

North London Waste Authority  
**North London Heat and Power  
Project**

Preliminary Environmental  
Information Report Volume 2  
Appendix 9.1 Transport  
Assessment Methodology

Issue for Consultation

May 2015

Arup

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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# 1 Transport Assessment Methodology

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## 1.1 Introduction

- 1.1.1 This appendix sets out the methodology for assessing the likely significant effects of the Project on transport.
- 1.1.2 An Interim Transport Report (ITR) has also been prepared. This will form the basis of the Transport Assessment (TA) which will support the application for development consent for the Project. The transport assessment presented in Vol 2 Section 9 of the PEIR draws on the data presented in, and the conclusions of, the ITR which is appended to the PEIR at Vol 2 Appendix 9.2.
- 1.1.3 The transport-related environmental effects considered in this assessment have been broadly categorised as follows:
- effects on road users in terms of delay due to route changes or changes in traffic flow conditions on routes ('road users' would include cars, motorcycles, buses, taxis and commercial vehicles) and/or road safety;
  - effects on public transport users due to changes in demand or provision;
  - effects on pedestrians due to new or diverted routes or changes in pedestrian volumes, including a consideration of delay, amenity, severance and road safety;
  - effects on cyclists due to changes to the local cycle network or to cyclist volumes, including a consideration of delay, amenity, severance and road safety; and
  - effects on equestrians due to changes to local equestrian routes, including a consideration of delay, amenity, severance and road safety.
- 1.1.4 This section sets out the methodology used to determine the effects of the Project on each of these receptor groups in transport terms. The assessment has not included effects on parking or users of the River Lee Navigation because all parking would be on the site and there would be no additional trips on the river during construction or operation of the Project. Effects are assessed for the various stages associated with the Project:
- construction (Phases 1-3 of the Project);
  - operation (Phases 1-4 of the Project);
  - decommissioning; and
  - effect of the Project in combination with other developments close to the Application Site (i.e. cumulative effects).
- 1.1.5 This appendix is divided into the following parts:

- engagement – describing a summary of comments included in the Scoping Opinion and through further stakeholder engagement and how these comments have been addressed;
- legislation and guidance – detailing requirements of the relevant National Policy Statements (NPS), how these have been addressed and additional guidance relevant to the assessment;
- methodology for establishing baseline conditions; and
- methodology for the assessment of construction, operation decommissioning and cumulative effects.

## 1.2 Engagement

- 1.2.1 The Scoping Report recommended that transport be scoped out from the EIA. The Scoping Opinion did not however agree that the provision of the Transport Assessment alone would fulfil the information required to assess the significant effects of transport and traffic on the environment. Based on the Scoping Opinion, transport has been scoped into the EIA to assess the transport effects on environmental receptors.
- 1.2.2 Stakeholder engagement on transport has been undertaken with Transport for London (TfL) and the Greater London Authority (GLA), the London Borough of Enfield (LB Enfield), the Highways Agency (HA), the Canal and River Trust, Sustrans and Network Rail.
- 1.2.3 Key issues raised included the scope and methodology of the transport assessment, ensuring the ‘busiest case scenario’ was assessed, and the need to explore the potential to make use of water transport. These issues have been addressed in the methodology by ensuring that the scope of the TA (and hence the subsequent assessment of the effects identified in it which feeds through to the EIA) is appropriate, including ensuring that the ‘busiest case scenario’ is assessed.
- 1.2.4 This appendix sets out all transport-specific comments related to the EIA received and a response to each of those comments, showing how the comment is addressed in the PEIR. Several of the comments are in relation to the TA which will be submitted as part of the application for development consent for the Project. The ITR appended to at Vol 2 Appendix 9.2 will form the main body of the TA. The ITR provides details on the transport effects of the Project and the TA, once complete, will do the same. These effects are then referenced in the PEIR for the purpose of assessing their effect on the identified receptors. It is therefore felt that it is relevant to include the comments here even though they do not focus specifically on the EIA. Within the table responses refer to the TA rather than the ITR since this is the final form this document will take.

Vol 2 Appendix 9.1 Table 1: Transport engagement responses

Organisation and date	Comment	Response
TfL (September 2014)	<p><i>a. TfL's Transport Assessment best practice advice should be followed.</i></p> <p><i>b. An updated TA scope to be submitted to TfL for review.</i></p> <p><i>c. TfL supports the principal of the development as helping to meet London needs and future growth.</i></p> <p><i>d. TfL supports the proposed access strategy for the site; TfL would need to know that access can work safely in the future and take account of non-motorised modes.</i></p> <p><i>e. Scenario testing proposed is acceptable to TfL – this may need further work in a revised scope, sensitivity testing only if necessary.</i></p> <p><i>f. Car and cycle parking needs to be related to London Plan standards, operational needs and overall management including during construction.</i></p> <p><i>g. Impact on TfL and Borough's areas of responsibility should be assessed. Mitigation agreed with each authority.</i></p> <p><i>h. TfL would seek to review information and identify gaps. TfL aim to seek appropriate mitigation so we can support the granting of the DCO.</i></p> <p><i>i. TfL needs to understand how the proposals translate into transport impacts – we will verify where we can and rely on the expertise of the NLWA.</i></p> <p><i>j. Walking, cycling and public transport access may change in relation to other proposals in this area. TfL would seek options to improve access to site and encourage mode shift where practicable.</i></p> <p><i>k. We expect DSP to be prepared for this site though we understand that the NLWA can influence logistics from collection authorities and only directly control a proportion of movements to site. .</i></p> <p><i>l. Water freight study is welcome and this may require a workshop with TfL, Canal and Rivers Trust, NLWA and relevant consultants before the recommendations are finalised.</i></p> <p><i>m. The opportunity to reduce this site's operational impact is shared with the seven collection authorities as well as through Travel Plan and DSP.</i></p> <p><i>n. TfL is most concerned about construction impact. This should be assessed in the TA and mitigation proposed including CLP and other measures.</i></p> <p><i>o. Programme information is useful for TfL, particularly where there is likely need for approval</i></p>	<p>TfL's comments are noted and are addressed in the TA.</p> <p>An updated TA Scoping Report was issued to TfL on 30 September 2014 and a follow-up meeting was held on 6 March 2015.</p>

