Transportation Planning : Infrastructure Design

Transport Assessment

Proposed Residential Development

Lower Berse Farm, Wrexham

Prepared for Redrow Homes North West

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EXECUTIVE SUMMARY

Overview

ES1 SCP have been appointed by Redrow Homes North West to provide specialist transport planning and engineering advice in support of a proposed residential development on land at Lower Berse Farm south of Ruthin Road, Wrexham. The proposed development will provide up to 1450 dwellings. The residual land which forms part of the allocation but is not within the Applicant's control, has capacity for up to 70 dwellings. Hence, a total of 1520 dwellings has been considered in these assessments.

ES2 SCP submitted a Transport Assessment (TA) to Wrexham County Borough Council (WCBC) on 6th February 2024. WCBC have provided initial comments on this TA. The Welsh Government (WG) and WCBC have also provided broad verbal comments in a series of meetings.

ES3 This Transport Assessment report should be read in conjunction with the "*Technical Report – Sustainable Transport Improvements and Potential Modal Shift".*

Transport Policy & Implications for the Development

ES4 In discussions the Welsh Government has clarified the revised approach with regard to highway capacity enhancement schemes for new developments. A 2-step approach is required, whereby a strategy to achieve modal shift to sustainable modes (eg. public transport, walking, cycling) is considered first. Once this has been assessed and quantified, highway capacity improvements can be considered to mitigate the residual vehicular trips. Any highway capacity improvements should comprise the minimum possible scheme and should not create additional capacity for general traffic.

ES5 The "*Technical Report – Sustainable Transport Improvements and Potential Modal Shift*" was prepared specifically to address this requirement. It considers how the sustainable transport measures proposed in conjunction with the Lower Berse Farm development might fit into Wrexham's own plans for development of its sustainable transport infrastructure and services. The Technical Report was discussed at meetings with WCBC and the WG in February and May 2024. Written feedback was received from WG endorsing the overall approach and the modal shift estimated as a direct result of sustainable interventions proposed in conjunction with the Lower Berse Farm development. No written feedback was received from WCBC.

Public Transport Improvements

ES6 A new bus service (Service A) operating north from the site via Maelor Hospital, Central Station and Wrexham Bus Station is proposed in conjunction with the development.

Active Travel Improvements

ES7 A comprehensive set of active travel measures, comprising both external and internal pedestrian and cycle provision, is proposed in conjunction with the development.

Modal Shift Potential

ES8 The "Technical Report – Sustainable Transport Improvements and Potential Modal Shift" provides a body of evidence to support the contention that the package of sustainable transport measures proposed in conjunction with the Lower Berse Farm development might deliver of meaningful modal shift. The available evidence suggests that a 7% reduction in private car modal share is achievable solely due to the measures proposed in conjunction with the development. Wider sustainable improvement measures across Wrexham may result in a larger modal shift.

Vehicle Trip Generation Rates

ES9 The TRICS trip generation rate database was used to derive vehicle trip generation rates with a housing mix comparable to that expected at the Lower Berse Farm development. An alternative set of vehicle trip generation rates were derived assuming the implementation of the proposed package of sustainable transport measures. The highway capacity situation was assessed under both scenarios.

Development Access

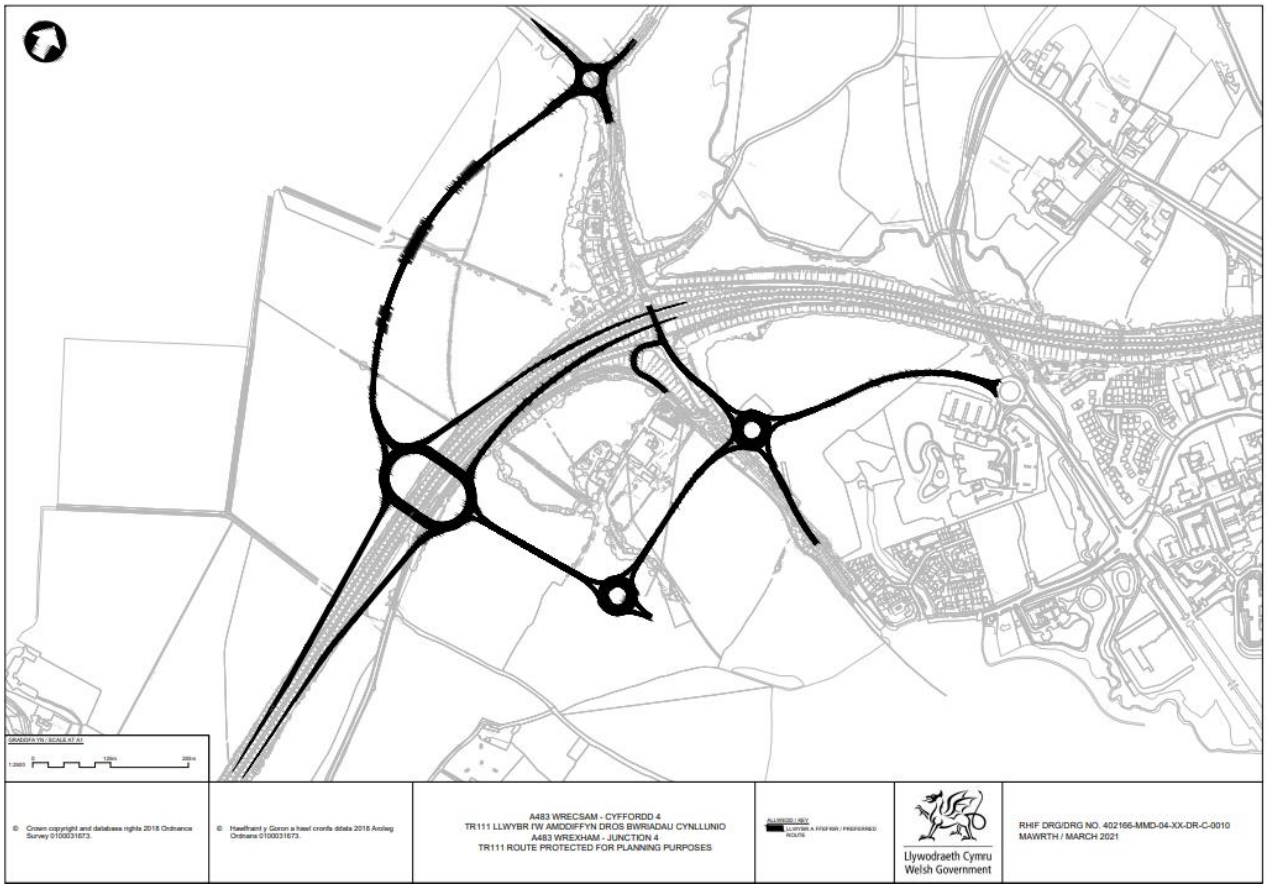
ES10 The proposed vehicular access arrangements for the development comprise four new access junctions; two on the A525 Ruthin Road and two on the B5099 Bersham Road. Access to the site will also be possible from the B5098 Berse Lane.

Potential Closure of Berse Lane and Homestead Lane

ES11 The creation of new north-south roads through the development provides an opportunity for Berse Lane and Homestead Lane to be downgraded to access only / active travel routes. However, WCBC have not provided any endorsement of this proposal at this stage.

A483 Junction 4

ES12 Significant road network improvements have previously been proposed by Welsh Government at A483 Junction 4. These comprise a large, new grade-separated roundabout and associated link roads. The status of this scheme is currently unclear. WG accepted the recommendations of the Roads Review Panel to drop the scheme in February 2023. However, in discussions, WG disclosed that the safeguarded route within the development site for the A483 Junction 4 improvements has never been withdrawn. The diagram extract below shows the "*A483 Wrexham-Junction 4 TR111 Route Protected for Planning Purposes*". The safeguarded route has been retained in this application. At the time of writing, neither WG nor WCBC have provided any clarity on the status of the proposed scheme.



Western Gateway

ES13 Wrexham's adopted Local Development Plan (LDP)) includes the Western Gateway Employment site, on the north side of Ruthin Road, and an associated link road running north-west from the A525 to Croesnewydd Road. The employment site has been allocated for over 20 years with no unimplemented planning permission in place, and no proposals to bring the link road forward. Accordingly, neither the employment site nor the associated link road have been

included in this assessment. Discussions held with WCBC in January 2024 supported this position. Notwithstanding the above, the development proposals set out in this report do not prejudice the construction of the link road, or the associated junction with the A525 Ruthin Road, and the site access arrangements for the development proposals have been specifically designed to take account of the indicative access for the Western Gateway site (*as per the diagram extract above*).

1.0 INTRODUCTION

General

1.1 SCP have been appointed by Redrow Homes North West to provide specialist transport planning and engineering advice in support of a proposed residential development on land south of Ruthin Road, Wrexham.

1.2 The proposed development will provide up to 1450 dwellings. The residual land not within the Applicant's control has capacity for up to 70 dwellings; hence, a total of 1520 dwellings has been considered in these assessments.

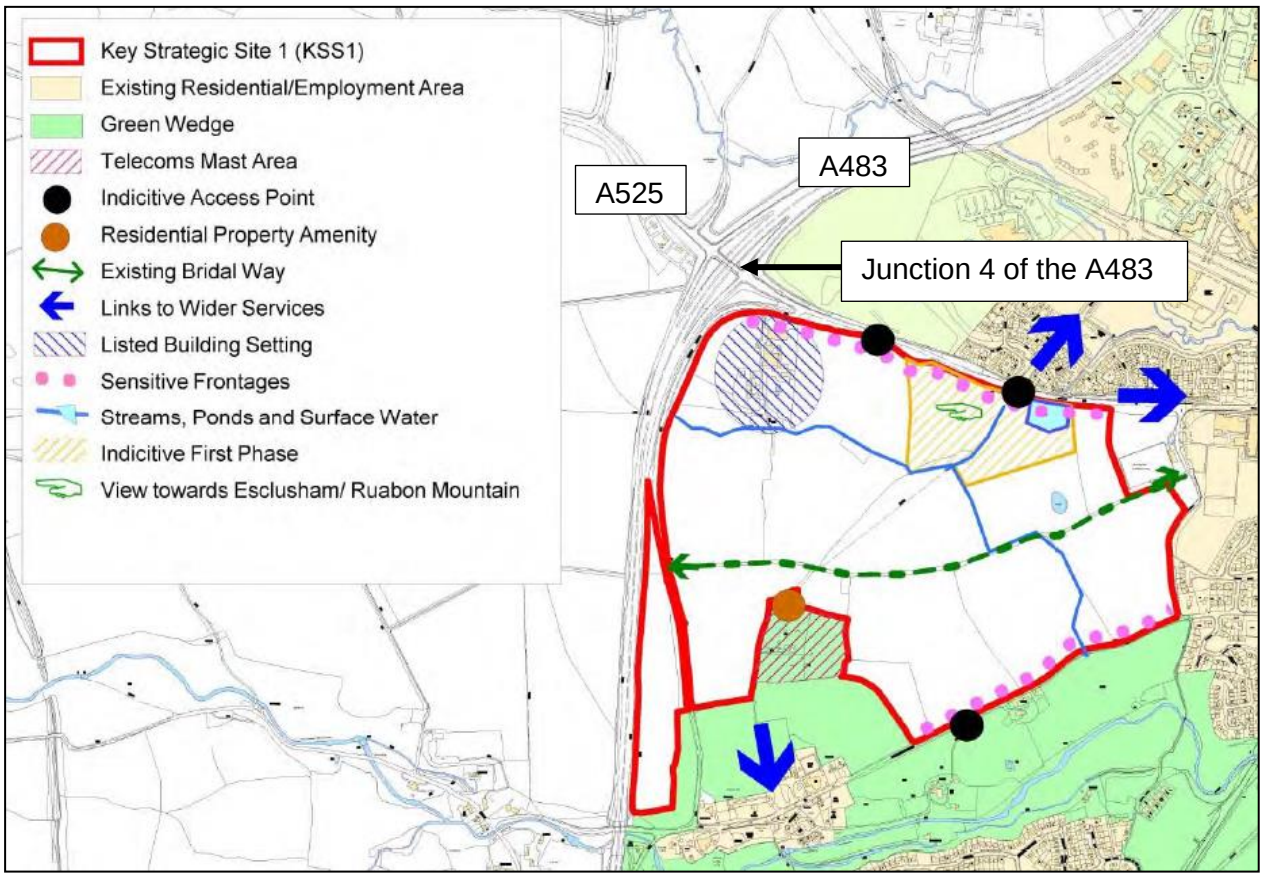
1.3 This Transport Assessment (TA) has been prepared to support the planning application and has been produced in accordance with guidance contained in TAN 18. In addition, the specific scope of this report including the study area and survey requirements have been communicated to the Highway Officer at Wrexham County Borough Council (WCBC) via a scoping note (document ref LB/210187/TN01).

1.4 Initial responses have been received from both the Welsh Government and Wrexham Council. This latest version of the TA has been updated to address these comments.

Planning Background

1.5 The application proposals have been developed in accordance with the Wrexham Unitary Development Plan (1996-2011). The site is referred to as a Key Strategic Site (KSS1) in Wrexham's adopted Local Development Plan (LDP) which covers the period 2013-2028. The extract of the LDP showing the location of the site is shown in **Figure 1.1** below:

Figure 1.1 – KSS1 Site Location Plan



Source: Wrexham LDP (Deposit Version 2017)

1.6 The Local Plan anticipates that the site has the potential to deliver a minimum of 1500 homes, and representations were made at the Local Plan to seek to agree the phasing and scale of the development related to the provision of off-site infrastructure works. The Local Plan initially sought to restrict any development on the site to 200 dwellings prior to 2028 although evidence presented to the examination of the Plan confirmed that 500 dwellings could be accommodated without any material detriment to traffic conditions that would otherwise be experienced.

Planning Background

1.7 An application for the scheme was submitted to WCBC in September 2023 under LPA Ref. P/2023/0593. The Welsh Government (WG) and the Local Highway Authority (LHA) reviewed the Highways elements of the scheme and provided consultation responses dated 11th October 2023 and 7th December 2023 respectively. Copies of these comments are provided in **Technical Appendix C** (in a separate document).

1.8 A revised Transport Assessment report was submitted to WCBC and WG in February 2024. In addition, further meetings took place with WCBC and the WG in February and May 2024.

1.9 This TA has been updated to address feedback received in the meetings and in writing.

Scope and Structure of Report

1.10 The structure of this report is as follows:

- Chapter 2 – summarises relevant national and local transport policies and presents an evaluated Transport Implementation Strategy;
- Chapter 3 – provides an appraisal of the existing conditions of the site including an appraisal of the local highway network, existing traffic conditions and road safety record;
- Chapter 4 – provides an appraisal of the development proposals including the proposed site access arrangements, servicing arrangements and car parking;
- Chapter 5 – presents a review of the accessibility of the site by walking, cycling and public transport modes;
- Chapter 6 – describes the future baseline traffic conditions on the local highway network in relation to committed development traffic flows and traffic growth;
- Chapter 7 – estimates the number trips generated by existing and proposed uses of the site and distributed and assigns the proposed development trips on the local highway network;
- Chapter 8 – presents an assessment of the impact of the development on the operational performance of the local highway network; and
- Chapter 9 – provides a summary and conclusions to this TA derived from the analysis presented in the above chapters.

2.0 POLICY CONTEXT AND TRANSPORT IMPLEMENTATION STRATEGY

Introduction

2.1 Technical Advice Note 18 (TAN 18) sets out the need for developments in Wales to include a Transport Implementation Strategy (TIS), which should include the following information in respect of each particular development proposal:

- Details of how the development and the TIS relate to transport planning policies and strategy. TIS's are intended to incorporate all the elements of a Travel Plan (TP) and to ensure that these are integrated with design elements of the new development;
- A set of objectives and targets relating to managing travel demand for the development;
- A framework for monitoring the objectives and targets, including the future modal split of transport to the development; and
- Details of measures proposed to improve access by public transport, walking and cycling to reduce the number and impacts of motorised journeys associated with the development.

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

Policy Context - Planning Policy Wales (PPW)

2.3 In terms of the national transport policy that is relevant to the TIS, the latest 11th edition of PPW was published in February 2021 by the Welsh Government and sets out a framework for the Welsh planning authorities to prepare their development plans. Chapter 4 of PPW sets out the approach to Transport.

2.4 Paragraph 4.1.1 of PPW states that "*The planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport. By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution by:*

- *Enabling More Sustainable Travel Choices – measures to increase walking, cycling and public transport, reduce dependency on the car for daily travel;*

- *Network Management – measures to make best use of the available capacity, supported by targeted new infrastructure; and,*

- *Demand Management – the application of strategies and policies to reduce travel demand, specifically that of single-occupancy private vehicles".*

2.5 Paragraph 4.1.9-4.1.10 of PPW states that "*The Welsh Government is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the Well-being of Future Generations Act.*

The planning system has a key role to play in reducing the need to travel and supporting sustainable transport, by facilitating developments which:

- *are sited in the right locations, where they can be easily accessed by sustainable modes of travel and without the need for a car;*

- *are designed in a way which integrates them with existing land uses and neighbourhoods; and,*

- *make it possible for all short journeys within and beyond the development to be easily made by walking and cycling."*

2.6 With reference to the Active Travel (Wales) Act 2013, Paragraph 4.1.26 of PPW states that walking and cycling should be promoted for shorter journeys, particularly everyday journeys to work and education establishments or to other local services and facilities. "*The Active Travel Act requires local authorities to produce Integrated Network Maps, identifying the walking and cycling routes required to create fully integrated networks for walking and cycling to access work, education, services and facilities*".

2.7 In reference to supporting documentation with planning applications, paragraph 4.1.56 of PPW states that *"Transport Assessments are an important mechanism for setting out the scale of anticipated impacts of a proposed development, or redevelopment, is likely to have. They assist in helping to anticipate the impacts of development so that they can be understood and catered for appropriately."*

TIS Objectives and Targets

2.8 The objectives of a TIS should benefit both the occupiers of a development and the wider community. The objectives will be set out in the following sections and form the basis for a TP for the development. Site specific objectives that are relevant to the proposed development are as follows:

- Increase opportunities for residents;
- Reduce vehicle use in and around the site;
- Improve the image of the local area;
- Reduce the transport impact of the development upon the environment;
- Promote more sustainable ways of travelling; and,
- Support government policy to manage travel demand more effectively.

2.9 In order to achieve the objective of reducing single occupancy vehicle travel, realistic short term annual targets for mode share will be set.

2.10 The proposed development is located in both the Wrexham 011 and Wrexham 014 Middle Super Output Areas (MSOA). As a result, the modal split analysis is based on an average of both MSOAs.

2.11 The 2011 UK Census shows that single occupancy travel to work by car mode is, on average; lower in the MSOA average (65%) to both Wrexham County (69%) and Wales (71%). The existing local single occupancy modal share percentage of 65% will therefore be the initial baseline target for the residential properties on the site. The following **Table 2.1** shows the figures obtained from the Census data.

