

7 TRAFFIC AND TRANSPORT

7.1 Introduction

7.1.1 This Chapter of the Environmental Statement (ES) determines the magnitude and significance of the environmental effects associated with the transportation requirements of the Proposed Development.

The context of this Chapter has been informed by the Transport Assessment within Appendix 7.1 of this ES.

7.2 Assessment Approach

Methodology

Assessment of the Site's Travel Credentials

7.2.1 The accessibility credentials of the application site have been considered by way of GIS-based modelling, using centralised travel networks and public transport data to identify the catchment of each mode.

Assessment of the Likely Traffic Effects

7.2.2 The potential effects of development traffic have been considered in terms of the potential change in the current operation of the highway network and the following study area has thus been determined in agreement with the Local Highway Authority and Highways England:

- 1) Faraday Avenue
- 2) The A446 Lichfield Road

7.2.3 The geometric characteristics and general maintenance of the network are considered with a view to establishing the suitability of the network in the context of accommodating the types of vehicles anticipated to be visiting the Proposed Development.

Ascertaining Traffic Conditions

7.2.4 The Environmental Impact Assessment (EIA) has sought to take account of existing permitted and future proposed development that may have an effect on baseline traffic demand on the study area highway network. In this respect the following scenarios will form part of the assessment.

Table 7.1: Traffic Flow Scenarios

Scenario	Matrix
2021 Baseline	<p style="text-align: center;">As 2016 Existing +</p> <ul style="list-style-type: none"> - Background Traffic Growth/Committed Development
2021 Baseline + Development	<p style="text-align: center;">As 2021 Baseline +</p> <ul style="list-style-type: none"> - Proposed Development

7.2.5 A forecast of likely traffic flows has been derived from data collected from traffic surveys which commenced on Thursday 14th April 2016. This is supplemented by data derived from predicted traffic generation of the Renewable Energy Centre based upon first principles. Background traffic growth between 2016 and 2021 has been obtained using TEMPRO 6.2.

7.2.6 The magnitude and significance of the forecasted development traffic flows have then been considered in the context of the '2021 Baseline' identified above.

Ascertaining Changes in Highway Capacity

7.2.7 In agreement with the Local Highway Authorities of Rotherham and Sheffield as well as Highways England, the following junctions have been assessed for the Proposed Development.

- Faraday Avenue/Canton Lane Roundabout
- Faraday Avenue/Edison Road Roundabout
- Faraday Avenue/A446 Lichfield Road Roundabout

Consideration of the Likely Safety Effects

7.2.8 The potential highway safety effects of the calculated development traffic flows has been undertaken with regard to the existing pattern of accidents and with reference to the Institute of Highways and Transportation (IHT) Risk Assessment Matrix.

7.2.9 Within this, the *severity* of a collision is determined by impact speed, the type of vehicles involved in the collision and the protection afforded to victims. The resultant *risks* are categorised within the standard matrix below as 'low', 'medium', 'high', or 'very high'.

Figure 7.1: IHT Risk Assessment Matrix

		Incident frequency			
		>Once a year (Frequent)	Between 1-3 years (Occasional)	Between 4-7 years (Rare)	Between 8-20 years (Very rare)
Severity	Fatal	Very high	High	High	Medium
	Serious	High	High	Medium	Medium
	Slight	High	Medium	Medium	Low
	Damage	Medium	Medium	Low	Low

7.2.10 It is typically accepted that a 'low risk' is immaterial and consideration of mitigation would not be required. Where 'medium risk' ratings are indicated, mitigation is not a prerequisite but practical solutions should be considered where possible. 'High risk' ratings indicate that mitigation would be desirable whereas a 'very high risk' would require immediate intervention.

7.2.11 Based on the above, an evaluation has been undertaken to establish if the calculated development traffic flows, when considered cumulatively, would lead to an abnormal or unacceptable safety risk. Where any adverse safety impacts are considered likely, appropriate mitigation measures have been identified.

Consideration of the Likely Environmental Effects

7.2.12 The need to consider environmental impacts beyond the highway capacity and safety effects has been determined by reference to the guidance for the Environmental Assessment of Road Traffic (IEA, 1993), which suggests two broad rules to define the need to undertake full environmental impact analysis. These are as follows:

- 1) The Highway links where traffic flows will increase by more than +30% (or where the number of HGVs will increase by more than +30%); or
- 2) Sensitive areas where traffic flows will increase by +10% or more.