Organisation and date	Comment	Response
	<i>from TfL during the planning process and postplanning.”</i>	
Secretary of State (November 2014)	<b>Traffic and Transport:</b> <i>“this topic is proposed to be scoped out on the basis that relevant information will be within the separate Transport Assessment which will accompany the DCO application. The Secretary of State does not agree that the provision of the Transport Assessment alone will necessarily fulfil the information required to assess the significant effects of transport and traffic on the environment. Therefore, the assessment of impacts from traffic and transport should be presented in the ES. The assessment should also include consideration of inter-relationships between potential transport impacts and other environmental aspects (e.g. air quality, noise/vibration).”</i> (para 3.11 bullet v)	The Transport Assessment (TA) is a technical document that considers the aspects required by statutory authorities such as TfL and LB Enfield, primarily impacts to networks and not necessarily ‘EIA’ receptors. A streamlined Transport chapter within the ES (and PEIR) has therefore also been prepared. This does not repeat information from the TA but signposts to the relevant sections of the appended TA while providing a specific assessment of transport effects on environmental receptors.  The effects of transport on air quality and noise and vibration are considered in Vol 2 Sections 2 and 7 respectively.
Secretary of State (November 2014)	<b>Traffic and Transport:</b> <i>“3.54 The Secretary of State welcomes the applicant’s commitment to agree the scope of the Transport Assessment (TA) with local authority highways officers and Transport for London (TfL). The Highways Agency (HA) do not object to the Project (see Appendix 2 of the Opinion for a copy of their response), however the Secretary of State encourages the applicant and the HA to also discuss and agree the scope of the assessment and the information which should be included in the ES.”</i> (para 3.54)	TfL is responsible for the Transport for London Road Network (TLRN) roads in the vicinity of the Application Site. LB Enfield is responsible for the remainder of the road network in the vicinity of the Application Site. The HA has been consulted and has confirmed that it has no comments on the Project.
Secretary of State (November 2014)	<b>Traffic and Transport:</b> <i>“The Secretary of State notes the potential for both the existing and proposed waste management facilities to be operational at the same time (during the proposed ‘phased move’). The ES should describe and assess the potential worst case transport impacts that could occur during such a scenario. This should also consider the potential for more workers to be travelling to and from the site during this time.”</i> (para 3.55)	The following trip generation scenarios are included in the TA (and therefore forms the basis of the EIA transport assessment):  1. Construction phases with the existing facilities in operation (Phases 1b, 1c and 1d). The new RRF has been included in the appropriate phases (Phase 1c and 1d);  2. Transition period in which the ERF and RRF

Organisation and date	Comment	Response
		<p>are completed and are part-operational alongside the EfW (Phase 2);</p> <p>3. Completed ERF when the existing EfW is decommissioned and demolished (Phase 3); and</p> <p>4. Completed ERF and RRF (Phase 4).</p> <p>The TA includes construction worker trips generated during each stage of construction. Phase 2 represents the worst-case scenario in transport terms when both facilities are temporarily operational at the same time.</p>
Secretary of State (November 2014)	<p><b>Traffic and Transport:</b> <i>“The impacts resulting from the delivery of construction materials and the removal of waste from the site (including that which results from decommissioning of the existing facility) should be assessed. This should include consideration of the likely modes of transport and the vehicle routes. Where certain routes are proposed to minimise/avoid adverse effects, the ES should explain how the use of these would be achieved.”</i> (para 3.56)</p>	<p>The TA includes trips associated with the delivery of construction materials and removal of waste from the site (including during the decommissioning of the existing facility).</p> <p>Details of access routes are set out in Vol 1 Section 3 and the TA. Restrictions required with regard to access routes (e.g. time restrictions) are set out in the Interim CoCP.</p>
Secretary of State (November 2014)	<p><b>Traffic and Transport:</b> <i>“The geographical origin of the proposed fuel (waste) has not been identified in the Scoping Report. The ES should identify any assumptions which have been made regarding the sourcing of the fuel, in particular its origin and how transporting the fuel to site has been assessed. The ES should also identify the anticipated quantity of by products, bottom ash and flue gas treatment residues that would be generated as a result of the Project and the anticipated number of associated vehicle movements, including vehicle types. If the vehicle depot and servicing facility is to be relocated off-site, then the ES should also assess the transport implications of this”</i> (para 3.57)</p>	<p>Summary details of the origin of fuel and disposal of residual waste (by-products) are contained within Vol 1 Section 3 and the TA. Full details of trips associated with fuel movement and waste disposal are provided in Section 5 of the TA.</p> <p>The vehicle depot is located within the Application Site boundary.</p>
Secretary of State (November 2014)	<p><b>Traffic and Transport:</b> <i>“The Secretary of State notes that the Project is in the vicinity of existing railway lines, roads and water bodies. The applicant is therefore encouraged to consult with Network Rail, the Canal and River Trust and other relevant bodies regarding any potential impacts on these assets and their users, for example in</i></p>	<p>The TA considers the impact of employees on rail capacity. However the use of rail or water for construction or operation purposes is not considered therefore it is considered</p>

Organisation and date	Comment	Response
	<i>terms of disruption. The methodology for any assessment required should be agreed, together with the design and likely effectiveness of measures proposed to mitigate any significant adverse effects identified.</i> (para 3.58)	that there would be no disruption to these modes. A meeting was held with the Canal and River Trust on 6 March 2015. No specific concerns on transport were raised.
Secretary of State (November 2014)	<b>Traffic and Transport:</b> <i>“The ES should clarify whether any Public Rights of Way (PRoW) including bridleways and byways would be affected by the Project. Any impacts on PRoW and the wider network of routes should be assessed.”</i> (para 3.59)	A streamlined transport assessment has been undertaken to consider the effects on users of these PRoW, (e.g. Lee Park Way which is used by cyclists) with cross references provided to the relevant parts of the TA.
Secretary of State (November 2014)	<b>Traffic and Transport:</b> <i>“The potential impacts (during demolition/construction and operation) on the use of the wharf that is leased by the Edmonton Sea Cadets should be assessed. This issue is also raised in the consultation response from the Canal and River Trust (see Appendix 2).”</i> (para 3.60)	A report into the feasibility of transporting waste and material by water is included in Appendix H of the ITR. The wharf would not be used for waterborne transport of construction materials or operational waste so there would be no impacts. The effects of the Project on the Edmonton Sea Cadets are considered in Vol 2 Section 8 (Socio-economics).
Secretary of State (November 2014)	<b>Traffic and Transport:</b> <i>“Mitigation measures should be considered within the ES, such as a travel plan and sourcing materials so as to minimise transport.”</i> (para 3.61).	Travel plans have been prepared and appended to the TA for both construction and operational phases. The plans contain measures for all transport modes e.g. car sharing and a shuttle bus for employees. The measures proposed within the travel plan would be secured via the Interim CoCP and Design Code Principles.
Secretary of State (November 2014)	<b>Traffic and Transport:</b> <i>“The relationship with other potential impacts of the Project (e.g. recreation, noise/vibration and air quality) should be considered; and cross reference should be made to the relevant chapters of the ES.”</i> (para 3.62)	The effects of transport on air quality and noise and vibration are considered in Vol 2 Sections 2 and 7 respectively. Additionally Vol 2 Section 11 contains an assessment of interactive effects.

