

Thames Tideway Tunnel
Thames Water Utilities Limited



Application for Development Consent

Application Reference Number: WWO10001

Transport Assessment

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Beckton Sewage Treatment Works

Main Report

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

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January 2013

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Tideway Tunnel**



Creating a cleaner, healthier River Thames

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Thames Tideway Tunnel

Transport Assessment

Section 26: Beckton Sewage Treatment Works

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26 Beckton Sewage Treatment Works

26.1 Introduction

- 26.1.1 This site-specific *Transport Assessment (TA)* presents the findings of the assessment of the transport issues of the Thames Tideway Tunnel project at the Beckton Sewage Treatment Works (STW) site located in the London Borough (LB) of Newham.
- 26.1.2 The assessment takes into consideration the changes as a result of all other Thames Tideway Tunnel project sites to ensure that results indicate the impact of each individual site in combination with construction works being undertaken at other sites.
- 26.1.3 The Beckton STW site is bound by the A13 (Alfred's Way) trunk road to the north, Barking Creek to the east, the Tidal Thames to the south and the A1020 (Royal Docks Road) to the west. The site's eastern boundary is the tidal confluence of the River Roding and the River Thames.
- 26.1.4 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.
- 26.1.5 The *TA* draws on a number of project-wide and 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*.
- 26.1.6 The *TA* structure is as follows:
- a. Section 26.2 includes a description of the proposed development. This details construction phasing, vehicle and person trip generation and construction traffic routing. It also provides details on transport during the operational phase.
 - b. Section 26.3 outlines the assessment methodology used for the *TA* for the construction and operational phases.
 - c. Section 26.4 details the baseline conditions on the transport network surrounding the site, including survey data analysis and accident analysis.
 - d. Section 26.5 provides the assessment of the construction phase of the project, including a comparison between the construction base case and the construction development case. This section also outlines sensitivity testing for the highway network.
 - e. Section 26.6 provides the assessment of the operational phase of the project.
 - f. Section 26.7 summarises the *TA* findings.

26.2 Proposed development

- 26.2.1 The proposed development site is located in the LB of Newham and lies close to the boundary with the LB of Barking and Dagenham. It comprises an area totally contained within the Thames Water's Beckton STW. Figure 26.2.1 in the Beckton STW *Transport Assessment* figures shows the Beckton STW site location.
- 26.2.2 The proposals at this site are for new infrastructure to transfer sewage from the Lee Tunnel (into which the Thames Tideway Tunnel would connect at Abbey Mills Pumping Station) to the STW for treatment, together with a new siphon tunnel connected to the Tideway Combined Sewage Overflow.
- 26.2.3 The site itself is surrounded by operational infrastructure associated with the STW. The site is bound by Alfred's Way (A13) trunk road to the north and Barking Creek to the east. The STW's eastern boundary is the tidal confluence of the River Roding (Barking Creek) and the River Thames. A Green Chain route, which is a designated public right of way and recreational footpath, is located along the river to the east of the site.
- 26.2.4 East of Barking Creek is a large timber yard and other warehouses. To the south of the site is the River Thames, the northern outfall sewer, business parks and areas of vacant land. To the west of the site there is land under development for the STW extension, Royal Docks Road (A1020) and a mixture of business parks and retail parks beyond.
- 26.2.5 To the north of the STW is Jenkins Lane waste transfer station, a cinema and retail complex and Alfred's Way (A13) trunk road. There are no residential properties in the immediate vicinity of the site.
- 26.2.6 The site can be accessed by road via Jenkins Lane which joins on to the A13. The site is approximately 890m from the Transport for London Road Network (TLRN) on Royal Docks Road (A1020) and 1.2km from the TLRN on Alfred's Way (A13) and its junction with the North Circular Road (A406). There is no rail network in the vicinity of the site. The nearest Docklands Light Railway (DLR) station is Gallions Reach which is 1.3 km from the site to the southwest.

Construction

- 26.2.7 The majority of the works required at Beckton STW are currently under construction as part of the Lee Tunnel project. However, some additional works would be constructed as part the Thames Tideway Tunnel project. During construction, all the works would be undertaken within the existing Thames Water operational land at Beckton STW.
- 26.2.8 Construction at the Beckton STW site is anticipated to last for approximately four and a half years. There would be two phases of construction at the Beckton STW site: phase 1 - covering site set-up of sites A and B, shaft construction and siphon tunnelling at site A, and shaft construction and construction of other structures at site B, and phase 2 – site A flow transfers and construction of other structures. The access plan and highway layout during construction plans in the Beckton STW

Transport Assessment figures present the highway layout during construction.

- 26.2.9 Stage 1 Road Safety Audits have been carried out on the illustrative highway layouts proposed for this site. The *Road Safety Audits* for this site are contained in Section 26 Appendix D.
- 26.2.10 The Beckton STW site would be accessed from Jenkins Lane, using the existing access to the STW facility. Construction traffic would travel from and to from the north and access the site on a left-turn in / right-turn out basis.
- 26.2.11 During construction, pedestrians would not be diverted away from the eastern footway of Jenkins Lane but would have to cross the site access point.
- 26.2.12 All construction materials would be transported to and from this site by road.
- 26.2.13 During construction all materials would be transported by road. Parking for 15 essential maintenance/operational vehicles would be provided on site. Parking facilities for construction workers needing to drive would also be available on site.
- 26.2.14 Construction details for the site relevant to the construction transport assessment are summarised in Table 26.2.1.

Table 26.2.1 Construction details

| Description | Assumption |
|---|---|
| Assumed peak period of construction lorry movements | Site Year 2 of construction |
| Assumed average peak daily construction lorry vehicle movements and duration | 50 movements per day (25 vehicle trips) for one month |
| Typical types of lorry requiring access (comprising rigid-bodied, flatbed and articulated vehicles) | Excavated material lorries Plant and equipment deliveries Ready mix concrete lorries Office/general delivery lorries Rebar lorries Temporary construction material lorries including pipe/track/oils/greases 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.

Construction routes

- 26.2.15 Figure 26.2.2 in the Beckton STW *Transport Assessment* figures shows the construction routes for the Beckton STW site. Construction routes

have been discussed with both Transport for London (TfL) and the Local Highway Authority.

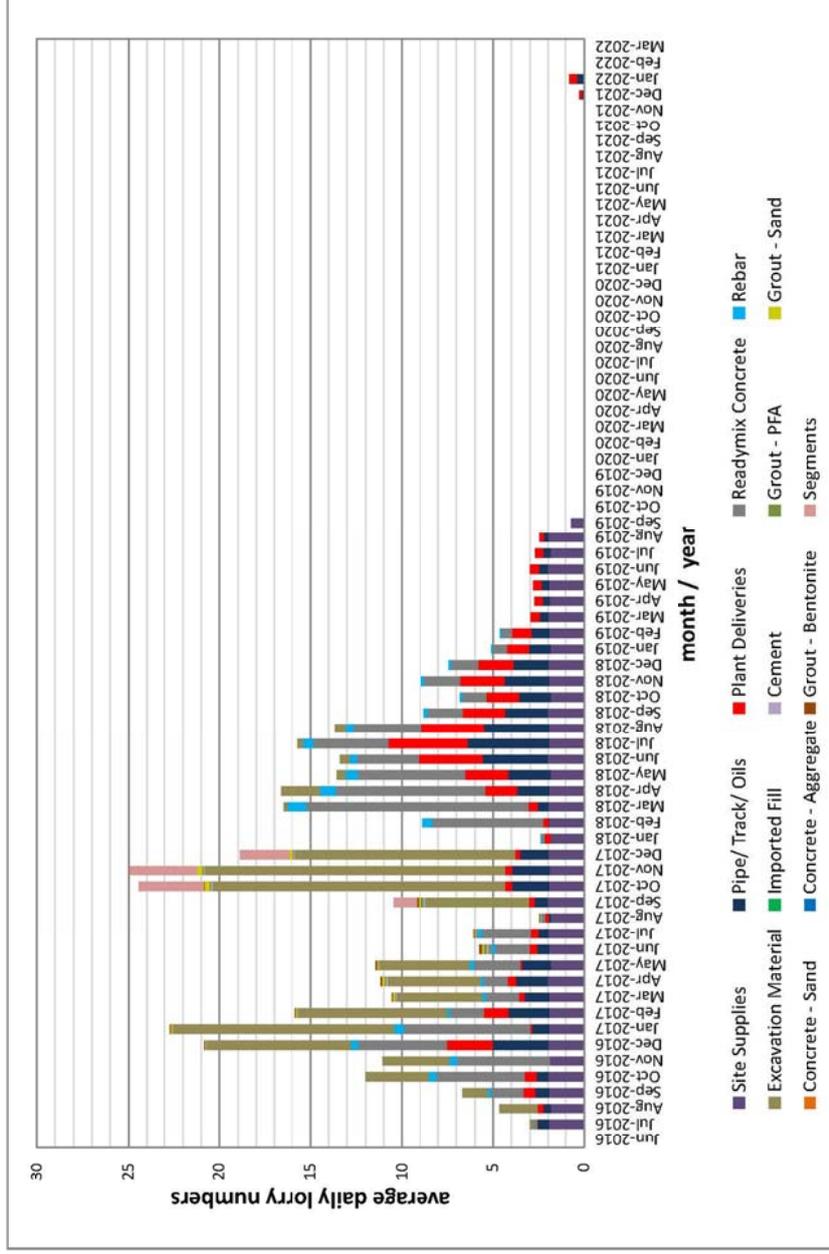
- 26.2.16 The construction vehicles would use Alfred's Way (A13) to access the site via Jenkins Lane. Alfred's Way (A13) forms part of the TLRN and is approximately 1.2km from the site. The main junctions along the construction traffic routes are:
- a. Jenkins Lane / Spur Road roundabout (south)
 - b. Jenkins Lane / Spur Road roundabout (north)
 - c. Alfred's Way (A13) / Newham Way (A13) / North Circular Road (A406) / Royal Docks Road (A1020).
- 26.2.17 The proposed routing strategy would use the grade-separated roundabout at the Alfred's Way (A13) / Newham Way (A13) / North Circular Road (A406) / Royal Docks Road (A1020) roundabout which then allows access to Jenkins Lane via the A13 eastbound slip road. The site would use the existing access point on Jenkins Lane that serves the present Thames Water facility.
- 26.2.18 Vehicles leaving the site would travel northbound along Jenkins Lane and would either take the westbound Spur Road and the A13 westbound slip road, or would pass under the A13 to each the A13 eastbound slip road.
- 26.2.19 The exact routing of construction traffic depends on the origins and destinations of construction materials which are shown indicatively in the *Project-wide TA*.

Proposed construction flows

Construction vehicles

- 26.2.20 Vehicle movements would take place during the standard day shift of ten hours on weekdays (08:00 to 18:00) and five hours on Saturdays (08:00 to 13:00). In exceptional circumstances HGV and abnormal load movements could occur up to 22:00 on weekdays for large concrete pours and later at night on agreement with the LB of Newham.
- 26.2.21 A site-specific peak construction assessment year has been identified. The histogram in Plate 26.2.1 shows that the peak site-specific activity at the Beckton STW site would occur in Site Year 2 of construction.
- 26.2.22 This TA assesses this site-specific peak construction year. As detailed in Table 26.4.2, there would be 50 average peak daily construction lorry vehicle movements in the peak month of this peak year and Plate 26.2.1 shows how the number of vehicular movements would vary throughout the construction period.
- 26.2.23 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* which are required as part of the *Code of Construction Practice*.

Plate 26.2.1 Estimated construction lorry profile



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

- 26.2.24 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.
- 26.2.25 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 26.4). 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.
- 26.2.26 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.
- 26.2.27 Other construction vehicle movements associated with site operations and contractor activities would be cars and light goods vehicles. The construction vehicle movements expected to be generated by the Beckton STW site are shown in Table 26.2.4.

Construction workers

- 26.2.28 The construction site is expected to require a maximum workforce of 65 workers on site over a 24 hour period. The number and type of workers is shown in Table 26.2.2. It is noted that the table shows the maximum total number of workers (65); however, as a result of shift patterns, the maximum workforce on site would be 44 at any one time.

Table 26.2.2 Maximum estimated construction worker numbers

| Contractor | | | | Client | |
|-------------|-------------|-------------|-------------|-------------|-------------|
| Staff* | | Labour** | | Staff*** | |
| 08:00-18:00 | 18:00-08:00 | 07:00-19:00 | 19:00-07:00 | 08:00-18:00 | 18:00-08:00 |
| 20 | 5 | 20 | 15 | 4 | 1 |

*Staff – contract staff brought in to project manage the engineering work and site.

**Labour – those working on site doing engineering, construction and manual work.

***Staff Client – engineering and support staff managing the project and supervising the Contractor.

- 26.2.29 The mode split outlined in Table 26.2.3 has been used to assess the changes as a result of the worker journeys on the highway and public transport networks. It has been derived by taking the highest number of workers during the peak month and calculating the percentage of trips by

mode using the 2001 Censusⁱ journey to work data for the area in the vicinity of the Beckton STW site.

26.2.30 The Census data indicates that the predominant mode of travel for journeys to work in this area is private car. Although there would be parking on site for workers needing to drive, parking on surrounding streets is restricted and measures to reduce car use would be incorporated into site-specific *Travel Plan* requirements. It is therefore likely that the number of construction workers driving to the site would be much lower than suggested in Table 26.2.3.

26.2.31 However, in order to ensure that the assessment is robust, the mode split outlined in Table 26.2.3 has been used to assess the impacts of worker journeys on the highway and public transport networks.

Table 26.2.3 Transport mode split

| Mode | Percentage of trips to site | Equivalent number of worker trips (based on 44 worker trips) | |
|-------------------------|-----------------------------|--|----------------------------|
| | | AM peak hour (07:00-08:00) | PM peak hour (18:00-19:00) |
| Bus | 9% | 4 | 4 |
| National Rail | 4% | 2 | 2 |
| DLR | 8% | 4 | 4 |
| London Underground | 0% | 0 | 0 |
| London Overground | 0% | 0 | 0 |
| Car driver | 68% | 30 | 30 |
| Car passenger | 5% | 2 | 2 |
| Cycle | 2% | <1 | <1 |
| Walk | 2% | <1 | <1 |
| River | 0% | 0 | 0 |
| Other (taxi/motorcycle) | 2% | <1 | <1 |
| Total | 100% | 44 | 44 |

26.2.32 It is difficult to predict with certainty the directions to and from which workers at the site would travel. Staff could potentially be based in the local area or in the wider Greater London area and are unlikely to have the same trip origin-destination distributions as construction lorries.

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

26.2.33 As indicated in Table 26.2.3, it is assumed that the predominant mode of travel for journeys to work in this area would be private car and the construction workers would use Jenkins Lane to access and egress the site.

Vehicle movements summary

26.2.34 The total anticipated number of construction-related vehicle movements in the peak month of activity at this site is set out in Table 26.2.4.

Table 26.2.4 Peak construction works vehicle movements

| Vehicle type | Vehicle movements per time period | | | | |
|---|-----------------------------------|----------------|----------------|----------------|----------------|
| | Total daily | 07:00 to 08:00 | 08:00 to 09:00 | 17:00 to 18:00 | 18:00 to 19:00 |
| Construction lorry vehicle movements 10%* | 50 | 0 | 5 | 5 | 0 |
| Other construction vehicle movements** | 36 | 4 | 4 | 4 | 4 |
| Worker vehicle movements*** | 60 | 30 | 0 | 0 | 30 |
| Total | 146 | 34 | 9 | 9 | 34 |

* 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 68% of workers driving, derived by taking the highest number of workers during the peak month and calculating the % of trips using the 2001 Census Journey to Work data. This represents an unconstrained case, as the Draft Project Framework Travel Plan and site-specific Travel Plan would include measures to restrict workers from parking in surrounding streets.

26.2.35 Based on all materials being transported by road, an average peak flow of 146 vehicle movements a day is expected during the months of greatest activity during Site Year 2 of construction at this site. At other times in the construction period, vehicle flows would be lower than this average peak figure.

26.2.36 Table 26.2.4 shows that in the AM and PM peak hours, the Beckton STW site would generate approximately nine vehicle movements. The site would also generate 34 vehicle trips in the hour prior to the AM peak hour and after the PM peak hour.

Code of Construction Practice

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

ⁱⁱ The *Code of Construction Practice (CoCP)* is provided in Vol 1 Appendix A of the *Environmental Statement*. It contains general requirements (Part A), and site specific requirements for this site (Part B).

- 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.

26.2.38 In addition to the general measures within the *CoCP Part A*, the following measures have been incorporated into the *CoCP Part B* (Section 5) relating to the Beckton STW site:

- a. the access to the Thames Tideway Tunnel project site would be through the Thames Water STW lands
- b. access would be from the Alfred's Way (A13) to the main Beckton STW entrance
- c. limited parking for workers is allowed at this site.

26.2.39 Based on current travel planning guidance including TfL's 'Travel planning for new development in London (TfL, 2011)¹, this development falls within the threshold for producing a Strategic Framework Travel Plan. A *Draft Project Framework Travel Plan*, submitted with the application documentation, has been prepared based on the TfL ATTrBuTE guidance (TfL, 2011)². The *Draft Project Framework Travel Plan* addresses project-wide travel planning measures, including the need for a project-wide Travel Plan Manager, initial travel surveys during construction and a monitoring framework. It also contains requirements and guidelines for the site-specific *Travel Plans* to be prepared by the site contractors. The site-specific travel-planning requirements of relevance to the *Draft Project Framework Travel Plan* are as follows:

- a. information on existing transport networks and travel initiatives for the Beckton STW site
- b. a mode split established for the Beckton STW site construction workers to establish and monitor travel patterns
- c. site-specific targets and interim targets 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.

Operation

26.2.40 Once the Thames Tideway Tunnel is operational it is not expected that there would be any significant changes to the transport infrastructure and operation within the local area, because the site would be accessed using the existing access to the STW and maintenance trips to the site would be infrequent and short-term. On this basis the only issues considered during the operational phase are those affecting highway layout and operation.

- 26.2.41 These have only been considered qualitatively because there would be no physical change required to the highway network during maintenance activity and maintenance trips would be very low, infrequent and temporary. It is expected that existing staff at the Beckton STW site would undertake most of the necessary maintenance works and therefore there would be very few additional maintenance vehicles visiting the site during operation. This means that a quantitative assessment is not required. The scope of this analysis has been discussed with the LB of Newham and TfL.
- 26.2.42 Given the level of transport activity associated with the Thames Tideway Tunnel project during the operational phase, only the localised transport effects around the Beckton STW site have been assessed. Other Thames Tideway Tunnel sites would not affect the area around the site in the operational phase and therefore they have not been considered in the assessment.
- 26.2.43 Access would be required for a light commercial vehicle on a three to six monthly maintenance schedule. Additionally, there would be more substantive maintenance visits at approximately ten year intervals which would require access to enable two cranes and associated support vehicles to be brought to the site.
- 26.2.44 During operation, the site would be accessed from Jenkins Lane, using the existing access to the STW facility and the maintenance vehicles would approach the site from the Jenkins Lane / Spur Road roundabout (south), as set out in the Beckton STW design principles (see *Design Principles* report Section 4.22 of Vol 1 Appendix B of the *Environmental Statement*). The permanent highway layout plan in the Beckton STW *Transport Assessment* figures shows the highway layout during the operational phase at Beckton STW.

26.3 Assessment methodology

Engagement

- 26.3.1 An extensive scoping and technical engagement process has been undertaken. All consultee comments relevant to this site are presented in Volume 26 of the *Environmental Statement*.
- 26.3.2 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

- 26.3.3 Throughout the scoping and technical engagement process, the key stakeholders with regards to transport, primarily TfL and the relevant local authority for each site have been consulted. For Beckton STW, the LB of Newham has been consulted and the comments which have arisen relating directly to Beckton STW site have been recorded and responded to accordingly.

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

26.3.5 The key issues arising from stakeholder engagement are:

- a. the need to consider any interaction between the Thames Tideway Tunnel and Crossrail construction
- b. arrangements for dealing with construction arisings, in particular maximising the use of water-borne transport
- c. minimising impacts on local residents, particularly in respect of parking arrangements and highway routes used for site access
- d. the inclusion of Travel Plans
- e. the assessment should include consideration of the Barking Riverside development as that development would be under construction during construction at Beckton STW
- f. new bus services as part of the Barking Riverside development should be considered
- g. information on construction traffic associated with other Thames Tideway Tunnel sites should be provided
- h. additional details and analyses of type of users involved in the accidents should be shown on a plan
- i. Road Safety Audits should be carried out
- j. clarification of the basis for defining the year of construction is required
- k. clarification of working hours assumed in the *TA* for the assessment is required
- l. swept path analysis for vehicle access to the construction site and final operational site should be undertaken.

Construction

26.3.6 The assessment methodology for the construction phase follows that described in the *Project-wide TA*. However, for Beckton STW there has been no local traffic modelling undertaken as the change in traffic flows resulting from construction at Beckton STW would be very low and no significant impact is expected on the highway network. Survey results and the outcomes of the strategic traffic modelling (which covers all Thames Tideway Tunnel sites) have instead been used to understand the existing capacity and operation of the local highway network.

26.3.7 The effect of all other Thames Tideway Tunnel project sites on the area surrounding the Beckton STW site has been taken into account within the assessment of the peak year of construction at this site.

Construction assessment area

26.3.8 The assessment area for the Beckton STW site includes Jenkins Lane, Jenkins Lane / Spur Road roundabout (south) (approximately 200m to the

north of the site, and Jenkins Lane / Spur Road roundabout (north) (approximately 450m to the northwest of the site).

- 26.3.9 Consideration has also been given to the potential impacts on pedestrian and cycle routes, and on bus services within 640m of the site and rail services in the vicinity of the site. Consideration has also been given to the potential impact on rail services although the nearest service is located more than 960m from the Beckton STW site. The Public Transport Accessibility Level (PTAL) of the site, calculated using TfL's approved 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).

Construction assessment year

- 26.3.10 To assess the busiest case scenario for the Beckton STW, the peak construction traffic year has been identified. This ensures that the assessment for the Beckton STW site takes into consideration the heaviest flow of construction vehicles at this site on local roads for the assessment.
- 26.3.11 The site-specific peak construction traffic year at Beckton STW is Site Year 2 of construction.
- 26.3.12 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

- 26.3.13 The assessment for this site takes account of construction vehicle movements associated with Beckton STW, together with construction traffic from other Thames Tideway Tunnel project sites that would use the highway network in the vicinity of this site in Site Year 2 of construction.
- 26.3.14 As indicated in the *Project-wide TA*, the TfL HAMs have been used as part of the assessment. The strategic highway modelling has used three of the HAMs, which cover west, central and east London. These three models cover the locations of all of the Thames Tideway Tunnel project sites and this approach has been agreed with TfL.
- 26.3.15 The HAMs have been developed by TfL using GLA employment and population forecast set out in the London Plan (GLA, 2011)³. As a result the assessment inherently takes into account a level of future growth and development across London.
- 26.3.16 For future year assessments for the Beckton STW site, the TfL East London HAM (ELHAM) has been used to test the strategic highway network impacts associated with this site. Construction traffic associated with other Thames Tideway Tunnel project sites using the routes in this area has been included in the ELHAM scenarios.
- 26.3.17 Construction lorry and operational vehicle trips associated with the project peak month were assigned to ELHAM to create the scenarios for testing strategic highway impacts.

