
Llanfabon School

Transport Assessment

784-B042565

Draft for Client Review

Caerphilly County Borough Council

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1.0 INTRODUCTION

- 1.1 Caerphilly County Borough Council (CCBC) have commissioned Tetra Tech to prepare a Transport Assessment (TA) in support of an extension to the existing Llanfabon Infant's School to house the junior element and a hall for community use out of school hours. There will be a standalone childcare unit within the grounds of the school, and the development of land opposite the school entrance to provide car parking for the school.
- 1.2 The creation of the car park will involve the diversion of a public footpath to the periphery of the site and the stopping up of the public highway outside the school entrance to allow the additional land to become part of the school site. The site masterplan is provided at **Appendix A**.
- 1.3 The report considers the accessibility to and from the site by all modes of transport regarding the proposed development. This TA has been prepared in accordance with the Welsh Government and Local Guidance and will examine the sustainable modes of walking, cycling and public transport and then consider the impact of the residual vehicular traffic on the local highway network.

REPORT STRUCTURE

- 1.4 The report structure is as follows:
 - **Chapter 2** outlines the National and Local Policy.
 - **Chapter 3** describes the site location and the existing highway network around the site regarding highway safety.
 - **Chapter 4** outlines the existing accessibility of the site by sustainable modes of transport including walking, cycling and public transport.
 - **Chapter 5** provides details of the proposed development including access arrangements and parking provision.
 - **Chapter 6** sets out the trip generation for the proposal.
 - **Chapter 7** reviews the traffic impact assessment; and,
 - **Chapter 8** summarises and concludes the report.

2.0 POLICY REVIEW

INTRODUCTION

- 2.1 This chapter of the TS reviews and analyses the relevant current and emerging integrated land use and transport planning policy and policy guidance in the context of the site and the proposals on a national and local level.

NATIONAL POLICY

Future Wales – The National Plan 2040

- 2.2 Future Wales was adopted by the Welsh Government in February 2021 and sets out that developments should provide infrastructure that encourages sustainable travel, prioritising trips by walking, cycling and public transport. Infrastructure should be provided to assist in meeting this target, thereby encouraging future site users to reduce their reliance on private car trips. This should be considered at the design stage and supported at the planning stage through technical assessments.
- 2.3 Policy 12 of Future Wales sets out a requirement for new non-residential developments to provide a minimum of 10% of the total car park capacity to have electric vehicle charging points.

Planning Policy Wales

- 2.4 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government, with Edition 11 published February 2021. PPW sets out a strategic framework to guide development across the country. The document promotes a transport hierarchy to give priority to active travel first, sustainable transport secondly, then by private motor vehicle.
- 2.5 PPW sets out that development proposals should prioritise sustainable travel movements over car travel, maximising accessibility by walking, cycling and public transport. The residual impact of any development to the local road network should be considered, with appropriate mitigation provided if required. This is achieved through the provision of a policy compliant Transport report, which will evidence the suitability of the development proposal and outline development impact at operation.

Technical Advice Note 18: Transport

- 2.6 Technical Advice Note 18: Transport provides national advice on transport related issues when planning for new developments and was adopted by the Welsh Government in March 2007. The document includes integration between land use planning and transport, location, parking, and design of new developments. The document advises that Travel Plans should relate to targets for the reduction of road traffic and the promotion of walking, cycling and public transport.

Active Travel Wales Act

- 2.7 The Welsh Government enacted the Active Travel Wales Act in 2013, which requires Local Authorities to continuously improve facilities and routes for pedestrians and cyclists and to prepare maps identifying current and potential future routes for use. The Act should also be considered at the design stage for new road schemes to consider the needs of pedestrians and cyclists.

Active Travel Act Guidance

2.8 The Active Travel Act Guidance was formally adopted in July 2021 to give guidance to several sections of the Active Travel Wales Act and provide a vision for walking and cycling to be a choice for short everyday journeys, or as part of a longer journey with other sustainable modes. The guidance sets out a 15-year ambition for a comprehensive, safe, direct, comfortable, and attractive walking and cycling routes to connect key settlements within Wales.

Llwybr Newydd: The Wales Transport Strategy 2021

2.9 The Welsh Government's Llwybr Newydd: The Wales Transport Strategy sets out how the transport system in Wales will change over the next 20-year period and was adopted in March 2021.

2.10 The document sets out the Welsh Government's priorities for Transport in Wales over the next five years, one of the priorities being to bring services to people to reduce the need for people to use their cars daily. To achieve this, new workplaces and homes will be built close to public transport interchanges and new developments will be designed to be walk and cycle friendly from the outset.

2.11 The Wales Transport Strategy proposes a modal shift change to achieve their aim of reducing carbon emissions from surface transport by half between 2020 and 2030, from 6 to 3 million tonnes CO₂. The strategy has set a target that 45% of journeys will be made by public transport, walking, and cycling by 2040, an increase from the current mode share of 32%. This will be achieved through various infrastructure improvement schemes, data reviews and other measures to incentivise sustainable travel.

Net Zero Strategy: Build Back Greener

1.1 The Net Zero Strategy: Build Back Greener was published in October 2021 and sets out policies and proposals for decarbonising all sectors of the UK economy to meet the net zero target by 2050.

1.2 Regarding transport, it details the commitment to end the sale of new internal combustion engine cars by 2030 and the 2035 commitment that all cars must be zero emissions capable. It also details several investments to fund EV infrastructure, active travel infrastructure, improvements to bus networks, and an aspiration to invest significantly in rail electrification, removing all diesel only trains by 2040.

1.3

Decarbonising Transport: A Better, Greener, Britain

1.4 This plan sets out the government's commitments and the actions needed to decarbonise the entire transport system in the UK. It includes the pathway to net zero transport in the UK, the wider benefits net zero transport can deliver and the principles that underpin the government's approach to delivering net zero transport.

Net Zero Wales Carbon Budget

The Net Zero Wales Carbon Budget sets out how Wales aims to meet its second Carbon Budget for the period 2021-2025.

2.12 Regarding transport, it sets out an aim to reduce emissions from passenger transport by 22% in 2025 (from 2019) and 98% in 2050 through demand reduction, modal shift, and the uptake of low carbon technologies.

LOCAL POLICY

Caerphilly Council Local Development Plan

2.13 The current Local Development Plan (LDP) was adopted on 23rd November 2010 and identifies the locations for new developments such as housing, employment, community facilities and infrastructure.

2.14 The LDP sets out that development proposals that are likely to generate a significant number of trips will only be permitted providing that:

- Walking and cycling are modes of travel which have been actively encouraged; and
- Provision has been made for ease of cycling, including secure bike storage and cyclist facilities.

2.15 Development proposals must satisfy the following highway requirements as set out in the LDP:

- The proposal has regard for the safe, effective, and efficient use of the transportation network.
- The proposal ensures that the development proposals are designed to standard that.
 - Promotes the interests of pedestrians, cyclists, and public transport before that of the private car; and,
 - Safely and effectively accommodates the scale and nature of traffic, which those roads are intended to serve.
- Parking, appropriate servicing and operational space have been provided in accordance with the CSS Wales Parking Standards 2014.

