

HYHAUL SWANSEA

Transport Assessment

794-PLN-WWP-00294-01A
Transport Assessment
Version 1A
07 February 2025

Document Status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
-	Transport Assessment	Louise Sheppard	Emma O'Neill	Emma O'Neill	07 February 2025
1A	Transport Assessment	Louise Sheppard	Emma O'Neill	Emma O'Neill	07 February 2025

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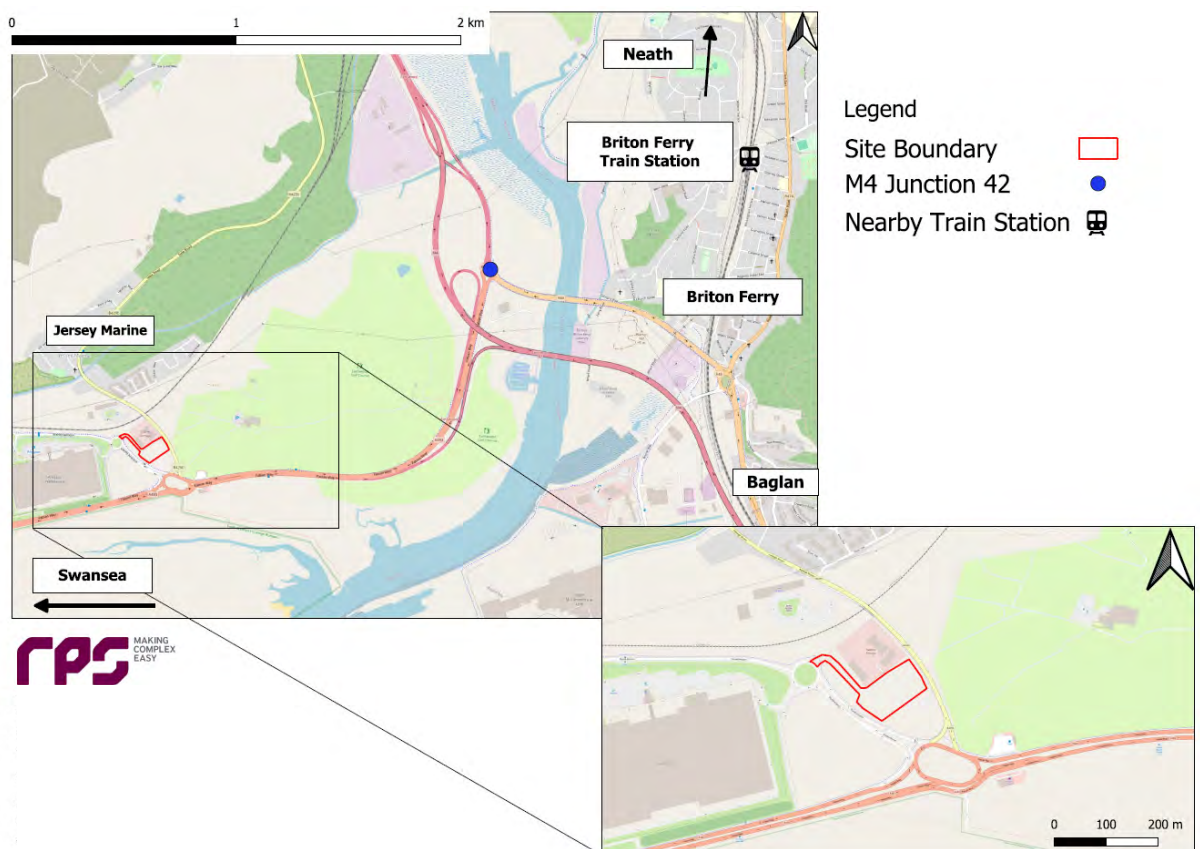
Appendices

- APPENDIX 1 – SITE MASTERPLAN
- APPENDIX 2 – SITE LOCATION PLAN
- APPENDIX 3 – RPS DRAWINGS
- APPENDIX 4 – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

1 INTRODUCTION

- 1.1 RPS have been commissioned by Marubeni Eurowpower Ltd (the applicant) to produce a Transport Assessment (TA) to accompany a detailed planning application for a new hydrogen refuelling facility on land east of Ffordd Amazon, located south of Jersey Marine.
- 1.2 The proposed site is approximately 0.9 hectares in size, and is located to the south of Jersey Marine, a small village approximately 5km east of Swansea. The site which is located approximately 1.6km to the west of J42 of the M4, is bound to the south by the A483, to the east by the B4290 and Swansea Bay Golf Course, to the west by Ffordd Amazon and Industrial Park and to the north by a small Industrial Estate.
- 1.3 **Figure 1** below shows the location of the site in both a strategic and local context, with key areas, including Briton Ferry Train Station and J42 of the M4 identified.

Figure 1: Site Location Plan



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- 1.4 The proposed development is a hydrogen refuelling facility, comprised of the following core components:
- Hydrogen Buffer Storage (500 and 900 bar);
 - 4 HGV and bus refuelling bays and car refuelling bays;
 - Tube trailer unloading;
 - Hardstanding and demountable / containerised storage and welfare buildings, fire walls, boundary fences and gates; and
 - Ancillary infrastructure (Chiller, high pressure compressors, air compressor, valve panel, nitrogen cylinders, electrical power supply and critical spares storage).
- 1.5 Access to the development is promoted from the A483, via the existing A483/ Ffordd Amazon/ B4290/ A483 roundabout. All vehicles would access the site via the Ffordd Amazon spur of this existing junction, before accessing the site via an existing road which currently serves as access to a small Industrial Estate located directly north of the proposed site.
- 1.6 The planning authority and highway authority for this site are Neath Port Talbot County Borough Council.
- 1.7 The masterplan for the site is included at **Appendix 1** with the site location plan included at **Appendix 2**.

Report Purpose

- 1.8 This Transport Assessment (TA) considers the transport issues surrounding the proposed development. It sets out the methodology for assessing the baseline and proposed development tests and provides a summary of the transport implications with regards to transport.

Report Structure

- 1.9 This Transport Assessment is structured as follows:
- **Section 2: Baseline Conditions** - Describes the existing site and the surrounding areas transport and highway characteristics;
 - **Section 3: Proposed Development** - Analysis of the development proposals in respect of the development itself as well as the access and parking arrangements being promoted;
 - **Section 4: Travel Demand** - Assessment of the number of trips that are likely to be generated by the developments; and
 - **Section 5: Summary and Conclusion** - Summary of the findings of the Transport Assessment.

2 BASELINE CONDITIONS

Context

- 2.1 This section provides information on the existing site and the surrounding road network, with focus on the local highway network and highway safety, given that the facility will not attract significant (if any) pedestrian or cyclist movements when operational.