- 26.3.18 ELHAM also provides factors for the increase in vehicle-kilometres in the borough between the ELHAM model base and forecast years (2008/9 and 2021 respectively).
- 26.3.19 For Beckton STW there has been no local traffic modelling undertaken as the change in traffic flows resulting from construction at the Beckton STW site would be very low and therefore no significant impacts on highway operation are expected.
- 26.3.20 The assessment undertaken is qualitative based on professional judgement drawing on survey data and strategic modelling outcomes to understand the existing capacity and operation of the local highway network. This enables the effect of all other Thames Tideway Tunnel sites on the area surrounding Beckton STW to be taken into account within the assessment of the peak year of construction at this site.

Operation

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

Operational assessment area

- 26.3.23 The assessment area for the operational assessment remains the same as for the construction assessment as outlined in para. 26.3.8.

Operational assessment year

- 26.3.24 The operational assessment year has been taken as Year 1 of operation which is the year in which it is assumed that the Thames Tideway Tunnel project would become operational. As the number of vehicle movements associated with the operational phase would be low, there is no requirement to assess any other year beyond that date.

26.4 Baseline

- 26.4.1 This section sets out the baseline conditions on the local transport network in the vicinity of the Beckton STW site in 2012, with the exception of the traffic survey data which was collected in 2011.

Policy review

- 26.4.2 The site is located within the LB of Newham; the relevant national, regional, and local policy documents have been reviewed and included in Appendix A.

Existing land use

- 26.4.3 The site comprises an area within Beckton STW. This is an operational sewage treatment works, owned and managed by Thames Water.
- 26.4.4 The nearest residential area is located more than 1km to the north of the site at Westminster Gardens.

Existing access

- 26.4.5 The existing site access to Beckton STW is from Jenkins Lane and this would be used to access the Thames Tideway Tunnel site within the STW area.

Pedestrian network and facilities

- 26.4.6 The key pedestrian network related to the Beckton STW site comprises:
- Jenkins Lane providing a north-south link between Beckton Showcase Cinema bus stop to the north and the site, including the zebra crossing to the south of Jenkins Lane / Spur Road roundabout (south)
 - Spur Road to the south of the A13 providing an east-west link between Jenkins Lane bus stop to the west and Jenkins Lane to the east.
- 26.4.7 There are no strategic pedestrian routes that pass close to the site. The nearest strategic pedestrian routes to the site are the Capital Ring and Jubilee Greenway, which are designated Public Rights of Way. The routes are located approximately 1.8km away from the site to the south.
- 26.4.8 There is a local walking route to the west of Barking Creek along the river (a Green Chain route), on the site's eastern boundary. This is a designated Public Right of Way and recreational footpath.
- 26.4.9 Jenkins Lane provides a continuous north-south link for pedestrians. The road has footways of between 1.4m and 2.1m in width on both sides. However, between the entrance to the Power League sport ground on Jenkins Lane and the junction of Eric Clarke Lane and Jenkins Lane, the footway is only available on the eastern side of the road.
- 26.4.10
- 26.4.11
- 26.4.12 Plate 26.4.1 shows the eastern footway of Jenkins Lane.
- 26.4.13 The only pedestrian crossing located on Jenkins Lane is to the south of the Jenkins Lane/Spur Road roundabout (south). This is a zebra crossing which aids east-west pedestrian movements.
- 26.4.14 Eric Clarke Lane to the northwest of the site provides a link between Jenkins Lane and Royal Docks Road (A1020). The footway along Eric Clarke Lane is only available on the southern side of the road and the width is approximately 1m. Currently no pedestrian crossing facilities are provided along this road.

Plate 26.4.1 Eastern footway facing north along Jenkins Lane



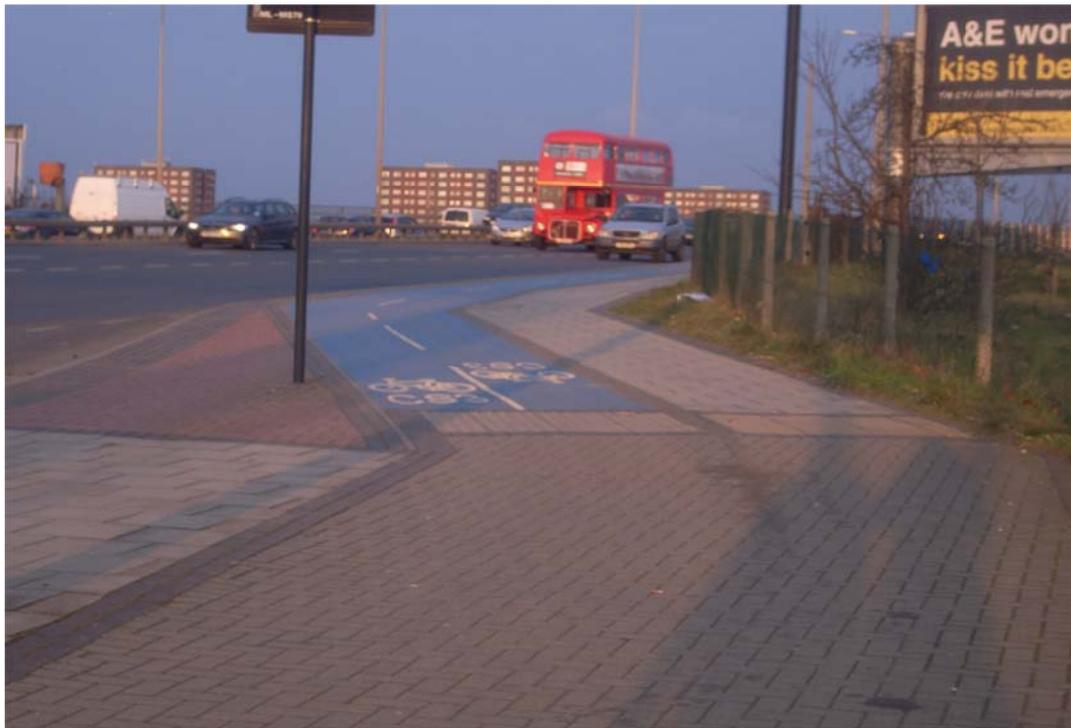
Cycle network and facilities

- 26.4.15 The existing cycle network and facilities in the vicinity of the site are described below and shown on Figure 26.4.1 in the Beckton STW *Transport Assessment* figures.
- 26.4.16 The closest cycle route to the site links Royal Albert Dock to Victoria Park. This almost entirely traffic free route traverses the LB of Newham between Beckton and Victoria Park, via the London 2012 Olympic and Paralympic Games site.
- 26.4.17 At Beckton the cycle route runs off-road parallel to Royal Docks Road (A1020).

Barclays Cycle Superhighways

- 26.4.18 The closest Cycle Superhighway (CS) to the site is CS3 which routes between Barking and Tower Gateway. The route begins to the east of the site at the junction of Alfred's Way (A13) / River Road and passes along the A13 to East India where it continues on less trafficked roads to Tower Gateway. The closest point of approach to the site is at Alfred's Way (A13), approximately 1.2km to the north and is shown in Plate 26.4.2.

Plate 26.4.2 CS3 facing east along Alfred's Way (A13)



Barclays Cycle Hire Scheme

- 26.4.19 There are no Barclays Cycle Hire docking stations in the vicinity of the Beckton STW site.

Cycle parking

- 26.4.20 There are no cycle parking facilities in the immediate vicinity of the Beckton STW site.

Public transport

Public Transport Accessibility Level

- 26.4.21 The Public Transport Accessibility Level (PTAL) of the site calculated using TfL's approved PTAL methodology⁴ (analysis is included in Appendix B).
- 26.4.22 The site has a PTAL rating of 2, rated as 'low' (with 1 being the lowest accessibility and 6b being the highest accessibility). The following sections detail the public transport services in the vicinity of the site which are shown on Figure 26.4.2 in the Beckton STW *Transport Assessment* figures.

Bus services

- 26.4.23 There is a dedicated shuttle bus service operated by Thames Water from Gallions Reach DLR station to the Beckton STW site. This shuttle bus is used by the workers using the DLR services to travel to and from the Beckton STW site.
- 26.4.24 A total of three day time bus routes operate within a 640m walking distance of the site serving local destinations. Table 26.4.1 provides a

summary of the bus services and their frequencies during the weekday peaks. These bus routes operate from the following bus stops:

- a. Beckton Showcase Cinema bus stop on Jenkins Lane (northbound and southbound), 130m walking distance to the north
- b. Jenkins Lane bus stop on Alfred's Way (A13) (eastbound and westbound), 460m walking distance to the north

26.4.25 Gallions Reach Shopping Centre bus stops on Armada Way provide three daytime and one night-time bus services serving the local area. However, given that these bus stops are 2km walking distance to the south of Beckton STW because there is no more direct walking route, they are not considered as part of the assessment.

26.4.26 On average there are a total of 31 day time bus services per hour in the AM peak hour and 33 bus services per hour in the PM peak within a 640m walking distance of the site. No night-time bus services operate within a 640m walking distance of the site.

Table 26.4.1 Existing daytime weekday peak hour local bus services and frequencies (number of buses per hour)

| Bus number | Origin - destination | Nearest bus stop to Beckton STW site | Approximate walking distance from Beckton STW (m) | Weekday peak hour two-way frequencies | |
|------------|--|---|---|---------------------------------------|-----------------------|
| | | | | AM peak (08:00-09:00) | PM peak (17:00-18:00) |
| 173 | Beckton Bus Station – King George Hospital | Jenkins Lane | 460m | 11 | 11 |
| 325 | East Beckton – Prince Regent Bus Station | Beckton Showcase Cinema | 130m | 11 | 11 |
| 366 | Beckton Bus Station – Falmouth Gardens | Beckton Showcase Cinema | 130m | 9 | 11 |
| | TW Shuttle bus | Various points within Beckton STW including active construction sites | 0m | Every 40 minutes | Every 40 minutes |

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

London Underground

- 26.4.27 As shown on Figure 26.4.2 in the Beckton STW *Transport Assessment* figures, Barking station, which is served by the Hammersmith and City, and District Underground lines is located approximately 2.4km walking distance to the north of the site. This is beyond the threshold distance of 960m used in the PTAL calculations, and represents approximately 30 minutes walking time.
- 26.4.28 The Hammersmith and City line trains serving this station travel west to Hammersmith. Barking is the eastern terminus on this line. In the AM and PM peak hours the frequency of the Hammersmith and City Line trains from this station is approximately every ten minutes providing six services per hour towards Hammersmith.
- 26.4.29 District Line trains travel west to Earl's Court, Ealing Broadway, Richmond, Wimbledon, and Kensington (Olympia), and east to Upminster with AM and PM peak frequencies of approximately every three minutes providing 20 services per hour in each direction.
- 26.4.30 On average there are 26 underground services per hour in total during the AM and PM peak hours from Barking Underground station.
- 26.4.31 Table 26.4.2 provides a summary of both London Underground and London Overground services and their frequencies during the weekday peaks.

London Overground

- 26.4.32 Barking station is also served by London Overground. The station is the eastern terminus on the London Overground line and services travel west to Gospel Oak. In the AM and PM peak hours there are four westbound trains per hour from this station towards Gospel Oak and four eastbound trains per hour arriving at Barking.

Docklands Light Railway (DLR)

- 26.4.33 Gallions Reach is the nearest Docklands Light Railway (DLR) station to the site, approximately 3.5km walking distance to the southwest. Figure 26.4.2 in the Beckton STW *Transport Assessment* figures indicates the location of this station and Table 26.4.3 provides a summary of the DLR services and their frequencies during the weekday peaks.
- 26.4.34 Gallions Reach DLR station provides access to the DLR serving Beckton and Stratford International to the north and Tower Gateway and Bank in the west.
- 26.4.35 During the AM and PM peak hours, frequencies of DLR services from this station are approximately every five to ten minutes to Beckton providing six to 12 services, and eight to ten minutes to Tower Gateway providing six to eight services. DLR trains serving Gallions Reach station also provide services to Stratford International. These trains run every ten minutes during the AM and PM peak hours providing approximately six services. In total there are approximately 31 DLR services from Gallions Reach station in each peak hour.

Table 26.4.2 Existing London Underground and London Overground weekday peak hour services and frequencies (number of services per hour)

| Line | Origin - destination | Approximate walking distance from Beckton STW site (m) | Weekday peak hour two-way frequencies | |
|----------------------|--|--|---------------------------------------|-----------------------|
| | | | AM peak (08:00-09:00) | PM peak (17:00-18:00) |
| District Line | Edgware Road, Ealing Broadway, Richmond, Wimbledon, Kensington (Olympia) – Upminster | 2,400 | 40 | 40 |
| Hammersmith and City | Barking – Hammersmith | 2,400 | 6 | 6 |
| London Overground | Barking – Gospel Oak | 2,400 | 4 | 4 |

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

Table 26.4.3 Existing Docklands Light Railway services and frequency (number of services per hour)

| Line | Origin - destination | Approximate walking distance from Beckton STW site (m) | Weekday peak hour two-way frequencies | |
|------|-----------------------------------|--|---------------------------------------|-----------------------|
| | | | AM peak (08:00-09:00) | PM peak (17:00-18:00) |
| DLR | Beckton – Tower Gateway | 3,500 | 16 | 16 |
| DLR | Beckton – Stratford International | 3,500 | 15 | 15 |

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

National Rail

- 26.4.36 As shown on Figure 26.4.2 in the Beckton STW *Transport Assessment* figures, the closest station to the site that provides National Rail services is also Barking. The station provides access to C2C services to and from Shoeburyness, Grays, Southend Central, Laindon, Pitsea, and London Fenchurch Street.
- 26.4.37 In the AM peak hour there are approximately 22 services (nine eastbound and 13 westbound) and in the PM peak hour there are approximately 26 services (13 eastbound and 13 westbound) calling at Barking.
- 26.4.38 Table 26.4.4 provides a summary of the National Rail services and their frequencies during the weekday peaks.

Table 26.4.4 Existing National Rail weekday peak hour services and frequencies (number of services per hour)

| National Rail station | Origin - destination | Approximate walking distance from Beckton STW site (m) | Weekday peak hour two-way frequency | |
|-----------------------|--|--|-------------------------------------|-----------------------|
| | | | AM peak (08:00-09:00) | PM peak (17:00-18:00) |
| Barking | Shoeburyness, Grays, Southend Central, Laindon, Pitsea | 2,400 | 22 | 26 |

Source: Railplanner information and timetables: www.nationalrail.co.uk (site last accessed December 2012)

Highway network and operation

- 26.4.39 The site is located on Jenkins Lane as shown on Figure 26.2.1 in the Beckton STW *Transport Assessment* figures, approximately 1.2km from Alfred's Way (A13) which both forms part of the TLRN. The North Circular Road (A406) which is also part of the TLRN can be accessed from the interchange on the A13 at the northern end of Royal Docks Road (A1020).
- 26.4.40 Alfred's Way (A13), Newham Way (A13) and North Circular Road (A406), would be used by the construction vehicles to travel to and from the Beckton STW site.
- 26.4.41 Construction vehicles would also use Jenkins Lane to access the site. Jenkins Lane is a two-way road with a 30mph speed limit. The road runs from north to south joining the North Circular Road (A406) in the north to a number of small industrial units and the Beckton STW compound in the south. Jenkins Lane runs under Alfred's Way (A13).
- 26.4.42 There are three junctions along Jenkins Lane, two located to the south of Alfred's Way (A13) with one approximately 380m from the site where it meets Eric Clarke Lane at a give-way T-junction, and one 710m from the site where it meets Spur Road (south) at a roundabout. Jenkins Lane (north) and Spur Road (north) meet at a mini-roundabout to the north of Alfred's Way (A13).

- 26.4.43 Jenkins Lane and Spur Road predominantly accommodate heavy goods vehicle traffic associated with the waste transfer station and Thames Water operations. The south roundabout at Jenkins Lane and Spur Road also provides entry and exit to the Showcase Cinema.
- 26.4.44 Vehicular access to the site from the TLRN is gained via the grade-separated roundabout at the junction of Alfred's Way (A13) / North Circular Road (A406) / Newham Way (A13) / Royal Docks Road (A1020).
- 26.4.45 Spur Road acts as the on/off slip from Alfred's Way (A13) onto Jenkins Lane. Both the on/off slips intersect with roundabouts accessing Jenkins Lane. The junction of Spur Road (south) and Jenkins Lane is a roundabout and forms the access junction with the Beckton Show Case Cinema. The junction of Spur Road (north) and Jenkins Lane is a mini-roundabout with Jenkins Lane (north) providing access to the Newham Council Depot to the north and Beckton STW in the south. Access from Jenkins Lane to Spur Road north involves passing under Alfred's Way (A13).
- 26.4.46 To access the northern end of Jenkins Lane, drivers take the A13 eastbound on slip and turn left at a left in / left out junction into Spur Road. At the mini-roundabout (north) with Jenkins Lane, drivers turn right into Jenkins Lane, and pass under the A13. They continue straight on at the Jenkins Lane / Spur Road roundabout (south) and the site is located further on the left. Egress from the site for destinations east along the A13 is via the reverse route. For all other destinations, drivers must turn left at the Jenkins Lane / Spur Road roundabout (south) to join the A13 grade-separated interchange and the TLRN.
- 26.4.47 Based on observation in January 2012 during the peak hours, the entry and exit to Alfred's Way (A13) from Spur Road (both eastbound and westbound slip roads) operate below capacity with limited queuing.
- 26.4.48 Traffic surveys results undertaken in May 2011 indicate that the traffic flow using Jenkins Lane / Spur Road mini-roundabout (north), and Jenkins Lane / Spur Road roundabout (south) are very low and the two roundabouts operate below capacity.

Parking

- 26.4.49 Figure 26.4.3 in the Beckton STW *Transport Assessment* figures shows the locations of the existing car parking within the vicinity of the site. The existing off-street/private car parking locations are also shown in this figure.

Existing on-street car parking

- 26.4.50 Jenkins Lane does not have any on-street car parking available due to double yellow line restrictions along the road which operate 24 hours a day.

Existing off-street/private car parking

- 26.4.51 There is parking for Thames Water operations and for contractor's staff within each contractor's area within the existing Beckton STW site.

- 26.4.52 There is also a substantial car park serving the Beckton Showcase Cinema, located on Jenkins Lane, 200m walking distance to the north of the site. In total, there are 533 parking bays in the car park. Additionally a further total of 46 disabled parking bays and four motorcycle bays are provided. The availability and usage of parking capacity on a weekday and a Saturday on the Beckton Showcase Cinema is summarised later in this section in Table 26.4.8.
- 26.4.53 There are also substantial car parks on the Beckton Triangle and Gateway retail parks located on Claps Gate Lane, 800m walking distance to the west of the site. Sainsbury's superstore car park is also located on Claps Gate Lane, 1km to the west of the site and provides parking bays for its customers. A further 2,000 parking spaces are provided at Gallions Reach shopping centre car parks, located on Armada Way, 2km walking distance to the southwest of the site.

Car clubs

- 26.4.54 There are no car club parking spaces in the vicinity of the site.

Servicing and deliveries

- 26.4.55 There are no loading bays in the vicinity of the site.

Baseline survey data

Description of data

- 26.4.56 Accident data in the assessment area for the most recent five-year period available were obtained from TfL which are further discussed in paras. 26.4.81-26.4.86.
- 26.4.57 Baseline survey data for Beckton STW were collected in May 2011 to establish the existing transport movements and usage of parking in the area. Figure 26.4.4 in the Beckton STW *Transport Assessment* figures shows the survey locations in the vicinity of the site. Traffic surveys were carried out on a weekday and a weekend to represent a weekly profile of traffic at particular locations.
- 26.4.58 As part of surveys in May 2011, manual and automated traffic surveys were undertaken to establish specific traffic, pedestrian and cycle movements including turning volumes and queue lengths. Parking surveys were undertaken to establish the availability and usage of parking bays in the vicinity of the site.
- 26.4.59 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 by the generation of additional trips or where conflicts could occur with construction vehicles. Parking survey data was collected where additional parking demand might be generated by the proposed development.

- 26.4.60 The *Baseline Data Report* presents the method for field survey data collection and data collected through other sources which is in Appendix A to Section 3 of the *Project-wide TA*.
- 26.4.61 The surveys undertaken and their locations are summarised in Table 26.4.5.

Table 26.4.5 Survey locations

| Survey type and location | Date |
|--|-----------------------|
| Junction survey (including pedestrian and cycle movements) | |
| Jenkins Lane / Spur Road roundabout (south) | 19 and 21 May 2011 |
| Junction survey (no pedestrian and cycle movements) | |
| Jenkins Lane / Spur Road mini-roundabout (north) | 19 and 21 May 2011 |
| Automatic Traffic Count (ATC) | |
| Jenkins Lane between the junction with Spur Road and the junction with Eric Clarke Lane | 21 May – 10 June 2011 |
| Pedestrian and cycle surveys | |
| Zebra crossing on Jenkins Lane to the south of Jenkins Lane / Spur Road roundabout (south) | 19 and 21 May 2011 |
| Parking surveys | |
| Beckton Showcase Cinemas car park on Jenkins Lane | 19 and 21 May 2011 |

- 26.4.62 The following ATC and junction surveys are on construction traffic routes to and from the Beckton STW site:
- ATC on Jenkins Lane between the junction with Spur Road and the junction with Eric Clarke Lane
 - Jenkins Lane / Spur Road roundabout (south)
 - Jenkins Lane / Spur Road mini-roundabout (north).

Results of the surveys

- 26.4.63 The surveys inform the baseline situation in the area surrounding the site and are summarised in the following paragraphs.

Pedestrians

- 26.4.64 Table 26.4.6 indicates the pedestrian flows surrounding the site during the AM, inter-peak, PM and weekend peak hours.
- 26.4.65 The survey data indicates that there is a very low pedestrian flow on the zebra crossing located to the south of Jenkins Lane / Spur Road roundabout (south) on Jenkins Lane. Two-way flows of one and three pedestrians were observed during the AM and PM peak hours respectively.

Cyclists

- 26.4.66 Table 26.4.7 shows the existing flows of bicycles along Jenkins Lane.
- 26.4.67 The survey data indicates that there is a very low flow of cyclists on Jenkins Lane both in the northbound and southbound directions. Two-way flows of two and five cyclists were observed during the AM and PM peak hours respectively.