Car Parking Standards Supplementary Planning Guidance (2017)

2.16 The SPG supplements LDP, detailing the policies regarding parking within CCBC.

2.17 Parking will be provided in accordance with the SPG as set out in **Table 2.1**.

Table 2.1 – CCBC Parking Standards – Zones 2 – 4

Type of Development	Operational	Non-Operational
Nursery/Infants/Primary Schools	1 commercial vehicle space	1 space per member of teaching staff, 1 space per 3 non-teaching staff, 1 space per 30 pupils visitor spaces, bus parking as required
Motorcycle Parking	5% of provision for car parking	

2.18 Disabled parking will be provided in accordance with the standard and the exact provision parking spaces will be agreed with CCBC.

2.19 Motorcycle parking should comprise of 5% of the total provision for car parking and be located in a safe, secure and convenient location where other vehicles cannot encroach or obstruct the motorcycle parking area.

2.20 The cycle parking will be provided in accordance with the SPG as set out in **Table 2.2**.

Table 2.2 – CCBC Cycle Parking Standards

Type of Development	Long Stay	Short Stay
Nursery/Infants/Primary Schools	1 stand per 5 staff and 1 stand per 20 children	1 stand /100 children

SUMMARY

- 2.21 This document has been prepared taking into consideration the Transport Statement principles of the National and Local Policy and a wide range of travel planning guidance and good practice documents.
- 2.22 An assessment has been undertaken, reviewing the National and Local Policy applicable to the proposals with regards to transport. The proposals accord to National and Local Policy in terms of accessibility and encouraging active travel.

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3.0 EXISTING HIGHWAY CONDITIONS

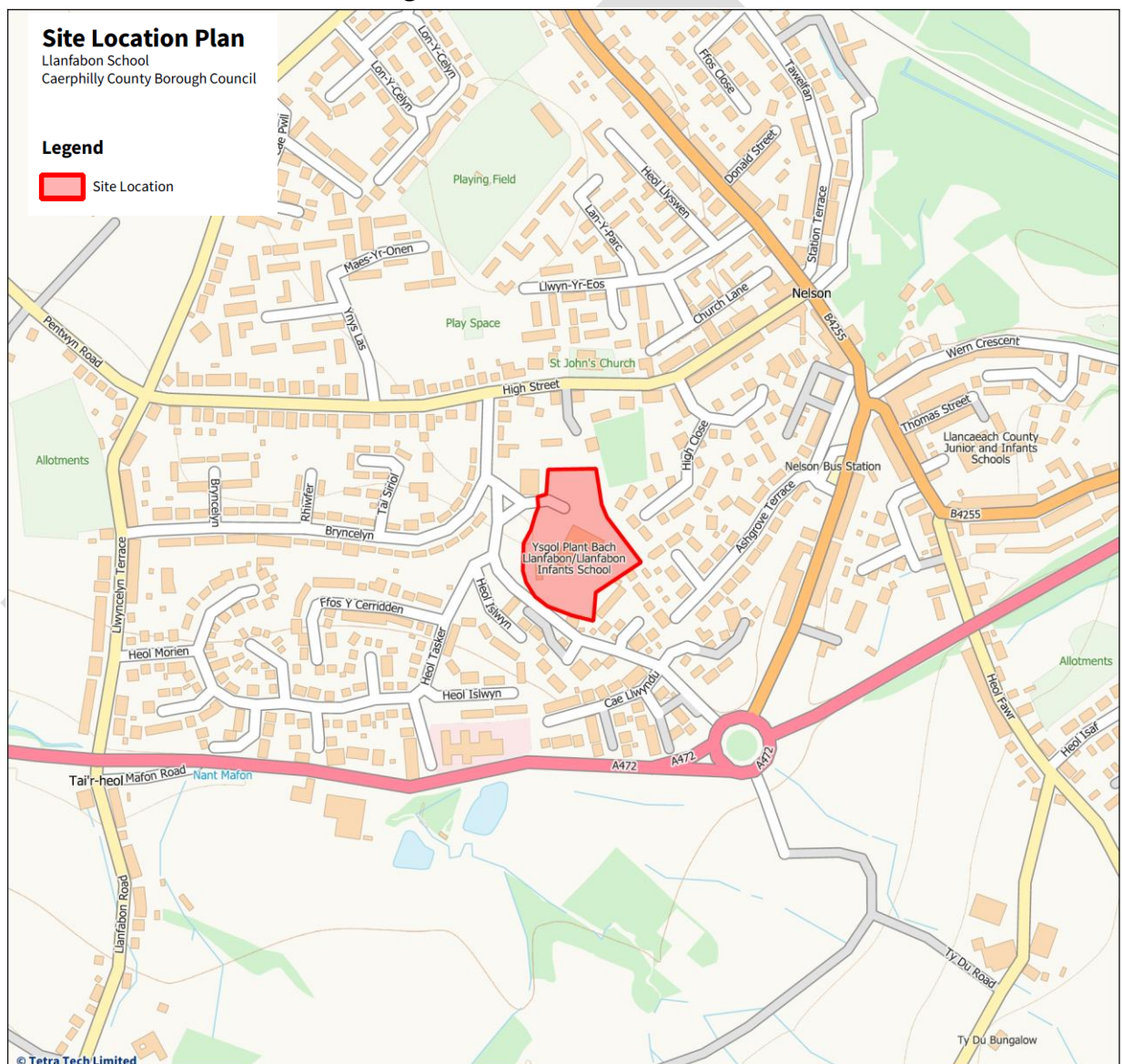
INTRODUCTION

3.1 This chapter describes the site location and the local highway network, alongside a highway safety audit.

SITE LOCATION

3.2 The site is located on Bryncelyn Avenue via a Y-junction off Heol Tasker within Nelson, Caerphilly. The location of the site is shown in **Figure 3.1**, with a masterplan of the site provided in **Appendix A**.

Figure 3.1 – Site Location



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LOCAL HIGHWAY NETWORK

- 3.3 The local road network is illustrated in **Figure 3.1**.
- 3.4 The existing site gains access to the local highway network, gained at the north-west of the site via a gated access on Bryncelyn.
- 3.5 Bryncelyn runs from Heol Tasker via a Y-junction to the site boundary. Bryncelyn is a two-way single carriageway road which benefits from street lighting on both sides of the carriageway and is subject to 30mph.
- 3.6 Heol Tasker runs from the T-junction at Bryncelyn south-east to a four-arm mini roundabout with Cae Llwyndu. Heol Tasker benefits from lit footways on both sides of the carriageway. Heol Tasker is subject to a 30mph speed limit and traffic calming measures in the form of speed cushions are presents along the length of Heol Tasker.
- 3.7 Bryncelyn runs from a T-junction with High Street in the north to a T-junction with Llwyncelyn Terrace in the south-west. Bryncelyn benefits from lit pedestrian footways on both sides of the carriageway and is subject to a 30mph speed limit.

