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Innovation Park Medway

Environmental Statement
Addendum Appendix B
Updated Chapter 7: Traffic and Transportation

INNOVATION PARK MEDWAY

October 2020

7.0 TRAFFIC AND TRANSPORTATION

7.1 Introduction

7.1.1 This chapter assesses the likely significant effects of the Proposed Development in terms of transportation. It is based on the information provided in the Transport Assessment (TA), Modelling Report contained in **ES Addendum Appendix C** and Travel Plan (TP) contained within **Appendix 7-1** of the original ES.

7.1.2 The Proposed Development will consist of up to 101,000 square metres of Business and general industrial uses with access routes, landscaping and multi-storey parking facilities. A full description of the development that has been assessed is set out in **Chapter 4** of this ES.

7.1.3 This chapter describes the assessment methodology, the baseline conditions currently existing at the Site and in the surrounding area, the likely significant environmental effects, the mitigation measures required to prevent, reduce or offset any significant adverse effects, and the likely residual effects after these measures have been employed.

7.1.4 Since the submission of the original LDO application and ES in June 2019 further iterations of the Medway Council Strategic Transport Assessment (STA) model have been undertaken during 2020 in consultation with Kent County Council (as Highway Authority) and Highways England. In parallel with the updates to the STA model, preliminary mitigation designs have been produced for junctions affected by the Proposed Development.

7.1.5 The whole of this chapter has been reviewed and all amended or new sections are presented in blue font for ease of identification. This chapter completely replaces the original chapter submitted as part of the ES.

7.2 Legislation, policy and guidance

Legislation

7.2.1 The TA has been undertaken within the context of relevant planning policies, guidance documents and legislative instruments as described below.

National Planning Policy

7.2.2 The National Planning Policy Framework[1] published by the Ministry of Housing, Communities and Local Government is the current planning guidance document for England. It provides a framework within which locally-prepared plans for housing and other development can be produced. It aims to encourage a sustainable approach to development which reduces the negative environmental impacts associated with the private car. It aims to balance the transport system in favour of sustainable transport modes and give people a choice about how they travel.

7.2.3 Chapter 9 of the Framework explains how planning decisions should promote sustainable transport.

7.2.4 Paragraph 103 is particularly relevant and states:

[1] Department for Communities and Local Government (February 2019) National Planning Policy Framework

"Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."

7.2.5 Paragraph 108 explains that when assessing sites that may be allocated for development it should be ensured that appropriate opportunities to promote sustainable transport modes can or have been taken, safe and suitable access can be achieved for all users, and any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost-effectively mitigated to an acceptable degree.

7.2.6 Paragraph 109 explains that development should only be prevented or refused on highways ground if there would be an unacceptable impact on highway safety, or the residual cumulative impacts would be severe.

Planning Practice Guidance

7.2.7 Planning Practice Guidance provides advice on the following traffic and transport topic areas:

- Transport evidence bases in Plan Making and Decision Making[2]
- Travel Plans, Transport Assessment and Statements in Decision Making[3]

7.2.8 The Planning Practice Guidance is clear that Local Planning Authorities should undertake an assessment of the transport implications when reviewing and preparing their Local Plan. This will ensure that a robust transport evidence base is in place that identifies opportunities for encouraging a shift to sustainable transport.

7.2.9 With regard to the development of travel plans and transport assessments the guidance confirms that the document should aim to:

- Encourage sustainable travel
- Lessen traffic generation and its detrimental impacts
- Look to reduce carbon emissions and climate impacts
- Create accessible, connected, inclusive communities
- Improve health outcomes and quality of life
- improve road safety
- Reduce the need for new development to increase existing road capacity or provide new roads.

7.2.10 The above requirements support the NPPF which sets out that planning should actively manage patterns of growth in order to make the fullest possible use of public transport, walking and cycling, and focus on significant development in locations which are or can be made sustainable.

