DevHU0174 AI Data Centre A160 at South Killingholme

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Introduction

In March 2024, pursuant to Regulation 6 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, Humber Tech Park Ltd [the Applicant], submitted a request to North Lincolnshire Council for a screening opinion (ref: PA/SCR/2024/2) in relation to a forthcoming planning application. The application will seek consent for the construction of:

> *"…a data centre of up to 309,000 sqm (GEA) delivered across up to 3no. buildings, including ancillary offices, internal plant and equipment and emergency back-up generators and associated fuel storage. Other works include internal roads and footpaths, cycle and car parking, hard and soft landscaping, security perimeter fence, lighting, drainage, an electricity substation, a district heating unit, horticultural glass house, and other associated works and infrastructure on land south of A160, South Killingholme."*

The Local Planning Authority [LPA] and Local Highway Authority [LHA] is North Lincolnshire Council [NLC] and the Applicant's Consultant is Pegasus Group [Pegasus] and DTA Transport Planning Consultants [DTA].

The Jacobs SYSTRA Joint Venture [JSJV], on behalf of National Highways, has reviewed the request for a screening opinion. This TM [TM01] will provide a review of the documentation, including the:

- Request for Screening Opinion (Pegasus); and
- Transport Assessment – Scoping Note (DTA).

Proposed development

Within the EIA Screening note, the proposed development is stated to comprise:

- *"Up to three Data Centre buildings capable of 384MW of IT load with a total GEA of 309,000 sqm, including ancillary office space, with a maximum height of 13m (15m with the external gantry and flues);*
- *A new electricity substation, with a maximum height of 8 meters;*

- *Provision for emergency back-up generators and fuel storage;*
- *A district heating unit, with a maximum height of 8 meters;*
- *A horticultural glass house, with a maximum height of 10m. The glass house will be heated from the excess heat from the data centre;*
- *Comprehensive scheme of landscaping and biodiversity enhancements, including provision of Sustainable Drainage System (SuDS).*
- *Safeguard of existing boundary hedgerows and trees where possible; and*
- *Primary access from Harbrough Road to the east, and emergency access from the A160 to the north with associated internal roads, car parking, security fencing and supporting infrastructure."*

Furthermore, a number of underground gas pipelines, a water pipeline and Hornsea One Wind Farm Export Cable will cross the application site.

The proposed development will take approximately 3 years to complete once construction commences.

Existing situation

The location of the proposed development in relation to the Strategic Road Network [SRN] is presented in **Figure 1.**

