



Wrexham Glyndŵr University
Plas Coch Campus

Transport Assessment

July 2018



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Transport Assessment

Version 2-0

July 2018

Produced by:



For:



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1. Introduction

- 1.1 Integrated Transport Planning Ltd has been commissioned by Wrexham Glyndŵr University to provide transport planning consultancy services to support a redevelopment of the main Plas Coch Campus. This includes the redevelopment of a number of teaching and academic buildings, the extension of a student accommodation block and the construction of new PRS apartments.
- 1.2 This Transport Assessment has been produced to present the transport and highways impact of the proposed development in its entirety (i.e. site wide) and is therefore being submitted across a number of individual planning applications.
- 1.3 The remainder of the report is set out in the following structure:
- Section 2 provides a brief summary of key national and location transport planning policy.
 - Section 3 introduces the existing situation, including multi-modal accessibility, the local highway network and parking at the campus.
 - Section 4 details the proposed development, including arrangements for access, parking and servicing.
 - Section 5 considers the traffic impact of the component elements of the proposed development and as a whole, looking at the impact on key local junctions.
 - Section 6 proposes steps that will be taken to mitigate for any potential increase in traffic associated with the proposed development.
 - Section 7 provides a summary and conclusion of the main findings of the report.

Pre-Application Consultation

- 1.4 A pre-application consultation highlighted a number of issues relating to transport and highways. These have been addressed when preparing the revised Transport Assessment.
- 1.5 Additional information or clarifications based on pre-application comments have been highlighted throughout the report, as shown here.

2. Policy

People, Places, Futures – The Wales Spatial Plan

2.1 The Wales Spatial Plan is a high-level document that's purpose is:

- *Making sure decisions are taken with regard to their impact beyond sectoral or administrative boundaries and that the core values of sustainable development govern everything we do*
- *Setting the context for local and community planning*
- *influencing where we spend money through understanding the roles of and interactions between places*
- *providing a clear evidence base for the public, private and third (voluntary) sectors to develop policy and action.*

2.2 The Wales Spatial Plan defines sustainable development as:

...improving wellbeing and quality of life by integrating social, economic and environmental objectives in the context of more efficient use of natural resources.

2.3 In regard to travel and climate change, The Wales Spatial Plan supports the development of spatially targeted responses. This includes:

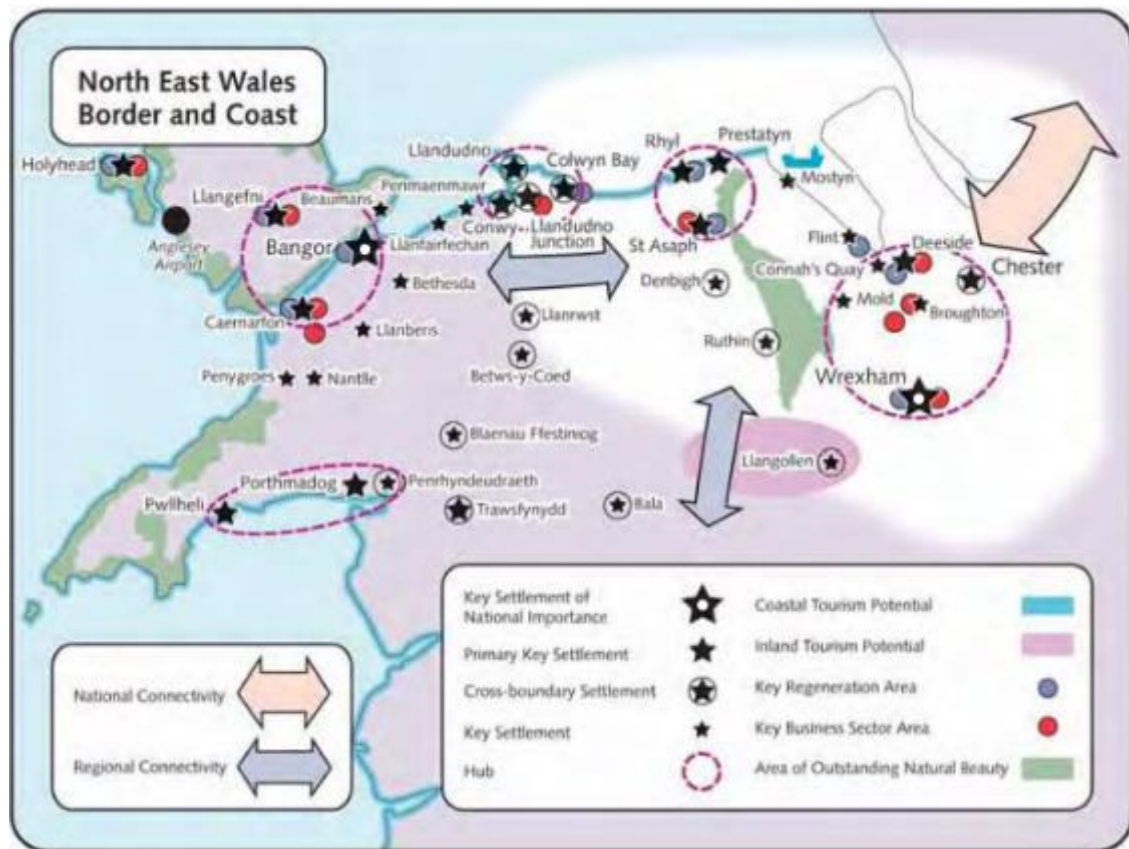
...reducing the need to travel by co-locating jobs, housing and services, for instance, and changing behaviour in favour of 'greener' modes of travel, such as car sharing, public transport, walking and cycling.

2.4 The Wales Spatial Plan also has a role in informing the development of Local Transport Plans. It does this by defining high-level growth and development areas and key movement corridors, such as that shown in Figure 2-1 below.

2.5 It can be seen that The Wales Spatial Plan defines Wrexham as a Key Settlement of National Importance, with emphasis later placed on:

Strengthening key hubs as a focus for investment in future employment, housing, retail, leisure and services.

Figure 2-1: North East Wales Border and Coast area strategy



Planning Policy Wales (Edition 9, November 2016)

- 2.6 Planning Policy Wales sets out the land use planning policies applicable to Wales, as devolved to the Welsh Government. Its overriding aim is to translate the Welsh Government's commitment to sustainable development into the planning system.
- 2.7 In regard to transport, planning policy intends to help to achieve the Welsh Government's objectives through:
- *reducing the need to travel, especially by private car, by locating development where there is good access by walking, cycling and public transport;*
 - *locating development near other related uses to encourage multi-purpose trips and reduce the length of journeys;*
 - *improving accessibility by walking, cycling and public transport;*
 - *ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people;*

- *promoting walking and cycling;*
- *supporting the provision of high quality public transport;*
- *supporting traffic management measures;*
- *promoting sustainable transport options for freight and commerce;*
- *supporting sustainable travel options in rural areas;*
- *supporting necessary infrastructure improvements; and*
- *ensuring that, as far as possible, transport infrastructure does not contribute to land take, urban sprawl or neighbourhood severance.*

2.8 Section 8.7 discusses development management and transport, setting out the following policy position for the determination of planning applications in regard to transport:

When determining a planning application for development that has transport implications, local planning authorities should take into account:

- *the impacts of the proposed development on travel demand;*
- *the level and nature of public transport provision;*
- *accessibility by a range of different transport modes;*
- *the opportunities to promote active travel journeys, and secure new and improved active travel routes and related facilities, in accordance with the provisions of the Active Travel (Wales) Act 2013; 124 Planning Policy Wales Edition 9 – November 2016 – Chapter 8 Transport*
- *the willingness of a developer to promote travel by walking, cycling or public transport, or to provide infrastructure or measures to manage traffic, to overcome transport objections to the proposed development (payment for such measures will not, however, justify granting planning permission to a development for which it would not otherwise be granted);*
- *the environmental impact of both transport infrastructure and the traffic generated¹² (with a particular emphasis on minimising the causes of climate change associated with transport); and*
- *the effects on the safety and convenience of other users of the transport network.*

Wrexham's Unitary Development Plan

2.9 Wrexham's Unitary Development Plan was adopted in February 2005. It was originally intended to expire in 2011, however consultation is ongoing for its replacement, therefore it continues to form the current statutory planning document for Wrexham County Borough Council.

2.10 The plan contains four key themes, which sit above the strategic policies:

- Sustainable development
- Countryside, Landscape and Biodiversity
- Settlement Growth
- Housing

2.11 Policy PS8 covers transport and states:

The transport network will be developed by providing an integrated range of travel options to and from principal residential, commercial, employment and education centres by making the best use of the existing road and rail network, including, where necessary, the provision of facilities for both passenger and freight interchange and by the encouragement of public transport, cycling and walking.

2.12 Policy T8 covers parking delivered as part of a development and states:

Development granted planning permission will be required to provide vehicle parking spaces either on site or nearby, in accordance with the Council's current parking standards. Special regard will be paid to the following factors, as appropriate: -

- a) the availability of public transport nearby,*
- b) proximity to public car parking,*
- c) proximity to local services and facilities,*
- d) road safety hazards and amenity considerations arising from on-street parking in the vicinity of the site.*

Where implementation difficulties arise in making parking provision on-site or nearby, the Council will require a developer to make financial contributions for measures to assist public transport, or walking and cycling as appropriate.

3. Existing Situation

Site Location

- 3.1 Wrexham Glyndŵr University's main campus at Plas Coch is located close to the centre of Wrexham and is highly accessible by multiple modes of transport.
- 3.2 Figure 3-1 demonstrates the campus's proximity to, Wrexham Town Centre, Wrexham General Railway Station, Plas Coch Retail Park and Wrexham Maelor Hospital. The smaller Regent Street Campus is also just 600m from the main campus.

Figure 3-1: Site location (with indicative boundary)



Source: Open Street Map Contributors

- 3.3 Figure 3-2 shows the existing campus map. The dispersed nature of the campus itself, as well as the numerous separate parking areas, should be noted. Arrows showing the vehicular access points have been added to the map below.