[2] Department for Communities and Local Government (March 2015) Planning Practice Guidance: Transport evidences bases in plan making and decision taking. ID http://planningguidance.planning portal.gov.uk/blog/guidance/transport-evidence-bas-in-plan-making

[3] Department for Communities and Local Government (March 2014) Planning Practice Guidance; Travel Plans, Transport Assessment and Statements in Decision taking. ID http://planningguidance.planning portal.gov.uk/blog/guidance/travel-plan-transport-assessment-and-statements-in-decision-making

Medway Local Plan policy

7.2.11 The Medway Local Plan[4] considers the impact of development in Policy T1, which states that

In assessing the highways impact of development, proposals will be permitted provided that:

(i) the highway network has adequate capacity to cater for the traffic which will be generated by the development, taking into account alternative modes to the private car; and

(ii) the development will not significantly add to the risk of road traffic accidents; and

(iii) the development will not generate significant H.G.V. movements on residential roads; and

(iv) the development will not result in traffic movements at unsociable hours in residential roads that would be likely to cause loss of residential amenity.

7.2.12 Medway Council has prepared a Development Strategy technical report as part of the Local Plan development strategy consultation stage in preparing a new Local Plan for Medway.

7.2.13 The council has commissioned the STA as a key component of the evidence base. It is used to assess the existing situation and determine the transport implications of potential site allocations, providing an understanding of the cumulative and site specific impacts in terms of the capacity of the road network and the associated safety issues. The STA will inform strategic and specific mitigation requirements for sites allocated for development in the Local Plan.

7.2.14 Policy T1 proposes the following measures in order to promote sustainable transport:

The council will work with the relevant authorities and transport providers to:

- *support the Medway Local Transport Plan (2011-26) and subsequent iterations during the plan period, along with the associated three-year Implementation Plans and strategies*
- *ensure development is located and designed to enable sustainable transport*
- *mitigate the impacts of new development according to Transport Assessments and Transport Statements, or refuse development where its residual cumulative impacts are severe*
- *require a Travel Plan for development which will generate significant amounts of movement*
- *plan for strategic road network and rail improvements*
- *improve public transport provision and the walking and cycling network*
- *develop an integrated transport strategy for Medway to deliver sustainable growth*
- *identify the need for and if required define the location for park and ride facilities.*
- *engage with the relevant authorities to address the impacts of the proposed Lower Thames Crossing*
- *undertake any necessary revisions to the adopted Parking Standards*

[4] Medway Local Plan 2003 – Medway Council adopted 14th May 2003

- *improve air quality as a result of vehicular emissions*

7.3 Assessment methodology and significance criteria

Statutory Consultation

7.3.1 The scope of the ES has been agreed with Medway Council, and the scope of the TA and modelling discussed with Medway Council, KCC and Highways England.

Assessment Scenarios

7.3.2 The three development scenarios to be examined are:

- Baseline assessment
- Construction assessment
- Future year 2028 with development assessment

Assessment of Baseline Conditions

7.3.3 This section sets out the methodology used for identifying the baseline conditions and assessing the likely significant effects during the construction and operational phases of the Proposed Development. This has been undertaken based on current relevant guidance for assessing environmental effects of traffic produced by the Institute of Environmental Management and Assessment (IEMA)[5] which sets out the recommended list of environmental impacts which could be considered as potentially significant wherever new development is likely to give rise to changes in traffic flow. These are:

- Severance
- Driver delay
- Pedestrian delay and amenity
- Fear and intimidation
- Accidents and safety
- Hazardous loads

7.3.4 The environmental impact of road traffic on air quality has been considered within in Chapter 8, *Air Quality* of the ES.

Criteria for Assessing Significance of Effects

7.3.5 To determine the potential environmental effects of the car and non-car traffic during the construction and operation phase of the Proposed Development, a number of methodologies have been applied within this assessment. The methodologies have been informed by the IEMA guidelines and also published transport assessment guidance and best practice.