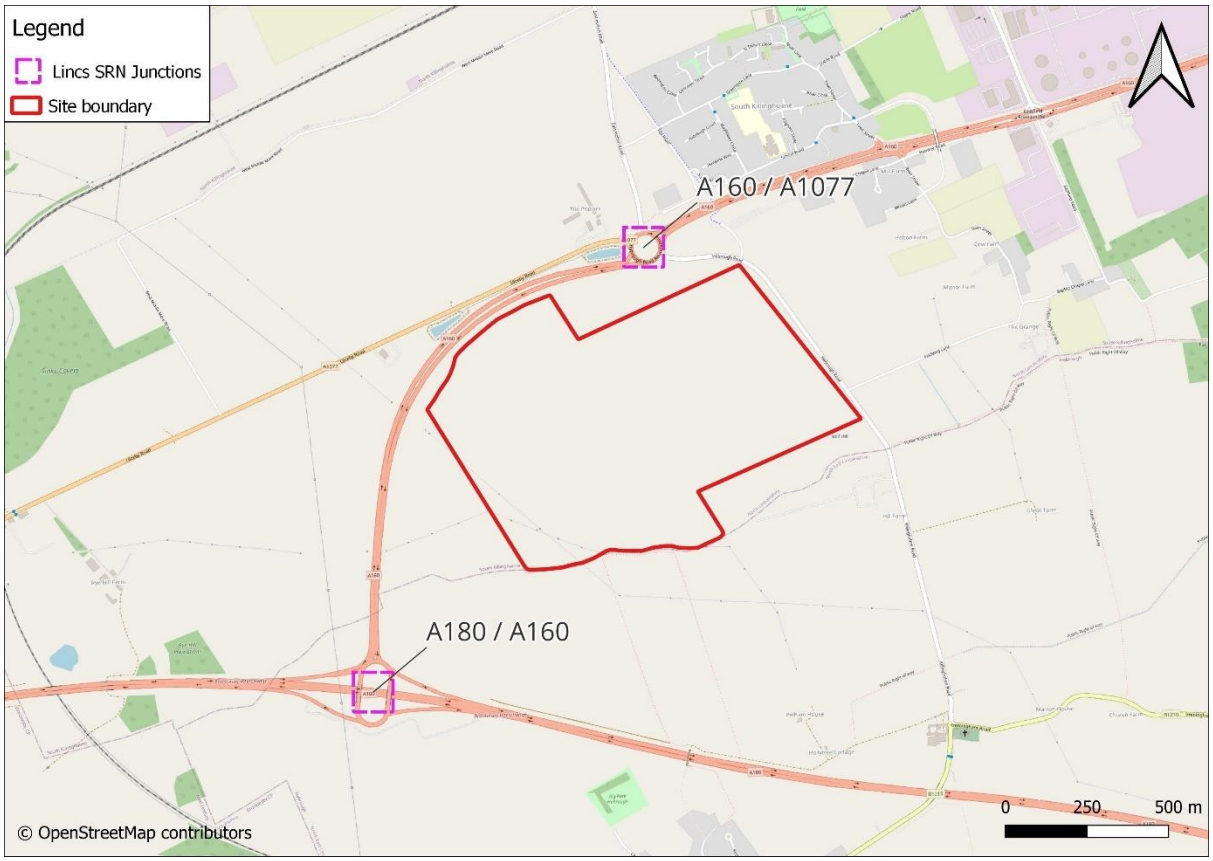

Figure 1. Application site location in relation to SRN

As indicated in **Figure 3**, the application site is located adjacent to the A160 / A1077 roundabout [Habrough Roundabout] and A180 / A160 junction [Brocklesby Interchange].

EIA Screening Opinion

The Applicant has submitted a request to NLC for an Environmental Impact Assessment [EIA] screening opinion.

Screening is the process by which the planning authority decides whether a development of the types listed in Schedule 2 of the EIA Regulations needs to undergo EIA before an application for planning permission is made. There are a number of circumstances that can prompt a planning authority to prepare and adopt an EIA screening opinion:

- Under Regulation 6 of the EIA Regulations a developer can ask the planning authority to give an EIA screening opinion before any application for planning permission is made. The planning authority must respond to such requests within three weeks unless an extension is agreed. Once the screening opinion has been adopted it will be made available for public inspection at the place where the Planning Register is held (the relevant borough or district council) for a period of 2 years;
- Under Regulation 8 of the EIA Regulations where a planning application has been made without an environmental statement and the planning authority has no record of having previously adopted a screening opinion for the proposal, the planning authority can adopt an EIA screening opinion. This will determine whether or not the scheme requires an EIA. This must be done within three weeks of the planning application being deemed valid (can be extended if the developer agrees). Once the screening opinion has been adopted it will be placed on the Planning Register (held by the relevant borough or district council) under the record for the submitted application.

The request from the Applicant for a screening opinion is submitted pursuant to Regulation 6 of the EIA Regulations.

We would note that it is for the planning authority to form and adopt a screening opinion. Nonetheless, with reference to Circular 01/2022 (para. 55), National Highways will engage in the relevant screening or scoping process where a potential impact on the SRN is identified.

In this instance, we would agree with the Applicant that the proposal does not comprise Schedule 1 development and, therefore, is not a type of development for which Environmental Impact Assessment is mandatory. The Applicant does state, however, that the development falls within Schedule 2 10(a) (Industrial Estate Project), but conclude that, with regard to the Indicative Criteria and Thresholds within the Planning Practice Guidance and the screening criteria set out in Schedule 3 of the EIA Regulations, any impacts would not be 'significant' such as to warrant the submission of a formal EIA.

