A1203 The Highway / Butcher Row Junction,	19	2	0	21
A1203 The Highway / Limehouse Link Junction	1	5	0	6
Butcher Row / Cable Street Junction.	3	0	0	3
Butcher Row / Ratcliffe Lane Junction.	4	0	0	4
Butcher Row / Rotherhithe Tunnel Northern Approach Junction	1	0	0	1
Limehouse Link	4	0	0	4
Limehouse Link / Butchers Row	3	0	0	3
Bekesbourne Street / Ratcliffe Lane, and	1	0	0	1
Rotherhithe Tunnel Approach / East India Dock Road Junction	0	1	0	1
Rotherhithe Tunnel Approach / Commercial Road Junction	2	0	0	2
Total	92	15	0	107

C.1.5 A total of 107 road traffic accidents have occurred in the area of interest during the five year period. These have been assessed in this section.

C.1.6 Of these accidents, 92 are classified as slight, 15 is classified as serious and none as fatal. Table C.1 summarises where these accidents occurred, and their level of severity. Accident analysis for the individual junctions and roads sections is discussed below.

A13 Commercial Road

C.1.7 The A1203 The Highway section runs parallel to the north of the site boundary and extends as far as the A13 at Limehouse in the east and the A100 at Tower Hill in the west. For the stretch of the A1203 within the study area, the highway is a double lane dual carriageway operating in a west-east direction. The junctions involved within this analysis are as follows:

a. A13 Commercial Road / Barnes Street Junction,
b. A13 Commercial Road / Bekesbourne Street Junction,
c. A13 Commercial Road / Belgrave Street Junction,
d. A13 Commercial Road / Branch Road,
e. A13 Commercial Road / Brunton Place,
f. A13 Commercial Road / Butcher Row Junction Junction,

g. A13 Commercial Road / Rotherhithe Tunnel Approach Junction,

h. A13 Commercial Road / White Horse Road Junction, and

i. A13 Commercial Road / Yorkshire Road Junction

C.1.8 Bekesbourne Street is sited to the north-east of King Edward Memorial Park, and to the south of Commercial Road (A13) and Limehouse Rail and Underground Station. It is proposed that Commercial Road and Bekesbourne Street will be the primary routes for construction traffic accessing and egressing the site.

C.1.9 Commercial Road (A13) - part of the Transport for London's Road Network (TLRN) - links to Whitechapel in Central London in the west and Basildon of Essex in the east.

C.1.10 A substantial proportion of accidents (57 accidents) within the study area occurred along Commercial Road (A13). These accidents are relatively dispersed along the stretch of road within the study area. Although there is a cluster of 10 and 13 accidents at its junction with Belgrave Street and Branch Road respectively. The majority of these accidents involved cars and motorcyclists and the key causes were recorded as failing to look properly and failure to judge another person's path or speed.

C.1.11 Of the total accidents along Commercial Road (A13), 7 were classified as serious. There is a cluster of 3 accidents at its junction with Butcher Row. The majority of these accidents involved cars and motorcyclists and the key causes were recorded as a failure to judge another person's path or speed and failing to restart at a junction. The majority of the other accidents involved cars and motorcyclists and the key causes were recorded as failing to look properly and reckless/careless driving. One of these accidents occurred at its junction with Butcher Row, where a coach/bus stops at a bus stop, collects a passenger, takes off again but the passenger falls from coach/bus. A junction restart was noted as the contributing factor to the cause of the accident.

C.1.12 Nearly all of the slight accidents that occurred along Commercial involved cars and motorcyclists and the cause was often attributed to failing to look properly and undertaking a poor turn or manoeuvre.

C.1.13 Of the total accidents, 5 accidents included Coaches/Buses or MGVs. Four of the accidents were rated as slight in severity and one led to a serious accident which has been described above.

A1203 The Highway

C.1.14 The A1203 The Highway section runs parallel to the north of the site boundary and extends as far as the A13 at Limehouse in the east and the A100 at Tower Hill in the west. For the stretch of the A1203 within the study area, the highway is a double lane dual carriageway operating in a west-east direction. The junctions involved within this analysis are as follows:

a. A1203 The Highway,

b. A1203 The Highway / Butcher Row Junction, and

c. A1203 The Highway / Limehouse Link Junction.

C.1.15 The Highway (A1203) - part of the Transport for London Road Network (TLRN) links to Tower Hill of Whitechapel in Central London in the west and Limehouse Link near Canary Wharf in the east.

C.1.16 A significant proportion of the accidents (31 accidents) within the study area occurred along The Highway (A1203). These accidents mainly occur along the stretch of road at its junction with Butcher Row. This cluster of 21 accidents involved cars and motorcyclists and the key causes were recorded as failing to look properly, swerving and sudden braking.

C.1.17 Of the total accidents along The Highway (A1203), 7 were classified as serious. There is a cluster of 5 accidents at its junction with Limehouse Link. The majority of these accidents involved just cars and the key causes were recorded as exceeding the speed limit and careless/reckless driving. The other two serious accidents involved just cars and the key causes were recorded as failing to look properly. One of these accidents occurred at its junction with Butcher Row, where a car stops at Butcher Row junction, the immediate car behind this car gets blinded by the sun and travels into the back of the first car. Poor driving was noted as the contributing factor to the cause of the accident.

C.1.18 Nearly all of the slight accidents that occurred along The Highway (A1203) involved cars and motorcyclists and the cause was often attributed to failing to look properly and undertaking a poor turn or manoeuvre.

C.1.19 Of the total accidents, 2 accidents included MGVs. Both the accidents were rated as slight in severity.

Butcher Row

C.1.20 The Bucther Row section runs parallel to the north of the site boundary and extends as far as the A13 at Limehouse in the east and the A100 at Tower Hill in the west. For the stretch of the A1203 within the study area, the highway is a double lane dual carriageway operating in a west-east direction. The junctions involved within this analysis are as follows:

a. Butcher Row Junction,

b. Butcher Row / Cable Street Junction,

c. Butcher Row / Ratcliffe Lane Junction, and

d. Butcher Row / Rotherhithe Tunnel Northern Approach Junction.

C.1.21 Butcher Row - part of the Transport for London's Road Network (TLRN) - links Commercial Road (A13) to The Highway (A1203).

C.1.22 The majority of accidents (8 accidents) within the study area occur relatively dispersed across the three junctions analysed. There are a small cluster of 3 and 4 accidents at its junction with Cable Street and Ratcliffe Lane respectively. All of these accidents involved cars and motorcyclists and the key causes were recorded as failing to look properly and poor turn or manoeuvre.

C.1.23 There were no serious accidents at this location. Nearly all of the slight accidents that occurred along Butcher Row involved cars and

motorcyclists and the cause was often attributed to failing to look properly and undertaking a poor turn or manoeuvre.

C.1.24 Of the total accidents, none included LGVs or HGVs.

Limehouse Link / /Bekesbourne Street / Rotherhithe Tunnel

C.1.25 The Bucther Row section runs parallel to the north of the site boundary and extends as far as the A13 at Limehouse in the east and the A100 at Tower Hill in the west. For the stretch of the A1203 within the study area, the highway is a double lane dual carriageway operating in a west-east direction. The junctions involved within this analysis are as follows:

a. Limehouse Link,

b. Limehouse Link / Butchers Row,

c. Bekesbourne Street / Ratcliffe Lane,

d. Rotherhithe Tunnel Approach / East India Dock Road Junction, and

e. Rotherhithe Tunnel Approach / Commercial Road Junction.

C.1.26 The majority of accidents (11 accidents) within the study area are relatively dispersed across the above locations. There is a small cluster of accidents at the Limehouse Link/ Butcher Row junction. All of these accidents involved cars and motorcyclists and the key causes were recorded as failing to look properly and poor turn or manoeuvre.

C.1.27 There was only one serious accident classified within this area. This serious accident involved two cars colliding and then one driver exiting his car to speak to the other driver and this driver reversed into him while walking. Aggressive and careless/reckless driving were the factors attributed to the cause of accident.

C.1.28 Nearly all of the slight accidents that occurred along Nine Elms involved cars and motorcyclists and the cause was often attributed to failing to look properly and undertaking a poor turn or manoeuvre.

C.1.29 None of these accidents included LGVs or HGVs.

C.2 Summary and conclusion

C.2.1 During the 5 year period, a total of 107 accidents occurred within the study area analysed. Of these accidents, 92 were categorised as slight and 15 were serious with the majority of accidents occurring on the junctions of Commercial Road (A13)/Belgrave Street, Commercial Road (A13)/Branch Road and The Highway (A1203)/ Butcher Row.

C.2.2 In general, the accidents largely involved cars and motorcyclists. Three of the accidents involved HGVs, of which 2 were rated as slight and one was serious, while MGVs were involved in 4 accidents, of which 4 were rated as slight.

C.2.3 Of the serious accidents, 7 occurred each on Commercial Road (A13) and The Highway (A1203), while one occurred at the junction between Rotherhithe Tunnel Approach and East India Dock Road Junction. The cause of these accident were attributed to factors such as aggressive

driving, careless/reckless driving and exceeding the speed limit. Thus, suggesting that these accidents have occurred as a result of human error rather than as a result of the highway geometry.

C.2.4 Of the total accidents along The Highway (A1203), 7 were classified as serious. There is a cluster of 5 accidents at its junction with Limehouse Link. The majority of these accidents involved just cars and the key causes were recorded as exceeding the speed limit and careless/reckless driving. The other two serious accidents involved just cars and the key causes were recorded as failing to look properly. One of these accidents occurred at its junction with Butcher Row, where a car stops at Butcher Row junction, the immediate car behind this car gets blinded by the sun and travels into the back of the first car. Poor driving was noted as the contributing factor to the cause of the accident. There was only one serious accident classified within this area. This serious accident involved two cars colliding and then one driver exiting his car to speak to the other driver and this driver reversed into him while walking. Aggressive and careless/reckless driving were the factors attributed to the cause of accident.

C.2.5 Furthermore, the majority of the slight accidents were also caused by factors associated with human error.

C.2.6 In summary, it is considered that the accidents within the vicinity of the site have been a result of human error rather than due to the geometry and / or infrastructure of the highway network. For this reason, accident mitigation is not considered necessary at this site location. In total 107 accidents have occurred within the study area analysed. In relation to the severity of these accidents, 92 were slight accidents, predominantly resulting from failure to look properly, poor manoeuvring and travelling too fast for the conditions.

Appendix D – Road Safety Audit

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Your ref -
Our ref 211146-00/cvl

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Thames Tideway Tunnel
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Paddington,
London W2 1AF
For the attention of Dermot Scanlon

15 February 2013

Dear Sirs

Thames Tideway Tunnel
Bekesbourne Street – Stage 1 Road Safety Audit

I have the pleasure of enclosing our Bekesbourne Street – Stage 1 Road Safety Audit report. In addition to the enclosed report the Audit Team noted the following points outwith the remit of the audit. I would be grateful if you would bring these issues to the attention of the Highway Authority, Designer and/or Maintainer as appropriate.

Additional Comments

- The proposals show the removal of around 15 on-street parking bays from Bekesbourne Street during the construction phase at Holloway CSO Weir. It is likely to result in congestion and frustration for residents who cannot find somewhere to park. Replacement facilities should be provided during the duration of the construction works.
- The swept path analysis drawings for the refuse vehicle appear to ignore the gateway structures immediately south and south west of the site on Bekesbourne Street. The Designer should ensure that vehicles can complete their manoeuvres safely.

IMG_8775.jpg

- Considering construction access to the site from Ratcliffe Lane requires vehicles to turn north into Bekesbourne Street and reverse south into the site compound, is is not clear how access to the site compound will be maintained during the ventilation ducting works during Phases 2c and 2d.

If you have any further queries regarding this letter or the enclosed report, please do not hesitate to contact me

Yours faithfully

Chris van Lottum
Senior Engineer
Road Safety Audit Team Leader

Enc

cc Phil Longman, Peter Brett Associates
Gavin Wicks, Arup

Thames Tideway Tunnel

Thames Tideway Tunnel - Bekesbourne Street

Stage 1 Road Safety Audit

RSA1.1a

Rev A | 15 February 2013

Job number 211146-03

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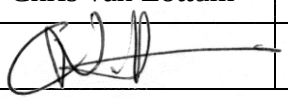
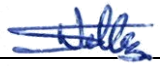
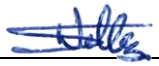
ARUP

Document Verification

ARUP

Job title		Thames Tideway Tunnel - Bekesbourne Street			**Job number** 211146-03
Document title		Stage 1 Road Safety Audit			**File reference**
Document ref		RSA1.1a			
Revision	**Date**	**Filename**	RP CVL TTT 22 Bekesbourne RSA1.1 130215 Rev A.docx		
Issue	19 Dec 2012	**Description**	Issue Report		
			Prepared by	Checked by	Approved by
		Name	Chris van Lottum	Steve Wells	Steve Wells
		Signature			
Rev A	15 Feb 2013	**Filename**	RP CVL TTT 22 Bekesbourne RSA1.1 130215 Rev A.docx		
		Description	Revised documents received		
			Prepared by	Checked by	Approved by
		Name	Chris van Lottum	Tom Corke	Steve Wells
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
				Issue Document Verification with Document	✓

Contents

Figures

Appendices

1 Introduction

Arup was appointed by Thames Tideway Tunnel to conduct a Stage 1 Road Safety Audit on proposals to create a construction access and egress for works associated with the Thames Tideway Tunnel at Bekesbourne Street in the London Borough of Tower Hamlets.

The agreed Audit Team consisted of:

- Mr C van Lottum MEng (Hons), MCIHT, MSoRSA
- Mr T Corke BEng (Hons), MSc, CEng, MICE, MCIHT, MSoRSA

The Audit Team visited the site together on Wednesday 12th December 2012; weather conditions at the time of the site visit were bright but very cold and the road surface was dry.

A list of information provided to the Audit Team has been included as Appendix A to this Report.

The following information was **not** made available to the Audit Team and as such any specific influence of these details on road user safety has not been considered by this audit:

- Departures from Standard
- Road profiles
- Cross sections
- Drainage
- Landscape
- Public utilities
- Traffic signals
- Traffic signs
- Street lighting
- Road markings
- Road restraint systems

It is understood that no previous Road Safety Audit have been conducted on this scheme.

This audit has been undertaken in accordance with the Terms of Reference set out in TfL Procedure 'Road Safety Audit SQA-0170 – Issue 4'; and the Audit Team members meet the training and experience requirements set out therein. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria. However, to clearly explain a problem or recommendation the Audit Team may occasionally refer to design standards without engaging in technical audit.

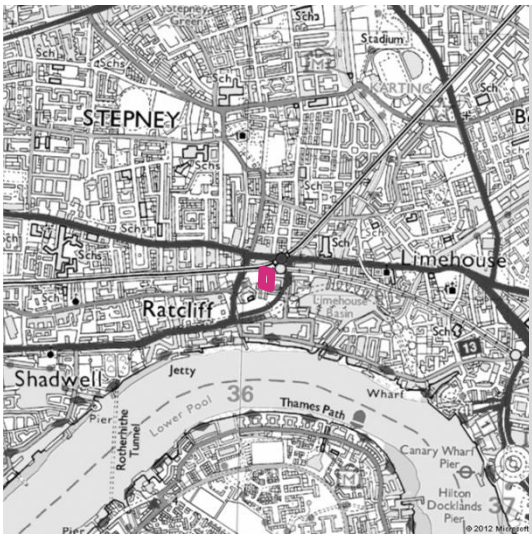
All problems and recommendations identified by this audit are referenced to the design drawings and the locations have been indicated on the attached plan.

Other issues, including safety issues identified during the Audit but excluded from this report by the Terms of Reference, which the Audit Team wishes to draw to the attention of the Audit Project Sponsor, are set out in separate correspondence.

Road Safety Audit is based upon a qualitative risk assessment process and there is no measure of the success achieved by any recommendations given herein. Road

Safety Audit cannot guarantee the safe operation of the scheme under consideration in this report as accidents are rare and random events and are largely caused by factors outside the Audit Team's influence, such as driving behaviour and, to a lesser extent, vehicle condition.

1.1 Site Description



Scheme Location

The Bekesbourne Street Site is situated adjacent to The Limehouse station of the Docklands Light Railway, on the south side of the A13 Commercial Road in Stepney, East London.

1.2 Scheme Description

Two different highway configurations would be implemented during the construction of the site:

- During Phase 1 of the construction works, the existing parking area on the eastern side of the road would be replaced by a single traffic lane under traffic control; pedestrians would use the eastern footway adjacent to John Scurr House.
- For Phase 2 of the construction works, the single traffic lane under traffic control would move to the western side whilst pedestrians would remain on the eastern footway.

Throughout the construction period, the site would be gated. Vehicles would need to access the Bekesbourne Street site in reverse gear from Ratcliffe Lane, under supervision as necessary. Vehicles would exit in forward gear and route westbound along Ratcliffe Lane to Butcher Row (A126).

2 Stage 1 Road Safety Audit

The Recommendations below are numbered as follows:

STAGE . AUDIT NUMBER . RECOMMENDATION NUMBER

2.1 Construction Layout

Location: Ratcliffe Lane at the junction with Bekesbourne Street

Summary: Realignment of carriageway may result in vehicle conflict with street furniture or other road users.

Description: It is proposed to temporarily realign carriageway of Ratcliffe Lane in order to excavate on the north side of the road. This will require the removal of bollards and an illuminated no-entry sign.

IMG_8759.jpg

The no-entry sign should be retained during the works and without a physical carriageway edge could be struck by a passing vehicle. Furthermore pedestrians using the footway could also be at risk of conflict with passing vehicles.

S1.1.1 Recommendation: Provide a physical barrier between the carriageway and the footway to protect pedestrians and street furniture from collisions.

