

Our ref: PreApp 7282 NZ570220  
Your ref: EN010103

*Letter sent by email*

National Highways  
2 City Walk  
Leeds  
LS11 9AR

Tel: [REDACTED]

14 February 2022

Dear Sir / Madam,

**EN010103 - Net Zero Teesside Project: Examining Authority response to Applicants' letter of 4<sup>th</sup> February 2022**

Thank you for the information provided in relation to the exchange of letters between the Applicant and the Examining Authority associated with the Net Zero Teesside Project.

We remain committed to working proactively with all parties involved in the Project to ensure that the Strategic Road Network continues to operate safely and efficiently. While I do not wish to make specific comments on the exchange of letters, I provide the following comments.

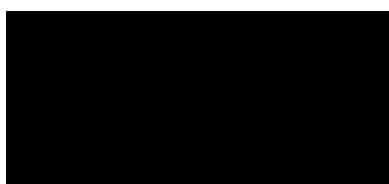
During the consultation period in December 2021, our review of the application highlighted the requirement for more information to be provided with regard the traffic impacts arising at the Strategic Road Network as a result of the Project, as presented in the AECOM Transport Assessment. I do not seek to provide these comments in full here, rather I attach our response from December 2021 so that it is clear as to the additional information we were seeking at that time. No further dialogue has taken place in relation to our comments (at the time of writing this letter) and I would welcome these matters being discussed in the near future with the aim of reaching an informed agreed position.


From review of the exchange of letters, it is clear that the applicant is seeking to make changes to the application and seeking a delay to the start of the examination. While it is not clear as to what the exact detail of these changes are, it is noted that the applicant is proposing to undertake further consultation between 10<sup>th</sup> March 2022 and 14<sup>th</sup> April 2022. We will engage as required during this consultation period. However, it would be welcomed if it could be confirmed if the proposed changes influence the findings of the analysis or outcomes presented in the AECOM Transport Assessment. If they do, provision of revised analysis in the form of an updated Transport Assessment, which also seeks to consider our previous comments, would be welcomed and we would be happy to consider such information.

From reviewing the letter and also having taken a wider look at the relevant representations to the application on the Project website, I note that there is no evidence of the National Highways response from December 2021. I would welcome confirmation that our response has been received and is being considered by the applicant team.

If you are able to confirm in relation to the above at the earliest opportunity that would be much appreciated. Please do not hesitate to contact me should you have any queries.

Yours faithfully



Chris Bell  
Planning Manager  
Email:  [@highwaysengland.co.uk](mailto: [redacted]@highwaysengland.co.uk)

# Net Zero Teesside Project – Transport Assessment Review

Prepared for: Chris Bell  
Prepared by: Jack Fawdington  
Date: 14<sup>th</sup> December 2021  
Case Reference: DevTV0032  
Document Reference: TM002  
Reviewed/approved by: Gavin Nicholson

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## Overview

Jacobs Systra Joint Venture [JSJV] (on behalf of National Highways) have undertaken a review of a Transport Assessment [TA] submitted for the development of the Net Zero Teesside Project, located in Redcar and Cleveland. The TA report has been produced by AECOM on behalf of Net Zero Teesside [the Applicant] for the development of a carbon capture facility. The development site is classified as a site of national importance and as such is the subject of a Development Consent Order [DCO].

The suitability of the TA report has been commented on by JSJV in order to ascertain the potential impact of the development proposals on the Strategic Road Network [SRN], specifically the A1053 and A174, which lie approximately 4km from the development site. For ease of cross referencing, the headings identified below reflect those detailed within the TA, where relevant to National Highways. Discussion will also be provided in reference to whether the TA addresses prior scoping comments provided by JSJV in relation to the proposed development, as detailed within JSJV DevTV0032 TM001.

## JSJV TM001 Scoping Comments

The following points were identified by JSJV within TM001 in reference to matters that require addressing within the forthcoming development TA. Where relevant, these comments will inform the content of this review note.

