

Transport Assessment (Including Transport Implementation Strategy)

**Project Dragon
Sustainable Aviation Fuel (SAF) Production Facility**

Land at Crown Wharf, Port Talbot Docks, Port Talbot

LanzaTech UK Limited

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1.0 INTRODUCTION

Overview

1.1 SCP have been appointed by LanzaTech UK Limited to provide transport planning and engineering advice in support of a full planning application for the erection of an Alcohol to Jet Fuel production facility, with associated development, on land at Crown Wharf, Port Talbot Docks, Port Talbot.

1.2 The full description of development is:

Demolition of existing structures and erection of a Sustainable Aviation Fuel (SAF) production facility, including enclosed ground flare, storage tanks, installation of pipework and electrical, processing and utility equipment, administration, warehouse and laboratory buildings, new access, car parking and transport infrastructure including a truck loading area and associated works, hard and soft landscaping, areas for temporary construction laydown, and associated development.

1.3 The SAF production facility uses the LanzaJet™ Alcohol to Jet Fuel (AtJ) technology. This will comprise several industrial components, buildings, and associated infrastructure. Further details on the development proposals are provided later in chapter 3 of this report.

1.4 This Transport Assessment (TA) has been prepared to support the planning application and provides an assessment of the traffic and transport implications associated with the development proposals. This assessment informs Neath Port Talbot Council (NPTC), as local highway and planning authority, as well as the Welsh Government as highway authority for the M4, of the nature and magnitude of likely highways and transportation impacts of the proposal.

Background

1.5 Prior to the submission of a pre-application consultation (PAC) process, preliminary scoping discussions took place with NPTC and a formal transport scoping note, dated May 2023, was submitted. Following the submission of the scoping note, the scope of this TA, including the study area, traffic generation/distribution methodology and assessment year/scenarios to be assessed has been agreed.

- 1.6 Furthermore, due to the additional level of traffic estimated to be generated during the operational phase not being material, as detailed later in this TA, it has been agreed with NPTC that detailed capacity assessments of the impact of the development during the operational phase are not required. The construction phase will represent the worst-case traffic impact of the scheme on the local highway network, with the construction phase being the focus of this TA.
- 1.7 Whilst the majority of the TA scope was agreed, NPTC provided comments in relation to the following points:
- Traffic Surveys – It was requested/agreed that the Thursday traffic survey data is compared to Friday traffic data from an automatic traffic count (ATC), due to concerns traffic levels may be higher on Fridays, with the surveyed traffic flows factored up in a sensitivity test should the difference in Thursday/Friday survey data be considered more than typical day to day variation.
 - Active Travel – NPTC confirmed that the TA needs to consider active travel modes.
 - Port Disruption/Maintenance – Further information was requested on the likelihood/frequency of issues in the port that would result in imports/exports taking place via road.
- 1.8 The proposed development was subject to a PAC process, in accordance with Article 1 of the Town and Country Planning (Development Management Procedure) (Wales) Order 2016, whereby a TA was submitted to address the above points and assess the traffic and transport implications associated with the development proposals.
- 1.9 NPTC reviewed the submitted TA and provided a consultation response, dated 12th September 2023, which raised no objection to the application in principle. NPTC have provided a number of comments relating to the site layout and matters of detail, which have been addressed/responded to throughout this updated TA, however, no comments have been provided on the detailed traffic analysis and highway impact which, on this basis, is understood to be agreed.

Structure of Transport Assessment

- 1.10 Having regard to the agreed scope of the TA with NPTC, the structure of this report is as follows:
- Chapter 2 - describes in detail the site location, local highway network, existing traffic conditions and road safety record;
 - Chapter 3 – defines the development proposals including the proposed access and car parking arrangements;

- Chapter 4 – summarises relevant policies and evaluated a Transport Implementation Strategy;
- Chapter 5 – considers the location of the site with regard to the existing local sustainable transport infrastructure;
- Chapter 6 – describes the future baseline traffic conditions on the local highway network in relation traffic growth and committed developments;
- Chapter 7 – estimates the number of vehicular trips generated by the proposed construction traffic and distributes and assigns the vehicular trips on the local highway network;
- Chapter 8 – presents an assessment of the impact of the development on the operational performance of the local highway network; and,
- Chapter 9 – provides summary and conclusions to this TA derived from the analysis presented in the above chapters.

2.0 EXISTING CONDITIONS

General

- 2.1 This chapter provides a detailed description of the location of the site, local highway network, existing traffic conditions and road safety record.

Site Location

- 2.2 The application site is located on land to the south of Port Talbot docks and west of the A4241 Harbour Way, approximately 1.4km south of Port Talbot Town Centre.
- 2.3 The location of the site in relation to the local highway network is shown on **Figure 2.1** below.

Figure 2.1 – Site Location / Local Highway Network



- 2.4 The site is bounded by a private industrial road called Phoenix Way, Hanson Cement Works and Port Talbot docks to the north, a private road and industrial works to the east, an unused section of railway line to the south and brownfield land and wider Associated British Ports (ABP) operations to the west.

Existing Site Access

- 2.5 The site is currently accessed off a section of Phoenix Way which fronts the northern site boundary and connects to the A4241 Harbour Way via North Road. The section of North Road between the A4241 Harbour Way / North Road roundabout and Phoenix Way is subject to a 30mph speed limit while Phoenix Way itself is subject to a 20mph speed limit, as shown on **Figure 2.2** below. Access off North Road onto Phoenix Way is controlled via a security gate which benefits from two entry lanes. Localised narrowing is present on Phoenix Way, circa 100m west of the ABP security gate, which is not of sufficient width for two HGVs to pass and as such a give way arrangement is in place. Phoenix Way is well used by HGVs serving the existing industrial uses in the vicinity of the site without issues.

Figure 2.2 – Phoenix Way Speed Limit Change



- 2.6 There is a shared footway / cycleway on the A4241 Harbour Way which connects to a shared footway / cycleway that runs along western side of North Road as well as the initial circa 185m of Phoenix Way. Pedestrian and cycle access is not permitted within the ABP area for safety reasons.

Local Highway Network

2.7 The study area for the TA is agreed with NPTC and includes the following junctions, the location of which in relation to the development site are also highlighted on **Figure 2.1** earlier:

- M4 Junction 41 (A48 Heilbronn Way / A48 Pentyla-Baglan Road / B4286 Heilbronn Way / Car Park Access)
- A48 Heilbronn Way / Car Park Access / A4241 / Water Street
- A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West)
- A4241 / A4241 Harbour Way / North Bank Road
- A4241 Harbour Way / Oakwood Road / Llewellyn's Road
- A4241 Harbour Way / North Road
- A4241 Harbour Way / Main Gate Access
- A4241 Harbour Way / A48 Margam Road / Access Road
- M4 Junction 38

2.8 A description of the key links and junctions within the study area is provided below.

A4241 Harbour Way

2.9 The A4241 Harbour Way provides a link between the A4241 / A4241 Harbour Way / North Bank Road roundabout, to the north-west, and the A4241 Harbour Way / A48 Margam Road / Access Road roundabout, to the south-east. It forms part of the Port Talbot Peripheral Distributor Road which was developed to assist in the industrial and commercial development of the south-western area of Port Talbot and remove local traffic from the M4. The A4241 Harbour Way is a dual carriageway subject to a 50mph speed limit to the south-east of the A4241 Harbour Way / Main Gate Access junction and a 40mph speed limit to the north-west. A shared footway / cycleway is provided on the northern side of A4241 Harbour Way, between the A4241 Harbour Way / Main Gate Access junction and the A48 Heilbronn Way / Car Park Access / A4241 / Water Street junction.

M4 Junction 41

- 2.10 The M4 Junction 41 on/off-slips link to the A48 Heilbronn Way / A48 Pentyla-Baglan Road / B4286 Heilbronn Way / Car Park Access junction which takes the form of a four-arm priority-controlled junction located to the north of the site. The A48 Heilbronn Way provides a link to the A48 Heilbronn Way / Car Park Access / A4241 / Water Street junction, to the south-west, whilst the B4286 routes to the north-east, providing a connection into Port Talbot. The A48 Pentyla-Baglan Road provides a connection to the north-west, towards Baglan, and the southern arm of the roundabout provides access to the Aberafan Shopping Centre upper-level car park. The junction is well lit, and all arms of the junction are subject to a 30mph speed limit.

A48 Heilbronn Way / Car Park Access / A4241 / Water Street

- 2.11 The A48 Heilbronn Way / Car Park Access / A4241 / Water Street junction is a five-arm roundabout largely under priority-control. The north-eastern arm which provides access to the Port Talbot Bus Station and car park is signalised. The A48 Heilbronn Way links the A48 Heilbronn Way / A48 Pentyla-Baglan Road / B4286 Heilbronn Way / Car Park Access junction, to the north-east, with Port Talbot to the south-east. The A4241 connects to the A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West) junction, to the south, and Water Street provides access to numerous residential roads to the west. The junction is well lit, and all approaches are subject to a 30mph speed limit.

A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West)

- 2.12 This junction is a five-arm priority-controlled roundabout located to the north of the site. The A4241 forms the north-west and south-west arms, connecting to the A4241 / A4241 Harbour Way / North Bank Road junction to the south-west. The eastern and western arms provide accesses to industrial sites and Harbourside Road provides access to Harbourside Business Park. The junction is well lit and all approaches are subject to a 30mph speed limit and benefit from dropped kerb crossings with tactile paving, providing connections to the shared footway / cycleway that routes along the A4241.

A4241 / A4241 Harbour Way / North Bank Road

- 2.13 The A4241 / A4241 Harbour Way / North Bank Road junction is a four-arm priority-controlled roundabout junction located north-west of the site. The A4241 forms both the western and northern arms and connects to the A4241 / Water Street / Dock Road / Riverside Road junction to the north-west. The A4241 Harbour Way provides access to the A4241 Harbour Way / Oakwood Road / Llewellyn's Road junction, to the east, and North Bank Road provides access to several commercial and industrial units to the west. The A4241 Harbour Way is subject to a 40mph speed limit with the other three approaches subject to a 30mph speed limit. The junction is well lit and all approaches benefit from dropped kerb crossings with tactile paving, providing connections to the shared footway / cycleway that routes along the A4241.

A4241 Harbour Way / Oakwood Road / Llewellyn's Road

- 2.14 This junction is a four-arm priority-controlled roundabout whereby the A4241 Harbour Way runs in a west to south-east direction, providing a link to the A4241 Harbour Way / North Road junction to the south-east. Oakwood Road forms the northern arm of the junction, providing access to Cramic Way and Port Talbot Station Car Park, and Llewellyn's Road forms the southern arm and provides access to numerous commercial and industrial units.
- 2.15 The A4241 Harbour Way eastern approach benefits from a staggered signal-controlled Toucan crossing with dropped kerbs and tactile paving to aid pedestrians across. The Oakwood Road approach benefits from a dropped kerb crossing with tactile paving, providing connections to the shared footway / cycleway that routes along the A4241 Harbour Way. The A4241 Harbour Way is subject to a 40mph speed limit and Oakwood Road and Llewellyn's Road are subject to a 30mph speed limit.

A4241 Harbour Way / North Road

- 2.16 The A4241 Harbour Way / North Road junction is a well-lit four-arm priority-controlled roundabout, although the north-eastern arm is currently a disused gated access. North Road, which is subject to a 30mph speed limit, forms the south-western arm and provides access to a number of industrial sites including Tata Steel, via West Gate Security, as well as the application site via the ABP security gate and an Phoenix Way. As detailed earlier, a shared footway / cycleway is provided on the western side of North Road and a dropped kerb crossing with tactile paving is provided across the A4241 Harbour Way northern arm providing connections to the shared footway / cycleway that routes along the A4241 Harbour Way.

A4241 Harbour Way / Main Gate Access

- 2.17 The A4241 Harbour Way / Main Gate Access junction is a well-lit four-arm priority-controlled roundabout, although the eastern arm is currently a disused gated access. The Main Gate Access, which is subject to a 30mph speed limit, forms the western arm and provides access to Tata Steel. A shared footway / cycleway is provided on the western side of the Main Gate Access and a dropped kerb crossing with tactile paving is provided across the A4241 Harbour Way northern arm providing connections to the shared footway / cycleway that routes along the A4241 Harbour Way.

A4241 Harbour Way / A48 Margam Road / Access Road

- 2.18 The A4241 Harbour Way / A48 Margam Road / Access Road junction is a four-arm priority-controlled junction located to the south-east of the site. The A48 Margam Road forms the northern and eastern arms which link the M4 Junction 38, to the south, with the Groes Interchange to the north. The A4241 Harbour Way provides a link to the A4241 Harbour Way / Main Gate Access junction to the north-west and the southern arm of the junction provides access to Heolcae'r-Bont and several industrial sites. The A48 Margam Road benefits from a shared footway / cycleway on the western side of the road and a dropped kerb crossing with tactile paving is provided across the southern access road and the A4241 Harbour Way to connect the shared footway / cycleway routes.

