ENVIRONMENTAL STATEMENT – VOLUME 1 – CHAPTER 5 TRAFFIC AND TRANSPORT

Drax Bioenergy with Carbon Capture and Storage

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations (2009) - Regulation 5(2)(a)

Document Reference Number: 6.1.5

Applicant: Drax Power Limited

PINS Reference: EN010120

REVISION: 01

DATE: May 2022

DOCUMENT OWNER: WSP UK Limited

AUTHOR: B. Pollard / P Whitley

APPROVER: V. Holden

PUBLIC

TABLE OF CONTENTS

TABLES

5. TRAFFIC AND TRANSPORT

5.1. INTRODUCTION

5.1.1. This chapter reports the outcome of the assessment of likely significant environmental effects arising from the Proposed Scheme on Traffic and Transport.

5.1.2. Impacts during the construction phase, operational phase and decommissioning of the Proposed Scheme are assessed. A full description of the Proposed Scheme is described in **Chapter 2 (Site and Project Description)** (document reference 6.1.2) of this ES.

5.1.3. This chapter (and its associated figures (**Volume 2**) and appendices (**Volume 3**)) is intended to be read as part of the wider ES with particular reference to **Chapter 6 (Air Quality)** (document reference 6.1.6) and **Chapter 7 (Noise and Vibration)** (document reference 6.1.7) and the **Outline Construction Traffic Management Plan (CTMP)** (**Appendix 5.1** (document reference 6.3.5.1)), and **Framework Construction Worker Travel Plan (CWTP)** (**Appendix 5.2** (document reference 6.3.5.2)).

5.1.4. This chapter reports the assessment of the likely significant effects of the Proposed Scheme on Traffic and Transport and covers the following:

a. Summarises the legislative and policy framework;
b. Describes consultation undertaken to date;
c. Describes the methodology followed for the assessment;
d. Identifies the potential impacts as a result of the Proposed Scheme on the construction phase and operational phase;
e. Details the design, mitigation and enhancement measures that have been identified;
f. Reports the assessment of the significant effects of the Proposed Scheme; and
g. Details the monitoring that should be carried out for the Proposed Scheme.

5.1.5. This chapter considers the likely effects of the Proposed Scheme on both motorised and non-motorised users of the highway network within the defined study area during that construction phase, operational phase, and decommissioning.

5.1.6. The Proposed Scheme has the potential to affect traffic and transport as a result of:

a. During the construction phase / decommissioning:
    i. Construction Traffic - Temporary increases in Heavy Duty Vehicular (HDV) traffic associated with the import and export of construction materials by road;
    ii. Construction Worker Movements - Temporary increases in Light Duty Vehicular (LDV) vehicular traffic associated with the construction workforce;
    iii. Site Access - The creation of a temporary construction site access to the East Construction Laydown Area and parking areas from the public highway; and

iv. Abnormal Indivisible Loads (AIL) - The delivery of AIL and associated highway modifications and traffic management.

b. During the operational phase:

i. Operational Traffic - an increase in HDV traffic associated with the import and export of raw materials; and

ii. Operational Worker Movements - changes in LDV traffic associated with the operational workforce.

5.1.7. For the purpose of this ES, decommissioning impacts are anticipated to be no worse than those during the construction phase following the implementation of a Decommissioning Traffic Management Plan (DTMP) for the works. The construction phase and decommissioning have therefore been assessed together.

OPTIONALITY

5.1.8. For the purposes of this assessment the options, as described in **paragraph 2.3.4** of **Chapter 2 (Site and Project Description)** affect the construction phase only. Two options are being considered for the construction phase of the Proposed Scheme:

a. Option 1 ('Sequential' Programme): The Carbon Capture Plant associated with Unit 2 is programmed to be constructed first along with the Common Plant, with the Carbon Capture Plant associated with Unit 1 to follow sequentially.

b. Option 2 ('Parallel' Programme): The Carbon Capture Plant associated with Unit 1 and Unit 2 as well as the Common Plant to be constructed at the same time.

5.1.9. This chapter assesses Option 2 as the worst case for traffic and transport. Option 2 is predicted to generate a greater number of vehicle movements during the peak construction year than the corresponding peak construction year in Option 1. In assessing the worst case scenario for traffic and transport, it is considered that no greater adverse effects would occur if Option 1 was adopted.

5.1.10. The size of the construction workforce and number of HDV movements during the construction phase varies between Option 1 and Option 2. The **Schedule Planner** included at (**Appendix 5.5** (document reference 6.3.5.5)) sets out the anticipated workforce and HDV profile across both Option 1 and 2 and is described further later in this Chapter at **paragraph 5.9.2 to 5.9.4**.

5.1.11. This chapter also assesses the chosen AIL route option as described in **paragraph 2.3.19** of **Chapter 2 (Site and Project Description)**. No assessment of the alternative construction transport routes described in **Section 3.6** of **Chapter 3 (Consideration of Alternatives)** (document reference 6.1.3) are assessed in this chapter as they have been assessed and discounted during consultation on and development of the Proposed Scheme.

5.2. LEGISLATIVE AND POLICY FRAMEWORK

LEGISLATIVE FRAMEWORK

5.2.1. An overview of the applicable legislative framework is summarised as follows.

National

Highways Act (1980)

5.2.2. The Highways Act (1980) (Parliament of the United Kingdom, 1980) sets out the requirements pertaining to delivering highways infrastructure, managing existing highways and managing highway activity including off site highway works, for example, the creation of temporary site access.

New Roads and Street Works Act (1991)

5.2.3. The New Roads and Street Works Act (1991) (Parliament of the United Kingdom, 1991) provides a legislative framework for street works by undertakers and works for road purposes to the extent that these must be co-ordinated by street authorities.

5.2.4. The aim of the 1991 Act is to balance the statutory rights of highway authorities and undertakers to carry out works with the right of road users to expect the minimum disruption from works.

5.2.5. The 1991 Act was introduced to tackle congestion and disruption on the road network and requires that local highway authorities ensure traffic can move quickly and freely on their roads, where possible. The 1991 Act includes powers related to street works including the provision of temporary construction access and removal of street furniture.

Traffic Management Act (2004)

5.2.6. The Traffic Management Act (2004) (Parliament of the United Kingdom, 2004) includes powers to tackle congestion and disruption on the road network and requires local authorities, where possible, to ensure that traffic can move quickly and freely on their roads. The 2004 Act includes powers related to the temporary stopping up of streets and Public Rights of Way (PRoW).

Local Transport Act (2008)

5.2.7. The Local Transport Act (2008) (Parliament of the United Kingdom, 2008) intended to address increasing road congestion and to improve the quality of local bus services. The 2008 Act contains provisions relating to:

a. The responsibilities of local authorities in relation to local transport policies and plans;
b. The operation of local bus services and related matters, including provisions relating to Traffic Commissioners (TCs);
c. The constitution and functions of Passenger Transport Authorities, which were renamed as Integrated Transport Authorities (ITAs); and
d. The establishment and operation of local and London road user charging schemes (commonly referred to as “local road pricing schemes”).

5.2.8. The 2008 Act is applicable to policy making and public transport service areas of local highway authorities and placed a requirement on authorities to prepare a Local Transport Plan (LTP). The current LTP for North Yorkshire County Council (NYCC) and East Riding of Yorkshire Council (ERoY) has been considered when assessing the impacts of the Proposed Scheme.

POLICY FRAMEWORK

5.2.9. An overview of the applicable policy framework is summarised as follows.

National

Overarching National Policy Statement for Energy EN-1 (Department for Energy and Climate Change, 2011)

5.2.10. The Overarching National Policy Statement (NPS) for Energy (EN-1) (Department for Energy and Climate Change, 2011) explains the assessment principles to which the Infrastructure Planning Commission (IPC) (now the Secretary of State (SoS)) will have regard in the examination of an energy nationally significant infrastructure projects (NSIP) (such as the Proposed Scheme), and explains the generic traffic and transport impacts with regard to energy infrastructure.

5.2.11. Paragraph 5.13.2 of NPS EN-1 considers the impacts of traffic and transport and states that 'The consideration and mitigation of transport impacts is an essential part of the Government's wider policy objectives for sustainable development'.

5.2.12. Paragraph 5.13.3 of NPS EN-1 sets out that if a project is likely to have a significant transport implication, the applicant's ES should include a transport assessment and should consult the Highways Agency (now National Highways) and Highways Authorities as appropriate on the assessment and mitigation.

5.2.13. Paragraph 5.13.4 of NPS EN-1 sets out that where appropriate, the applicant should prepare a travel plan including demand management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts.

5.2.14. Paragraph 5.13.5 of NPS EN-1 sets out if additional transport infrastructure is proposed, applicants should discuss with network providers the possibility of co-funding by Government for any third-party benefits.

5.2.15. Paragraph 5.13.6 of NPS EN-1 states that new NSIP may give rise to substantial impacts on the surrounding transport infrastructure and the IPC should ensure the applicant has sought to mitigate these impacts, including during the construction phase of the development. Paragraph 5.13.6 goes on to state that where the proposed measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the IPC should consider requirements to mitigate adverse impacts on transport networks arising from the development and states that applicants may also be willing to enter into planning obligations for funding infrastructure and otherwise mitigating adverse impacts.

5.2.16. Paragraph 5.13.7 of NPS EN-1 states that providing that the applicant is willing to enter into planning obligations or requirements can be imposed to mitigate transport impacts identified in the NATA/WebTAG transport assessment, with attribution of costs calculated in accordance with the Department for Transport's guidance, then development consent should not be withheld, and appropriately limited weight should be applied to residual effects on the surrounding transport infrastructure.

5.2.17. Paragraph 5.13.11 of NPS EN-1 states that where there is likely to be substantial HDV traffic that the SoS may attach requirements to control HDV numbers, HDV parking, and ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force.

5.2.18. In accordance with NPS EN-1 **Section 5.10** of this Chapter considers the mitigation of transport impacts, **Section 5.9** includes a transport assessment of the transport implications, a **Framework Construction Worker Travel Plan (CWTP)** (**Appendix 5.2**) has been prepared to outline the demand management measures to mitigate transport impacts, and an **Outline Construction Traffic Management Plan (CTMP)** (**Appendix 5.1**) has been prepared to manage the impact of construction traffic including HDV movements and AIL.

Draft Overarching National Policy Statement for Energy EN-1 (Department for Energy and Climate Change, 2021)

5.2.19. The Applicant is aware that the Government is currently updating the Energy NPS, and it is anticipated that these will be published in 2022.

5.2.20. A draft version of NPS EN-1 (Department for Business, Energy & Industrial Strategy, 2021) has been published for consultation in September 2021. This draft version includes considerations for assessment of traffic and transport impacts associated with the transport of materials, goods and personnel to and from a development during all project phases.

5.2.21. The draft NPS EN-1 is similar in content to the current NPS EN-1 in relation to the consideration of traffic and transport impacts, approach to mitigation, and decision making by the SoS. It is considered that the Draft NPS EN-1 does not change the assessment methodology, consideration of the Proposed Scheme impacts, or approach to mitigation.

5.2.22. **Section 5.10** of this Chapter considers the mitigation of transport impacts, **Section 5.9** includes a transport assessment of the transport implications, a **Framework Construction Worker Travel Plan (CWTP)** (**Appendix 5.2**) has been prepared to outline the demand management measures to mitigate transport impacts, and an **Outline Construction Traffic Management Plan (CTMP)** (**Appendix 5.1**) has been prepared to manage the impact of construction traffic including HDV movements and AIL.

National Policy Statement for Renewable Energy Infrastructure (EN-3) (Department of Energy and Climate Change, 2011)

5.2.23. The NPS Statement for Renewable Energy EN-3 (EN-3) (Department of Energy and Climate Change, 2011) provides the basis for decisions by the IPC on applications it receives for nationally significant renewable energy infrastructure.

5.2.24. Section 2.5 of NPS EN-3 relates to combustion generating stations that use waste and / or biomass as a fuel to produce electricity. The key considerations of Section 2.5 in transportation terms are summarised follows:

a. Government policy encourages multi-modal transport, and the IPC should expect materials (fuel and residues) to be transported by water or rail routes where possible;
b. Applicants should locate new biomass or waste combustion generating stations in the vicinity of existing transport routes wherever possible, and;
c. Road transport may be required to connect the Site to the rail network, waterway or port. Therefore, any application should incorporate suitable access leading off from the main highway network.

5.2.25. Drax Power Station is accessible by multi-modal transport options including by water, rail and road. Drax Power Station benefits from its own rail hub infrastructure and the Existing Drax Jetty located along the River Ouse. The existing operation at Drax Power Station includes the transport of materials (fuel and residues) by rail. However, the existing Drax Jetty is not currently in use.

5.2.26. The use of rail and the existing Drax Jetty to transport construction materials and AIL to the Site during the construction phase has been considered by the Applicant as part of the alternatives studied but as described in **paragraph 3.6.2** of **Chapter 3 (Consideration of Alternatives)** (document reference 6.1.3) both rail and water were considered and discounted. The rail facility will continue to be used for the delivery of fuel for the existing operation at Drax Power Station.

5.2.27. It is considered that the Proposed Scheme is in accordance with the key aspects of EN-3 in relation to the transport considerations in so far as the Site benefits from existing multi-modal transport options and is located in the vicinity of existing transport routes with access to the Strategic Road Network (SRN) via Junction 36 of the M62 and suitable access already exists.

Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (Department of Energy and Climate Change, 2011)

5.2.28. A draft version has been published for consultation in September 2021. Draft NPS EN-3 (Department for Business, Energy & Industrial Strategy, 2021) includes the same key considerations in transportation terms as contained in NPS EN-3. It is considered that the Draft NPS EN-3 does not change the assessment methodology, consideration of the Proposed Scheme impacts, or approach to mitigation.

5.2.29. **Section 5.10** of this Chapter considers the mitigation of transport impacts, **Section 5.9** includes a transport assessment of the transport implications, a **Framework Construction Worker Travel Plan (CWTP)** (**Appendix 5.2**) has been prepared to outline the demand management measures to mitigate transport impacts, and an **Outline Construction Traffic Management Plan (CTMP)** (**Appendix 5.1**) has been prepared to manage the impact of construction traffic including HDV movements and AIL.

National Planning Policy Framework (Department for Communities and Local Government, 2021)

5.2.30. The National Planning Policy Framework (NPPF) replaced the previous Planning Policy Statements and Planning Policy Guidance used to determine planning applications under the Town and Country Planning Act 1990.

5.2.31. The document states the need for a Transport Statement (TS) or Transport Assessment (TA) to support developments likely to generate significant numbers of trips. It suggests that development should take advantage of opportunities for sustainable travel, facilitated by a Travel Plan.

5.2.32. Paragraph 110 of the NPPF relates to the consideration of development proposals and goes on to state that 'in assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a. Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b. Safe and suitable access to the site can be achieved for all users;

c. The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code, and;

d. 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.

5.2.33. Paragraph 111 states 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'.

5.2.34. Paragraph 113 goes on to state that 'All developments that will generate significant amounts of movement should be required to provide a travel plan'.

5.2.35. A **Framework Construction Worker Travel Plan (CWTP)** (**Appendix 5.2**) has been prepared to outline the demand management measures to mitigate transport impacts that are appropriate to the temporary nature of the traffic impacts, the type of development and nature of the work, and the remote location of the Drax Power Station Site. This includes the promotion of car sharing and private mini-buses to transport construction workers between contractor hotels and the Site, reflecting that fixed time public transport is not appropriate in this location and the remote location of the Drax Power Station Site means only a small proportion of the construction phase and operational phase workforce would be within walking and/or cycling distance.

5.2.36. Construction worker trips were distributed using a gravity model weighted on population and distance that informed the traffic analysis for the Drax Repower Development Consent Order (DCO) Application, which estimated the likely distribution of worker traffic to and from Drax Power Station. Further details on the gravity model used to calculate the distribution of construction worker trips are provided from **Paragraph 5.9.22** to **Paragraph 5.9.25** within this chapter.

5.2.37. **Paragraph 5.7.2** and **paragraph 5.8.2** of this chapter describes how safe and suitable access to the Site can be achieved for all users during the construction phase and operational phase, with any highway modifications proposed in accordance with the appropriate design guidance.

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

5.2.38. The Planning Practice Guidance (PPG) was published in March 2014. Together PPG and the NPPF set out what the Government expects of local authorities. The overall aim is to ensure the planning system allows land to be used for new homes and jobs, while protecting valuable natural and historic environments.

5.2.39. In relation to Travel Plans, Transport Assessments and Statements (Ministry of Housing, Communities & Local Government , 2014), the guidance provides an overview on:

a. What Transport Assessments and Statements are;
b. How Travel Plans, Transport Assessments and Statements relate to each other;
c. Why Travel Plans, Transport Assessments and Statements are important;
d. What key principles should be taken into account when preparing a Travel Plan, Transport Assessment or Statement;
e. The use of Travel Plans, Transport Assessments and Statements in justifying appropriate parking facilities;
f. When Travel Plans are required;
g. How to establish the scope of a Travel Plan;
h. What information should be included in Travel Plans;
i. How Travel Plans should be monitored;
j. When are Transport Assessments and Transport Statements required;
k. How to establish the scope of a Transport Assessment or Statement, and;
l. What information should be included in Transport Assessments and Statements.

5.2.40. This chapter includes an assessment of the traffic and transport impacts and should be read alongside the Framework Construction Worker Travel Plan (CWTP) (**Appendix 5.2**) and an Outline Construction Traffic Management Plan (CTMP) (**Appendix 5.1**). It is considered that the Proposed Scheme has been assessed in accordance with PPG.

Circular 02/2013 – The Strategic Road Network and the Delivery of Sustainable Development (Department for Transport, 2013)

5.2.41. DfT Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development' (Department for Transport , 2013) sets out National Highways policy on how it will engage with developers and local communities to deliver sustainable development and economic growth whilst safeguarding the primary function and purpose of the SRN.

5.2.42. The policy is intended for all parties involved in development proposals which may result in traffic or other impacts on the strategic road network. The aim of the policy is

to cut unnecessary red tape and make the planning process simpler and more straightforward.