Organisation and date	Comment	Response
Canal and River Trust (November 2014)	<p><i>"[...] the Canal &amp; River Trust considers that the following information should be provided as part of the environmental statement:</i></p> <p><i>Feasibility/viability study for the transport of waste and materials using the blue ribbon network during the demolition/construction phase and the operational phase following completion;</i></p> <p><i>Information about how the proposal will affect the use of the wharf that is leased by the Edmonton Sea Cadets during both the construction period and following completion". (Appendix 2)</i></p>	<p>A report into the feasibility of transporting waste and material by water is included in Appendix H of the ITR.</p> <p>The wharf would not be used for waterborne transport of construction materials or operational waste so there would be no impacts.</p> <p>The Project has been discussed with the Canal &amp; River Trust at a meeting on 6 March 2015.</p> <p>No specific concerns were raised with respect to transport.</p>
Greater London Authority (January 2015)	<p><b>Water transport:</b> Transport by river should be considered in line with policy 7.26 of the London Plan and Mayor's Transport Strategy for demolition/construction and operational stage (especially delivery of waste to the site).</p>	<p>A study into the feasibility of the use of water transport is provided in the TA and summarised Vol 2 Section 9 (Transport).</p>
Greater London Authority (January 2015)	<p><b>Transport assessment:</b> Transport for London (TfL) provided comments on the scope of the transport assessment in September 2014. TfL's summary comments were:</p> <ol style="list-style-type: none"> <li>TfL Transport Assessment best practice advice should be followed.</li> <li>An updated TA scope to be submitted to TfL for review.</li> <li>TfL supports the principal of the development as helping to meet London needs and future growth.</li> <li>TfL supports the proposed access strategy for the site; TfL would need to know that access can work safely in the future and take account of non-motorised modes.</li> <li>Scenario testing proposed is acceptable to TfL – this may need further work in a revised scope, sensitivity testing only if necessary.</li> <li>Car and cycle parking needs to be related to London Plan standards, operational needs and overall management including during construction.</li> <li>Impact on TfL and Borough's areas of responsibility should be assessed. Mitigation agreed with each authority.</li> <li>TfL would seek to review information and identify gaps. TfL aim to seek appropriate mitigation so we can support the granting of the DCO.</li> <li>TfL needs to understand how the proposals translate into transport impacts – we will verify</li> </ol>	<p>The comments received have been addressed throughout the TA and Vol 2 Section 9 (Transport).</p> <p>Responses to particular requests have been addressed as follows:</p> <ol style="list-style-type: none"> <li>TfL Transport Assessment best practice advice has been followed in the preparation of the assessment.</li> <li>An updated TA scope was submitted to TfL in September 2014.</li> <li>The safety of the access and its effect on non-motorised modes is assessed in the TA/PEIR.</li> <li>The elements mentioned have been taken into account in the proposed level of parking provision.</li> <li>The impact on TfL and Borough's areas of responsibility is assessed. It is not anticipated that any mitigation would be required but if so it would be agreed with the relevant authority.</li> </ol>

Organisation and date	Comment	Response
	<p>where we can and rely on the expertise of the NLWA.</p> <p>j. Walking, cycling and public transport access may change in relation to other proposals in this area. TfL would seek options to improve access to site and encourage mode shift where practicable.</p> <p>k. TfL expect Delivery and Service Plan to be prepared for this site though we understand that the NLWA can influence logistics from collection authorities and only directly control a proportion of movements to site.</p> <p>l. Water freight study is welcome and this may require a workshop with TfL, Canal and Rivers Trust, NLWA and relevant consultants before the recommendations are finalised.</p>	<p>i. The TA outlines the transport impact of the Project.</p> <p>j. Any changes to walking, cycling and public transport access can be taken advantage of through the travel plan process.</p> <p>k. A Servicing Management Plan (SMP) is expected to be agreed with LB Enfield.</p> <p>l. The Water freight study has been completed and is included in the TA (Appendix H of Vol 2 Appendix 9.2).</p>
Highways Agency (January 2015)	No comments at this time	No response required.
London Borough of Enfield (January 2015)	<p><b>Transport Assessment</b></p> <p>The LPA understand that works to prepare the Transport Assessment (TA) are underway and at this stage we would reserve our position in the matter of the potential transport implications of the scheme until such time as a TA can be scrutinised. Please note that the Edmonton EcoPark SPD includes minimum requirements for the TA and the submission must take account of this.</p>	The TA has been prepared with consideration for the Edmonton EcoPark SPD.
London Borough of Enfield (January 2015)	<p><b>Trip Generation</b></p> <p>There is a need to ensure the existing baseline employee trips are done before the site begins to close as opposed to 'estimating' what it should be based on the site size. Use the real figures whilst the site is fully operational.</p>	Existing baseline employee trips have not been used in the preparation of the TA and the employee mode share has been derived based on TRICS (Trip Rate Information Computer System) and from first principles. The Applicant will seek to obtain data prior to the commencement of construction so that it can be used to inform the Travel Plan targets of the full Travel Plans.
London Borough of Enfield (January 2015)	<p><b>Effect of Proposed Development</b></p> <p>There is a need to ensure the impact on the peak hours of the local network is covered and as a minimum the junctions of Fore Street St/A406, Cook's Ferry Roundabout, Great Cambridge/A406, and Montagu Street/ Conduit Way are covered (as per SPD). The impact from the construction should also be looked at in terms of an estimated profile of trip numbers over time</p>	The TA includes as assessment of the likely additional trips at the junctions of Fore Street St/A406, Cook's Ferry Roundabout, Great Cambridge/A406, and Montagu Street/ Conduit Way. A daily profile of trips

Organisation and date	Comment	Response
	and included in the TA. The actual detail of how trips/ deliveries/ parking etc will be managed should be put in the Construction Logistics Plan.	is provided for each Project development phase taking account of construction and operational traffic. Detail of how trips/ deliveries/ parking etc. would be managed is set out in the Interim CoCP.
Sustrans	No concerns at this time but suggest that Sustrans <i>Handbook for cycle-friendly design</i> <sup>1</sup> and TfL's <i>London Cycle Design Standards</i> <sup>2</sup> are used to inform the design.	The Sustrans and TfL guidance have both been considered in the design of cycle facilities associated with the Project.
Network Rail	No comments received to date.	No response required.

### 1.3 Legislation and guidance

- 1.3.1 The assessment takes into account relevant national and international legislation and guidance.
- 1.3.2 There are two NPS' of direct relevance to the Project. These are:
- EN-1 – Overarching National Policy Statement for Energy
  - EN-3 – National Policy Statement for Renewable Energy Infrastructure
- 1.3.3 Vol 2 Appendix 9.1 Table 2 details the requirements from EN-1 which are relevant to transport. How this requirement has been addressed and where further details on how the requirement has been addressed is also described.

Vol 2 Appendix 9.1 Table 2: Transport NPS EN-1 requirements

Requirements of NPS EN-1	How the requirement is addressed	Location of where to find further detail
Para 5.13.2 – <i>“If the project is likely to have significant transport implications, the applicant’s ES should include a transport assessment, using the NATA/WebTAG methodology stipulated in Department for Transport guidance, or any successor to such methodology. Applicants should consult the Highways Agency and Highways Authorities as appropriate on the assessment and mitigation.”</i>	An ITR (which will form the main body of the TA) has been produced with reference to the DCLG National Planning Practice Guidance on Travel plans, transport assessments and statements in decision-taking <sup>3</sup> (which has superseded the DfT guidance).  The Highways Agency were consulted but had no comments on the Project which does not affect the strategic road network (SRN).	The ITR is provided in Vol 2 Appendix 9.2 of the PEIR.
Para 5.13.4 – <i>“Where appropriate, the applicant should prepare a travel plan including demand management</i>	Two Travel Plans are being produced to support the application for development consent for the	The Framework Travel Plans are provided in Appendix

<sup>1</sup> Sustrans (2014) Sustrans Design Manual: Handbook for cycle-friendly design [online]

<sup>2</sup> Transport for London (2014) London Cycle Design Standards [online]

<sup>3</sup> Department for Communities & Local Government (2015) Planning Practice Guidance: Travel plans, transport assessments and statements in decision-taking [online]