M4 Junction 38

- 2.19 This M4 Junction 38 is a grade separated priority-controlled junction located to the south-east of the site, known as Margram Interchange. The A48 Margam Road forms the north-western arm and the M4 southbound off-slip forms the north-eastern arm. There is no M4 northbound on-slip at this junction but an on-slip and off-slip to/from the M4 (south) are provided for southbound and northbound movements respectively. The A48 forms the eastern arm and provides a link between the M4 Junction 38 and the village of Pyle to the south-east. Heolcae'r-Bont forms the western arm and provides access to several residential properties, industrial uses and Morfa Beach.

Traffic Flow Data

- 2.20 In order to establish the existing traffic flow demand on the local highway network, manual classified turning count traffic flow surveys have been undertaken at all the junctions in the TA study area. The traffic surveys were undertaken on Thursday 30th June 2022, in a neutral traffic month, between 07:00-09:30 and 16:00-18:30.

- 2.21 The traffic survey data is presented in **Appendix A** with the base peak hour traffic flows (07:45-08:45 and 16:30-17:30) shown diagrammatically on **Traffic Flow Figure 1**.
- 2.22 As detailed earlier, it was agreed during scoping discussions that the traffic survey data would be compared to Friday traffic data from an ATC, with the surveyed traffic flows factored up in a sensitivity test should the difference on Thursday/Friday survey data be considered more than typical day to day variation.
- 2.23 A 7-day ATC survey took place on the A4241 Harbour Way, between Thursday 17th March 2022 and Wednesday 23rd March 2022, with the ATC data provided in **Appendix A**. A peak hour traffic flow comparison between the Thursday 30th June 2022 traffic survey data and the Friday 18th March 2022 ATC data is presented in **Table 2.1** below.

Table 2.1 – Survey / ATC Comparison

	Thursday Survey		Friday ATC		Difference	
	AM	PM	AM	PM	AM	PM
Northbound	522	405	437	459	85	-54
Southbound	286	477	322	319	-36	158
Two-way	808	882	759	778	49	104

- 2.24 As can be seen from the above, the two-way surveyed traffic flows are in fact higher than the traffic flows recorded on a Friday in the same location. It is also worth noting that undertaking traffic surveys across the peak periods on a single day is standard practice given that it is widely accepted that there is little day-to-day variation in peak hour traffic flows. Furthermore, it is standard practice to undertake traffic counts on a single day and this is an approach that has been accepted by NPT on other developments in this area.
- 2.25 Having regard to the above and given that the survey was undertaken in a neutral traffic month, the traffic surveys undertaken are considered representative of current traffic conditions.

Road Safety Record

- 2.26 In order to identify critical locations on the network with a poor accident record, the personal injury accident data has been obtained from the online resource CrashMap for the most recent five-year period (2017-2021). The location and severity of any accidents within the study area during this period, are shown on the accident plan presented in **Appendix B**.
- 2.27 A summary of the number and severity of the accidents at each junction/link in the study area is presented in **Table 2.2** below:

Table 2.2 – Personal Injury Accident Data Summary

Junction / Link	Fatal	Serious	Slight	Total
M4 Junction 41 Junction	0	0	2	2
A48 Heilbronn Way / Car Park Access / A4241 / Water Street Junction	0	0	3	3
A4241 link between the A48 Heilbronn Way / Car Park Access / A4241 / Water Street Junction and the A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West) Junction	0	1	0	1
A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West) Junction	0	0	0	0
A4241 / A4241 Harbour Way / North Bank Road Junction	0	0	2	2
A4241 Harbour Way / Oakwood Road / Llewellyn's Road Junction	0	1	1	2
A4241 Harbour Way link between the A4241 Harbour Way / Oakwood Road / Llewellyn's Road Junction and the A4241 Harbour Way / North Road Junction	0	1	0	1
A4241 Harbour Way / North Road Junction	0	0	0	0
A4241 Harbour Way link between the A4241 Harbour Way / North Road Junction and the A4241 Harbour Way / Main Gate Access Junction	0	0	1	1
A4241 Harbour Way / Main Gate Access Junction	0	0	3	3
A4241 Harbour Way link between the A4241 Harbour Way / Main Gate Access Junction and the A4241 Harbour Way / A48 Margam Road / Access Road Junction	0	2	0	2
A4241 Harbour Way / A48 Margam Road / Access Road Junction	0	0	1	1
A48 link between the A4241 Harbour Way / A48 Margam Road / Access Road Junction and the M4 Junction 38	0	0	1	1
M4 Junction 38	1	2	6	9

- 2.28 As can be seen from the above, no accidents were recorded at the A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West) and A4241 Harbour Way / North Road junctions during the five-year study period.
- 2.29 Of the remaining junctions within the TA study area, all of them experienced three or less accidents during the five-year study period except the M4 Junction 38. Less than three accidents over a five-year period is not considered to be an unusual frequency for these types of junctions and therefore, the existing accident record at these junctions does not represent a material concern in the context of the development. Furthermore, all of the links experienced between 0 and 2 accidents over the five-year period, with no accident cluster spots.

M4 Junction 38

- 2.30 A total of nine accidents were recorded at the M4 Junction 38 during the five-year period, of which, 6 resulted in 'slight' severity injuries, 2 resulted in 'serious' severity injuries and 1 resulted in 'fatal' injuries. The fatal accident took place in 2019 and involved a car moving off and a motorcycle colliding with the rear of the car.
- 2.31 Whilst all accidents are regrettable, nine accidents over a five-year period (average of 1.8 per year) is not considered to be an unusual frequency for this type of junction and the traffic volumes it carries. Therefore, the existing accident record at this junction does not represent a material concern in the context of the development, particularly given that the recorded accidents took place at different locations at this junction, with no specific accident cluster spots.

3.0 PROPOSED DEVELOPMENT

General

- 3.1 The development proposals consist of the erection of an Alcohol to Jet Fuel production facility, with associated development, on land at Crown Wharf, Port Talbot Docks, Port Talbot.
- 3.2 The SAF production facility uses AtJ technology and will produce Alcohol to Jet Synthetic Paraffinic Kerosene (ATJ-SPK), also known as SAF, and sustainable diesel (SPD). The facility will comprise several industrial components, buildings and associated infrastructure.
- 3.3 As detailed earlier, the proposed development was subject to a PAC process and NPTC raised a number of comments relating to the site layout. NPTC's comments have been addressed in an updated site layout, presented in **Appendix C**, and responded to in this Chapter.
- 3.4 The applicant has confirmed that under normal operation the required ethanol (primary input production) will be imported by barge and all ATJ-SPK will be stored on-site and exported by barge, with all transport movements associated with loading / unloading kept off the local highway network.
- 3.5 Notwithstanding the above, the process to make ATJ-SPK also produces sustainable diesel which is proposed to be exported via road to surrounding local areas / businesses. Furthermore, the process also requires nitrogen, chemicals, and catalyst, which will be delivered by road, and produces contaminated water, waste ethanol and spent catalyst which will be transported off-site by road, as detailed later.
- 3.6 The applicant anticipates a requirement for a total of 85 staff for the proposed development to operate which includes 6 remote technical support staff. The facility will be operational 24 hours per day with on-site staff working the following shifts:
- Day Support Staff: 9 staff working 08:00-17:00
 - Day Shift: 41 staff working 08:00-16:00
 - Evening Shift: 17 staff working 16:00-00:00
 - Night Shift: 12 staff working 00:00-08:00

Proposed Construction Phase

- 3.7 The applicant has confirmed that the proposed development will require circa 2.5 years to construct, inclusive of commissioning of the processing plant and overall facility and is expected to be operational by mid-late 2026.
- 3.8 Construction is proposed to take place during normal working hours Monday-Friday and a contractor has been brought on board who estimates 450 staff will be required on-site.
- 3.9 As part of the PAC process, NPTC have asked whether there will be car sharing / bus transport to the site during the construction phase to avoid potential issues with contractor parking on the existing port roads.
- 3.10 As detailed later, in order to limit traffic impacts during the construction phase and promote sustainable travel, the applicant / contractor has confirmed that car sharing and travel via minibus will be heavily encouraged through site inductions. Furthermore, minibuses will be put on to collect construction workers lodging in the surrounding areas and a free EV shuttle service will also be provided between the site and ABP security gate for all construction workers/staff who wish to walk to the site (either as a whole journey or in combination with public transport), reducing reliance on private cars.

Proposed Vehicular Site Access Arrangements

- 3.11 Vehicular access to the development site will be provided via the introduction of three accesses off Phoenix Way to the north of the site, which connects to the local highway network at the A4241 Harbour Way / North Road access junction. This access route regularly accommodates large HGV's / commercial vehicles associated with the existing operations / uses surrounding the application site.
- 3.12 The 'East Access' is located at the north-east corner of the site and comprises a dual gated simple priority-controlled junction, which will provide access to the staff car park area and a separate access to the main site / primary internal road network, as shown on drawing number SCP/220352/D03 Rev F, presented in **Appendix D**.

- 3.13 The access to the staff car park has been designed with a 6m wide carriageway and is of sufficient width for two cars to access / egress simultaneously, as demonstrated through swept path analysis shown on drawing number SCP/220352/D03 Rev F, presented in **Appendix D**. The access to the main site / primary internal road network has been designed with a 7.3m wide carriageway to allow two HGVs to access / egress the site simultaneously, which has also been demonstrated through swept path analysis. It should be noted that the proposed gates are set back a sufficient distance to allow an HGV to wait off Phoenix Way.
- 3.14 The 'West Access' is located at the north-west corner of the site and comprises a gated access to the truck loading facility off Phoenix Way which is of sufficient width for two HGVs to access / egress simultaneously, as demonstrated through swept path analysis shown on drawing number SCP/220352/D02 Rev F, presented in **Appendix E**. Similarly, the proposed gate is set back a sufficient distance to allow an HGV to wait off Phoenix Way.
- 3.15 The third access is located circa 20m south-west of the West Access and comprises a gated emergency vehicular access.
- 3.16 As detailed earlier, localised narrowing is present on Phoenix Way, circa 100m west of the ABP security gate, which is not of sufficient width for two HGVs to pass. However, this section of Phoenix Way, which benefits from a give way arrangement, is well used today by multiple HGVs serving the existing industrial businesses in the vicinity of the site without issues and is considered acceptable to serve the proposed development during both the construction and operation phase. Notwithstanding this, a wider review of road improvements to accommodate ABP's Future Vision and site wide Masterplan is being progressed separately by ABP and could result in alternative access strategies being pursued longer-term.
- 3.17 During the PAC process, NPTC provided several comments in relation to access which have been summarised and responded to below:
1. In terms of the 'East Access', NPTC have noted that there is potential for traffic using the dual access junction to conflict and have requested details of the management plan in respect of vehicle movements due to the close proximity of traffic conflict in both directions.

- 3.18 Whilst the two accesses at the 'East Access' are in close proximity, the movements will be controlled by the gatehouse and the HGV and light vehicle accesses are a sufficient distance apart as to not conflict with each other, with HGVs able to access/egress the site without overrunning the light vehicle access, as demonstrated through swept path analysis shown on drawing number SCP/220352/D03 Rev F, presented in **Appendix D**. It should also be noted that the accesses will both be extremely lightly trafficked, with only between 1 and 3 two-way HGV movements per hour, as detailed later, so the opportunity for conflict will be very low. It is also worth noting that the dual access design works better from a layout design and operational perspective, with only 1 gatehouse needed to serve and control both accesses.
2. NPTC have requested visibility splays of 2.4m x 45m in accordance with TAN 18 for a 20mph limit.
- 3.19 The required visibility splays of 2.4m x 45m are achievable from both site accesses as shown on drawing number SCP/220352/D03 Rev F and SCP/220352/D02 Rev F, presented in **Appendix D** and **Appendix E** respectively.
3. Further evidence has been requested that shows Phoenix Way has a 20mph speed limit and how is it enforced.
- 3.20 20mph speed limit signage is provided on Phoenix Way, as shown on **Figure 2.2** earlier. It should also be noted that the port roads are under the control of ABP and their Transport Policy confirms that speed limits are strictly enforced by Police, Port Security or ABP staff with speed monitoring equipment provided for ABP or its security contractor.
4. Whilst NPTC have acknowledged the access to the National Grid switchroom will be used infrequently, they have requested adequate visibility splay in both directions.
- 3.21 The required visibility splays of 2.4m x 45m are also achievable from the National Grid switchroom access, as shown on drawing number SCP/220352/D03 Rev F, presented in **Appendix D**.
5. NPTC have noted that the truck loading area egress does not adjoin the road at 90° which reduces visibility to the left when egressing the junction.
- 3.22 It should be noted that the truck loading egress has been removed on the revised site layout and therefore, this comment is now no longer relevant.
6. NPTC have requested clarification on how goods will be transported to and from the jetty on the opposite side of Phoenix Way.