Local Highway Network

Site Access Road

- 2.2 Access to the site is promoted from a four-arm roundabout via an unnamed single carriageway road. This road is approximately 6m in width, there are no footways provided along its length, but it does benefit from wide grass verges along both sides. This road provides access to a small Industrial Estate located directly north of the proposed site. In this regard, access to the new refuelling facility will be shared with those accessing this existing development.

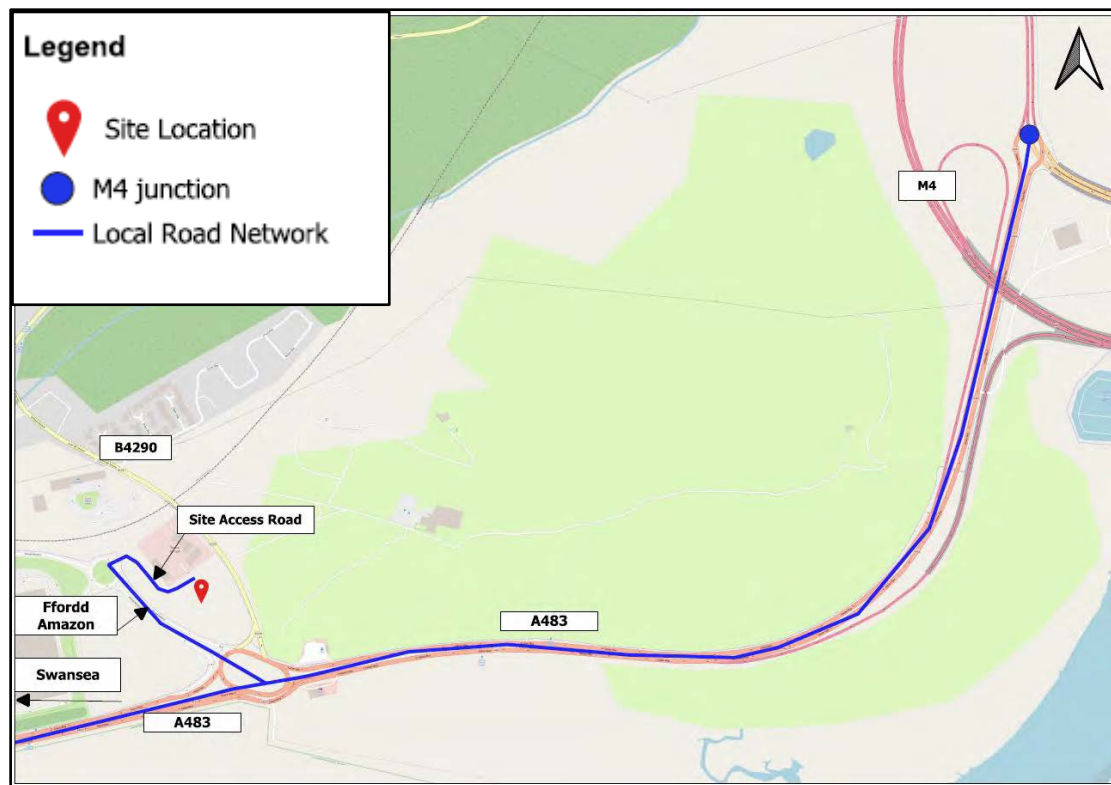
Ffordd Amazon

- 2.3 Ffordd Amazon is located to the immediate west of the site and routes broadly on a southeast to southwest alignment from its signalised roundabout junction with the A483 to the unnamed access road detailed above.
- 2.4 Ffordd Amazon is a dual carriageway between the A483 signalised roundabout and the site access road roundabout with footways provided on both sides of the carriageway. This road is subject to a speed limit of 30mph. Ffordd Amazon provides access to a large Industrial Estate.

A483

- 2.5 The A483 is located to the south of the site and routes broadly east to west alignment from J42 of the M4 to the east through to Swansea.
- 2.6 The A483 is a dual carriageway road. Street lighting is provided along its length and footways are provided on the northern side of the carriageway to the east of the Ffordd Amazon and on both sides of the carriageway to the west of this roundabout.
- 2.7 **Figure 2** below shows the location of the primary road network in the vicinity of the proposed Hydrogen facility.

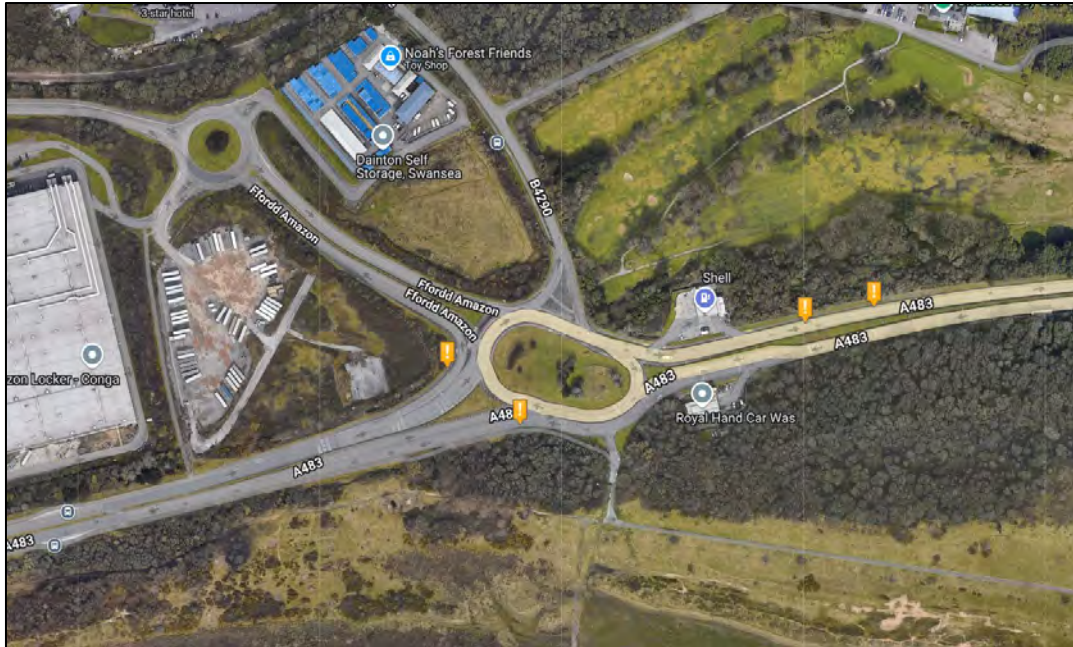
Figure 2: Local Highway Network



Personal Injury Accident History

- 2.8 Collision data in the vicinity of the proposed development site has been obtained by RPS from CrashMap and analysed for the latest five-year period (2019-2023).
- 2.9 The collision history has been reviewed for the study area presented in **Figure 3** below. This showed that there has been four slight Personal Injury Accidents (PIA) recorded during this period, this equates to under 1 accident each year.