5.2.43. Paragraph 9 of the Circular states that:" Development proposals are likely to be acceptable if they can be accommodated within the existing capacity of a section (link or junction) of the Strategic Road Network, or they do not increase demand for use of a section that is already operating at over-capacity levels, taking account of any travel plan, traffic management and / or capacity enhancement measures that may be agreed. However, development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe."

5.2.44. Circular 02/2013 places an emphasis on the role of sustainable travel modes and travel planning as a means of managing the impact of development on the road network, acknowledging the role that area-wide travel plan initiatives can play to 'free-up' additional capacity, so that travel demand created by a new development can be accommodated.

5.2.45. In assessing development impact, the Circular states, in paragraph 33, that "only after travel plan and demand management measure have been fully explored and applied will capacity enhancement measures be considered".

5.2.46. In terms of mitigation of development impact, paragraph 34 states that "Where insufficient capacity exists to provide for overall forecast demand at the time of opening, the impact of the development will be mitigated to ensure that at that time, the strategic road network is able to accommodate existing and development generated traffic".

5.2.47. **Section 5.9** of this chapter sets out the impact of the Proposed Scheme on the SRN, and **paragraphs 5.9.2 – 5.9.5** of this chapter sets out the impact of the Proposed Scheme on the SRN in relation to highway safety.

Highways England Water Preferred Policy (Highways England, 2019)

5.2.48. The purpose of the Water Preferred Policy (Highways England, 2019) is to provide guidance on when to move an AIL by water and when it is allowed to be moved by road.

5.2.49. The Water Preferred Policy (WPP) recognises that industries need to transport AIL internally within Great Britain and for export, but a balance is needed between the disruption and traffic congestion to other road users, together with the impact this has on the UK economy, when compared to any extra costs or difficulty associated with using alternative transport modes.

5.2.50. During the development of the Proposed Scheme National Highways, NYCC, and ERoY have been consulted on the movement of AIL. This is described in further detail in **Section 3.6** of **Chapter 3 (Consideration of Alternatives)**. The outcome of the consultation was Agreement in Principle to transporting AIL by using the 'Road Option' and approval of the proposed strategy was confirmed 20 April 2021. It is therefore considered the Proposed Scheme is in accordance with the WPP. The

assessment of the environmental impact of the AIL using the 'Road Option' is set out in **paragraphs 5.9.56 – 5.9.59** of this chapter.

Local

North Yorkshire Local Transport Plan (North Yorkshire County Council, 2016)

5.2.51. The NYCC LTP (North Yorkshire County Council, 2016) sets out key transport aims and priorities for the North Yorkshire area for 2016 -2045. The objectives of LTP 4 are:

a. Economic growth – Contributing to economic growth by delivering reliable and efficient transport networks and services.
b. Road safety – Improving road and transport safety.
c. Access to Services – Improving equality of opportunity by facilitating access to services
d. Environment and climate change – Managing the adverse impact of transport on the environment.
e. Healthier travel – Promoting healthier travel opportunities.

5.2.52. The vision and objectives are proposed to be achieved through NYCC commitment to manage, maintain, and improve transport networks and services including managing new development in a way that will reduce the need to travel and therefore minimise the impact on congestion.

5.2.53. **Section 5.9** of this chapter sets out the impact of the Proposed Scheme on congestion during the construction phase and operational phase respectively.

Selby District Local Plan

Overview

5.2.54. The Selby District Council Local Plan currently consists of the following documents:

a. The Selby District Core Strategy Local Plan (CSLP) (Selby District Council, 2013) – this sets out a long term vision and strategic policies to guide development and shape the growth of the District.
b. Some 'saved' detailed policies from the previous 2005 Local Plan (Selby District Council, 2005) - which remain part of the Council's planning policies until replaced (those that were not replaced by policies in the Core Strategy).

Selby District CSLP

5.2.55. The Selby District CSLP (Selby District Council, 2013) provides a strategic context with which subsequent Local Plan documents must conform. The Core Strategy covers the period from 2011 to 2027 and sets out a spatial vision for Selby District and strategic objectives to achieve that vision.

a. A development strategy which establishes:
b. The context for designating areas where specific policies will apply, either encouraging development to meet economic and / or social objectives or constraining development in the interests of environmental protection.
c. The identification of strategic development sites for housing and economic development to accommodate major growth in Selby and a District-wide

framework for the subsequent allocation of sites for specific uses (including housing, retail, leisure and other activities).

d. Policies setting out the context for more detailed policies and guidance to be included in other local plan documents.

5.2.56. The CSLP acknowledges the energy sector will continue to be important to the economy of the district.

Selby District Local Plan

5.2.57. The Selby District Local Plan (SDLP) (Selby District Council, 2005) provides a comprehensive land-use framework for the Selby District in terms of promoting, co-ordinating and controlling future development in the area. The Local Plan is of relevance as it is important to consider the transport and traffic-based impacts associated with the scale, nature and type of new developments.

5.2.58. The SDLP was adopted in February 2005. Transitional arrangements enabled policies and proposals in adopted development plans to be 'saved', initially for up to three years from commencement of the new legislation or until replaced by individual Development Plan Documents (DPD) policies. In the case of the SDLP the three year 'saved' period ran until February 2008 but those policies which remained consistent with national and regional policy at that time were further extended indefinitely (or until replaced), by Direction of the SoS's approval. The saved policies of the SDLP and those that are yet to be replaced by the adopted core strategy include directly related to traffic and transport include:

a. T1 - Development in Relation to the Highway network
b. T2 - Access to Roads
c. T7 - Provision for Cyclists
d. T8 - Public Rights of Way

5.2.59. During the operational phase the Proposed Scheme will use the existing accesses to the Drax Power Station Site for the operational phase of the development.

5.2.60. During the construction phase a temporary construction site access will be required to the East Construction Laydown Area. The site access will be provided in accordance with CD 123 Geometric design of at-grade priority and signal-controlled junctions, Design Manual for Roads and Bridges (DMRB) (National Highways, November 2021) or other locally agreed design guidance.

5.2.61. Adequate cycle parking and facilities for staff to change are already provided at the Drax Power Station Site for the operational workforce. The Proposed Scheme will not sever points used by cyclists / pedestrians.

Summary

5.2.62. This assessment takes into consideration the growth aspirations of the CSLP through the application of TEMPro growth factors and inclusion of committed development, where appropriate. The CSLP and the saved polices in the SDLP polices have been considered in the preparation of this chapter and it is considered that the Proposed Scheme is in broad accordance with the current Selby District Local Plan.

Emerging Local Plan

5.2.63. Selby District Council are producing a new Local Plan which will provide a long-term strategy for the whole District that will replace the CSLP and 'saved' polices. A Local Plan - Preferred Options Consultation 2021 (Selby District Council, 2021) was prepared and sets out the preferred approach to development and growth in the district up to 2040.

5.2.64. The draft polices which will be used to determine planning applications, when adopted, related to traffic and transport include:

a. Preferred Approach SG1 – Achieving Sustainable Development;
b. Preferred Approach IC1 – Infrastructure Delivery;
c. Preferred Approach IC2 – Provision of New Infrastructure
d. Preferred Approach IC5 – Sustainable Transport;
e. Preferred Approach IC6 – Parking and Highway Safety; and
f. Preferred Approach IC7 – Public Rights of Way.

5.2.65. The Local Plan also identifies Drax Power Station as a growth driver, which is subject to a £700 million investment to transform itself into a largely biomass-fuelled facility. It is noted that the Applicant are currently piloting a carbon capture scheme and working with several large industries in the Humber industrial cluster with a view to becoming the world's first zero carbon industrial cluster.

5.2.66. It is considered that the Proposed Scheme is in broad accordance with the emerging draft polices of the Local Plan and the Proposed Scheme supports the role of Drax Power Station being a growth driver within the district. In particular:

a. IC5 – The Proposed Scheme will introduce measures to discourage single vehicle occupancy trips and providing minibus services for transient workers.
b. IC6 – The Proposed Scheme will include a cap on the number of parking spaces available to construction workers, at no more than 450 to discourage single occupancy vehicle trips.
c. IC7 – Path 35.6/6/1 will be temporarily stopped up, enabling the establishment of the planting in the Fallow Field in the Off-site Habitat Provision Area.

5.2.67. The preparation of publication of the Local Plan will follow during 2022 and progress will be monitored by the Applicant to ensure on-going compliance as greater weight is given to the emerging policy.

East Riding of Yorkshire Local Transport Plan 2021-2039 (East Riding of Yorkshire Council, 2021)

5.2.68. ERoY has produced four previous LTP (East Riding of Yorkshire Council, 2021), the most recent of which was formally adopted in 2015 and ran from 2015 – 2029. Notwithstanding this, due to changes in government strategy, mainly around walking and cycling, ERoY has undertaken a refresh of the LTP, which was adopted in April 2021 and runs from 2021 – 2039 to tie in with the timeframe of the Local Plan.

5.2.69. The LTP sets out the following five objectives that form the foundation of the LTP:

a. Objective 1 – Improve the maintenance and management of the existing transport network;
b. Objective 2 – Support sustainable economic growth and regeneration;
c. Objective 3 – Reduce carbon emissions and encourage healthy lifestyles;
d. Objective 4 – Improve road safety; and
e. Objective 5 – Improve access to key services.

5.2.70. The LTP anticipates and manages future demands on the East Riding's transport network.

5.2.71. In assessing the traffic and transport impacts of the Proposed Scheme the assessment of the highway network has included traffic movements associated with key committed developments to the north of the M62 (J36).

5.2.72. **Section 5.9** of this chapter set out the impact of the Proposed Scheme on congestion during the construction phase and operational phase respectively. It is considered that Proposed Scheme contributes positively towards the objectives of the ERoY LTP including supporting sustainable economic growth and regeneration.

East Riding Local Plan (2016)

5.2.73. East Riding of Yorkshire Council is the neighbouring Local Planning Authority. The East Riding Local Plan (ERLP) (East Riding District Council, 2016) is comprised of the following principal documents:

a. Strategy Document - The Strategy Document sets the overall strategic direction for the Local Plan, providing strategic policies to guide decisions on planning applications; and
b. Allocations Document - The Allocations Document allocates sites for development (such as housing, retail, industry or land for transport schemes).

5.2.74. Other documents include the Bridlington Town Centre Area Action Plan, Joint Waste Plan, Joint Minerals Plan, Neighbourhood plan, and supplementary planning documents.

5.2.75. The Strategy Document includes polices on how growth and development will be managed in East Riding up to 2029. In relation to the Proposed Scheme the important of supporting the energy sector (Policy EC5) and the role of the Port of Goole and its links to Drax Power Station are recognised.

5.2.76. In assessing the traffic and transport impacts of the Proposed Scheme the assessment of the highway network has included traffic movements associated with key committed developments to the south of the M62 (J36). **Section 5.9** of this chapter set out the impact of the Proposed Scheme on congestion during the construction phase and operational phase respectively. It is considered that the Proposed Scheme will contribute positively to the delivery of the ERoY Local Plan through the use of the Port of Goole for the delivery of AIL during the construction phase.

5.2.77. An assessment of the relevant policies is detailed further in the **Planning Statement** (document reference 5.2).

5.3. CONSULTATION

5.3.1. Engagement with NYCC, ERoY and National Highways has been carried out to confirm the study area and sensitive receptors in relation to traffic, transport and access. **Table 5.1** provides a summary of the consultation undertaken in support of the preparation of this assessment.

Table 5.1 - Consultation Summary Table

Date and Method of Consultation	Consultee	Summary of Key Topics discussed and Key Outcomes
22 February 2021 Email	NYCC (Highways) National Highways ERoY	NYCC, National Highways, and ERoY provided comments on the proposed transport assessment parameters set out in a Transport Scoping Note, which had been provided to them by the Applicant. The approach was generally accepted by the highway authorities, but further discussions are required to reach final agreement ahead of the completion of the ES. The Transport Scoping Note issued covered all transport related parameters including baseline conditions, predicted trip generation, trip distribution, assessment scenarios, proposed growth factors, and other general items ahead of a scheduled meeting with consultees.
2 March 2021 Email	NYCC (Highways) National Highways ERoY	NYCC, National Highways, and ERoY resolved to provide comment on the Transport Scoping Note and AIL strategy. Inception call to introduce the Proposed Scheme to highway authorities, Proposed Scheme overview, Transport Scoping Note content, AIL strategy, and approach to future engagement.
2 March 2021 Email	ERoY	ERoY provided comments on the Transport Scoping Note.
25 March 2021 Online Meeting	NYCC (Highways) National Highways ERoY	AIL call with highway authorities to discuss approach to AIL routes. National Highways to liaise with the DfT and seek confirmation and Approval in Principle for the Port of Goole 'Road Option' (as per the agreed approach for AIL movements associated with Drax Repower).
25 March 2021 Email	National Highways, ERoY, NYCC Highways	Request from the Applicant for National Highways to liaise with the DfT and seek confirmation and Approval in Principle for the Port of Goole 'Road Option' (as per Drax Repower).
20 April 2021 Email	National Highways	Confirmation received from National Highways that DfT and National Highways are happy with the proposed AIL approach.
22 April 2021 Email	ERoY	ERoY Bridges and Structures Team response regarding the AIL route including request for various surveys to check the structures along the Proposed Scheme AIL route.
04 May 2021 Email	NYCC (Highways)	NYCC (Highways) comments on Transport Scoping Note.
04 May 2021 Email	National Highways	National Highways comments on Transport Scoping Note.
04 May 2021 Email	National Highways	J36 data requested from National Highways. Data received 25th June 2021 for review.
10 May 2021 Online Meeting	ERoY	ERoY Bridges and Structures Team survey requirements.
09 June 2021 Online Meeting	ERoY Collett Transport	ERoY Bridges and Structures Team survey requirements.
25 June Email	National Highways	National Highways shared M62 J36 Classified Turning Count and Queue data for review by the BECCS project team.
01 November Statutory Submission	NYCC (Highways) National Highways ERoY	The preliminary environmental assessment, report in the Preliminary Environmental Information Report (PEIR) (WSP , 2021) was issued to all parties as part of s42 process.
TBC Email	NYCC (Highways)	S42 response received. NYCC (highways) reserved judgement until final assessment undertaken as part of ES.
22 December 2021 Email	National Highways	Applicant email to National Highways noting Statutory Consultation period had ended. National Highways confirmed receipt of the information and would review and provide comment.
10 January 2022 Online Meeting	ERoY	Follow up discussion to regarding Abnormal Indivisible Load (AIL) route between Goole Docs and Drax Power Station, structures, previous loads, surveys, and DCO.
12 January 2022 Email	ERoY	AIL vehicle configuration and associated loading data issued to ERoY for review and approval in principle by the Infrastructure and Facilities team.
14 January 2022 Email	ERoY (Forward Planning)	S42 Response – confirmation of no comments from Forward Planning team.

Date and Method of Consultation	Consultee	Summary of Key Topics discussed and Key Outcomes
20 January – 22 February 2022 Emails	ERoY	Email to ERoY in relation to the anticipated AIL vehicle configuration and associated loading data for review and comment by ERoY Infrastructure and Facilities officers, including follow up discussions related to timescales for receipt of response.
7 March – 14 April 2022 Emails	ERoY	Email from ERoY confirming appointment of an external consultancy to undertake principal inspections on all structures along the proposed AIL route. ERoY confirmed these structures would have a structural review to determine carrying capacity, current conditions and need for new assessments to be undertaken and the results shared with the Applicant when available. At the time of writing, the outcome of the principal inspections are not available.
26 January 2022 Technical Memorandum	National Highways Jacobs Systra Joint Venture (JSJV)	National Highways provided a response to the PEIR (WSP , 2021) received in the form of a Technical Memorandum as prepared by JSJV on behalf of National Highways. The issues raised in the Technical Memorandum have been reviewed and incorporated their into this chapter, the CTMP and/or CWTP, as appropriate. Discussion are ongoing with National Highways to address any outstanding issues.

5.3.2. An **EIA Scoping Opinion (Appendix 1.2)** (document reference 6.3.1.2) was received by the Applicant from the Planning Inspectorate (PINS) on behalf of the SoS on 26 February 2021, including formal responses from Statutory Consultees. The responses from PINS in relation to traffic and transport and how these requirements are addressed by the Applicant are set out in **Scoping Opinion Responses (Appendix 4.2)** (document reference 6.3.4.2).

5.4. SCOPE OF THE ASSESSMENT

5.4.1. The scope of this assessment has been established through an ongoing scoping process. Further information can be found in **Chapter 4 (EIA Methodology)** (document reference 6.1.4).

5.4.2. This section provides an update to the scope of the assessment and updates the evidence base for scoping out elements following further iterative assessment.

ELEMENTS SCOPED OUT OF THE ASSESSMENT

5.4.3. The elements shown in **Table 5.2** are not considered to give rise to likely significant effects as a result of the Proposed Scheme and have therefore not been considered further within this assessment.

Table 5.2 - Elements Scoped Out of the Assessment.

Element scoped out	Justification
Refined Study Area	The study area has been refined post **Scoping Opinion** in accordance with the proposed methodology set out in **paragraph 6.3.3** of the **EIA Scoping Report, Appendix 1.1 of the ES** (document reference 6.3.1.1). The A63 / A162 four-arm roundabout (Junction 7) has been removed from the study area as the number of vehicular trips during the construction phase and operational phase is predicted to result in a change of less than 10% (Rule 1) on the link approaching the junction and less than 30 trips through the junction during the AM and PM peak hour. No further assessment of the Proposed Schemes impact on Junction 7 is therefore presented in this chapter.

ELEMENTS SCOPED INTO THE ASSESSMENT

Construction and Decommissioning Phase

5.4.4. The following elements are considered to have the potential to give rise to likely significant effects during the construction phase of the Proposed Scheme and have therefore been considered within this assessment:

- **a.** Construction Traffic - temporary increases in HDV traffic associated with the import and export of construction materials by road;
- **b.** Construction Worker Movements - temporary increases in Light Duty Vehicular (LDV) vehicular traffic associated with the construction workforce;
- **c.** Site Access - the creation of new construction site access to the east Construction Laydown Area from the public highway; and
- **d.** AIL - The delivery of AIL and associated demand and traffic management.