- 3.23 Goods will be transferred to/from the jetty and the SAF Production Facility via a pipeline which will be culverted under Phoenix Way.

Proposed Pedestrian / Cycle Access

- 3.24 In the short term, pedestrian and cycle access will not be permitted within the ABP area for safety reasons. However, the applicant proposes to provide a free EV shuttle service with a cycle rack and a system will be implemented to allow staff to walk/cycle to the site, whereby they call to be picked up from in the vicinity of the ABP security gate and transported to the site. Staff will then be provided with/request a pickup time for transport back to the gate. Cycle storage has been provided within the car parking area in and around the administrative building.
- 3.25 ABP are in the process of developing a site wide Masterplan for the port where consideration of routes for pedestrians and cyclists will be provided in the longer term.
- 3.26 NPTC's PAC comments noted that there is no pedestrian permeability throughout the whole of the site and have requested justification for this as it would allow for safe access to the works where necessary.
- 3.27 Pedestrians (excluding facility operating personnel) will be banned from walking through the site, other than in the administration and car park areas as part of the site's safety and operational control requirement.

Internal Site Layout – Main Site

- 3.28 The internal road layout of the main site has been designed to facilitate the operation of the site in accordance with LanzaTech's specification, informed by designs of other sites they operate, and comprises a permeable road layout with 6m wide primary roads that are straight in alignment and 4m wide maintenance roads for light vehicles only.
- 3.29 NPTC have stated that the internal site roads should be a minimum of 6.5m wide to allow 2 HGV vehicles to pass (where required within the site) and have requested clarification if a one-way system is proposed.

- 3.30 As detailed later, the internal road network will be extremely lightly trafficked by HGVs, particularly given that the majority of HGVs will only require access to the separate fuel loading area, and the internal road network will be managed by LanzaTech so there will not be any impact on the local highway network or Phoenix Way. Notwithstanding this, drawing number SCP/220352/D07 Rev B presented in **Appendix F** shows the 6m wide primary roads, which will be used by all site vehicles, and the 4m wide maintenance roads which will only be used by light vehicles. It should also be noted that the primary roads within the site have been designed to operate on a one-way basis with the details of the one-way arrangement also shown on drawing number SCP/220352/D07 Rev B, presented in **Appendix F**.
- 3.31 NPTC have also stated that a sufficient turning area for HGVs should be provided within the site as well as designated loading and unloading areas. As detailed above, the site layout has been designed on a permeable one-way basis to avoid the need for reversing manoeuvres and turning areas and swept path analysis of the internal circulation routes is shown on drawing number SCP/220352/ATR02 Rev E, presented in **Appendix G**, which demonstrates the movements of a 16.5m articulated HGV can be accommodated.
- 3.32 In terms of the designated loading and unloading areas for HGVs, suitable loading areas, depending on the required vehicle size, are provided at the required locations of the layout as determined by LanzaTech to suit their requirements.
- 3.33 NPTC have also noted that no lighting is shown on the highway links within the site and have requested confirmation on whether a lighting scheme is proposed to ensure safe access for vehicles during nighttime operations. This is more a matter of detail which can be dealt with via a suitably worded planning condition, although a lighting assessment and strategy has been prepared by AECOM and submitted under separate cover.

Internal Site Layout – Truck Loading Area

- 3.34 The truck loading area comprises a gatehouse, a weigh bridge, a product tanker loading package and HGV parking area. Swept path analysis of a 16.5m articulated HGV has been undertaken, as shown on drawing number SCP/220352/D02 Rev F presented in **Appendix E**, which demonstrates that such a vehicle can access/egress the truck loading and parking area.

- 3.35 NPTC have raised concerns over the internal HGV/tanker storage area within the site. The current proposals provide space for 3 HGVs to load jet fuel/diesel simultaneously and additional space for 3 HGVs to wait for the loading area as well as 5 HGV parking bays and a 2-space HGV layby. This level of storage is more than sufficient to accommodate the level of HGV movements detailed later and has been designed to also provide adequate space in the event of shipping disruption, when circa 26 HGVs would be required per day (circa 1-2 per hour) for the first 2 days of disruption and then 13 HGVs per day (circa 0-1 per hour) thereafter, as detailed later. It is also worth noting that the internal site layout provides a network of primary roads which could accommodate waiting HGVs in the unlikely event that additional storage space is required.

Parking

- 3.36 As shown on the site layout plan presented in **Appendix C**, a total of 57 parking space are proposed, including 3 disabled bays, and the car park has been designed with aisle widths of 6m to allow for safe manoeuvring within the car park. Cycle storage has also been provided within the car parking area in and around the administrative building and the electricity supply will be capable of supporting 25% of parking spaces with active EV charging provision to aid sustainable transport methods, as well as the provision of ducting for the future extension of EV charging points as utilisation and demand increases.
- 3.37 Given the very specific / bespoke nature of the development, it is not appropriate to apply NPTC parking standards. Instead, the proposed level of parking has been informed by anticipated staff numbers at the site, as detailed below.
- 3.38 As detailed earlier, there will be a total of 85 staff including 6 remote technical support staff. Based on the proposed shift patterns detailed earlier, the applicant expects circa 50 staff to be on site at any one time during the day, although up to 62 staff could potentially be on site at anyone-time during shift change over periods.
- 3.39 In order to estimate the number of staff that will travel by car, the Census records for the Neath Port Talbot 019 Middle Super Output Area (MSOA) have been analysed. The results show that 83% of those who work in the Neath Port Talbot 019 MSOA travel by car. Applying the 83% to the maximum number of staff on site during shift change over periods equates to a parking demand of 51-52 spaces. In addition, there will be up to 5 additional contractors on site to support with routine maintenance and servicing of equipment and therefore, a total of 57 parking space are proposed.
- 3.40 On this basis the proposed level of parking is considered acceptable.

- 3.41 NPTC have accepted the proposed level of parking for the specific use of the development, however, they have stated that a revised parking assessment will be necessary should the use class change. This is noted and can be dealt with via a suitably worded planning condition.
- 3.42 In addition to the above, NPTC have requested parking provision on the site should include EV charging at a rate of 10% and disabled spaces (3.6m x 4.8m minimum) at a rate of 5%. As detailed earlier, 3 disabled bays are now proposed, in excess of 5%, and the electricity supply will be capable of supporting 25% of parking spaces with active EV charging provision to aid sustainable transport methods which is in excess of NPTC's requirements.

4.0 PLANNING POLICY CONTEXT AND TRANSPORT IMPLEMENTATION STRATEGY

Introduction

4.1 Planning Policy Wales - Technical Advice Note 18: Transport (TAN 18) sets out the need for all TA supporting documents in Wales to include a Transport Implementation Strategy (TIS), which should set objectives relating to managing travel demand for the development and set out the infrastructure, demand management measures and financial contributions necessary to achieve them. The TIS is intended to achieve the following three things:

- *Identify what policy objectives and requirements are set by the development plan in terms of access to the development and movements in and around the site.*
- *Identify what access arrangements are required for a successful development (meeting the needs of the developer, end user, addressing impacts on neighbours and existing movements surrounding the site).*
- *Specify the package of physical, management and promotional measures needed to accommodate the requirements identified above, such as physical infrastructure, the design and location of buildings, parking management, financial incentives, and dedicated travel plan co-ordinators.*

4.2 This TIS section is prepared having regard to the advice from TAN 18, as outlined above. It is considered that this TIS can be taken forward and used as a framework for a future detailed Travel Plan that can be secured as part of a planning condition and agreed prior to commissioning of the proposed development, if considered necessary.

Policy Context - Future Wales: The National Plan 2040

4.3 In terms of the national transport policy that is relevant to the TIS, the *Future Wales: The National Plan 2040* document sets out the direction for development in Wales up to 2040. It provides an overarching development plan with a strategy for “addressing key national priorities through the planning system including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities”. “Planning decisions at every level of the planning system in Wales must be taken in accordance with the development plan as a whole”.

- 4.4 In relation to transport, the document states on page 51 that *“Significant investment in public transport, including Metro schemes and active travel infrastructure, including the walking and cycling routes being developed as a result of the Active Travel Act, provide an opportunity to re-think how our places work. Growth should be shaped around sustainable forms of transport and places that make us and the environment healthier. The National Cycle Network is an important part of our national infrastructure, and its planned improvements are supported”*.
- 4.5 The *Future Wales: The National Plan 2040* document outlines 11 outcomes the Welsh Government wants to achieve over the next 20 years. Outcome 7 states that *“Sustainable transport infrastructure will be embedded within development to enable easy and convenient access from one place to another for commuting, business, tourism and leisure purposes. Development will focus on active travel and public transport, allied with a reduced reliance on private vehicles”*.
- 4.6 On page 174, it is noted that *“the Welsh Government wishes to see development built in sustainable locations that are supported by the active travel and public transport infrastructure and services needed to enable people to live active and healthy lives.”* In relation to Policy 36, the document goes on to state that *“The overall aim is to reduce the need to travel, particularly by private vehicles, and support a modal shift to walking, cycling and public transport”*.
- 4.7 Policy 11 relates to National Connectivity which the Welsh Government is committed to improve. Their priorities are to encourage longer-distance trips to be made by public transport, while also making longer journeys possible by electric vehicles.
- 4.8 *“The Welsh Government will work with Transport for Wales, local authorities, operators, and partners to support the delivery of the following measures to improve national connectivity:*
- *Rail Network – Transform the rail network and improve the quality of rail services for passengers.*
 - *Bus Network – Invest in the development of the national bus network, fully integrated with regional and local bus networks, to increase modal share of bus travel and improve access by bus to a wider range of trip destinations.*
 - *Strategic Road Network – Invest in road improvements to reduce journey times, deliver a safer and more resilient road network, and improve air and noise quality. Create a network of rapid-charging points to enable longer distance travel by electric vehicles throughout Wales.*

- *National Cycle Network – Revitalise the National Cycle Network to create a network of traffic-free paths connecting cities, towns, and countryside across Wales.*

4.9 *Planning authorities should support developments associated with improvements to national connectivity and, where appropriate, maximise the opportunities that arise from them”.*

4.10 Policy 12 relates to Regional Connectivity and notes that Active travel must be an essential and integral component of all new developments, large and small. The Welsh Government’s priorities are to improve and integrate active travel and public transport.

4.11 *“The Welsh Government will work with Transport for Wales, local authorities, operators and partners to deliver the following measures to improve regional connectivity:*

- *Active Travel – Prioritising walking and cycling for all local travel. We will support the implementation of the Active Travel Act to create comprehensive networks of local walking and cycling routes that connect places that people need to get to for everyday purposes.*
- *Bus – Improve the legislative framework for how local bus services are planned and delivered. We will invest in the development of integrated regional and local bus networks to increase modal share of bus travel and improve access by bus to a wider range of trip destinations.*
- *Metros – Develop the Southeast Metro, Southwest Metro and North Wales Metro. We will create new integrated transport systems that provide faster, more frequent, and joined-up services using trains, buses, and light rail.*
- *Ultra-Low Emission Vehicles – Support the roll-out of suitable fuelling infrastructure to facilitate the adoption of ultra-low emission vehicles, particularly in rural areas.*

Policy Context – Planning Policy Wales Edition 11 (PPW)

4.12 PPW Edition 11 was published in February 2021 by the Welsh Government and sets out a framework for the Welsh planning authorities to prepare their development plans. Its primary objective is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental, and cultural well-being of Wales.

- 4.13 At paragraph 4.1.1, PPW states that *“The planning system should enable people to access jobs and services through shorter, more efficient, and sustainable journeys, by walking, cycling and public transport. By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health, and helps to tackle the causes of climate change and airborne pollution by:*
- *Enabling More Sustainable Travel Choices – measures to increase walking, cycling and public transport, reduce dependency on the car for daily travel;*
 - *Network Management – measures to make best use of the available capacity, supported by targeted new infrastructure; and*
 - *Demand Management – the application of strategies and policies to reduce travel demand, specifically that of single-occupancy private vehicles”.*
- 4.14 In relation to sustainable transport, PPW confirms in paragraph 4.1.9 that *“The Welsh Government is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport”.*
- 4.15 It goes on to state in paragraph 4.1.10 that *“The planning system has a key role to play in reducing the need to travel, particularly by private car, and supporting sustainable transport, by facilitating developments which:*
- *are sited in the right locations, where they can be easily accessed by sustainable modes of travel and without the need for a car;*
 - *are designed in a way which integrates them with existing land uses and neighbourhoods; and*
 - *make it possible for all short journeys within and beyond the development to be easily made by walking and cycling”.*
- 4.16 PPW also refers to a *Sustainable Transport Hierarchy* which prioritises walking, cycling and public transport ahead of private motor vehicles. In relation to the *Sustainable Transport Hierarchy*, paragraph 4.1.13 states that it *“should be used to reduce the need to travel, prevent car-dependent developments in unsustainable locations, and support the delivery of schemes located, designed and supported by infrastructure which prioritises access and movement by active and sustainable transport”.*

- 4.17 In reference to supporting documentation with planning applications, paragraph 4.155 of PPW states that *“Transport Assessments are an important mechanism for setting out the scale of anticipated impacts a proposed development, or redevelopment, is likely to have. They assist in helping to anticipate the impacts of development so that they can be understood and catered for appropriately”*.

