

Appendix 8A: Transport Assessment

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8A. Transport Assessment

8A.1 Introduction

Report Purpose

- 8A.1.1 AECOM have prepared this Transport Assessment (TA) on behalf of VPI Immingham LLP (VPI) and Phillips 66 Limited to support proposed carbon capture facilities at Phillips 66 Humber Refinery and VPI Immingham Combined Heat and Power (CHP) Plant (the Proposed Developments). This report outlines the potential peak hour impacts generated by the Proposed Developments during the construction phase. This TA covers both of the Proposed Developments, the locations of which are shown in Figure 1.1 (ES Volume III).
- 8A.1.2 The Proposed Developments' Sites ('the Sites') are located to the north of the A160 and will be accessed from Rosper Road and Eastfield Road.

Proposed Developments

- 8A.1.3 The Proposed Developments consists of post-combustion carbon capture (PCC) facilities across two sites – one at the VPI Immingham CHP Plant and one at the Phillips 66 Humber Refinery. The Proposed Developments will deliver 3.8 megatonnes per annum of abated carbon dioxide emissions via:

- PCC retrofit to two gas turbines (GT1 and GT2) and two auxiliary gas boilers at the VPI Immingham CHP Plant; and
- PCC retrofit to the Fluid Catalytic Cracker (FCC) stack at the Humber Refinery.

Progress of the Proposed Developments is subject to the necessary consents being granted and government policy/ funding support being in place to enable final investment decisions to be made.

- 8A.1.4 The Proposed Developments aim to form the basis for a potential cluster of projects in the future, with ambitions for both green and blue hydrogen production and further decarbonisation related projects.
- 8A.1.5 The Sites are split over two parcels of land with a small area of overlap.
- 8A.1.6 The VPI Site (see Figure 1.3 in ES Volume III) is within and adjacent to the south of the operational VPI Immingham CHP Plant site, accessed from Rosper Road and separated from the Phillips 66 Humber Refinery by the Network Rail railway line discussed above. The VPI Site currently benefits from three existing access points from Rosper Road to the east. A new (fourth) access from Rosper Road is also proposed.
- 8A.1.7 The Phillips 66 Site (see Figure 1.2 in ES Volume III) is largely within the operational Humber Refinery, accessed from Eastfield Road, but also includes land to the east of the Refinery for pipeline and cable connections, including part of the Network Rail railway line which will need to be traversed by pipelines and cables. The Phillips 66 Site currently benefits from two existing vehicular accesses to the west via Eastfield Road, both of which are provided with ghost island right turn facilities. A new vehicular access is proposed to the west of the Proposed Phillips 66 Development via Eastfield Road. Other access points into the wider Humber Refinery site are also available from Eastfield Road and the A160.

Scoping and Engagement

- 8A.1.8 AECOM has scoped the parameters of this TA with North Lincolnshire Council (NLC) setting out the contents and approach that will be taken. In response NLC have confirmed that:
- the scope of the transport reports and the count locations proposed at Rosper Road, Eastfield Road, the A160, A180, A15, Manby Road and Humber Road are acceptable; and

- there will be a requirement for a Construction Traffic Management Plan (CTMP) and a Construction Worker Travel Plan (CWTP) (these are provided in Appendices 8B and 8C of the ES).

Structure

8A.1.9 Following this introductory section, the TA is structured as follows:

- **Transport Policy and Guidance:** This section consists of a review of how the Proposed Developments comply with relevant national, regional and local transport policy and guidance.
- **Existing Conditions:** This section reviews the existing characteristics of the transport network in the vicinity of the Sites along with a summary of existing site use. This is supported by data from traffic surveys undertaken in February 2022.
- **Proposed Developments:** This section provides a description of the Proposed Developments as well as access and parking arrangements for the Sites.
- **Trip Generation:** This section details the anticipated travel demands associated with the construction of the Proposed Developments.
- **Mitigation and Measures:** This section details measures which shall be put in place during the construction of the Proposed Developments to mitigate any increases in traffic which may occur.
- **Summary.**

8A.2 Transport Policy and Guidance

Introduction

1.1.1 In accordance with development planning process, the Proposed Developments are required to comply with various national, regional and local planning policies. This chapter therefore incorporates a brief overview of the relevant policy documents and highlights how the Proposed Developments satisfy these policies. In addition to this, relevant aspects of specific transport guidance are also detailed.

Relevant Policy and Guidance

National Planning Policy Framework (NPPF) (2021)

8A.2.1 The National Planning Policy Framework (NPPF) was introduced in 2012, updated for 2021 and sets out the Government's planning policies for England, superseding the Planning Policy Guidance Notes. The document aims to contribute to the achievement of sustainable development through the planning system.

8A.2.2 Paragraph 32 indicates that "*developments should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe*".

Travel Plans, Transport Assessments and Statements – Planning Practice Guidance (2014)

8A.2.3 The guidance relates to the development of Travel Plans, Transport Assessments and Statements, providing advice in relation to decision making for authorities.

North Lincolnshire Local Development Framework (2006-2026) (2011)

8A.2.4 The adopted plan sets out North Lincolnshire Council's long term special planning policies which deliver the vision for the area including the scale and distribution of development.

Transport Plan for the Humber

8A.2.5 The Transport Plan for the Humber defines priorities for the transport system in the area to be implemented over the next 10 to 20 years and sets out the Humber's aspirations for future transport schemes to support strategic priority and emerging and adopted local plans.

8A.3 Existing Conditions

Introduction

- 8A.3.1 This section provides a summary of the characteristics of the existing Sites and transport network. This section is supported by data from traffic surveys undertaken in February 2022.

Sustainable Accessibility

- 8A.3.2 This section covers the accessibility of the Sites by sustainable transport modes, initially considering pedestrian movements, followed by cycle movements and then public transport.

