7. TRANSPORT AND ACCESS

7.1 Introduction

This Chapter assesses the potential effects of the Proposed Development in relation to transport and access. It summarises the findings of the Transport Assessment (TA), Travel Plan (TP) and Delivery and Servicing Plan (DSP) prepared by Entran Ltd, which are included as **Appendix 7.1.**

The existing transport network, in the vicinity of the Site, has been described in the context of national, regional and local transport policy. The effects of the Proposed Development on the network have been assessed, taking into consideration future changes in the baseline resulting from committed developments in the area and the net changes in travel demand resulting from the Proposed Development.

7.2 Scope of the Assessment

A detailed assessment of transport and traffic impact was carried out in 2013 for an earlier Energy Recovery Centre development (NCC Ref: 13/00079/WASFUL) on the Site. Further work was carried out in 2016 as part of the Consented Development application (NCC Reference: 16/00028/WASFUL).

The 2013 assessment included detailed junction capacity analyses and found there to be no effect on highway safety or capacity. The Proposed Development is expected to generate similar traffic levels to those tested in 2013 therefore an assessment of background traffic across the agreed study area has been undertaken to determine whether any new junction capacity analyses are required.

The 2016 ES concluded that the Consented Development would result in an increase in traffic on the local highway network that would be less than daily variation on any part of the transport network and therefore imperceptible to other highway users; the effects during the construction and operational phases were considered to be ‘Neutral’. The Proposed Development is likely to generate more traffic than the 2016 Consented Development and the effect of the higher amount has been assessed within the EIA. In particular, a detailed and updated assessment of predicted travel demand has been undertaken, including deliveries and collections and staff movements.

7.3 Assessment Methodology and Significance Criteria

7.3.1 Assessment Methodology

The TA (**Appendix 7.1**) has been prepared in accordance with good practice guidance, published by both the Department for Transport (DfT) and Ministry of Housing, Communities and Local Government (MHCLG). The above guidance indicates that the assessment should set out the baseline conditions against which effects should be fully assessed. It also states that the TA should include details of the lawful uses of the Site. The TA considers the net effect of the Proposed Development when compared to the extant planning permission for a similar form of development; however, for the purposes of the EIA, the existing observed baseline conditions are used as the basis of assessment.

7.3.2 Significance Criteria

The potential effects and residual effects of the proposed development upon all transport modes, have been assessed using the significance criteria in **Table 7.1**. These criteria have been based on professional judgement and outline the approach to categorising the significance of effects identified within the TA.

Table 7.1 Significance Criteria for Transport

Significance Criteria	Traffic	Public transport	Walking & Cycling	Construction
Major adverse effect	>50% increase in either daily or peak hour traffic flows on any road.	>50% increase in either daily or peak hour passenger demand for public transport.	On and off-site facilities for pedestrians and cyclists significantly degraded.	>50% increase in either daily or peak hour traffic flows on any road.
Moderate adverse effect	20%-50% increase in either daily or peak hour traffic flows on any road.	20%-50% increase in either daily or peak hour passenger demand for public transport.	On and off-site facilities for pedestrians and cyclists degraded.	20%-50% increase in either daily or peak hour traffic flows on any road.
Minor adverse effect	5%-20% increase in either daily or peak hour traffic flows on any road.	5%-20% increase in either daily or peak hour passenger demand for public transport.	On-site facilities for pedestrians and cyclists degraded.	5%-20% increase in either daily or peak hour traffic flows on any road.
Neutral	<5% change in daily and peak hour traffic flows on all roads.	<5% change in daily and peak hour passenger demand for public transport.	Facilities for pedestrians and cyclists neither enhanced or degraded.	<5% change in daily and peak hour traffic flows on all road.
Minor beneficial effect	No increase in traffic on any road with 5%-20% reduction in daily and peak hour traffic flows on one or more roads.	5%-20% reduction in daily and peak hour passenger demand for public transport.	On and off-site facilities for pedestrians and cyclists enhanced.	20%-50% reduction in either daily or peak hour traffic flows on any road.
Major beneficial effect	No increase in traffic on any road with >50% reduction in daily and peak hour traffic flows on one or more roads.	>50% reduction in daily and peak hour passenger demand for public transport.	On and off-site facilities for pedestrians and cyclists significantly enhanced.	>50% reduction in either daily or peak hour traffic flows on any road.

7.3.3 Assumption and Limitations

There are no comparable sites in the TRICS database from which to determine predicted future travel to and from the Proposed Development. Predicted travel patterns have therefore been derived from first principles. In terms of large goods vehicles the numbers of movements have been established by determining the volume of goods and materials to be brought to and from the Site and then calculating the number of vehicles required to transport that volume. The number of vehicle movements will be influenced by the size and type of vehicles used. The precise details of the origins and type of materials to be brought to Site are not known at this stage so assumptions about vehicle sizes are based on the most likely vehicle types when compared to similar facilities elsewhere.

7.4 Legislation, Planning Policy and Guidance

7.4.1 National Planning Policy

Key national planning policy in relation to the transport effects of the Proposed Development comprise the following.

7.4.1.1 Department for Transport, Eddington Transport Study (2006)

In 2006 the Chancellor of the Exchequer and the Secretary of State for Transport commissioned the Eddington Transport report (Ref 7.1) to examine the long term links between transport and the UK's economic productivity, growth and stability, within the context of the Government's broader commitment to sustainable development. The Eddington study highlighted transport's pivotal role in supporting the UK's future economic success. It recommended a number of reforms to the planning, funding and delivery of transport interventions to maximise sustainable returns from investment, as well as recognising the need to improve the environmental performance of transport.