Transport Implementation Strategy

- 4.18 The main policy initiatives which need to be addressed have been summarised above. The key theme relates to reducing reliance on the private car focusing on supporting a modal shift to walking, cycling and public transport.
- 4.19 The objectives of a TIS should benefit both the occupiers of a development and the wider community. Site specific objectives that are relevant to the proposed development and will form the basis for a TP are as follows: -
- Increase opportunities for staff;
 - Reduce vehicle use in and around the site;
 - Reduce the transport impact of the development upon the environment;
 - Promote more sustainable ways of travelling; and
 - Support government policy to manage travel demand more effectively.
- 4.20 It should be noted that temporary construction staff will either be sourced locally or lodge locally. They will be encouraged to travel via sustainable modes of transport via their contractors and through site inductions. It should also be noted that minibuses will be put on to collect construction workers lodging in the surrounding areas. A free EV shuttle service will also be provided between the site and ABP security gate for all construction workers/staff who wish to walk to the site (either as a whole journey or in combination with public transport), reducing reliance on the private car. The demand for the shuttle service will remain under review as the scheme becomes operational through staff surveys, as detailed later, with services increased/decreased as necessary.
- 4.21 Therefore, this TIS will focus on permanent operational staff.

Achieving the TIS Objectives and the Monitoring Process

- 4.22 The objectives and monitoring of the TIS will substantially be achieved through the appointment of suitable Travel Plan Co-ordinator/s (TPC/s). Appropriate start-up funding will be provided for the TPC/s to cover the administration costs involved.

- 4.23 Once appointed, the TPC/s will act as the main contact for the TIS and will be responsible for implementing the TIS measures, involving new staff, maintaining a database, and monitoring the effects of implementation. A full set of duties and responsibilities of the TPC/s is set out in the sections below.
- 4.24 The TPC/s will inform the Local Planning Authority and the appropriate local public transport operators of their contact details. Similarly, the TPC/s will obtain the contact details of staff and complete a 'Contact' form to provide easy reference when dealing with relevant matters.
- 4.25 The TPC/s will undertake an initial staff travel survey to enable a travel database to be set up. The TPC/s will prepare and distribute a questionnaire to each staff member, to collect the following details:
- Home postcode area;
 - Normal working hours;
 - Mode of travel to work;
 - Car ownership / usage;
 - Reasons for not using public transport and other modes;
 - The anticipated take-up of a car sharing scheme, shuttle service, the use of public transport or other non-car modes of travel to work; and
 - Information relating to potential areas for sustainable travel improvement, upon which the TPC/s could act and draw up measures to improve the TIS.
- 4.26 The TPC/s will set up a travel database within 3 months of completion of the travel survey.
- 4.27 The TPC/s will agree the annual targets with the LPA within 1 month of completion of the travel survey analysis. The initial travel survey results for the proportion of staff travelling by single occupancy vehicles should be recorded along with the agreed short term annual targets.
- 4.28 The TPC/s will ensure that any changes to the TIS or any relevant information is passed on to staff on a biannual / annual basis in the form of leaflets.
- 4.29 The TPC/s will ensure that staff are provided with information to allow ease of use of local public transport by providing up-to-date public transport route maps and timetable information in staff 'welcome packs', and updating by leaflet drop, as necessary. Contact details for local taxi firms will also be provided by the TPC/s.

- 4.30 The TPC/s will liaise regularly with local public transport operators to ensure that information remains valid. The TPC/s will provide details of the websites and telephone advice services, such as <http://www.traveline.info/> to enable staff to obtain details on their individual journey requirements.
- 4.31 The TPC/s will also liaise with the local public transport operators and release survey data to the operators to identify travel demands and allow appropriate services to be provided. The TPC/s will check regularly to ensure that the information supplied to staff remains valid.
- 4.32 The TPC/s will encourage walking as a mode of travel to the site by implementing the following initiatives: -
- Provide details to all staff of the free EV shuttle service that will run between the site and the ABP security gate;
 - Raise awareness of the health benefits of walking through promotional material;
 - Provide a map showing walking routes, indicating distances and times to the most common destinations near to the site; and,
 - Ensure that footways to site are well maintained and lit and any defects reported to the highway's authority on an annual/biannual basis.
- 4.33 In conjunction with the pedestrian initiatives, cycle parking will be provided as part of the development and the TPC/s will investigate the potential to set up a bicycle user group (BUG) to encourage staff to cycle to work.
- 4.34 The TPC/s will set up a car sharing scheme, utilising the online website www.liftshare.com, within 3 months of receiving the initial travel surveys. Staff will be contacted by the TPC/s to allow potential car sharers to register an interest and provide details of their journey to and from work along with their contact phone number and home location. The TPC/s will then identify suitable matches for staff that may be able to share their journeys to and from work.
- 4.35 The TPC/s will make the new staff aware of the existence of the TIS by providing them with a copy of the TIS as part of a welcome pack during their induction.
- 4.36 The TPC/s will monitor travel patterns on an annual basis for the first five years of the occupation of the sites and then at suitable intervals as agreed by the Local Planning Authority. The monitoring of the plan is important for the following reasons: -
- It will ensure that the Local Planning Authority can see that the aims and objectives of the TIS are being achieved;

- It justifies the commitment of the TPC/s and of other resources;
 - It maintains support for the plan by reporting successes;
 - It identifies any measures that are not working or problems with the approach of the Plan;
 - It can be shared with other organisations to refine the development of the Plan.
- 4.37 Surveys will be used to monitor travel to and from the site. The surveys can be used to monitor the number of staff walking, cycling, using cars, and using public transport. The results can then be used to identify initial mode share targets.
- 4.38 The TPC/s will develop the monitoring programme in conjunction with the Local Planning Authority to ensure that the monitoring procedures are appropriate. The TPC/s will maintain a monitoring table of progress to key TIS targets based on the results of the monitoring travel surveys. This table will be published and distributed by leaflet to staff on the site.
- 4.39 The TPC/s will make information on mode share available to the Local Planning Authority as part of the continuous monitoring process, subject to the provisions of the Data Protection Act.
- 4.40 The TPC/s will undertake an annual review of the TIS in conjunction with the Local Planning Authority. This review will be important in assessing the effectiveness of the measures implemented and to identify areas where modification may be necessary. In particular the following will be assessed:
- The level of car/non-car usage at the site;
 - Comments received from staff.
- 4.41 When reviewing the effectiveness of the TIS, the following questions will be asked: -
- Which areas offer the greatest potential for change/improvement?
 - Was the initiative implemented by the target date?
 - How well used is each scheme/initiative?
 - How much did it cost to introduce?
- 4.42 The TPC/s will compare the mode share statistics obtained from the annual monitoring to the targets set for the development. The TPC/s will set revised realistic targets for modal shifts to non-car travel modes and investigate the effectiveness of the TIS initiatives being promoted in conjunction with the Local Planning Authority.
- 4.43 Considering the data collected from the monitoring process, the TPC/s will adapt the TIS to enable the revised agreed targets to be achieved and submit a review report to be agreed with the Local Planning Authority.

4.44 It is considered that the delivery of the TIS / TP can be secured by planning condition, as appropriate.

5.0 ACCESSIBILITY

General

- 5.1 This chapter presents a review of the accessibility of the site by walking, cycling and public transport modes.
- 5.2 The accessibility of the site by non-car modes has been assessed by comparison with the following threshold distances, as set out by Andrew Davies AM ‘Minister for Economic Development and Transport’ in his foreword to the 2003 *“Walking and Cycling Strategy for Wales”* document:

Table 5.1 – Walk / Cycle Distance Thresholds

Threshold Distance	Significance	Reference
1 mile	Walking can offer viable and attractive alternatives [to car trips]	Walking and Cycling Strategy for Wales
5 miles	Cycling can offer viable and attractive alternatives [to car trips]	Walking and Cycling Strategy for Wales

Pedestrian Accessibility

- 5.3 Pedestrian / Cycle access to the development site will be provided via a section of Phoenix Way and North Road, off the A4241 Harbour Way.
- 5.4 As detailed earlier, there is a shared footway / cycleway on the A4241 Harbour Way which connects to a shared footway / cycleway that runs along western side of North Road as well as the initial circa 185m of Phoenix Way. Currently pedestrian and cycle access is not permitted within the ABP area for safety reasons; however, a free EV shuttle service is proposed between the site and ABP security gate for all construction workers/staff who wish to walk to the site (either as a whole journey or in combination with public transport), reducing reliance on the private car and encouraging sustainable travel choices.
- 5.5 NPTC have produced an Active Travel Network Map to identify existing suitable routes for walkers and cyclists as well as proposed routes. The Council apply for funding from the Welsh Government each year in order to implement the proposed routes. A screen shot of the Active Travel Network Map is shown in **Figure 5.1** below.

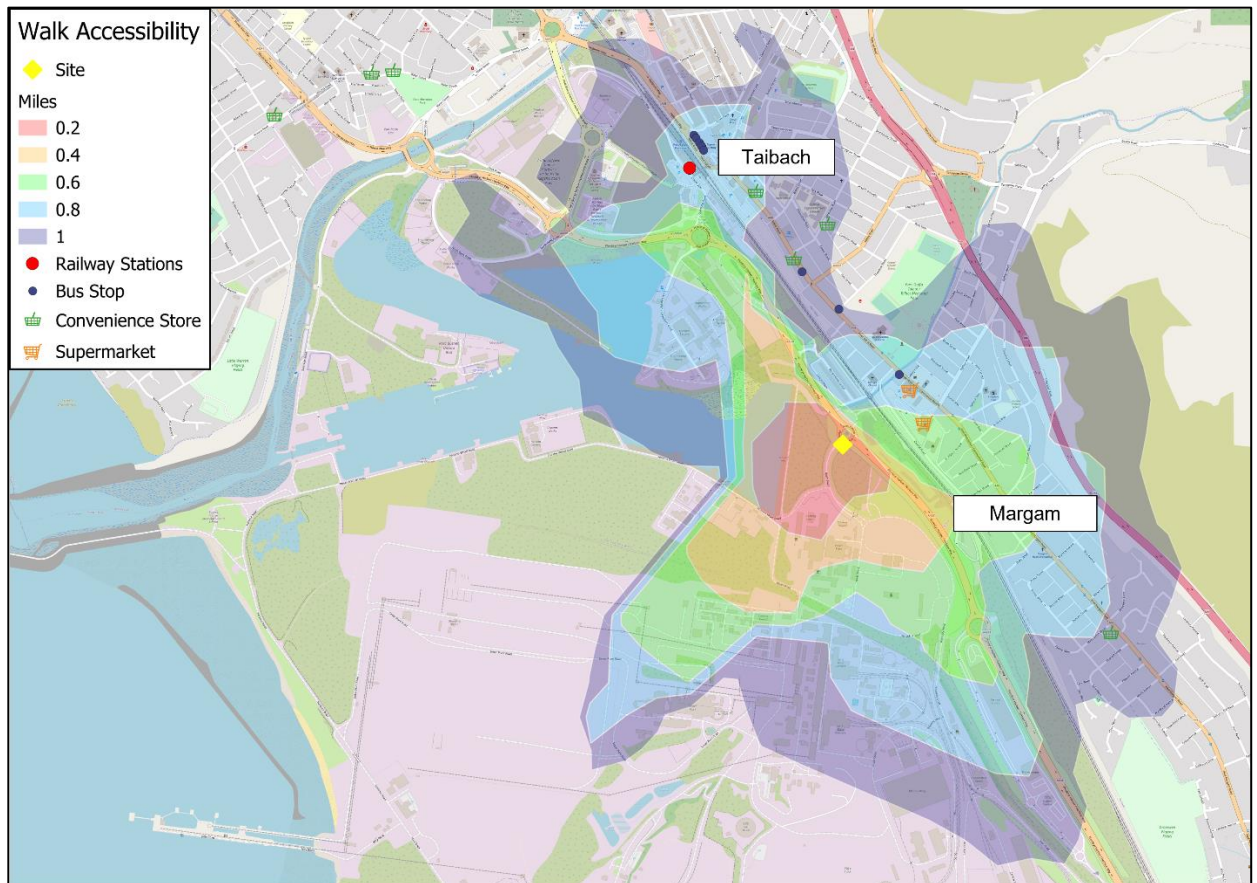
Figure 5.1 – NPTC Active Travel Plan



- 5.6 As can be seen from the above, there are continuous existing active travel routes connecting to the key local residential areas of Port Talbot, Margam and Taibach. Furthermore, there is a route proposed, known as the Margam to Port Talbot Steelworks (Alternative NCN4), that is currently subject to consultation. This proposed route will provide a useful connection from the A4241 Harbour Way / Main Gate Access junction, across the railway lines, to Knights Road, further increasing the connectivity of the site and creating a shorter walking/cycling route to the residential area of Margam.
- 5.7 Having regard to the above, the site is well located to benefit from both existing and proposed active travel links which connect to key residential areas as well as additional routes.