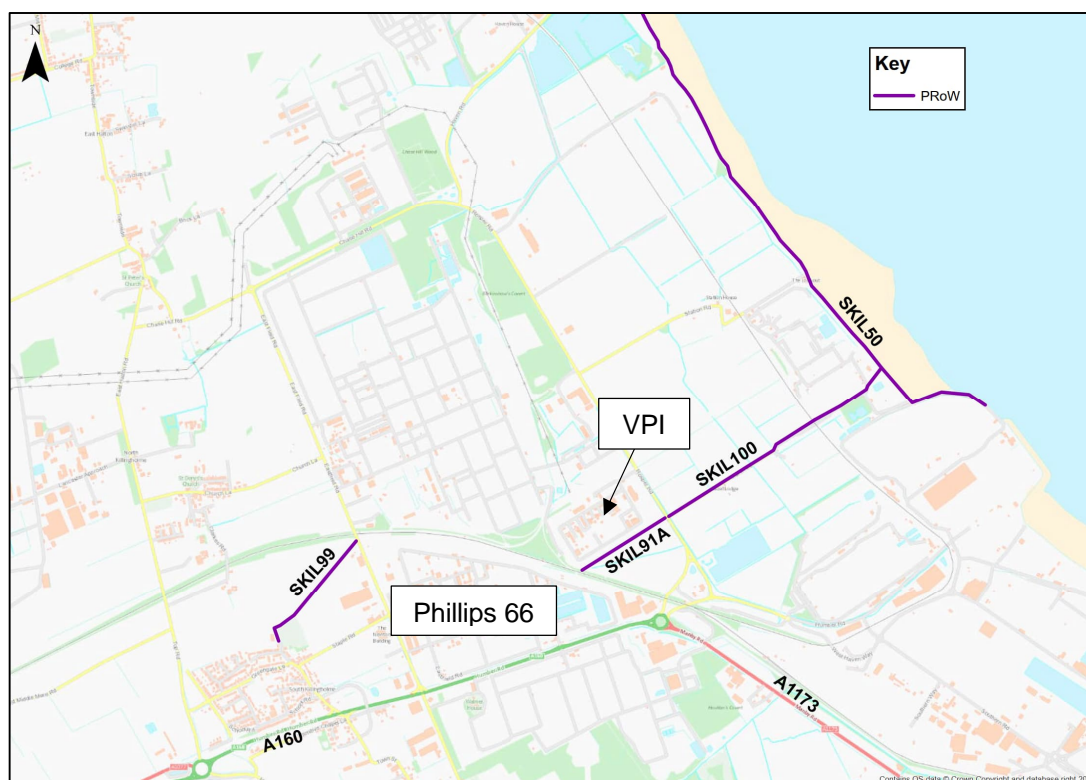
Pedestrians

- 8A.3.3 The Chartered Institute of Highways and Transportation (CIHT) document ‘Providing for Journeys on Foot’ (2000) suggests a maximum walking distance of 2 km for journeys to work.
- 8A.3.4 Considering a 2 km walking catchment, there is limited ability for employees at the VPI Site to access it on foot. The nearest settlements to the VPI Site are South Killingholme and Immingham, both of which are outside of the 2 km range considered acceptable for walking to work. In terms of infrastructure, Rosper Road has footways on the east side of the carriageway, on the north side of Humber Road and on the south side of the A160. These footways are of an appropriate width, surface and are lit and therefore it is possible for those who would wish to travel to the VPI Site from South Killingholme on foot to do so.
- 8A.3.5 In terms of accessing the Phillips 66 Site, both North Killingholme and South Killingholme are within a 2 km catchment of the Phillips 66 Site. From the proposed site accesses on Eastfield Road there are good connections to South Killingholme in the form of a foot and cycle way on Staple Road, meaning that workers travelling to the Phillips 66 Site from these settlements could be encouraged to travel on foot. North Killingholme is accessed from the Phillips 66 Site via Eastfield Road which, north of the site access junctions, does not have continuous footways and no footways are present on much of the route between the Phillips 66 Site and the town.

Cycling

- 8A.3.6 Cycling is considered to be a viable alternative to that of the private car for journeys up to 8 km, providing a healthy and environmentally friendly form of transport.
- 8A.3.7 In respect of acceptable cycle distances, ‘Local Transport Note 2/08: Cycling Infrastructure Design’, published by the Department for Transport states that many utility cycle trips are less than 3 miles (approximately 5 km), but for commuter journeys, a distance of 5 miles (approximately 8 km) is not uncommon. An 8 km catchment from the Sites includes Immingham, North Killingholme, South Killingholme, Ulceby, Habrough and Brocklesby.
- 8A.3.8 In terms of infrastructure, there is a shared foot and cycle way on the south side of the A160, a shared foot and cycle way on Staple Road between Eastfield Road and South Killingholme and a shared foot and cycle way on the A1077 between South Killingholme and Ulceby. A combination of these facilities as well as some sections of on-road cycling mean that both the VPI Site and the Phillips 66 Site are accessible by bicycle for those employees who wish to use those modes.
- 8A.3.9 There are a number of Public Rights of Way (PRoWs) within and adjacent to the Sites, key routes are identified on Plate 8A.1 below, which also shows the Sites’ boundaries.

Plate 8A.1. PRoW / Cycle Network¹



- 8A.3.10 PRoW SKIL91A runs within the VPI Site, between the existing railway line and Rosper Road. However, site observations indicated that this PRoW is not present on the ground and has not been for many years despite still being included on mapping. Therefore, an application has been submitted associated with the Proposed Developments to extinguish this PRoW, which is currently being processed.
- 8A.3.11 An existing Pelican crossing is provided across Eastfield Road along the Phillips 66 Site's western frontage and controlled pedestrian crossing facilities are also provided at the A160 Humber Road/ Eastfield Road signalised crossroads junction, south-east of the Phillips 66 Site.
- 8A.3.12 It is not anticipated that the Proposed Developments will impact on any elements of the existing pedestrian/ cycle network within the vicinity of the Sites.

Public Transport

Bus

- 8A.3.13 The CIHT document, 'Guidelines for Public Transport in Development' recommends a maximum walking distance of 400 m to a bus stop.
- 8A.3.14 The nearest bus stops to the VPI Site are on Manby Road, just north of Immingham. These stops are served by the 455 service which operates Monday to Friday between Barton-upon-Humber and Cleethorpes and has three services per day. Within Immingham, there are bus stops on Pelham Road which are also served by the 5 service which is an hourly service between Immingham and Grimsby. Both of these stops are however outside the recommended 400 m guidance.
- 8A.3.15 The nearest bus stops to the Phillips 66 Site are on School Road in South Killingholme which is approximately 700 m walk from the Phillips 66 via the Staple Road shared foot and cycle way. This stop is served by the 455 service and the 510 service. The 510 service operates between East Halton, South Killingholme and Immingham and has two services per day, an inbound and an outbound service.

¹ Source: www.northlincs.gov.uk/planning-and-environment/definitive-map

8A.3.16 The bus services and frequencies are summarised in Table 8A.1 below.

Table 8A.1. Bus Service Timetabling

Service	Stop	Route	Monday-Friday	Saturday
5	Pelham Road	Immingham to Grimsby	Hourly	Hourly
455	Manby Road & School Road	Barton-upon-Humber to Cleethorpes	3 services daily	3 services daily
510	School Road	East Halton to Immingham	2 services daily	No service

Source: bustimes.org

Rail

8A.3.17 The nearest rail stations to the Sites are located at Ulceby and Habrough. Ulceby station is located approximately 5.8 km from the VPI Site and 4 km from the Phillips 66 Site while Habrough is located approximately 6.5 km from the VPI Site and 4.7 km from the Phillips 66 Site. Both stations are served by the East Midlands Railway service between Barton-upon-Humber and Cleethorpes which operates every two hours in each direction. Habrough is also on the Transpennine Express line between Manchester Piccadilly and Cleethorpes which operates an hourly service in each direction.

Highway Network

8A.3.18 Plate 8A.2 below identifies the Local and Strategic Road Network within the vicinity of the Proposed Development Sites.

Plate 8A.2. Existing Transport Network



Eastfield Road

8A.3.19 Eastfield Road has some pedestrian infrastructure on the east side of the carriageway, however this does not extend south as far as its junction with the A160. It consists of a series of footpaths, set well back from the road carriageway by a grass verge which connects areas

of the Humber Refinery site via a series of zebra crossings internal to the Phillips 66 Site. There is also a signal controlled pedestrian crossing on Eastfield Road which facilitates access to the Staple Road shared foot and cycle path.

