Net Zero Teesside – Environmental Statement

Planning Inspectorate Reference: EN010103

Volume III – Appendices

Appendix 16A: Transport Assessment

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended)

Prepared by: AECOM

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16A. Transport Assessment

16.1 Introduction

16.1.1 This Transport Assessment (TA) has been prepared to identify, assess and propose mitigation where necessary in relation to the traffic impact of the Proposed Development as set out in Chapter 16: Traffic and Transportation (Environmental Statement (ES) Volume I, Document Ref. 6.2).

16.1.2 This TA is accompanied by Annexes 16A.0 to 16A.9 which are presented at the end of this report.

16.1.3 A scoping exercise has been undertaken with Redcar and Cleveland Borough Council (RCBC), Stockton-on-Tees Borough Council (STBC) and Highways England (HE) to discuss and agree the TA Scoping Report and to agree the approach to the TA. The Transport Scoping Report was issued to key stakeholders in January 2020. The scoping responses are provided in Annex 16A.0. Consultation on the draft TA was then undertaken through formal consultation on the Preliminary Environmental Information (PEI) Report (June – September 2020), which included the draft TA in Appendix 16A (PEI Report, Volume III). Table 16-4 in ES Chapter 16: Traffic and Transport (ES Volume I, Document Ref. 6.2) presents a full summary of all consultation responses (including EIA Scoping, TA Scoping, S42,43 and S44 responses on the PEI report) received relevant to traffic and transportation so therefore are not repeated here.

16.1.4 The issues identified for consideration in this assessment are as follows:

- a description of current baseline conditions;
- calculation of the likely profile of traffic generation through the construction period and the identification of peak development flows;
- distribution and assignment of construction traffic;
- identification of other committed developments in the study area and that have been taken account of as part of the assessment;
- network capacity and impact analysis of construction, operation and decommissioning phases;
- effects on Public Rights of Way (PRoW);
- analysis of accidents within the study area; and
- formulation of mitigation measures.

16.2 Policy Context

16.2.1 This section outlines the relevant planning policy relating to traffic and transport associated with the Proposed Development.

National Planning Policy

Overarching National Policy Statement for Energy (NPS EN-1)

16.2.2 The National Policy Statement (NPS) EN-1 (Department for Energy and Climate Change (DECC), 2011a) was published in 2011. Section 5.13 outlines the planning policy for traffic and transport, including guidance on the carrying out of the relevant parts of the Environmental Impact Assessment (EIA). The most relevant paragraphs for the Transport Assessment are 5.13.2 to 5.13.4 which state:

"5.13.2 The consideration and mitigation of transport impacts is an essential part of Government's wider policy objectives for sustainable development as set out in Section 2.2 of this NPS.

5.13.3 If a project is likely to have significant transport implications, the applicant's ES (see Section 4.2) should include a transport assessment, using the NATA/WebTAG139 methodology stipulated in Department for Transport guidance, or any successor to such methodology. Applicants should consult the Highways Agency and Highways Authorities as appropriate on the assessment and mitigation.

*5.13.4 Where appropriate, the app*licant 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."

16.2.3 In terms of decision making, Section 5.13 of NPS EN-1 states that the Secretary of State should ensure that the applicant has sought to mitigate the impacts on the surrounding road infrastructure that may occur as a result of a new energy NSIP. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the Secretary of State should consider requirements to mitigate the adverse impacts on transport networks arising from the development and could include:

- demand management measures;
- water-borne or rail transport, where cost effective; and
- imposing relevant Requirements within the draft DCO where there is likely to be substantial HGV traffic.

National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (NPS EN-2)

16.2.4 Section 2.2 of NPS EN-2 (DECC, 2011b) outlines the planning policy for traffic and transport specifically in respect of fossil fuel generating stations such as the Proposed Development. The relevant paragraphs for the Transport Assessment are 2.2.5 and 2.2.6 which state:

"2.2.5 New fossil generating stations need to be accessible for the delivery and removal of construction materials, fuel, waste and equipment, and for employees.

2.2.6 Government policy encourages multi-modal transport and materials (fuel and residues) may be transported by water or rail routes where possible. Applicants should locate new fossil generating stations in the vicinity of existing transport routes wherever possible. Although there may in some instances be environmental advantages to rail or water transport, whether or not such methods are viable is likely to be determined by the economics of the scheme. Road transport may be required to connect the site to the rail network, waterway or port. Any application should therefore incorporate suitable access leading off from the main highway network. If the existing access is inadequate and the applicant has proposed new infrastructure, the IPC should satisfy itself that the impacts of the new infrastructure are acceptable as set out in Section 5.13 of EN-1."

National Planning Policy Framework

16.2.5 The National Planning Policy Framework (NPPF) (Ministry for Housing Communities and Local Government (DCLG), 2019) sets out the Government's current national planning policies.

16.2.6 Section 9 of the NPPF, Promoting Sustainable Transport, outlines the important role that the planning system has in enabling sustainable development stating in paragraph 103:

16.2.7 *'Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health.'*

16.2.8 In determining planning applications, paragraph 109 states that:

16.2.9 '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'.

16.2.10 Paragraph 111 states that all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.

Local Planning Policy

Redcar and Cleveland Local Plan 2018 – 2032

16.2.11 The Local Plan was adopted in 2018 and sets out the vision and overall development strategy for the borough and how it will be achieved for the period until 2032.

16.2.12 Policy TA 1 states that:

'The Council and its partners will ensure that the transport requirements of new development, commensurate to the scale and type of development, are taken into account and seek to promote sustainable travel to minimise environmental impacts and support residents' health and wellbeing.

Proposals will be supported that:

- *improve transport choice and encourage travel to work and school by public transport, cycling and walking;*

- *minimise the distance that people need to travel,*
- *where appropriate contribute positively to wider demand management measures to address congestion, environmental and safety issues'.*

16.2.13 Policy TA 2 states that:

*'The council wi*ll work together with neighbouring authorities, the Tees Valley Combined Authority, Tees Valley Unlimited (the Local Enterprise Partnership), the Government, developers and transport providers to improve accessibility within and beyond the borough, which will support economic, tourism and regeneration objectives for both Redcar and Cleveland and the wider Tees Valley.

This will include 'working with Highways England to improve capacity to the A66, A1053 and A174, particularly Greystones roundabout'.

Tees Valley Combined Authority Strategic Transport Plan 2020 – 2030

16.2.14 The focus of the Tees Valley Combined Authority Strategic Transport Plan is aimed at improving the transport system for local people and businesses ensuring integration between different transport modes. This plan has been developed by the five constituent local authorities including Darlington, Hartlepool, Middlesbrough, Redcar & Cleveland and Stockton-on-Tees.

16.2.15 The plan has the following aims and aspirations to be delivered over the plan period:

- Better transport links helping to create more jobs;
- Improving the affordability, quality and reliability of people's daily commute;
- More reliable and affordable public transport, walking and cycling options; and
- Improved technology making travelling around as easy and simple as possible.

Redcar and Cleveland Local Transport Plan (LTP) 2011 – 2021

16.2.16 The Redcar and Cleveland third Local Transport Plan, 2011-2021 (LTP3) was adopted by RCBC in March 2011 and builds upon the core strategy and the Local Enterprise Partnership Statement of Ambition by setting five main goals for city and regional networks, namely:

- Reduce carbon emissions;
- Support economic growth;
- Promote quality of opportunity;
- Contribute to better safety, security and health; and
- Improve quality of life and a healthy natural environment.

16.2.17 The following four transport policies have been identified as being critical in achieving the goals of the LTP3 and are considered to be of relevance to the consideration of the Proposed Development's potential transport impacts:

- PEG2 – Manage the demand for travel, in particular during peak periods. The package of measures will include car parking restraint and enforcement; providing informed travel choices; considerate land use planning.
- PEG4 – Address localised congestion issues, in particular through the development of Workplace Travel Plans and through localised traffic management schemes.
- PEG5 – Manage freight transport in the borough to provide reliability of journey times and minimise adverse environmental impacts.
- SSH1 – Improve Road Safety in the borough through a combination of education, encouragement, engineering and enforcement initiatives.

16.3 Existing Conditions

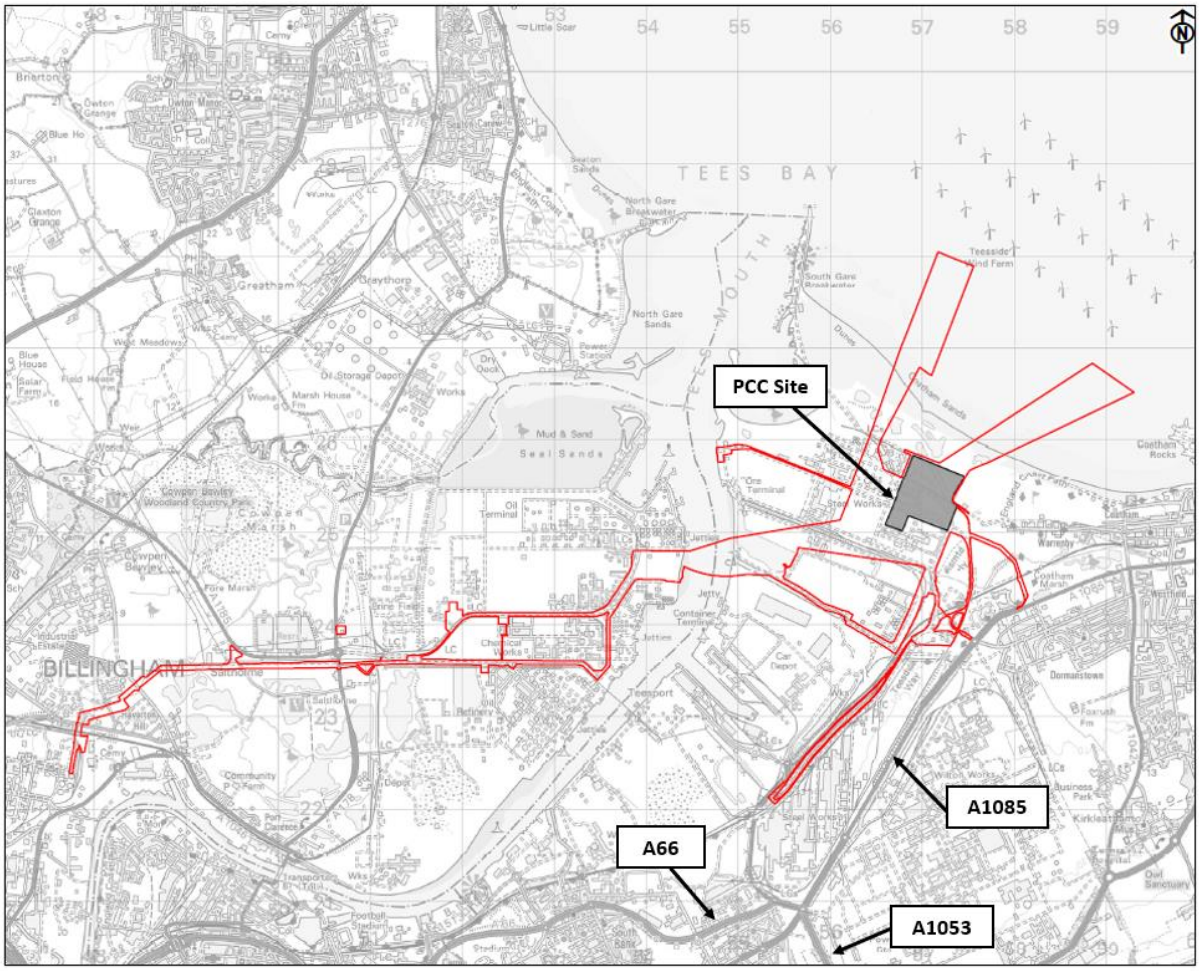
Local Highway Network

16.3.1 The Electricity Generating Station and Carbon Capture elements of the Proposed Development are located approximately 2 km north west of Redcar on the former SSI steelworks site (see Diagram 16A-1) and will be accessed via the existing roundabout junction with the A1085 and West Coatham Lane. The wider connection network covers land to the north and south of the River Tees as shown on Diagram 16A-1.

16.3.2 The A1085 Trunk Road is a dual carriageway road running east to west between Redcar and the A1053 Tees Dock Road and is subject to a de-restricted speed limit. The carriageway is street lit and a shared footway/cycleway is provided on either side of the road.

16.3.3 Travelling west from the site access, the A1085 provides a link to the A1053 which in turn connects to the A174 to the south and the A66 to the north. The A1053 and A174 are part of Highways England's strategic network. All other routes are managed by Redcar and Cleveland Borough Council Highways. Authority. The Site location in relation to the surrounding road network is illustrated in Diagram 16A-1, where the Site refers to the Application boundary.

Diagram 16A- 1: Site Location Plan



Walking

16.3.4 The Chartered Institution of Highways and Transportation (CIHT) document 'Providing for Journeys on Foot' (2000) suggests a maximum walking distance of 2 km for journeys to work.

16.3.5 Considering a 2 km walking catchment area, the potential for walking access to the site is small with only the built-up area of Dormanstown on the western edge of Redcar located within a 2 km walking distance of the site.

16.3.6 In terms of pedestrian facilities, a footway is provided on both sides of West Coatham Lane and Broadway West which is street lit. In addition, a shared footway/ cycleway is provided along the entire length of the A1085 Trunk Road on either side of the carriageway.

16.3.7 At the A1085 / West Coatham Lane Roundabout, dropped kerbs and tactile paving are provided on all arms of the junction. Central refuges are also provided on the A1085 to allow pedestrians to cross the dual carriageway.

16.3.8 Given the limited walking catchment area, it is not therefore anticipated that walking trips would likely represent a practical mode for construction, operational and/or decommissioning staff.

16.3.9 There are PRoWs crossing the PCC Site therefore the development will have no direct impact on PRoWs.

16.3.10 However, the Teesdale Way PRoW which runs parallel to South Gare Road to the north east of the PCC Site may be affected by temporary closures (traffic management) during construction of the CO_2 Export Pipeline and replacement outfall (e.g. for crossing of vehicles from the PCC Site to Coatham Dunes).

Cycling

16.3.11 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.

16.3.12 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 area includes Redcar, Marske-by-the-Sea and the suburbs of Eston, Normanby and South Bank to the east of Middlesbrough.

16.3.13 Within the vicinity of the Site there is a shared cycle / footway along the length of the A1085 Trunk Road between Redcar and Middlesbrough. Given the cycling infrastructure already in place on the local road network there is potential for staff living within this catchment area to travel to the site by cycle.

Public Transport

16.3.14 The nearest bus stops to the Site are located on West Coatham Lane approximately 250 metres south east of the PCC Site entrance. Pedestrian crossing facilities in the form of drop kerbs and tactile paving are provided on all five arms of the A1085 / West Coatham Lane / Site Access Roundabout allowing for safe crossing of this junction.

16.3.15 There are five services that stop at the West Coatham Lane bus stops, these are services 62, 64, X3, X3A, X4 and X4A.

16.3.16 Bus Service 62 runs between Middlesbrough and New Marske via Dormanstown and Redcar. Service 62 operates a half hourly service Monday to Saturday apart from Sunday which operates an hourly service. The service is run by Arriva Bus. The first bus departs Middlesbrough at 06:43 and New Marske at 06:25. The last bus departs Middlesbrough at 20:05 and New Marske at 19:45.

16.3.17 Bus Service 64 runs between Middlesbrough and Redcar operating two services in the morning from Redcar at 05:04 and 06:09 and two services in the evening from Middlesbrough at 17:30 and 18:10 Monday to Saturday. The service is run by Arriva Bus.

16.3.18 Bus Service X3 runs between Middlesbrough and Lingdale via Dormanstown, Redcar and Saltburn. Service X3 operates an hourly service Monday to Saturday. The service is run by Arriva Bus. The first bus departs Middlesbrough at 08:25 and Lingdale at 06:44. The last bus departs Middlesbrough at 17:25 and Lingdale at 17:54.

16.3.19 Bus Service X3A runs between Middlesbrough and Brotton. Service X3A operates an hourly service Monday to Saturday. The service is run by Arriva Bus. The first bus departs Middlesbrough at 08:50 and Brotton at 09:15. The last bus departs Middlesbrough at 17:55 and Brotton at 17:15.

16.3.20 Bus Service X4 runs between Middlesbrough and Whitby via Redcar and Saltburn. Service X4 operates a half hourly service Monday to Saturday apart from Sunday which operates an hourly service. The service is run by Arriva Bus. The first bus departs Middlesbrough at 06:02 and Whitby at 05:59. The last bus departs Middlesbrough at 18:10 and Whitby at 17:04.

16.3.21 Bus Service X4A runs between Middlesborough and Whitby via Redcar and Saltburn. Service X4A operates an hourly evening service Monday to Sunday. The service is run by Arriva Bus.

16.3.22 Given the frequency of bus services, it is anticipated that using the bus could be an attractive option for workers accessing the site. A summary of the bus service frequency is shown in Table 16A-1 below.

Table 16A- 1: Bus Service Summary

Service	Route	Mon – Fri (Daytime)	Mon – Fri (Evening)	Saturday	Sunday
62	Middlesbrough – New Marske	30 mins	60 mins	30 mins	60 mins
64	Middlesbrough - Redcar	2 services per day	n/a	2 services per day	n/a
X3	Middlesbrough - Lingdale	60 mins	n/a	60 mins	n/a
X3A	Middlesbrough - Brotton	60 mins	n/a	60 mins	n/a
X4	Middlesbrough - Whitby	30 mins	n/a	30 mins	60 mins
X4A	Middlesbrough - Whitby	n/a	60 mins	60 mins	60 mins

16.3.23 The nearest railway station to the Proposed Development is British Steel Redcar which is located within the DCO Application boundary. The station is located on the Tees Valley Line and is operated by Northern Rail. Historically there were two eastbound services per day to Saltburn via Redcar and two westbound services per day to Bishop Auckland via Middlesbrough and Darlington. Northern Rail suspended all services to and from the station on 14th December 2019 due to the lack of passengers using the station.

16.3.24 However, there is potential for the station to be re-opened in the future for both construction staff and operational staff to use the train as a mode of traveling to work.

Table 16A- 2: Former Rail Services from British Steel Redcar

Route	Mon - Fri	Saturday	Sunday
Redcar British Steel – Redcar - Saltburn	08:25; 18:17	08:25; 18:17	n/a
Redcar British Steel – Middlesbrough – Darlington – Bishop Auckland	07:57; 16:58	07:57; 16:58	n/a

16.3.25 The nearest station to the site that is still open is Redcar Central, located approximately 3km east of the Site.

16.3.26 A summary of the services and their frequencies are shown in Table 16A-3.

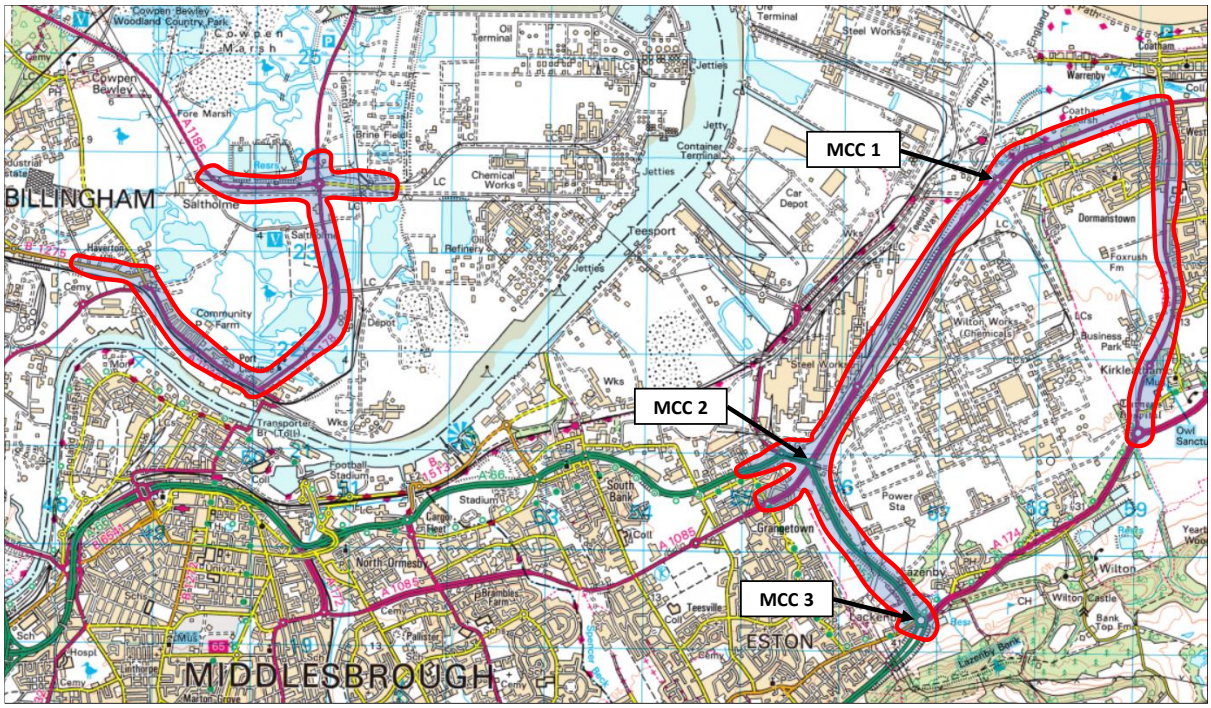
Table 16A- 3: Rail Services from Redcar Central

Route	Mon - Fri	Saturday	Sunday
Darlington – Middlesbrough - Redcar Central - Saltburn	Every 30 mins	Every 30 mins	Every 60 mins
Bishop Auckland – Middlesbrough - Redcar Central - Saltburn	Every 60 mins	Every 60 mins	Every 60 mins

16.4 Baseline Traffic Flows

16.4.1 The Study Area for assessment is shown in Diagram 16A-2 below and also in Figure 16-1: Traffic Study Area (ES Volume II, Document Ref. 6.3). The road network considered has been informed by scoping with the relevant highway authorities.

Diagram 16A- 2: Study Area



16.4.2 Baseline traffic flows for the immediate local highway network have been established through peak hour junction Manual Classified Counts (MCC) at the following locations:

- MCC 1: A1085 / West Coatham Lane / Site Access Roundabout;
- MCC 2: A1085 / A1053 Roundabout; and
- MCC 3: A1053 / A174 / B1380 Roundabout.

16.4.3 The counts were undertaken on Tuesday 19th November 2019, between 0600 and 1000 and 1600 and 2000. The raw traffic data is provided in Annex 16A.1. A plan showing the traffic locations is shown in Figure 16-3: Traffic Count Locations (ES Volume II, Document Ref. 6.3).

16.4.4 In order to establish the peak hours for assessment, the total flows arriving at each individual junction have been calculated for each hour in order to identify the base peak hours for assessment for each junction.

16.4.5 Table 16A-4 below summarises the total flows into each junction and identifies time period 08:00 – 09:00 as the weekday AM peak hour and 16:00 – 17:00 as the PM Peak hour.

Table 16A- 4: Establishing the 2019 Baseline Weekday Peak Hours

Peak Hours	MCC 1	MCC 2	MCC 3	Total
06:00 – 07:00	777	1,745	2,280	4,802
07:00 – 08:00	1,327	2,843	4,803	8,973
08:00 – 09:00	1,680	3,396	5,083	10,159
09:00 – 10:00	1,244	2,160	3,180	6,584
16:00 – 17:00	1,840	3,241	5,217	10,298
17:00 – 18:00	1,790	3,167	4,879	9,836
18:00 – 19:00	909	1,826	3,017	5,752
19:00 – 20:00	569	1,035	1,736	3,340

16.4.6 In addition, a series of Automatic Traffic Counts (ATCs) have been undertaken between Tuesday 19th November and Monday 25th November 2019 at the following locations. It should be noted counts on the A1053 Greystone Road and the A174 were obtained from Highways England's Webtris* database for the month September 2019 but are still considered a robust reflection of the baseline conditions for the network. Traffic flows for the A1185 and B1275 were obtained from the Department for Transport (DfT) Road Traffic Statistics website for 2019. A plan showing the traffic locations is shown in Figure 16-3: Traffic Count Locations (ES Volume II, Document Ref. 6.3).

- ATC 1: A1085 Trunk Road (East of Site Entrance);
- ATC 2: A1085 Trunk Road (West of Site Entrance);
- ATC 3: A1042 Kirkleatham Lane;
- ATC 4: A1085 Trunk Road (South of British Steel Lackenby Entrance);
- ATC 5: A1085 Broadway;
- ATC 6: B1380 High Street;
- ATC 7: A66 (West of A1053);

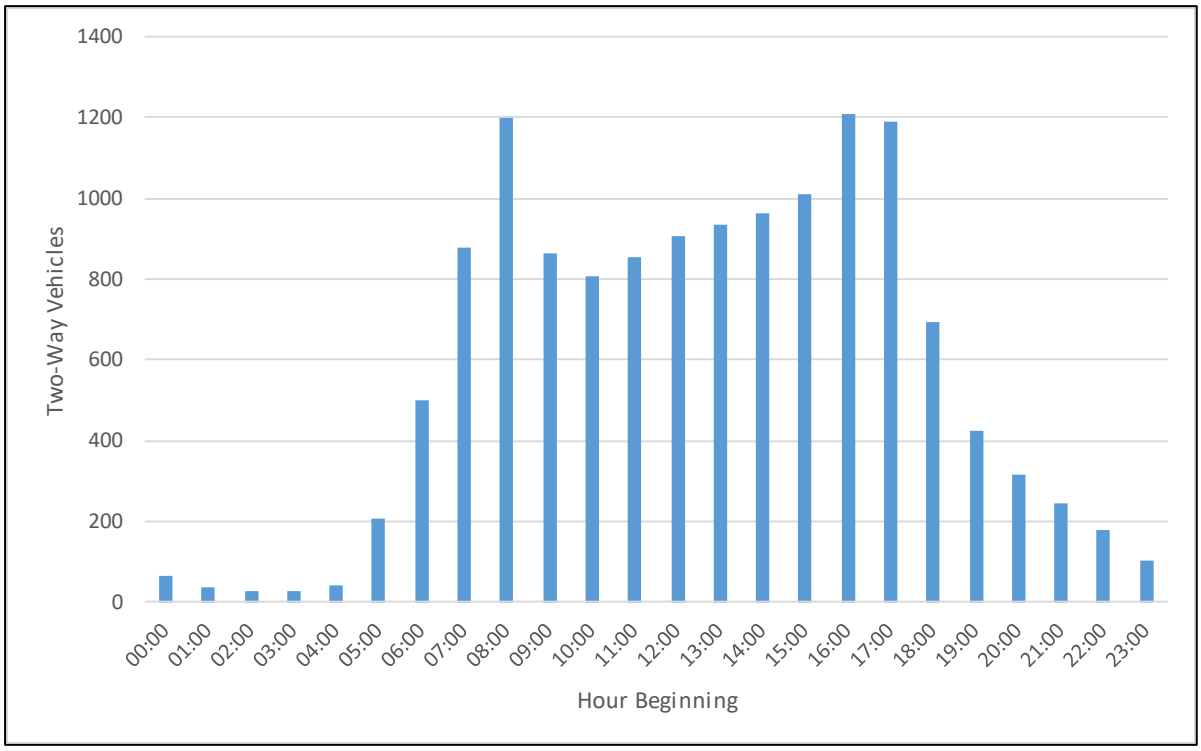
- ATC 8: A1046 Port Clarence Road to the Proposed Gas and CO2 pipeline corridors;
- ATC 9: A178 Seaton Carew Road to the Proposed Gas and CO2 pipeline corridors;
- ATC 10: Unnamed Road serving Seal Sands to the Proposed Gas and CO2 pipeline corridors.
- *Webtris: A1053 Greystone Road;
- *Webtris A174 (West of Greystones Roundabout);
- *DfT Count: B1275 Belasis Avenue; and
- *DfT Count: A1185 (west of A178 Seaton Carew Road).

16.4.7 From this data, the following typical traffic flows are evident on each link as set out below. Note that no information has been provided for the B1275 or A1185 as DfT Count data only provides a single Annual Average Daily Flow figure.

ATC 1-A1085 Trunk Road (East of Site Entrance)

- Average Weekday Morning Peak (two-way): 1,202 vehicles;
- Average Weekday Evening Peak (two-way): 1,211 vehicles;
- Annual Average Weekday Traffic (AAWT two-way): 13,672 vehicles.

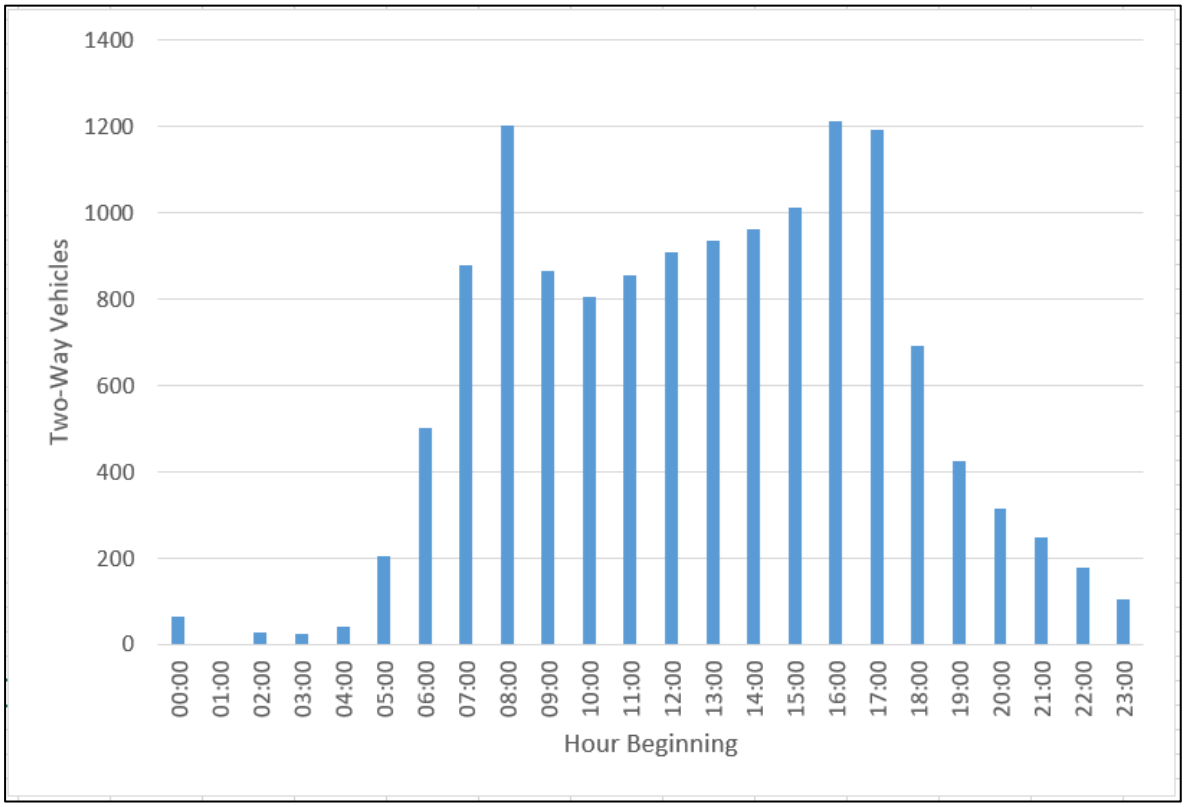
Diagram 16A- 3: A1085 Trunk Road (East of Site Entrance)



ATC 2- A1085 Trunk Road (West of Site Entrance)

- Average Weekday Morning Peak (two-way): 1,328 vehicles
- Average Weekday Evening Peak (two-way): 1,357 vehicles
- Annual Average Weekday Traffic (two-way): 14,825 vehicles.