7.2.13 In the event that that the EIA process identifies the resultant traffic increases exceed either of the above criteria, the significance of and exposure to the environmental effects of traffic is considered. The environmental effects of traffic include:

- 1) Pedestrian amenity (including severance, fear and intimidation, and delay)
- 2) Driver delay
- 3) Accidents and Safety

Assessment of Significance

7.2.14 Consideration of the significance of the effects is undertaken in compliance with the EIA guidance, as outlined below.

7.2.15 In the context of 'accidents and safety' the guidance suggests that professional judgment would be needed to assess the significance of the impact in the context of existing accident patterns. This Chapter refers the IHT Risk Assessment (mentioned above) to provide an informative to underpin the professional judgment.

7.2.16 In the context of driver delay, it is considered reasonable to assume for simplicity that the magnitude of driver delay effects will correspond with the changes in traffic flow. Categorisation of the magnitude of the effects is summarised in Table 7.2 below.

Table 7.2: Magnitude of Effect based upon Traffic Flow

Sensitivity	Magnitude of Effect
Substantial	Consideration deterioration / improvement in local conditions or circumstances (+/- 90% change in traffic demand).
Moderate	Readily apparent change in conditions (+/- 60-90% change in traffic demand).
Slight	Perceptible change in conditions or circumstances (+/- 30-60% change in traffic demand).
Negligible	Very small perceptible change in conditions or circumstances (+/- 10 – 30% change in traffic demand).
No Impact	No discernible change in conditions (+/- 0 – 10% change in traffic demand).

7.2.17 Receptors are defined in Volume 11 of the Design Manual for Roads & Bridges (DMRB) and the levels for the environmental sensitivity of a receptor are specified therein. A similar approach is adopted herein with four levels of receptor sensitivity assessed: Low, Medium, High and Very High, as shown in Table 7.3. In this respect, the land-use of the receptors have been used to determine each receptor's sensitivity, based upon the typical level of pedestrian activity for that land use.

Table 7.3: Receptor Sensitivity based upon Traffic Flow

Sensitivity	Receptor
Very High	Nationally or internally important site with special sensitivity to increases in road traffic.
High	Regionally important site with special sensitivity to increases in road traffic.
Moderate	Residential (with frontage onto road under consideration), educational, healthcare, leisure public open space or town centre/local centre land-use.
Low	Employment or out of town retail land use, such as a retail park.

7.2.18 In the context of the Proposed Development, receptors within the study area are as follows:

- Receptor 1 – Hams Hall Distribution Park
- Receptor 2 – Residential Property on A446 Lichfield Road

7.2.19 In this regard, the sensitivity of the distribution park is considered to be 'low' whereas the sensitivity of residential dwellings is categorised as 'moderate'. The significance of the impacts have been considered with a matrix-based approach, similar to that contained within DMRB Chapter 11, such that the impacts are derived from the receptor's environmental sensitivity value in combination with the magnitude of the effect at that receptor. The matrix criteria is set out below.

Table 7.4 Significance Matrix

		Magnitude of Impact (Degree of Change)			
		Negligible	Slight	Moderate	Substantial
Receptor Sensitivity	Very High	Slight Adverse	Moderate Adverse	Substantial Adverse	Substantial Adverse
	High	Slight Adverse	Slight Adverse	Moderate Adverse	Substantial Adverse
	Moderate	Negligible	Slight Adverse	Moderate Adverse	Moderate Adverse
	Low	Negligible	Negligible	Slight Adverse	Moderate Adverse

Policy Framework

7.2.20 The EIA process has been undertaken with due regard to current best practice and current policy, particularly in respect to the National Planning Policy Framework (NPPF) such that the assessment focusses on the following two principle areas of policy;

1) Sustainability

The stated purpose of the NPPF is "to help to achieve sustainable development" (Ministerial Foreword) and NPPF is therefore underpinned by a presumption in

favour of sustainable development. In this regard, the economic, social and environmental credentials of the development proposals will be considered throughout this report, so far as is relevant to transport matters.

2) Cumulative Impact

Paragraph 32 of NPPF states that "development should only be prevented or refused on transport grounds where the residual cumulative impacts of a development are severe" and the report therefore seeks to quantify the magnitude of any transport effects (including highway capacity and safety) in order to inform measures of likely severity.

7.2.21 This Chapter of the ES has been prepared with reference to the requirements and best practice methods advocated by the following documents:

- 1) Planning Practice Guidance (Department for Communities and Local Government, March 2014);
- 2) The National Planning Policy Framework (Department for Communities and Local Government, March 2012);
- 3) Guidelines for the Environmental Assessment of Road Traffic (IEA, 1993); and
- 4) Department for Transport's document entitled 'Design Manual for Roads & Bridges' Volume 11: Environmental Assessment.