Location: Ratcliffe Lane junction with Bekesbourne Street

Summary: The poor condition of the existing carriageway could lead to vehicle damage.

Description: There is an area of poor carriageway condition at the junction of Bekebourne Street and Ratcliffe Lane to the north of the site access. The existing block paving at the junction is loose and shows signs of structural failure of the underlying pavement.

IMG_8779.jpg

Repeated overrunning by construction traffic is likely to exacerbate the existing problem, to a point at which vehicles could be damaged by debris.

S1.1.2 **Recommendation:** Ensure the carriageway is maintained so as to remain safe for all users for the duration of the works.

	Location:	Ratcliffe Lane junction with Bekesbourne Street
	Summary:	Large vehicle manoeuvring could conflict with other road users leading to injury.
	Description:	The swept path analysis for the Bekesbourne Street site shows vehicles approaching on Ratcliffe Lane, turning north into Bekesbourne Street and reversing south, through the junction to the site, on the southern section of Bekesbourne Street. Reversing vehicles have limited visibility so there is a much greater chance of conflict between the reversing vehicle and other road users or fixed assets.
S1.1.3	**Recommendation:**	Introduce temporary traffic control across the whole junction throughout the construction phase to stop vehicles turning into the junction and conflicting with construction traffic.

	Location:	Bekesbourne Street
	Summary:	Site hoarding blocks visibility to traffic signal leading to vehicle conflicts
	Description:	The site hoarding around the ventilation duct excavations during Phase 2b will obscure the traffic signal head located on the eastern footway of Bekesbourne Street. If approaching traffic cannot see the traffic signal it is not under the control of the traffic signal resulting in conflicts between traffic streams.
S1.1.4	**Recommendation:**	Ensure the traffic signal head is clearly visible to all traffic approaching the works area, or extend the area of traffic signal control allowing separate traffic signal heads on each approach.

2.2 Permanent Layout

No items have been raised with respect to the Permanent Layout as a result of this audit

End of list of problems identified and recommendations offered in this Stage 1 Road Safety Audit

3 Road Safety Audit Statement

I certify that this audit has been carried out in accordance with HD19/03.

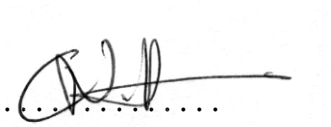
Audit Team Leader

Mr C van Lottum MEng (Hons), MCIHT, MSoRSA

Senior Engineer

Arup

Central Square, Forth Street,
Newcastle upon Tyne, NE1 3PL



15 February 2013

Audit Team Member

Mr T Corke BEng (Hons), MSc, CEng, MICE, MCIHT, MSoRSA

Senior Engineer

Arup

The Arup Campus, Blythe Gate, Blythe Valley Park,
Solihull, B90 8AE

Figures

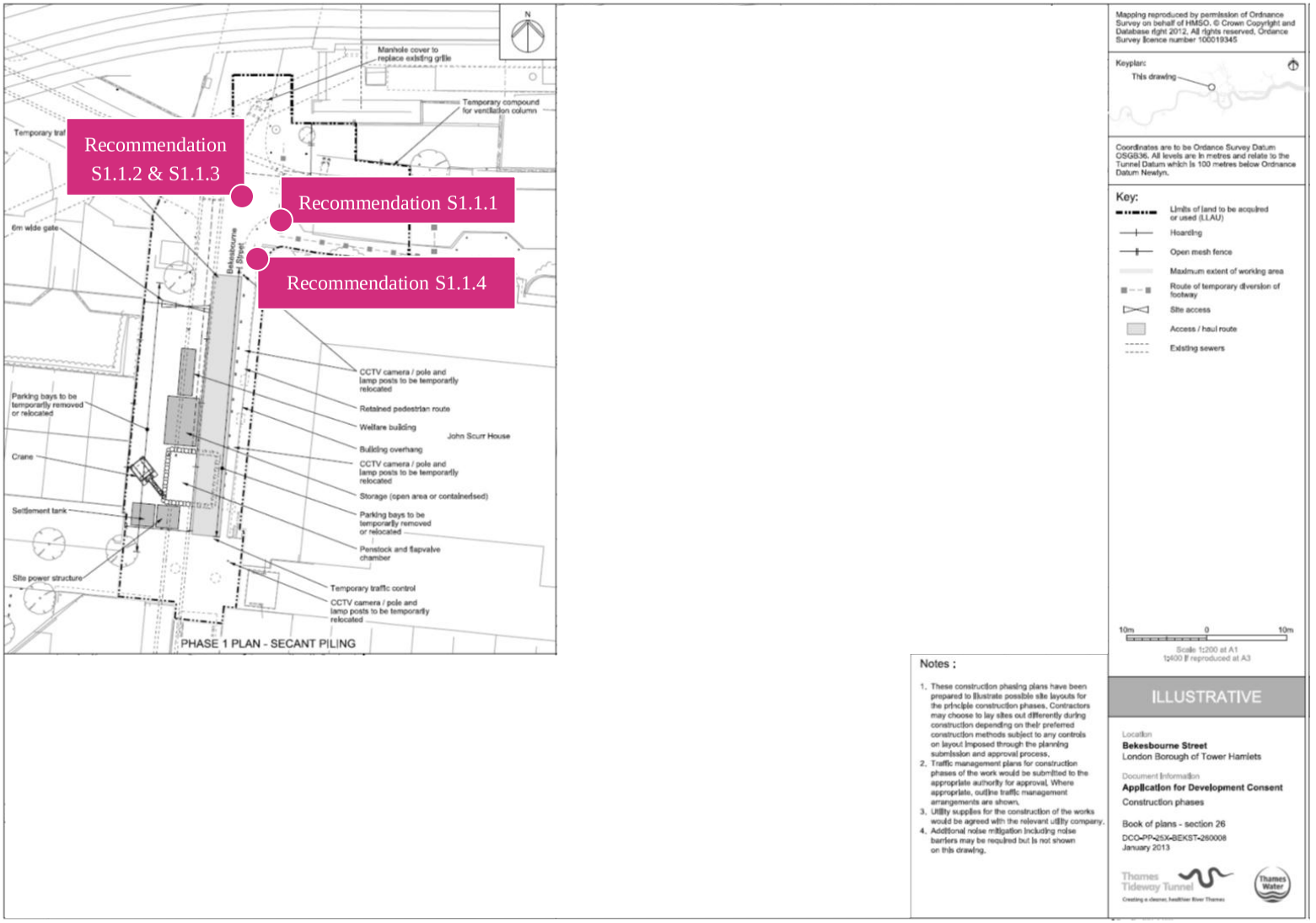


Figure 1 Location of Recommendations

Appendix A

Documents and Drawings

A1 Documents and Drawings

The following documents and drawings were supplied to the Audit Team by the Designer and have been examined in the course of conducting this audit.

A1.1 Documents

Title	Reference	Revision
Road Safety Audit Brief	-	16/12/2012

A1.2 Drawings

Title	Reference	Revision
Transport - site location plan	1PL03-TT-50658	Jan 2013
Transport - construction traffic routes	1PL03-TT-50650	Jan 2013
Transport - accident locations	1PL03-TT-50754	Jan 2013
Construction phases	DCO-PP-25X-BEKST-260008	Jan 2013
Existing and construction base case highway layout	DCO-PP-25X-BEKST-260010	Jan 2013
Highway layout during construction – Phase 1	DCO-PP-25X-BEKST-260011	Jan 2013
Highway layout during construction – Phase 2	DCO-PP-25X-BEKST-260012	Jan 2013
Highway layout during construction – Phase 2a	DCO-PP-25X-BEKST-260013	Jan 2013
Highway layout during construction – Phase 2b -2d	DCO-PP-25X-BEKST-260014	Jan 2013
Highway layout during construction – Phase 3	DCO-PP-25X-BEKST-260015	Jan 2013
Permanent highway layout – Area 1 work	DCO-PP-25X-BEKST-260016	Jan 2013
Highway layout during construction – Phase 1 – Vehicle swept path analysis	DCO-PP-25X-BEKST-260017	Jan 2013
Highway layout during construction – Phase 1 – Vehicle swept path analysis	DCO-PP-25X-BEKST-260018	Jan 2013
Highway layout during construction - Phase 2 - Vehicle swept path analysis	DCO-PP-25X-BEKST-260019	Jan 2013
Highway layout during construction - Phase 2 - Vehicle swept path analysis	DCO-PP-25X-BEKST-260020	Jan 2013
Highway layout during construction – Phase 2b -2d - Vehicle swept path analysis	DCO-PP-25X-BEKST-260021	Jan 2013
Permanent highway layout (Area 1) – Vehicle swept path analysis	DCO-PP-25X-BEKST-260022	Jan 2013

TECHNICAL NOTE

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Job Name	**Thames Tideway Tunnel – Bekesbourne Street**	
Job No.	22104	
Note No.	001	
Date	15th February 2013	
Subject	Stage 1 Road Safety Audit – Designer's Response	
Prepared by	L Harney	**Reviewed:** B Kemp

1 Introduction

1.1 Arup was appointed by Thames Water to conduct a Stage 1 Road Safety Audit on proposals to create a construction access and egress for works associated with the Thames Tideway Tunnel at Bekesbourne Street, Tower Hamlets.

1.2 This technical note provides the Designer's Response to the Stage 1 Audit for this site.

2 Stage 1 Road Safety Audit

2.1 Location: Ratcliffe Lane at the junction with Bekesbourne Street

Summary: Realignment of carriageway may result in vehicle conflict with street furniture or other road users.

Description: It is proposed to temporarily realign carriageway of Ratcliffe Lane in order to excavate on the north side of the road. This will require the removal of bollards and an illuminated no-entry sign.

The no entry sign should be retained during the works and without physical carriageway edge could be struck by a passing vehicle. Furthermore pedestrians using the footway could also be at risk of conflict with passing vehicles.

S1.1.1 Recommendation: Provide a physical barrier between the carriageway and the footway to protect pedestrians and street furniture from collision..

Recommendation Accepted – The method of working will determine if sufficient width is available to maintain vehicles past the works site, early review has suggested a complete closure of the carriageway to undertake the works, further review to be undertaken at Stage 2 (Detailed Design)

2.2 Location: Ratcliffe Lane junction with Bekesbourne Street

Summary: The poor conditions of the existing carriageway could lead to vehicle damage.

Description: There is an area of poor carriageway condition at the junction of Bekesbourne Street and Ratcliffe Lane to the north of the site access. The existing block paving at the junction is loose and shows signs of structural failure of the underlying pavement.

Repeated overrunning by construction traffic is likely to exacerbate the existing problem, to a point at which vehicles could be damaged by debris.

S1.1.2 Recommendation: Ensure the carriageway is maintained so as to remain safe for all users for the duration of the works.

Recommendation Accepted – Existing condition of the carriageway will be reviewed at Stage 2 (Detailed Design). A condition survey will be undertaken before commencement of any onsite works to verify the existing condition of the adjacent highway.

2.3 Location: Ratcliffe Lane junction with Bekesbourne Street

Summary: Large vehicles manoeuvring could conflict with other road users leading to injury.

Description: The swept path analysis for the Bekesbourne Street site shows vehicles approaching on Ratcliffe Lane, turning south into Bekesbourne Street and reversing south, through the junction to the site, on the southern section of Bekesbourne Street.

Reversing vehicles have limited visibility so there is a much greater chance of conflict between the reversing vehicle and the other road users or fixed assets.

S1.1.3 Recommendation: Introduce temporary traffic control across the whole junction through the construction phase to stop vehicles turning into the junction and conflicting with construction traffic.

Recommendation Accepted – The proposed traffic management arrangement will be reviewed at Stage 2 (Detailed Design).

2.4 Location: Bekesbourne Street

Summary: Site hoarding blocks visibility to traffic signal leading to vehicle conflicts. Description: The site hoarding around the ventilation duct excavations during phase 2b will obscure the traffic signal head located on the eastern footway of Bekesbourne Street.

If approaching traffic canot see the traffic signal it is not under the control of the traffic signal resulting in conflicts between traffic streams.

S1.1.4 Recommendation: Ensure traffic signal head is clearly visible to all traffic approaching the works area, or extend the area of traffic signal control allowing separate traffic signal heads on each approach.

Recommendation Accepted – The proposed traffic management arrangement will be reviewed at Stage 2 (Detailed Design).

3 Response to Comments provided in addition to the Stage 1 Road Safety Audit

3.1 Additional Comments

The proposals show the removal of around 15 on-street parking bays from Bekesbourne Street during the construction phase at Holloway CSO Weir. It is likely to result in congestion and frustration for residents who cannot find somewhere to park. Replacement facilities should be provided during the duration of the construction works.

Comment Response – The option of providing replacement parking was examined. However a suitable area could not be identified. This will be revisited at Stage 2 (Detailed Design).

3.2 Additional Comments

The swept path analysis drawings for the refuse vehicle appear to ignore the gateway structure immediately south of the site on Bekesbourne Street. The Designer should ensure that vehicles can complete their manoeuvres safely.

Comment Reponse – The swept path will be amended to take into account the gateway structure at Stage 2 (Detailed Design).

3.3 Additional Comments

Considering construction access to the site from Ratcliffe Lane requires vehicles to turn north into Bekesbourne Street and reverse south into the site compound, it is not clear how

access to the site compound will be maintained during the ventilation duct works during Phase 2c and 2d.

Comment Reponse – The site compound access will need to be managed by the contractor. Further consideration of phasing will be undertaken at Stage 2 (Detailed Design).