Requirements of NPS EN-1	How the requirement is addressed	Location of where to find further detail
<i>measures to mitigate transport impacts. The applicant should also 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.”</i>	Project: one for the construction phases and one for the final operational phase (Phase 4).	I (Construction) and Appendix J (Operation) of the ITR which is provided in Vol 2 Appendix 9.2.
Para 5.13.5 – <i>“If additional transport infrastructure is proposed, applicants should discuss with network providers the possibility of co-funding by Government for any third-party benefits. Guidance has been issued in England which explains the circumstances where this may be possible, although the Government cannot guarantee in advance that funding will be available for any given uncommitted scheme at any specified time.”</i>	No additional infrastructure is required other than the provision of two new access points from Lee Park Way, Deephams Farm Road and widening of the existing southern access on Advent Way.	Design and Access Statement and TA.
Para 5.13.6 – <i>“A new energy NSIP may give rise to substantial impacts on the surrounding infrastructure”. The applicant should have “sought to mitigate these impacts, including during the construction phase of the development. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, requirements to mitigate adverse impacts on the transport networks arising from the development” should be considered. “Applicants may also be willing to enter into planning obligations for funding infrastructure and otherwise mitigating adverse impacts.”</i>	The Project is not anticipated to give rise to any significant effects.	The ITR is provided in Vol 2 Appendix 9.2.
Para 5.13.8 – <i>“Where mitigation is needed, possible demand management measures must be considered and if feasible and operationally reasonable, required, before considering requirements for the provision of new inland transport infrastructure to deal with remaining transport impacts.”</i>	Mitigation measures, such as the provision of cycle parking, are implicit within the design. The Travel Plans for the Project include measures such as the provision of shuttle services to encourage travel by public transport during construction. The potential to operate a shuttle bus for the operation of the scheme will be reviewed as part of the Operational Travel Plan. Walking and cycling will also be encouraged. No new transport infrastructure is proposed.	The Framework Travel Plans are provided in Appendix I (Construction) and Appendix J (Operation) of the ITR which is provided in Vol 2 Appendix 9.2.
Para 5.13.9 – <i>“The IPC should have regard to the cost-effectiveness of</i>	The Travel Plans for the Project will include measures such as the	The Framework Travel Plans are

<b>Requirements of NPS EN-1</b>	<b>How the requirement is addressed</b>	<b>Location of where to find further detail</b>
<i>demand management measurements compared to new transport infrastructure, as well as the aim to secure more sustainable patterns of transport development when considering mitigation measures.</i>	provision of shuttle services to encourage travel by public transport. Walking and cycling will also be encouraged. No new transport infrastructure is proposed.	provided in Appendix I (Construction) and Appendix J (Operation) of the ITR which is provided in Vol 2 Appendix 9.2.
Para 5.13.10 – <i>“Water-borne or rail transport is preferred over road transport at all stages of the project, where cost-effective.”</i>	Water-borne transport utilising the River Lee Navigation has been assessed. The conclusions of the assessment were that the costs of providing water transport outweighs the benefits (including the environmental benefits).	A detailed study of the use of water-borne transport is provided in Appendix H of the ITR which is provided in Vol 2 Appendix 9.2.
Para 5.13.11 of this NPS notes that <i>“the IPC may attach requirements to a consent where there is likely to be substantial HGV traffic.”</i>	The composition of traffic is not expected to vary significantly from that of the existing site and there would not be a significant increase in HGV movements during construction.	The ITR is provided in Vol 2 Appendix 9.2.
<i>“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;</i>	HGV movements would be controlled through the implementation of the Interim CoCP during construction and the Servicing Management Plan (SMP) during operation. .	Details are provided in the Interim CoCP and in the ITR, which is provided in Vol 2 Appendix 9.2.
<i>“make sufficient provision for HGV parking, whether 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;</i>	Sufficient parking is provided on-site for LWL operational vehicles. Parking would be provided on the Laydown Area for construction vehicles.	Details are provided in the Interim CoCP and in the ITR, which is provided in Vol 2 Appendix 9.2.
<i>“ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force.”</i>	Arrangements for reasonably foreseeable normal loads are detailed in the Interim CoCP and will be agreed with TfL and LB Enfield.	Details are provided in the Interim CoCP.
Para 5.13.12 – <i>“If an applicant suggests that the costs of meeting any obligations or requirements would make the proposal economically unviable this should not in itself justify the relaxation by the IPC of any obligations or requirements needed to secure the mitigation.”</i>	The Applicant is committed to ensuring that all reasonable obligations are met.	N/A

1.3.4 Vol 2 Appendix 9.1 Table 3 details the requirements from EN-3 which are relevant to transport. How this requirement has been addressed and where further details on how the requirement has been addressed is also described.

Vol 2 Appendix 9.1 Table 3: Transport NPS EN-3 requirements

Requirements of NPS EN-3	How the requirement is addressed	Location of where to find further detail
<b>Para 2.5.25 of this NPS makes reference to requirements in EN-1 Section 5.13. These references and additional requirements are detailed below.</b>		
<i>“Government policy encourages multi-modal transport and the IPC should expect materials (fuel and residues) to be transported by water or rail routes where possible.”</i>	Water-borne transport utilising the River Lee Navigation has been assessed. The conclusions of the research were that the costs of providing water transport outweighs the benefits (including the environmental benefits).	A detailed study of the use of water-borne transport is provided in Appendix H of the ITR which is provided in Vol 2 Appendix 9.2.
<i>“Applicants should locate new biomass or waste combustion generating stations in the vicinity of existing transport routes wherever possible. Although there may in some instances be environmental advantages to rail or water transport, whether such methods are viable is likely to be determined by the economics of the scheme.”</i>	The Project is on the site of an operational EfW facility and can make use of existing transport routes. It is located close to the A406 which is a route of strategic importance in north London.	Refer to Section 3 of the ITR (Vol 2 Appendix 9.2) and Vol 2 Section 9 (Transport).
<i>“Road transport may be required to connect the site to the rail network, waterway or port. Therefore, any application should incorporate suitable access leading off from the main highway network. If the existing access is inadequate and the applicant has proposed new infrastructure, the IPC will need to be satisfied that the impacts of the new infrastructure are acceptable as set out in Section 5.13 of EN-1.”</i>	Two new accesses are proposed to ensure access to the Project is adequate and would ensure the continued operation of the site in the most efficient manner. The existing southern access on Advent Way would also be widened.	Refer to Section 4 of the ITR (Vol 2 Appendix 9.2) and Vol 2 Section 9 (Transport).

- 1.3.5 In addition, a review of potential transport environmental effect assessment methods has been undertaken to ensure the most appropriate methods were used in the assessment.

**Department for Communities & Local Government (DCLG) – Planning Practice Guidance: Travel plans, transport assessments and statements in decision-taking<sup>3</sup>**

- 1.3.6 The DCLG Planning Practice Guidance, a web-based resource, replaces the DfT Guidance on Transport Assessments (2007) which was withdrawn in 2014. The guidance sets out the methodological approach for completing a TA. The transport impacts identified in the TA<sup>4</sup> are then assessed in the environmental assessment (reported in the PEIR) for their

<sup>4</sup> ITR rather than TA for the purposes of the PEIR.

effect on the identified receptors. The TA has been written in accordance with this guidance.

- 1.3.7 Since the guidance does not cover environmental effect assessment, further specific environmental effect assessment guidance is required to develop the methodology for the main environmental effect assessment stage.

#### **Transport for London (TfL) – Transport Assessment Guidance<sup>5</sup>**

- 1.3.8 The TfL Transport Assessment Guidance provides guidance on assessing all transport effects of a development. It provides an overall approach for establishing baseline conditions and potential effects in general transport assessment terms. The TA<sup>6</sup> has been written in accordance with this guidance.