- 8A.3.20 The shared foot and cycle path on Staple Road also provides a direct, off-road cycle route between Eastfield Road and South Killingholme. The route is approximately 4.9 m wide and segregates pedestrians from cyclists by surface lining.
- 8A.3.21 Eastfield Road is an adopted highway, maintained at public expense which is formed of a lit, 7.3 m wide single carriageway and extends c. 2.4 km north from a signalised crossroads junction with the A160 Humber Road.
- 8A.3.22 Eastfield Road is subject to a 40 mph speed limit throughout and forms the Phillips 66 Site's western frontage. Three priority T junctions provide access to the Phillips 66 Site to the east of Eastfield Road, which are provided with ghost island right turn facilities, and a Pelican crossing is located some 50 m north of the Humber Refinery's main vehicular access on Eastfield Road.
- 8A.3.23 Eastfield Road also provides access to a number of industrial units and a car park along its western flank, opposite the Phillips 66 Site.
- 8A.3.24 Some 900 m north of its signalised crossroads junction with A160 Humber Road, Eastfield Road crosses an existing railway line in the form of an overbridge and provides access to Lindsey Oil Refinery and Church Lane, via signalised crossroads junction and priority T junction, respectively. The route then continues north, before diverting east as Chase Hill Road, along the northern boundary of Lindsey Oil Refinery.

Rosper Road/ Humber Road

- 8A.3.25 Chase Hill Road extends east from Eastfield Road along the northern boundary of Lindsey Oil Refinery before meeting Haven Road in the form of priority T junction, with the priority route continuing south as Rosper Road.
- 8A.3.26 Rosper Road currently does not have any pedestrian or cycle infrastructure present.
- 8A.3.27 Rosper Road extends c. 2.25 km on a north-south alignment between Chase Hill Road and A160 Humber Road, providing access to a large vehicle storage and distribution facility and the operational VPI Immingham CHP Plant to the north-east and south-west, respectively.
- 8A.3.28 Rosper Road is an adopted highway which is formed of a c. 6.75 m wide single carriageway flanked by areas of grassed verge to both sides and is subject to a 40 mph speed limit. At its southern extent, Rosper Road serves Marsh Lane before meeting Humber Road, at which point the north and southbound lanes divert on approach to a gyratory system which is formed around the Immingham West Fire Station. The southbound lane meets the east-west section of Humber Road in the form of a left out/right out exit only junction. To the west, Humber Road crosses underneath a railway overbridge, before meeting a 5-arm roundabout junction with the A160 and A1173, known as the Mandy Roundabout.
- 8A.3.29 Humber Road also provides entry only dual lane one-way access to the northbound lane of Rosper Road and the aforementioned gyratory system from the Mandy Roundabout.

A160

- 8A.3.30 The A160 has footways located to the north of the carriageway between Eastfield Road and Town Street in South Killingholme. Signalised crossing facilities are provided at the A160/ Eastfield Road junction which facilitates movements to the footways on the south side of the A160 carriageway which are present between the A160/ Eastfield Road junction and Manby Roundabout.
- 8A.3.31 The A160 forms part of the Strategic Road Network (SRN) which is operated and managed by National Highways. The route extends c. 4.3 km between the Manby Roundabout and a grade separated junction with the A180, known as the Brocklesby Interchange. The A160 forms the Humber Refinery's southern frontage and comprises a dual carriageway with c.

3.65 m lane widths, with the east and westbound running carriageways separated by c. 6 m wide traffic island.

- 8A.3.32 The A160 benefits from street lighting and is subject to the national speed limit (70 mph), although this reduces to 50 mph on approach to the Habrough Roundabout, before reverting to the national speed limit upon existing the roundabout junction, on route to the A180.

A180

- 8A.3.33 The A180 forms part of the SRN and extends c. 24 km eastbound from the A16 within Grimsby, before meeting the A15/ A18 at a grade separated junction known as the Barnetby Interchange, where the route continues as M180.

M180

The M180 also forms part of the SRN, and, together with the A180, forms the major east – west access route for Immingham Dock and Grimsby. M180 can be utilised to access the M181, Scunthorpe, the A15 and M18 over its c. 40 km route.

Baseline Traffic Data

- 8A.3.34 Baseline traffic conditions were established using ATCs undertaken in 2022 at the locations shown in Table 8A.2 supplemented by HGV percentages obtained from Department for Transport (DfT) counters and through WebTRIS. Locations where this has been applied are indicated on Table 8A.2 below and an appropriate footnote included to state the source of the information used.

Table 8A.2. 2022 Surveyed Two-Way Daily Traffic Flows

Site Number	Road Link	Car and LGV	HGV	HGV%	Total Vehicles
1	Rosper Road	2,686	1,114	29.3%	3,800
2	Eastfield Road	6,236	840	11.9%	7,076
3	A160 (near Killingholme Petrol Station)*	6,430	6,640	50.8%	13,070
4	A180 (near Ulceby Skitter)*	17,144	10,133	37.2%	27,277
5	A180 (near Immingham)*	11,133	2,065	15.7%	13,198
6	A1173 Manby Road	7,352	1,045	12.4%	8,397
7	A160 (south of Phillips 66 site)*	5,278	5,638	51.7%	10,916
8	Humber Road	7,802	2,018	20.5%	9,820
9	A15*	20,848	2,129	9.3%	22,977

*HGV percentage not recorded at these sites. Has been derived from alternative sources.

- 8A.3.35 The locations that have required their HGV percentage to be derived from an alternative source to the ATC counts have been derived from the sources shown in Table 8A.3 below.

Table 8A.3. HGV Percentage Alternative Sources

Road Link	HGV%	Source	Site
A160 (near Killingholme PS)	50.8%	WebTRIS	ADT Sites 7072/1 and 7072/2
A180 (near Ulceby Skitter)	37.2%	WebTRIS	ADT Sites 8752/2 and 8753/2
A180 (near Immingham)	15.7%	WebTRIS	ADT Sites 8849/1 and 8850/1
A160 (south of Phillips 66 Site)	51.7%	WebTRIS	ADT Sites 9958/1 and 9959/1
A15	9.3%	DfT Counters	Site 57942

8A.3.36 As can be seen from the ATC data above, the roads within the study area generally have a high percentage of HGV traffic, over 50% on the A160, reflecting the industrial nature of the area. The percentage of HGV traffic remains high beyond the A160, with the A180 at Ulceby Skitter having an HGV percentage of 37.2% and the Humber Road having an HGV percentage of 20.5%.

8A.3.37 The AM and PM peak traffic flows at each of the count sites is shown in Table 8A.4 below. It should be noted that the data taken from WebTRIS and the DfT counters do not contain peak hour flows and therefore these have been estimated using the daily profile for Site 1.

Table 8A.4. AM and PM Peak Hour Two-Way Vehicle Flows

Site Number	Site Name	AM Peak (07.00 – 08.00)		PM Peak (16.00 – 17.00)	
		Total	HGV	Total	HGV
1	Rosper Road	409	95	361	85
2	Eastfield Road	784	37	910	75
3	A160 (near Killingholme Petrol Station)*	1,990	566	1,757	507
4	A180 (near Ulceby Skitter)*	4,153	864	3,666	773
5	A180 (near Immingham)*	2,010	176	1,774	158
6	A1173 Manby Road	680	65	763	76
7	A160 (south of Phillips 66 Site)*	1,662	481	1,467	430
8	Humber Road	751	103	695	139
9	A15*	3,499	182	3,088	162

*Peak hourly flows derived using daily flow profile at Site 1

Accident History

8A.3.38 The Crashmap database (www.crashmap.co.uk) has been reviewed to establish the historical accident record from the last five years on the road network adjacent to the Sites. The number and severity of accidents on each link is shown in Tables 8A.5-8A.13 below.