BASELINE TRAFFIC DATA

- 3.8 Tetra Tech obtained Manual Classified Counts (MCC) for the period 07:00 – 19:00 on Tuesday 8th November 2022 at the following junctions:
- Bryncelyn / Heol Tasker T-junction.
 - Heol Tasker / Bryncelyn Avenue School Access Northern; and,
 - Heol Tasker / Bryncelyn Avenue School Access Southern.
- 3.9 The above MCC surveys are contained in **Appendix B**.
- 3.10 **Table 3.1** provides a summary of the net traffic recorded at the junctions during the AM and PM peak periods.

Table 3.1 – AM and PM Two Way Traffic Flows - 2022

Junction	AM Peak (08:00 – 09:00)	PM Peak (15:00 – 16:00)
Bryncelyn / Heol Tasker T-junction	207	118
Heol Tasker / Bryncelyn Avenue School Access Northern	184	85
Heol Tasker / Bryncelyn Avenue School Access Southern	189	113

HIGHWAY SAFETY AUDIT

- 3.11 The highway safety audit contained within this section is derived from ‘Crashmap’ which uses police collected data regarding the occurrence of Personal Injury Accidents. This data is approved by the National Statistics Authority and reported on by the Department for Transport (DfT) each year.

-
- 3.12 The data comprises the most recent data freely released by the DfT, covering the five-year period between 2017 and 2021, within the study area of Bryncelyn Avenue, Heol Tasker and Bryncelyn.
- 3.13 No incidents were recorded within the study area during the study period. Given this, the assessed road network is determined to be of a safe and suitable arrangement. On this basis, it is considered that there are no apparent issues with the highway network (located within the study area), which would be exacerbated by or need to be addressed by the proposed development.

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4.0 SUSTAINABLE TRAVEL AUDIT

ACCESSIBILITY GUIDANCE

- 4.1 Tetra Tech have reviewed the nationally available accessibility guidance prepared by the government and professional transport institutions for walking, cycling and public transport.

Welsh Government Guidance

- 4.2 The Welsh Government Active Travel: Walking and Cycling in Wales document (2019) recorded that for Caerphilly, approximately 7% of residents would use cycling as a regular mode of transport and approximately 42% walking daily or several times a week.
- 4.3 The Welsh Government Active Travel Act Guidance (2021) sets out that the vision of the Active Travel (Wales) Act is for walking and cycling to be the natural mode of choice for short everyday journeys, or as part of a longer journey in combination with other sustainable modes. The document sets out that many users are likely to walk up to 3.2km (2 miles), with some likely to walk up to 4.8km (3 miles), while many cyclists would cycle up to 8km (5 miles) with some willing to cycle up to 12km (7.5 miles).
- 4.4 The Welsh Government Personal Travel in Wales document (2013) recorded that a typical walking trip (for any purpose) was up to 1.6km and up to 14.5km for travel by bus. No data was assessed for cycling at the time of release. The study also recorded that on average, regular commuters travelling to work are prepared to walk for 12 minutes (960m), cycle for 21 minutes (5.6km) and travel 33 minutes by bus.

BEST PRACTICE GUIDANCE

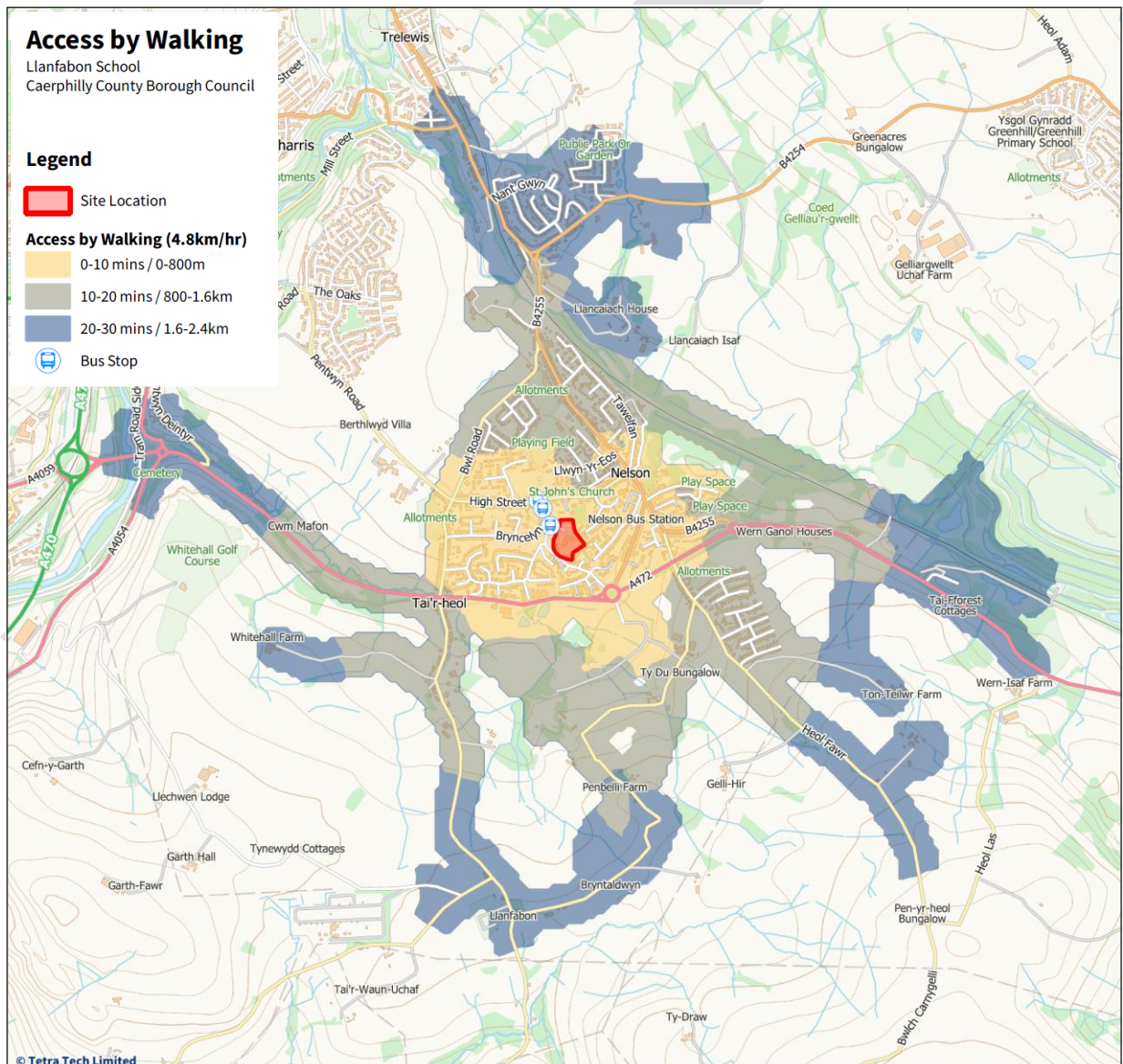
- 4.5 The Institution of Highways and Transport (IHT) guidance document 'Planning for Walking' (April 2015) states that 80% of journeys shorter than 1.6km are made wholly on foot with 20% for journeys that are 1.6km to 3.2km long also being undertaken on foot.
- 4.6 The Chartered Institution of Highways and Transport (IHT) guidance document 'Buses in Urban Developments' (January 2018) recommends a maximum walking distance to bus stops of 300 metres when accessing less frequent bus routes. The National Travel Survey (NTS) 2014 (September 2015), recorded that pedestrians will walk on average 624m to bus stops, when using a local bus as the main part of a local trip.