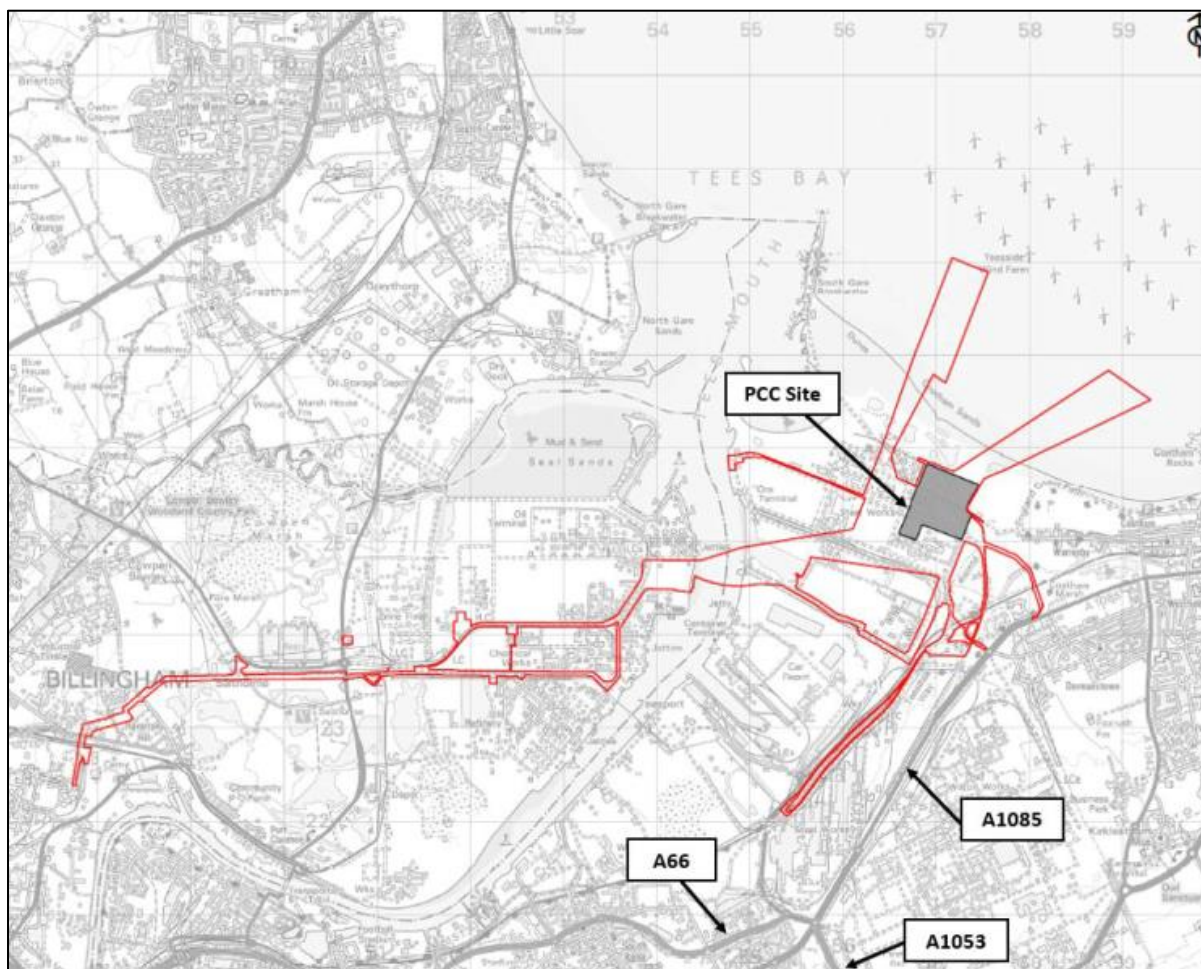
- 1) Given two site locations are still being considered, forthcoming transport considerations will need to include concrete details for the chosen site location, given that if the Wilton site is to come forward, this will take direct access from the SRN and adequate and safe access/egress will need to be demonstrated;
- 2) Further details regarding the impact of the generation of construction traffic is required. It is expected that a CTMP be supplied to National Highways with an appropriate construction activity plan for the chosen site given that the period of construction is currently referred to in quarters and specific months are not identified for the period of

construction. JSJV would expect this to reflect a detailed and live document that would aim to control and manage both HGV and staff construction movements;