We note that the Applicant does acknowledge the potential for environmental impacts arising from the proposed development and states that these aspects will be considered and addressed through the provision of supporting reports, including:

- A Transport Assessment [TA];
- Construction Environmental Management Plan [CEMP]; and
- Construction Traffic Management Plan [CTMP].

Again, with reference to Circular 01/2022, the JSJV would expect the applicant to provide sufficient environmental information to satisfy the LPA, and any other

consenting authorities, that all environmental implications of the proposals have been appropriately considered. Further, National Highways will expect to see measures implemented that fully mitigate any and all environmental impacts arising from and relating to the interaction between developments and the SRN; there are three aspects to this:

- The environmental impacts arising from the temporary construction works;
- The environmental impacts of the permanent transport solution associated with the development; and
- The environmental impact of the road network upon the development itself.

Any assessment undertaken by, or on behalf of, the Applicant should be sufficiently comprehensive to establish the likely transport related environmental impacts, including air quality, light pollution and noise, and to identify the measures to mitigate these impacts.

Further, to avoid potential delay or challenge, transport assessments and environmental statements/impact assessments (if required) should be mutually consistent and pay due regard to each other.

Without prejudice to the planning authority's screening opinion, therefore, JSJV welcomes the decision to submit the above-mentioned reports alongside the planning application.

Transport Assessment

It is stated that a TA will be submitted in support of the forthcoming planning application for the proposed development. JSJV would agree that the planning application should be accompanied by a TA.

The scope of the TA has been prepared by DTA within the "Transport Assessment – Scoping Note" [TASN]. We have reviewed this note and would offer the following comments.

The impact of the development should be assessed based on relevant regional and national planning policy. In terms of the impact on the SRN, we would request that the Applicant makes reference to the following policy:

- National Planning Policy Framework 2023;
- Local Transport Note LTN 1/20, and
- DfT Circular 01/2022 – Strategic Road network and the delivery of sustainable development.

In this regard, with reference to Circular 01/2022, National Highways will require that a vision for the development be set out. The vision should describe the aims of the development in terms of transport and illustrate how the Applicant will enable a reduction in the need to travel by private car and prioritise sustainable transport opportunities, ahead of capacity enhancements. Consequently, the TA may need to consider a set of scenarios to determine the optimum design and transport infrastructure to realise this vision.

The Applicant should put forward clear targets and commitments to manage down the traffic impact of development and maximise accessibility to and within the sites by walking, wheeling, cycling, public transport and shared travel; hence, the Travel Plan should present suitable multi-modal (person) trip rates alongside any travel planning

targets. The Transport Assessment should be prepared in line with Circular 01/2022, particularly paragraphs 47-54, and other pertinent and prevailing policy requirements.

Where an assessment indicates that the residual vehicle trip generation would have an unacceptable safety impact or the cumulative impacts on the SRN would be severe, the Applicant must identify when, in relation to the occupation of the development, transport improvements will become necessary.

Proposed development

As stated by DTA, it is expected that the main traffic generating aspect of the proposed development is comprised of a three-building data centre with a *"total floor area of circa 150,000sqm GEA and a glass house"*.

We would note that, within the EIA screening note, the total floor area was stated as 309,000m², 159,000m² greater than that stated by DTA within the TASN. We would, therefore, seek clarification on the anticipated total floor area to be provided.

Access

It is proposed that access will be taken via a new priority T-junction on to Habrough Road connecting to the eastern boundary of the site.

Existing traffic data

DTA has procured manual classified turning counts and queue length surveys. These were undertaken on Tuesday 9th January 2024 at Habrough Roundabout and Brocklesby Interchange.

The result of traffic surveys showed the AM peak to be 07:00-08:00 and PM peak hour to be 16:00-17:00 for both roundabout. From previous reviews and knowledge of the area we would consider the peak hours to be appropriate and representative of the local and strategic network; however, we would note that January 2024 is not considered to be a neutral month in line with TAG Unit M1.2:

> *"Neutral periods are defined as Mondays to Thursdays from March through to November (excluding August)"*.