Figure 3-2: Campus map



Source: www.glyndwr.ac.uk

- 3.4 Access to the main campus is currently gained at three locations and have been referred to in the remainder of the report as follows:
- Entrance A – Mold Road – separate ‘in’ and ‘out’ footway crossings
 - Entrance B – Plas Coch Road – arm off retail park roundabout
 - Entrance C – Crispin Lane – simple priority junction
- 3.5 An additional access off Crispin Lane serves the adjacent student accommodation, as well as a small car park used by Wrexham Football Club, however there is no through access into the main campus.

Accessibility

Walking

- 3.6 Internally the Plas Coch campus is highly walkable with an extensive network of pedestrian routes connecting the cluster of teaching, academic and sports buildings and facilities. The campus is also highly permeable with pedestrian access to the surrounding neighbourhoods on three of its four sides.
- 3.7 Footways are provided along all of the roads surrounding the campus and provide direct connections to nearby destinations, a number of which are summarised in Table 3-1 below.

Table 3-1: Local destinations on foot

Destination	Distance from the centre of the campus	Walking time
Plas Coch Retail Park (incl. Sainsburys, Aldi, etc.)	300–700 m	4–8 minutes
Wrexham General Station	800 m	10 minutes
Regent Street Campus	1.0 km	12 minutes
Wrexham Maelor Hospital	1.2 km	16 minutes
Wrexham Bus Station	1.3 km	16 minutes

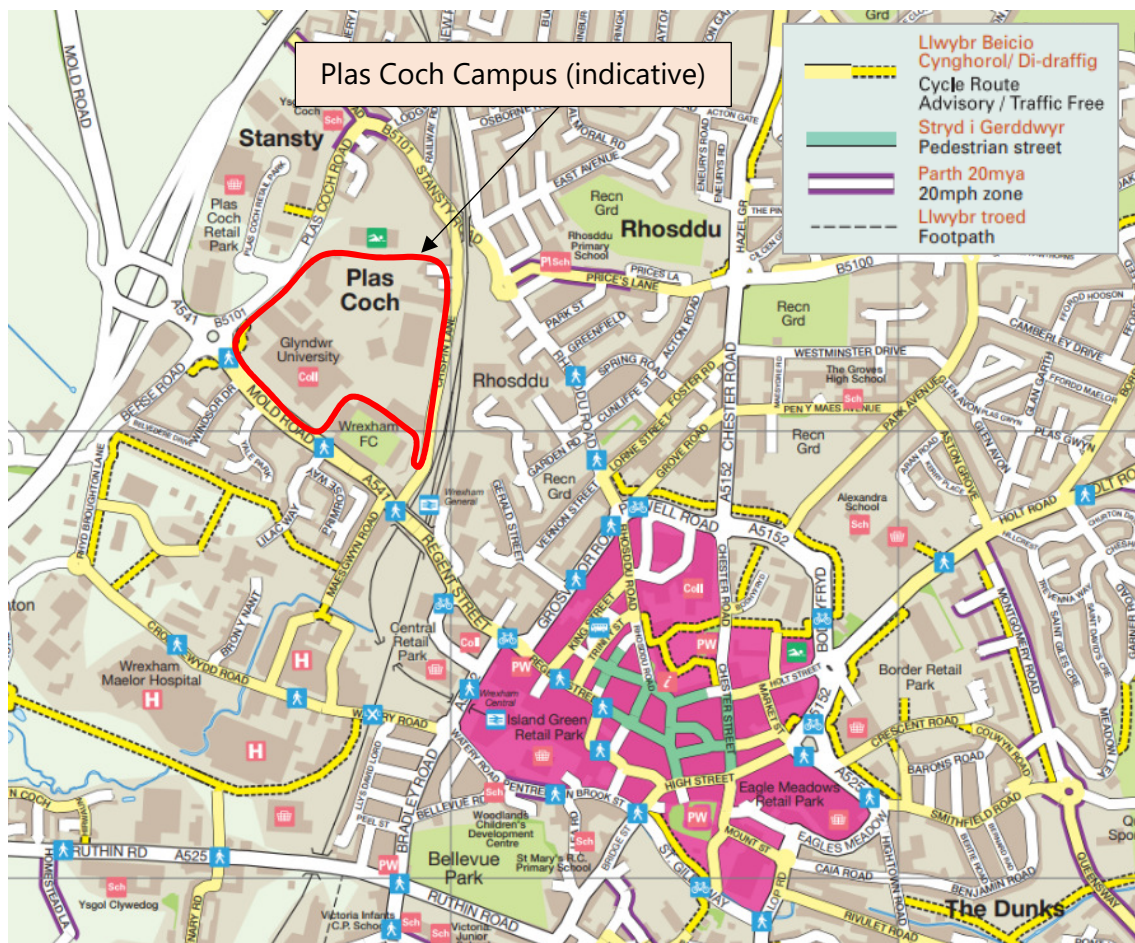
- 3.8 The campus is also only located a short distance from Wrexham town centre, which offers a full range of shops and amenities. The direct walking route along Mold Road and Regent Street means that all of the town centre is within 2km of centre of the

campus on foot, which is considered to be an acceptable walking distance based on CIHT's *Providing for Journeys on Foot* guidance. Existing pedestrian signage is located along the route for those unfamiliar with the area.

Cycling

- 3.9 Wrexham has a good network of cycle routes across the town, which comprise traffic-free paths, low-traffic streets and cycle lanes. Figure 3-3 shows an extract of the Wrexham cycle map, on which both Mold Road and Crispin Lane are highlighted as advisory routes for cyclists.

Figure 3-3: Wrexham cycle map



Source: Sustrans Cymru

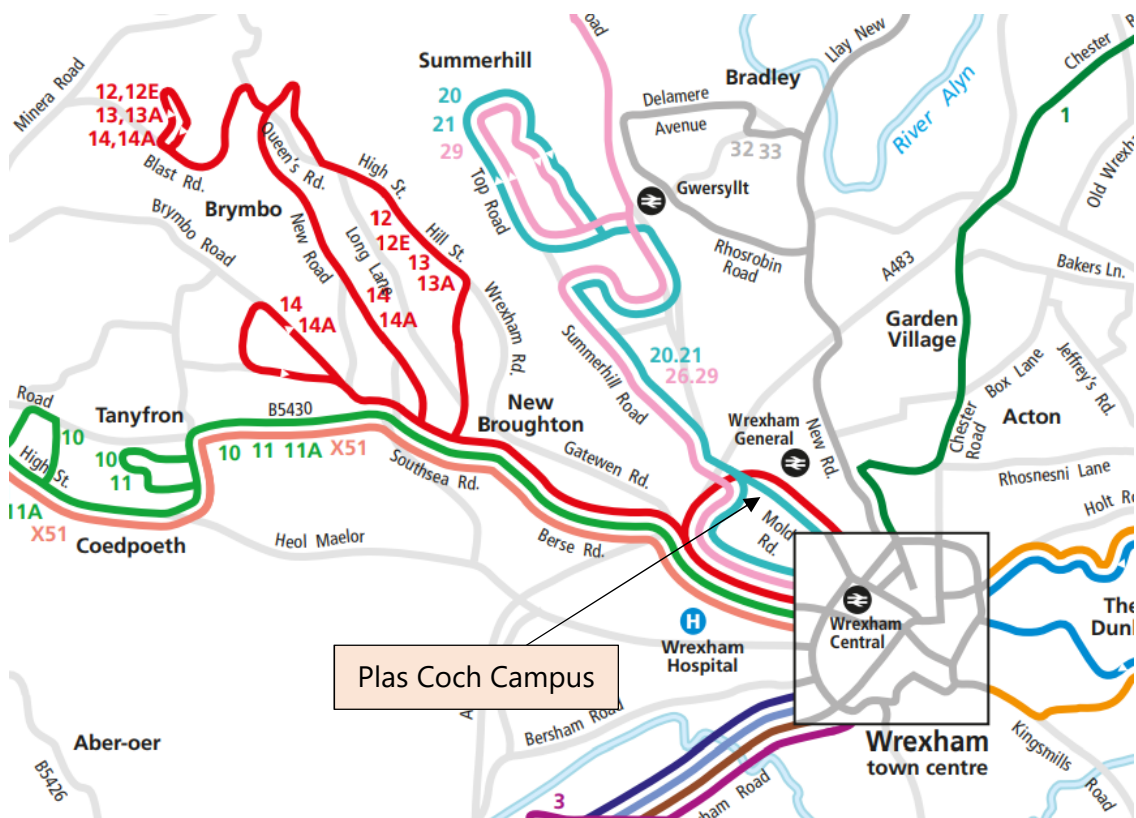
- 3.10 Segregated cycle facilities are also provided on the eastern side of the Mold Road / Plas Coch Road roundabout, which are particularly useful for cyclists travelling from the north-west of the campus towards Wrexham Maelor Hospital.

- 3.11 Within the campus, staff and student already benefit from access to secure cycle parking facilities in a number of locations, as well as access to lockers, showers and changing rooms provided in the sports centre.
- 3.12 The university's sports centre also offers a free cycle hire scheme, with students and staff able to borrow a bike, lock and safety equipment for up to 7 days at a time. This is particularly useful for those who want to try cycling to work before committing to buying a bicycle.

Bus

- 3.13 Figure 3-4 shows an extract of Arriva bus's network map for Wrexham. The Plas Coch campus is served by four major routes – 20, 21, 26 and 29 – which are summarised below.