Figure 3: Personal Injury Accident Study Area



- 2.10 There was one slight accident on the western A483 arm of the A483 / B4290 / Ffordd Amazon roundabout on the westbound side of the carriageway, this took place in 2019. One slight accident occurred on the slip lane between the A483 and Ffordd Amazon, this took place in 2022. Two slight accidents occurred on the eastern A483 arm of the A483 / B4290 / Ffordd Amazon roundabout on the eastbound side of the carriageway, both taking place in November 2019, the locations for these two accidents are approximately 50m apart.
- 2.11 The data shows that there is no inherent trend on accident locations, and no accidents occurred in the vicinity of the proposed hydrogen refuelling facility access. On this basis, it is considered that the adjoining highway network currently operates with no significant highway safety issues which could be exacerbated by the development.

Pedestrian and Cycle Accessibility

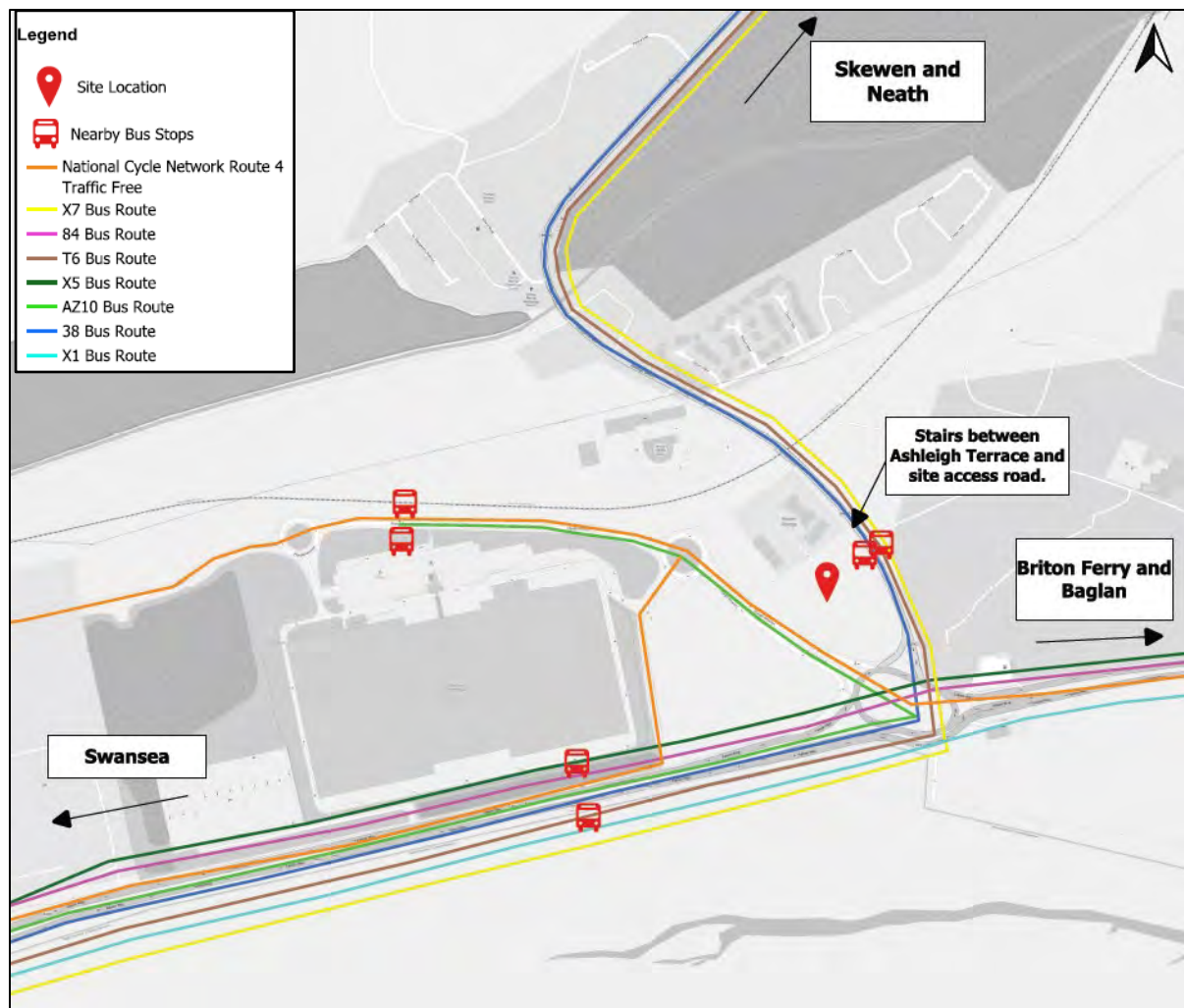
- 2.12 The proposed development is being promoted as a hydrogen refuelling station, and therefore given the land use proposed is unlikely to generate any significant number of trips by either, walking cycling or public transport. Notwithstanding this, it will employ one or two people who will be encouraged to travel sustainably to the site. On that basis, the section below provides a summary of how the site can be accessed by walking, cycling or public transport.
- 2.13 The proposed development site is located within the area of the Ffordd Amazon industrial area and can be easily accessed by sustainable modes of travel. The development site benefits from existing pedestrian infrastructure within its immediate vicinity, providing continuous links to local residential areas and bus stops. Whilst the existing access road to the site does not have pedestrian infrastructure at present, there is a wide grass verge for pedestrians to use to link to footways along the Ffordd Amazon. Existing stairs link the site access road to Ashleigh Terrace which forms the site's eastern boundary. These stairs provide access (albeit for pedestrians

-
- without physical impairments) for those wishing to access the wider Industrial Park from Ashleigh Terrace.
- 2.14 Along the northern side of the A483 carriageway and Ffordd Amazon there is a shared cycleway / footway with wide pavements, ranging in width between approximately 2m-3.5m, this allows for a safe cycle route separated from the traffic.
- 2.15 National Cycle Route 4 is a long-distance route which routes between London and Fishguard via Reading, Bath, Bristol, Newport, Swansea, Tenby, Haverfordwest and St. Davids. In the vicinity of the site, it uses the A483 to the east, Ffordd Amazon and then A483 to the west.
- 2.16 In Swansea national cycle route 4 connects to route 43 that routes north to Coelbren. To the east of the site national cycle route 4 links to route 47 which connects Newport and Fishguard. The national cycle routes are presented on **Figure 4**.