As a result, we would suggest further information that the flows provided are consistent with a typical, neutral month.

Proposed Glass house trip generation

DTA notes that the glass house is expected to employ a total of 50 staff during harvesting time, with shift times expected to be infrequent and outside peak hours. Consequently, DTA has excluded the glass house trip generation from the traffic modelling at this stage, however, note that a *"more detailed assessment of likely operation of the glasshouses is being prepared and this will be incorporated into the assessments as required"*. JSJV would consider this approach appropriate.

Proposed Data Centre trip rates and generation

DTA notes the majority of the total floor area will comprise the data centre halls but there will also be ancillary accommodation for offices, maintenance and other associated activities.

It is stated that the specific land use of a data centre typically falls under a B8 use and results in the construction of a building for storage and distribution. However, DTA notes that data centres differ where the storage element is digital rather than physical and where the *"distribution of what is being stored is not made by vehicle but*

distributed electronically, subsequently not generating vehicle trips to/from the site typically found at B8 storage and distribution land use".

As such, DTA has considered the specific operation of the data centre rather than its more general land use, which will be digital rather than physical. The JSJV would consider this approach to be appropriate, however, we would suggest, as it is possible that the data centre could be used as B8 in the future, DTA should also consider the impacts of the development as entirely B8.

TRICS trip rates and generation

DTA has derived one set of vehicle trip rates from the TRICS online database (version 7.10.4), and has derived an average vehicle trip rate from the four data centre sites available in TRICS, all of which are located in Slough. However, DTA has noted that the average floor are of these sites, 11,000m², is "significantly less" compared to the proposed development floor area. The vehicle trip rates and generation are summarised in **Figure 2**.

Table 2 – Vehicle Trip Rates

	HGV Trip Rates			Cars and LGVs Trip Rates			Total Vehicle Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
07:00-08:00	0.002	0.002	0.004	0.123	0.017	0.140	0.125	0.019	0.144
08:00-09:00	0.004	0.004	0.008	0.096	0.025	0.121	0.100	0.029	0.129
16:00-17:00	0.000	0.000	0.000	0.011	0.058	0.069	0.011	0.058	0.069
17:00-18:00	0.000	0.000	0.000	0.007	0.020	0.027	0.007	0.020	0.027
07:00-19:00	0.019	0.018	0.037	0.679	0.665	1.344	0.698	0.683	1.381

Table 3 – Vehicle Trips

	HGV Trips			Cars and LGVs Trips			Total Vehicle Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
07:00-08:00	3	3	6	185	26	210	188	29	216
08:00-09:00	6	6	12	144	38	182	150	44	194
16:00-17:00	0	0	0	17	87	104	17	87	104
17:00-18:00	0	0	0	5	32	36	5	32	36
07:00-19:00	29	27	56	1,019	998	2,016	1,047	1,025	2,072

Figure 2. DTA proposed TRICS vehicle trip rates and generation

Figure 2 highlights that the proposed development is forecast to generate 216 two-way vehicle trips in the AM peak and 104 two-way vehicle trips in the PM peak. The JSJV would recommend these results are compared to a trip generation assessment that assumes the development as entirely B8 use.

DTA has also provided a second trip generation assessment as an alternative to vehicle trip rates from TRICS. We would recommend that the TA set out the forecast person trip generation for the development, how the need to travel will be minimised, and the anticipated shift towards more sustainable modes. The measures and initiatives employed to achieve the mode shift should be set out in the Travel Plan and as discussed, referenced within the TA.

To this end, paragraph 44 states that *"…promoters must put forward clear targets and commitments to manage down the traffic impact of development and maximise the accessibility of and within sites by walking, wheeling, cycling, public transport, and shared travel. Targets for achieving a modal shift to sustainable transport will need to be subject to sustained monitoring and management by an appointed travel plan coordinator."*

Given the above, the Applicant should forecast the person trip generation for the development, set out how the need to travel will be minimised, based upon sound, deliverable, and secured travel planning initiatives and forecast the anticipated shift towards more sustainable modes. Once the residual traffic generation is determined its impact on the operation of the SRN should then be established.