Thames Tideway Tunnel
Thames Water Utilities Limited

Application for Development Consent

Application Reference Number: WWO10001

Transport Assessment

Doc Ref: **7.10.24**

Minor Work Sites

Figures

APFP Regulations 2009: Regulation **5(2)(q)**

Hard copy available in

Box **53** Folder **B**
January 2013

Thames Tideway Tunnel

Creating a cleaner, healthier River Thames

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Thames Tideway Tunnel

Transport Assessment

Section 27: Minor works sites figures

List of contents

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Plans

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Bekesbourne Street

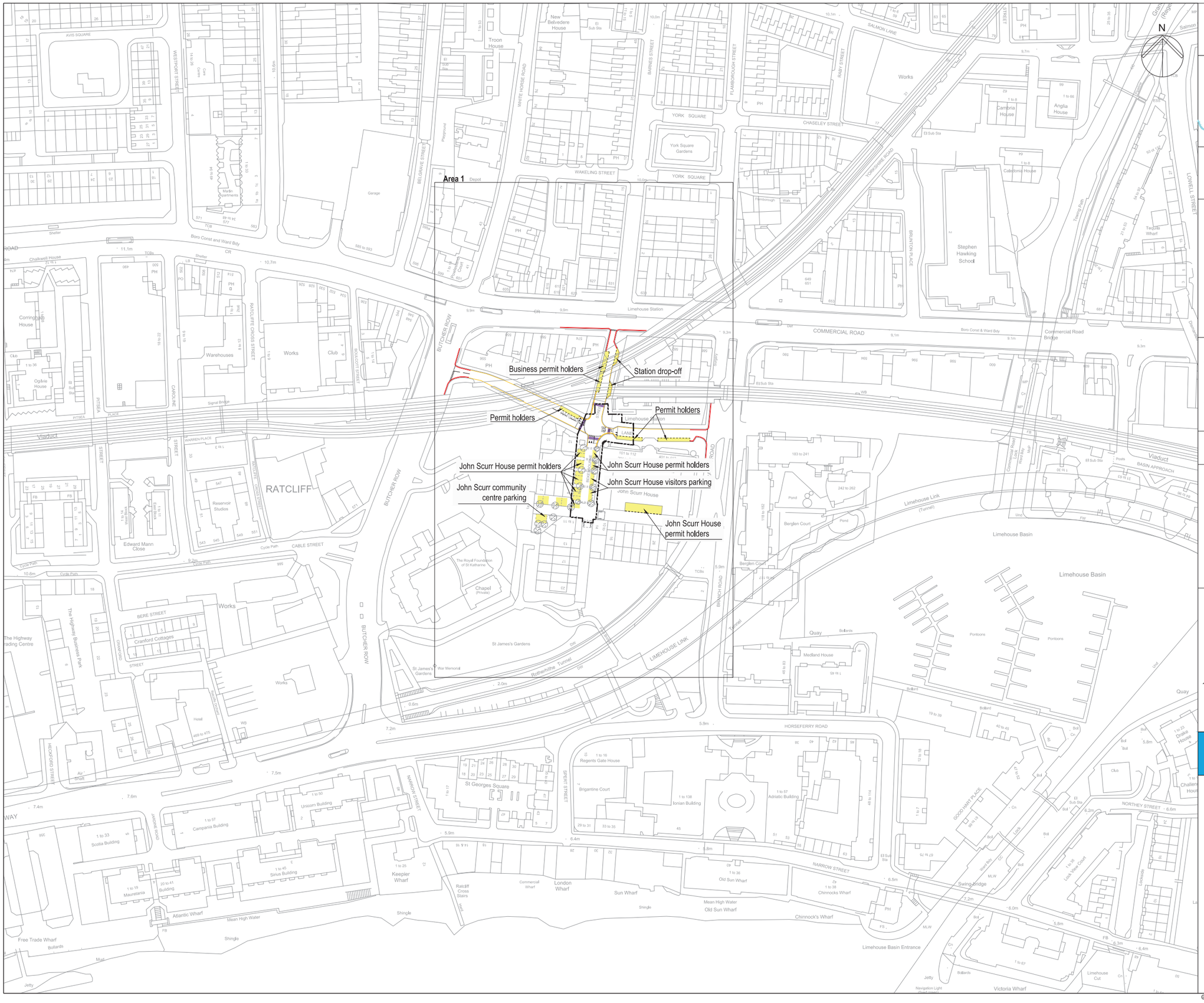
THAMES TIDEWAY TUNNEL - SCHEDULE OF ASSOCIATED HIGHWAY WORKS

Drawing Number	Works Reference	Location	Item of Work	Date of Implementation
DCO-PP-25X-BEKST-260011 DCO-PP-25X-BEKST-260015	SM08X_C01	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Provision of temporary traffic management system to control vehicles along section of diverted carriageway on the eastern side of Bekesbourne Street as only one direction of traffic can be accommodated at a time.	TBC
	SM08X_C02	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Removal of 8 trees on either side of the existing carriageway to accommodate the construction site and diverted road.	TBC
	SM08X_C03	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Suspension of approximately 13 parking bays associated with John Scurr House and 2 visitor parking bays.	TBC
	SM08X_C04	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Provision of diverted carriageway on the eastern side of Bekesbourne Street in order to facilitate the Phase 1 construction site area. This road will only be wide enough to accommodate one way traffic flow at a time.	TBC
	SM08X_C05	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Removal of landscaped areas on the western side of Bekesbourne Street in order to accommodate the Phase 1 site area.	TBC
	SM08X_C06	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Provision of gated construction site access for Phase 1.	TBC
	SM08X_C07	N/A	N/A	
DCO-PP-25X-BEKST-260012 DCO-PP-25X-BEKST-260013 DCO-PP-25X-BEKST-260014	SM08X_C08	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Provision of temporary traffic management system to control vehicles along section of diverted carriageway on the western side of Bekesbourne Street as only one direction of traffic can be accommodated at a time.	TBC
	SM08X_C09	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Removal of trees on both sides of the existing carriageway to accommodate the construction site and diverted road.	TBC
	SM08X_C10	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Suspension of approximately 13 parking bays associated with John Scurr House and 2 visitor parking bays.	TBC
	SM08X_C11	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Provision of diverted carriageway on the western side of Bekesbourne Street in order to facilitate the Phase 2 construction site area. This road will only be wide enough to accommodate one way traffic flow at a time.	TBC
	SM08X_C12	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Removal of landscaped areas on the western side of Bekesbourne Street in order to accommodate the diverted road.	TBC
	SM08X_C13	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Provision of gated construction site access for Phase 2.	TBC
DCO-PP-25X-BEKST-260014	SM08X_C14	Bekesbourne Street - North of the Bekesbourne Street / Ratcliffe Lane junction	Provision of a temporary compound for the ventilation column.	TBC
	SM08X_C15	Bekesbourne Street - Bekesbourne Street / Ratcliffe Lane junction	Removal of footway and relocation of kerb on southern side of Ratcliffe Lane accommodate ventilation duct works	TBC
	SM08X_C16	Bekesbourne Street - Bekesbourne Street / Ratcliffe Lane junction	Removal of footway and relocation of kerb on northern side of Ratcliffe Lane accommodate ventilation duct works	TBC
	SM08X_C17	Bekesbourne Street - Bekesbourne Street / Ratcliffe	Suspension of 2 parking bays on Ratcliffe Lane.	

Bekesbourne Street

THAMES TIDEWAY TUNNEL - SCHEDULE OF ASSOCIATED HIGHWAY WORKS

Drawing Number	Works Reference	Location	Item of Work	Date of Implementation
		Lane junction		
DCO-PP-25X-BEKST-260016	SM08X_P01	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Reinstatement of two way traffic flow on Bekesbourne Street to the south of Ratcliffe Lane.	TBC
	SM08X_P02	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Reinstatement of 8 trees which were removed to accommodate the construction site and temporary road diversion.	TBC
	SM08X_P03	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Permanent removal of 2 parking bays to accommodate the electrical kiosk.	TBC
	SM08X_P04	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Reinstatement of landscaped areas on the western and eastern sides of Bekesbourne Street.	TBC
	SM08X_P05	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Provision of electric kiosk which results in the permanent removal of 2 parking bays.	TBC
	SM08X_P06	Bekesbourne Street - South of the Bekesbourne Street / Ratcliffe Lane junction	Reinstatement of 13 permit parking bays and 2 visitor parking bays associated with John Scurr House.	TBC
	SM08X_P07	Bekesbourne Street - Bekesbourne Street / Ratcliffe Lane junction	Reinstatement of 2 permit parking bays on Ratcliffe Lane	TBC
	SM08X_P08	Bekesbourne Street - Bekesbourne Street / Ratcliffe Lane junction	Reinstatement footway on Ratcliffe Lane.	TBC



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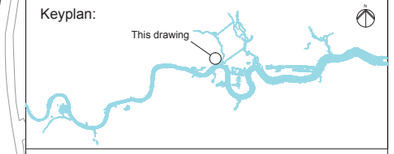

Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing

- Red route parking restrictions
- Parking restrictions
- On street parking
- Pedestrian crossing
- Tree

Revised

- Limit of land to be acquired or used (LLAU)

On Street Parking

Permit holders - Permit holders only Mon - Fri 8:30am - 5:30pm
Station drop off - No waiting Mon - Fri 8:30am - 5:30pm
John Scurr House permit holders - Residents parking
John Scurr House visitors parking - Visitors parking
Business permit holders - Business permit holders only Mon - Fri 8:30am - 5:30pm
John Scurr community centre parking - Community centre parking

Stage
Phase 1-3

Standards

- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 100m

Scale 1:1000 at A1
1:2000 if reproduced at A3

FOR INFORMATION

Location
Bekesbourne Street
London Borough of Tower Hamlets

Document Information
Application for Development Consent
Existing and construction base case highway layout

DCO-PP-25X-BEKST-260010
January 2013

Thames Tideway Tunnel
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Thames Water

Existing and construction base case highway layout

Highway layout during construction

Business permit holders

Station drop-off

Permit holders

Permit holders

John Scurr House permit holders

John Scurr House permit holders

John Scurr House visitors parking

John Scurr community centre parking

John Scurr House permit holders

SM08X_C01

SM08X_C02

SM08X_C03

SM08X_C04

SM08X_C05

SM08X_C06

Limehouse Station

John Scurr House

BUTCHER ROW

BRANCH ROAD

LIMEHOUSE LINK

Rotherhithe Tunnel

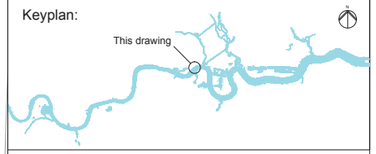
St James's Gardens

The Royal Foundation of St Katharine

Chapel (Private)

War Memorial

Keyplan:



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Key

Existing

- Parking restrictions
- On street parking
- Pedestrian crossing
- Tree

Revised

- Parking restrictions
- Illustrative on-site manoeuvring zone
- Suspended parking
- Diverted access road (new carriageway construction)
- Site hoarding
- Access gate
- Trees to be removed
- Temporary traffic signal
- Limit of land to be acquired or used (LLAU)
- SM08X_C00 See schedule of works

On Street Parking

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John Scurr House permit holders - Residents parking
John Scurr House visitors parking - Visitors parking
Business permit holders - Business permit holders only Mon - Fri 8:30am - 5:30pm
John Scurr community centre parking - Community centre parking

Stage
Phase 1

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

Document Information
Application for Development Consent
Highway layout during construction - Phase 1

DCO-PP-25X-BEKST-260011
January 2013

Standards

- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
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- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

Thames Tideway Tunnel
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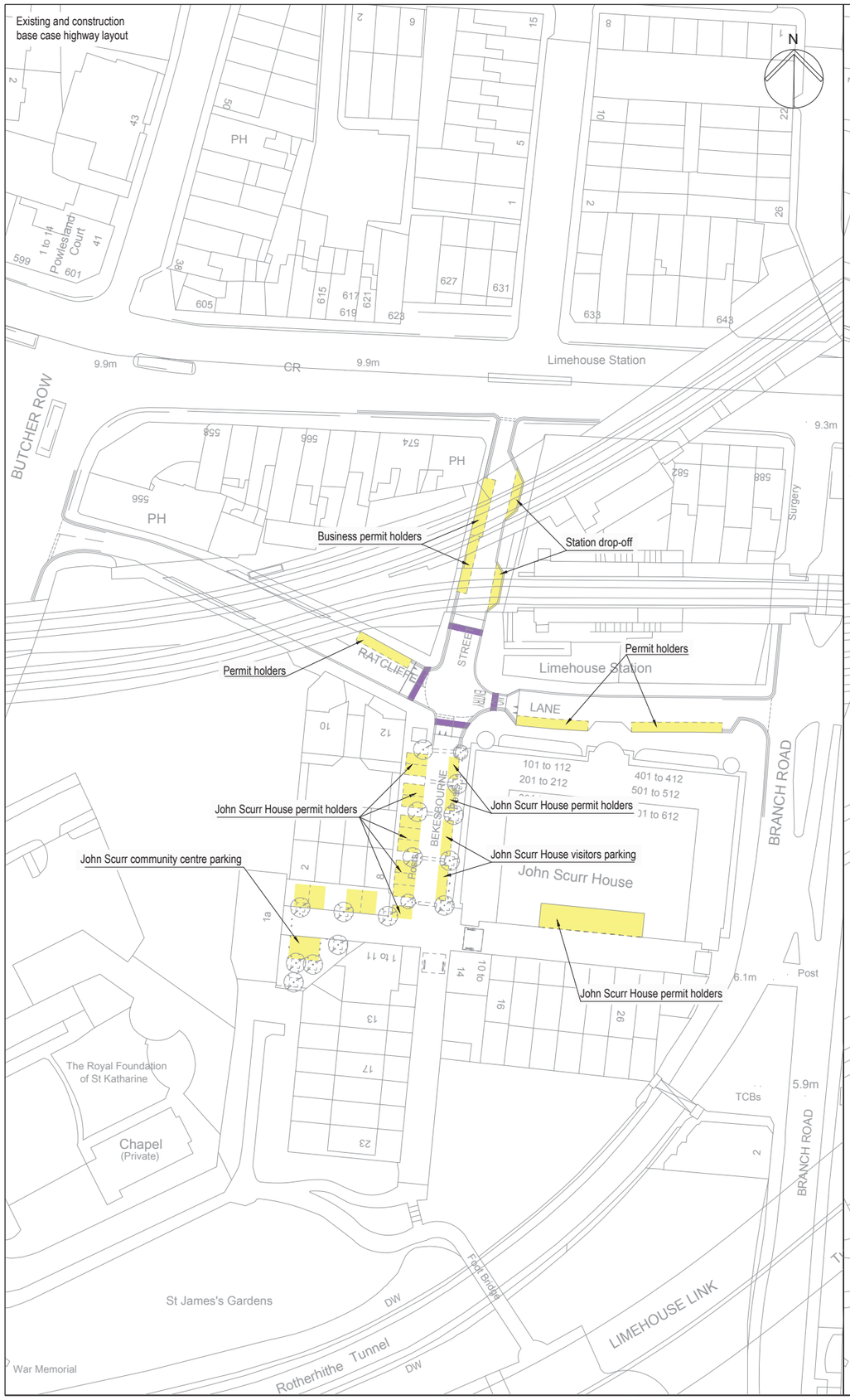
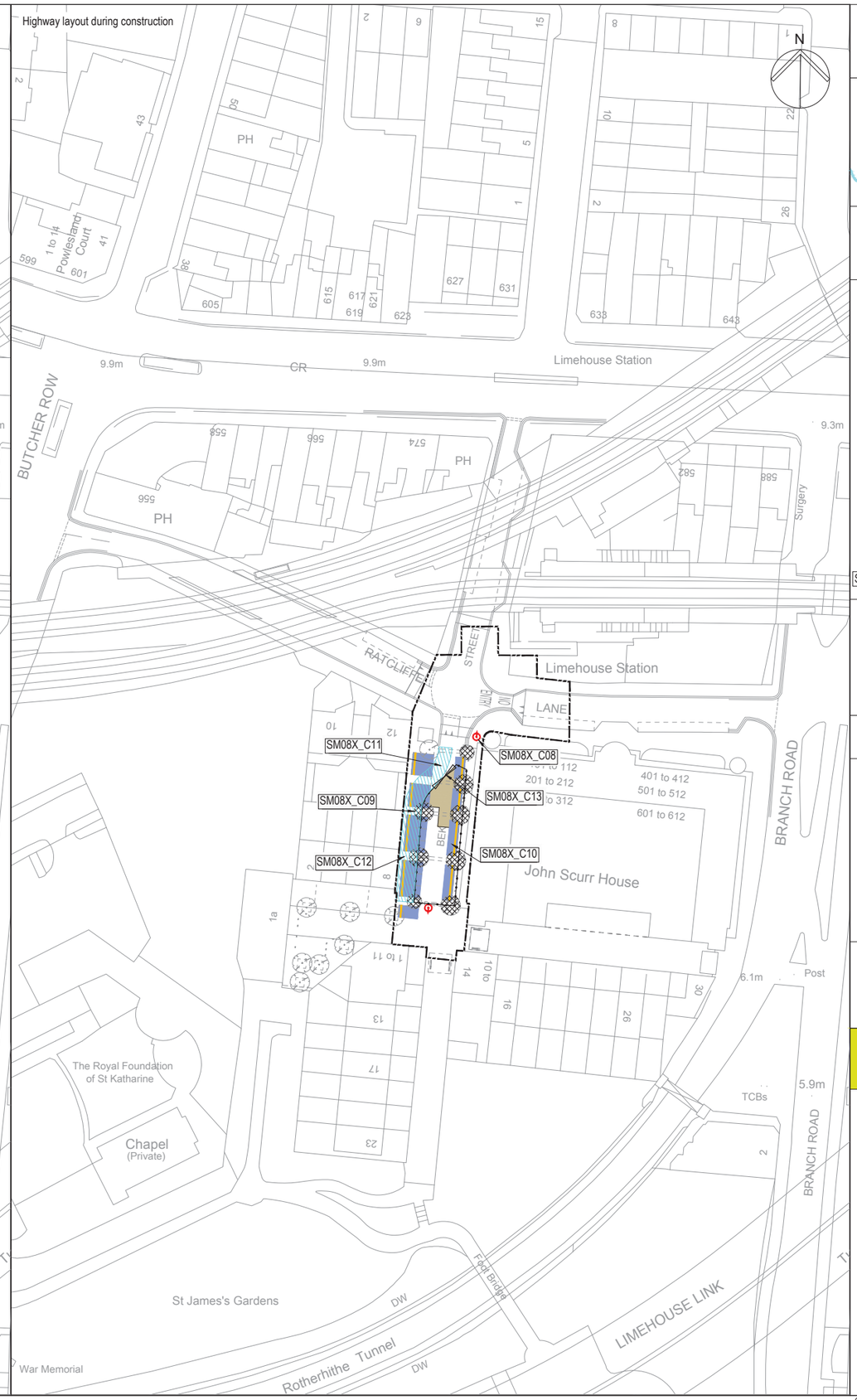
Thames Water

Existing and construction base case highway layout



Highway layout during construction



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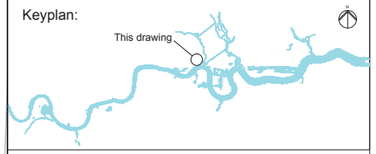

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Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing
- Tree

Revised
- Parking restrictions
- Illustrative on-site manoeuvring zone
- Suspended parking
- Diverted access road (new carriageway construction)
- Site hoarding
- Access gate
- Trees to be removed
- Temporary traffic signal
- Limit of land to be acquired or used (LLAU)
- SM08X_C00 See schedule of works

On Street Parking

Permit holders - Permit holders only Mon - Fri 8:30am - 5:30pm
Station drop off - No waiting Mon - Fri 8:30am - 5:30pm
John Scurr House permit holders - Residents parking
Business permit holders - Business permit holders only Mon - Fri 8:30am - 5:30pm
John Scurr community centre parking - Community centre parking

Stage
Phase 2

Standards
- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 40m

Scale 1:500 at A1
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ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

Document Information
Application for Development Consent
Highway layout during construction - Phase 2