- 1.3.9 Since the guidance does not cover environmental effect assessment, further specific environmental effect assessment guidance is required to develop the methodology for the main environmental effect assessment stage.

#### **Department for Transport (DfT) – TAG Unit A3: Environmental Impact Appraisal<sup>7</sup>**

- 1.3.10 The DfT guidance for environmental effect appraisal recommends using the Highways Agency DMRB guidance to undertake the environmental effect assessment itself.

#### **Highways Agency – Design Manual for Roads and Bridges<sup>8</sup>**

- 1.3.11 The DMRB guidance is specifically for the assessment of transport schemes rather than developments generally. However, aspects of its recommended methodological approach are relevant to the assessment of non-transport schemes which have transport impacts and can be used for this purpose too. The methodological approach outlined in this document therefore uses elements of the DMRB guidance.

#### **IEA [IEMA] – Guidelines for the Environmental Assessment of Road Traffic<sup>9</sup>**

- 1.3.12 The IEMA guidance provides a methodology and approach which is appropriate for conducting a transport environmental effect assessment of a development. The approach can be complemented with use of the DMRB guidance in the development of transport environmental effect assessment methodology where appropriate.

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<sup>5</sup> Transport for London (2015) Transport Assessment Guidance [online]

<sup>6</sup> ITR rather than TA for the purposes of the PEIR.

<sup>7</sup> Department for Transport (2014) TAG UNIT A3: Environmental Effect Appraisal

<sup>8</sup> Highways Agency (1993) Design Manual for Roads and Bridges (DMRB): Volume 11 Section 3 Parts 3, 8 9 and 12 ('Disruption Due to Construction', 'Pedestrians, Cyclists, Equestrians and Community Effects', 'Vehicle Travellers' and 'Impact of Road Schemes on Policies and Plans')

<sup>9</sup> Institute of Environmental Assessment (1993, now the Institute of Environmental Management and Assessment) Guidelines for the Environmental Assessment of Road Traffic

## Guidance used for transport environmental assessment

- 1.3.13 Both the DMRB and the IEMA guidance documents were written over twenty years ago and so there is a risk that parts of the guidance are now outdated. However, since there is no more recent guidance available, the approach taken for the assessment has been to use the DMRB and IEMA guidance as a base approach and modify it where appropriate and based on professional judgement, to account for transport conditions specific to the Project and for the area within which the Project is located. The TfL guidance has been used for assessing what the transport effects of the Project are (as reported in the TA).

## 1.4 Baseline conditions

### Current baseline

- 1.4.1 Existing transport conditions have been identified by means of desktop research and online data sources, analysis using Geographic Information Systems (GIS), site visits and surveys. These are described in the following sections.

#### *All modes*

- 1.4.2 A number of site visits were undertaken in 2012, 2013 and 2014 to verify the current local transport infrastructure.

#### *Road users*

- 1.4.3 The local highway network within the vicinity of the Application Site has been considered in order to understand the current traffic flows in the vicinity of the Application Site. This includes but is not limited to A406 North Circular Road, Advent Way, Eley Road, A1055 Meridian Way, Ardra Road and A1009 Hall Lane. These are shown in Vol 2 Figure 9.1.

- 1.4.4 Traffic surveys were undertaken in May 2013 and October 2014. Details of the baseline conditions on the local highway network and the traffic surveys that were undertaken are provided in Section 4 of the ITR (Vol 2 Appendix 9.2).

#### *Public transport users*

- 1.4.5 A desktop based Public Transport Accessibility Level (PTAL) assessment of the Application Site has been undertaken. The PTAL has been calculated using TfL's approved PTAL methodology<sup>10</sup>. This assumes a walking speed of 4.8km/h. It considers rail stations within a 12 minute walk (960m) and bus stops within an eight minute walk (640m) as accessible.
- 1.4.6 The numbers of existing bus, London Underground and rail services were calculated using March 2015 timetable information.

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<sup>10</sup> PTAL is a detailed measure of the accessibility of a defined point to the public transport network, taking into account walk access time and service availability. TfL's summary document on PTAL measurement can be accessed at: <http://data.london.gov.uk/dataset/public-transport-accessibility-levels/resource/86bbffe1-8af1-49ba-ac9b-b3eacaf68137/proxy>

***Pedestrians***

- 1.4.7 The existing pedestrian network has been identified through desktop studies and site visits. The purpose of this review was to identify the existence, qualities, legibility and convenience of the existing pedestrian infrastructure. The review was based on professional judgement and details can be found in Section 3 of the ITR (Vol 2 Appendix 9.2).

***Cyclists***

- 1.4.8 In addition to a site visit, a desktop study was used to identify the existing local cycling infrastructure. The purpose of this review was to identify the existence, quantities, coherence and convenience of the existing cycling infrastructure. The review was based on professional judgement and details can be found in Section 3 of the ITR (Vol 2 Appendix 9.2).
- 1.4.9 There is no standard measure for assessing the distance from a development to cycling facilities. When assessing bus services, all services within 640m of the Application Site boundary are considered within accessible walking distance; this was therefore considered to be an appropriate catchment area for cycling facilities as well. All cycle parking and cycle routes within 640m are included within the baseline.

***Equestrians***

- 1.4.10 In addition to a site visit, a desktop study was used to identify the existing local equestrian network. The purpose of this review was to identify the existence and quality of local equestrian routes. The review was based on professional judgement and details can be found in Section 3 of the ITR (Vol 2 Appendix 9.2).
- 1.4.11 There is no standard measure for determining the area which should be considered when assessing local equestrian routes. As was the case with the assessment of the local cycle network, a 640m catchment area from the Application Site boundary was deemed to be appropriate for the assessment of equestrian routes.

**Receptor identification and sensitivity**

- 1.4.12 The significance of any effect is dependent upon both the sensitivity of the receptor affected and the magnitude of the effect. The criteria for determining receptor sensitivity varies by receptor. Vol 2 Appendix 9.1 Table 4 sets out the receptor sensitivity methodologies for the identified receptors based on baseline conditions.

Vol 2 Appendix 9.1 Table 4: Methodology for determining receptor sensitivity

Receptor	Description	Methodology for identifying sensitivity level
Road users	Road users on the road network in the immediate vicinity of the Application Site (i.e. access points)	Analysis of survey data to determine existing traffic conditions in the vicinity of the Application Site. The receptor sensitivity is identified as very low, low, medium or high based on professional judgement.
Public transport users	Public transport users travelling on bus, rail or Underground services in the vicinity of the Application Site	Desktop study to determine the availability of public transport services. The receptor sensitivity is identified as very low, low, medium or high based on professional judgement.
Pedestrians	Pedestrians using footways and pedestrian infrastructure in the vicinity	Desktop study on the availability of location of pedestrian routes. The receptor sensitivity is identified as very low, low, medium or high based on professional judgement.
Cyclists	Cyclists using cycle routes in the vicinity of the Application Site affected by the proposals	Analysis of survey data to determine existing traffic conditions in the vicinity of the Application Site and a desktop study on the availability of location of cycle routes. The receptor sensitivity is identified as very low, low, medium or high based on professional judgement.
Equestrians	Equestrians using the River Lee Navigation path/towpath.	Desktop study on the availability of location of equestrian routes. The receptor sensitivity is identified as very low, low, medium or high based on professional judgement.

