HERBATA DATA CENTRE, NAAS

EIAR
VOLUME I MAIN TEXT – CHAPTER 12 TRAFFIC AND TRANSPORTATION

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12 TRAFFIC AND TRANSPORTATION

12.1 Introduction

This chapter of the EIAR reports on the outcome of the assessment of the Project in relation to Transportation. This chapter describes the consultation that has been undertaken during the EIA, the scope of the assessment and assessment methodology, and a summary of the baseline information that has informed the assessment.

The assessment reports on the likely environmental effects, the further mitigation measures which may be required to prevent, reduce or offset any adverse effects or further enhance the beneficial effects. The conclusions are provided in terms of the residual effects and whether these are considered significant.

This Chapter, and its associated figures and appendices, is intended to be read as part of the wider EIAR with particular reference to the introductory chapters of the EIAR.

12.2 Methodology

The methodology employed in the preparation of this Chapter is as follows;

12.2.1 Planning Policy Context & Relevant Guidance

The assessment has been undertaken in accordance with the following policy and guidance;

- Project Ireland 2040 – National Planning Framework (2019);
- Transport Infrastructure Ireland (TII) Traffic and Transport Assessment Guidelines;
- Smarter Travel, A Sustainable Transport Future – A New Transport Policy for Ireland 2009-2020;
- Climate Action Plan (2023);
- Design Manual for Urban Roads & Streets (DMURS);
- Transport Strategy for the Greater Dublin Area (2016-2035);
- Kildare County Development Plan (2023-2029);
- Naas Local Area Plan (2021-2027); and
- Naas Sallins Transport Strategy (2020).

The lands on which the Project is located is designated for 'Data Centre' in the Naas Local Area Plan (2021-2027). The Naas Local Area Plan states '*These lands are identified exclusively for Data Centres, to ensure the location of these types of proposals are controlled proximate to service areas of the county. The Council will not consider any alternative use on these lands, other than those associated with Data Centres'* (Objective EDO1.12).

Objective EDO1.12 is contained within Policy ED 1 – Enterprise and Economic Development of the Naas Local Area Plan (2021 – 2027) and states the following *Facilitate the location of the Data Centre development on land designated P:Data Centre at Caragh Road South and Jigginstown for the identified land use only subject to appropriate environmental assessments, heat mapping, transport impact assessments and consideration of the cumulative impact on the electricity network supply capacity and targeted reductions in greenhouse gas emissions*.

This chapter should be read in conjunction with the Transport Assessment and Microsimulation Assessment Report, Appendix 12.1 and 12.2 respectively, contained in Volume II. A Construction Traffic Management Plan has also been prepared and is included in Appendix 4.6 Volume II.

12.2.2 Study Area

The proposed site is accessed via the R409, which is a regional road and the purpose of which is to connect many small towns to each other as well as to the national road network. The R409 provides connectivity to

the R445 Millennium Park, which provides direct access to the M7 motorway via grade separated interchanges to both the north and south.

The M7 is part of the Dublin – Limerick route and provides connectivity to the M9 to the south and the N7 to the north. The N7 connects to the M50, providing further connectivity to the M1, M2 and M4 northbound and the N11 southbound as indicated in Figure 12.1 below.