Figure 3-4: Wrexham bus service map



Source: Arriva

Rail

- 3.14 Wrexham General Station is located between 300m and 700m from all parts of the Plas Coch Campus, equivalent to a walking duration of up to 9 minutes. The campus is therefore highly accessible by rail and presents an attractive alternative for those who would otherwise travel to the site by car.
- 3.15 Wrexham General is currently operated by Arriva Trains Wales but is also served by long-distance services operated by Virgin Trains West Coast on a limited basis. The network maps of both operators are shown below as Figure 3-5 and Figure 3-6 respectively

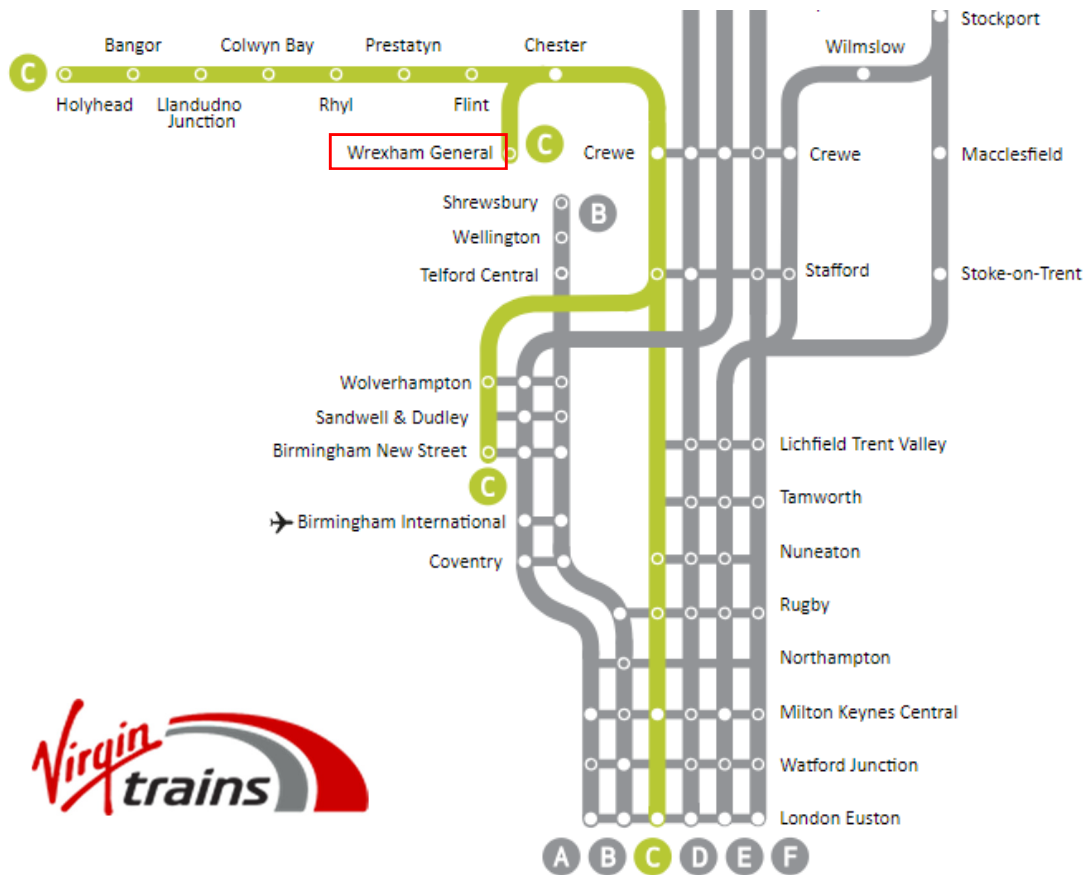
Figure 3-5: Arriva Trains Wales network map extract



Source: Arriva Trains Wales

- 3.16 Arriva Trains Wales operates two routes through Wrexham: Shrewsbury–Chester and Wrexham–Bidston (for connections to Liverpool). Direct services are also available to Holyhead, Birmingham International and Cardiff. Services run at hourly intervals during weekdays, with an enhanced service at peak hours.
- 3.17 Virgin Trains currently operate one direct service between Wrexham and London Euston every weekday morning with a return service in the evening.

Figure 3-6: Virgin Trains West Coast network map extract



Source: Virgin Trains

- 3.18 Wrexham is also set to benefit significantly from the recently-announced Wales and Borders franchise, which will commence in October 2018. This will include investment in new services, trains and stations, including the acceleration of a North Wales Metro, which will see improved connectivity between Wrexham, Chester and Liverpool – a key growth corridor.

Local Highway Network

Mold Road (A541)

- 3.19 Mold Road is part of a regional classified route – the A541 – between Wrexham and Mold. To the west of the A483, the road consists of a rural dual carriageway format, however in the vicinity of the campus and further east, the road becomes increasingly urban in nature.
- 3.20 In the vicinity of the campus the road transitions from two-lane dual carriageway to single carriageway under a 30mph speed limit, which is enforced by a fixed speed camera. Kerbed central reservations are provided to limit turning movements at some smaller junctions.
- 3.21 An advisory on-street cycle lane is provided in the westbound direction, with segregation provided at key locations, such as the roundabout with Plas Coch Road. A signalised pedestrian crossing is provided directly in front of the campus.
- 3.22 The existing accesses from the campus are via footway crossings, as shown in Figure 3-7, which suffer from poor visibility, however provide for all turning movements.

Figure 3-7: Mold Road



Plas Coch Road (B5101)

- 3.23 Plas Coch Road is a single carriageway with the main function as a distributor route, accessing the Plas Coch Retail Park, Stansty residential neighbourhood, Tennis Centre and Entrance B of the campus.
- 3.24 Figure 3-8 shows the southbound view from the Retail Park roundabout towards Mold Road. The Plas Coch Retail Park can be seen on the right-hand side of the image. It can be seen that the southbound carriageway widens to three lanes on approach to the Mold Road roundabout, with the predominant flow towards the A483 accommodated by two of the three lanes.

Figure 3-8: Plas Coch Road



Crispin Lane

- 3.25 Crispin Lane is an unclassified minor road, with limited direct frontage along much of its length. To the east, the road is bounded by the railway line and palisade fencing. A footway is provided along the western side of the carriageway.
- 3.26 Access to the university at Entrance C is taken via a wide footway crossing. A similar arrangement is in place to access the student accommodation and football club.
- 3.27 Waiting restrictions are in place along the eastern side of the carriageway, which retains sufficient width for two vehicles to pass when vehicles are parked along the western side. Where parking is available, it is currently uncontrolled by duration and uncharged.
- 3.28 On the approach to Mold Road, waiting restrictions are more extensive to maintain visibility and to offset the narrowing of the carriageway, as shown in Figure 3-9.

Figure 3-9: Crispin Lane



A483 Junction 5

- 3.29 Junction 5 of the A483 is a large partially-signalised gyratory, which is linked to the adjacent Mold Road / Plas Coch Road roundabout. The main gyratory currently consists of two circulatory lanes with signal controls on all major entry arms.
- 3.30 Junction 5 is one of four junctions of the A483 that serves Wrexham and is the closest to Wrexham Town Centre. It is also where the A451, from Mold, joins the A483.
- 3.31 Figure 3-10 shows the adjacent Plas Coch Road / Mold Road roundabout, which is a smaller roundabout, however is fully signalised and marked with spiral road markings. It is understood that the two sets of signals are linked and can alter their timings based on traffic flows.

Figure 3-10: Plas Coch Road / Mold Road roundabout



Highway safety

- 3.32 Figure 3-11 shows the location and severity of collisions recorded between 2015 and 2017, inclusive. It can be seen that the locations are generally spread across the network, however a higher concentration is observed around the A483 and adjacent roundabouts. This is to be expected with the higher levels of traffic that use these roads.
- 3.33 All recorded collisions within the study area shown below are classed as 'slight' or 'severe' in nature. Of the severe collisions, three involved motorcyclists, however none involved vulnerable road users, such as pedestrians, cyclists or children.

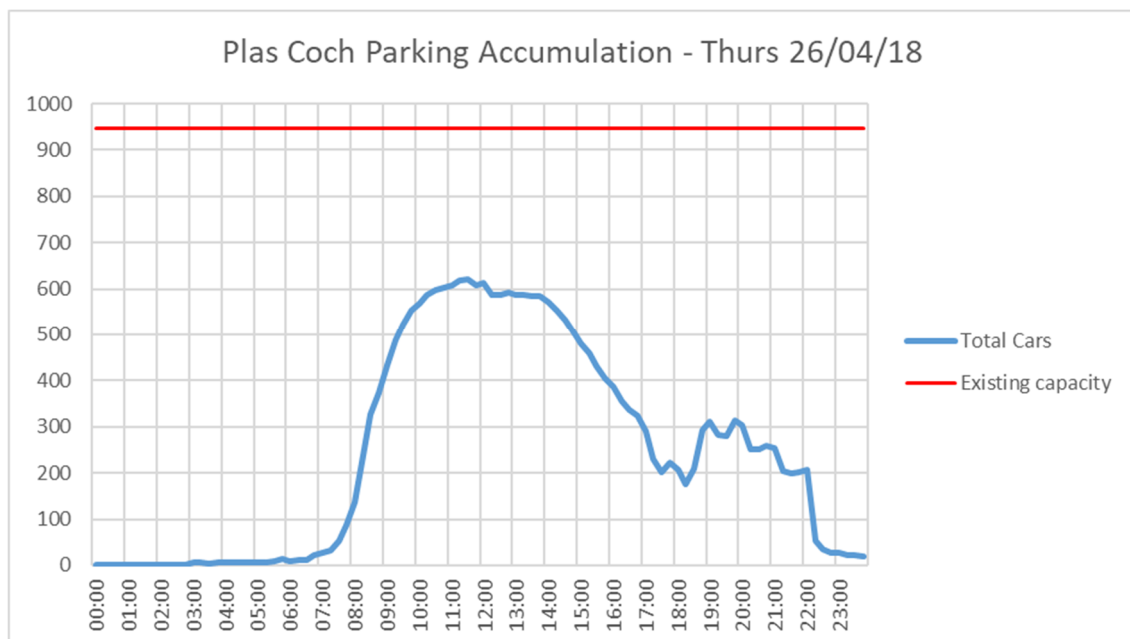
Figure 3-11: Collision locations (2015-2017)



Car Parking

- 3.34 The campus currently does not operate any form of parking control and its existing 947 spaces¹ are open for use by staff, students, visitors and general members of the public. Anecdotal evidence suggests use of the car parks by rail commuters, given the close proximity to Wrexham General station.
- 3.35 Wrexham Glyndŵr University are keen to implement new control to reduce abuse of their car parks and encourage a modal shift to sustainable travel behaviour where possible. It must, however, be remembered that many of the staff and students who attend the university live in rural areas without reliable transport alternatives. An appropriate level of on-site parking must therefore be retained to prevent overspill onto the local highway network.
- 3.36 Figure 3-12 shows the parking demand at the campus on a typical term-time day (26th April 2018). The data was obtained from ANPR data recorded at each entrance point, with the accumulation calculated at 15-minute intervals. All cars entering and exiting the campus have been included, with no discounting of short-stay durations.