First principles approach

DTA has estimated the vehicle trip generation using the number of expected staff at the data centre. DTA notes:

> *"Based on experience of the promotor (and DTA) at other Data Centre proposals it is likely to the scale of development here will generate around **370 Full Time Equivalent (FTE) staff**.*
>
> *Taking account of holidays and weekends etc and average hours (12 hours times four days = 40 hours per week), the typical employee (FTE) would spend around **1,800 hours per year on site**.*
>
> *Therefore 370 FTEs would correspond to around **80 – 90 staff on site** at any one time and up to around 180 staff on any one day. The building will generally operate on shifts with the peak change over expected to take place between 07:00-19:00 and 19:00-07:00. This will mainly fall outside the current highway peaks on the network which are 07:00-08:00 and 16:00-17:00.*
>
> *Part time and contract employees are assumed to arrive and depart throughout the day outside of the peak hours. For robustness it is assumed that 90 staff will work on the main shift changes (180 in total) and the remainder arrive and depart through the working day. Assuming a peak of 10% of these occur in any hour gives the following."*

A summary of the person trip generation is shown in **Figure 3**.

Table 4 – Total Person Trips

Time Period	Arrival	Departure	Two Way
07:00-08:00	90	90	180
AM Peak (08:00-09:00)	6	6	12
PM Peak (17:00-18:00)	6	6	12
19:00-20:00	90	90	180

Figure 3. DTA first principles person trip generation

We would note that the AM and PM peak periods, as provided by DTA, are 07:00-08:00 and 16:00-17:00 and not 08:00-09:00 and 17:00-18:00 as shown in **Figure 3**.

DTA has applied a modal split to the person trip generation to estimate the vehicle trip generation for the proposed development. DTA has derived modal split data from the 2011 Census 'Method of Travel to Work' data for the workplace population in North Lincolnshire 004 MSOA. The modal split data and subsequent multi-modal trip generation is shown in **Figure 4**.

Table 5 – Multi-Modal Development Trips

Method of Transport	Mode Share %	Two Way Trip Generation
Driving a car or van	87%	157
Train /Underground	0%	0
On foot	3%	5
Passenger in a car or van	6%	11
Bicycle	2%	4
Bus, minibus or coach	1%	2
Motorcycle, scooter or moped	1%	2
Taxi	0%	0
Other	0%	0
Total	100%	180

Table 6 – Vehicular Trip Generation

Time Period	Arrival	Departure	Two Way
07:00-08:00	79	79	157
AM Peak (08:00-09:00)	7	7	14
PM Peak (17:00-18:00)	7	7	14
19:00-20:00	79	79	157

Figure 4. DTA's proposed multi-modal trip generation

As can be seen from **Figure 4**, DTA forecast the proposed development to generate 157 vehicle trips in the AM peak and between 19:00-20:00.

The JSJV would suggest that the first principles approach that considers the estimated level of employees to derive the trip generation for the proposed development should be compared to a trip generation assessment that assumes the development as entirely B8 use.

DTA states it is 'likely' that the proposed development will generate 'around' 370 employees. JSJV would not consider this as sufficient evidence to suggest that the vehicle trips associated with this methodology are derived from robust or precise information. Furthermore, the number of employees may significantly change during the operational period of the proposed development, which will, in turn, result in a change in vehicle trip generation.

As a result, the JSJV would suggest the trip rate and generation methodology is revised in line with Circular 01/2022 as previously recommended above. The Applicant should forecast the person trip generation for the development, set out how the need to travel will be minimised, based upon sound, deliverable, and secured travel planning initiatives and forecast the anticipated shift towards more sustainable modes. Once the residual traffic generation is determined its impact on the operation of the SRN should then be established.

Vehicle trip distribution

DTA has undertaken a vehicle trip distribution assessment using 2011 Census Journey to Work data for North Lincolnshire 004 MSOA in which the site is located. DTA's vehicle trip distribution results are shown in **Figure 5**.