Scoping Criteria

7.2.22 In accordance with the requirements of EIA, the assessment of impacts has been undertaken following appropriate consultation with the Local Planning and Highway Authorities. Under the EIA Regulations Scoping is not a mandatory requirement, but through pre-application meetings with Matthew Williamson (Planning Officer at Warwickshire County Council), the key environmental issues were able to be identified at an early stage. This enabled the ES to determine which elements of the Proposed Development are likely to cause significant environmental effects and to identify issues that can be 'scoped out' of the assessments.

7.2.23 The transport-related issues relevant to the proposed development are summarised as follows:-

- 1) The EIA Chapter should be based on information provided in the Transport Assessment.
- 2) Supplementary analyses should be provided to identify the magnitude of change for a typical weekday, from which the significance of the impact may be determined.
- 3) A Travel Plan would be required as part of the mitigation strategy.

Limitation to the Assessment

7.2.24 There are no clear limitations to the assessment provided below. All traffic surveys were conducted on a neutral weekday and the data collected as part of the assessment is considered to be reliable and robust.

7.3 Baseline Conditions

Site Description and Context

7.3.1 The application site comprises an area of 1.96 hectares of brownfield land, approximately 1.65 kilometres to the south-east of Junction 9 of the M42 Motorway, as well as connections to the M6 Toll Road. The site is located within an established industrial area and is bound to the east by industrial units and to the south by Faraday Avenue, which provides direct access to the site. The western edge of the site is bound by airport parking business, while the application site abuts undeveloped brownfield land to the north.

7.3.2 In a wider context, the site is located on the north edge of Coleshill and is strategically positioned to provide easy access to key transport links including the M42 and M6. Such access is reflective of the industrialised nature of the locality and ensures that the site is easily accessible for larger commercial vehicles.

Site Access

7.3.3 The application site is accessed off Faraday Avenue via a priority T-junction arrangement, with a left-in/left-out access. Access to the site is currently gated and the associated junction has an entry radius of 15 metres and an exit radius of 7 metres. This is considered to be sufficient to accommodate the turning requirements of large goods vehicles.

7.3.4 On site observations have noted the presence of on-street parking within the vicinity of the site access, which is also indicated by the erosion of the adjacent grass verge. In terms of geometry, visibility at the junction is achievable over a distance in excess of 100 metres in either direction from a 2.4 metre setback distance. This is commensurate with the likely approach speeds of vehicles. An image of the site access arrangements is presented in Figure 7.2 below for reference.

Figure 7.2: Site Access from Faraday Avenue



Faraday Avenue

7.3.5 The Faraday Avenue forms the main vehicular route into the Hams Hall Distribution Park and accommodates a dual carriageway separated by a central grass verge. Each carriageway measures approximately 7.5 metres in width with no restrictions on parking within the vicinity of the application site. Faraday Avenue is accessed off the A446-Lichfield Road via a four-arm give-way roundabout located to the west of the application site and provides a route through to Station Road via Fisher Lane to the east.

7.3.6 The carriageway is subject to a 30 mph speed limit throughout and is barrier controlled to the west of the application site in the vicinity of the Faraday Avenue/Edison Road roundabout to regulate access. The barrier controlled access located on Faraday Avenue also comprises part-time signals to provide traffic management of the roundabout when required. The access road is publically owned and maintained and the carriageway surface is in a good state of repair and does not appear to require any remedial work.

7.3.7 The road is illuminated throughout with allotted pedestrian and cycle paths located on either side of the carriageway, measuring approximately 2.5 metres in width and providing a good level of pedestrian and cycle access. An image of the site access arrangements is presented in Figure 7.3 below for reference.

Figure 7.3: Looking East on Faraday Avenue



Faraday Avenue/Edison Road Roundabout

7.3.8 The roundabout of Faraday Avenue/Edison Road is located approximately 200 metres to the west of the site access. It's a four-arm give-way roundabout formed of Faraday Avenue, Edison Road and an unnamed road leading towards the neighbouring village of Lea Marston to the north.

7.3.9 The roundabout provides a route towards the A446-Lichfield Road to the west, which then leads to Junction 9 of the M42 Motorway. The roundabout has an Inscribed Circle Diameter (ICD) of 67 metres and incorporates two lanes on the circulatory carriageway with a kerbed central island of some 47 metres. At this point the carriageway of the roundabout is subject to a 30 mph speed limit.