ACCESS BY WALKING

- 4.7 The site will gain pedestrian access from Bryncelyn Avenue via Heol Tasker. Bryncelyn Avenue benefits from lit pedestrian footways on both sides of the carriageway which provides a connection onto Heol Tasker and the wider pedestrian network with Nelson.
- 4.8 A secondary pedestrian access is located on the eastern edge of the school. Access to this entrance is via the diverted public footpath onto Ashgrove Terrace. Ashgrove Terrace benefits from lit pedestrian footways on both sides of the carriageway and provides a connection onto the B4255 and the surrounding residential areas within Nelson.

- 4.9 Heol Tasker benefits from lit pedestrian footways on both sides of the carriageway with dropped kerbs present to enable pedestrian movement to the north and south into the residential areas within Nelson.
- 4.10 Bryncelyn benefits from lit pedestrian footways on both sides of the carriageway with dropped kerbs present where driveways and side roads interrupt the footway. Bryncelyn provides a connection from Heol Tasker to the north and west of Llanfabon School into the residential areas within Nelson.
- 4.11 A GIS network analysis has been carried out to assess pedestrian accessibility from the site. **Figure 4.1** shows a 30-minute walking isochrone (2.4km) from the main site, calculated based upon a walk speed of 4.8 km/hr.

Figure 4.1 – Access by Walking



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4.12 **Figure 4.1** shows that the surrounding residential areas to the school can be reached within 30 minutes (2.4km) walk of the site. It is therefore considered that there are genuine opportunities for trips to the site to be undertaken by walking.

ACCESS BY CYCLING

4.13 The site gains its cycle access from Bryncelyn Avenue via Heol Tasker. There is limited dedicated cycle infrastructure within the proximity of the site, with cycle trips undertaken along the road network. The local road network surrounding the site is subject to a 30mph speed limit.

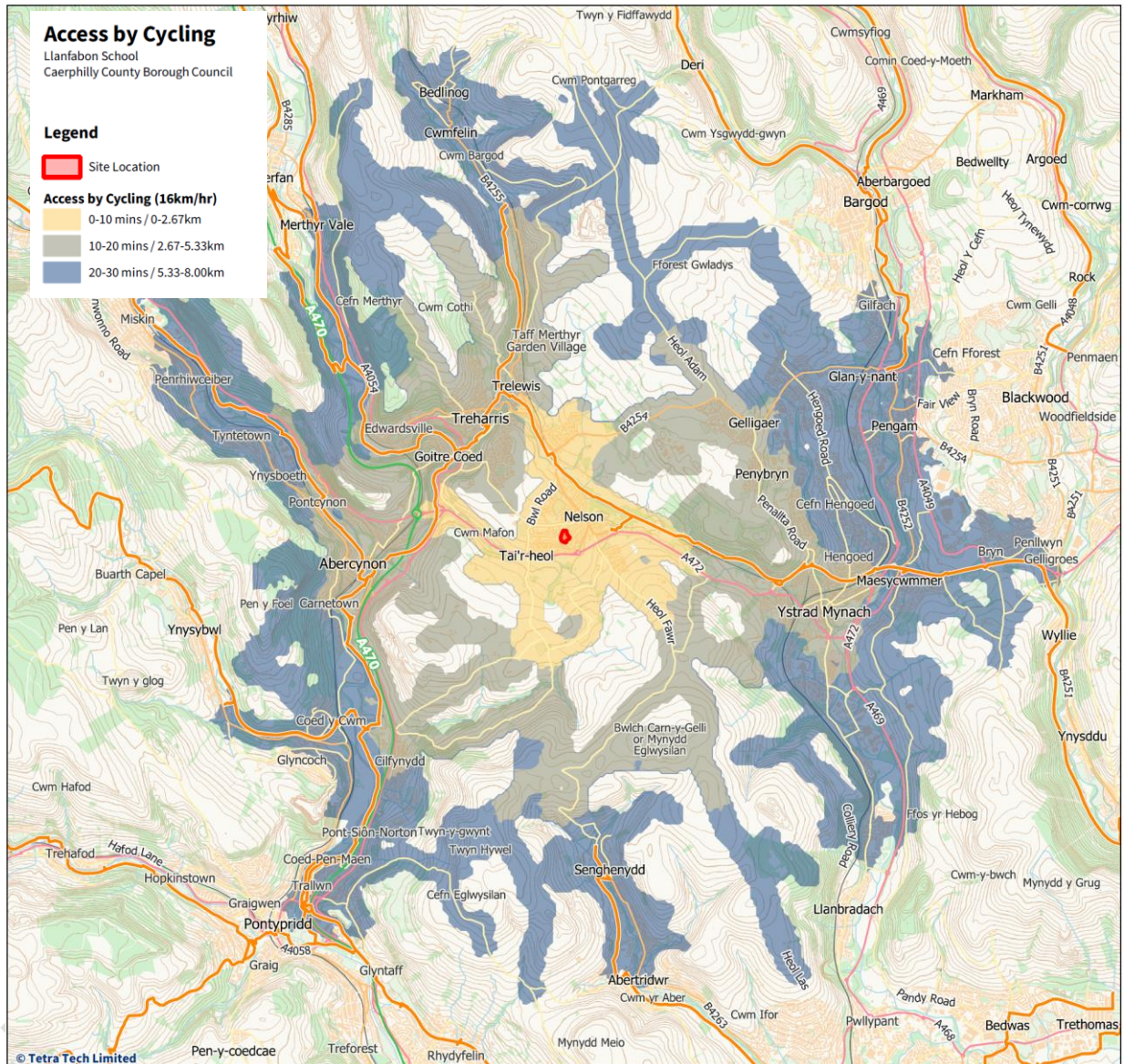
4.14 National Cycle Route (NCN) 47 is located 1.2km east of the site. In the surrounding area of the site, NCN 47 provides a link to Sirhowy Valley Country Park, Taff Bargoed Park, and the Taff Trail (NCN 8).

4.15 NCN 47 forms an inland route starting at Newport and finishing at Fishguard, through numerous towns and villages including, Neath and Carmarthen. NCN 47 provides a link to the surrounding villages of Nelson, Treharris, Hengoed and Gelligroes.

4.16 **Figure 4.2** shows a 30-minute cycling isochrone (8.0km) from the site, which has been calculated based upon a cycle speed of 16km/hr.

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Figure 4.2 – Access by Cycling



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4.17 **Figure 4.2** shows that many surrounding residential areas to the school can be reached within 30 minutes cycle of the site, with access to National Cycle Route 47 achievable circa 900m northeast of the site. It is therefore considered that there are genuine opportunities for trips to the site to be undertaken by cycling.