7.3.6 The IEMA Guidelines provide two 'rules of thumb' when defining the scale and extent of the assessment of traffic impacts and determining which traffic links require assessment. These are as follows:

- Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where traffic flows have increased by more than 10%.

7.3.7 The significance criteria adopted for potential transport and access effects is based on the sensitivity (or importance) of the receptor affected as well as the magnitude (or scale) of the change.

7.3.8 The determination of sensitivity of individual receptors is based on a number of factors such as level of activity and vulnerability of users. Categories of receptor sensitivity has been defined from the principles set out in the IEMA Guidelines and are provided in **Table 7-1** below.

[5] IEMA – Guidelines for the Environmental Assessment of Road Traffic

Table 7-1: Criteria for Assessing the Sensitivity of Receptors

Sensitivity	Criteria
High	Receptors of greatest sensitivity to traffic flows: • Schools, colleges and other educational institutions; • Retirement/care home for the elderly/infirm; • Roads with no footways that may be used by pedestrians; or • Accident black spots.
Medium	Traffic flow sensitive receptors: • Hospitals, surgeries and clinics; • Parks and recreation areas; • Shopping area with roadside frontage; • Residential areas; or • Roads with narrow footways that may be used by pedestrians.
Low	Receptors with some sensitivity to traffic flows: • Open spaces; • Tourist/Visitor attractions • Historic buildings; or • Churches or other places of worship
Negligible	Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions

7.3.9 The determination of the magnitude of change to traffic effects is described in **Table 7-2**.

Table 7-2: Criteria for assessing the magnitude of change

Magnitude	Criteria
High	Change in total traffic, HGV or hazardous load flows exceeding 90%
Medium	Change in total traffic, HGV or hazardous load flows of 60% - 89%
Low	Change in total traffic, HGV or hazardous load flows of 30% - 59%
Negligible	Change in total traffic, HGV or hazardous load flows of less than 30%

7.3.10 Our assessment of the sensitivity of the relevant links and junctions within the study area is set out in **Table 7-3** below.

Table 7-3: Sensitivity of Links

Road Link / Junction	Sensitivity
Laker Road / Lankester Parker Road	Low
B2097 (south of Lankester Parker Road)	Medium
B2097 (north of Lankester Parker Road)	Medium
A229 Maidstone Road	Medium
Other local roads	Medium
Bridgewood roundabout	High (due to level of existing congestion)

7.3.11 The significance of the impacts identified is determined by considering the perceived sensitivity of the receptor in conjunction with the predicted magnitude effect as shown in **Table 7-4**.

Table 7-4: Significance matrix used within the assessment

Magnitude of Effect	Sensitivity of Receptor			
	High	Medium	Low	Negligible
Large	Major	Moderate to Major	Minor to Moderate	Negligible
Medium	Moderate to Major	Moderate	Minor	Negligible
Small	Minor to Moderate	Minor	Negligible to Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Highway Network Operation

7.3.12 To characterise the existing baseline traffic, pedestrian, cycle and public transport conditions at the Proposed Development Site and in the study area, the following have been undertaken:

- Site visits
- Assessments of road collision records
- Review of traffic volumes at junctions and links
- A review of the 2011 census data for the local area

7.3.13 The Department for Transport Manual Traffic Count Points website [6] has been referenced in order to review the traffic flows on the local road network as summarised in **Table 7-5**. The location of the road links are shown in **Figure 7-1**.

[6] roadtraffic.dft.gov.uk/manualcountpoints

Table 7-5: Road Traffic Volumes

Reference	Road Link	DfT Annual Average Daily Traffic
1	A229 Maidstone Road	40,739
2	A229 Maidstone Road north of Innovation Centre	40,739
3	A229 Maidstone Road south of Innovation Centre	40,739
4	A229 Maidstone Road approaching M2	40,739
5	A229 link to M2	49,654
6	A2045 link to A229	not available
7	A2045 Walderslade Road	19,333
8	B2097 south of Laker Road	16,537
9	B2097 north of Lankester Parker Road	16,537
10	M2 motorway	99,296
11	A230 Horsted Way	19,968
12	A229 Roman Road / City Way	15,143

Pedestrian and cycle accessibility and infrastructure

7.3.14 The Site is surrounded by a network of pedestrian footways. The A229 has pedestrian footways on both sides of the road with signalised crossing facilities in the vicinity of the Innovation Park's existing access. The existing network provides access to local facilities and bus stops. Laker Road and Lankester Parker Road provide footways on one or both sides of the street. However, the B2097 does not have pedestrian footways.