DCO-PP-25X-BEKST-260012
January 2013

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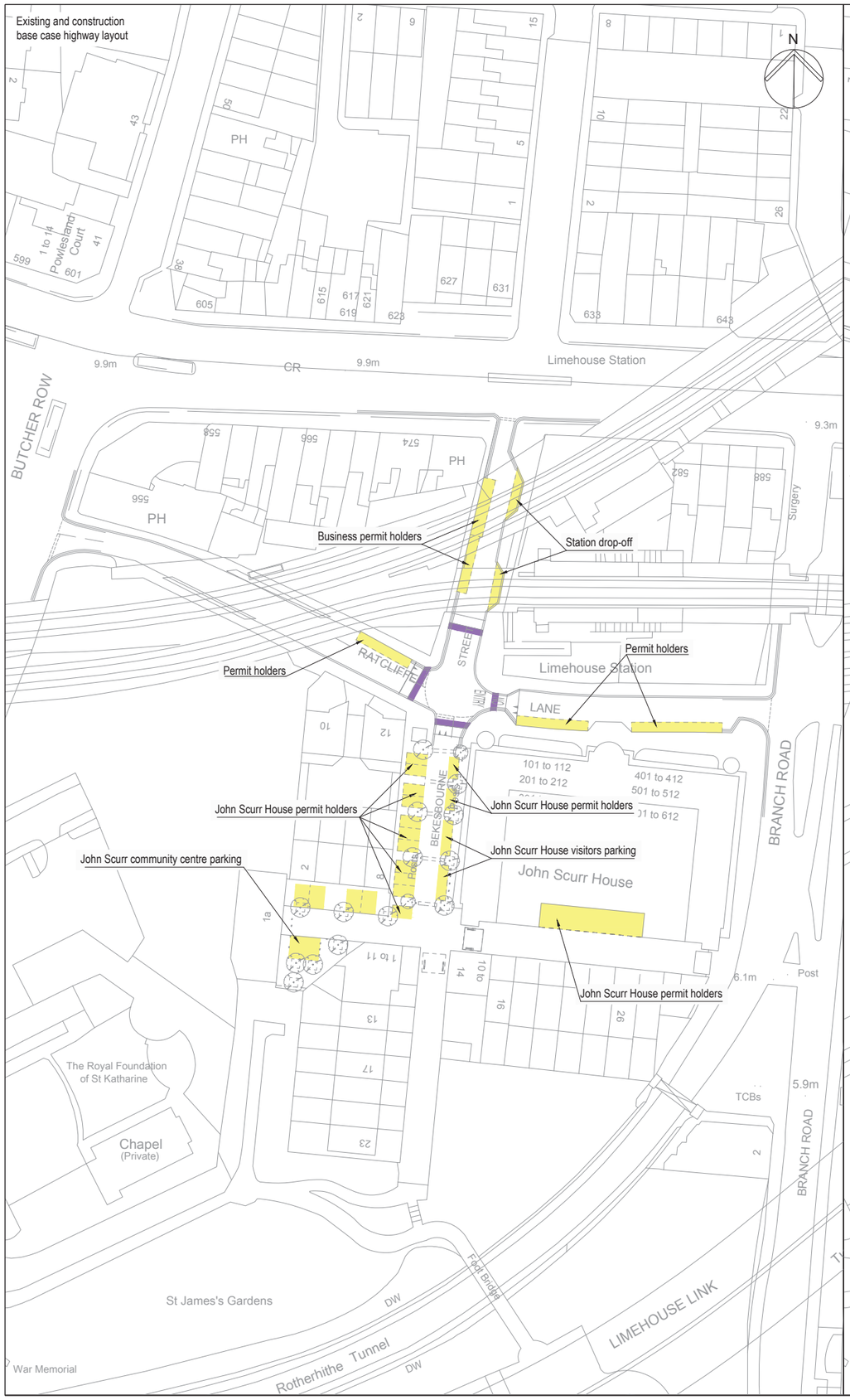
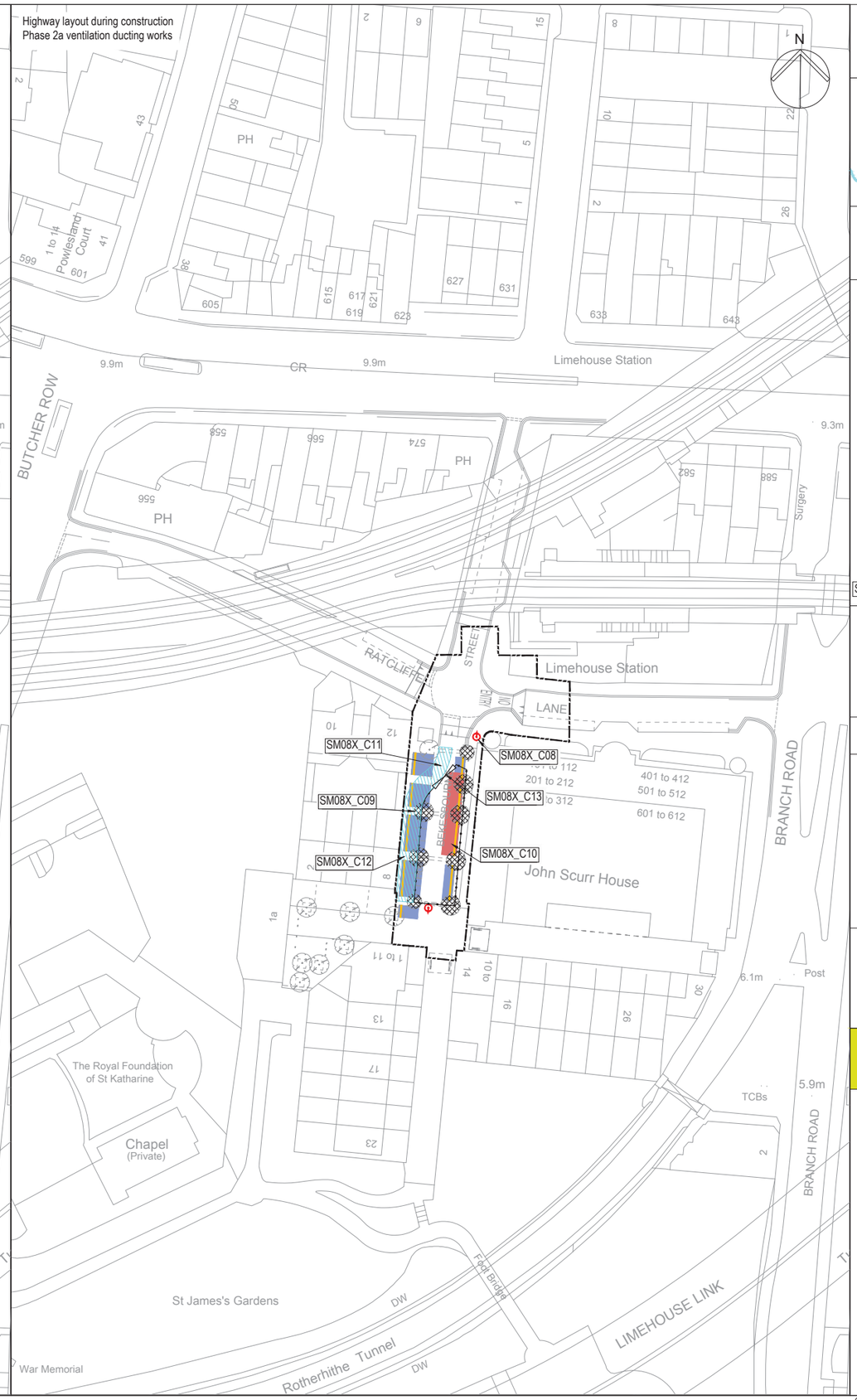
Thames Water

Existing and construction base case highway layout



Highway layout during construction Phase 2a ventilation ducting works



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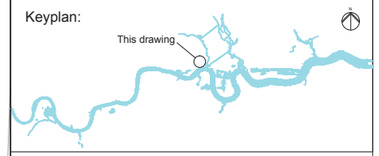

Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing
- Tree

Revised
- Parking restrictions
- Suspended parking
- Ventilation compound
- Diverted access road (new carriageway construction)
- Site hoarding
- Access gate
- Trees to be removed
- Temporary traffic signal
- Limit of land to be acquired or used (LLAU)
- SM08X_C00 See schedule of works

On Street Parking

Permit holders - Permit holders only Mon - Fri 8:30am - 5:30pm
Station drop off - No waiting Mon - Fri 8:30am - 5:30pm
John Scurr House permit holders - Residents parking
Business permit holders - Business permit holders only Mon - Fri 8:30am - 5:30pm
John Scurr community centre parking - Community centre parking

Stage

Phase 2a

Standards

- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
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10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location

Bekesbourne Street
London Borough of Tower Hamlets

Document Information

Application for Development Consent

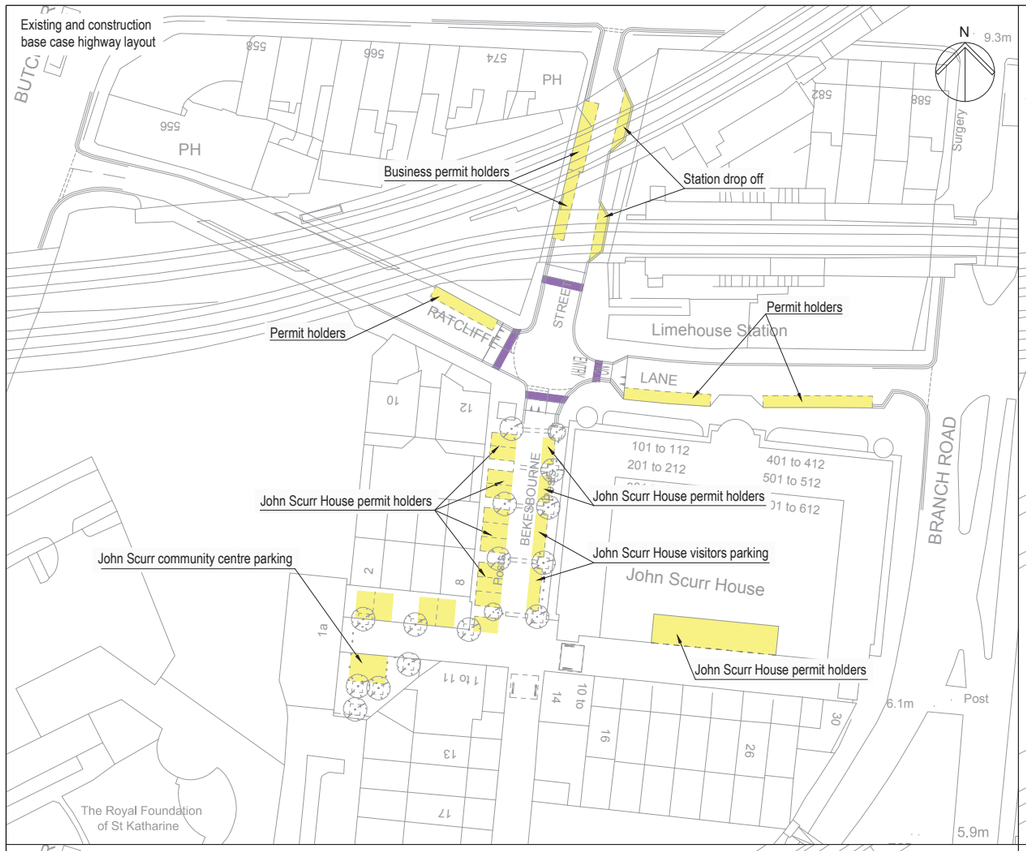
Highway layout during construction Phase 2a

DCO-PP-25X-BEKST-260013
January 2013

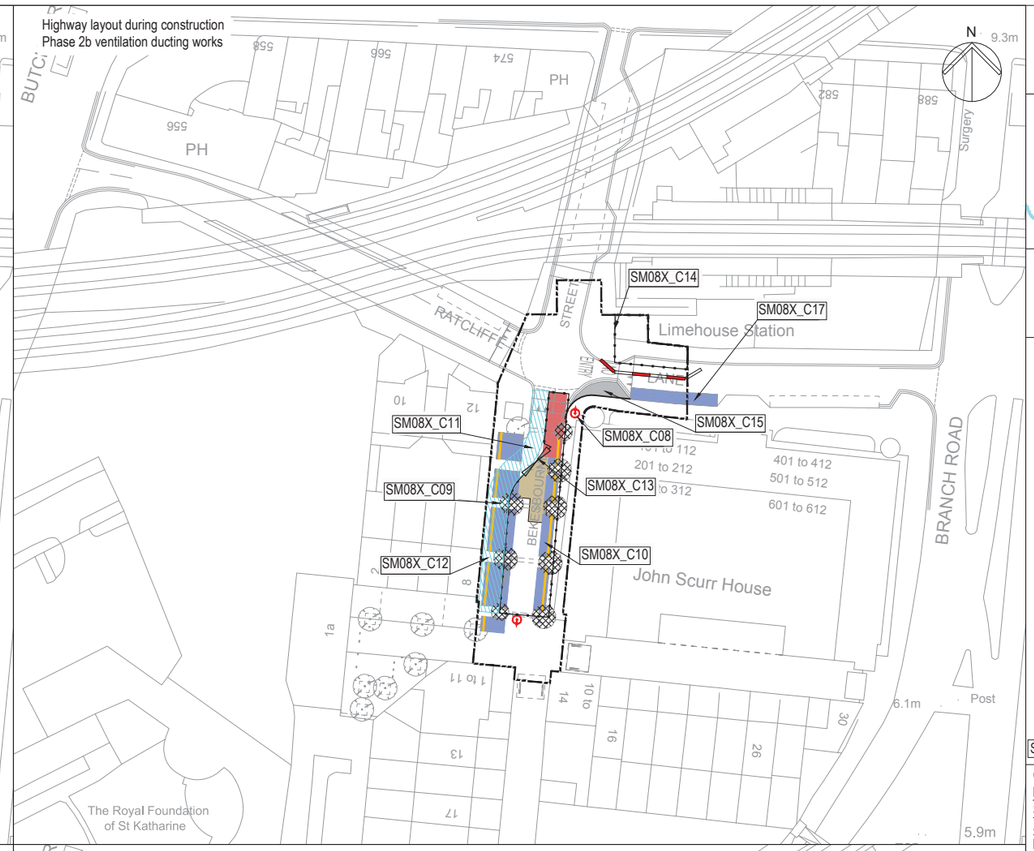
Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

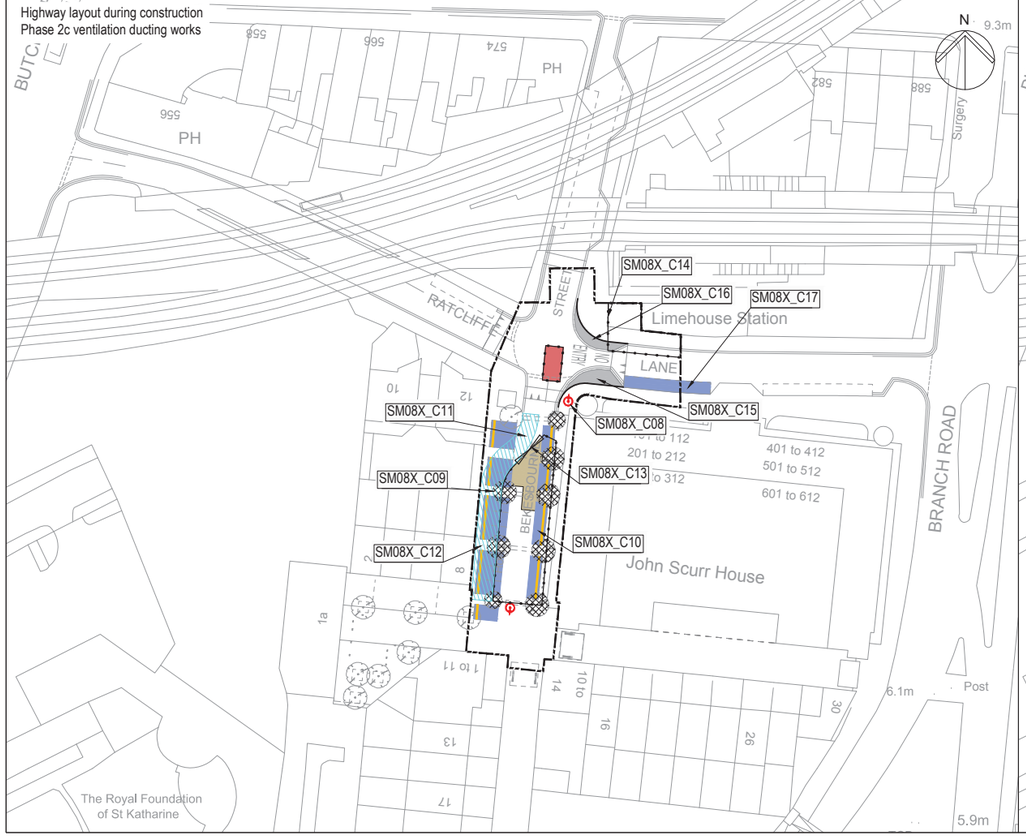
Existing and construction base case highway layout



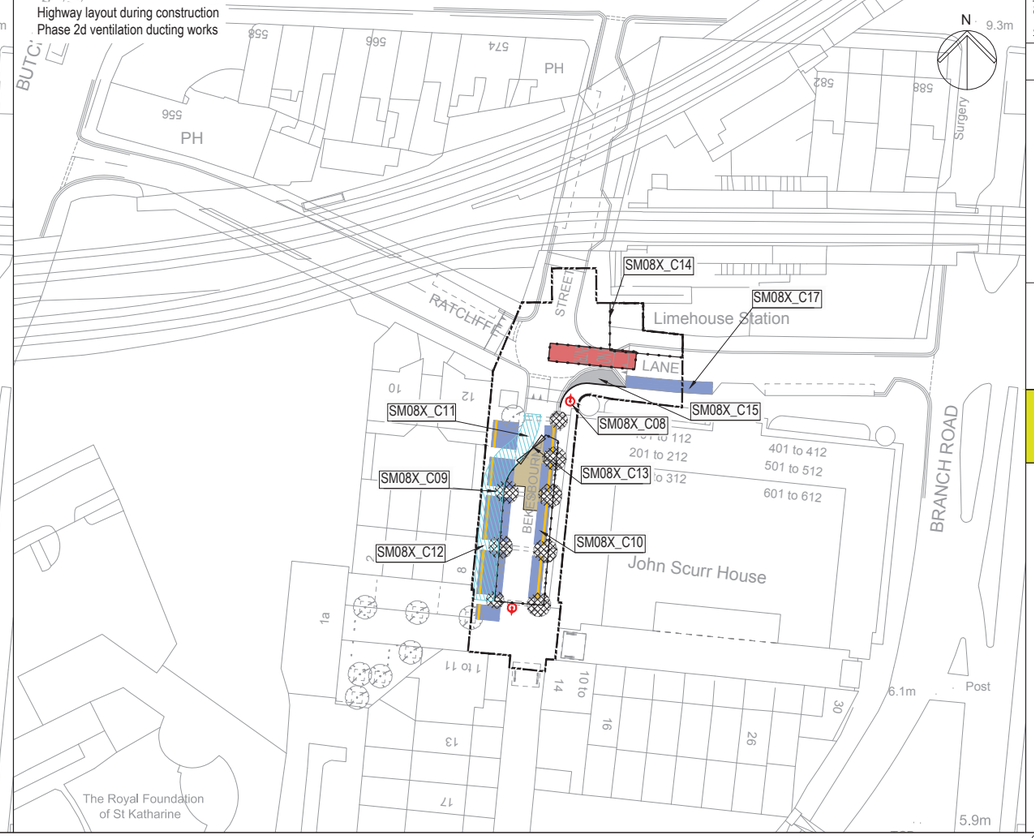
Highway layout during construction Phase 2b ventilation ducting works