Table 26.4.6 Existing pedestrian flows

| Pedestrian crossing | Direction | Weekday | | | Weekend (13:00-14:00) |
|--|------------|--------------------------|-----------------------------|--------------------------|--------------------------|
| | | AM peak (08:00-09:00) | Inter-peak (12:00-13:00) | PM peak (17:00-18:00) | |
| Specific surveys | | | | | |
| Zebra crossing on Jenkins Lane | Eastbound | 1 | 4 | 0 | 0 |
| | Westbound | 0 | 1 | 3 | 0 |
| Junction counts (pedestrian crossings) at the Jenkins Lane / Spur Road roundabout (south) | | | | | |
| Pedestrian crossing at the entry to the Showcase Cinema car park on Jenkins Lane | Northbound | 0 | 0 | 0 | 0 |
| | Southbound | 0 | 0 | 1 | 0 |
| Pedestrian crossing at the exit from the Showcase Cinema car park on Jenkins Lane | Northbound | 0 | 0 | 0 | 3 |
| | Southbound | 1 | 1 | 0 | 0 |

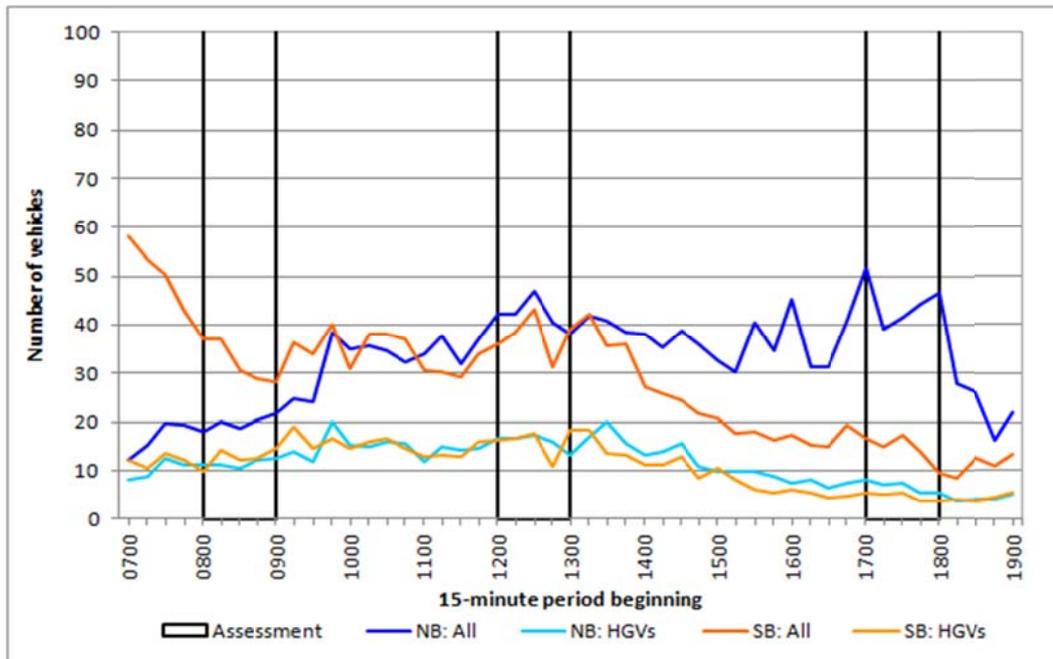
Table 26.4.7 Existing cycle flows

| Road/route | Direction | Weekday | | | Weekend (13:00-14:00) |
|--------------|------------|--------------------------|-----------------------------|--------------------------|--------------------------|
| | | AM peak (08:00-09:00) | Inter-peak (12:00-13:00) | PM peak (17:00-18:00) | |
| Jenkins Lane | Northbound | 0 | 0 | 3 | 0 |
| | Southbound | 2 | 0 | 2 | 0 |

Traffic flows

26.4.68 ATC data collected as part of the surveys have been analysed to identify the existing traffic flows along Jenkins Lane. Weekday flows have been used as this is when the greatest impacts from the project are likely to be experienced. The weekday vehicle and HGV flows for a 12-hour period (07:00-19:00) are shown in Plate 26.4.3.

Plate 26.4.3 Existing weekday 15-minute traffic flows on Jenkins Lane (ATC survey)



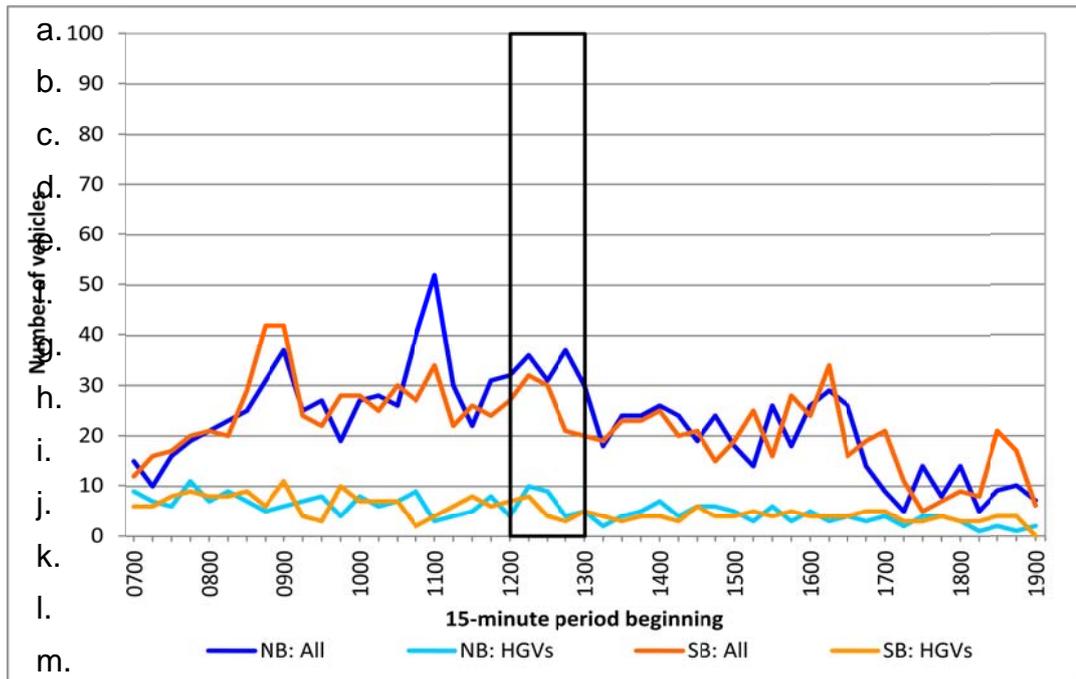
EB – East Bound, WB – West Bound. The black box represents the peak hour traffic flows used for the traffic assessment.

26.4.69 The weekday ATC data shows that between 08:00 and 09:00 there were approximately 210 two-way vehicle movements. The busiest 15 minute peak period in this period occurred after 08:00 with approximately 20 northbound vehicles and approximately 40 southbound vehicles.

26.4.70 For the period between 17:00 and 18:00 there were approximately 240 two-way vehicle movements. The busiest 15 minute peak period in this period occurred after 16:45 with approximately 50 northbound vehicles and approximately 20 southbound vehicles.

26.4.71 The Saturday vehicle and HGV flows for a 12-hour period (07:00-19:00) are shown in Plate 26.4.4. Analysis of the data showed that the Saturday peak travel period occurred between 12:00 and 13:00 with approximately 250 two-way movements recorded. This is higher than the AM and PM weekday two-way traffic flows and the period falls outside of the expected weekend construction works vehicle movements period of between 08:00 and 13:30 on a Saturday.

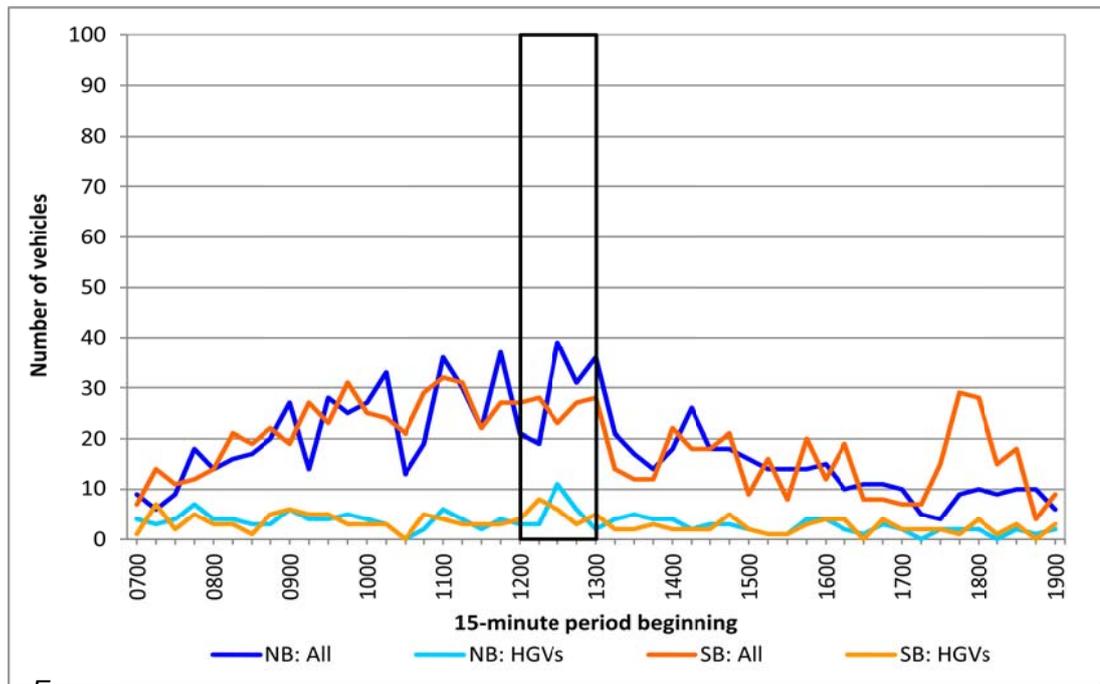
Plate 26.4.4 Existing Saturday 15-minute traffic flows on Jenkins Lane (ATC survey)



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

26.4.72 The Sunday vehicle and HGV flows for a 12-hour period (07:00-19:00) are shown in Plate 26.4.5. Analysis of the data showed that the Sunday peak travel period occurred between 11:00 and 12:00 with approximately 240 two-way movements recorded. This is higher than the AM and PM weekday two-way traffic flows. However, construction vehicle movements are not expected to take place on a Sunday.

Plate 26.4.5 Existing Sunday 15-minute traffic flows on Jenkins Lane (ATC survey)



E

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

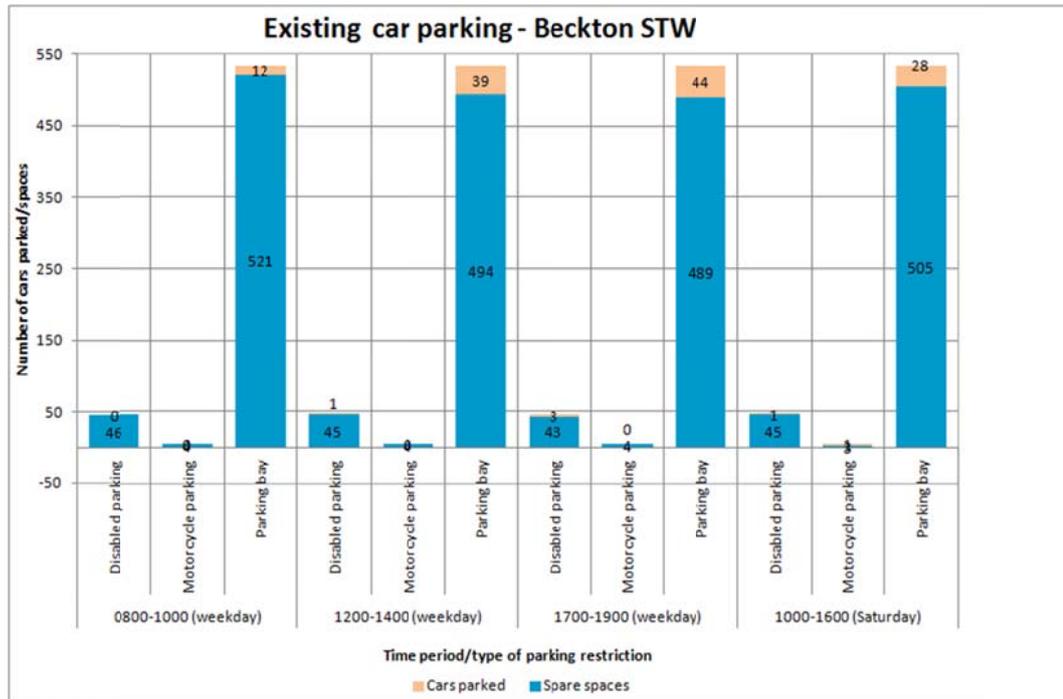
- 26.4.73 The baseline traffic flow diagrams in Figures 26.4.5 to 26.4.6 in the Beckton STW *Transport Assessment* figures show the AM and PM peak hour traffic flows which indicate the traffic flow information collected during the ATC surveys and junction surveys in 2011.
- 26.4.74 The junction surveys indicate that there is a total traffic flow of 299 and 354 vehicles in the AM and PM peak hours respectively using the Jenkins Lane / Spur Road roundabout (south). The dominant flows are 161 vehicles along Jenkins Lane in the southbound direction in the AM peak hour and 105 vehicles from Jenkins Lane turning left to Spur Road in the PM peak hour.
- 26.4.75 In the AM and PM peak hours, a total traffic flow of 266 and 280 vehicles respectively use the Jenkins Lane / Spur Road mini-roundabout (north). In the AM and PM peak hours, the dominant flows are 171 and 107 vehicles turning right from Spur Road to Jenkins Lane.
- 26.4.76 Comparison of the junction survey data for Jenkins Lane / Spur road roundabout (south) against the ATC survey data indicates that the flows on Jenkins Lane from the ATC data are slightly lower than the junction survey data but of a similar order of magnitude.

Parking

- 26.4.77 Plate 26.4.6 shows a histogram of the car and motorcycle parking survey results as well as blue badge parking availability and usage in the Beckton Showcase Cinema car park during the AM, inter-peak, PM peaks on a

weekday and during the weekend peak period. Surveys were not undertaken on Jenkins Lane as there is no on-street parking on that road.

Plate 26.4.6 Existing car parking availability and usage in the Beckton Showcase Cinema car park



26.4.78 Table 26.4.8 indicates the parking capacity available throughout a weekday.

Table 26.4.8 Parking, blue badge and motorcycle parking bay availability and usage*

| Location | Number and Type of Bays | | No. of spaces available | | | |
|----------------------------------|-------------------------|-----|-------------------------|-------------|-------------|-------------|
| | | | Weekday | | | Saturday |
| | | | 08:00-10:00 | 12:00-14:00 | 17:00-19:00 | 12:00-14:00 |
| Beckton Showcase Cinema car park | Parking bays | 533 | 521 | 494 | 489 | 505 |
| | Blue badge parking bays | 46 | 46 | 46 | 46 | 45 |
| | Motorcycle spaces | 4 | 4 | 4 | 4 | 3 |

*Motorcycle spaces available based on an assumed width of 1m per motorcycle

26.4.79 The results of the surveys indicate that the usage of the Beckton Showcase Cinema car park is very low and there is substantial spare capacity on both weekdays and at weekends.

26.4.80 Less than 10% of the capacity of the parking bays, blue badge and motorcycle spaces in the car park is utilised on weekdays and at weekends.

Accident analysis

- 26.4.81 Accident data in the assessment area for the most recent five-year period available were obtained from TfL.
- 26.4.82 A total of three accidents occurred in the vicinity of the site over the five years of accident data analysed, which were all classified as slight. There have been no serious or fatal accidents.
- 26.4.83 Of the accidents that occurred along Jenkins Lane, none involved vulnerable road users (ie, pedestrian and pedal cycles). The accidents involved cars and a bus/coach. Goods vehicles were not involved in any of the accidents.
- 26.4.84 Of the five year accident data analysed, the information available suggests that the accidents were primarily the result of road users not looking properly or making poor manoeuvres and none of the accidents happened as a result of the road layout.
- 26.4.85 Table 26.4.9 and Figure 26.4.7 in the Beckton STW *Transport Assessment* figures indicate the accidents that have occurred within the vicinity of the site.

Table 26.4.9 Accident severity 2006 to 2011

| Location | Slight | Serious | Fatal | Total |
|--|----------|----------|----------|----------|
| Jenkins Lane | 2 | 0 | 0 | 2 |
| Jenkins Lane / Spur Road roundabout (south) | 0 | 0 | 0 | 0 |
| Jenkins Lane / Spur Road mini-roundabout (north) | 0 | 0 | 0 | 0 |
| Jenkins Lane / Eric Clarke Lane junction | 1 | 0 | 0 | 1 |
| Total | 3 | 0 | 0 | 3 |

- 26.4.86 In the context of the construction HGV movements associated with the Beckton STW site, the accident risk to pedestrians and cyclists would be managed by providing pedestrian and cyclist awareness training for commercial drivers associated with the construction works as set out in the *CoCP*. For sections of roads affected by roadworks, 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 (DfT, 2009)⁵. Figure 26.4.8 in the Beckton STW *Transport Assessment* figures shows the pedestrian and cycle accidents by severity that occurred within the vicinity of the site.
- 26.4.87 Appendix C provides a full analysis of accidents within the local area surrounding Beckton STW.

26.5 Construction assessment

26.5.1 The Transport Assessment for the Beckton STW site including both qualitative and quantitative analysis has been undertaken drawing on discussions with TfL and the LHAs, knowledge of the transport networks and their operational characteristics in the vicinity of the site and the anticipated construction programme, duration and levels of construction activity.

26.5.2 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 project under construction. The construction base case does not include any traffic related to the Thames Tideway Tunnel, whether from the Beckton STW site or from other sites.

Construction base case

26.5.3 As described in Section 26.3 above, the construction assessment year for transport effects in relation to this site is Site Year 2 of construction.

Pedestrians and cyclists

26.5.4 There are no proposals to change the pedestrian or cycle network by Site Year 2 of construction and the construction base case for these networks is therefore the same as indicated in the baseline description in Section 26.4.

Public transport

26.5.5 In terms of the public transport network, it is expected that as a result of the TfL London Underground Upgrade Plan (TfL, 2011)⁶, compared to the current baseline, peak hour passenger capacity on the London Underground District Line will increase by approximately 24%. The TfL London Underground Upgrade Plan envisages a combined increase in capacity on the Circle and Hammersmith and City Line 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. It is envisaged that London Underground patronage will increase by Site Year 2 of construction.

26.5.6 There are no proposals to alter London Overground or DLR services from the current baseline conditions and therefore the construction base case in Site Year 2 of construction would remain similar to baseline situation.

26.5.7 In terms of National Rail services, a key requirement of the new Essex Thameside franchise (due to commence in 2013) is that all routes to London Fenchurch Street will be expected to be capable of operating 12-car trains after Network Rail has completed a programme of platform lengthening. This will tend to increase available capacity on these routes by Site Year 2 of construction at Beckton STW.

26.5.8 Due to the traffic growth in the construction base case compared to the baseline situation, bus journey times along Jenkins Lane and within the

wider area will be affected. However, as there is adequate capacity on the roads in the vicinity of Beckton STW at present, it is anticipated that the local network will continue to operate with available capacity when taking into account the construction base case traffic flows and the impact on the bus journey times will be insignificant.

- 26.5.9 It is anticipated that patronage on public transport services may change between the baseline situation and Site Year 2 of construction. Future patronage changes on bus and rail 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 base case scenario has been issued in assessing the result of additional construction worker journeys by public transport, the capacity for 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

- 26.5.10 Baseline traffic flows (determined from the junction surveys) have been used and forecasting carried out to understand the capacity on the highway network in the vicinity of the Beckton STW site in Site Year 2 of construction without the Thames Tideway Tunnel project. The scope of this analysis has been discussed with the LB of Newham and TfL.
- 26.5.11 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 2011* (GLA, 2011)⁷. 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*.
- 26.5.12 For the Beckton STW site, ELHAM has been used. The relevant growth factors for this site are described in para. 26.5.17 which were applied to the survey flows undertaken in 2011 to produce flows for the base and development cases.
- 26.5.13 It should be noted that these factors represent growth over the period to 2021, which is beyond Site Year 2 of construction at Beckton STW and therefore ensures that the construction base case for the highway network is robust.

Committed developments

- 26.5.14 The construction base case takes into account new developments that would be completed or under construction within the vicinity of the site by Site Year 2 of construction at Beckton STW. The proposed commercial development of the land at the northern end of Jenkins Lane is approximately 750m walking distance to the north of the site and would be complete and operational by Site Year 2 of construction. While the development is not in the immediate vicinity of the site, the construction vehicles associated with the Beckton STW site would pass along Spur Road which runs through the development.

26.5.15 In the wider area, further development at Gallions Reach Shopping Park would be complete and operational by Site Year 2 of construction, and development at Beckton Waterfront Masterplan (area 1, 2, 3, 4, 8 and 9) would be under construction in Site Year 2 of construction at the Beckton STW site. Although these developments are within 150m of the site, there are no direct connections between them and Jenkins Lane and by road they are over 2km from the Beckton STW site. On this basis it is not expected that trips associated with construction at Beckton STW, which would be low, would affect the routes serving these developments.

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

Local highway modelling

26.5.17 The growth factors for the LB of Newham based on ELHAM have been discussed with TfL and the LB of Newham and applied equally to all of the baseline traffic flow movements. The growth factors are:

- a. Weekday AM Peak growth factor – +11.7%
- b. Weekday PM Peak growth factor – +12.6%

26.5.18 These factors form the background to the consideration of the local highway network and its operation during the construction works at Beckton STW. However it has been discussed with LB of Newham that local highway capacity modelling is not required as part of the transport assessment at this site.

Construction development case

26.5.19 This section summarises the findings of the assessment undertaken for the peak year of construction at the Beckton STW site (Site Year 2 of construction).

Pedestrian routes

26.5.20 As discussed in Section 26.2, pedestrians walking along Jenkins Lane would not be diverted away from the eastern footway; however, they would have to cross the site access point which is the existing access to the STW compound. The construction phase (phase 1 and phase 2) plans in the Beckton STW *Transport Assessment* figures show the layout of the pedestrian footways during construction.

26.5.21 To assess a busiest case scenario, it has been anticipated that all worker trips would travel to and from the site by foot. As a result the 44 worker trips generated by the site during the AM and PM peak hours have been added to the construction base case pedestrian flows.

26.5.22 If all workers were to complete their journeys by foot, these additional trips would not present any capacity issues in relation to the surrounding footways as base case pedestrian flows would be very low and there are no other key destinations towards the southern end of Jenkins Lane.

26.5.23 Given the relatively low traffic flows on Jenkins Lane, pedestrians using the pedestrian crossing located to the south of Jenkins Lane / Spur Road roundabout (south) and the pedestrian routes within the vicinity of the site

would experience no additional delay and there would be no diversion of pedestrian routes.