Table 8A.5. Accident History - Rosper Road

Location	Year	Slight	Serious	Fatal	Total
Rosper Road	2015	0	0	0	0
	2016	0	0	0	0
	2017	0	0	0	0
	2018	0	0	0	0
	2019	1	0	0	1
	Total	1	0	0	1

Source: Crashmap

Table 8A.6. Accident History – Eastfield Road

Location	Year	Slight	Serious	Fatal	Total
Eastfield Road	2015	0	0	0	0
	2016	0	0	0	0
	2017	1	0	0	1
	2018	0	0	0	0
	2019	0	0	0	0
	Total	1	0	0	1

Source: Crashmap

Table 8A.7. Accident History – A160 (near Killingholme Primary School)

Location	Year	Slight	Serious	Fatal	Total
A160 (near Killingholme Primary School)	2015	2	0	0	2
	2016	2	0	0	2
	2017	2	0	0	2
	2018	1	0	0	1
	2019	1	1	0	2
	Total	8	1	0	9

Source: Crashmap

Table 8A.8. Accident History – A180 (near Ulceby Skitter)

Location	Year	Slight	Serious	Fatal	Total
A180 (near Ulceby Skitter)	2015	12	5	1	18
	2016	9	1	2	12
	2017	13	4	1	18
	2018	12	5	1	18
	2019	7	3	0	10
	Total	53	18	5	76

Table 8A.9. Accident History – A180 (near Immingham)

Location	Year	Slight	Serious	Fatal	Total
A180 (near Immingham)	2015	5	0	0	5
	2016	3	0	0	3
	2017	2	0	0	2
	2018	4	2	0	6
	2019	3	0	0	3
	Total	17	2	0	19

Source: Crashmap

Table 8A.10. Accident History – A1173 Manby Road

Location	Year	Slight	Serious	Fatal	Total
A1173 Manby Road	2015	1	0	0	1
	2016	2	0	0	2
	2017	1	1	0	2
	2018	0	0	0	0
	2019	3	0	0	3
	Total	7	1	0	8

Source: Crashmap

Table 8A.11. Accident History – A160 (south of Phillips 66 Site)

Location	Year	Slight	Serious	Fatal	Total
A160 (south of Phillips 66 Site)	2015	0	0	0	0
	2016	3	0	0	3
	2017	0	0	0	0
	2018	0	0	0	0
	2019	1	0	0	1
	Total	4	0	0	4

Source: Crashmap

Table 8A.12. Accident History – Humber Road

Location	Year	Slight	Serious	Fatal	Total
Humber Road	2015	0	0	0	0
	2016	0	0	0	0
	2017	0	0	0	0
	2018	0	0	0	0
	2019	0	0	0	0
	Total	0	0	0	0

Source: Crashmap

Table 8A.13. Accident History – A15

Location	Year	Slight	Serious	Fatal	Total
A15	2015	0	0	0	0
	2016	5	0	0	5
	2017	3	3	0	6
	2018	2	0	0	2
	2019	3	0	1	4
	Total	13	3	1	17

Source: Crashmap

As can be seen from the tables above, there is one link which would appear to have a significant accident history - the A180 (near Ulceby Skitter). Most of these accidents centre around the A180/ A15 roundabout.

8A.4 Proposed Developments

Introduction

8A.4.1 This section provides detail on the Proposed Developments, including proposed access arrangements and parking.

Proposed Developments

8A.4.2 This TA relates to two Proposed Developments – the Proposed VPI Development and the Proposed Phillips 66 Development – which together comprise the first phase of the Humber Zero project.

8A.4.3 The Proposed VPI Development will include a PCC plant and associated facilities for capturing CO₂ from two of the gas turbines (GT1 and GT2)² and two auxiliary boilers at the VPI Immingham CHP Plant.

8A.4.4 The Proposed Phillips 66 Development will include one PCC unit for the Fluid Catalytic Cracker (FCC).

8A.4.5 The water, steam and power required for the Proposed Developments will be supplied from existing Humber Refinery systems and the VPI Immingham CHP Plant.

8A.4.6 The PCC facilities will be designed for up to 95% CO₂ capture. CO₂ will be exported at high pressure via an interface to a CO₂ gathering network adjacent to the Sites.

8A.4.7 The Proposed Developments are necessarily located adjacent to the existing activities that are to be decarbonised (namely the Humber Refinery FCC and the VPI Immingham CHP Plant), but they are also well situated to connect into either the Viking CCS CO₂ gathering network and/or the Humber Low Carbon Pipelines CO₂ gathering network for transport to storage sites under the North Sea. Development Consent Order applications for both of these CO₂ gathering networks are being progressed by Harbour Energy and National Grid respectively, and are due to be submitted in mid 2023.

8A.4.8 The indicative layouts for each of the Proposed Developments are shown in Figures 3.1 and 3.2 (ES Volume III).

Access Arrangements

8A.4.9 The Proposed Developments will utilise the existing accesses to the VPI Site and to the Phillips 66 Site (see Figure 2.1) during both construction and operation.

² The third gas turbine is proposed to be converted to hydrogen firing in future as part of the wider Humber Zero project.

- 8A.4.10 A new access (also shown on Figure 2.1) is also proposed to be constructed from the public highway (Eastfield Road) into the north-west area of the Phillips 66 Site. This new access will be used as the main HGV and abnormal load access and egress during construction use. It is also proposed to provide egress for operational deliveries (which will access via the existing access road on Eastfield Road approximately 170 m to the north). Staff access during construction and operation will be via the existing access points into the Refinery and associated car parking areas.
- 8A.4.11 A new access (also shown on Figure 2.1) is also proposed to be constructed from the public highway (Rosper Road) into the VPI Site. This new access will be used as the main HGV access and egress during construction and for maintenance and emergency use during operation. Staff access will be via the existing main entrance to the CHP Plant.

Car Parking

- 8A.4.12 Both VPI and Phillips 66 Sites have large car parking facilities at their disposal (used during turnarounds/ maintenance outages) which will be used during the construction period by workers.
- 8A.4.13 For the Proposed VPI Development, the construction car parking area will be located along the eastern boundary of the VPI Site and will be accessed from Rosper Road. The area allocated for car parking at VPI contains space for 250 cars.
- 8A.4.14 For the Proposed Phillips 66 Development, there are multiple car parking area located within and in proximity of the Phillips 66 Site. On the east side of Eastfield Road there are two car parks within the Humber Refinery (one of these is within the Phillips 66 Site), and on the west side of Eastfield Road, there is large car parking area, accessed via a one way system with separate priority junctions for entry and exit movements.

Working Hours

- 8A.4.15 Normal construction working hours for the Proposed Phillips 66 Development and the Proposed VPI Development may be 24/7 as per the existing Humber Refinery and VPI Immingham CHP Plant operating and maintenance working hours.