### Future baseline

- 1.4.13 The future baseline has been determined using the same sources of information as the current baseline. Information available on expected changes to the transport networks was also used for the development of the future baseline. Full details of the methodology used in the development of the future baseline are included in Section 6 of the ITR contained in Vol 2 Appendix 9.2.
- 1.4.14 In addition, information on developments in the area close to the Application Site that have extant planning permissions has been used to

identify any additional future receptors for consideration in the baseline and assessment.

## **1.5 Construction and operation**

1.5.1 Each of the project phases is considered in terms of both construction and operational traffic, i.e. it is a combined assessment with the total traffic within each phase considered. Also, when considering the construction and operational effects of the Project on environmental receptors, the same significance criteria are used.

### **Assessment of project phases**

1.5.2 A number of trip generation scenarios are assessed:

- Phase 1a – site preparation and enabling works;
- Phase 1b – construction of RRF, EcoPark House and commence use of Laydown Area;
- Phase 1c – operation of RRF, EcoPark House and demolition/clearance of northern area;
- Phase 1d – construction of ERF;
- Phase 2: commissioning of ERF alongside operation of EfW facility, i.e. transition period;
- Phase 3: operation of ERF, RRF and EcoPark House, demolition of EfW facility; and
- Phase 4: operation of ERF, RRF and EcoPark House, i.e. final operational situation; and
- Decommissioning of ERF.

1.5.3 For the assessment of Phase 1, the assessment focuses on Phase 1d which is the 'busiest case scenario', generating the most trips (combined construction and operation trips) on the local transport network. For all other Phase 1 sub-phases, the effect of Project on the local transport network would be lower than that of Phase 1d.

### **Assessment area**

1.5.4 The assessment area for assessing impacts on road users (shown on Vol 2 Figure 9.2) focuses on the highway network in the vicinity of the application site including the following junctions:

- A406 North Circular Road/Advent Way (Cooks Ferry Roundabout);
- A406 North Circular Road/Montagu Road;
- A1055 Meridian Way/Conduit Lane;
- A406 North Circular Road/A1010 Fore Street; and
- A406 North Circular Road/A10 Great Cambridge Road.

- 1.5.5 The above junctions/links have been included as they have been specifically referenced in the Edmonton EcoPark Planning Brief<sup>11</sup>. The assessment area has also been discussed with TfL and LB Enfield.
- 1.5.6 The assessment area for assessing impacts on public transport users focuses on the public transport services identified in paragraphs 1.4.5-1.4.6.
- 1.5.7 The assessment area for assessing impacts on pedestrians, cyclists and equestrians focuses on the relevant local networks identified in paragraphs 1.4.7-1.4.11.

### Assessment method

- 1.5.8 Based on the approach recommended by the guideline documents discussed above, the process for the environmental effect assessment has been as follows:
1. To identify the different groups or receptors that would be affected by the transport effects of the Project;
  2. To develop a checklist of potential effects on the different groups/receptors;
  3. To develop a significance framework, setting out the levels of significance of effects on different users/receptors;
  4. To develop a baseline (to be used for comparison against the different phases of the Project);
  5. To identify what the changes would be for the different phases of the Project; and
  6. To assess the changes and effects on receptors in terms of significance using the significance framework.
- 1.5.9 Vol 2 Appendix 9.1 Table 5 addresses steps one and two of this process.

Vol 2 Appendix 9.1 Table 5: Summary of potential transport environmental effects

Guidance	Potential transport effects	Affected parties/ areas (receptors)
Transport for London	Effects on the road network (including loading)	Car clubs, car parking, coaches, dial-a-ride, electric vehicle charging points, freight, taxis and private hire, 'general' road users i.e. drivers
	Effects on cycle and pedestrian routes	Cycling [leisure and utility] and walking
	Effects on the public transport network	Buses, Rail and London Underground passengers and operators
Highways Agency – Effects of construction	Localised increase in noise*, vibration*, dust and dirt*, and a loss of amenity, longer journey times, impact on the natural environment*	Pedestrians, cyclists [leisure and utility], equestrians, the local community (including vulnerable groups which should be separately identified), the natural environment, [motor] vehicle users

<sup>11</sup> Enfield Council (2013) Edmonton EcoPark Planning Brief Supplementary Planning document, May 2013.

Guidance	Potential transport effects	Affected parties/ areas (receptors)
Highways Agency – Pedestrians, cyclists, equestrians and community effects	Changes in journey lengths and patterns	Pedestrians, cyclists [leisure and utility], equestrians, the local community (including vulnerable groups which should be separately identified)
	Changes in route amenity	
	Adverse or beneficial changes in existing community severance, new severance or relief from severance	
Highways Agency – Vehicle travellers	View from the road	[Motor] Vehicle users
	Driver stress	
Highways Agency – Policies and Plans	Effect on transport policy objectives	Society as a whole
IEMA	Noise*	Local community
	Vibration*	Local community
	Visual effect*	Society as a whole
	Severance	Pedestrians and vehicle users
	Driver delay	[Motor] Vehicle users
	Pedestrian delay	Pedestrians
	Pedestrian amenity	Pedestrians
	Fear and intimidation	Vulnerable road users
	Accidents and safety	All road users
	Hazardous loads*	All parties
	Air pollution*	Local community, society as a whole
	Dust and dirt*	Local community
	Ecological effect*	Sites of ecological/nature conservation value

Note: aspects marked with an asterisk "\*" have been covered in different topic assessments within the PEIR.

- 1.5.10 The assessment covers all the potential transport effects outlined in Vol 2 Appendix 9.1 Table 5 except for those which were highlighted for assessment by a different discipline (i.e. assessment contained within other topic sections of the PEIR).
- 1.5.11 Assessments of effects in relation to the construction and operation of the Project have been undertaken. The assessments are based on trip generation and distribution analysis and on the physical changes proposed to the transport networks. Data presented in Sections 5 and 6 of the ITR provides information regarding the anticipated number of vehicle trips, by type, that the construction and operation of the Project would generate respectively and the probable routes those vehicles would take. Trip generation for the construction of the Project is based on the expected vehicle requirements for materials deliveries and removal of materials and also includes trips by construction workers by all modes of transport. Trip generation for the operation of the Project is based on the

expected number of trips by operational employees and visitors accessing the Project as well as the expected number of operational vehicle trips associated with the operation of the facility.

- 1.5.12 The expected mode split of construction workers and operational employees has been derived based on the location of the application site, the accessibility to public transport and the likely shift times/patterns (for operational employees).

**Road users**

- 1.5.13 For the operational assessment, the number of trips and the directional distribution has been derived based on the borough/location from which waste is arriving, the volume of municipal waste arriving at the application site from each borough/location, the location of any waste transfer stations from which waste is arriving and the destination of any waste outputs. The number of visitor trips to the application site has also been estimated and its impact on the highway network assessed.
- 1.5.14 The number of construction traffic trips and directional distribution has been derived in a similar manner for the construction stages, based on the anticipated origins and destinations of construction materials and construction waste.
- 1.5.15 A mode share has been calculated to determine the number of trips undertaken to the Edmonton EcoPark site by each mode of transport for construction workers during the construction stage and operational employees during the operational stage. These trips would be distributed to the local transport networks.
- 1.5.16 The forecasted volume of traffic for the construction and operation stages has been assessed against baseline traffic flows for the AM, PM and Saturday peak hours to quantify the increase in traffic as a result of construction or operation and the effect these additional trips would have on the network.
- 1.5.17 The effect on road users has been determined for the highway AM peak hours (07:00–08:00/08:00–09:00) and the highway PM peak hours (17:00–18:00/18:00–19:00) as well as the period during the day which the application site generates most traffic. This occurs between 11:00 and 12:00, as derived from the profile of traffic entering and leaving the existing site. In determining the effects during the AM and PM peak hours, the traffic generated by the application site has been considered so that the 'busiest case' scenario has been assessed.
- 1.5.18 Outside of the above hours, the traffic generated by the application site would be lower and would have a lower effect on the local highway network.