- 26.5.24 As indicated in Section 26.2, it is anticipated that pedestrians would need to cross the existing access point to the Beckton STW site which would be used by construction vehicles for the Thames Tideway Tunnel project. Should a vehicle be entering or leaving the site, a journey time increase of up to 30 seconds at the access point could result. However as this access is already used by vehicles accessing the STW compound, the number of project vehicles accessing the site and the number of pedestrian movements would be relatively low, it is unlikely that the situation would be significantly different from that at present. The majority of pedestrians using Jenkins Lane would therefore be unaffected.
- 26.5.25 The site access would be marshalled and have appropriate signage to ensure that pedestrian and vehicle conflicts are minimised and that construction vehicle movements into and out of the site are supervised to minimise the risk of pedestrian accidents. Given the low pedestrian flows in the area and the low number of construction vehicles associated with the project, it is not expected that there would be any material change in the risk of pedestrian accidents.
- 26.5.26 During all construction work and on any section of road subject to temporary diversions or restriction imposed by roadworks associated with the Beckton STW 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 (DfT, 2009)⁸. This will include compliance with the Equality Act 2010 (HM Government, 2010)⁹ to ensure safe passage for mobility and vision impaired pedestrians.

Cycle routes

- 26.5.27 Cyclists using Jenkins Lane would experience a slight delay as a result of an increase in construction traffic flow serving the site. However, given the spare capacity available in the highway network, it is expected that any additional delay would be very small and would be insignificant in the context of the low number of cyclists in the area and the overall length of cycle journeys.
- 26.5.28 With regard to accidents and safety, the addition of construction traffic associated with the Beckton STW site on the local road network would present only a small increase in risk to cyclists, given that cycle flows in the area are low, the site access would be marshalled and signage would be provided to warn cyclists of the presence of heavy vehicles.
- 26.5.29 Measures set out in the *CoCP* described in paras. 26.2.37 and 26.2.39 include increasing driver awareness of restrictions on the road network and 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 Beckton STW site, the risk to all road users would be managed by the contractor(s) in accordance with the provision made under the Traffic Signs Manual Chapter 8 – Traffic Safety Measures and Signs for Road Works (DfT, 2009)¹⁰. This would

include compliance with TfL guidance (Cyclists at Roadworks – Guidance (DfT, 1999)¹¹) to ensure safe passage for cyclists.

Bus routes and patronage

- 26.5.30 Bus services 325 and 366 run past the site. These services would be able to continue in operation during the construction period. Additional construction vehicles serving the site may affect some bus routes and bus journey times locally and within the wider area.
- 26.5.31 The Beckton STW site is expected to generate approximately nine construction traffic movements per hour in the AM and PM peak hours in Site Year 2 of construction. Given this level of activity and the spare capacity available on Jenkins Lane, it is expected that any additional delay to buses on Jenkins Lane would be very small. In the wider area, the additional construction vehicle HGV movements represent a very small percentage of the number of vehicles using the network in the base case and therefore any change to highway network operation and bus journey times is likely to be insignificant.
- 26.5.32 It is expected that approximately four additional two-way worker trips would be made by bus during the AM and PM peak hours. The area is served by three bus routes which provide a total of 31 and 33 buses within 640m walking distance of the site during the AM and PM peak hours respectively. On this basis the additional worker trips made by bus in the peak hours to the Beckton STW would be capable of being accommodated on the base case bus services and would typically be within the normal daily variation in bus patronage on these routes.
- 26.5.33 If it is assumed that workers travelling by National Rail, DLR, London Overground or London Underground services were to complete their journeys by bus from surrounding stations, this would increase the additional bus journeys to a total of ten journeys in each peak hour. This would also be capable of being accommodated on the base case bus services.

DLR and patronage

- 26.5.34 No DLR stations are directly adjacent to the site and therefore none would be directly affected by the construction site development.
- 26.5.35 It is anticipated that there would be approximately four additional person trips on the DLR services in each of the AM and PM peak hours.
- 26.5.36 DLR services through Gallions Reach provide approximately 31 services in total during the AM and PM peak hours and therefore the additional demand from construction workers would represent less than one extra journey per DLR service. Alternatively, given that Gallions Reach is close to the eastern terminus of this branch of the DLR, the additional demand would be less than one additional journey per DLR train if all trips were made from the same direction.
- 26.5.37 In either case this change would not be significant and could be accommodated on base case services.

London Underground and patronage

- 26.5.38 No underground stations are directly adjacent to the site and therefore none would be directly affected by the construction site development.
- 26.5.39 Based on 2001 Census data, it is anticipated that no construction workers and labourers would use London Underground services to access the site. If workers do choose to use London Underground services it is likely that they would complete their journeys by bus, and this is addressed in para. 26.5.33.

London Overground and National Rail and patronage

- 26.5.40 No London Overground or National Rail stations are directly adjacent to the site and therefore none would be directly affected by the construction site development.
- 26.5.41 It is anticipated that construction at Beckton STW would result in two additional person trips on London Overground or National Rail services in each of the AM and PM peak hours.
- 26.5.42 London Overground provides four services per hour at Barking station during the AM and PM peak hours. There are a further 22 and 26 National Rail services per hour in the AM and PM peak hours respectively at this station.
- 26.5.43 The additional worker journeys therefore would result in an insignificant number of additional passengers on London Overground and National Rail services in the local area, which could easily be accommodated within the existing capacity.
- 26.5.44 The implications of workers completing their journeys by bus from the nearest London Overground and National Rail station at Barking is addressed in para. 26.5.33.

Parking

- 26.5.45 Parking for 15 essential maintenance vehicles would be provided on site.
- 26.5.46 Car parking provision is not anticipated to change from base case conditions. Based on the Census mode share data discussed in Section 26.2, 30 construction workers would be expected to travel by car; however, there are parking facilities within the Thames Water STW site boundary and therefore it is not anticipated that there would be any additional demand placed on car parking facilities in the local area if these workers chose to drive.
- 26.5.47 Additionally site-specific *Travel Plan* measures would be put in place to discourage workers from driving and encourage the use of public transport, in order to minimise the number of additional worker car journeys.

Highway assessment

Highway layout

- 26.5.48 The highway layout during construction plans in the Beckton STW *Transport Assessment* figures show the proposed highway layout during construction at the Beckton STW site. No modification to highway or

junction layouts would be required as a result of construction activity at the Beckton STW site. The construction vehicles would use the existing access point on Jenkins Lane that serves the existing Thames Water STW compound.

- 26.5.49 The highway layout during construction vehicle swept path analysis plan in the Beckton STW *Transport Assessment* figures shows the swept path movements and shows that the construction vehicles would be able to safely enter and leave the site.

Highway network

- 26.5.50 Construction lorry movements would be limited to the day shift only (08:00 to 18:00) except in exceptional circumstances when HGV and abnormal load movements could occur up to 22:00 for large concrete pours and later at night on agreement with LB of Newham.
- 26.5.51 Table 26.2.4 in Section 26.2 shows the vehicle movement assumptions for the local peak traffic periods based on the peak months of construction activity at this site.
- 26.5.52 Based on all materials being transported by road, Table 26.2.4 shows that an average peak flow of 146 vehicle movements a day is expected during the months of greatest activity during Site Year 2 of construction at this site. In the AM and PM peak hours, the Beckton STW site would generate approximately nine vehicle movements. The site would also generate 34 vehicle trips in the hour prior to the AM peak hour and after the PM peak hour.
- 26.5.53 The busiest peak in the AM and PM period for each type of movement (construction, other and worker) 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 will 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.
- 26.5.54 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.
- 26.5.55 The assignment of construction lorry trips has been undertaken using OmniTransⁱⁱⁱ 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 Beckton STW site, or with other Thames Tideway Tunnels sites, that would use routes in the vicinity of the Beckon STW site. Figure 26.5.1 in the Beckton STW *Transport*

ⁱⁱⁱ 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.

Assessment figure shows the OmniTrans plot for the local road network around the Beckton STW site.

- 26.5.56 It is anticipated that there would be an additional five two-way HGV movements along Jenkins Lane as a result of the construction works at Beckton STW. No other Thames Tideway Tunnel site construction routes pass along Jenkins Lane; however, in addition to the HGV movements generated by Beckton STW, there would be a further two two-way vehicle movements along the A13 during the peak hour in Site Year 2 of construction.
- 26.5.57 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. The construction traffic flows resulting from construction at the Beckton STW site would be small in comparison to the existing levels of traffic on the surrounding highway network. The results of the ATC and junction surveys conducted in May 2011 indicate that the immediate highway network operates within capacity and it has been agreed with LB of Newham and TfL that no quantitative assessment is necessary for the assessment at this site.
- 26.5.58 Qualitative assessment based on professional judgement suggests that vehicles using the highway network could experience an increase in journey time a result of the additional construction traffic flows on the local network. However, given the low number of construction vehicle movements and the spare capacity available in the network it is expected that any additional delay would be very small.

Construction mitigation

- 26.5.59 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 are summarised in Table 26.5.1.

Table 26.5.1 Beckton STW design measures

| Phase | Issues | Design measures |
|--------------|--|---|
| Construction | Pedestrian and cyclist safety at the site access point | <ul style="list-style-type: none"> Where necessary pedestrian and cyclist safety at the site access points could be assisted by a banksman during periods of greater construction activity Provision of appropriate warning signage for pedestrians, cyclists and drivers |

- 26.5.60 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 or operational phases.

26.6 Operational assessment

- 26.6.1 This section summarises the findings of the assessment undertaken for Year 1 of operation at the Beckton STW site.
- 26.6.2 The assessment of the operational phase is limited to the physical issues associated with accessing the site from the highway network as outlined in Section 26.2. This has been discussed with the LB of Newham and TfL.

Operational base case

- 26.6.3 The operational assessment year for transport is Year 1 of operation.
- 26.6.4 As explained in para. 26.2.40, the elements of the transport network considered in the operational assessment are highway layout and operation. For the purposes of the operational base case, it is anticipated that the highway layout will be as indicated in the construction base case.

Operational development case

- 26.6.5 The operational development case for the site includes permanent changes in the vicinity of the Beckton STW site as a result of the Thames Tideway Tunnel project and takes into consideration the occasional maintenance activities required at the site.
- 26.6.6 As outlined in Section 26.2, it is anticipated that there would be no significant effects on the transport infrastructure and operation within the local area. There would be no physical change to the highway network in this phase as maintenance vehicles would use the existing entrance to Beckton STW. Additional transport demands created by the development in the operational phase would only arise every ten years, for cranes to access the site as part of the operational maintenance routine. All other shorter-term maintenance would be undertaken by existing Beckton STW workers.

Highway layout and operation

- 26.6.7 During the operational phase, the site would be served from the existing access point that serves the Thames Water STW on Jenkins Lane. The permanent highway layout plan in the Beckton STW *Transport Assessment* figures shows the highway layout during the operational phase..
- 26.6.8 It is expected that existing staff at the Beckton STW site would undertake most of the necessary maintenance works and therefore there would be very few additional maintenance vehicles visiting the site during operation.
- 26.6.9 During ten-yearly inspections, space to locate two large cranes within the site area would be required. The permanent highway layout vehicle swept path analysis plan in the Beckton STW *Transport Assessment* figures demonstrates that the maintenance vehicles would be able to safely enter and leave the site.
- 26.6.10 When larger vehicles are required to service the site, there may be some temporary, short-term delay to other road users while manoeuvres are made. However traffic flows on Jenkins Lane are relatively low and it is

anticipated that the arrival of large vehicles would normally be scheduled to take place outside of the peak hours to minimise the effect on the local highway network.

- 26.6.11 Due to the infrequent nature of maintenance trips there is anticipated to be no significant change to the operation of the surrounding highway network during the operational phase at the Beckton STW site.

26.7 Summary of Transport Assessment findings

- 26.7.1 The key outcomes of this TA are indicated in Table 26.7.1.

Table 26.7.1 Beckton STW transport assessment results

| Phase | Mode of transport | Key Findings |
|--------------|-------------------------------------|---|
| Construction | Pedestrians | Potential for occasional additional delay at the access point for pedestrians currently using the eastern footway of Jenkins Lane due to additional construction vehicles entering and exiting the site. However an individual pedestrian is likely to encounter such delays infrequently as pedestrian flows and the number of project vehicles using the site would be low. |
| | Cyclists | Cyclists would experience some delay, but due to the spare capacity in the highway network and low numbers of project vehicles and cyclists this is expected to be very small. |
| | Bus patronage and operators | Approximately four two-way worker trips would be made by bus. This could increase to approximately ten if rail journeys are completed by bus from nearby stations. In either case these journeys could be accommodated on base case bus services. Any delay to bus services is expected to be very small, due to the spare capacity in the highway network and low numbers of construction vehicles anticipated. |
| | DLR patronage | Approximately four two-way worker trips would be made by DLR and could be accommodated on base case services. |
| | London Overground and National Rail | Approximately two two-way worker trips would be made by London Overground or National Rail and could be accommodated on base case services. |
| | Parking | It is not anticipated that there will be any change to car parking. Any workers driving to the site (notwithstanding site-specific <i>Travel Plan</i> measures) would park within the Beckton STW site boundary and would not affect parking in other locations. |
| | Highway network and operation | There would be no changes to the highway network during construction. There may be some delay to vehicles due to increased numbers of HGVs, but this is expected to be minimal. |
| Operation | Highway layout and operation | Some slight network delay may be experienced by other road users when large vehicles are accessing the site, however this would be infrequent and temporary. |

References

- ¹Transport for London, *Travel Planning for new development in London*, 2011.
- ²Transport for London, *Assessment Tool for Travel plan Building Testing and Evaluation, (ATTrBuTE)*, 2011. <http://www.attrbute.org.uk/>.
- ³ Greater London Authority, *London Plan*, July 2011.
- ⁴ Transport for London, *Transport Assessment Best Practice Guidance*, April 2010.
- ⁵ Department for Transport (DfT), *Traffic Signs Manual Chapter 8 – Traffic Safety Measures and Signs for road Works and Temporary Situations*, 2009.
- ⁶Transport for London, *London Underground Upgrade Plan*, February 2011. <http://www.tfl.gov.uk/assets/downloads/corporate/our-upgrade-plan-london-underground-february-2011.pdf>
- ⁷ Greater London Authority, 2011. See citation above.
- ⁸ Department for Transport (DfT), 2009. See citation above.
- ⁹ HM Government, *Equality Act 2010 – Guidance*, 2010.
- ¹⁰ Department for Transport (DfT), 2009. See citation above.
- ¹¹ 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: **7.10.23**

Beckton Sewage Treatment Works

Appendices

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

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Transport Assessment

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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 Beckton STW. 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 London Borough (LB) of Newham.

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:
- a. 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;
 - b. safe and suitable access to the site can be achieved for all people; and
 - c. 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 Plan. 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:

- a. “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;
- b. 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
- c. 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 poor accessible transport hub and the proposed location has a Public Transport Accessibility Level (PTAL) rating of 2, rated as ‘low’. However, measures would be incorporated into *Project Framework Travel Plan* and site-specific *Travel Plan* to discourage construction workers from driving to and from the site and encourage the use of public transport, in order to minimise the number of additional worker car journeys.

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. A city that meets the challenges of economic and population growth;
- b. An internationally competitive and successful city;
- c. A city of diverse, strong, secure and accessible neighbourhoods;
- d. A city that delights the senses;
- e. A city that becomes a world leader in improving the environment; and
- f. 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:

- a. Encouraging patterns and nodes of development that reduce the need to travel, especially by car;
- b. Seeking to improve the capacity and accessibility of public transport, walking and cycling, particularly in areas of greater demand;
- c. 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;
- d. Seeking to increase the use of the Blue Ribbon Network, especially the Thames, for passenger and freight use;
- e. Facilitating the efficient distribution of freight whilst minimising its impacts on the transport network;
- f. Supporting measures that encourage shifts to mode sustainable modes and appropriate demand management; and
- g. 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). In accordance Policy 6.9 the development is located close to the Barclays Cycle Superhighway (CS) Route 3 which runs approximately 1.2km to the north of the Beckton STW site. The route is segregated from motorised traffic.

- 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:
- a. **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”;
 - b. **Policy 5** seeks “to ensure efficient and effective access for people and goods within central London”;
 - c. 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”;

- d. Policy 9 states that the Mayor “will use the local and strategic development control processes”;
- e. 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”;
- f. 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
- g. 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

Local Development Framework – Core strategy (Ref: [Newham 2027: Planning Newham – The Core Strategy. London Borough of Newham, adopted Jan 2012](#))

- A.4.1 The Core Strategy was released in January 2012. The Core Strategy is the most important part of a new plan for Newham – called the Local Development Framework (LDF). The adoption of the Core Strategy in January 2012 has resulted in the deletion of some Unitary Development Plan (UDP) policies. The transport related policies are identified below:
- A.4.2 **Policy S2 – Stratford and West Ham** aims to improve connectivity between surrounding areas and between new and existing communities.
- A.4.3 **Policy S5 – Beckton** seeks to make improvements to the connectivity of streets and routes through the area.
- A.4.4 **Policy SP2 – Healthy neighbourhoods** wishes to “promote healthy lifestyles, reduce health inequalities, and create healthier neighbourhoods.” This is achieved in a number of ways, including:
- a. Facilitating and promoting walking and cycling; and
 - b. Protection and promotion of local access to health and other community facilities.
- A.4.5 With regards to transport, **Policy INF1 – Strategic Transport** of the Core Strategy states that “*proposals to encourage the improvement and use of Newham’s navigable waterway network including rivers, canals, wharves, locks and winding holes for water freight, passenger and leisure transport*

purposes will be supported in appropriate locations, consistent with relevant spatial and land use policies”.

A.4.6 **Policy INF2 – Sustainable Transport** support the ongoing and increased investment in sustainable transport including:

- a. *“Raising and maintaining the safety, quality, appearance and functioning, as spaces for social activity and movement, of the public realm which comprises new and existing streets and other public spaces including squares, parks and riverside pathways;*
- b. *Continuing to address linear and other physical barriers including rivers, railways and major roads and, where applicable, providing connecting public routes through and within new development and to public transport nodes. This policy supports and strengthens Policies SP1 and SP3;*
- c. *Reviewing, completing, adding, maintaining and improving defined routes for walking, horse riding and cycling including the LCN and, Cycling Superhighways, and green and blue ribbon networks including the Capital Ring, the Roding Valley Way, the Lea River Park, the Olympic Cycling and Walking Network (OCWRE), and the Greenway and their access points;*
- d. *Providing safe, high quality measures to encourage and facilitate cycling as an increasingly popular mode of transport, including, as appropriate, the provision of high quality, continuous dedicated infrastructure, general public realm interventions that benefit cyclists and public cycle parking both on-street and in secure, covered facilities;*
- e. *Supporting improvements to local public transport services by continuing to invest in infrastructure and network enhancement, including new bus stops and bus priority measures and service enhancements;*
- f. *Maintaining careful management of the supply of routes, capacity and parking for motor traffic in order to reduce or minimise congestion and the dominance of motor-vehicular traffic in the public realm and to make space for other modes;*
- g. *Major development proposals that generate or attract large numbers of trips, including higher density residential and commercial development, should be located in areas with good public transport accessibility and demonstrate the existence of, or propose new safe, attractive walking and cycling routes to public transport node;*
- h. *Development proposals will not be supported where they would have an unacceptable adverse impact on the capacity or environment of the highway network. Where applicable proposals must be accompanied by Transport Assessments and monitored Travel Plans which show the likely impacts of trip generation, and which include: acceptable robust, monitored proposals to counter or minimise the potential impacts identified, these include ‘smarter travel’ strategies and plans;*

and proposed measures to facilitate and encourage more widespread walking, cycling and public transport use; and

- i. The incorporation of appropriate cycle and car parking standards, as set out in the London Plan. These standards are subject to a local review in the forthcoming Development Management Policy Manual DPD in line with the potential for Newham to realise a substantial increase in cycling”.*

A.4.7 **Policy INF6 – Green infrastructure** addresses the deficiencies and seeks to improve the quality, accessibilities and improve the connections of existing open spaces. It also ensures that new developments include adequate open space for new residents.

Unitary Development Plan (June 2001)

A.4.8 The Unitary Development Plan (UDP) was adopted by the LB of Lewisham in June 2001 as Newham’s statutory development plan with only certain policies ‘saved’ from September 2007 and will remain until adopted policies in Development Plan Documents (DPDs) and Supplementary Planning Documents (SPDs) within the LDF replace them. It is a technical town planning document that acts as a land use strategy document and also sets out policies that planning applications will be considered against.

A.4.9 The transport related policies set out policies for the integration of land use and transport; major improvements to both the public transport and road network; a comprehensive parking strategy; cycling and walking; freight transport, and air transport. The transport related policies place particular emphasis on encouraging the greater use of public transport and other sustainable modes of transport as alternatives to cars.

A.4.10 **Policy EQ2 – Waterside access** seeks to secure, where appropriate waterside access:

- a. along river and canal sites, and
- b. along dock edges or quaysides.

A.4.11 **Policy EQ3 – Waterside commercial development** states that any adverse impact on the nature conservation value of the area by industry and those associated with waterway freight transport development will be minimised.

A.4.12 **Policy EQ22 – Access** requires satisfactory catering for the needs of disabled people with the exception of proposals where access is not a material consideration.

A.4.13 **Policy EQ45 – Pollution** states that planning permission will be resisted should it involve the generation of unacceptable levels of one or more of the following:

- a. Vibration
- b. Smell
- c. Fumes
- d. Dust

- e. Grit
- f. Air and water pollutants
- g. Noise
- h. Vehicular or pedestrian traffic
- i. Ground/soil pollutants
- j. Light spillage

A.4.14 **Policy EQ56 – Criteria for assessing waste management facilities** normally requires an impact assessment which meets the following criteria:

- a. Separation from existing and proposed schools, hospitals, housing and other sensitive land uses;
- b. Good access to the strategic road network, rail or river depot transshipment facilities;
- c. Appropriate landscaping and screened from view where necessary; and
- d. No significant land contamination or airborne, water or noise pollution.

A.4.15 **Policy T14 – Design to minimise road accidents in new development** aims to keep road accidents and personal injuries to a minimum on all developments involving access/egress onto a public highway.

Supplementary Planning Guidance – Environmental Sustainability Checklist for Major Development (London Borough of Newham, 2004)

A.4.16 The guidance note aims to provide an environmental sustainability checklist of supporting information that may be requested by the council to assist in assessing the environmental sustainability of the major development. The following topics may be relevant to and affect a transport development:

- a. **Access for all** aims to “create an environment that provides full accessibility for all” and “contribute towards greater social equity and social inclusiveness”
- b. **Transport** has the following objectives:
 - i Encourage the switch of private car use to more energy efficient, less polluting modes of transport;
 - ii Reduce traffic congestion;
 - iii Protect human health;
 - iv Reduce traffic related environmental impacts; and
 - v Minimise the impact of global warming by conserving non-renewable natural resources.
- c. Quality of waterside development has the following aims:
 - i Promote urban environmental quality;

- ii Promote the use of river for sustainable transport and leisure; and
- iii Protect and enhance the biodiversity of the Thames, its tributaries and its adjoining habitats.

Supplementary Planning Guidance – London City Airport Safeguarding (London Borough of Newham, 2004)

- A.4.17 The purpose of the guidance is to provide a checklist of relevant planning and design issues that require consideration by those applying for planning permission and Council planning officers within a ‘safeguarded’ area around London City Airport.
- A.4.18 The issues that may be related to a transport development include:
 - a. Physical Safeguarding Areas (Obstacle Limitation Surfaces)
 - b. Technical Safeguarding Areas
 - c. Construction and Cranage
 - d. Public Safety Zones (PSZs)
 - e. Roads and Railways.