7.4.1.2 Department for Transport, Delivering a Sustainable Transport System (2008)

In October 2007 The Department for Transport (DfT) published 'Towards a Sustainable Transport System' (TaSTS) (Ref 7.2) and in December 2008 DfT published 'Delivering a Sustainable Transport System' (DaSTS) (Ref 7.3) both in response to the Eddington study. These reports set five clear goals for the UK's transport system:

- to support national economic competitiveness and growth, by delivering reliable and efficient transport networks;
- to reduce transport's emissions of carbon dioxide and other greenhouse gases, with the desired outcome of tackling climate change;
- to contribute to better safety, security and health and longer life expectancy by reducing the risk of death, injury or illness arising from transport, and by promoting travel modes that are beneficial to health;
- to promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society; and
- to improve quality of life for transport users and non-transport users, and to promote a healthy natural environment.

All integrated planning and transport policy must therefore be considered under the aegis of these goals.

7.4.1.3 Department for Transport, Creating Growth, Cutting Carbon — Making Sustainable Transport Happen (2011)

In January 2011 the Government published this White Paper (Ref 7.4). This paper outlined the coalition Government's vision for a transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities. It stated that investment on its own is not enough, but people also need help to make transport choices that are good for society as a whole; however, it also stated that the Government recognises that it is not possible for public transport, walking or cycling to represent viable alternatives to the private car for all journeys, particularly in rural areas and for some longer multi-leg journeys and so the Government is committed to making car travel greener by supporting greener automotive technology.

7.4.1.4 Ministry of Housing, Communities & Local Government, National Planning Policy Framework (2018)

The NPPF, first issued in 2012 and most recently updated in 2018 (Ref. 7.5) replaces the majority of national Planning Policy Guidance notes and Statements. Section 9, Promoting Sustainable Transport supersedes PPG13 Transport 2011 but carries the same message. Where PPG13 promoted policies to reduce the need to travel, especially by car, NPPF says that smarter use of technologies can reduce the need to travel and that the transport system needs to be balanced in favour of sustainable travel, giving people real choice about how they travel; However, in common with the 2011 White Paper, NPPF states that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural areas.

The NPPF states that all developments that generate significant amounts of movement should be supported by a Travel Plan and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.

At paragraph 108 NPPF says that new applications should ensure that appropriate opportunities have been taken up to promote sustainable transport modes, given the type of development and its location. It says that all developments must achieve safe and suitable access for all users, and that new developments should ensure:

"any significant impacts on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree".

It also states at paragraph 109 that:

"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe".

These statements indicate that any effects on highway safety must be cost effectively mitigated but that mitigation will also be required for significant or severe impacts on highway capacity.

7.4.1.5 Department for Transport Guidance on Transport Assessments (2007)

DfT guidance on transport assessments (Ref7.6) states that when preparing such reports due consideration should be given to factors such as environmental sustainability, managing existing networks and mitigating the residual effects of traffic. The guidance is intended to assist stakeholders in determining whether an assessment may be required and, if so, what the level and scope of that assessment should be. It also provides guidance on the content and preparation of transport assessments and transport statements.

A key difference between a Transport Assessment (TA) and the former Traffic Impact Assessment (TIA) is the requirement to seek to influence travel behaviour rather than merely predicting the transport effects of a development and providing for it. The DfT guidance is clear that this should be an iterative process whereby the impacts are determined and if they are not deemed acceptable the form of development should be reconsidered to maximise travel by sustainable modes of transport. Furthermore, unlike a TIA and an EIA, where a site is unused or partially vacant the baseline conditions for a TA should take account of the extant uses of the Site.

The 2007 DfT guidance has now been formally superseded by the 2014 PPG (MHCLG) but many local highway authorities still refer to it for useful advice on the detailed content of transport assessments and statements.

7.4.1.6 Ministry of Housing, Communities & Local Government, Planning Practice Guidance: Travel Plans, Transport Assessments and Statements (2014)

The PPG (Ref. 7.7) formally supersedes the DfT guidance from 2007 in providing the overarching principles on Travel Plans, Transport Assessments and Statements. It relates only to those

assessments and plans in relation to decision-taking. The high-level, strategic nature of this guidance means than many local highway authorities still refer to the 2007 DfT guidance on detailed matters.

7.4.1.7 Highways England, The strategic road network: Planning for the future: A guide to working with Highways England on planning matters (2015)

The HE guidance (Ref 7.8) explains how Highways England, on behalf of the Secretary of state for Transport, will participate in all stages of the planning process to ensure national and regional aims and objectives can be aligned and met. The guidance states that HE will work with developers to secure delivery of their proposals in such a way that they minimise any additional burden on other users of the strategic road network.

The HE will expect developers to submit plans for the implementation and maintenance of measures that will minimise the traffic generated by the development. This is likely to include travel plans, including measures to manage car use and particularly by single occupants.

7.4.2 Local Policy

7.4.2.1 Northamptonshire Transportation Plan (2012)

The Northamptonshire Transportation Plan (Ref 7.9) was published in March 2012. It is Northamptonshire's Local Transport Plan and sets out the highway authority's transport policies, objectives and vision for the long term. The plan replaced the interim third Local Transport Plan and ensures that the highway authority meets the statutory requirements of the Transport Act 2000 and Local Transport Act 2008 by setting out their plans and policies for transport as well as how they intend to implement them.