ACCESS BY BUS

4.18 The 'Bryncelyn Community Centre' bus stop is located approximately 95m from the site on Bryncelyn Avenue. The 'Bryncelyn Community Centre' stop is marked with a bus shelter and provides timetabling information.

- 4.19 Additional bus stops are located north of the site on High Street. The westbound ‘Bryncelyn Junction’ bus stop is marked and benefits from a bus shelter and timetabling information while the eastbound stop is unmarked.
- 4.20 Further services are available at the ‘Nelson’ bus stops, located on the B4265, approximately 430m east of the site.
- 4.21 **Table 4.1** provides a summary of the services available from these bus stops.

Table 4.1 – Bus Service Summary

Service	Route	Timetable Information		
		Day of Operation	First / Last Bus	Average Frequency
Bryncelyn Community Centre				
C16	Caerphilly – Ystrad Mynach - Nelson	Mon – Sat	09:01 – 17:50	Hourly
	Nelson – Ystrad Mynach – Caerphilly		07:42 – 16:37	Hourly
High Street				
78	Abergavenny – Merthyr Tydfil - Pontypridd	Mon – Sat	06:18 – 18:18	Hourly
	Pontypridd – Merthyr Tydfil – Abergavenny		06:53 – 18:53	Hourly
S79	Merthyr Tydfil – Treharris - Bedlinog	Sun	11:42	1 Daily
	Bedlinog – Treharris – Merthyr Tydfil		10:15 – 12:15	2 Daily
Nelson				
7	Blackwood – Nelson – Pontypridd	Mon – Sat	07:20 – 17:41	Hourly
	Pontypridd – Nelson – Blackwood		08:10 – 18:22	Hourly
C1	Nelson – Mount Way – Nelson	Mon – Fri	10:00 – 11:10	2 daily
X38	Pontypridd – Nelson – Bargoed	Mon-Fri	06:30 – 18:01	Hourly
		Saturday	06:41 – 18:01	Hourly
	Bargoed – Nelson – Pontypridd	Mon-Fri	06:30 – 18:54	Hourly
		Saturday	07:24 – 18:54	Hourly

ACCESS BY RAIL

- 4.22 Quakers Yard Rail Station is located 3.7km from the site and can be reached within a 17-minute cycle.
- 4.23 Quakers Yard Railway Station is located on the Merthyr Line between Abercynon and Merthyr Vale Rail Stations. Services run every half hour north to Merthyr Tydfil and south to Pontypridd and Cardiff

Central. On Sundays, the station benefits from a two-hourly service each way, with services operated by Transport for Wales.

- 4.24 The station benefits from step free access and a ramp for train access availability. **Table 4.2** provides a summary of the travel times to key destinations which are accessible from Quakers Yard Railway Station.

Table 4.2 – Direct Rail Services from Quakers Yard

Destination	Average Travel Time (Minutes)	Average Frequency (Minutes)
Pontypridd	11	30
Merthyr Tydfil	22	30
Taffs Well	24	30
Cardiff Central	45	30
Barry	70	30

- 4.25 Quakers Yard Rail Station provides connections to key residential areas within the region, which provides several opportunities to encourage staff and visitors to the site to undertake trips by rail.
- 4.26 Additional services are available from Ystrad Mynach Rail Station. Ystrad Mynach Station is located approximately 4km from the site and can be reached within a 19-minute cycle and 19-minutes via the C16 bus. The station benefits from a ticket machine and ticket office.
- 4.27 Ystrad Mynach Rail Station is on the Rhymney Line between Llanbradach and Hengoed Rail Stations. Four trains an hour run northbound to Bargoed, on Mondays to Saturday, whilst southbound there are four trains per hour to Cardiff Central.
- 4.28 Ystrad Mynach Rail Station benefits from a car park with 34 spaces, a ticket office, a ticket machine, and step free access to both platform 1 and 2.

Table 4.3 – Direct Rail Services from Ystrad Mynach

Destination	Average Travel Time (Minutes)	Average Frequency (Minutes)
Bargoed	12	60
Caerphilly	14	60
Rhymney	30	60

- 4.29 The site is well located to offer a variety of sustainable journey choices to future site users, given its proximity to the pedestrian, cycle and public transport network.

BREEAM EXISTING AMENITIES

- 4.30 This section provides an overview of the amenities accessible to the site, against the assessment criteria of the BREEAM 2016 UK New Construction Tra02 Existing Amenities (Table 7.6). It should be noted that as part of the assessment, category Building Group 2 has been used, which relates to the accessibility of amenities for Preschools, Schools, and Sixth Forms.

4.31 The applicable existing amenities accessible within 500m are summarised in **Table 4.4**.

Table 4.4 – Existing Amenities

Type	Facility	Distance	Walk Time	Cycle Time
Appropriate food outlet	Commercial Street Co-op	490m	6 mins	2 mins
Access to cash	Commercial Street Co-op	490m	6 mins	2 mins
Publicly available postal facility	St John’s Church Post Box	350m	4 mins	1 min
Community facility	Nelson Community Centre	100m	1 min	1 min
Over the counter services associated with a pharmacy	Sheppards Pharmacy	490m	6 mins	2 mins

4.32 **Table 4.4** demonstrates that five of the seven applicable facility types for Building Group 2 are accessible within a 500m walk/cycle of the site.

BREEAM PUBLIC TRANSPORT ACCESSIBILITY INDEX

4.33 The BREEAM public transport accessibility Index (AI) has been assessed against the following criteria:

- Distance (m) from the main building entrance to each compliant public transport node.
- Public transport types serving the compliant node, e.g., bus or rail; and,
- Average number of services stopping per hour at each compliant node during the operating hours.

4.34 Using the BREAAM AI tool, the AI for the school has been calculated as 1.66.

5.0 DEVELOPMENT PROPOSALS

PROPOSED DEVELOPMENT

- 5.1 The development proposals comprise of an extension to the existing infant's school to house the junior element and a hall for community use out of school hours.
- 5.2 There will be a standalone childcare unit within the grounds of the school, and the development of land opposite the school entrance to provide car parking for the school.
- 5.3 The creation of the car park will involve the diversion of a public footpath to the periphery of the site and the stopping up of the public highway outside the school entrance to allow the additional land to become part of the school site.
- 5.4 Llanfabon school currently accommodates 18 teaching staff, 10 non-teaching staff, and 117 pupils across all age groups. The proposals comprise of an increase in staff to 39 teaching staff, 9 non-teaching staff and 319 pupils across all age groups.
- 5.5 The masterplan is illustrated in **Figure 5.1**, which is outlined in **Appendix A**.

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Figure 5.1 – Site Masterplan



ACCESS ARRANGEMENTS

Pedestrian / Cycle Access

- 5.6 The main pedestrian and cycle access will remain unchanged, and pedestrians / cyclists will continue to gain access from Bryncelyn Avenue. With a new pedestrian crossing point located on Bryncelyn Avenue adjacent to the school gates.
- 5.7 A secondary site access will be located on the eastern edge of the school. Access to this entrance is via the diverted public footpath onto Ashgrove Terrace.
- 5.8 The pedestrian and cycle accesses are shown on the masterplan at **Appendix A**.