Figure 3-12: Main campus parking accumulation



- 3.37 It can be seen that the peak period for arrivals is between 08:00 and 09:00 and, whilst the rate of departures is more gradual, the PM peak period is between 17:00 and 18:00.

¹ Excluding spaces associated with Crispin Lane student accommodation and Wrexham Football Club

- 3.38 Peak demand for parking at the campus was recorded at approximately 620 cars, falling to approximately 590 cars after midday. It should be noted that this is significantly lower than the 947 spaces that are currently available for use freely at the campus.
- 3.39 Reviewing Figure 3-2, it is apparent that, whilst the main car parks to the south and west of the campus may become heavily subscribed and therefore lead to the perception that the car parking is at capacity, the current layout provides numerous 'hidden' car parks that are not as well utilised.
- 3.40 On the day of the survey being conducted a performance at the university's theatre occurred during the evening, which reportedly attracted in the region of 450 guests. This is reflected in a demand of between 200 and 300 cars being maintained through the evening.
- 3.41 It is therefore concluded that there is an existing surplus of car parking at the campus for the current demand, which will only be increased as the result of implementation of a car park control scheme and campus-wide travel plan.

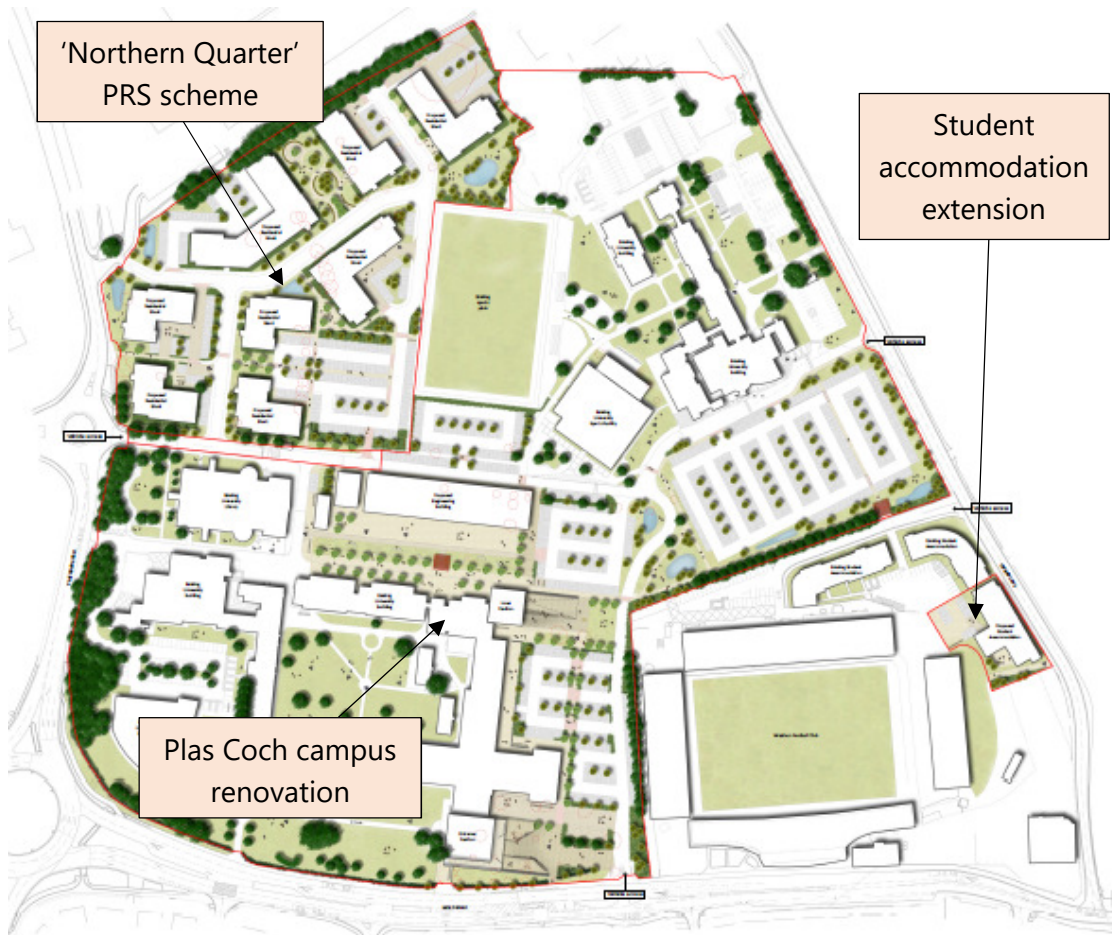
4. Proposed Development

4.1 The proposed development consists of:

- Replacement and renovation of a number of existing campus buildings, including the addition of a landmark foyer extension
- Extension of 197 beds to the existing student accommodation off Crispin Lane
- Construction of 410-apartment PRS residential development

4.2 Figure 4-1 shows the proposed masterplan for the Plas Coch campus. Annotated are the key developments which have been considered within the following assessment.

Figure 4-1: Proposed Plas Coch campus masterplan

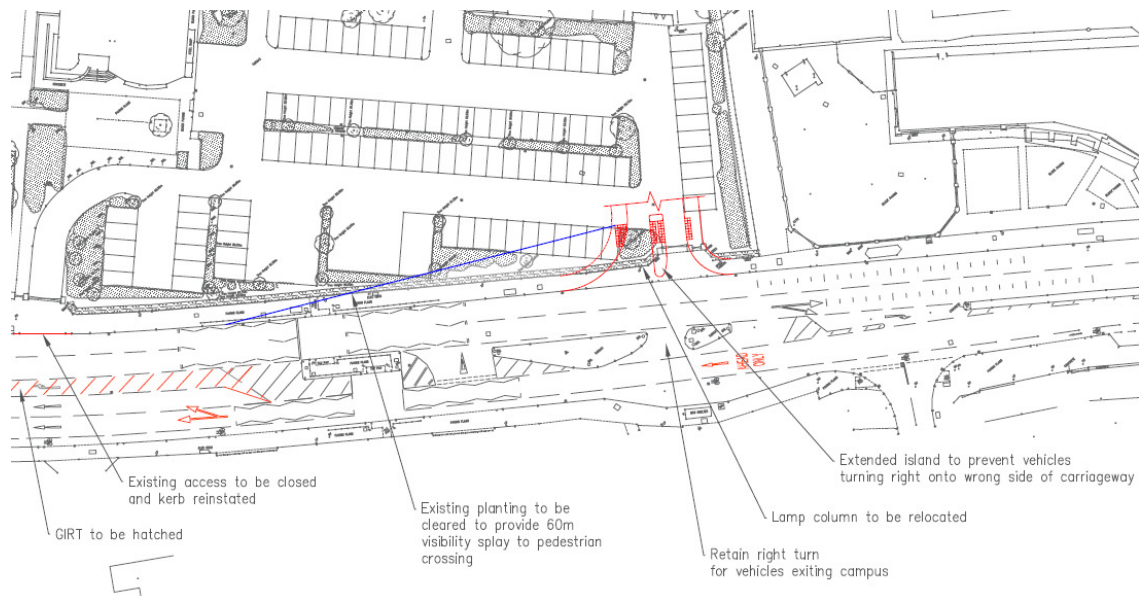


Source: TPM Landscape (3060-103C)

Access

- 4.3 Primary access to the campus is proposed to be taken off Mold Road at 'Entrance A', via an upgraded and consolidated single priority junction at the location of the existing vehicular exit.
- 4.4 In order to avoid the need to make significant changes to the central reservation and westbound carriageway, right turns into the campus will be prohibited, with the small number of vehicles approaching from the east expected to turn into Crispin Lane or make a U-turn at the subsequent roundabout. This is reflected in the flow diagrams included in Appendix D.
- 4.5 The upgraded junction, shown in Figure 4-2 and Appendix B, includes closure of the existing entrance, alongside the provision of a new priority junction with central splitter island and uncontrolled pedestrian crossing of the minor arm. It should be noted that the operation of the existing exit at this point is unaffected, with vehicles still able to turn both left and right out of the campus.

Figure 4-2: Proposed 'Entrance A' junction upgrade

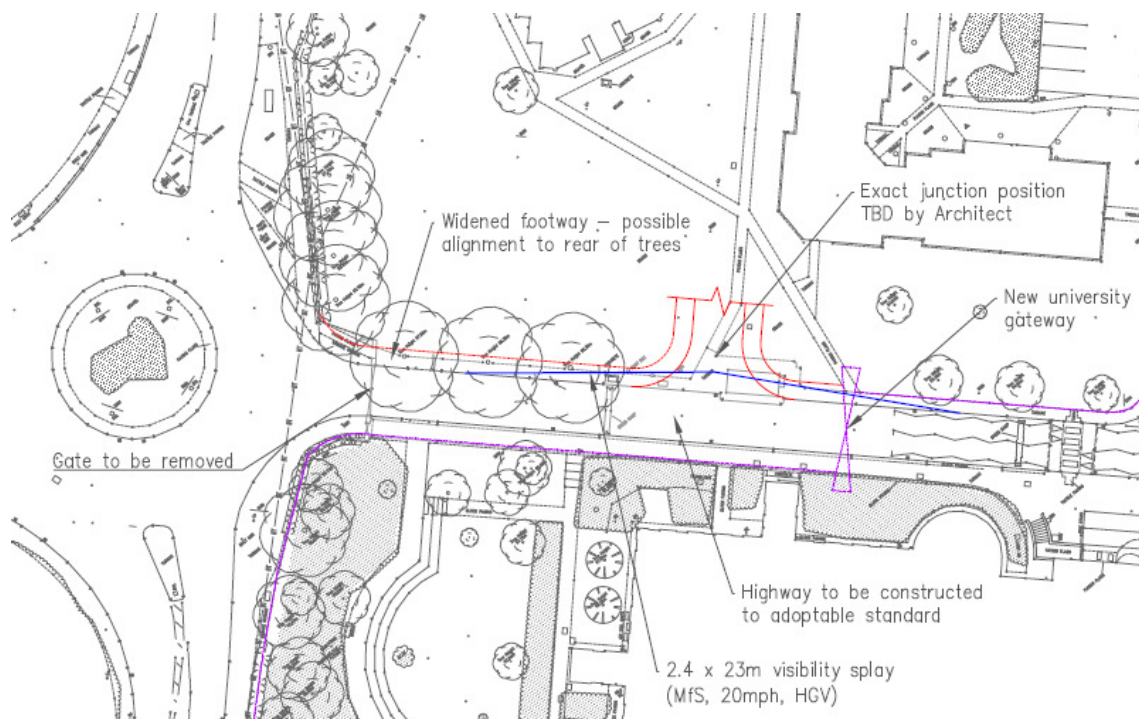


Source: ITP DWG-2627-101

- 4.6 Increased visibility of the junction, and in particular the pedestrian crossing, will be ensured by moving the existing hedge line back into the campus to maintain at least 60m visibility of the crossing for drivers approaching from the west. This is demonstrated on the proposed masterplan, shown in Figure 4-1 above.