7.3.15 A shared cycleway/footway is present on the eastern side of the A229 which links with the wider local cycle network.

Bus services

7.3.16 Public transport provision in the vicinity of the Site is relatively good with bus stops provided on the A229 in the vicinity of the existing Innovation Park access. These bus stops are served by routes as set out in **Table 7-6**. Service 101 runs via the A229 to Maidstone in one direction and Chatham and Gillingham in the other direction. On the western side of the site Service 142 operates via Warren Wood between Blue Bell village and Rochester and Chatham.

Table 7-6: Road Traffic Volumes

Service Number	Route	Service Interval					
		Monday - Friday		Saturday		Sunday	
		Daytime	Evening	Daytime	Evening	Daytime	Evening
101	Maidstone – Chatham – Gillingham	12 minutes	30 minutes	12 minutes	30 minutes	20 minutes	2 per hour
142	Chatham – Rochester – Blue Bell Hill	60 minutes	-	120 minutes	-	-	-

Rail services

7.3.17 The nearest railway stations are Rochester and Chatham, both approximately 4km to the north of the site. There are direct services from these stations to key destinations including London Victoria, London St Pancras International, Dover, Ramsgate, Faversham and Luton.

7.4 Assessment of Effects

Construction Phase

7.4.1 At this stage, detailed estimates of construction traffic flows are not available. Construction traffic will be constrained to defined routes. The majority of construction traffic movements are expected to travel along the B2097 from the south. The additional impact of HGV movements on this section of the road network is expected to be low. The effects will be temporary and only occur over the duration of the construction phase. Taking into account the timescales the significance of the impact is assessed to be **minor adverse**.

Operational Phase

Impacts on walking and cycling

7.4.2 The movement strategy for the Proposed Development seeks to maximise pedestrian permeability and encourage pedestrian activity to and from, and within the Site. Footways will be provided on all roads within the Site. The Proposed Development also includes the provision of a new walking and informal cycle route connecting the northern development parcel with the southern development parcel.

7.4.3 In light of this provision, the assessment of the significance of impact on pedestrians and cyclists is assessed as being **moderate to major beneficial**.

Impacts on public transport

7.4.4 As part of the Proposed Development for the Site the main spine road has been designed as a bus priority route to enable existing services and new bus routes to serve the Site. This will improve accessibility to the public transport network for all occupants. With the proposed provisions for future bus services, the significance on the impact on the public transport network is assessed to be **moderate beneficial.**

Severance

7.4.5 The measurement for assessing severance is difficult to predict as "*the correlation between the extent of the severance and the physical barrier of a road is not clear and there is no predictive formula which give simple relationships between traffic factors and levels of severance*" (IEMA guidelines). Further, "*Changes in traffic flow of 30%, 60% and 9)% are regarded as producing 'slight', 'moderate' and 'substantial' changes in severance respectively.*"

7.4.6 Whilst the Proposed Development will increase vehicular traffic on the A229 and B2097 the percentage increase in road traffic volume is less than 30% on all major road links. The pedestrian crossing facilities on the A229 allow pedestrians to walk to and from the residential and commercial area on the eastern side of the A229. The Proposed Development is therefore considered to have a **negligible** impact in terms of severance.