Table 2.1 – Mode Share from Local, Regional and National Area (2011 Census)

Travel to Work (QS701EW) Census Statistics	Wrexham MSOA 011	Wrexham MSOA 014	MSOA Average	Wrexham County	Wales Country
All Usual Residents Aged 16 to 74 in Employment	6,503	4,470		98,691	1,363,615
Work Mainly at or From Home	127	74		2,624	73140
Underground, Metro, Light Rail, Tram	2	1		37	1175
Train	87	15		521	27341
Bus, Minibus or Coach	222	171		3,416	62903
Taxi	36	23		449	6523
Motorcycle, Scooter or Moped	27	18		403	7694
Driving a Car or Van	2,409	2,255		44,090	918645
Passenger in a Car or Van	487	249		5,278	92727
Bicycle	60	34		832	19659
On Foot	863	173		5,621	145135
Other Method of Travel to Work	31	7		343	8673
Total Persons Travelling to Work	**4,224**	**2,946**		**60,990**	**1,290,475**
Single Occupancy Car Journeys (%)	**57%**	**77%**	**67%**	**72%**	**71%**
Car Shares (%)	**12%**	**8%**	**10%**	**8%**	**7%**
Public Transport (%)	**7%**	**6%**	**7%**	**7%**	**7%**
Walking (%)	**20%**	**6%**	**13%**	**9%**	**11%**
Bicycle (%)	**1%**	**1%**	**1%**	**1%**	**2%**
Taxi (%)	**1%**	**1%**	**1%**	**1%**	**1%**
Motorcycle (%)	**1%**	**1%**	**1%**	**1%**	**1%**

2.12 If it is demonstrated (through surveys) that the level of single occupancy car travel from the proposed development is lower than the 65% MSOA average level, the initial short term targets will be reassessed in conjunction with the local authority to try and bring levels down even further.

2.13 In addition to the single occupancy car travel targets, if it is demonstrated (through surveys) that the level of public transport travel usage to / from the site is less than the 7% for the MSOAs average, the initial short term targets will be to increase the public transport travel to that level. Once public transport usage from the development is at 7%, the targets will be reassessed to try to increase public transport usage levels even further.

Achieving the TIS Objectives and the Monitoring Process

2.14 The objectives and monitoring of the TIS will substantially be achieved through the appointment of suitable Travel Plan Co-ordinator/s (TPC/s). The TPC role for the development would most commonly be overseen by a Management Company located on the site, although in time this role could evolve to be overseen by the residents of the site themselves. Appropriate start-up funding will be provided for the TPC/s to cover the administration costs involved.

2.15 Once appointed, the TPC/s will act as the main contact for the TIS and will be responsible for implementing the TIS measures, involving new residents, maintaining a database and monitoring the effects of implementation. A full set of duties and responsibilities of the TPC/s is set out in the sections below.

2.16 The TPC/s will inform the Local Planning Authority and the appropriate local public transport operators of their contact details. Similarly, the TPC/s will obtain the contact details of the owners and complete a 'Contact' form to provide easy reference when dealing with relevant matters.

2.17 The TPC/s will undertake an initial resident travel survey, within three months of 30% occupation of the site, to enable a resident travel database to be set up. The TPC/s will prepare and distribute a questionnaire to each resident, to collect the following details:

- Postcode area of place of employment;
- Normal working hours;
- Mode of travel to work;
- Car ownership / usage;
- Reasons for not using public transport and other modes;
- The anticipated take-up of a car sharing scheme, the use of public transport or other non-car modes of travel to work; and,
- Information relating to potential areas for sustainable travel improvement, upon which the TPC/s could act and draw up measures to improve the TIS.

2.18 On receipt of the completed questionnaires the TPC/s will set up a travel database within 3 months of completion of the travel survey.

2.19 The TPC/s will agree the annual targets with the LPA within 1 month of completion of the travel survey analysis. The initial travel survey results for the proportion of residents travelling by single occupancy vehicles should be recorded along with the agreed short-term annual targets.

2.20 The TPC/s will ensure that any changes to the TIS or any relevant information is passed on to residents on a biannual / annual basis in the form of leaflets.

2.21 The TPC/s will ensure that residents are provided with information to allow ease of use of the local public transport by providing up-to-date public transport route maps and timetable information in residential 'welcome packs', and updating by leaflet drop, as necessary. Contact details for local taxi firms will also be provided by the TPC/s.

2.22 The TPC/s will liaise regularly with local public transport operators to ensure that information remains valid. The TPC/s will provide details of the websites and telephone advice services, such as http://www.traveline.info/ to enable residents to obtain details on their individual journey requirements.

2.23 The TPC/s will also liaise with the local public transport operators and release survey data to the operators to identify travel demands and allow appropriate services to be provided. The TPC/s will check regularly to ensure that the information supplied to residents remains valid.

2.24 The TPC/s will encourage walking as a mode of travel to the site by implementing the following initiatives:

- Raise awareness of the health benefits of walking through promotional material;
- Provide a map showing walking routes, indicating distances and times to the most common destinations near to the site; and,
- Ensure that footways on site are well maintained and lit and any defects reported to the highways authority on an annual/biannual basis.

2.25 In conjunction with the pedestrian initiatives, the TPC/s will investigate the potential to set up a bicycle user group (BUG) to encourage residents to cycle to work.

2.26 The TPC/s will set up a car sharing scheme, utilising the online website www.liftshare.com, within 3 months of receiving the initial residents travel surveys. Residents will be contacted by the TPC/s to allow potential car sharers to register an interest and provide details of their journey to and from work along with their contact phone number and work location. The TPC/s will then identify suitable matches for residents that may be able to share their journeys to and from work or for shopping trips.

2.27 The TPC/s will make the new residents aware of the existence of the TIS by providing them with a copy of the TIS as part of a welcome pack as they move into their properties. The existence of the TIS would also be highlighted in promotional literature and advertising for the new dwellings.

2.28 The TPC/s will monitor travel patterns on an annual basis for the first five years of the occupation of the sites and then at suitable intervals as agreed by the Local Planning Authority. The monitoring of the plan is important for the following reasons:

- It will ensure that the Local Planning Authority can see that the aims and objectives of the TIS are being achieved;
- It justifies the commitment of the TPC/s and of other resources;
- It maintains support for the plan by reporting successes;

- It identifies any measures that are not working or problems with the approach of the Plan;
- It can be shared with other organisations to refine the development of the Plan.

2.29 Surveys will be used to monitor travel to and from the site. The surveys can be used to monitor the number of residents walking, cycling, using cars and using public transport. The results can then be compared with the mode share targets identified earlier in this framework TIS.

2.30 The TPC/s will develop the monitoring programme in conjunction with the Local Planning Authority to ensure that the monitoring procedures are appropriate. The TPC/s will maintain a monitoring table of progress to key TIS targets based on the results of the monitoring travel surveys. This table will be published and distributed by leaflet to residents on the site.

2.31 The TPC/s will make information on mode share available to the Local Planning Authority as part of the continuous monitoring process, subject to the provisions of the Data Protection Act.

2.32 The TPC/s will undertake an annual review of the TIS in conjunction with the Local Planning Authority. This review will be important in assessing the effectiveness of the measures implemented and to identify areas where modification may be necessary. In particular the following will be assessed:

- The level of car/non-car usage at the site;
- Comments received from residents.

2.33 When reviewing the effectiveness of the TIS, the following questions will be asked:

- Which areas offer the greatest potential for change/improvement?
- Was the initiative implemented by the target date?
- How well used is each scheme/initiative?
- How much did it cost to introduce?

2.34 The TPC/s will compare the mode share statistics obtained from the annual monitoring to the targets set for the development. The TPC/s will set revised realistic targets for modal shifts to non-car travel modes and investigate the effectiveness of the TIS initiatives being promoted in conjunction with the Local Planning Authority.

2.35 In light of the data collected from the monitoring process, the TPC/s will adapt the TIS to enable the revised agreed targets to be achieved and submit a review report to be agreed with the Local Planning Authority.

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

3.0 EXISTING CONDITIONS

Site Location

3.1 The application site is located to the south of the A525 Ruthin Road and east of the A483 in Wrexham. The site is split into two parcels which form a large irregular shaped parcel (referred to as the eastern parcel) and a smaller triangular shaped parcel (referred to as the western parcel).

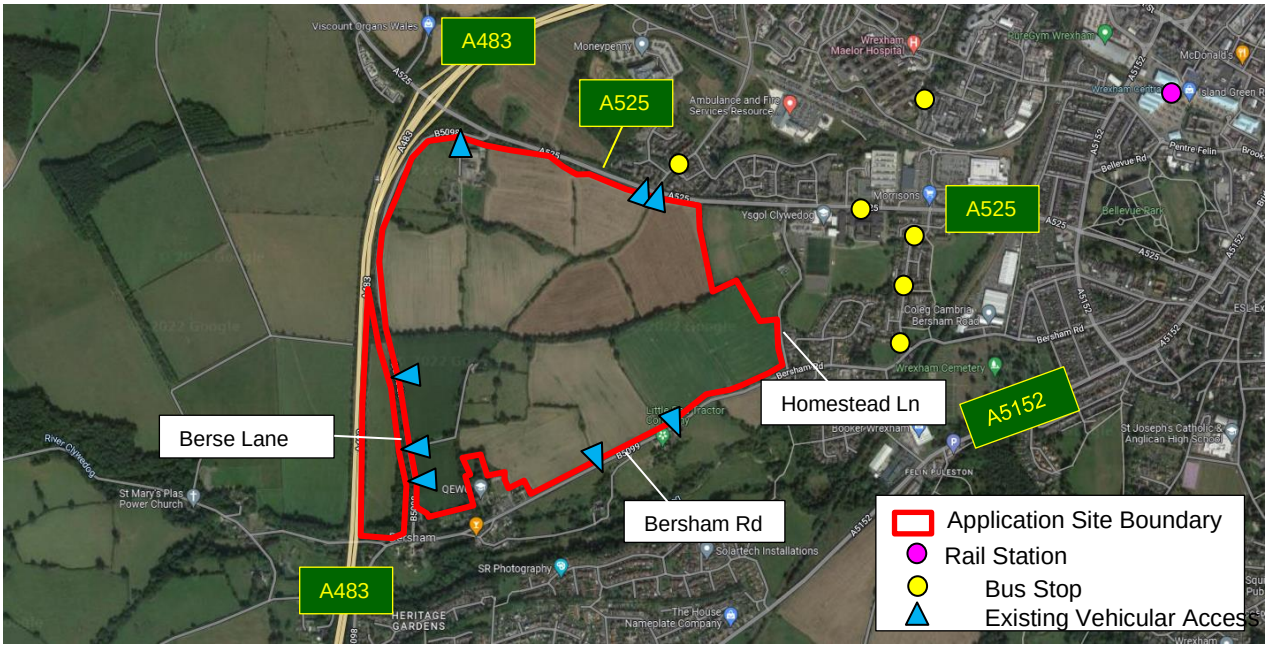
3.2 The site currently comprises a farm complex (Lower Berse Farm) with surrounding agricultural land.

3.3 The location of the site in relation to the wider highway network is shown on **Figure 3.1** below and the site boundary in relation to the local highway network is shown in red on **Figure 3.2** overleaf.

Figure 3.1 – Site Location – Wider Highway Network



Figure 3.2 – Site Location Plan – Local View



3.4 The application site is bounded by the A525 to the north, undeveloped land and Homestead Lane to the east, Bersham Road, Bersham Club, Bryn Tirion Hall School and residential dwellings to the south-east and the A483 to the west. Berse Lane separates the two application site parcels.

3.5 There is currently no vehicular access to the western parcel of the site. However the existing vehicular accesses to the eastern parcel of the site are shown on **Figure 3.2** above and are summarised below:

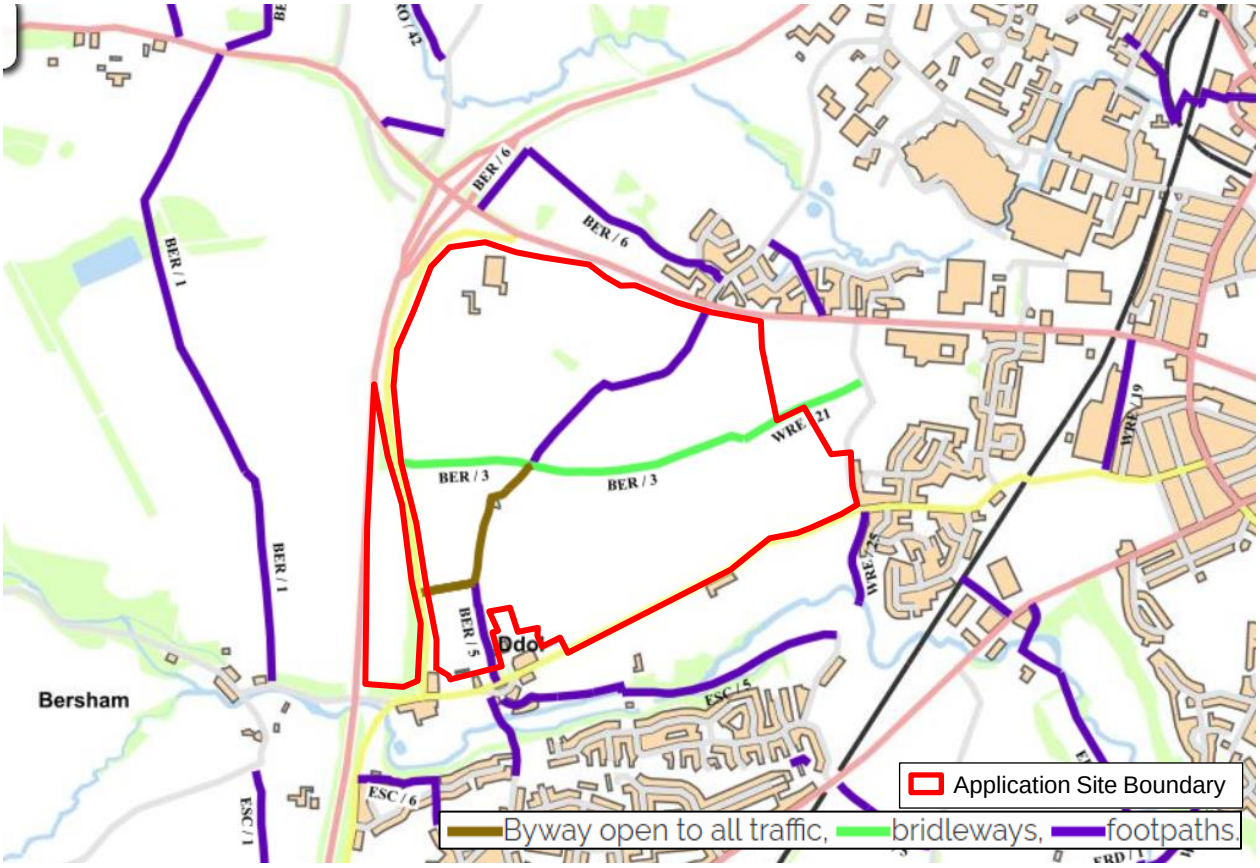
- Two gated farm accesses along the A525
- A single priority access to the Lower Berse Farm units along Berse Lane
- Two farm accesses (one ungated and one gated) along Berse Lane
- A single priority access along Berse Road
- Two gated farm accesses along Bersham Road

3.6 There are a number of Public Rights of Way (PROW) which surround the application site, with the routes shown on **Figure 3.3** below. The PROW which route within the site are summarised below:

- Footpath Bersham 4 runs north-east/south-west through the site and provides a link between the A525 to the north-east, Berse Lane to the south-west and Bersham Road to the south-west via footpath Bersham 5; and

- Footpath Bersham 3 runs east/west through the centre of the site and provides a link between Berse Lane to the west and Homestead Lane to the east via footpath Wrexham 21.

Figure 3.3 – Public Right of Way Plan



Source: WCBC

Local Highway Network

A525 Ruthin Road

3.7 The A525 Ruthin Road runs along the northern boundary of the site and is a principal road, locally connecting Wrexham town centre in the east with the A483 junction 4 to the west. Beyond the A483, the A525 continues to connect to Ruthin and beyond to Denbigh.

3.8 Within the vicinity of the site, the A525 has a carriageway width of approximately 7.5m and benefits from continuous footway facilities along the northern section of the carriageway via a mixture of footway/footpaths. A footway is provided along the southern section of the A525 in the vicinity of and to the east of Homestead Lane. Shared footway/cycleway facilities are provided in the vicinity of Croesnewydd Road.

3.9 Within the vicinity of the site, the A525 is street lit and is subject to a mandatory 50mph speed limit which changes to 30mph approximately 115m to the west of the junction with Croesnewydd Road.

Homestead Lane

3.10 Homestead Lane is located along the eastern boundary of the site and is a through route from Ruthin Road in the north to Bersham Road in the south. At the northern it provides access to Ysgol Clywedog secondary school.

3.11 In the vicinity of the school access the carriageway has a width of between approximately 5.5m – 7.3m. To the south of the school access, Homestead Lane narrows significantly before widening to approximately 5.0m on the approach to the junction with Bersham Road. There are no footways on this section of the road.

3.12 Street lighting is provided at the northern section of Homestead Lane in the vicinity of the school access.

3.13 Homestead Lane is subject to a mandatory 30mph for the majority of its length except in the vicinity of the school access where the speed of the road reduces to a mandatory 20mph limit.

Bersham Road

3.14 Bersham Road is located along the southern boundary of the site and is a link in the B5099 which connects Wrexham town centre via the A5152 Victoria Road in the east and Rhostyllen in the west. Bersham Road passes through residential areas and Cambria College towards the town centre.

3.15 Within the vicinity of the site, Bersham Road has a carriageway width which varies between 6.0m-6.4m. Continuous footways are provided to the west of the Little Red Tractor Company unit and to the east of Homestead Lane.

3.16 Traffic calming features including chicanes and speed bumps are provided in the vicinity of the junction with Berse Lane and Y Ddol.

3.17 In the vicinity of the site, Bersham Road benefits from street lighting and is subject to a mandatory 30mph speed limit, despite its rural character.

Berse Lane

3.18 Berse Lane is a ‘B’ classified road (B5098) that connects Ruthin Road in the north with Bersham Road in the south. As mentioned previously, Berse Lane separates the two application site parcels.

3.19 Berse Lane is rural in character with no footways and no street lighting provided and is subject to a mandatory 50mph speed limit over the majority of its length.

A483

3.20 The A483 is a trunk road of national importance and often referred to as the Wrexham By-pass. It is located along the western boundary of the site and connects Chester in the north with the A5 at Chirk to the south, which continues to link up with the national motorway network north of Birmingham.

3.21 Within the vicinity of the site, the A483 is a dual carriageway which is subject to the national speed limit.

A525 Ruthin Road / Croesnewydd Road Signalised T-Junction

3.22 The A525 Ruthin Road / Croesnewydd Road is located along the northern boundary of the site and takes the form of a signalised T-junction, as shown on **Figure 3.4** below. Pedestrian crossing facilities including a pedestrian refuge, dropped kerbs and tactile paving are provided along the northern arm.