- 4.7 It is proposed that 'Entrance B', off Plas Coch Road, will be restricted to use by the proposed PRS residential development only. Emergency and servicing access to the campus will be retained for infrequent and off-peak use; however, staff and student vehicles will be required to make use of the two remaining alternative entrances to access the campus. This is supported by existing signage, which directs drivers to use the Mold Road access.
- 4.8 By removing existing staff and student trips from this access, the net impact on the Retail Park roundabout is minimised once the trips associated with the PRS scheme are considered. Furthermore, changing the nature of the trips from predominantly arrivals (associated with the university) to departures (associated with the PRS scheme) in the AM peak, and vice versa in the PM peak, also has the effect of rebalancing flows at the roundabout, which is reflected in the junction assessment results presented in Section 5.

Figure 4-3: Proposed 'Entrance B' access arrangement



Source: ITP DWG-2627-101

- 4.9 The effect of rerouting the existing trips from Entrance B has been represented on flow diagrams presented in Appendix D. Vehicle trips have been rerouted to Entrances A and B based on their origin and subsequently included in any junction assessment calculations.

- 4.10 Entrance C off Crispin Lane will remain unaltered and will be available to staff and students accessing the campus from the north and east. Given that this access is already available for use by staff and students, it is not expected that its use will alter significantly from the present situation.
- 4.11 Access to the student accommodation of Crispin Lane will also remain unaltered with an extended area of car parking accessed from within the existing car park. Given the scale and nature of the proposals, it is not expected that the number of vehicles using this access will change noticeably.
- 4.12 In regard to the PRS apartments, a secondary emergency access has been identified adjacent to the neighbouring tennis centre. This existing point of access is currently gated, however, subject to confirmation of land rights, is proposed to be used at least as an emergency access point, but also for pedestrians and cyclists. If this cannot be achieved then emergency access can be gained via the university campus.

Car Parking

University

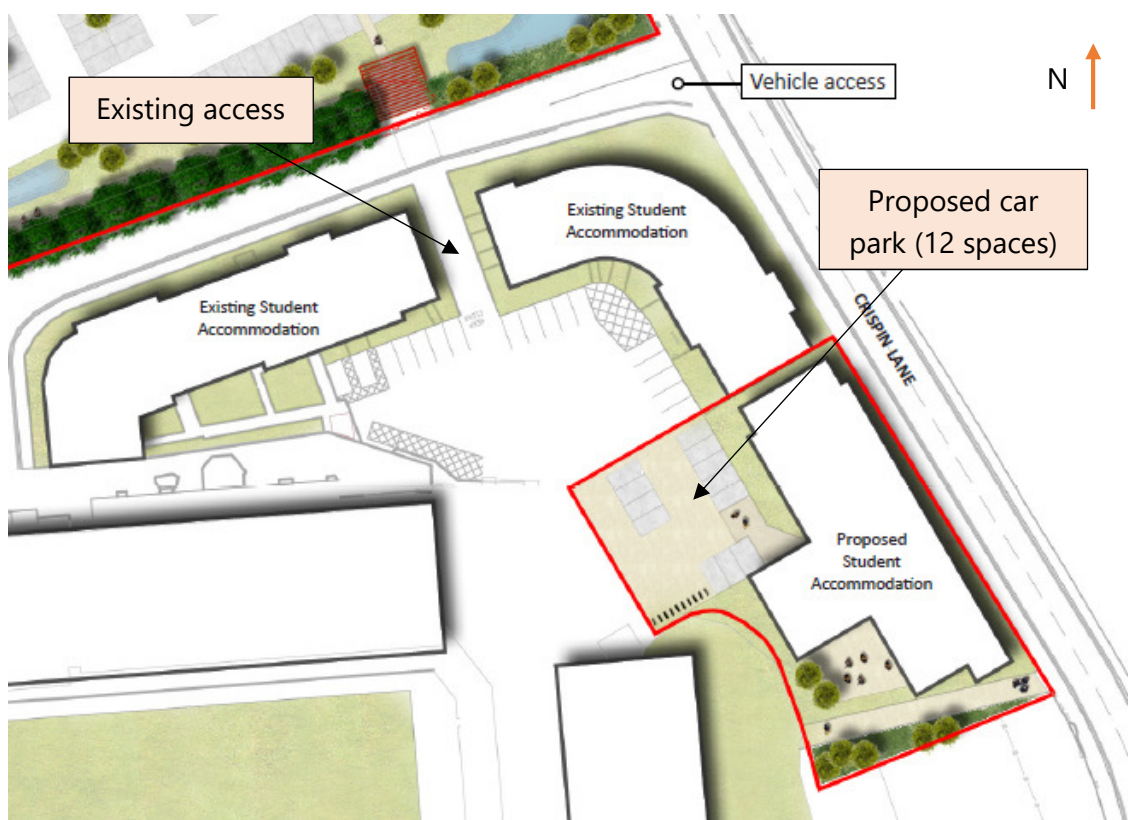
- 4.13 As demonstrated in Section 3, there is currently a surplus of car parking, when viewing the Plas Coch campus as a whole. It is therefore considered appropriate to review the future car parking provision as part of the proposed development masterplan.
- 4.14 It is proposed that once the land associated with the PRS scheme is removed from the campus, 568 spaces will be retained for use by the university, excluding the spaces allocated to the Crispin Lane student accommodation. This will be achieved by the redesign of identified car parks and the creation of new areas of parking where buildings are demolished, as is illustrated on the masterplan shown in Figure 4-1.
- 4.15 Without further intervention through parking controls or travel planning, this would accommodate the existing demand, albeit, without spare capacity, congestion during peak periods would be high as drivers searched for remaining free spaces. Once parking controls are introduced and the Travel Plan becomes active, we expect the existing parking demand to fall somewhat as a proportion of drivers switch to more sustainable modes or car share.
- 4.16 As a contingency, the masterplan shows the option to construct a new 314-space car park on the site of redundant sports pitches to the north of the football club. The construction of this car park will, however, be reserved as a last resort to avoid undermining the Travel Plan and to allow for future organic growth of the university

and its student numbers in line with its Campus 2025 strategy. This strategy confirms the university's intent to focus on sustainable travel behaviour in preference to encouraging additional trips by private car.

Student Accommodation

- 4.17 12 additional parking spaces (including one disabled bay) will be provided to the rear of the proposed student accommodation extension and will be accessed via the existing car park. The point of access from the local highway will remain unchanged.

Figure 4-4: Proposed student accommodation extension and car park



Source: TPM Landscape (3060-103C)

- 4.18 The current operator of the student accommodation operates a permit system for student car parking, with only those having applied being eligible to park onsite. This reduces the likelihood of students arriving with cars and assuming that they will be able to park on-site.
- 4.19 For many students, car ownership is not necessary, given the short walking distance to the university campus, town centre, railway station and retail parks. It is therefore considered that the proposed provision is therefore appropriate for the scale of proposed development and is in line with the existing level of provision.

- 4.20 Wrexham CBC's parking standards allow up to a maximum of 1 car space per 2 student bed spaces therefore the proposed provision is in line with adopted policy, when considering the highly-accessible nature of the location.
- 4.21 It should be noted that the area of car parking immediately to the west of the existing student accommodation is used by Wrexham Football Club and has therefore not been considered as part of this assessment.

PRS Apartments

- 4.22 Figure 4-5 shows the proposed layout of the PRS apartment scheme. The red line indicates the boundary between the PRS site and the retained university campus.
- 4.23 Car parking for the PRS apartments has been provided in line with Wrexham CBC's guidance, with 390 spaces provided for 410 apartments. It is considered that the proposed location and nature of the proposed accommodation makes it suitable for a reduced car parking provision, whilst retaining one allocated parking space per apartment for the majority.

Figure 4-5: Proposed PRS apartments and car parking



Source: tpm landscape (Drawing 103 22/05/18 DRAFT)

- 4.24 It is further noted that car ownership statistics from 2011 for the surrounding area revealed only 88 cars per 100 dwellings, meaning that the proposed level of car parking for the PRS apartments is in line with existing car ownership levels for the locality. Taking into account that surrounding properties are more likely to be houses and not apartments it is apparent that the proposed parking provision is robust.

Cycle Parking

- 4.25 Cycle parking will be provided in line with Wrexham CBC's adopted standards and be provided as a mix of secure and publicly-accessible stands across the campus and PRS apartments.
- 4.26 The university campus will be provided with 160 cycle parking spaces, including current provision. These will largely take the form of sheltered Sheffield stands, as shown in Figure 4-6. This meets Wrexham's standards of one cycle parking space per 250m² of gross floor area (40,100m²)

Figure 4-6: Existing cycle parking



- 4.27 The PRS development will be provided with one secure cycle parking per apartment. Given the scale of the development, this equates to 410 additional secure cycle parking

spaces. Whilst Wrexham CBC's standards suggest two spaces per apartment, this is a standard that applies across all type of residential dwelling and therefore does not reflect the nature and location of the proposed apartments.

- 4.28 The student accommodation will be provided with 40 additional cycle parking spaces, which will be located at ground floor level. This is in line with Wrexham CBC's standards which require one cycle parking space per five bed spaces.