7.5 Baseline Conditions

The baseline traffic and transport conditions presented in the 2016 ES have been reviewed and updated where required. In particular, revised baseline traffic flows have been derived using up to date information from a new manual turning count at the junction of Shelton Road and Steel Road as well as the permanent traffic monitoring stations that were also used in the 2016 ES.

7.5.1 Overview (No change from the 2016 ES)

The Site is located to the west of Shelton Road and to the north of the Willowbrook East Industrial Estate. The Site is bounded on its southern edge by unit F-N (Harlow House) of the Willowbrook East Industrial Estate. To the west is an existing car storage and distribution operation.

The Site has an existing vehicular access onto Shelton Road, which is located at the south-east corner of the Site. This is shared with a parcel of land located immediately to the south.

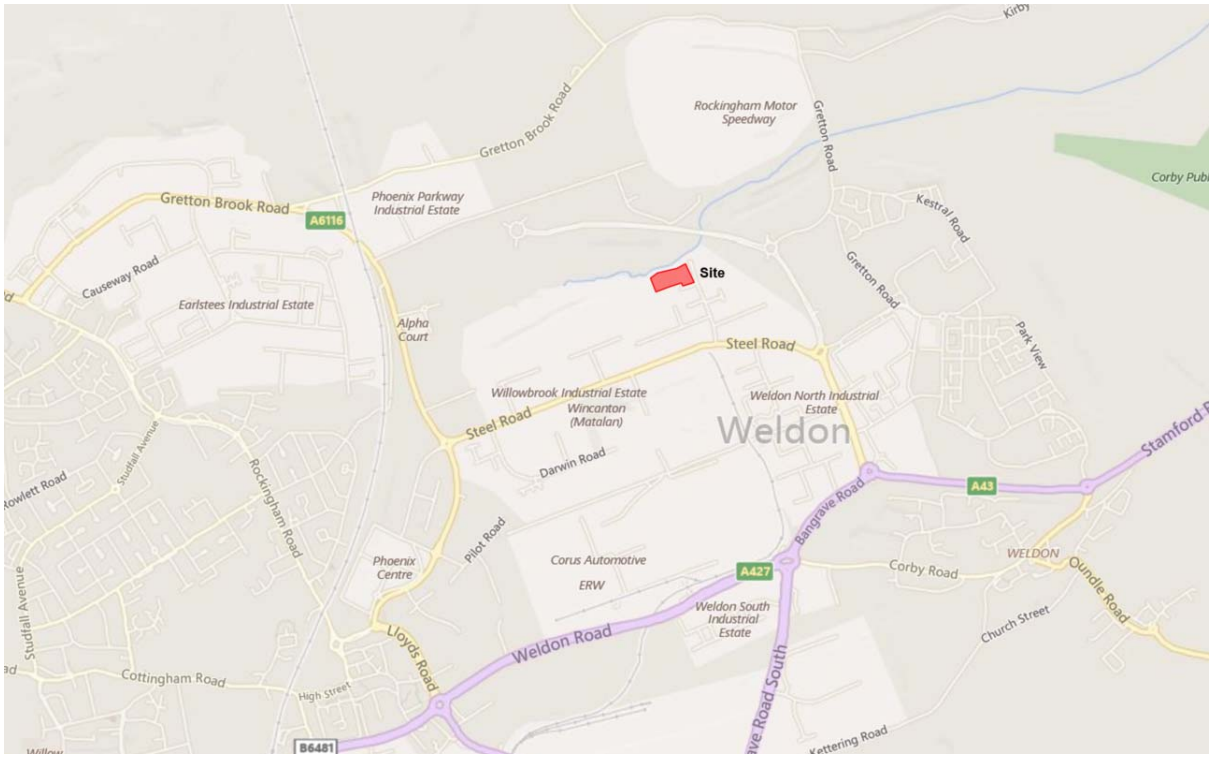
The Site is currently used for car storage. The Site has surfacing, internal access roads and lighting in place and is able to store 1125 cars. The EIA team is informed that the wider car storage site (6.5 hectares including the application Site) has capacity to store 3000 cars. There are two accesses to the wider car storage area, from Baird Road and also from Shelton Road at the location of the Site Access. At present, Paragon (who lease the site) choose to only use the access from Baird Road for their operation, which means the car storage site currently fills up from west to east. The EIA team understands that at its peak the whole 6.5 hectares was regularly full of cars (up to 3000 at a time) which meant that the application Site was in constant use. The whole 6.5 hectares is still leased for this purpose but as the business is less intensive than it was a few years ago the western half of the wider site is currently used more than the eastern half. The application Site is therefore in use for car storage but at present it is only used at times of peak demand.

The Site currently takes access from Shelton Road, which is a 7.3 m wide industrial estate road serving part of Willowbrook East Industrial Estate. Shelton Road is an adopted public highway with a

30 mph speed limit and is bounded by a footway to the western side and a grassed verge to the eastern side.

Figure 7.1 illustrates the local highway network.

Figure 7.1 Local Highway Network



Shelton Road is street-lit with no parking restrictions. A plan illustrating the limit of adopted highway, provided by NCC is appended to the TA. The extent of adopted highway continues to a point north of the existing site access.