Public Transport

- 2.17 The proposed development site is also accessible by public transport. The nearest bus stops to the proposed site are located along Ffordd Amazon approximately 550m west of the site. Bus route AZ10 stops here and provides four services a day (two services between 04:00-07:00 and two services between 17:00-19:00). There are three stops along this service linking Sketty Cross, Swansea and Ffordd Amazon.
- 2.18 Two bus stops are also located approximately 600m southwest of the site along the A483. The bus stop serves six different bus routes including; 38, 84, T6 TrawsCymru, X1 Cymru Clipper, X5 Cymru Clipper, and X7 Cymru Clipper. Combined these routes provide a peak frequency of six buses per hour to Swansea, Brecon, Bridgend, Neath and Port Talbot.
- 2.19 Two bus stops are located along Ashleigh Terrace and serve three bus routes including; 38, T6 TrawsCymru and X7 Cymru Clipper. Combined these routes provide a peak frequency of three buses per hour. These stops are approximately 125m in walking distance from the site, the shortest route is not step free, however, an alternative route is available which is approximately 600m.
- 2.20 The nearest train station is Briton Ferry railway station, which is located approximately 4.3km from the site, equating to approximately one hour walk or a 16-minute cycle. Travel to Swansea, Neath, Port Talbot Parkway, Bridgend, and Cardiff Central can be accessed at Briton Ferry railway station.
- 2.21 **Figure 4** show the walking, cycling and public transport infrastructure in the vicinity of the development site.

Figure 4: Sustainable Transport Infrastructure



3 PROPOSED DEVELOPMENT AND ACCESS ARRANGEMENTS

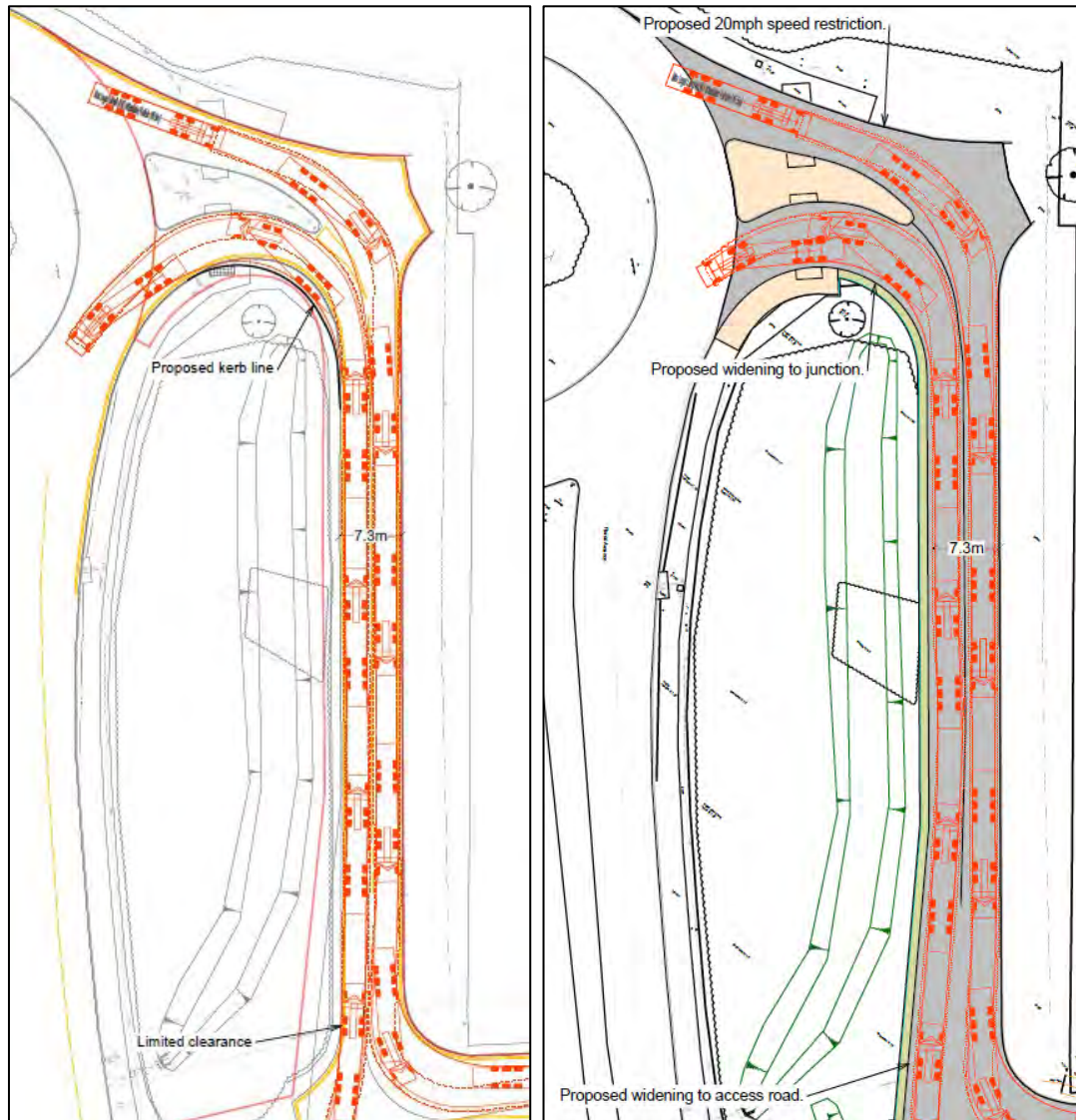
Site Location

- 3.1 The site is located to the south of Jersey Marine, a small village approximately 5km east of Swansea. The site which is located approximately 1.6 km from J42 of the M4, is bound to the south by the A483, to the east by the B4290 and Swansea Bay Golf Course, to the west by Ffordd Amazon and Industrial Park and to the north by a small industrial area including Dainton Self Storage.