7.3.10 All approaches provide a two lane flared entry to the roundabout, with the nearside lane designated for traffic turning left and travelling straight ahead and the offside lane for right-turning traffic. All approaches on the roundabout contain flared entries, measuring between 7 to 10 metres in width across both lanes. The western and eastern approaches to the roundabout from Faraday Avenue both comprise remotely controlled barriers to regulate access when needed, as well as part time signals.

7.3.11 Pedestrian and cyclists are accommodated via uncontrolled crossing points available at each approach to the roundabout with designated dropped kerbs and tactile paving. An image of the westbound approach to Faraday Avenue/Edison Road roundabout is provided in Figure 7.4 below.

Figure 7.4: Westbound Approach to Faraday Avenue/Edison Road Roundabout



Faraday Avenue/Canton Lane Roundabout

7.3.12 The roundabout of Faraday Avenue/Canton Lane is located approximately 300 metres to the east of the site access. It comprises of a four-arm give-way roundabout formed from Faraday Avenue, Canton Lane and an unnamed road leading towards a number of industrial units.

7.3.13 The roundabout has an Inscribed Circle Diameter (ICD) of 62 metres and incorporates 2 lanes on the circulatory carriageway with a kerbed central island of some 42 metres. At this point the carriageway of the roundabout is subject to a 30 mph speed limit.

7.3.14 All approaches provide a 2 lane flared entry to the roundabout, with the nearside lane designated to traffic turning left and travelling straight-ahead and the offside lane for right-turning traffic. All approaches on the roundabout contain flared entries, measuring between 6.5 and 10.5 metres in width across both lanes.

7.3.15 Pedestrian and cyclists are accommodated for with uncontrolled crossing points available at each approach to the roundabout with designated dropped kerbs and tactile paving. An image of the westbound approach to Faraday Avenue/Canton Lane roundabout is provided in Figure 7.5 below.

Figure 7.5: Westbound Approach to Faraday Avenue/Canton Lane Roundabout



Surrounding Road Network in Wider Context

7.3.16 Located approximately 1.7 kilometres north of the application site, access is available to the northbound and southbound of the M42 Motorway via Junction 9. This is connected to the site via the trunk road of the A446-Lichfield Road which runs adjacent to the west of Faraday Avenue. This junction also provides further links to the M6 Motorway Toll Road situated to the west of the M42 Motorway. As the application site is well connected to the Motorway network this will allow for relative ease of access for HGVs travelling to the site.

Access by Car

7.3.17 The study area highway network was considered at Section 3.0 of the submitted Transport Assessment (**Appendix 7.1**), wherein a review of the geometric layout of the network was undertaken in the context of the Design Manual for Roads and Bridges (DMRB).

7.3.18 The assessment concluded that the application site is located where it would be able to access a high quality network of roads that provide connectivity to other significant destinations around the region, and made easier by the proximity of the trunk road and motorway network. These roads were determined to be geometrically suitable for use by the types of vehicles anticipated to be associated with the Proposed Development.