Shelton Road joins the A6116 Steel Road at a large three-arm priority junction, incorporating a 'ghost' right turn lane, with Shelton Road forming the minor arm. Steel Road is an important single carriageway local distributer road link through the existing industrial and commercial area to the north-west of Corby and provides a key east-west link between the A6006 (via Phoenix Way) and the A43. Steel Road is street-lit with wide grassed verges and there are footways provided to the north side with an additional footway on the south side of Steel Road to the east of the Shelton Road junction. The speed limit on Steel Road is 40mph.

7.5.2 Pedestrian Access (No change from the 2016 ES)

Acceptable journey distances on foot vary depending on the purpose of the journey, the environment in which the journey is taking place and of course the individual walking. Prior to being superseded by the National Planning Policy Framework (NPPF) PPG13 suggested that walking offers the greatest potential to replace short car trips for journeys less than 2 km. The IHT guide 'Providing for Journeys on Foot' suggests that for journeys to work a desirable walking distance would be 50 0m, an acceptable walking distance would be 1 km and the preferred maximum walking distance would be 2 km, in line with the PPG13 advice.

Within a 15 minute walking catchment there is a wide residential catchment, all within a 2 km walking distance. Due to the scale and dispersed nature of the industrial estate there are a fairly limited number of local destinations which might lead to journeys being undertaken on foot on a regular basis

by staff working at the Proposed Development; however, this is subject to change as a result of the on-going construction of the Priors Hall development to the east of the Site, which will help lead to the creation of more walking journeys on a day to day basis. The Priors Hall site includes a District Centre which will be within 18 minutes' walk or 1,500 metres of the site together with extensive residential areas.

An audit of pedestrian facilities around the Site has been undertaken which reveals reasonably good provision for those undertaking walking trips in the local area.

7.5.3 Cycle access (Updated from the 2016 ES)

There is a range of cycle infrastructure available in proximity to the Site. Although there are no dedicated facilities provided on Shelton Road itself, to the east of the Site on Steel Road there are sections of dedicated shared off-road cycle facilities leading north, east and south from the Steel Road/Birchington Road roundabout. There are junction crossing points and refuge islands provided to aid cyclists. The cycle facilities continue south along Steel Road leading to the A34/Steel Road roundabout and then along Bangrave Road and Weldon Road. There is a cycle facility on Birchington Road heading towards the proposed District Centre.

7.5.4 Public transport (Updated from the 2016 ES)

The nearest bus stop is located on Steel Road approximately 400 metres walk from the Site. This is within the recommended 400 metres in the IHT publication 'Planning for Public Transport in Development'. The route to the eastbound bus stop can be comfortably walked in 5 minutes. The corresponding westbound bus stop on Steel Road is located approximately 500 metres or 6 minutes' walk from the Site, on the opposite side of the road, close to the junction of Steel Road and Sallow Road and also the crossing point over Steel Road. Full bus timetables can be found at www.transportdirect.info or www.northamptonshire.gov.uk but the main bus services are summarised below:

Table 7.2 Bus Route Summary

No	Details		
2	Corby Town Centre – Railway Station – Weldon Industry – Priors Hall	13:42-18:42	2 Services Eastbound 4 Services Westbound
2a/2b	Kingsthorpe – Danesholme – Corby Town Centre – Willow Brook Industry – Priors Hall	08:55-22:15	5 Services
18	Corby – Little Stanios – Brigstock – Trapston - Raunds	07:02 – 17:51	2 hours
X4 gold	Corby Town Centre – Railway Station – Weldon Industry – Priors Hall	08:21-18:19	Hourly each way

Table 7.2 shows that the nearest bus stops benefit from reasonably good bus provision. The services which stop within 5 minutes' walk of the Site provide access to a wide area including Corby Rail Station and Town Centre at a reasonable frequency and duration during the day and evenings. The duration and frequency of these services are suitable for those working conventional office hours and shifts.

7.5.5 Rail (No change from the 2016 ES)

The nearest rail station to the Site is Corby Station which is located to the southwest of the Site and about 3.6 km or 14 minutes' cycle. Frequent services (approximately every hour) are operated between Corby and Kettering and north towards Melton Mowbray. Most services continue towards

London St Pancras as well as many intermediary stops. Cycle parking is available at the station, and the bus services identified in **Table 7.2** also call at the station.

7.5.6 Vehicle access and traffic flow (Updated baseline)

The Site access has been designed around the swept path of a 16.5 m long articulated HGV, being the largest vehicle likely to visit the Site. The access has been designed such that all vehicles can enter and leave in a forward gear with ample stacking capacity within the Site so that no queuing will occur within the public highway. In practice, the predicted frequency of vehicle movements is sufficiently light that it is unlikely that more than one vehicle will arrive at any one time but the layout allows for such an eventuality.

Baseline traffic figures for the surrounding highway network were derived from traffic counts undertaken by 360TSL Traffic Data Collection as well as the DfT permanent traffic monitoring sites at 10 locations on the A6116 Phoenix Parkway, A43 and A427. These have average annual daily traffic flows from 2000-2017 for all strategic routes around Corby. Further traffic count data (manual 12 hour turning count) was acquired in July 2018 for the Shelton Road/ Steel Road priority junction. It is therefore possible to derive baseline traffic flows for all roads with permanent traffic counters and establish growth rates from 2000-2017 and therefore future projected growth based on observed local conditions as well.

The traffic count data are included in full within the TA and summarised below.