5.4.5. For the purpose of this ES, decommissioning impacts are anticipated to be no worse than those during the construction phase following the implementation of a DTMP for the works. The construction phase and decommissioning have therefore been assessed together.

Operational Phase

5.4.6. The following elements were considered to have the potential to give rise to likely significant effects during the operational phase of the Proposed Scheme and have therefore been considered within this assessment for the carbon capture plant:

- **a.** Operational Traffic - increases in HDV traffic associated with the import and export of raw materials; and
- **b.** Operational Workforce Movements – increases in LDV traffic associated with the operational workforce.

5.4.7. The assessment of the operational phase has been limited to reviewing the change in traffic flows on the links and junctions within the study area. The assessment shows there would be less than 30 two-way trips generated (LDV and HDV) at all junctions within the study area, with the exception of Junction 1, which would have a total of 34 two-way trips generated (LDV and HDV) in the peak hours.

5.4.8. A total of 34 two-way movements was calculated on the basis of:

- **a.** 50 staff working across three shift patters, equating to 17 movements each way (17 workers arriving to start work and 17 workers departing from work); and
- **b.** A vehicle occupancy of one worker per vehicle.

5.4.9. The distribution of construction workers for the operational phase was assumed to be the same as the distribution of construction workers during the construction phase, which equates to:

- **a.** 100% of trips travelling through Junction 1, equating to 34 two-way movements;
- **b.** 30% of trips travelling through Junctions 5 and 6, equating to 10 two-way movements, and;
- **c.** 70% of trips travelling through Junctions 2, 3 and 4, equating to 24 two-way movements.

5.4.10. No junction capacity assessments have therefore been undertaken on the basis that:

a. All junctions within the study area, with the exception of Junction 1, have less than 30 two-way trips generated, the threshold below which it is generally accepted there will be no discernible impact on the operational performance of a junction, and;

b. The modelling output for Junction 1 presented in **Table 5.27** illustrates that the junction would operate well within capacity during the construction phase.

5.4.11. The change in traffic flows is also significantly less than 10% across the day on all links within the study area. The predicted trip assignment is contained in **Traffic Flow Diagrams** (**Appendix 5.3)** and this assessment has been included for completeness.

5.5. ASSESSMENT METHODOLOGY

OVERVIEW

5.5.1. The environmental effects of traffic generated by the Proposed Scheme have been assessed with reference to the DMRB LA104 (Highways England, 2020b) and Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment, 1993) (hereafter referred to as 'GEART') and other guidance as detailed at **paragraph 5.5.18** of this chapter. In accordance with this guidance, effects including severance, pedestrian amenity, fear and intimidation, highway safety and driver delay associated with the Proposed Scheme have been assessed within this chapter. This chapter also incorporates the Transport Assessment for the Proposed Scheme as proposed in **paragraph 6.7.17** of the **EIA Scoping Report**.

5.5.2. For the purposes of this chapter no allowance has been made for the delivery of construction materials by water or rail (in order to assess the 'worst case' construction phase and operational phase road traffic impact). Although Drax Power Station has water and rail facilities the Proposed Scheme will not involve use of, or modification of either facility. The rail facilities are currently operating at capacity. Further detail around the removal of these options from the Proposed Scheme design are discussed in **Chapter 3 (Consideration of Alternatives)** (document reference 6.1.3).

5.5.3. The study area is the same as the Drax Repower DCO Application, as shown on **Figure 5.1 (Study Area (Traffic and Transport))**, which was agreed following detailed consultation with NYCC, ERoY and National Highway (formerly Highways England). The study area has been refined as further information has been received and the Proposed Scheme's traffic and transport characteristics fully understood, including cumulative impacts and Abnormal Indivisible Loads (AILs).

5.5.4. The refinements to the study area have primarily been based upon 'Rule 1' and 'Rule 2' of the Institute of Environmental Management and Assessment (IEMA) guidelines (Institute of Environmental Assessment, 1993) which can be used to determine the effect of increased traffic volumes on links within the study area, as described below:

c. Rule 1 – Include highway links where traffic flows (or HDV flows) are predicted to increase by more than 30%; and

d. Rule 2 – Include any other specifically sensitive areas where traffic flows (or HDV flows) are predicted to increase by 10% or more.

5.5.5. The assessment set out in this chapter has considered the existing traffic and transport conditions within the agreed study area and has qualitatively and quantitatively assessed the highway network and corridor performance in relation to a number of receptors. This is based on existing data from a range of sources detailed in **paragraph 5.5.18** of this chapter.

5.5.6. Any likely significant environmental effects relating to noise and vibration and air pollution, generated by traffic arising from the Proposed Scheme during the construction phase and operational phase, are considered separately in **Chapter 6 (Air Quality)** and **Chapter 7 (Noise and Vibration)**.

ASSESSMENT SCENARIOS

5.5.7. The following assessment scenarios have been developed for this chapter:

a. Existing
   i. 2018 Baseline –March 2018 surveyed traffic flows collected during 2018 as part of Drax Repower and October 2018 flows for M62 J36 provided by National Highways. Both sets of traffic flow data were agreed with National Highways during scoping. Data for M62 J36 was requested from National Highways on 4 May 2021 and received on 25 June 2021 for review, as illustrated in **Table 5.1**.

b. Year of Submission (AM / PM Peak Hour only)
   i. 2022 Baseline - March and October 2018 surveyed traffic flows and TEMPRO traffic growth applied.

c. Peak Construction Year – see **paragraph 5.9.4** of this chapter for further details on peak construction year.
   i. 2026 Future Baseline - 2022 Baseline with TEMPRO traffic growth applied.
   ii. 2026 Do Minimum – this will be the 2026 Future Baseline plus 'reasonably foreseeable' committed development (Without Development), see **Justification of Scoping In / Out of Stages 3 and 4 of the Assessment (Appendix 18.4)** (document reference 6.3.18.4) for further details;
   iii. 2026 Do Something – this will be the 2026 Do Minimum plus construction traffic (With Development – Construction Phase).

Receptor Value / Sensitivity

Sensitivity of Receptors

5.5.8. A desktop exercise has been undertaken to classify the sensitivity of the routes within the study area based on the guidance in LA104 (Highways England, 2020b). The classification of the link sensitivity is based on professional judgement. For example, if the route passes a school, care home or similar it would have a higher sensitivity due to the presence of vulnerable users. Similarly, if the route runs through the middle of a town or village, it would have a higher sensitivity than if there was limited direct access to frontage development.

5.5.9. In accordance with Table 3.2N in DMRB ‘ LA 104 - Environmental assessment and monitoring’, the sensitivity of the affected receptors has been assessed on a scale of high, medium, low and negligible in the context of the sensitivity of the road links within the study area.

5.5.10. The sensitivity of a road link, or the immediate area through which it passes including PRoW, is defined by the type of user groups who may use it. Vulnerable users include elderly residents and children. It is also necessary to consider footpath and cycle route networks that cross the roads within the study area. The sensitivity has also been informed by information obtained from viewing Strava ‘heat maps’ of the local area showing the usage of routes including PRoW and other non-PRoW routes, in addition to local knowledge. The impact of the Proposed Scheme on the PRoW network has also been considered in **Chapter 9 Landscape and Visual Impact** (document reference 6.1.9).

5.5.11. The sensitivity of a junction has been related to the baseline operational performance of the junction. The level of traffic a junction can theoretically accommodate without incurring significant delays and / or congestion, the ‘capacity’, is compared to the level of traffic which is typically travelling through that junction. This relationship between capacity and traffic flow is assessed by the metric of ‘Ratio of Flow to Capacity’ (RFC). It is typically recognised that a maximum RFC value of 0.85 is desirable. If the RFC is greater than this, but below 1.00, this suggests that the traffic flow is approaching capacity and at risk of queues building. Where an RFC exceeds 1.00, the junction is exceeding theoretical capacity.

5.5.12. The sensitivity of a junction has been assigned according to the following rationale:

a. Any junctions with an RFC less than 0.5 have been categorised as having a Negligible sensitivity;
b. Any junctions with an RFC between 0.5 and 0.7 have been categorised as having a Low sensitivity;
c. Any junctions with an RFC between 0.7 and 0.85 have been categorised as having a Medium sensitivity;
d. An RFC of between 0.85 and 1 have been categorised as having a High sensitivity;
e. Any junctions with an RFC of over 1 have been classified as having a Very High sensitivity.

Magnitude

5.5.13. The traffic generated by all aspects of the Proposed Scheme will be used to assess the impacts on the key links and junctions on the surrounding network. The likely effects of the Proposed Scheme in environmental terms has been evaluated in accordance with the Institute of Environmental Assessment’s (IEA) GEART (Institute of Environmental Assessment, 1993).

5.5.14. The assessment methodology adopted in this Chapter, as contained in the DMRB (Highways England, 2020b) and GEART (Institute of Environmental Assessment, 1993), is recognised as the industry standard methodology for the assessment of traffic and highway impacts. The guidelines outline the issues and the respective

changes in volume and composition of traffic regarded as necessary before each issue results in traffic and transport impacts.

5.5.15. GEART (IEA, 1993) identifies the following environmental effects are susceptible to changes as a result of Proposed Schemes:

a. **Severance**: Severance occurs in a community when a major artery separates people from places and other people. Severance occurs from difficulty of crossing a road or where the road itself creates a physical barrier. Severance can be caused to pedestrians or motorists. The GEART suggest that changes in total traffic flow of 30%, 60% and 90% result in slight, moderate and substantial changes in severance respectively.

b. **Pedestrian Amenity**: Pedestrian amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition, pavement width and separation between vehicles and pedestrians. The impact manifests itself as a combination of fear and intimidation, exposure to noise and vehicle emissions. The GEART suggest that a doubling or halving of total traffic flow or the HDV composition could lead to perceptible negative or positive impacts upon pedestrian amenity.

c. **Fear and Intimidation**: The volume of traffic and its HDV composition are the factors that contribute to fear and intimidation. In the absence of thresholds set out in the GEART, this ES considers that changes in total traffic flow of 30%, 60% and 90% are considered to result in slight, moderate or substantial impacts.

d. **Highway Safety**: Highway safety is assessed by the frequency and severity of injury accidents that are attended by the police and recorded in official accident statistics. Intensification of use or changes in the composition of traffic has the potential to have an effect on collision rates. The examination of recent collision statistics on routes within the study area has highlighted any hotspots that need further examination, see **paragraph 5.7.17** for further details.

e. **Driver Delay**: The use of industry standard junction capacity modelling programs provides a methodology to quantify junction delay. Driver delay is only likely to be significant where the existing study area highway network is at or close to capacity.

5.5.16. For many effects, there are no simple rules or formulae which define thresholds of significance and there is, therefore, a need for interpretation and the application of professional judgement on the part of the assessor, backed-up by data or quantified information wherever possible.

5.5.17. Using the information set out above, the magnitude of traffic impacts used in this ES is defined in **Table 5.3**.

Table 5.3 – Traffic and Transport – Magnitude of Impact

Type of Impact	Magnitude of Impact				
	No Change	**Negligible**	**Minor**	**Moderate**	**Major**
Severance	No change in traffic flow	Change in total traffic flow of <30%	Change in total traffic flow of 30% - 60%	Change in total traffic flow of 61% - 90%	Change in total traffic flow of >90%
Pedestrian Amenity	No change in traffic flow	Changes in traffic flow (or HDV component) less than 30%	Changes in traffic flow (or HDV component) less than 50%	Changes in traffic flow (or HDV component) of 50% to 100%	Changes in traffic flow (or HDV component) of 101% to 150%
Fear and Intimidation	No change in traffic flow	Change in total traffic flow of <30%	Change in total traffic flow of 30% - 60%	Change in total traffic flow of 61% - 90%	Change in total traffic flow of >90%
Highway Safety	Magnitude of impact derived using professional judgment informed by the frequency and severity of recorded collisions within the study area and the forecast increase in traffic.				
Driver Delay	Magnitude of impact derived using professional judgment informed by the increase in vehicle delay and whether a junction is at, or close to capacity.				

Significance Criteria

5.5.18. **Table 5.4** combines the receptor sensitivity with the magnitude of impact and classifies the effects as negligible, minor, moderate or major (adverse or beneficial) which is based on Table 3.8.1 from LA104 (Highways England, 2020b).

Table 5.4 – Matrix for Determining Significance of Effect

Sensitivity	Magnitude of Impact (degree of change)				
	No Change	**Negligible**	**Minor**	**Moderate**	**Major**
Very High	Neutral	Slight	Moderate	Large	Very Large
High	Neutral	Slight	Moderate	Moderate	Large
Medium	Neutral	Neutral	Slight	Moderate	Moderate
Low	Neutral	Neutral	Slight	Slight	Moderate
Negligible	Neutral	Neutral	Neutral	Neutral	Slight

5.5.19. Moderate and major effects are considered to be 'significant' for the purposes of this EIA; minor and negligible effects are 'not significant'.

METHOD OF BASELINE DATA COLLECTION

Desk Study

5.5.20. A desk study was carried out to inform the baseline traffic conditions and utilised the data sources described in Section 'Guidance and Data' below. A desk study also involved discussions with Statutory bodies as described in the **Consultation Summary Table** above (**Table 5.1**).

Site Visits and Surveys

5.5.21. Considerable local knowledge of the area of the Proposed Scheme has been developed by the project team over previous projects on the Site and therefore no additional site visits have been undertaken.

5.5.22. Survey data from Drax Repower that was collected in March 2018 and separate data provided by National Highways collected in October 2018, both of which were considered acceptable by National Highways, has been used in this chapter, therefore no additional surveys have been commissioned.

Guidance and Data

5.5.23. The following guidance documents and data sources have been used during the preparation of this chapter:

a. Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment, 1993) (Institute of Environmental Assessment, 1993);

b. LA 101 (Revision 0) Introduction to Environmental Assessment (Highways England, 2019) (Highways England, 2019);

c. LA 103 (Revision 1) - Scoping Projects for Environmental Assessment (Highways England 2020) (Highways England, 2020a);

d. LA 104 (Revision 1) - Environmental Assessment and Monitoring (Highways England, 2020) (Highways England, 2020b);
e. CD 123 Geometric design of at-grade priority and signal-controlled junctions, Design Manual for Roads and Bridges (National Highways et al., 2021); and
f. CD 122 (Version 1.1.1) Geometric design of grade separated junctions (National Highways et al., 2022).
g. Traffic Surveys - Figure 5.4 (Traffic Survey Data Locations) shows the location and source of data:
    i. Baseline traffic data collected in March 2018 prior to COVID-19 restrictions for all junctions in the study area (except at M62 Junction 36).
    ii. Baseline traffic data collected in October 2018 that has been provided directly to the Applicant by National Highways.
    iii. Webtris (National Highways, 2018).
h. Other Committed Developments
    i. Publicly available Traffic and Transport environmental information submitted in support of committed developments included in the cumulative assessment as detailed in **Chapter 18 (Cumulative Effects)** (document reference 6.1.18).
i. Personal Injury Collision (PIC) data
    i. PIC data has been obtained from NYCC Data & Intelligence team for the period 1 January 2017 – 31 December 2021, the most recent five-year period available at the time of the request. The data is included in **Personal Injury Collison Data** (**Appendix 5.4).**
    ii. PIC data has been obtained from ERoY for the period 1 January 2017 – 31 December 2021, the most recent five-year period available at the time of the request. The data is included in **Personal Injury Collison Data** (**Appendix 5.4).**
j. Public Rights of Way
    i. Public Rights of Way data provided by NYCC (North Yorkshire County Council, 2022) and ERoY
    ii. Ordnance Survey mapping data
k. Public Transport Information
    i. Bus timetables from Arriva (Arriva, 2022)
    ii. Rail timetables from Northern (Northern Trains Limited, 2022)
l. Cycling
    i. Cycle Maps obtained from Sustrans (Sustrans, 2022)
m. Abnormal Indivisible Loads
    i. Route Survey for Road Transportation of Regenerators from Port of Goole to Drax Power Station (Sarens, 2022)

Assessment Assumptions and Limitations

5.5.24. The following assumptions and limitations apply to this chapter:

Assumptions

a. As described in **paragraph 2.1.7** of **Chapter 2** (**Site and Project Description**), the Applicant has full planning permission for the demolition of the redundant Flue Gas Desulphurisation (FGD) Plant and associated restoration works at Drax Power Station (2020/0994/FULM). The decommissioning and demolition works of Absorber Units 4, 5 and 6 are scheduled to take place prior to the start of the construction phase of the Proposed Scheme, whilst the demolition of Absorber Units 1, 2 and 3 are assumed to take place following the completion of the Proposed Scheme;
b. The Applicant has an existing DCO (The Drax Power (Generating Stations) Order 2019), which allows Drax to repower up to two of the existing coal-powered generating units with new gas turbines that can operate in both combined cycle and open cycle modes (referred to as the Drax Repower Project). The new units would have a new combined capacity of up to 3,600 MW in combined cycle mode (1,800 MW each). If the DCO Application for the Proposed Scheme is successful, the Applicant confirms that the Drax Repower Project will not be built so has not been considered as part of this assessment;
c. AIL will be transported by road from the Port of Goole to the Site, following a specified route, as described from **paragraph 2.3.18** onwards in **Chapter 2** (**Site and Project Description**). It has been agreed in principle with the Department for Transport (DfT) via their agents National Highways that this approach is acceptable. The principle of the by Road Option has also been agreed in principle with ERoY and NYCC. Discussions are on-going regarding future survey requirements and understanding the practicalities of moving AIL by road. **The Outline Construction Traffic Management Plan** (**CTMP**) (**Appendix 5.1**) sets a framework for future discussions with all affected highway authorities. HDVs have assumed routing via Junction 36 of the M62; and
d. For the purpose of this ES, decommissioning impacts are anticipated to be no worse than those during the construction phase following the implementation of a DTMP for the works. The construction phase and decommissioning have therefore been assessed together.