Highway layout during construction Phase 2c ventilation ducting works



Highway layout during construction Phase 2d ventilation ducting works



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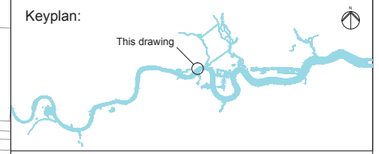

Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing
- Tree

Revised
- Parking restriction
- Suspended parking
- Illustrative on-site manoeuvring zone
- Removal of footway
- Ventilation compound
- Diverted access road (new carriageway construction)
- Pedestrian barrier
- Site hoarding
- Access gate
- Trees to be removed
- Temporary traffic signal
- Limit of land to be acquired or used (LLAU)
- SM08X_C00 See schedule of works

On Street Parking

Permit holders - Permit holders only Mon - Fri 8:30am - 5:30pm
Station drop off - No waiting Mon - Fri 8:30am - 5:30pm
John Scurr House permit holders - Residents parking
Business permit holders - Business permit holders only Mon - Fri 8:30am - 5:30pm
John Scurr community centre parking - Community centre parking

Stage

Phase 2b-2d

Standards

- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
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- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location

Bekesbourne Street
London Borough of Tower Hamlets

Document Information

Application for Development Consent

Highway layout during construction
Phase 2b-2d

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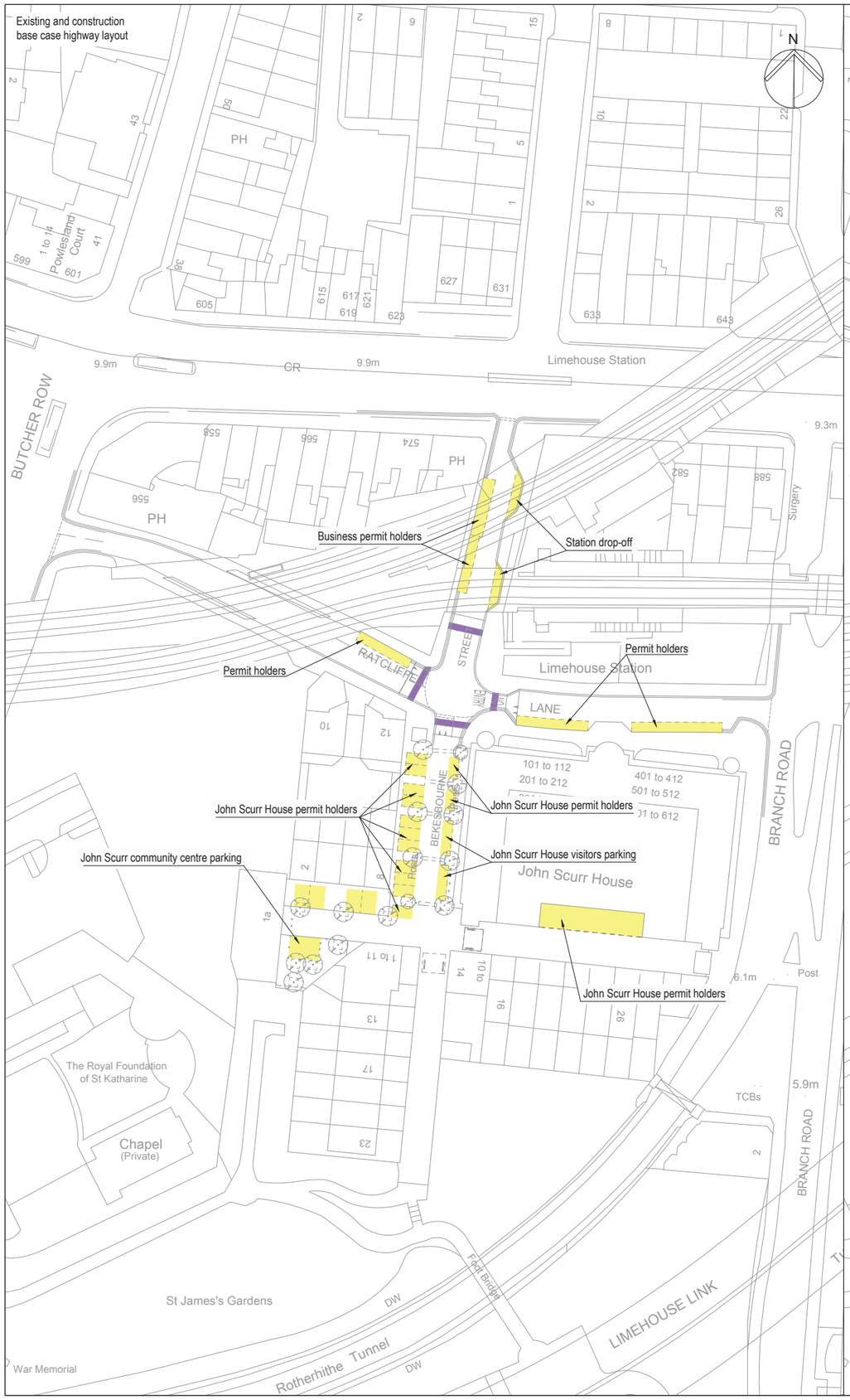
January 2013

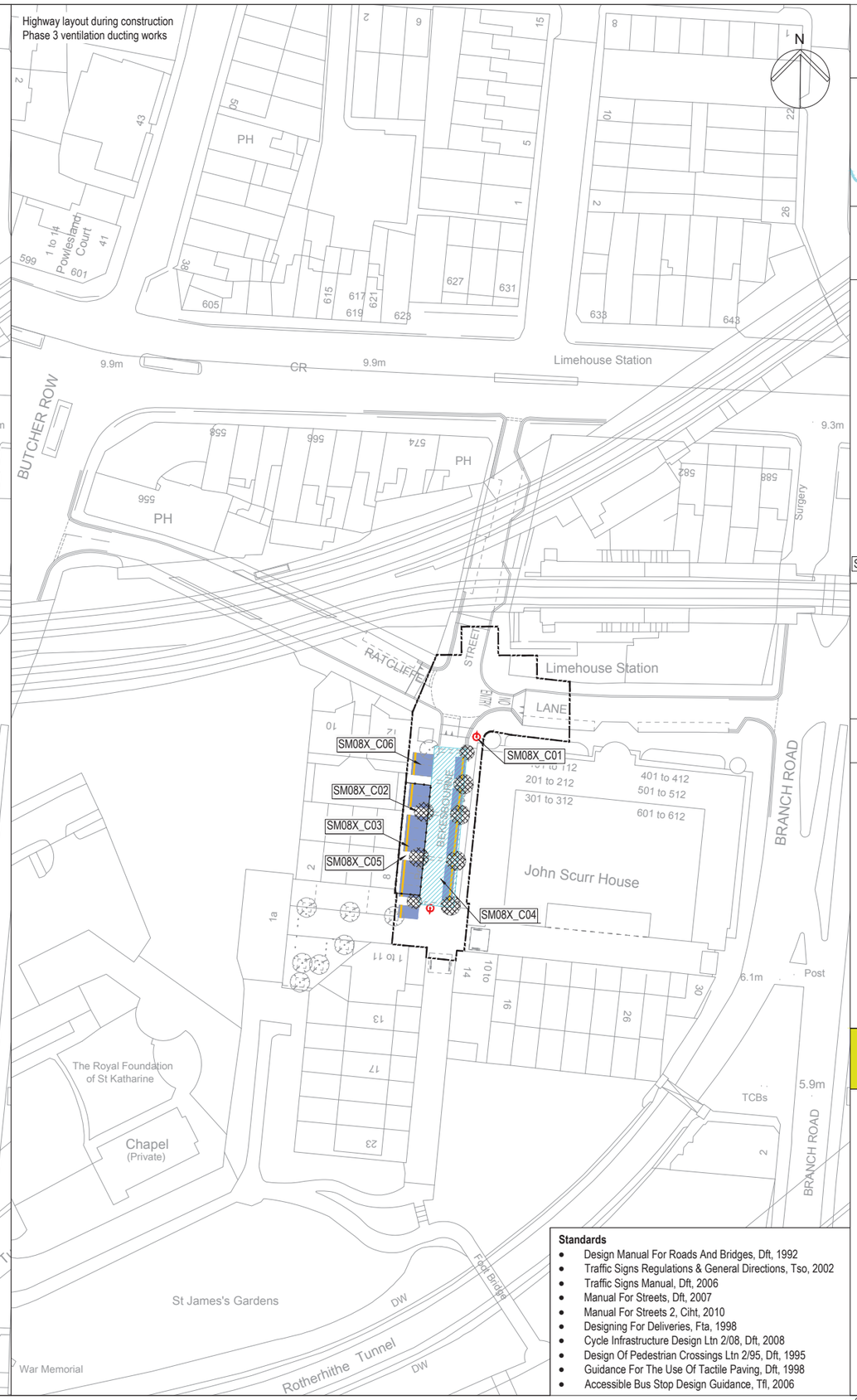
Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

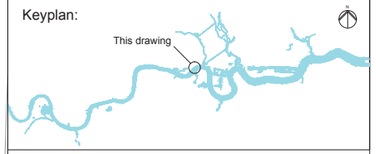
Existing and construction base case highway layout



Highway layout during construction Phase 3 ventilation ducting works



Keyplan:



Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing
- Tree

Revised
- Parking restrictions
- Suspended parking
- Diverted access road (new carriageway construction)
- Site hoarding
- Trees to be removed
- Temporary traffic signal
- Limit of land to be acquired or used (LLAU)
- SM08X_C00 See schedule of works

On Street Parking

Permit holders - Permit holders only Mon - Fri 8:30am - 5:30pm
Station drop off - No waiting Mon - Fri 8:30am - 5:30pm
John Scurr House permit holders - Residents parking
John Scurr House visitors parking - Visitors parking
Business permit holders - Business permit holders only Mon - Fri 8:30am - 5:30pm
John Scurr community centre parking - Community centre parking

Stage
Phase 3

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

Document Information
Application for Development Consent
Highway layout during construction - Phase 3

DCO-PP-25X-BEKST-260015
January 2013

Standards
- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

Existing and construction base case highway layout

Permanent highway layout

Business permit holders

Station drop-off

Permit holders

Permit holders

John Scurr house permit holders

John Scurr House permit holders

John Scurr community centre parking

John Scurr House visitors parking

John Scurr House permit holders

SM08X_P08

SM08X_P07

SM08X_P01

SM08X_P02

SM08X_P05

SM08X_P03

SM08X_P04

SM08X_P06

Keyplan:

Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing
- Tree

Revised
- Parking restrictions
- Reinstated parking
- Reinstated footway
- Replaced trees
- Electrical control kiosk
- Permanently removed parking
- SM08X_P00 See schedule of works

On Street Parking

Permit holders - Permit holders only Mon - Fri 8:30am - 5:30pm
Station drop off - No waiting Mon - Fri 8:30am - 5:30pm
John Scurr House permit holders - Residents parking
John Scurr House visitors parking - Visitors parking
Business permit holders - Business permit holders only Mon - Fri 8:30am - 5:30pm
John Scurr community centre parking - Community centre parking

Stage
Permanent phase

Standards
- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

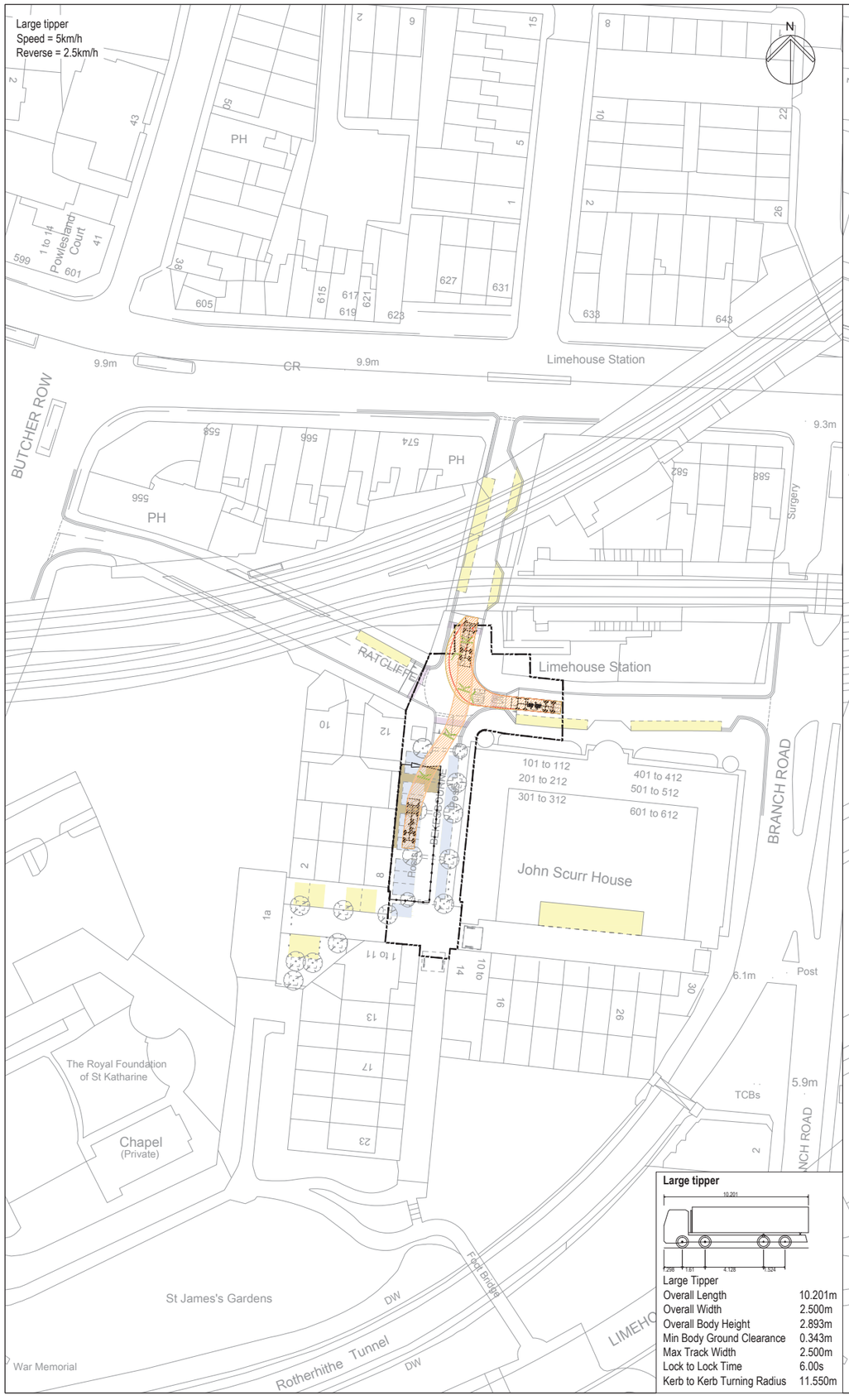
Document Information
Application for Development Consent
Permanent highway layout - Area 1 work

DCO-PP-25X-BEKST-260016
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

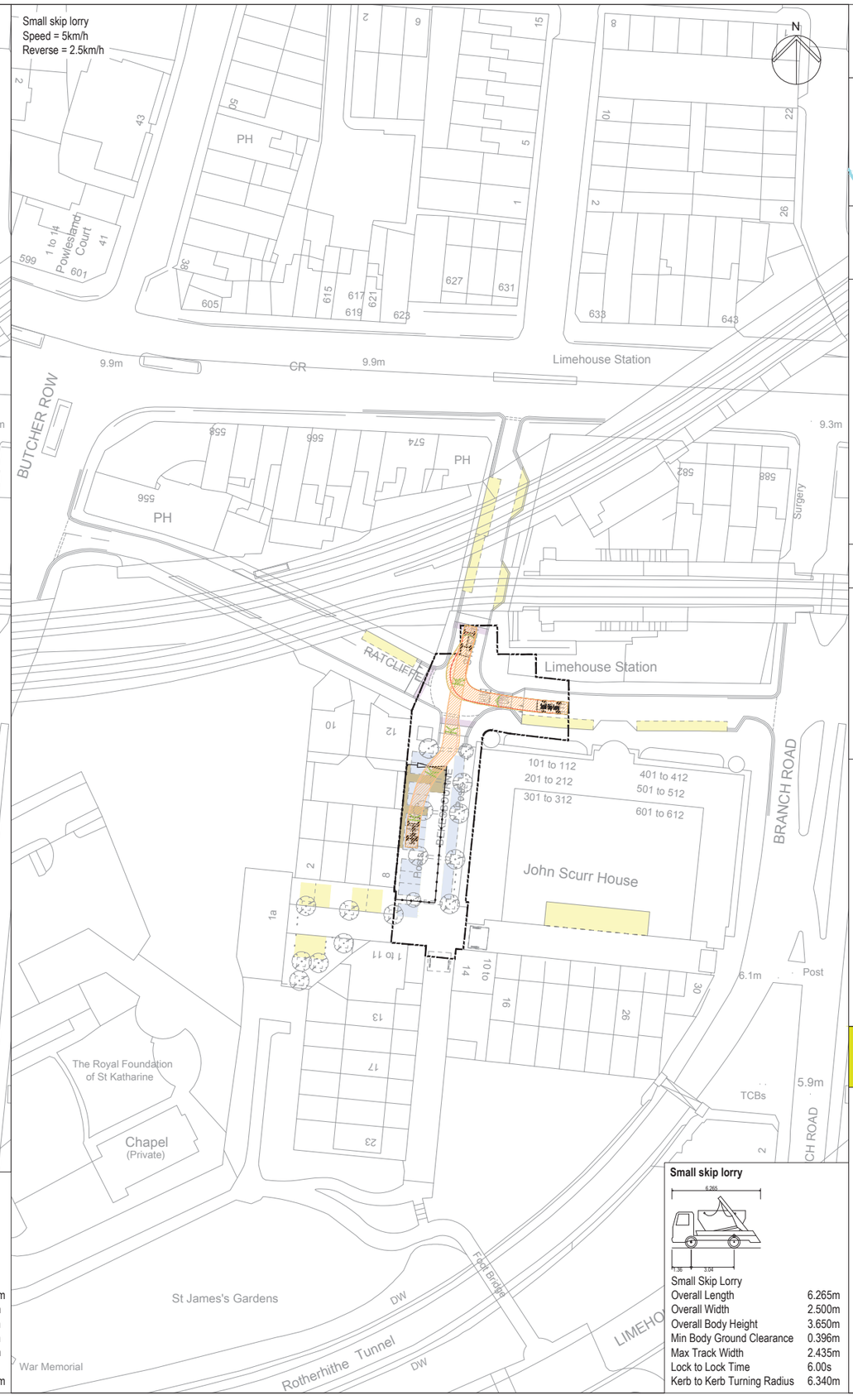
Large tipper
Speed = 5km/h
Reverse = 2.5km/h