8A.5 Trip Generation

- 8A.5.1 This section considers the likely trip generation to and from the Proposed Developments during the construction period. Operational traffic associated with the Proposed Developments will be limited and has been scoped out of the assessment.

Construction Traffic Volumes

- 8A.5.2 Information regarding the likely number and types of vehicular trips that will be necessary to construct the Proposed Developments has been provided by the Applicants and is based on the estimated material quantities required as the number of workers estimated to be required on site throughout the construction period.
- 8A.5.3 Construction trips generated by the Proposed Developments have been split into worker trips (assumed as 1 car per worker, which is considered as a worst case scenario as some would be expected to travel using other modes such as car share, public transport etc.) and HGV trips.
- 8A.5.4 The breakdown of the total two-way vehicle movements expected as part of the construction phases, along with those expected in the peak month, is summarised in Table 8A.15 below. Construction traffic was provided in the form of daily requirements of HGV and workers on the Sites for each month during anticipated construction period. The cumulative peak period for HGVs and overall traffic has then been determined from these monthly profiles. It should be noted that construction HGV traffic generation was not provided for the Proposed Phillips 66 Development and therefore it has been assumed to be the same as for the Proposed VPI Development (this is considered to be conservative as the scale of the Proposed VPI Development is greater than the Proposed Phillips 66 Development).

8A.5.5 The peak years for total traffic for each of the Proposed Developments as well as the combined peak are as follows:

- Proposed VPI Development
 - Peak Year for Total Traffic – 2027 (Month 40)
- Proposed Phillips 66 Development
 - Peak Year for Total Traffic – 2025 (Month 23)
- Combined

Table 8A.14. Estimated Daily Construction Traffic – Proposed VPI Development (Two-way Movements)

Vehicle Type	Peak Total Traffic Period (2027)
HGVs	80
Cars/ LGVs	1,686
Total	1,766

Table 8A.15. Estimated Daily Construction Traffic – Proposed Phillips 66 Development (Two-way Movements)

Vehicle Type	Peak Total Traffic Period (2025)
HGVs	230
Cars/ LGVs	1,580
Total	1,810

Table 8A.16. Estimated Daily Construction Traffic – Combined Proposed Developments (Two-way Movements)

Vehicle Type	Combined Total
HGVs	310
Cars/ LGVs	3,266
Total	3,576

- 8A.5.6 Whilst it is accepted that there will be movements of larger construction vehicles in addition to the HGVs, such as cranes, the number of daily movements is expected to be small, therefore has not been considered as part of the assessment.
- 8A.5.7 It should be noted that some works may be carried out overnight, resulting in a small number of associated vehicle movements. As this number would be small, further assessment of traffic outside of the current daytime periods was not considered necessary.
- 8A.5.8 In order to derive an anticipated AM and PM peak hour flow of vehicles, it has been assumed that 30% of staff will arrive in the AM peak and 10% will depart. It is also assumed that 10% of staff will arrive during the PM peak and 30% of staff will depart. In terms of HGVs, it is assumed that these arrivals and departures are spread uniformly across the daytime period (7am to 7pm).
- 8A.5.9 The resulting anticipated traffic flows from these assumptions are shown below.

Table 8A.17. Estimated Peak Hour Traffic Flows (Peak Total Traffic Period)

Site	Vehicle Type	Total Daily Vehicles	AM Peak Hour		PM Peak Hour	
			In	Out	In	Out
VPI (2027)	Cars/ LGVs	843	253	84	84	253
	HGVs	40	3	3	3	3
Phillips 66 (2025)	Cars/ LGVs	790	237	79	79	237
	HGVs	115	10	10	10	10

- 8A.5.10 As shown above in Table 8A.18, the VPI Site is estimated to generate 343 two-way trips during the AM and PM peak hours including cars, vans and HGVs. The Phillips 66 Site would be estimated to generate 336 two-way trips during the AM and PM peak hours including cars, vans and HGVs.

Construction Traffic Distribution

- 8A.5.11 The construction traffic detailed in the above sections has been distributed onto the local road network within the study area to facilitate the assessment.
- 8A.5.12 Traffic distribution diagrams have been produced to aid the process of distributional assignment onto the local road network within the study area.
- 8A.5.13 The distribution methodology has been separated into two elements, with one focussing on the distribution of workers and one on the distribution of HGVs during the construction period. Both methodologies have been agreed with NLC.

Car/ LGV Traffic Distribution (Workers)

- 8A.5.14 In order to assume a robust traffic distribution of workers travelling to and from the Sites each day, a gravity model has been developed.
- 8A.5.15 It is currently unknown where workers may originate, therefore the distribution of worker origin has been based on the approximate populations of large settlements (>6,000 people) within

a 60 minute driving time of the Sites. For those settlements towards the maximum journey time of 60 minutes, a weighting of 0.7 has been applied to reflect the additional distance needed to travel, hence the reduce likelihood of people travelling from that area. This methodology has been agreed with NLC.

8A.5.16 Table 8A.19 below indicates the distribution based on each settlement identified.

Table 8A.18. Worker Location Distribution

Town	Population	Distance Weighting	Weighted Population	Distribution
Hull	261,149	1	261,149	37.4%
Doncaster	109,805	0.7	76,864	11.0%
Lincoln	97,541	0.7	68,279	9.8%
Grimsby	88,105	1	88,105	12.6%
Scunthorpe	82,334	1	82,334	11.8%
Beverley	31,198	0.7	21,839	3.1%
Gainsborough	23,243	0.7	16,270	2.3%
Retford	22,013	0.7	15,409	2.2%
Goole	19,518	0.7	13,663	2.0%
Thorne	17,295	0.7	12,107	1.7%
Louth	16,419	0.7	11,493	1.7%
Barton-Upon-Humber	11,066	1	11,066	1.6%
Immingham	9,642	1	9,642	1.4%
Hedon	7,100	0.7	4,970	0.7%
Horncastle	6,815	0.7	4,771	0.7%

8A.5.17 The above distribution percentages were then applied to the relevant road links within the study area in order to carry out the impact assessment. This is summarised in Table 8A.20 below and a diagram of the distribution is provided in Appendix 8D (in Volume II of this ES).

Table 8A.19. Worker Distribution Percentage by Road Link

Site	Road	Proposed VPI Development Distribution	Proposed Phillips 66 Development Distribution
1	Rosper Road	100%	0%
2	Eastfield Road	0%	100%
3	A160 (near Killingholme PS)	83.7%	98.6%
4	A180 (near Ulceby Skitter)	83.7%	83.7%
5	A180 (near Immingham)	0%	12.6%
6	A1173 Manby Road	15.7%	1.4%
7	A160 (south of Phillips 66 Site)	84.3%	1.4%
8	Humber Road	0%	0%
9	A15	42.8%	42.8%

HGV Distribution

8A.5.18 A separate methodology has been developed in order to assume a robust distribution of HGVs onto the local network. Vehicles have been distributed according to the relative number of HGVs which have been recorded in the baseline flows from traffic surveys undertaken in 2022, DfT counters and WebTRIS counters.

8A.5.19 The result of these calculations when applied to the relevant road links is summarised in the table below and a diagram containing the HGV distributions is contained with Appendix 8D (in Volume II of this ES).