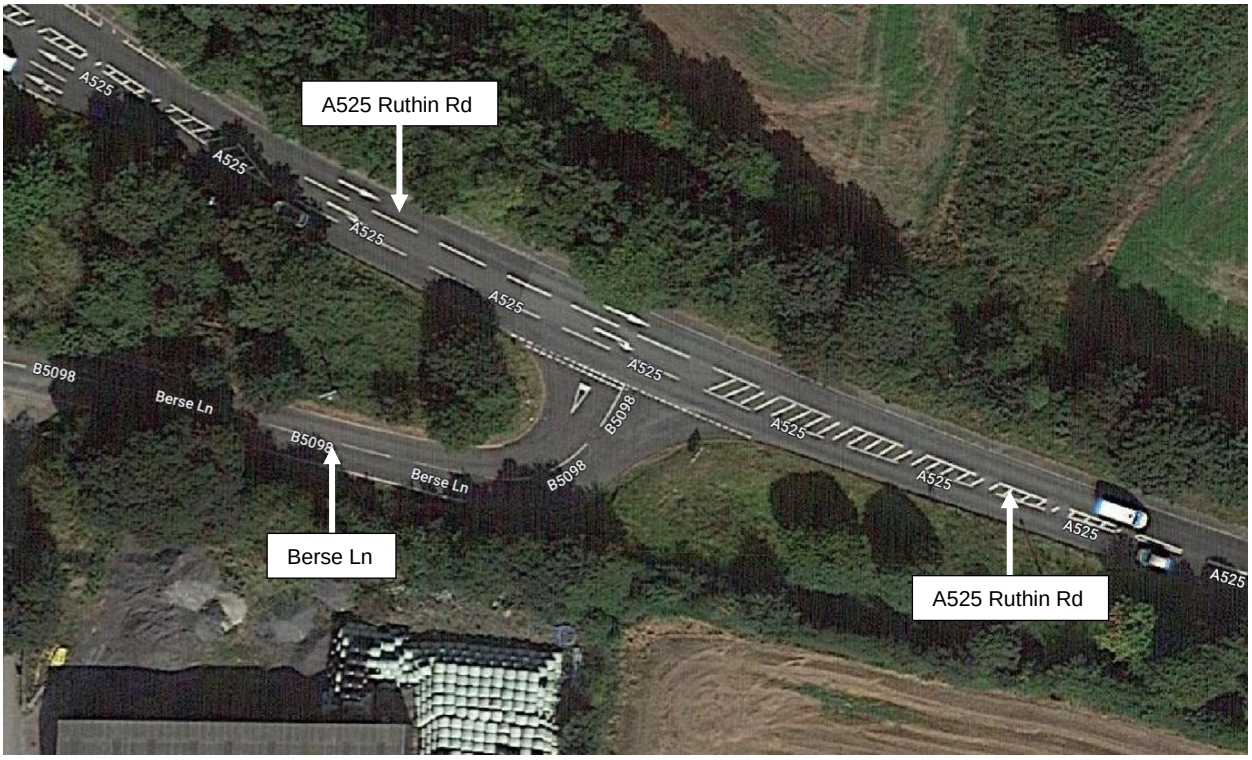
Figure 3.4 – A525 Ruthin Road / Croesnewydd Road Signalised T-Junction



A525 Ruthin Road / Berse Lane Priority Junction

3.23 The A525 Ruthin Road / Berse Lane junction is located along the northern boundary of the site and takes the form of a priority-controlled T-junction, with the A525 forming the major arms and Berse Lane the minor arm, as shown on **Figure 3.5** below.

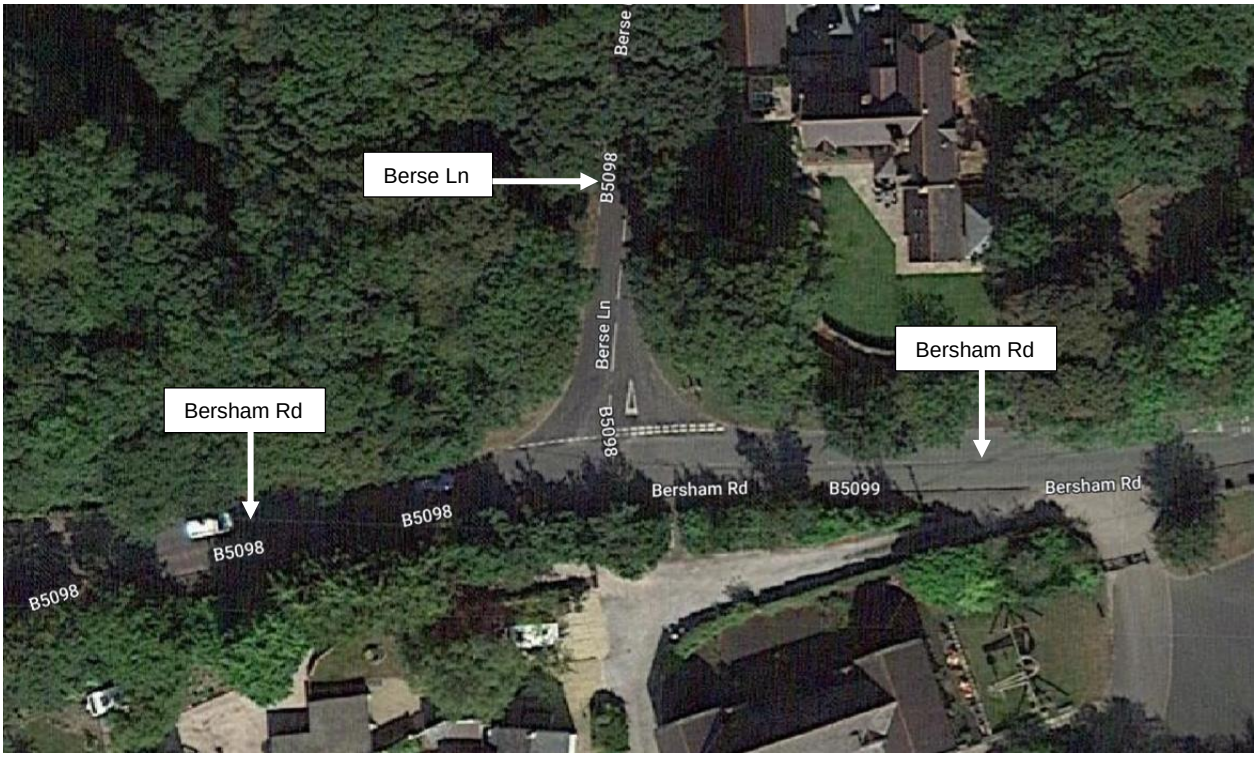
Figure 3.5 – A525 Ruthin Road / Berse Lane Priority Junction



Bersham Road / Berse Lane Priority Junction

3.24 The Bersham Road / Berse Lane is located to the south-west of the site and takes the form of a priority-controlled T-junction, with the A525 forming the major arms and Berse Lane the minor arm, as shown on **Figure 3.6** below.

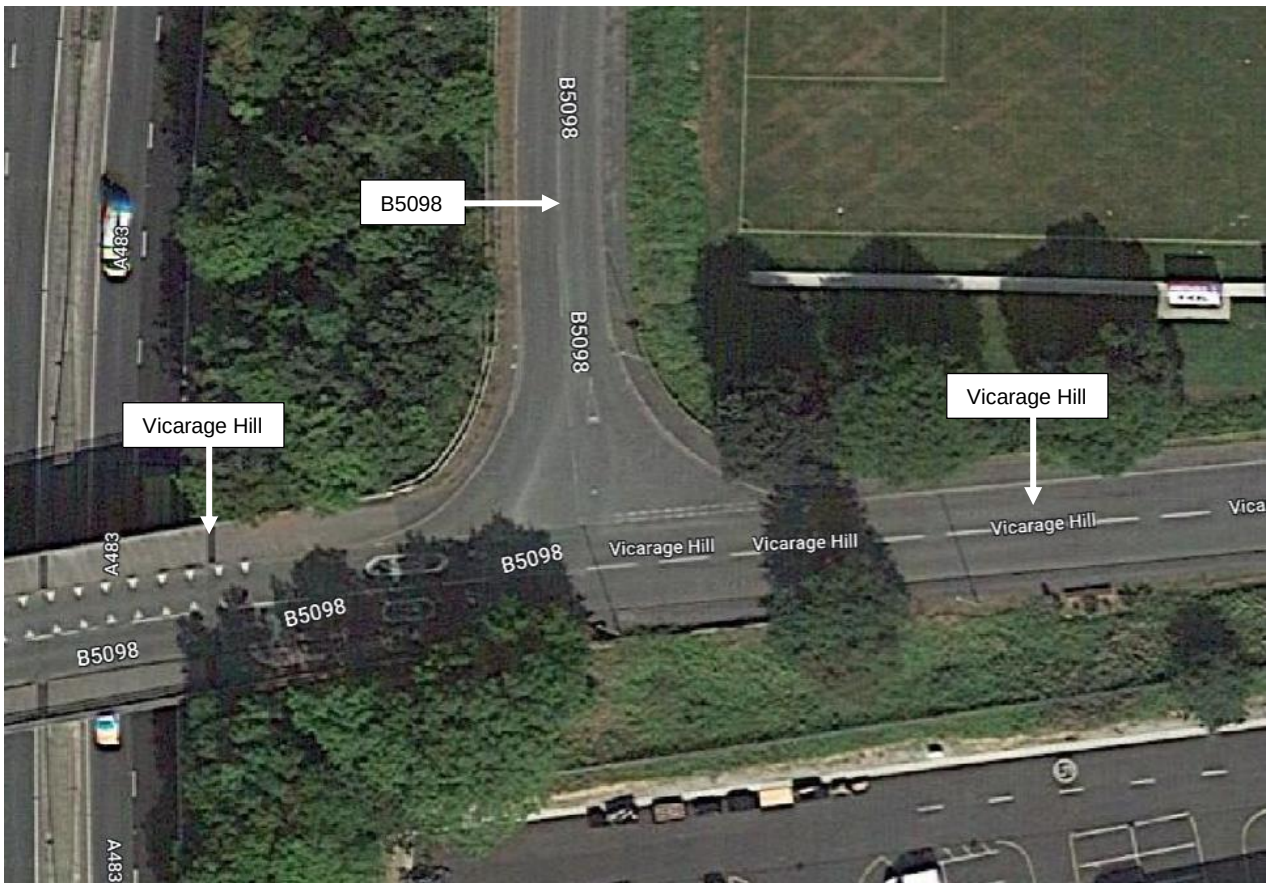
Figure 3.6 – Bersham Road / Berse Lane Priority Junction



Vicarage Hill / B5098 Priority Junction

3.25 The Vicarage Hill / B5098 junction is located to the south-west of the site in Rhostyllen and takes the form of a priority-controlled T-junction, with the Vicarage Hill forming the major arms and B5098 the minor arm, as shown on **Figure 3.7** below.

Figure 3.7 – Vicarage Hill / B5098 Priority Junction



A5152 Victoria Road / Bersham Road / Hampden Road Crossroads

3.26 The A5152 Victoria Road / Bersham Road / Hampden Road junction is located to the east of the site and takes the form of a priority-controlled crossroads, with the A5152 forming the major arms and Bersham Road / Hampden Road the minor arms, as shown on **Figure 3.8** below.

Figure 3.8 – A5152 Victoria Road / Bersham Road / Hampden Road Priority Crossroads



A5152 Ruabon Road / A525 Ruthin Road Priority Roundabout

3.27 The A5152 Ruabon Road / A525 Ruthin Road priority roundabout is located to the south-east of the site and takes the form of a priority-controlled 4-arm roundabout, as shown on **Figure 3.9** below. Pedestrian crossing facilities including dropped kerbs and tactile paving and provided along all arms and pedestrian refuges are provided along the northern, eastern and western arms of the roundabout.

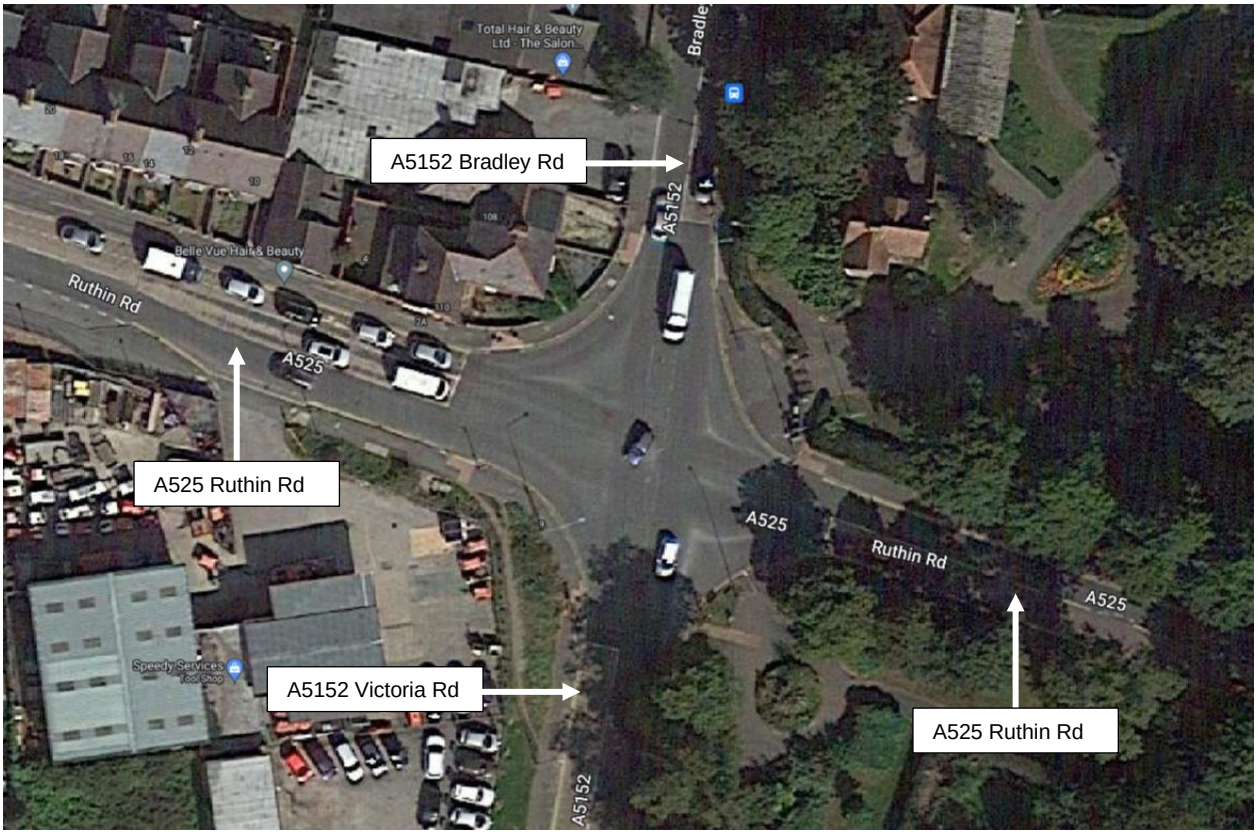
Figure 3.9 – A5152 Ruabon Road / A525 Ruthin Road Priority Roundabout



A525 Ruthin Road / A5152 Signalised Crossroads

3.28 The A525 Ruthin Road / A5152 junction is located to the east of the site and takes the form of a signalised crossroads, as shown on **Figure 3.10** below. Signalised pedestrian crossing facilities including dropped kerbs and tactile paving are provided along all arms of the crossroads.

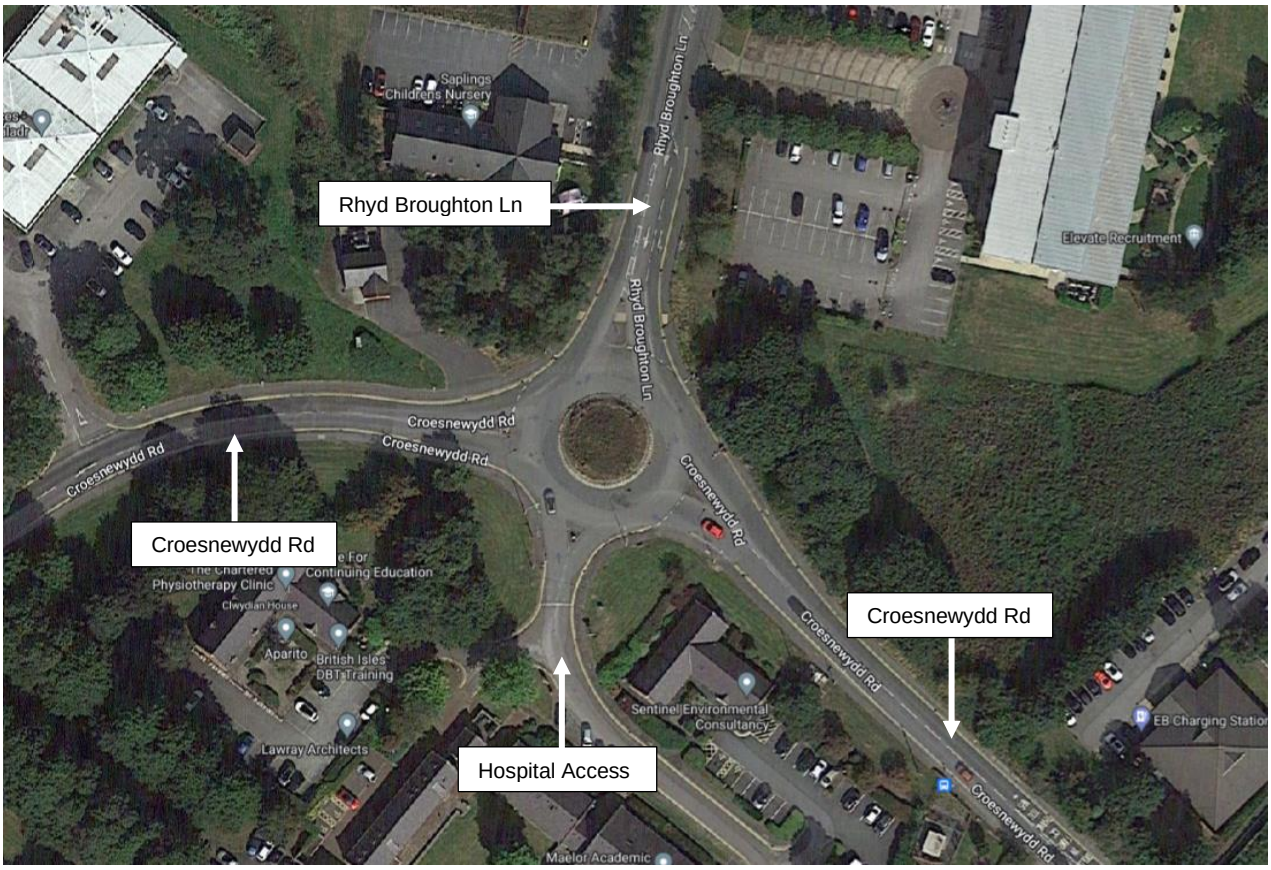
Figure 3.10 - A525 Ruthin Road / A5152 Signalised Crossroads



Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout

3.29 The Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital junction is located to the north-east of the site takes the form of a priority-controlled 4-arm roundabout, as shown on **Figure 3.11** below. Pedestrian crossing facilities are provided, including dropped kerbs along the southern eastern/southern arms and dropped kerbs/tactile paving along the northern arm.