Development Proposals

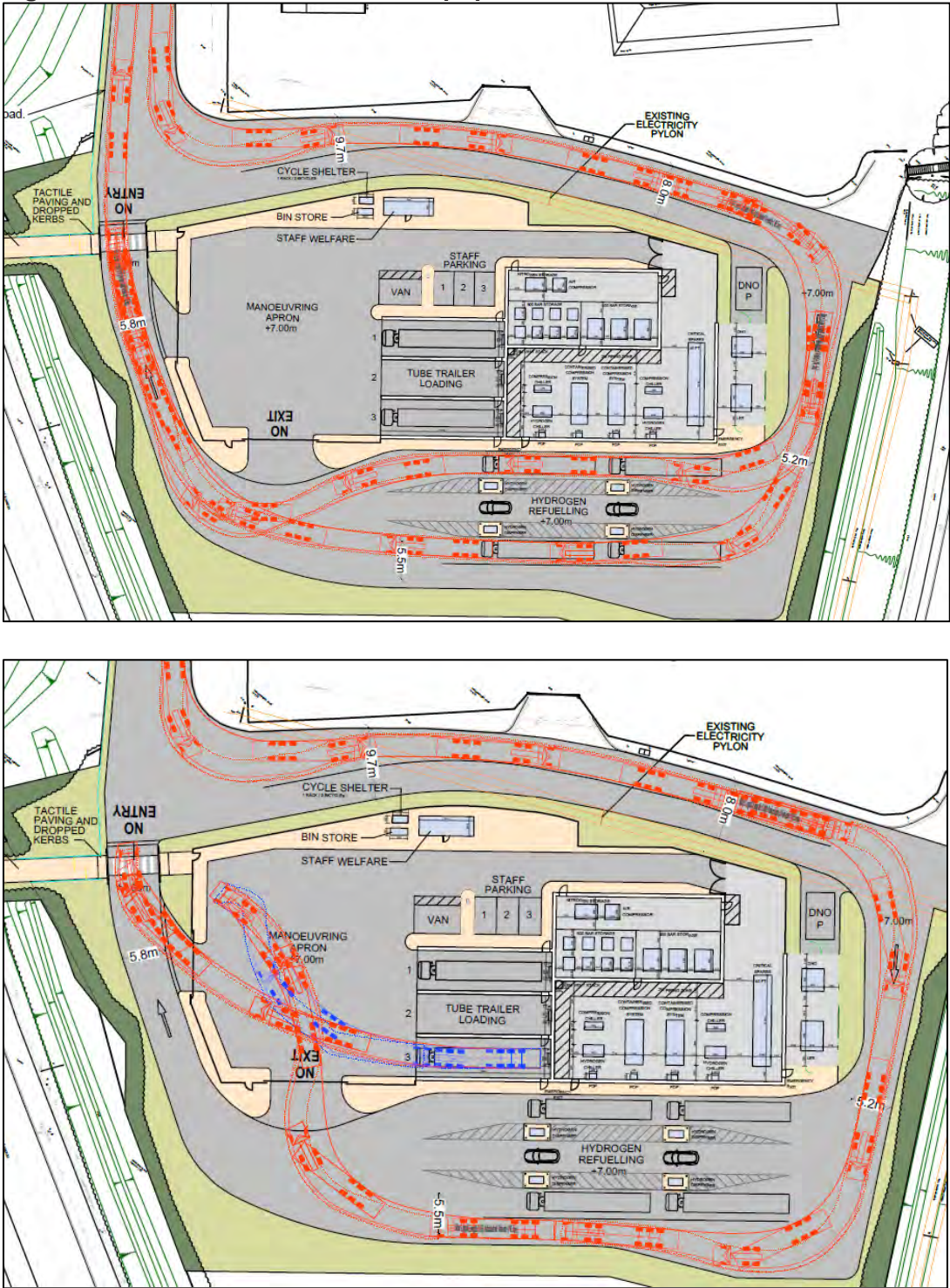
- 3.2 The proposed development is for a hydrogen refuelling facility and is approximately 0.9 hectares in size. The refuelling facility will be open 24 hours a day, seven days a week. A booking system will be in place to ensure that there is access to the refueller on a 24/7 basis and to ensure that vehicles only travel to the site when facilities are available.
- 3.3 Access to the facility will be promoted from Ffordd Amazon to the west of the site and via an existing access road to the small industrial area located directly north of the proposed site. All vehicles will operate on a one-way system through the development. It is anticipated that a separate application will be made for the existing access road to be adopted by Neath Port Talbot County Borough Council.
- 3.4 **RPS Drawing Number 794-PLN-WWP-00294-DR-001A** included at **Appendix 3** shows a 16.5m HGV (as the largest vehicle expected on site during operation) accessing and egressing the site via the existing access road. A small number of HGVs currently use this road to access the existing storage site and industrial area directly north of the proposed site. However, the initial swept path showed that a 16.5m HGV would overrun the carriageway on the southern side of the bell mouth, therefore minor realignment of the radii has been proposed within the red line boundary to allow for the 16.5m HGVs to access and egress.
- 3.5 In addition to the above, when HGVs are egressing the proposed site via the one-way system, the existing carriageway width meant they should give way to a HGV travelling south along the existing access road. However proposed widening will mean that two HGVs could pass each other safely within the carriageway. The proposed widening is shown on **Figure 5** below, alongside the amended carriageway width showing no HGV overrun.

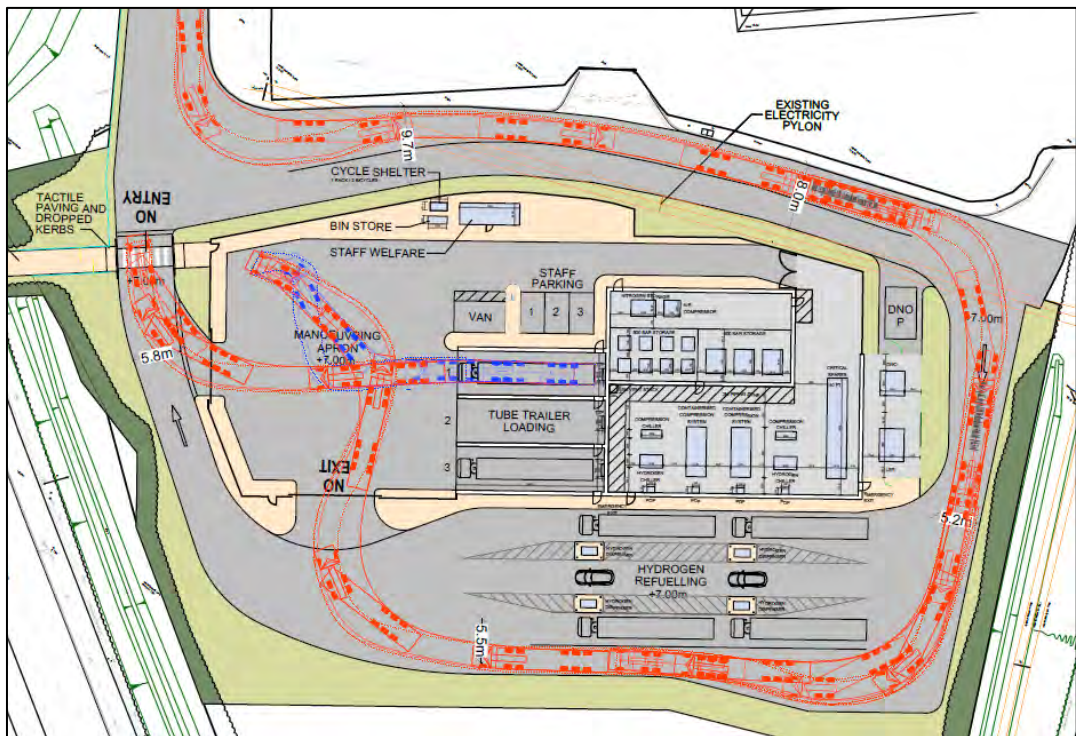
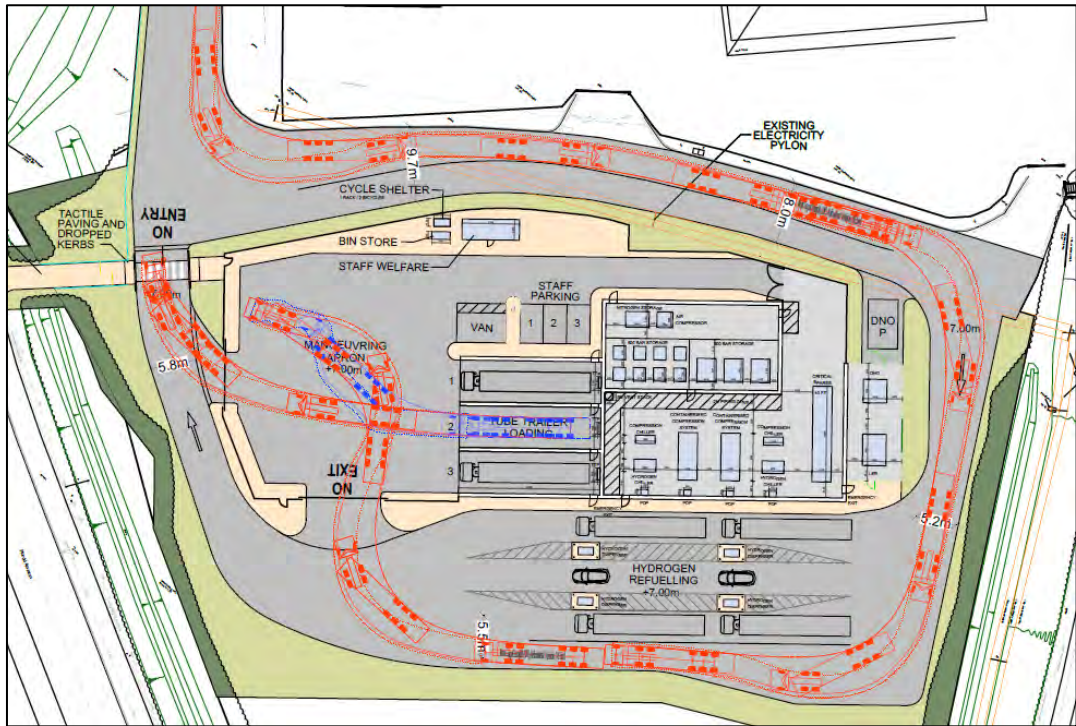
Figure 5: Proposed widening to site access road.