Servicing

- 4.29 Servicing of the main university campus will remain unaltered with delivery and refuse vehicles able to enter the campus from any of the existing access points. It is understood that the majority of servicing takes place during off-peak periods, therefore the impact on the local highway network is negligible.
- 4.30 The student accommodation extension benefits from its proximity to a larger existing block and therefore it is not considered that the development will result in the need for any additional servicing trips, as deliveries and refuse collection will be combined with existing trips.
- 4.31 For the PRS apartments it is proposed that the primary internal road network be constructed to an adoptable standard. Subject to detailed design carried out as part of a reserved matters application, delivery and refuse vehicles will be able to enter the development freely, avoiding the need to cause disruption on Plas Coch Road. The internal layout will allow vehicles to enter and exit in a forward gear and gain close access to all apartment block and refuse stores.

5. Traffic Impact

University

- 5.1 The existing vehicle trip generation for the Plas Coch Campus has been obtained from a cordon survey that was carried out at the university on 26th April 2018. The number of vehicles using each access and the total have been shown in Table 5-1 below.

Table 5-1: University existing vehicle trip generation

Access	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
A – Mold Road	74	28	102	45	82	127
B – Plas Coch Road	245	41	286	69	118	187
C – Crispin Lane	58	26	84	41	44	85
Total	377	95	472	155	244	399

Source: ANPR survey MCC count (26/04/18)

- 5.2 A nominal 10% growth has been applied to account for planned organic growth in the university across both staff and students. It should be noted that this is likely to take place as a gradual process, rather than occurring immediately as a direct result of the proposed development.
- 5.3 The university currently underutilises its existing space, meaning that it could be argued that significant growth could be achieved without requiring redevelopment and therefore without requiring planning permission. The inclusion of university growth within our assessment therefore shows a will to assess a worst-case scenario.

Table 5-2: University proposed vehicle trip generation

Factor	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
Do nothing	377	95	472	155	244	399
+ 10 % growth	+38	+10	+47	+16	+24	+40
Proposed	415	105	519	171	268	439

Source: ANPR Survey (26/04/18)

- 5.4 With the planned introduction of a campus-wide travel plan and greater controls over the use of the car parking, it can be assumed that vehicle trip generation will fall, notwithstanding any proposed expansion of the staff and student intake. The figures shown in Table 5-2 are therefore considered to represent a worst-case scenario as no adjustment has been attempted to reflect the likely shift away from private car use towards more sustainable alternatives.
- 5.5 As an indication of the approximate mode share that can be expected, the information in Table 5-3 has been obtained from Bangor University's Travel Plan. Bangor is considered to present a similar situation – main campus located close to the town centre, with satellite campuses (including Wrexham).

Table 5-3: University mode split

Mode	Percentage
Walking	30%
Cycling	9%
Public Transport	8%
Motorcycle	1%
Car	41%
Car Share	12%

Source: Campus Travel Plan

(https://www.bangor.ac.uk/eo/environment/travel_and_transport.php.en)

- 5.6 University development vehicle trips have been distributed according to 2011 origin destination census data for respondents reporting to drive to work in the super output area of Wrexham 011 – in which the Plas Coch campus is located. Table 5-4 gives a summary of the main home locations by local authority. Full calculations can be found in Appendix D.
- 5.7 It can be seen that a significant number (21%) of drivers commute from areas within the built-up area of Wrexham and therefore are most susceptible to travel planning measures. Furthermore, the data states that nearly 200 workers drive to work in Wrexham 011 from their homes in the same super output area – a group that could easily be targeted for greater uptake of active travel.

Table 5-4: University trip distribution top home locations

Home location	Percentage
Wrexham (county)	44%
Wrexham (town ²)	21%
Flintshire	13%
Cheshire West and Chester	6%
Denbighshire	4%
Shropshire	4%
Wirral	1%
Other	8%

Source: 2011 Census WU03EW Wrexham 011

Student Accommodation

- 5.8 Using data obtained from the TRICS database, the following person trip rates, shown in Table 5-5, are presented to represent the proposed extension to the existing student accommodation.

Table 5-5: Student accommodation person trip rates

Factor	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
Per student bedroom	0.015	0.204	0.219	0.184	0.100	0.284

Source: TRICS v7.5.1

- 5.9 It can be seen in Table 5-6 that the proposed development will result in a modest increase in person trip generation.

Table 5-6: Student accommodation person trip generation

Factor	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
200 student bedrooms	3	41	44	37	20	57

² Defined as Wrexham 007-012

- 5.10 Using mode share data also obtained from the TRICS database, shown in Table 5-7, it can be seen that the proposed vehicle trip generation, shown in Table 5-8, is negligible. This makes sense when considering that the students living at the proposed accommodation will be just metres from the main university campus, as well as close to the town centre, railway station and retail parks.

Table 5-7: Student accommodation mode split

Mode	Percentage
Walking	80%
Cycling	1%
Public Transport	8%
Car	6%
Car Share	5%

Source: TRICS v7.5.1

Table 5-8: Student accommodation vehicle trip generation

Factor	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
200 student bedrooms	0	2	3	2	1	3

- 5.11 When considering that only a limited number of additional parking spaces will be provided for the student accommodation extension, and the site's proximity to the university, town centre, railway station and retail parks, it is clear that there will be little or no need for students to require a car on a day-to-day basis. Any car trips that are generated are also highly likely to take place in off-peak periods or be limited to the start and end of term periods.
- 5.12 It should also be considered that existing student accommodation is being removed from the northwest of the campus to make way for the proposed PRS apartments scheme, thereby offsetting any overall impact.
- 5.13 On the basis that the vehicle trip generation is negligible, the student accommodation extension has not been included in any further traffic impact assessment.

PRS Apartments

- 5.14 Using data from the TRICS database for similar privately-owned apartment schemes, the following person trip rates have been obtained, as shown in Table 5-9. It should be noted that, should the accommodation be classified as affordable, the trip rates are likely to be lower than those presented, based on generally lower car availability. Unadjusted trip rates have been used to ensure a robust assessment.

Table 5-9: PRS apartments person trip rates

Factor	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
Per apartment	0.143	0.655	0.798	0.641	0.220	0.861

Source: TRICS v7.5.1

- 5.15 Applying the person trip rates to 406 apartments, the following person trip generation is presented in Table 5-10.

Table 5-10: PRS apartments person trip generation

Factor	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
406 apartments	58	266	324	260	89	350

- 5.16 It should be noted that no discounting has been applied corresponding to the existing student accommodation that will be demolished to make way for the PRS apartments. As well as the fact that these existing uses are unlikely to generate a significant number of peak hour vehicle trips, any impact will be offset by the construction of the student accommodation extension off Crispin Lane.

- 5.17 Using 2011 method of journey to work census data for the built-up area of Wrexham, the following mode split has been determined in Table 5-11. This shows that whilst driving a car is the most likely choice, many do already choose to use active and sustainable modes.
- 5.18 Table 5-12 applies the mode split for 'Car Driver' to determine the proposed vehicle trip generation for the PRS apartments scheme. It can be seen that approximately 200 to 220 two-way vehicle trips are generated in the AM and PM peak, respectively. It should be noted that this is based on existing travel habits across Wrexham and does

not take into account the higher than average accessibility of the site, the travel behaviour of apartment residents or proposed travel planning measures.

Table 5-11: PRS apartments mode split

Mode	Percentage
Walking	15%
Cycling	2%
Public Transport	6%
Motorcycle	1%
Car Driver	63%
Car Passenger (incl. Taxi)	12%

Source: NOMIS QS701EW Method of travel to work (Wrexham 007-012 combined)

Table 5-12: PRS apartments vehicle trip generation

Factor	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
406 apartments	37	168	204	164	56	221

- 5.19 Few schemes of a similar scale are present in Wrexham; therefore, information is limited as to how the residents will choose to travel. Experience nationwide supports the assumption that trip rates will be significantly lower than for houses, since apartment dwellers tend to have reduced access to cars, either as a result of choice or lower income.
- 5.20 It is therefore considered that despite the potential addition of trips to an already pressurised highway network, the proposed development represents a highly sustainable location for 406 dwellings. The impact of the same number of dwellings spread across more suburban and rural settings would be much higher, with residents forced to use cars for journeys that can, in the proposed location, be made easily on foot, by bicycle or using a wider variety of public transport services.
- 5.21 The PRS apartment development vehicle trips have been distributed according to 2011 origin destination census data for respondents reporting to drive from homes in the

built-up area of Wrexham³. Table 5-4 gives a summary of the main workplace locations by local authority. Full calculations are included in Appendix D.

Table 5-13: University trip distribution top home locations

Home location	Percentage
Wrexham (county)	36%
Wrexham (town ⁴)	34%
Flintshire	9%
Cheshire West and Chester	8%
Shropshire	4%
Denbighshire	2%
Cheshire East	1%
Other	7%

Source: 2011 Census WU03EW Wrexham 011

- 5.22 It can be seen that despite the relatively compact nature of Wrexham, 34% of drivers travel to work within Wrexham over a short distance that would be easily achievable on foot or by bicycle by the majority of commuters. This suggests that travel planning measures could have a significant impact on how the future residents of the scheme travel.
- 5.23 Converting commuters who travel within the built-up area of Wrexham alone could reduce the potential vehicle trip generation of the proposed development by 70-75 trips in either peak period. It should again be noted that no adjustment has been made for travel planning outcomes, in order to present a robust assessment, despite a Framework Travel Plan being presented alongside this Transport Assessment.

³ Defined as Wrexham 007-012

⁴ Defined as Wrexham 007-012

Total Impact

- 5.24 Table 5-14 shows the total impact based on the calculations shown above. The total figures below have been used when assessing junction performance and have been distributed to the local highway network as shown on flow diagrams included in Appendix D.

Table 5-14: Total vehicle trip generation

Use	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
University (net impact ⁵)	38	10	47	16	24	40
Student accommodation	negligible impact					
PRS apartments	37	168	204	164	56	221
Total	75	178	253	180	80	260

Sensitivity Test

- 5.25 A sensitivity test scenario has also been assessed to represent a significantly increased level of growth from the university – 50% on top of 2017/18 levels. This is to determine the sensitivity of the local highway network and the resulting performance of key junctions.