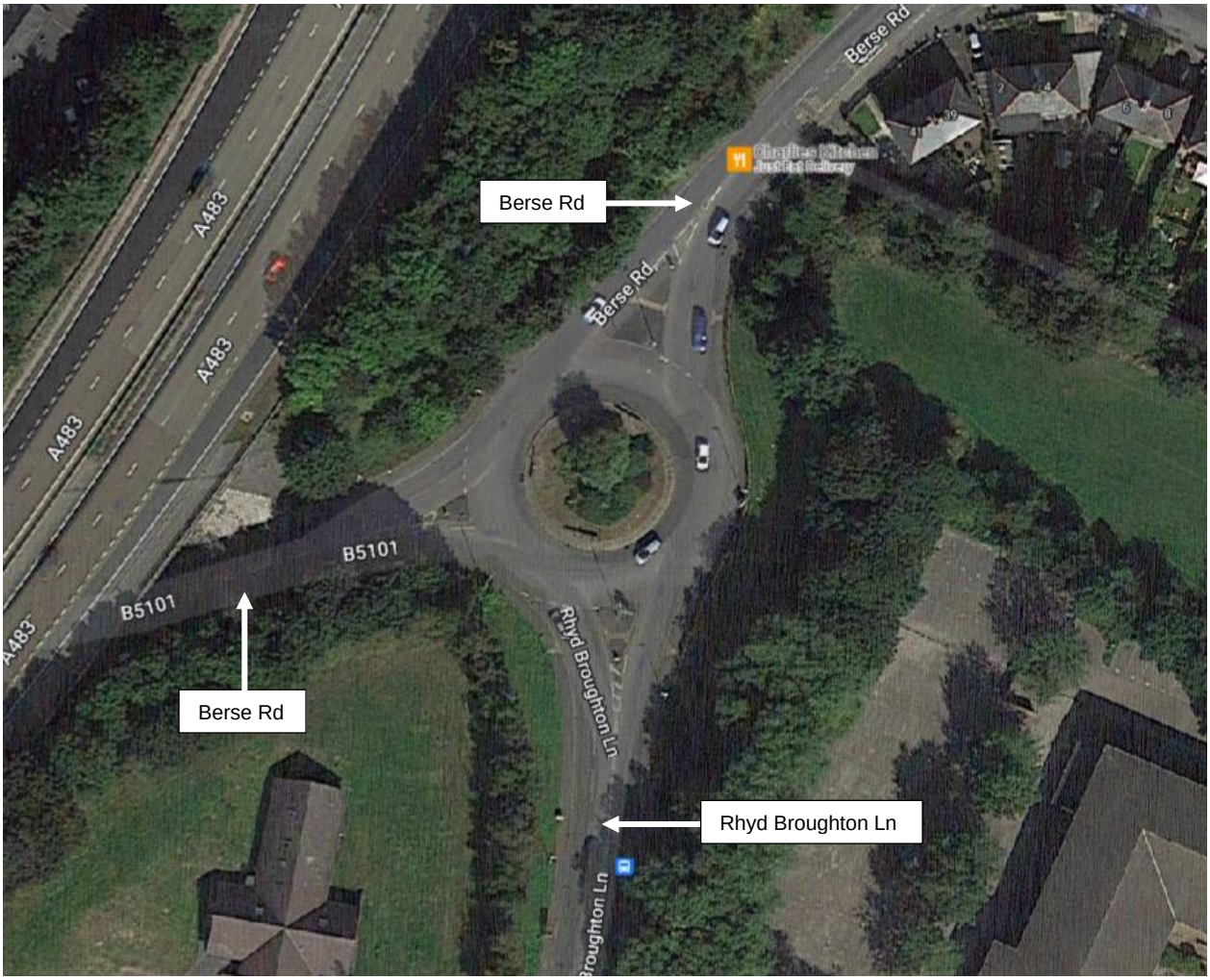
Figure 3.11 - Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout



Berse Road / Rhy Broughton Lane Priority Roundabout

3.30 The Berse Road / Rhy Broughton Lane junction is located to the north-east of the site takes the form of a priority-controlled 3-arm roundabout, as shown on **Figure 3.12** below. Pedestrian crossing facilities including splitter islands, dropped kerbs and tactile paving are provided along the northern and southern arms.

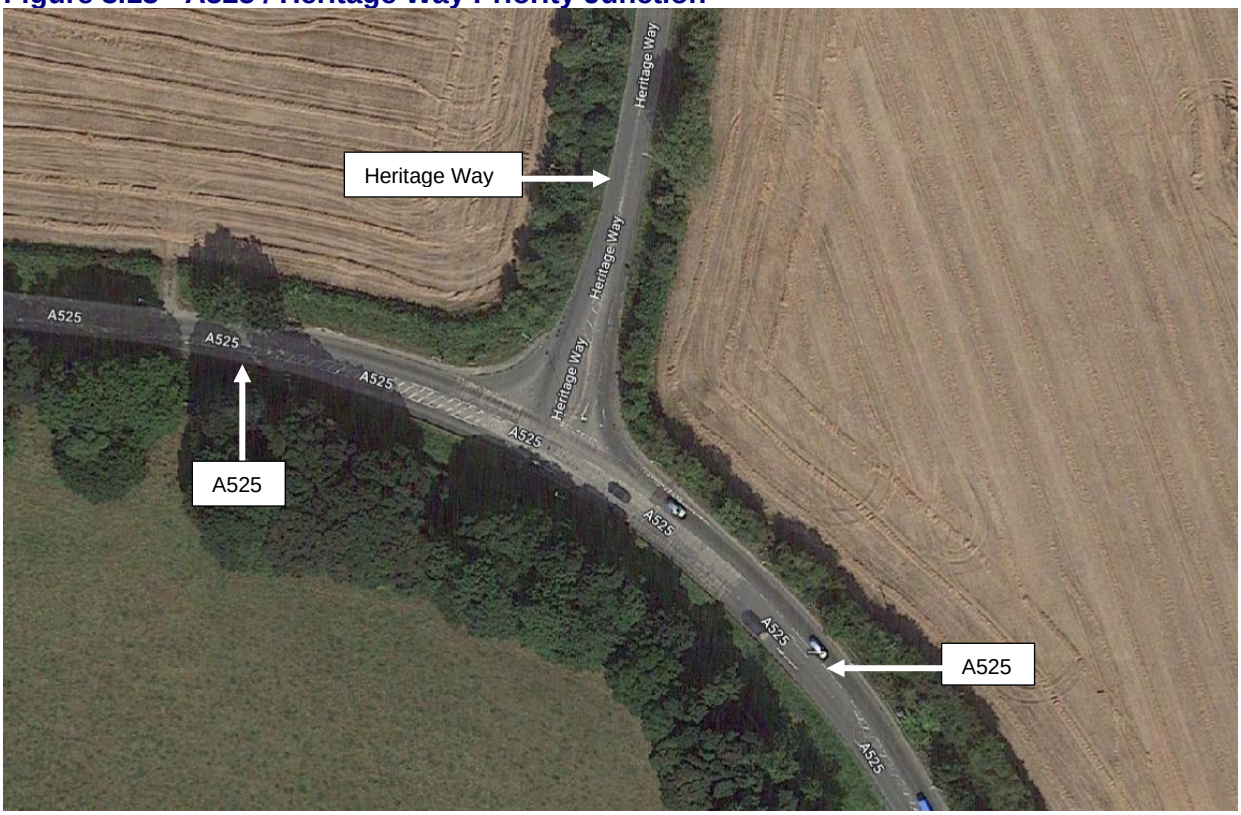
Figure 3.12 - Berse Road / Rhy Broughton Lane Priority Roundabout



A525 / Heritage Way Priority Junction

3.31 The A525 / Heritage Way junction is located to the west of the site takes the form of a priority-controlled T-junction with the A525 forming the minor arms and Heritage Way the minor arm, as shown on **Figure 3.13** below. Pedestrian crossing facilities including a pedestrian island and dropped kerbs are provided along the minor arm of the junction.

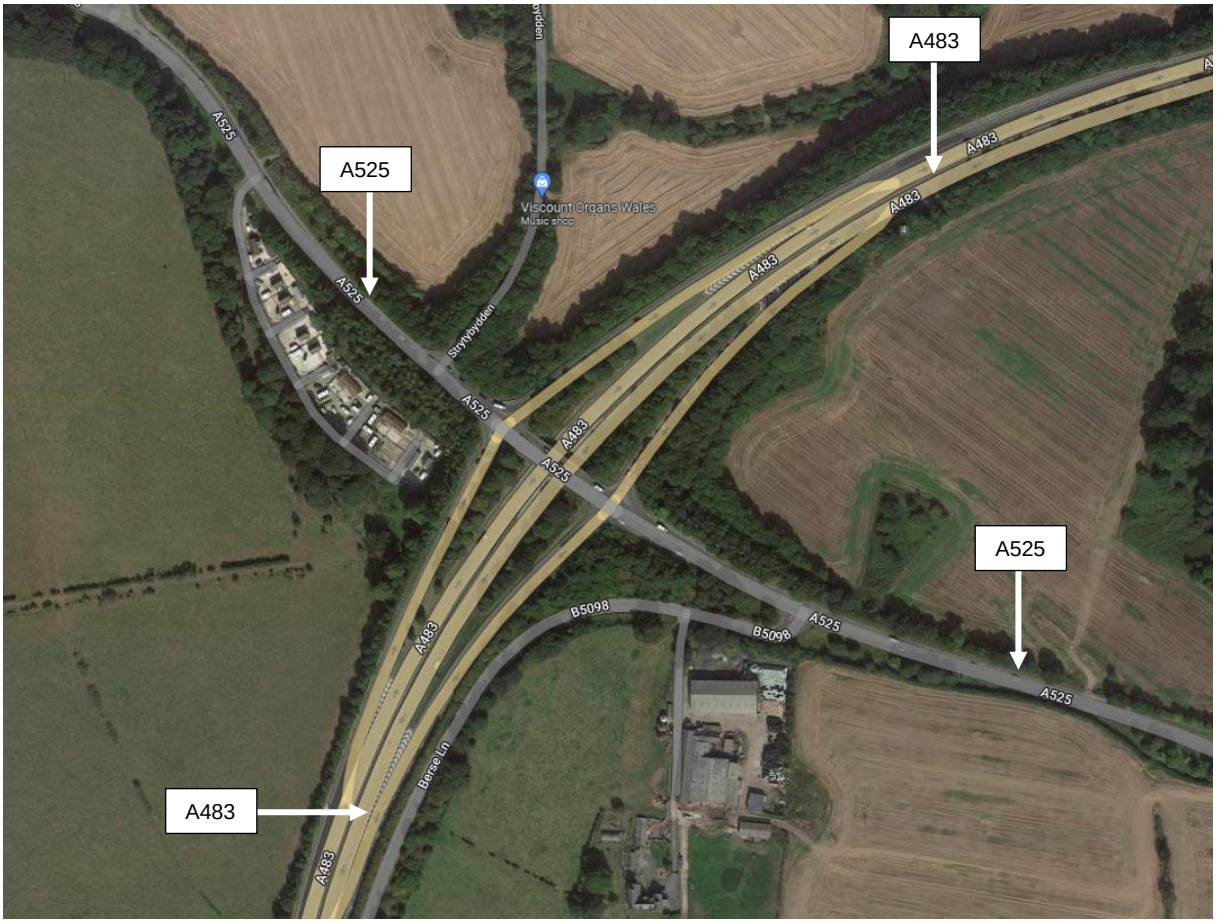
Figure 3.13 - A525 / Heritage Way Priority Junction



Junction 4 of the A483

3.32 Junction 4 of the A483 is located to the north-west of the site takes the form of a grade separated, signalised junction with slip roads provided to and from the A483, as shown on **Figure 3.14** below.

Figure 3.14 – Junction 4 of the A483



3.33 The Welsh Government have been reviewing potential improvements to junction 4 of the A483 over a number of years. However, in June 2021, the Deputy Minister for Climate Change announced a review of new road schemes (known as the '*Roads Review*') which was funded by the Welsh Government. The review was commissioned due to concerns that some road investment schemes that were in development were no longer consistent with Welsh Government's policies, particularly the declaration of a climate and nature emergency. The purpose of the review was to:

- Ensure road investment is fully aligned to the delivery of the Wales Transport Strategy ambitions and priorities, Welsh Government Programme for Government commitments and Net Zero Wales;
- Develop a set of criteria which identify appropriate circumstances for expenditure of Welsh Government funds on roads;
- Use these criteria to recommend which of current road projects should be supported, modified, or have support withdrawn;

- Provide guidance on reallocating road space on parts of the road network which might in future benefit from enhancement
- Consider how any savings might be allocated, in order to ensure problems on the road network are addressed, and in particular to make recommendations on how to tackle the backlog of road maintenance
- Responding to the recommendations is a complex piece of work, which has been further complicated by the significant reduction in our spending power, caused by record high levels of inflation and the UK Government's mismanagement of the economy.
- There was no additional capital funding in the Autumn Statement for either 2023-24 or 2024-25 – this means the Welsh Government's overall capital budget will be 8.1% lower in real terms in 2024-25.

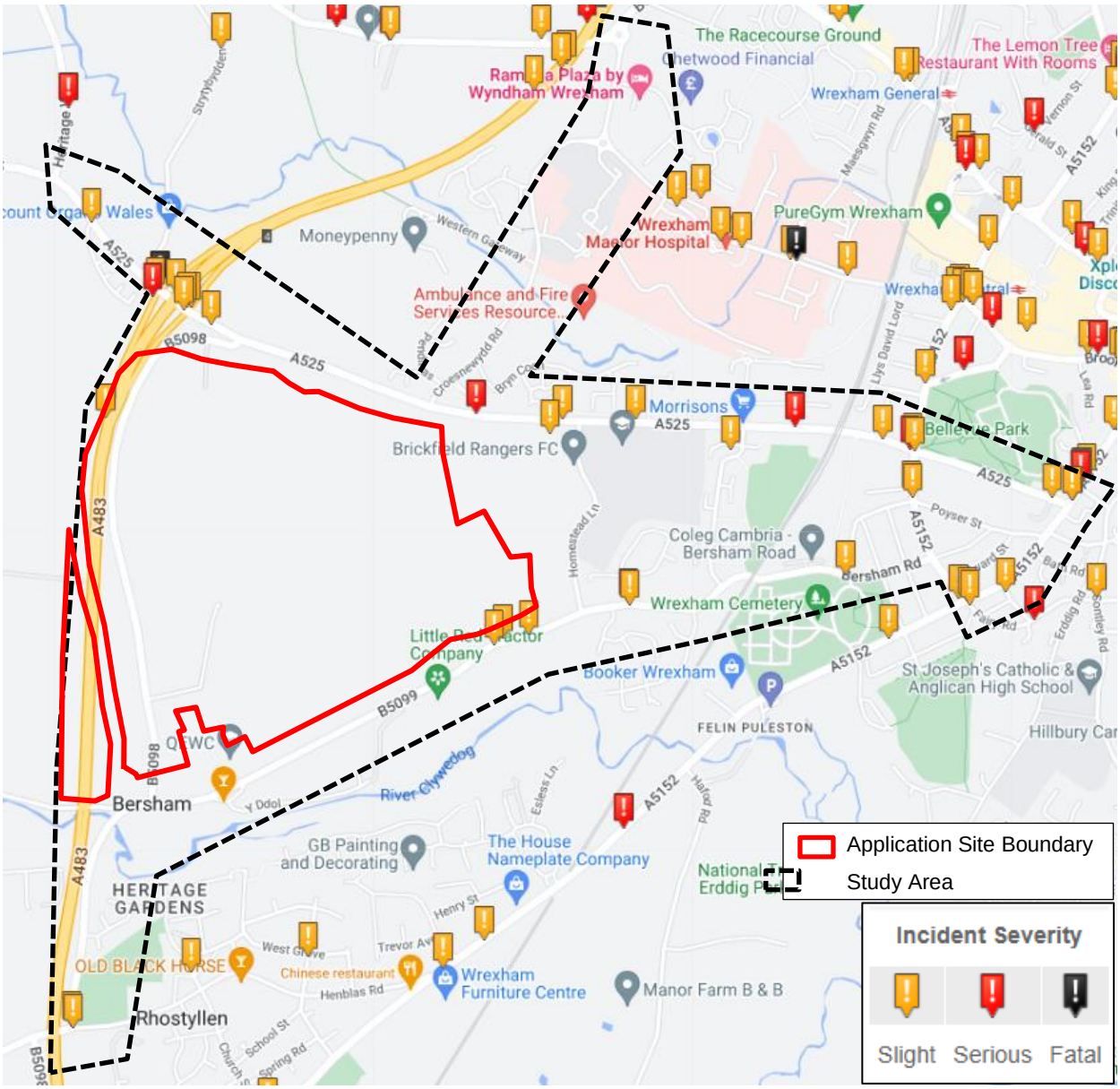
3.34 Further to the Roads Review taking place, the Welsh Government announced in February 2023 that only 15 of the major Highway infrastructure projects would be progressed whilst the rest, including the improvement scheme at Junction 4 of the A483, would be put on hold for the foreseeable future. The reasons for the decision focus on the environmental impacts of the scheme, with the aim of *"ensuring that future roads investment does not simply increase the demand for private car travel. Instead, we need to deliver schemes that contribute meaningfully to modal shift. ensuring that future roads investment does not simply increase the demand for private car travel."*

3.35 In discussions in May 2024, WG disclosed that the safeguarded route within the development site for the A483 Junction 4 improvements has never been withdrawn. The "*A483 Wrexham- Junction 4 TR111 Route Protected for Planning Purposes*" remains in force. The safeguarded route for this scheme has been retained in this application. At the time of writing, neither WG nor WCBC have provided any clarity on the status of the proposed scheme.

Road Safety

3.36 In order to identify critical locations on the network with a poor accident record, the personal injury accident data has been obtained for the most recently available 5-year period (approx.), and is summarised in **Figure 3.15**.

Figure 3.15 – Accident Summary



Source: www.crashmap.co.uk

3.37 The accident analysis is summarised in **Tables 3.1** and **3.2** below:-

Table 3.1 – Accident Summary - Junctions

Junction		Severity of Collision			Total
		Slight	Serious	Fatal	
1	A525 Ruthin Road / Croesnewydd Road Signal Junction	0	0	0	0
2	A525 Ruthin Road / Berse Lane Priority Junction	0	0	0	0
3	Bersham Road / Berse Lane Priority Junction	0	0	0	0
4	B5098 / Vicarage Hill Priority Junction	2	0	0	2
5	Bersham Road / Victoria Road / Hampden Road Priority Crossroads	0	0	0	0
6	A5152 Ruabon Road / A525 Ruthin Road Priority Junction	2	0	0	2
7	A525 Ruthin Road / A5152 Signalised Crossroads	2	1	0	3
8	Croesnewydd Road / Rhyd Broughton Lane / Hospital Access Rndbt	0	0	0	0
9	Berse Road / Rhy Broughton Lane Priority Roundabout	0	0	0	0
10	A525 Ruthin Road / Heritage Way Priority Junction	0	0	0	0
11	Junction 4 of the A483	4	1	1	6

Table 3.2 – Accident Summary - Links

Link		Severity of Collision			Total
		Slight	Serious	Fatal	
1	A525 Ruthin Road (between Heritage Way and the A5152)	6	2	0	8
2	Berse Lane	0	0	0	0
3	Bersham Road / B5098 (between Vicarage Hill and Poyser St)	5	1	0	6
4	Croesnewydd Road (between A525 and Rhyd Broughton Lane)	0	0	0	0
5	Rhyd Broughton Lane	0	0	0	0

3.38 No accidents have occurred at Junctions 1, 2, 3, 5, 8, 9 and 10. As a result, all of these junctions are considered to be operating in a safe manner.