Vehicle Access

- 5.9 Vehicle access will remain unchanged, and vehicles will continue to gain access from Bryncelyn Avenue. The vehicle access is shown in the masterplan at **Appendix A**.

PARKING PROVISION

Cycle Parking

- 5.10 Cycle parking will be provided in accordance with CCBC parking standards. A total of 30 cycle spaces are proposed adjacent to the main school hall.
- 5.11 The location of the cycle parking and the number of spaces is shown in the masterplan at **Appendix A**.

Vehicle Parking

- 5.12 Car parking will be provided in accordance with CCBC parking standards which are set out in **Table 2.1** of this report.
- 5.13 A total of 39 car parking spaces will be provided for visitors and staff. A total of 3 spaces will be provided for car sharing, with 3 accessible spaces provided, alongside 3 motorcycle spaces.
- 5.14 In accordance with Future Wales, 6 electric vehicle charging car parking spaces are provided.
- 5.15 The location of the car park and the number of spaces is shown in the Masterplan at **Appendix A**.

REFUSE AND SERVICING VEHICLE ACCESS

- 5.16 The proposed vehicular access strategy will be conducive towards the movements of emergency and service vehicles, allowing vehicles to enter / exit the site in a forward gear. Drawings **784-B042565-TTE-00-ZZ-DR-CH-SK001, SK002** and **SK003** illustrate that a refuse vehicle, coach, and private car can safely and suitably access/egress the site.

BREEAM TRAVEL PLAN

- 5.17 A comprehensive BREEAM Travel Plan is provided as part of the application that outlines a package of measures with the aim of reducing the number of single occupancy car trips generated by staff and visitors by promoting travel by sustainable travel modes.
- 5.18 The BREEAM Travel Plan Measures will be implemented, subject to agreement with CCBC.

6.0 TRIP RATE AND GENERATION

INTRODUCTION

- 6.1 The purpose of this section of the report is to set out the methodology and results of the trip generation assessments. This has been undertaken to assess the potential impact of the proposed development, in terms of trips generated on the surrounding highway network.
- 6.2 The trip generation for the proposals have been derived from observed survey data.

TRIP GENERATION ASSESSMENT METHODOLOGY

- 6.3 Tetra Tech obtained Manual Classified Counts (MCC) for the period 07:00 – 19:00 on Tuesday 8th November 2022 at the following junctions:
- Bryncelyn / Heol Tasker T-junction.
 - Heol Tasker / Bryncelyn Avenue School Access Northern; and,
 - Heol Tasker / Bryncelyn Avenue School Access Southern.
- 6.4 The surveys were interrogated to calculate the peak hour trip generation for the existing site, to provide a robust assessment of the potential impacts of the development traffic. The peak hours of 08:00 – 09:00 in the AM and 15:00 – 16:00 in the PM peak will be used to calculate the peak hour trip generation for the development.

DEVELOPMENT TRIP ASSESSMENT

- 6.5 A vehicle trip rate for the development has been derived from the existing pupil numbers at the school. The proposals for the development comprise of an increase from 117 pupils and 28 members of staff to 319 pupils and 46 members of staff.
- 6.6 The vehicle trips rates per pupil have been derived from the surveyed traffic flows for the existing 117 pupil site. The total vehicle trip rates per pupil are summarised in **Table 6.1**.

Table 6.1 – Vehicle Trip Rate per Pupil

Junction	Arrivals	Departures	Two-Way
AM Peak (08:00 – 09:00)	0.3590	0.2650	0.6239
PM Peak (15:00 – 16:00)	0.1368	0.3162	0.4530

- 6.7 **Table 6.2** outlines the number of vehicle trips to be generated by the expanded 319 pupil site, derived from the trip rates set out in **Table 6.1**.

Table 6.2 – Expanded Site Vehicle Trip Generation (319 Pupils)

Junction	Arrivals	Departures	Two-Way
AM Peak (08:00 – 09:00)	115	85	199
PM Peak (15:00 – 16:00)	44	101	145

6.8 **Table 6.2** shows that the development proposal is forecast to produce 199 two-way vehicle trips in the AM peak, with 115 arriving and 85 departing. In the PM peak, the development is forecast to produce 145 two-way vehicle trips, with 44 arriving and 101 departing.

NET DEVELOPMENT TRAFFIC

6.9 **Table 6.3** sets out the net increase in traffic that will be generated by the proposed development.

Table 6.3 – Net Increase in Vehicle Traffic

Junction	Arrivals	Departures	Two-Way
AM Peak (08:00 – 09:00)	73	54	126
PM Peak (15:00 – 16:00)	28	64	92

6.10 **Table 6.3** demonstrates that the development proposal will generate a net increase of 126 vehicles in the AM peak and 92 in the PM peak.

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7.0 TRAFFIC IMPACT ASSESSMENT

INTRODUCTION

- 7.1 This section summarises the results obtained from the modelling undertaken in terms of junction performance. The modelling of the local road network has been undertaken using the Transport Research Laboratory's (TRL) computer modelling package Junctions 9.
- 7.2 Modelling presented within this Transport Statement is worst case, with no consideration towards mitigation, such the implementation of a Travel Plan. The local highway network will therefore operate with improved capacity to the figures set out within this report.

BACKGROUND TRAFFIC GROWTH

- 7.3 To calculate the 2028 forecast background traffic growth factors have been calculated and applied to the surveyed flows using the most recent DfT guidance 'Use of TEMPro data'.
- 7.4 The calculation of traffic growth is undertaken using the DfT TEMPro v7.2b computer software. Growth factors have been calculated based on data for Caerphilly, for roads serving the region.
- 7.5 TEMPro includes traffic forecasts that have been provided to the DfT by Local Planning Authorities, which include LPA forecasts on demography change, employment and housing levels, and the impact of allocated/consented applications.
- 7.6 **Table 7.1** provides a summary of the resultant growth rates outputted by TEMPro v7.2b.

Table 7.1 – TEMPro Growth Rates

Time Period	AM Peak	PM Peak
2022 - 2028	1.049412	1.049007

JUNCTION CAPACITY ASSESSMENT METHODOLOGY

- 7.7 Transport Research Laboratory's (TRL) PICADY 9 computer modelling software, within the Junctions 9 package, has been used to assess the operational capacity of the priority junctions within the study area. The results of the modelling are expressed in RFC (Ratio of Flow to Capacity), Delays and Queue Lengths (vehicles).
- 7.8 Assessments for the site access junction have been undertaken for the AM (08:00-09:00), PM (15:00-16:00) peak periods using the 'One Hour' method for inputting traffic flows, in accordance with the peak periods identified with the surveyed flows.

INTERPRETATION OF RESULTS

- 7.9 Transport Research Laboratory's (TRL) PICADY 9 computer modelling software, within the Junctions 9 package forecasts the overall available capacity at junctions by outputting the junction's Ratio of Flow to Capacity (RFC). The model outputs an RFC for each arm / traffic movement to consider how the junction may operate.