Limitations

a. The ES has been prepared during the COVID-19 pandemic which has drastically changed travel patterns in the short-term and, potentially medium to longer term. Government policy has been at varying levels since March 2020, which has led to temporary changes in travel demand, and as a result, consultants and Local Highway Authorities are unable to undertake representative traffic surveys to measure 'typical' traffic conditions to assess the impact of development proposals; and
b. Traffic surveys collected during March 2018 as part of Drax Repower have been used to date to inform this ES. Notwithstanding this, more recent data (October 2018) was provided by National Highways for M62 (J36)which has also been used in this assessment.

5.6. STUDY AREA

5.6.1. **Figure 5.1 (Study Area (Traffic and Transport))** shows the study area including junction locations and link names. The study area considered as part of this

assessment covers the following junctions, along with the highway links between junctions:

a. Junction 1 - A645 / New Road Roundabout;
b. Junction 2 - A614 / A645 Roundabout;
c. Junction 3 - A614 / Services Roundabout;
d. Junction 4a / 4b - M62 Junction 36 Dumbbell Roundabout.
e. Junction 5 - A645 / A1041 Station Road Roundabout; and
f. Junction 6 - A63 / A1041 Roundabout.

5.6.2. The highway links within the study area as follows:

a. Link 1 – New Road
b. Link 2 – Main Road
c. Link 3 – A645 (S/E)
d. Link 4 – A614 Rawcliffe Road (W)
e. Link 5 – A614 Rawcliffe Road (E)
f. Link 6 – M62 (E)
g. Link 7 – A614 Rawcliffe Road (east of M62)
h. Link 8 – A161 Port of Goole Bypass
i. Link 9 – M62 (W)
j. Link 10 – A645 (W)
k. Link 11 – Station Road
l. Link 12 – A1041
m. Link 13 – A63 (E)
n. Link 14 – Bawtry Road
o. Link 15 – A63 (W)

5.6.3. In addition, a desk-study has identified the PRoW within the study area. The PRoW network is shown on **Figure 5.2 (Public Rights of Way Network)**.

5.7. BASELINE CONDITIONS

LOCAL TRANSPORT NETWORK

5.7.1. Drax Power Station is located in North Yorkshire to the south of the town of Selby. It is accessed from the A645 to the south of the Drax Power Station Site. The A1041 and the A645 serve to connect the power station to the wider road network. The SRN is accessed at J36 M62, via A645 and A614 approximately 6 km south east of the Site.

5.7.2. Drax Power Station is serviced by road via three secure gated points of vehicular access as follows:

a. South Gate – a southern site access arrangement situated along the A645 comprising a priority T-junction arrangement, including a right-turn ghost island.

A traffic splitter island is provided in the junction mouth of the minor arm to prevent right-turn out vehicle manoeuvres;

b. North Gate – a northern site access arrangement situated along New Road comprising a priority T-junction arrangement; and

c. Materials Handling Gatehouse Entrance – a northern site access arrangement situated along New Road (approximately 500 m north of the North Gate) comprising a priority T-junction arrangement.

5.7.3. The A1041 and the A645 serve to connect Drax Power Station to the wider road network. The Strategic Road Network is accessed at Junction 36 of the M62 (via A645 and A614), approximately 6.0 km to the south east of the Site.

5.7.4. Drax Power Station is bounded by parcels of agricultural land. However, there are businesses and residential properties in the wider area (including, the settlements of Drax, Camblesforth and Barlow) to the south east, south west and north west respectively which have all been considered in this assessment.

5.7.5. At present, staff, site contractors, and visitors primarily access the Drax Site via the 'South Gate' on the A645, whereas deliveries and HDV traffic make use of the site entrances on New Road to the eastern boundary of the Site.

5.7.6. The Drax Power Station Site is also currently served by rail for deliveries of biomass and access to the River Ouse via a jetty located off Redhouse Lane which is of limited use due to its capacity and condition, and is used only very occasionally.

5.7.7. For access to the Drax Power Station Site it is assumed that any operational phase related traffic, including HDV's and AIL, will continue to use the existing access junctions off the A645 and New Road, both of which can accommodate HDV and non-HDV traffic. No highway or jetty improvement works are anticipated as part of the Proposed Scheme.

5.7.8. There are a number of unclassified roads which are located within close proximity to the Site, with Main Road and Carr Lane providing access to neighbouring villages such as Drax and Long Drax, in a west-east direction. Main Road is of varying width alternating from a single carriageway on approach to Drax village before converting into a narrow rural road. Through the settlement the road has a speed limit of 30 mph but increases to the national speed limit along the rural road between Drax and the Redhouse Lane.

5.7.9. There is a pedestrian footway on one side of New Road which is the main road access to the North Gate entrance of the Drax Power Station Site, with additional footways along the A645 westbound towards A1041. PRoW are shown in **Figure 5.2 (Public Rights of Way Network)**.

5.7.10. There are seven PRoW within or adjacent to the Order Limits that could be impacted by the Proposed Scheme, and these are detailed below:

a. 35.6/11/1 runs along the western edge of the Order Limits, and adjoins 35.47/10/1 to the north;

b. 35.47/10/1 intersects the Order Limits west to east, and runs along the northern boundary of Drax Power Station Site for approximately 200 m, connecting with 35.47/6/1 to the east

c. 35.47/6/1 intersects the Order Limits west to east and runs along the northern boundary of the Drax Power Station Site. It runs south east, ending at New Road;

d. 35.47/1/1 lies within the Order Limits and runs north west to south east from New Road, adjoining 35.47/8/1 to the north and 35.47/1/2 to the south which sit outside the Order Limits; and

e. 35.6/6/1 lies outside Order Limits to the west of Drax Power Station in an area referred to as the Off-site Habitat Provision Area. The path runs north west to south east through the field and connects to a track.

5.7.11. There is no cycling infrastructure in place within the immediate vicinity of the Drax Power Station Site. National Cycle Route 62 is on the A1041 approximately 2.5 miles south west of the Site which travels along Hirst Road on and off road towards Selby and further afield, to York. **Figure 5.3 (National Cycle Routes)** shows nearby national cycle routes. National Cycle Route 65 and the Tran Pennine Trail (TPT) are on the north side of the River Ouse but are not directly accessible from the Site.

BUS SERVICES

5.7.12. The nearest bus stop is at the South Gate entrance of the Drax Power Station Site along the A645 and is served by Service 42. This service connects the Site to York and Selby, passing through a number of small villages along the route. National rail services can be accessed in York and Selby. National and regional rail services can be accessed in York and Selby. **Table 5.5** contains details of these services.

Table 5.5 - Bus Services (March 2022)

Service	Route	Frequency		
		Mon- Fri	Sat	Sun
42 (Arriva)	York – Selby - Drax	Westbound: 10:12, 11:42, 13:12, 14:42, 16:12. Eastbound: 08:24, 10:02, 11:32, 13:03, 14:33, 16:03.	Westbound: 10:12, 11:42, 13:12, 14:42, 16:12. Westbound: 08:24, 10:02, 11:32, 13:03, 14:33, 16:03.	No services

RAIL SERVICES

5.7.13. The nearest railway station is Snaith which lies 4.3 miles south west of Drax Power Station Site. This railway station is served by Northern Rail services operating limited services to Leeds and Goole. Snaith railways station is accessible by private car via the A1041 and A645. Alternatively, Selby railway station lies seven miles north west of the Drax Power Station Site and provides a wider range of rail connection services and is accessible via bus route 42.

5.7.14. There are four routes that serve Selby station which are operated by Hull Trains, Northern Rail, Transpennine Express (TPE) and Virgin East Coast. There are 10 daily services between Hull and Doncaster, 57 services between York and Hull, 33 services between Selby and Leeds, 11 services between Hull and Manchester.

5.7.15. Whilst Selby railway station is approximately three miles further away from the Drax Power Station Site compared with Snaith railway station, it is an important local transport hub and is accessible via local bus services.

HIGHWAY SAFETY ANALYSIS

Background

5.7.16. Personal Injury Collision (PIC) data has been obtained from NYCC and ERoY for the most recent five-year period available at the time of the request (01/01/2017 to 31/01/2021).

5.7.17. The extent of study area is shown on **Figure 5.1 (Study Area (Traffic and Transport))** and comprises approximately 40 km of roads on the local highway network and the SRN.

5.7.18. The **Personal Injury Collison Data** is included in **Appendix 5.4** (document reference 6.3.5.4).

Overview

5.7.19. A summary of the PIC data classified by severity and year is presented in **Table 5.6.**

Table 5.6 – PIC Summary (Severity and Year)

Severity	2017	2018	2019	2020	2021	5 Year Period	12 Month Average
Slight	**16**	**17**	**17**	**19**	**14**	**83**	**16.6**
Serious	**2**	**4**	**3**	**2**	**3**	**14**	**2.8**
Fatal	**1**	**1**	**0**	**2**	**0**	**4**	**0.8**
Total	**19**	**22**	**20**	**23**	**17**	**101**	**20.2**

5.7.20. The PIC records show that during the analysed period, there was a total of 101 recorded collisions within the study area, of which, 83 were categorised as slight, 14 as serious and four as fatal.

5.7.21. There was an average of 20 collisions per year, ranging from 17 collisions during 2021 to 23 collisions during 2020. There was an average of 17 slight collisions per year during the period, ranging from 14 during 2021 to 19 during 2020. The average number of serious collisions was significantly lower, at three collisions per year, which ranged from two during 2017 and 2020 to four during 2018. Fatal collisions occurred at an average of just under one per year, ranging from one during 2017 and

2018 to two during 2020. There were zero fatal collisions recorded within the study area during 2019 and 2021.

Spatial Analysis

5.7.22. A summary of the PIC data by severity and link within the study area is presented in **Table 5.7.**

Table 5.7 – PIC Summary (Severity and Link)

Link	Slight	Serious	Fatal	Total	12 Month Average
Link 1	0	0	0	0	0
Link 2	0	0	0	0	0
Link 3	5	1	0	6	1.2
Link 4	13	3	1	17	3.4
Link 5	3	2	0	5	1
Link 6	0	0	0	0	0
Link 7	5	1	0	6	1.2
Link 8	7	0	0	7	1.4
Link 9	0	0	0	0	0
Link 10	4	0	0	4	0.8
Link 11	15	2	1	18	3.6
Link 12	10	0	2	12	2.4
Link 13	0	0	0	0	0
Link 14	0	0	0	0	0
Link 15	14	0	0	14	2.8
Total	76	9	4	89	17.8
Average by Link	5.1	0.6	0.3	5.9	1.2

5.7.23. **Table 5.7** indicates there were 18 collisions per year on average on links within the study area. The average number of collisions per link was 1.2 collisions per year, ranging from 0.8 collisions per year on Link 10 to 3.6 collisions per year on Link 11.

No collisions were recorded during the analysed period on Link 1, Link 2, Link 6, Link 9, Link 13 and Link 14.

5.7.24. An average of five slight collisions were recorded on links, ranging from three slight collisions on Link 5 to 15 slight collisions on Link 11. The most collisions occurred on Link 4, Link 11 and Link 12, and Link 15, respectively.

5.7.25. An average of under one serious collision occurred on each link within the study area, ranging from one collision on Link 3 and Link 7, to three collisions on Link 4. There were zero serious collisions recorded on 10 links within the study area.

5.7.26. A total of four fatal collisions occurred in the study area. This included one fatal collision on Link 4 and Link 11, and two collisions on Link 12. There were no other fatal collisions recorded in the study area.

5.7.27. Link 4, Link 11 and Link 15 – the links with the highest average number of collisions per year comprise a mixture of rural and urban characteristics, including sections with agricultural fields on both sides of the road and other sections where they form the main through-route through a village centre. The length of Links 4 and 11 are approximately 4.8 km and 4.5 km, respectively. Link 15 is the longest link within the study area at approximately 13 km.

5.7.28. Most of the collisions on Link 11 were located within the built-up areas of Carlton and Snaith. Most collisions on Link 4 can be attributed to a cluster of incidents at and on approach to the A614 / A1041 roundabout which included six slight and two serious collisions.

5.7.29. The collisions on Link 15 were spatially distributed relatively evenly, although there was a cluster of three incidents at A645 / A1041 Station Road roundabout (Junction 5) and a cluster of three collisions situated in the vicinity of a bend to the west of the A63 / A1238 roundabout where the national speed limit applies.

5.7.30. A summary of the PICs by severity and junction within the study area is presented in **Table 5.8.**

Table 5.8 – PIC Summary (Severity and Junction)

Junction	Slight	Serious	Fatal	Total	12 Month Average
Junction 1	0	0	0	0	0
Junction 2	0	0	0	0	0
Junction 3	0	2	0	2	0.4
Junction 4a	1	1	0	2	0.4
Junction 4b	1	0	0	1	0.2
Junction 5	0	0	0	0	0

Junction	Slight	Serious	Fatal	Total	12 Month Average
Junction 6	3	1	0	4	0.8
Junction 7	2	1	0	3	0.6
Total	7	5	0	12	2.4
Average by Junction	0.9	0.6	0.0	1.5	0.3

5.7.31. There was an average of just over two collisions per year at Junctions 1 – 7. The average number of collisions per junction was 0.3 collisions per year during the study period, ranging from 0.2 collisions at Junction 4b to 0.8 collisions at Junction 6. No collisions were recorded during the analysed period at Junctions 1, 2 and 5.

5.7.32. An average of 0.9 slight collisions occurred at each junction, ranging from one collision at Junctions 4a and 4b to 3 collisions at Junction 6. Zero slight collisions occurred at Junctions 1, 2, 3 and 5. The most collisions occurred at Junction 6, at 3 collisions.

5.7.33. An average of 0.6 serious collisions occurred at each junction within the study area. This included one collision at Junction 4a, 6 and 7. There were no serious collisions recorded at Junctions 1, 2 and 5.

5.7.34. No fatal collisions occurred at any junction during the analysed period.

5.7.35. It is considered that there are no inherent highway safety issues at the junctions within the study area.

Killed Seriously Injured (KSI) Collisions

Links

5.7.36. Fatal and serious collisions result in people being killed or seriously injured (KSI), a metric used to monitor the safety of the highway network. The data in **Table 5.7** shows that four fatal collisions and nine serious collisions were recorded within the study area during the study period, and they all occurred on links.

5.7.37. Two of the four fatal collisions occurred within approximately 300 m of each other on Link 12 (A1041). Each of these collisions is summarised as follows:

a. NYCC reference: 12170155447 - occurred on the 30 August 2017 at 22:53. The collision took place during fine conditions without high winds, with a wet / damp road surface and in the hours of darkness with no street lighting. The collision involved two vehicles (Car and a Van <3.5t) and involved the van veering across the centre white line into the path of the car. Distraction in the vehicle and driver fatigue were given as causation factors with possible confidence level.

b. NYCC reference: 2000927 – occurred on the 11 October 2020 at 11:55. The collision took place during fine conditions without high winds, with a dry road surface and in the hours of darkness with no street lighting. The collision involved

two vehicles (Car and a Pedal Cycle) and involved the car driving into the back of the pedal cycle. Impaired by alcohol was given as the causation factor with a very likely confidence level.

5.7.38. The two other fatal collisions occurred on Link 4 (A614 Rawcliffe Road W) and Link 11 (Station Road) respectively. Each of these collisions are summarised as follows:

a. ERoY reference: 322778 - The fatal incident on Link 4 occurred on the 25 August 2018 at 08:55. The collision took place during the hours of daylight with fine conditions without high winds, with a dry road surface. The collision involved two vehicles (Motorcycle and a Car). It is understood that the motorcycle overtook three cyclists by crossing a solid white line into the path of an oncoming car.
b. NYCC reference: 2000367 - The fatal incident on Link 11 occurred on the 22 March 2020 at 20:03. The collision took place during fine conditions, with a dry road surface and in the hours of darkness with lit streetlights. The collision involved a motorcycle losing control and colliding with a wall. Exceeding the speed limit and loss of control were given as causation factors with a very likely confidence level.

5.7.39. The description of the four fatal collisions indicates that the causation factors were varied but largely related to human factor.

5.7.40. The highest frequency of serious collisions occurred on Link 4, equating to three serious collisions. One of the collisions occurred on the A614 to the north of Rawcliffe, and the other two collisions were located on the A614 northbound approach to the A614 / A1041 roundabout. Each collision is summarised as follows:

a. ERoY reference: 222906 - The serious collision occurred to the north of Rawcliffe occurred on the 15 September 2017 at 01:00. The collision took place during hours of darkness with fine conditions without high winds, with a wet / damp road surface. The collision involved a car which lost control and left the carriageway due to a greasy surface.
b. ERoY reference: 220550 - The collision occurred at the A614 / A1041 roundabout on the 14 September 2017 at 17:56. The collision took place during daylight hours whilst raining without high winds. The collision involved a vehicle losing control on the northbound approach to the roundabout due to oil and colliding with a moped travelling south from the roundabout.
c. ER0Y reference: 1012771 - The collision also occurred at the A614 / A1041 roundabout and involved a collision between a car travelling northbound towards the roundabout and a taxi travelling south from the roundabout. No further details were available within the description of the accident to determine the cause of the collision.

5.7.41. The collisions at the A614 / A1041 roundabout occurred within the vicinity of each other and involved head-on collisions. The first collision occurred during daylight hours whilst raining without high winds and the second collision occurred during the hours of darkness without streetlighting in fine conditions. The road surface was wet / damp at the time both collisions occurred.

5.7.42. All other serious collisions on the links were spread throughout the remainder of the study area, equating to no more than two collisions on any link, which does not indicate any clusters.

Junctions

5.7.43. The highest frequency of serious collisions occurred at Junction 3, equating to two serious incidents. Each collision is summarised as follows:

a. ERoY reference: 1012771 - involved a pedal cycle being knocked over by an HDV on the circulatory carriageway. No further details were available within the description of the accident to determine which vehicle was at fault.

b. ERoY reference: 1113463 - involved a car being distracted by an item within the vehicle and as a result, losing control and colliding with a crash barrier.