- 5.8 GIS TRACC software has been used to assess the accessibility of the development by foot for a 1-mile walking distance from the site access, as shown on **Figure 5.2** below, given that pedestrians and cyclists are not permitted within the site, as detailed earlier. The plan shows the reachable areas within 0.2-mile-coloured bands from the site.

Figure 5.2 – Walk Accessibility



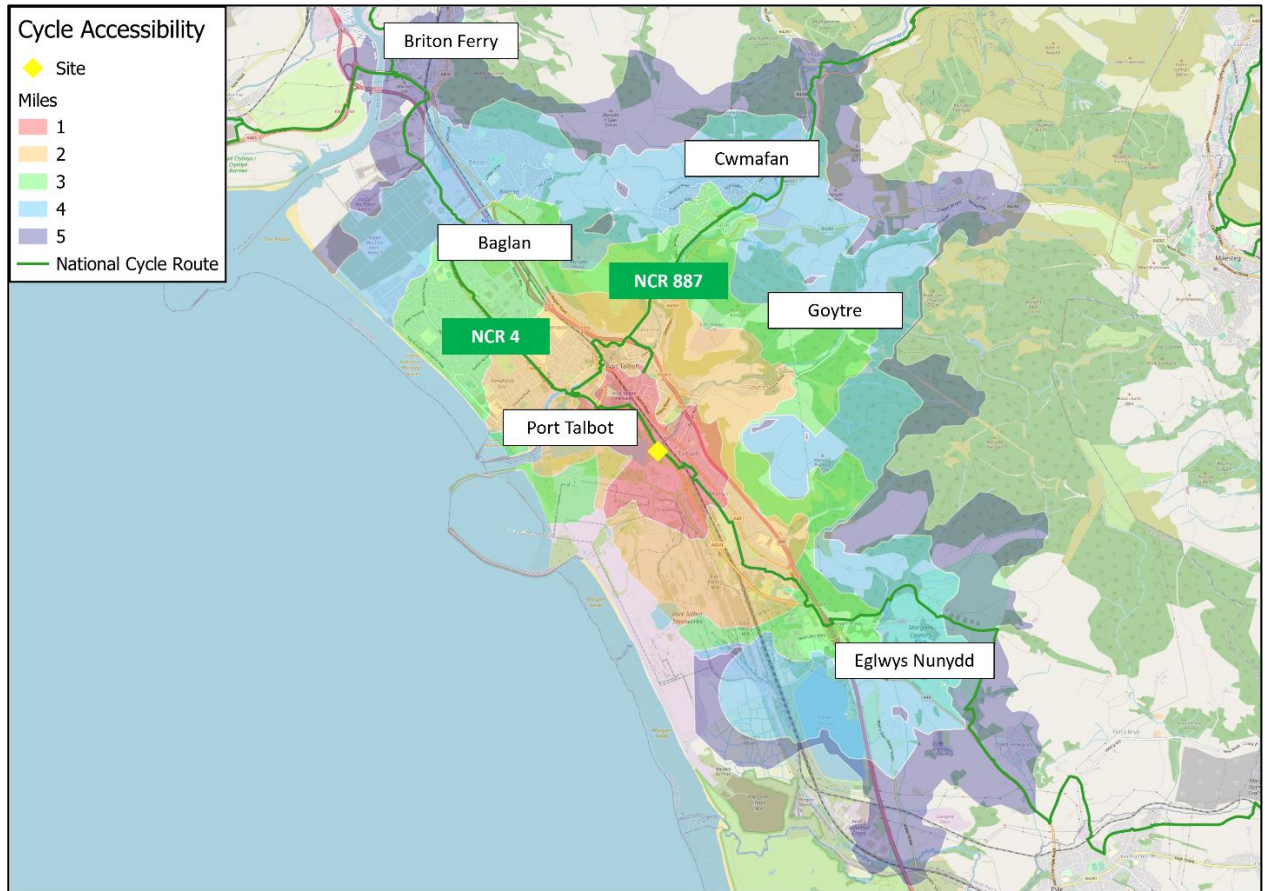
- 5.9 As demonstrated above, the residential areas of Taibach and Margam are both within a 1-mile walking distance of the site.
- 5.10 Notwithstanding the above, the Active Travel Wales Act Guidance, published by the Welsh Government in July 2021, provides guidance in relation to reasonable travel distances for each mode of active travel and confirms that many users are likely to travel up to 2 miles on foot with some users likely to travel up to 3 miles on foot.

- 5.11 There is a large residential catchment within 2 miles of the site as well as numerous transport facilities to encourage existing and prospective staff to travel via sustainable modes. The closest bus stops are located on both sides of the A48 Margam Road, 0.5 miles from the A4241 Harbour Way / North Road access, and Port Talbot Parkway Railway Station is located approximately 0.6 miles north-west of the A4241 Harbour Way / North Road access.
- 5.12 Overall, the site benefits from reasonable levels of accessibility by foot and prospective staff will not be wholly reliant on the private car for travel to work.

Cycle Accessibility

- 5.13 There is a shared footway / cycleway on the A4241 Harbour Way which connects to a shared footway / cycleway that runs along western side of North Road as well as the initial circa 185m of Phoenix Way. Furthermore, the proposed Margam to Port Talbot Steelworks (Alternative NCN4) route will provide a useful connection from the A4241 Harbour Way / Main Gate Access junction to Margam, further increasing the connectivity of the site, as detailed earlier.
- 5.14 Transport policy identifies that cycling represents a realistic and healthy option to use of the private car for making journeys up to 5 miles as a whole journey or as part of a longer journey by public transport.
- 5.15 GIS TRACC software has again been used to assess the accessibility of the site by bicycle, for a 5-mile cycle distance and is shown on **Figure 5.3**.

Figure 5.3 – Cycle Accessibility



- 5.16 The plan demonstrates that Goytre, Cwmafan, Port Talbot and Baglan, amongst others, are all located within the 5-mile catchment area. In addition, **Figure 5.3** shows the sites close proximity to National Cycle Route 4, which is located to the north-east of the site. The route connects Swansea in the north, with the outskirts of Cardiff in the south-east, whilst also providing a traffic-free link to National Cycle Route 887 in Port Talbot. National Cycle Route 887 runs in a south-west to north-east direction and provides a link between Port Talbot town centre and Glyncorrwg.
- 5.17 As the application site is within an acceptable cycle distance of a range of areas and associated facilities and services, cycling is considered to be a viable alternative to private car use for prospective staff. This is particularly the case given that secure cycle parking is proposed, and the proposed EV shuttle service will have a bike rack.

Public Transport Accessibility

- 5.18 The development is well placed to encourage travel by bus. As detailed earlier, the closest bus stops are located on both sides of the A48 Margam Road, 0.5 miles from the A4241 Harbour Way / North Road access.

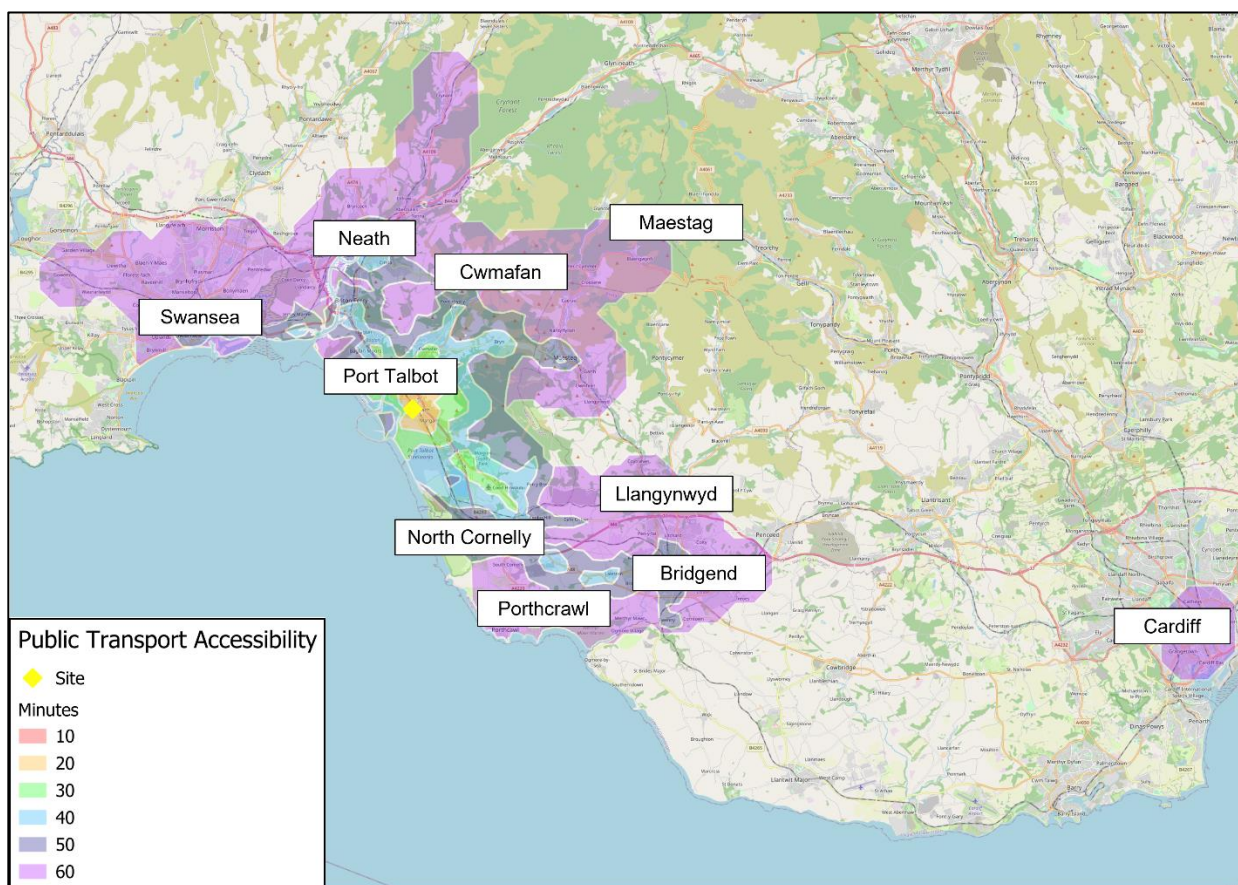
- 5.19 Details of the main bus services and frequencies from the aforementioned existing stops are provided in **Table 5.2** below.

Table 5.2 – Bus Services:

Service	Route	Approximate Service Frequency
82	Golden Avenue - Port Talbot	Mon to Fri: Hourly
		Sat: Hourly
		Sun: -
87	Neath – Margam	Mon to Fri: 20 mins
		Sat: 30mins
		Sun: -
X1 Cymru Clipper	Swansea – Bridgend	Mon to Fri: 30mins
		Sat: 30mins
		Sun: -

- 5.20 The above demonstrates that prospective staff will have access to bus stops within a reasonable walking distance. The stops provide 6 servicers per hour to numerous destinations, including Neath, Swansea, and Bridgend, amongst others, which will provide a viable option for prospective staff to travel by bus.
- 5.21 In terms of rail services, Port Talbot Parkway Railway Station is located approximately 0.6 miles north-west of the A4241 Harbour Way / North Road access. This location is well within an acceptable walking and cycling distance to encourage perspective staff to travel by train. Port Talbot Parkway Railway Station offers regular direct services throughout the week to destinations including Llanelli, Swansea, Manchester Piccadilly, Milford Haven, Haverfordwest, London Paddington and Hereford, amongst others.
- 5.22 The level of accessibility by public transport has been analysed using GIS TRACC software and is shown on **Figure 5.4** below. The figure illustrates the distance that can be travelled within 60 minutes by public transport to and from the site, which includes the time taken to walk to the bus stops.

Figure 5.4 – Public Transport Accessibility



- 5.23 The above demonstrates that the site is within close proximity to public transport links, serving both the local area and other destinations further afield. The figure shows that key areas of Cardiff, Swansea, Neath, North Cornelly, Bridgend and Maesteg, amongst others, are all within an acceptable 60-minute commute time.

Summary

- 5.24 The site benefits from good levels of accessibility by sustainable modes and has a large residential catchment as well as a good range of local amenities within close proximity. Access to the site on foot and by cycle is of a good standard and there are multiple transport connections within close proximity providing access to a range of local destinations. These findings demonstrate that prospective staff will not be wholly reliant on the private car for travel to work.

6.0 FUTURE BASELINE TRAFFIC FLOWS

Introduction

- 6.1 This chapter describes the future baseline traffic conditions on the local highway network in relation to traffic growth and committed developments.