7.10 This figure ranges from 0.00 to 1.00, with 1.00 identifying that the traffic movement along the junction’s arm is forecast to operate at capacity. The theoretical capacity for a junction’s arm is identified as an RFC of 0.85, where queuing and delay will likely be low. In instances where RFCs are between 0.86 and 0.99, queuing and delay are likely to be exhibited at the junction but will still operate within capacity and appropriately accommodate traffic movements.

TRAFFIC IMPACT STUDY AREA

7.11 The junctions assessed within this section are as follows:

- Bryncelyn / Heol Tasker T-junction.
- Heol Tasker / Bryncelyn Avenue School Access Northern; and,
- Heol Tasker / Bryncelyn Avenue School Access Southern.

ASSESSMENT SCENARIOS

7.12 The assessment years for the traffic impact generated by the proposed development are as follows:

- Scenario 1: 2022 Baseline Year.
- Scenario 2: 2028 Forecast Year; and,
- Scenario 3: 2028 with Development.

BRYNCELYN / HEOL TASKER T-JUNCTION

7.13 The assessments for the AM and PM peak periods have been undertaken using Junctions 9, with the output results contained in **Appendix C**.

Scenario 1: 2022 Baseline Year

7.14 **Table 7.2** summarises the results of the junction capacity assessment for the junction with Scenario 1 flows.

Table 7.2 – Bryncelyn / Heol Tasker T-junction: Scenario 1 Capacity Assessment

Arm	AM Peak			PM Peak		
	Queue	Delay	RFC	Queue	Delay	RFC
Heol Tasker – Bryncelyn South	0.0	6.16	0.01	0.0	6.04	0.03
Heol Tasker – Bryncelyn North	0.1	10.17	0.09	0.1	8.98	0.12
Bryncelyn South – Bryncelyn North / Heol Tasker	0.0	6.32	0.04	0.0	5.86	0.03

7.15 **Table 7.2** shows that the junction is forecast to operate within capacity during the AM and PM peak periods in the 2022 Baseline scenario, exhibiting a maximum RFC of 0.12 during the peak periods. It is forecast to generate minimal queuing and delays in the region of 5 to 11 seconds.

Scenario 2: 2028 Forecast Year

7.16 **Table 7.3** summarises the results of the junction capacity assessment for the junction with Scenario 2 flows.

Table 7.3 – Bryncelyn / Heol Tasker T-junction: Scenario 2 Capacity Assessment

Arm	AM Peak			PM Peak		
	Queue	Delay	RFC	Queue	Delay	RFC
Heol Tasker – Bryncelyn South	0.0	6.19	0.02	0.0	6.07	0.04
Heol Tasker – Bryncelyn North	0.1	10.40	0.10	0.1	9.13	0.13
Bryncelyn South – Bryncelyn North / Heol Tasker	0.0	6.35	0.05	0.0	5.87	0.04

7.17 **Table 7.3** shows that the junction is forecast to operate within capacity during the AM and PM peak periods in the 2028 Forecast scenario, exhibiting a maximum RFC of 0.13 during the peak periods. It is forecast to generate minimal queuing and delays in the region of 5 to 11 seconds.

Scenario 3: 2028 with Development

7.18 **Table 7.4** summarises the results of the junction capacity assessment for the junction with Scenario 3 flows.

Table 7.4 – Bryncelyn / Heol Tasker T-junction: Scenario 3 Capacity Assessment

Arm	AM Peak			PM Peak		
	Queue	Delay	RFC	Queue	Delay	RFC
Heol Tasker – Bryncelyn South	0.0	6.31	0.04	0.1	6.23	0.06
Heol Tasker – Bryncelyn North	0.2	11.25	0.14	0.2	8.89	0.16
Bryncelyn South – Bryncelyn North / Heol Tasker	0.1	6.68	0.08	0.1	5.97	0.05

7.19 **Table 7.4** shows that the junction is forecast to operate within capacity during the AM and PM peak periods in the 2028 with Development scenario, exhibiting a maximum RFC of 0.16 during the peak periods. It is forecast to generate minimal queuing and delays in the region of 6 to 12 seconds.

HEOL TASKER / BRYNCELYN AVENUE SCHOOL ACCESS NORTHERN

7.20 The assessments for the AM and PM peak periods have been undertaken using Junctions 9, with the output results contained in **Appendix C**.

Scenario 1: 2022 Baseline Year

7.21 **Table 7.5** summarises the results of the junction capacity assessment for the junction with Scenario 1 flows.

Table 7.5 – Bryncelyn Avenue – School Access Northern: Scenario 1 Capacity Assessment

Arm	AM Peak			PM Peak		
	Queue	Delay	RFC	Queue	Delay	RFC
Bryncelyn Avenue – Heol Tasker South	0.0	7.55	0.03	0.0	5.94	0.02
Bryncelyn Avenue – Heol Tasker North	0.0	8.52	0.01	0.0	8.34	0.02
Heol Tasker South – Heol Tasker North / Bryncelyn Avenue	0.0	0.0	0.0	0.0	0.0	0.0

7.22 **Table 7.5** shows that the junction is forecast to operate within capacity during the AM and PM peak periods in the 2022 Baseline scenario, exhibiting a maximum RFC of 0.03 during the peak periods. It is forecast to generate minimal queuing and delays in the region of 0 to 9 seconds.

Scenario 2: 2028 Forecast Year

7.23 **Table 7.6** summarises the results of the junction capacity assessment for the junction with Scenario 2 flows.

Table 7.6 – Bryncelyn Avenue – School Access Northern: Scenario 2 Capacity Assessment

Arm	AM Peak			PM Peak		
	Queue	Delay	RFC	Queue	Delay	RFC
Bryncelyn Avenue – Heol Tasker South	0.0	7.68	0.03	0.0	5.97	0.02
Bryncelyn Avenue – Heol Tasker North	0.0	8.58	0.01	0.0	8.39	0.02
Heol Tasker South – Heol Tasker North / Bryncelyn Avenue	0.0	0.0	0.0	0.0	0.0	0.0

7.24 **Table 7.6** shows that the junction is forecast to operate within capacity during the AM and PM peak periods in the 2028 Forecast scenario, exhibiting a maximum RFC of 0.03 during the peak periods. It is forecast to generate minimal queuing and delays in the region of 1 to 9 seconds.

Scenario 3: 2028 with Development

7.25 **Table 7.7** summarises the results of the junction capacity assessment for the junction with Scenario 3 flows.

Table 7.7 – Bryncelyn Avenue – School Access Northern: Scenario 3 Capacity Assessment

Arm	AM Peak			PM Peak		
	Queue	Delay	RFC	Queue	Delay	RFC
Bryncelyn Avenue – Heol Tasker South	0.1	8.09	0.06	0.1	6.31	0.05
Bryncelyn Avenue – Heol Tasker North	0.0	8.98	0.05	0.1	8.22	0.05
Heol Tasker South – Heol Tasker North / Bryncelyn Avenue	0.0	0.0	0.0	0.0	0.0	0.0

7.26 **Table 7.7** shows that the junction is forecast to operate within capacity during the AM and PM peak periods in the 2028 with Development scenario, exhibiting a maximum RFC of 0.06 during the peak periods. It is forecast to generate minimal queuing and delays in the region of 0 to 9 seconds.