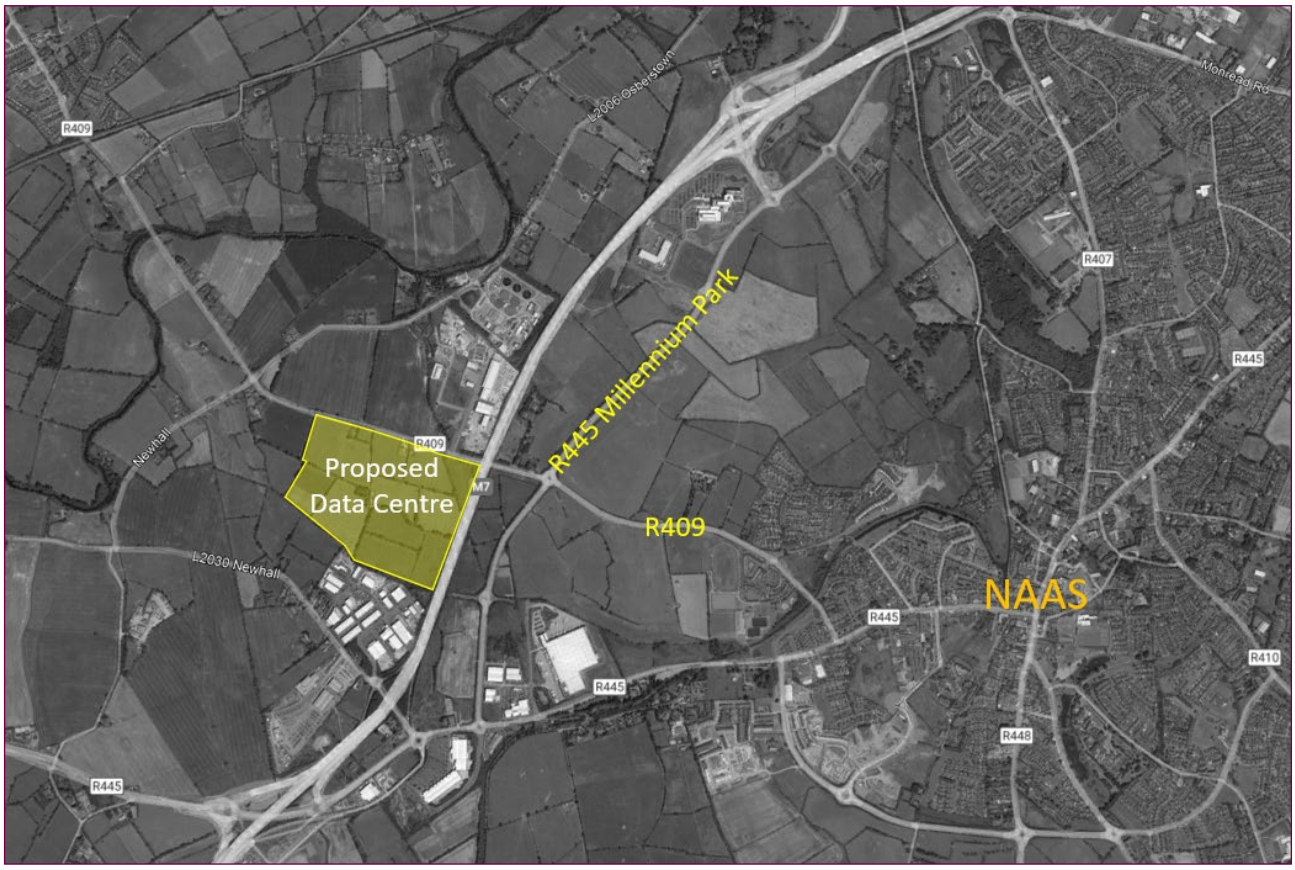

Figure 12.1: Study Area (Road Network)

Therefore, it is clear that the site is well served by both the local and strategic road network which provides good connectivity for both the construction and operational traffic associated with the Project site.

12.3 Characteristics of the Project

The Project comprises of 6no. Data Centre buildings (each building is 2no. storey), a management/administration building, car parking and other associated works. The key characteristics of the proposal are as follows.

- Project Site Area – 38.64 hectares
- 6no. Data Centre buildings following a *template design*, each with a total gross internal area (GIA) of 37.51 ha
- Total of 210 no. car parking spaces comprising of 63 electric car charging spaces and 14 disabled car parking spaces
- Of the 210 total, each of the 6 Data Centre buildings will have 30 car parking spaces (total) and the administration building will also have 30 car parking spaces
- Access to development via R409
- Emergency access only via M7 Business Park
- Pedestrian / Cycling Infrastructure (active travel) on the R409

- Total number of 104 bicycle spaces (16 per each of the 6 Data Centre buildings and 8 for the administration workshop)
- Provision of bus stop on R409 adjacent to the Project

12.3.1 Construction Phase

During the construction phase there will be a construction site access created from the R409 which will provide access to the construction compound.