- 3) JSJV would seek to understand what level of traffic generation is expected for both the gas pipeline construction and CO2 pipeline construction as well as during operation of the site;
- 4) JSJV would point out that any traffic flow generation for the Net Zero Teesside will be considered by National Highways based upon its own individual merits and not on any previously consented flows for developments at the same site location. Based on the information presented in the report, the volume of traffic and likely routing of traffic, in JSJV's view, will necessitate junction capacity assessments on the roundabouts in vicinity of the two sites. It will be important that such assessments capture all movements, including u-turning movements for HGVs for example, if necessary;
- 5) National Highways welcomes measures such as travel planning and suitable parking provision in reducing single car occupancy to and from the site as this will be key in managing down the number of trips on the SRN, linked to a CTMP;
- 6) Further details for the trip distribution and assignment exercises should be supplied given JSJV are of the view a higher proportion of vehicles are likely to utilise the SRN;
- 7) Location of ATCs will need to be updated depending on the chosen site to come forward; and
- 8) It is welcomed that a consideration of safety is to be made and JSJV would emphasise the safe and functional operation of the SRN is key and a suitable assessment of the A1053 / A174 will be needed.

## Site Location Plan

Figure 1 – Site Location Plan



(Extracted from TA Figure 16A-1)

## Proposed Development

The location of the proposed low-carbon gas fired power station is to be located on the Power, Capture and Compression [PCC] site, as detailed on Figure 1 above. Paragraph 16.6.2 identifies that for the purposes of the TA, a construction programme lasting approximately 51 months, starting in 2022 and ending in 2026 is considered to be the 'realistic' worst case scenario.

The electricity generation station and carbon capture elements of the proposed development are located approximately 2km north west of Redcar on the former SSI Steelworks site 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.

## Existing Conditions

### Connections to SRN

Travelling west from the site access, the A1085 provides a link to the A1053, which in turn connects to the A174. The A1053 and A174 are the most immediate sections of SRN to the site access.

It is proposed that all construction workers associated with the construction of the PCC and associated connections and pipeline workers working to the south of the Tees will access the site via the existing entrance located at the A1085 / West Coatham Lane roundabout.

All construction HGVs associated with the construction of the PCC will access the site via the A66 / A1053 / Tees Dock Road roundabout.

### **Walking and Cycling**

The existing pedestrian facilities serving the proposed site area are generally appropriate, however, it is noted by JSJV that the overall 2km walking catchment from the site is slightly constrained, such that relatively few peak hour journey to work trips to / from the site will be undertaken on foot.

In addition, it is acknowledged by JSJV that the existing cycling facilities serving the site are appropriate, however, the relative proximity of the site to a number of dual carriageways and trunk roads may constrain the overall level of cycle trips to / from the development.

### **Public Transport**

The nearest bus stops to the site are located on West Coatham Lane approximately 250m south east of the PCC site entrance. The TA confirms that 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.

There are five services that stop at the West Coatham Lane bus stops, these are services 62, 64, X3, X3A, X4 and X4A. A summary of the bus service frequency is provided within TA Table 16-1, however, JSJV would note that the frequency of service provision provided by the existing services are generally limited during the weekday daytime and evening periods, such that the inflexibility of service frequency may not cater for the demands of site staff. As such, an increased service provision may be required for a meaningful proportion of site staff to access the site via bus.

The TA proposes that there is potential for the currently closed British Steel Redcar station to be reopened in order to serve the site. While this remains a possibility, no further detail is provided in relation to investigating the potential reopening of this station.

## **Construction Generation – PCC Site**

### **PCC Site Construction Trip Generation**

The TA states that the profile of construction workforce over the construction period has been developed based on the indicative construction programme and through discussion with the Applicant. The estimated profile of the workforce over the construction period for the proposed development (excluding pipeline connections which is discussed subsequently) is detailed below.