Baseline Survey Information

Access by Walking and Cycling

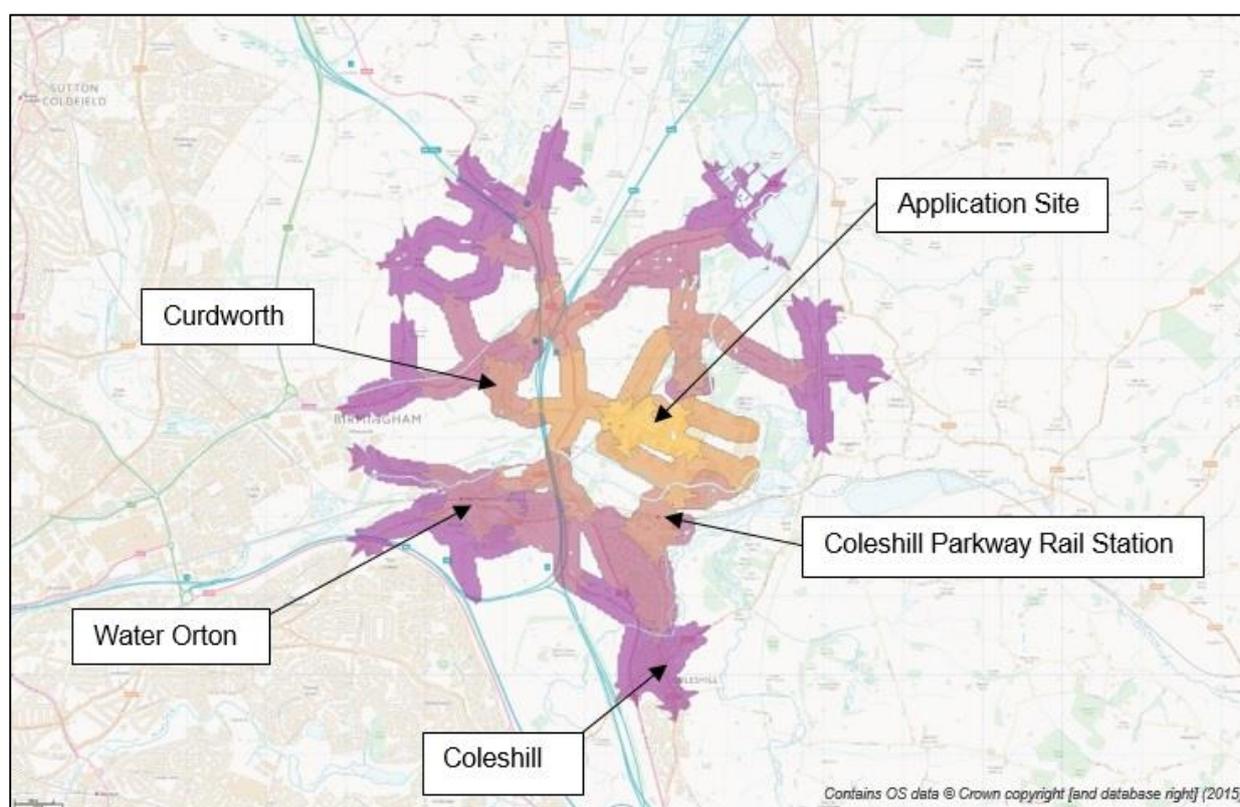
7.3.19 The opportunities to travel to the application site by foot have been considered at Section 4.0 of the submitted Transport Assessment (**Appendix 7.1**) wherein the baseline footway infrastructure has been replicated within a GIS accessibility model.

7.3.20 Pedestrian and cycling infrastructure in the vicinity of the site is considered to be of a good standard. As demonstrated above, all roads accommodate footways on either side of the carriageway, with street lighting and appropriate crossing facilities provided throughout.

7.3.21 Given the site is already located within a large and established industrial area, it is considered the pedestrian and cycling accessibility levels of the site are already of a good standard and the site is unlikely to require any improved levels of accessibility as a result of the development proposals.

7.3.22 Notwithstanding the above, the credentials of the site have been considered further by way of GIS-based modelling to identify the geographical catchment area for cycling accessibility. A typical threshold of 5 kilometres has been assumed for cycling. The resulting analysis is shown in Figure 7.6.

Figure 7.6: 5km Cycling Catchment Area



Access by Public Transport

7.3.23 The opportunities to travel to the application site by bus have been considered at Section 4.0 of the submitted Transport Assessment (**Appendix 7.1**).

7.3.1 There are no current bus services available within 400 metres of the application site. However public bus stops are located at Coleshill Parkway Rail Station located approximately 1 kilometre south-east of the application site. Coleshill Parkway Rail Station is currently managed by London Midland and provides frequent services to Birmingham New Street, Stansted Airport and Leicester.

Highway Safety

7.3.2 The safety risks of the existing study area network are considered within Section 3.5 of the submitted Transport Assessment (**Appendix 7.1**) wherein existing accident records provided on behalf of the Local Highway Authority were provided for the most recent five-year period available.

7.3.3 The data were evaluated in order to establish if there were obvious clusters or patterns of accidents that might be suggestive of a deficiency in the geometry of the highway that might be contributing to an unacceptable safety risk. In this respect, the Transport Assessment review identified that the majority of accidents within the study area have taken place within the vicinity of the Faraday Avenue/A446-Lichfield Road roundabout.

7.3.4 In view that risk increases with exposure the above results should be considered in the context of traffic demand and in this respect, it is to be expected that accidents occur more frequently at those locations that accommodate greater levels of demand.

7.3.5 On Faraday Avenue in the immediate vicinity of the application site there have been ten Personal Injury Accidents within the last five years, eight of which are classified as 'slight' and two classified as 'serious'. None of these accidents indicate an inherent problem with highway design or geometry. It is therefore concluded that, in terms of safety the surrounding highway network can comfortably accommodate the traffic flows generated by the Proposed Development.