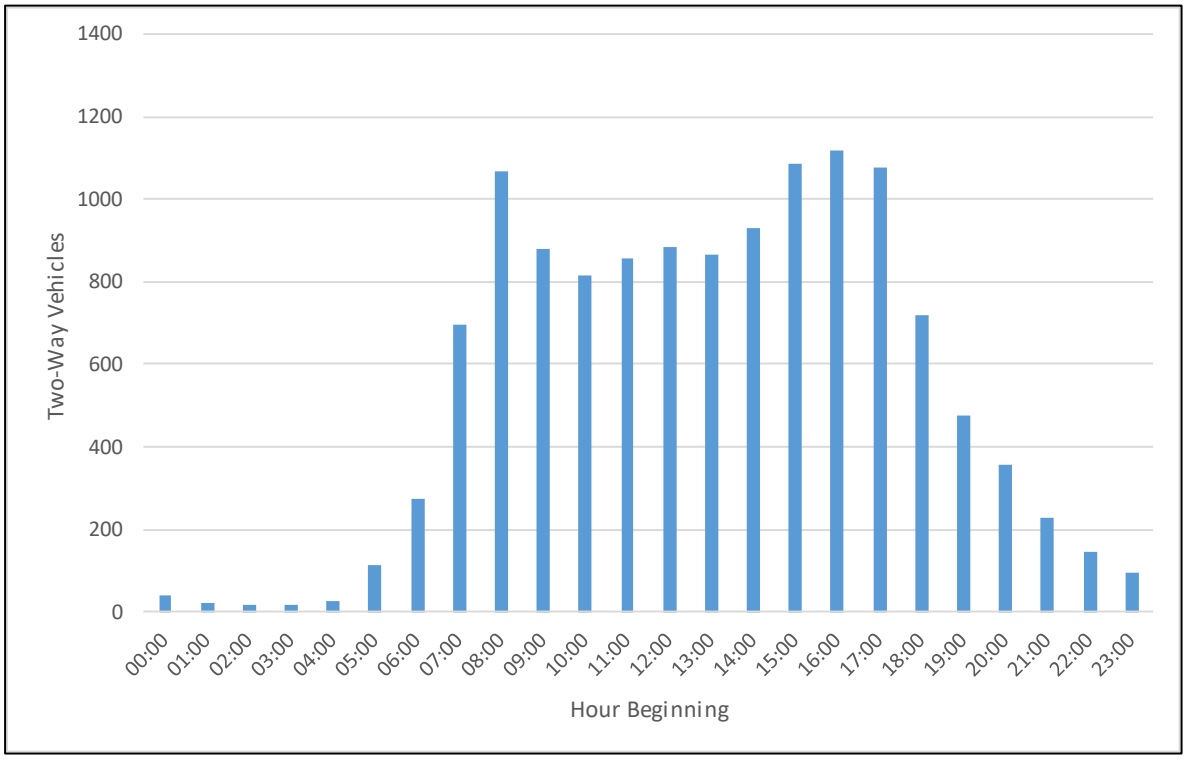
Diagram 16A- 4: A1085 Trunk Road (West of Site Entrance)



ATC 3- A1042 Kirkleatham Lane

- Average Weekday Morning Peak (two-way): 1,070 vehicles
- Average Weekday Evening Peak (two-way): 1,120 vehicles
- Annual Average Weekday Traffic (two-way): 12,818 vehicles.

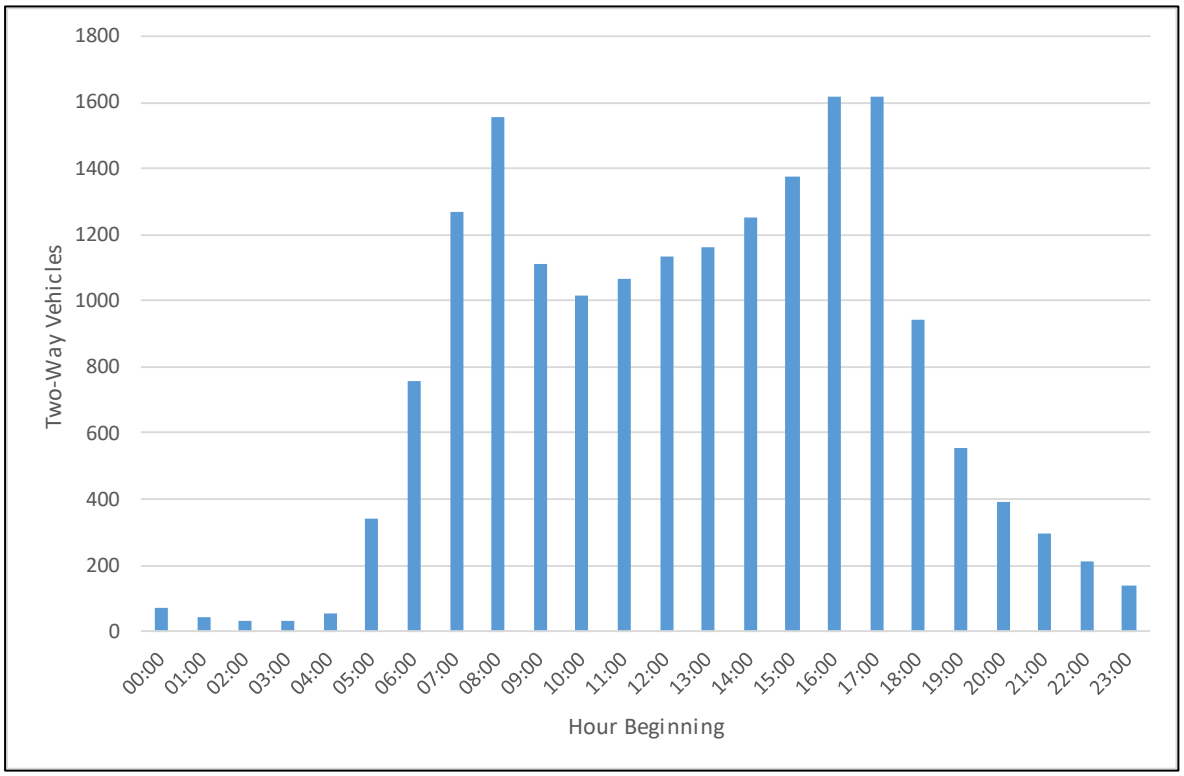
Diagram 16A- 5: A1042 Kirkleatham Lane Average Weekday Profile



ATC 4- A1085 Trunk Road (South of British Steel Lackenby Entrance)

- Average Weekday Morning Peak (two-way): 1,558 vehicles
- Average Weekday Evening Peak (two-way): 1,618 vehicles
- Annual Average Weekday Traffic (two-way): 18,036 vehicles.

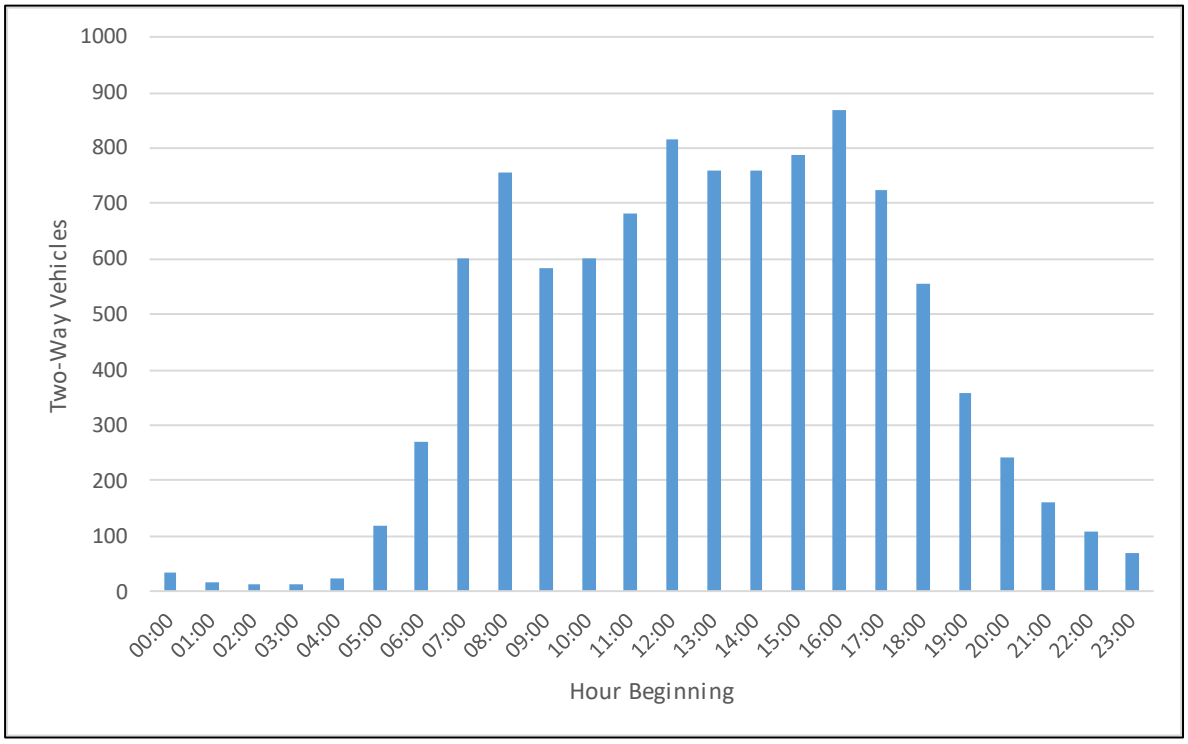
Diagram 16A- 6: A1085 Trunk Road (South of British Steel Lackenby Entrance) Average Weekday Profile



ATC 5- A1085 Broadway

- Average Weekday Morning Peak (two-way): 756 vehicles
- Average Weekday Evening Peak (two-way): 868 vehicles
- Annual Average Weekday Traffic (two-way): 9,919 vehicles.

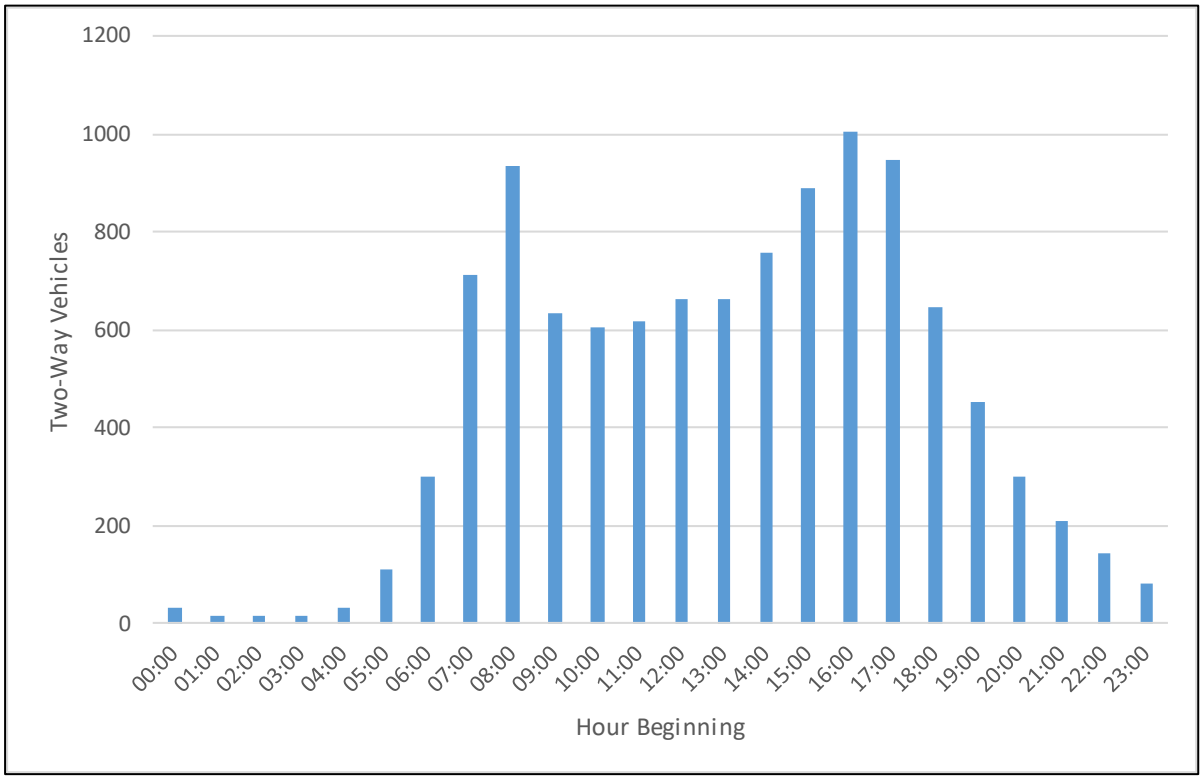
Diagram 16A- 7: A1085 Broadway Average Weekday Profile



ATC 6- B1380 High Street

- Average Weekday Morning Peak (two-way): 934 vehicles
- Average Weekday Evening Peak (two-way): 1,006 vehicles
- Annual Average Weekday Traffic (two-way): 10,770 vehicles.

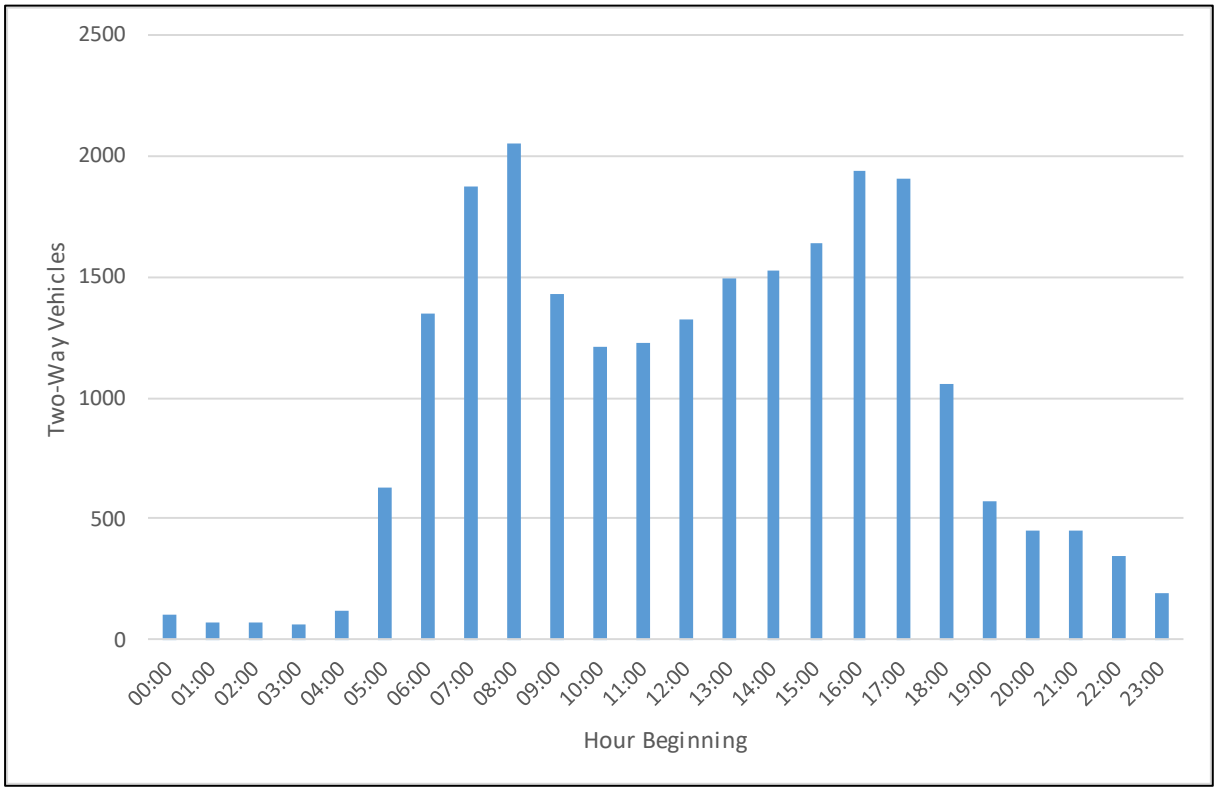
Diagram 16A- 8: B1380 High Street Average Weekday Profile



ATC 7- A66 (West of A1053)

- Average Weekday Morning Peak (two-way): 2,054 vehicles
- Average Weekday Evening Peak (two-way): 1,941 vehicles
- Annual Average Weekday Traffic (two-way): 23,081 vehicles.

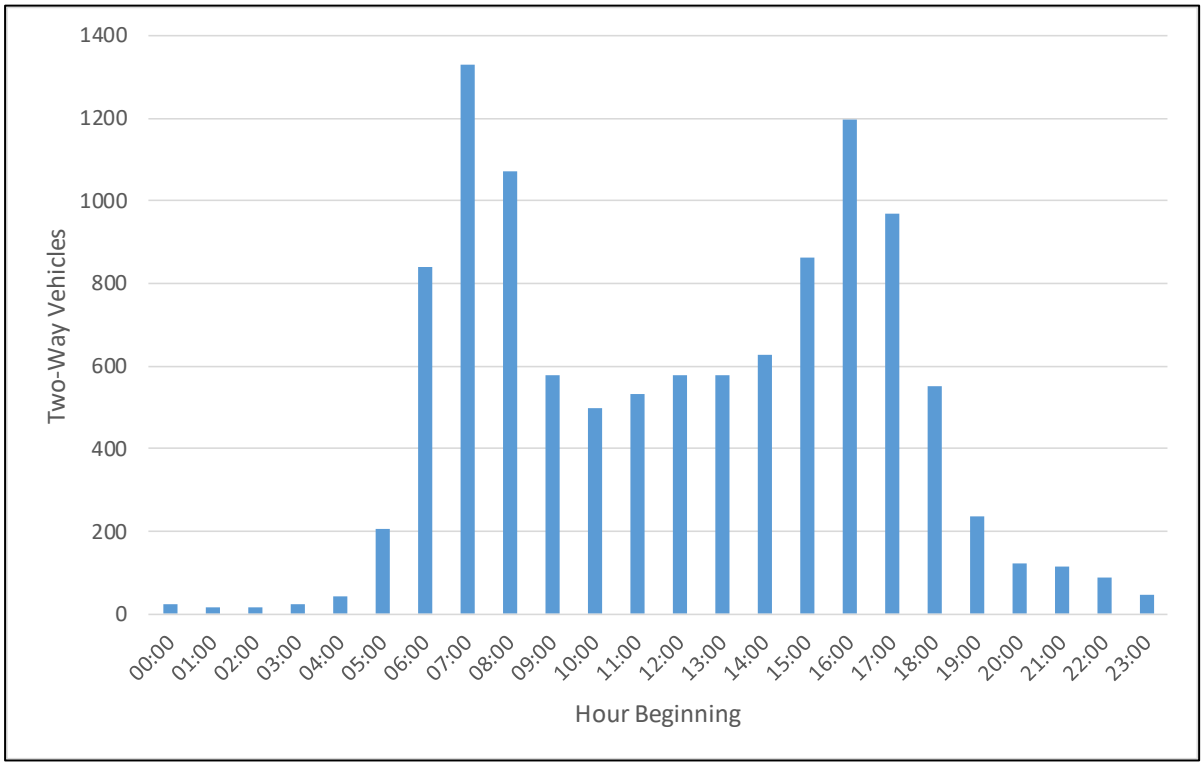
Diagram 16A- 9: A66 (West of A1053) Average Weekday Profile



ATC 8- A1046 Port Clarence Road

- Average Weekday Morning Peak (two-way): 1,330 vehicles
- Average Weekday Evening Peak (two-way): 1,196 vehicles
- Annual Average Weekday Traffic (two-way): 11,144 vehicles.

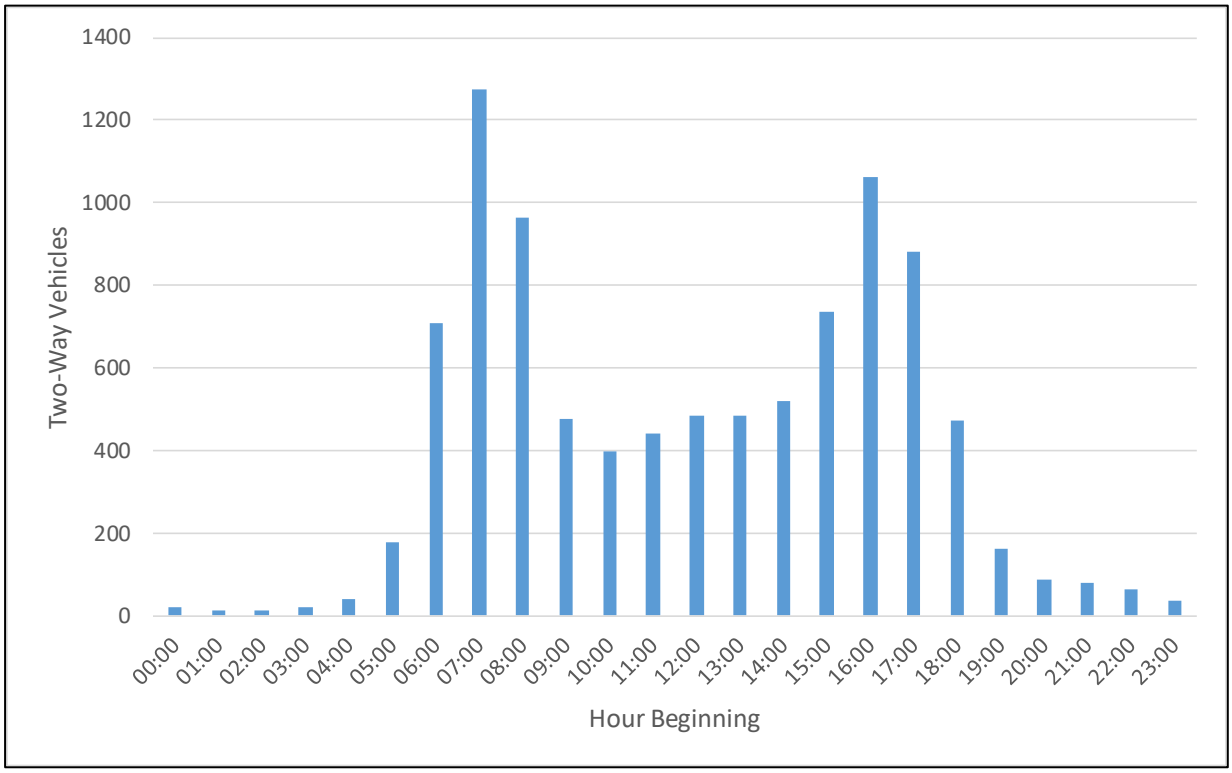
Diagram 16A- 10: A1046 Port Clarence Road Average Weekday Profile



ATC 9- A178 Seaton Carew Road

- Average Weekday Morning Peak (two-way): 1,275 vehicles
- Average Weekday Evening Peak (two-way): 1,061 vehicles
- Annual Average Weekday Traffic (two-way): 9,606 vehicles.

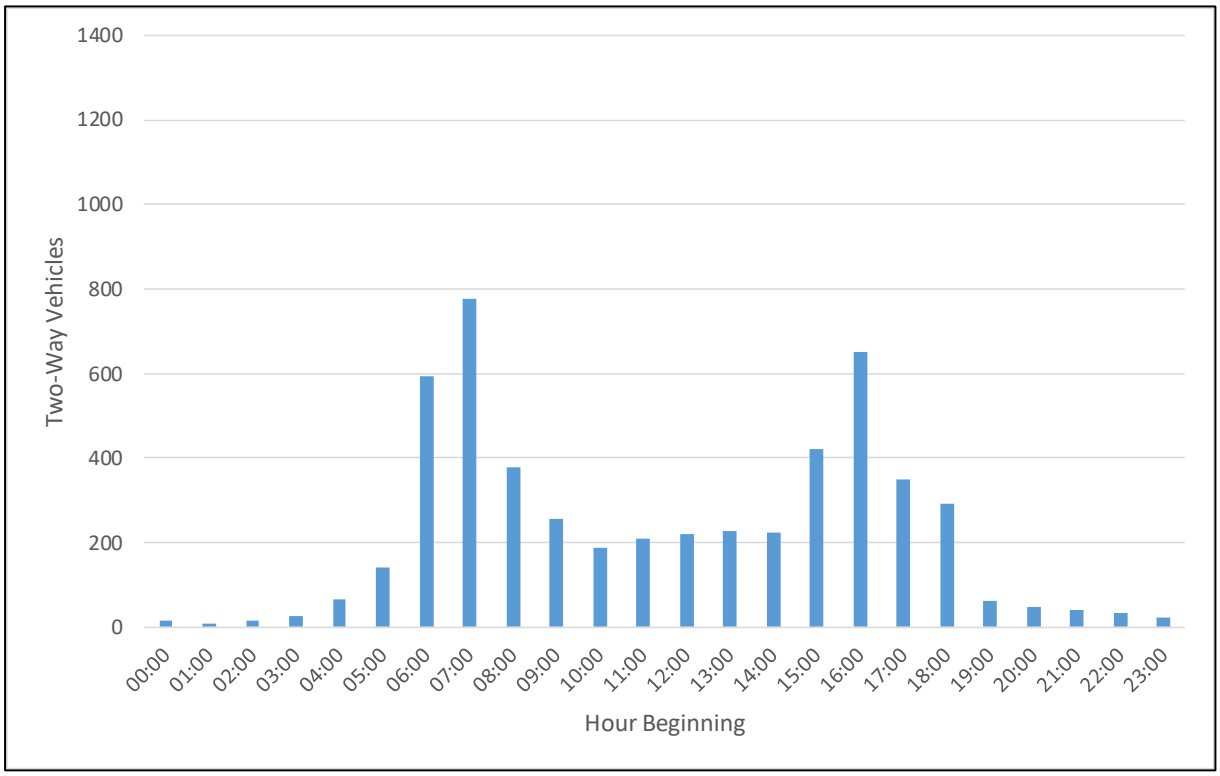
Diagram 16A- 11: A178 Seaton Carew Road Average Weekday Profile



ATC 10 - Un-named Road serving Seal Sands

- Average Weekday Morning Peak (two-way): 776 vehicles
- Average Weekday Evening Peak (two-way): 653 vehicles
- Annual Average Weekday Traffic (two-way): 5,268 vehicles.

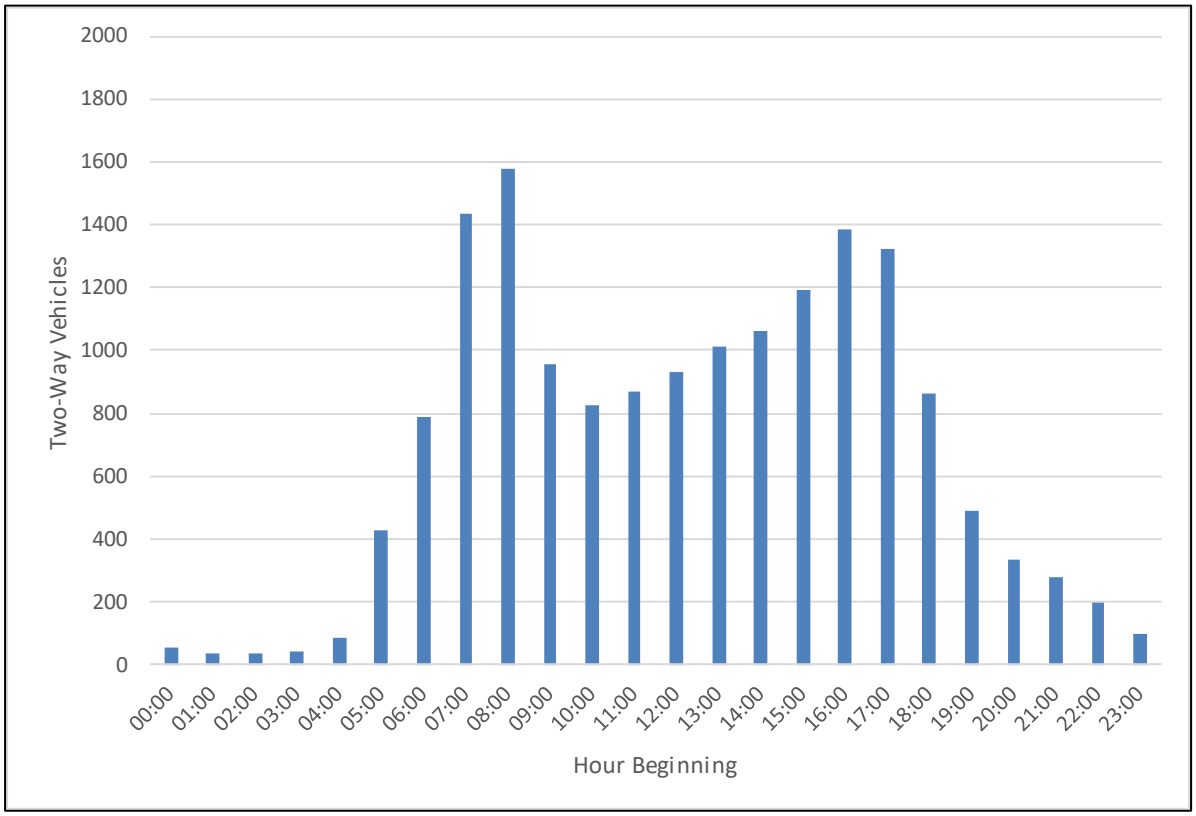
Diagram 16A- 12: Un-named Road serving Seal Sands Average Weekday Profile



Webtris- A1053 Greystone Road

- Average Weekday Morning Peak (two-way): 1,577 vehicles
- Average Weekday Evening Peak (two-way): 1,383 vehicles
- Annual Average Weekday Traffic (two-way): 16,298 vehicles.

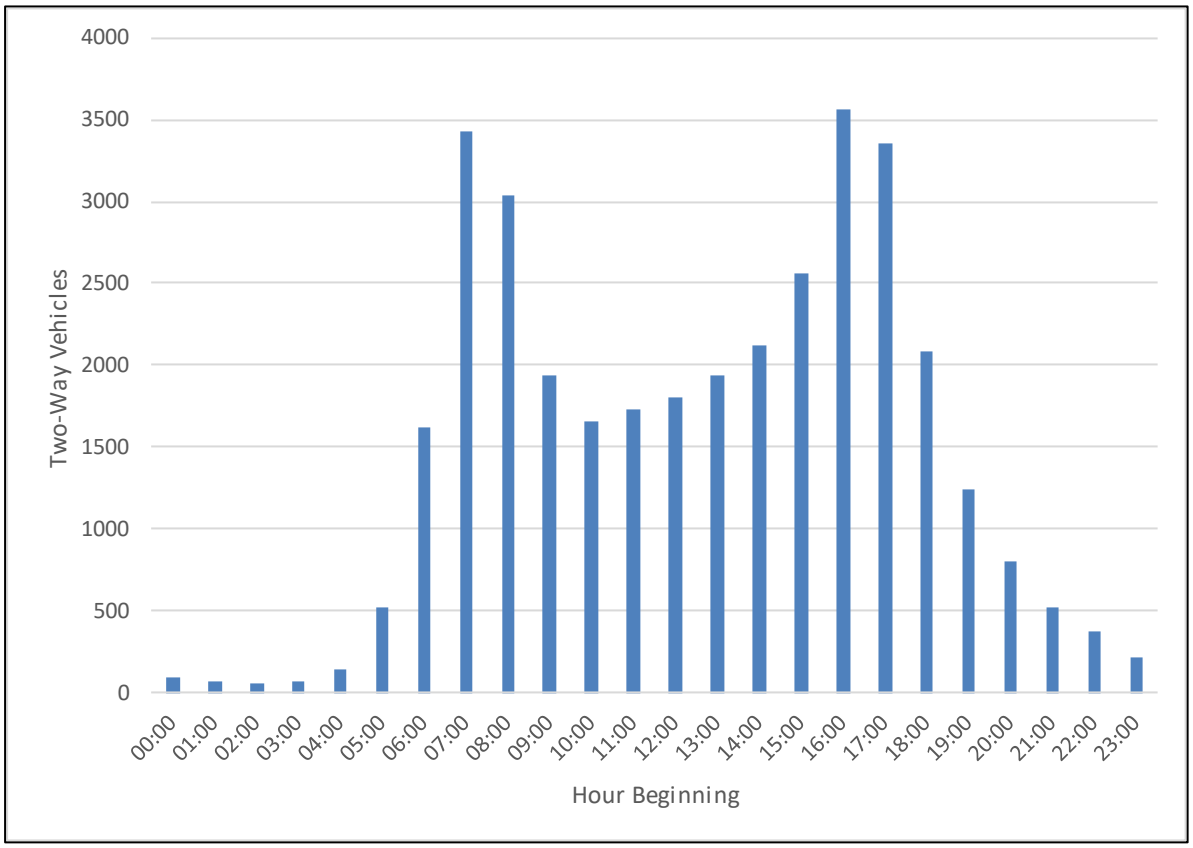
Diagram 16A- 13: A1053 Greystone Road Average Weekday Profile



Webtris- A174 (West of Greystones Roundabout)

- Average Weekday Morning Peak (two-way): 3,431 vehicles
- Average Weekday Evening Peak (two-way): 3,568 vehicles
- Annual Average Weekday Traffic (two-way): 34,946 vehicles.