3.39 Two accidents occurred at Junction 4 (B5098 / Vicarage Hill Priority Junction) which were both of slight severity. Two accidents occurred at Junction 6 (A5152 Ruabon Road / A525 Ruthin Road junction) which were both of slight severity. Three accidents occurred at Junction 7 (A525 Ruthin Road / A5152 Signalised Crossroads) including two of slight severity and one of serious severity. Given the relatively low number of accidents which have occurred and given the majority of accidents were of slight severity, the junctions are considered to be operating in a relatively safe manner and we are not aware of any concerns from the Council to promote safety schemes at any of these locations.

3.40 Six accidents occurred at Junction 4 of the A483 including 4 of slight severity, 1 of serious severity and 1 fatal accident. The accident data is provided in **Technical Appendix B** and details that the fatal accident occurred when a car turning right crashed head on with a motorcyclist proceeding normally along the carriageway. Whilst any accident is regrettable, particularly a fatal, there is nothing to suggest that the junction is generally operating in an unsafe manner.

3.41 No accidents have occurred at Links 1, 4 and 5. As a result, all of these links are considered to be operating in a safe manner.

3.42 Eight accidents occurred at Link 1 (A525 Ruthin Road) including six of slight severity and two of serious severity. Six accidents occurred at Link 3 (Bersham Road / B5098) including five of slight severity and one of serious severity. Given the majority of accidents were of slight severity, the links are considered to be operating in a generally safe manner.

3.43 Based on the above analysis, the existing accident record does not present a concern in the context of the proposed development.

Traffic Survey Data

3.44 In order to establish current existing traffic flow demand, traffic flow surveys have been undertaken on Thursday 10th November 2022. The survey flows captured survey data at the following junctions:

- A525 Ruthin Road / Croesnewydd Road Signal Junction;
- A525 Ruthin Road / Berse Lane Priority Junction;
- Bersham Road / Berse Lane Priority Junction;
- B5098 / Vicarage Hill Priority Junction;
- A5152 Ruabon Road / A525 Ruthin Road Priority Junction;
- A525 Ruthin Road / A5152 Signalised Crossroads;
- Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Priority Roundabout;
- Berse Road / Rhy Broughton Lane Priority Roundabout;
- A525 Ruthin Road / Heritage Way Priority Junction; and
- Junction 4 of the A483.

3.45 The traffic surveys are presented in **Technical Appendix C**. The peak hours for the local highway network have been calculated as being between 08:00 and 09:00 and 16:30 to 17:30.

3.46 In order to determine the split between through traffic and school traffic along Homestead Lane, an additional turning count survey took place on Tuesday 24th January 2024 at the Ysgol Clywedog access.

3.47 The queue survey data is also shown in **Technical Appendix C** in order to validate the capacity assessment models presented later in this report which include 2022 survey flow assessments.

4.0 PROPOSED DEVELOPMENT

General

4.1 Given the application is in outline, the proposals are still to be developed in detail. The indicative site layout plan is presented in **Technical Appendix C.** Whilst the layout refers to 1,450 dwellings, in order to provide a robust assessment in terms of highway impact and allow for flexibility/alterative options at the site, the assessments undertaken in this report have been based on 1,520 dwellings.

4.2 There is potential to provide a commercial centre on the north-western section of the site with plans to be developed in detail at a later stage.

Proposed Site Access Arrangements

4.3 The proposed vehicular access arrangements for the site are summarised below.

Access from A525 Ruthin Road

4.4 The A525 Ruthin Road will provide the main route for traffic travelling to/from the development.

4.5 The existing A525 Ruthin Road / Croesnewydd Road 3-arm signalised junction would be upgraded to provide a 4-arm signalised crossroads with the proposed site access forming the southern arm with a two lane exit. Local widening would be required to provide two-lane approaches on an all arms. The proposed junction layout is shown in **Annex A Figure A1** of this report.

4.6 Pedestrian and cycle provision would be provided as described in Chapter 5. Signalised pedestrian crossing facilities including pedestrian refuges will be provided along all arms of the junction in order to further assist pedestrians.

4.7 A second development access would be provided from Ruthin Road at approximately the mid-point between A483 Junction 4 and A525 Ruthin Road / Croesnewydd Road junction (referred to as the “North-Western Site Access”). The junction layout would comprise a 3-arm priority arrangement. The proposed junction layout is shown in **Annex A Figure A2** of this report.

4.8 In earlier versions of this report, the North-Western Site Access was located some 25 metres further to the east providing better separation from the A525 / Berse Lane junction. The requirement to safeguard the land for the possible Welsh Government A483 Junction 4 scheme has necessitated the westward relocation of the internal spine road and the corresponding site access.

4.9 The site access arrangements for the development proposals have been specifically designed to take account of the indicative access for the Western Gateway site.

Access from B5099 Bersham Road

4.10 Access from the B5099 Bersham Road would comprise two priority T-junctions located approximately 190m and 450m to the west of the junction with Homestead Lane, respectively. The proposed access will include a 6.75m wide carriageway and shared footway/cycleway facilities which will tie onto Bersham Road. The proposed junction layouts are shown in **Annex A Figures A3 and A4** of this report. Access to the site will also be possible from the B5098 Berse Lane.

B5098 Berse Lane and Homestead Lane

4.11 When the development's internal road network is fully built out it would provide north-south routes connecting the A525 Ruthin Road with the B5099 Bersham Road. These links would provide an opportunity for existing traffic to reassign; specifically, from the B5098 Berse Lane and Homestead Lane. Such traffic reassignment would provide an opportunity for Berse Lane and Homestead Lane to be downgraded to access only / active travel routes through the use of a Traffic Regulation Order (TRO), or similar mechanism. However, WCBC, have not provided any endorsement of this proposal at this stage.

Speed Limit

4.12 It is proposed that the 30mph traffic speed limit along the A525 Ruthin Road should be extended along the entire length of the site frontage. As a result, the entirety of Berse Lane will also be reduced from 50mph to 30mph. All proposed accesses will therefore be along a road with a mandatory speed limit of 30mph. Based on the guidance presented in Manual for Streets (MfS), visibility requirements of 2.4m x 43m are required from each access and this is achievable.

Permeability

4.13 As noted in the Manual for Streets (MfS) 2 document, development should aim to create networks of streets and active travel corridors that provide permeability and connectivity to main destinations and a choice of routes. The provision of access points onto both the A525 and Bersham Road therefore increases the permeability of the site for all transport users. Pedestrian and cycle routes would also be provided within the development to facilitate easy / direct access within the site along with connections to the external network.

Internal Site Layout and Servicing

4.14 As mentioned previously, the application is in outline and therefore the internal layout is to be determined at a later stage, however the internal road network will be designed to ensure the

movements of service and refuse vehicles will be accommodated without allowing their requirements to dominate the layout of the site.

4.15 As mentioned above, the layout will be configured to feed site traffic towards the main vehicular access route - the A525 Ruthin Road. Other routes to/from Wrexham centre will focus on public transport and active travel movements.

Parking

4.16 Similarly, given the application is in outline the parking arrangement is still being developed, however the proposed parking will be provided in accordance with WCBC's parking standards.

5.0 ACCESSIBILITY

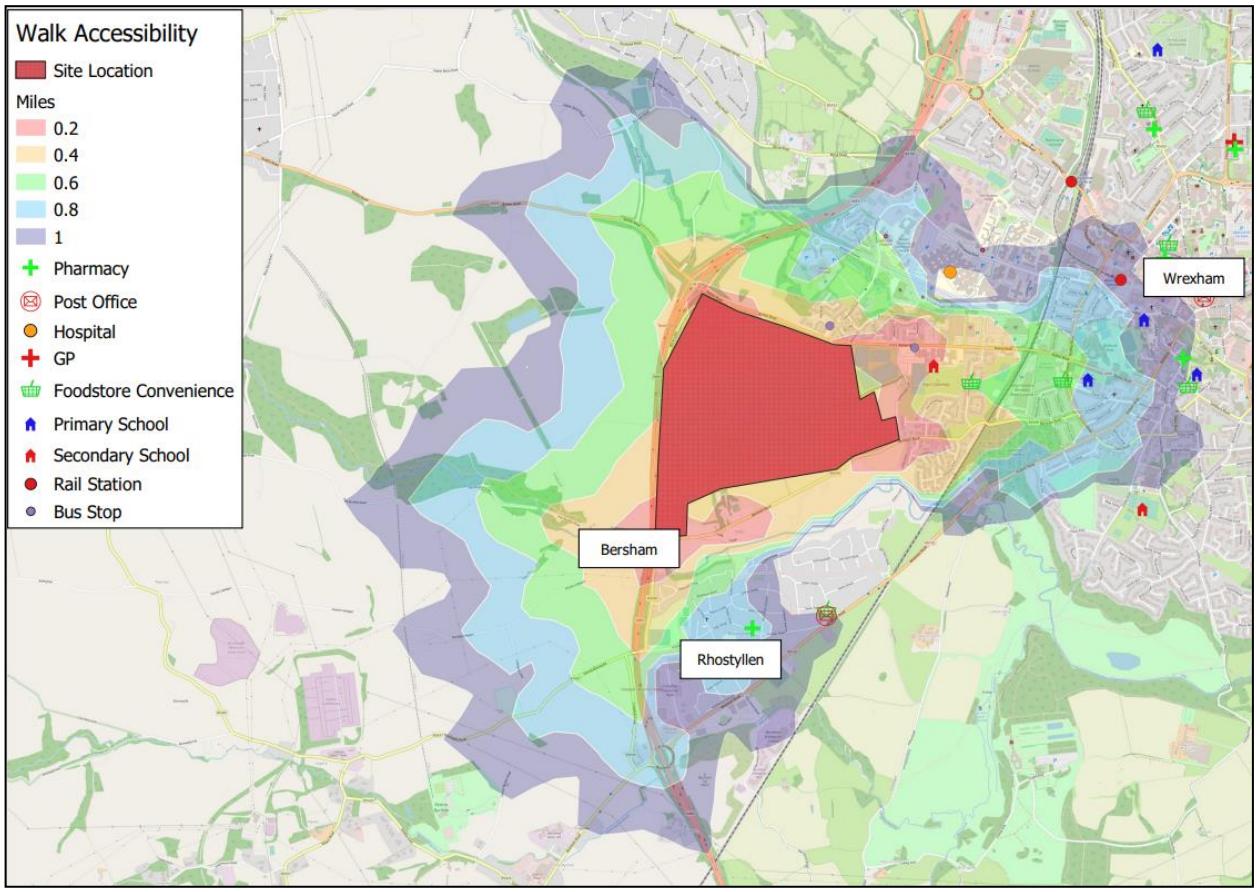
General

5.1 This chapter presents a review of the accessibility of the site by walking, cycling and public transport modes.

Pedestrian Accessibility

5.2 Industry standard GIS TRACC software has been used to assess the accessibility of the development by foot for a 1 mile walk distance from the site, as shown on **Figure 5.1** below. The plan shows the reachable areas within 400m coloured bands from the site.

Figure 5.1 – Walking Accessibility 2km Isochrone

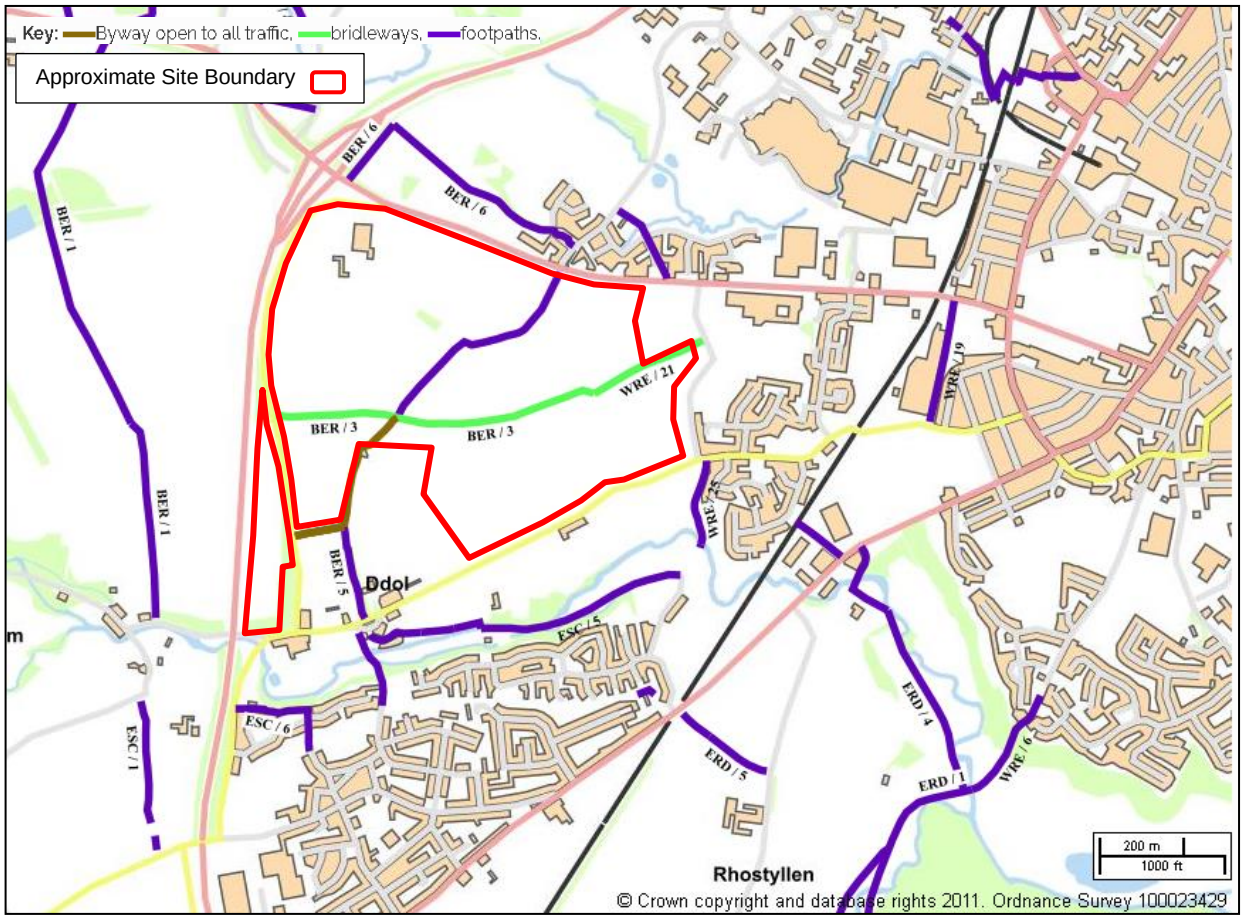


5.3 The site is within acceptable walking distance of Wrexham town centre, and the amenities on offer. The closest bus stops are located on Croesnewydd Road, approximately 100m north of the site.

5.4 The site will be developed with the highest importance given to the movement of pedestrians through the site and connecting to the existing pedestrian infrastructure outside of the site.

5.5 Two Public Rights of Way (4 & 5) are located within the site. Public Footpath 4 creates a pedestrian route from the A525 in the north to the B5098 Berse Lane to the south-west. Public Footpath 5 creates a pedestrian route between Public Footpath 4 in the north with Bersham Road to the south. In addition, a bridleway (3) crosses the site and provides a connecting from the B5098 Berse Lane to the west, with Homestead Lane to the east. These are shown in **Figure 5.2**.

Figure 5.2 – PROW in the Vicinity



5.6 The topography of the local area is generally flat and conducive to pedestrian trips, and the area benefits from natural surveillance from the businesses and residential properties that abut all the main walking routes.

5.7 Overall, the site benefits from high levels of accessibility by foot, with the area of Wrexham within walking distance from the site, providing opportunities for linked shopping, leisure, and recreation trips as well as transport connections.

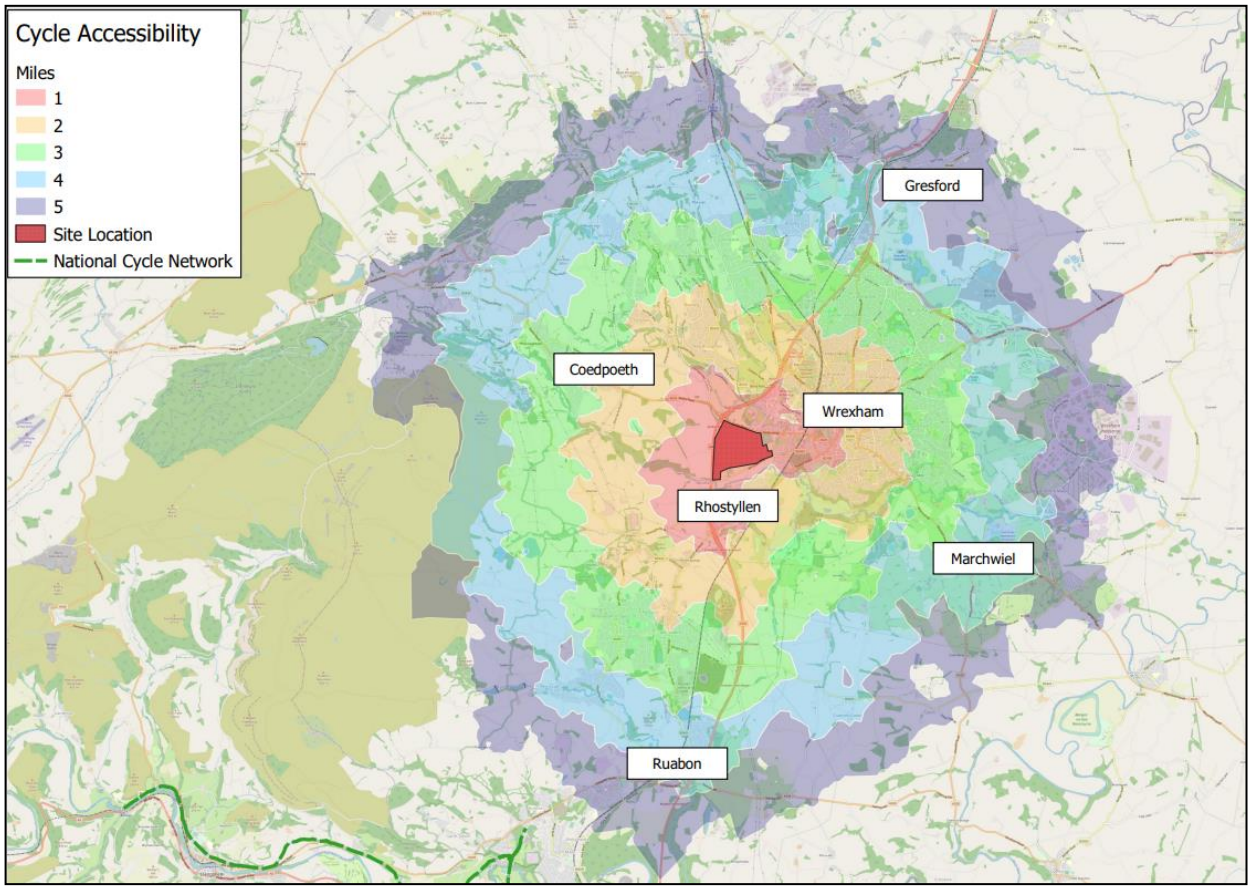
Cycle Accessibility

5.8 Transport policy identifies that cycling represents a realistic and healthy option to use of the private car for making journeys up to 5 miles as a whole journey or as part of a longer journey by public transport.