**Table 1 – Profile of Daily Workforce – 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
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
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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

*(Extracted from TA Table 16A-23)*

Table 1 identifies that the peak construction workforce is forecast to occur in Months 16 – 27 when circa 1,750 workers are expected on site. The resultant vehicle generation scenarios based upon varying construction worker car occupancy rates is detailed in Table 2 below. TA Paragraph 16.6.23 notes that in relation to traffic generation, an occupancy rate of 1.35 per vehicle without any management or mitigation measures is a figure that is ‘generally’ accepted within the construction industry. Continuing, AECOM note that while an individual survey cannot be drawn upon to justify the stated 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 – 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

(Extracted from TA Table 16A-24)

With reference to the proposed vehicle occupancy rate of 1.35, JSJV note that:

- While no further evidence is provided in reference to the 1.35 occupancy figure, independent research undertaken by JSJV has evidenced that this figure has been accepted in relation to comparable major infrastructure developments, namely the VPI Immingham OCGT Project in 2019.

In relation to development traffic generation, the TA assumes that active management will result in 80% of workers travelling to the site by private car with an average occupancy of 2 workers per vehicle. 20% of workers are proposed to travel to the site by minibus, with an average occupancy of 7 workers per vehicle. The TA notes that this assumption has been used as a basis for assessment within the Knottingley CCGT Power Station TA (June 2013) which gained DCO consent in March 2015 and Egborough CCGT Power Station which gained DCO consent in September 2018.

When the aforementioned 1.35 occupancy rate is applied to workforce associated with the peak development construction period (months 16 to 27), the proposed development trip generation is detailed in Table 3 below.

**Table 3 – Peak Construction Trip Generation**

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

(Extracted from TA Table 16A-25)

With reference to the proposed peak construction trip generation, JSJV note that:

- As above, while no further evidence is provided in reference to the average occupancy rates proposed, it is acknowledged that the proposed rates have been accepted in relation to a comparable major infrastructure development, namely the Knottingley CCGT Power Station in 2013.

### PCC Site - HGV Movements

TA Paragraph 16.6.28 states that the volume of construction HGVs is predicted to be at its maximum of around 346 two-way daily HGV movements (173 arrivals – 173 departures) during months 7 to 12 of the site remediation and preparation phase of construction, with 174 two-way daily HGV movements (87 arrivals – 87 departures) during months 1 to 6.

During the remainder of the construction period, it is proposed that HGV movements will vary, with 80 two-way daily HGV movements from month 13 to month 28 of construction, 60 two-way daily HGV movements from months 29 to 34 and 40 two-way movements from months 35 to 51 of the construction programme.



## Construction Generation – Pipeline Construction

TA Paragraph 16.6.30 states that the construction workforce associated with pipeline construction is expected to total 120 workers who will travel directly to their relevant compound.

A vehicle occupancy rate of 2.0 per vehicle has been applied within the TA which would result in 120 two-way movements per day.

### Pipeline Construction – HGV Movements

TA Paragraph 16.6.33 states that the volume of HGVs delivering materials will be at its maximum of 10 two-way daily movements over the entire pipeline construction period except for the first month of construction when a maximum of 42 two-way daily movements is expected. In addition, a maximum of 64 two-way daily movements are expected in month 7.

## Combined Vehicle Trip Generation – Peak Month

The total two-way construction vehicle traffic expected over the construction period is detailed in TA Annex 16A.3, which identifies the peak month of construction to be between months 22 – 26 (Q3 / Q4 in 2024). An extract of Annex 16A.3 over the peak construction months is detailed below in Table 4.

**Table 4 – Combined Peak Vehicle Trip Generation (Months 22 to 26)**

Month of Construction					
	22	23	24	25	26
Daily Total 2-way Construction Worker Traffic	1620	1620	1620	1620	1620
Daily Total 2-way HGV Traffic	90	90	90	90	90
Daily Total 2-way Construction Traffic	1710	1710	1710	1710	1710

*(Extracted from TA Annex 16A.3)*

With reference to the combined peak vehicle trip generation, JSJV note that the total cumulative trip generation values appear to have been correctly calculated in line with the trip generation figures presented within the TA.

## Combined Daily Vehicle Profile – Peak Month

The percentage of daily inbound and outbound construction worker / HGV trips on an hour-by-hour basis for all aspects of the proposed construction are detailed in TA Tables 16A-26, 16A-27 and 16A-28. Table 5, detailed below, has combined the content of these tables to provide a cumulative indication of the daily profile of vehicle arrivals and departures from all aspects (PCC and Pipeline) of the construction site as a whole.