5.7.44. There is no more than one serious collision at any other junction within the study area, which does not indicate any clusters.

Summary and Conclusion

5.7.45. The analysis of PIC data t indicates the following:

a. The PIC data does not indicate any pattern associated with accidents in relation to the year of occurrence, with an average of 20 collisions per year, ranging from 17 collisions during 2021 to 23 collisions during 2020.

b. Most serious incidents were spread throughout the network across links and junctions, although there were two serious incidents at the A614 / A1041 junction.

c. Two of the four fatal collisions occurred on the A1041. However, these collisions do not appear to have been as a result of the same causation factors.

5.7.46. It is considered that the frequency, severity, and spatial distribution of collision does not indicate a pattern that indicates there are inherent highway safety issues within the study area.

EXISTING TRAFFIC FLOWS

2018 Baseline

5.7.47. The baseline traffic flows on the surrounding road network and used in the assessment of the environmental effects associated with the Proposed Scheme have been established using data from a combination of Automatic Traffic Count (ATC) surveys, junction turning count (JTC), and Webtris.

5.7.48. The 2018 Baseline (AM and PM) peak traffic flows on the surrounding road network and used in the assessment of the junction assessments are included in **Traffic Flow Diagrams** (**Appendix 5.3)** (document reference 6.3.5.3). The 2018 Baseline (AADT) traffic flows are shown in **Table 5.9**.

Table 5.9 – 2018 Baseline (AADT) Traffic Flows

Link No.	Link Description	2018 Baseline
		AADT

		Total HDV (No.)	HDV (%)	Total Vehicles
1	New Road	260	12%	2190
2	Main Road	125	5%	2453
3	A645 (S/E)	627	8%	8304
4	A614 Rawcliffe Road (W)	350	5%	7273
5	A614 Rawcliffe Road (E)	759	5%	14502
6	M62 (E)	7596	17%	44576
7	A614 Rawcliffe Road (east of M62)	1264	10%	12135
8	A161 Port of Goole Bypass	2237	24%	9235
9	M62 (W)	12074	21%	56545
10	A645 (W)	420	5%	8823
11	Station Road	257	3%	8945
12	A1041	424	3%	13419
13	A63 (E)	1029	8%	12492
14	Bawtry Road	450	3%	16187
15	A63 (W)	869	6%	14667

5.7.49. The results in **Table 5.9** indicate that across the study area, the HDV content on the existing road network ranges from 3% to 24%.

FUTURE BASELINE

Background Traffic Growth

5.7.50. The TEMPro Growth Factors differ from those originally proposed within the **EIA Scoping Report**. TEMPro v7.2c was released after the submission of the **EIA Scoping Report**. The same methodology has been applied but the rates reflect the latest available forecasts and are therefore considered appropriate.

5.7.51. Traffic growth predictions for the assessment years considered within this ES were taken from the Trip End Model Program (TEMPro) v7.2c to predict the level of background traffic growth within the local area between the 2018 Baseline, 2022 Baseline (Application Year), and 2026 Future Baseline (Peak Construction Year).

5.7.52. Growth factors for the AM Peak Hour (07:00 – 09:59) and PM Peak Hour (16:00 – 18:59) were obtained for use in the peak hour junction capacity assessments. Average Weekday growth factors were obtained for use in AADT assessments. These growth factors were determined using the following criteria in TEMPro:

a. Base year of 2018 and future years of 2022 and 2026.
b. Location of Selby and East Riding.
c. National Traffic Model (NTM) Adjusted (RTF 2018 Scenario 1 – Reference).
d. Trip end origin / destination.
e. Area Type (Rural).
f. Road Type (All).

5.7.53. **Table 5.10** contains the growth factors derived from TEMPro for Selby and East Riding.

Table 5.10 - TEMPro Growth Factors

Assessment Years	Location	AM Peak	PM Peak	Weekday
2018-2022	Selby	1.0368	1.0350	1.0359
	East Riding	1.0339	1.0317	1.0338
	Average	1.0354	1.0334	1.0349
2022-2026	Selby	1.0339	1.0332	1.0333
	East Riding	1.0350	1.0292	1.0299
	Average	1.0345	1.0332	1.0316

5.7.54. The 2018 Baseline (AADT) traffic flows have been factored to the future assessment year of 2026 based on the background traffic growth factors to create the 2026 Future Baseline (AADT). The annual average daily traffic (AADT) two-way link traffic flows are shown in **Table 5.11**.

Table 5.11 -2026 Future Baseline (AADT)

Link No.	Link Description	2026 Future Baseline		
		AADT		
		Total HDV (No.)	HDV (%)	Total Vehicles
1	New Road	285	12%	2402
2	Main Road	137	5%	2691
3	A645 (S/E)	688	8%	9109
4	A614 Rawcliffe Road (W)	384	5%	7978
5	A614 Rawcliffe Road (E)	833	5%	15908
6	M62 (E)	8332	17%	48898
7	A614 Rawcliffe Road (east of M62)	1387	10%	13311

Link No.	Link Description	2026 Future Baseline		
		AADT		
		Total HDV (No.)	HDV (%)	Total Vehicles
8	A161 Port of Goole Bypass	2454	24%	10130
9	M62 (W)	13245	21%	62027
10	A645 (W)	461	5%	9678
11	Station Road	282	3%	9812
12	A1041	465	3%	14720
13	A63 (E)	1129	8%	13703
14	Bawtry Road	494	3%	17756
15	A63 (W)	953	6%	16089

5.7.55. The National Transport Model (NTM) includes for committed developments and forecasts new household formed and jobs created. In order to avoid double counting, alternative assumptions have been applied to the future household and jobs forecasts to reflect that the peak hour traffic flows associated with a number of committed developments have been included in the future assessment scenarios as described further in **paragraph 5.7.63** below.

5.7.56. **Table 5.12** contains the adjusted growth factors derived from TEMPro for Selby and East Riding with the alternative assumptions applied.

Table 5.12 - TEMPro Growth Factors (Alternative Assumptions)

Assessment Years	Location	AM Peak	PM Peak
2022-2026	Selby	1.0340	1.0333
	East Riding	1.0253	1.0238
	Average	1.0297	1.0286

5.7.57. The 2018 Baseline (AM and PM) traffic flows have been factored to the future assessment year of 2022 and 2026 based on the background traffic growth factors to create the 2022 Baseline (AM and PM) and 2026 Future Baseline (AM and PM) assessment scenarios. The traffic flows used in the assessment of the junction assessments are included in **Traffic Flow Diagrams** (**Appendix 5.3**) (document reference 6.3.5.5).

Committed Developments

5.7.58. The Traffic and Transport assessment has accounted for traffic generated by 'committed' developments, in accordance with the methodology for assessing potential cumulative effects with other schemes, as detailed in **Chapter 18 (Cumulative Effects)** (document reference 6.1.18). A total of 74 developments were

included within the short list that were considered as part of an assessment of the significance of cumulative effects.

5.7.59. Out of the 74 developments on the short list, the following six developments have been included on the basis that the development may result in a significant effect on daily traffic flows within the traffic and transport study area during the construction phase with the Proposed Scheme.

5.7.60. The methodology setting out the assessment of committed developments is included in **Justification of Scoping In / Out of Stages 3 and 4 of the Assessment (Appendix 18.4)** (document reference 6.3.18.4)).

5.7.61. The following developments have been scoped in to the Traffic and Transport assessment:

a. Short List ID 2 - 2019/1343/EIA – Eggborough Demolition Works and Redevelopment;
b. Short List ID 6 – Barlow Mound Resource Recovery Operations; and
c. Short List ID 44 - 21/03027/STPLF - Erection of Employment Units – Rawcliffe Road Airmyn.
d. Short List ID 71 - 19/01430/STPLF – Train Manufacturing Plant;
e. Short List ID 72 15/00305/STOUT - Up to 838 New Homes - A164 Rawcliffe Road; and
f. Short List ID 73 18/03879/STREM - Erection of a building for use as B8, B1(a) and B2.

5.7.62. Short List ID 2, ID 6, and ID 44 have been explicitly included in the AADT traffic flows with refence to publicly available environmental information. Environmental information was not available for Short List ID 71, 72 and 73 therefore these developments have only been included in the AM and PM peak hour assessments which inform the assessment of driver delay.

5.7.63. Short List ID 71, 72 and 73 form part of ERoY Local Plan allocation GOO-A and GOO-L have been partially built out since the 2018 Baseline traffic survey data was collected. The traffic flows have been extracted from the transport information submitted with reference to the planning applications and subsequent assessments.

5.7.64. The remaining scoped out developments identified on the short list are not considered to generate any significant levels of traffic through the traffic and transport study area. Background growth has also been applied to the baseline traffic flows.

5.7.65. The scoped in committed development has been added to the 2022 Baseline (AM and PM) and 2026 Future Baseline (AM and PM) assessment scenarios to create the 2022 Do Minimum (AM and PM) and 2026 Do Minimum (AM and PM) assessment scenarios.

5.7.66. The 2022 Baseline (AM and PM) and 2026 Do Minimum (AM and PM) traffic flows are included in **Traffic Flow Diagrams** (**Appendix 5.3)**. The 2026 Do Minimum (AADT) traffic flows are provided in **Table 5.14**.

Table 5.14 – 2026 Do Minimum (AADT)

Link No.	Link Description	2026 Do Minimum		
		AADT		
		Total HDV (No.)	HDV (%)	Total Vehicles
1	New Road	470	18%	2598
2	Main Road	137	5%	2699
3	A645 (S/E)	873	9%	9367
4	A614 Rawcliffe Road (W)	384	5%	8015
5	A614 Rawcliffe Road (E)	1018	6%	16749
6	M62 (E)	8425	17%	49142
7	A614 Rawcliffe Road (east of M62)	1387	10%	13441
8	A161 Port of Goole Bypass	2454	24%	10185
9	M62 (W)	13337	21%	62261
10	A645 (W)	461	5%	9733
11	Station Road	282	3%	9851
12	A1041	465	3%	14736
13	A63 (E)	1169	8%	14029
14	Bawtry Road	494	3%	17769
15	A63 (W)	993	6%	16414

Netting Off

5.7.67. It should be noted that operations at Drax Power Station have changed since the collection of the baseline traffic data during 2018. The two remaining coal units (units 5 and 6) stopped generating electricity commercially in March 2021 and will cease operations entirely prior to works to construct the Proposed Scheme commencing. As a result there has been a reduction in operational traffic as the workforce has reduced by approximately 230 people. This reduction in the workforce has been acknowledged in discussions with the NYCC, ERoY, and National Highways.

5.7.68. In addition, as outlined in **Chapter 2 (Site and Project Description)** the Applicant has the benefit of a DCO (The Drax Power (Generating Stations) Order 2019), which allows it to repower up to two of the existing coal-powered generating units with new gas turbines that can operate in both combined cycle and open cycle modes ("*Repower*"). The new units would have a new combined capacity of up to 3,600 MW in combined cycle mode (1,800 MW each). The Applicant has publicly stated that it has no plans to progress Drax Repower, and this is confirmed by a proposed article in the **draft DCO** submitted with the Application (document reference 3.1).

5.7.69. The traffic and transport contained in the Repower DCO assessed peak construction years of 2022 and 2026 and concluded that although the traffic and transport impacts would give rise to temporary large adverse effects it was not deemed necessary to provide junction-specific mitigation to reduce this impact. A CTMP was prepared to mitigate, monitor, and manage traffic during the construction phase. The 2026 assessment year is the same as the peak construction assessment year assessed in this chapter.

5.7.70. For clarity, the changes in vehicle movements associated with the change in operations at Drax Power Station and consented Repower DCO have not been adjusted in the future baseline in order to assess a robust assessment scenario. However, it is our view that the recent changes to the operations at Drax Power Station and the consented Repower DCO should be taken into consideration by the highway authorities when reviewing the temporary traffic impacts associated with the construction phase and decommissioning, and permanent traffic impacts associated with the operational phase discussed in **Section 5.9**.

5.8. SENSITIVE RECEPTORS

5.8.1. The following sensitive receptors have been identified and considered within this ES:

a. Motorised users of the surrounding highway network within the study area as shown on **Figure 5.1 (Study Area (Traffic and Transport))**, including vehicle drivers and public transport users;

b. Non-motorised users of the surrounding highway network within the study area as shown on **Figure 5.2 (Public Rights of Way Network)**, PRoW and non-designated public routes, including pedestrians, cyclists and equestrians (and vulnerable groups); and

c. Residents within the settlements of Camblesforth, Drax and Carlton have been considered in relation to the sensitivity of the links that pass through these villages, change in traffic flows, and assessment of the effects.

5.8.2. **Table 5.15** identifies the links, the assigned link sensitivity and the rationale based on the methodology set out in **Section 5.5**.

Table 5.15 – Sensitivity of Receptors

Link	Description	Link Sensitivity	Rationale
1	New Road	Negligible	The road is a single carriageway and is subject to a 60 mph posted speed limit. There is no frontage development along the route. There is a narrow footway provided to the west side of the carriageway separated by a grass verge and the road is not lit.
2	Main Road	Very High	The road is a single carriageway and is subject to a 60 mph posted speed limit between its junction with New Road and Drax village where it drops to 30 mph. There is frontage development within Drax village and there is a school, church, and other local amenities. There is a narrow footway provided to the north side of the carriageway separated by a grass verge and the road is street lit between New Road and the village. Within the village there are generally footways to either side of the carriageway.
3	A645 (S/E)	Low	The road is a single carriageway and is subject to a 60 mph posted speed limit. There is no frontage development along the route. There are no footways present for the majority of the link.
4	A614 Rawcliffe Road (W)	High	The road is a single carriageway and is subject to a 40 mph posted speed limit from its junction with the A645 before reducing to 30 mph at Rawcliffe. There is limited frontage development along the route between the A645 and Rawcliffe village. There is frontage development within Rawcliffe village and there are shops, a church, and other local amenities. There is a narrow footway provided to the north of the carriageway that then crosses to the south side. The link is not street lit outside the boundary of the village.
5	A614 Rawcliffe Road (E)	Low	The road is a single carriageway and is subject to a 40 mph posted speed limit from its junction with the M62 before increasing to 60 mph. There is limited frontage development along the route between the A645 and the M62. There is a footway provided to the north of the road and it is street lit.
6	M62 (E)	Low	The road is a three-lane motorway with a derestricted speed limit and is subject to Motorway regulations.
7	A614 Rawcliffe Road (east of M62)	Medium	The road is a single carriageway and is subject to a 40 mph posted speed limit. There is frontage development along both sides of the route, with residential to the north and a mix of industrial and retail to the south. There are footways provided on both sides of the carriageway and is street lit.
8	A161	Low	The road changes from a dual carriageway to a single carriageway subject to a 40 mph posted speed limit. There is no frontage development. There are footways provided on both sides of the carriageway. A cycle route is provided to the north side of the carriageway and for part of the south side. The link is street lit.
9	M62 (W)	Low	The road is a three-lane motorway with a derestricted speed limit and is subject to Motorway regulations.
10	A645 (W)	Low	The road is a single carriageway and is subject to a 60 mph posted speed limit. There is no frontage development along the route. Residential properties back on to the link. There is a footway provided on the north side of the carriageway. The link is not street lit.
11	Station Road	High	The road is a single carriageway and is subject to a 60 mph posted speed limit from the A645 before dropping to 40 mph at Carlton. There is limited frontage development along the route between the A645 and Carlton. There is frontage development within Carlton village and there are shops, a church, and other local amenities. There is a footway provided to the west side of the carriageway it is street lit. Within the village there are footways to both sides of the carriageway.
12	A1041	Medium	The road is a single carriageway and is subject to a 40 mph posted speed limit before increasing to 60mph as it exits the built up area. There is limited frontage development along the route. Residential properties back on to the link. There are footways to both sides of the carriageway within the built-up area, which then reduces to one side of the carriageway. The link is street lit within the built-up area at Camblesforth.

Link	Description	Link Sensitivity	Rationale
13	A63 (E)	Negligible	The road is a single carriageway and is subject to a 60 mph posted speed limit. There is no frontage development. There are no footways, but the route is street lit.
14	Bawtry Road	High	The road is a single carriageway and is subject to a 40 mph posted speed limit. There is frontage development between the A63 and the centre of the town. There are footways to both sides of the carriageway and the route is street lit.
15	A63 (W)	Negligible	The road is a single carriageway and is subject to a 60 mph posted speed limit. There is no frontage development. There are no footways but the route is street lit.

5.8.3. The sensitivity of a junction has been related to the baseline operational performance of the junction based on the methodology set out in Section 5.5. Table 5.16 categorises the sensitivity of each junction according to the 2026 Do Minimum scenario.

Junction No.	Junction Name	AM	PM
1	A645 / New Road Roundabout	Negligible	Negligible
2	A614 / A645 Roundabout	Low	Medium
3	A614 / Services Roundabout	Medium	High
4	M62 Junction 36 Dumbbell Roundabout	Very High	Very High
5	A645 / A1041 Station Road Roundabout	Low	Low
6	A63 / A1041 Roundabout	Low	Medium

5.8.4. All key sensitive receptor locations are shown on **Figure 5.1 (Study Area (Traffic and Transport))**.

5.9. PRELIMINARY ASSESSMENT OF LIKELY IMPACTS AND EFFECTS

5.9.1. This section details the assessment of significant effects taking account of primary mitigation, as described in **Chapter 2 (Site and Project Description)** but in the absence of secondary mitigation. Secondary mitigation for the Proposed Scheme is described in **Section 5.10**.

CONSTRUCTION PHASE TRAFFIC GENERATION

Overview

5.9.2. The profile of construction workforce and HDV movements over the construction phase has been detailed in a Schedule Planner that has been provided by the Applicant and is included in the **Schedule Planner** (**Appendix 5.5)**.

5.9.3. The Applicant prepared the Schedule Planner in combination with the Engineering, Construction, Procurement (ECP) contractor and this assessment is based on the information provided, and, whilst not being definitive as to how the construction phase will take place, is considered to be a robust basis for assessment.