Observed Traffic Demand

7.3.6 Observed traffic demand for 2016 has been established through data collected from traffic surveys which commenced on Thursday 14th April 2016. A summary of traffic data for the '2016 Observed' scenario is provided in Table 7.5 below:

Table 7.5 2016 Observed Traffic Flows - AADT

Link	All Vehicles			HGVs		
	Eastbound	Westbound	Total	Eastbound	Westbound	Total
Faraday Avenue	4,148	4,340	8,487	1,909	3,301	5,210
Link	Northbound	Southbound	Total	Northbound	Southbound	Total
A446 Lichfield Road (North)	14,305	11,597	25,902	2,101	2,187	4,288

Baseline Traffic Demand and Highway Capacity

7.3.7 In agreement with the Local Highway Authority and following discussion with Highways England, the submitted Transport Assessment (**Appendix 7.1**) considers a horizon year development scenario for consented development at 2021, incorporating all committed developments.

7.3.8 Background traffic growth between 2016 and 2021 has been determined using TEMPRO 6.2 and has been obtained by using the following criteria:

- Coleshill (44UB1)
- Urban Principal Road
- NTM AF09 Dataset
- Average Day

7.3.9 The resulting growth factor of 1.0897 has been used to establish the 2021 Baseline traffic flows.

7.3.10 The data collected represents demand on the network throughout the day. As such, this Chapter has assessed the significance of the impacts at all times of the day. A summary of traffic data for the '2021 Baseline' scenario is provided in Table 7.6 below.

Table 7.6 2021 Baseline Traffic Flows - AADT

Link	All Vehicles			HGVs		
	Eastbound	Westbound	Total	Eastbound	Westbound	Total
Faraday Avenue	4,520	4,729	9,249	2,080	3,597	5,677
Link	Northbound	Southbound	Total	Northbound	Southbound	Total
A446 Lichfield Road (North)	15,588	12,637	28,225	2,290	2,383	4,672

7.4 Assessment of Likely Significant Effects

Construction

7.4.1 Based on experience of previous developments of a similar size, it is expected that civil and infrastructure works would likely last onsite for a duration of 38 months including commissioning and testing. The potentially significant construction phase impacts are considered likely to be determined as a result of the following principle activities:

- 1) Daily arrival and departure of construction traffic;
- 2) Onsite activity to demolish the existing development and facilitate construction of buildings and associated infrastructure;
- 3) Export/Import of any residual material during demolition of the site; and
- 4) Delivery of construction materials.

Magnitude of the Effects

7.4.1 It is anticipated that transport related effects will be associated with the demolition and construction of the site, combined with the movements of construction staff. Allowances have therefore been made in order to consider the magnitude and significance of the effects during this period.

7.4.2 Demolition will take place over a couple of months and is unlikely to involve earthworks or re-grading. It is therefore considered that vehicular movements associated with the construction phase will not exceed the operational phase of the development. In this respect the magnitude of effects is expected to be lower than the operational phase.

7.4.3 As mentioned above, the construction phase is expected to last for a period of 38 months including the commissioning and testing period, which is anticipated to last for approximately 10-12 months. Over the construction period an average work force of 100 personnel are expected to be onsite with a peak of 225 workers occurring between month 20 and month 23. It is considered that the above figures are acceptable, particularly given their temporary nature and that the temporary extant use currently on site is likely to generate higher levels of movement. In order to assist travel to site a bus parking area is likely to be provided to enable contractors to provide minibus transport for local workers and reduce the number of car trips to site.

7.4.4 Further to the above it is expected that the construction phase is likely to generate 30 HGV vehicles a day. During major concrete pours it is expected that this number would double. In respect to HGV movements the magnitude of effects is expected to be similar to the operational phase.

7.4.5 The significance of the peak construction phase impacts are considered to be acceptable, particularly in light of their temporary nature. Notwithstanding this, mitigation measures are proposed to reduce the magnitude of the effect further and these are identified at Section 7.5 of this Chapter

Operational Traffic Generation

7.4.6 Section 5.0 of the submitted Transport Assessment (**Appendix 7.1**) sets out the methodologies used to determine the likely trip generation characteristics of the Proposed Development.

7.4.7 The submitted Transport Assessment identifies the development trip generations for the weekday peak hours in line with the scope agreed with the Local Highway Authority and Highways England, proving a comparison with the extant land use.

Magnitude of the Effects

7.4.8 The above trip generations have been considered in relation to the baseline traffic flows identified within Table 7.6 to provide an indicative magnitude of change expected. The results are set out at Table 7.7, below.