**Table 5 – Combined Daily Vehicle Profile – Peak Month**

Hour Beginning	Arrivals	Departures
0600	315	15
0700	191	18
0800	41	18
0900	34	19
1000	33	26
1100	34	27
1200	40	33
1300	34	34
1400	27	27
1500	19	27
1600	18	40
1700	26	175
1800	23	264
1900	15	120
2000	0	7
2100	0	0
Total	1700	1700

(Extracted from TA Tables 16A-26, 16A-27 and 16A-28)

In addition, TA Paragraph 16.6.40 notes that during peak construction months 22 to 26, it is expected that there will be 10 evenly spread two-way HGV movements per day associated with pipeline construction. The addition of these 10 trips ensures that the total trip generation values in Table 4 and Table 5 appropriately correspond.

With reference to the combined daily vehicle profile over the peak construction period, JSJV note that:

- TA section 16.9.3 identifies the network peak hours as 0800 – 9000 and 1700 – 1800, therefore with reference to Table 5, over the AM peak hour, approximately 49 two way trips will be undertaken, while approximately 201 will be undertaken over the PM Peak hour. As such, it remains possible that a material impact may be incurred at the SRN over both the AM and PM network peak hours.

## Abnormal Indivisible Loads

The TA notes that it is the intention of the proposed development to avoid road transport for Abnormal Indivisible Loads [AIL]s as far as possible by using alternative modes such as water. It is proposed to import large modular plant and components for the site using the facilities at the Redcar Bulk Terminal [RBT]. The TA notes that AILs weighing less than 100 tonnes may also be brought in through Teesport. AILs are then proposed to be moved to the PCC site using HGVs via Tees Dock Road and the internal Teesworks road network north of Lackenby Steelworks. This approach for the movement of AILs would be welcomed by National Highways.

## Development Operational Period

TA Paragraph 16.6.45 identifies that once the site is operational, there could be a maximum of 60 full-time staff working in three shifts (0600 – 1400, 1400 – 2200 and

2200 – 0600). In addition, there is to be around 40 corporate staff based at the site working normal office hours (0900 – 1700).

In addition, HGV traffic is to be generated by deliveries of operational and maintenance plant and equipment, however, this is expected to equate to a maximum of four HGVs per day.

During an outage, the TA acknowledges that it could be expected that up to 200 additional staff could be on-site on any one day. However, it is noted that outages are expected to occur infrequently (once every 5 years) and last for approximately 3 months. The effects of this specific operational phase and associated traffic has therefore not been considered in detail within the TA.

With reference to the trip generation impact of the operational period of the development, JSJV note that:

- In line with the anticipated level of operational and corporate staff on site during a typical operational period, JSJV acknowledge that the trip generation associated with these staff trips is unlikely to incur a material impact on the SRN.

## Decommissioning

Assuming a 25 year operational life, TA Paragraph 16.6.49 notes that the decommissioning phase is currently too far in the future to enable a meaningful assessment at this current stage, therefore this scenario has not been considered further within the TA. The TA acknowledges that the site decommissioning is likely to be addressed via a DCO requirement that will need to be discharged before any decommissioning works can take place. This approach is accepted by JSJV.

## Trip Distribution and Assignment

### Trip Distribution

Primarily, the TA notes that around 60% of the construction workforce is likely to be sourced from elsewhere in the UK, with 40% anticipated to be permanent home-based residents. It is noted by JSJV that these proportions have been agreed with the local authority and National Highways during scoping works.

The distribution of the permanently residing construction workforce 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, utilising 2011 Census Journey to Work Table KS605UK. The proposed network distribution of these workers is detailed in Table 7 below.

**Table 6 – 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

(Extracted from TA Table 16A-29)

With reference to the permanent resident gravity model, JSJV note that:

- Utilisation of the 2011 Census Journey to Work Table KS605UK is seen to represent an acceptable methodology for the distribution of permanent residents.
- The resultant calculations underpinning the proposed number of site workers per district during the peak construction month are seen to be acceptable.