The proposed construction programme is an estimated 8 years and 9 months. Table 4.1 below provides an indicative construction phase programme for key milestones. A commencement date of January 2024 has been presented, serving as an indicative start date in order to illustrate the construction milestones. A final commencement date will be subject to the timescales for the Project in obtaining all necessary consents.

The construction programme is anticipated to last for 8no. years and 9no. months and is scheduled to begin in January 2025 – it should be noted that a commencement date of January 2025 has been presented, serving as an indicative start date in order to illustrate the construction milestones. A final commencement date will be subject to the timescales for the Project in obtaining all necessary consents.

All buildings are predicted to be completed within full occupancy in September / October 2033. There are 3no. stages for construction.

- Phase 1 – January 2025 – September 2028
  - Enabling works overall construction programme.
  - ESB substation overall construction programme.
  - AGI building overall construction programme.
  - DC1 overall construction programme.
  - R409 road improvements works including pedestrian walkway and cycle lane.
  - DC2 overall construction programme.
- Phase 2 – August 2027 – November 2030
  - DC3 overall construction programme.
  - DC5 overall construction programme
- Phase 3 – October 2030 – September 2033
  - Construct secondary construction compound around the site & remove existing construction car park.
  - DC6 overall construction programme.
  - DC4 overall construction programme.
  - Site wide works overall construction programme.

The proposed working hours during construction are 0800 – 1800hours (Monday – Friday) and 0800 – 1300hours (Saturday) with no working on Sunday or Bank Holidays unless permission is granted by Kildare County Council. During construction the traditional peak hour periods will be avoided as far as reasonably practicable.

The majority of construction related vehicles will be normal sized HGVs that are permissible on the surrounding road network and do not require any special permissions. Should any abnormal loads be required (not anticipated at this stage) then the formal process for abnormal loads will be undertaken in terms of the route being pre-planned and all relevant authorities will be notified.

The peak construction period level of traffic is predicted as ~47no. vehicles per day, outside of these peak construction periods the volumes of construction traffic will be considerably less.

The 47no. vehicles will arrive and depart throughout the day and therefore assuming an 8no. hour working day this equates to an average of 6no. vehicles per hour (1no. vehicle every 10no. minutes).

During the peak construction period it is predicted that a maximum of 1,100no. staff will be required to travel to / from the site per day. This is predicted to result in an average of 425no. vehicle trips per day, with ~175no. vehicle trips occurring during the peak hour periods (AM & PM)

12.3.2 Operational Phase

During the operational phase the Project is anticipated to generate the following staff numbers, these do not account for shift patterns etc.

- 225no. total staff.
- ~125 – 175no. visitors daily (likely to arrive / depart outside of the traditional peak periods).
- 56no. person arrivals during the AM peak hour period.
- 56no. person departures during the PM peak hour period.
- Operational HGVs – 26no. total trips per day (likely to arrive / depart outside of traditional peak periods).

Based on the information presented above and the 24hr operation of the Project it is predicted that the operational phase is unlikely to have a significant impact upon the surrounding road network.

12.4 Baseline

Surveys have been undertaken to determine the existing levels of traffic on the surrounding road network. The surveys have been undertaken at the following locations (which are the approaches to the M7 interchanges to the north and south of the site).

- Location 1 – West Arm of the Bundle of Sticks Roundabout
- Location 2 – North Arm of the Millennium Roundabout; and

These surveys were undertaken on 18th January 2023 between 0700 – 1000 and 1600 – 1900 hours. The surveyed traffic flows are indicated in Table 12.1 (15minute time segments) and Table 12.2 (hourly time segments) below.