Large tipper

Large Tipper	
Overall Length	10.201m
Overall Width	2.500m
Overall Body Height	2.893m
Min Body Ground Clearance	0.343m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	11.550m

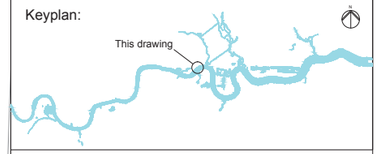
Small skip lorry
Speed = 5km/h
Reverse = 2.5km/h



Small skip lorry

Small Skip Lorry	
Overall Length	6.265m
Overall Width	2.500m
Overall Body Height	3.650m
Min Body Ground Clearance	0.396m
Max Track Width	2.435m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	6.340m

Keyplan:



Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing

Revised
- Suspended parking
- Illustrative on-site manoeuvring zone
- Site hoarding
- Access gate
- Limit of land to be acquired or used (LLAU)

Vehicle swept path analysis
- Vehicle body outlines
- Vehicle chassis outline
- Vehicle swept path

Stage
Phase 1

Standards
- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

Document Information
Application for Development Consent

Highway layout during construction - Phase 1
Vehicle swept path analysis

DCO-PP-25X-BEKST-260017
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

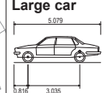
Large car
Speed = 5km/h
Reverse = 2.5km/h

Tower Hamlets refuse vehicle (3 axle)
Speed = 5km/h
Reverse = 2.5km/h

N

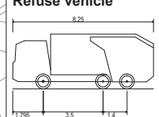
Limehouse Station
BUTCHER ROW
RATCLIFFE STREET
BRANCH ROAD
LANE
John Scurr House
The Royal Foundation of St Katharine
Chapel (Private)
St James's Gardens
War Memorial
Rotherhithe Tunnel
LIMEHOUSE LINK
Foot Bridge
PH
Surgery
TCBs
Post
9.9m
9.3m
6.1m
5.9m
2.0m
CR
DW

Large car



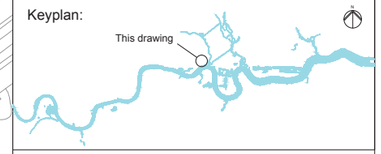
Large Car (2006)	
Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

Refuse vehicle



Tower Hamlets Refuse Vehicle (3 axle)	
Overall Length	8.250m
Overall Width	2.500m
Overall Body Height	3.205m
Min Body Ground Clearance	0.410m
Track Width	2.500m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	8.750m

Keyplan:



Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing

Revised
- Suspended parking
- Illustrative on-site manoeuvring zone
- Site hoarding
- Temporary traffic signal
- Access gate
- Limit of land to be acquired or used (LLAU)

Vehicle swept path analysis
- Vehicle body outlines
- Vehicle chassis outline
- Vehicle swept path
- (1) Vehicle manoeuvre number

Stage
Phase 1

Standards
- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

Document Information
Application for Development Consent

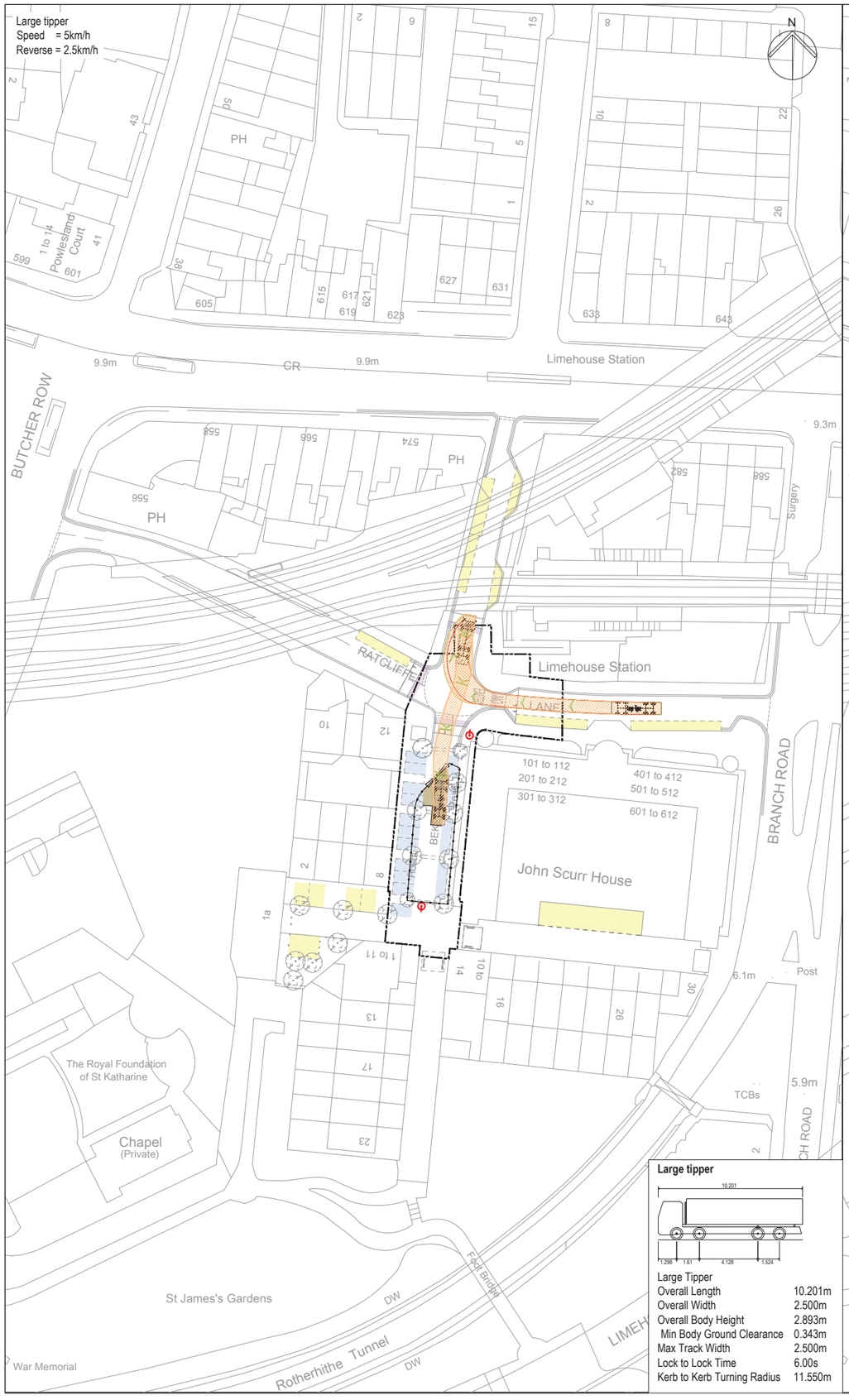
Highway layout during construction - Phase 1
Vehicle swept path analysis

DCO-PP-25X-BEKST-260018
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

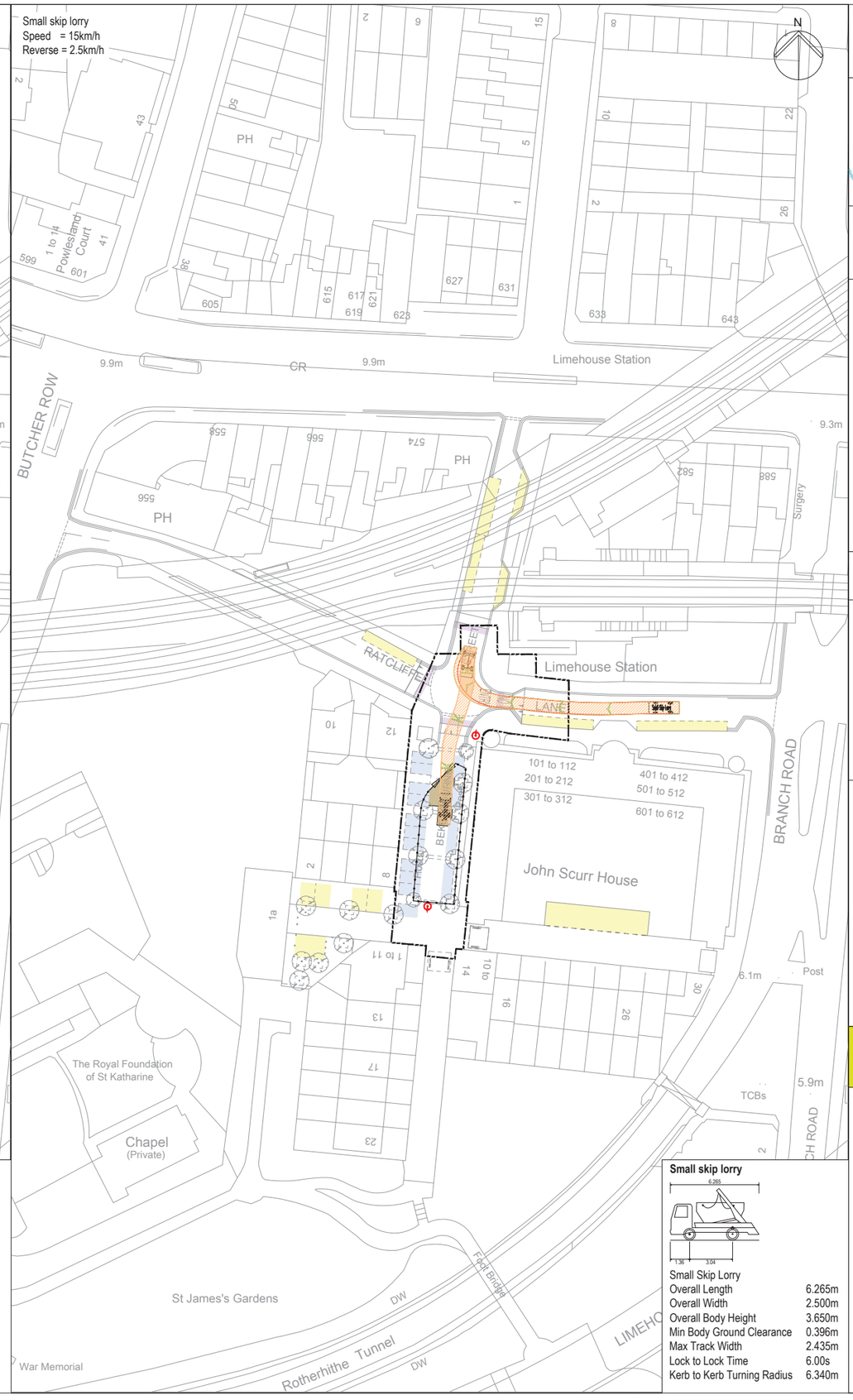
Large tipper
Speed = 5km/h
Reverse = 2.5km/h



Large tipper

Large Tipper	
Overall Length	10.201m
Overall Width	2.500m
Overall Body Height	2.893m
Min Body Ground Clearance	0.343m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	11.550m

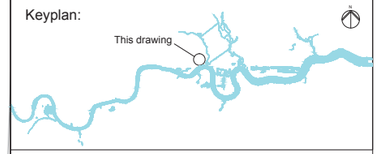
Small skip lorry
Speed = 15km/h
Reverse = 2.5km/h



Small skip lorry

Small Skip Lorry	
Overall Length	6.265m
Overall Width	2.500m
Overall Body Height	3.650m
Min Body Ground Clearance	0.396m
Max Track Width	2.435m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	6.340m

Keyplan:



Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing

Revised
- Suspended parking
- Illustrative on-site manoeuvring zone
- Temporary traffic signal
- Site hoarding
- Access gate
- Limit of land to be acquired or used (LLAU)

Vehicle swept path analysis
- Vehicle body outlines
- Vehicle chassis outline
- Vehicle swept path

Stage
Phase 2

Standards
- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

Document Information
Application for Development Consent

Highway layout during construction - Phase 2
Vehicle swept path analysis

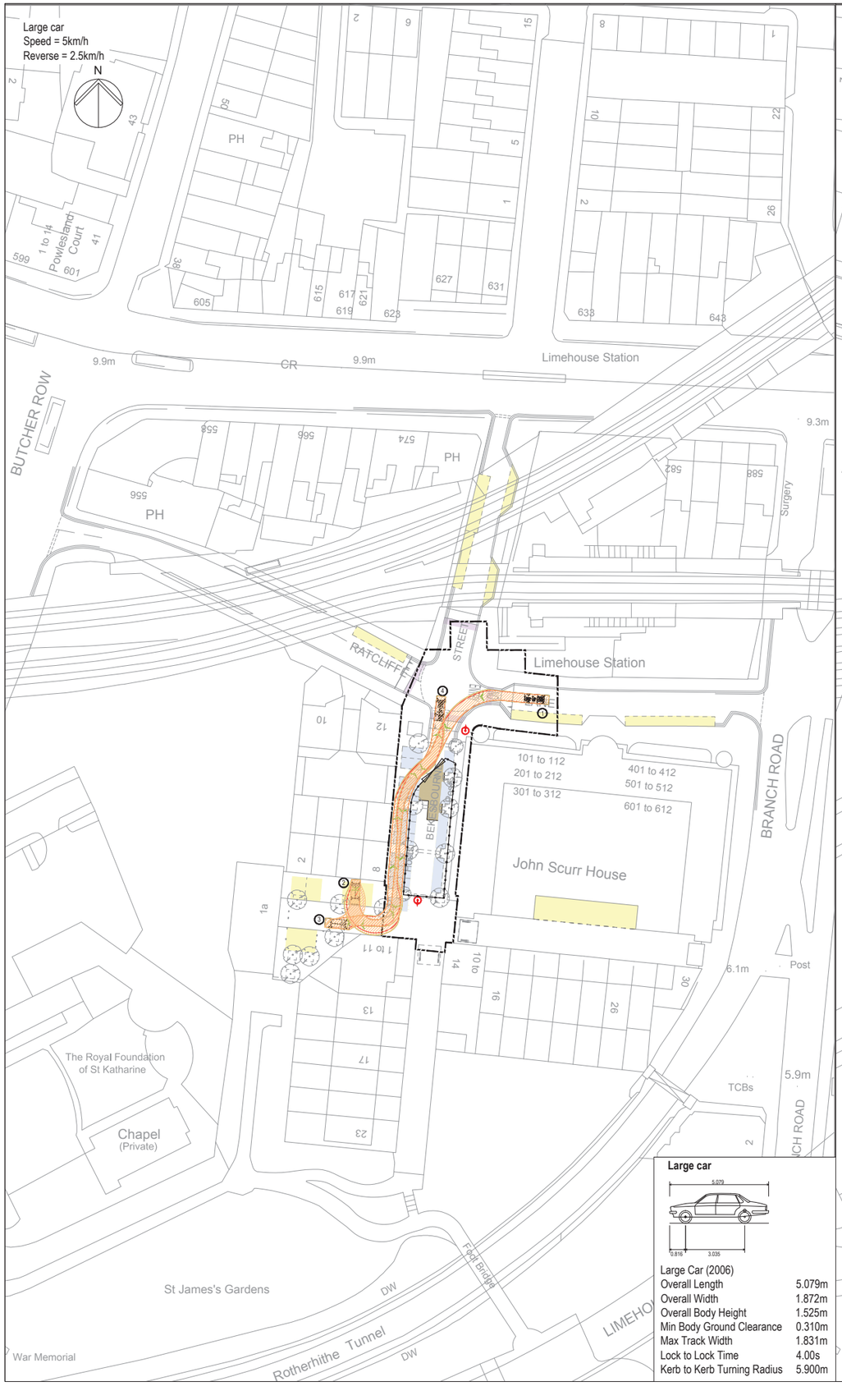
DCO-PP-25X-BEKST-260019
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

Large car
Speed = 5km/h
Reverse = 2.5km/h

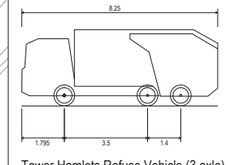
Tower Hamlets refuse vehicle (3 axle)
Speed = 1km/h
Reverse = 1km/h



Large car

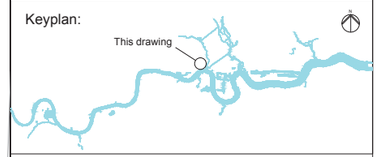
Large Car (2006)	
Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