Appendix B: PTAL analysis

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PTAI Study Report File Summary

PTAI Run Parameters

PTAI Run Parameters
PTAI Run: 20122109160528
Description: 20122109160528
Run by user: PTAL web application
Date and time: 21/09/2012 16:05

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: 544363, 182650

Transport Assessment

| Mode | Stop | Route | Distance (metres) | Frequency (vph) | Weight | Walk time (mins) | SWT (mins) | TAT (mins) | EDF | AI |
|---------------|-------------------------|-------|-------------------|-----------------|--------|------------------|------------|------------|------|------|
| BUS | NEWHAM WAY JENKINS LANE | 173 | 464.01 | 5.0 | 0.5 | 5.8 | 8.0 | 13.8 | 2.17 | 1.09 |
| BUS | Beckton Showcase Cinema | 325 | 130.61 | 5.0 | 1.0 | 1.63 | 8.0 | 9.63 | 3.11 | 3.11 |
| BUS | Beckton Showcase Cinema | 366 | 130.61 | 5.0 | 0.5 | 1.63 | 8.0 | 9.63 | 3.11 | 1.56 |
| LT | SAP Points Not Found | | | | | | | | | |
| NATIONAL_RAIL | SAP Points Not Found | | | | | | | | | |

Total AI for this POI is 5.76.
PTAL Rating is 2.

Appendix C: Accident analysis

C.1 Existing highway safety analysis

- C.1.1 Details of road traffic accident within the vicinity of the site have been obtained from Transport for London (TfL) and have been reviewed to determine whether there are particular problems or trends on the local highway network.
- C.1.2 Data on accidents for the most recent five-year period from April 2006 until March 2011 has been analysed for the following junctions and surrounding roads:
- Jenkins Lanes
 - Jenkins Lane / Spur Road roundabout (south)
 - Jenkins Lane / Spur Road roundabout (north)
 - Jenkins Lane / Eric Clarke Lane 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 and the severity of the accidents are indicated in Table C.1.

Table C.1 Accident severity 2006 to 2011

| Location | Slight | Serious | Fatal | Total |
|--|----------|----------|----------|----------|
| Jenkins Lane | 2 | 0 | 0 | 2 |
| Jenkins Lane / Spur Road roundabout (south) | 0 | 0 | 0 | 0 |
| Jenkins Lane / Spur Road mini-roundabout (north) | 0 | 0 | 0 | 0 |
| Jenkins Lane / Eric Clarke Lane junction | 1 | 0 | 0 | 1 |
| Total | 3 | 0 | 0 | 3 |

- C.1.5 A total of three accidents occurred in the vicinity of the site over the five years of accident data analysed, which were all classified as slight. There were no serious or fatal accidents.
- C.1.6 Road traffic accident analysis for individual junctions and roads within the vicinity of the site is discussed below.

Jenkins Lane

- C.1.7 Jenkins Lane runs from north to south joining the North Circular Road (A406) in the north to a number of small industrial units and the Beckton STW compound in the south. Jenkins Lane runs under Alfred's Way (A13).
- C.1.8 Between April 2006 and March 2011, three accidents occurred along Jenkins Lane and all were classified as slight. Two of the accidents occurred along Jenkins Lane between the junctions with Eric Clarke Lane to the south and Spur Road to the north. The accidents involved cars, and they were caused by drivers failing to look properly and poor manoeuvres.
- C.1.9 One further slight accident occurred at the junction of Jenkins Lane and Eric Clarke Lane. The accident involved a bus/coach and happened when the bus turned left and caused passenger to fall. The accident was caused by the vehicle travelling too fast and not as result of the road geometry.

C.2 Summary and conclusions

- C.2.1 Of the accidents that occurred along Jenkins Lane, none involved vulnerable road users (ie, pedestrian and pedal cycles). The accidents involved cars and a bus/coach. Goods vehicles were not involved in any of the accidents.
- C.2.2 Of the five year accident data analysed, the information available suggests that the accidents were primarily the result of road users not looking properly or making poor manoeuvres and none of the accidents happened as a result of the road layout.

Appendix D: Road Safety Audits

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Thames Water Utilities

**Beckton Sewage Treatment
Works**

Stage 1 Road Safety Audit

Project Ref: 27016/033

Doc Ref: 001

February 2013

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Thames Tideway Tunnel - Beckton Sewerage Treatment Works
Stage 1 Road Safety Audit

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Document Control Sheet

Project Name: Thames Tideway Tunnel - Beckton Sewerage Treatment Works

Project Ref: 27016/033

Report Title: Stage 1 Road Safety Audit

Doc Ref: 001

Date: February 2013

| | Name | Position | Signature | Date |
|--|----------------|------------------------|-----------------------|---|
| Prepared by: | Philip Edwards | Principal Engineer | <i>Philip Edwards</i> | 13 th February 2013 |
| Reviewed by: | James Horne | Senior Engineer | <i>James Horne</i> | 13 th February January 2013 |
| Approved by: | Alan Fry | Divisional Director pp | <i>Philip Edwards</i> | 13 th February 2013 |
| For and on behalf of Peter Brett Associates LLP | | | | |

| Revision | Date | Description | Prepared | Reviewed | Approved |
|----------|------|-------------|----------|----------|----------|
| | | | | | |
| | | | | | |

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Thames Tideway Tunnel - Beckton Sewerage Treatment Works
Stage 1 Road Safety Audit

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Appendices

Appendix A - Information Utilised in this Stage 1 Road Safety Audit

Appendix B - Site Reference Plan

1 Introduction

- 1.1 Peter Brett Associates LLP have been commissioned to undertake a series of Stage 1 Road Safety Audits on proposals associated with the construction of the Thames Tideway Tunnel project in London.
- 1.2 This Audit has been undertaken on the highway aspects of the proposal at Beckton Sewage Treatment Works, Newham, during construction and post construction. At this location access is to / from the A13 via Jenkins Lane and this is the existing route to the main entrance to Beckton STW where there is a priority junction serving Beckton STW. Vehicular movement on private roads within Beckton STW is outside the scope of this Audit and has not been examined in this report.
- 1.3 Jenkins Lane is an urban single carriageway within a 30mph speed limit, is illuminated by a system of street lighting. On the eastern side there is a footway throughout. On the western side there is a footway from the cinema complex roundabout for about 120m to the entrance to the 'Power League' football complex. There is a Zebra crossing outside the cinema complex and bus stops south of the Zebra crossing.
- 1.4 It is proposed to use the existing Highway with no temporary or permanent modifications proposed for either the Construction Phase or Operational Phase.

Vehicles can approach and depart the site from A13 eastbound via the existing slip road which joins Jenkins Lane at a 3-arm mini roundabout. Vehicles can also depart from the site to the A13 westbound via the existing slip road which leaves Jenkins Lane at a 4-arm roundabout at which also gives access to the cinema complex.

- 1.5 The Audit Team Membership was as follows:-

Audit Team Leader:-

Philip Edwards Peter Brett Associates, Northampton

Team member:-

James Horne Peter Brett Associates, Northampton

The Audit Team are independent of the Design Team.

- 1.6 The Audit took place during December 2012 / January / February 2013. The Audit Team visited the site on 18th December 2012 between 13:00 and 14:00. The weather during the site visit was cloudy. The Audit comprises of an examination of the documents listed in Appendix A.
- 1.7 The Audit Team have not been made aware of any Departure from Standards identified with this proposed scheme. The Audit Team have not been provided with a specific Audit Brief but have received a number of documents that describe the proposed works.
- 1.8 The Audit Team have received a document summarising the recorded collision data within the surrounding highway network for a 5 year period (April 2006 to March 2011). The Audit Team have not been provided with the raw collision data, therefore, a full review and analysis of the recorded collisions cannot be undertaken as part of this Audit.

Thames Tideway Tunnel - Beckton Sewerage Treatment Works Stage 1 Road Safety Audit

- 1.9 The Terms of Reference of this Audit are as described in Transport for London (TfL) Procedure SQA-0170. 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 designs to any other criteria. However, to clearly explain a safety problem or the recommendation to resolve a problem the Audit Team may, on occasion, have referred to a design standard without touching on technical Audit.
- 1.10 This Audit has a maximum shelf life of 2 years. Should the scheme not progress to the next stage in its development within this period it should be re-audited.
- 1.11 Problems identified in the report are indicated by location and are shown on the site reference plan in Appendix B.

2 Items Raised from this Stage 1 Road Safety Audit

Construction Phase

2.1 Problem

Location - General

Summary - Maintenance of Existing Highway

The proposals are for the existing roads, which already provide access for all types of traffic to Beckton STW to be used without any modification. The existing Highway infrastructure appears to be in need of some maintenance in order to enhance road safety. Issues observed during the site visit were:-

- Numerous gully pots full of silt;
- Severely worn high friction surfacing and road markings on the approaches and at the Zebra crossing on Jenkins Lane outside the cinema;
- Ponding in the western channel of Jenkins Lane at the Zebra crossing resulting with a slippery slurry on the footway;
- Vegetation, brambles etc. overhanging and partially obstructing the footways;
- Damaged inspection chamber cover in the northern footway south of the A13 overbridge;

Recommendation

The developer should liaise with the local Highway Authority (London Borough of Newham) to ensure that the affected Highways in the vicinity of Beckton STW are inspected and a programme of maintenance implemented.

Operational Phase (Post Construction)

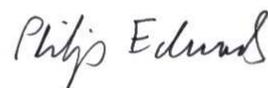
No problems identified that this stage.

3 Audit Team Statement

We certify that we have examined the drawings and documents listed in Appendix A to this Road Safety Audit Report. The Road Safety Audit has been carried out within the sole purpose of identifying any feature that could be removed or modified in order to improve the safety of the scheme. The problems identified have been noted in this report together with associated suggestions for safety improvements that we recommend should be studied for implementation.

No one on the Audit Team has been involved with the design of the measures.

Audit Team Leader:



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Position: Principal Engineer Date: 13th February 2013
Organisation: Peter Brett Associates
Address: 11 Prospect Court
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Blisworth
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Audit Team Members:



Name: James Horne Signed:
Position: Senior Engineer Date: 13th February 2013
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Thames Tideway Tunnel - Beckton Sewerage Treatment Works
Stage 1 Road Safety Audit



Appendix A



Thames Tideway Tunnel - Beckton Sewerage Treatment Works Stage 1 Road Safety Audit

Appendix A

Information Utilised in this Stage 1 Road Safety Audit:-

- Figure 26.2.1 – Site Location Plan;
- Figure 26.2.2 – Construction Traffic Routes;
- Figure 26.4.7 – Accident Locations;
- DCO-PP-27X-BESTW-280002 – Access Plan;
- DCO-PP-27X-BESTW-280012 – Existing Highway Layout;
- DCO-PP-27X-BESTW-280013 – Highway Layout During Construction 1 of 2;
- DCO-PP-27X-BESTW-280014 – Highway Layout During Construction 2 of 2;
- DCO-PP-27X-BESTW-280015 – Permanent Highway Layout 1 of 2;
- DCO-PP-27X-BESTW-280016 – Permanent Highway Layout 2 of 2;
- DCO-PP-27X-BESTW-280017 – Highway Layout During Construction Swept Path Analysis 1 of 2;
- DCO-PP-27X-BESTW-280018 – Highway Layout During Construction Swept Path Analysis 2 of 2;
- DCO-PP-27X-BESTW-280019 – Permanent Highway Layout Swept Path Analysis 1 of 2;
- DCO-PP-27X-BESTW-280019 – Permanent Highway Layout Swept Path Analysis 2 of 2;
- Highway Mitigation Plans;
- Technical Note – Information for Beckton Sewage Treatment Works 1 RSA;
- Technical Memorandum – Beckton Sewage Works – Accident Analysis;

NB Some of the above drawings indicate a note that states 'See Schedule of Works'. The Audit Team have not been provided with this Schedule.

Appendix B



Thames Tideway Tunnel - Beckton Sewerage Treatment Works
Stage 1 Road Safety Audit

Appendix B

Site Reference Plan – Figure 1



Client

THAMES WATER UTILITIES

SCALING NOTE: Do not scale from this drawing. If in doubt, ask UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but the Contractor is advised to verify this information. The Contractor is also advised to undertake his own investigation where the presence of any existing sewers, services, plant or apparatus may affect his operations.

**THAMES TIDEWAY TUNNEL
 BECKTON SEWAGE TREATMENT WORK
 SITE REFERENCE PLAN**

| | | | | |
|---|----------|----------------|----------|------|
| Mark | Revision | Drawn | Date | Chkd |
| Drawing Status | | | | |
| STAGE 1 ROAD SAFETY AUDIT | | | | |
| Date of 1st issue | 15/02/13 | Drawing Number | Revision | |
| A3 Scale | N.T.S. | FIGURE 1 | - | |
| Drawn by | MA | Checked by | PE | |
| J:\Safety Audit\2013\Thames Tideway\Stage 1\SPSA_004-FIGURE 1.dwg | | | | |

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Project title Thames Tideway Tunnel

Job number

211146-04

cc

File reference

211146

Prepared by F Jahanshahi

Date

15 February 2013

Subject RSA Stage 1 - Designer's response for Beckton Sewage Treatment Works (STW)

1 Introduction

This report is the Designer's Response to the Stage 1 Road Safety Audit Report for Beckton STW completed in February 2013.

2 Responses to the items arising from the Stage 1 Road Safety Audit

2.1 Problem –

Location: *General*

Summary: *Maintenance of existing highway*

Description: The proposals are for the existing roads, which already provide access for all types of traffic to Beckton STW to be used without any modification. The existing Highway infrastructure appears to be in need of some maintenance in order to enhance road safety. Issues observed during the site visit were:

- Numerous gully pots full of silt;
- Severely worn high friction surfacing and road markings on the approaches and at the Zebra crossing on Jenkins Lane outside the cinema;
- Ponding in the western channel of Jenkins Lane at the Zebra crossing resulting with a slippery slurry on the footway;
- Vegetation, brambles etc. overhanging and partially obstructing the footways;
- Damaged inspection chamber cover in the northern footway south of the A13 overbridge.

Recommendation: The developer should liaise with the local Highway Authority (London Borough of Newham) to ensure that the affected Highways in the vicinity of Beckton STW are inspected and a programme of maintenance implemented.

Technical Note

211146-04

15 February 2013

Designer's response

Recommendation noted. The maintenance of the existing highway in the vicinity of the Beckton STW site will be reviewed at detail design (stage 2).

DOCUMENT CHECKING (not mandatory for File Note)

| | Prepared by | Checked by | Approved by |
|-----------|---|---|---|
| Name | F Jahanshahi | G Wicks | S Jenkins |
| Signature |  |  |  |

Thames Tideway Tunnel
Thames Water Utilities Limited



Application for Development Consent

Application Reference Number: WWO10001

Transport Assessment

Doc Ref: **7.10.23**

Beckton Sewage Treatment Works

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 26: Beckton Sewage Treatment Works figures

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| Transport - permanent highway layout (2 of 2) | |
| Transport - highway layout during construction vehicle swept path analysis (1 of 2) | |
| Transport - highway layout during construction vehicle swept path analysis (2 of 2) | |
| Transport - permanent highway layout vehicle swept path analysis (1 of 2) | |
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| Transport - parking | Figure 26.4.3 |
| Transport - survey locations | Figure 26.4.4 |
| Transport - Baseline, Construction and Development case traffic flow (AM peak hour) | Figure 26.4.5 |
| Transport - Baseline, Construction and Development case traffic flow (PM peak hour) | Figure 26.4.6 |
| Transport - accident locations | Figure 26.4.7 |
| Transport - pedestrian and cyclist accidents by severity | Figure 26.4.8 |
| Hourly Construction Lorry Movements - Site Year 2 of Construction | Figure 26.5.1 |

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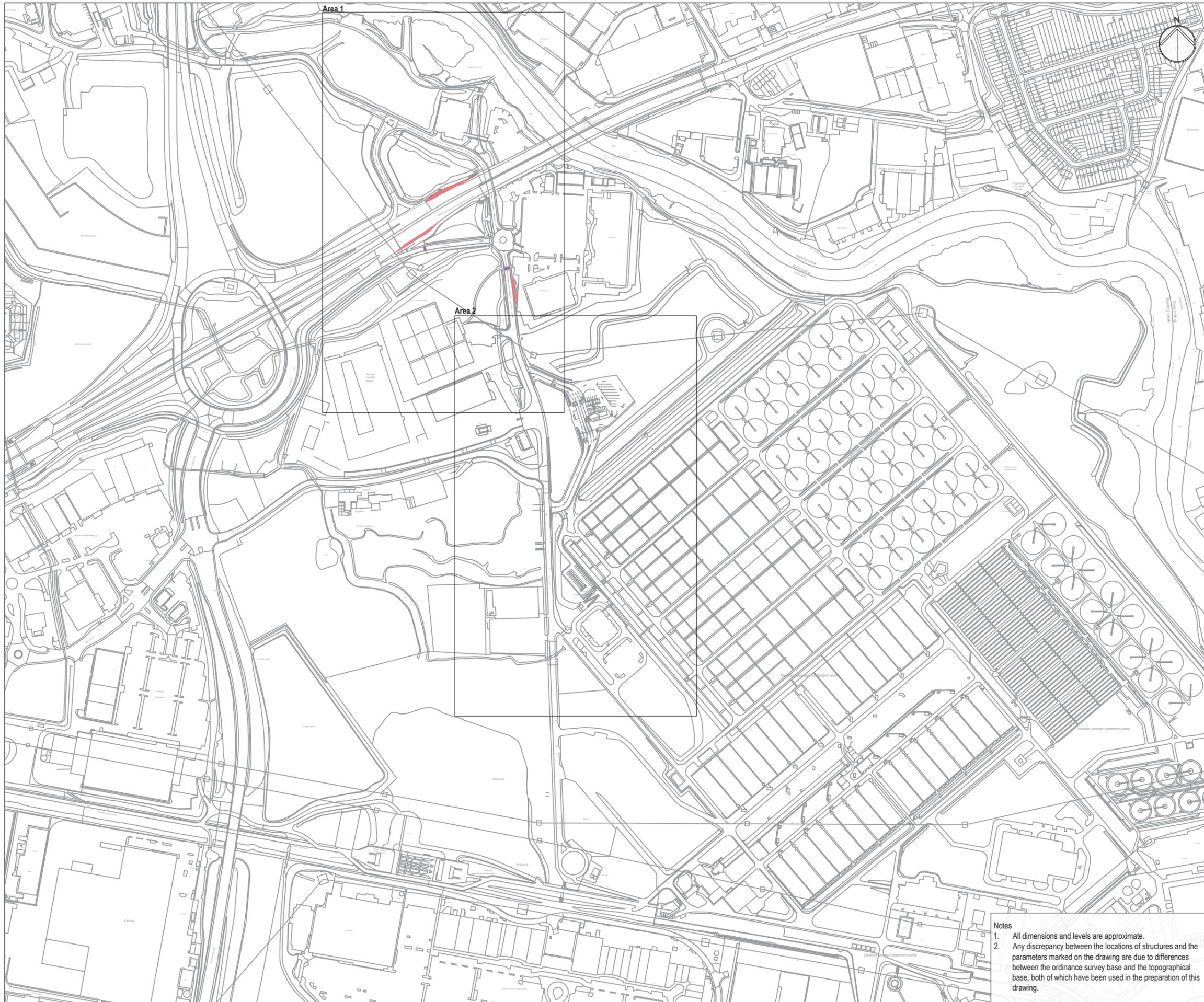
Plans

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Beckton Sewage Treatment Works

THAMES TIDEWAY TUNNEL - SCHEDULE OF ASSOCIATED HIGHWAY WORKS

| Drawing Number | Works Reference | Location | Item of Work | Date of Implementation |
|-------------------------|-----------------|--------------|--------------|------------------------|
| DCO-PP-27X-BESTW-280013 | | Jenkins Lane | None | |
| DCO-PP-27X-BESTW-280014 | | Jenkins Lane | None | |
| DCO-PP-27X-BESTW-280015 | | Jenkins Lane | None | |
| DCO-PP-27X-BESTW-280016 | | Jenkins Lane | None | |



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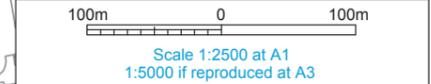


Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

- Key**
- Bus stop / stand
 - Pedestrian crossing

- 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

Stage
Existing



FOR INFORMATION

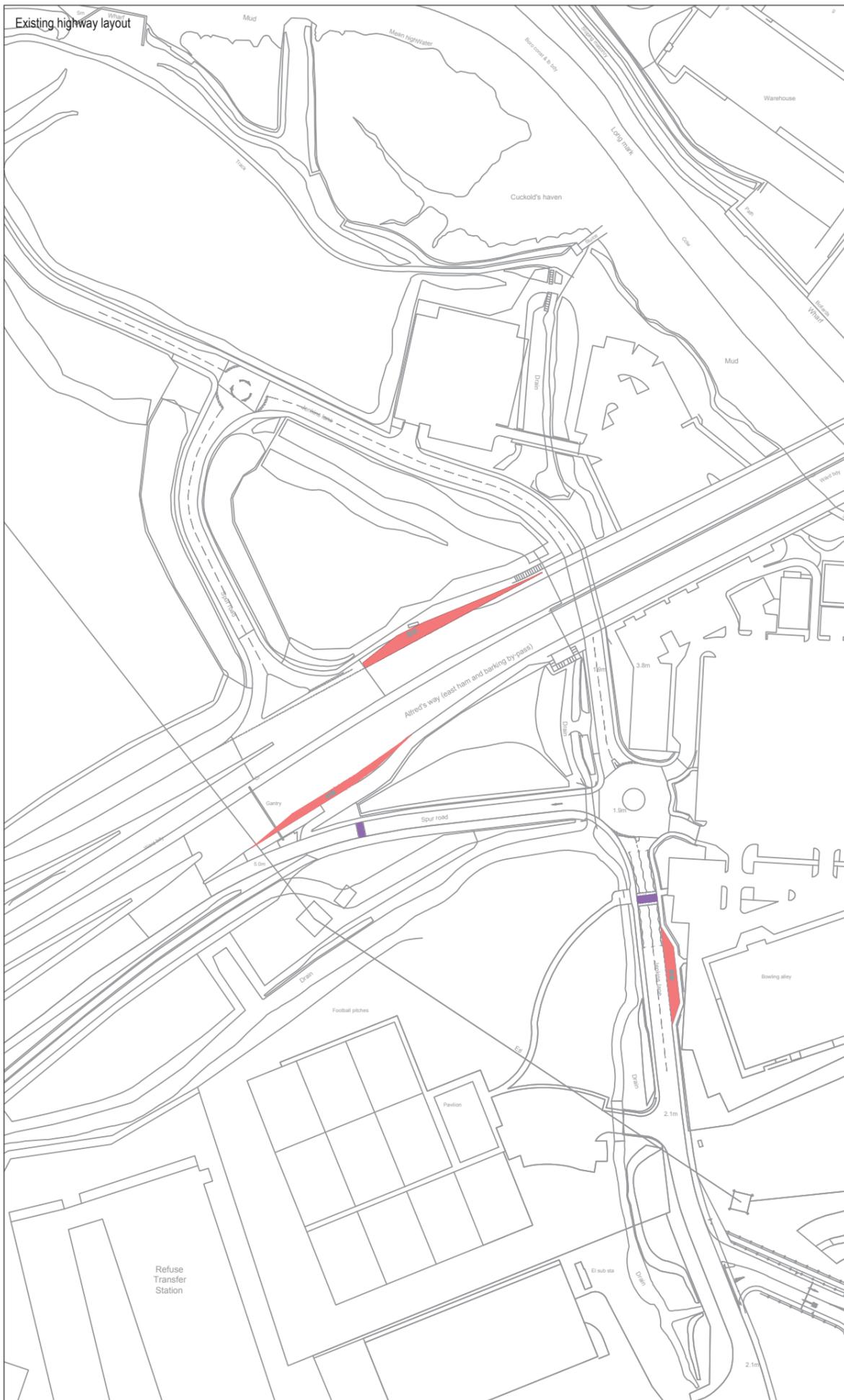
Location
Beckton sewage treatment plant
London Borough of Newham

Document Information
Application for Development Consent
Existing highway layout

DCO-PP-27X-BESTW-280012
January 2013



- Notes**
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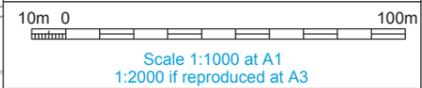


Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

- Key**
- Existing
 - Bus stop / stand
 - Pedestrian crossing
 - Revised
 - BESTW CO See schedule of works
 - L.L.A.U.