Driver delay

7.5 The Proposed Development will bring about an increase in the number of vehicle movements on the local road network. The assessment of the future year traffic on the local highway network has been undertaken by Fore Consulting Limited as part of the 2020 update to the STA model (**within ES Addendum Appendix C**). This includes Local Plan modelling scenarios and additional scenarios investigating the potential impact of the Proposed Development on the local road network. Do Minimum scenarios have been developed for the years 2023, 2028 and 2037 which are based on the equivalent scenarios developed for the Local Plan but excluding the IPM development. The main assessment year for IPM is 2037, and is consistent with the horizon year of the Local Plan and full buildout of the IPM development. The scenarios include all committed developments and committed highway improvements that are expected to be in place by 2037.

7.6 Vehicle trip rates for the Proposed Development have been projected based on the assessment of other similar sites contained within the TRICS[7] database and trip rates agreed with Medway Council. Subsequent to the submission of the LDO application, further consultation has been undertaken with Highways England regarding the proposed development trip rates for the IPM within the TA. The conclusion of this consultation was agreement that the trip rates set out within this section of the TA were an acceptable basis of assessment and these have been included within the updates to the STA model in 2020. Further information on the derivation of the trip rates is provided within the TA. The vehicle trips have been assigned to the local road network in accordance with the methodology described within the TA. This has been discussed and agreed as appropriate by Medway Council, Kent County Council and Highways England.

7.6.1 Independent of the IPM development, the highway network would experience a background increase in traffic flows and potentially be subject to highway improvement measures. The addition of the Proposed Development generated traffic will see changes in traffic flows, congestion and delay in the operational phase. The results from Fore's STA Aimsun traffic modelling shows that the Proposed Development will increase the volume of traffic on an already congested local road network in the future year modelling.

7.6.2 **Table 7-7** sets out the predicted proposed development traffic (07:00-19:00) on the local road network links and the percentage increase based on the current traffic volumes as presented in **Table 7-5**. The likely low quantities of development traffic outside of this 12-hour period is unlikely to significantly change the increase in road traffic volume reported.

Table 7-7: Proposed development traffic

Reference	Road Link	Predicted Development Traffic (07:00-19:00)	Increase in Road Traffic Volume (%)
1	A229 Maidstone Road	1,701	4%
2	A229 Maidstone Road north of Innovation Centre	2,129	5%
3	A229 Maidstone Road south of Innovation Centre	2,151	5%
4	A229 Maidstone Road approaching M2	152	0%

[7] TRICS Consortium Limited – TRICS database

5	A229 link to M2	638	1%
6	A2045 link to A229	1,410	not available
7	A2045 Walderslade Road	1,099	6%
8	B2097 south of Laker Road	3,658	22%
9	B2097 north of Lankester Parker Road	797	5%
10	M2 motorway	423	0%
11	A230 Horsted Way	1,393	7%
12	A229 Roman Road / City Way	237	2%

7.6.3 The table shows that in accordance with IEMA Guidelines, traffic change on key roads attributable to the Proposed Development fall below thresholds of significance. The impact is therefore classed as **negligible** for all of the considered road links and the Bridgewood roundabout junction.

7.6.4 Due to the congested network in the baseline, queuing and delay at the Bridgewood, Lord Lees and Taddington roundabouts is likely to increase with the addition of the Proposed Development traffic unless mitigation measures are implemented. There is therefore considered to be a **moderate adverse** impact on links in the vicinity of these roundabout junctions in advance of mitigation.

Pedestrian delay and amenity

7.6.5 The Proposed Development will bring about an increase in the number of vehicle movements on the local road network. In general, increases in traffic levels can lead to greater increases in delay to pedestrians seeking to cross roads. The presence of signalised pedestrian crossing facilities on the A229 provides opportunities for pedestrians to cross and therefore the significance of impact on pedestrian delay is assessed to be **negligible**.

7.6.6 The IEMA guidelines define pedestrian amenity as the relative pleasantness of a journey and can include fear and intimidation if they are relevant. As with pedestrian delay, amenity is affected by traffic volumes and composition along with pavement width and pedestrian activity. The guidelines suggest tentative thresholds of significance would be where the traffic flow is halved or doubled. None of the road links experience a doubling or halving of traffic flows and therefore the significance of the impact on pedestrian amenity is assessed as **negligible**.