Diagram 16A- 14: A174 (West of Greystones Roundabout) Average Weekday Profile



16.5 Personal Injury Accident Data

Introduction

16.5.1 Accident data has been taken into consideration in line with Planning Practice Guidance titled '*Travel plans, transport assessments and statements in decision taking'*, first published in March 2014 which requires analysis of any road traffic incidents that have occurred within the most recent five-year period within the locality of the Site.

16.5.2 Personal Injury Accident (PIA) Data has been obtained from the Crashmap.co.uk and takes into account accidents that occurred within the selected areas between 1st January 2015 and 31st December 2019 (the most up to date data available at the time of preparing this report).

Accident Study Area 1

16.5.3 Diagram 16A-15 below outlines the accident study area for links and junctions within the vicinity of the main construction site and connections to the South of the Tees.

Diagram 16A- 15: Accident Study Area 1 – South of the Tees

16.5.4 Within the defined area outlined in Diagram 16A-15, a total of 47 accidents occurred over the five-year study period between 2015 and 2019. Of these accidents, 38 were classed as slight in severity, 9 as serious and none as

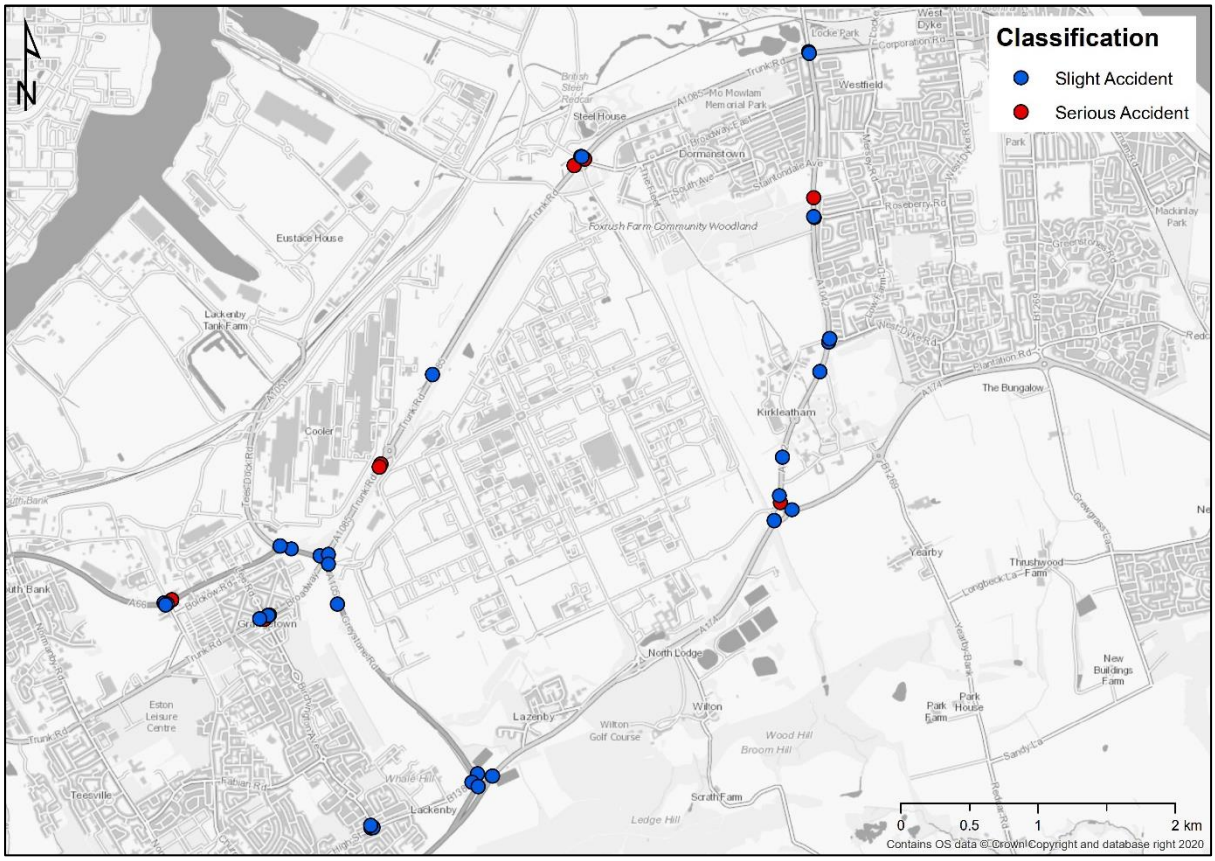
fatal. A breakdown of all accidents for this study area is provided in Table 16A-5 below.

Table 16A- 5: Accident Study Area 1 Breakdown Summary

Year	Total	Slight	Serious	Fatal
2015	15	10	5	0
2016	8	7	1	0
2017	5	5	0	0
2018	13	10	3	0
2019	6	6	0	0
Total	**47**	**38**	**9**	**0**

16.5.5 Diagram 16A-16 below outlines the distribution of the above accidents by severity across Study Area 1.

Diagram 16A- 16: Accident Study Area 1 – Accident Distribution



16.5.6 Further detailed analysis is provided below. Full accident reports are available in **Annex 16A.2.**

B1380 High Street / Birchington Avenue Junction

16.5.7 Over the five-year study period, a total of three accidents occurred at the junction between the B1380 and Birchington Avenue, of which all three were

considered slight in severity. Table 16A-6 provides a more detailed breakdown of the incidents.

Table 16A- 6: B1380 / Birchington Avenue Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
08/03/2015	Slight	2	Vehicle turning left impacted by vehicle travelling normally along the carriageway.
09/03/2017	Slight	2	Vehicle turning left impacted by vehicle travelling normally along the carriageway.
03/12/2019	Slight	2	Vehicle turning right impacted by vehicle travelling normally along the carriageway.

B1380 High Street between A1053 and Birchington Avenue

16.5.8 No accidents have occurred on this link over the five-year study period.

A1053 / A174 / B1380 Roundabout

16.5.9 Over the five-year study period, four accidents occurred at the A1053 / A174 / B1380 Roundabout, of which all were slight in severity. Table 16A-7 provides a more detailed breakdown of the incidents.

Table 16A- 7: A1053 / A174 / B1380 Roundabout Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
11/08/2015	Slight	2	Waiting vehicle impacted at rear by moving vehicle in carriageway.
02/09/2015	Slight	2	Slowing vehicle impacted from the rear by a moving vehicle in the carriageway.
19/04/2016	Slight	2	Slowing vehicle impacted from the rear by a moving vehicle in the carriageway.
26/05/2016	Slight	1	Vehicle travelling normally along the carriageway impacted with crash barrier.

A1053 Greystone Road

16.5.10 Over the five-year study period, two accidents occurred along the A1053 Greystone Road, both of which were considered slight in severity. Table 16A-8 provides a more detailed breakdown of the incidents.

Table 16A- 8: A1053 Greystone Road Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
01/06/2017	Slight	1	Vehicle travelling normally along the carriageway impacted with crash barrier.
09/01/2018	Slight	1	Crossing pedestrian impacted by vehicle in the carriageway.

A1053 / A1085 Roundabout

16.5.11 Over the five-year study period, three accidents occurred at the A1053 / A1085 Roundabout, all of which were considered slight in severity. Table 16A-9 provides a more detailed breakdown of the incidents.

Table 16A- 9: A1053 / A1085 Roundabout Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
03/02/2016	Slight	2	Cyclist impacted by moving vehicle in the carriageway.
05/04/2019	Slight	2	Bus / Coach proceeding normally along the carriageway impacted head-on with a Goods Vehicle (7.5T and over).
04/06/2019	Slight	2	Two vehicles impacted (front-rear) when proceeding normally along the carriageway.

A1053 / A66 / Tees Dock Road Roundabout

16.5.12 Over the five-year study period, one accident occurred at the A1053 / A66 / Tees Dock Road Roundabout, considered slight in severity. Table 16A-10 provides a more detailed breakdown of this incident.

Table 16A- 10: A1053 / A66 / Tees Dock Road Roundabout Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
11/03/2015	Slight	2	Vehicle changing lane impacted by vehicle turning right.

A66 between A1053 and Eston Road

16.5.13 No accidents have occurred on this link section over the five year study period.

A66 / Eston Road / Church Lane Junction

16.5.14 Over the five-year study period, a total of five accidents occurred at the A66 / Eston Road / Church Lane junction, of which two were considered serious in severity and the other three were slight in severity. Table 16A-11 provides a more detailed breakdown of the incidents.

Table 16A- 11: A66 / Eston Road / Church Lane Junction Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
15/04/2015	Serious	2	Cyclist impacted by moving vehicle in the carriageway.
23/07/2015	Serious	2	Motorcycle impacted with vehicle turning left in the carriageway.
15/09/2015	Slight	2	Vehicle performing a U-turn impacted by vehicle proceeding normally along the carriageway.
17/12/2015	Slight	2	Cyclist impacted by moving vehicle in the carriageway.
16/01/2017	Slight	2	Waiting vehicle impacted at rear by moving vehicle in the carriageway.

A1085 between A1053 and Birchington Avenue

16.5.15 No accidents have occurred on this link section over the five-year study period

A1085 / Birchington Avenue Roundabout

16.5.16 Over the five-year study period, nine accidents occurred at the Broadway / Birchington Avenue Roundabout, of which one was considered serious in severity and eight were slight in severity. Table 16A-12 provides a more detailed breakdown of the incidents.

Table 16A- 12: A1085 / Birchington Avenue Roundabout Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
23/09/2015	Slight	3	Waiting vehicles impacted at rear by moving vehicle in the carriageway.
23/11/2015	Slight	2	Two vehicles impacted when proceeding normally along the carriageway.
04/05/2016	Slight	3	Waiting vehicles impacted at rear by moving vehicle in the carriageway.
17/10/2016	Serious	2	Two vehicles impacted when proceeding normally along the carriageway.
13/12/2016	Slight	1	Pedestrian impacted when crossing by vehicle proceeding normally along the carriageway.

Date of Incident	Severity	No. of Vehicles	Causation
04/10/2017	Slight	2	Two vehicles impacted when proceeding normally along the carriageway.
22/08/2018	Slight	2	Waiting vehicle impacted at rear by moving vehicle in the carriageway.
27/09/2018	Slight	1	Pedestrian impacted when crossing by vehicle proceeding normally along the carriageway.
25/07/2019	Slight	1	Pedestrian impacted when crossing by vehicle proceeding normally along the carriageway.

A1085 between A1053 and A1085 / British Steel Roundabout

16.5.17 Over the five-year study period, two accidents occurred on this section of the A1085, both of which were classed as serious in severity. Table 16A-13 provides a more detailed breakdown of the incidents.

Table 16A- 13: A1085 Corridor between A1053 and A1085 / British Steel Roundabout Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
03/08/2015	Serious	2	Parked vehicle impacted by moving vehicle in the carriageway.
05/04/2018	Serious	2	Parked vehicle impacted by moving vehicle in the carriageway.

A1085 / British Steel Roundabout

16.5.18 No accidents have occurred on this junction over the five-year study period

A1085 between British Steel Roundabout and West Coatham Lane Roundabout

16.5.19 Over the five-year study period, one accident occurred on this section of the A1085, classed as slight in severity. Table 16A-14 provides a more detailed breakdown of the incident

Table 16A- 14: A1085 Corridor between British Steel Roundabout and West Coatham Lane Roundabout

Date of Incident	Severity	No. of Vehicles	Causation
15/01/2015	Slight	2	Vehicle changing lane impacted by a vehicle attempting to pass another in the carriageway.

A1085 / West Coatham Lane Roundabout

16.5.20 Over the five-year study period, five accidents occurred at this junction, of which three were slight in severity and two were serious in severity. Table 16A-15 provides a more detailed breakdown of the incidents.

Table 16A- 15: A1085 / West Coatham Lane Roundabout Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
28/06/2015	Serious	2	Cyclist impacted by moving vehicle when turning right in the carriageway.
04/04/2017	Slight	2	Vehicle turning right impacted by another vehicle proceeding normally along the carriageway.
24/09/2018	Slight	2	Moving vehicle impacted with another vehicle turning right in the carriageway.
31/10/2018	Serious	1	Motorcycle proceeding normally along the carriageway.
07/01/2019	Slight	2	Two vehicles impacted when proceeding normally along the carriageway.

A1085 between West Coatham Lane and Kirkleatham Lane

16.5.21 No accidents have occurred on this link section over the five-year study period.

A1085 / A1042 Kirkleatham Lane Junction

16.5.22 Over the five-year study period, two accidents occurred at this junction, of which both were classed as slight in severity. Table 16A-16 provides a more detailed breakdown of the incidents.

Table 16A- 16: A1085 / A1042 Kirkleatham Lane Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
16/03/2015	Slight	2	Vehicle turning right impacted by another vehicle proceeding normally along the carriageway.
02/10/2018	Slight	2	Vehicle waiting to turn right impacted by vehicle turning left in the carriageway.

A1042 Kirkleatham Lane

16.5.23 Over the five-year study period, a total of seven accidents occurred along the A1042 within the study area, of which one was considered serious in severity and the other six were of slight severity. Table 16A-17 provides a more detailed breakdown of the incidents.

Table 16A- 17: A1042 Kirkleatham Lane Corridor Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
02/06/2015	Slight	2	Vehicle turning right impacted with vehicle waiting to turn right in the carriageway.
22/08/2016	Slight	2	Cyclist impacted by vehicle turning left in the carriageway.
26/08/2016	Slight	3	Two waiting vehicles impacted at rear by moving vehicle in the carriageway.
13/04/2018	Slight	3	Two vehicles waiting to turn right impacted by another vehicle proceeding normally along the carriageway.
22/06/2018	Serious	1	Crossing pedestrian impacted by vehicle proceeding normally along the carriageway.
19/08/2018	Slight	2	Two vehicles impacted proceeding normally along the carriageway.
20/08/2018	Slight	2	Vehicle turning right impacted by another vehicle proceeding normally along the carriageway.

A174 / A1042 Roundabout

16.5.24 Over the five-year study period, a total of four accidents occurred at the A174 / A1042 Roundabout, of which one was considered serious in severity and the other three were of slight severity. Table 16A-18 provides a more detailed breakdown of the incidents.

Table 16A- 18: A174 / A1042 Roundabout Accidents Breakdown

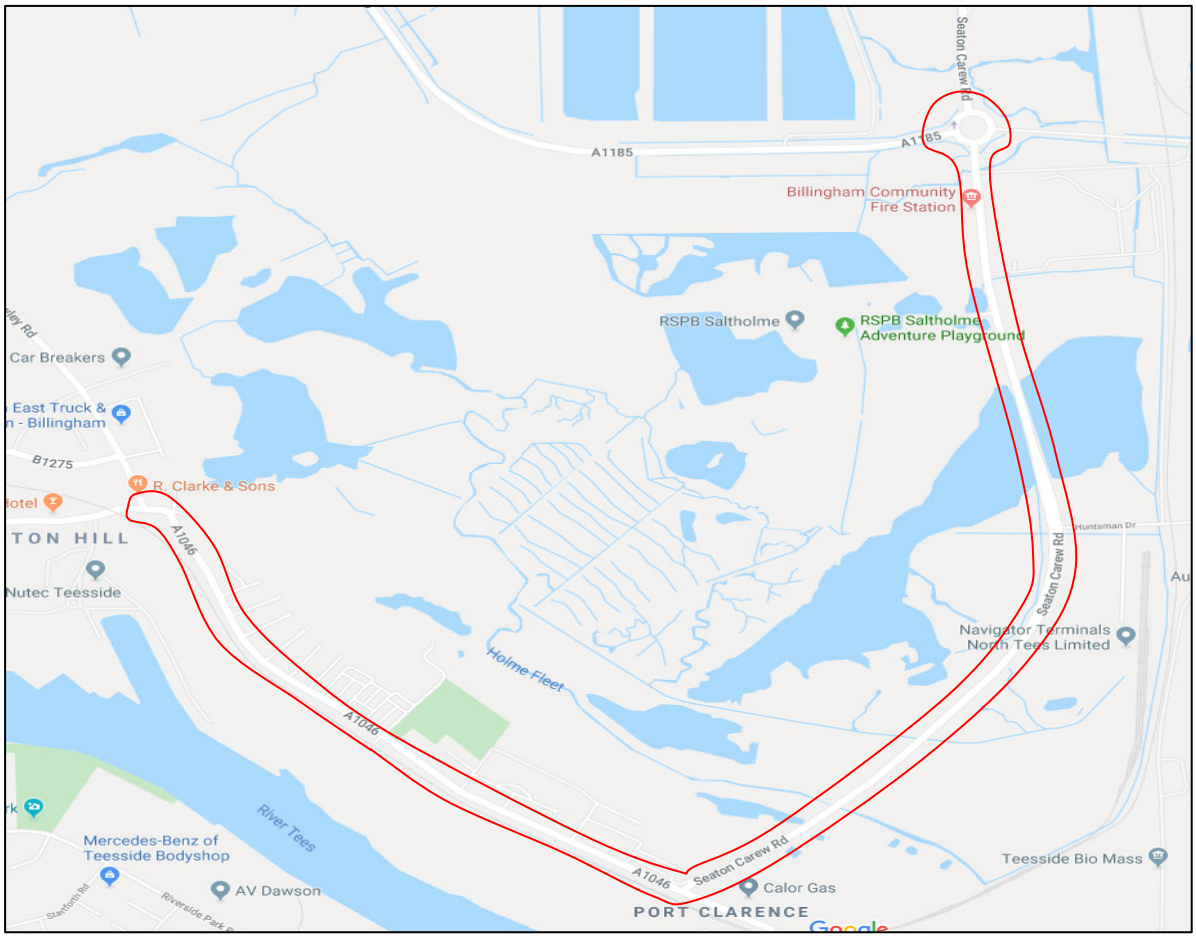
Date of Incident	Severity	No. of Vehicles	Causation
20/05/2015	Serious	2	Motorcycle impacted by vehicle proceeding normally along the carriageway.
16/06/2018	Slight	2	Slowing vehicle impacted from the rear by a moving vehicle in the carriageway.
12/08/2018	Slight	5	Four waiting vehicles impacted on offside by another vehicle proceeding normally along the carriageway.
08/01/2019	Slight	2	Cyclist impacted by vehicle proceeding normally along the carriageway.

Accident Study Area 2

16.5.25 Figure 16A-17 below outlines the accident study area for links and junctions to the north of the River Tees. The study area incorporates the following links and junctions:

- A1046 Port Clarence Road;
- A178 Seaton Carew Road;
- A1046 Port Clarence Road / A178 Seaton Carew Road Junction; and
- A178 Seaton Carew Road / A1185 Roundabout.

Diagram 16A- 17: Accident Study Area 2 – North of the River Tees



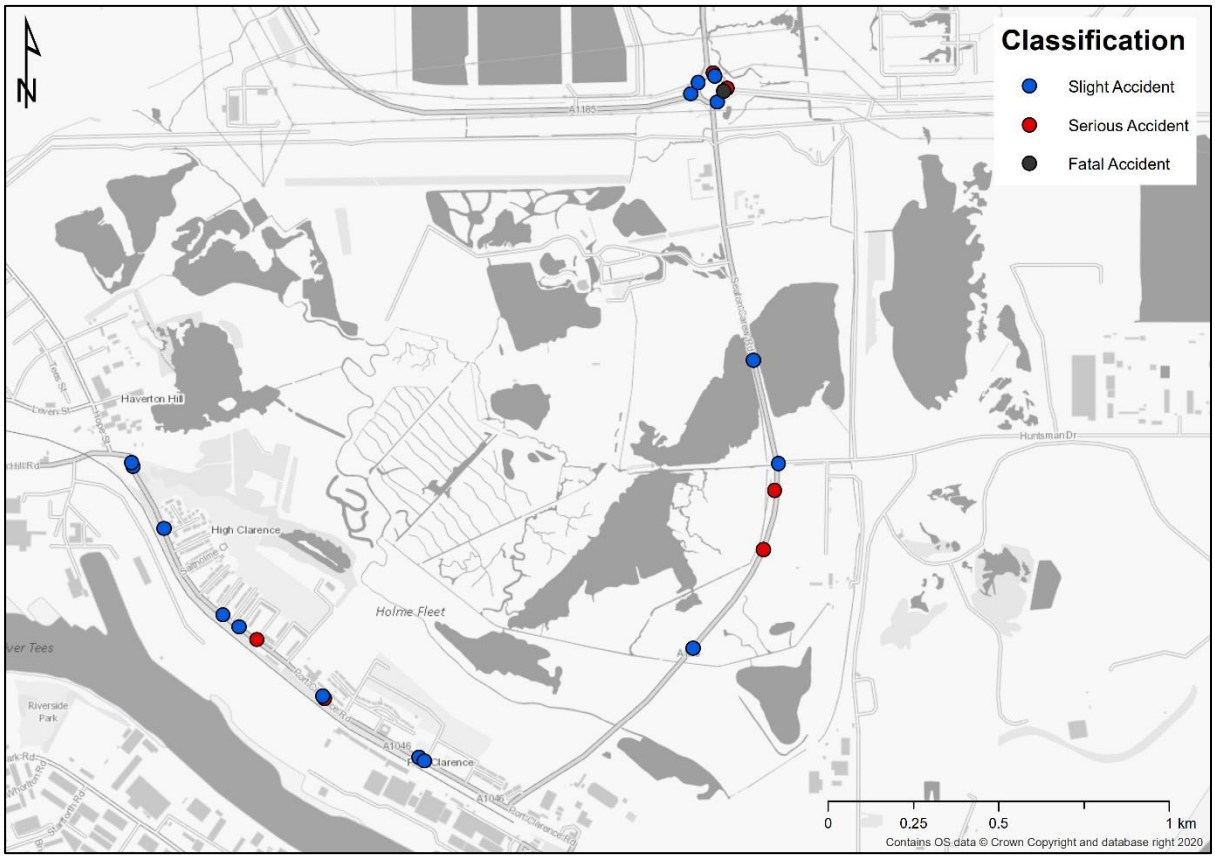
16.5.26 Within the defined area outlined in Diagram 16A-17, a total of 22 accidents occurred over the five-year study period between 2015 and 2019. Of these accidents, 15 were classed as slight, 6 as serious and 1 as fatal. A breakdown of all accidents for this Study Area is provided in Table 16A-19 below.

Table 16A- 19: Accident Study Area 2 Breakdown Summary

Year	Total	Slight	Serious	Fatal
2015	8	4	4	0
2016	4	3	0	1
2017	2	1	1	0
2018	2	2	0	0
2019	6	5	1	0
Total	**22**	**15**	**6**	**1**

16.5.27 Diagram 16A-18 below outlines the distribution of the above accidents by severity across Study Area 2.

Diagram 16A- 18: Accident Study Area 2 – Accident Distribution



16.5.28 Further detailed analysis is provided below. Full accident reports are available in Annex 16A.2.

A1046 Port Clarence Road

16.5.29 Over the five-year study period, a total of ten accidents occurred along the A1046 Port Clarence Road within the Study Area, of which two were considered serious in severity and the other eight were slight in severity. Table 16A-20 provides a more detailed breakdown of the incidents.

Table 16A- 20: A1046 Port Clarence Road Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
04/11/2015	Slight	2	Vehicle passing another moving vehicle on offside in the carriageway.
22/03/2015	Slight	2	Parked vehicle impacted from rear by moving vehicle in the carriageway.
08/08/2016	Slight	2	Vehicle performing a U-turn impacted by vehicle travelling normally along the carriageway.
29/08/2016	Slight	2	Vehicle turning right impacted by vehicle

Date of Incident	Severity	No. of Vehicles	Causation
			proceeding normally along the carriageway.
02/07/2017	Serious	1	Vehicle collided with refuge when proceeding normally along the carriageway.
18/08/2017	Slight	3	Two cars held-up in the carriageway, rear-end knock-on impact from a moving vehicle.
29/11/2018	Slight	1	Vehicle travelling normally around a right-hand bend in the carriageway.
15/11/2018	Slight	2	Parked vehicle impacted from rear by moving vehicle in the carriageway.
13/03/2019	Slight	2	Two vehicles impacted (head-on) proceeding normally along the carriageway.
21/03/2019	Serious	2	Vehicle turning right impacted by vehicle proceeding normally along the carriageway.

A178 Seaton Carew Road

16.5.30 Over the five-year study period, a total of five accidents occurred along the A178 Seaton Carew Road, of which three were considered serious in severity and two as slight severity. Table 16A-21 provides a more detailed breakdown of the incidents.

Table 16A- 21: A178 Seaton Carew Road Accident Summary

Date of Incident	Severity	No. of Vehicles	Causation
30/06/2015	Serious	2	Vehicle performing a U-turn impacted by a vehicle proceeding normally along the carriageway.
12/01/2015	Serious	3	Vehicle impacted in the carriageway when attempting to change lanes.
29/07/2015	Slight	2	Vehicle turning right impacted by vehicle proceeding normally along the carriageway.
22/03/2016	Slight	2	Cyclist impacted by vehicle attempting to

Date of Incident	Severity	No. of Vehicles	Causation
			pass another moving vehicle in the carriageway.
20/09/2019	Slight	2	Vehicle turning right impacted by vehicle proceeding normally along the carriageway after striking kerb.

Seaton Carew Road / A1185 Roundabout

16.5.31 Over the five-year study period, a total of seven accidents occurred at the Seaton Carew Road / A1185 Roundabout, of which four were considered slight in severity, two as serious severity and one as a fatal. Table 16A-22 provides a more detailed breakdown of the incidents.

Table 16A- 22: Seaton Carew Road / A1185 Roundabout Accidents Breakdown

Date of Incident	Severity	No. of Vehicles	Causation
07/11/2015	Serious	1	Motorcycle proceeding normally along the carriageway.
14/05/2015	Slight	1	Vehicle collided with road sign when proceeding normally along the carriageway.
31/08/2015	Serious	1	Vehicle collided with lamp post when proceeding normally along the carriageway.
15/12/2016	Fatal	1	Vehicle collided with road sign when proceeding normally along the carriageway.
03/04/2019	Slight	2	Slowing vehicle impacted from the rear by a moving vehicle in the carriageway.
14/06/2019	Slight	2	Collision between two vehicles in act of turning left.
25/07/2019	Slight	2	Vehicle passing another moving vehicle on offside in the carriageway.

16.5.32 There was one accident within this portion of the Study Area that resulted in a fatality. The incident occurred in December 2016 in wet conditions. The driver left the carriageway when proceeding normally and impacted with traffic apparatus upon the central island of the roundabout.

Accident Clusters

16.5.33 The criteria adopted for identifying potential collision clusters within the Study Area for both urban and rural areas are:

- a rural collision cluster site is one at which there have been four or more personal injury collisions within a 100 m radius of each other during a five-year period and the speed limit of the road is over 40 mph; and
- an urban collision cluster site is one at which there have been four or more personal injury collisions within a 50 m radius of each other during a five-year period and the speed limit of the road is 40 mph or less.

16.5.34 Based on the above analysis this has identified five accident clusters:

Cluster One: Roundabout Junction of the A1085, West Coatham Lane and PCC Site access

16.5.35 The junction has experienced five collisions within the past five years of which three were slight in severity and two were serious in severity. Of the three slight accidents all three involved a vehicle turning right and colliding with an oncoming vehicle. Of the two serious accidents, one involved a car and pedal cyclist collision and one involved a single vehicle loss of control.

16.5.36 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

Cluster Two: Roundabout Junction of the A174 and A1053 Greystone Road

16.5.37 The junction has experienced four collisions within the past five years of which all four were slight in severity. Of these three involved a rear end shunt collision and one involved a single vehicle loss of control.

16.5.38 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

Cluster Three: Roundabout Junction of the A1185 and Seaton Carew Road

16.5.39 The junction has experienced seven collisions within the past five years of which four were slight in severity, two serious in severity and one fatal in severity. Of the four slight accidents, two involved a car and pedal cyclist collision, one involved a rear end shunt and one involved a single vehicle loss of control. Of the two serious and one fatal accident, all three involved a single vehicle loss of control.

16.5.40 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

Cluster Four: Crossroad Junction of the A66/ Eston Road and Church Lane

16.5.41 The junction has experienced five collisions within the past five years of which three were of slight severity and two of serious severity. Of these, two

involved a vehicle colliding with a pedal cycle, one involved a vehicle turning left and colliding with an oncoming vehicle, one involved a vehicle performing a U-turn at the junction and colliding with another vehicle and one involved a rear end shunt.

16.5.42 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

Cluster Five: Roundabout Junction of the A1085 Broadway and Birchington Avenue

16.5.43 The junction has experienced nine collisions within the past five years of which eight were of slight severity and one of serious severity. Of the eight slight accidents, two involved a car and pedal cyclist colliding, three involved a car colliding with a pedestrian and three involved a rear end shunt. The accident of serious severity involved a car colliding with a pedal cyclist.

16.5.44 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

16.6 Proposed Development

Introduction

16.6.1 The location of the proposed low-carbon gas fired power station will be a gas powered power plant with carbon capture and compression and is located on the Power, Capture and Compression (PCC) Site. The location of the PCC Site is shown on Figure 3-2A (ES Volume II, Document Ref. 6.3). A detailed description of the Proposed Development is presented in ES Chapter 4: Proposed Development (ES Volume I, Document Ref. 6.2), a summary for the purposes of the TA is presented below.

16.6.2 For the purposes of the assessment a construction programme lasting approximately 51 months, starting in 2022 and ending 2026 is considered to be the 'realistic' worst-case scenario.

16.6.3 It is anticipated that construction of the Natural Gas Connection will be undertaken between Months 19 – 30 (Q2 2024 to Q1 2025). Construction of the CO_2 Gathering Network will be undertaken between Months 34 – 45 (Q3 2025 to Q2 2026). Full descriptions of the Natural Gas Connection, CO_2 Gathering Network and CO_2 Export pipeline are presented in Chapter 4: Proposed Development (ES Volume I, Document Ref. 6.2) and summarised in brief below.

CO_2 Gathering Network

16.6.4 The CO2 Gathering Network will predominantly use an existing above ground pipe racking network and using existing culverts and overbridges. The CO_2 Gathering Network is proposed to start in Billingham, pass through the Seal Sands industrial area and cross under the River Tees before entering the PCC Site for high pressure (HP) compression.