- 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

Stage
All phases



ILLUSTRATIVE

Location
Beckton sewage treatment plant
LB Newham

Document Information
Application for Development Consent
Highway layout during construction
1 of 2

DCO-PP-27X-BESTW-280013
January 2013



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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
 Revised
 - - - L.L.A.U.

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

Stage
 All phases

10m 0 100m
 Scale 1:1000 at A1
 1:2000 if reproduced at A3

ILLUSTRATIVE

Location
 Beckton sewage treatment plant
 London Borough of Newham

Document Information
 Application for Development Consent
 Highway layout during construction
 2 of 2

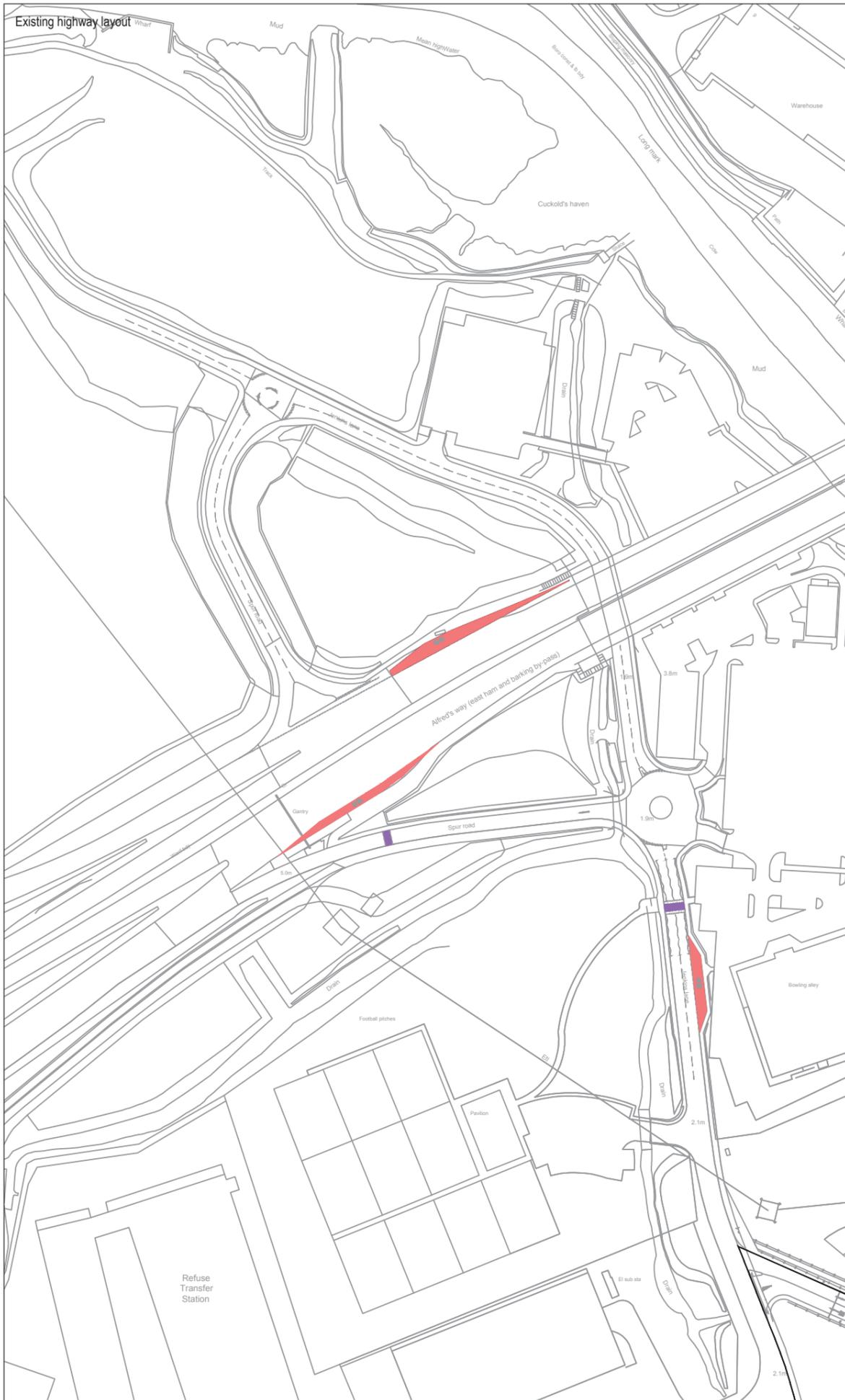
DCO-PP-27X-BESTW-280014
 January 2013

Notes
 1. All dimensions and levels are approximate.
 2. Any discrepancy between the locations of structures and the parameters marked on the drawing are due to differences between the ordnance survey base and the topographical base, both of which have been used in the preparation of this drawing.

Thames Tideway Tunnel
 Creating a cleaner, healthier River Thames

Thames Water

© Thames Water Utilities Ltd 2008



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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
 - Bus stop / stand
 - Pedestrian crossing
 - Revised
 - BESTW 001 See schedule of works

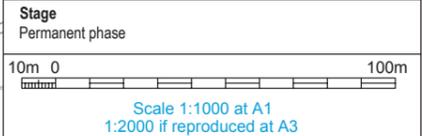
On street parking

Permit holder
 permit holders only mon - fri 8:30am - 6:30pm

Solo motorcycle
 solo motorcycles only at all times

Car club permit holders
 car club permit holders at all times

- 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



ILLUSTRATIVE

Location
 Beckton sewage treatment plant
 London Borough of Newham

Document Information
 Application for Development Consent
 Permanent highway layout
 1 of 2

DCO-PP-27X-BESTW-280015
 January 2013



- Notes**
1. All dimensions and levels are approximate.
 2. Any discrepancy between the locations of structures and the parameters marked on the drawing are due to differences between the ordnance survey base and the topographical base, both of which have been used in the preparation of this drawing.

Existing highway layout

Permanent layout



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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.



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

Stage

Permanent phase

10m 0 100m

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

ILLUSTRATIVE

Location

Beckton sewage treatment plant
London Borough of Newham

Document Information

Application for Development Consent

Permanent highway layout
2 of 2

DCO-PP-27X-BESTW-280016
January 2013

Notes

1. All dimensions and levels are approximate.
2. Any discrepancy between the locations of structures and the parameters marked on the drawing are due to differences between the ordnance survey base and the topographical base, both of which have been used in the preparation of this drawing.



16.5m Articulated vehicle
Design speed 5km/h

12.0m Rigid vehicle
Design speed 5km/h

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Keyplan:

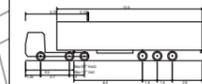


Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

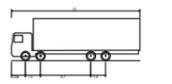
- Vehicle swept path analysis
- Vehicle body outlines
- Vehicle chassis outline
- Vehicle swept path

16.5m Articulated vehicle



Min Legal Articulated Vehicle (16.5m)
Overall Length 16.500m
Overall Width 2.500m
Overall Body Height 3.800m
Min Body Ground Clearance 12.200m
Min Track Width 2.000m
Lock to Lock Time 6.00 sec
Kerb to Kerb Turning Radius 8.000m

12.0m Rigid vehicle



Rigid Truck
Overall Length 12.000m
Overall Width 2.500m
Overall Body Height 3.800m
Min Body Ground Clearance 12.200m
Min Track Width 2.000m
Lock to Lock Time 6.00 sec
Kerb to Kerb Turning Radius 11.000m

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

Stage

All phases



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

ILLUSTRATIVE

Location

Beckton sewage treatment plant
London Borough of Newham

Document Information

Application for Development Consent

Highway layout during construction
Swept path analysis 1 of 2

DCO-PP-27X-BESTW-280017
January 2013



Notes

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2. Any discrepancy between the locations of structures and the parameters marked on the drawing are due to differences between the ordnance survey base and the topographical base, both of which have been used in the preparation of this drawing.

16.5m Articulated vehicle
Design speed 5km/h

12.0m Rigid vehicle
Design speed 5km/h



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Keyplan:



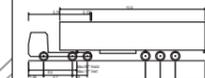
Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key

- Vehicle swept path analysis
- Vehicle body outlines
- Vehicle chassis outline
- Vehicle swept path
- L.L.A.U.

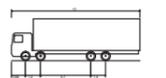


16.5m Articulated vehicle



Max Legal Articulated Vehicle (16.5m)
Overall Length: 16.500m
Overall Width: 2.500m
Overall Body Height: 3.500m
Max Body Clearance: 2.000m
Max Track Height: 0.700m
Lock to Lock Time: 6.00 sec
Kerb to Kerb Turning Radius: 6.00m

12.0m Rigid vehicle



Rigid Truck
Overall Length: 12.000m
Overall Width: 2.500m
Overall Body Height: 3.500m
Max Body Clearance: 2.000m
Max Track Height: 0.700m
Lock to Lock Time: 6.00 sec
Kerb to Kerb Turning Radius: 6.00m

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

Stage

All phases



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

ILLUSTRATIVE

Location

Beckton sewage treatment plant
London Borough of Newham

Document Information

Application for Development Consent

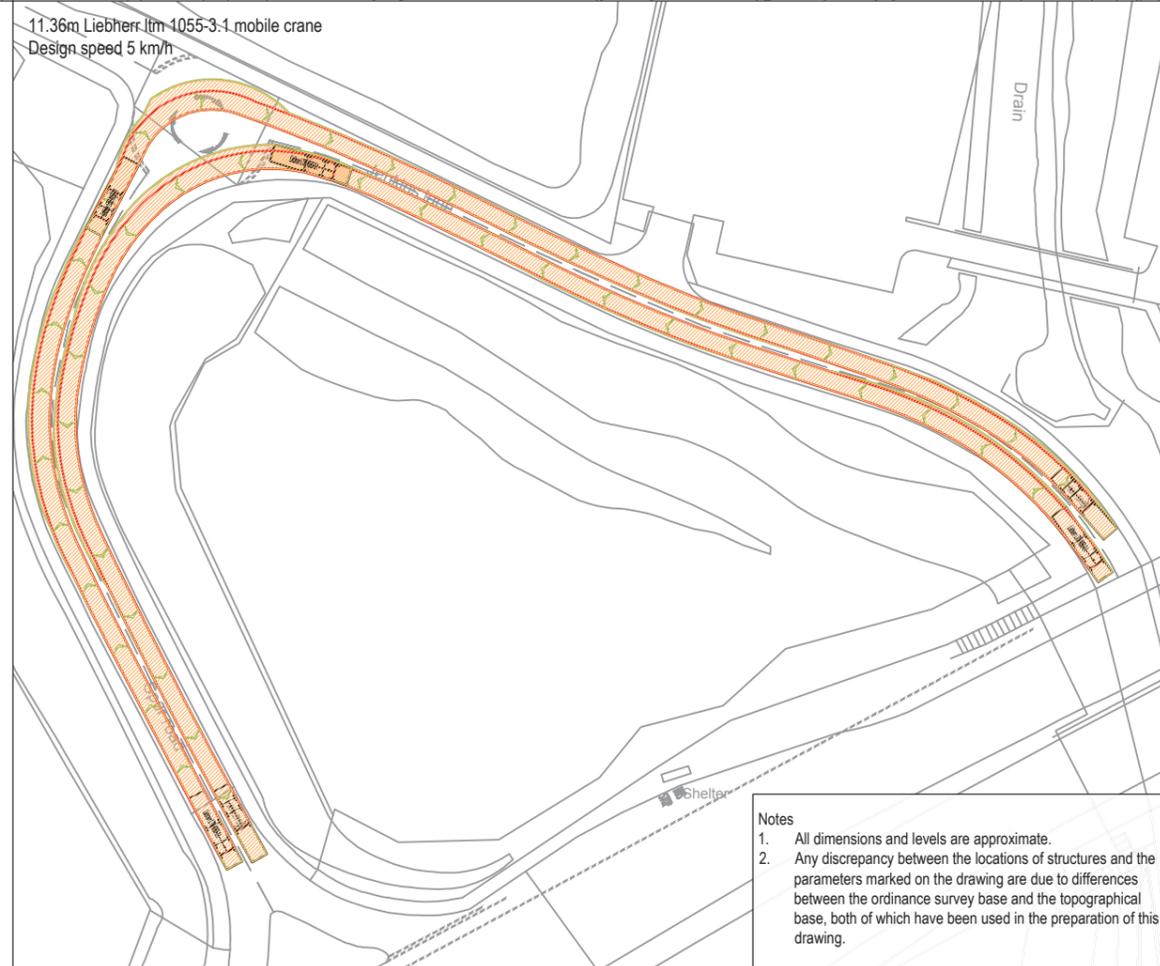
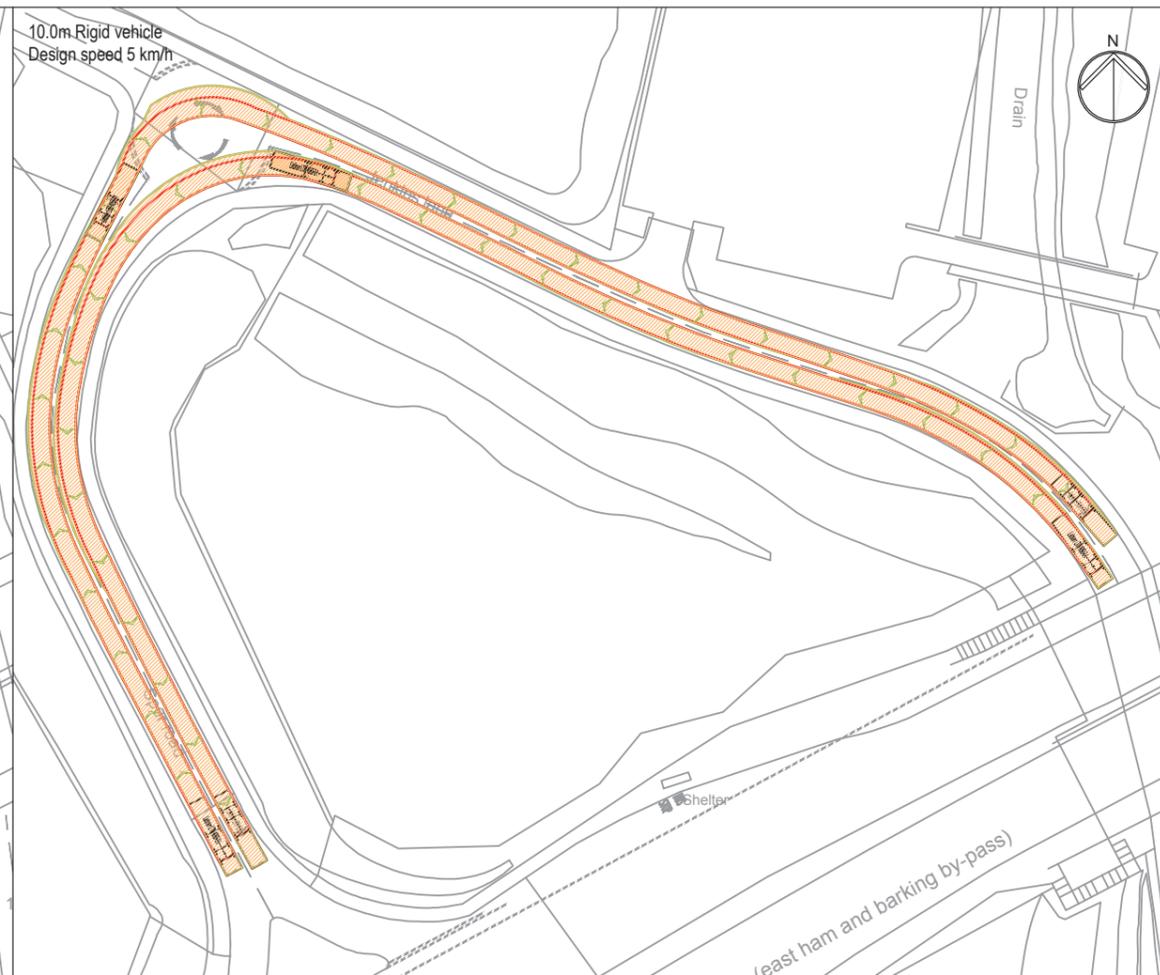
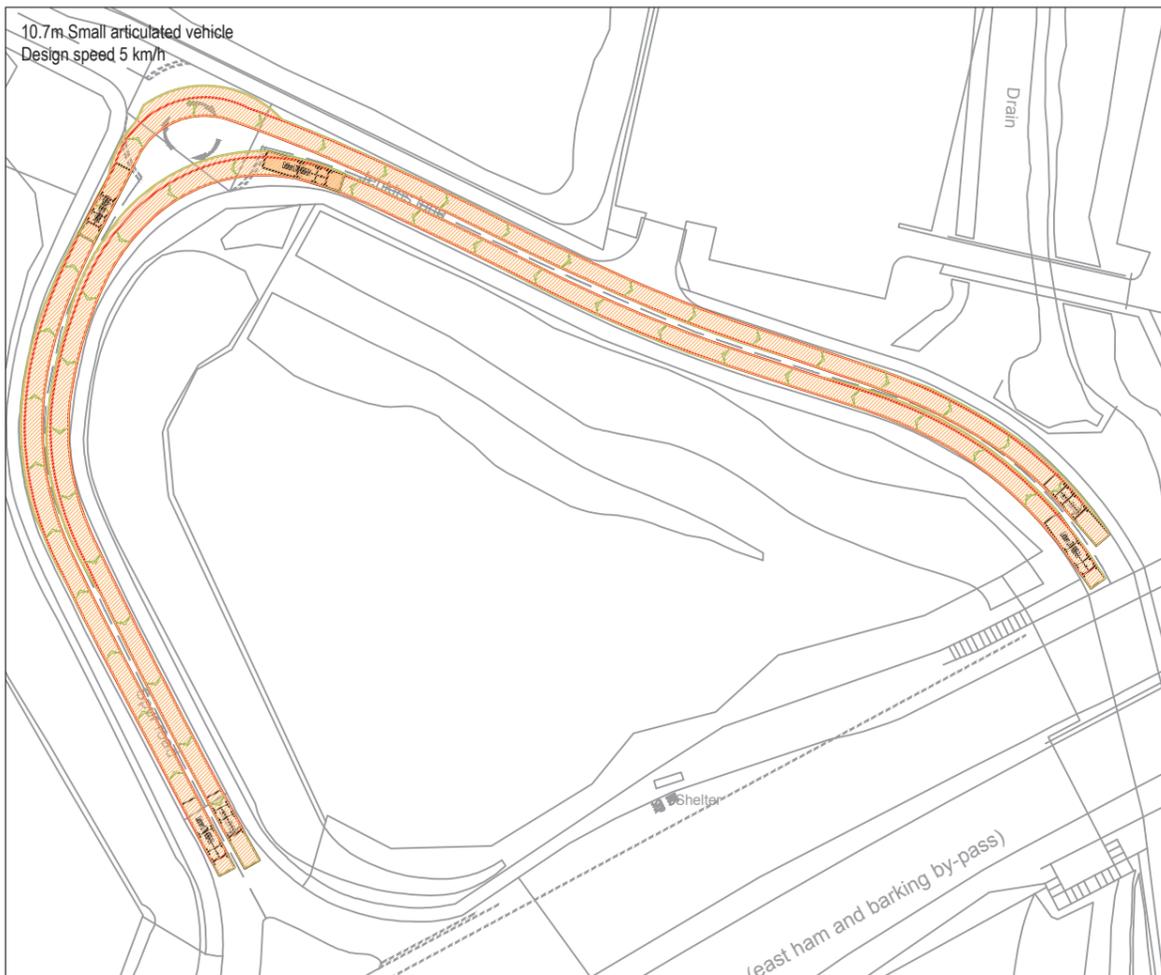
Highway layout during construction
Swept path analysis 2 of 2

DCO-PP-27X-BESTW-280018
January 2013

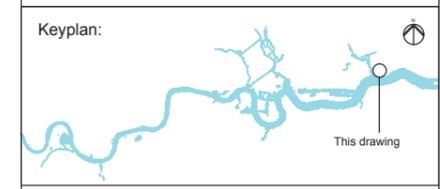


Notes

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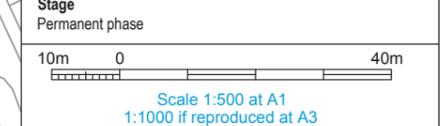
Key

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

| 10.7m Small articulated vehicle | 10.0m Rigid vehicle |
|--|--|
| <p>Small Articulated Vehicle Overall Length 10.700m Overall Width 2.500m Overall Body Height 3.800m Overall Body Ground Clearance 0.500m Track Width 2.280m Lock to Lock Time 6.50 sec Kerb to Kerb Turning Radius 5.740m</p> | <p>FTA Design HG Rigid Vehicle (1996) Overall Length 10.000m Overall Width 2.500m Overall Body Height 3.800m Overall Body Ground Clearance 0.500m Track Width 2.280m Lock to Lock Time 4.50 sec Kerb to Kerb Turning Radius 11.000m</p> |

| 11.36m Liebherr ltm 1055-3.1 mobile crane |
|---|
| <p>Liebherr LTM 1055-3.1 Mobile Crane Overall Length 11.360m Overall Width 3.000m Overall Body Height 3.200m Overall Body Ground Clearance 0.500m Lock to Lock Time 4.50 sec Wall to Wall Turning Radius 8.170m</p> |