- 3.6 It is also proposed that a speed restriction of 20mph is introduced along the access road to the site from the Ffordd Amazon roundabout.
- 3.7 **RPS Drawing Number 794-PLN-WWP-00294-DR-005** included at **Appendix 3** shows a 16.5m HGV can manoeuvre around the site and use the proposed facilities without issue. This is also shown on **Figure 6** below.

Figure 6: 16.5m articulated HGV swept path.



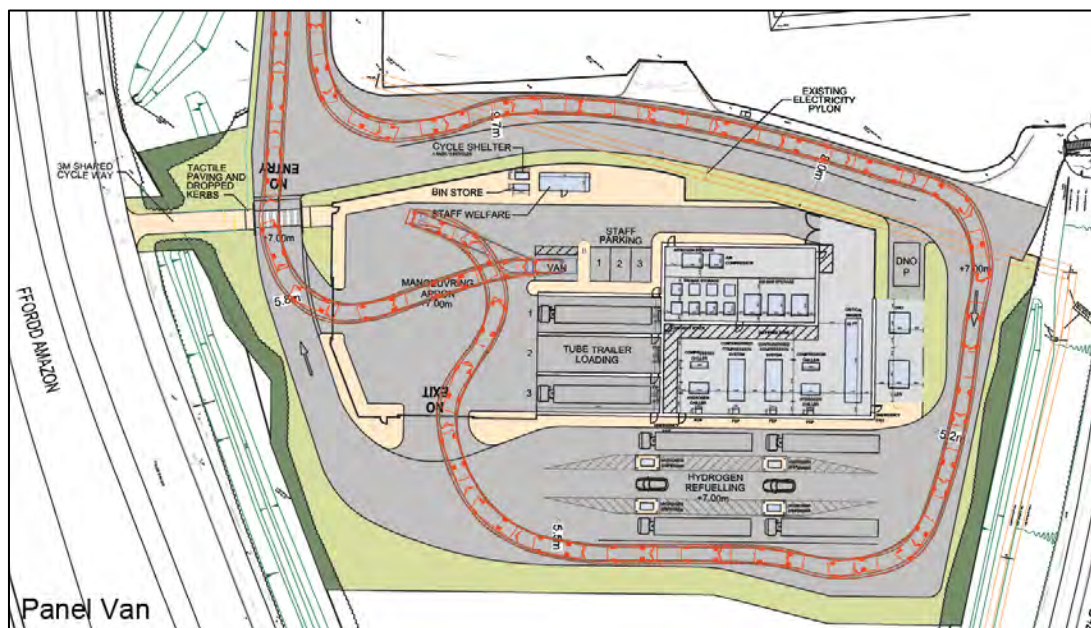
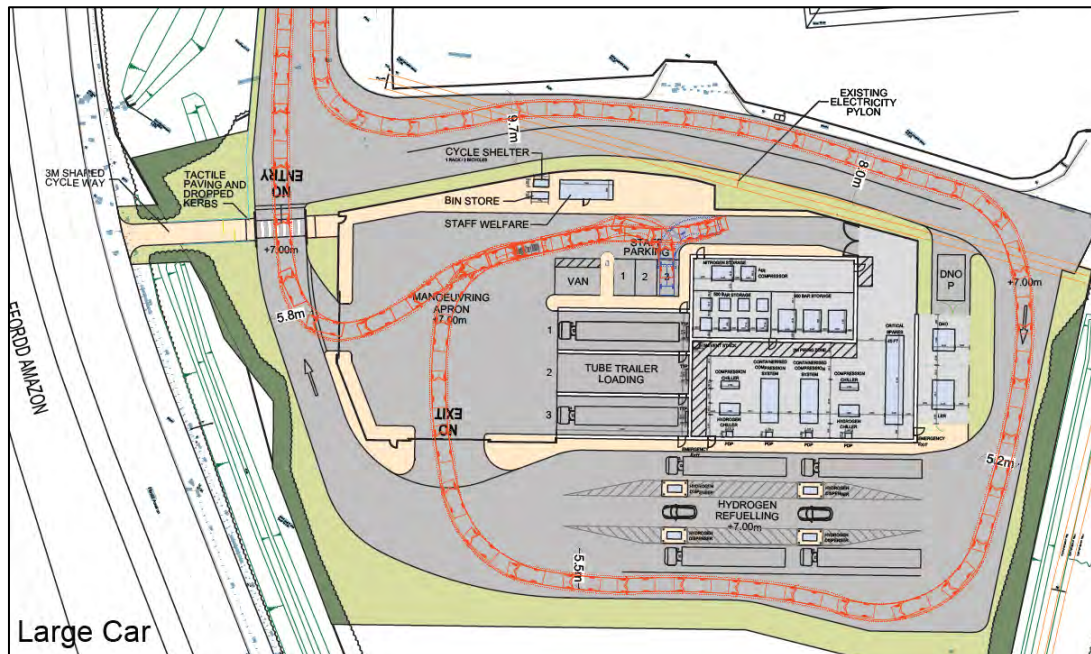


3.8

RPS Drawing Number 794-PLN-WWP-00294-DR-006 included at **Appendix 3** demonstrates that a large car and a panel van can manoeuvre around the site and use the proposed facilities without issue. This is also shown on **Figure 7** below.