Table 8A.20. HGV Distribution Percentage by Road Link

Site	Road	Proposed VPI Development Distribution	Proposed Phillips 66 Development Distribution
1	Rosper Road	100%	0%
2	Eastfield Road	0%	100%
3	A160 (near Killingholme PS)	64.8%	54.1%
4	A180 (near Ulceby Skitter)	53.8%	44.9%
5	A180 (near Immingham)	11.0%	9.2%
6	A1173 Manby Road	12.0%	15.7%
7	A160 (south of Phillips 66 Site)	64.8%	45.9%
8	Humber Road	23.2%	30.3%
9	A15	9.4%	7.8%

8A.5.20 Tables 8A.22-8A.24 below show the impact on the peak hourly flows that would be anticipated during the construction phase of the Proposed Developments. The tables consider the impact of the Proposed VPI Development and the Proposed Phillips 66 Development in isolation as well as the combined anticipated impact. The assessment only considers the overall peak traffic periods for each of the Proposed Developments and the combined Proposed Developments as this is considered the worst case scenario and will ensure the most robust assessment.

Table 8A.21. Peak Total Traffic Period (VPI) Traffic Increases on the Road Network (Peak Hours) – Two Way Traffic

Site	Road	AM Peak			PM Peak		
		Baseline	Baseline + Cons	% Change	Baseline	Baseline + Cons	% Change
1	Rosper Road	409	753	84%	361	705	95%
2	Eastfield Road	784	784	0%	910	910	0%
3	A160 (near Killingholme PS)	1990	2213	11%	1757	1979	13%
4	A180 (near Ulceby Skitter)	4153	4338	4%	3666	3851	5%

Site	Road	AM Peak			PM Peak		
		Baseline	Baseline + Cons	% Change	Baseline	Baseline + Cons	% Change
5	A180 (near Immingham)	2010	2047	2%	1774	1812	2%
6	A1173 Manby Road	680	721	6%	763	804	5%
7	A160 (south of Phillips 66 Site)	1662	1885	13%	1467	1690	15%
8	Humber Road	751	831	11%	695	775	11%
9	A15	3499	3531	1%	3088	3120	1%

Table 8A.22. Peak Total Traffic Period (Phillips 66) Traffic Increases on the Road Network (Peak Hours) – Two Way Traffic

Site	Road	AM Peak			PM Peak		
		Baseline	Baseline + Cons	% Change	Baseline	Baseline + Cons	% Change
1	Rosper Road	409	409	0%	361	361	0%
2	Eastfield Road	784	1119	43%	910	1245	37%
3	A160 (near Killingholme PS)	1990	2172	9%	1757	1938	10%
4	A180 (near Ulceby Skitter)	4153	4304	4%	3666	3817	4%
5	A180 (near Immingham)	2010	2041	2%	1774	1805	2%
6	A1173 Manby Road	680	733	8%	763	816	7%
7	A160 (south of Phillips 66 Site)	1662	1816	9%	1467	1621	10%
8	Humber Road	751	853	14%	695	797	15%
9	A15	3499	3525	1%	3088	3114	1%

Table 8A.23. Peak Total Traffic Period Combined VPI and Phillips 66 Traffic Increases on the Road Network (Peak Hours) – Two Way Traffic

Site	Road	AM Peak			PM Peak		
		Baseline	Baseline + Cons	% Change	Baseline	Baseline + Cons	% Change
1	Rosper Road	409	753	84%	361	705	95%
2	Eastfield Road	784	1119	43%	910	1245	37%
3	A160 (near Killingholme PS)	1990	2394	20%	1757	2161	23%
4	A180 (near Ulceby Skitter)	4153	4489	8%	3666	4002	9%
5	A180 (near Immingham)	2010	2078	3%	1774	1842	4%
6	A1173 Manby Road	680	774	14%	763	857	12%
7	A160 (south of Phillips 66 Site)	1662	2039	23%	1467	1844	26%
8	Humber Road	751	932	24%	695	876	26%
9	A15	3499	3557	2%	3088	3147	2%

8A.5.21 As shown above, the most significant increases in traffic are expected on Rosper Road and Eastfield Road during both the AM and PM peaks.

8A.5.22 Increases of up to 26% would also be expected for the combined Proposed Developments peak during both the AM and PM peak periods on the A160 (south of the Phillips 66 Site) and on Humber Road. It is noted that these increases cover the peak overall traffic generation during construction at the two Sites and therefore represent the worst case scenario.

8A.5.23 Additionally these figures are estimated without considering measures implemented by the CWTP or the CTMP (see ES Appendices 8B and 8C). These effects would be temporary in nature, covering a short period of an hour in the AM and PM over a period of 2-3 months. For the majority of the construction period, the impact on the surrounding network during the AM and PM peak periods would be considerably lower.

8A.6 Cumulative Effects Assessment

18.1.1 An assessment of potential cumulative effects on traffic and transport due to the Proposed Development and the 13 other developments are presented in Table 8A.25. The ID numbers relate to the reference numbers given in ES Chapter 18 (Cumulative and Combined Effects) and shown on ES Figure 18.1, and the developments are ordered based on distance from the Sites (closest first).

Table 8A.24. Traffic and Transport Cumulative Effects Assessment

ID	Application Reference Description	Assessment of cumulative effects with Proposed VPI Development and proposed mitigation	Assessment of cumulative effects with Proposed Phillips 66 Development and proposed mitigation	Assessment of cumulative effects with both Proposed Developments	Residual cumulative effects (and for which development(s))
46	PINS (Chrysaor Production (UK) Limited) – Viking CCS Pipeline	The majority of the Viking CCS Pipeline is located several kilometres to the south of the VPI Site. There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed VPI Development cannot be determined. The Humber Zero and Viking CCS project teams are working collaboratively to manage cumulative construction traffic impacts.	The majority of the Viking CCS Pipeline is located several kilometres to the south of the Phillips 66 Site. There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed Phillips 66 Development cannot be determined. The Humber Zero and Viking CCS project teams are working collaboratively to manage cumulative construction traffic impacts.	The majority of the Viking CCS Pipeline is located several kilometres to the south of the Sites. There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed Developments cannot be determined. The Humber Zero and Viking CCS project teams are working collaboratively to manage cumulative construction traffic impacts.	No significant residual effects are anticipated.
52	PA/SCO/2022 /13 Gigastack	The application has the potential to generate minor cumulative impacts associated with the Proposed VPI Development due to directing traffic, both staff and HGV, onto similar road links on the network. These include Rosper Road, the A160, the A180 and the A1173. These amount to an estimated 248 extra daily two-way trips on Rosper Road and a further 123 on the A160, A180 and A1173. Rosper Road was identified as a location where there would be a significant increase in overall traffic as a result of the Proposed VPI Development. The addition of 248 daily two-way trips could potentially generate a cumulative effect. This would	It is considered that the cumulative impacts of this application and the Proposed Phillips 66 development would be negligible as the only mutual links affected would be the A160, A180 and A1173, on which the anticipated increase in trips of 123 two-way daily movements is considered to be not significant.	The cumulative impacts of both Proposed Developments are considered negligible on all links other than Rosper Road where the addition of the VPI B development would grow the traffic increase from 45.1% associated with the Proposed Developments to over 50%, which is not considered to be significant.	No significant residual effects are anticipated.