16.6.5 The routeing of the CO_2 Gathering Network across the River Tees will be either:

- via a micro-bored tunnel from Seal Sands directly to the PCC (and shared with the Natural Gas Connection) and then below ground along the southern side of the proposed Teesworks Spine Road to the PCC Site; or
- installed using a horizontal directional drilled (HDD) bore from Seal Sands to the northern bank of the mouth of Dabholm Gut and then above ground along the northern bank of Dabholm Gut past Bran Sands Wastewater Treatment Plant and then north to the PCC Site.

Natural Gas Connection

16.6.6 Natural gas will be used as the fuel for the operation of the Low-Carbon Electricity Generating Station. Two alternative route corridors being considered for connection to the high-pressure transmission system.

16.6.7 Natural gas will be supplied via a tie-in to the gas transmission network in the area on the north bank of the Tees at Seal Sands with subsequent transport through a new 24" buried gas line and will require a crossing of the Tees direct to the STDC site via a new tunnel. Upon exit from the tunnel the new gas pipeline terminates at the PCC with a new gas receiving facility (AGI).

16.6.8 The route corridors being considered for connection to the high-pressure transmission system are shown in Figure 3-2B (ES Volume II, Document Ref. 6.3).

16.6.9 The new gas pipeline will be installed below ground using a combination of open-cut and trenchless technologies, depending on the constraints or crossings required.

16.6.10 Two alternative routes for the Gas Connection are currently being considered:

- the outlet from the new NZT AGI gas could be routed into the existing 24" Trafigura pipeline which runs between the TPGG facility on Seal Sands to the Navigator Terminal. At this point a tie-in will be constructed (new AGI with pig receiver) which then connects (via a new AGI with pig launcher) into the new 24" gas line and into the new tunnel and on to STDC as described above. At present the Trafigura line is under long term preservation and detailed assessment will be undertaken to understand the re-use of this pipeline.
- the outlet from the new NZT AGI could be fed into the existing 24" Sembcorp gas line which runs through North Tees. The existing Sembcorp pipeline crosses the river Tees and lands on the north bank of Dabholm Gut and runs on to Wilton site on the South Tees. At a point near the Northumbrian Water Ltd. (NWL) Bran Sands WwTP, a new tie-in will be constructed which then connects via a new AGI into a new 16" gas pipeline which could run to the STDC site to the new gas receiving station via a wayleave to the South of the NWL Bran Sans WwTP. At present the Sembcorp line is under long term preservation and detailed assessment will be undertaken to understand the re-use of this pipeline.

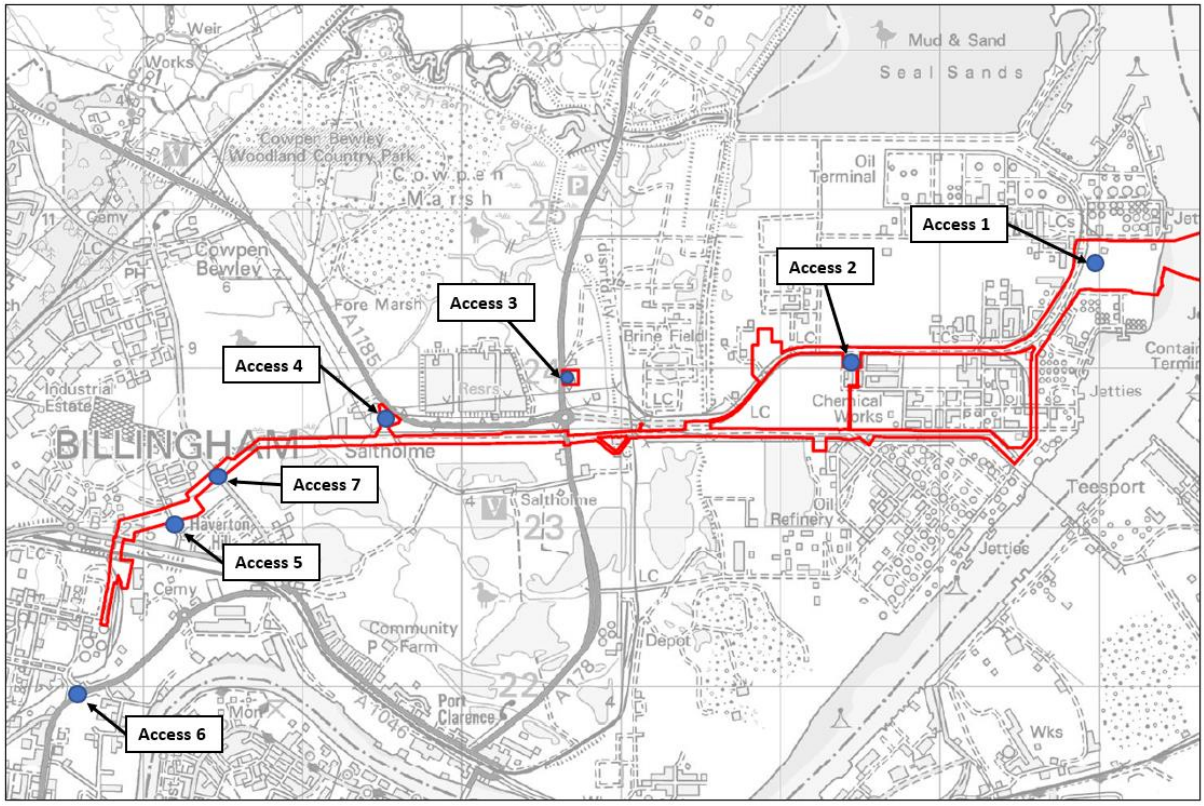
CO_2 Export Pipeline

16.6.11 The export of CO_2 from Teesside to the Endurance store will include an onshore high-pressure (HP) Compressor Station located within the PCC Site adjacent to the Low-Carbon Electricity Generating Station, and the commencement of an export pipeline to the off-shore elements of the Net Zero Teesside (NZT) Project development.

16.6.12 4.3.44 The offshore CO_2 export and storage elements below Mean Low Water Springs (MLWS) will be separately consented and do not form part of the Proposed Development – including the offshore section of the CO_2 Export Pipeline, the CO_2 store itself and CO_2 injection wells into the store and the associated off-shore infrastructure.

16.6.13 Seven construction compound access points to the Connections north of the River Tees are shown in Diagram 16A-19.

Diagram 16A- 19: Construction Compound Access Locations (North of Tees)



16.6.14 A detailed description of the access points is provided below:

- **Access 1 – Seal Sands Road**: It is proposed to provide a temporary construction access to the laydown area at Navigator Terminals. Access is proposed off Seal Sands Road. Sight lines onto Seal Sands Road are good in either direction with a 'y' distance of 120 metres (which is the standard for a 40mph speed limit) achievable in both directions from a 2.4 metre setback. However, it is proposed that advance warning signage is erected in the highway verge to warn drivers of the construction access ahead and the potential for slow moving vehicles;
- **Access 2 – Seal Sands Road**: It is proposed to provide a temporary construction access to the laydown area in the car park at INEOS. Access

is proposed off Seal Sands Road using the existing vehicle access to the car park. Sight lines onto Seal Sands Road are good in either direction with a 'y' distance of 120 metres (which is the standard for a 40mph speed limit) achievable in both directions from a 2.4 metre setback. However, it is proposed that advance warning signage is erected in the highway verge to warn drivers of the construction access ahead and the potential for slow moving vehicles;

- **Access 3 - A178 Seaton Carew Road**: It is proposed to use a small plot of land in Saltholme (existing plant yard) to the east of the A178 and to the north of Swiss Cottage as a potential construction works compound. Sight lines onto the A178 are good in either direction with a 'y' distance in excess of 200 metres achievable to the north of the entrance and 135 metres achievable to the south of the entrance from a 2.4 metre setback. However, it is proposed that advance warning signage is erected in the highway verge to warn drivers of the construction access ahead and the potential for slow moving vehicles;
- **Access 4 – A1185 (South of Saltholme Substation Access):** It is proposed to provide a temporary construction access to a works compound off the A1185 to the south of Saltholme Substation access. Sight lines onto the A1185 are good in either direction with a 'y' distance in excess of 140 metres achievable to the north and south of the entrance from a 2.4 metre setback. However, it is proposed that advance warning signage is erected in the highway verge to warn drivers of the construction access ahead and the potential for slow moving vehicles;
- **Access 5 – Nelson Avenue**: It is proposed to provide a temporary construction access to the laydown area at Haverton Hill. Access is proposed off Nelson Avenue which connects to the B1275 Belasis Avenue to the south. Sight lines onto Nelson Avenue and the B1275 are good in either direction from a 2.4 metre setback. However, it is proposed that advance warning signage is erected in the highway verge to warn drivers of the construction access ahead and the potential for slow moving vehicles;
- **Access 6 – A1046 Haverton Hill Road**: It is proposed to provide a temporary construction access via the existing vehicle access to CF Fertilisers located off the A1046 Haverton Hill Road. This vehicle access is currently used by cars and HGVs and is considered suitable; and
- **Access 7 – Cowpen Bewley Road**: It is proposed to provide a temporary construction access off Cowpen Bewley Road adjacent to the existing gas pipeline. Sight lines onto Cowpen Bewley Road are good in either direction with a 'y' distance in excess of 150 metres achievable to the north and south of the entrance from a 2.4 metre setback. However, it is proposed that advance warning signage is erected in the highway verge to warn drivers of the construction access ahead and the potential for slow moving vehicles.

16.6.15 It is proposed that all construction workers associated with the construction of the PCC and associated connections, and those pipeline workers working

to the south of the River Tees will access the Site via the existing entrance located at the A1085 / West Coatham Lane Roundabout.

16.6.16 Designated contractor parking is expected to be included close to the PCC Site, within the Site boundary on the laydown area on Teesworks land, as shown in Work No. 9A on the Works Plans (Document Ref. 4.4) submitted with the Application.

16.6.17 Pipeline workers would be transferred to the working area at Dabholm Gut by minibus via Sembcorp land using the southern arm of the A1085/West Coatham Lane roundabout which provides access to the Wilton International Complex. Pipeline workers working to the north of the River Tees would go straight to their relevant compound.

16.6.18 All construction HGVs associated with the construction of the PCC will access the site via the A66 / A1053 / Tees Dock Road Roundabout. HGV deliveries associated with pipeline construction will be directed to the relevant temporary construction compound.

Key Parameters for Assessment

16.6.19 The maximum and minimum parameters adopted for building sizes within the Rochdale Envelope defined for the Proposed Development do not have any material impact on vehicle numbers accessing the Site and therefore are not considered further in this assessment. Similarly, where flexibility is to be retained in the application, any changes are unlikely to have a material difference on the volumes of traffic accessing the Site.

Construction Generation

PCC Site

16.6.20 The profile of construction workforce over the construction period has been developed based on the indicative construction programme and through discussion with the Applicants.

16.6.21 The estimated profile of the workforce over the construction period for the Proposed Development (excluding pipeline connections which is discussed separately below in section 16.6.30 – 16.6.33) is shown below in Table 16A-23 and is based on discussions with the Applicants.

16.6.22 Table 16A-23 shows that the peak construction workforce is forecast to occur in Months 16 – 27 when circa 1,750 workers are expected on-site.

Table 16A- 23: Profile of Daily Workforce throughout PCC Construction

Month of Construction	Daily Workforce in the Month
1	300
2	300
3	300
4	300
5	300
6	300
7	300
8	300

Month of Construction	Daily Workforce in the Month
9	300
10	300
11	300
12	300
13	300
14	300
15	300
16	1750
17	1750
18	1750
19	1750
20	1750
21	1750
22	1750
23	1750
24	1750
25	1750
26	1750
27	1750
28	1722
29	1722
30	1722
31	1722
32	1722
33	1722
34	1722
35	1722
36	1722
37	1722
38	1722
39	1722
40	1722
41	1722
42	1722
43	777
44	777
45	777
46	777
47	777
48	777
49	777
50	777
51	777

16.6.23 In relation to traffic generation, an occupancy rate of 1.35 per vehicle without any management or mitigation measures is a figure generally accepted in the construction industry. While we cannot point to an individual survey that categorically proves the 1.35 figure, its robustness can be confirmed when typical site operation of gangs arriving in crew buses rather than individual private cars is taken into account. Table 16A-24 below sets out several vehicle generation scenarios based on different vehicle occupancy rates.

Table 16A- 24: Construction Worker Car Occupancy Rates

Total Workers at Peak of Construction	Vehicle Occupancy Rate	No. of Vehicle Arrivals	Two-Way Daily Flow
1,750	1.35	1,296	2,592
1,750	1.50	1,166	2,332
1,750	2.00	875	1,750
1,750	2.50	700	1,400

16.6.24 In relation to traffic generation for the proposed development, it has been assumed that active management will result in 80% of workers traveling to the Site by private car with an average occupancy of 2 workers per vehicle and 20% will travel to site by minibus with an average occupancy of 7 workers per vehicle.

16.6.25 This assumption has 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. This is considered a realistic assumption given that the mode of arrival of construction workers can be controlled through travel planning measures and that construction workers would want to minimise their travel expenditure, particularly if having to pay for temporary accommodation. It is proposed that this level of traffic generation can be managed and maintained through Travel Plan measures and the availability of on-site parking spaces.

16.6.26 When this occupancy rate is applied to the workforce associated with construction of the Proposed Development during the peak months (Months 16 - 27), the following daily car generations on a month-by-month basis result as shown in Table 16A-25 below. This equates to an overall vehicle occupancy rate of 2.33 per vehicle (including minibuses).

Table 16A- 25: Generation of Vehicles at Peak of Construction

Month of Construction	Total Workers	No. of Cars / Vans @ 2 per Vehicle (assuming an 80% modal share)	No. of Minibuses @ 7 per vehicle	Average Two-Way Daily Flow
16 - 27	1,750	700	50	1,500

16.6.27 The volume of construction HGV on the network is predicted to be at its maximum of around 346 two-way daily HGV movements (173 in and 173 out) during Months 7 to 12 of the Site Remediation and preparation phase of

construction (including spoil management) with 174 two-way daily HGV movements (87 in and 87 out) during Months 1 to 6.

16.6.28 This is associated with the potential cut and fill of the top layer of ground within the Proposed PCC Site for geotechnical purposes and equates to a worst case assumption for traffic assessment purposes of spoil export/ imported material movements of up to 3,500 tonnes per day over the first six month period and 1,750 tonnes per day for the following six months. As outlined in Chapter 5: Construction Programme and Management (ES, Volume I, Document Ref. 6.3), a worst case spoil arising of 50,000 tonnes is envisaged from tunnelling and boring operations, the bulk of which is expected to be beneficially reused on site to create the development platform. The quantity of spoil requiring off-site disposal is therefore envisaged to be only a fraction of the material generated; off-site disposal of any spoil arising from tunnelling – if required – has therefore been included in the worst case HGV traffic volumes considered in this assessment.

16.6.29 During the remainder of the construction period, HGV movements will vary with 80 two-way daily HGV movements (40 in and 40 out) from month 13 to month 28 of construction, 60 two-way daily HGV movements (30 in and 30 out) from months 29 to 34 and 40 two-way daily HGV movements (20 in and 20 out) from months 35 to 51 of the construction programme.

Pipeline Connections

16.6.30 The construction workforce associated with pipeline construction is expected to total 120 workers who will travel directly to their relevant compound.

16.6.31 Applying the vehicle occupancy rate of 2.0 per vehicle to the peak workforce associated with pipeline construction, results in 60 vehicle arrivals and 60 vehicle departures per day (120 two-way movements).

16.6.32 Materials required to carry out the construction of the pipelines will be delivered direct to the relevant compound rather than the main site and include:

- general construction materials (including temporary fencing);
- pipe sections and associated materials;
- consumable construction materials; and
- machinery, plant and engineering equipment.

16.6.33 The volume of HGVs delivering materials will be at its maximum of 10 two-way daily HGV movements (5 in and 5 out) over the entire pipeline construction period except for the first month of pipeline construction when a maximum of 42 two-way daily HGV movements (21 in and 21 out) is expected associated with delivery of pipe sections and associated materials. In addition, a maximum of 64 daily HGV movements (32 in and 32 out) is expected in Month 7 of the construction programme associated with pipeline excavation under the River Tees.

Combined Vehicle Generation

16.6.34 The total two-way construction vehicle traffic expected over the construction period is illustrated in **Annex 16A.3** which identifies the peak month of construction to be between Months 22 - 26 (Q3 / Q4 in 2024).

16.6.35 During the peak month of construction it is estimated that there will be 1,580 daily vehicle movements associated with construction of the Electricity Generating Station and Carbon Capture (comprising 1,500 construction worker vehicle movements and 80 HGV movements) and 130 daily vehicle movements associated with the Natural Gas Connection pipeline construction (comprising 120 worker vehicle movements and 10 HGV movements).

Daily Vehicle Profile associated with Generating Station and Carbon Capture Plant during the Peak Month

16.6.36 Working hours on major construction sites tend to be long due to pressures of timescales and available light. Therefore, the arrival and departure of workers vehicles tend to be spread over the peak periods rather than all falling in the traditional network peak hours. In an attempt to quantify this, previous discussions have been held with contractors associated with power station build projects where it was revealed that there is a general tendency for construction workers to travel early for a number of reasons as follows:

- to avoid congestion and delay; and
- to deliver the project to programme.

16.6.37 Table 16A-26 below sets out the percentage of daily inbound and outbound trips on an hour-by-hour basis and calculates the totals for the peak month of construction (Months 22 - 26). This profile is based on a count undertaken at the construction site entrance to Ferrybridge Multifuel 2 in 2017 and through discussions with the Applicants.

Table 16A- 26: Daily Vehicle Profile during Peak Month of Construction (Electricity Generating Station and Carbon Capture Plant)

Hour Beginning	% of Daily Inbound	% of Daily Outbound	Arrivals	Departures
06:00	34%	2%	255	15
07:00	25%	2%	187	15
08:00	5%	2%	37	15
09:00	4%	2%	30	15
10:00	4%	3%	30	23
11:00	4%	3%	30	23
12:00	5%	4%	37	30
13:00	4%	4%	30	30
14:00	3%	3%	23	23
15:00	2%	3%	15	23

Hour Beginning	% of Daily Inbound	% of Daily Outbound	Arrivals	Departures
16:00	2%	5%	15	37
17:00	3%	15%	23	112
18:00	3%	35%	23	262
19:00	2%	16%	15	120
20:00	0%	1%	0	7
21:00	0%	0%	0	0
Total	100%	100%	750	750

16.6.38 The daily profile of HGV movement at the peak of construction is shown in Table 16A-27. This profile is based on experience from other CCGT construction sites and shows that the arrival and departure of HGVs from the site will be spread evenly over the day. The profile shows that deliveries will be made between 07:00 and 19:00 hours.

Table 16A- 27: Daily HGV Profile during Peak Month of Construction (Electricity Generating Station and Carbon Capture Plant)

Hour Beginning	Arrivals	Departures
06:00	0	0
07:00	4	3
08:00	4	3
09:00	4	4
10:00	3	3
11:00	4	4
12:00	3	3
13:00	4	4
14:00	4	4
15:00	4	4
16:00	3	3
17:00	3	3
18:00	0	2
19:00	0	0
20:00	0	0
21:00	0	0
Total	40	40

Daily Vehicle Profile associated with Pipeline construction during the Peak Month

16.6.39 It is anticipated that all pipeline workers associated with the construction of the Natural gas connection will arrive at their relevant compound hour beginning 06:00 and depart hour beginning 17:00 (see Table 16A-28).

Table 16A- 28: Pipeline Daily Vehicle Profile during Peak Month of Construction

Hour Beginning	Arrivals	Departures
06:00	60	0
07:00	0	0
08:00	0	0
09:00	0	0
10:00	0	0
11:00	0	0
12:00	0	0
13:00	0	0
14:00	0	0
15:00	0	0
16:00	0	0
17:00	0	60
18:00	0	0
19:00	0	0
20:00	0	0
21:00	0	0
Total	60	60

16.6.40 At the peak of construction (Months 22 - 26) it is expected there will be 5 HGV deliveries per day (10 HGV movements) associated with pipeline construction spread evenly over the working day. HGV deliveries associated with pipeline construction will go straight to the relevant compound.

Abnormal Indivisible Loads

16.6.41 Abnormal indivisible loads (AILs) will be required to import large modular plant and components for the construction of the Low Carbon Electricity Generating Station.

16.6.42 The Highways England document ‘Water preferred policy guidelines for the movement of abnormal indivisible loads’ published in January 2016, states that it is government policy to avoid road transport as far as possible by using alternative modes, such as water. This is the intention of the Proposed Development and was one of the drivers for this Site being selected for the Proposed Development.

16.6.43 It is proposed to import large modular plant and components for the Low-Carbon Electricity Generating Station using the facilities at the Redcar Bulk Terminal (RBT) (see Section 5.3 in Chapter 5, Construction Programme and Management, ES Volume I, Document Ref. 6.2 for more details).

16.6.44 AILs weighing less than 100 tonnes may also be brought in through Teesport. In addition, Teesport will used to import containerised plant or components. Both AILs and containerised loads which would then be moved to the PCC Site using HGVs via Tees Dock Road and the internal Teesworks road network north of Lackenby Steelworks.

Operational Period

16.6.45 Once operational there could be a maximum of approximately 60 full-time staff working in three shifts (06:00 – 14:00 hours, 14:00 – 22:00 hours and 22:00 – 06:00 hours). In addition, there would be around 40 corporate staff based at the site working normal office hours (09:00 – 17:00 hours).

16.6.46 In addition, there will be HGV traffic generated by deliveries of operational and maintenance plant and equipment. However, this is expected to equate to a maximum of four HGVs per day. Fuel for the new power station will be natural gas imported to the PCC via pipeline and there will be no vehicular movements associated directly with this. Small quantities of back-up diesel would be delivered by road if refilling of storage tanks was required.

16.6.47 The full details for the expected hazardous substances and related quantities to be delivered and removed from the Proposed Development Site during the operational phase are not yet known but preliminary information has been compiled and it is estimated that there would be circa 1 HGV per day delivering chemicals and up to 5 HGV per day coming to remove waste (mainly acid wash effluent).

16.6.48 During an outage, it could be expected that up to 200 additional staff could be on-site on any one day. However, outages are expected to occur infrequently (once every 5 years) and are short lived (approximately 3 months). Therefore, it is considered that the effects of operational traffic would be negligible and a detailed assessment of the operational phase of the development is not proposed within the Transport Assessment.

Decommissioning

16.6.49 The scale of traffic generation associated with decommissioning of the power and carbon capture elements of the project in the year 2051 (assuming a 25-year operational life) would be significantly less than at the peak of construction. Coupled with the fact that decommissioning is too far in the future to enable a meaningful assessment at this current time it is not proposed to undertake an assessment of decommissioning in the Transport Assessment. It is likely to be covered by a DCO Requirement that will need to be discharged before any decommissioning works can commence.

Trip Distribution and Assignment

Trip Distribution

16.6.50 Construction of a power station and connections is a specialist trade, with a limited number of contractors experienced in this field. With such a large and specialised workforce required for construction, it is likely that much of the workforce will be sourced from beyond the daily commutable catchment area.

16.6.51 Indeed, experience at other similar construction sites has confirmed this and recent Transport Assessments prepared for other large power station proposals have allowed for a split of permanent home-based site staff and transient staff staying in temporary accommodation. From experience at other power stations, it is considered that around 60% of the construction workforce is likely to be sourced from elsewhere in the UK (and even abroad) and 40% would be permanent home-based residents. This has been agreed with RCBC and the HE during scoping.

16.6.52 The 60% transitory workers will either engage in short term rentals or will reside in B&B's, small hotels, caravan sites or private households, located in the vicinity of the development site. From experience elsewhere on similar types of construction sites, these staff prefer to locate as close to the site as possible to minimise travel time and costs. They also tend to find accommodation in groups and lift share to site (or use contractors' minibuses).

16.6.53 The distribution of the permanent resident construction workforce traffic to the network has been based on a gravity model and the number of those employed in construction in towns and cities (Table KS605UK, 2011 Journey to Work Census), within a 45-minute drive time of the site. The catchment area includes the districts of Redcar and Cleveland, Middlesbrough, Stockton-on-Tees, Hartlepool, Darlington, Sunderland and parts of County Durham. Table 16A-29 shows the permanent resident workforce distribution and the number of workers this equates to at the peak month of construction (Months 22 - 26).

Table 16A- 29: Permanent Resident Construction Workforce Distribution

District	Construction Worker Population (2011 Census)	Distance to Centroid (miles)	Weighting Factor (= 1 / d)	Pop. x Weighting Factor	Percentage Distribution	No. of Workers (Peak Month of Construction)
Darlington	3,743	22	0.045	170	5%	37
Durham	9,100	32	0.031	284	8%	60
Hartlepool	3,764	22	0.045	171	5%	37
Middlesbrough	4,620	6	0.167	770	22%	165
Redcar & Cleveland	4,976	4	0.250	1244	35%	262
Stockton-on-Tees	7,200	12	0.083	600	17%	127
Sunderland	9,345	35	0.029	267	8%	60

16.6.54 In contrast the distribution of the transitory workforce has been undertaken based on a gravity model and the estimated number of accommodation beds available in the surrounding districts within a 30-minute travelling distance of the site. This information has been obtained from the Visit Britain Accommodation Stock Audit 2016 and is included in Annex 16A.4. Table 16A-30 shows the transitory workforce distribution and the number of workers this equates to at the peak month of construction.

Table 16A- 30: Transitory Construction Workforce Distribution

District	No. of Accommo-dation Beds	Distance to Centroid (miles)	Weighting Factor (= 1 / d)	Pop. x Weighting Factor	Percentage Distribution	No. of Workers (Peak Month of Construction)
Darlington	3,545	22	0.045	161	13%	146
Hartlepool	946	22	0.045	43	3%	34
Middlesbrough	2,870	6	0.167	478	37%	415
Redcar & Cleveland	1,484	4	0.250	371	29%	325
Stockton-on-Tees	2,711	12	0.083	226	18%	202

Trip Assignment

16.6.55 Five key routes have been identified that are most likely to be taken by construction workers travelling to and from work and are as follows:

- Route 1: Via A66 onto A1085 Trunk Road, Site Access;
- Route 2: Via A1085 Broadway onto A1085 Trunk Road, Site Access;
- Route 3: Via B1380 High Street onto A1053 Greystone Road, A1085 Trunk Road, Site Access;
- Route 4: Via A174 onto A1053 Greystone Road, A1085 Trunk Road, Site Access; and
- Route 5: Via A1085 Trunk Road, Site Access.

16.6.56 The key routes are shown in Annex 16A.5.

16.6.57 The assignment of the permanent resident construction workforce to the network is summarised in Table 16A-31 and Annex 16A.6.

16.6.58 The assignment of the transitory construction workforce to the network is summarised in Table 16A-32 and Annex 16A.6.

16.6.59 For assessment purposes, it is assumed that all construction HGVs associated with the Electricity Generating Station and Carbon Capture Plant would arrive / depart the site from Tees Dock Road via the A1053 / A66 / Tees Dock Road roundabout. At the junction with the A1053 / A66 / Tees Dock Road, it is assumed that 50% would head west on the A66 and 50% would head south on the A1053 then west on the A174. A plan of the HGV Routes is shown in Figure 16-2: HGV Routes to and from Site (ES Volume II, Document Ref. 6.3).

Table 16A- 31: Catchment Area and Route Assignment for Permanent Resident Workforce

Route	Catchment Area	% of Construction Worker Vehicles
Route 1: Via A66 onto A1085 Trunk Road turning left into Site Access	Redcar & Cleveland Darlington; Durham; Hartlepool; Middlesbrough; Stockton-on-Tees; Sunderland.	50%
Route 2: Via A1085 Broadway onto A1085 Trunk Road turning left into Site Access	Redcar & Cleveland; Middlesbrough	17%
Route 3: Via B1380 High Street onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	Redcar & Cleveland; Middlesbrough	7%
Route 4: Via A174 onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	Middlesbrough	6%
Route 5: Via A1085 Trunk Road turning right into Site Access	Redcar & Cleveland	20%

Table 16A- 32: Catchment Area and Route Assignment for Transient Workforce

Route	Catchment Area	% of Construction Worker Vehicles
Route 1: Via A66 onto A1085 Trunk Road turning left into Site Access	Darlington; Hartlepool; Middlesbrough; Stockton-on-Tees.	49%
Route 2: Via A1085 Broadway onto A1085 Trunk Road turning left into Site Access	Middlesbrough	22%
Route 3: Via B1380 High Street onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	-	0%
Route 4: Via A174 onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	-	0%
Route 5: Via A1085 Trunk Road turning right into Site Access	Redcar & Cleveland	29%

16.6.60 As set out in Table 16A-32, it is not expected that any Transient Workers will route to the south west via the A174 given the identified districts within a 30 minute travelling distance of the site are located to the west and north west of the site and would therefore utilise the A66 towards the A19 and the A1085.

16.7 Growth Factors

16.7.1 For the purposes of this assessment, the anticipated peak traffic generation during the construction period would occur in 2024 on the basis that construction of the Proposed Development begins in Q4 2022. The assessment year for this TA, where the traffic impact would be greatest, is therefore 2024.

16.7.2 Traffic growth factors for the Redcar and Cleveland District have been obtained from TEMPRO Version 7.2 software. The use of TEMPRO software is generally recognised as the industry standard tool for determining traffic growth factors to apply to base flows in order to estimate future year traffic flows.

16.7.3 The TEMPRO software provides a local adjustment to the National Trip End Model to provide localised growth factors for geographical areas.

16.7.4 The local growth factors to be applied to the 2019 Base Flows are shown in Table 16A-33.

16.7.5 It should be noted that we have not made any reduction in the TEMPRO growth factors to allow for the additional committed development traffic, and therefore this provides a more robust assessment.

Table 16A- 33: Growth Factors to be applied to Base Flows

Road Type	Year	AM Peak	PM Peak	All Day
Principal	2019-2024	1.0479	1.0459	1.0475
Trunk	2019-2024	1.0549	1.0528	1.0544

16.8 Committed Developments

Overview

16.8.1 The following committed or likely developments have been identified and incorporated into the future baseline and future year assessment. The list of committed developments has been reviewed and updated where required since the preparation of the PEI Report:

- 1,700 MW gas-fired CCGT generating station on Wilton International Complex, Redcar (EN010082);
- 550 Residential Unit Development, Kirkleatham Lane, Redcar (R/2016/0663/OOM);
- The York Potash Harbour Facilities Order, Redcar (TR030002);
- Minerals Processing and Refining Facility, Wilton International Complex, Redcar (R/2017/0876/FFM);

- Dogger Bank Teesside A & B (EN010051);
- Teeswork Development Zone, South Tees Development Corporation, Redcar;
- 1,250 Residential Unit Development, Low Grange Farm, South Bank (R/2014/0372/OOM);
- York Potash Materials Handling Facility (R/2014/0627/FFM);
- Redcar Energy Centre (R/2020/0411/FFM); and
- South Bank, Teeswork (R/2020/0357/OOM).

Tees CCPP Project (Wilton International Complex, Redcar)

16.8.2 A DCO application (PINS Ref: EN010082) for a 1,700 MW gas-fired generating station within the Wilton International Complex received DCO consent in April 2019.

16.8.3 The DCO application was supported by a Transport Assessment prepared by Mayer Brown in October 2017 and included an estimate of operational vehicle trips for the AM and PM peak periods.

16.8.4 Table 16A-34 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods.

Table 16A- 34: Tees CCPP Project Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	0	4	1
07:00	0	3	4
08:00	0	31	10
09:00	0	0	0
16:00	0	0	0
17:00	0	21	31
18:00	0	4	1
19:00	0	3	4

550 Residential Unit Development (Kirkleatham Lane, Redcar)

16.8.5 Outline planning permission (R/2016/0663/OOM) was granted in May 2017 for up to 550 residential units on land to the north of Kirkleatham Business Park and west of Kirkleatham Lane.