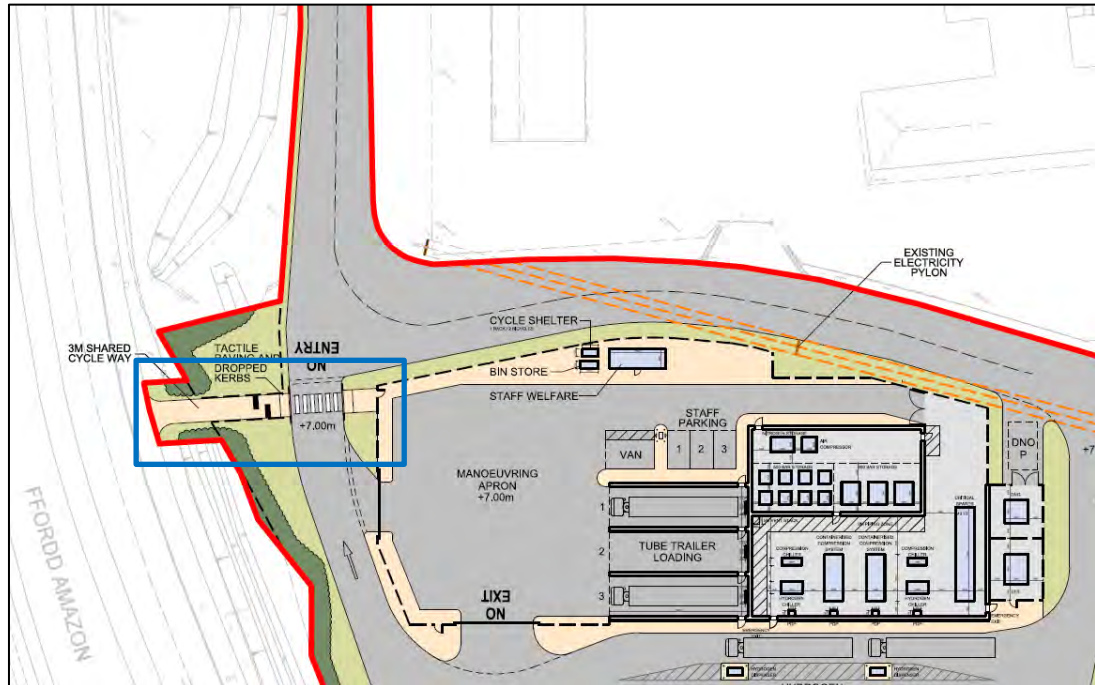
Figure 7: Large car and panel van swept path.





- 3.9 Pedestrians and cyclists will access the development via a proposed 3m wide shared footway / cycleway that will provide a traffic free link to existing pedestrian and cycling infrastructure along Ffordd Amazon. The proposed shared footway / cycleway is shown below within the blue box on **Figure 8**.

Figure 8: Proposed shared cycleway / footway.



Visibility

- 3.10 The development site access road will be subject to a 20mph speed restriction. In line with Manual for Streets 2 the requisite visibility splay for 20mph is 24.9m for light vehicles and 26.7m for HGVs. **RPS Drawing Number 794-PLN-WWP-00294-DR-007** shows that the maximum achievable visibility splay to the east from the proposed egress junction is 2.4m x 45.7m therefore achieving the requisite visibility splay standards from Manual for Streets 2.
- 3.11 A visibility splay for the existing access junction to the small industrial estate to the north of the proposed site has also been shown on **RPS Drawing Number 794-PLN-WWP-00294-DR-007**. Given the site will operate a one-way system with vehicles not permitted to route in a westerly direction, a visibility splay to the east is not required. **RPS Drawing Number 794-PLN-WWP-00294-DR-007** shows that the maximum achievable visibility splay to the west from the existing junction is 2.4m x 45m therefore achieving the requisite visibility splays from Manual for Streets 2.

Staff and Visitor Car Parking

- 3.12 The masterplan includes three car parking spaces and one van parking space for staff and visiting contractors. The development will result in one full time staff member on site and up to two visiting contractors when required. This level of parking is therefore sufficient to meet the staffing demand.
- 3.13 Operational demand from vehicles refuelling will be accommodated at the refuelling stations, it is not envisaged that these vehicles would remain onsite for any longer than needed to refuel.

Cycle Parking

- 3.14 The development proposals include one sheltered cycle rack for two cycle parking spaces. These are located near the staff car parking area and will provide adequate cycle parking for staff or contractors who are cycling to site.

4 TRAVEL DEMAND

- 4.1 This section of the Transport Assessment outlines the forecast trip generation of the proposed developments in respect of vehicular trips.
- 4.2 The development is a low trip generator with typically more vehicular trips generated during the construction phases than when the site is operational. On that basis, a separate Construction Traffic Management Plan (CTMP) have been produced to address travel demand and impacts during construction. This provides detail on how traffic will be managed through the construction period and how its impact is mitigated. This report is included at **Appendix 4**.