**Public transport users**

- 1.5.19 The effects on public transport services as a result of construction workers during the construction of the site and operational employees and visitors once the application site is in operation have been assessed by comparing the number of construction workers and employees anticipated

to use public transport with the number of AM peak hour and PM peak hour services. For a robust assessment it has been assumed that all construction worker and employee trips would occur between 08:00 and 09:00 which is usually the busiest period on public transport. In reality construction workers may arrive earlier than 08:00 when the public transport networks are quieter and employees may have working hours that mean that they are not travelling at the busiest period.

- 1.5.20 Professional judgement has been used to determine the effect that additional passengers would have on public transport services based on a typical bus capacity of 87 passengers (double decker), a tube (Victoria line) capacity of 864 passengers per train and a capacity of approximately 600 passengers per train (Greater Anglia).
- 1.5.21 The effect of changes to traffic levels on the road network on bus services have been covered under the highway network assessment.

### ***Pedestrians***

- 1.5.22 The effects on pedestrian networks in terms of delay and route options has been assessed by measuring the additional journey distance and assessing the physical changes to routes likely to occur as a result of proposed diversions during construction and permanent changes to routes during operation. Professional judgement based on knowledge of the local highway network has been used to determine the effect that additional pedestrians would have on the local pedestrian network. Given that the traffic flows in the vicinity of the Project are already high, the flow increases arising from the Project may not be noticed by pedestrians. In such instances, the flow increases would be deemed imperceptible.
- 1.5.23 Route amenity, severance, safety and fear and intimidation effects have been assessed with reference to expected traffic volumes (and composition) and baseline conditions on routes in the vicinity of the application site using professional judgement.

### ***Cyclists***

- 1.5.24 The effects on cycling networks in terms of delay and route options has been assessed by measuring the additional journey distance and assessing the physical changes to routes likely to occur as a result of proposed diversions during construction and permanent changes to routes during operation. The assessments take into account any route changes which mean that cyclists are required to dismount from their cycle or manoeuvre around obstacles (such as gates, steps and so on), which are known to create inconvenience and discomfort and to reduce the overall accessibility of routes. Professional judgement based on knowledge of the local highway network was used to determine the effect that additional cyclists would have on the local cycle network.
- Route amenity, severance, safety and fear and intimidation effects have been assessed with reference to expected traffic volumes (and composition) and baseline conditions on routes in the vicinity of the application site using professional judgement.

**Equestrians**

- 1.5.25 The effects on equestrian routes in terms of delay and route options has been assessed by measuring the additional journey distance and assessing the physical changes to routes likely to occur as a result of proposed diversions during construction and permanent changes to routes during operation.
- 1.5.26 Route amenity, severance, safety and fear and intimidation effects have been assessed with reference to expected traffic volumes (and composition) and baseline conditions on routes in the vicinity of the application site using professional judgement.

**Significance criteria**

- 1.5.27 Vol 2 Appendix 9.1 Table 6 sets out the explanation of magnitude of effect for the different types of effects on different receptors. General definitions are not related to a particular stage of development but instead give a general summary of what would be expected at that level of magnitude in an assessment looking at any stage of the Project. Effect thresholds have been defined in relation to the Project specifically to reflect the area in which the Project is located and the existing transport conditions in the vicinity of the application site.

In the case of the assessment of the effect of the Project on road users, the assessment considers the overall effect on the users of all roads that are included in the assessment. This means that while a particular road may have a high magnitude effect (i.e. increase in traffic of over 40%), the overall effect on road users could still be very low if all other roads within the assessment experience an very low magnitude effect (i.e. increase in traffic of less than 10%).

Vol 2 Appendix 9.1 Table 6: Explanation of magnitude of effects based on effect receptors

<b>High magnitude effect</b>		
<b>General definition:</b> permanent/irreversible change, over the whole Project area and beyond (i.e. strategic or regional scale) to key characteristics or features of receptor. Effects certain or likely to occur.		
<b>Receptor-specific definitions</b>		
<b>Receptor</b>	<b>Description of effect</b>	<b>Definition of effect</b>
Road users	Very significant increase in delay to road users or reduction in road capacity caused by increases in traffic volumes.	Increase in peak hour traffic flows of 40% as a result of the Project; Increase of greater than ten percentage points in the junction degree of saturation (DoS) <sup>12</sup> or ratio of flow to capacity (RFC) <sup>13</sup> , where the future baseline DoS or RFC is greater

<sup>12</sup> Degree of saturation (DoS): the ratio of demand to capacity used as an indicator of signalised junction performance.

<sup>13</sup> Ratio of flow to capacity (RFC): ratio of flow to capacity used as an indicator of priority junction/roundabout performance.

		than 85% or increases to above 85% as a result of the Project; and/or Qualitative assessment shows a very substantial negative effect on road safety.
Public transport users	Very significant increase in the number of passengers on public transport resulting in a reduction in capacity for other public transport users.	Increase of > 25% in the number of users on each public transport service when considered against the theoretical capacity of public transport services.
Pedestrians	Very significant reduction in route amenity or route options or significant increase in delay. Very significant increase in severance.	Very substantial loss of existing routes; Qualitative assessment shows a very significant reduction in route amenity or safety; and/or Permanent increase in journey length of 250m or more.
Cyclists	Very significant reduction in route amenity or route options or significant increase in delay. Very significant increase in severance.	Very substantial loss of existing routes; Qualitative assessment shows a very significant reduction in route amenity or safety; and/or Permanent increase in journey length of 500m or more.
Equestrians	Very significant reduction in route amenity or route options or significant increase in delay. Very significant increase in severance.	Very substantial loss of existing routes; Qualitative assessment shows a very significant reduction in route amenity or safety; and/or Permanent increase in journey length of 500m or more.

**Medium magnitude effect**

**General definition:** temporary change, over the majority of the Project and potentially beyond, to key characteristics or features of the receptor; or  
 Permanent change over a localised area.  
 Effects certain or likely to occur.

**Receptor-specific definitions**

Receptor	Description of effect	Definition of effect
Road users	Significant increase in delay to road users or reduction in road capacity caused by increases in traffic volumes.	Increase in peak hour traffic flows of between 20% and 40% as a result of the Project or increase of between five and ten percentage points in the junction degree of saturation (DoS) or ratio of flow (RFC) to capacity, where the future baseline DoS or RFC is greater than 85% or increases to above 85% as a result of the Project; and/or Qualitative assessment shows a substantial negative effect on road safety.