16.8.6 The planning application was supported by a Transport Assessment prepared by WYG Transport in October 2016 and includes an estimate of vehicle trips for the AM and PM peak periods.

16.8.7 Table 16A-35 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods.

Table 16A- 35: 550 Residential Development Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	0	0	0
07:00	0	0	67
08:00	0	0	97
09:00	0	0	60
16:00	0	0	83
17:00	0	0	95
18:00	0	0	64
19:00	0	0	0

York Potash Harbour Facilities Order

16.8.8 The York Potash Harbour Facilities Order (PINS Ref: TR030002) gained DCO consent in July 2016. The application was supported by a Transport Assessment prepared by Royal Haskoning DHV, dated December 2014.

16.8.9 Following a review of the Transport Assessment construction of the Harbour facilities was due to commence in 2017 and last 17 months generating 140 two-way construction worker vehicle movements per day and 66 two-way HGV movements per day. However it is our understanding that construction is yet to begin on-site.

16.8.10 To ensure a worst case for assessment, it has been assumed that construction of the Harbour facilities will take place during the peak month of construction associated with the Net Zero Teesside Project.

16.8.11 Table 16A-36 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods.

Table 16A- 36: York Potash Harbour Facilities Order Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	0	0	0
07:00	6	6	0
08:00	76	76	33
09:00	6	6	0
16:00	6	6	0
17:00	76	76	33
18:00	6	6	0
19:00	0	0	0

16.8.12 The Transport Assessment states that once operational, a peak demand of 10 employees would be required on-site at any one time and that the traffic

impact associated with the operational phase would therefore be inconsequential.

Mineral Processing and Refining Facility

16.8.13 Full planning permission (R/2017/0876/FFM) was granted in January 2018 for a mineral processing and refining facility on land at the Wilton International Complex, Redcar.

16.8.14 The planning application was supported by a Transport Assessment prepared by WYG Transport in November 2017 and includes an estimate of vehicle trips for the AM and PM peak periods.

16.8.15 Table 16A-37 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods.

Table 16A- 37: Mineral Processing and Refining Facility Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	5	55	19
07:00	0	0	0
08:00	4	78	23
09:00	0	2	0
16:00	0	4	0
17:00	4	34	21
18:00	5	38	23
19:00	0	0	0

Dogger Bank Teesside A&B

16.8.16 Development consent was granted in August 2015 (PINS Ref: EN010051) for the construction of two offshore windfarms including the onshore elements for connection to the national grid network.

16.8.17 The planning application was supported by a Transport Assessment prepared by Royal Haskoning DHV in February 2014 and includes an estimate of construction vehicle trips for the AM and PM peak periods.

16.8.18 To ensure a worst case for assessment, it has been assumed that construction of the Harbour facilities will take place during the peak month of construction associated with the Net Zero Teesside Project.

16.8.19 Table 16A-38 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods.

Table 16A- 38: Dogger Bank A&B Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	0	0	0
07:00	0	62	146
08:00	0	36	65
09:00	0	36	65
16:00	0	36	65
17:00	0	98	211
18:00	0	0	0
19:00	0	0	0

Teesworks Development Zone

16.8.20 The Teesworks site covers 4,500 acres and has been identified for large scale modern industry, innovative manufacturing and global distribution. The site comprises of a number of zones (Dorman Point, Steel House, Long Acres, The Foundry) that will be built out in phases up to 2033.

16.8.21 The forecasted floorspace to be built out by the end of 2024, which coincides with the Peak of Construction for the Proposed Development, in each of the zones is as follows:

- Dorman Point: 77,109 sqm of B2 Industrial B8 Warehouse Land Uses assuming 50/50 split;
- Steel House: 12,077 sqm of B1 Office;
- Long Acres: 52,955 sqm of B2 Industrial B8 Warehouse Land Uses assuming 50/50 split; and
- The Foundry: 59,458 sqm of B2 Industrial B8 Warehouse Land Uses assuming 50/50 split.

16.8.22 To arrive at a vehicle trip generation for these four zones, the TRICs database has been interrogated, with the assignment of trips to the network being based on the 2011 Journey to Work census data.

16.8.23 It is assumed that Steel House, Long Acres and The Foundry will be accessed via the A1085 / West Coatham Lane Roundabout. It is assumed Dorman Point will be accessed via the A66 / A1053 / Tees Dock Road roundabout.

16.8.24 Table 16A-39 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods.

Table 16A- 39:Teesworks Development Zone Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	415	484	276
07:00	495	546	311
08:00	635	664	372
09:00	482	511	287
16:00	515	555	313
17:00	624	642	358
18:00	275	297	167
19:00	222	258	147

1,250 Residential Unit Development (Low Grange Farm, South Bank)

16.8.25 Outline planning permission (R/2014/0372/OOM) was granted in March 2016 for up to 1,250 residential units on land at Low Grange Farm, South Bank.

16.8.26 The planning application was supported by a Transport Assessment prepared by ARP Associates in December 2014 and includes an estimate of vehicle trips for the AM and PM peak periods.

16.8.27 Table 16A-40 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods.

Table 16A- 40: 1,250 Residential Development Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	0	0	0
07:00	27	94	17
08:00	44	155	30
09:00	28	97	40
16:00	36	127	33
17:00	48	166	45
18:00	42	147	37
19:00	0	0	0

York Potash Materials Handling Facility

16.8.1 The York Potash Materials Handling Facility gained planning consent in August 2015 (R/2014/0627/FFM). The application was supported by a Transport Assessment prepared by Royal Haskoning DHV, dated February 2015.

16.8.1 Table 16A-41 below summarises the estimated trip generation associated with the development once operational for the AM and PM network peak periods.

Table 16A- 41: York Potash Minerals Handling Facility Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	59	59	36
07:00	38	38	24
08:00	4	4	2
09:00	4	4	2
16:00	60	60	36
17:00	20	20	12
18:00	3	3	2
19:00	3	3	2

Redcar Energy Centre

16.8.2 A full planning application for the proposed Redcar Energy Centre to be located at the Redcar Bulk Terminal was submitted for planning in August 2020 but is yet to be determined (R/2020/0411/FFM). The application was supported by a Transport Assessment prepared by RPS Group, dated July 2020.

16.8.3 Table 16A-42 below summarises the estimated trip generation associated with the development once operational for the AM and PM network peak periods.

Table 16A- 42: Redcar Energy Centre Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	24	16	6
07:00	24	16	6
08:00	29	27	7
09:00	24	24	6
16:00	24	24	6
17:00	29	27	7
18:00	24	16	6
19:00	24	16	6

South Bank, Teeswork Development Zone

16.8.4 Outline planning consent (R/2020/0357/OOM) was granted in December 2020 for up to 418,000 sqm of B2 / B8 land uses at South Bank. The application was supported by a Transport Assessment prepared by ARUP, dated July 2020.

16.8.5 The Transport Assessment states that the site would be built out over a period of 6 years between 2023 and 2028 however only vehicle generations associated with full build out in 2028 have been provided. A linear approach has therefore been applied to derive traffic generations in 2024.

16.8.6 Table 16A-43 below summarises the estimated trip generation associated with the development in 2024 for the AM and PM network peak periods.

Table 16A- 43: South Bank Teeswork Two-Way Vehicle Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00			
07:00			
08:00	59	161	81
09:00			
16:00			
17:00	58	136	69
18:00			
19:00			

16.8.7 Further developments as set out in Chapter 24: Cumulative and Combined Effects (ES Volume I, Document Ref. 6.2) have been considered but not included within the future baseline for reasons as set out in Table 16A-44.

Table 16A- 44: Projects considered but not included within the Assessment

Application Reference	Local Planning Authority	Description	Material Consideration
R/2008/0671/EA	Redcar	Construction of 300MW Biomass Fired Power Station	A review of the Transport Chapter identifies that the additional movements to be generated are considered insignificant.
R/2015/0393/RSM	Redcar	Residential development (188 dwellings), land at Stokesley Road – Guisborough	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2016/0326/OOM	Redcar	Residential development (400 dwellings), land north of Woodcock Wood and west of Flatts Lane, Normanby.	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2014/0455/OOM	Redcar	Residential development (126 dwellings), former Redcar & Cleveland college site - Redcar Lane, Redcar.	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2019/0403/FFM	Redcar	Refurbishment of 289 dwelling houses and construction of 32 dwellings, land at Caernarvon Close, Somerset Road, Cheddar Close, Avondale Close, Monmouth Road, Aberdare Road, Bridgend Close, Grangetown.	Transport impact considered to be insignificant as no TA/TS submitted in support of application. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows.

Application Reference	Local Planning Authority	Description	Material Consideration
R/2019/0150/FFM	Redcar	Erection of 17 industrial units, Kirkleatham Business Park, off Troisdorf Way, Kirkleatham	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2019/0045/FFM	Redcar	Proposed storage and distribution warehouse, land adjacent to SK Chilled Foods Ltd, Nelson Street, South Bank.	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2016/0484/FFM	Redcar	Proposed anaerobic biogas production facility and combined heat and power plant, former Croda Site Wilton International Redcar	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2016/0201/FFM	Redcar	Residential Development (51 dwellings), land at Fabian Road, Eston.	Transport impact considered to be insignificant as no TA/TS submitted in support of application. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2019/0767/OOM	Redcar	Outline application for the construction of an energy recovery facility (ERF) and associated development, Grangetown Prairie Land east of John Boyle Road and west of Tees Dock Road, Grangetown.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2018/0098/FF	Redcar	Construction and operation of a 12 MWe peaking power generation plant, land bound by A66 and Tees Dock Road, Grangetown.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2017/0564/FF	Redcar	Installation of an energy storage facility (up to 49.9 MW), land at Crow Lane adjacent to old Hall Farm and	Transport impact considered to be insignificant as no TA/TS submitted in support of application.

Application Reference	Local Planning Authority	Description	Material Consideration
		(A1053) Greystones Road Old Lackenby, Eston.	
R/2019/0183/OOM	Redcar	Residential Development (52 dwellings), land south of Spencerbeck Farm Normanby Road, Ormesby.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2017/0815/FF	Redcar	Extension to existing car park (14 additional spaces), land at coast & country housing office corner of Kingsley Road & Shakespeare Avenue, Grangetown	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2019/0031/FFM	Redcar	Construction and operation of a plastic conversion facility, former Croda Site Wilton International, Redcar.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2018/0587/FFM	Redcar	Refurbishment of redundant 'coal rail pit' for handling polysulphate products, potash conveyor, Tees Dock Terminal, Teesport	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2017/0906/OOM	Redcar	Outline planning application for an overhead conveyor and associated storage facilities in connection with the York potash project, land between Wilton International and Bran Sands, Redcar	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2016/0502/FFM	Redcar	Erection of workshop, Wilton International Wilton Redcar.	Transport impact considered to be insignificant as no

Application Reference	Local Planning Authority	Description	Material Consideration
			TA/TS submitted in support of application.
R/2015/0466/FF	Redcar	Proposed energy centre, land at Huntsman Polyurethanes Wilton Site, Lazenby.	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2014/0820/FFM	Redcar	24 industrial units, land at Tod Point Road, Redcar.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2019/0427/FFM	Redcar	Preparation of land for Regeneration and Development, land at former South Bank Works, Grangetown	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2020/0270/FFM	Redcar	Engineering operations including widening of Eston Road, formation of new roundabout and internal access roads, land at and adjoining Eston Road and A66	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2020/0318/FFM	Redcar	Engineering operations associated with ground remediation and preparation, land at Prairie Site, Grangetown	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2020/0465/FFM	Redcar	Demolition of existing buildings/structures and engineering operations associated with ground remediation and preparation of land for development, land at Metals Recovery Area, North West of PD Ports	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2006/0433/00	Redcar	Outline application for development of a container terminal, land at Teesport, Grangetown	Planning application has expired.
18/0634/FUL	Middlesbrough	Residential Development (89 Dwellings),land at Roworth Road, Middlesbrough.	Project is considered to fall outside the area of influence for the Proposed Development. Any

Application Reference	Local Planning Authority	Description	Material Consideration
			traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
17/0347/FUL	Middlesbrough	Residential Development (106 dwellings), land To The South Of College Road, Middlesbrough	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
H/2019/0275	Hartlepool	Energy Recovery (energy from waste) Facility, land to the south of Tofts Road, West Graythorp, Hartlepool.	Project is considered to fall outside the area of influence for the Proposed Development.
H/2014/0428	Hartlepool	Residential Development (1,200 dwellings), land south of Elwick Road, High Tunstall, Hartlepool.	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
19/2161/FUL	Stockton	Erection of new plant, new buildings and extensions to existing buildings, Lianhetech, Seal Sands, Seal Sands Road	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
15/2187/FUL	Stockton	Proposed installation of a Gaseous Oxygen (GOX) Pipeline associated with Tees Valley 2 (TV2) Renewable Energy Facility (REF), Air Products Plc Huntsman Drive, Seal Sands, Middlesbrough	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
15/2181/FUL	Stockton	Erection of new plants for supply of steam and	Transport impact considered to be

Application Reference	Local Planning Authority	Description	Material Consideration
		compressed air including 3 boilers, 3 compressors, a water purification plant, storage bunds for chemicals, North Tees Site Sabic UK Petrochemicals Seaton Carew Road, Port Clarence, Stockton-On-Tees,	insignificant as no TA/TS submitted in support of application.
15/2799/FUL	Stockton	Construct and operate an extension to the existing Materials Recovery Facility (MRF) building to process material produced by the existing MRF operation, Impetus Waste Management, Huntsman Drive, Seal Sands, Stockton-on-Tees	Transport impact considered to be insignificant as no additional traffic movements to be generated.

Combined Committed Development Flows

16.8.8 The total committed development flows for the key junctions within the Study Area for the 2024 AM and PM peak periods is shown in Table 16A-45.

Table 16A- 45: 2024 Total Committed Development Two-Way Flows

Hour Beginning	A1085 / West Coatham Lane / Site Access (MCC 1)	A1085 / A1053 (MCC 2)	A1053 / A174 / B1380 (MCC 3)
06:00	503	618	338
07:00	590	765	575
08:00	851	1232	720
09:00	544	680	460
16:00	641	812	536
17:00	859	1220	882
18:00	355	511	300
19:00	249	280	159

16.9 Identification of Peak Hours for Assessment

Identification of Network Peak Hours

16.9.1 In order to identify the peak hour for assessment, it is necessary to combine base plus committed development flows with development flows to determine which hour in the peak periods displays the highest combined flows. This approach was agreed with RCBC and HE in their scoping responses (see Annex 16A.0). An overall network peak hour has therefore been selected based on total traffic arriving at each of the three key junctions as follows:

- MCC 1: A1085 / West Coatham Lane / Site Access Roundabout;
- MCC 2: A1085 / A1053 Roundabout; and
- MCC 3: A1053 / A174 / B1380 Roundabout.

16.9.2 Table 16A-46 below summarises how the peak hour has been selected and identifies hour beginning 08:00 as the AM Peak hour for assessment and hour beginning 17:00 as the PM Peak hour for assessment (in bold text).

Table 16A- 46: Identification of Peak Hours for Assessment

Hour Beginning	2024 Base				Committed Development				Construction Flows				Total Flows			
	MCC1	MCC2	MCC3	Total	MCC1	MCC2	MCC3	Total	MCC1	MCC2	MCC3	Total	MCC1	MCC2	MCC3	Total
06:00	814	1,841	2,405	5,060	503	618	338	1,459	330	246	17	594	1,648	2,705	2,761	7,113
07:00	1,391	2,999	5,067	9,456	590	765	575	1,930	203	155	15	373	2,183	3,919	5,656	11,759
08:00	1,760	3,582	5,362	10,705	851	1,232	720	2,803	53	43	7	103	2,664	4,858	6,089	**13,610**
09:00	1,304	2,279	3,355	6,937	544	680	460	1,684	45	38	6	89	1,893	2,996	3,821	8,710
16:00	1,924	3,412	5,492	10,829	641	812	536	1,989	53	43	7	103	2,618	4,267	6,035	12,921
17:00	1,872	3,334	5,137	10,343	859	1,220	882	2,961	195	150	14	359	2,926	4,704	6,033	**13,663**
18:00	951	1,922	3,176	6,049	355	511	300	1,166	285	214	16	515	1,591	2,647	3,492	7,731
19:00	595	1,090	1,828	3,512	249	280	159	688	135	101	7	243	979	1,471	1,994	4,444

16.9.3 The total two-way construction worker vehicle generations and HGV generations for the AM (08:00 – 09:00) and PM peak (17:00 – 18:00) hours associated with the Proposed Development construction during the peak month (Months 22 - 26) are provided in Annex 16A.7.

Assessment Years

16.9.4 The following assessment scenarios are considered within the Transport Assessment:

- 2019 Baseline;
- 2024 Baseline (Future Baseline) plus Committed Development; and
- 2024 Baseline plus Committed Development plus Peak of Construction.

16.10 Junction Impact Assessment

MCC1: A1085 / West Coatham Lane / Site Access Roundabout

16.10.1 The A1085 / West Coatham Lane / Site Access Roundabout has been modelled using ARCADY from the TRL Junctions 9 software package. Within the software, the time periods assessed are divided into a number of 15-minute time segments in order to simulate the likely arrival pattern of traffic more effectively. The results returned in the models are the Ratio of Flows to Capacity (RFC) and queue length based on Passenger Car Units (PCU).

16.10.2 RFC values between 0.00 and 0.85 are generally accepted as representing stable operating conditions, values between 0.85 and 1.00 represent variable operation (i.e. possible queues building up at the junction during the period under consideration and increases in vehicle delay moving through the junction). RFC values in excess of 1.00 represent overloaded conditions (i.e. congested conditions).

16.10.3 Level of Service (LOS) is an additional measure of junction performance, utilising letters A to F, with the definitions below being typical:

- A = Free flow;
- B = Reasonably free flow;
- C = Stable flow;
- D = Approaching unstable flow;
- E = Unstable flow; and
- F = Forced or breakdown flow.

16.10.4 The results of the assessment for the 2019 baseline scenario are outlined in Table 16A-47 below, with full ARCADY modelling output available at Annex 16A.8 for reference.

Table 16A- 47: A1085 / West Coatham Lane / Site Access Roundabout Assessment Results – 2019 Baseline

Arm	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2019 Baseline							
A - A1085 N	0.6	3.21	0.37	A	0.3	2.78	0.25	A
B - W Coatham Ln	0.3	3.30	0.23	A	0.1	2.68	0.12	A
C - Wilton Site Access	0.0	3.26	0.01	A	0.0	2.21	0.01	A
D - A1085 S	0.7	3.30	0.40	A	1.8	5.30	0.64	A
E - Mini Chef Stop / York Potash	0.0	0.00	0.00	A	0.0	0.00	0.00	A
F - Site Access	0.0	2.81	0.01	A	0.0	2.72	0.02	A

16.10.5 The table above highlights that the junction operates within its theoretical capacity when accounting for the 2019 baseline traffic across both the AM and PM peak periods. RFC values for all arms is below the capacity-exceeding threshold (maximum 0.40 during the AM peak, and 0.64 during the PM peak). Queuing and Delay are also minimal.

16.10.6 The results of the 2024 Baseline plus Committed Development scenario are outlined in Table 16A-48 below.

Table 16A- 48: A1085 / West Coatham Lane / Site Access Roundabout Assessment Results – 2024 Baseline Plus Committed Development

Arm	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2024 Baseline + Committed Developments							
A - A1085 N	1.2	4.57	0.54	A	0.6	3.95	0.37	A
B - W Coatham Ln	0.4	4.02	0.27	A	0.2	3.45	0.16	A
C - Wilton Site Access	0.0	3.95	0.01	A	0.0	2.82	0.03	A
D - A1085 S	3.0	7.80	0.74	A	4.0	9.49	0.80	A
E - Mini Chef Stop / York Potash	0.0	0.00	0.00	A	0.1	4.22	0.08	A
F - Site Access	0.1	2.74	0.09	A	0.6	3.65	0.35	A

16.10.7 Table 16A-48 highlights that the junction operates within its theoretical capacity for the scenario 2024 Base plus Committed Development. RFC values for all six arms is below the capacity exceeding threshold (maximum 0.74 during the AM peak, and 0.80 during the PM peak). Queuing and Delay are also minimal.

16.10.8 The results of the 2024 Baseline plus Committed Development plus Peak of Construction scenario are outlined in Table 16A-49 below.

Table 16A- 49: A1085 / West Coatham Lane / Site Access Roundabout Assessment Results – 2024 Baseline Plus Committed Development Plus Peak of Construction

Arm	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2024 Baseline + Committed + Peak of Construction							
A - A1085 N	1.2	4.67	0.55	A	0.7	4.29	0.39	A
B - W Coatham Ln	0.4	4.06	0.28	A	0.2	3.69	0.17	A
C - WIlton Site Access	0.0	3.98	0.01	A	0.0	2.99	0.03	A
D - A1085 S	3.3	8.38	0.76	A	4.3	10.03	0.81	B
E - Mini Chef Stop / York Potash	0.0	0.00	0.00	A	0.1	4.28	0.08	A
F - Site Access	0.1	2.68	0.10	A	0.9	4.34	0.47	A

16.10.9 Table 16A-49 above highlights that the junction operates within its theoretical capacity for the scenario 2024 Base plus Committed plus Peak of Construction. RFC values for all six arms is bellowing the capacity exceeding threshold (maximum 0.76 during the AM peak, and 0.81 during the PM peak). Queuing and delays are also minimal.

16.10.10 The impact upon queuing as a result of the development peak construction traffic is minor, with a maximum increase of 0.3 PCU during both the AM and PM Peaks at Arm D – A1085 S.

16.10.11 The impact upon delay as a result of the development peak construction traffic is minor, with a maximum increase of 0.58 seconds during the AM peak (Arm D – A1085 S) and 0.69 seconds during the PM peak (Arm F – Site Access).

16.10.12 It can therefore be concluded that the A1085 / West Coatham Lane / Site Access Roundabout can satisfactorily accommodate construction traffic at the peak of construction in 2024 without the need to undertake any off-site highway improvement works.

MCC2: A1085 / A1053 Roundabout

16.10.13 The assessment of the A1085 / A1053 Roundabout has been undertaken using LinSig V3.

16.10.14 LinSig is used to model the operation of signalised junctions and reports a Degree of Saturation (DoS) for each link (i.e. demand / available capacity) and MMQ recorded in Passenger Car Units (PCUs). A DoS between 0% and 90% is generally considered as representing stable operating conditions, values between 90% and 100% represents a constrained scenario (i.e. possible queues building up at the junction and increases in vehicle delay). A DoS beyond 100% represents overloaded conditions and a junction working beyond theoretical capacity.

16.10.15 The results of the assessment for the 2019 baseline scenario are outlined in Table 16A-50 below, with full LINSIG modelling output available at Annex 16A.9 for reference.

Table 16A- 50: A1085 / A1053 Roundabout Assessment Results – 2019 Baseline

Approach	AM		PM	
	PRC = 44.5		PRC = 16.8	
	DoS %	Max Queue (PCU)	DoS %	Max Queue (PCU)
A1085 Trunk Road (N) Ahead Left	43.7%	6.8	49.1%	6.3
A1085 Trunk Road (N) Ahead	44.1%	7.4	50.8%	7.0
Willton Works Access Ahead Left	1.8%	0.0	1.8%	0.0
Willton Works Access Ahead	2.4%	0.0	4.3%	0.0
A1053 Greystone Stone Ahead Left	53.8%	10.3	21.7%	3.1
A1053 Greystone Stone Ahead	53.7%	10.2	22.0%	3.2
A1053 Greystone Stone Ahead	20.4%	3.0	21.6%	3.0
A1085 Trunk Road (S) Ahead Left	12.8%	0.1	8.5%	0.0
A1085 Trunk Road (S) Ahead	9.6%	0.1	12.9%	0.1
A1053 - Tees Dock Road Left	36.6%	5.9	56.1%	10.8
A1053 - Tees Dock Road Ahead Left	36.7%	5.8	74.4%	17.5

16.10.16 Table 16A-50 above highlights that the junction operates well within its theoretical capacity in the 2019 baseline traffic scenario. All approaches show a DoS of below 60%, with minimal queuing.

16.10.17 Table 16A-51 below outlines the results of the assessment for the 2024 Baseline Plus Committed Development scenario.

Table 16A- 51: A1085 / A1053 Roundabout Assessment Results – 2024 Baseline Plus Committed Development

Approach	AM		PM	
	PRC = 20.4		PRC = -2.9	
	DoS %	Max Queue (PCU)	DoS %	Max Queue (PCU)
A1085 Trunk Road (N) Ahead Left	64.1%	11.9	77.7%	13.8
A1085 Trunk Road (N) Ahead	62.1%	12.1	72.7%	13.7
Willton Works Access Ahead Left	3.9%	0.0	5.5%	0.0
Willton Works Access Ahead	3.7%	0.0	4.7%	0.0
A1053 Greystone Stone Ahead Left	72.9%	17.0	48.3%	7.8
A1053 Greystone Stone Ahead	69.7%	15.7	38.6%	5.9
A1053 Greystone Stone Ahead	35.8%	5.7	18.2%	2.4
A1085 Trunk Road (S) Ahead Left	18.4%	0.1	10.9%	0.1
A1085 Trunk Road (S) Ahead	14.4%	0.1	15.3%	0.1
A1053 - Tees Dock Road Left	65.0%	12.4	68.7%	15.3
A1053 - Tees Dock Road Ahead Left	64.5%	12.0	92.6%	31.5

16.10.18 Table 16A-51 above highlights that the growth in background traffic to 2024, alongside the addition of all Committed Development traffic, results in an inflation in both DoS and Max Queue figures across both the AM and PM peak periods. The level of DoS increase during the AM peak is a maximum of 28.4% at the Tees Dock Road Left approach, and 28.6% at the A1085 Trunk Road (N) Ahead Left approach during the PM peak, when compared to the 2019 baseline assessment. It should be noted however that the junction is still forecast to operate within its theoretical capacity.

16.10.19 The results of the 2024 Baseline plus Committed Development plus Peak of Construction scenario are outlined in Table 16A-52.

Table 16A- 52: A1085 / A1053 Roundabout Assessment Results – 2024 Baseline Plus Committed Development Plus Peak of Construction

Approach	AM		PM	
	PRC = 15.0		PRC = -3.2	
	DoS %	Max Queue (PCU)	DoS %	Max Queue (PCU)
A1085 Trunk Road (N) Ahead Left	71.0%	13.6	79.9%	15.7
A1085 Trunk Road (N) Ahead	67.7%	13.4	74.5%	15.0
Willton Works Access Ahead Left	2.6%	0.0	5.3%	0.0
Willton Works Access Ahead	5.1%	0.0	4.9%	0.0
A1053 Greystone Stone Ahead Left	74.8%	17.7	59.0%	8.5
A1053 Greystone Stone Ahead	68.3%	15.0	52.5%	7.3
A1053 Greystone Stone Ahead	39.4%	6.5	29.8%	3.6
A1085 Trunk Road (S) Ahead Left	18.8%	0.1	12.6%	0.1
A1085 Trunk Road (S) Ahead	14.4%	0.1	13.8%	0.1
A1053 - Tees Dock Road Left	66.3%	12.9	69.6%	15.8
A1053 - Tees Dock Road Ahead Left	65.7%	12.3	92.9%	31.8

16.10.20 Table 16A-52 above highlights that the addition of the development traffic at peak of construction has a minor impact upon the DoS and Max Queue figures across both the AM and PM peak periods. The level of DoS increase during the AM peak is a maximum of 6.9% at the A1085 Trunk Road (N) Ahead Left approach, and 13.9% at the A1053 Greystone Stone Ahead approach during the PM peak when compared to the previous scenario. In terms of queue, the maximum expected increase during the AM peak is 1.7 PCU at the A1085 Trunk Road (N) Ahead Left approach, with a respective increase of 1.9 PCU at the same approach during the PM peak, when compared to the 2024 Base plus Committed Development scenario.

16.10.21 It can therefore be concluded that the junction is still forecast to operate within its theoretical capacity when accounting for the development traffic. The impact upon the junction between the 2024 Baseline Plus Committed and 2024 Baseline Plus Committed Development plus Peak of Construction scenarios is minor, and

the addition of the peak volume of construction traffic should not be viewed as significantly detrimentally impacting upon the operation of the junction itself.

MCC 3: A1053 / A174 / B1380 Roundabout

16.10.22 Following a telephone call held with Highways England on the 21st December 2020, it was agreed that modelling of the A1053 / A174 / B1380 roundabout was not required as the number of construction vehicles passing through the junction during the AM and PM peak hours is less than 30 two-way vehicle movements (see Annex 16A.7).

16.11 Measures to Minimise Impact of Development

16.11.1 A number of mitigation measures have been identified to minimise the impact of development on the surrounding road network during construction.

Construction Worker Travel Plan

16.11.2 A Travel Plan is a management tool designed to minimise the negative impact of travel and transport on the environment by reducing congestion and improving air quality.

16.11.3 The aim of the Construction Worker Travel Plan will be to identify measures and establish procedures to encourage construction workers to adopt modes of transport which reduce reliance on single occupancy private car use. Measures will include promoting car sharing and crew buses.

16.11.4 The Framework Construction Worker Travel Plan is provided in Appendix 16B (ES Volume III, Document Ref. 6.4).

Construction Traffic Management Plan

16.11.5 The contractor will be required to prepare a Construction Traffic Management Plan (CTMP) which will be in accordance with the Framework CTMP and which will identify measures to control the routing and impact that HGVs will have on the local road network during construction. It is proposed that all construction HGVs will be required to arrive and depart the site via the A1053 / A66 / Tees Dock Road Roundabout.

16.11.6 The Framework Construction Traffic Management Plan is provided in Appendix 16C (ES Volume III, Document Ref. 6.4).

16.12 Conclusion

16.12.1 This Transport Assessment has been prepared to support an Application for Development Consent for the Proposed Development.

16.12.2 Network flows for the Study Area have been derived from traffic counts undertaken in 2019 by a specialist traffic count company.

16.12.3 Growth rates for the district have been obtained from TEMPRO software. The use of the TEMPRO software is generally recognised as the industry standard tool for determining traffic growth factors to apply to base flows in order to estimate future year traffic flows.

16.12.4 Committed developments have been identified in the area and incorporated into the future year analysis. No discounting for committed development has been included and therefore this represents a more robust assessment.

16.12.5 A profile of construction generation throughout the 51 month construction programme has been produced and the peak month identified in Year 2 (2024). The typical daily profile within the peak month has been calculated based on experience at other similar sites.

16.12.6 The assignment of traffic to the network has taken three forms. Firstly, HGV traffic has been assigned to the most direct route to the strategic network. The construction workers assignment has been split into permanent workforce and transient workforce.

16.12.7 In order to identify the correct time period for junction capacity assessment, base flows were combined with committed development flows and construction development flows to determine which hour in the peak periods displayed the highest combined flows. This identified the peak hours for assessment to be 08:00-09:00 and 17:00-18:00.

16.12.8 Junction Capacity Assessments have been undertaken at two key junctions within the Study Area at the peak month of construction in 2024. The modelling results show that both junctions would operate within capacity without the need to undertake any off Site highway improvement works.

16.12.9 In order to manage and mitigate the impact of construction traffic, a CWTP and CTMP would be implemented by the contractor and would be in place throughout the construction period. A framework CWTP and CTMP have been prepared and submitted as part of the DCO Application.

16.12.10 In summary it is concluded that the traffic and transportation impacts associated with the Proposed Development are temporary and relatively minor particularly when construction mitigation measures are implemented and will therefore not result in severe highway capacity or safety problems.