Table 5-15: Total vehicle trip generation (sensitivity test)

Use	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
University (net impact ⁶)	188	48	236	78	122	200
Student accommodation	negligible impact					
PRS apartments	37	168	204	164	56	221
Total	225	216	441	242	178	420

⁵ 10% growth on 2017/18

⁶ 50% growth on 2017/18

Junction Assessment

Traffic surveys

- 5.26 Traffic surveys were carried out at all existing accesses to the university campus and at key locations on the surrounding local highway network on the week commencing 23th April 2018. These comprised a range of data collection techniques, including seven-day automatic traffic counts (ATCs), ANPR cordon surveys and manual classified counts. The results of the surveys have been included on flow diagrams in Appendix D.

Future year growth

- 5.27 Future year growth has been obtained using Temprow, which considers the planned local plan development for Wrexham and can forecast the increase in traffic associated with growth in residential and employment sites.
- 5.28 As requested by Wrexham CBC Highways, future year growth has been assessed up to 15-years post opening (2035). It should be noted that the emerging local plan extends to 2028 therefore there is significant uncertainty with presenting predicted impacts for this far in the future. Growth factors are based on current committed and allocated development, as well as current and predicted trends in travel behaviour, all of which are subject to change within this period.

Table 5-16: Growth factors

Year	AM Peak	PM Peak
2018 → 2020	1.0335	1.0316
2018 → 2035	1.2062	1.1991

Source: Temprow v7.2 (Wrexham 011; urban; minor roads)

- 5.29 In addition, the impact of the proposed residential development at Gatewen Road has also been indicated on the flow diagrams and considered when assessing junction performance. This development has been submitted for planning permission concurrently, therefore the impacts have been combined to present a full picture of the overall impact of the two developments.

Modelling scenarios

5.30 The following scenarios have been presented for both the AM (08:00-09:00) and PM (17:00-18:00) peak periods:

- 2018 Baseline
- 2020 Baseline
- 2020 Baseline + Development
- 2035 Baseline
- 2035 Baseline + Development

Results

Mold Road (A541) / Entrance A

5.31 Table 5-17 shows a summary of the PICADY assessment carried out at the proposed upgraded priority junction access to the campus from Mold Road, as shown previously in Figure 4-2. Results are shown for the minor arm only since the right turn movement from Mold Road has been removed.

5.32 It can be seen that the proposed junction operates well within capacity in both peak periods with minimal queuing and RFCs of less than 0.85.

Table 5-17: Entrance A junction assessment summary

Scenario	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2018 Baseline	<1	0.07	<1	0.22
2020 Baseline	<1	0.07	<1	0.23
2020 Baseline + Development	<1	0.20	2	0.61
2035 Baseline	<1	0.09	<1	0.29
2035 Baseline + Development	<1	0.23	2	0.71

5.33 Table 5-18 shows the results of applying a sensitivity test, as described in paragraph 5.25 (50% additional university growth). It can be seen that the proposed access continues to operate within capacity, albeit with some minor increase in queuing within the university campus which is not to detrimental to the free flow on Mold Road

(A541). This has the effect of metering vehicles entering the local highway network and helps to limit the impact of development trips on adjacent junctions, therefore can be seen as a positive capacity restraint.

Table 5-18: Entrance A junction assessment sensitivity test summary

Scenario	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline + Development (Sensitivity Test)	<1	0.33	10	0.97

Plas Coch Road (B5101) / Entrance B

- 5.34 Table 5-19 shows a summary of the ARCADY assessment carried out at the existing Plas Coch Road access roundabout.
- 5.35 It can be seen that the proposed junction operates well within capacity in the AM peak period with minimal queuing and RFCs of less than 0.85. When viewing the development scenarios, the result of rebalancing the flows on the roundabout can be observed with slight improvements to the RFCs made on Plas Coch Rd (N) and the Retail Park arm.
- 5.36 In the PM peak period it can be seen that the junction is already operating with higher RFCs, however well below the 0.85 threshold that would indicate the junction was approaching capacity. The proposed development has the effect of elevating the RFCs and causing a slight increase in queuing (up to one additional vehicle on each arm), however all arms continue to operate well within capacity.

Table 5-19: Entrance B junction assessment summary

Arm	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2018 Baseline				
Plas Coch Rd (N)	<1	0.32	<1	0.46
Entrance B	<1	0.07	<1	0.39
Plas Coch Rd (S)	<1	0.41	1	0.57
Retail Park	<1	0.16	<1	0.42

Arm	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2020 Baseline				
Plas Coch Rd (N)	<1	0.34	<1	0.48
Entrance B	<1	0.07	<1	0.42
Plas Coch Rd (S)	<1	0.43	1	0.58
Retail Park	<1	0.17	<1	0.43
2020 Baseline + Development				
Plas Coch Rd (N)	<1	0.32	1	0.56
Entrance B	<1	0.31	<1	0.43
Plas Coch Rd (S)	<1	0.44	2	0.64
Retail Park	<1	0.16	<1	0.45
2035 Baseline				
Plas Coch Rd (N)	<1	0.41	2	0.61
Entrance B	<1	0.09	2	0.72
Plas Coch Rd (S)	1	0.50	2	0.69
Retail Park	<1	0.20	1	0.51
2035 Baseline + Development				
Plas Coch Rd (N)	<1	0.38	2	0.70
Entrance B	<1	0.35	3	0.75
Plas Coch Rd (S)	1	0.51	3	0.74
Retail Park	<1	0.20	1	0.53

5.37 Table 5-20 shows the results of applying a sensitivity test, as described in paragraph 5.25. Since Entrance B will no longer be used by staff and students, the effect of increasing the growth of the university has a negligible impact on this junction.

Table 5-20: Entrance B junction assessment sensitivity test summary

Scenario	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline + Development (Sensitivity Test)				
Plas Coch Rd (N)	<1	0.38	2	0.70
Entrance B	<1	0.35	3	0.75
Plas Coch Rd (S)	1	0.51	3	0.74
Retail Park	<1	0.20	1	0.53

Crispin Lane / Entrance C

- 5.38 Table 5-21 shows a summary of the PICADY assessment carried out at the existing Crispin Lane access priority junction. It can be seen that the junction continues to operate within capacity in all AM and PM peak scenarios.

Table 5-21: Entrance C junction assessment summary

Arm	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2018 Baseline				
Entrance C	<1	0.05	<1	0.09
Crispin Lane (N)	<1	0.06	<1	0.04
2020 Baseline				
Entrance C	<1	0.06	<1	0.10
Crispin Lane (N)	<1	0.06	<1	0.04
2020 Baseline + Development				
Entrance C	<1	0.06	<1	0.12
Crispin Lane (N)	<1	0.15	<1	0.05
2035 Baseline				
Entrance C	<1	0.07	<1	0.11
Crispin Lane (N)	<1	0.07	<1	0.04

Arm	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline + Development				
Entrance C	<1	0.07	<1	0.14
Crispin Lane (N)	<1	0.17	<1	0.05

- 5.39 Table 5-22 shows the results of applying a sensitivity test, as described in paragraph 5.25. It can be seen that the junction continues to operate well within capacity.

Table 5-22: Entrance C junction assessment sensitivity test summary

Scenario	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline + Development (Sensitivity Test)				
Entrance C	<1	0.08	<1	0.15
Crispin Lane (N)	<1	0.20	<1	0.06

Mold Road (A541) / Crispin Lane

- 5.40 Table 5-23 shows a summary of the PICADY assessment carried out at the amended Mold Road / Crispin Lane priority junction, as described in paragraph 6.4. Whilst all scenarios are tested using the proposed junction geometries, all baseline scenarios retain the existing number of right-turns from Crispin Lane. The 'with development' scenarios therefore also show the impact of restricting the right turn movement.
- 5.41 It can be seen that the junction continues to operate well within capacity in all 2020 AM and PM peak scenarios. There is some increase in queuing in the PM peak, as a combined result of background traffic growth and development trips, however this is not considered to be a severe impact. As expected with significant growth in background traffic levels to 2035, the junction approaches capacity with greater levels of queuing in the peak periods. In reality this is likely to result in rerouting of trips.
- 5.42 The restriction of right-turns out of Crispin Lane has clear capacity benefits with the RFCs reducing on this arm in both development scenarios. There is also likely to be a positive safety benefit also with the removal of a movement with limited visibility currently.

Table 5-23: Mold Road / Crispin Lane junction assessment summary

Arm	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2018 Baseline				
Crispin Lane	<1	0.26	<1	0.29
Mold Road (E)	<1	0.16	2	0.38
2020 Baseline				
Crispin Lane	<1	0.28	<1	0.31
Mold Road (E)	<1	0.17	2	0.42
2020 Baseline + Development				
Crispin Lane	<1	0.26	<1	0.21
Mold Road (E)	<1	0.25	3	0.51
2025 Baseline				
Crispin Lane	<1	0.37	<1	0.51
Mold Road (E)	<1	0.23	9	0.77
2025 Baseline + Development				
Crispin Lane	<1	0.34	<1	0.31
Mold Road (E)	1	0.33	28	0.96

5.43 Table 5-24 shows the results of applying a sensitivity test, as described in paragraph 5.25. It can be seen that the junction exceeds capacity in the PM peak. With queuing increasing on the Mold Road (E) arm, there is likely to be interaction with the nearby signalised junction. As stated above, in reality this is likely to result in some level of reouting, particularly for vehicles seeking to emerge from Crispin Lane.

5.44 As a minor road, additional queuing on Crispin Lane does not necessarily have an impact on the wider highway network. As congestion increases, the proposals to restrict right turns from Crispin Lane, has benefits for traffic proceeding away from the town centre.

Table 5-24: Entrance B junction assessment sensitivity test summary

Scenario	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline + Development (Sensitivity Test)				
Crispin Lane	<1	0.34	<1	0.35
Mold Road (E)	2	0.47	46	1.01

Crispin Lane / Stansty Road

5.45 Table 5-21 shows a summary of the PICADY assessment carried out at the existing Crispin Lane / Stansty Road priority junction. It can be seen that the junction continues to operate within capacity in all AM and PM peak scenarios, with little or no queuing experienced.