Table 7.3 Baseline two-way traffic flows

	Link	0800-0900	1700-1800	(24hr)
1	Shelton Road	226	192	2,131
2	Steel Road (E)	1,100	1,092	10,004
3	Steel Road (S)	1,110	1,104	9,957

The Average Annual Daily Flow (AADF) for 2018, derived from the permanent traffic monitoring sites is summarised below. The 2018 figures are interpolated from the 2017 statistics based on the observed rates of growth. The 24 hour AADF flow for Shelton Road is interpolated from the 2018 manual traffic count and the 24 hour profile on the surrounding network. The resultant AADT flows on the highway network surrounding the Site are summarised below.

Table 7.4 Summary of DfT AADF Traffic Count Data (two-way)

	Link	Daily AADF (24hr)
1	Shelton Road	2,532
2	Steel Road (W)	9,240
3	Steel Road (E)	9,240
4	A6116 Phoenix Parkway (N)	13,529
5	A6116 Phoenix Parkway (S)	19,738
6	Steel Road (S)	12,143
7	A43 (East of Steel Road)	10,782
8	A43 (Bangrave Road)	14,855
9	A427 Weldon Road)	11,414
10	A43 (Bangrave Road S)	9, 826

These daily baseline link flows have been used to inform the proportional increase in traffic resulting from the proposed redevelopment of the Site.

7.6 Existing Uses

In order to determine the realistic trips which might be generated by the Site, discussions were held with the site owner regarding the existing car storage operation and the transporters were also observed entering and leaving the site using Baird Road.

It is understood that the wider site has capacity to store 3000 cars. The proposed redevelopment site is 2.53 hectares which therefore equates to 1125 cars. We are informed that when a car storage site is in active use it is commonly around 80% occupied rather than completely full. This is simply a reserve capacity to assist the operation.

Observations made for this assessment suggest that transporters delivering cars usually have 8-10 vehicles so for simplicity it is reasonable to assuming an average of 9 cars per transporter. These same transporters take cars away, but usually in smaller numbers so it is the departures which set the number of trips. An average of 3 cars per transporter has been observed; indeed most transporters photographed had three cars on them.

Following discussions with the Site operator, the EIA team understands that the cars stay on site from 1 to 3 weeks depending on the amount of valet, servicing or work they require so it is reasonable to assume an average of two weeks, equating to 11 days (2 x 5.5). **Table 7.5** provides a simple summary of the calculation of the number of HGV trips that might realistically be generated by the Site when fully utilised for its extant use. This assessment has tested 70%-100% occupancy which provides a range of 48-68 HGV trips per day. The figure at 80% is 55 HGV trips, which will be subtracted from the Proposed Development traffic for the assessment of the work.

Table 7.5 Summary of Trips Generated from the Current Use of the Site

	70% Occupancy	80% Occupancy	90% Occupancy	100% Occupancy
Delivery Transporters	88 (=788/9)	100 (=900/9)	113 (1013/9)	125 (=1125/9)
Collection Transporters	263 (=788 *3)	300 (=900 *3)	338 (=1013 *3)	375 (=1125 *3)
Total Transporter Trips Required *(Assume Collection Transporters also used for Delivery)*	525 (=263 *2)	600 (=300 *2)	675 (=338 *2)	750 (=375 *2)
Assumed Turnaround per car	11 days			
Transporters per day	24 (=263/11)	27 (=300/11)	31 (=338/11)	34 (=375/11)
HGV trips per day	**48** (=34 *2)	**55** (=27 *2)	**61** (=31 *2)	**68** (=34 *2)

7.7 Identification and Evaluation of Key Effects

7.7.1 Construction Phase (No material change from the 2016 ES)

It is anticipated that during the site clearance and civils construction an average 5 construction vehicles per hour (10 trips) would be generated. This is expected to reduce during the mechanical installation period. 10 construction vehicle trips per hour over a 12 hour working day equates to 120 construction trips per day. When compared to a baseline of zero Site traffic this would equate to a 4.7% increase in traffic on Shelton Road representing a short-term **Minor Adverse** effect on driver delay and severance. That

traffic would comprise 60 trips to the west and 60 trips to the east, thereby representing an increase in traffic on Steel Road of less than 1%. This is less than daily variation and would be imperceptible to other highway users. The effect on driver delay and severance is **Neutral.**

Due to the distribution of traffic onto the highway network the impact on each subsequent link would be less than on Steel Road.

When compared to the potential traffic generation of the current use the construction traffic would have a **Neutral** effect on all roads.

7.8 Completed Development (Updated assessment)

The Site access has been designed around the swept path of a 16.5 m long articulated HGV, being the largest vehicle likely to visit the Proposed Development. The access has been designed such that all vehicles can enter and leave in a forward gear with ample stacking capacity within the Site so that no queuing will occur within the public highway. In practice, the predicted frequency of vehicle movements is sufficiently light that it is unlikely that more than one vehicle will arrive at any one time but the layout allows for such an eventuality.

The Proposed Development includes operational car parking for staff and visitors plus an allowance for shift change-overs. This additional allowance is important to ensure no parking takes place on the internal circulation roads or loading/unloading areas while the shifts are changing.

Secure covered, lit cycle parking is provided close to the site offices. At least 10 cycle parking spaces will be provided to ensure cycle parking for every member of staff on Site. This exceeds local authority standards.

There are no appropriate sites in the TRICS vehicle trip database. Vehicle trips for the proposed energy recovery facility are derived from first principles based on a maximum receipt of 260,000 tonnes of material per year. In addition to feedstock deliveries, the on-site processes will require a number of other materials to be delivered to site including auxiliary fuel (LPG or LFO) as well as adsorbents for air quality control. Finally, residual material will need to be collected and taken off-site such as bottom ash, fly ash and APCR. These are all taken into account when calculating predicted vehicle movements.