Annex 16A.0: TA Scoping and Responses

Net Zero Teeside Project

Transport Assessment Scoping Report

OGCI Climate Investments Holdings LLP

January 2020

Quality information

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Revision History

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0	January 2020	Final		P.Firth	Associate Director

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Figures

Tables

1. Introduction

AECOM has been commissioned by OGCI Climate Investments Holdings LLP to prepare a Transport Assessment in relation to a proposed application for a 2,100 MW combined cycle gas turbine (CCGT) generating station in Redcar, Teesside.

There are two possible site locations for the CCGT. These are summarised in Sections 1.1 and 1.2 below.

This scoping study sets out the methodology it is proposed to adopt within the Transport Assessment and has been prepared to seek the agreement of Redcar & Cleveland Borough Council, Stockton-on-Tees Borough Council and Highways England.

1.1 STDC Site Location

The first location for the proposed development will be constructed largely within the boundary of the former Sahaviriya Steel Industries UK Ltd (SSI) steelworks site, although it will also include a gas supply pipeline connection to the National Transmission System, CO_2 gathering network pipeline corridors and electrical connection corridors outside the SSI site. The site location is shown in Figure 1.

Figure 1. Site Location Plan – STDC Site

The proposed development is classed as a nationally significant infrastructure project and therefore will be subject of a Development Consent Order (DCO). The earliest start date for the construction of the proposed development is Q3 2022 with the construction programme due to last 48 months.

Natural gas will be used as the sole fuel for operation of the CCGT and will be supplied via a tie-in to the high pressure gas transmission network in the area. It is currently anticipated that this will be at the feeder from the Central Area Transmission System gas processing terminal to the north of the River Tees, approximately 3.7 km

west of the SSI site. An Above Ground Installation will be required at the connection point to the transmission system. The route corridor being considered for connection to the high-pressure transmission system is shown in Appendix A. It is anticipated that construction of the gas pipeline will last round 12 months.

In addition to the gas pipeline, a CO2 gathering network pipeline will be constructed to allow for the capture of CO2 generated by a number of industrial sources on Teesside. The route corridors being considered for the CO2 gathering network pipeline are shown in Appendix A. It is anticipated that construction of the CO2 gathering network pipeline and collection works will last around 24 months (12 months each).

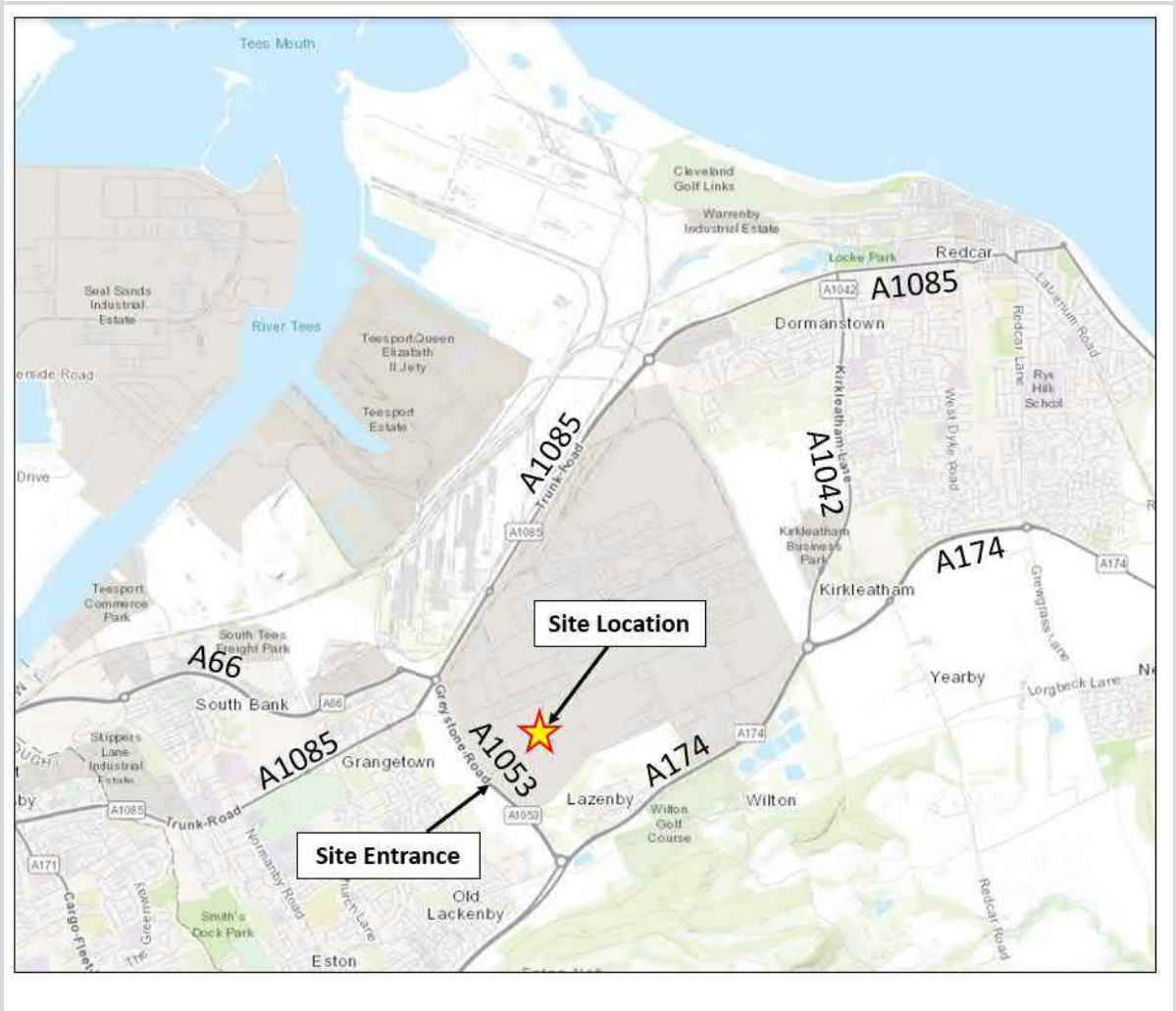
For a development of this scale, the assessment years for the Transport Assessment would generally be peak of construction and during operation. However given the proposed build programme is flexible and that uncertainty exists as to when the CCGT would be built out, this presents challenges as to what is a 'realistic' worst case scenario that can be used as the basis of assessment.

Following detailed discussions with the applicant, it was agreed that a single phase build lasting 48 months, starting in Q3 2022 and ending Q2 2026 is considered to be the 'realistic' worst-case scenario for assessment purposes.

1.2 Wilton Site Location

The second potential site is on the previously approved Tees Combined Cycle Power Plant Project site, on land at the Wilton International Site, Teesside (see Figure 2). This new project would replace the previous one with a slightly larger CCGT.

Figure 2. Site Location Plan – Wilton Site



The Wilton Site also already has planning consent for the Tees Combined Cycle Power Plant Project. This comprised a natural gas fired Combined Cycle Gas Turbine (CCGT) generating station with an output capacity of

up to 1,700 MWe. The station included up to two gas turbine units, two steam turbine units, ancillary plant and equipment located.

The Wilton site is located within the wider Wilton International Site, which is made up of around 800 hectares of development land with deemed planning permission for heavy industrial use, brownfield land and light industrial land. The surrounding area is highly industrialised with port facilities, oil refineries and chemical worksntly less than those used in this assessment.

The site is accessed via a left in / left out priority junction on the north side of the 1053 dual carriageway road (Greystone Road), which forms part of the strategic trunk road network. The A1053 connects to the A174 to the south and A66 Tees Dock Road to the north. The A174 provides a link to the A19 to the south which in turn links to the A1(M).

Vehicles wanting to turn right into the site therefore have to undertake a U-turn at the A1053/ A66/A1053 Westgate Roundabout junction to the north, while those wishing to turn right out of the site undertake a U-turn at the A174/A1053/B1300 Greystone Roundabout to the south. The Westgate Roundabout forms one of the main access points into the Wilton International Site.

It is not intended to net off the traffic associated with this previous scheme at this stage, despite the traffic flows for the previous scheme being consented to already. However consideration to the previous consented flows will be given for any junction modelling results.

2. Construction Generation

2.1 CCGT Construction

The profile of construction workforce over the build period has been benchmarked against other previous CCGT builds of a similar size to the proposed power plant including Pembroke, Willington and Eggborough. Pembroke is a 2000 MW CCGT and commenced operation in 2012. Willington is a 2000 MW CCGT with 400 MW of OCGT and received planning consent in 2014 though is yet to be constructed. Eggborough is a 2500 MW CCGT and received DCO planning consent in 2018 though is yet to be constructed.

The estimated profile of workforce over the construction period for the development of the CCGT is shown below in Table 1 and reveals the peak construction workforce is forecast to occur in Month 20 when 1200 workers are expected on-site. This profile and generation is in line with previous Section 38 / DCO consents.

Table 1. Profile of Daily Workforce throughout CCGT Construction

Month of Construction	Daily Workforce in the Month
1	9
2	6
3	27
4	127
5	144
6	169
7	330
8	365
9	392
10	444
11	480
12	512
13	715
14	810
15	880
16	950
17	1010
18	1080
19	1140
20	1200
21	1155
22	1106
23	1060
24	1010
25	960
26	910
27	850
28	810
29	765
30	710
31	660

Month of Construction	Daily Workforce in the Month
32	610
33	550
34	510
35	470
36	440
37	360
38	300
39	270
40	170
41	140
42	102
43	84
44	63
45	50
46	50
47	50
48	50

In relation to traffic generation associated with this level of construction workers, an occupancy rate of 1.35 per vehicle without any management or mitigation measures is a figure generally accepted in the construction industry. While we cannot point to an individual survey that categorically proves the 1.35 figure, its robustness can be confirmed when typical site operation of gangs arriving in crew buses rather than individual private cars is taken into account. Table 2 below sets out several vehicle generation scenarios based on different vehicle occupancy rates.

Table 2. Construction Worker Car Occupancy Rates

Total Workers at Peak of Construction	Vehicle Occupancy Rate	No. of Vehicle Arrivals	Two-Way Daily Flow
1,200	1.35	889	1,778
1,200	1.50	800	1,600
1,200	2.00	600	1,200
1,200	2.50	480	960

In relation to traffic generation associated with construction workers, it has been assumed that 80% of workers will travel to site by private car with an average occupancy of 2 workers per vehicle and 20% will travel to site by contractor provided minibuses with an average occupancy of 7 workers per vehicle. This assumption is based on those set out 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. This is considered a realistic assumption given that the mode of arrival of construction workers can be controlled through travel planning measures and that construction workers would want to minimise their travel expenditure, particularly if having to pay for temporary accommodation. It is proposed that this level of traffic generation can be managed and maintained through Travel Plan measures and the availability of on-site parking spaces.

When this occupancy rate is applied to the workforce associated with CCGT construction at the peak month of construction (Month 20), the following daily car generations on a month-by-month basis result as shown in Table 3 below and equates to an overall vehicle occupancy rate of 2.33 per vehicle (including minibuses).

Table 3. Generation of Vehicles at Peak of Construction

Month of Construction	Total Workers	No. of Arriving Cars / Vans @ 2 per Vehicle	No. of Minibuses @ 7 per vehicle	Average Two-Way Daily Flow
20	1200	480	35	1,030

The volume of construction HGVs on the network has been based on previous CCGT build projects and will vary over the course of the construction programme but is expected to peak at up to 80 two-way daily HGV movements (40 in & 40 out) from month 7 to month 28 of construction. During the remainder of the construction period, HGV movements are estimated to be around 40 two-way daily HGV movements.

The total two-way construction vehicle traffic expected over the 48 month construction period is illustrated in **Appendix B** which identifies Month 20 (Q1 2024) to be the peak month of construction with 1,109 daily vehicle movements comprising 1,030 construction worker vehicle movements and 80 HGV movements.

2.2 Gas Pipeline Construction

Natural gas will be used as the sole fuel for operation of the CCGT and will be supplied via a tie-in to the high pressure gas transmission network in the area. It is currently anticipated that this will be at the feeder from the Central Area Transmission System gas processing terminal to the north of the River Tees, approximately 3.7 km west of the SSI site. An Above Ground Installation will be required at the connection point to the transmission system.

Construction of the gas pipeline is due to last 12 months however works are not anticipated to overlap with the peak month of construction (Month 20).

The maximum workforce number on the pipeline construction project at any one time during the 12 month build period will be 90 workers per day. It is proposed that workers will arrive at the main construction site entrance before being transferred by minibus to their working area either along the working width of the Gas Pipeline or via the local highway network.

2.3 CO_2 Gathering Network Pipeline Construction

Construction of the CO_2 gathering network pipeline is due to last 12 months however works are not anticipated to overlap with the peak month of construction (Month 20).

The maximum workforce number on the pipeline construction project at any one time during the 12 month build period will be 90 workers per day. It is proposed that workers will arrive at the main construction site entrance before being transferred by minibus to their working area either along the working width of the Pipeline or via the local highway network.

2.4 Daily Vehicle Profile during the Peak Month

Working hours on major construction sites tend to be long due to pressures of timescales and available light. Therefore, the arrival and departure of workers vehicles tend to be spread over the early and late hours rather than all falling in the traditional network peak hours. In an attempt to quantify this, previous discussions have been held with contractors associated with power station build projects where it was revealed that there is a general tendency for construction workers to travel early for a number of reasons as follows:

- To avoid congestion and delay; and
- To deliver the project to programme.

Based on these discussions a profile of arrivals and departures over the working day has been produced. With construction working hours starting at 0700 it is common for the major proportion of workers to arrive before 0700 to start their shift on time. Table 3 below sets out the percentage of daily inbound and outbound trips on an hour-by-hour basis and calculates the totals for the peak month of construction (Month 20).

Table 4. Daily Vehicle Profile during Peak Month of Construction

Hour Beginning	% of Daily Inbound	% of Daily Outbound	Arrivals	Departures
06:00	38%	1%	193	7
07:00	33%	3%	172	15
08:00	11%	3%	58	16
09:00	8%	3%	41	16
16:00	3%	20%	14	102
17:00	4%	23%	18	119
18:00	3%	37%	16	191
19:00	0%	10%	2	52
Total	**100%**	**100%**	**515**	**515**

The daily profile of HGV movement at the peak of construction is shown in Table 5. This profile is based on experience from other CCGT construction sites and shows that the arrival and departure of HGVs from the site will be spread evenly over the day. The profile shows that deliveries will be made between 07:00 and 19:00 hours.

Table 5. Daily HGV Profile during Peak of Construction

Hour Beginning	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00
HGVs In	4	4	4	3	3	3	3	4	4	4	2	2
HGVs Out	4	4	4	3	3	3	3	4	4	4	2	2

2.5 Abnormal Indivisible Loads

A number of abnormal indivisible load (AIL) movements are expected during the construction programme associated with the delivery of large items of plant and equipment. The nearest port to the Proposed Development is Teesport. It is currently unknown the exact number and dimension of AIL's and this will depend on the technology provider. This is unlikely to be known until after the DCO process.

The Highways England document 'Water preferred policy guidelines for the movement of abnormal indivisible loads' published in January 2016, states that it is government policy to avoid road transport as far as possible by using alternative modes, such as water.

Detailed consideration would be given to the appropriate port and AIL routes during detailed design. However, it is a reasonable assumption that all major ports are able to accommodate abnormal loads and that adequate access to the strategic road network is achievable. On this basis, only the route from the strategic network to the Site requires assessment.

3. Operation and Decommissioning

3.1 Operation

Operational traffic movements will be small given that the proposed development will employ up to 100 staff who will work shifts. Fuel would be delivered by pipeline and other operational and maintenance consumables are likely to be minimal.

During an outage, it could be expected that up to 200 additional staff could be on-site on any one day. However outages are expected to occur infrequently (once every 2-4 years) and are short-lived (approximately 3 months). Therefore, it is considered that the effects of operational traffic would be negligible and a detailed assessment of the operational phase of the development is not proposed within the Transport Assessment.

3.2 Decommissioning

The scale of traffic generation associated with decommissioning of the power plant in the year 2051 to 2056 (assuming a 25-30 year operational life) would be significantly less than at the peak of construction. Coupled with the fact that decommissioning is too far in the future to enable a meaningful assessment at this current time it is not proposed to undertake an assessment of decommissioning in the Transport Assessment. It is likely to be covered by a requirement that will need to be discharged before any demolition works can commence.

4. Trip Distribution and Assignment

4.1 Trip Distribution

Construction of a CCGT is a specialist trade, with a limited number of contractors experienced in this field. With such a large and specialised workforce required for construction, it is likely that much of the workforce will be sourced from beyond the daily commutable catchment area.

Indeed, experience at other similar construction sites has confirmed this and recent Transport Assessments prepared for other large Power Station proposals have allowed for a split of permanent home based site staff and transient staff staying in temporary accommodation. From experience at other power stations, it is considered that around 60% of the construction workforce is likely to be sourced from elsewhere in the UK (and even abroad) and 40% would be permanent home based residents.

The 60% transitory workers will either engage in short term rentals or will reside in B&B's, small hotels, caravan sites or private households, located in the vicinity of the development site. From experience elsewhere on similar types of construction sites, these staff prefer to locate as close to the site as possible to minimise travel time and costs. They also tend to find accommodation in groups and lift share to site (or use contractors' minibuses).

The distribution of the permanent resident construction workforce traffic to the network has been based on a gravity model and the number of those employed in construction in towns and cities within a 45 minute drive time of the site. The catchment area includes the districts of Redcar and Cleveland, Middlesbrough, Stockton-on-Tees, Hartlepool, Darlington, Sunderland and County Durham. Table 5 shows the permanent resident workforce distribution and the number of workers this equates to at the peak month of construction (Month 20).

Table 6. Permanent Resident Construction Workforce Distribution

District	Construction Worker Population (2011 Census)	Distance to Centroid (miles)	Weighting Factor (= 1 / d)	Population x Weighting Factor	Percentage Distribution	No. of Permanent Resident Workers (Peak Month of Construction)
Darlington	3,743	22	0.045	170	5%	24
Durham	9,100	32	0.031	284	8%	38
Hartlepool	3,764	22	0.045	171	5%	24
Middlesbrough	4,620	6	0.167	770	22%	106
Redcar & Cleveland	4,976	4	0.250	1244	35%	168
Stockton-on-Tees	7,200	12	0.083	600	17%	82
Sunderland	9,345	35	0.029	267	8%	38

In contrast the distribution of the transitory workforce has been undertaken based on a gravity model and the estimated number of accommodation beds available in the surrounding districts within a 30 minute travelling distance of the site. This information has been obtained from the Visit Britain Accommodation Stock Audit 2016. Table 7 shows the transitory workforce distribution and the number of workers this equates to at the peak month of construction (Month 20).

Table 7. Transitory Construction Workforce Distribution

District	No. of Accommodation Beds	Distance to Centroid (miles)	Weighting Factor (= 1 / d)	Population x Weighting Factor	Percentage Distribution	No. of Transient Workers (Peak Month of Construction)
Darlington	3,545	22	0.045	161	13%	94
Hartlepool	946	22	0.045	43	3%	22
Middlesbrough	2,870	6	0.167	478	37%	266
Redcar & Cleveland	1,484	4	0.250	371	29%	209
Stockton-on-Tees	2,711	12	0.083	226	18%	129

4.2 Trip Assignment

Five key routes have been identified that are most likely to be taken by construction workers travelling to and from work and are as follows:

- Route 1: Via A66 onto A1085 Trunk Road, Site Access;
- Route 2: Via A1085 Broadway onto A1085 Trunk Road, Site Access;
- Route 3: Via B1380 High Street onto A1053 Greystone Road, A1085 Trunk Road, Site Access;
- Route 4: Via A174 onto A1053 Greystone Road, A1085 Trunk Road, Site Access; and
- Route 5: Via A1085 Trunk Road, Site Access.

The key routes are shown in **Appendix C.**

The assignment of the permanent resident construction workforce to the network is shown in **Appendix D** and is summarised in Table 8.

The assignment of the transitory construction workforce to the network is shown in **Appendix E** and is summarised in Table 9.

Table 8. Catchment Area and Route Assignment for Permanent Resident Workforce

Route	Catchment Area	% of Construction Worker Vehicles
Route 1: Via A66 onto A1085 Trunk Road turning left into Site Access	Darlington; Durham; Hartlepool; Middlesbrough; Stockton-on-Tees; Sunderland.	50%
Route 2: Via A1085 Broadway onto A1085 Trunk Road turning left into Site Access	Middlesbrough	17%
Route 3: Via B1380 High Street onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	Middlesbrough	7%
Route 4: Via A174 onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	Middlesbrough	6%
Route 5: Via A1085 Trunk Road turning right into Site Access	Redcar & Cleveland	20%

Table 9. Catchment Area and Route Assignment for Transient Workforce

Route	Catchment Area	% of Construction Worker Vehicles
Route 1: Via A66 onto A1085 Trunk Road turning left into Site Access	Darlington; Hartlepool; Middlesbrough; Stockton-on-Tees.	49%
Route 2: Via A1085 Broadway onto A1085 Trunk Road turning left into Site Access	Middlesbrough	22%
Route 3: Via B1380 High Street onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	-	0%
Route 4: Via A174 onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	-	0%

Route	Catchment Area	% of Construction Worker Vehicles
Route 5: Via A1085 Trunk Road turning right into Site Access	Redcar & Cleveland	29%

For assessment purposes, it is assumed that all construction HGVs would arrive / depart the site to the west via the A1085 Trunk Road. At the junction with the A66 / A1053, it is assumed that 50% would continue west on the A66 and 50% would head south on the A1053 then west on the A174.

The total construction workforce two-way vehicle generations for the AM and PM peak periods (0600 – 1000 and 1600 – 2000) associated with the proposed development construction during the peak month (Month 20) are provided in **Appendix F**.

5. Study Area

5.1 Traffic Count Locations

It is proposed that the following links and junctions are included within the Transport Assessment. It is proposed that link counts will be undertaken over a continuous 7-day period and junction counts will be undertaken in the AM and PM Peak periods between 06:00 and 10:00 and 16:00 and 20:00. The proposed traffic count locations are shown in Figures 3 and 4 below.

Links:

- ATC 1: A1085 Trunk Road (East of Site Access);
- ATC 2: A1085 Trunk Road (West of Site Access);
- ATC 3: A1042 Kirkleatham Lane;
- ATC 4: A1085 Trunk Road (North East of A1053);
- ATC 5: A1085 Broadway;
- ATC 6: B1380 High Street; and
- ATC 7: A66 (West of A1053).

In addition link counts for the A1053 Greystone Road and the A174 (west of A1053) will be obtained from Highways England's Webtris database.

Based on the indicative route corridors associated with the gas pipeline and CO_2 gathering network, additional ATC counts will be undertaken to the north of the River Tees at the following locations:

- ATC 8: A1046 Port Clarence Road;
- ATC 9: A178 Seaton Carew Road; and
- ATC 10: Unknown Road serving Seal Sands.

Junctions:

In April 2019, DCO consent was granted for the Teesside Combined Cycle Power Plant located 6 km south of the Proposed Development with access off the A1053 Greystone Road. A review of the Transport Assessment prepared by Mayer Brown in October 2017 identified junction counts were undertaken at two junctions including the A1085 / A1053 Roundabout and the A1053 / A174 / B1380 Roundabout.

As was agreed with Redcar and Cleveland Borough Council and Highways England for the consented Teesside CCGT Power Station, it is proposed that junction counts will be undertaken at these two junctions plus the A1085 / West Coatham Lane / Site Access Roundabout.

Redcar and Cleveland Borough Council, Stockton-on-Tees Borough Council and Highways England are asked to agree the proposed count locations.

5.2 Growth Factors

The anticipated peak traffic generation during the construction period occurs in 2024 on the basis that construction of the Proposed Development begins in Q3 2022. The assessment year for this Transport Assessment where the traffic impact will be greatest will therefore be 2024.

Traffic growth factors for the Redcar and Cleveland District will be obtained from TEMPRO Version 7.2 software. The use of TEMPRO software is generally recognised as the industry standard tool for determining traffic growth factors to apply to base flows in order to estimate future year traffic flows.

The TEMPRO software provides a local adjustment to the National Trip End Model to provide localised growth factors for geographical areas.

The local growth factors to be applied to the 2019 Base Flows based on a principal road type and a trunk road type within an urban area are shown in Table 9.

Table 10. Growth Factors to be applied to Base Flows

Road Type	Year	AM Peak	PM Peak	All Day
Principal	2019-2024	1.0479	1.0459	1.0475
Trunk	2019-2024	1.0549	1.0528	1.0544
Principal	2019-2029	1.0881	1.0852	1.0881
Trunk	2019-2029	1.0992	1.0962	1.0992

Figure 3. Traffic Count Locations

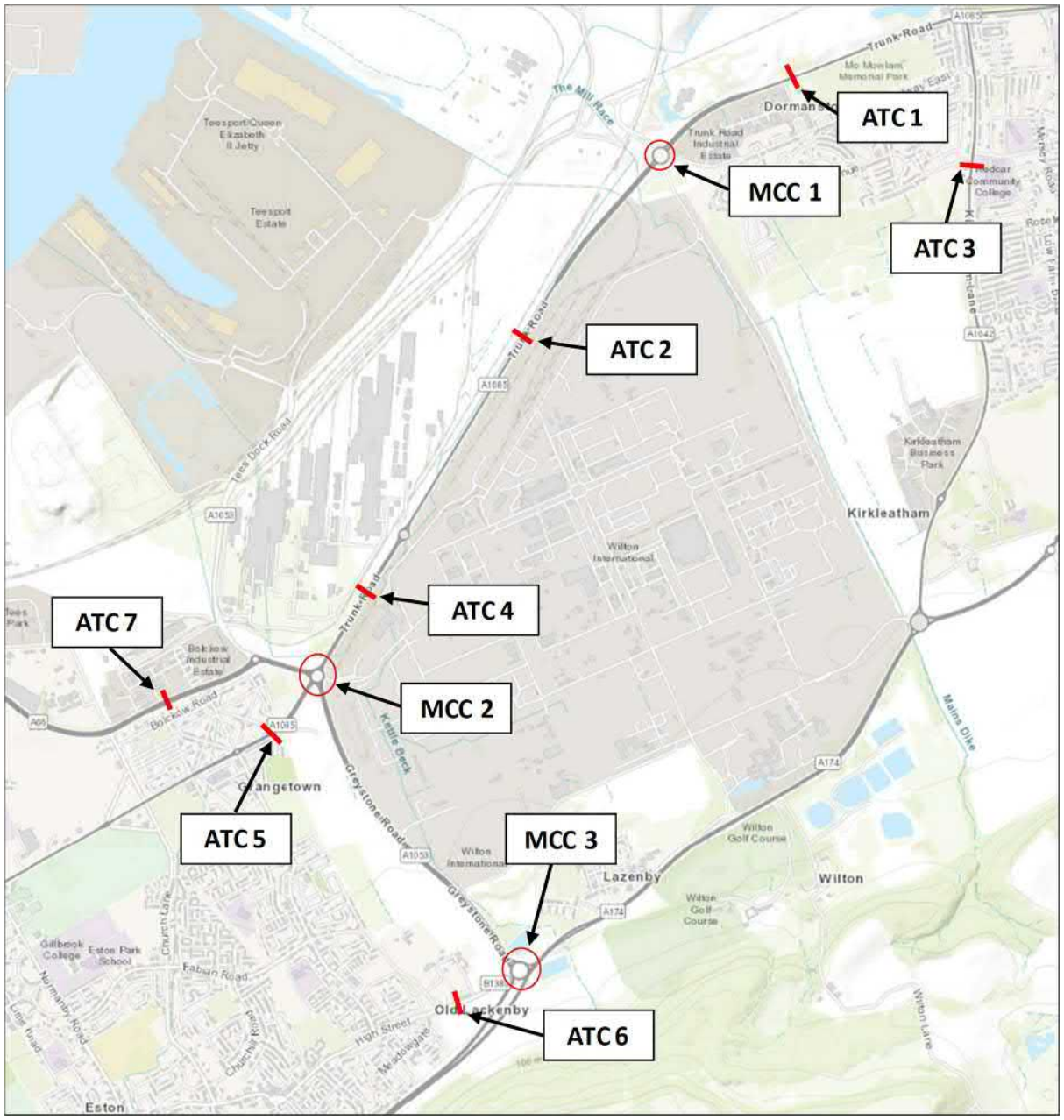
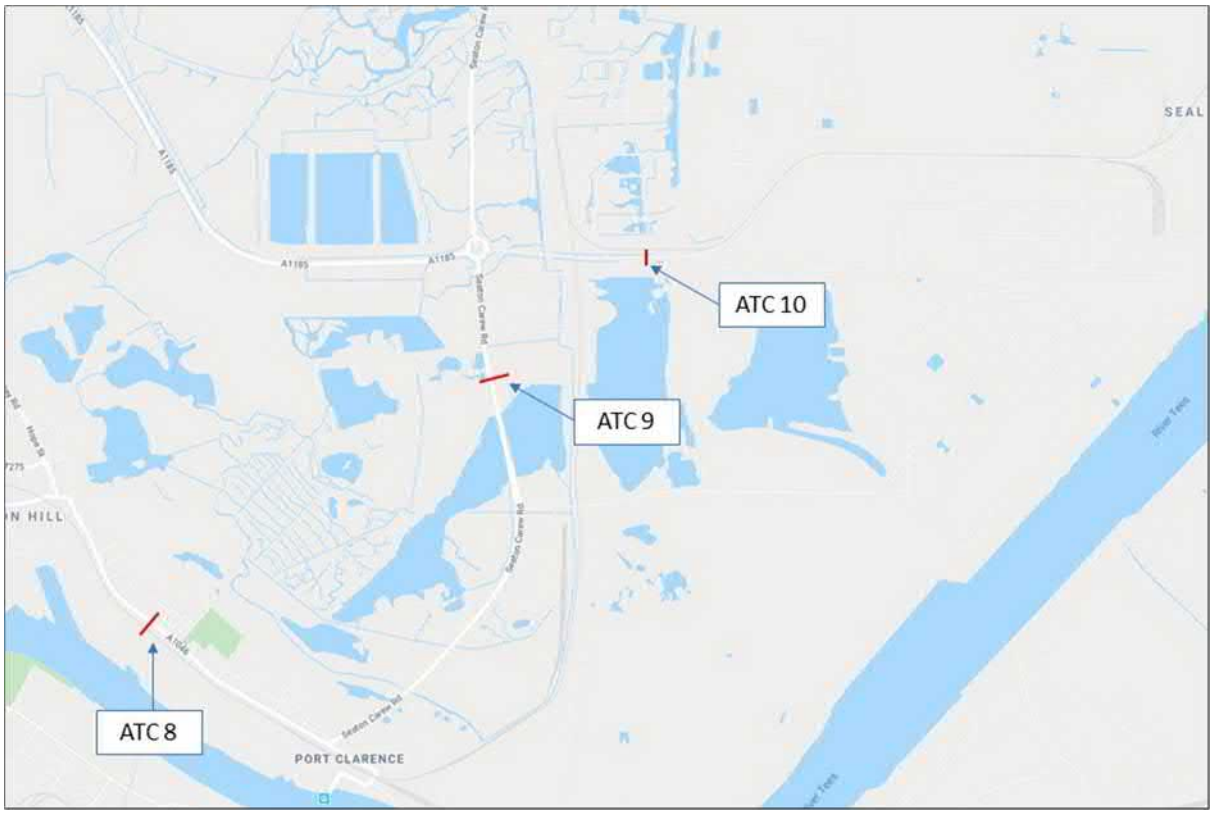


Figure 4. Traffic Count Locations

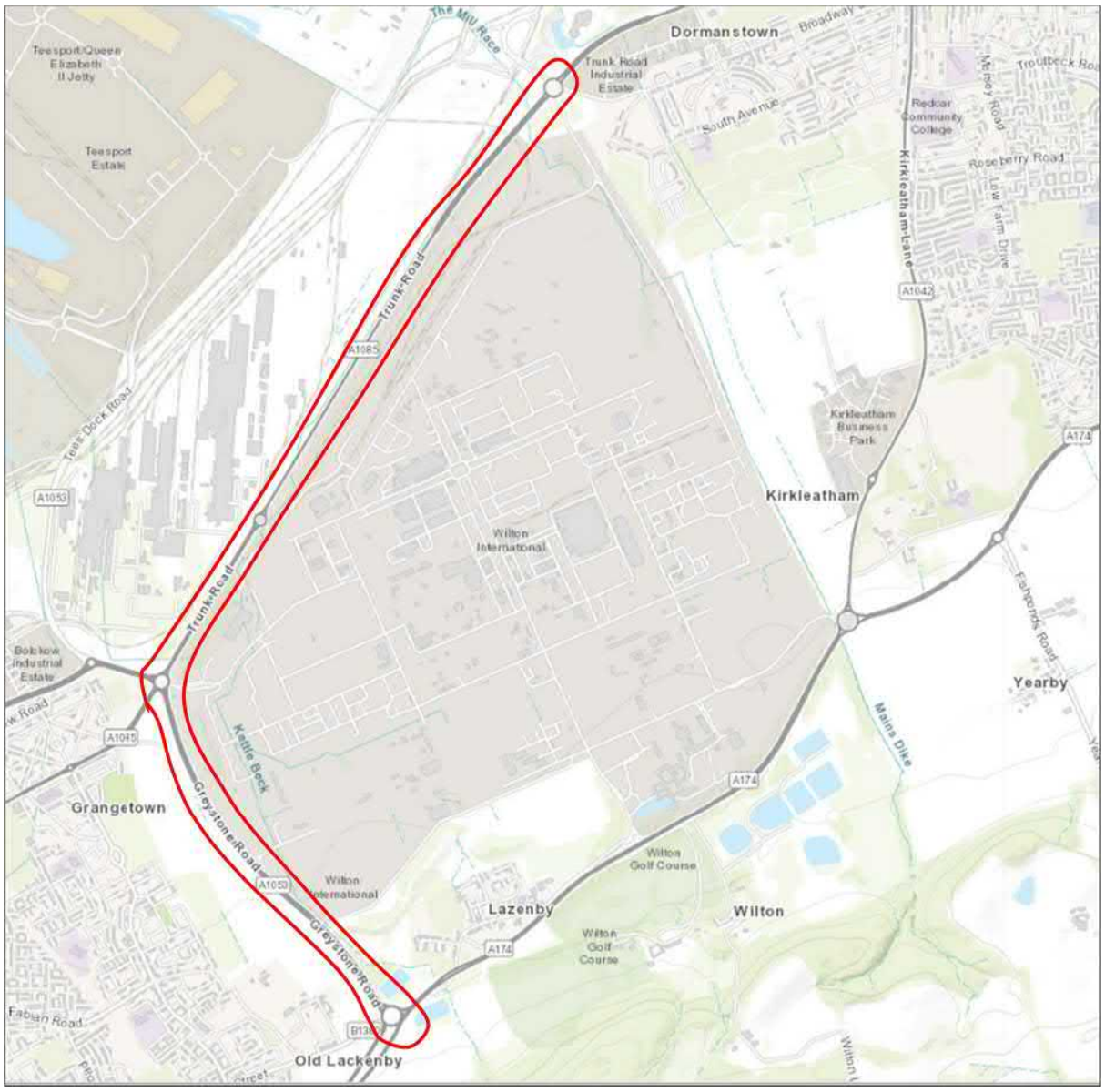


5.3 Road Safety

A road safety assessment will be undertaken in order to identify existing issues that may be affected by the Proposed Development.