Future Baseline Traffic Flows

- 6.2 The construction phase will represent the worst-case traffic impact of the scheme on the local highway network and as detailed earlier, it has been agreed with NPTC that detailed capacity assessments of the impact of the development during the operational phase are not required.
- 6.3 As detailed earlier, the proposed development is anticipated to be constructed and operational by 2026 and as a result, capacity assessments have been undertaken in the future assessment year of 2026, as agreed with NPTC.
- 6.4 National Traffic Model (NTM) growth factors (modified by TEMPRO local growth factors) have been used to quantify the level of background traffic growth that could occur on the local network between the date of the traffic surveys and the future assessment year. This quantification is summarised in **Table 6.1** below.

Table 6.1 – Traffic Growth Factors

Period	AM Peak	PM Peak
2022 to 2026	1.0302	1.0294

- 6.5 The above growth factors have been applied to the surveyed traffic flows to obtain the 2026 base traffic flows, as shown in **Traffic Flow Figure 2**.

Committed Developments

- 6.6 NPTC have requested that the following committed developments are considered in the assessments within this TA:
- P2021/1255 - Land off J38 of the M4, Margam - Full planning application of the development of a metal processing facility totalling 28,500sq.m of floorspace comprising a powder processing plant (17,377sq.m), warehouse and store (5,428 sq.m) office building (1,442 sq.m), amenity building (776 sq.m), laboratory (200 sq.m), services building (470 sq.m), substation (107 sq.m), phase 2 (2,700 sq.m), CCTV, storage tanks and plant, parking, servicing and roads and associated works.

- A2020/0014 - Tyn-y-caeau, Margam Road - Change of use from dwelling house and annex building into a mixed used development consisting of guest house accommodation consisting of 16 guest rooms, with associated bar, cafe and spa facilities, and truck stop with 21 HGV parking spaces. The proposal includes the demolition of an existing single storey rear extension, and the erection of a single-storey rear extension, together with widened site access, additional internal access roads, parking areas and associated works.

P2021/1255 - Land off J38 of the M4, Margam

- 6.7 This planning application is for a 28,500m² metal processing facility.
- 6.8 The traffic flows associated with the development have been obtained from the submitted TA and are presented diagrammatically on **Traffic Flow Figure 3**. It should be noted that the development traffic flows have been input directly from the TA at the A4241 Harbour Way / A48 Margam Road / Access Road junction and the M4 Junction 38, albeit they have been converted to passenger car units (PCU), and then distributed at the remaining junctions within the TA study area as follows:
- All traffic routing via the A4241 Harbour Way has been assigned straight through the following junctions:
 - i. A4241 Harbour Way / Main Gate Access
 - ii. A4241 Harbour Way / North Road
 - iii. A4241 Harbour Way / Oakwood Road / Llewellyn's Road
 - All traffic approaching the A4241 / A4241 Harbour Way / North Bank Road junction has been assigned on the A4241 (West) and A4241 (North) based on turning proportions, excluding U-turn movements and North Bank Road given that this is just an access road to commercial and industrial sites.
 - All traffic approaching the A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West) junction have been assigned straight through the junction along the A4241 given that the other arms provide access to commercial and industrial sites only.
 - Traffic has been assigned through the A48 Heilbronn Way / Car Park Access / A4241 / Water Street based on existing turning proportions, excluding U-turn movements and the Port Talbot Bus Station car park access.

- Traffic has been assigned through the M4 Junction 41 based on existing turning proportions, excluding U-turn movements and the shopping centre car park access.

A2020/0014 - Tyn-y-caeau, Margam Road

- 6.9 The traffic flows associated with the development have been obtained from the submitted TA and distributed on the M4 northbound and southbound based on existing northbound and southbound mainline flows, obtained from a DfT count to the south of the M4 Junction 38.
- 6.10 The traffic flows associated with the development are presented diagrammatically on **Traffic Flow Figure 4**
- 6.11 The total committed development traffic is presented in **Traffic Flow Figure 5**.

7.0 TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

Overview

- 7.1 This chapter provides an estimate of the trips generated by the proposed development during the weekday AM and PM peak hours and distributes and assigns the vehicular trips on the local highway network.
- 7.2 Due to the very specific / bespoke nature of the development, a first principles approach based on information provided by the applicant / contractor has been adopted to estimate the level of traffic anticipated to be generated by the scheme during both the construction and operational phase.

Trip Generation – Proposed Construction Traffic

- 7.3 The following measures are proposed which will reduce the traffic impacts during the temporary construction phase: -
- Off-site pre-construction / pre-fabrication will be utilised where possible.
 - Operational production plant will be delivered via barge.
 - Travel via minibus instead of personal vehicles will be incentivised and car sharing will also be encouraged.
 - HGVs will be required to route via the M4 Junction 38, and therefore avoid Port Talbot and junctions with identified capacity issues, as detailed later, through the implementation of a Construction Traffic Management and Routing Plan. The permitted routes to the M4 will be communicated to all construction contractors, displayed on-site and route plans passed to all drivers at site inductions. Drivers will be informed that they will face disciplinary action if caught contravening.
 - Adaptation of working time to avoid peak hours, if necessary.
- 7.4 The contractor has confirmed that approximately 102 daily HGV movements (204 two-way daily HGV movements) are anticipated to be generated during the peak months of construction associated with the following processes, although this TA considers 120 daily HGV movements (240 two-way daily HGV movements) in order to allow for a robust assessment.
- Site preparation works including removal of soil and import of clean fill material.

- Site establishment
- Delivery of construction equipment
- Delivery of materials
- Removal of waste

7.5 HGV movements will be spread across the day, although the contractor estimates up to 52 and 24 two-way HGV movements could be expected in the AM and PM peak hours respectively based on the robust figure of 240 two-way daily HGV movements.

7.6 In addition to the above and as detailed earlier, the contractor estimates 450 staff will be required on-site. In order to limit the traffic impacts during the construction phase and promote sustainable travel, the applicant / contractor has confirmed that car sharing and travel via minibus will be heavily encouraged with a summary of staff mobilisation provided in **Table 7.1** below.

Table 7.1 – Construction Workers Mobilisation

Category	Staff	Vehicle	% Occupancy	Staff/Vehicle	1-Way Vehicle
Managers	68	5-Seat Car	20%	1	68
Workforce	230	5-Seat Car	60%	3	90
	152	24-Seat Minibus	80%	20	8

7.7 Whilst a total of 166 one-way vehicle movements are estimated associated with construction workers, this TA considers 200 (34 additional cars) one-way vehicle movements (400 two-way) in order to allow for a robust assessment.

7.8 **Table 7.2** below presents the anticipated temporal distribution of construction workers arriving and departing the site, based on the anticipated site opening time of 07:00 and proposed 10-hour construction worker shift pattern.

Table 7.2 – Construction Workers Temporal Distribution (Arrivals / Departures)

Staff Arrival and Departure Times	Arrive		Depart	
	06:00-07:00	75%	17:00-18:00	75%
	07:00-08:00	20%	18:00-19:00	20%
	08:00-09:00	5%	19:00-20:00	5%

7.9 The estimated construction workforce trip generation between the hours of 06:00-07:00 and 17:00-18:00 is summarised in **Table 7.3** below.

Table 7.3 – Construction Workers Trip Generation Estimates

Workforce (PCU)	AM Arrivals	AM Departures	PM Arrivals	PM Departures
	153	0	0	153

7.10 It should be noted that the average network peak hours have been identified from the traffic survey data as 07:45-08:45 and 16:30-17:30, as detailed earlier. Therefore, assessing the worst-case construction traffic peak hours of 06:00-07:00 and 17:00-18:00 with the network peak hour base flows allows for a robust assessment.

7.11 The number of estimated HGV moments during the network peak hours has been converted to PCU, as summarised in **Table 7.4** below.

Table 7.4 – HGV Construction Trip Generation Estimates

HGV (PCU)	AM Arrivals	AM Departures	PM Arrivals	PM Departures
	52	52	24	24

7.12 The total trip generation estimates associated with the proposed construction of the development is summarised in **Table 7.5** below.

Table 7.5 – Total Construction Trip Generation Estimates

Total (PCU)	AM Arrivals	AM Departures	PM Arrivals	PM Departures
	205	52	24	177

HGV Trip Distribution – Proposed Construction Traffic

7.13 It was agreed with NPTC as part of the scoping process that all HGVs would be requested to route via the M4 Junction 38, and not through Port Talbot, through the implementation of a Construction Traffic Management Plan.

7.14 Having regard to the above, 100% of HGVs have been distributed south at the A4241 Harbour Way junction and then distributed on the M4 northbound and southbound based on the existing northbound and southbound HGV turning proportions arriving and departing the A4241 Harbour Way / North Road site access junction.

7.15 The HGV distribution is presented diagrammatically on **Traffic Flow Figure 6**.

LGV and Minibus Trip Distribution – Proposed Construction Traffic

- 7.16 The applicant has estimated that 50% of construction workers will be sourced locally and 50% from elsewhere (lodging in the local area). On this basis, a gravity model based on a 60-minute drive time has been undertaken to identify a suitable distribution for the construction workers.
- 7.17 The gravity model is presented in **Appendix H** with the methodology adopted described below:
- A 60-minute drivetime isochrone has been centred on the site access using Microsoft Mappoint software (see plan at **Appendix H**). Within this isochrone, population data for each postcode sector has been exported. 60 minutes has been taken to represent the maximum driving time for the majority of commuters driving to work. This is considered robust when considering 27 minutes is the average driving time for commuters driving to work and back during the peak hours (as derived from the DfT's July 2007 "Travel to Work" Factsheet).
 - The travel time, D, from the approximate centre of each postcode sector to the site is estimated using Google route planning software.
 - The factor P/D (to the power of 2) is estimated for each postcode sector to determine the relative attractiveness of the development in that sector.
 - Each postcode sector is assigned to an appropriate route based on that specified by Google route planner software.
 - The total percentage of trips assigned to each route is determined, as summarised in **Table 7.6** below.

Table 7.6 – LGV Trip Distribution

Route	Route Description	%
A	M4 (South) / A48 Margram Road (South) / A4241 Harbour Way	31.5%
B	A48 Heilbronn Way (East) / A4241 (South) / A4241 Harbour Way (East)	4.8%
C	M4 (North) / A48 Pentyla Baglan Road / A48 Heilbronn Way (North) / A4241 (South) / A4241 Harbour Way (East)	25.9%
D	Water Street / A4241 (South) / A4241 Harbour Way (East)	0.0%
E	A4241 (West) / A4241 Harbour Way (East)	19.3%
F	A48 Pentyla Baglan Road / A48 Heilbronn Way (North) / A4241 (South) / A4241 Harbour Way (East)	3.8%
G	A48 Margram Road (North) / A4241 Harbour Way (West)	3.7%
H	A48 (East) / A48 Margram Road (South) / A4241 Harbour Way (West)	4.9%
I	B4286 Heilbronn Way / A48 Heilbronn Way (North) / A4241 (South) / A4241 Harbour Way (East)	6.1%

- 7.18 This methodology has been adopted to distribute trips for the LGVs and the LGV percentage distribution of vehicular trips generated by the proposed construction workers is also presented diagrammatically in **Traffic Flow Figure 7**.

Traffic Assignment – Proposed Construction Traffic

- 7.19 The traffic assignment of LGVs and HGVs has been obtained by applying the relevant trip distribution proportions detailed earlier to the relevant estimated traffic generation figures. The traffic assignment of LGVs and HGVs are individually presented diagrammatically on **Traffic Flow Figure 8** and **Traffic Flow Figure 9** respectively.
- 7.20 The total traffic assignment is also presented diagrammatically on **Traffic Flow Figure 10**.

Trip Generation – Operational Phase

- 7.21 As detailed earlier, the process to make ATJ-SPK produces sustainable diesel which is proposed to be exported via road to surrounding local areas / businesses. Furthermore, the process also requires nitrogen, chemicals, and catalyst, which will be delivered by road, and produces contaminated water, waste ethanol and spent catalyst which will be transported off-site by road.
- 7.22 The applicant has confirmed the following in relation to tanker / HGV movements:
- Approximately 7 fuel tankers per week are expected, which may increase to 50 tankers per week depending on the operating mode, although this level of fuel export by truck would last no longer than 2 months.
 - The intent will be to utilize by-products within the plant as much as feasible. However, there may be reasons by-products need to go out as waste via truck, either on flatbed trucks with tote tanks or tanker truck. Between 0-4 HGV movements per week will be associated with the export of by-products.
 - During normal operation there are utility and process chemicals that will be needed to keep the facility operating properly. Some utility chemicals will be managed by the plant, others will be contracted out for chemical treatment and be shipped to the site under the guidance of the contracted organization. Between 6-12 HGV movements per week will be associated with the delivery of chemicals.

- There will also be requirements for routine delivery of equipment, spare parts, and other materials to support the continued operation, as well as shipment of materials out for servicing. Each of these could be on lighter delivery trucks or flatbed trucks with 1-2 trucks per day expected.