Table 7.7: 2021 with Proposed Development - AADT

Link	All Vehicles			HGVs		
	Eastbound	Westbound	Total	Eastbound	Westbound	Total
Faraday Avenue	4,555	4,752	9,307	2,114	3,628	5,741
Link	Northbound	Southbound	Total	Northbound	Southbound	Total
A446 Lichfield Road (North)	15,612	12,672	28,284	2,320	2,416	4,736

7.4.9 The relative impact of the Proposed Development on the baseline traffic flows of the surrounding highway network is provided in Table 7.8 below. Although though there is a

small increase in traffic movements, this appears to be negligible in comparison and well within the normal day-to-day fluctuations in traffic flows.

Table 7.8: Impact of Proposed Development - AADT

Link	All Vehicles			HGVs		
	Eastbound	Westbound	Total	Eastbound	Westbound	Total
Faraday Avenue	+24 (+0.77%)	+35 (+0.49%)	+58 (+0.63%)	+31 (+1.63%)	+33 (+0.86%)	+64 (+1.13%)
Link	Northbound	Southbound	Total	Northbound	Southbound	Total
A446 Lichfield Road (North)	+35 (+0.15%)	+24 (+0.28%)	+58 (+0.21%)	+33 (+1.31%)	+31 (+1.38%)	+64 (+1.37)

Significance of the Impact

7.4.10 As stated previously within this Chapter, the significance of the effect is determined in combination with the sensitivity of the receptor, as set out at Table 7.4.

7.4.11 In this context, the magnitude of the effects identified above in Table 7.6 above indicate that the significance of the operational traffic effects would be classified as 'Negligible' in respect of receptors identified in Section 7.2.

7.4.12 In the context of highway safety, it is considered that the change in traffic flows would be unlikely to materially or discernibly alter the risk of accident on the network. Consequently, the significance of the operational effects are considered to be acceptable. Notwithstanding this, mitigation measures are proposed to reduce the magnitude of the effect further and these are identified at Section 7.5 of this Chapter.

Summary of Magnitude and Significance

7.4.13 In summary of the above, the magnitude and significance for the calculated impacts is set out in Table 7.9 below.

Table 7.9: Summary of Magnitude and Significance

Impact	Receptor Sensitivity	Direct or Indirect	Positive/Negative	Permanent/Temporary	Magnitude	Significance
Construction						
Receptor 1 Hams Hall Distribution Park	Low	Direct	Positive	Temporary	Negligible	Negligible
Receptor 2 Residential Property on A446 Lichfield Road	Moderate	Direct	Positive	Temporary	Negligible	Negligible
Operational						
Receptor 1 Hams Hall Distribution Park	Low	Direct	Positive	Permanent	Negligible	Negligible
Receptor 2 Residential Property on A446 Lichfield Road	Moderate	Direct	Positive	Permanent	Negligible	Negligible

7.5 Mitigation and Enhancement

7.5.1 Notwithstanding the already small and acceptable environmental impacts identified above, it is proposed to mitigate the development traffic effects further through the range of measures as identified below.

Construction Phase

7.5.2 It is proposed that a Construction Traffic Management Plan (CTMP) would be prepared and submitted to Warwickshire County Council prior to the commencement of on-site works. The purpose of the CTMP would be so that appropriate environmental management practices are followed during the construction (and demolition) phase of the project.

7.5.3 Although measures will be identified within the CTMP, it is possible that they may include some or all of the following:

- 1) Wheel washing facilities to prevent the transfer of detritus onto the public highway.
- 2) Appropriate road signage directing construction traffic to the appropriate location and warning drivers and other road users of the presence of construction vehicle traffic.
- 3) A Construction Staff Travel Plan that would seek to minimise the number of car-borne visits to the application site. Notwithstanding the fact that the contractor would look to limit the potential for on-site car parking, a mini-bus collection service may be operated by the appointed contractor.

Operational Phase

7.5.4 Given the application site's current land-use and the resulting impact of the Proposed Development, it is considered that the surrounding highway network is of a suitable standard and will not require further mitigation to accommodate movements associated with the operational phase. The application site's location on an industrial estate, means the roads within the vicinity of the site all incorporate suitable geometry to accommodate the movements of HGV traffic.

7.5.5 Being located within an established industrial area, the site also provides a high level of accessibility to sustainable means of transport including walking, cycling and public transport, as demonstrated in section 7.3 of this chapter. As part of the Transport Assessment included at Appendix 7.1 an Outline Travel Plan has been prepared to promote the use of sustainable travel amongst future staff visitors.