Accidents and safety

7.6.7 Given the level of increase in traffic flows that result from the Proposed Development, based on the personal injury road collision data, the Proposed Development is expected to have **negligible** impact on road collisions.

Hazardous Loads

7.6.8 The IEMA guidelines acknowledge that most developments will not result in an increase in the number of movements of hazardous / dangerous loads. It is not anticipated that the operational phase of the Proposed Development will result in the carriage of dangerous goods.

7.7 Mitigation Measures

Construction Phase

7.7.1 A Construction Environmental Management Plan (CEMP) will be prepared in order to minimise any environmental impacts during the construction period. This will include measures to control and optimise vehicle movements, vehicle routes and delivery times.

Operational Phase

7.7.2 To enhance the Proposed Development the following measures to encourage the use of sustainable modes of transport, in particular walking and cycling are proposed:

- Introduction of a Site-wide Travel Plan
- Improved pedestrian and cycle links through the Proposed Development
- Provision of bus infrastructure to enable bus routes to serve the development

7.7.3 The Framework Workplace Travel Plan will be introduced for the Proposed Development. As there will be a number of lessees, a Framework Travel Plan will set out the main guidelines and measures for individual Travel Plans, which in turn will be prepared by the larger individual occupiers and will feed into the framework plan. It is envisaged that any occupiers of smaller units or areas will sign up to the Framework by producing Travel Plan Statements or as part of their lease agreement.

7.7.4 The proposed pedestrian network will provide a clear hierarchy of streets that will be easier to find one's way around safely. The development is designed with cycle integration. The development allows for a bus route to pass along the primary route.

7.7.5 Further details of these improvements are provided within the masterplanning documents submitted in support of the planning application.

7.7.6 In addition to the measures stated above to increase the use of sustainable modes of transport there are a number of highway mitigation measures proposed as part of the updated 2020 Fore Consultants Limited modelling exercise. As Bridgewood Roundabout is shown as causing congestion at adjacent junctions on the B2097 and A229 a number of capacity improvements have been identified:

- Widening of the B2097 approach flare to three lanes and extending the flare in length
- Two-lane exit on B2097 from roundabout merging to the existing single lane
- Provision of shared footway/cycleway on the approach to the junction to connect with the existing Toucan crossing
- Changes in lane use on the approaches and circulating lanes of the roundabout
- Enhanced lane marking to assist drivers in staying in the correct lanes as they enter, circulate, and leave the roundabout

7.7.7 The existing and proposed layouts for Bridgewood Roundabout are shown in **ES Addendum Appendix D**. This layout has been submitted for a Stage 1 Road Safety Audit and the comments received will be integrated at the next stage of detailed design.

7.7.8 Further capacity improvements are identified at the Lord Lees Roundabout to the south of the Bridgewood Roundabout comprising:

- Extending the three-lane flare on the northern and southern entry arms

7.7.9 The existing and proposed layout for the Lord Lees Roundabout is shown in **ES Addendum Appendix E**. This layout has been submitted for a Stage 1 Road Safety Audit and the comments received will be integrated at the next stage of detailed design.

7.7.10 At M2 Junction 3 Taddington Roundabout, the following improvements are proposed:

- Changes to existing hatching to extend northern circulatory to three lanes and associated changes to lane allocations

7.7.11 The existing and proposed layouts for Taddington Roundabout is shown in **ES Addendum Appendix F**. This layout has been submitted for a Stage 1 Road Safety Audit and the comments received will be integrated at the next stage of detailed design.

7.7.12 At M2 Junction 4, the following improvements are proposed:

- Provision of the two-lane right turn from the westbound off-slip, including the provision of a two-to-one merge on Hoath Way to retain the existing segregated left turn lane from the eastbound off-slip.