- 7.23 Having regard to the above and assuming all imports / exports take place Monday-Friday, the proposed development will generate between approximately 4-15 tanker / HGV movements per day (8-30 two-way tanker / HGV movements per day) in relation to road imports / exports.
- 7.24 The processing facility will be operational 24 hours per day, however, assuming the imports / exports all take place in the 12-hour period of 07:00-19:00, then the proposed development will only result in circa 1-3 additional two-way HGV movements in both the AM and PM highway peak hours.
- 7.25 In terms of staff, there will be a total of 85 staff including 6 remote technical support staff, as detailed earlier. Based on the proposed shift patterns detailed earlier, the applicant expects circa 50 staff to be on site at any one time during the day, although up to 62 staff could potentially be on site at anyone-time during shift change over periods. In addition to the normal operating team, there will be up to 5 additional contractors on site primarily during the day to support with routine maintenance and servicing of equipment. When considering the staff shift patterns detailed earlier and assuming all staff travel in private cars, circa 50 staff are anticipated to arrive between 07:00 and 08:00, with no other arrivals and only 12 departures in the AM peak period, between 08:00 and 09:00. There are not anticipated to be any arrivals in the PM peak period, although circa 41 departures are expected between 16:00 and 17:00 and 9 departures are expected between 17:00 and 18:00.

HGV Trip Distribution – Proposed Operational Traffic

- 7.26 HGVs have been distributed based on the existing northbound and southbound HGV turning proportions arriving and departing the A4241 Harbour Way / North Road site access junction and then distributed through the remaining study area based on the most direct route to the M4.
- 7.27 The HGV distribution is presented diagrammatically on **Traffic Flow Figure 11**.

LGV Trip Distribution – Proposed Operational Traffic

- 7.28 The aforementioned gravity model trip distribution percentages presented in **Traffic Flow Figure 7** are also considered appropriate to be applied to the operational phase staff.

Traffic Assignment – Proposed Operational Traffic

- 7.29 The traffic assignment of LGVs and HGVs associated with the operational phase has been obtained by applying the relevant trip distribution proportions detailed earlier to the relevant estimated traffic generation figures. The traffic assignment of LGVs and HGVs are individually presented diagrammatically on **Traffic Flow Figure 12** and **Traffic Flow Figure 13** respectively.
- 7.30 The total traffic assignment is also presented diagrammatically on **Traffic Flow Figure 14**.
- 7.31 **Traffic Flow Figure 14** demonstrates that once distributed on the A4241 Harbour Way, all junctions within the proposed TA study area with the exception of the A4241 Harbour Way / North Road access junction, A4241 Harbour Way / Oakwood Road / Llewellyn's Road and A4241 / A4241 Harbour Way / North Bank Road junctions will result in significantly less than 30 two-way additional trips in both the AM and PM peak hours.
- 7.32 The proposed operational phase of the development will therefore result in a negligible increase in traffic movements during the highway peak hours, particularly given that the assessment assumes all staff travel in private cars, with no staff travelling via sustainable and active travel modes or car sharing, in order to allow for a robust assessment.
- 7.33 Having regard to the above, detailed capacity assessments of the operational phase have not been undertaken in this TA, as agreed with NPTC, particularly given that the A4241 Port Talbot Peripheral Distributor Road was designed to accommodate such growth.

Disruption / Maintenance

- 7.34 In terms of the likelihood of disruption in the shipping supply chain, ABP have confirmed they have no specific records, but both sets of gates at Port Talbot are new and of market leader construction. ABP also confirmed all lock gates are visually inspected and tested on a weekly basis in addition to an annual internal & external dive team inspection to monitor mud/water levels. On this basis, it can be assumed disruption in the shipping supply chain is unlikely.

- 7.35 Notwithstanding the above, in the unlikely event of disruption in the shipping supply chain, ethanol and jet fuel will be transported via trucks. This operation would be a 24-hour operation which would occur with normal production rates for a maximum duration of 2 days, with 26 HGV movements per day anticipated (52 two-way HGV movements per day). If any shipping disruption continues beyond 2 days, the production will ramp down to 50% for a maximum duration of 2 weeks, with 13 HGV movements per day anticipated (26 two-way HGV movements), before operations shut down. This traffic increase is not considered significant, particularly given that shipping disruption is unlikely and will only be temporary.
- 7.36 It should also be noted that on an annual basis it is expected that the plant will be shut down for a period of 2-4 weeks for major maintenance. During this time, the applicant anticipates 30 light vehicle movements (60 two-way vehicle movements) per day.

8.0 ANTICIPATED HIGHWAY IMPACT

General

- 8.1 Due to the additional level of traffic estimated to be generated during the operational phase not being material, as detailed earlier, it has been agreed with NPTC that detailed capacity assessments of the impact of the development during the operational phase are not required.
- 8.2 The construction phase will represent the worst-case traffic impact of the scheme on the local highway network and this chapter describes the impact of the additional trips generated during the peak months of the construction on the operation of the local highway network.
- 8.3 When considering the impact of the development on the local highway network it should be borne in mind that the impacts are of a temporary nature, during the construction period only. The applicant is committed to ensuring the temporary traffic impact during the construction period is minimised as far as possible and proposes the following measures as mitigation: -
- Off-site pre-construction / pre-fabrication will be utilised where possible.
 - Operational production plant will be delivered via barge.
 - Travel via minibus instead of personal vehicles will be incentivised and car sharing will also be encouraged.
 - HGVs will be required to route via the M4 Junction 38, and therefore avoid Port Talbot and junctions with identified capacity issues, as detailed later, through the implementation of a Construction Traffic Management and Routing Plan. The permitted routes to the M4 will be communicated to all construction contractors, displayed on-site and route plans passed to all drivers at site inductions. Drivers will be informed that they will face disciplinary action if caught contravening.
 - Adaptation of working time to avoid peak hours, if necessary.
- 8.4 As stated earlier, the study area for the TA has been agreed with NPTC and includes the following junctions:
- M4 Junction 41 (A48 Heilbronn Way / A48 Pentyla-Baglan Road / B4286 Heilbronn Way / Car Park Access)
 - A48 Heilbronn Way / Car Park Access / A4241 / Water Street

- A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West)
- A4241 / A4241 Harbour Way / North Bank Road
- A4241 Harbour Way / Oakwood Road / Llewellyn's Road
- A4241 Harbour Way / North Road
- A4241 Harbour Way / Main Gate Access
- A4241 Harbour Way / A48 Margam Road / Access Road
- M4 Junction 38

Assessment Methodology

- 8.5 Assessments of the A48 Heilbronn Way / Car Park Access / A4241 / Water Street junction have been undertaken using LINSIG software and the remaining junctions in the TA study area have been assessed using Junctions 9 (ARCADY) software.
- 8.6 With the Junctions 9 models the results generated provide a Ratio to Flow capacity (RFC) along with an estimate of the likely traffic queues. RFC values between 0.00 and 0.85 are generally accepted as representing stable and acceptable operating conditions. Values between 0.85 and 1 represents variable operation (i.e., possible queues building up at the junction during the period under consideration and increases in vehicular delay moving through the junction). RFC values in excess of 1 represents overloaded conditions (i.e., congested conditions).
- 8.7 LINSIG software presents results as a percentage Degree of Saturation (DoS) and corresponding likely traffic queues for each modelled link at the junction. For Traffic Signals it is generally accepted that DoS of 90% or less on individual links represents satisfactory signal operation. DoS of between 90% and 100% represent variable operation which warrants further investigation and values in excess of 100% represent overloaded conditions.
- 8.8 As detailed earlier, capacity assessments have been undertaken in the future assessment year of 2026 which reflects the anticipated year of completion and is therefore considered robust.
- 8.9 All capacity assessments in the future assessment years include a Do Minimum scenario (i.e., without development) and a Do Something scenario (i.e., with development). The 2026 Do Minimum baseline traffic flows are the sum of the relevant growth surveyed traffic flows plus the committed development flows and are shown on **Traffic Flow Figures 15**.

8.10 The 2026 Do Something assessment traffic flows are the sum of the relevant Do Minimum baseline traffic flows and the proposed construction traffic flows, as shown on **Traffic Flow Figures 16**.

M4 Junction 41 (A48 Heilbronn Way / A48 Pentyla-Baglan Road / B4286 Heilbronn Way / Car Park Access Roundabout)

8.11 ARCADY software has been used in the assessment of the A48 Heilbronn Way / A48 Pentyla-Baglan Road / B4286 Heilbronn Way / Car Park Access roundabout. The ARCADY results are presented in **Appendix I** with the results summarised in **Table 8.1** below.

Table 8.1 – A48 Heilbronn Way / A48 Pentyla-Baglan Road / B4286 Heilbronn Way / Car Park Access Roundabout ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
2026 Do Minimum				
A48 Pentyla-Baglan Road	0.50	1.0	0.55	1.2
B4286 Heilbronn Way	0.95	13.3	0.86	5.8
Car Park Access	0.00	0.0	0.00	0.0
A48 Heilbronn Way	0.32	0.5	0.69	2.2
2026 Do Something				
A48 Pentyla-Baglan Road	0.53	1.1	0.55	1.2
B4286 Heilbronn Way	0.98	19.1	0.86	5.8
Car Park Access	0.00	0.0	0.00	0.0
A48 Heilbronn Way	0.32	0.5	0.72	2.5

8.12 The above table demonstrates that the B4286 Heilbronn Way approach to the roundabout is predicted to overate over the typical 0.85 threshold, but below 1.0, in the AM and PM peak hours in both the Do Minimum and Do Something scenarios.

- 8.13 The RFC and queue values are predicted to increase as a result of the proposed construction traffic. However, the construction traffic will result in just a 2% impact at this junction in both the AM and PM peak hours when compared to the 2026 Do Minimum scenario, or an average of less than 1 additional two-way vehicle movement a minute. In addition, the greatest increase in queues occurs on the B4286 Heilbronn Way link during the AM peak period where there is an increase of only 5.8 PCU. Having regard to this and given the robust approach adopted in these assessments, the impact of the development at this junction is not considered to be material and no physical mitigation measures are required, particularly given that the construction traffic impact will only be temporary.

A48 Heilbronn Way / Car Park Access / A4241 / Water Street Signalised Junction

- 8.14 LINSIG software has been used to assess the operation of the A48 Heilbronn Way / Car Park Access / A4241 / Water Street signal-controlled junction. The results of the Do Minimum and Do Something development assessments are presented in **Appendix J** and summarised in **Table 8.2** below.

Table 8.2 – A48 Heilbronn Way / Car Park Access / A4241 / Water Street Signal Controlled Junction LINSIG Results

Link	2026 Do Minimum				2026 Do Something			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK	
	DoS	MMQ	DoS	MMQ	DoS	MMQ	DoS	MMQ
A48 Heilbronn Way (North) Ahead Left	53.1%	0.6	39.6%	0.3	58.5%	0.7	39.7%	0.3
A48 Heilbronn Way (North) Ahead	62.2%	0.8	53.9%	0.6	62.5%	0.8	54.0%	0.6
Bus Station Access Ahead Left	37.2%	1.5	41.6%	1.7	37.2%	1.5	41.6%	1.7
A48 Heilbronn Way (South) Ahead Left	68.6%	3.9	79.1%	4.8	71.5%	4.6	79.1%	4.8
A48 Heilbronn Way (South) Ahead	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0
A4241 Ahead Left	18.5%	0.1	78.4%	3.6	18.5%	0.1	88.1%	7.4
A4241 Ahead	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0
Water Street Ahead Left	48.2%	0.5	87.7%	3.7	48.2%	0.5	90.1%	4.9
Circ 1 Right Ahead	47.5%	5.8	48.1%	5.9	49.7%	6.1	48.6%	5.9
Circ 1 Right	44.0%	4.8	38.0%	3.8	45.7%	5.0	38.0%	3.8
Circ 2 Ahead	15.4%	0.1	3.2%	0.0	16.9%	0.1	3.2%	0.0
Circ 2 Right Ahead	31.4%	0.2	27.9%	0.2	32.5%	0.2	27.9%	0.2
Circ 3 Right Ahead	48.1%	0.5	52.6%	0.6	48.1%	0.5	52.6%	0.6
Circ 3 Right	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0
Circ 4 Right Ahead	14.8%	0.1	39.4%	0.3	14.8%	0.1	42.3%	0.4
Circ 4 Right	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0
Circ 5 Right Ahead	14.3%	0.1	21.5%	0.1	13.3%	0.1	21.9%	0.1
Circ 5 Right	1.7%	0.0	2.8%	0.0	2.7%	0.0	2.8%	0.0
PRC (%):	31.1%		2.6%		25.9%		-0.1%	

8.15 The above results demonstrate that the A48 Heilbronn Way / Car Park Access / A4241 / Water Street signal-controlled junction is predicted to operate within capacity in the future assessment year of 2026, in the Do Minimum scenario.