- 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



ILLUSTRATIVE

Location
Beckton sewage treatment plant
LB Newham

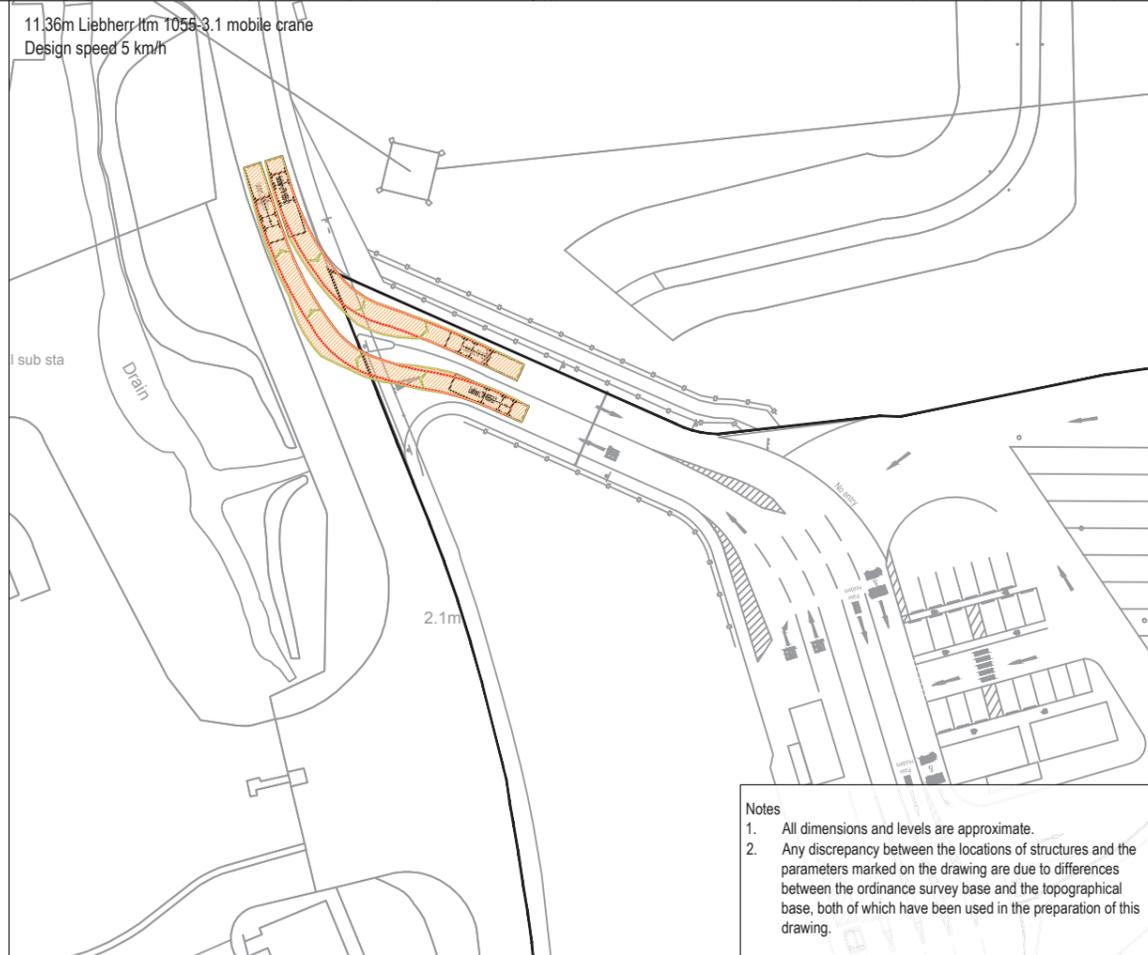
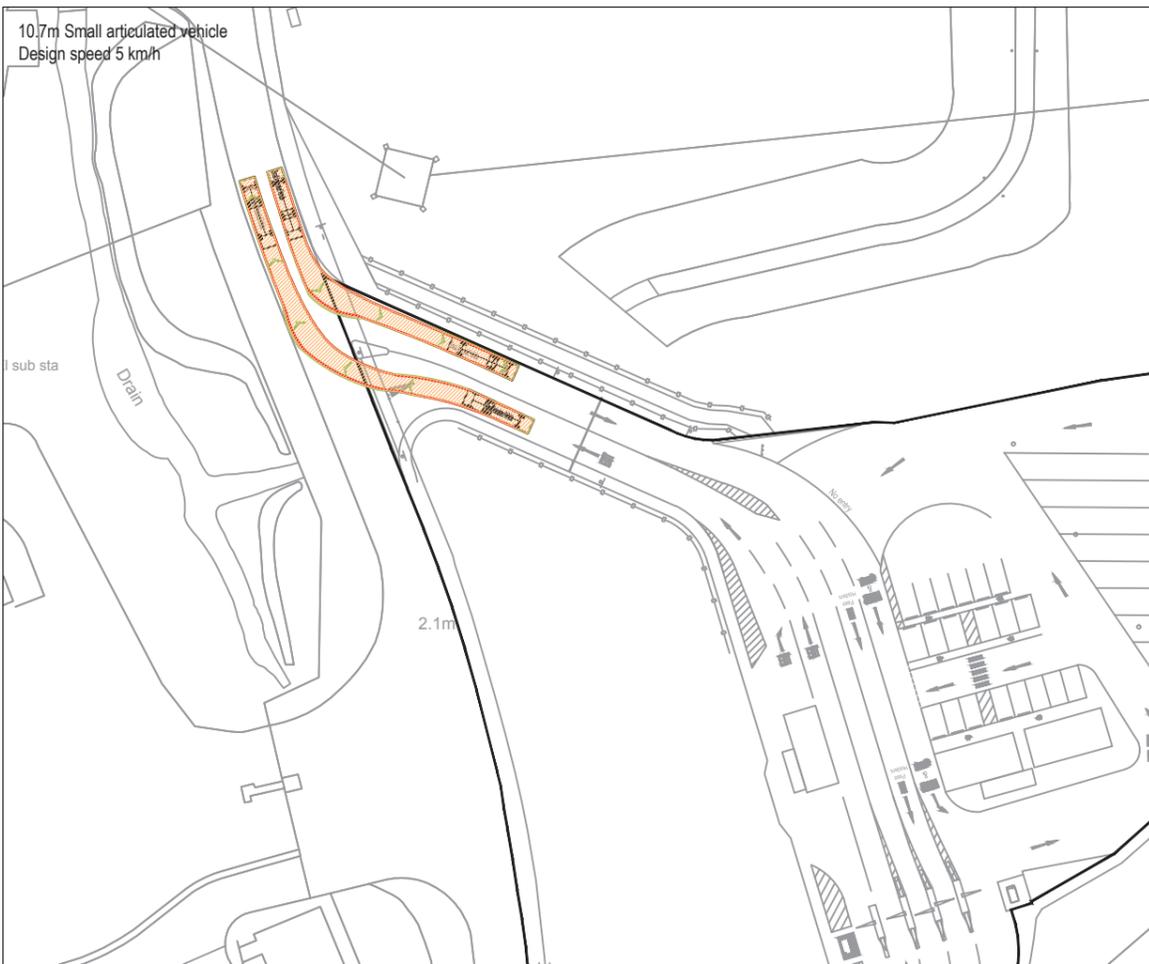
Document Information
Application for Development Consent
Permanent highway layout
Swept path analysis 1 of 2

DCO-PP-27X-BESTW-280019
January 2013



Notes

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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

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

| 10.7m Small articulated vehicle | 10.0m Rigid vehicle |
|--|--|
| <p>Small Articulated Vehicle Overall Length: 15.700m Overall Width: 3.360m Overall Body Height: 3.840m Max Body Ground Clearance: 2.260m Front Wheel: 2.260m Lock to Lock Time: 6.07 sec Max to North Turning Radius: 5.140m</p> | <p>FTA Design 10.0 Rigid Vehicle (1998) Overall Length: 10.000m Overall Width: 2.650m Overall Body Height: 3.840m Max Body Ground Clearance: 2.260m Front Wheel: 2.260m Lock to Lock Time: 3.95 sec Max to North Turning Radius: 11.000m</p> |

11.36m Liebherr ltm 1055-3.1 mobile crane

Liebherr LTM 1055-3.1 Mobile Crane
Overall Length: 11.360m
Overall Width: 3.730m
Overall Body Height: 3.840m
Max Body Ground Clearance: 2.260m
Front Wheel: 2.260m
Lock to Lock Time: 4.60 sec
Max to West Turning Radius: 8.110m

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

Stage
Permanent phase

10m 0 40m
Scale 1:500 at A1
1:1000 if reproduced at A3

ILLUSTRATIVE

Location
Beckton sewage treatment plant
LB Newham

Document Information
Application for Development Consent
Permanent highway layout
Swept path analysis 2 of 2

DCO-PP-27X-BESTW-280020
January 2013

Notes

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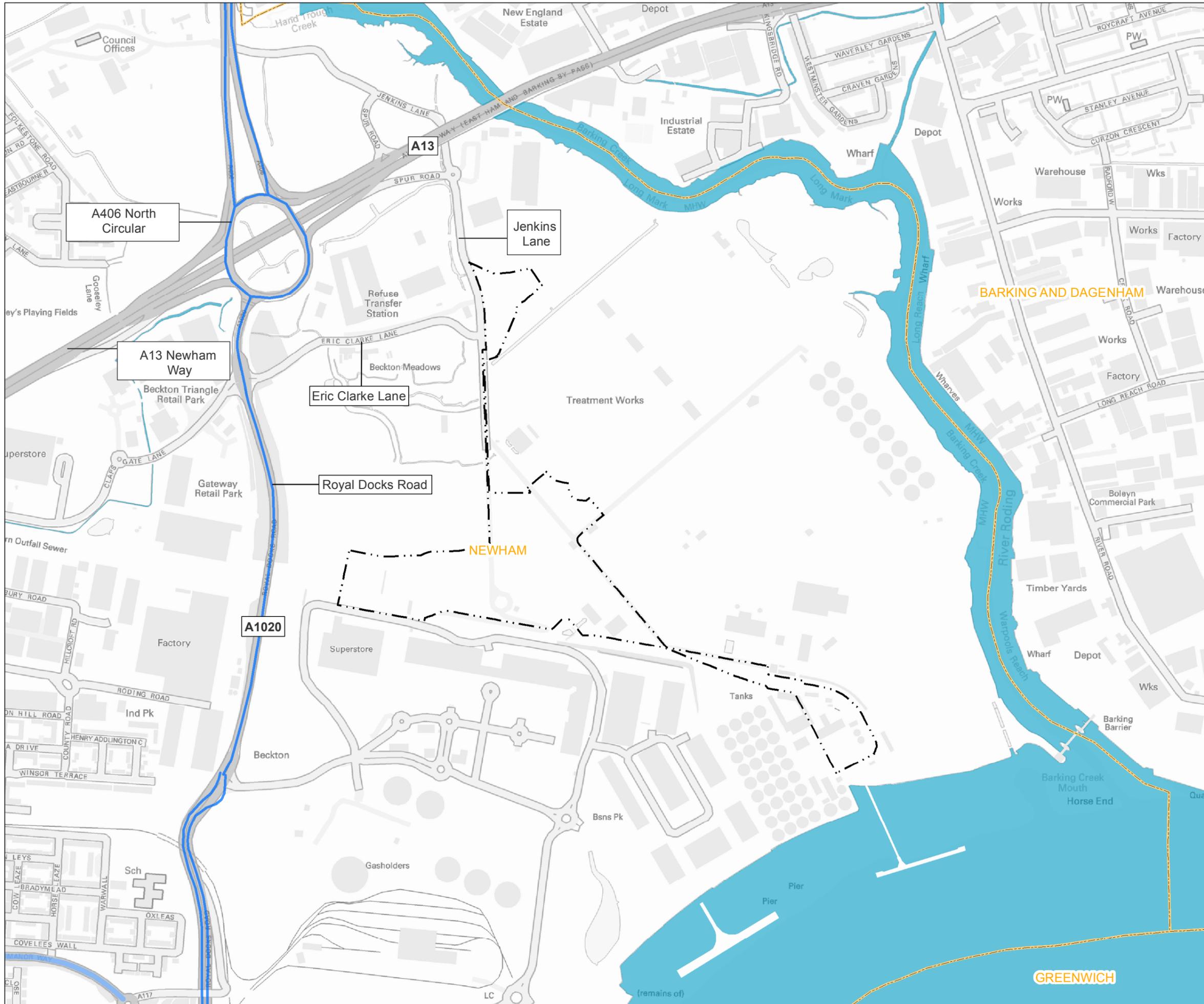
Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

Thames Water

© Thames Water Utilities Ltd 2008

Transport assessment figures

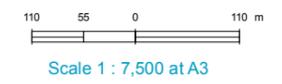
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- Key**
- TFL road network
 - Strategic road network
 - Limits of Land to be Acquired or Used
 - Local authority boundary



FOR INFORMATION

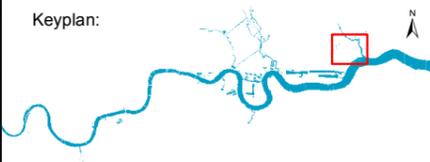
Location
Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
Transport Assessment
 Transport - site location plan

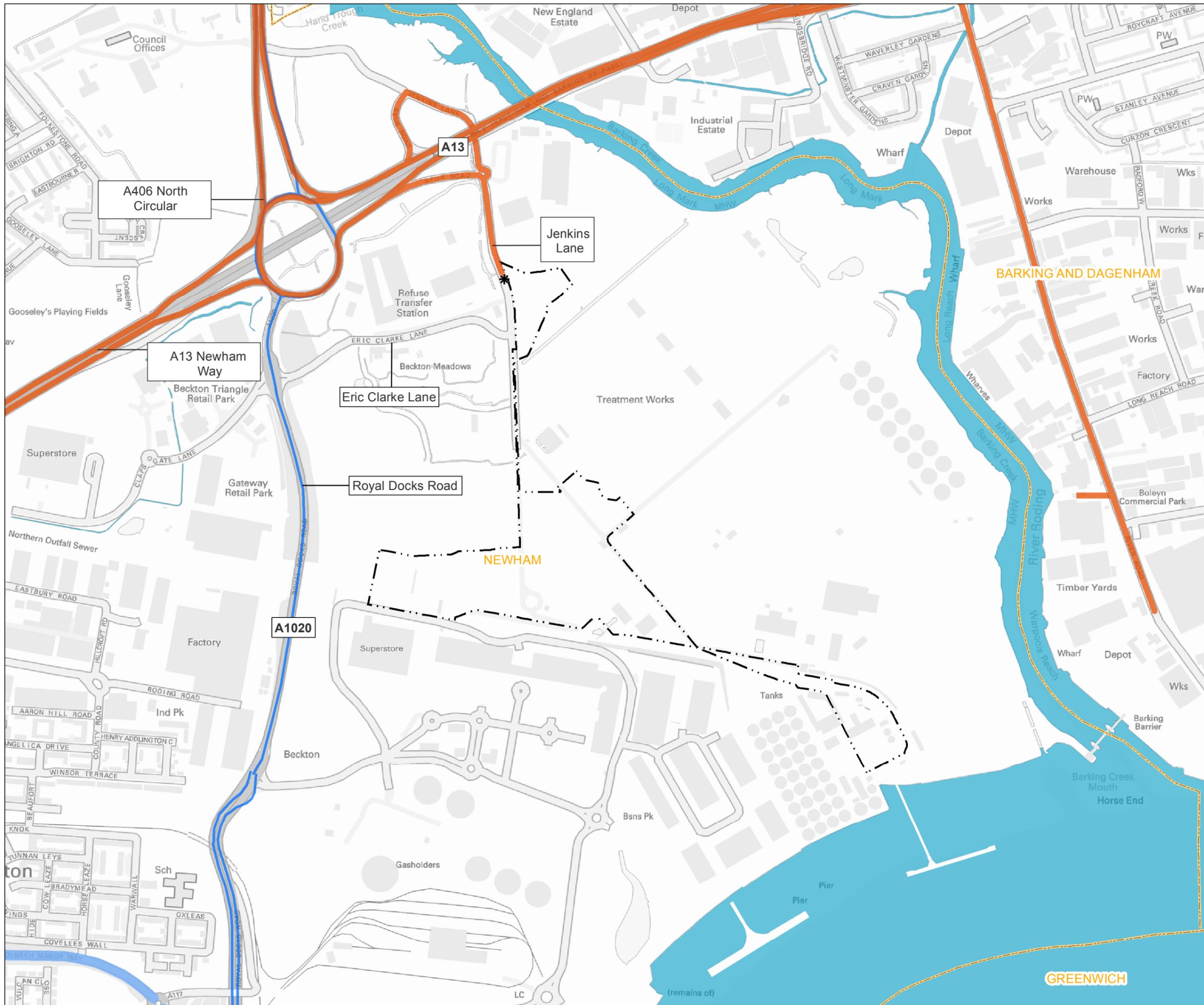
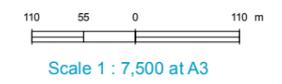
Figure 26.2.1
 1PL03-TT-50656
 January 2013



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



FOR INFORMATION

Location
Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
Transport Assessment
 Transport - construction traffic routes

Figure 26.2.2
 1PL03-TT-50648
 January 2013



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- Key**
- Cycle superhighway (open)
 - London cycle routes
 - - - Pedestrian 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

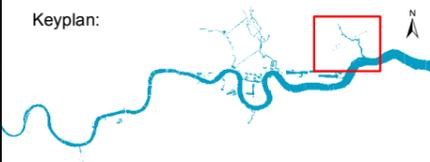
Location
Beckton Sewage Treatment Works
London Borough of Newham

Document Information
Transport Assessment
Transport - pedestrian and cycle network

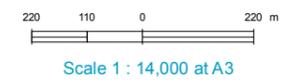
Figure 26.4.1
1PL03-TT-50664
January 2013



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



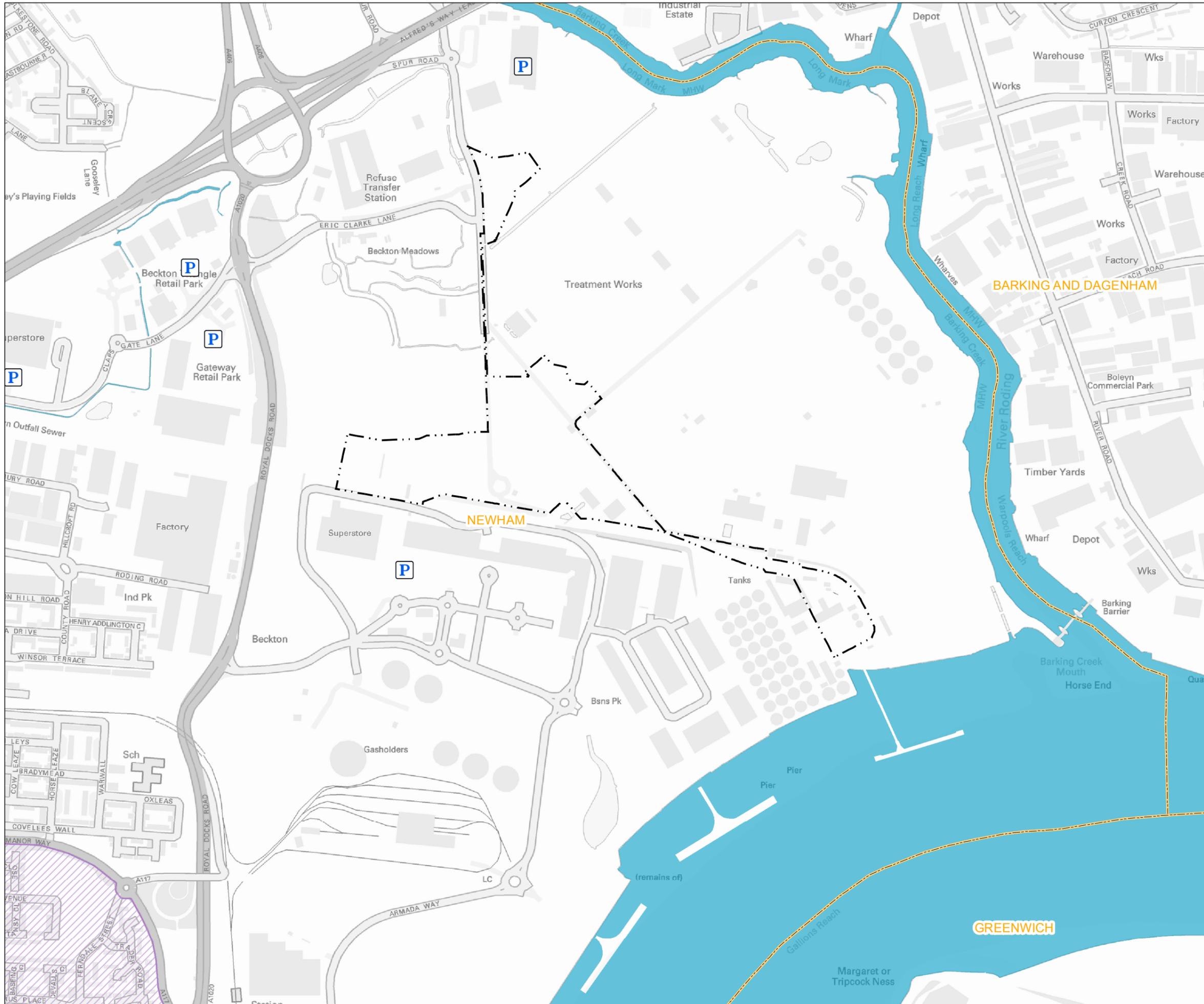
FOR INFORMATION

Location
Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
Transport Assessment
 Transport - public transport

Figure 26.4.2
 1PL03-TT-50672
 January 2013

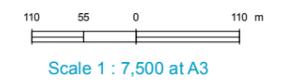




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- Key**
- Private car parking
 - Limits of Land to be Acquired or Used
 - Local authority boundary
 - Controlled Parking Zones and hours of operation