7.7.13 The outputs of the STA model have confirmed that the proposed mitigation will be necessary. The design of the mitigation will be subject to final surveys and agreement on delivery (to be led by Medway Council). If further survey demonstrates that mitigation is not deliverable then an alternative will be sought.

7.7.14 With the mitigation in place, there is reported to be a significant reduction in delay in the AM peak hour but a marginal increase in the PM peak hour to a level equivalent to the Do Minimum scenario. However, significantly more traffic can pass through the network with less traffic waiting to enter the network at the end of the simulation period. This suggests that the mitigation results in a net betterment across the network with the full IPM development in place.

7.7.15 With the proposed mitigation in place, there will be a significant reduction in predicted delay and queuing on most approaches at Lord Lees roundabout, Taddington roundabout and Bridgewood roundabout. This mitigation measure would have **moderate to major beneficial** impact based on initial assessment.

7.8 Cumulative and in-combination effects

7.8.1 The assessment is based on the existing traffic data that has been factored to take into account anticipated growth within the Local Plan Period. In addition, the Strategic Transport model includes committed developments to 2037 delivered in the Local Plan period.

7.8.2 As a result of the assessment, it is predicted that there will be negligible cumulative and in-combination effects as a result of the development.

7.9 Residual Effects

7.9.1 **Table 7-8** provides a summary of the residual impacts on the transport network as a result of the construction and occupation/operational phases of the Proposed Development.

Table 7-8: Summary of Construction and Operational Phase Effects on the transportation network

Project component / Effect types	Receptor / Affected group	Sensitivity of receptor	Effect	Magnitude / spatial extent / Duration	Likelihood of occurrence	Significance of Effect	Mitigation measure	Significance of effect (post-mitigation)	Additional mitigation (if required)	Significance of Residual Effect
Construction Phase										
Changes in traffic flows, congestion and delay	Local Roads network, notably B2097	High	Increased Goods vehicle movements	Medium / Local Temporary	High	Minor adverse	CEMP measures to control vehicle movements, routes and delivery times	Minor adverse	None required	Minor adverse
Effects on users of public transport, walking and cycling (severance, delay and amenity, fear and intimidation)	Local roads / Residents	Low to High	Increased goods vehicle movements	Medium / Local Temporary	High	Negligible	CEMP measures to control vehicle movements, routes and delivery times	Neutral	None Required	Neutral
Operational Phase										
Changes in traffic flows, congestion and delay	Local Road network / Residents	Low to High	Increase in traffic flows	Small/ Local Long term	High	Moderate adverse at congested junctions	Travel Plan measures Highway improvements at Bridgewood, Lord Lees and Taddington roundabouts	Negligible	None Required	Negligible
Effects on walking and cycling (delay and amenity)	Local Roads / pedestrians and cyclists	Low	Improved facilities	Medium /Local Long term	High	Moderate to major beneficial	Improved pedestrian and cycle linkages; provision of new pedestrian and cycle routes	Moderate-major beneficial	None Required	Moderate-major beneficial

Project component / Effect types	Receptor / Affected group	Sensitivity of receptor	Effect	Magnitude / spatial extent Duration	Likelihood of occurrence	Significance of Effect	Mitigation measure	Significance of effect (post-mitigation)	Additional mitigation (if required)	Significance of Residual Effect
Effects on users of public transport	Local residents and staff	Low	Improved accessibility	Medium / Local	High	Minor beneficial	Bus facilities to allow future bus routes to serve the Proposed Development	Moderate beneficial	Rerouting of existing or new bus services	Moderate beneficial
Effects on Severance	Pedestrians	Low	Improved pedestrian connectivity	Medium / Local Long term	High	Negligible	-	Negligible	None	Negligible
Effects on Pedestrian delay, amenity, and fear and intimidation	Pedestrians	Low	More direct pedestrian routes	Low / Local Long term	High	Negligible	-	Negligible	None	Negligible
Effects on Accidents	All road users	Low	Change of accident ratio	Low / Local Long term	Low	Negligible	-	Negligible	None	Negligible