ID	Application Reference Description	Assessment of cumulative effects with Proposed VPI Development and proposed mitigation	Assessment of cumulative effects with Proposed Phillips 66 Development and proposed mitigation	Assessment of cumulative effects with both Proposed Developments	Residual cumulative effects (and for which development(s))
		<p>bring the total traffic increase on Rosper Road from 45.1% as a result of the Proposed VPI Development to over 50%, which is not considered to be significant. It is considered that the additional trips from this application on the A160, A180 and A1173 would have a negligible cumulative effect.</p>			
39	PA/2021/1525 Monopile Manufacturing Facility. Land at Able Marine Energy park	<p>Traffic and Transport was scoped out of this application and therefore it is assumed that the cumulative impacts of this development and the Proposed VPI Development are not significant.</p>	<p>Traffic and Transport was scoped out of this application and therefore it is assumed that the cumulative impacts of this development and the Proposed Phillips 66 Development are not significant.</p>	<p>Traffic and Transport was scoped out of this application and therefore it is assumed that the cumulative impacts of this development and the Proposed Developments are not significant.</p>	<p>No significant residual effects are anticipated.</p>
48	PINS (VPI Immingham B Ltd) VPI Immingham OCGT	<p>This application refers to a development which, like the Proposed VPI Development, will be accessed from Rosper Road. There is therefore potential for cumulative effects between this development the Proposed VPI Development due to mutual links including Rosper Road, the A160, A180, Humber Road and the A1173.</p> <p>In terms of daily traffic, it is anticipated that this development will generate 2,932 daily two-way construction trips on Rosper Road with 6,266 daily two-way trips associated with the operation of the site. If this is combined with the Proposed VPI Development it would be likely to generate a significant impact.</p> <p>Based on the information provided within the application the development was</p>	<p>At this stage the specific dates associated with the start/end of construction and operation for this site are unknown. It is not possible to assess whether this traffic would be on the road network at the same time as the Proposed Phillips 66 Development traffic, therefore an accurate assessment of the cumulative impacts is also not possible.</p>	<p>At this stage the specific dates associated with the start/end of construction and operation for this site are unknown. It is not possible to assess whether this traffic would be on the road network at the same time as the traffic from both developments, therefore an accurate assessment of the cumulative impacts is also not possible.</p>	<p>It is not possible to assess cumulative impacts.</p>

ID	Application Reference Description	Assessment of cumulative effects with Proposed VPI Development and proposed mitigation	Assessment of cumulative effects with Proposed Phillips 66 Development and proposed mitigation	Assessment of cumulative effects with both Proposed Developments	Residual cumulative effects (and for which development(s))
		<p>approved in 2014 with an initial construction period running up to 2017. This has since been extended in 2020 for a further 5 years for construction to begin. A revised PEIR was produced in 2021, however there was no revised programme or assessment included within the traffic chapter. As such the specific dates associated with the start/end of construction and operation for this site are unknown. It is not possible to assess whether this traffic would be on the road network at the same time as the Proposed VPI Development traffic, therefore an accurate assessment of the cumulative impacts is also not possible.</p>			
37	<p>PA/2022/1223 Hybrid application for Land Adjacent to Westgate Entrance, Port of Immingham.</p>	<p>There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed VPI Development cannot be determined. However consideration of the EIA Scoping Report for the project suggests the site will be accessed from Rosper Road, similar to the Proposed VPI Development and therefore there is potential for cumulative effects. However based on the published information construction is proposed to begin in Q4 of 2023 and operations commencing in 2025 and therefore should not clash with the anticipated peak construction period for the Proposed VPI Development of 2027. The A160 will be assessed in the EIS therefore cumulative effects on the A160 could be anticipated, however the lack of crossover in peak construction periods</p>		<p>There is currently no transport and traffic submission with regards to this project and therefore cumulative effects of this and the Proposed Phillips 66 Development cannot be determined. However, the EIS Scoping Report indicates that the A160 will be a route considered in the EIS assessment and therefore there is potential for cumulative effect with the Proposed Phillips 66 Development. Based on the published information peak periods of construction are unlikely to overlap with operations commencing for this development in 2025 while the peak construction traffic periods for the Proposed Phillips 66 Development are anticipated to be late 2025. The Humber Zero and Gigastack project teams (which both</p>	<p>There is currently no transport and traffic submission with regards to this project and therefore cumulative effects of this and the Proposed Developments cannot be determined. However, the site is proposed to be accessed from Rosper Road and the A160 will form part of the assessment in the EIS chapter for the</p>

ID	Application Reference Description	Assessment of cumulative effects with Proposed VPI Development and proposed mitigation	Assessment of cumulative effects with Proposed Phillips 66 Development and proposed mitigation	Assessment of cumulative effects with both Proposed Developments	Residual cumulative effects (and for which development(s))
		<p>should minimise any effect. The Humber Zero and Gigastack project teams (which both include Phillips 66) are working collaboratively to manage cumulative construction traffic impacts.</p>		<p>include Phillips 66) are working collaboratively to manage cumulative construction traffic impacts.</p>	<p>project. This would indicate there is potential for cumulative effects between this development and the Proposed Developments. Given the published information on construction programme indicated commencement in Q3 2023 and operation by 2025, it is unlikely that the periods of peak construction traffic will overlap. The Humber Zero and Gigastack project teams (which both include Phillips 66) are working collaboratively to manage cumulative construction traffic impacts.</p>
45	<p>PA/SCO/2022 /7 EIA scoping request for enabling</p>	<p>This application includes a Transport Assessment which contains anticipated total daily trip generation as well as AM and PM peak trip generation. The application affects similar links to the</p>	<p>This application includes a Transport Assessment which contains anticipated total daily trip generation as well as AM and PM peak trip generation. The application affects similar links to the</p>	<p>This application includes a Transport Assessment which contains anticipated total daily trip generation as well as AM and PM peak trip generation. The application affects similar links to the</p>	<p>No significant residual effects are anticipated.</p>