The Consented Development was designed to receive 260,000 tonnes of feedstock per year. Due to the mixed-source nature of the material being used as feedstock the vehicle trip calculations were based on deliveries taking place in a number of vehicle types with average payloads ranging from 7t to 20t. The approved facility would be serviced by 53 HGVs per day (106 HGV trips) as well as an additional 22 staff car trips.

The Proposed Development is for an Energy Recovery Centre that uses different technology from either of the previously approved schemes. The new planning application is framed by a maximum receipt of some 260,000 tonnes of material per year. This increase in the throughput of feedstock will have an effect on the likely number of vehicle movements, but the change will not be directly proportionate.

Given that the Proposed Development remains in the early stages of planning, the feedstock supplier has not yet been confirmed. The facility has the potential to treat household and commercial waste. If the facility was to receive all commercial waste in bulk loads then the vehicle trips would be minimised. However, to enable flexibility, and as the supplier of the feedstock is likely to evolve and change during the lifetime of the facility, the traffic generation has been calculated on the more onerous assumption that the feedstock is all domestic waste. Under this worst case scenario the Proposed Development would receive waste deliveries direct from a number of local authorities within an agreed catchment area; some material would be delivered in bulk loads, but some would be delivered in smaller vehicles with an average payload of 12 or 7.5 tonnes. This would have an effect on the total number of vehicle trips.

Table 7.6 shows the predicted large goods vehicles associated with the Proposed Development.

Table 7.6 Predicted Large Good Vehicles (HGV) Trips

260k tpa into ERC		T per day	Ave load	V per day	Trips
IN					
22 t artics	Waste Deliveries	633	22	29	58
7.5t waste veh	Waste Deliveries	158	7.5	21	42
12t waste veh	Waste Deliveries	144	12	12	24
Tanker	Aux fuel	2	35	0	0
2.5t rigid	Urea	1	2.5	0	1
25t tanker	Lime	17	25	1	1
2.5t rigid	PAC	1	2.5	0	1
				63	**127**
OUT					
10t rigid	Bottom Ash	187	10	19	37
10t rigid	Fly ash	5	10	0	1
10t rigid	Filter	14	10	1	3
25t tanker	APCR	47	25	2	4
10t RoRo skip	Ferrous material	14	10	1	3
				24	**48**
			TOTAL	**87**	**175**

Each HGV makes two trips (one arrival and one departure) so one HGV represents two HGV trips. **Table 7.6** demonstrates that the Proposed Development would be likely to be serviced by 87 HGVs per day (175 HGV trips) compared to the 27 HGVs associated with the existing car storage use of the site and the 53 associated with the Consented Development. This therefore represents a net increase of 60 HGVs across the working day when compared to the baseline and a net increase of 34 HGVs compared to the Consented Development.

It is important to note that the above calculation assumes that all vehicles that deliver materials will leave empty and that all vehicles that collect materials arrive empty. In practice a commercial operation will make best use of a proportion of those vehicles ensuring that they are fully laden in each direction. These assumptions can therefore be considered to be ‘worst case’.

In addition to vehicle movements associated with delivery and collection of materials, and assuming that the Proposed Development includes an element of fuel preparation on site, the facility will generally employ 25 full time equivalent (FTE) staff including administrative staff working normal office hours as well as shift-workers operating the plant. There will be 16 staff travelling to and from the Proposed Development each day equating to 32 staff multi-modal movements.

The accessibility audit illustrates that the Site is in a suitable location to promote walking, cycling and travel by public transport. The proposed Staff Travel Plan (**Appendix 7.1**) includes infrastructure, information and incentives to encourage the use of these sustainable modes, as well as encouraging car-share. For a robust assessment the TA assumes that two thirds drive as lone car occupants and only one third travel by sustainable means. This equates to 22 staff car trips per day. As the Proposed

Development will be supported by a Staff Travel Plan this is likely to over-estimate the number of staff car journeys but it does present a worst-case for the purposes of traffic impact assessment.

The worst case assessment would therefore be to assume 175 HGV movements plus 22 staff car trips per day. For the purpose of this assessment the combined gross total of HGV and staff vehicle trips is therefore 197 vehicle trips per day.