The 60% transitory workers are proposed to likely to temporarily reside within general proximity to the development site. The proposed network distribution of these workers is detailed in Table 7 below, and has been determined 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. The TA notes that this information has been obtained from the 'Visit Britain Accommodation Stock 2016 Audit'.

**Table 7 – Transitory Construction Workforce Distribution**

District	No. of Accommodation 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

(Extracted from TA Table 16A-30)

With reference to the transitory resident gravity model, JSJV note that:

- Utilisation of the stated 2016 Visit Britain Audit is seen to represent an acceptable methodology for the distribution of transitory residents.
- The resultant calculations underpinning the proposed number of site workers per district during the peak construction month are seen to be acceptable.

## Trip Assignment

TA Paragraph 16.6.55 identifies five key routes that are noted as being most likely to be taken by construction workers travelling to and from the site. These 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.

For assessment purposes, TA Paragraph 16.6.59 identifies that it has been assumed that all construction HGVs associated with the PCC site will arrive / depart 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.

The principle of the HGV assignment is seen to be acceptable by JSJV, however, no justifying methodology is provided within the TA to explain the proposed distribution proportions.

The network assignment of the permanent resident construction workforce is summarised within Table 8, detailed below.

**Table 8 – Permanent Resident Route Assignment**

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

(Extracted from TA Table 16A-31)

With reference to the distribution of the permanent resident workforce, JSJV note that:

- The combined routing of 43% workers to catchment areas such as Darlington, Durham, Hartlepool, Stockton-on-Tees and Sunderland via Route 1 and the A66 is seen to be correct, however, no methodology is provided within the TA

to justify how the assignment of workers to Middlesbrough and Redcar & Cleveland have been calculated.

- The TA should clarify by way of MSOA how the assignment of workers to Middlesbrough and Redcar & Cleveland has been calculated by way of journey to work data, given the figures provided in TA Table 16A-31 cannot be evaluated in any detail. This data should ideally be provided in MS Excel format to enable efficient review.

The network assignment of the transitory construction workforce is summarised within Table 9, detailed below.

**Table 9 – Transient Workforce Route Assignment**

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

*(Extracted from TA Table 16A-32)*

In supplement, TA Paragraph 16.6.60 notes that 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 to the site are located to the west and north west of the site, and are therefore expected to utilise the A66 towards the A19 and the A1085.

With reference to the distribution of the transitory workforce, JSJV note that:

- The combined routing of 34% workers to catchment areas such as Darlington, Hartlepool and Stockton-on-Tees via Route 1 and the A66 is seen to be correct.
- It is acknowledged by JSJV that the largest proportion of guesthouses within Middlesbrough and Redcar will be located within the general proximity to the town centres of these respective locations, however, it is considered potentially overly simplistic to assign all traffic to these locations via both Route 2 and Route 5 respectively. No methodology is provided within the TA to justify how the assignment of workers to Middlesbrough and Redcar & Cleveland has been calculated.

## Growth Factors

The TA identifies that for the purposes of this assessment, the anticipated peak traffic generation during the construction period would occur in 2024 on the basis that construction commences in Q4 2022. The proposed TA assessment year is therefore 2024.

Traffic growth factors for the Redcar and Cleveland District have been obtained from TEMPro 7.2. The TA notes that no reductions have been made within TEMPro to account for the additional committed development traffic considered.

**Table 10 – Growth Factors**

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

*(Extracted from TA Table 16A-33)*

With reference to the proposed growth factors, JSJV note that:

- JSJV have undertaken an independent TEMPro interrogation and consider the 2024 AM / PM Peak growth factors for the Trunk road type to be acceptable.

## Committed Developments

The following committed or likely developments have been identified within the TA are incorporated into the future baseline and future year assessment.

- 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);
- Teesworks 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, Teesworks (R/2020/0357/OOM).

### Combined Committed Development Flows

The total committed development two-way flows for the identified study area junctions for the 2024 AM and PM peak periods are detailed in Table 11 below.

**Table 11 – 2024 Total Committed Development 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

(Extracted from TA Table 16A-45)

The identified committed developments and resultant flows are seen to be acceptable by JSJV.

## Identification of Assessment Peak Hours

### Identification of Network Peak Hours

To identify the peak assessment hours, the TA combines the assessment base flows plus committed development flows with development flows in order to determine which hour displays the highest combined flows.