5.9.4. The Schedule Planner indicates that the peak construction workforce is forecast to occur in August 2026, where up to 1,000 workers would likely be required to construct the Proposed Scheme based on Option 2. Deliveries of up to 135 HDVs are anticipated to be required per day during the peak month of the construction phase. All HDV movements within the Schedule Planner include movements associated with the disposal of waste.

5.9.5. For the purpose of this ES, decommissioning impacts are anticipated to be no worse than those during the construction phase following the implementation of a DTMP for the works. The construction phase and decommissioning have therefore been assessed together

Construction Worker Traffic Generation

5.9.6. It is anticipated that 80% of the workforce would be based locally and therefore travel from home and 20% of the workforce would be transient and therefore travel from local accommodation. It has been assumed that workers travelling from home will travel by private car as a driver or passenger, with an average vehicle occupancy of two workers per vehicle, with the remaining 20% travelling by minibus, with an average occupancy of seven workers per vehicle.

5.9.7. These assumptions have previously been used as a basis for assessment within the Knottingley CCGT Power Station Transport Assessment (June 2013) which gained DCO consent in March 2015 and Eggborough CCGT Power Station which gained DCO consent in September 2018. The Applicant has also confirmed these assumptions are in line with their experience of outages at Drax Power Station Site.

5.9.8. The method of arrival of construction workers can be managed and maintained through measures contained in the **Framework Construction Worker Travel Plan (CWTP)** (**Appendix 5.2)** including controlling the availability of on-site parking spaces throughout the construction phase.

5.9.9. When this vehicle occupancy rate is applied to the workforce associated within the construction phase of the Proposed Scheme during the peak month of construction (August 2026), the following vehicle trip generations for construction workers shown in **Table 5.16** would be anticipated.

Table 5.16 – Construction Worker Vehicle Generation (Peak Month)

Month of Construction	Total Workers Per Day	Number of cars / vans at 2 per vehicle	Number of minibuses at 7 per vehicle	Average two-way daily flow.
August 2026	1,000	400	29	858

Construction HDV Traffic Generation

5.9.10. The volume of HDVs on the network during the peak month of construction (in 2026) is anticipated to be a maximum of 270 two-way daily HDV movements (135 in and 135 out). The **Schedule Planner** (**Appendix 5.5)** indicates the HDV profile across the full programme.

5.9.11. It should also be noted that this peak number of movements would not be a regular occurrence and would be related to specific high intensity elements of work such as when foundation and concrete pours take place, steel is transported to Site for installation or concurrent activity is taking place.

5.9.12. The HDV traffic will be managed through measures contained in the **Outline Construction Traffic Management Plan (CTMP)** (**Appendix 5.1**).

Daily Vehicle Profile During Peak Month

5.9.13. During the construction phases, it is expected that standard working hours would be Mondays to Friday 07:00 to 19:00 with all personnel working a nine hour period within this timeframe. Start-up and shutdown activities would take place in relation to the Proposed Scheme during a one-hour window either side of standard working hours. For the purposes of the assessment it has been assumed that all construction worker related trips would arrive between 06:00 and 10:00 and depart between 16:00 and 20:00 (Mondays to Fridays).

5.9.14. On Saturdays, working hours would be 07:00 and 14:30. Start-up and shutdown activities would take place in relation to the Proposed Scheme during a one hour window either side of working hours.

5.9.15. In order to estimate a realistic arrival and departure profile of workers for the Site, it is common practice to use an existing flow profile for a similar development to the Proposed Scheme. The arrival and departure profile is based on the profile used for Eggborough CCGT Power Station which gained DCO consent in September 2018 and Keadby 3 Carbon Capture Power Station DCO, which is awaiting consent.

5.9.16. **Table 5.17** sets out the percentage of daily inbound and outbound trips for the periods 06:00 – 10:00 and 16:00 – 20:00 used in this assessment.

Table 5.17 – Construction Worker Vehicle Generation (Peak Month)

Time Period	% of Daily Inbound	% of Daily Outbound
06:00 – 07:00	30%	0%
07:00 – 08:00	55%	0%
08:00 – 09:00	10%	0%
09:00 – 10:00	5%	0%
16:00 – 17:00	0%	10%
17:00 – 18:00	0%	15%

Time Period	% of Daily Inbound	% of Daily Outbound
18:00 – 19:00	0%	70%
19:00 – 20:00	0%	5%

5.9.17. HDV deliveries are anticipated to be spread evenly over the 12-hour working day from 07:00 – 19:00. This is considered to be robust as it doesn't account for HDVs being spread over a 14-hour period between 06:00 – 20:00 on the highway network. Notwithstanding this, HDV movements could be on the highway network prior to 07:00 and after 19:00 as described in **Chapter 2 (Site and Project Description)**, however, they will be scheduled to arrive after 07:00 and depart before 19:00.

5.9.18. Based on the above, an overview of the daily vehicle profile for construction workers and HDV movements during peak month of the construction phase is presented in **Table 5.18**.

Table 5.18 – Daily Vehicle Profile During Peak Month of Construction

Time Period	Construction Worker Vehicles (LDVs)		Construction HDVs	
06:00 - 07:00	129	0	0	0
07:00 - 08:00	236	0	11	11
08:00 - 09:00	43	0	11	11
09:00 - 10:00	21	0	11	11
10:00 - 11:00	0	0	11	11
11:00 - 12:00	0	0	11	11
12:00 - 13:00	0	0	11	11
13:00 - 14:00	0	0	11	11
14:00 - 15:00	0	0	11	11
15:00 - 16:00	0	0	11	11
16:00 - 17:00	0	43	11	11
17:00 - 18:00	0	64	11	11
18:00 - 19:00	0	300	11	11
19:00 - 20:00	0	21	0	0
Total	429	429	135	135

5.9.19. Based on the above, the total number of vehicles anticipated per day during the peak month of the construction phase would be 564 vehicles per day, split between 429 LDVs for constructions workers and 135 HDVs.

5.9.20. **Table 5.19** provides a summary of the vehicular trip generation across the AM and PM peak periods.

Table 5.19 – Vehicular Trip Generation – AM and PM Peak Periods

	AM Peak Period (06:00 – 10:00)		
	Arrival	Departure	Total
06:00 – 07:00	140	11	151
07:00 – 08:00	247	11	258
08:00 – 09:00	54	11	65
09:00 – 10:00	32	11	43
	PM Peak Period (16:00 – 20:00)		
16:00 – 17:00	11	54	65
17:00 – 18:00	11	75	86
18:00 – 19:00	11	311	322
19:00 – 20:00	11	32	43

5.9.21. **Table 5.19** indicates that the Proposed Scheme is likely to generate 65 two-way trips in the AM peak hour (08:00 – 09:00) and 86 two-way trips in the PM peak hour (17:00 – 18:00).

Construction Phase Traffic Distribution

5.9.22. Construction worker trips have been distributed using a gravity model weighted on population and distance that informed the traffic analysis for the Drax Repower ES (6.1.5) Environmental Statement - Volume 1 - Chapter 5 - Transport (Drax, 2018), which estimated the likely distribution of worker traffic to and from Dax Power Station.

5.9.23. The gravity model was calibrated with an average trip length of 30 km, which reflected the remote nature of the Site, and the likely source of workers from the neighbouring major urban centres of Hull, York, Leeds and Doncaster. The gravity model showed that 70% of car trips travelled via the M62 Junction 36, while the remaining 30% travelled via Selby.

5.9.24. This gravity model was reviewed (and agreed) by Highways England (now National Highways). Through EIA scoping for the Proposed Scheme, National Highways and NYCC agreed that the gravity model could be used to distribute workers associated with the Proposed Scheme. No response was received from ERoY on this matter.

5.9.25. **Table 5.20** presents a summary of the gravity model. The resultant trip distribution through the study area is included within **Traffic Flow Diagrams** (**Appendix 5.3)**.

Table 5.20 – Gravity Model

Origin / Destination	District (50 km Radius of Site)	Total Population (2011)	X	Y	Distance from Dev Site	Gravity Calculation	Percentage	Trip Length (of 30,000 m)
1	City of Kingston upon Hull (B)	256406	509840	430569	43,424	0.000025	3%	1279
2	East Riding of Yorkshire	334179	499880	442359	36,643	0.000047	6%	2056
3	North Lincolnshire (B)	167446	493239	411740	30,806	0.000035	4%	1276
4	York (B)	198051	461681	451811	25,158	0.000065	8%	1938
5	West Lindsey District	89250	501369	389516	51,254	0.000006	1%	363
6	Hambleton District	89140	444425	488119	64,880	0.000004	0%	271
7	Harrogate District (B)	157869	426568	463538	54,077	0.000009	1%	601
8	Ryedale District	51751	474969	480025	53,561	0.000003	0%	199
9	Selby District	83449	457109	432651	10,939	0.000176	21%	2283
10	Bassetlaw District	112863	469427	382267	44,954	0.000010	1%	539
11	Barnsley District (B)	231221	431077	404459	42,100	0.000024	3%	1198
12	Doncaster District (B)	302402	460016	405677	22,426	0.000128	15%	3411
13	Rotherham District (B)	257280	447553	390437	41,319	0.000028	3%	1365

Origin / Destination	District (50 km Radius of Site)	Total Population (2011)	X	Y	Distance from Dev Site	Gravity Calculation	Percentage	Trip Length (of 30,000 m)
14	Sheffield District (B)	552698	429990	389827	52,232	0.000035	4%	2195
15	Bradford	522452	409659	438724	58,063	0.000026	3%	1821
16	Kirklees	422458	415750	414563	52,333	0.000027	3%	1674
17	Leeds	751485	432614	436721	35,267	0.000116	14%	4847
18	Wakefield	325837	438967	418403	28,932	0.000078	9%	2683
Total Population		4906237						

5.9.26. HDVs associated with the construction phase and decommissioning are distributed on fixed routes to and from the Site along the M62, A614 and A645 as show in **Figure 5.5 (HDV Routeing)**. In relation to AIL **Figure 5.6 (Abnormal Indivisible Load Routeing)** shows the anticipated route between the Port of Goole and the Site.

Construction Traffic Assignment

5.9.27. Based on the trip generation and LDV and HDV trip distribution the resultant trip assignment across all links and junctions is included in **Traffic Flow Diagrams** (**Appendix 5.5**). **Table 5.22** contains the 2026 Do Something (AADT) traffic flows.

Table 5.22 – 2026 Do Something (AADT)

Link No.	Link Description	2026 Do Something		
		AADT		
		Total HDV (No.)	HDV (%)	Total Vehicles
1	New Road	667	20%	3318
2	Main Road	137	5%	2699
3	A645 (S/E)	1070	11%	9888
4	A614 Rawcliffe Road (W)	384	5%	8015

Link No.	Link Description	2026 Do Something		
		AADT		
		Total HDV (No.)	HDV (%)	Total Vehicles
5	A614 Rawcliffe Road (E)	1215	7%	17270
6	M62 (E)	8523	17%	49303
7	A614 Rawcliffe Road (east of M62)	1387	10%	13441
8	A161 Port of Goole Bypass	2454	24%	10185
9	M62 (W)	13436	21%	62621
10	A645 (W)	461	5%	9932
11	Station Road	282	3%	9851
12	A1041	465	3%	14934
13	A63 (E)	1169	8%	14055
14	Bawtry Road	494	3%	17779
15	A63 (W)	993	6%	16576

5.9.28. **Table 5.23** sets out the 2026 Do Minimum, the increase in construction phase traffic during the peak construction year extracted from the 2026 Do Something, and what percentage change this equates to inform the assessment of effects.

Table 5.23 – 2026 Percentage Change (AADT)

Link No.	Link Description	2026 Do Minimum		Construction Traffic		Percentage Change (%)	
		AADT		AADT			
		Total HDV (No.)	Total Vehicles	Total HDV	Total Vehicles	Total HDV	Total Vehicles
1	New Road	470	2598	197	720	42%	28%
2	Main Road	137	2699	0	0	0%	0%
3	A645 (S/E)	873	9367	197	521	23%	6%
4	A614 Rawcliffe Road (W)	384	8015	0	0	0%	0%

Link No.	Link Description	2026 Do Minimum		Construction Traffic		Percentage Change (%)	
		AADT		AADT			
		Total HDV (No.)	Total Vehicles	Total HDV	Total Vehicles	Total HDV	Total Vehicles
5	A614 Rawcliffe Road (E)	1018	16749	197	521	19%	3%
6	M62 (E)	8425	49142	99	161	1%	0%
7	A614 Rawcliffe Road (east of M62)	1387	13441	0	0	0%	0%
8	A161 Port of Goole Bypass	2454	10185	0	0	0%	0%
9	M62 (W)	13337	62261	99	360	1%	1%
10	A645 (W)	461	9733	0	199	0%	2%
11	Station Road	282	9851	0	0	0%	0%
12	A1041	465	14736	0	199	0%	1%
13	A63 (E)	1169	14029	0	26	0%	0%
14	Bawtry Road	494	17769	0	10	0%	0%
15	A63 (W)	993	16414	0	162	0%	1%

ASSESSMENT OF CONSTRUCTION EFFECTS

Overview

5.9.29. **Table 5.23** contains the change in traffic flows within the study area during the construction phase of the Proposed Scheme and indicates that there would be a temporary increase in traffic flows including HDVs. The following sections provide an assessment of the effects in relation to severance, pedestrian amenity and fear and intimidation with reference to the change in traffic flows. The assessment of driver delay is considered separately in relation to the peak hour junction assessments.

5.9.30. It is considered that the decommissioning phase is likely to cause the same effects as that of construction, but goods are taken away from site rather than to site, therefore the construction and decommissioning have been assessed together.

SEVERANCE

5.9.31. Severance is the perceived division that can occur within a community when it becomes separated from places and other people. The severance may be caused by a physical barrier created by a development or by the difficulty of crossing roads due to an increase in traffic flow.

5.9.32. The results in **Table 5.24** show that the predicted change in total traffic flows associated with the construction phase of the Proposed Scheme results in no change, or less than 30% (negligible). The significance of effect of severance on Link 14 is classified as **slight (not significant)** and all other links are classified as **neutral (not significant).**

Table 5.24 – Assessment of Effect (Severance)

Link	2026 Do Something Percentage Change		Receptor Sensitivity	Severance	
	HDV	Total Vehicles		Magnitude	Significance
1	41.9%	27.7%	Negligible	Negligible	Neutral
2	0.0%	0.0%	Very High	No Change	Neutral
3	22.6%	5.6%	Low	Negligible	Neutral
4	0.0%	0.0%	High	No Change	Neutral
5	19.4%	3.1%	Low	Negligible	Neutral
6	1.2%	0.3%	Low	Negligible	Neutral
7	0.0%	0.0%	Medium	No Change	Neutral
8	0.0%	0.0%	Low	No Change	Neutral
9	0.7%	0.6%	Low	Negligible	Neutral
10	0.0%	2.0%	Low	Negligible	Neutral
11	0.0%	0.0%	High	No Change	Neutral
12	0.0%	1.3%	Medium	Negligible	Neutral
13	0.0%	0.2%	Negligible	Negligible	Neutral
14	0.0%	0.1%	High	Negligible	Slight
15	0.0%	1.0%	Negligible	Negligible	Neutral

PEDESTRIAN AMENITY

5.9.33. Pedestrian amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition, pavement width and separation between vehicles and pedestrians. The Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment, 1993) suggest that a doubling or halving of total traffic flow or the HDV composition could lead to perceptible change upon pedestrian amenity.

5.9.34. The results in **Table 5.25** show that the predicted change in total traffic flows associated with the construction phase of the Proposed Scheme results in no change, or less than 30% **(negligible)**, or between 31% - 50% **(minor).**

5.9.35. **Table 5.25** also shows that the predicted change in HDV traffic flows associated with the construction phase of the Proposed Scheme results in no change, less than 30% **(negligible),** or between 31% - 50% **(minor)**.

5.9.36. The significance of effect on pedestrian amenity on Link 3 and Link 14 is classified as **slight (not significant)** and all other links are classified as **neutral (not significant)**.

Table 5.25 – Assessment of Effects (Pedestrian Amenity)

Link	2026 Do Something Percentage Change		Receptor Sensitivity	Pedestrian Amenity	
	HDV	Total Vehicles		Magnitude	Significance
1	41.9%	27.7%	Negligible	Minor	Neutral
2	0.0%	0.0%	Very High	No Change	Neutral
3	22.6%	5.6%	Low	Negligible	Slight
4	0.0%	0.0%	High	No Change	Neutral
5	19.4%	3.1%	Low	Negligible	Neutral
6	1.2%	0.3%	Low	Negligible	Neutral
7	0.0%	0.0%	Medium	No Change	Neutral
8	0.0%	0.0%	Low	No Change	Neutral
9	0.7%	0.6%	Low	Negligible	Neutral
10	0.0%	2.0%	Low	Negligible	Neutral

Link	2026 Do Something Percentage Change		Receptor Sensitivity	Pedestrian Amenity	
	HDV	Total Vehicles		Magnitude	Significance
11	0.0%	0.0%	High	No Change	Neutral
12	0.0%	1.3%	Medium	Negligible	Neutral
13	0.0%	0.2%	Negligible	Negligible	Neutral
14	0.0%	0.1%	High	Negligible	Slight
15	0.0%	1.0%	Negligible	Negligible	Neutral

FEAR AND INTIMIDATION

5.9.37. A further effect that traffic may have on pedestrians is fear and intimidation, which is dependent on the following factors: the volume of traffic, its HDV composition, its proximity to people or the lack of protection caused by such factors as narrow pavement widths.

5.9.38. The results in **Table 5.26** show that the predicted change in total traffic flows associated with the construction phase of the Proposed Scheme results in no change, or less than 30% (**negligible**). **Table 5.26** also shows that the predicted change in HDV traffic flows associated with the construction phase of the Proposed Scheme results in no change, less than 30% (**negligible**), or between 31% - 50% (**minor**).

5.9.39. The significance of effect of severance on Link 14 is classified as **slight (not significant)** and all other links are classified as **neutral (not significant)**.