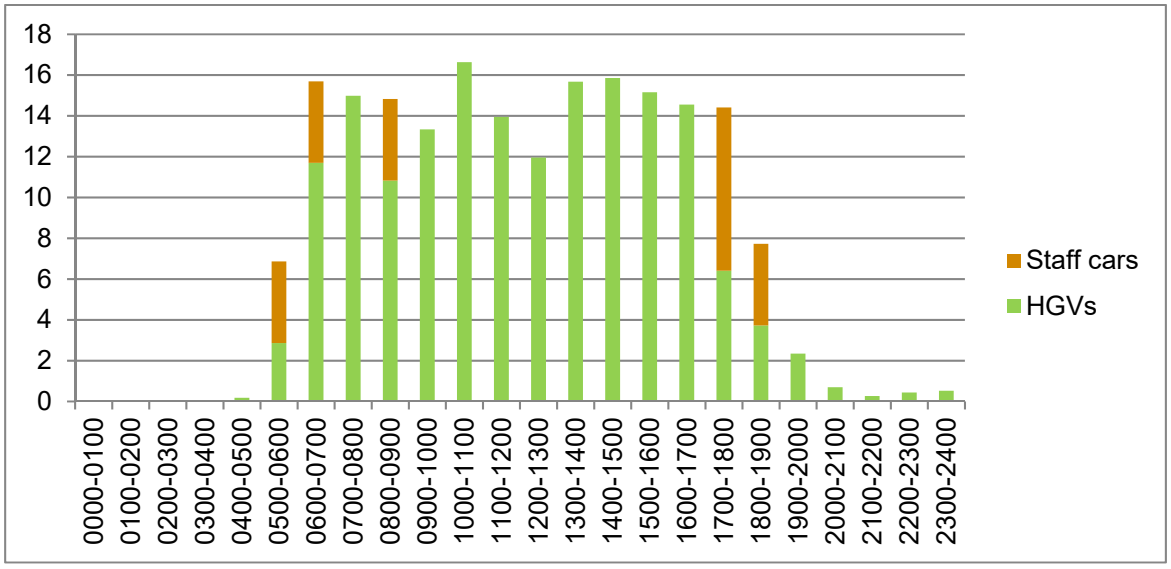
Taking into account the car storage use of the site, which could generate 55 HGV trips per day, the discounted, or net additional trip generation of the site would be a total of 120 HGV movements plus 22 staff car trips per day for the Proposed Development. The combined net total of HGV and staff vehicle trips is therefore 142 additional trips per day.

The Proposed Development is designed to operate 24 hours a day but it is unlikely that the HGV trips would be spread equally across the whole day. If there were no other data it would be appropriate to assume that one-third of HGV trips take place overnight (between 7pm and 7am) and two-thirds during the day. This would equate to 5 HGV trips per hour over night and 9 or 10 trips per hour during the day. If deliveries were to be restricted to daytime only there would be an average of 15 HGV trips per hour. However, for a robust assessment daily profile testing has been carried out in order to inform peak hour traffic impact assessment.

The previously approved daily profile predictions (2013 Transport Assessment and the 2016 ES) were based on an automatic traffic survey at a site in Surrey currently used for waste materials recovery, storage and distribution. The automatic traffic counter surveyed 24 hour flows over a full week in order to establish average daily flows and profiles. Whereas the Surrey site is not used for energy recovery it does have a similar feedstock in terms of commercial and industrial waste and the type and size of HGVs are similar to those expected to serve the Proposed Development.

By assigning the predicted traffic levels to this observed daily profile it is clear that the Site's peak period is likely to be between 10-11am during which period the Proposed Development would generate a total of 17 vehicle trips. This exercise also provides an accurate forecast for the predicted development traffic during the highway peak periods of 8am-9am and 5pm-6pm (15 and 14 trips respectively). The daily profile of combined trips is illustrated in **Figure 7.2**.

Figure 7.2 Daily Profile of Combined Trips



The change in AADT daily flows on the highway network surround the Site, are summarised in **Table 7.7**. The year 2023 is the assumed year of opening and the year 2028 represents the design year (i.e. 5 years after opening). The development traffic has simply been apportioned to each link of the A43, A427 and A6116, according to the balance in AADT base flows.

Table 7.7 Proportional Increase in AADT Two-Way Traffic Flows

Link	2023	2023+ dev	2025	2025+ dev	% incr
Shelton Road	2620	2816	2689	2885	7.3%
Steel Road (W)	9570	9677	9818	9925	1.1%
Steel Road (E)	9570	9659	9818	9907	0.9%
Phoenix Way (N)	14013	14067	14375	14429	0.4%
Phoenix Way (S)	20443	20485	20971	21014	0.2%
Steel Road (S)	12576	12647	12902	12973	0.5%
A43 (E)	11167	11190	11455	11479	0.2%
A43 Bangrave Road	15385	15418	15783	15816	0.2%
A427 Weldon Road	11822	11848	12128	12153	0.2%
A43 Bangrave Road (S)	10177	10199	10440	10462	0.2%

This illustrates that the Proposed Development would have a **Minor Adverse** effect on capacity and severance in Shelton Road and a **Neutral** effect on capacity and severance on the remainder of the highway network.

7.8.1 Traffic Impact (Updated assessment)

This above assessment is based on significance criteria which review the proportional increase in traffic on road links. However, the baseline traffic flows on Shelton Road are very low, so the proportional increase in traffic appears to be significant. In practice, the Proposed Development would generate an additional seven vehicles during the peak hours, which would have no material

effect on the operational capacity of the Shelton Road / Steel Road junction and no effect on the link capacity of Shelton Road.

The TA makes reference to an earlier full junction capacity analysis at the three highway junctions closest to the Site, using robust vehicle trip rates, assessing gross traffic generation (not net increase) and assuming high background traffic growth. That traffic impact assessment demonstrated that all three junctions would operate within their practical reserve capacity with or without development, with no mitigation measures required, and that the development traffic has no material effect on the operation of those junctions. The Proposed Development would generate the same number of peak hour vehicle movements as those previously assessed so the same conclusions can be drawn in relation to operational capacity.

7.9 Assessment of Cumulative Effects

With the exception of Shelton Road, the effect of the Proposed Development on the local highway network is Neutral, even under worst-case conditions during the construction phase and the operational phase. Furthermore, background traffic growth has been set well above observed growth to take account of potential committed development. By factoring in future growth, above the predicted baseline, the assessment effectively takes account of cumulative effects over the long term; there is therefore no requirement to further consider cumulative effects.