Table 8 – Traffic Distribution

Destination	Percentage	Trips AM (07:00-08:00)	Trips AM (08:00-09:00)	Trips PM Peak (17:00-18:00)	Trips PM (19:00-20:00)
Habrough Road North	86%	135	12	12	135
• A160 West	62%	97	9	9	97
- A180 West	21%	33	3	3	33
- A180 East	40%	63	6	6	63
• A160 East	10%	16	1	1	16
• A1077	13%	20	2	2	20
• E Halton Road	2%	3	0	0	3
Habrough Road South	14%	22	2	2	22

Figure 5. DTA vehicle trip distribution

We will withhold commenting on appropriateness of the vehicle trip distribution and assignment until the vehicle trip generation is revised in line with our comments, however, we have provided a comparison of DTA results using National Highways' gravity model GraHAM.

JSJV has taken the results shown in **Figure 5** and summarised the distribution at the SRN junctions in **Table 1**.

Table 1. DTA's proposed vehicle trip distribution at the SRN

Junction	Arm	AM Peak Period		PM Peak Period	
		Arrivals	Departures	Arrivals	Departures
Habrough Roundabout	A160 East	10%	10%	10%	10%
	A160 West	62%	62%	62%	62%
	A1077	13%	13%	13%	13%
	E Halton Rd	2%	2%	2%	2%
	Total	87%	87%	87%	87%
Brocklesby Interchange	Eastbound diverge	21%	-	21%	-
	Westbound diverge	40%	-	40%	-
	Eastbound merge	-	40%	-	40%
	Westbound merge	-	21%	-	21%
	Total	61%	61%	61%	61%

JSJV's vehicle trip distribution comparison exercise using National Highways' gravity model GraHAM is presented in **Table 2**.

Table 2. JSJV proposed vehicle distribution comparison at SRN

Junction	Arm	AM Peak Period		PM Peak Period	
		Arrivals	Departures	Arrivals	Departures
Habrough Roundabout	A160 East	0% (-10%)	0% (-10%)	0% (-10%)	0% (-10%)
	A160 West	64% (+2%)	64% (+2%)	64%(+2%)	64% (+2%)
	A1077	11% (-2%)	11% (-2%)	11% (-2%)	11% (-2%)
	E Halton Rd	0% (-2%)	0% (-2%)	0% (-2%)	0% (-2%)
	Total	**75% (-12%)**	**75% (-12%)**	**75% (-12%)**	**75% (-12%)**
Brocklesby Interchange	Eastbound diverge	13% (-8%)	-	13% (-8%)	-
	Westbound diverge	51% (+11%)	-	51% (+11%)	-
	Eastbound merge	-	51% (+11%)	-	51% (+11%)
	Westbound merge	-	13% (-8%)	-	13% (-8%)
	Total	**64% (+3%)**	**64% (+3%)**	**64% (+3%)**	**64% (+3%)**

As shown in **Table 2**, the total vehicle trip distribution shown at both SRN junctions is fairly similar between DTA's and JSJV's results, although JSJV forecast 12% less at Habrough Roundabout.

Junction capacity assessments

DTA has provided junction capacity assessments for Habrough Roundabout and Brocklesby Interchange. JSJV would note the modelling provided within the TASN is based on the geometric parameters from the IERRT TA Addendum Report.

We welcome the preparation of junction capacity assessments as part of the TASN and would agree the assessments will need to be provided within the TA. However, we will withhold commenting on the results until the vehicle trip generation is agreed.

Nonetheless, JSJV would note an opening year junction capacity should be provided in line with Circular 01/2022:

> *"An opening year assessment to include trips generated by the proposed development, forecasted growth and committed development shall be carried out to establish the residual transport impacts of a proposed development. For multi-phase developments, additional assessments shall be provided based on the opening of each phase."*

Please note that Section D.2.7 of TAG Unit M3.1 gives the PCU for HGVs on motorways and all-purpose dual carriageways as 2.5. Given the nature of the highway network around the proposed development site, we request that the PCU equivalent value of 2.5 is used in order to ensure an appropriate assessment of anticipated vehicular traffic associated with the development.