Table 5.26 – Fear and Intimidation

Link	2026 Do Something Percentage Change		Receptor Sensitivity	Fear and Intimidation	
	HDV	Total Vehicles		Magnitude	Significance
1	41.9%	27.7%	Negligible	Minor	Neutral
2	0.0%	0.0%	Very High	No Change	Neutral
3	22.6%	5.6%	Low	Negligible	Neutral
4	0.0%	0.0%	High	No Change	Neutral
5	19.4%	3.1%	Low	Negligible	Neutral

Link	2026 Do Something Percentage Change		Receptor Sensitivity	Fear and Intimidation	
	HDV	Total Vehicles		Magnitude	Significance
6	1.2%	0.3%	Low	Negligible	Neutral
7	0.0%	0.0%	Medium	No Change	Neutral
8	0.0%	0.0%	Low	No Change	Neutral
9	0.7%	0.6%	Low	Negligible	Neutral
10	0.0%	2.0%	Low	Negligible	Neutral
11	0.0%	0.0%	High	No Change	Neutral
12	0.0%	1.3%	Medium	Negligible	Neutral
13	0.0%	0.2%	Negligible	Negligible	Neutral
14	0.0%	0.1%	High	Negligible	Slight
15	0.0%	1.0%	Negligible	Negligible	Neutral

DRIVER DELAY

5.9.40. **Table 5.23** in this chapter indicates that all links would experience an increase in total traffic flow associated with the Proposed Scheme of less than the 30%, the threshold below which the IEMA guidance (Institute of Environmental Assessment, 1993) indicates no environmental assessment is required unless it is a sensitive area. However, it is also necessary to understand the temporary traffic impacts at junctions within the study area and the environmental effects associated with the impact on driver delay.

5.9.41. The analysis of all junctions within the study area has been undertaken within the Junctions 10 software. Junctions 10 is the industry standard software for the analysis of priority junctions and roundabouts.

5.9.42. The software reports the operation of junctions based upon a Ratio of Flow to Capacity (RFC). RFC values lower than 1.0 indicate a junction is operating within capacity, whilst values of over 1.00 indicate that the junctions will operate over capacity. It is generally considered that an RFC of between 0.85 – 1.00 indicates a junction is starting to experience queues and delay. Queue length, reported in Passenger car Units (PCU) and delay reported in seconds, are also presented.

5.9.43. The analysis of all junctions has been undertaken using the ‘ONE HOUR’ method, which synthesises a ‘bell curve’ profile for peak hour traffic, i.e., predicting a short-term peak of traffic within the overall peak hour. This is considered a robust method in traffic capacity terms.

5.9.44. The geometric parameters for all junctions were based on OS Data. A full set of measurements and Junctions 10 output files are included in **Junction Modelling (Appendix 5.6)** (document reference 6.3.5.6).

Junction 1 - A645 / New Road Roundabout

5.9.45. **Table 5.27** provides a summary of the results for the scenarios assessed for the A645 / New Road Roundabout.

Table 5.27 – Junction 1 - A645 / New Road Roundabout Results

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
Scenario 1 – 2018 Baseline						
A645 West	0.29	0.4	3.06	0.38	0.6	3.35
New Road	0.06	0.1	2.77	0.15	0.2	3.01
Main Road	0.07	0.1	2.24	0.07	0.1	2.45
A645 South	0.39	0.7	3.76	0.25	0.4	3.21
Social Club	0.01	0.0	5.10	0.02	0.0	4.71
Scenario 2 - 2022 Baseline						
A645 West	0.30	0.4	3.11	0.40	0.7	3.43
New Road	0.06	0.1	2.79	0.15	0.2	3.06
Main Road	0.08	0.1	2.26	0.07	0.1	2.48
A645 South	0.40	0.7	3.86	0.26	0.4	3.26
Social Club	0.01	0.0	5.20	0.02	0.0	4.76
Scenario 3 - 2026 Future Baseline						
A645 West	0.31	0.5	3.16	0.41	0.7	3.50
New Road	0.06	0.1	2.82	0.16	0.2	3.11
Main Road	0.08	0.1	2.28	0.07	0.1	2.51
A645 South	0.41	0.7	3.95	0.27	0.4	3.31
Social Club	0.01	0.0	5.28	0.02	0.0	4.82
Scenario 4 - 2026 Do Minimum						
A645 West	0.33	0.5	3.30	0.43	0.8	3.67
New Road	0.09	0.1	3.00	0.18	0.2	3.26
Main Road	0.09	0.1	2.35	0.08	0.1	2.58
A645 South	0.45	0.9	4.23	0.32	0.5	3.56
Social Club	0.01	0.0	5.51	0.02	0.0	5.04
Scenario 5 - 2026 Do Something						

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
A645 West	0.34	0.5	3.45	0.44	0.8	3.86
New Road	0.10	0.1	3.11	0.26	0.4	3.58
Main Road	0.09	0.1	2.38	0.08	0.1	2.71
A645 South	0.49	1.0	4.54	0.37	0.6	3.95
Social Club	0.01	0.0	5.76	0.02	0.0	5.38

5.9.46. **Table 5.27** indicates that under all scenarios, the roundabout would operate within capacity during both the AM and PM peak hours, including with the addition of Proposed Scheme traffic. Junction modelling therefore, indicates that the driver delay effect of the Proposed Scheme would be **negligible (not significant).**

Junction 2 - A614 / A645 Roundabout

5.9.47. **Table 5.28** provides a summary of the results for the scenarios assessed for the A614 / A645 / Roundabout.

Table 5.28 – Junction 2 A614 / A645 Roundabout Results

	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
Scenario 1 – 2018 Baseline						
A645	0.49	1.0	9.91	0.66	2.0	13.74
A164 East	0.47	0.9	3.94	0.42	0.7	3.51
A164 West	0.56	1.3	10.41	0.41	0.7	6.90
Scenario 2 – 2022 Baseline						
A645	0.51	1.1	10.47	0.69	2.3	15.08
A164 East	0.49	1.0	4.08	0.43	0.8	3.61
A164 West	0.58	1.4	11.28	0.43	0.8	7.15
Scenario 3 - 2026 Future Baseline						
A645	0.54	1.2	11.05	0.72	16.58	2.6
A164 East	0.51	1.1	4.20	0.44	3.69	0.8
A164 West	0.61	1.6	12.12	0.44	7.40	0.8
Scenario 4 - 2026 Do Minimum						
A645	0.64	1.9	14.67	0.82	4.3	25.46
A164 East	0.55	1.3	4.62	0.51	1.1	4.19

	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
A164 West	0.69	2.3	16.18	0.49	1.0	8.58
Scenario 5 - 2026 Do Something						
A645	0.68	2.2	16.42	0.92	8.8	47.60
A164 East	0.58	1.5	4.99	0.53	1.1	4.33
A164 West	0.73	2.7	19.15	0.50	1.0	8.92

5.9.48. **Table 5.28** indicates that under all scenarios, the roundabout would operate within capacity during both the AM and PM peak hours, including with the addition of Proposed Scheme traffic. Junction modelling therefore, indicates that the driver delay effect of the Proposed Scheme would be **negligible (not significant).**

Junction 3 - A614 / Services Roundabout

5.9.49. **Table 5.29** provides a summary of the results for the scenarios assessed for the A614 / Services Roundabout.

Table 5.29 – Junction 3 A614 / Services Roundabout Assessment Summary (Existing Layout) Results

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
Scenario 1 – 2018 Baseline						
A614 West	0.61	1.6	7.95	0.70	2.3	10.33
Distribution Access	0.01	0.0	5.53	0.03	0.0	6.51
Airmyn Road	0.36	0.6	9.65	0.29	0.4	8.77
A614 East	0.45	0.9	4.02	0.45	0.9	3.99
Rawcliffe Road	0.48	1.0	10.44	0.50	1.1	10.59
Scenario 2 – 2022 Baseline						
A614 West	0.63	1.8	8.52	0.72	2.6	11.42
Distribution Access	0.01	0.0	5.70	0.03	0.0	6.78
Airmyn Road	0.39	0.6	10.28	0.30	0.4	9.23
A614 East	0.47	0.9	4.16	0.47	0.9	4.12
Rawcliffe Road	0.51	1.1	11.31	0.53	1.2	11.40

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
Scenario 3 - 2026 Future Baseline						
A614 West	0.65	2.0	9.09	0.75	3.0	12.63
Distribution Access	0.01	0.0	5.85	0.04	0.0	7.04
Airmyn Road	0.41	0.7	10.89	0.32	0.5	9.70
A614 East	0.48	1.0	4.29	0.48	1.0	4.42
Rawcliffe Road	0.53	1.2	12.18	0.55	1.4	12.23
Scenario 4 - 2026 Do Minimum						
A614 West	0.77	3.4	14.07	0.87	6.1	23.91
Distribution Access	0.02	0.0	6.97	0.04	0.0	8.68
Airmyn Road	0.51	1.0	15.39	0.40	0.7	12.75
A614 East	0.57	1.5	5.34	0.58	1.5	5.32
Rawcliffe Road	0.71	2.6	20.93	0.75	3.2	23.87
A614 West	0.79	3.9	15.67	0.94	11.2	41.13
Distribution Access	0.02	0.0	7.18	0.05	0.1	9.55
Airmyn Road	0.52	1.1	16.29	0.43	0.7	14.51
A614 East	0.61	1.7	5.81	0.59	1.6	5.52
Rawcliffe Road	0.75	3.1	25.32	0.77	3.5	26.20

5.9.50. **Table 5.29** indicates that under all scenarios, the roundabout would operate within capacity during both the AM and PM peak hours, including with the addition of Proposed Scheme traffic. Junction modelling therefore, indicates that the driver delay effect of the Proposed Scheme would be **negligible (not significant).**

5.9.51. However, it is understood that as part of Short List ID 44 planning application the developer is required to upgrade the western arm of the roundabout to increase capacity at the junction. **Table 5.30** provides a summary of the results for the future scenarios assessed for the A614 / Services Roundabout based on the committed layout.

Table 5.30 – Junction 3 A614 / Services Roundabout Assessment Summary (Committed Layout) Results

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
Scenario 3 - 2026 Future Baseline						
A614 West	0.52	1.1	5.13	0.59	1.5	6.08
Distribution Access	0.01	0.0	5.85	0.04	0.0	7.04
Airmyn Road	0.41	0.7	10.90	0.32	0.5	9.70
A614 East	0.48	1.0	4.28	0.48	1.0	4.24
Rawcliffe Road	0.53	1.2	12.18	0.55	1.4	12.23
Scenario 4 - 2026 Do Minimum						
A614 West	0.60	1.6	6.49	0.68	2.1	8.06
Distribution Access	0.02	0.0	6.98	0.04	0.0	8.70
Airmyn Road	0.51	1.0	15.40	0.40	0.7	12.78
A614 East	0.57	1.5	5.33	0.58	1.5	5.31
Rawcliffe Road	0.71	2.6	20.93	0.75	3.2	23.72
Scenario 5 - 2026 Do Something						
A614 West	0.62	1.7	6.82	0.73	2.8	9.68
Distribution Access	0.02	0.0	7.18	0.05	0.1	9.64
Airmyn Road	0.52	1.1	16.31	0.43	0.8	14.68
A614 East	0.61	1.7	5.79	0.59	1.6	5.51
Rawcliffe Road	0.75	3.1	25.32	0.77	3.5	26.21

5.9.52. **Table 5.30** indicates that under all future scenarios, the roundabout would continue to operate within capacity during both the AM and PM peak hours, including with the addition of Proposed Scheme traffic. Junction modelling therefore, indicates that the driver delay effect of the Proposed Scheme would be **negligible (not significant)**.

Junction 4 – M62 Junction 36 Dumbbell Roundabout

5.9.53. **Table 5.31** provides a summary of the results for the scenarios assessed for the M62 Junction 36 Dumbbell Roundabout.

Table 5.31 – Junction 4 M62 Junction Dumbbell Roundabout Results

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
Scenario 1 – 2018 Baseline						
Overbridge (From west to east)	0.52	1.2	3.69	0.56	1.4	3.84
M62 Southbound Off-Slip	0.52	1.2	9.11	0.39	0.7	7.88
A614 Rawcliffe Road (East)	0.31	0.5	3.07	0.40	0.7	3.24
A161	0.18	0.3	3.94	0.26	0.4	4.20
A614 Rawcliffe Road (West)	0.67	2.2	8.48	0.77	3.4	12.08
Overbridge (From east to west)	0.46	1.0	4.59	0.58	1.5	5.59
M62 Northbound Off-Slip	0.43	0.9	3.22	0.43	0.9	3.26
Scenario 2 - 2022 Baseline						
Overbridge (From west to east)	0.54	1.3	3.84	0.58	1.5	4.02
M62 Southbound Off-Slip	0.55	1.3	9.92	0.41	0.8	8.37
A614 Rawcliffe Road (East)	0.32	0.5	3.18	0.42	0.7	3.37
A161	0.19	0.3	4.05	0.27	0.4	4.35
A614 Rawcliffe Road (West)	0.70	2.5	9.42	0.80	4.1	14.28
Overbridge (From east to west)	0.48	1.0	4.73	0.60	1.6	5.86
M62 Northbound Off-Slip	0.45	1.0	3.36	0.45	1.0	3.41
Scenario 3 - 2026 Future Baseline						
Overbridge (From west to east)	0.55	1.4	3.98	0.59	1.6	4.18
M62 Southbound Off-Slip	0.58	1.5	10.80	0.43	0.9	8.86
A614 Rawcliffe Road (East)	0.34	0.5	3.28	0.43	0.8	3.50

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
A161	0.20	0.3	4.16	0.28	0.4	4.50
A614 Rawcliffe Road (West)	0.73	2.9	10.43	0.83	4.9	16.88
Overbridge (From east to west)	0.49	1.1	4.87	0.62	1.7	6.12
M62 Northbound Off-Slip	0.46	1.1	3.49	0.47	1.0	3.55
Scenario 4 - 2026 Do Minimum						
Overbridge (From west to east)	0.79	4.3	8.57	0.68	2.3	5.39
M62 Southbound Off-Slip	1.38	128.5	641.6	0.73	3.0	21.50
A614 Rawcliffe Road (East)	0.67	2.1	8.55	0.60	1.6	5.44
A161	0.29	0.5	5.19	0.67	2.2	11.24
A614 Rawcliffe Road (West)	1.12	72.8	202.0	1.20	113.0	299.34
Overbridge (From east to west)	0.57	1.5	5.79	0.89	7.7	20.24
M62 Northbound Off-Slip	0.72	3.1	6.85	0.66	2.2	6.43
Scenario 5 - 2026 Do Something						
Overbridge (From west to east)	0.79	4.4	8.71	0.68	2.3	5.49
M62 Southbound Off-Slip	1.39	135.4	682.1	0.73	3.0	22.06
A614 Rawcliffe Road (East)	0.67	2.2	8.68	0.61	1.6	5.62
A161	0.29	0.5	5.27	0.69	2.4	12.23
A614 Rawcliffe Road (West)	1.15	86.2	234.3	1.28	153.9	440.5
Overbridge (From east to west)	0.57	1.5	5.80	0.89	7.7	20.23
M62 Northbound Off-Slip	0.74	3.5	7.54	0.67	2.3	6.73

5.9.54. **Table 5.31** indicates that Junction 4 would operate over capacity in the 2026 Do Minimum assessment scenario i.e. without the addition of the Proposed Scheme construction traffic and that the Proposed Scheme would also increase driver delay.

5.9.55. It is understood that a highway improvement and contribution model has been identified at Junction 4 to address the traffic impacts associated with committed development, including Short List 44 (ERYC Planning Reference: 21/03027/STPLF).

5.9.56. As part of National Highways changing their notice from 'Non Determination to 'No Objection' for Short List 44, National Highways accepted a financial contribution through a legal agreement (e.g. S106), with the financial contribution going towards the costs of design, costing and construction of required improvements listed in the Local Plan Infrastructure Study (June 2014) and the Local Plan Infrastructure Delivery Plan (March 2015) regarding essential junction improvements at the M62 Junction 36.

5.9.57. It is understood that the scheme comprises minor widening and partial signalisation of the junction and is due to be implemented between 2024 – 2029.

5.9.58. Further discussions are required with National Highways to consider the temporary impacts of the Proposed Scheme in the context of the above highway improvement scheme and the Applicant's current operation including reduced workforce, and Drax Repower DCO consent which assessed the same peak construction year.

5.9.59. It is considered that the effect of the Proposed Scheme is negligible, but the cumulative impact of all committed development and background traffic growth is a **temporary large adverse effect** without mitigation being in place.

Junction 5 - A645 / A1041 Roundabout

5.9.60. **Table 5.32** provides a summary of the results for the scenarios assessed for the A645 / A1041 Roundabout.

Table 5.32 – Junction 5 A645 / A1041 Roundabout Results

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
Scenario 1 – 2018 Baseline						
A645	0.52	1.1	5.24	0.46	0.9	4.54
Station Road	0.40	0.7	5.07	0.53	1.2	6.58
A1041	0.38	0.6	4.41	0.35	0.5	4.38
Scenario 2 - 2022 Baseline						
A645	0.54	1.2	5.47	0.47	0.9	4.69
Station Road	0.41	0.7	5.23	0.55	1.3	6.93
A1041	0.39	0.7	4.55	0.36	0.6	4.51
Scenario 3 - 2026 Future Baseline						

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
A645	0.55	1.3	5.69	0.49	1.0	4.82
Station Road	0.43	0.8	5.39	0.57	1.4	7.28
A1041	0.41	0.7	4.67	0.37	0.6	4.63
Scenario 4 - 2026 Do Minimum						
A645	0.57	1.4	5.92	0.50	1.0	4.98
Station Road	0.45	0.8	5.59	0.60	1.4	7.83
A1041	0.41	0.7	4.79	0.38	0.6	4.77
Scenario 5 - 2026 Do Something						
A645	0.58	1.4	6.06	0.50	1.0	4.98
Station Road	0.45	0.8	5.59	0.62	1.7	8.20
A1041	0.41	0.7	4.79	0.39	0.6	4.85

5.9.61. **Table 5.32** indicates that under all scenarios, the roundabout would continue to operate within capacity during both the AM and PM peak hours, including with the addition of Proposed Scheme traffic. Junction modelling therefore, indicates that the driver delay effect of the Proposed Scheme would be **negligible (not significant)**.