Residual Impacts of Mitigation Measures

7.5.6 For simplicity, the benefits afforded by introduction of the above mitigation strategies have not been quantified and indeed it is considered that doing so would not alter the conclusions of this Chapter. Thus, for the purpose of this assessment, the residual impacts are considered to be as follows.

Table 7.10: Summary of Residual Impacts

Impact	Receptor Sensitivity	Direct or Indirect	Positive/Negative	Permanent/Temporary	Magnitude	Significance
Construction						
Receptor 1 Hams Hall Distribution Park	Low	Direct	Positive	Temporary	Negligible	Negligible
Receptor 2 Residential Property on A446 Lichfield Road	Moderate	Direct	Positive	Temporary	Negligible	Negligible
Operational						
Receptor 1 Hams Hall Distribution Park	Low	Direct	Positive	Permanent	Negligible	Negligible
Receptor 2 Residential Property on A446 Lichfield Road	Moderate	Direct	Positive	Permanent	Negligible	Negligible

7.6 Cumulative and In-Combination Effects

7.6.1 It is possible that construction of the Proposed Development will occur concurrent to the construction of other nearby schemes. It is apparent that most of the schemes to be considered are already operational and therefore form part of the baseline assessment. For the remaining schemes it is apparent they have, at best, outline planning permission,

with limited information from which to gauge the associated impacts and to undertake a comprehensive cumulative assessment.

7.6.2 Nevertheless, confidence may be taken from the results of the analysis contained herein, which identifies a worst-case impact of 'Negligible'. This suggests that there is significant scope to accommodate cumulative traffic effects whilst maintaining acceptable thresholds of impact.

7.7 Summary and Conclusion

Introduction

7.7.1 This Chapter of the ES has been written by Curtins in order to assess the environmental impacts of a proposed development of Hams Hall Energy at Faraday Avenue, Coleshill. The context of this Chapter has been informed by the technical analysis contained within the submitted Transport Assessment contained **Appendix 7.1** of this ES.

7.7.2 This Chapter has considered the environmental impacts of traffic to include pedestrian amenity, highway safety and driver delay in the context of the relative change in traffic flows. Two receptors have been identified within the study area, these being the Hams Hall Distribution Park and the residential property on the A446 Lichfield Road. The sensitivity of these receptors was noted to be 'low' and 'moderate', respectively.

Baseline Conditions

7.7.3 The location of the application site has been considered in the context of existing and future consented infrastructure using GIS-based modelling techniques, which confirm that the site relates well by non-car modes to adjoining residential areas.

7.7.4 Baseline traffic flows have been collected and used as the basis of the environmental impact analysis. Analysis against daily flows is considered reasonable in light of the fact that the trip profile of the site is likely to be distributed evenly over the course of the day.

Likely Significant Effects

7.7.5 Operational phase impacts have been determined with reference to the trip generation calculations contained within the submitted Transport Assessment at **Appendix 7.1**.

7.7.6 Construction phase impacts could be generated from the arrival and departure of construction workers and associated HGV traffic. Whilst impacts can be significantly reduced with appropriate mitigation, the construction phase impacts would be, at worst, categorised as 'Negligible'. This is considered to be acceptable, particularly in light of the temporary nature of this phase of development.

7.7.7 Cumulative impacts during construction could arise alongside the construction of adjoining schemes. However, schemes are either already operational and are included within the baseline assessment or there is limited information from which to gauge the associated impacts and to undertake a comprehensive cumulative assessment. Notwithstanding, an arbitrary quadrupling of construction traffic flows assumed for the Proposed Development will only yield an acceptable 'Moderate Adverse' impact.

Mitigation and Enhancement

7.7.8 Given the application site's current land use and the resulting impact of the Proposed Development, it is considered that the surrounding highway network is of a suitable

standard and will not require further mitigation to accommodate movements associated with the operational phase.

7.7.9 For the construction phase it is proposed that a Construction Traffic Management Plan (CTMP) would be prepared and submitted to the Local Planning Authority prior to the commencement of on-site works. The purpose of the CTMP would be so that appropriate environmental management practices are followed during the construction (and demolition) phase of the project

7.7.10 For the operational phase an Outline Travel Plan has been prepared to promote the use of sustainable travel amongst future staff visitors.

Conclusion

7.7.11 In view of the above, it is the conclusion of this Chapter of the ES that the Proposed Development can be accommodated without any unacceptable detriment to the environmental effects of traffic. Furthermore, it is noted that the inclusion of mitigation measures at both construction and operational phases would reduce the effects and impacts of the development further, providing confidence in the conclusion of this assessment.