If the opening year assessments demonstrate that a mitigation scheme is required in order to accommodate the impact of the proposed development, this would need to be assessed, agreed with National Highways and a Stage 1 Road Safety Audit undertaken prior to determination of the planning application.

Travel Plan

The JSJV would note that the Travel Plan should be provided for National Highways to review. Nonetheless, we would note where a Travel Plan and a TA is required, this should support the vision of what the development is seeking to achieve.

The JSJV would expect the Applicant to *"put forward clear targets and commitments to manage down the traffic impact of development and maximise the accessibility of and within sites by walking, wheeling, cycling, public transport and shared travel"*.

The Circular also states that *"targets for achieving a modal shift to sustainable transport will need to be subject to sustained monitoring and management by an appointed travel plan coordinator"* and that *"advice on preparing and monitoring travel plans is contained in the planning practice guidance"*.

We would expect the Travel Plan to, at least, include the following:

- Firm financial commitments with regards to funding for the measures proposed;
- Targets for mode shift and vehicular trip generation, which should be taken forward into the Transport Assessment;
- A sustained monitoring and management strategy to confirm that vehicle trip targets are being met; and
- A plan detailing the remediation process in the event that targets are not being met.

Construction Traffic Management Plan

Due to the proposed site location being in close proximity to the SRN, the JSJV would also recommend a Construction Traffic Management Plan [CTMP] is submitted alongside the application. This should be provided to National Highways for review and agreement in writing prior to commencement of construction. Construction will then be expected to proceed in accordance with the approved CTMP.

The CTMP will need to include at least the following:

- A dust management plan;
- A noise management plan;
- Pollution prevention measures;
- Staffing numbers;
- Contractor parking;
- Construction traffic routes;
- Details of delivery arrangements (including for any abnormal loads); and
- Measures to limit and manage transfer of debris on to the highway.

Summary and Conclusions

On the basis of this review, the recommendation to National Highways in relation to this development proposals is:

Pre-application / Scoping Response – comments are made on the pre-application / scoping in order to assist defining an appropriate assessment of the Strategic Road Network.

This review has highlighted the following:

- National Highways will expect to see measures implemented that fully mitigate any and all environmental impacts arising from and relating to the interaction between developments and the SRN; there are three aspects to this:
  - The environmental impacts arising from the temporary construction works;
  - The environmental impacts of the permanent transport solution associated with the development; and
  - The environmental impact of the road network upon the development itself.
- The impact of the development should be assessed based on relevant regional and national planning policy. In terms of the impact on the SRN, we would request that the Applicant makes reference to the following policy:
  - National Planning Policy Framework 2023;
  - Local Transport Note LTN 1/20, and
  - DfT Circular 01/2022 – Strategic Road network and the delivery of sustainable development.
- We would note that, within the EIA screening note, the total floor area was stated as 309,000m², 159,000m² greater than that stated by DTA within the TASN. We would, therefore, seek clarification on the anticipated total floor area to be provided.
- We would note that January 2024 is not considered to be a neutral month in line with TAG Unit M1.2:

  "Neutral periods are defined as Mondays to Thursdays from March through to November (excluding August)".
  - As a result, we would suggest further information that the flows provided are consistent with a typical, neutral month.
- DTA has considered the specific operation of the data centre rather than its more general land use, which will be digital rather than physical. The JSJV would consider this approach to be appropriate, however, we would suggest, as it is possible that the data centre could be used as B8 in the future, DTA should also consider the impacts of the development as entirely B8.
- The JSJV would suggest that the first principles approach that considers the estimated level of employees to derive the trip generation for the proposed development should be compared to a trip generation assessment that assumes the development as entirely B8 use.
- The JSJV would suggest the trip rate and generation methodology is revised in line with Circular 01/2022 as previously recommended above. The Applicant should forecast the person trip generation for the development, set out how the need to travel will be minimised, based upon sound, deliverable, and secured travel

planning initiatives and forecast the anticipated shift towards more sustainable modes. Once the residual traffic generation is determined its impact on the operation of the SRN should then be established.