BRYNCELYN AVENUE SCHOOL ACCESS SOUTHERN

7.27 The assessments for the AM and PM peak periods have been undertaken using Junctions 9, with the output results contained in **Appendix C**.

Scenario 1: 2022 Baseline Year

7.28 **Table 7.8** summarises the results of the junction capacity assessment for the junction with Scenario 1 flows.

Table 7.8 – Bryncelyn Avenue – School Access Southern: Scenario 1 Capacity Assessment

Arm	AM Peak			PM Peak		
	Queue	Delay	RFC	Queue	Delay	RFC
Bryncelyn Avenue – Heol Tasker South	0.0	7.21	0.03	0.0	5.71	0.02
Bryncelyn Avenue – Heol Tasker North	0.0	7.27	0.01	0.0	7.30	0.01
Heol Tasker South – Heol Tasker North / Bryncelyn Avenue	0.0	6.42	0.04	0.0	6.17	0.03

7.29 **Table 7.8** shows that the junction is forecast to operate within capacity during the AM and PM peak periods in the 2022 Baseline scenario, exhibiting a maximum RFC of 0.04 during the peak periods. It is forecast to generate minimal queuing and delays in the region of 5 to 8 seconds.

Scenario 2: 2028 Forecast Year

7.30 **Table 7.9** summarises the results of the junction capacity assessment for the junction with Scenario 2 flows.

Table 7.9 – Bryncelyn Avenue – School Access Southern: Scenario 2 Capacity Assessment

Arm	AM Peak			PM Peak		
	Queue	Delay	RFC	Queue	Delay	RFC
Bryncelyn Avenue – Heol Tasker South	0.0	7.33	0.03	0.0	5.74	0.02
Bryncelyn Avenue – Heol Tasker North	0.0	7.33	0.01	0.0	7.36	0.02
Heol Tasker South – Heol Tasker North / Bryncelyn Avenue	0.0	6.45	0.04	0.0	6.19	0.03

7.31 **Table 7.9** shows that the junction is forecast to operate within capacity during the AM and PM peak periods in the 2028 Forecast scenario, exhibiting a maximum RFC of 0.04 during the peak periods. It is forecast to generate minimal queuing and delays in the region of 5 to 8 seconds.

Scenario 3: 2028 with Development

7.32 **Table 7.10** summarises the results of the junction capacity assessment for the junction with Scenario 3 flows.

Table 7.10 – Bryncelyn Avenue – School Access Southern: Scenario 3 Capacity Assessment

Arm	AM Peak			PM Peak		
	Queue	Delay	RFC	Queue	Delay	RFC
Bryncelyn Avenue – Heol Tasker South	0.1	7.70	0.06	0.1	6.04	0.05
Bryncelyn Avenue – Heol Tasker North	0.0	7.83	0.04	0.1	7.76	0.05
Heol Tasker South – Heol Tasker North / Bryncelyn Avenue	0.1	7.07	0.12	0.1	6.46	0.06

7.33 **Table 7.10** shows that the junction is forecast to operate within capacity during the AM and PM peak periods in the 2028 with Development scenario, exhibiting a maximum RFC of 0.12 during the peak periods. It is forecast to generate minimal queuing and delays in the region of 5 to 8 seconds.

SUMMARY

7.34 **Table 7.11** provides a summary of the traffic impact assessments.

Table 7.11 – Junction Modelling Summary

Junction		Scenario 1: 2022 Baseline		Scenario 2: 2028 Forecast		Scenario 3: 2028 with Development	
		AM	PM	AM	PM	AM	PM
Bryncelyn / Heol Tasker T-junction	RFC	0.09	0.12	0.10	0.13	0.14	0.16
	Delay	10.17	8.98	10.40	9.13	11.25	8.89
	Queue	0.1	0.1	0.1	0.1	0.2	0.2
Heol Tasker / Bryncelyn Avenue School Access Northern	RFC	0.03	0.02	0.03	0.02	0.06	0.05
	Delay	8.52	8.34	8.58	8.39	8.98	8.22
	Queue	0.0	0.0	0.0	0.0	0.1	0.1
Heol Tasker / Bryncelyn Avenue School Access Southern	RFC	0.04	0.03	0.04	0.03	0.12	0.05
	Delay	7.27	7.30	7.33	7.36	7.89	7.76
	Queue	0.0	0.0	0.0	0.0	0.1	0.1

Green – Operates well within capacity Orange – Operate close to capacity Red – Operates above capacity

7.35 The summary of the technical assessments, shown at **Table 7.11**, evidences that the development will have an immaterial impact to the operation of the Bryncelyn / Heol Tasker junction operation, with a worst-case RFC of 0.16. The development will have an immaterial impact to the operation of the Heol Tasker / Bryncelyn Avenue School Access Northern junction, with a worst-case RFC of 0.06. The development will also have an immaterial impact to the operation of the Heol Tasker / Bryncelyn Avenue School Access Southern junction, with a worst-case RFC of 0.12.

8.0 SUMMARY AND CONCLUSION

SUMMARY

- 8.1 Caerphilly County Borough Council (CCBC) have commissioned Tetra Tech to prepare a Transport Assessment (TA) in support of an extension to the existing Llanfabon Infant's School to house the junior element and a hall for community use out of school hours. There will be a standalone childcare unit within the grounds of the school, and the development of land opposite the school entrance to provide car parking for the school.
- 8.2 The creation of the car park will involve the diversion of a public footpath to the periphery of the site and the stopping up of the public highway outside the school entrance to allow the additional land to become part of the school site.
- 8.3 The proposed development site is well located to integrate into the local pedestrian, cycle, and public transport network. Given the location of the development, it is well located to maximise access by sustainable transport modes.
- 8.4 An audit of personal injury accident data has been undertaken and has found no cause for concern that the arrangement of the local highway network is not seen as a contributing factor to the recorded accidents.
- 8.5 The main pedestrian and cycle access will remain unchanged, and pedestrians / cyclists will continue to gain access from Bryncelyn Avenue, with a new pedestrian crossing point located on Bryncelyn Avenue adjacent to the school gates. A secondary site access will be located on the eastern edge of the school. Access to this entrance is via the diverted public footpath onto Ashgrove Terrace.
- 8.6 The junction modelling evidences that the development of the site will have a negligible impact on highway operation and will not be detrimental to road user safety.
- 8.7 A BREEAM Travel Plan for the site has been submitted as part of the Application which should be read in conjunction with this document. The Plan provides an appropriate package of measures to promote travel by sustainable modes for future site residents and reduce the reliance on car travel to / from the wider area.

CONCLUSION

- 8.8 Evidence presented in this Transport Assessment demonstrates that there are no significant transport impacts associated with the proposed development of the site. The residual cumulative impacts of the development are not severe, with safe and suitable provision provided to accommodate future transport users.
- 8.9 In the context of Welsh Government and Local Policy, there are no transport or highways reasons why this application should not be approved.

DRAWINGS

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FIGURES

APPENDIX A: SITE MASTERPLAN

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APPENDIX B: MCC SURVEYS

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APPENDIX C: MODELLING OUTPUTS

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