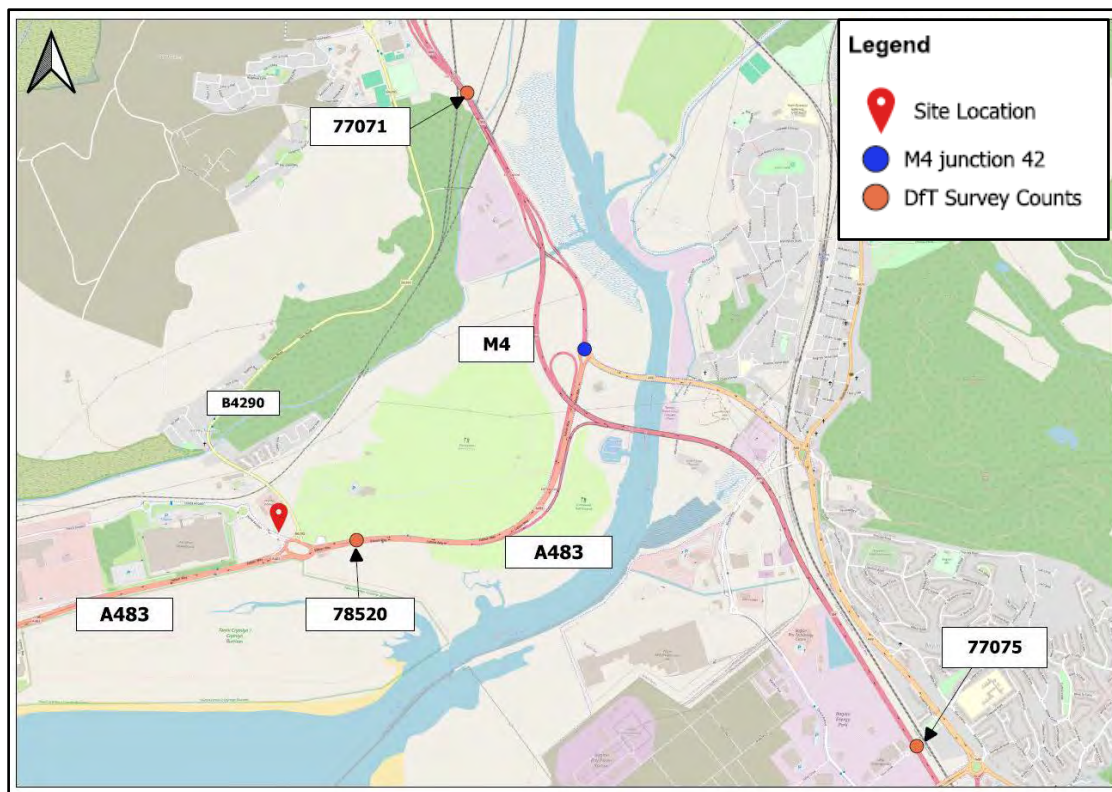
Trip Generation

- 4.3 Other than occasional staff, fuel delivery and maintenance movements, the facility will not, generate any new traffic movements, with all trips being either pass by or diverted, and therefore already on the network .
- 4.4 When the site is operational it is proposed that it will employ one full time equivalent staff member and up to two visiting contractors for maintenance when required. For the purpose of this assessment, it has been assumed that there would be four staff members on site each day. This would (as a worst-case scenario) create eight two-way vehicle movements (four inbound and four outbound)
- 4.5 There is no data available in TRICS for the land use proposed and therefore traffic generation assumptions are based on forecasts from the proposed operators. The site will have storage for 1.99 tonnes of hydrogen The market for hydrogen is clearly evolving, but the scheme has been designed with an intended maximum capacity of around 38 refuels per day. This would generate around 76 movements per day. In practise, it is likely that usage will be significantly lower in the early years.
- 4.6 As aforementioned, the site will be open for refuelling 24/7, a booking system will allow access to the refueller on this basis.
- 4.7 The scheme has also been designed to allow for the delivery of hydrogen for refuelling, it is intended that there will be 4 deliveries per day via HGVs, this would generate around 8 movements per day.
- 4.8 Assuming 10% of movements occur in the peak hours, this would generate around eight movements each way during the morning and evening peak hour.
- 4.9 Traffic magnitudes of this levels are within daily variation and would not impact on the existing working of local junctions within the area.

Traffic Impact

- 4.10 2022 Annual Average Daily Flow (AADF) data for the A483 and the M4 have been obtained from Department for Transport. The following counts and their approximate locations are listed below and shown on **Figure 9** also.

Figure 9: DfT Survey Count Locations



- Count Point 78520 – Along the A483, approximately 260m east of the B4290 / Ffordd Amazon / A483 roundabout.
- Count Point 77071 - Along the M4 between J43 and J42.
- Count Point 77075 – Along the M4 between J42 and J41.

4.11 The 2023 AADF data for the total flows three count points is summarised in **Table1**.

Table 1: 2023 AADF

Location	Count ID	Car / LGVs	HGVs	Total
A483	78520	28881	875	29756
M4 between J43 and J42	77071	82222	4995	87217
M4 between J42 and J41	77075	61510	4961	66471

4.12 Estimated trip generation during operation of the proposed development calculates that peak two-way movements would equate to 74 HGV movements and 18 two-way car movements. All traffic has been assigned in an eastbound direction along the A483 towards the M4 and then in

both directions along the M4 This results in an overly robust assessment and is summarised below in **Table 2**.

Table 2: Traffic Flows

Location	Count ID	Car / LGVs	HGVs	Total
A483	78520	74 (0.3%)	18 (2.1%)	92 (0.3%)
M4 between J43 and J42	77071	74 (0.1%)	18 (0.4%)	92 (0.1%)
M4 between J42 and J41	77075	74 (0.1%)	18 (0.4%)	92 (0.1%)

- 4.13 The above changes in traffic flows along the A483 and the M4 represent a negligible change in traffic flows, similarly the A483 and the M4 in the vicinity of the site are not in a specifically sensitive location. On this basis, these predicted increases are well below the 'Guidelines for the Environmental Assessment of Road Traffic' which suggest two broad rules that can be used as a screening process to identify the appropriate extent of the assessment area. These are:
- **Rule 1** – Include highway links where traffic flows would increase by more than 30% (or the number of HGVs would increase by more than 30%); and
 - **Rule 2** – Include any other specifically sensitive areas where traffic flows would increase by 10% or more.
- 4.12 Therefore, the operational traffic as a result of the development will not create a significant impact on the local highway network.

Summary

- 4.13 It is evident that the site (when operational) is a low trip generator. The site will generate approximately 92 vehicle movements. Increases of this magnitude are well within daily variance, On that basis, no further analysis has been undertaken to determine the impact the proposals have on the local network.

5 SUMMARY AND CONCLUSIONS

- 5.1 RPS have been commissioned by Marubeni (the applicant) to produce a Transport Assessment (TA) to accompany a detailed planning application for a new hydrogen refuelling facility on land east of Ffordd Amazon, located south of Jersey Marine.
- 5.2 The proposed site is approximately 0.9 hectares in size, and is located to the south of Jersey Marine, a small village approximately 5km east of Swansea. The site which is located approximately 1.6 km from J42 of the M4, is bound to the south by the A483, to the east by the B4290 and Swansea Bay Gold Course, to the west by Ffordd Amazon and an industrial park and to the north by a small industrial area including Dainton Self Storage.
- 5.3 An indicative masterplan for the site is included at **Appendix 1** with a site location plan included at **Appendix 2**.
- 5.4 The proposed site is low trip generator, especially during the operational phase. The site will be used for refuelling facility for cars, HGVs and buses and will employ one full time staff member and two visiting contractors when required.
- 5.5 Access to the site will be promoted from Ffordd Amazon via an existing internal road which serves other industrial units. A 3m wide shared footway / cycleway is proposed to provide a traffic free link to existing pedestrian and cycle infrastructure along Ffordd Amazon and the A483.
- 5.6 The masterplan includes one van parking space, three car parking spaces and two bicycle parking spaces, these will be used for staff and visiting contractors. The level of parking is therefore sufficient to meet staffing demand. The site also provides four HGV/Bus refuelling spaces and car refuelling spaces, it is not envisaged that these vehicles would remain onsite for any longer than needed to refuel.

Conclusion

- 5.7 Based on the above it is therefore considered that, in transport terms, there are no overriding or sustainable reasons why the development proposals should not be approved.

Appendices