Table 5-25: Crispin Lane / Stansty Road junction assessment summary

Arm	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2018 Baseline				
Crispin Lane	<1	0.11	<1	0.20
Stansty Road (W)	<1	0.13	<1	0.06
2020 Baseline				
Crispin Lane	<1	0.11	<1	0.21
Stansty Road (W)	<1	0.13	<1	0.06
2020 Baseline + Development				
Crispin Lane	<1	0.12	<1	0.25
Stansty Road (W)	<1	0.14	<1	0.06
2035 Baseline				
Crispin Lane	<1	0.14	<1	0.26
Stansty Road (W)	<1	0.17	<1	0.08
2035 Baseline + Development				

Arm	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Crispin Lane	<1	0.15	<1	0.32
Stansty Road (W)	<1	0.18	<1	0.08

5.46 Table 5-22 shows the results of applying a sensitivity test, as described in paragraph 5.25. It can be seen that the junction continues to operate well within capacity.

Table 5-26: Crispin Lane / Stansty Road junction assessment sensitivity test summary

Scenario	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline + Development (Sensitivity Test)				
Crispin Lane	<1	0.16	<1	0.35
Stansty Road (W)	<1	0.18	<1	0.08

Stansty Road / New Road

5.47 Table 5-21 shows a summary of the PICADY assessment carried out at the existing Stansty Road / New Road priority junction. It can be seen that the junction continues to operate within capacity in all AM and PM peak scenarios until the 2035 with development scenario, which sees significant congestion in PM peak. This is largely a result of the increase in background traffic rather than the development impact.

Table 5-27: Stansty Road / New Road junction assessment summary

Arm	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2018 Baseline				
Stansty Road (left turn)	1	0.53	2	0.65
Stansty Road (right turn)	<1	0.48	<1	0.45
New Road (N)	1	0.46	2	0.58

Arm	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2020 Baseline				
Stansty Road (left turn)	1	0.56	2	0.68
Stansty Road (right turn)	1	0.51	<1	0.48
New Road (N)	1	0.48	2	0.60
2020 Baseline + Development				
Stansty Road (left turn)	2	0.62	2	0.72
Stansty Road (right turn)	2	0.64	2	0.56
New Road (N)	1	0.49	2	0.64
2035 Baseline				
Stansty Road (left turn)	2	0.71	6	0.89
Stansty Road (right turn)	2	0.68	3	0.76
New Road (N)	2	0.57	4	0.74
2035 Baseline + Development				
Stansty Road (left turn)	4	0.84	11	0.97
Stansty Road (right turn)	5	0.85	6	0.95
New Road (N)	2	0.58	5	0.79

5.48 Table 5-22 shows the results of applying a sensitivity test, as described in paragraph 5.25. It can be seen that the junction is predicted to operate at capacity, which in reality is likely to lead to drivers rerouting or considering alternative travel modes.

Table 5-28: Stansty Road / New Road junction assessment sensitivity test summary

Scenario	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline + Development (Sensitivity Test)				
Stansty Road (left turn)	5	0.87	14	1.00

Scenario	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Stansty Road (right turn)	5	0.88	7	0.97
New Road (N)	2	0.60	6	0.80

Construction Traffic Management Plan

5.49 It is considered that the provision of a Construction Traffic Management Plan would be advantageous in limiting the impact of the development on the local highway network during construction phases. It is considered that this could be conditioned against any planning permission to ensure that it is in place prior to the commencement of any works.

6. Mitigation

Framework Travel Plan

- 6.1 A Framework Travel Plan has been produced alongside this Transport Assessment, to act as an umbrella document that encourages joined up thinking when seeking to reduce the transport impact of the proposed development.
- 6.2 This contains an action plan with roles and responsibilities, setting out steps that will be taken to reduce private car use and encourage the take-up of active and public transport modes. It is considered most efficient and effective to have a single document that summarises this for all three key elements of the proposed development at this stage.
- 6.3 If the Framework Travel Plan is successful, it will achieve a significant reduction in the number of car-based trips to what has been robustly assessed in the sections above. This will allow space that would otherwise have been used as car parking to be made available for alternative uses and retain additional capacity on the local highway network for others.

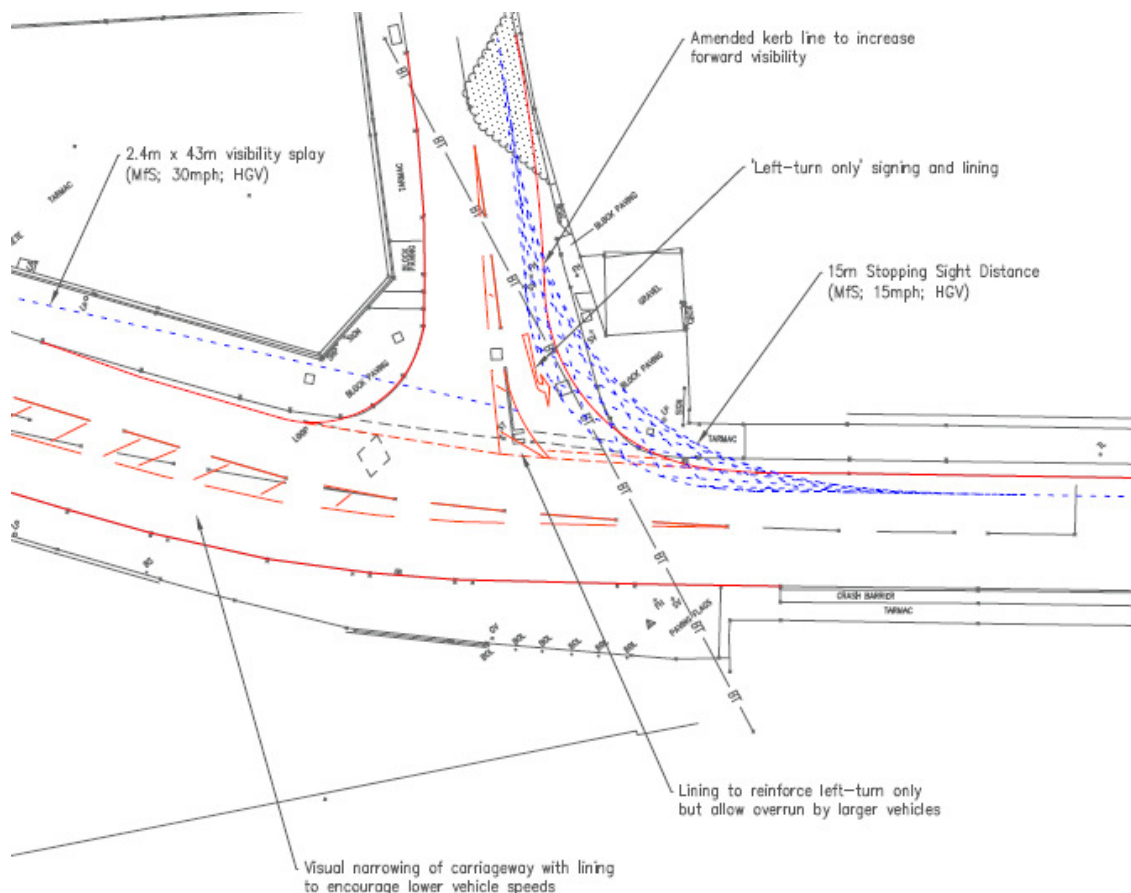
Mold Road / Crispin Lane

- 6.4 As mentioned previously, it is proposed alter the current configuration of the junction of Mold Road and Crispin Lane by removing the infrequently-used right turn from Crispin Lane. This has been proposed in order to address existing safety concerns which are exacerbated by the junction's close proximity to the railway bridge.
- 6.5 A preliminary scheme was previously developed to support the full development of the third-party-owned Wrexham Village student accommodation scheme. It is understood that since this permission was never fully built-out that the junction improvements were not delivered.
- 6.6 Upon reviewing the proposed improvements, it has become clear that the previous scheme relied on land outside of the current applicant's control and is therefore undeliverable. A revised scheme has therefore been developed that make use of land within the current highway boundary.
- 6.7 The scheme, shown in Figure 6-1, consists primarily of banning right-turn movements out of Crispin Lane, supported by amendments to the existing kerb lines and road markings. This removes the only movement at the junction which suffers from poor

visibility as a result of the nearby railway bridge and therefore reduces the likelihood of vehicle conflict.

- 6.8 Amendments to the kerb line also narrow the distance required for pedestrians to cross on Crispin Lane and provide greater visibility of vehicles approaching the junction on Crispin Lane. Due to limited carriageway width it has not been possible to introduce kerbed refuges at this location.
- 6.9 Traffic surveys completed in April 2018 provide evidence that the right turn movement at this junction is not heavily used and therefore removing it will not require a significant rerouting of traffic. As demonstrated in the previous section, removing this turn also has capacity benefits for the junction, with vehicles finding it easier to turn left than right out of Crispin Lane.

Figure 6-1: Proposed Mold Road / Crispin Lane junction improvements



7. Conclusion

- 7.1 Integrated Transport Planning Ltd has been commissioned by Wrexham Glyndŵr University to provide transport planning consultancy services to support redevelopment of the main Plas Coch Campus. This includes the redevelopment of a number of teaching and academic buildings, the extension of a student accommodation block and the construction of new PRS apartments.
- 7.2 This Transport Assessment has been produced to present the transport and highways impact of the proposed development in its entirety and is therefore being submitted across a number of individual planning applications.
- 7.3 The existing campus benefits from its highly accessible location, close to a wide range and number of amenities and transport options. This includes extensive shopping provision at the adjacent retail parks and frequent public transport via bus or rail from the nearby Wrexham General station.
- 7.4 Whilst it is recognised that there are existing issues regarding congestion on the local highway network, these are largely constrained to the PM peak period and originate from existing traffic rather than development trips. Assessment has shown that the proposed development does not have a severe impact on the highway network immediately surrounding it.
- 7.5 Proposed mitigation including the accompanying Framework Travel Plan and preliminary scheme for junction improvements at Mold Road / Crispin Lane, will ensure that the actual impact of the proposed development is reduced and will help to bring benefits to existing road users, including by offering them alternative ways to travel. It must be remembered that the existing university is already a significant trip generator and many of the steps being taken are seeking to encourage more sustainable travel behaviour across both the existing and proposed development, thereby having an overall positive impact.
- 7.6 Overall it is concluded that the proposed development represents an excellent opportunity to deliver sustainable development within Wrexham, providing new mixed-use sites, reducing the need to travel and providing new housing education and employment prospects on a brownfield site, therefore is in line with planning policy for Wales and Wrexham.



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