5.9 Again, the internal layout of the site and its immediate surroundings will be developed to give a high priority to safe and convenient cycle access.

5.10 GIS TRACC software has again been used to assess the accessibility of the site by bicycle, for a 5 mile cycle distance and is shown on **Figure 5.3** below.

Figure 5.3 - Cycle Accessibility 5 Miles Isochrone



5.11 In addition to Wrexham town centre and the employment areas of the town, the plan demonstrates that the nearby areas of Rhostyllen, Marchwiel, and Ruabon, amongst others, are all located within the 5 mile catchment area from the development site. The topography of the area is generally conducive to cycling, so the site is therefore well located to encourage prospective residents to travel via bicycle.

5.12 As the application site is within an acceptable cycle distance of a range of areas and associated facilities, cycling is considered to be a viable alternative to private car use for prospective residents of the site, particularly given that secure cycle parking is proposed.

Public Transport

Bus

5.13 The nearest bus stops are located on Croesnewydd Road, approximately 100m north of the site. The bus stops are served by the TL2 bus service which provides around 3 services per day and is a circular service which operates in a clockwise direction. The TL2 service routes via Wrexham town centre, Pentre back and Pen y Bryn and serves a large number of key facilities including the Wrexham General and Wrexham Central rail stations.

5.14 There are numerous and more frequent bus services located along the A5152 (within 900m walking distance to the south of the site) and Croesnewydd Road (within 900m walking distance to the north of the site). Both sets of bus stops provide over 10 services per hour in either direction with links to destinations throughout the wider region.

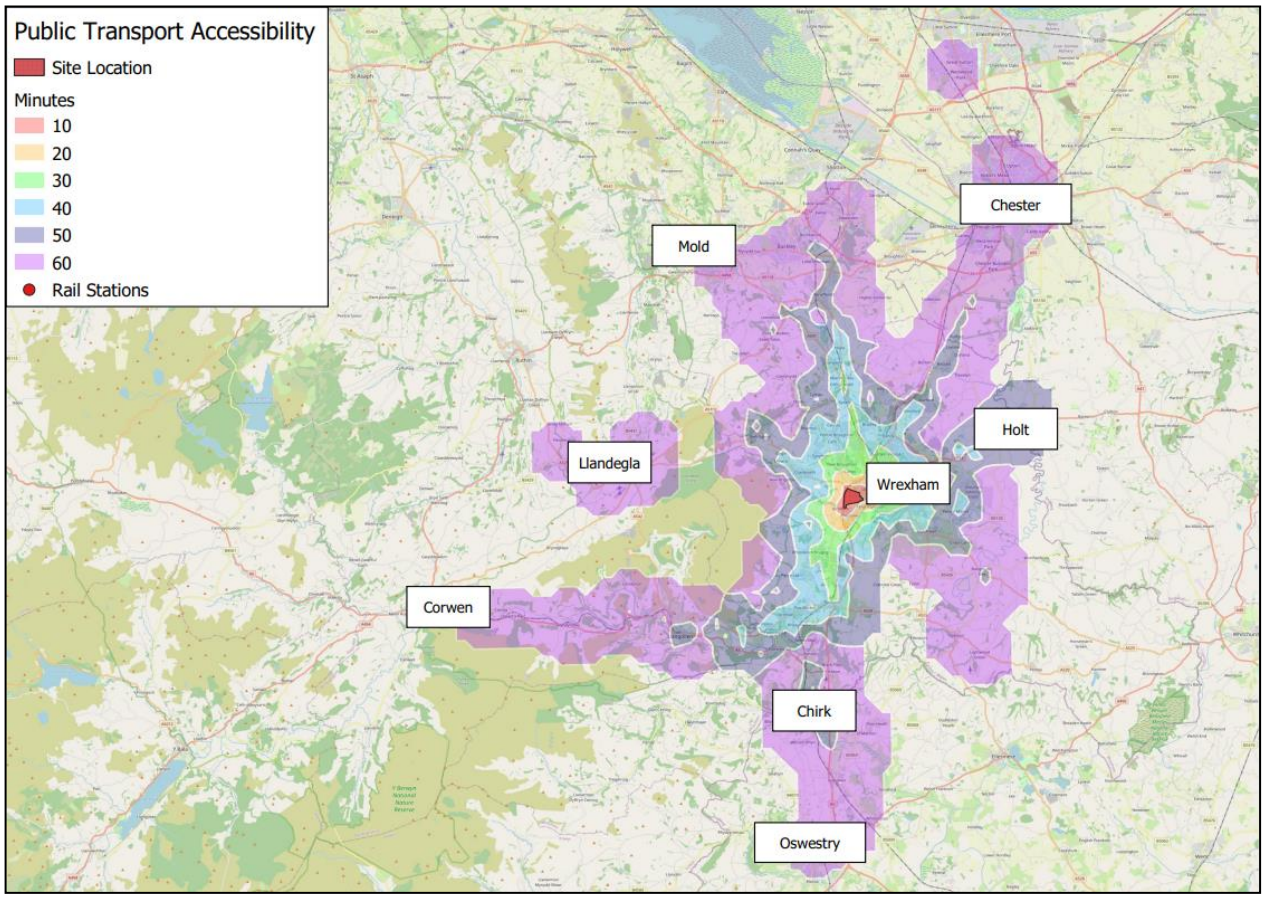
Train

5.15 Wrexham Central Train Station can be accessed in under a 10-minute cycle time (or <2mile cycle distance) from the site and is therefore within an acceptable cycling distance. Wrexham Central Train Station provides direct frequent train services throughout the week to destinations including Bidston.

5.16 In addition, Wrexham General Train Station can be accessed in under a 12-minute cycle time (or <2.1mile cycle distance) from the site and is therefore within an acceptable cycling distance. This train station provides regular services throughout the week to destinations including Holyhead, Wrexham Central, Bidston, Birmingham and Cardiff Central.

5.17 The level of accessibility by public transport has been analysed using GIS TRACC software to assess the accessibility of the site and is shown on **Figure 5.4** below**.** The figure illustrates the distance that can be travelled within 60 minutes by public transport to and from the site, which includes the time taken to walk to the bus, and railway stops.

Figure 5.4 – 60 Minute Public Transport Catchment Isochrone



5.18 The above demonstrates that the site is within a reach of a number of bus, and rail links, serving Wrexham town centre, Wrexham Industrial Estate and other destinations further afield. The figure shows that key areas of Oswestry, Chester and Holt, amongst others, are in an acceptable 60-minute commute time of the site.

Active Travel Improvements Proposed in Conjunction With the Development

5.19 **Table 5.1** summarizes the proposed active travel enhancements external to the site boundary. These will be funded by the development.

Table 5.1: Proposed External Active Travel Enhancements

Corridor	Section	Proposed Active Travel Measure
A525 Ruthin Road	Section B5098 Between Berse Lane and Croesnewydd Road	Southern Side (along site frontage) 5.5m Segregated Cycle / Footway comprising: - 3.0m 2-way cycle track - 2.0m footway - 0.5m separation verge Northern side - 3.0m Shared Cycle / Footway
	Section Between Croesnewydd Road and Homestead Lane	Southern side - 3.0m Shared Cycle / Footway
	Section Between Homestead Lane and Centenary Road	Southern side - 2.0m Footway
B5099 Bersham Road	Section Between Western Site Boundary and Homestead Lane	Northern Side (along site frontage) 5.5m Segregated Cycle / Footway comprising: - 3.0m 2-way cycle track - 2.0m footway - 0.5m separation verge
B5098 Berse Lane	Section Between B5099 Bersham Road and PROW Byway	Eastern side - 3.0m Shared Cycle / Footway
Homestead Lane	Section Between A525 Ruthin Road and PROW	Eastern side (adjacent to school frontage) - 2.0m Footway

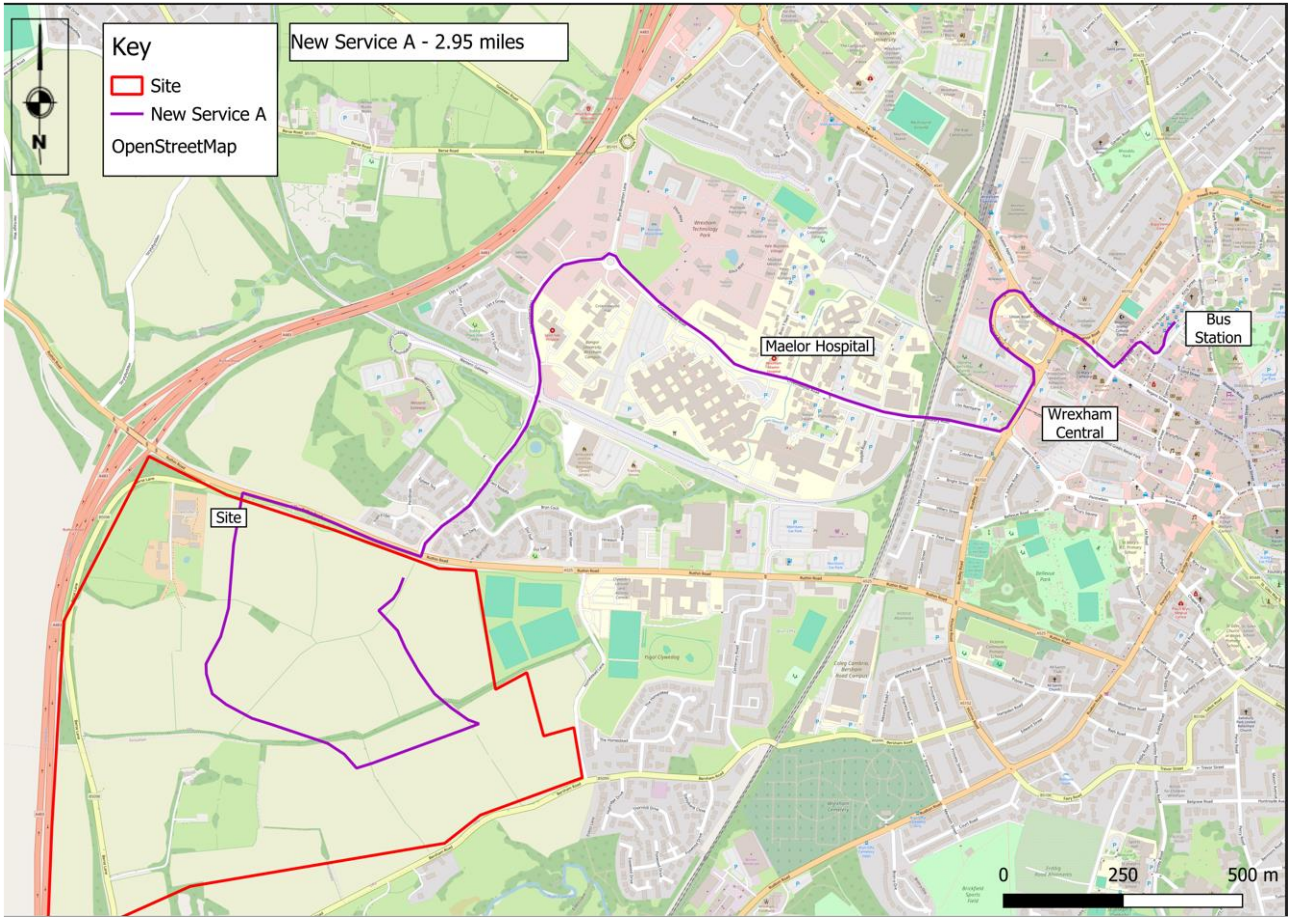
5.20 A comprehensive set of active travel measures are also proposed within the development site. Details of these can found in the Design and Access Statement.

Bus Service Improvements Proposed in Conjunction With the Development

5.21 **Table 5.2** summarizes the proposed bus service enhancements. These will be funded by the development.

Table 5.2: Proposed Bus Service Enhancements

Measure	Route	Indicative Operational Parameters
New Bus Service	One way loop within the development site, then connecting to Wrexham Bus Station via Maelor Hospital and Central Station (indicative route shown below)	Half hourly service, Monday to Saturday



6.0 FUTURE BASELINE TRAFFIC CONDITIONS

Introduction

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

Traffic Growth

6.2 Capacity assessments have been undertaken for the end of the Local Plan period (2028) except for Junction 4 of the A483 which has been undertaken for the expected completion year of the development (2040) due to the strategic nature of the junction.

6.3 In order to quantify the level of background traffic growth that could occur on the local network, National Traffic Model (NTM) growth factors, modified by TEMPRO local growth factors, have been used for the Wrexham dataset.

6.4 The traffic generated by the proposed allocation site, committed developments and other allocated sites have been specifically estimated and included in the capacity assessments. In order to avoid double counting, the traffic growth factor has been adjusted in TEMPRO to remove the housing and job numbers that will be delivered by these sites. The resultant TEMPRO growth factors are summarised in **Table 6.1** below.

Table 6.1 – Traffic Growth Factors

Period	AM Peak	PM Peak
2022 -2028	1.0627	1.0651
2022 - 2040	1.2068	1.2091

6.5 The above growth factors are applied to the surveys traffic flow to obtain the 2040 growthed surveyed traffic flows, as shown in the **Technical Appendix A** (in a separate document). It is worth emphasizing that the derived 2040 growthed flows are likely to be an overestimate since they do not take account of the Welsh Government's policy of not providing additional road capacity and engendering modal shift away from private car use.

Committed Development

6.6 The following committed developments have been taken into account and included in the assessments given the scale, location to the application site and impact on the study area:

- 112 dwellings along Gatewen Road (LPA Ref: P/2021/0955);
- 70 dwellings along Heritage Way (LPA Ref: PP/2021/0255);
- 189 dwellings along Main Road (LPA Ref: 2021/0135);
- 455 dwellings along Stantsy Chain Road (LPA Ref: P/2019/0923)
- 450 dwellings at Brymbo Park (LPA Ref: P/2019/0546) – appeal pending;
- 90 dwellings at Plas Coch (LPA Ref: P/2021/0094)

6.7 Wrexham's adopted Local Development Plan (LDP)) includes the Western Gateway Employment site, on the north side of Ruthin Road, and an associated link road running north-west from the A525 to Croesnewydd Road. The employment site has been allocated for over 20 years and is not a committed development, with no unimplemented planning permission in place, and no proposals to bring the link road forward. Discussions held with WCBC in January 2024 supported this position. Accordingly, neither the employment site nor the associated link road have been included in this assessment. Notwithstanding the above, the development proposals set out in this report do not prejudice the construction of the link road, or the associated junction with the A525 Ruthin Road.

6.8 The Wrexham Stadium application (LPA Ref: P/2022/0725) has not been included in the flows given the supporting TA states the application will not generate a significant amount of flows during the peak hours that will impact the study area.

6.9 The traffic flows from the above committed developments have been obtained from the supporting Transport Assessments (TA's) and are shown in **Technical Appendix A.**

7.0 TRIP GENERATION AND DISTRIBUTION

Trip Generation

7.1 Following consultation with WCBC Highways, a traffic survey was undertaken in January 2024 at two nearby residential estates (Bryn Coch and Pendinas) in order to calculate vehicle trip rates which are comparable to the proposed development.

7.2 Subsequent analysis of the traffic survey results and further consultation with WCBC Highways suggested that the housing mix at the Lower Berse Farm development was not sufficiently comparable to that at the surveyed developments.

7.3 A review of comparable developments in the TRICS trip generation rate database was undertaken to derive trip generation rates with a housing mix comparable to that expected at the Lower Berse Farm development. The resulting trip generation rates are shown in the first row of **Table 7.1**. (labelled as “Standard” trip rates).

7.4 As briefly described in the preceding chapters, a separate analysis was undertaken to estimate the potential modal shift as a result of the sustainable transport improvements proposed in conjunction with the development. The results of this are summarised in the separate “*Technical Report – Sustainable Transport Improvements and Potential Modal Shift”.*

7.5 The outcome of this separate analysis was a set of vehicle trip generation rates which were around 9% lower than the “Standard” trip rates due to the anticipated modal shift. These are shown in the second row of **Table 7.1** (labelled as “Adjusted” trip rates).

Table 7.1 – Adopted Trip Generation Rates

Development	Vehicle Trip Rates (vehs/dwelling/hour)					
	AM Peak Hour			PM Peak Hour		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
"Standard" Vehicle Trip Rates	0.084	0.344	0.427	0.286	0.128	0.413
"Adjusted" Vehicle Trip Rates	0.076	0.312	0.388	0.260	0.116	0.376

7.6 Both sets of trip rates in the table have been applied to the defined development quantum (1,520 dwellings) to estimate the anticipated peak hour vehicular trip generation, as summarised in **Table 7.2** below.

Table 7.2 – Estimated Vehicle Trip Generation based on 1,520 dwellings

Development	AM Peak Hour			PM Peak Hour		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
"Standard" Vehicle Trip Rates	127	522	649	435	194	628
"Adjusted" Vehicle Trip Rates	115	475	590	395	176	571

7.7 The proposed local centre is designed to serve residents of the development; as such, it will not generate a significant volume of external trips. A small number of school-related trips may be generated from outside the development; however, it is expected that these will be balanced out by those accessing the local centre via non-car modes (which is not reflected in the adopted trip rates). In fact, the internalisation of development trips (ie. trips with both an origin and destination within the site) means that the adopted trip rates can be considered robust.

Trip Distribution

7.8 Trips to and from the site have been distributed using a travel to work model based upon 2011 Census data for the Wrexham 011 MSOA. (It was agreed with WCBC that the use of 2021 census data would not be appropriate due to impacts from the COVID pandemic). The trip distribution routes and proportions are shown in **Table 7.3**. Further details of the traffic distribution calculations can be found in **Technical Appendix A**.

Table 7.3 – Trip Distribution

Road Corridor	Proportion
A483 (N)	48.3%
A483 (S)	14.0%
Wrexham Town Centre	14.7%
Croesnewydd Rd	11.6%
A525 (East of Wrexham Centre)	4.9%
Other Corridors	6.5%
Total	100.0%

Trip Assignment

7.9 The development related traffic for the proposed residential use has been assigned to the above distribution method for the wider highway network and is shown in **Technical Appendix A.**

7.10 As described previously, the internal layout of the site will guide external vehicular traffic to use the A525 Ruthin Road. As such, it has been assumed that approximately 95% of properties will route via the northern accesses and 5% of properties will route via the southern accesses when travelling to/from Wrexham Town Centre.

7.11 Given the proposed layout is still indicative, it has been assumed that the western accesses will accommodate 75% of the traffic heading west, 25% of the traffic heading east and vice versa for the eastern accesses.

7.12 As discussed in the earlier Chapter 4, the development's internal road network would provide an opportunity for existing traffic to reassign; specifically, from the B5098 Berse Lane and Homestead Lane. Such traffic reassignment would provide an opportunity for Berse Lane and Homestead Lane to be downgraded to access only / active travel routes. However, WCBC, have not provided any endorsement of this proposal at this stage.