Refuse vehicle



Tower Hamlets Refuse Vehicle (3 axle)	
Overall Length	8.250m
Overall Width	2.500m
Overall Body Height	3.205m
Min Body Ground Clearance	0.410m
Track Width	2.500m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	8.750m

Keyplan:



Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing

Revised
- Suspended parking
- Illustrative on-site manoeuvring zone
- Temporary traffic signal
- Site hoarding
- Access gate
- Limit of land to be acquired or used (LLAU)

Vehicle swept path analysis
- Vehicle body outlines
- Vehicle chassis outline
- Vehicle swept path
- (1) Vehicle manoeuvre number

Stage
Phase 2

Standards
- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

Document Information
Application for Development Consent

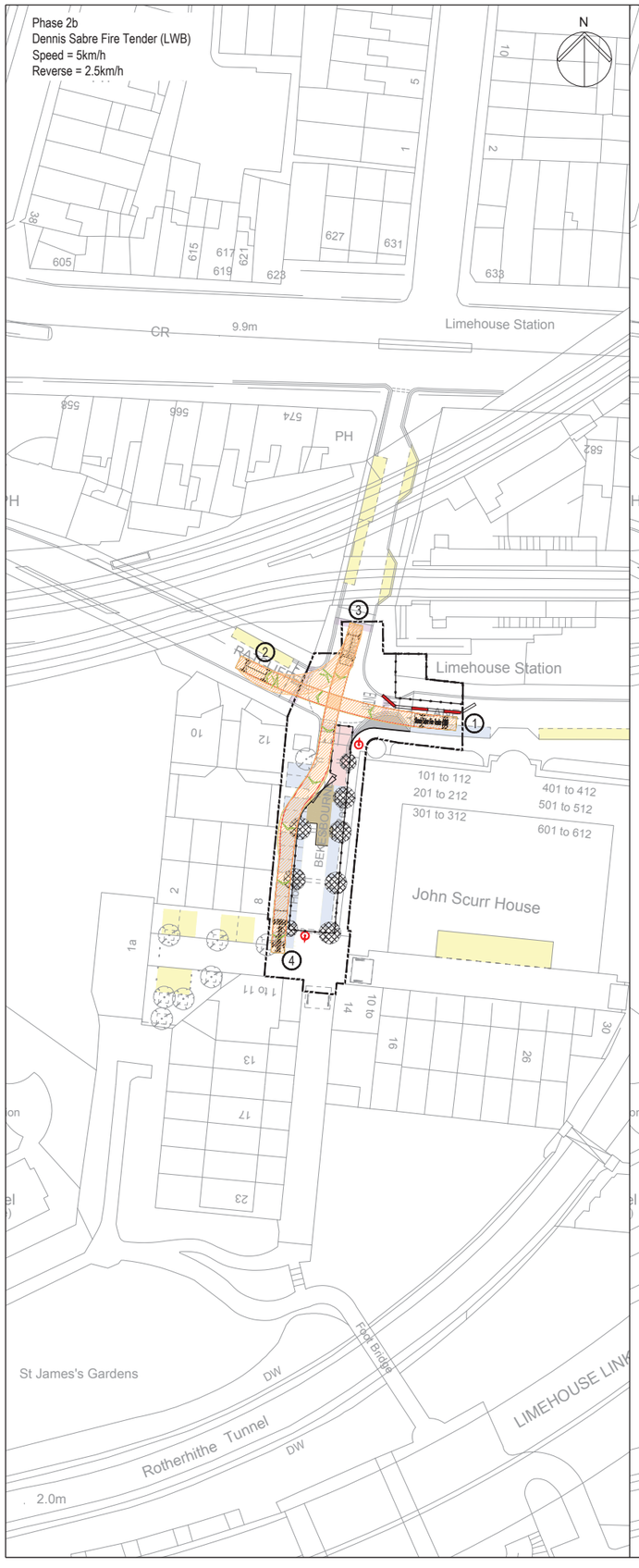
Highway layout during construction - Phase 2
Vehicle swept path analysis

DCO-PP-25X-BEKST-260020
January 2013

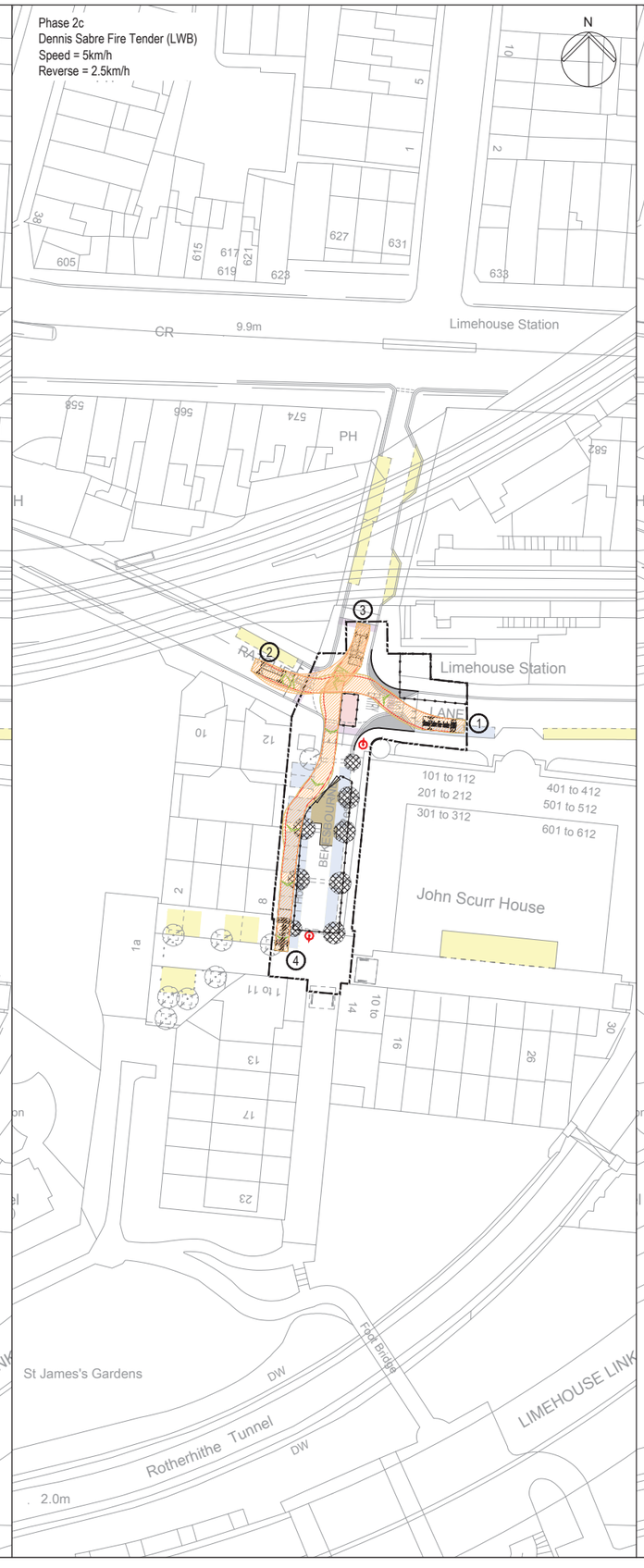
Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

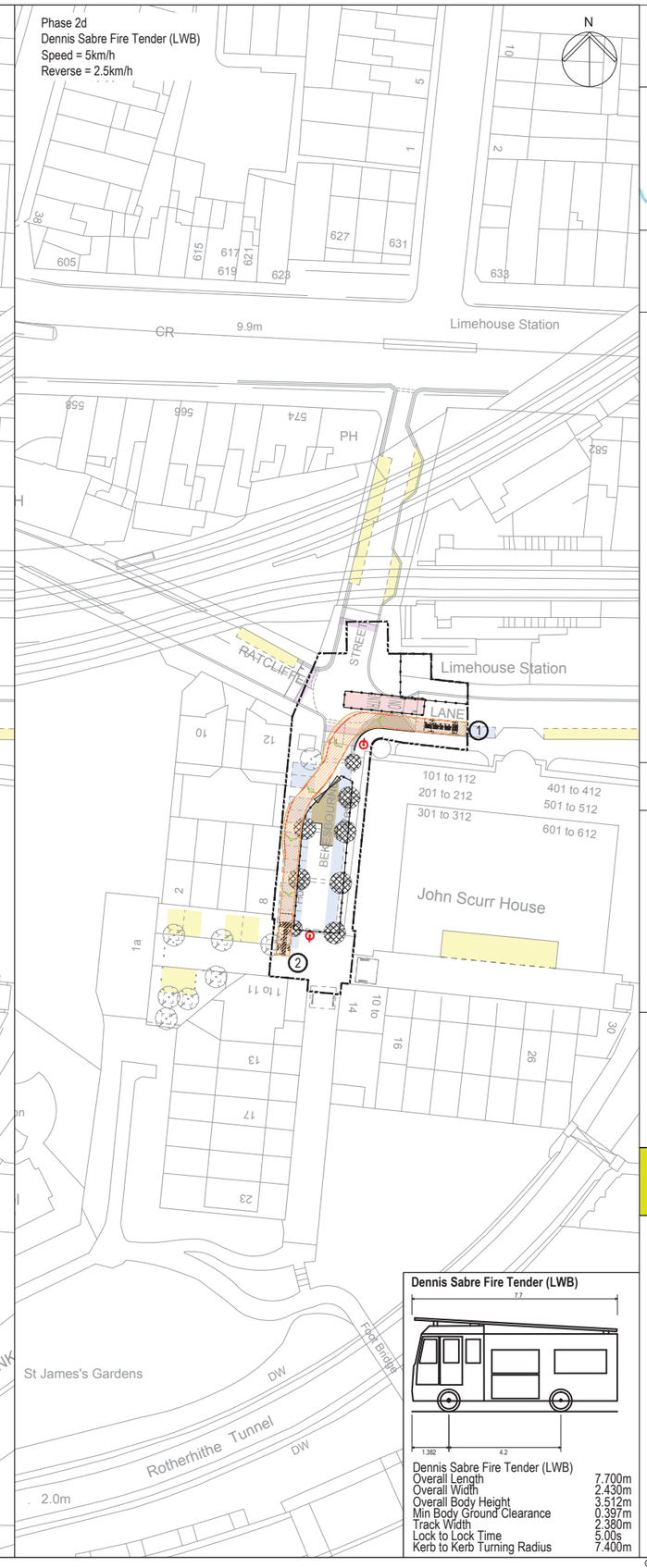
Phase 2b
Dennis Sabre Fire Tender (LWB)
Speed = 5km/h
Reverse = 2.5km/h



Phase 2c
Dennis Sabre Fire Tender (LWB)
Speed = 5km/h
Reverse = 2.5km/h



Phase 2d
Dennis Sabre Fire Tender (LWB)
Speed = 5km/h
Reverse = 2.5km/h



Dennis Sabre Fire Tender (LWB)

Dennis Sabre Fire Tender (LWB)	
Overall Length	7.700m
Overall Width	2.430m
Overall Body Height	3.512m
Min Body Ground Clearance	0.397m
Track Width	2.380m
Lock to Lock Time	5.00s
Kerb to Kerb Turning Radius	7.400m

Keyplan:

Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing
- Tree

Revised
- Suspended parking
- Illustrative on-site manoeuvring zone
- Removal of footway
- Ventilation compound
- Site hoarding
- Access gate
- Trees to be removed
- Temporary traffic signal
- Limit of land to be acquired or used (LLAU)

Vehicle swept path analysis
- Vehicle body outlines
- Vehicle chassis outline
- Vehicle swept path
- (1) Vehicle manoeuvre number

Stage
Phase 2b-2d

Standards
- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

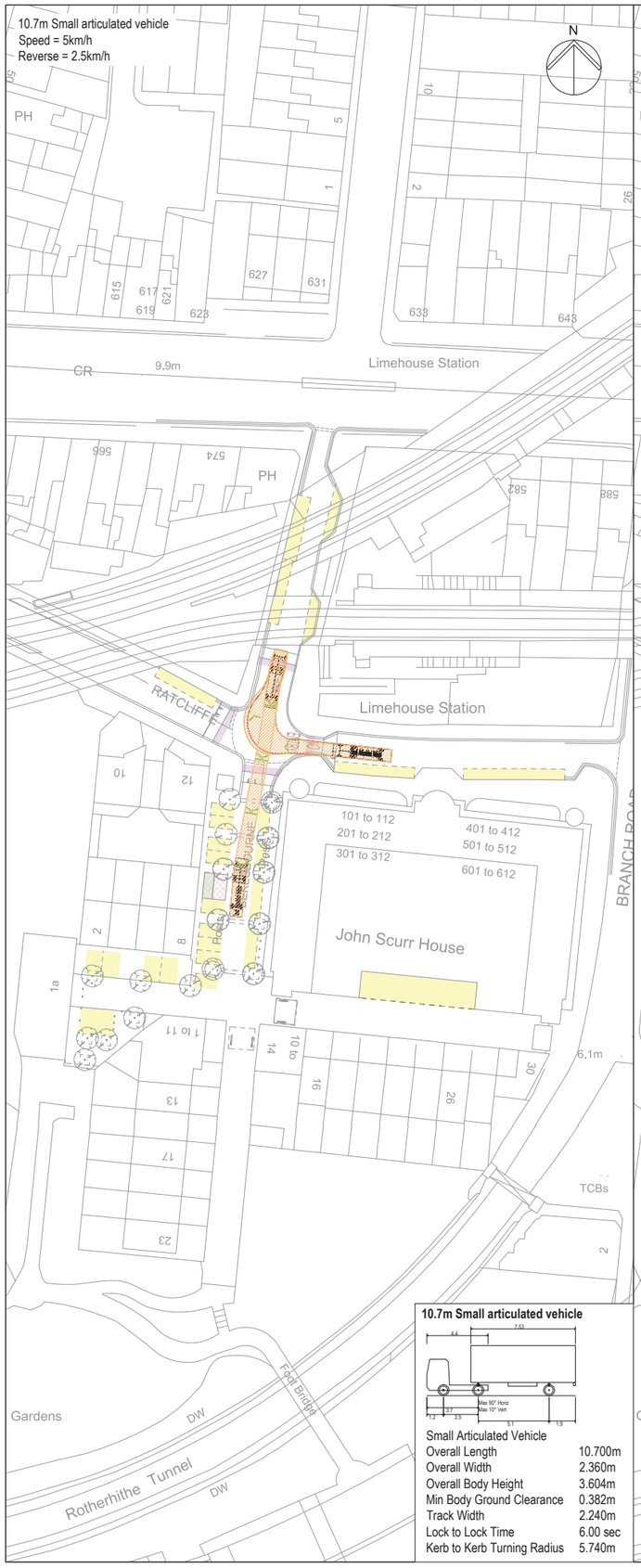
Document Information
Application for Development Consent
Highway layout during construction
Phase 2b-2d - Vehicle swept path analysis

DCO-PP-25X-BEKST-260021
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

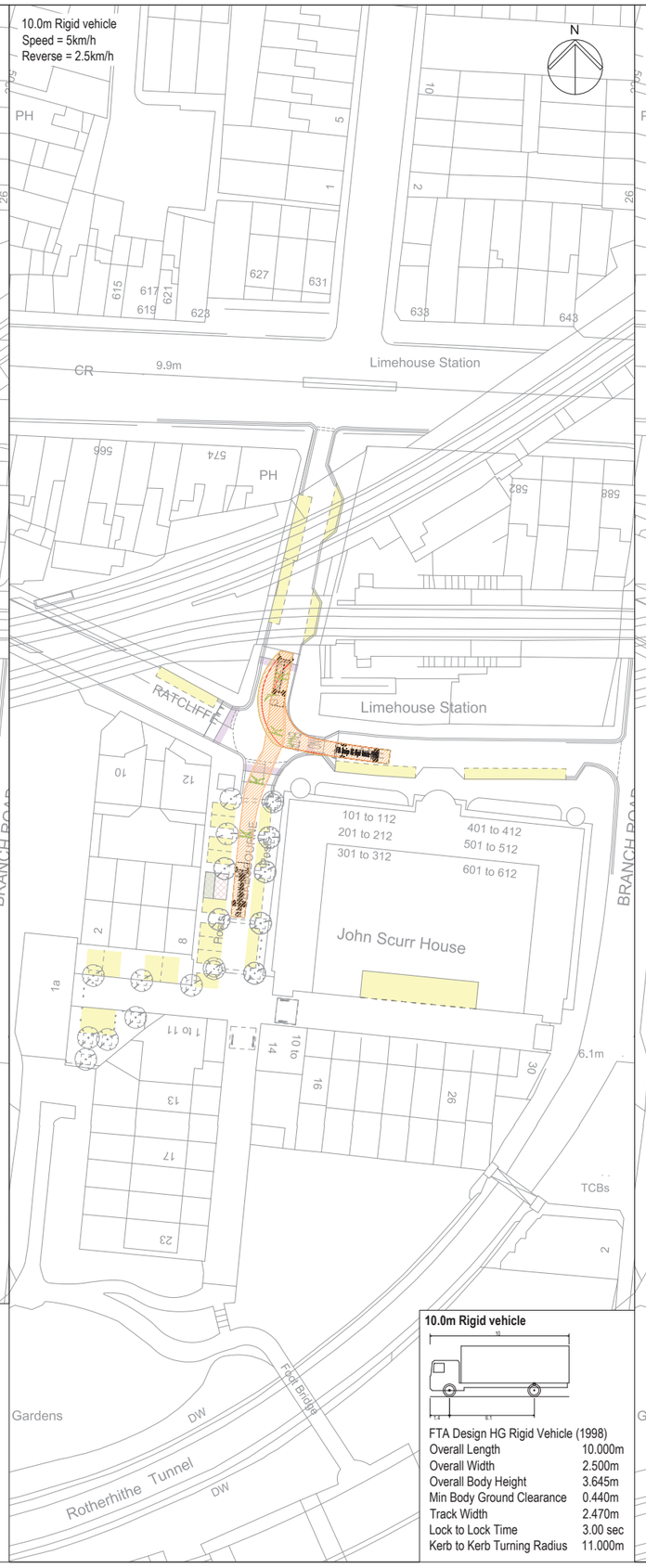
10.7m Small articulated vehicle
Speed = 5km/h
Reverse = 2.5km/h