7.9.1 Enhancement, Mitigation and Residual Effects

7.9.1.1 Construction Phase (No change from the 2016 ES)

A Construction Environmental Management Plan (CEMP) will be implemented before construction works commence to provide management control and minimise congestion on public highways. The CEMP will include a route management plan and also specify vehicle types and sizes where appropriate so smaller vehicles could use routes with weight restrictions for example. Any abnormal loads will have specific route management plans imposed.

The CEMP will specify any restrictions on hours of operation that may be imposed as part of the planning process.

The CEMP will also impose requirements on the internal operations of the Site so that during the construction phase the developer will:

- establish and maintain an area for turning vehicles on Site so that all vehicles can enter and leave in a forward gear;
- establish and maintain an area for Site workers to park on Site; and
- establish and maintain a wheel-wash facility for the use of all vehicles leaving the Site.

The Proposed Development will have a **Neutral effect** on the local transport network; however, the CEMP will further improve the management of construction traffic. The residual effects of construction travel on buses or rail will be **Neutral**.

7.9.1.2 Completed Development (No change from the 2016 ES)

The TA (**Appendix 7.1**) includes a three-part Transport Implementation Strategy comprising:

- Staff Travel Plan (STP);
- Delivery and Servicing Plan (DSP); and
- Construction Traffic Management Plan (CTMP).

The STP has been developed to seek to influence modes of travel to the Proposed Development rather than merely predicting travel patterns and providing mitigation. The STP promotes travel by sustainable modes of transport and provides a structure for the management of staff travel to the

Proposed Development. Its sets out objectives, obligations, targets and measures as well as means of securing and enforcing the STP.

The development will include the extension of the footway on the western side of Shelton Road to allow pedestrian access directly from the highway into the Site.

The development will also deliver a new 1.8 m wide metalled link between the footway and carriageway on Steel Road adjacent to the existing bus stop to assist bus passengers and encourage sustainable travel behaviour.

The DSP highlights the implications of the Proposed Development with regard to existing and also proposed servicing constraints and has been prepared in accordance with the Freight Transport Association document 'Designing for Deliveries' and TfL's guidance document "Managing freight effectively: Delivery and Servicing Plans".

The DSP and CTMP provide a strategy for managing deliveries including measures to reduce the number of vehicle trips, hours of delivery, and route management.

The DSP and CTMP both include a route management strategy which directs all drivers of large vehicles to the highest category road available and away from minor roads and villages. The final versions of these management documents will be secured by planning condition and will be submitted to and approved by the planning authority prior to development (CEMP prior to commencement; DSP prior to first occupation).

The Proposed Development will result in an increase in traffic on the local highway network that is less than daily variation and imperceptible to other highway users; the residual effect will be Neutral. The implementation of a STP, DSP and CTMP will improve the management of staff travel and deliveries to and from the Site.

7.10 Differences from the Consented Development

The environmental effects of transport related to the construction of the Proposed Development are the same as those for the Consented Development.

During the operational phase the Consented Development would have generated 106 HGV trips per day plus 22 staff car trips per day. The Proposed Development is expected to generate 175 HGV trips and 22 staff trips. The net difference between the Consented Development and the Proposed Development is therefore 69 HGV trips (35 vehicles arriving and then departing) across a full operational day.

The Consented Development and the Proposed Development are both predicted to have a Minor Adverse effect on Shelton Road but a Neutral effect on the remainder of the highway network.

7.11 Summary

A summary of potential effects, mitigation measures and resulting residual effects in relation to transport is provided below in **Table 7.8**.

Table 7.8 Transport and Access Summary Table

Potential Effect	Nature of Effect (Permanent or Temporary)	Significance	Mitigation / Enhancement Measures	Residual Effects
Construction				
Driver severance and delay	Temporary	Minor adverse	CEMP	Neutral
Disruption to pedestrians and cyclists	Temporary	Minor adverse	CEMP	Neutral
Disruption public transport	Temporary	Neutral	None	Neutral
Operation				
Driver severance and delay	Permanent	Minor adverse	DSP	Neutral
Cyclists amenity and delay	Permanent	Neutral	STP and DSP	Neutral
Pedestrian amenity and delay	Permanent	Neutral	STP and DSP	Neutral
Disruption to bus users	Permanent	Neutral	STP and DSP	Neutral
Disruption to rail users	Permanent	Neutral	STP and DSP	Neutral

7.12 References

Ref: 7.1: Chancellor of the Exchequer and Secretary of State for Transport (2006); Eddington 'Transport Study', HMSO, Norwich

Ref 7.2: DfT (2007); 'Towards a Sustainable Transport System', DfT Publications, London

Ref 7.3: DfT (2008); 'Delivering a Sustainable Transport System', DfT Publications, London

Ref 7.4: DETR (2011); 'Creating Growth, Cutting Carbon – Making Sustainable Transport Happen', DfT Publications, London

Ref 7.5: MHCLG (2018); 'National Planning Policy Framework', HMSO

Ref 7.6: DfT (2007); 'Guidance on Transport Assessment', HMSO, Norwich

Ref 7.7: MHCLG (2014); 'Planning Practice Guidance: Travel Plans, Transport Assessments and Statements', HMSO, Norwich

Ref 7.8: Highways England (2015); 'The strategic road network: Planning for the future: A guide to working with Highways England on planning matters', HE, London

Ref 7.9: Northamptonshire County Council; (2012); 'Northamptonshire Transport Plan'

Ref 7.10: Corby, Kettering, Wellingborough and East Northamptonshire Councils (2016); 'North Northamptonshire Joint Core Strategy'