Table 12.1: Baseline Traffic Survey Analysis (15minute time segments)

18th January 2023						
Time	**Location 1 – Bundle of Sticks R'about**			**Location 2 – Millennium Park R'about**		
	West	**East**	**Total**	**North**	**South**	**Total**
0700 – 0715	79	78	157	70	69	139
0715 – 0730	104	121	225	82	199	281
0730 – 0745	122	164	286	97	189	286
0745 – 0800	160	214	374	87	182	269
0800 – 0815	178	267	445	97	110	207
0815 – 0830	163	249	412	143	192	335
0830 – 0845	131	248	379	142	206	348
0845 – 0900	173	251	424	121	172	293
0900 – 0915	137	221	358	110	146	256
0915 – 0930	126	198	324	84	125	209
0930 – 0945	133	204	337	75	94	169
0945 – 1000	148	200	348	71	86	157
Total (0700 – 1000)	**1654**	**2415**	**4069**	**1179**	**1770**	**2949**
1600 – 1615	246	220	466	173	137	310
1615 – 1630	233	212	445	181	115	296
1630 – 1645	243	181	424	178	125	303

18th January 2023						
1645 – 1700	196	198	394	140	124	264
1700 – 1715	271	216	487	198	147	345
1715 – 1730	259	238	497	173	154	327
1730 – 1745	245	228	473	156	119	275
1745 – 1800	179	189	368	152	153	305
1800 – 1815	168	152	320	144	146	290
1815 – 1830	157	150	307	118	99	217
1830 – 1845	119	164	283	110	98	208
1845 – 1900	104	129	233	73	89	162
Total (1600 – 1900)	**2420**	**2277**	**4697**	**1796**	**1506**	**3302**

Table 12.2: Baseline Traffic Survey Analysis (hourly time segments)

18th January 2023						
Time	**Location 1 – Bundle of Sticks R'about**			**Location 2 – Millennium Park R'about**		
	West	**East**	**Total**	**North**	**South**	**Total**
0700 – 0800	465	577	1042	336	639	975
0715 – 0815	564	766	1330	363	680	1043
0730 – 0830	623	894	1517	424	673	1097
0745 – 0845	632	978	1610	469	690	1159
0800 – 0900	645	1015	1660	503	680	1183
0815 – 0915	604	969	1573	516	716	1232
0830 – 0930	567	918	1485	457	649	1106
0845 – 0945	569	874	1443	390	537	927
0900 – 1000	544	823	1367	340	451	791
1600 – 1700	918	811	1729	672	501	1173
1615 – 1715	943	807	1750	697	511	1208
1630 – 1730	969	833	1802	689	550	1239
1645 – 1745	971	880	1851	667	544	1211
1700 – 1800	954	871	1825	679	573	1252
1715 – 1815	851	807	1658	625	572	1197
1730 – 1830	749	719	1468	570	517	1087
1745 – 1845	623	655	1278	524	496	1020
1800 - 1900	548	595	1143	445	432	877

As indicated in Table 12.2 above the peak hour period at location 1 (Bundle of Sticks roundabout) occurs 15minutes earlier that the peak hour period at location 2 (Millennium Park roundabout) in both the AM and PM peak hour period.

Further baseline traffic surveys in the form of junction turning counts were undertake at 12no. junctions and Automatic Traffic Counter (ATC) loops were laid at 6no. locations in 2023 to provide a wider understanding of the existing traffic volumes in the vicinity of the site.

This data enabled the provision of a VISSIM model for this road network to assess the impact of the operational phase of the Project upon the surrounding road network and the detailed analysis is presented in the TA in Appendix 12.1.

12.5 Impact Assessment

The Assessment Criteria and Assignment of Significance is based on the thresholds identified within the Traffic and Transport Assessment Guidelines May 2014 published by TII. These guidelines indicate a detailed assessment is required when the following thresholds are exceeded.

- Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road;
- Traffic to and from the development exceeds 5% of the traffic flows on the adjoining road where congestion exists or the location is sensitive.

The Guidelines also states that where applications affect National Roads a Transport Assessment should be requested if the following thresholds are exceeded.

- Development traffic exceeds 10% of turning movements at junctions with and no National Roads.
- Development traffic exceeds 5% of turning movements at junctions with National Roads if location has potential to become congested or sensitive.

For this assessment there are 2 no. receptor points as follows.

- Bundle of Sticks Roundabout; and
- Millennium Park Roundabout.