7.13 In the absence of such an endorsement, it has been assumed that both Berse Lane and Homestead Lane would remain open to general traffic. Following on from this, the following traffic assignment assumptions have been made:

- B5098 Berse Lane – No traffic reassignment; all through traffic would continue to use this route
- Homestead Lane – This road is of a significantly lower standard than the proposed parallel internal development roads . As such, through traffic would be expected to reassign to the higher standard route and this has been assumed in the highway network analysis described in Chapter 8. School-related traffic is assumed to remain on Homestead Lane.

8.0 HIGHWAY NETWORK IMPACTS

Scope of Assessment

8.1 The study area for the TA includes a total of 11 junctions as shown in **Figure 8.1**.

8.2 The close proximity of the development site to A483 Junction 4 means that the majority of longer-distance traffic movements will route via this junction. Routeing via either Junctions 3 or 5 would result in materially longer journey times. As such, the impact of the development on other junctions on the A483 would be minimal.

Assessment Approach and Methodology

8.3 All junctions have been tested with the full development (1520 units) to ensure a robust assessment.

8.4 The following scenarios have been assessed for all junctions:

- 2028 Reference (ie. existing road configuration, no development)
- 2028 With Development

8.5 In addition, the following scenarios have been assessed for A483 Junction 4 reflecting the strategic nature of this junction:

- 2040 Reference (ie. existing road configuration, no development)
- 2040 With Development

8.6 All junctions have been tested using both the “standard” and “adjusted” trip rates described in Chapter 7.

8.7 “Acceptability criteria” are as follows:

- **Existing junctions** - Leave the junction in a no worse position than it would be without the development (‘nil detriment’)

- **New junctions** – Satisfactory traffic capacity conditions (as specified in para 8.8 below)

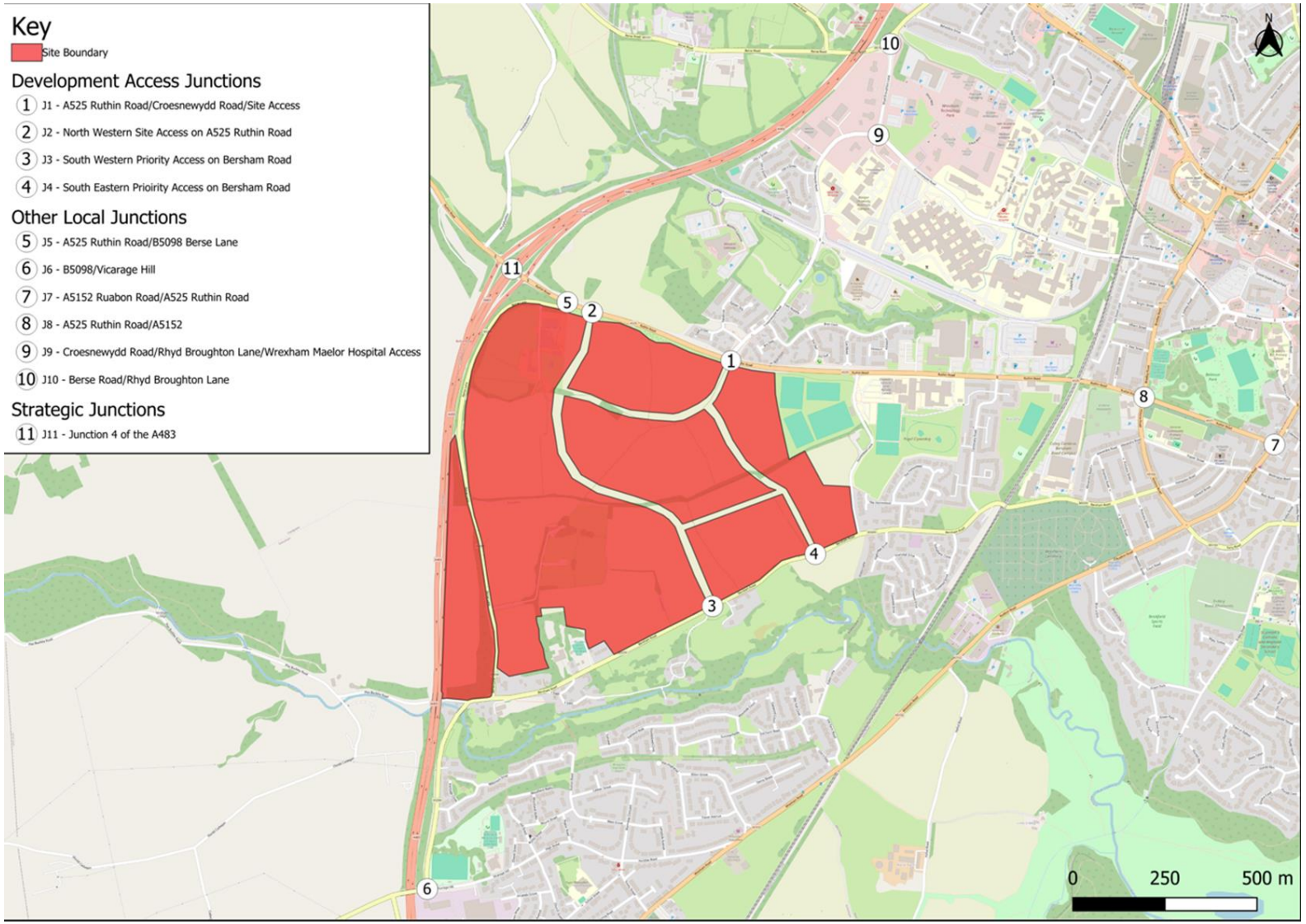
8.8 Assessments of the priority-controlled and roundabout junctions within the study area have been undertaken using Junctions 9 (ARCADY and PICADY) software and for the signal junctions LinSig software. With the Junctions 9 models the results generated provide a Ratio to Flow capacity (RFC) along with an estimate of the likely traffic queues. **RFC values less than 0.85 are generally accepted as representing stable and acceptable operating conditions**. Values

between 0.85 and 1.0 represent variable operation (i.e. possible queues building up at the junction during the period under consideration and increases in vehicular delay moving through the junction). RFC values in excess of 1.0 represents overloaded conditions (i.e. congested conditions). In this report results are presented in the form of the RFC for the worst arm.

8.9 Signal-controlled junctions have been assessed using LinSig software. In this report results are presented in the form of a Practical Reserve Capacity (PRC) for the junction as a whole. **A PRC value greater than 0% indicates satisfactory junction performance**.

8.10 Further details of the highway network assessment and detailed junction capacity results can be found in **Technical Appendix B**.

Figure 8.1: Location of Assessed Junctions



Development Access Junctions

8.11 **Table 8.1** shows the results of the junction capacity analysis for the development access junctions. Reference scenario results are not shown because these are new junctions which only exist in the With Development scenario.

Table 8.1 - Junction Capacity Analysis Results - Development Access Junctions

SCENARIO: YEAR 2028 WITH DEVELOPMENT & STANDARD TRIP RATES

Ref. No.	Junction Name	Junction Analysis Results	
		AM	PM
	SIGNALISED JUNCTIONS		
1	Proposed A525 Ruthin Road / Croesnewydd Road / Site Access Signal Junction	14.1%	41.8%
	PRIORITY JUNCTIONS		
2	Proposed North-Western Site Access on A525 Ruthin Road	0.63	0.51
3	Proposed South-Western Priority Access along Bersham Road	0.15	0.07
4	Proposed South-Eastern Priority Access along Bersham Road	0.28	0.27

SCENARIO: YEAR 2028 WITH DEVELOPMENT & ADJUSTED TRIP RATES

Ref. No.	Junction Name	Junction Analysis Results	
		AM	PM
	SIGNALISED JUNCTIONS		
1	Proposed A525 Ruthin Road / Croesnewydd Road / Site Access Signal Junction	21.1%	42.9%
	PRIORITY JUNCTIONS		
2	Proposed North-Western Site Access on A525 Ruthin Road	0.56	0.47
3	Proposed South-Western Priority Access along Bersham Road	0.27	0.27
4	Proposed South-Eastern Priority Access along Bersham Road	0.28	0.27

Notes:
1) For signalised junctions, a Practical Reserve Capacity (PRC) value greater than 0% indicates satisfactory junction performance.
2) For priority junctions, RFC values less than 0.85 are generally accepted as representing stable and acceptable operating conditions.

8.12 The capacity assessment results indicate that all four of the proposed development junction access layouts operate satisfactorily.

Other Local Junctions

8.13 Six existing junctions on the local road network have been identified as being potentially impacted by the development related traffic. **Table 8.2** shows the results of the junction capacity analysis for these junctions. Results are shown for both the Reference and With Development scenarios.

Table 8.2 - Junction Capacity Analysis Results – Other Local Junctions

SCENARIO: YEAR 2028 WITH STANDARD TRIP RATES

Ref. No.	Junction Name	Junction Analysis Results			
		2028 Reference		2028 With Development	
		AM	PM	AM	PM
	SIGNALISED JUNCTIONS				
8	A525 Ruthin Road / A5152 Victoria Road	91.1%	77.8%	61.8%	58.3%
	PRIORITY JUNCTIONS				
5	A525 Ruthin Road / B5098 Berse Lane	0.35	0.17	0.78	0.19
6	B5098 / Vicarage Hill	0.17	0.22	0.20	0.23
7	A525 Ruthin Road / A5152 Ruabon Road	0.49	0.46	0.68	0.67
9	Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Roundabout	0.69	0.47	0.70	0.50
10	B5101 Berse Road / Rhyd Broughton Lane Roundabout	0.73	0.65	0.74	0.66

SCENARIO: YEAR 2028 WITH ADJUSTED TRIP RATES

Ref. No.	Junction Name	Junction Analysis Results			
		2028 Reference		2028 With Development	
		AM	PM	AM	PM
	SIGNALISED JUNCTIONS				
8	B5101 Berse Road / Rhy Broughton Lane	91.1%	77.8%	64.2%	57.7%
	PRIORITY JUNCTIONS				
5	A525 Ruthin Road / B5098 Berse Lane	0.35	0.17	0.70	0.19
6	B5098 / Vicarage Hill	0.17	0.22	0.19	0.23
7	A525 Ruthin Road / A5152 Ruabon Road	0.49	0.46	0.66	0.65
9	Croesnewydd Road / Rhyd Broughton Lane / Wrexham Maelor Hospital Access Roundabout	0.69	0.47	0.70	0.50
10	B5101 Berse Road / Rhyd Broughton Lane Roundabout	0.73	0.65	0.74	0.66

Notes:
1) For signalised junctions, a Practical Reserve Capacity (PRC) value greater than 0% indicates satisfactory junction
performance.
2) For priority junctions, RFC values less than 0.85 are generally accepted as representing stable and acceptable operating conditions.

8.14 The results show that all six junctions operate satisfactorily with the development in place.

Strategic Junctions

8.15 Significant road network improvements have previously been proposed by Welsh Government at A483 Junction 4. These comprise a large, new grade-separated roundabout and associated link roads. The status of this scheme is currently unclear. In the absence of any clarity on this point, A483 Junction 4 has been assessed based on its existing layout.

8.16 WCBC have provided the LinSig model used by Capita for previous highway impact assessments at this junction. Both WG and WCBC provided feedback on earlier versions of the LinSig model used for this assessment. The model configuration was modified to address these points. The results are summarised in **Table 8.3** for the Reference and With Development + Mitigation scenarios.

Table 8.3 - Junction Capacity Analysis Results – Strategic Junctions

SCENARIO: YEAR 2030 WITH STANDARD TRIP RATES

Ref. No.	Junction Name	Junction Analysis Results			
		2030 Reference		2030 With Development + Mitigation	
		AM	PM	AM	PM
11	Junction 4 of the A483	-18.7%	-34.6%	-11.1%	-1.9%

SCENARIO: YEAR 2040 WITH STANDARD TRIP RATES

Ref. No.	Junction Name	Junction Analysis Results			
		2040 Reference		2040 With Development + Mitigation	
		AM	PM	AM	PM
11	Junction 4 of the A483	-31.3%	-49.1%	-12.4%	-6.9%

SCENARIO: YEAR 2030 WITH ADJUSTED TRIP RATES

Ref. No.	Junction Name	Junction Analysis Results			
		2030 Reference		2030 With Development + Mitigation	
		AM	PM	AM	PM
11	Junction 4 of the A483	-18.7%	-34.6%	-11.5%	-1.7%

SCENARIO: YEAR 2040 WITH ADJUSTED TRIP RATES

Ref. No.	Junction Name	Junction Analysis Results			
		2040 Reference		2040 With Development + Mitigation	
		AM	PM	AM	PM
11	Junction 4 of the A483	-31.3%	-49.1%	-11.1%	-6.5%

Notes:
1) For signalised junctions, a Practical Reserve Capacity (PRC) value greater than 0% indicates satisfactory junction performance.

8.17 The junction is known to be operating beyond its theoretical capacity without the development and queues and delays will inevitably be increased by the addition of all committed development within Wrexham without any mitigation works.

8.18 The proposed improvement scheme, which maintains the basic layout of the existing junction, is shown in **Annex A Figures A5, A6 and A7** and includes the following elements:

- Localised widening to provide additional lane capacity on the A525 westbound and the A525 eastbound approaches to the junction

- Localised widening to provide additional lane capacity on the A525 westbound and A525 eastbound exits from the junction
- Modification of junction lane markings
- A reduction in size of the existing traffic islands which feature signal heads.

8.19 As can be seen from **Table 8.3**, junction performance with the development and the mitigation scheme in place shows a noticeable improvement when compared to that in the reference situation.

9.0 SUMMARY AND CONCLUSIONS

9.1 SCP have been appointed by Redrow Homes North West to provide specialist transport planning and engineering advice in support of a proposed residential development of up to 1520 dwellings and a local centre on land south of Ruthin Road, Wrexham.

9.2 The site is an allocation for a minimum of 1500 homes in the adopted Local Development Plan (LDP) and at the examination of the Local Plan the site was fully supported by the Council, along with our Client. The principle of development has been fully examined and it has been concluded that the site meets with the national and local policies in that it is a sustainable location.

9.3 This updated report addresses initial responses received from both the Welsh Government and Wrexham Council.

9.4 In adherence with Welsh Government policy there has been a strong focus on sustainable access to the development. A comprehensive set of active travel and bus improvement measures are proposed and these will be funded by the development. The internal site layout has been designed to give pedestrians and cyclists the highest priority.

9.5 The impact of the development related traffic movements has been tested on the surrounding highway network. The development related traffic is to be distributed over a number of access points, including two principal accesses from Ruthin Road (A525) and two further secondary accesses from Bersham Road. Traffic from the development has been distributed in accordance with existing patterns of travel within Wrexham, including movements towards the town centre, Wrexham Industrial Estate, the hospital site, Ruthin, Chester and other destinations north and south along the A483.

9.6 With the development traffic added to the highway network, it has been found that the highway network can accommodate the development related traffic movements, albeit with some improvements along the A525 at the site access points and at the A483 Junction 4 intersection.

9.7 The proposals provide an opportunity to re-route some traffic through the development site, for movements between the A525 and Bersham Road. Specifically, Berse Lane and Homestead Lane could be downgraded to access only / active travel routes. However, WCBC have not provided any endorsement of this proposal at this stage.

9.8 Overall, there are no highway, traffic or transport reasons to prevent the development proposals from being brought forward as envisaged by the adopted Local Development Plan for Wrexham.

Furthermore, the development would enhance the sustainable transport network in western Wrexham.

ANNEX A: JUNCTION LAYOUT DRAWINGS

Figure A1: Proposed A525 Ruthin Road / Croesnewydd Road / Site Access Signalised Junction