Personal Injury Accident Data (PIA) will be obtained from CrashMap over a period of five years for the study area shown in Figure 5.

Figure 5. Accident Study Area



6. Committed Development

The only committed developments of note located within the vicinity of the site to take account of within the Transport Assessment are as follows:

- 1,700 MW gas-fired CCGT generating station on Wilton International Complex, Redcar
- The York Potash Harbour Facilities Order, Redcar;
- Tees Renewable Energy Plant, Teesport; and
- 550 Residential Unit Development, Kirkleatham Lane, Redcar.

We are unaware of any other committed developments within the study area.

7. Identification of Peak Hours for Assessment

In order to identify the peak hour for assessment, it is necessary to combine base plus committed development flows with development flows to determine which hour in the peak periods displays the highest combined flows.

Total flows into each of the three key junctions listed below will be calculated to determine the AM and PM Peak hours for assessment.

- MCC 1: A1085 / West Coatham Lane / Site Access Roundabout;
- MCC 2: A1085 / A1053 Roundabout; and
- MCC 3: A1053 / A174 / B1380 Roundabout.

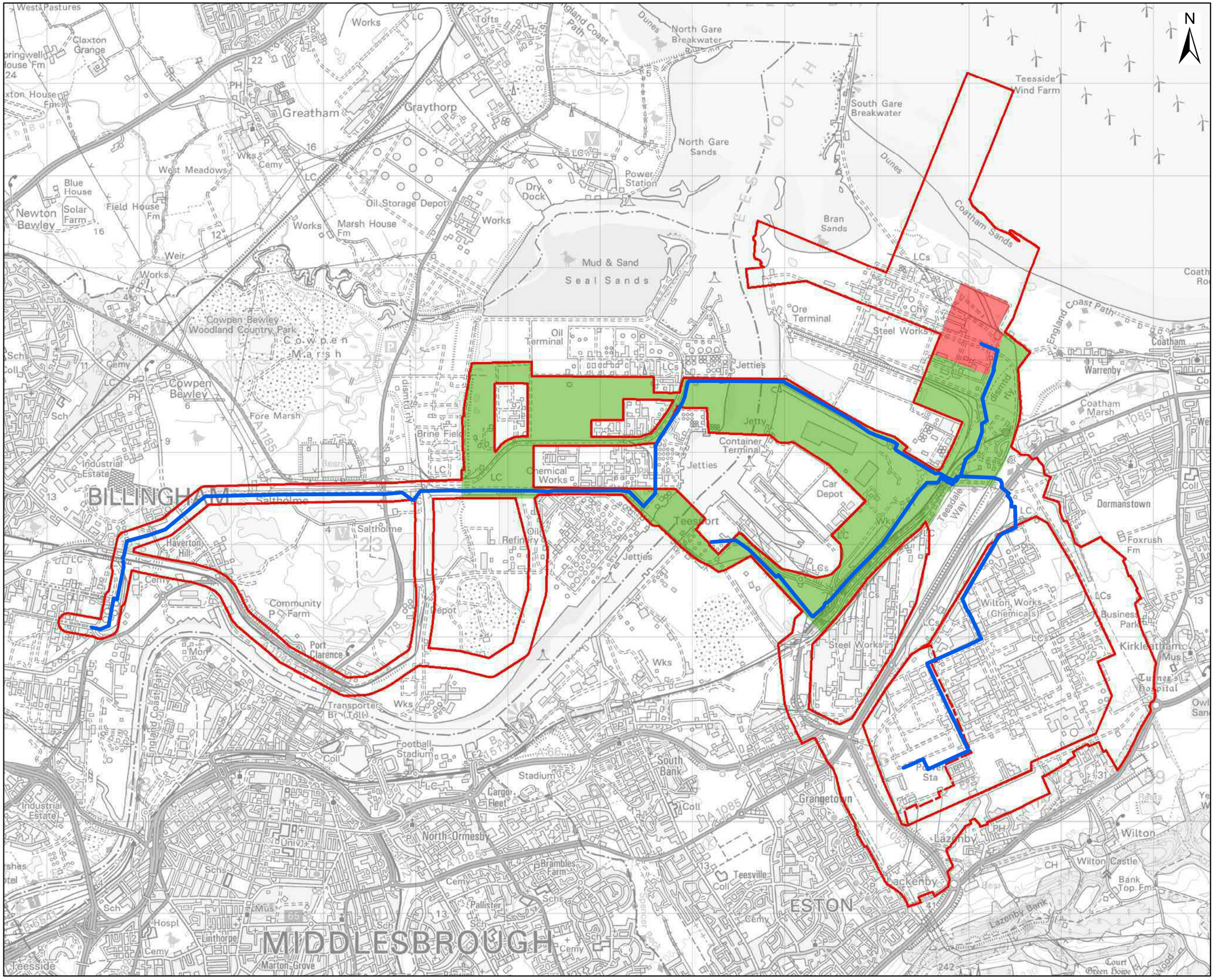
8. Summary

A Transport Assessment will be prepared to support the DCO Application in addition to the ES Transport Chapter.

Redcar & Cleveland Borough Council, Stockton-on-Tees Borough Council and Highways England are asked to agree:

- The calculated trip generations;
- The trip distribution and assignment to the network;
- The study area;
- The approach to traffic growth;
- Committed developments;
- The road safety assessment methodology; and
- The identification of the AM and PM peak hours for assessment.
- Thresholds for junction modelling

Appendix A – Pipeline Corridors Route Plan



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www.aecom.com

Project Title:

TEESSIDE CLUSTER CARBON CAPTURE & USAGE PROJECT

Client:

OGCI CLIMATE INVESTMENTS HOLDINGS LLP

Location Inset:

LEGEND

Copyright:

AECOM Internal Project No:

60559231

Drawing Title:

CO2 GATHERING NETWORK

Scale at A3:

Drawing No:	Rev:
N / A	01

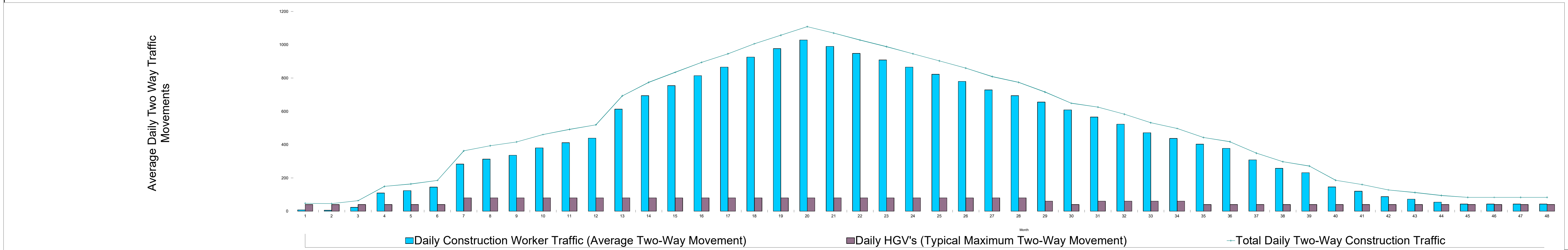
Drawn:	Chk'd:	App'd:	Date:
RT	RT	RL	07/11/19

Appendix B – Profile of Construction Traffic

Month of Construction

Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
CCGT Site Preparation																								
Main Civil Works																								
CCGT Power Station Construction & Plant Installation																								
Gas Pipeline Construction																								
CCGT Commissioning																								
CO2 Pipeline and Booster Station Works																								
CO_2 Collection Works																								
Typical Daily CCGT Construction Workforce in Month	9	6	27	127	144	169	330	365	392	444	480	512	715	810	880	950	1010	1080	1140	1200	1155	1106	1060	1010
Typical Daily Construction Worker Private Car (Inbound)(Based on 2 per vehicle)	4	2	11	51	58	68	132	146	157	178	192	205	286	324	352	380	404	432	456	480	462	442	424	404
Typical Daily Construction Worker Private Car (Outbound)(Based on 2 per vehicle)	4	2	11	51	58	68	132	146	157	178	192	205	286	324	352	380	404	432	456	480	462	442	424	404
Typical Daily Construction Worker Minibus (Inbound) (Based on 7.0 per vehicle)	0	0	1	4	4	5	9	10	11	13	14	15	20	23	25	27	29	31	33	34	33	32	30	29
Typical Daily Construction Worker Minibus (Outbound) (Based on 7.0 per vehicle)	0	0	1	4	4	5	9	10	11	13	14	15	20	23	25	27	29	31	33	34	33	32	30	29
Typical Maximum Daily HGV Trafic in Month (Inbound)	20	20	20	20	20	20	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Typical Maximum Daily HGV Trafic in Month (Outbound)	20	20	20	20	20	20	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Typical Daily Gas Pipeline Workforce in Month																								
Typical Daily Gas Pipeline Traffic (Inbound) (Based on 2.0 per vehicle)																								
Typical Daily Gas Pipeline Traffic (Outbound) (Based on 2.0 per vehicle)																								
Typical Daily Gas Pipeline HGV Traffic (Inbound)																								
Typical Daily Gas Pipeline HGV Traffic (Outbound)																								
Daily Construction Worker Traffic (Average Two-Way Movement)	8	5	23	109	123	145	283	313	336	381	411	439	613	694	754	814	866	926	977	1029	990	948	909	866
Daily HGV's (Typical Maximum Two-Way Movement)	40	40	40	40	40	40	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Total Daily Two-Way Construction Traffic	**48**	**45**	**63**	**149**	**163**	**185**	**363**	**393**	**416**	**461**	**491**	**519**	**693**	**774**	**834**	**894**	**946**	**1006**	**1057**	**1109**	**1070**	**1028**	**989**	**946**
Daily Pipeline Worker Traffic (Average Two-Way Movement)																								
Daily Pipeline HGV's (Typical Maximum Two-Way Movement)																								
Total Daily Two-Way Pipeline Traffic																								
Daily Total Construction Worker Traffic (2-way movement)	8	5	23	109	123	145	283	313	336	381	411	439	613	694	754	814	866	926	977	1029	990	948	909	866
Daily Total HGV's (Typical Maximum Two-Way Movement)	40	40	40	40	40	40	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Total Daily Two-Way Construction Traffic	48	45	63	149	163	185	363	393	416	461	491	519	693	774	834	894	946	1006	1057	1109	1070	1028	989	946

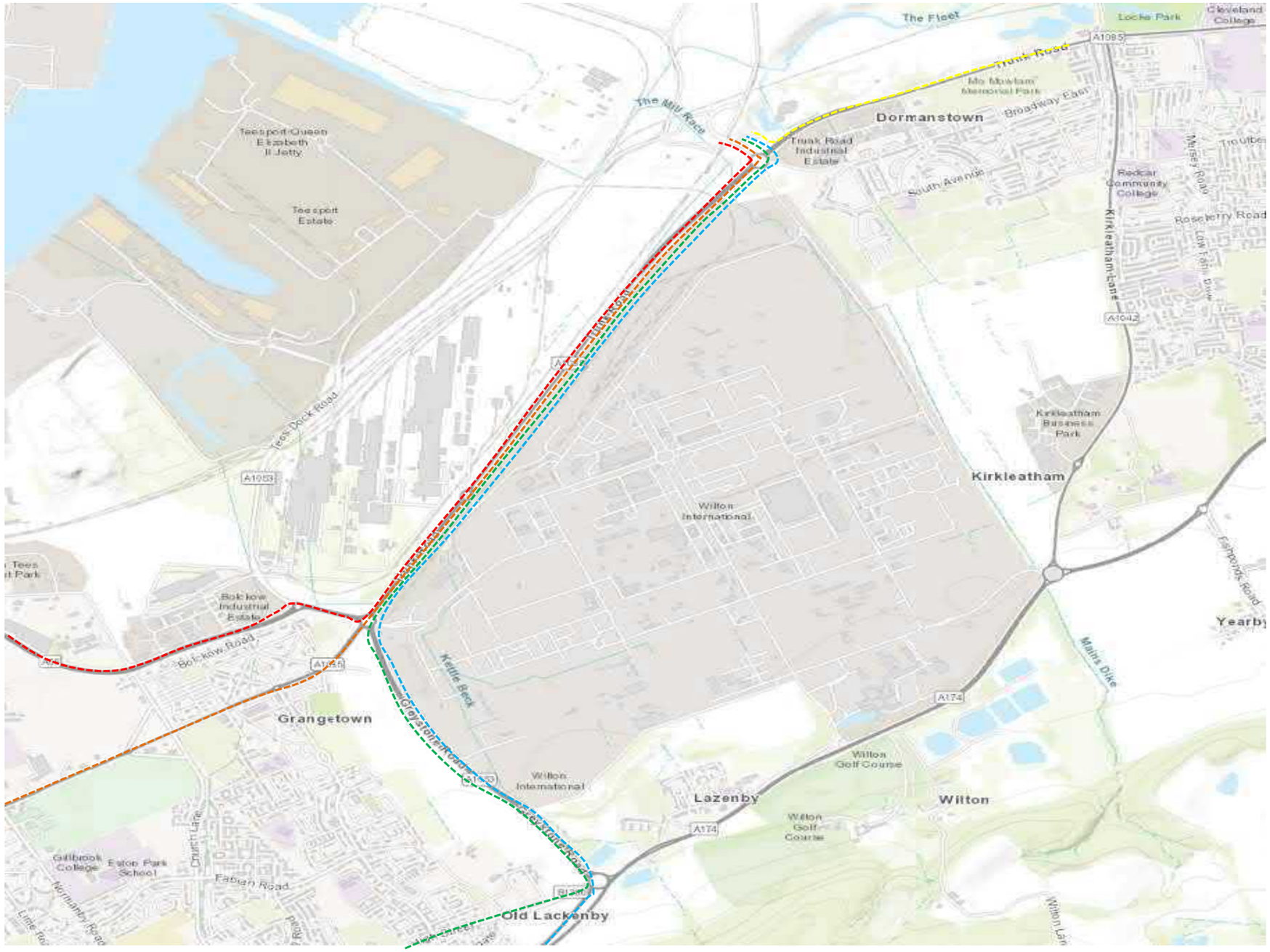
Description	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
CCGT Site Preparation																								
Main Civil Works																								
CCGT Power Station Construction & Plant Installation																								
Gas Pipeline Construction																								
CCGT Commissioning																								
CO2 Pipeline and Booster Station Works																								
CO_2 Collection Works																								
Typical Daily CCGT Construction Workforce in Month	960	910	850	810	765	710	660	610	550	510	470	440	360	300	270	170	140	102	84	63	50	50	50	50
Typical Daily Construction Worker Private Car (Inbound)(Based on 2 per vehicle)	384	364	340	324	306	284	264	244	220	204	188	176	144	120	108	68	56	41	34	25	20	20	20	20
Typical Daily Construction Worker Private Car (Outbound)(Based on 2 per vehicle)	384	364	340	324	306	284	264	244	220	204	188	176	144	120	108	68	56	41	34	25	20	20	20	20
Typical Daily Construction Worker Minibus (Inbound) (Based on 7.0 per vehicle)	27	26	24	23	22	20	19	17	16	15	13	13	10	9	8	5	4	3	2	2	1	1	1	1
Typical Daily Construction Worker Minibus (Outbound) (Based on 7.0 per vehicle)	27	26	24	23	22	20	19	17	16	15	13	13	10	9	8	5	4	3	2	2	1	1	1	1
Typical Maximum Daily HGV Trafic in Month (Inbound)	40	40	40	40	30	20	30	30	30	30	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Typical Maximum Daily HGV Trafic in Month (Outbound)	40	40	40	40	30	20	30	30	30	30	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Typical Daily Gas Pipeline Workforce in Month	30	60	60	90	90	90	90	90	60	30	30	30	30	60	60	90	90	90	90	90	60	30	30	30
Typical Daily Gas Pipeline Traffic (Inbound) (Based on 2.0 per vehicle)	15	30	30	45	45	45	45	45	30	15	15	15	15	30	30	45	45	45	45	45	30	15	15	15
Typical Daily Gas Pipeline Traffic (Outbound) (Based on 2.0 per vehicle)	15	30	30	50	45	45	45	45	30	15	15	15	15	30	30	50	45	45	45	45	30	15	15	15
Typical Daily Gas Pipeline HGV Traffic (Inbound)	21	5	5	5	5	5	5	5	5	5	5	5	21	5	5	5	5	5	5	5	5	5	5	5
Typical Daily Gas Pipeline HGV Traffic (Outbound)	21	5	5	5	5	5	5	5	5	5	5	2	21	5	5	5	5	5	5	5	5	5	5	2
Daily Construction Worker Traffic (Average Two-Way Movement)	823	780	729	694	656	609	566	523	471	437	403	377	309	257	231	146	120	87	72	54	43	43	43	43
Daily HGV's (Typical Maximum Two-Way Movement)	80	80	80	80	60	40	60	60	60	60	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Total Daily Two-Way Construction Traffic	**903**	**860**	**809**	**774**	**716**	**649**	**626**	**583**	**531**	**497**	**443**	**417**	**349**	**297**	**271**	**186**	**160**	**127**	**112**	**94**	**83**	**83**	**83**	**83**
Daily Pipeline Worker Traffic (Average Two-Way Movement)	30	60	60	95	90	90	90	90	60	30	30	30	30	60	60	95	90	90	90	90	60	30	30	30
Daily Pipeline HGV's (Typical Maximum Two-Way Movement)	42	10	10	10	10	10	10	10	10	10	10	7	42	10	10	10	10	10	10	10	10	10	10	7
Total Daily Two-Way Pipeline Traffic	72	70	70	105	100	100	100	100	70	40	40	37	72	70	70	105	100	100	100	100	70	40	40	37
Daily Total Construction Worker Traffic (2-way movement)	853	840	789	789	746	699	656	613	531	467	433	407	339	317	291	241	210	177	162	144	103	73	73	73
Daily Total HGV's (Typical Maximum Two-Way Movement)	122	90	90	90	70	50	70	70	70	70	50	47	82	50	50	50	50	50	50	50	50	50	50	47
Total Daily Two-Way Construction Traffic	975	930	879	879	816	749	726	683	601	537	483	454	421	367	341	291	260	227	212	194	153	123	123	120



TEESSIDE CCGT POWER STATION: PROFILE OF CONSTRUCTION TRAFFIC (TWO-WAY TRIPS)

AECOM

Appendix C – Key Construction Worker Routes Plan

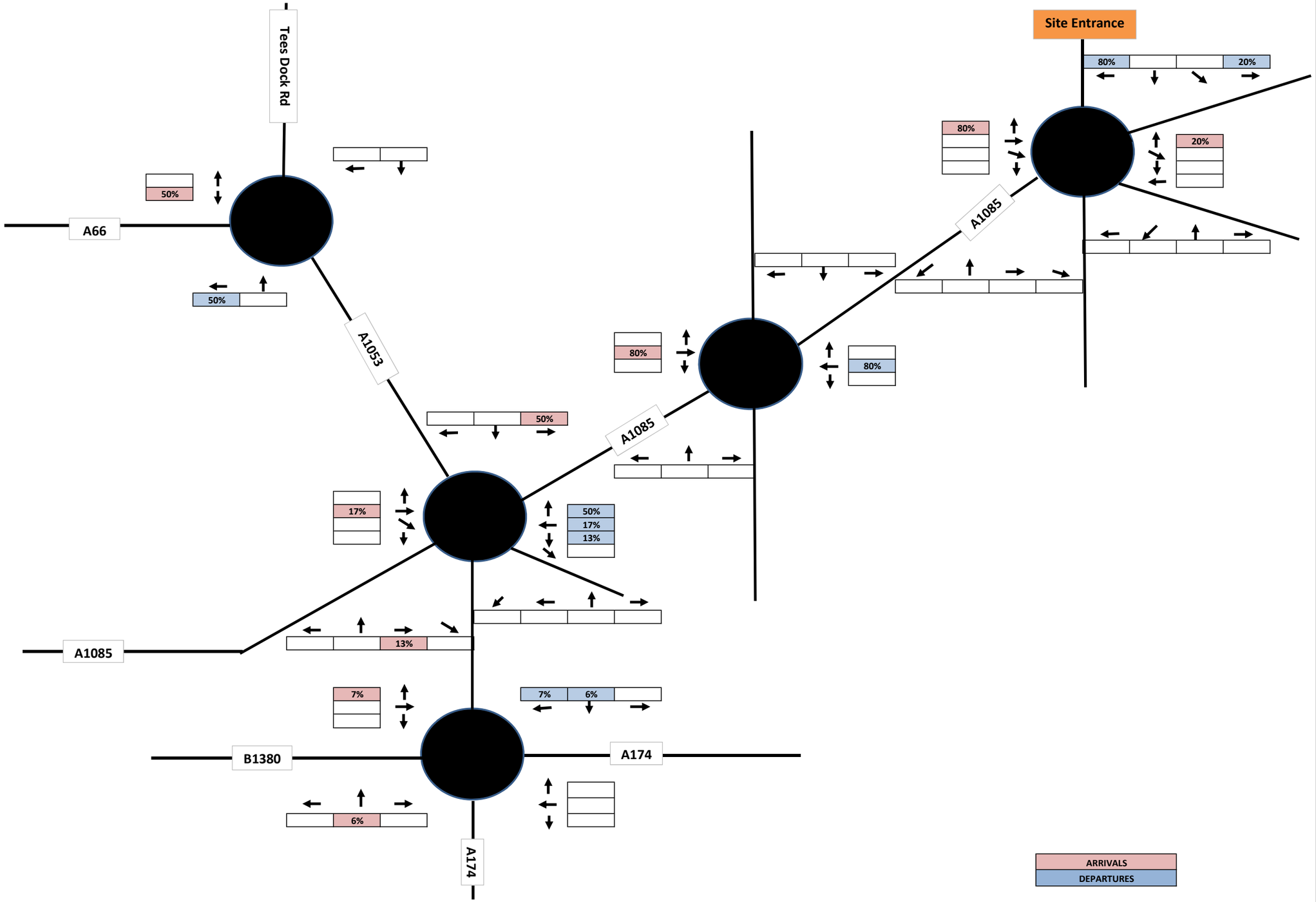


Date	11.11.2019
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
OGCI Climate Investments Holdings LLP	Teesside Cluster Carbon Capture & Usage Project	Key Construction Worker Routes	AECOM	Appendix C	A

File:

Appendix D – Permanent Construction Worker Vehicle Assignment



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OGCI Climate Investments Holdings LLP	Teesside Cluster Carbon Capture & Usage Project	Permanent Construction Worker Vehicle Assignment	AECOM	Appendix D	A	Design	JS
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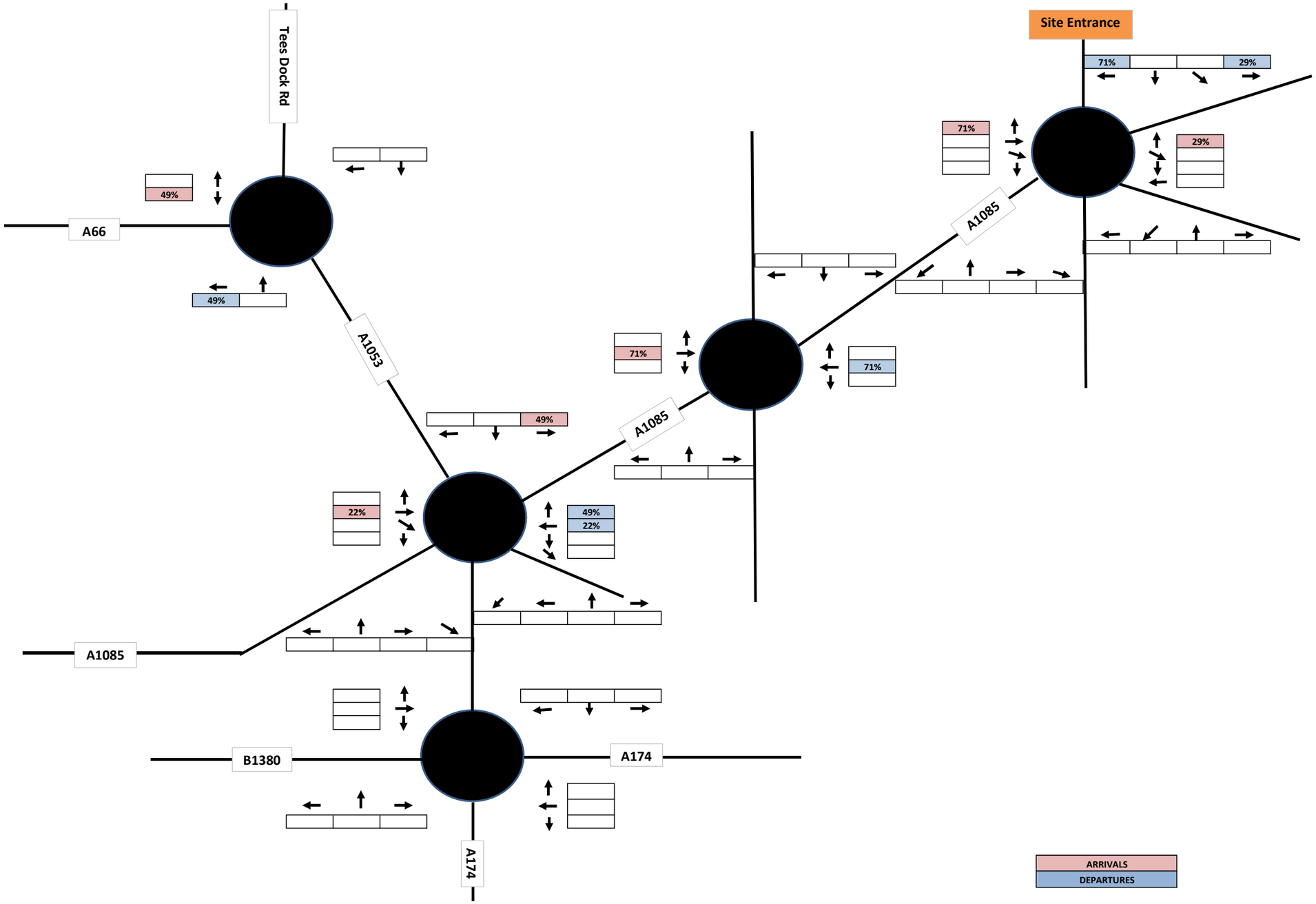
Appendix E – Transitory Worker Vehicle Assignment



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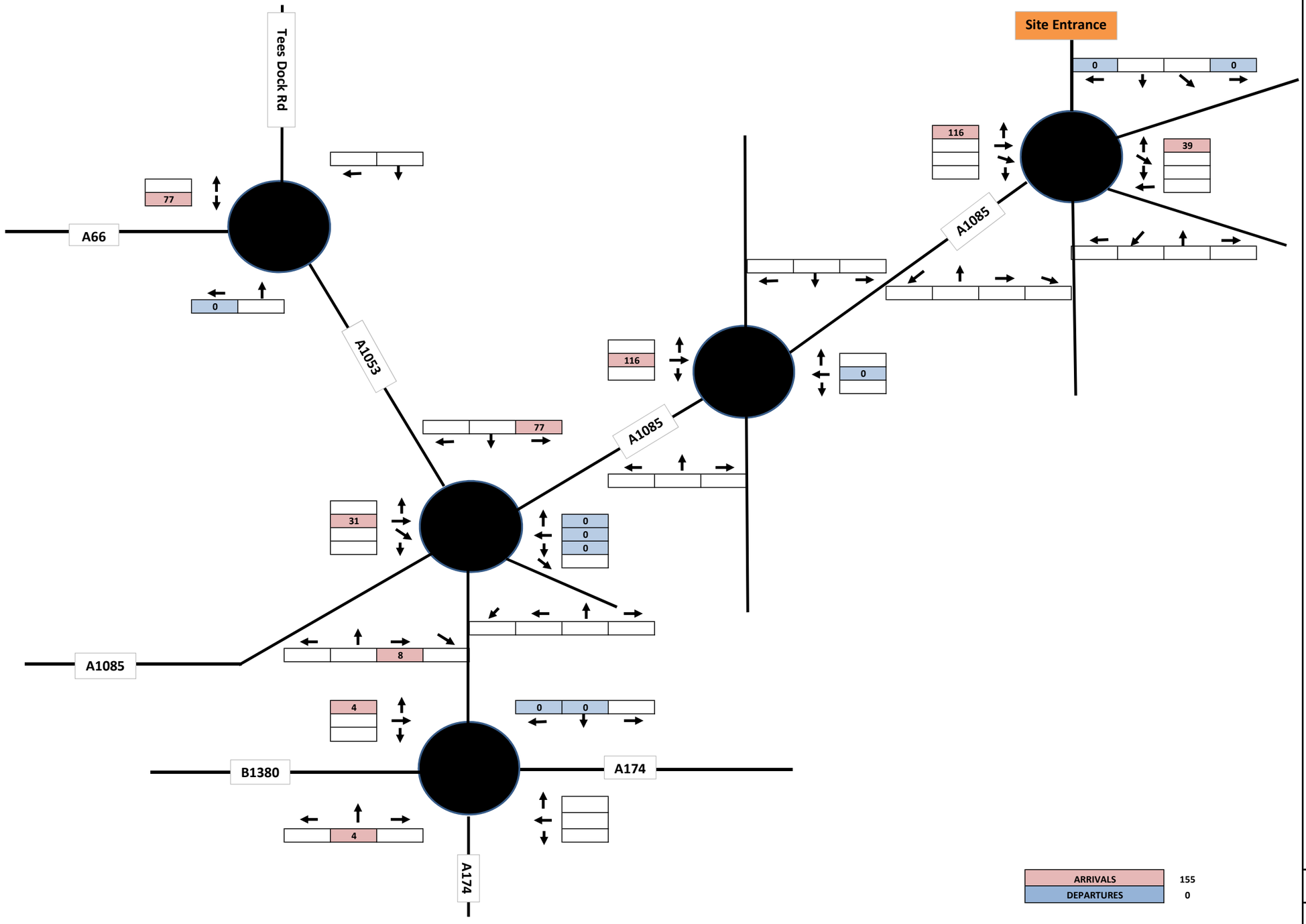
				File:			