The significance of the traffic impacts on these 2 no. receptor points, using the criteria set out above will determine the sensitivity and magnitude of the Project.

12.5.1 Do Nothing Scenario

The Do-Nothing Scenario would result in no increase in traffic upon the surrounding highway network. Traffic in the area would grow by normal background traffic growth and there would be no significant impact on any junctions.

12.5.2 Likely Significant Environmental Effects – Construction Phase

Based on the predicted daily vehicle trips associated with the construction phase of the development there are unlikely to be any significant environmental effects. The volume of HGVs on the surrounding road network is small (47no. per day / 6no. vehicles per hour), and the HGV traffic will, as far as reasonably practicable, avoid the peak hours. The larger traffic volumes associated with staff are likely to be via cars / vans (~175no. in the peak hours).

Therefore, assuming the staff vehicles are split 50% from the north of the site and 50% from the south of the site then this would equate to 88no. vehicles coming from the north and south respectively. Table 12.3 indicates the percentage impact of the peak construction phase vehicles on the 2no. receptor points during the AM and PM peak hour periods respectively (the peak hour for both locations has been assessed for robustness).

Table 12.1: Percentage Impact Analysis – Construction Phase

Impact of Peak Construction Vehicles on Road Network						
Time	**Location 1 – Bundle of Sticks R'about**			**Location 2 – Millennium Park R'about**		
	Total (2-way)	**Construction Traffic**	**% Impact**	**Total (2-way)**	**Construction Traffic**	**% Impact**
0800 – 0900	1660	88	5.30%	1183	88	7.44%
0815 – 0915	1573	88	5.59%	1232	88	7.14%
1645 – 1745	1851	88	4.75%	1211	88	7.27%
1700 – 1800	1825	88	4.82%	1252	88	7.03%

Whilst there will be an increase in traffic on the surrounding road network during the construction period, the percentage impacts during the AM and PM peak hour periods is less than 10% and given the volumes of traffic

this section of the network is not currently congested. Therefore, the impact on the surrounding road network falls within the thresholds as set out in the relevant guidance. Given the percentage impact it is unlikely that the construction phase will result in a significant impact upon the surrounding road network.

12.5.3 Likely Significant Environmental Effects – Operational Phase

Whilst there will be a traffic generation associated with the operational phase of the development, this impact will be staff vehicles i.e. cars and therefore any impact upon the surrounding road network is likely to be insignificant. The percentage impacts of the Project upon the surrounding road network during the peak hour periods is less than 5% as indicated in Table 12.4. This assessment is based on the robust analysis of 56no. arrivals and 56no. departures during both the AM and PM peak hour periods with traffic split 50% / 50% between the 2no. receptor locations.

Table 12.2: Percentage Impact Analysis – Operational Phase

Impact of Peak Operational Vehicles on Road Network						
Time	**Location 1 – Bundle of Sticks R'about**			**Location 2 – Millennium Park R'about**		
	Total (2-way)	**Operational Traffic**	**% Impact**	**Total (2-way)**	**Operational Traffic**	**% Impact**
0800 – 0900	1660	56	3.37%	1183	56	4.73%
0815 – 0915	1573	56	3.56%	1232	56	4.55%
1645 – 1745	1851	56	3.03%	1211	56	4.62%
1700 – 1800	1825	56	3.07%	1252	56	4.47%

The VISSUM modelling analysis of the operational phase of the Project indicates that the operational phase is unlikely to have any significant impact upon existing traffic progression on the surrounding road network in the AM peak period. During the PM peak period there is a small increase predicted in total delay, however, the robustness of the assessment must be taken into account when considering any impact on the network.

In terms of journey time analysis, there will be an increase in journey time along the R409 towards Naas, which is expected as this is the arrival / departure point for the Project and therefore the largest increase in traffic. The journey times on the wider network is not predicted to be significantly impacted upon with the Project constructed and operational.

Therefore, the overall impact of the Project upon the surrounding highway network is considered to be negligible.

12.5.4 Mitigation

There is no proposed mitigation upon the surrounding highway network as part of this proposal. The Project is served by existing motorways and regional roads which can accommodate the predicted levels of traffic during the construction and operational phases.