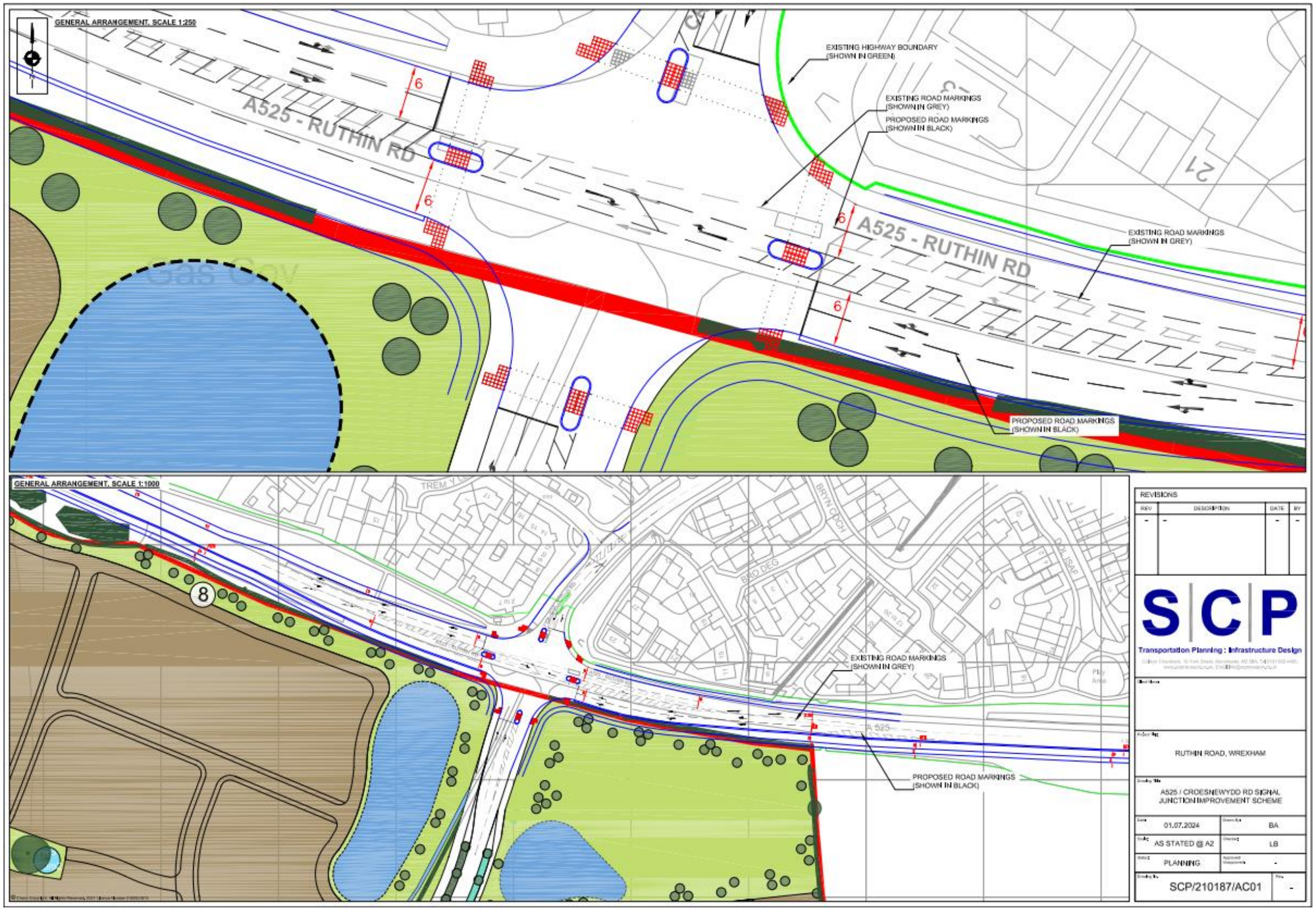


Figure A2: Proposed North-Western Site Access on A525 Ruthin Road

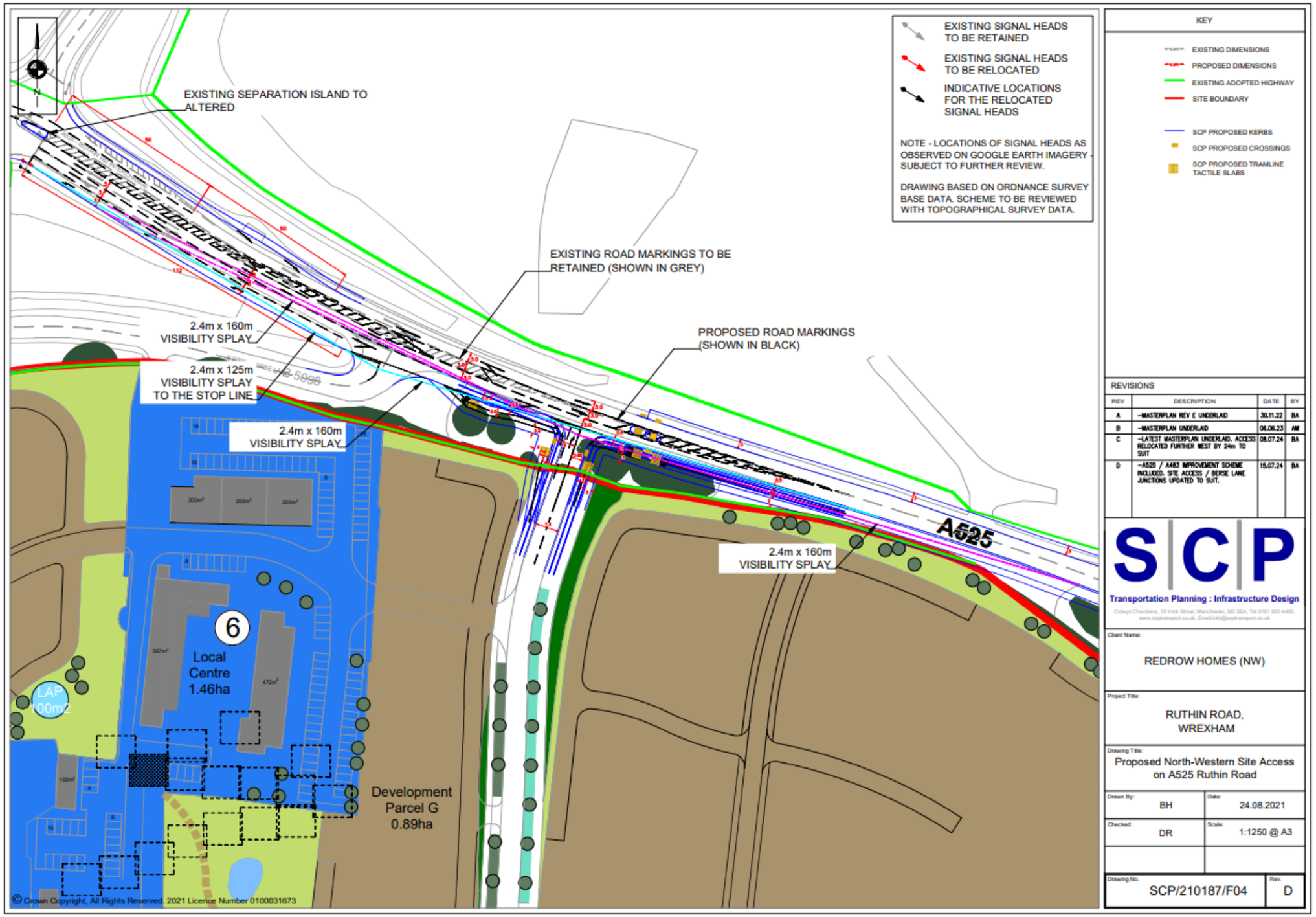


Figure A3: Proposed South-Western Priority Access on Bersham Road

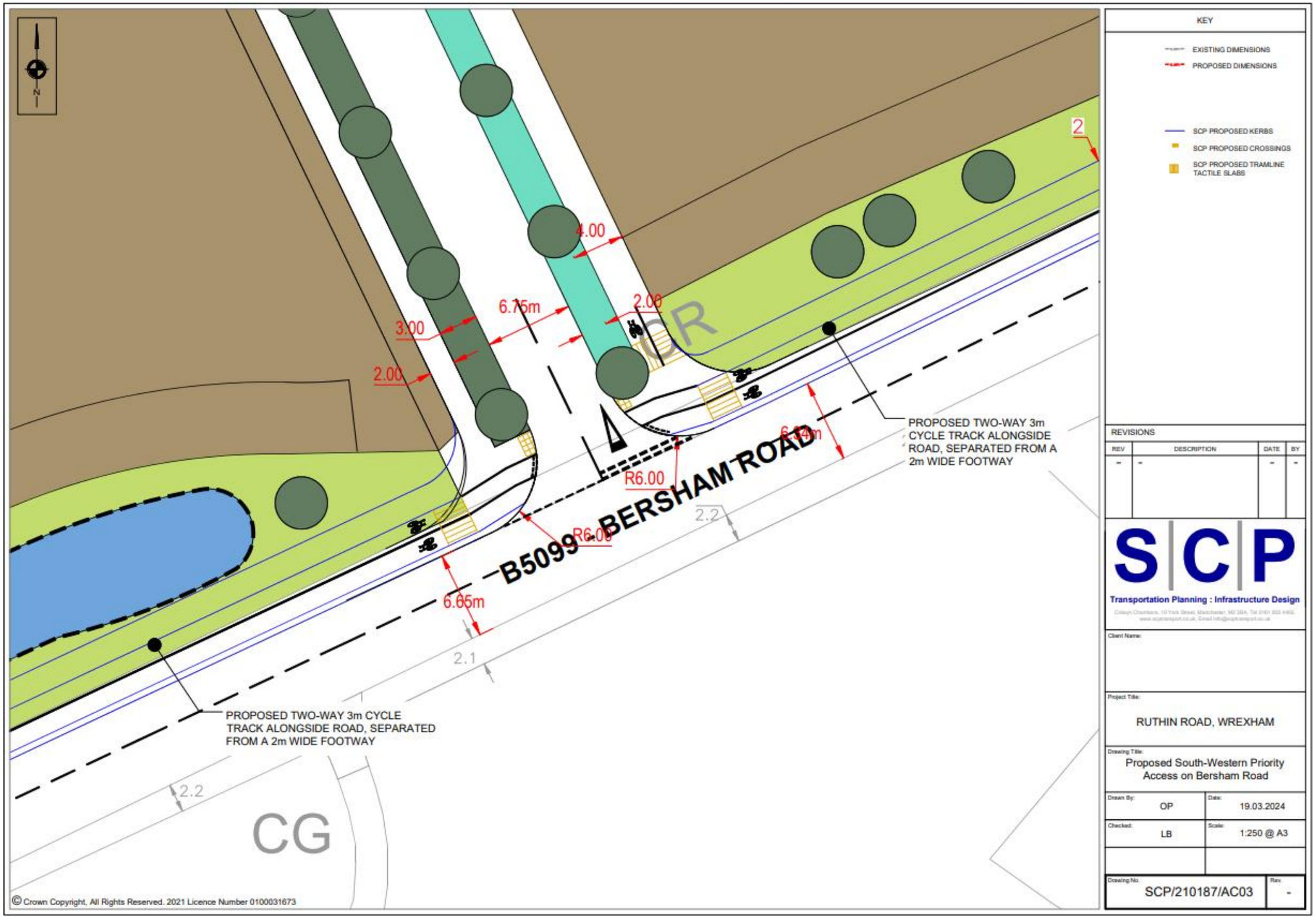


Figure A4: Proposed South-Eastern Priority Access on Bersham Road

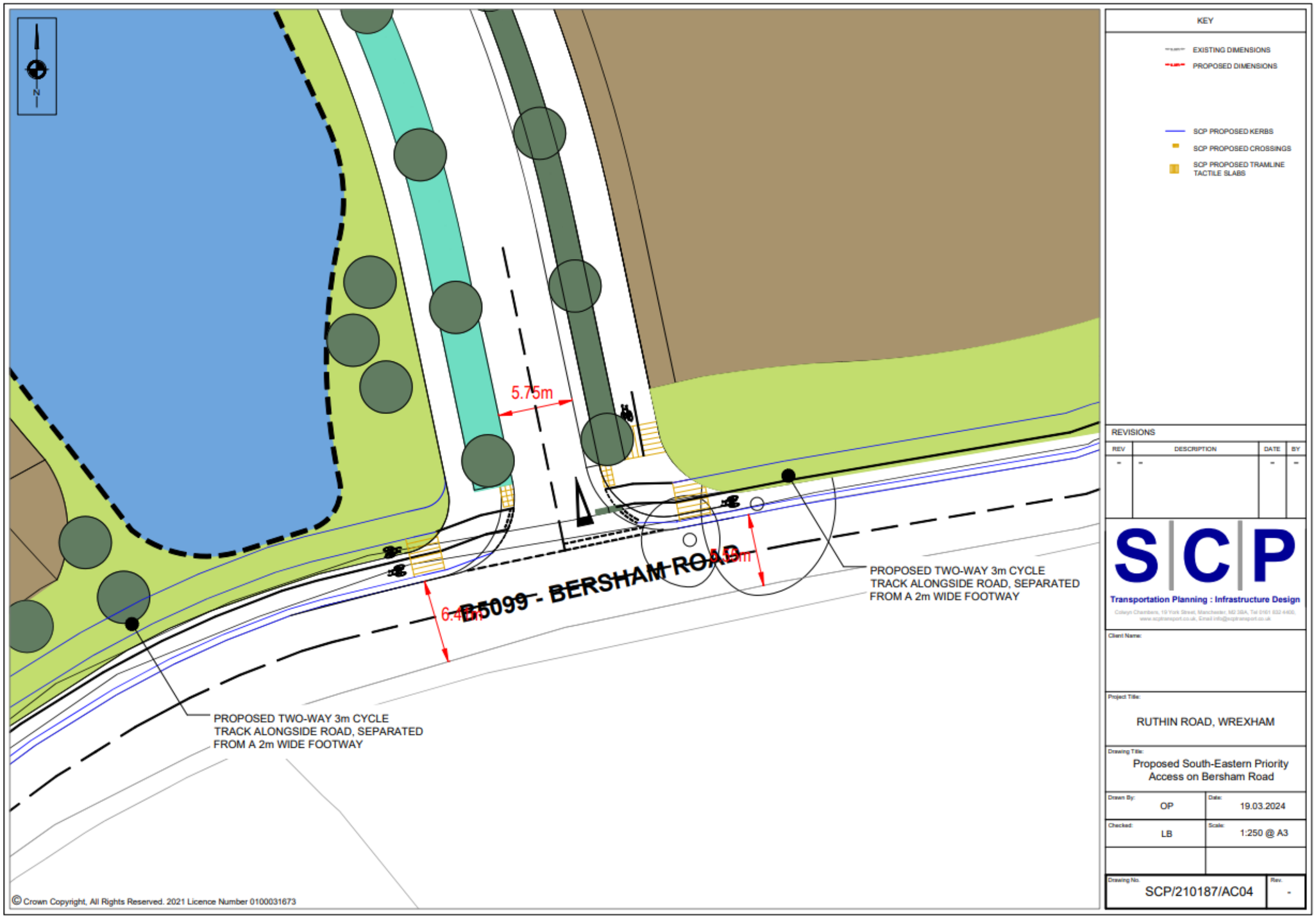


Figure A5: Proposed Junction Improvements at A483 Junction 4 - Overview

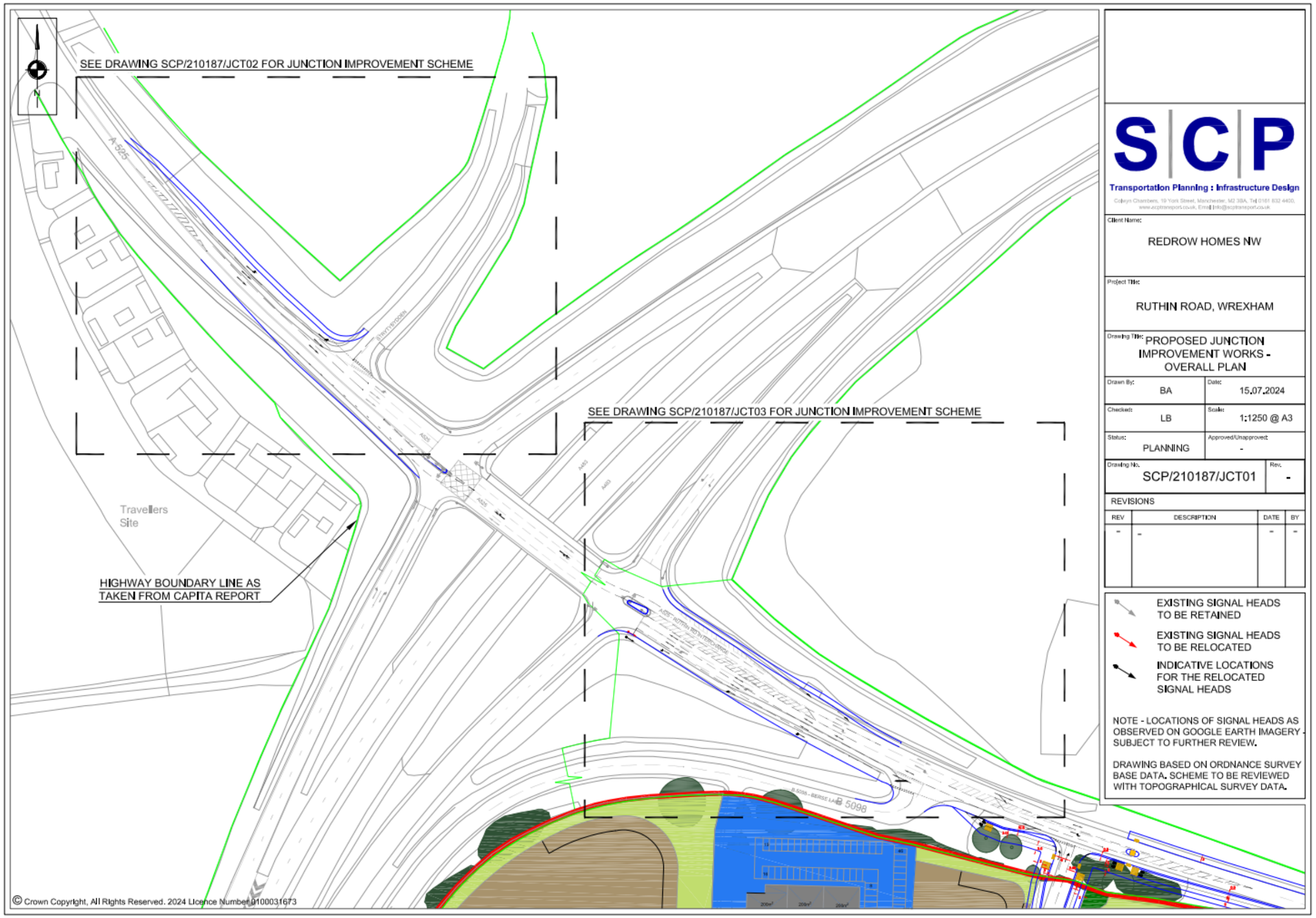


Figure A6: Proposed Junction Improvements at A483 Junction 4 – Western Portion of the Junction

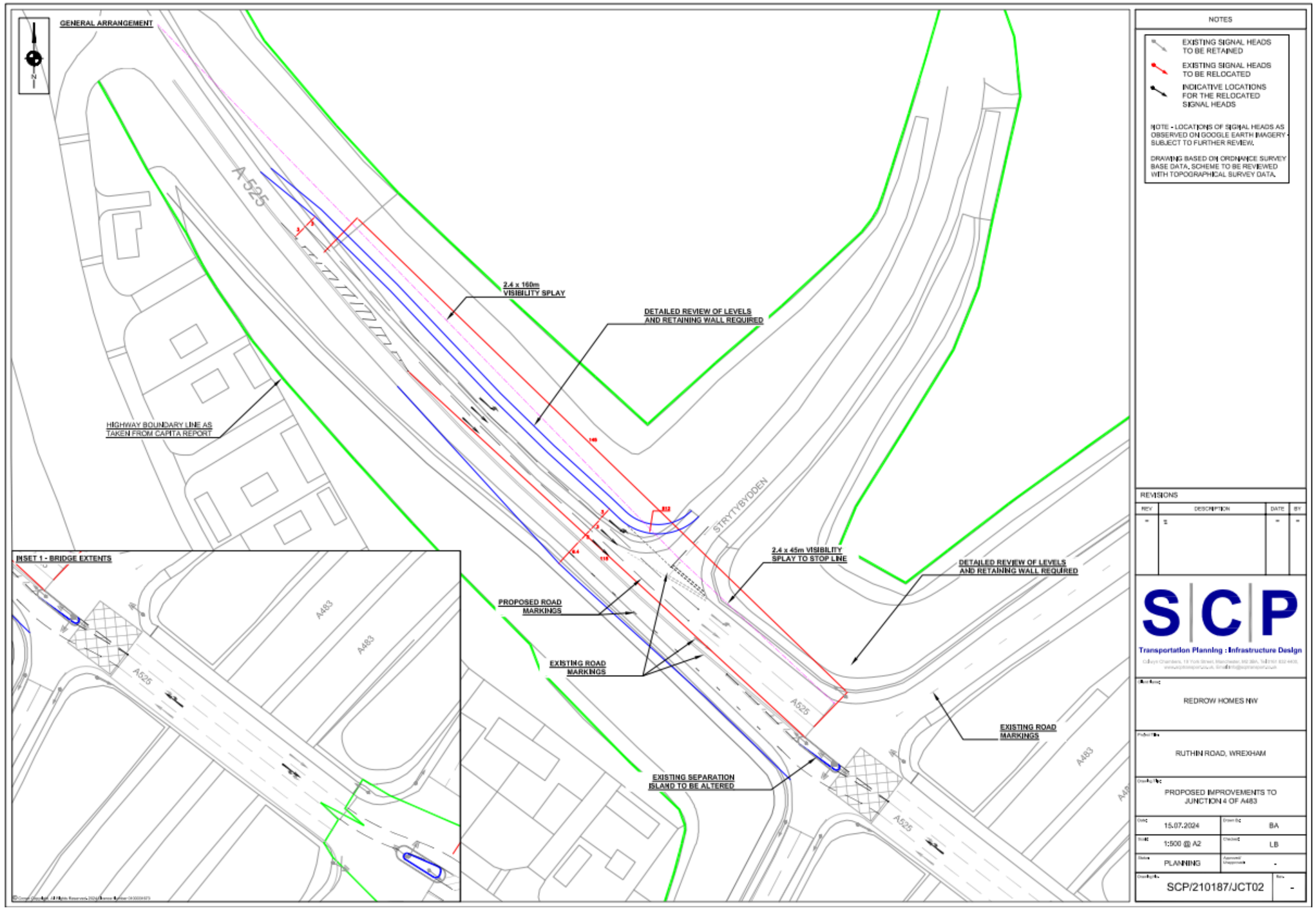


Figure A7: Proposed Junction Improvements at A483 Junction 4 – Eastern Portion of the Junction