8.16 In the Do Something scenario, the DoS and queue values are predicted to slightly increase on a number of links with the Water Street approach predicted to overrate slightly over capacity in the PM peak hour as a result of the proposed construction traffic. However, the increase in queues on the Water Street approach during the PM peak hour is not material (1.2 PCU) and the greatest increase in queues occurs on the A4241 northbound approach during the PM peak period where there is an increase of only 3.8 PCU. Having regard to this and given the robust approach adopted in these assessments, the impact of the development at this junction is not considered to be material and no physical mitigation measures are required, particularly given that the construction traffic impact will only be temporary.

A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West) Roundabout

8.17 ARCADY software has been used in the assessment of the A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West) roundabout. The ARCADY results are presented in **Appendix K** with the results summarised in **Table 8.3** below.

Table 8.3 – A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West) Roundabout ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
2026 Do Minimum				
Harbourside Road	0.01	0.0	0.3	0.0
A4241 (South)	0.08	0.1	0.24	0.3
Access (West)	0.00	0.0	0.00	0.0
A4241 (North)	0.21	0.3	0.07	0.1
Access (East)	0.03	0.0	0.02	0.0
2026 Do Something				
Harbourside Road	0.01	0.0	0.03	0.0
A4241 (South)	0.08	0.1	0.28	0.4
Access (West)	0.00	0.0	0.00	0.0
A4241 (North)	0.24	0.3	0.07	0.1
Access (East)	0.03	0.0	0.02	0.0

- 8.18 The above results demonstrate that the A4241 / Industrial Unit Access / Harbourside Road / Industrial Unit Access (West) roundabout is predicted to operate within capacity in the future assessment year of 2026, in the Do Something scenario.

A4241 / A4241 Harbour Way / North Bank Road Roundabout

- 8.19 ARCADY software has been used in the assessment of the A4241 / A4241 Harbour Way / North Bank Road roundabout. The ARCADY results are presented in **Appendix L** with the results summarised in **Table 8.4** below.

Table 8.4 – A4241 / A4241 Harbour Way / North Bank Road Roundabout ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
2026 Do Minimum				
A4242 Harbour Way	0.21	0.3	0.40	0.7
North Bank Road	0.03	0.0	0.03	0.0
A4241 (West)	0.18	0.2	0.18	0.2
A4242 (North)	0.22	0.3	0.10	0.1
2026 Do Something				
A4242 Harbour Way	0.21	0.3	0.44	0.8
North Bank Road	0.03	0.0	0.03	0.0
A4241 (West)	0.19	0.2	0.18	0.2
A4242 (North)	0.26	0.3	0.10	0.1

- 8.20 The above results demonstrate that the A4241 / A4241 Harbour Way / North Bank Road roundabout is predicted to operate within capacity in the future assessment year of 2026, in the Do Something scenario.

A4241 Harbour Way / Oakwood Road / Llewellyn's Road Roundabout

- 8.21 ARCADY software has been used in the assessment of the A4241 Harbour Way / Oakwood Road / Llewellyn's Road roundabout. The ARCADY results are presented in **Appendix M** with the results summarised in **Table 8.5** below.

Table 8.5 – A4241 Harbour Way / Oakwood Road / Llewellyn's Road Roundabout ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
2026 Do Minimum				
A4241 Harbour Way (East)	0.18	0.2	0.34	0.5
Llewellyn's Road	0.05	0.1	0.07	0.1
A4241 Harbour Way (West)	0.29	0.4	0.20	0.2
Oakwood Road	0.03	0.0	0.03	0.0
2026 Do Something				
A4241 Harbour Way (East)	0.18	0.2	0.37	0.6
Llewellyn's Road	0.05	0.1	0.07	0.1
A4241 Harbour Way (West)	0.32	0.5	0.20	0.2
Oakwood Road	0.03	0.0	0.03	0.0

- 8.22 The above results demonstrate that the A4241 Harbour Way / Oakwood Road / Llewellyn's Road roundabout is predicted to operate within capacity in the future assessment year of 2026, in the Do Something scenario.

A4241 Harbour Way / North Road Roundabout

- 8.23 ARCADY software has been used in the assessment of the A4241 Harbour Way / North Road roundabout. The ARCADY results are presented in **Appendix N** with the results summarised in **Table 8.6** below.

Table 8.6 – A4241 Harbour Way / North Road Roundabout ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
2026 Do Minimum				
A4241 Harbour Way (South)	0.22	0.3	0.30	0.4
North Road Site Access	0.07	0.1	0.27	0.4
A4241 Harbour Way (North)	0.29	0.4	0.22	0.3
Access (East)	0.00	0.0	0.00	0.0
2026 Do Something				
A4241 Harbour Way (South)	0.28	0.4	0.31	0.4
North Road Site Access	0.11	0.1	0.44	0.8
A4241 Harbour Way (North)	0.33	0.5	0.22	0.3
Access (East)	0.00	0.0	0.00	0.0

- 8.24 The above results demonstrate that the A4241 Harbour Way / North Road roundabout is predicted to operate within capacity in the future assessment year of 2026, in the Do Something scenario.

A4241 Harbour Way / Main Gate Access Roundabout

- 8.25 ARCADY software has been used in the assessment of the A4241 Harbour Way / Main Gate Access roundabout. The ARCADY results are presented in **Appendix O** with the results summarised in **Table 8.7** below.

Table 8.7 – A4241 Harbour Way / Main Gate Access Roundabout ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
2026 Do Minimum				
A4241 Harbour Way (South)	0.24	0.3	0.19	0.2
Main Gate Access	0.04	0.0	0.15	0.2
A4241 Harbour Way (North)	0.23	0.3	0.20	0.3
Access (East)	0.02	0.0	0.00	0.0
2026 Do Something				
A4241 Harbour Way (South)	0.29	0.4	0.20	0.3
Main Gate Access	0.04	0.0	0.15	0.2
A4241 Harbour Way (North)	0.25	0.3	0.24	0.3
Access (East)	0.02	0.0	0.00	0.0

- 8.26 The above results demonstrate that the A4241 Harbour Way / Main Gate Access roundabout is predicted to operate within capacity in the future assessment year of 2026, in the Do Something scenario.

A4241 Harbour Way / A48 Margam Road / Access Road Roundabout

- 8.27 ARCADY software has been used in the assessment of the A4241 Harbour Way / A48 Margam Road / Access Road roundabout. The ARCADY results are presented in **Appendix P** with the results summarised in **Table 8.8** below.

Table 8.8 – A4241 Harbour Way / A48 Margam Road / Access Road Roundabout ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
2026 Do Minimum				
A48 Margam Road (South)	0.43	0.7	0.44	0.8
Access Road	0.03	0.0	0.13	0.1
A4241 Harbour Way	0.20	0.3	0.33	0.5
A48 Margam Road (North)	0.10	0.1	0.09	0.1
2026 Do Something				
A48 Margam Road (South)	0.47	0.9	0.45	0.8
Access Road	0.04	0.0	0.13	0.1
A4241 Harbour Way	0.23	0.3	0.38	0.6
A48 Margam Road (North)	0.10	0.1	0.09	0.1

8.28 The above results demonstrate that the A4241 Harbour Way / A48 Margam Road / Access Road roundabout is predicted to operate within capacity in the future assessment year of 2026, in the Do Something scenario.

M4 Junction 38 Roundabout

8.29 ARCADY software has been used in the assessment of the M4 Junction 38 roundabout. The ARCADY results are presented in **Appendix Q** with the results summarised in **Table 8.9** below.

Table 8.9 – M4 Junction 38 Roundabout ARCADY Results

Approach	AM PEAK		PM PEAK	
	RFC	MMQ	RFC	MMQ
2026 Do Minimum				
M5 SB Slip	0.26	0.4	0.24	0.3
A48	0.20	0.3	0.30	0.4
M4 NB Slip	0.35	0.5	0.31	0.4
Heolcae'r-Bont	0.02	0.0	0.06	0.1
A48 Margam Road	0.19	0.2	0.26	0.3
2026 Do Something				
M5 SB Slip	0.28	0.4	0.25	0.3
A48	0.21	0.3	0.32	0.5
M4 NB Slip	0.41	0.7	0.32	0.5
Heolcae'r-Bont	0.02	0.0	0.06	0.1
A48 Margam Road	0.20	0.3	0.29	0.4

- 8.30 The above results demonstrate that the M4 Junction 38 roundabout is predicted to operate within capacity in the future assessment year of 2026, in the Do Something scenario.

Summary

- 8.31 The results of the assessments demonstrate that the majority of the junctions along the A4241 Harbour Way and on route between the site and the M4, including Junction 38 itself, are predicted to operate within capacity with the proposed construction traffic in place.
- 8.32 Capacity issues have been identified during the PM peak hour at the A48 Heilbronn Way / Car Park Access / A4241 / Water Street junction and during both the AM and PM peak hours at the A48 Heilbronn Way / A48 Pentyla-Baglan Road / B4286 Heilbronn Way / Car Park Access junction, on route north to Junction 41 of the M4. However, as detailed earlier, the impact of the construction traffic at this junction is not considered to be material and mitigation measures are not considered necessary, particularly given the robust nature of the assessments and the temporary nature of the impact.

9.0 SUMMARY AND CONCLUSIONS

- 9.1 SCP have been appointed by LanzaTech UK Limited to provide transport planning and engineering advice in support of a full planning application for the erection of an Alcohol to Jet Fuel production facility, with associated development, on land at Crown Wharf, Port Talbot Docks, Port Talbot.
- 9.2 The SAF production facility uses Alcohol to Jet Fuel (AtJ) technology. This will comprise several industrial components, buildings, and associated infrastructure.
- 9.3 Vehicular access to the development site will be provided via the introduction of three accesses off Phoenix Way to the north of the site, which connects to the local highway network at the A4241 Harbour Way / North Road access junction. This access route regularly accommodates large HGV's / commercial vehicles associated with the existing operations / uses surrounding the application site.
- 9.4 The 'East Access' is located at the north-east corner of the site and comprises a dual gated simple priority-controlled junction, which will provide access to the staff car park area and a separate access to the main site / primary internal road network. The access to the staff car park has been designed with a 6m wide carriageway and is of sufficient width for two cars to access / egress simultaneously. The access to the main site / primary internal road network has been designed with a 7.3m wide carriageway to allow two HGVs to access / egress the site simultaneously. It should be noted that the proposed gates are set back a sufficient distance to allow an HGV to wait off Phoenix Way.
- 9.5 The 'West Access' is located at the north-west corner of the site and comprises a gated access to the truck loading facility which is of sufficient width for two HGVs to access / egress simultaneously. Similarly, the proposed gate is set back a sufficient distance to allow an HGV to wait off Phoenix Way.
- 9.6 The third access is located circa 20m southwest of the West Access and comprises a gated emergency vehicular access.
- 9.7 In the short term, pedestrian and cycle access will not be permitted within the ABP area for safety reasons. However, the applicant proposes to provide a free EV shuttle service with a cycle rack and a system will be implemented to allow staff to walk/cycle to the site, whereby they call to be picked up from in the vicinity of the ABP security gate and transported to the site. Staff will then be provided with/request a pickup time for transport back to the gate. Cycle storage has been provided within the car parking area in and around the administrative building.

- 9.8 ABP are in the process of developing a site wide Masterplan for the port where consideration of facilities will be provided for pedestrians and cyclists in the longer term.
- 9.9 The personal injury accident data for the most recently available five-year period has been reviewed and does not represent a material concern in the context of the proposed development.
- 9.10 The accessibility of the site has been assessed. Overall, the site benefits from good levels of accessibility by sustainable modes and has a large residential catchment as well as a good range of local amenities within close proximity. Access to the site on foot and by cycle is of a good standard and there are multiple transport connections within close proximity providing access to a range of local destinations. These findings demonstrate that prospective staff will not be wholly reliant on the private car for travel to work.
- 9.11 Due to the additional level of traffic estimated to be generated during the operational phase not being material, it has been agreed with NPTC that detailed capacity assessments of the impact of the development during the operational phase are not required. The impact of the construction traffic arising from the scheme has been tested in detail at the key junctions on the local highway network, as agreed with NPTC. The assessments show that that the majority of the junctions along the A4241 Harbour Way and on route between the site and the M4, including Junction 38 itself, are predicted to operate within capacity with the proposed construction traffic in place.
- 9.12 Capacity issues have been identified during the PM peak hour at the A48 Heilbronn Way / Car Park Access / A4241 / Water Street junction and during both the AM and PM peak hours at the A48 Heilbronn Way / A48 Pentyla-Baglan Road / B4286 Heilbronn Way / Car Park Access junction, on route north to Junction 41 of the M4. However, as detailed earlier, the impact of the construction traffic at this junction is not considered to be material and mitigation measures are not considered necessary, particularly given the robust nature of the assessments and the temporary nature of the impact.
- 9.13 The proposed development is recommended for approval on the basis of the foregoing analysis.