12.5.5 Residual Impacts

The residual impacts will be associated with the operational phase of the Project and will be the traffic impact associated with staff / visitors to the site daily. However, as indicated above this is not anticipated to be a significant level of traffic and therefore the residual impacts are likely to be low.

12.6 Cumulative Effects

12.6.1.1.1 Other Projects

As identified in Chapter 1 of the EIAR (Section 1.4), there are a number of other projects which have been identified for consideration in terms of their potential for cumulative effects. A number of planning applications (permitted, submitted but undetermined and under construction) have been identified within the locale of the Project site.

Overall, when potential construction and operational stage cumulative landscape and visual effects are considered for the Project in combination with permitted and planned projects they will not result in any significant cumulative landscape and visual effects due to a combination of separation distance, intervening development and the nature and setting of the proposals. Construction stage activities involve an increase in construction traffic for all cumulative projects. HGV traffic is frequent feature of this landscape, and the existing wider Dublin road network consists of very busy roads with low potential for significant cumulative visual impacts as a result. The operational stage activities as part of the Project are sufficiently separated from any permitted or planned projects in the area surrounding the Project to avoid potential cumulative effects while permitted or planned developments within the surrounding area or so similar in character that they are difficult to discern from the existing busy context

Many of these projects are associated with the commercial and industrial complexes located to the north and south of the Project site. It is not likely that the Project will result in any negative significant cumulative effects on cultural heritage in combination with these external plans/projects.

12.6.1.1.2 Gas Connection

As identified in Chapter 1 of the EIAR (Section 1.4.4), the Project will require a physical connection to the gas network to supply the on-site gas turbines. The final, detailed design, consent and construction of the required infrastructure works will be the responsibility of GNI in the exercise of their own statutory functions, and therefore Herbata Ltd is not seeking planning consent to carry out these works as part of the Project.

The GNI Infrastructure Upgrade Outline Report, identifying the specification and most likely route for the connection and a description of the works required to provide same, is included in Volume II, Appendix 1.2. The report provides sufficient detail and information to allow a robust cumulative impact assessment to be conducted.

As identified within the GNI Infrastructure Upgrade Outline Report, there is an extensive network of gas transmission pipes running through Naas with a high-pressure pipe connecting to the existing AGI at Glebe West.

The proposal will likely require a ~300mm diameter high pressure gas pipeline in addition to the existing pipes already in-situ. At this stage it is anticipated that the new pipeline will most likely follow the route of the existing pipeline from Glebe West AGI to the Naas Town AGI. The pipeline will most likely be constructed adjacent to the existing to ensure minimum separation distances are required.

Once the new pipeline has reached the Naas AGI the route to the site is likely to continue to follow the low pressure distribution network along the southern link road to the R445 Newbridge Road.

From the R445 the new pipeline will most likely cross beneath the canal and then follow the public foul sewer network, where wayleaves are already in place. This section of the foul sewer network crosses agricultural lands, heading in a northwest direction.

The gas pipeline will then likely cross under the M7 motorway, most likely, by directional drilling / pipe jacking to reach the west side of the M7, emerging onto the R409 Caragh Road, whereupon it will enter the Project site.

In terms of the construction impacts of the proposed gas pipeline.

- Works within the agricultural land will not result in any significant impacts upon traffic progression on the sounding road network. Access to the works on the agricultural lands will be taken from the public road network in the general location of where the pipeline will cross the public road. During the construction phase a Traffic Management Plan will be agreed with the Council's Roads Department.
- Works within / along public roads are likely to result in a short term low impact upon existing traffic progression, prior to commencement of the construction phase Traffic Management Plans will be agreed with the Council's Roads Department to identify traffic management proposals including safety and signage requirements.
- Construction period is likely to be 7-12 months, however, a considerable portion of the construction period will be working within existing agricultural lands, which will not result in any significant impact upon existing traffic progression.

12.7 Interactions

The traffic and transport chapter interacts with both the Noise and Air Quality Assessments.