10.7m Small articulated vehicle

Small Articulated Vehicle	
Overall Length	10.700m
Overall Width	2.360m
Overall Body Height	3.604m
Min Body Ground Clearance	0.382m
Track Width	2.240m
Lock to Lock Time	6.00 sec
Kerb to Kerb Turning Radius	5.740m

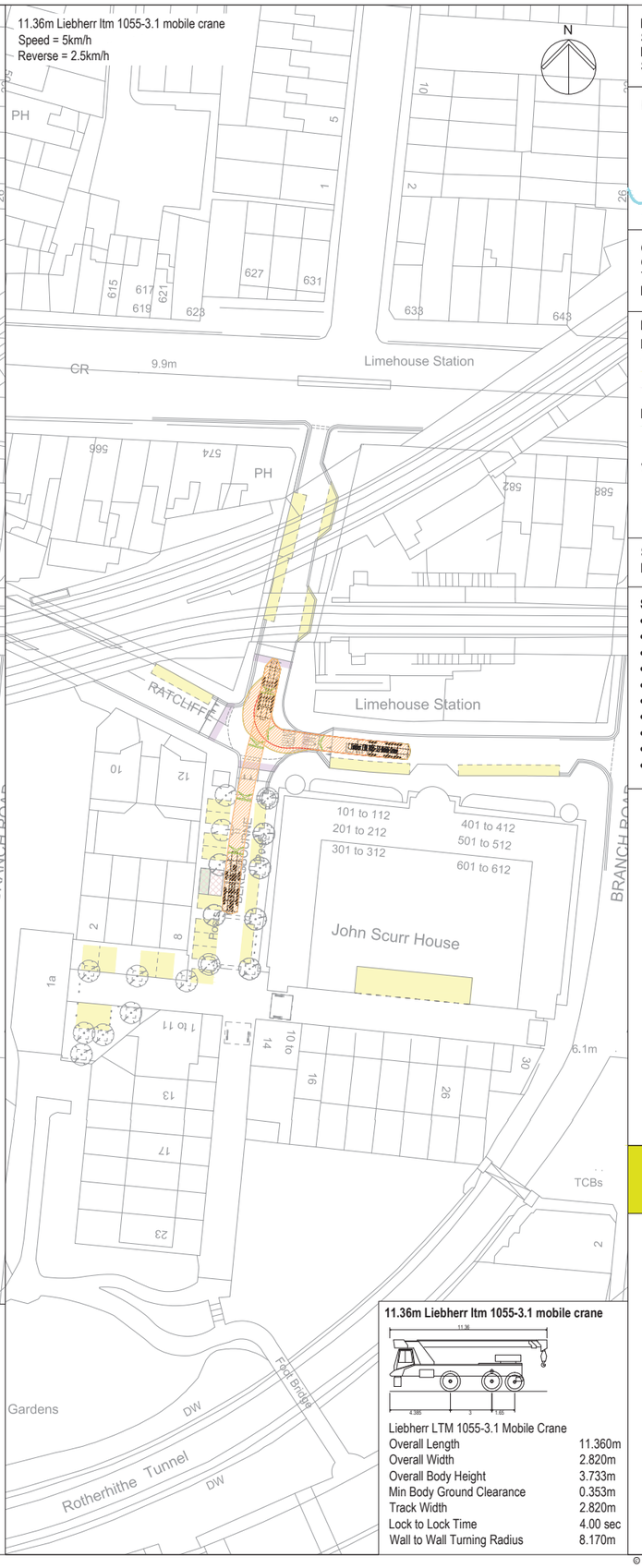
10.0m Rigid vehicle
Speed = 5km/h
Reverse = 2.5km/h



10.0m Rigid vehicle

FTA Design HG Rigid Vehicle (1998)	
Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to Lock Time	3.00 sec
Kerb to Kerb Turning Radius	11.000m

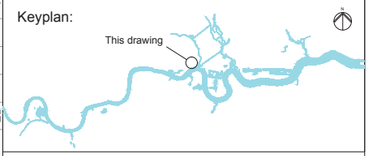
11.36m Liebherr ltm 1055-3.1 mobile crane
Speed = 5km/h
Reverse = 2.5km/h



11.36m Liebherr ltm 1055-3.1 mobile crane

Liebherr LTM 1055-3.1 Mobile Crane	
Overall Length	11.360m
Overall Width	2.820m
Overall Body Height	3.733m
Min Body Ground Clearance	0.353m
Track Width	2.820m
Lock to Lock Time	4.00 sec
Wall to Wall Turning Radius	8.170m

Keyplan:



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Key

Existing
- Parking restrictions
- On street parking
- Pedestrian crossing

Revised
- Electrical control kiosk
- Permanently removed parking

Vehicle swept path analysis
- Vehicle body outlines
- Vehicle chassis outline
- Vehicle swept path

Stage
Permanent phase

Standards
- Design Manual For Roads And Bridges, Dft, 1992
- Traffic Signs Regulations & General Directions, Tso, 2002
- Traffic Signs Manual, Dft, 2006
- Manual For Streets, Dft, 2007
- Manual For Streets 2, Ciht, 2010
- Designing For Deliveries, Fta, 1998
- Cycle Infrastructure Design Ltn 2/08, Dft, 2008
- Design Of Pedestrian Crossings Ltn 2/95, Dft, 1995
- Guidance For The Use Of Tactile Paving, Dft, 1998
- Accessible Bus Stop Design Guidance, Tfl, 2006

10m 0 40m

Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Bekesbourne Street
London Borough of Tower Hamlets

Document Information
Application for Development Consent
Permanent highway layout (Area 1)
Vehicle swept path analysis

DCO-PP-25X-BEKST-260022
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

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Transport assessment figures

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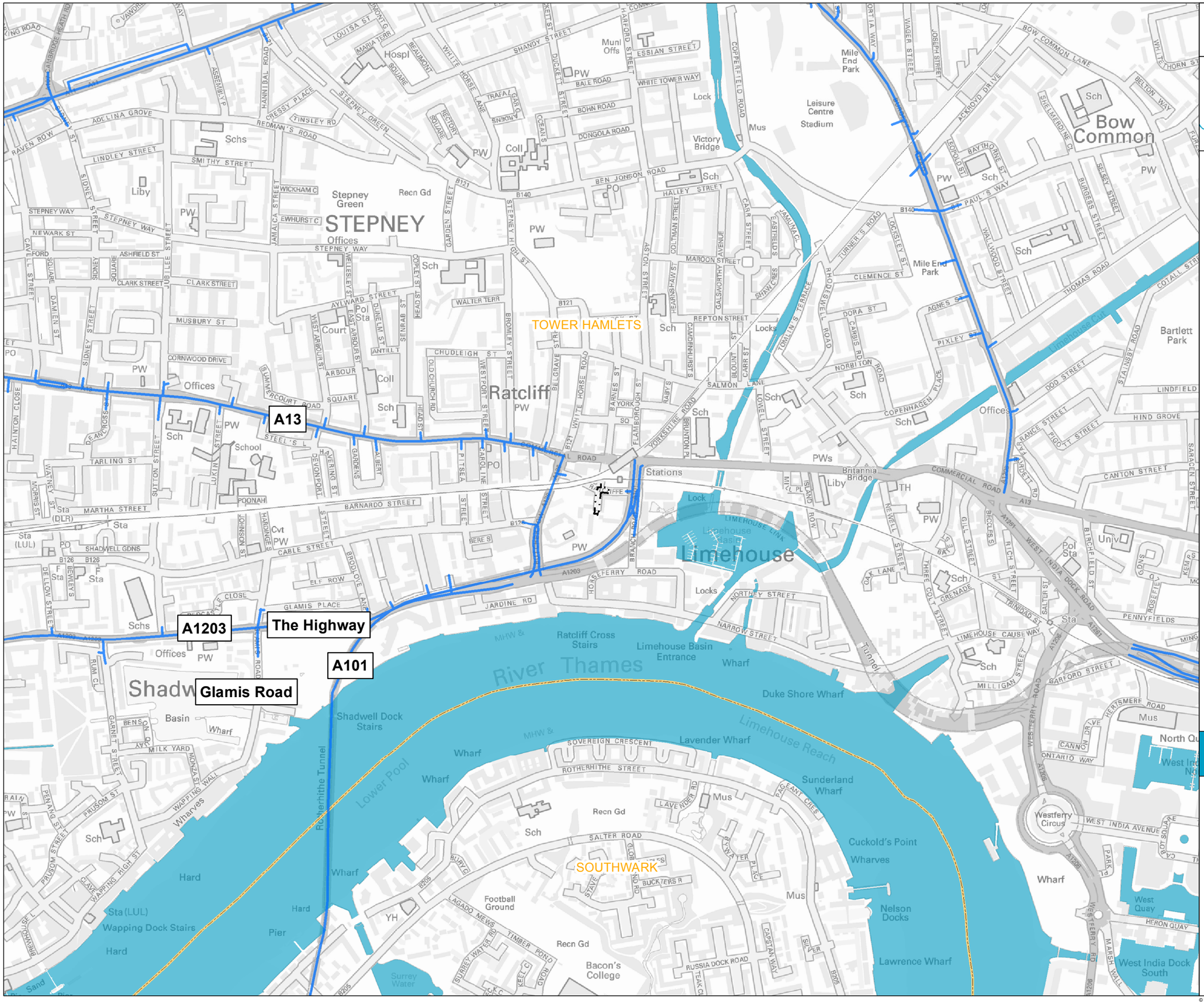


Keyplan:

Key

- Site access
- TFL road network
- Primary construction route
- Limits of Land to be Acquired or Used
- Local authority boundary

110 55 0 110 m

Scale 1 : 7,500 at A3

FOR INFORMATION

Location

Bekesbourne Street
London Borough Of Tower Hamlets

Document Information

Transport Assessment

Transport - construction traffic routes

Figure 27.2.2

1PL03-TT-50650
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

Keyplan:

Key

- DLR stations with cycle parking
- Underground stations with cycle parking
- Barclays cycle hire docking stations
- Cycle superhighway (open)
- London strategic walk network
- Pedestrian routes
- Thames path
- London cycle routes

National cycle network

Route Type

- Open Traffic Free
- Open on-road
- Limits of Land to be Acquired or Used
- Local authority boundary

110 55 0 110 m

Scale 1 : 7,500 at A3

FOR INFORMATION

Location

Bekesbourne Street
London Borough Of Tower Hamlets

Document Information

Transport Assessment

Transport - pedestrian and cycle network

Figure 27.4.1

1PL03-TT-50666
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

Keyplan:

Key

- TFL bus stops
- National rail stations
- Docklands light railway stations
- London overground stations
- Pier locations
- TfL bus routes
- Limits of Land to be Acquired or Used
- Local authority boundary

110 55 0 110 m

Scale 1 : 7,500 at A3

FOR INFORMATION

Location

Bekesbourne Street
London Borough Of Tower Hamlets

Document Information

Transport Assessment

Transport - public transport

Figure 27.4.2

1PL03-TT-50674
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

Keyplan:

Key

- City Car
- City Car (Coming Soon)
- Hertz on Demand
- Zip Car
- Coach Parking
- Limits of Land to be Acquired or Used
- Local authority boundary

110 55 0 110 m

Scale 1 : 7,500 at A3

FOR INFORMATION

Location

Bekesbourne Street
London Borough of Tower Hamlets

Document Information

Transport Assessment

Transport - parking

Figure 27.4.3

1PL03-TT-50682
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

Keyplan:

Key

- Automatic traffic count surveys
- Pedestrian and cycle surveys
- Junction surveys
- Parking surveys
- Limits of Land to be Acquired or Used
- Local authority boundary

40 20 0 40 m

Scale 1 : 3,000 at A3

FOR INFORMATION

Location

Bekesbourne Street
London Borough Of Tower Hamlets

Document Information

Transport Assessment

Transport - survey locations

Figure 27.4.4

1PL03-TT-50690
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

Keyplan:

Key

- Slight
- Serious
- Limits of Land to be Acquired or Used
- Local authority boundary

110 55 0 110 m

Scale 1 : 7,500 at A3

FOR INFORMATION

Location

Bekesbourne Street
London Borough Of Tower Hamlets

Document Information

Transport Assessment

Transport - accident locations

Figure 27.4.5

1PL03-TT-50754
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

Keyplan:

Key

Accidents

(Severity, Mode of travel)

- Slight, Pedestrian
- Slight, Pedal Cycle
- Serious, Pedestrian
- Limits of Land to be Acquired or Used
- Local authority boundary

110 55 0 110 m

Scale 1 : 7,500 at A3

FOR INFORMATION

Location

Bekesbourne Street
London Borough Of Tower Hamlets

Document Information

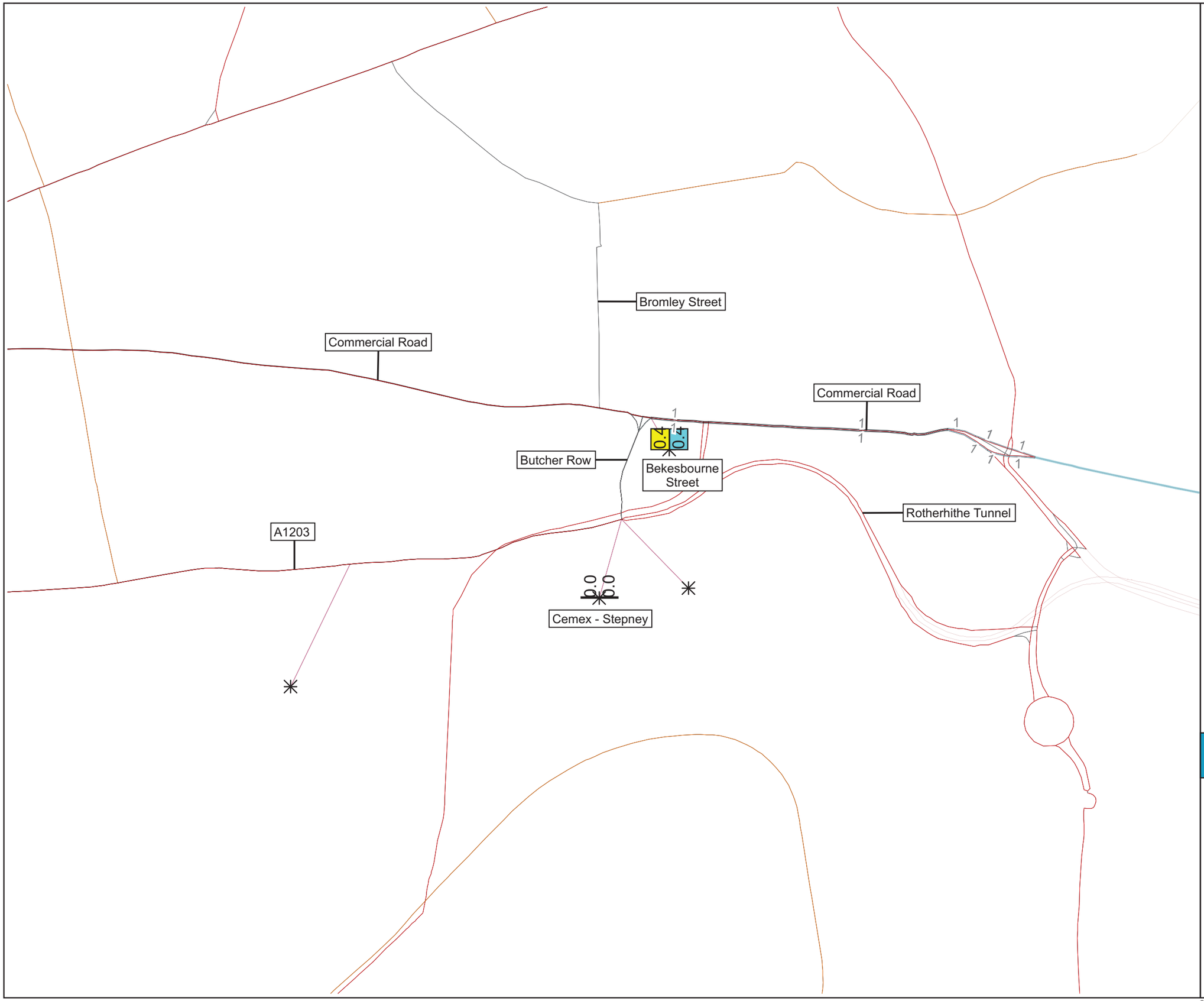
Transport Assessment

Transport - pedestrian and cyclist accidents by severity
Figure 27.4.6

1PL03-TT-50838
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water



Hourly construction lorries arrivals and departures

- Arrivals
- Departures

Hourly construction lorries movements

- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- 70 - 75
- > 75

Note: Construction vehicle flows include all Thames Tideway Tunnel sites on this network during this period.

FOR INFORMATION

Location

Bekesbourne Street
London Borough of Tower Hamlets

Document Information

Transport Assessment
Hourly Construction Lorry Movements - Site Year 1 of Construction

Figure 27.5.1

1PL03-TT-50881

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

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Thames Water Utilities Limited
Clearwater Court, Vastern Road, Reading RG1 8DB

DCO-DT-000-ZZZZZ-071024