Appendix F – Construction Workforce Vehicle Flows



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Date	11.11.2019
Design	JS
Checked	PF
Appr'd	PF

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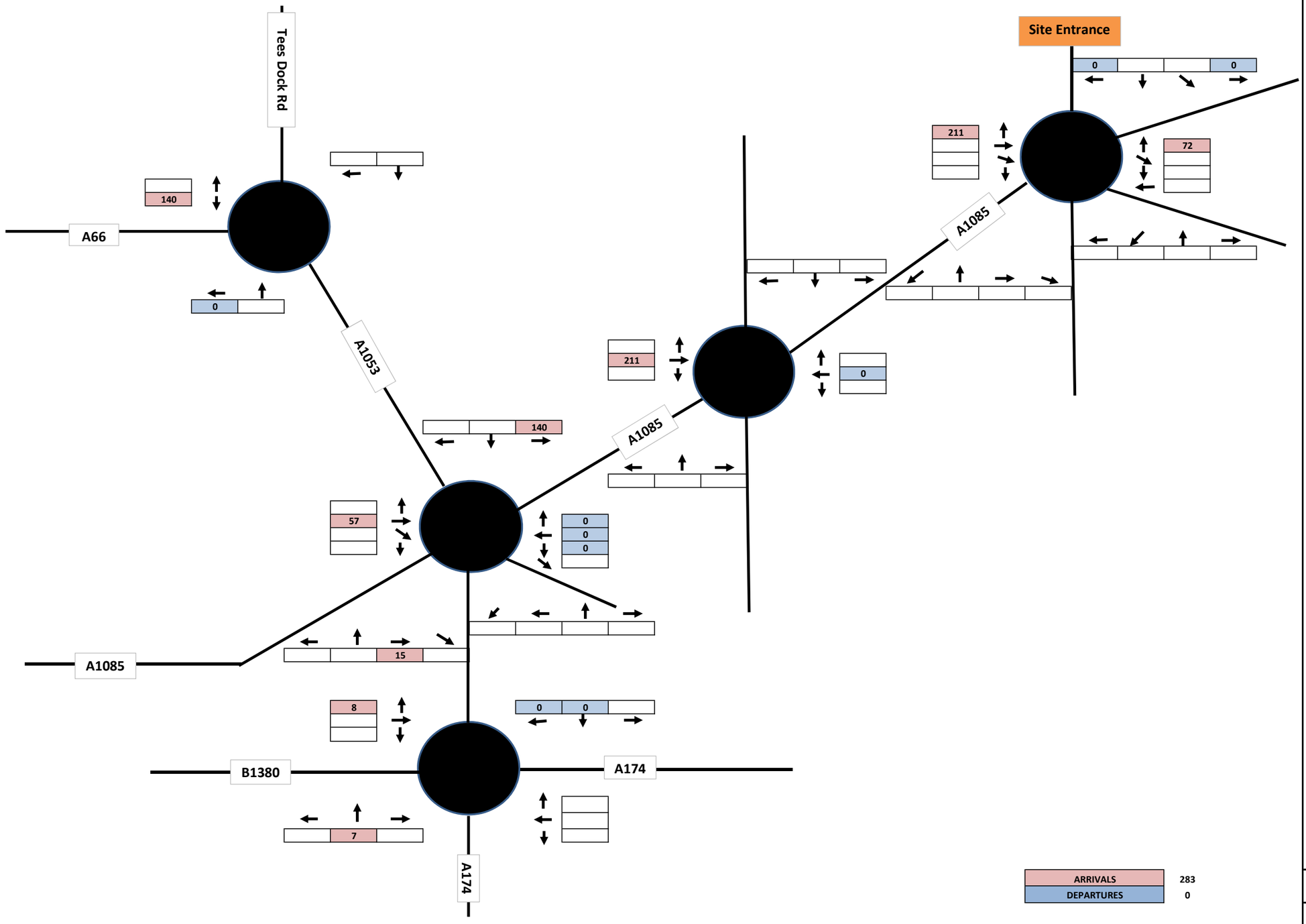

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DEPARTURES	0

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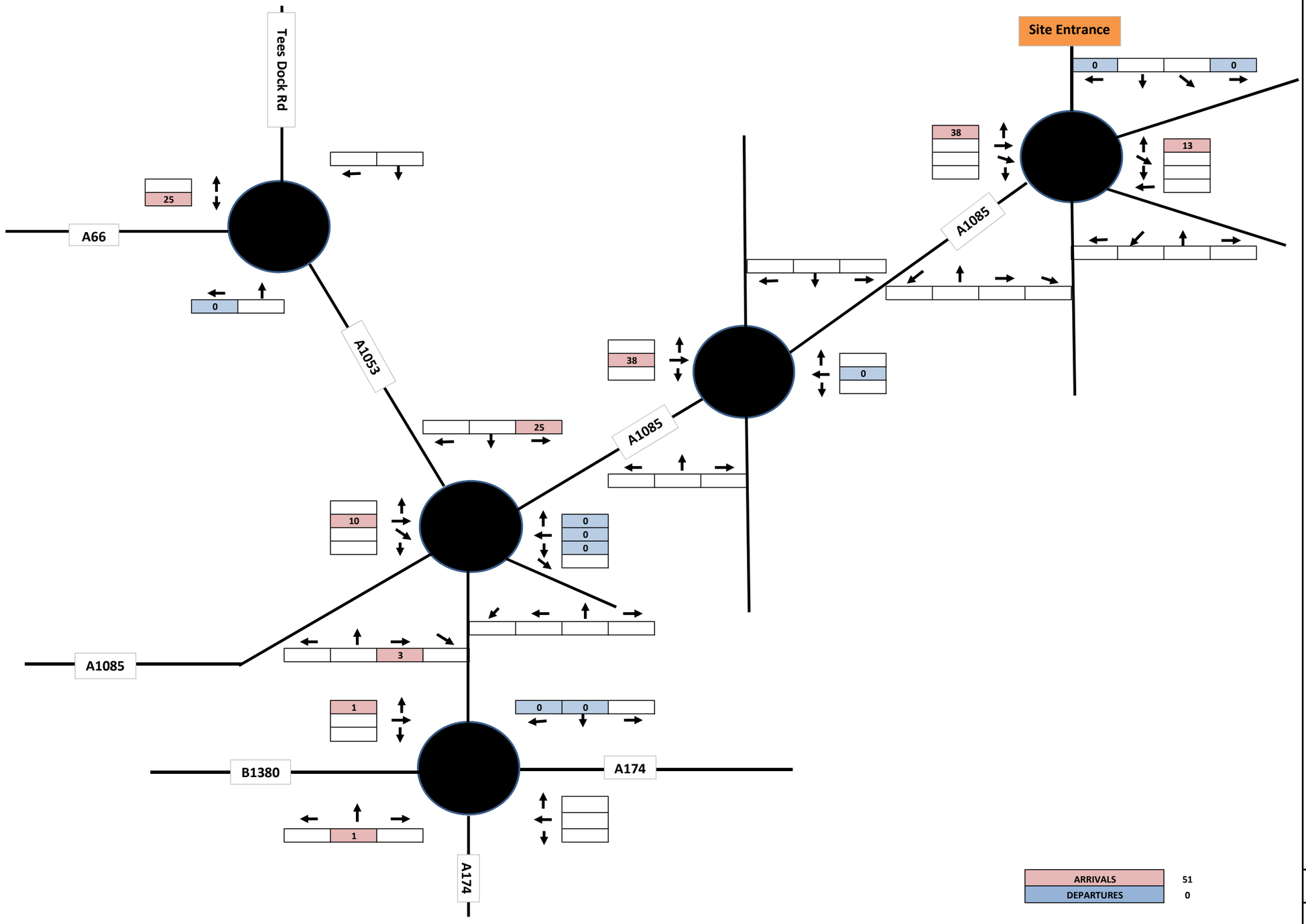
File:

Date	11.11.2019
Design	JS
Checked	PF
Appr'd	PF



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				File:	

Date	11.11.2019
Design	JS
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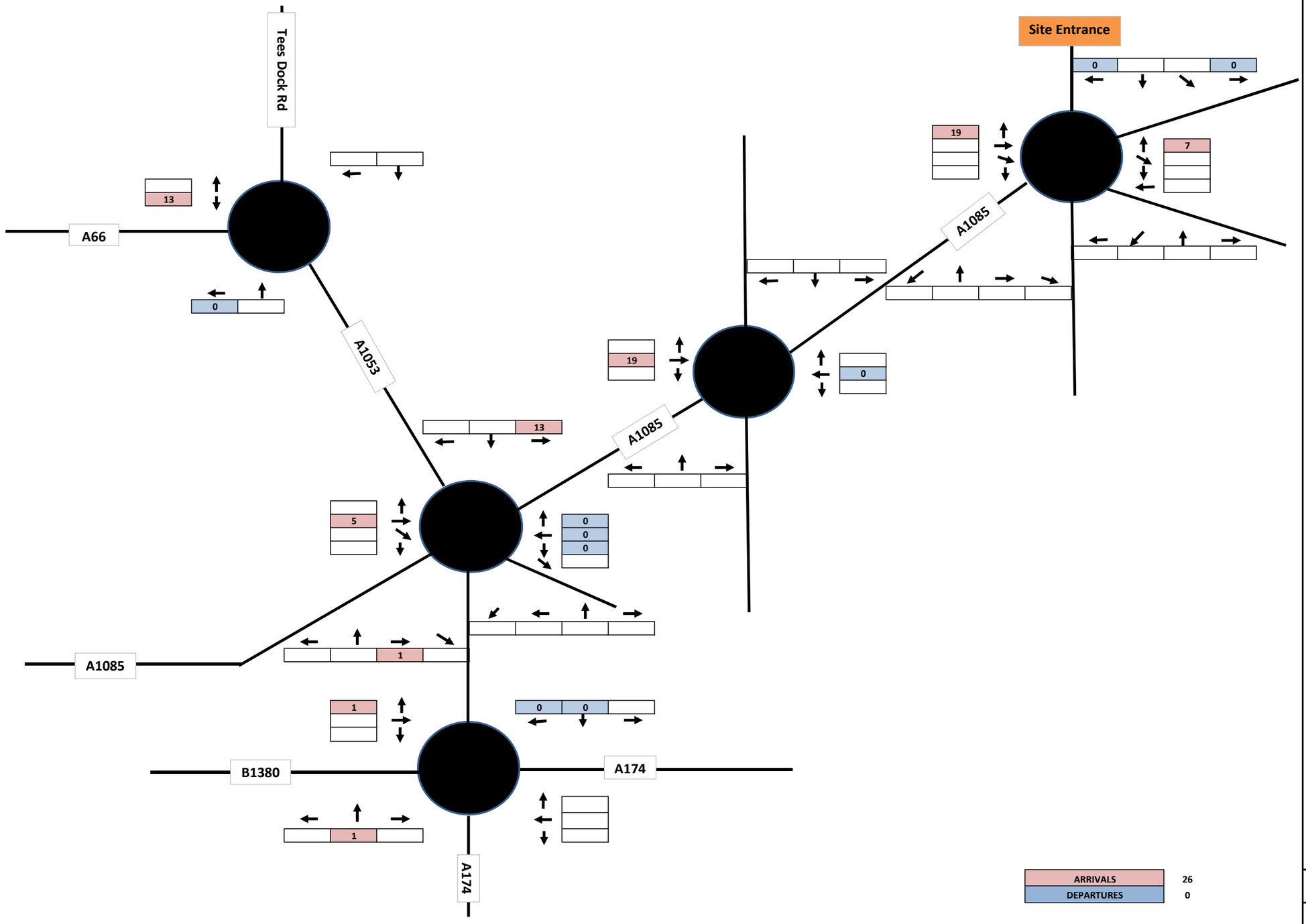
Appr'd	PF



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DEPARTURES	0

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Date	11.11.2019
Design	JS
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Appr'd	PF

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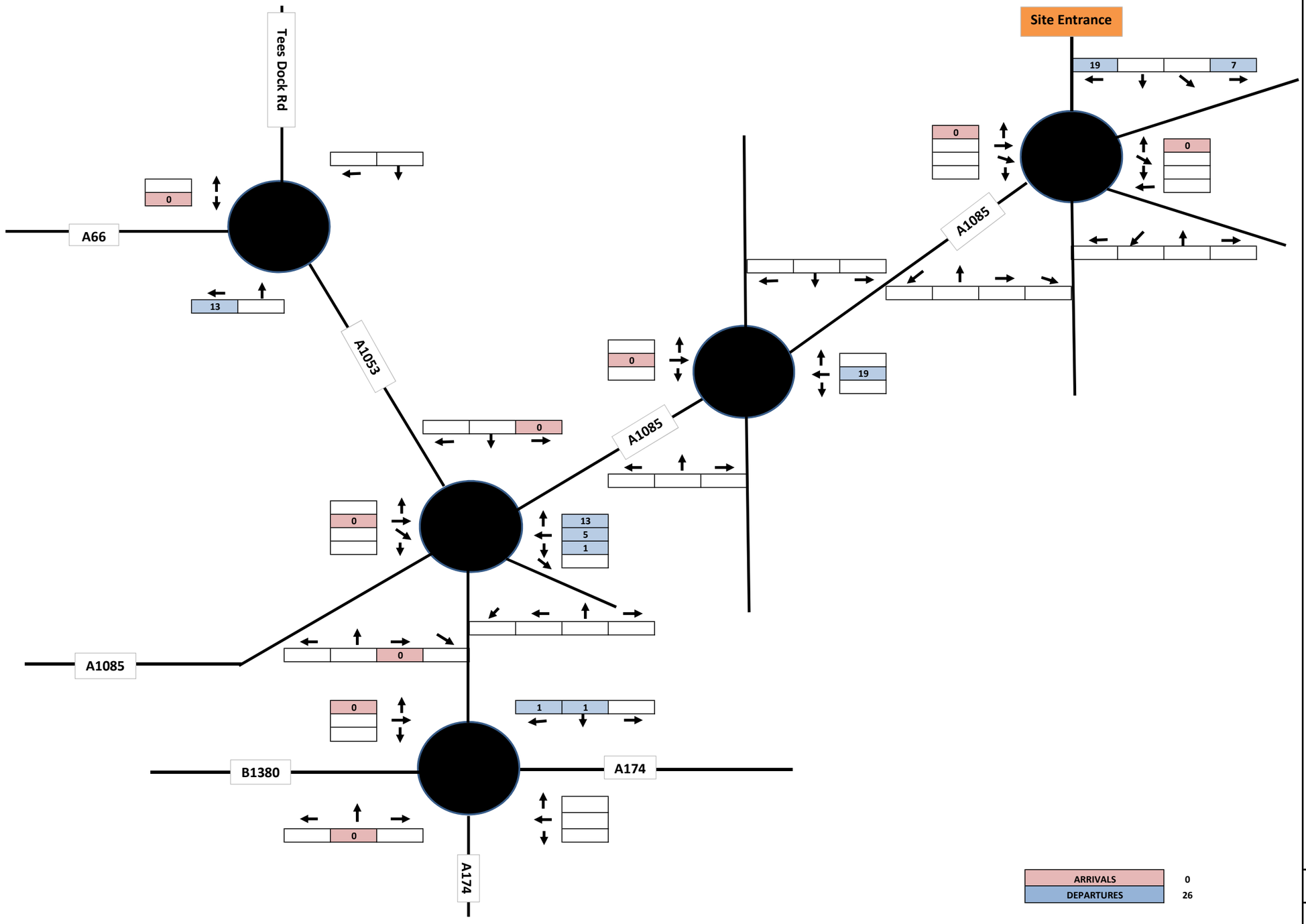

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				File:	

Date	11.11.2019
Design	JS
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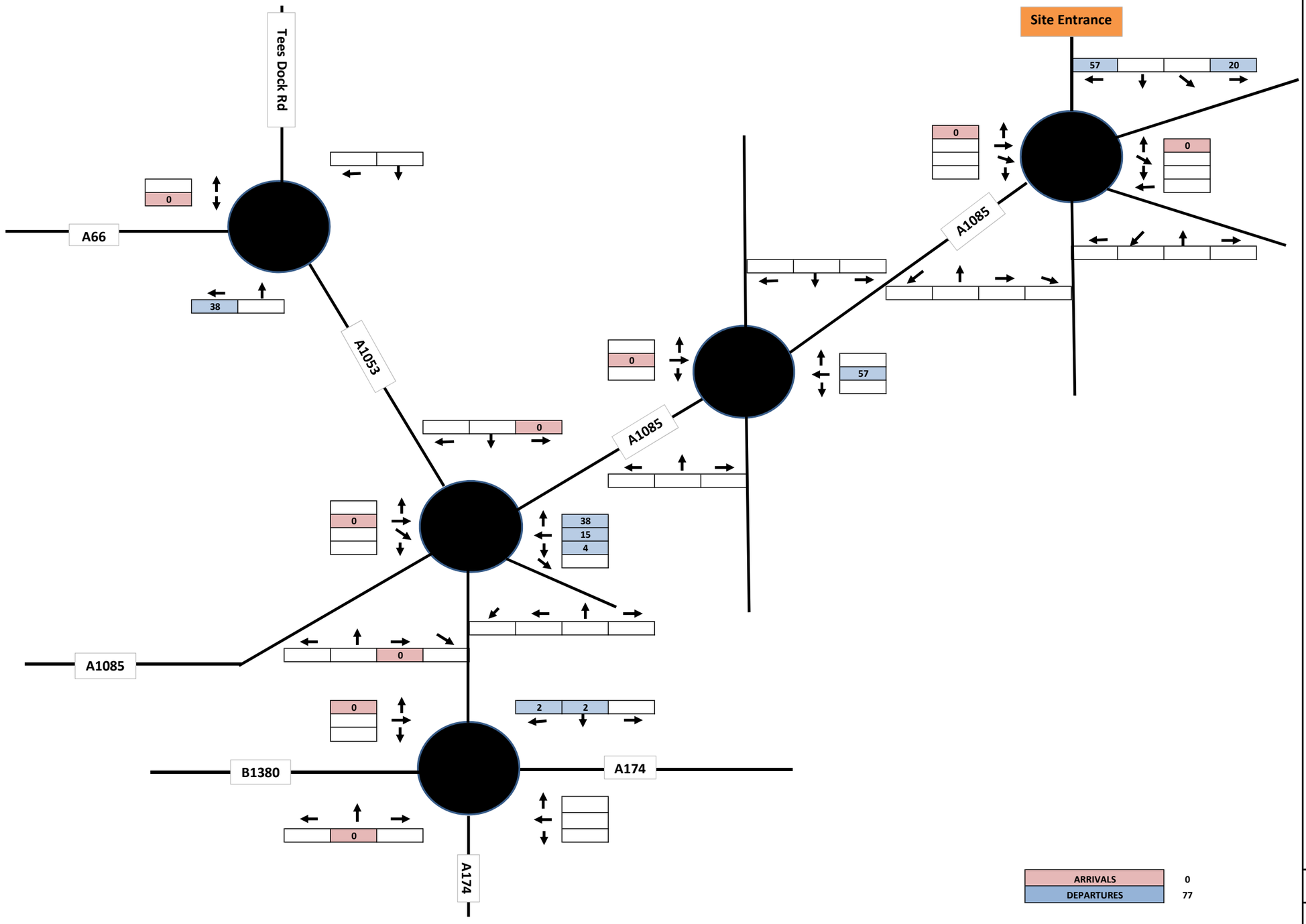
Appr'd	PF



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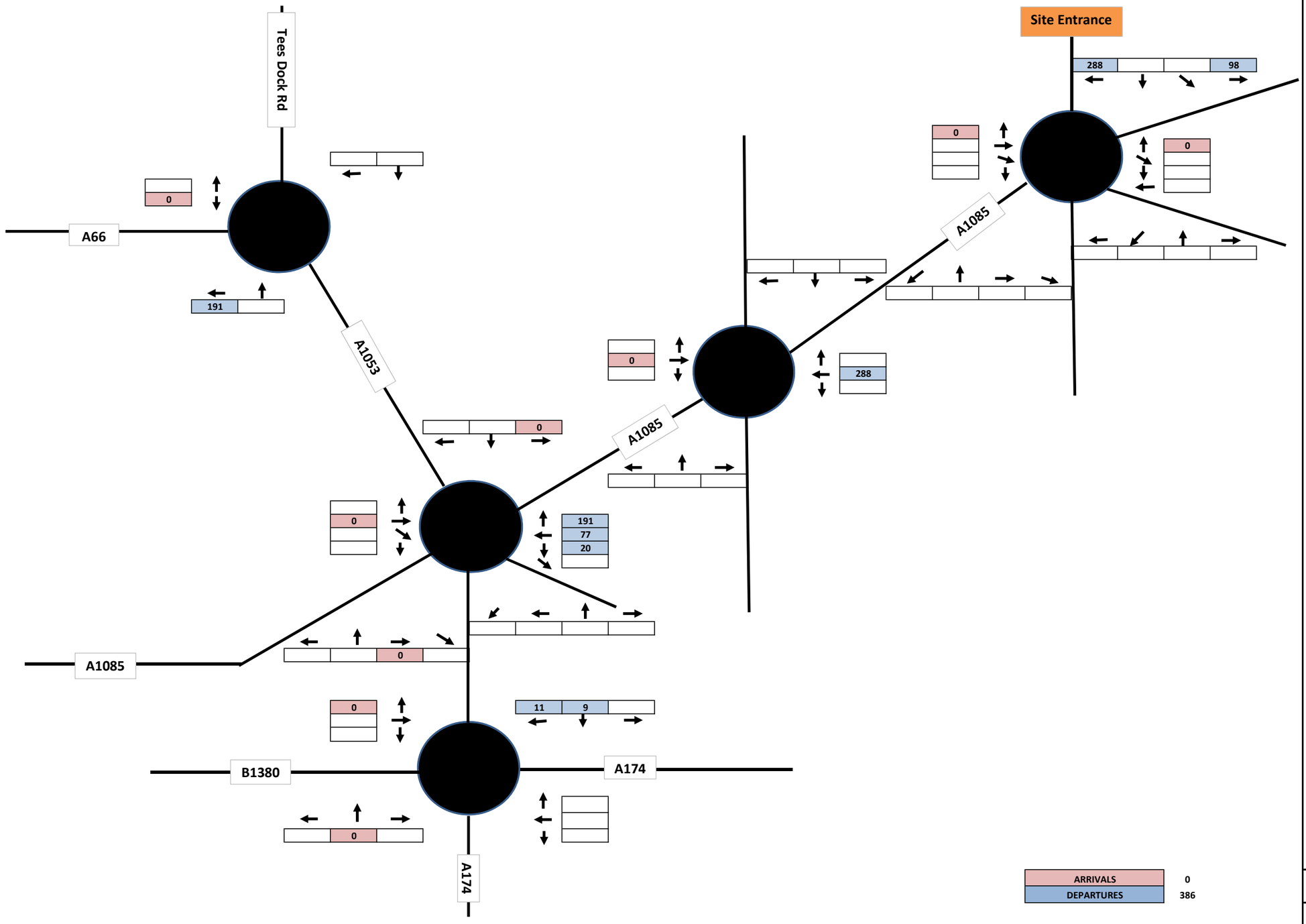

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OGCI Climate Investments Holdings LLP	Teesside Cluster Carbon Capture & Usage Project	Total Construction Workforce Flows (18:00 - 19:00)	AECOM	Appendix F	A	Design	JS
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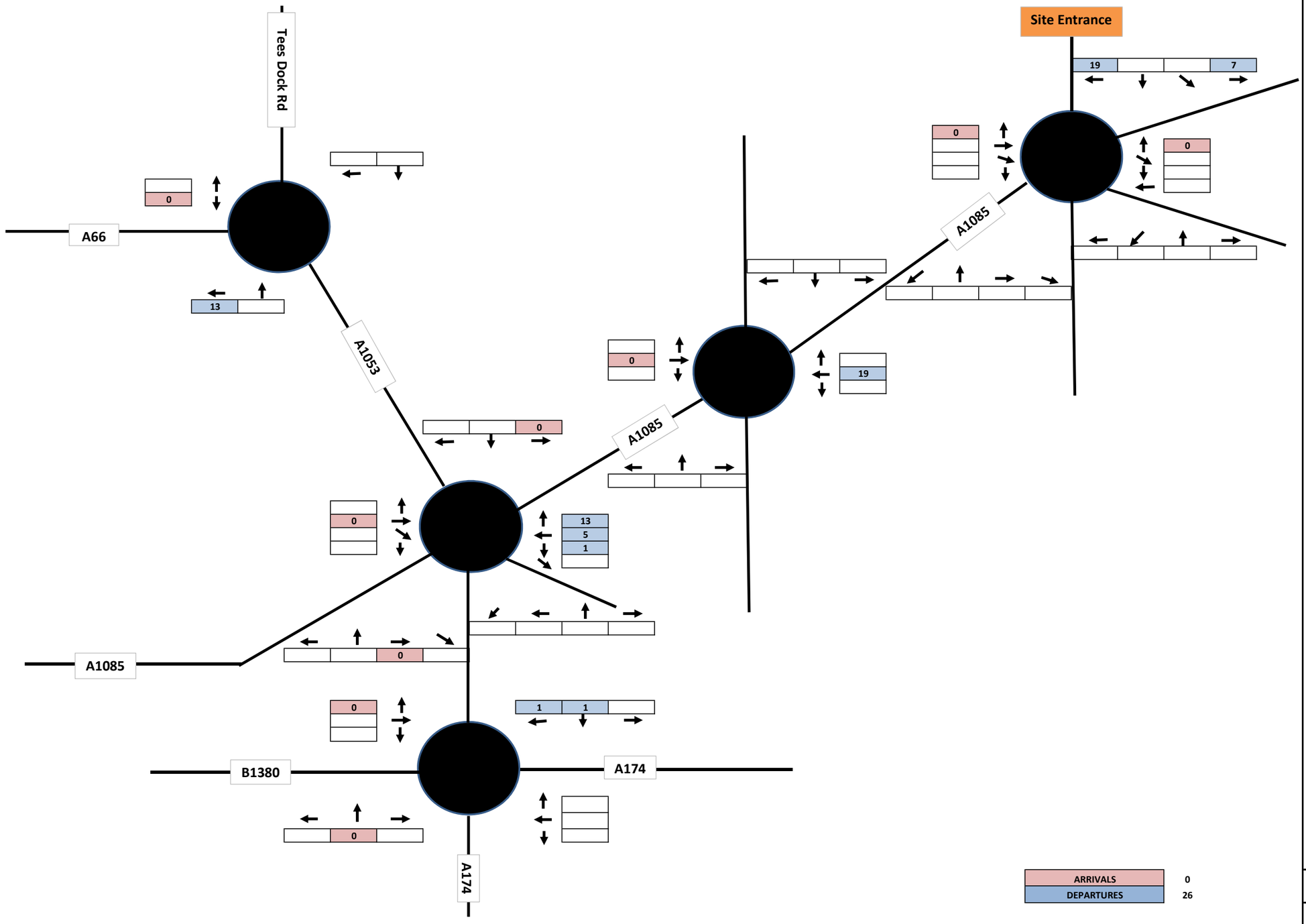

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				File:	

Date	11.11.2019
Design	JS
Checked	PF
Appr'd	PF

Gorstige, Jonathan

From: Gordon, Tony [redacted]@redcar-cleveland.gov.uk>
Sent: 22 January 2020 08:35
To: Gorstige, Jonathan
Subject: FW: Net Zero Teeside (NZT) - Transport Scoping

Jonathan,

We have reviewed the scoping document and we are happy with the proposed methodology for the assessment. We note that with a peak construction workforce of 1200 the developers would need to maximise their promotion of the use of crew minibuses and car sharing in order to minimise the use of private cars and the level of car parking on site.

Tony Gordon
Senior Strategic Transport Officer
[redacted]

From: Gorstige, Jonathan [mailto[redacted]@aecom.com]
Sent: 17 January 2020 16:13
To: Planning Admin
Subject: Net Zero Teeside (NZT) - Transport Scoping

Dear Redcar & Cleveland Planning,

Net Zero Teeside (NZT)

This proposal is for the development of a Carbon Capture Utilisation and Storage (CCUS) project comprising a gas-fired Combined Cycle Gas Turbine (CCGT) generating station with a net electrical output of up to 2,100 MW together with equipment required for the capture and compression of carbon dioxide (CO2) emissions from the generating station.

You may be aware of the proposal as a DCO ES Scoping Report has already been sent out under the title 'Teesside Cluster Carbon Capture & Usage Project'.

Would you be the appropriate contacts for this ? If not please could you supply me with contact details.

There are two potential sites being considered at the moment and full details are included in the attached TA Scoping Report.

We are wanting to agree the scope and methodology of the Transport Assessment based on the attached scoping report and would be grateful for any comments you may have.

We are also proposing to submit a Framework Construction Worker Travel Plan (CWTP) and a Framework Construction Traffic Management Plan (CTPM) with the DCO application to minimise construction worker vehicles and ensure HGV's use only the agree designated HGV Routes.

If you need any more information please get in touch.

Many thanks

Kind Regards

Jon

Jon Gorstige, BEng (Hons) MCIHT
Principal Consultant, Transportation, Consulting
D [redacted]
[redacted]@aecom.com

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Redcar & Cleveland Borough Council, Redcar & Cleveland House, Kirkleatham Street, Redcar, TS10 1RT, Tel: 01642 774 774, Website: www.redcar-cleveland.gov.uk

Gorstige, Jonathan

From: Bell, Christopher (NO, North East) <[redacted]@highwaysengland.co.uk>
Sent: 07 February 2020 14:20
To: Gorstige, Jonathan
Subject: FW: Net Zero Teeside (NZT) - Transport Scoping
Attachments: Net Zero Teeside TA Scoping Draft Review_for Issue.docx

Jon,
Please find attached an initial review of the Net Zero scoping report

I trust this is of assistance but if more info is required please just phone or email me.

Regards

Christopher Bell, Asset Manager
Highways England | Lateral | 8 City Walk | Leeds | LS11 9AT
Tel: [redacted] | **Mobile**: +[redacted]
Web: http://www.highways.gov.uk
GTN: [redacted]