An overall network peak hour has been selected based on total traffic arriving at the following junctions:

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

In line with the summary data provided within the TA, the selection of the following network peak hours is considered appropriate:

- AM: 0800 – 0900; and
- PM: 1700 – 1800.

### Assessment Years

The proposed assessment scenarios are as follows:

- 2019 baseline;
- 2024 baseline (future baseline) plus committed development; and
- 2024 baseline plus committed development plus peak of construction.

The assessment scenarios are seen to be acceptable by JSJV given the temporary nature of construction activities.

## Baseline Traffic Flows

With reference to the SRN, baseline flows have been extracted from the National Highways WebTRIS database for the following junctions:



- A1085 / A1053 Roundabout; and
- A1053 / A174 / B1380 Roundabout.

The TA confirms that raw traffic data was extracted for the hours of 0600 – 1000 and 1600 – 2000.

## Junction Impact Assessment

### A1085 / A1053 Roundabout Junction

The TA confirms that the assessment of the A1085 / A053 roundabout junction has been undertaken using LinSig V3. However, as identified by JSJV within this review note, no methodology has been provided within the TA to justify how the network assignment of workers to Middlesbrough and Redcar & Cleveland has been calculated, and as such, JSJV have been unable to determine how the assignment of workers to these locations has been established by way of journey to work data.

As such, detailed comments on the outputs of the LinSig modelling will not be provided by JSJV until the proposed trip distribution methodology can be fully evaluated and agreed.

### A174 / A1053 / B1380 Roundabout Junction

TA Paragraph 16.10.22 states that following a telephone call held with Highways England on the 21<sup>st</sup> 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 / PM peak hours is proposed to be less than 30 two-way vehicle movements.

JSJV cannot provide any comments as to the content of the proposed telephone conversation, however, while aspects pertaining to trip distribution remain outstanding, JSJV do not accept the principle that the junction does not require further assessment while matters pertaining to the trip distribution of the resident and transitory workforce are not agreed. Upon provision of further information in relation to trip distribution, the requirement (or confirmation that there is no requirement) for further assessment will be able to be provided.

## Personal Injury Accident Data

### Accident Clusters

Based upon the analysis undertaken within the TA, the following collision clusters have been identified in relation to the SRN.

### A174 / A1053 / B1380 Roundabout Junction

The junction has experienced four collisions in the past five years, of which all four were slight in severity. Of these collisions, three involved a rear shunt.

While it is accepted by JSJV that these collisions are likely not attributed to inadequate highway design, the frequency of rear shunt collisions may be systematic of regular queueing experienced on this link.

### A66 / Eston Rd / Church Ln Crossroads

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.

In line with the analysis undertaken, it is accepted by JSJV that the referenced collisions do not indicate a specific issue with regards to highway design at this junction.

## Summary and Conclusions

This review has highlighted the following:

- 1) Over the AM peak hour, approximately 49 two way trips will be undertaken, while approximately 201 will be undertaken over the PM Peak hour. As such, it remains possible that a material, albeit temporary impact may be incurred at the SRN over both the AM and PM network peak hours.
- 2) The principle of the HGV assignment is seen to be acceptable by JSJV, however, no justifying methodology is provided within the TA to explain the proposed distribution proportions.
- 3) The TA should clarify by way of MSOA how the assignment of permanent resident workers to Middlesbrough and Redcar & Cleveland has been calculated by way of journey to work data, given the figures provided in TA Table 16A-31 cannot be evaluated in any detail. This data should ideally be provided in MS Excel format to enable efficient review.
- 4) No methodology is provided within the TA to justify how the assignment of transitory workers to Middlesbrough and Redcar & Cleveland has been calculated.
- 5) As such, detailed comments on the outputs of the LinSig modelling at the SRN will not be provided by JSJV until the proposed trip distribution methodology can be fully evaluated and agreed.
- 6) While aspects pertaining to trip distribution remain outstanding, JSJV do not accept the principle that the A174 / A1053 / B1380 junction does not require further assessment while matters pertaining to the trip distribution of the resident and transitory workforce are not agreed.