ID	Application Reference Description	Assessment of cumulative effects with Proposed VPI Development and proposed mitigation	Assessment of cumulative effects with Proposed Phillips 66 Development and proposed mitigation	Assessment of cumulative effects with both Proposed Developments	Residual cumulative effects (and for which development(s))
	works on and adjacent to the AMEP site.	Proposed VPI Development in the A160, A180 and A1173. The TA anticipates that the development would generate an additional 1004 daily two-way trips which could potentially cause cumulative impacts with the Proposed VPI Development. However, the development and would not generate a cumulative traffic increase of more than the 30% significance threshold.	Proposed Phillips 66 Development in the A160, A180 and A1173. The TA anticipates that the development would generate an additional 1004 daily two-way trips which could potentially cause cumulative impacts with the Proposed Phillips 66 Development. However, the development and would not generate a cumulative traffic increase of more than 30%.	Proposed Developments in the A160, A180 and A1173. The TA anticipates that the development would generate an additional 1004 daily two-way trips which could potentially cause cumulative impacts with the Proposed Developments. However, the development and would not generate a cumulative traffic increase of more than 30%.	
28	PINS (National Grid) Humber Low Carbon Pipelines	The application is accessed from Rosper Road. A Technical Note was included in the application to cover Transportation matters. As the Proposed VPI Development is also accessed from Rosper Road, there is potential for cumulative effects across multiple links including Rosper Road, the A160, A180, A15 and A1173. However, the Transport Technical Note sets out that Proposed Monopole Factory is anticipated to generate an additional 193 two-way vehicle trips per day on top of the already consented DCO application. This would be expected to have negligible cumulative effect on the Proposed VPI Development and would not generate a cumulative traffic increase of more than 30%.	Cumulative effects would be less for the Proposed Phillips 66 Development as this application due to the access being from Eastfield Road rather than Rosper Road. However, there is potential for cumulative effects across multiple links including the A160, A180, A15 and A1173. However, the Transport Technical Note sets out that Proposed Monopole Factory is anticipated to generate an additional 193 two-way vehicle trips per day on top of the already consented DCO application. This would be expected to have negligible cumulative effect on the Proposed Phillips 66 Development and would not generate a cumulative traffic increase of more than 30%.	The Transport Technical Note submitted with this application sets out that the proposed Monopole Factory anticipates generation of an additional 193 daily two-way trips on top of the already consented DCO application. This would not generate a cumulative traffic increase of more than 30%.	No significant residual effects are anticipated.
8	PINS (Able Humber Ports Ltd)	There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed VPI Development cannot be determined.	There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed Phillips 66 Development cannot be determined.	There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed Developments cannot be determined.	No significant residual effects are identified.

ID	Application Reference Description	Assessment of cumulative effects with Proposed VPI Development and proposed mitigation	Assessment of cumulative effects with Proposed Phillips 66 Development and proposed mitigation	Assessment of cumulative effects with both Proposed Developments	Residual cumulative effects (and for which development(s))
10	<p>Able Marine Energy Park</p> <p>PINS (C.GEN Killingholme Ltd) North Killingholme Power Project</p>	<p>The assessment for this development suggests impacts on several shared links with the Proposed VPI Development. These include the A160 and A180. However, the cumulative impact of this development and the Proposed VPI Development are not sufficient enough to put them over the 30% threshold to mark them as significant.</p>	<p>The assessment for this development suggests impacts on several shared links with the Proposed Phillips 66 Development. These include the A160, A180 and Humber Road. However, the cumulative impact of this development and the Proposed Phillips 66 Development are not sufficient enough to put them over the 30% threshold to mark them as significant.</p>	<p>The cumulative impacts of this development and the Proposed Developments are not sufficient to breach the 30% significance threshold and therefore are not considered significant.</p>	<p>No significant residual effects are anticipated.</p>
11	<p>PINS (Associated British Ports) Immingham Eastern Ro-Ro Terminal</p>	<p>The assessment for this development suggests impacts on several shared links with the Proposed VPI Development. These include the A160, A180, Humber Road and the A1173. However, the cumulative impact of this development and the Proposed VPI Development are not sufficient enough to put them over the threshold to mark them as significant.</p>	<p>The assessment for this development suggests impacts on several shared links with the Proposed Phillips 66 Development, notably Eastfield Road from which the Phillips 66 site is accessed. These also include the A160, A180, Humber Road and A1173. However, the cumulative impact of this development and the Proposed Phillips 66 Development are not sufficient enough to push them beyond the threshold to be considered significant. The cumulative impact on Eastfield Road would be 28% and therefore below the significance threshold of 30%.</p>	<p>The cumulative impacts of this development and the Proposed Developments are not sufficient to breach the 30% significance threshold and therefore are not considered significant.</p>	<p>No significant residual effects are anticipated.</p>
47	<p>PINS (Associated British Ports) Immingham Green Energy Terminal</p>	<p>There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed VPI Development cannot be determined.</p>	<p>There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed Phillips 66 Development cannot be determined.</p>	<p>There is currently no transport and traffic submission with regards to this project and therefore the cumulative effects of this and the Proposed Developments cannot be determined.</p>	<p>No significant residual effects are identified.</p>

8A.7 Mitigation Measures

8A.7.1 In order to manage and mitigate the increases in traffic that could occur during the construction phase of the Proposed Developments, a series of measures are proposed to reduce the level of single occupancy car trips to the Sites and mitigate the impacts of HGV traffic.

8A.7.2 The measures which are proposed have been detailed in two documents: the CTMP and the CWTP (see Appendices 8B and 8C of the ES Volume II). The proposals in these documents are summarised below.

Construction Traffic Management Plan

8A.7.3 The following measures are proposed with the CTMP:

- Working hours are clearly specified to reduce the time frame within which construction traffic will be present on the network.
- Routing for construction HGV traffic will be specified to ensure they are on the most appropriate roads as well as ensuring the effects of construction traffic are not spread to other parts of the network.
- Traffic management signage will be in place to ensure the safety of the Sites as well as keep construction traffic flowing as freely as possible.
- Construction vehicles will avoid travelling in convoys where reasonable and practical to avoid queueing on the road network.
- Construction staff will park in designated areas to avoid on street parking on the local road network.
- The local community will be engaged to ensure they are aware of construction activities and are provided with relevant information.
- Wheel washing facilities will be provided to ensure mud and dirt deposited on the local road network is kept to a minimum.
- There will be a delivery management system in place recording all deliveries to the site compound to allow the monitoring and management of measures implemented through the CTMP.

Construction Workers Travel Plan

8A.7.4 The following measures are proposed with the CWTP:

- A Travel Plan Coordinator will be appointed for each of the Sites to manage, monitor and implement individual measures within the Travel Plan.
- The availability of car parking will be managed to ensure that the number of spaces available encourages sustainable travel to the Sites as much as possible.
- Contractors will be encouraged to operate a minibus service for workers from nearby key points of origin.
- A car share scheme will be created to encourage car sharing among staff at the Sites.
- Secure cycle parking will be provided for those who choose to cycle to the Sites.
- Public transport information will be provided to all in an information pack to encourage as much uptake as possible.
- On site storage will be provided for workers to limit what they need to carry to the Sites each day.
- Staggered working hours will be put in place for staff to minimise the impact of peak periods of staff arrivals.

8A.8 Summary

- 8A.8.1 AECOM has prepared this TA on behalf of the Applicants to support proposed the Proposed Developments at Phillips 66 Humber Refinery and VPI Immingham CHP Plant.
- 8A.8.2 The Proposed VPI Development will be accessed from Rosper Road while the Proposed Phillips 66 Development will mainly be accessed from Eastfield Road.
- 8A.8.3 Car parking will be provided on or near to the Sites for both Proposed Developments.
- 8A.8.4 The most significant increases in traffic during construction are expected on Rosper Road and Eastfield Road during both the AM and PM peaks.
- 8A.8.5 Increases of up to 26% would also be expected for the combined Proposed Developments peak of construction during both the AM and PM peak periods on the A160 (south of the Phillips 66 Site) and on Humber Road. These increases are 'worst case' covering the peak overall traffic generation during construction at the two Sites over a 2-3 month period, and without mitigation. For the majority of the construction period, the impact on the surrounding network during the AM and PM peak periods would be considerably lower.
- 8A.8.6 Proposed mitigation measures have been set out which described in greater detail in the CTMP and CWTP (Appendices 8B and 8C of the ES).