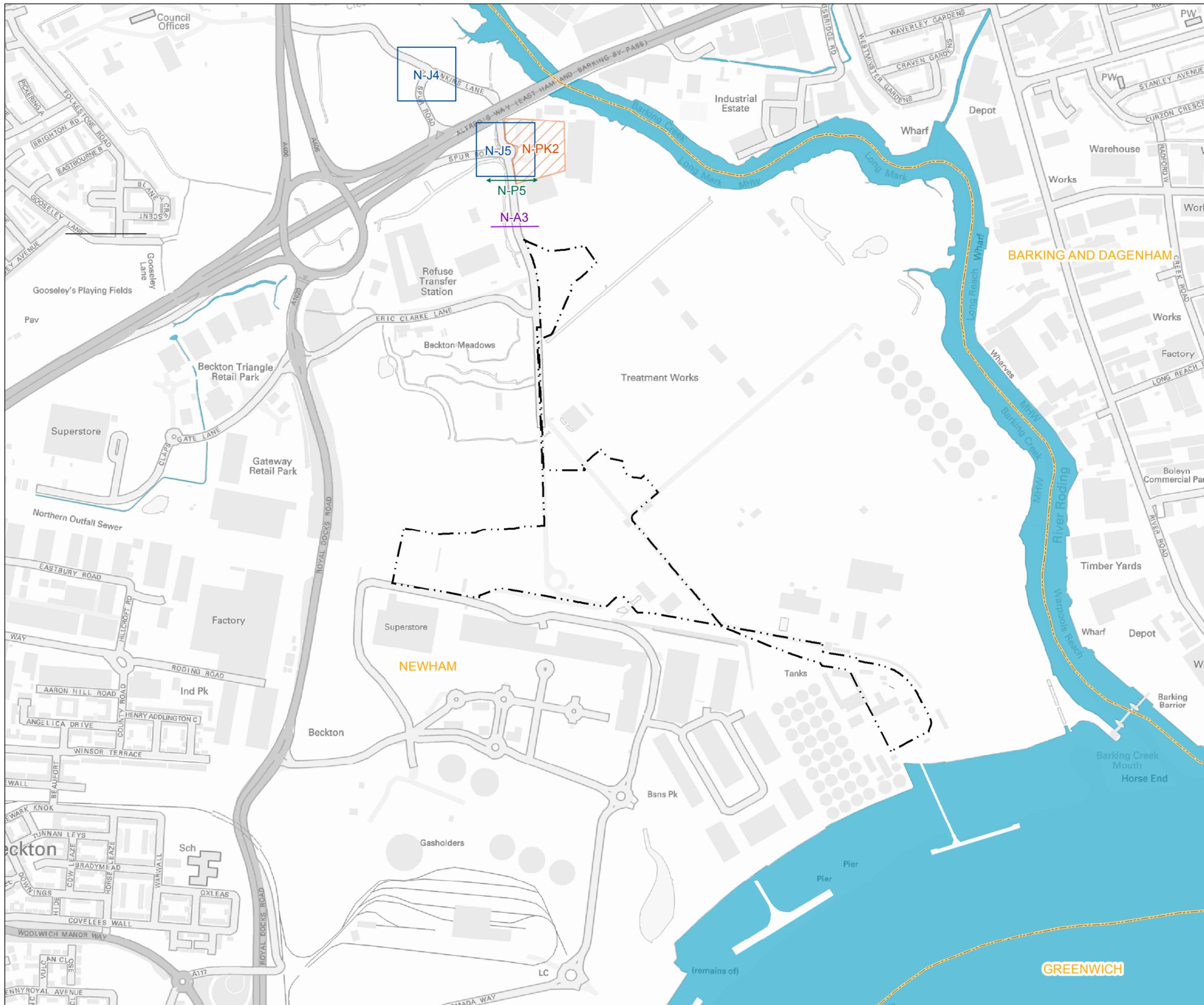
FOR INFORMATION

Location
Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
Transport Assessment
 Transport - parking

Figure 26.4.3
 1PL03-TT-50680
 January 2013





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



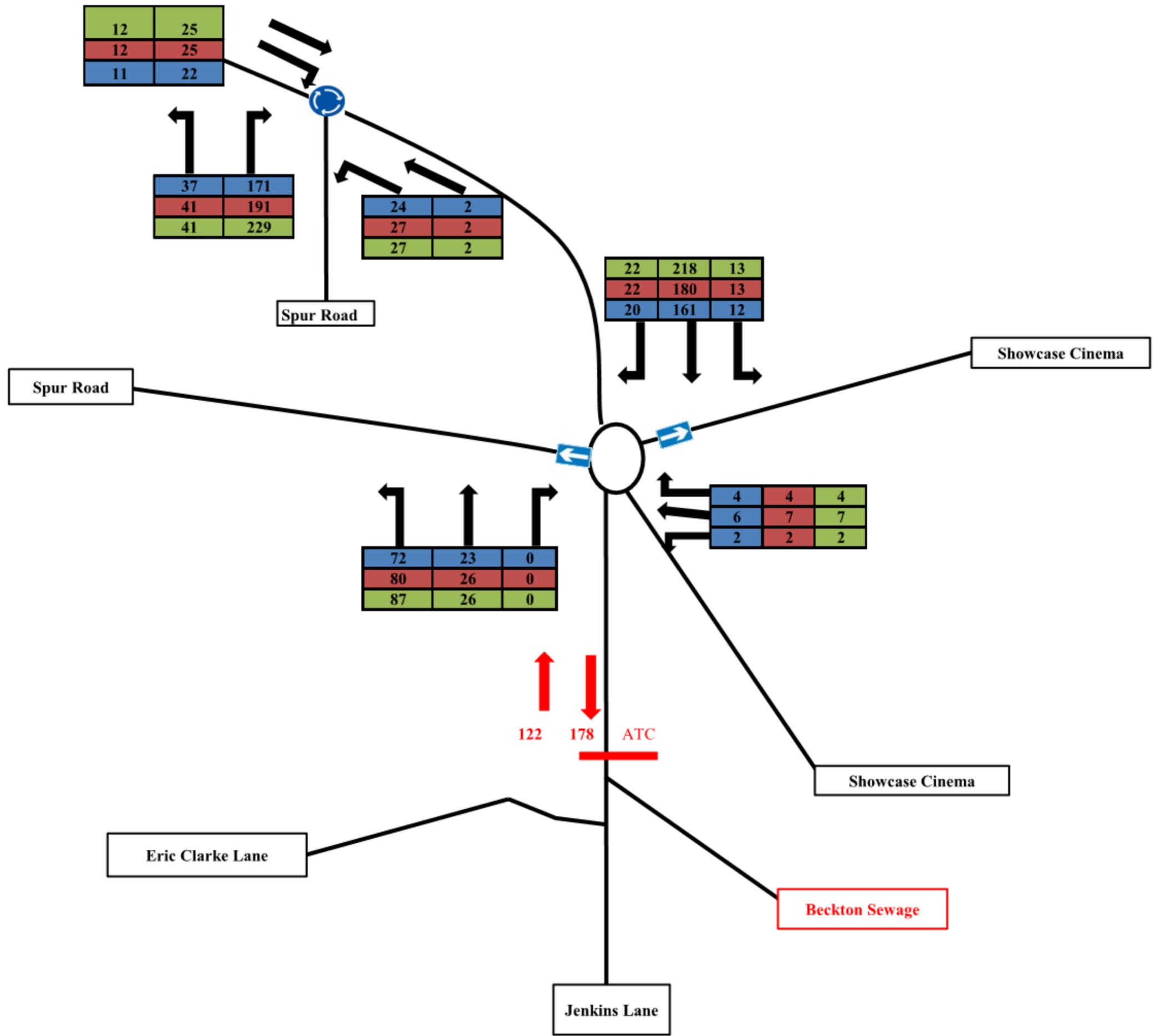
FOR INFORMATION

Location
Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
Transport Assessment
 Transport - survey locations

Figure 26.4.4
 1PL03-TT-50688
 January 2013





Key

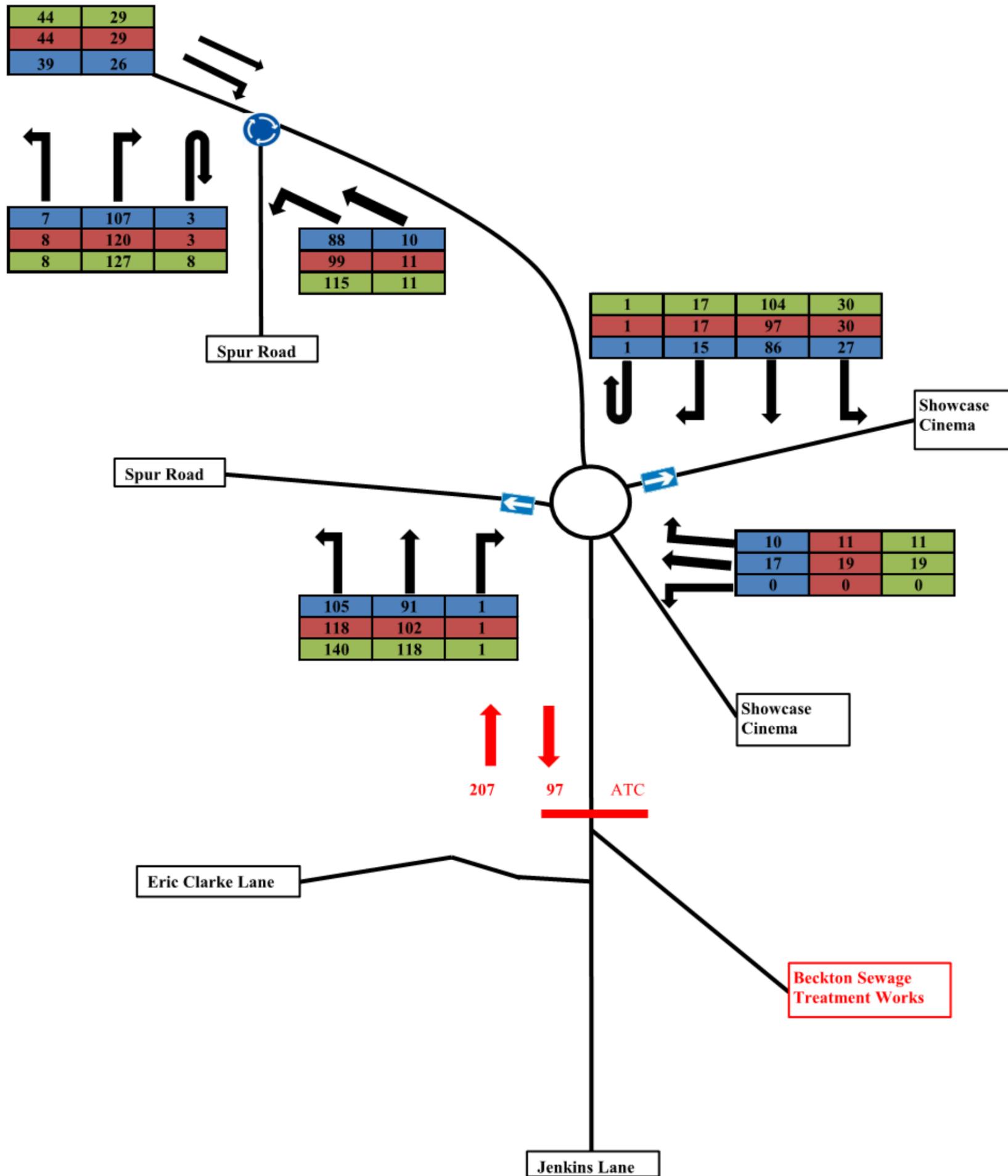
- Base Traffic Flow
- Construction Base
- Development Case

FOR INFORMATION

Location
 Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
 Transport Assessment
 Transport - Baseline, Construction and Development case traffic flow (AM peak hour)
 Figure 26.4.5
 1PL03-TT-50907
 January 2013





Key

- Base Traffic Flow
- Construction Base
- Development Case

FOR INFORMATION

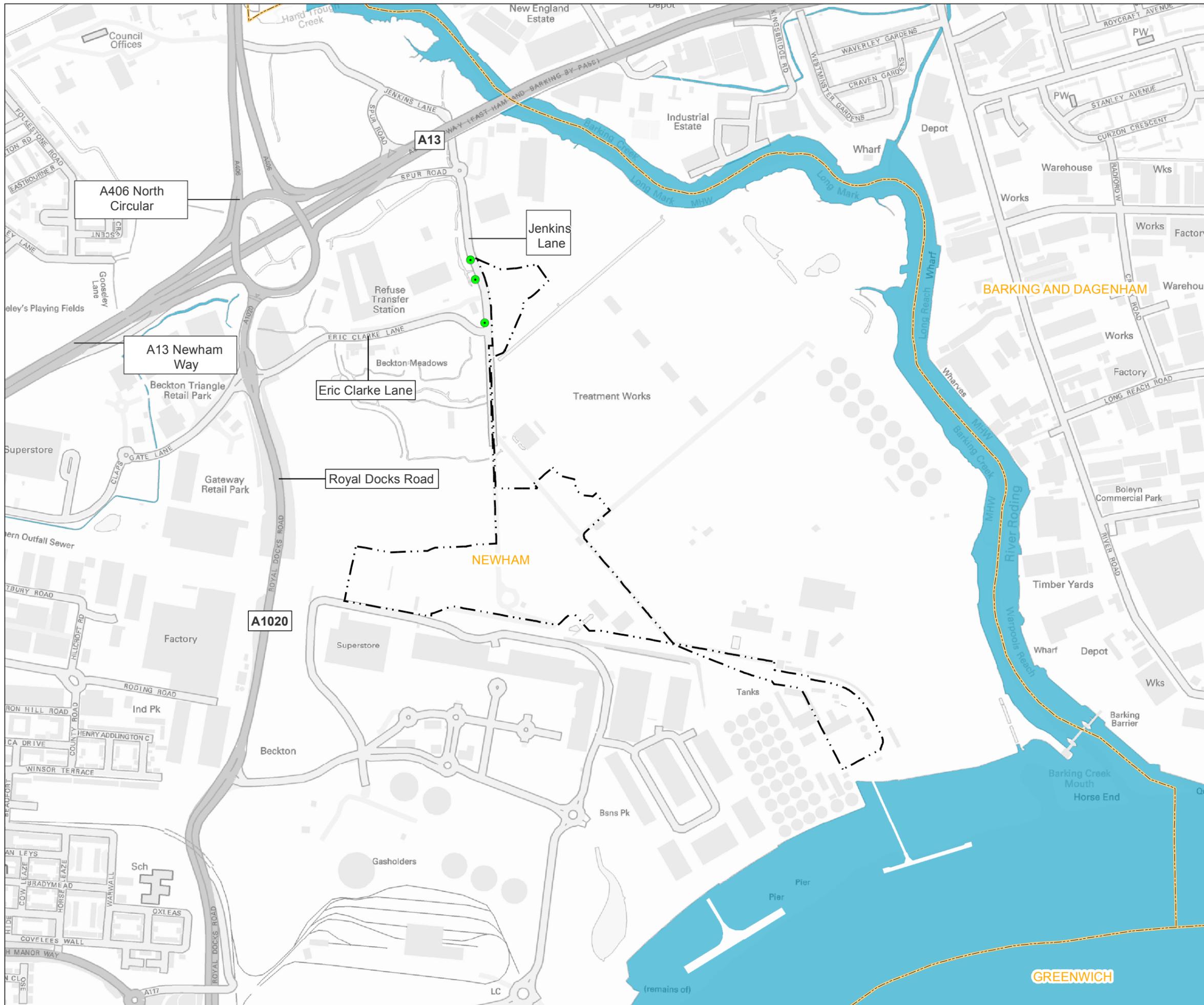
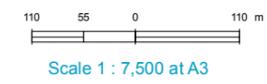
Location
Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
Transport Assessment
 Transport - Baseline, Construction and Development case traffic flow (PM peak hour)
 Figure 26.4.6
 1PL03-TT-50931
 January 2013





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



FOR INFORMATION

Location
Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
Transport Assessment
 Transport - accident locations

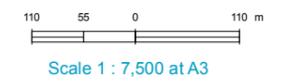
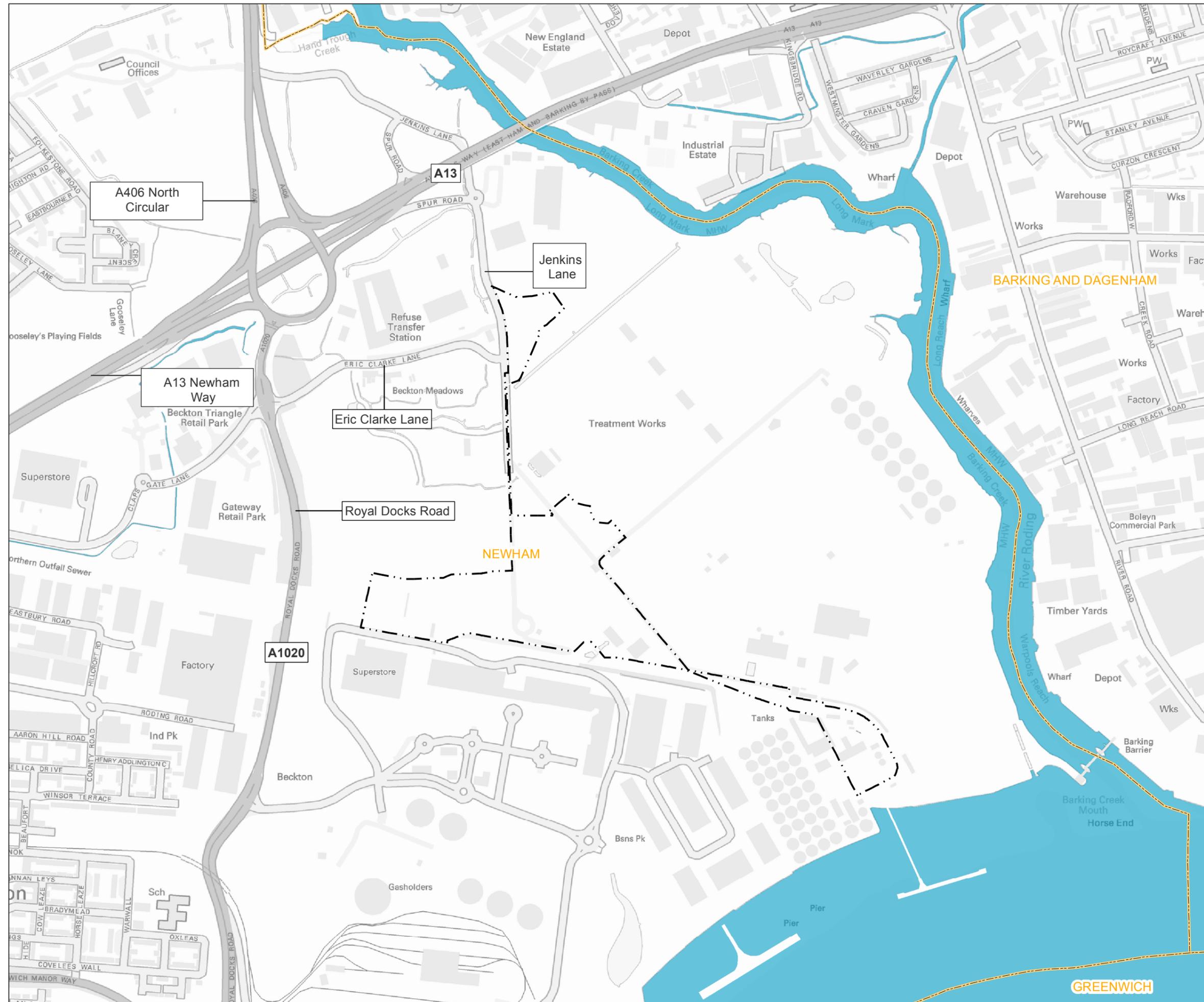
Figure 26.4.7
 1PL03-TT-50752
 January 2013



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- Key**
- Limits of Land to be Acquired or Used
 - Local authority boundary

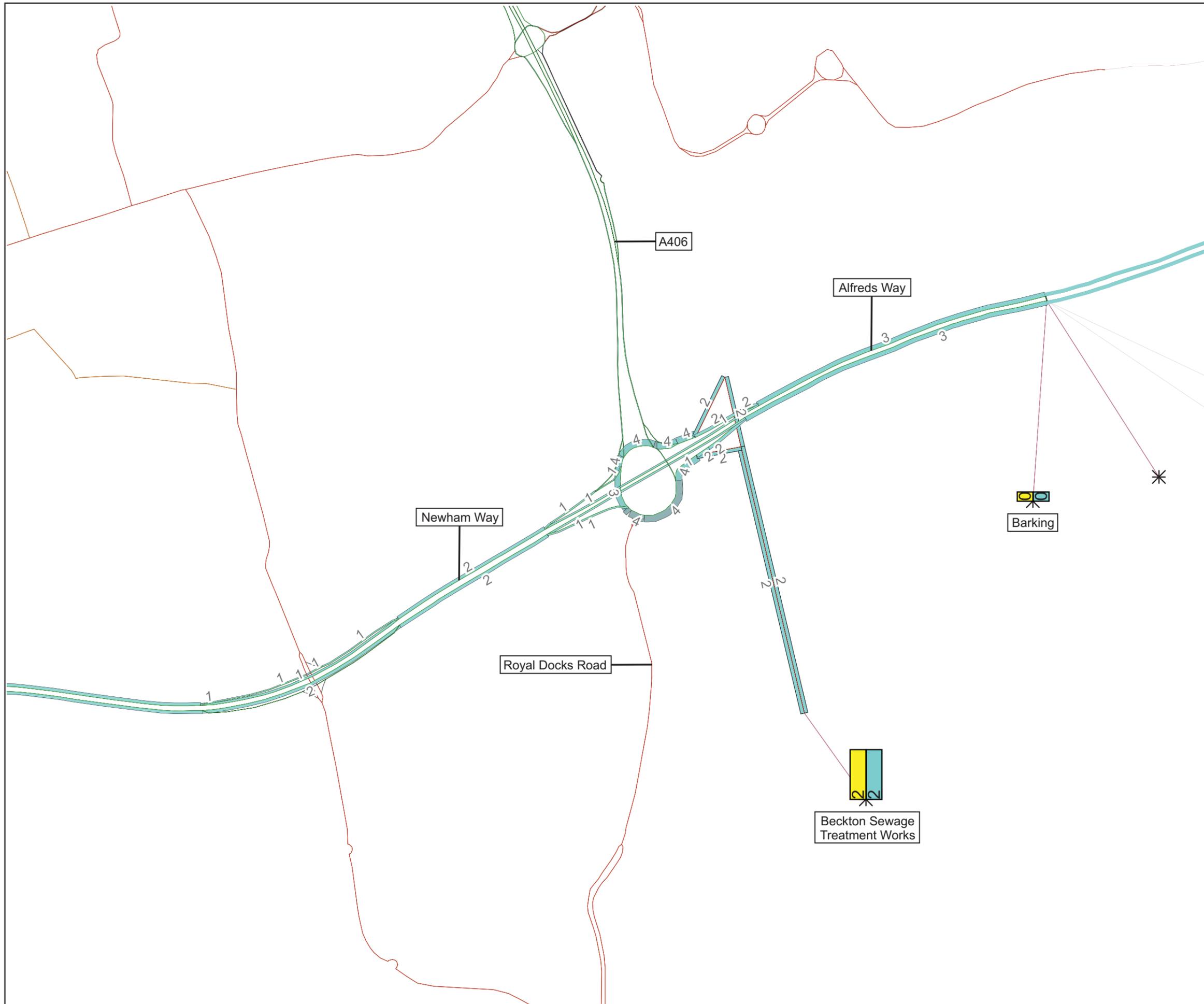


FOR INFORMATION

Location
Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
Transport Assessment
 Transport - pedestrian and cyclist accidents by severity
 Figure 26.4.8
 1PL03-TT-50836
 January 2013





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
Beckton Sewage Treatment Works
 London Borough of Newham

Document Information
Transport Assessment
 Hourly Construction Lorry Movements -
 Site Year 2 of Construction

Figure 26.5.1
 1PL03-TT-50880



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