Junction 6 - A63 / A1041 Roundabout

5.9.62. **Table 5.33** provides a summary of the results for the scenarios assessed for the A63 / A1041 Roundabout.

Table 5.33 – Junction 6 A63 / A1041 Roundabout Junctions 10 Results

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
Scenario 1 – 2018 Baseline						
A63 West	0.41	0.7	3.29	0.38	0.6	3.02
Bawtry Road	0.44	0.8	4.00	0.65	1.9	6.24
A63 East	0.34	0.6	3.38	0.41	0.7	4.02
A1041	0.53	1.2	4.41	0.52	1.1	4.64
Scenario 2 – 2022 Baseline						
A63 West	0.43	0.8	3.43	0.40	0.7	3.13
Bawtry Road	0.46	0.9	4.18	0.68	2.1	6.80
A63 East	0.36	0.6	3.49	0.43	0.8	4.22

Arm	AM Peak			PM Peak		
	Max RFC	Queue (PCU)	Delay (Seconds)	Max RFC	Queue (PCU)	Delay (Seconds)
A1041	0.55	1.3	4.66	0.55	1.2	4.91
Scenario 3 - 2026 Future Baseline						
A63 West	0.45	0.9	3.57	0.41	0.7	3.23
Bawtry Road	0.48	0.9	4.34	0.70	2.4	7.39
A63 East	0.37	0.6	3.60	0.45	0.8	4.40
A1041	0.57	1.4	4.90	0.57	1.3	5.17
Scenario 4 - 2026 Do Minimum						
A63 West	0.46	0.9	3.66	0.43	0.8	3.37
Bawtry Road	0.48	1.0	4.44	0.72	2.5	7.87
A63 East	0.40	0.7	3.77	0.46	0.9	4.53
A1041	0.59	1.5	5.16	0.58	1.4	5.41
Scenario 5 - 2026 Do Something						
A63 West	0.46	0.9	3.67	0.43	0.8	3.41
Bawtry Road	0.49	1.0	4.50	0.72	2.6	7.92
A63 East	0.40	0.7	3.81	0.46	0.9	4.53
A1041	0.59	1.5	5.16	0.60	1.5	5.59

5.9.63. **Table 5.32** indicates that under all scenarios, the roundabout would continue to operate within capacity during both the AM and PM peak hours, including with the addition of Proposed Scheme traffic. Junction modelling therefore, indicates that the driver delay effect of the Proposed Scheme would be **negligible (not significant).**

Summary

5.9.64. In summary the junction modelling indicates Junction 1, Junction 2, Junction 3, Junction 5, and Junction 6 will operate within capacity in all assessment scenarios and therefore the Proposed Scheme would have no significant effects on driver delay.

5.9.65. At Junction 4 the junction modelling indicates that the junction would operate over capacity in the 2026 Do Minimum assessment scenario and the Proposed Scheme would increase driver delay in 2026 Do Something assessment scenario.

5.9.66. It is understood that a highway improvement and contribution model has been identified at Junction 4 to address the traffic impacts associated with committed development, including Short List 44 (ERoY Planning Reference: 21/03027/STPLF).

5.9.67. Further discussions are required with National Highways to consider the temporary impacts of the Proposed Scheme in the context of the above highway improvement

scheme, the Applicant's current operation including reduced workforce, and Drax Repower DCO consent which assessed the same peak construction year.

5.9.68. It is considered that the decommissioning phase is likely to cause the same effects as that of the construction phase, but goods are taken away from site rather than to site.

HIGHWAY SAFETY

5.9.69. The IEMA: Guidance Note 1: Guidelines for the Environmental Assessment of Road Traffic recognises that professional judgement will be needed to assess the implications of local circumstances.

5.9.70. A detailed highway safety assessment has been undertaken as part of this assessment with reference to personal injury collision (PIC) records within the study area for the most recent 5-year period available (1 January 2017 to 31 December 2021) at the time of the request in February 2022.

5.9.71. Link 4, Link 11 and Link 15 were the links with the highest average number of collisions per year. It is anticipated that there would be no increase in trips on Links 4 and 11 as part of the Proposed Scheme. No HDV trips would be routed via Link 15 and only 2% of construction workers are anticipated to use this link. It is therefore considered that the Proposed Scheme will not have a detrimental impact on highway safety on these links. The assessment concluded that there are no existing highway safety issues that the Proposed Scheme could exacerbate.

5.9.72. However, the Proposed Scheme and other committed developments would have a significant cumulative impact at Junction 4. This could lead to an increase in driver delay and queuing, including on the local road network and M62 slip roads and therefore have a temporary **moderate adverse effect (significant)** on highway safety without mitigation in place.

ABNORMAL INDIVISIBLE LOADS

5.9.73. During the construction phase there would be temporary disruption to the highway network associated with the movement of AIL. The largest AIL would be the four Regenerators and these would be transported between the Port of Goole and the Site using the A161, M62, and A645. **Figure 5.6 (Abnormal Indivisible Load Routeing)** shows the route for using the M62.

5.9.74. A swept path analysis and 3D survey of the route has been undertaken and indicates where street furniture needs to be removed, overhead lines lifted or switched off, and vegetation pruned (see the **Access and Right of Way Plans** (document reference 2.4). In addition to road modifications, traffic management would also be required.

5.9.75. An AIL strategy is included in the **Outline Construction Traffic Management Plan (CTMP)** (**Appendix 5.1**) and all AIL movements would be subject to the necessary consultation and notification process. The AIL strategy sets out the approach to scheduling AIL movements to avoid peak hours where possible, an outline communications plan, details of advanced signage, neighbour notifications, haulage responsibilities, and condition surveys (where appropriate).

5.9.76. It is considered that appropriate measures can be put in place to manage the effects of the movement of AILs and there would be no traffic and transport significant effects associated with the movement of AIL due to the temporary nature of the moves.

PUBLIC RIGHTS OF WAY – TEMPORARY EFFECTS DURING CONSTRUCTION.

5.9.77. During the construction phase the presence of construction plant and equipment in works areas adjacent to the PRoW network may temporarily reduce the amenity value of the paths, however, the effects would be temporary and short-term. It is considered that appropriate construction environmental measures can be put in place to manage the effects. This would include solid fencing / barriers in areas where dust-generating construction activities occur adjacent to a PRoW, along with appropriate signage to caution any passers-by and regular visual inspections during periods of activity. It is considered that there would be no significant effects on PRoW users.

5.9.78. It is also proposed to temporarily stop up path 35.6/6/1. This will enable the establishment of the planting in the Fallow Field in the Off-site Habitat Provision Area. It is considered that there would be no significant effects on PRoW users.

OPERATIONAL PHASE

Operational Phase Traffic Generation

5.9.79. It is anticipated that a workforce of 50 full time staff will be required for the operational phase of the Proposed Scheme. Given this, when compared to the workforce at the Drax Power Station Site at the time of collection of the baseline traffic flow data during 2018, there would be an overall net-reduction of circa 180 people in the workforce.

5.9.80. The Proposed Scheme would operate 24 hours per day, seven days per week with planned and unplanned periods of maintenance. Staff are likely to work three shift patterns over the course of a day, which typically could run between 07:00 - 15:00, 15:00 – 23:00 and 23:00 – 07:00. As such, it is anticipated that the Proposed Scheme would generate on average 33 two-way trips per shift.

5.9.81. The Proposed Scheme will use several chemicals and a proprietary solvent for normal operation which will be delivered to Drax Power Station. Based on current information provided by the Applicant, the average refill rates for the solvent and liquid chemicals are estimated in **Table 5.34**.

Table 5.34 – Normal Chemical Fill Frequency

Material	Refill Rate (Two CCS plants)
Proprietary Solvent	2-4 HDVs every 2.5 weeks
Caustic Soda (20-47%)	2-3 HDVs every 2.9 weeks
Anti-foam	1-3 HDVs every three-months

5.9.82. Based on a worst case scenario where all materials would be delivered on the same day, the Proposed Scheme may attract up to 10 HDVs (20 two-way) movements per day. Based on a typical 12-hour day, this would equate to approximately two trips (one arrival / one departure) during the AM and PM peak hours.

5.9.83. Due to the very low traffic flows which will result once the Proposed Scheme is operational, the vehicle numbers generated will be significantly lower than experienced during the construction phase, and will represent an overall net-reduction of circa 180 people in the workforce compared to the 2018 baseline traffic data. The overall effects during the operational phase are therefore considered to be **negligible (not significant).**

5.10. DESIGN, MITIGATION AND ENHANCEMENT MEASURES

5.10.1. This Section sets out the design, mitigation and enhancement measures which are likely to be required to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment.

DESIGN

5.10.2. No additional design measures over and above the primary mitigation measures outlined in **Chapter 2 (Site and Project Description)** are proposed.

MITIGATION

5.10.3. No additional mitigation measures are proposed other than those already referenced earlier in this chapter, namely the **Outline Construction Traffic Management Plan (CTMP)** (**Appendix 5.1**), and **Framework Construction Worker Travel Plan (CWTP)** (**Appendix 5.2**).

OPPORTUNITIES FOR ENVIRONMENTAL ENHANCEMENT

5.10.4. No opportunities for environmental enhancement are proposed as part of the Proposed Scheme.

5.11. ASSESSMENT OF LIKELY SIGIFICANT EFFECTS

5.11.1. This section details the assessment of significant effects taking account of the secondary mitigation detailed in **Section 5.10** of this chapter. It is assumed that the construction phase and decommissioning would be similar in their effects.

CONSTRUCTION PHASE AND DECOMMISSIONING

5.11.2. The residual effects are those predicted following consideration of any proposed mitigation measures. In line with the significance criteria presented in **Section 5.5** earlier in this chapter all effects for the construction phase and decommissioning are predicted to be **neutral or slight (not significant)** except for driver delay and highway safety.

5.11.3. The additional traffic generated by the Proposed Scheme during the construction phase would result in temporary increases in traffic flow, including HDVs, on the links within the study area. In line with the significance criteria presented, the effects of

construction traffic on all road links are anticipated to be **negligible or slight** and thus **not significant**. However, there could be **significant** temporary cumulative effects in relation to driver delay and highway safety at Junction 4 if all other committed developments are built out and the junction is not upgraded. Further discussions are required with ERoY and National Highways to understand the timescales and mechanism to upgrade Junction 4 to accommodate planned growth and if this would result in a reduced impact at the junction.

5.11.4. The generation of traffic during the decommissioning phase is expected to involve traffic movements associated with the removal (and recycling, as appropriate) of material arising from demolition and potentially the import of materials for land restoration and re-instatement. It is anticipated that the effects of decommissioning traffic would be no greater than that of the construction traffic and are, therefore, also anticipated to be **not significant** at Junction 4 if the junction is upgraded**.**

OPERATIONAL PHASE

5.11.5. The effects associated with the generation of traffic during the operational phase of the Proposed Scheme are considered to be negligible (not significant).

5.12. CUMULATIVE EFFECTS

5.12.1. The assessment presented in this chapter inherently includes an assessment of construction phase related traffic cumulative effects with other short-listed developments (see **Section 5.9** Preliminary Assessment of Likely Significant Impacts and Effects).

5.12.2. In summary significant cumulative effects are predicted at Junction 4 should short listed developments be built out and other background growth is realised without an upgraded junction being delivered. However, the impacts of the Proposed Scheme traffic are minimal and it is considered that the temporary construction phase impacts can be cost effectively mitigated through enhanced management of the construction traffic, with robust monitoring and reporting measures included in the **Outline Construction Traffic Management Plan (CTMP)** (**Appendix 5.1 3**) and **Framework Construction Worker Travel Plan (CWTP)** (**Appendix 5.2**). This would include working with National Highways, NYCC, and ERoY.

5.12.3. An assessment of intra-project combined effects and inter-project cumulative effects for the Proposed Scheme has been carried out and is presented in **Chapter 18 (Cumulative Effects)** of this ES.

5.13. IN-COMBINATION CLIMATE CHANGE IMPACTS

5.13.1. The in-combination Climate Change impact assessment considers the extent to which climate change may alter the effects which have already been identified within this Chapter.

5.13.2. The effects that have been considered within this Chapter have been assessed against likely climate hazards, as set out within **Chapter 14 (Climate Change Resilience)** (document reference 6.1.14), and the effects identified are not anticipated to change as a result of these hazards.

5.14. MONITORING

5.14.1. Monitoring of the construction traffic, construction worker movements, and Abnormal Indivisible Loads during the construction phase are set out in the **Outline Construction Traffic Management Plan (CTMP)** (**Appendix 5.1**) and **Framework Construction Worker Travel Plan (CWTP)** (**Appendix 5.2**). Similar arrangements would be required for the decommissioning phase in the DTMP.

5.14.2. No monitoring arrangements are proposed for the operational phase of the Proposed Scheme.

Table 5.13 - Summary of Traffic and Transport Effects

Receptor	Potential Effects	Additional Mitigation	Residual Effects
Link 1	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 2	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 3	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Slight (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST

Receptor	Potential Effects	Additional Mitigation	Residual Effects
Link 4	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Driver Delay	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 5	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 6	Severance	N/A	**Neutral (not significant)** T / D / ST T / I / MT
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 7	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST

Receptor	Potential Effects	Additional Mitigation	Residual Effects
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 8	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 9	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 10	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 11	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST

Receptor	Potential Effects	Additional Mitigation	Residual Effects
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 12	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 13	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 14	Severance	N/A	**Slight (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Slight (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Slight (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Link 15	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	N/A	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	N/A	**Neutral (not significant)** T / D / ST

Receptor	Potential Effects	Additional Mitigation	Residual Effects
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Junction 1	Driver Delay	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Junction 2	Driver Delay	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Junction 3	Driver Delay	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Junction 4	Driver Delay	Enhanced CWTP and CTMP	**Adverse Large (Significant)** T / D / ST
	Highway Safety	N/A	**Adverse Moderate (Significant)** T / D / ST
Junction 5	Driver Delay	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Junction 6	Driver Delay	N/A	**Neutral (not significant)** T / D / ST
	Highway Safety	N/A	**Neutral (not significant)** T / D / ST
Public Rights of Way	Severance	N/A	**Neutral (not significant)** T / D / ST
	Pedestrian Amenity	Embedded environmental measures to manage the effects.	**Neutral (not significant)** T / D / ST
	Fear and Intimidation	Embedded environmental	**Neutral (not significant)**

Receptor	Potential Effects	Additional Mitigation	Residual Effects
		measures to manage the effects.	T / D / ST

Key to table:

P/T = Permanent or Temporary, D/I = Direct or Indirect, ST/MT/LT = Short Term, Medium Term or Long Term, N/A = Not Applicable

5.15. REFERENCES

Arriva. (2022). *Arriva Bus (online)*.

Department for Business, Energy & Industrial Strategy. (2021). *Draft National Policy Statement for Renewable Energy Infrastructure (EN-3).* Department for Business, Energy & Industrial Strategy.

Department for Business, Energy & Industrial Strategy. (2021). *Draft Overarching National Policy Statement for Energy (EN-1).* Department for Business, Energy & Industrial Strategy.

Department for Communities and Local Government. (2021). *National Planning Policy Framework.*

Department for Energy and Climate Change. (2011). *National Policy Statement EN-1.*

Department for Transport . (2013). *Circular 02/2013 – The Strategic Road Network and the Delivery of Sustainable Development.*

Department of Energy and Climate Change. (2011). *National Policy Statement for Renewable Energy Infrastructure (EN-3).* Department of Energy and Climate Change.

Drax. (2018). *Drax Repower ES, 6.1.5 Environmental Statement-Volume 1-Chapter 5-Transport.* Drax.

East Riding District Council. (2016). *East Riding Local Plan.* East Riding District Council.

East Riding of Yorkshire Council. (2021). *Local Transport Plan 2021 - 2039.* East Riding of Yorkshire: East Riding of Yorkshire Council.

Highways England. (2019). *LA 101 Introduction to Environmental Assessment.*

Highways England. (2019). *Water preferred policy - Guidelines for the movement of abnormal indivisible loads.*

Highways England. (2020a). *LA 103 - Scoping projects for environmental assessment.*

Highways England. (2020b). *LA 104 - Environmental assessment and monitoring.*

Highways England. (2020c). *LA 112 Population and Human Health, Design Manual for Roads and Bridges.*

Institute of Environmental Assessment. (1993). *Guidelines for the Environmental Assessment of Road Traffic.*

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

National Highways. (2018). *Highways England Webtris*. Retrieved from https://webtris.highwaysengland.co.uk/

National Highways et al. (2021). *CD 123 Geometric design of at-grade priority and signal-controlled junctions.* National Highways et al.

National Highways et al. (2022). *CD 122 - Geometric design of grade separted junctions.* National Highways et al.

North Yorkshire County Council. (2016). *North Yorkshire Local Transport Plan.*

North Yorkshire County Council. (2022). *North Yorkshire County Council*. Retrieved from https://hub.datanorthyorkshire.org/dataset/north-yorkshire-county-council-public-rights-of-way

Northern Trains Limited. (2022). *Northern Trains [online]*.

Parliament of the United Kingdom. (1980). *Highways Act.*

Parliament of the United Kingdom. (1990). *Town and Country Planning Act.*

Parliament of the United Kingdom. (1991). *New Roads and Street Works Act.*

Parliament of the United Kingdom. (2004). *Traffic Management Act.*

Parliament of the United Kingdom. (2008). *Local Transport Act.*

Selby District Council. (2005). *Selby District Local Plan.* Selby District Council.

Selby District Council. (2013). *Selby District Core Strategy Local Plan.*

Selby District Council. (2021). *Selby District Council - Local Plan Preferred Options Consultation 2021.* Selby District Council.

Sustrans. (2022). *The National Cycle Network [online]*.

WSP . (2021). *Drax BECCS Preliminary Environmental Information Report, October 2021.*