Public transport users	Significant increase in the number of passengers on public transport resulting in a reduction in capacity for other public transport users.	Increase of between 15% and 25% in the number of users on each public transport service when considered against the theoretical capacity of public transport services.
Pedestrians	Significant reduction in route amenity or route options or significant increase in delay. Significant increase in severance.	Substantial negative change to existing routes; Qualitative assessment shows a significant reduction in route amenity or safety; and/or Change in journey length by between 250m and 500m either permanently or for a period of four weeks or more (during construction).
Cyclists	Significant reduction in route amenity or route options or significant increase in delay. Significant increase in severance.	Substantial negative change to existing routes; Qualitative assessment shows a significant reduction in route amenity or safety; and/or Change in journey length by between 250m and 500m either permanently or for a period of four weeks or more (during construction).
Equestrians	Significant reduction in route amenity or route options or significant increase in delay. Significant increase in severance.	Substantial negative change to existing routes; Qualitative assessment shows a significant reduction in route amenity or safety; and/or Change in journey length by between 250m and 500m either permanently or for a period of four weeks or more (during construction).
<b>Low magnitude effect</b>		
<b><i>General definition:</i></b> noticeable, temporary (during the Project duration) change, over a limited/local area, to key characteristics or features of the receptor. Effects would possibly occur.		
<b><i>Receptor-specific definitions</i></b>		
<b>Receptor</b>	<b>Description of effect</b>	<b>Definition of effect</b>
Road users	Slight increase in delay to road users or reduction in road capacity caused by increases in traffic volumes.	Increase in peak hour traffic flows of between 10% and 20% as a result of the Project or increase of between two and five percentage points in the junction degree of saturation (DoS) or ratio of flow (RFC) to capacity, where the future baseline DoS or RFC is greater than 85% or increases to above 85% as a result of the Project; and/or Qualitative assessment shows a slight negative effect on road safety.
Public transport users	Slight increase in the number of passengers on public transport resulting in a reduction in	Increase of between 10% and 15% in the number of users on each public transport service when considered

	capacity for other public transport users.	against the theoretical capacity of public transport services.
Pedestrians	Slight reduction in route amenity or route options or slight increase in delay. Slight increase in severance.	Slight negative change to existing routes; Qualitative assessment shows a slight negative effect on road safety; and/or Change in journey length by between 100m and 250m for a period of four weeks or more (during construction).
Cyclists	Slight reduction in route amenity or route options or slight increase in delay. Slight increase in severance.	Slight negative change to existing routes; Qualitative assessment shows a slight reduction in route amenity or safety; and/or Change in journey length by between 100m and 250m for a period of four weeks or more (during construction).
Equestrians	Slight reduction in route amenity or route options or slight increase in delay. Slight increase in severance.	Slight negative change to existing routes; Qualitative assessment shows a slight reduction in route amenity or safety; and/or Change in journey length by between 100m and 250m for a period of four weeks or more (during construction).
<b>Very low magnitude effect</b>		
<b><i>General definition:</i></b> noticeable, temporary (for part of the Project duration) change, or barely discernible change for any length of time, over a small area, to key characteristics or features of receptor. Effects unlikely or rare to occur.		
<b><i>Receptor-specific definitions</i></b>		
<b>Receptor</b>	<b>Description of effect</b>	<b>Definition of effect</b>
Road users	Very slight increase in delay to road users or reduction in road capacity caused by increases in traffic volumes.	Increase in peak hour traffic flows of less than 10% as a result of the Project or increase of less than two percentage points in the junction degree of saturation (DoS) or ratio of flow (RFC) to capacity, where the future baseline DoS or RFC is greater than 85% or increases to above 85% as a result of the Project; and/or Qualitative assessment shows a very slight negative effect on road safety.
Public transport users	Very slight increase in the number of passengers on public transport resulting in a reduction	Increase of less than 10% in the number of users on each public transport service when considered

	in capacity for other public transport users.	against the theoretical capacity of public transport services.
Pedestrians	Very slight reduction in route amenity or route options or increase in delay.	Very slight negative change to existing routes; Qualitative assessment shows a very slight reduction of route amenity or safety; and/or Change in journey length by less than 100m for a period of four weeks or more (during construction).
Cyclists	Very slight reduction in route amenity or route options or increase in delay.	Very slight negative change to existing routes; Qualitative assessment shows a very slight reduction route amenity or safety; and/or Change in journey length by less than 100m for a period of four weeks or more (during construction).
Equestrians	Slight reduction in route amenity or route options or slight increase in delay. Slight increase in severance.	Slight negative change to existing routes; Qualitative assessment shows a slight reduction in route amenity or safety; and/or Change in journey length by between 100m and 250m for a period of four weeks or more (during construction).

1.5.28 Combining the receptor sensitivity with magnitude of effect, the overall significance of effect can be assessed for each stage of the Project. Vol 2 Appendix 9.1 Table 7 sets out a matrix of significance levels.

Vol 2 Appendix 9.1 Table 7: Matrix to determine effect significance

Magnitude of effect	Sensitivity of receptor			
	High	Medium	Low	Very low
High	Major	Major to moderate	Moderate to minor	Negligible
Medium	Major to moderate	Moderate	Minor	Negligible
Low	Moderate to minor	Minor	Minor to negligible	Negligible
Very low	Negligible	Negligible	Negligible	Negligible

1.5.29 These effect categories can then be used to assess whether an effect is significant or not significant in EIA terms. Vol 2 Appendix 9.1 Table 8 sets out the definitions for effect levels and significance and identifies how these relate to the matrix of significance set out in Vol 2 Appendix 9.1 Table 7.

Vol 2 Appendix 9.1 Table 8: Definitions for effect levels and significance

Category	Effect level	Significance
Major effect	The importance of the receptor and the magnitude of effects are predicted to give rise to effects that are fundamental and may be material in the decision-making process.	Significant
Moderate effect	The importance of the receptor and the magnitude of effects are predicted to give rise to effects that are material but not fundamental and alone are not likely to be material in the decision-making process.	
Minor effect	The importance of the receptor and the magnitude of effects are predicted to give rise to effects that are detectable but alone are not likely to be material in the decision-making process.	Not significant
Negligible effect	The effects arising from the specified magnitude of effect acting on the receptor are not predicted to be detectable or outside the norms of variations.	

1.5.30 Transport-related mitigation measures have been built into the Project for the construction and operation elements of the Project and so are reflected in the assessments for each development phase. These include measures such as improvements to the Lee Park Way, new accesses to the application site, on-site cycle parking and shuttle buses during the construction stage. Full details are provided in the ITR (Vol 2 Appendix 9.2).

## 1.6 Decommissioning effects

1.6.1 The effects of decommissioning would be comparable to and no worse than the effects assessed for Phase 3 of the Project. No additional assessment for decommissioning has been undertaken but the assessment draws on the Phase 3 assessment.

## 1.7 Cumulative effects

1.7.1 A separate assessment of the cumulative effects of the Project with other nearby developments (as set out in Vol 2 Section 9.11) on all receptors during each NLHPP development phase has also been undertaken.

1.7.2 The methodologies for the cumulative assessment is the same as the assessment of the effects of the Project. The effect of cumulative developments has been determined by utilising trip generation figures from these developments' TAs or through trip generation estimates carried out for these developments specifically for this assessment. This approach to the cumulative effects assessment trip generation has been agreed with TfL.

1.7.3 The output of the cumulative assessment is used to determine whether the cumulative effects are of greater significance than those set out in the core assessment.