WARRINGTON
Borough Council

Bus Service Improvement Plan – A49 Infrastructure Improvements

Strategic Business Case

August 2024

WARRINGTON
Borough Council

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1. Introduction

1.1 Overview

This Strategic Business Case document has been prepared to provide an overview of the proposed improvements to bus and active travel infrastructure on the A50 Long Lane and the A49 Winwick Road.

The proposed scheme forms part of Warrington Borough Council's Bus Service Improvement Plan (BSIP) and Warrington's Local Cycling and Walking Infrastructure Plan (LCWIP).

The following sub sections will provide an overview of the scheme, Warrington's growth, and the policy and strategic alignment of the proposed plans.

1.2 Scheme Overview

Warrington Borough Council is proposing to implement bus priority measures and improvements to walking and cycling facilities on the A50 Long Lane and the A49 Winwick Road southbound towards the town centre. Improving walking and cycling facilities to bus stops provides attractive routes for passengers and is also more cost effective to undertake the works in conjunction with one another.

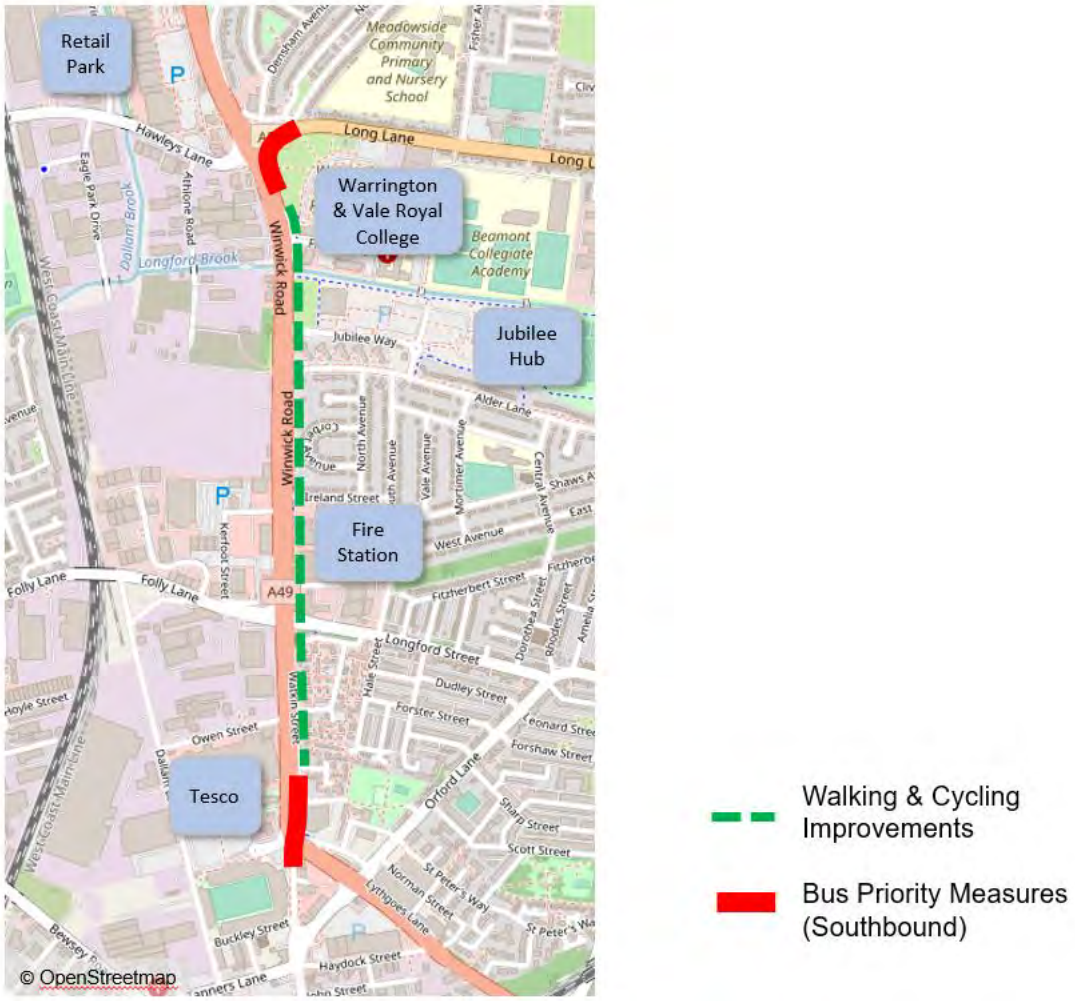
The proposals include the following:

- The construction of sections of new carriageway that only buses can use (known as a bus gate) alongside the existing carriageway with two lanes maintained for other traffic.
- A new pedestrian crossing on Long Lane for the benefit of pupils at Warrington and Vale Royal College.
- Traffic signal upgrades to improve the flow of traffic and provide buses with priority.
- Complementary high quality active travel improvements in line with the council's Local Cycling and Walking Infrastructure Plan (LCWIP)
- Upgraded bus stops along the route.

The number of existing lanes for cars would not change. New carriageway would be built, and the existing grass verge repurposed to provide bus, walking and cycling infrastructure. Motorists would not lose any lanes of traffic as part of the proposals, as such capacity for general traffic would remain the same and journey car journey times would remain approximately as they are now.

The extent of the proposed scheme is presented in Figure 1.1.

Figure 1.1 – Scheme Extent



Scheme Objectives

The objectives of the scheme are summarised below:

1. Enhance access to social, leisure, cultural, education, and employment opportunities by public transport and active travel modes
2. Increase numbers of people using buses, walking and cycling;
3. Reduce congestion through shifting users to sustainable modes of travel, with associated reductions in carbon emissions and improvements to air quality;
4. Reduce bus journey times; and
5. Reduce the variability in journey times and improve the punctuality of bus journeys.

A more detailed overview of the scheme will be provided in Section 2 of this report.

1.3 Introduction to Warrington

Warrington's Growth

Warrington has a reputation as a place where industry thrives; from its Victorian industrial heritage; its designation as a New Town; and more recently as a centre for science-based industries, engineering consulting, business services and logistics.

Warrington has a strong and resilient economy, and one of the most successful towns in the UK today in terms of economic development, investment, employment rates and growth; and over the last ten years has repeatedly been recognised as such in national research and league tables such as the Centre for Cities 'Cities Outlook'.

Omega in the west of Warrington has been one of the most successful development areas. This is a 233ha mixed use development being delivered over 25 years. The growth of logistics and manufacturing on this site has created some 8,000 new jobs[1] with employers including Brakes, Hermes, Travis Perkins, ASDA, the Hut Group and Plastic Omnium. Development of some 1,100 new homes is underway.

Birchwood Park in the east of the borough is central to the Cheshire Science Corridor Enterprise Zone. Over 160 companies, including Nuclear Decommissioning Agency, are located on the Park, employing over 5,000[2] people.

Warrington shares boundaries with Cheshire West and Chester, Cheshire East, the Liverpool City Region and Greater Manchester. Warrington's economic gravity covers a much larger area than the Borough, extending into the adjoining conurbations to its east and west.

The Borough comprises the main urban area of Warrington, surrounded by a rural hinterland which includes a number of distinct settlements. The town of Warrington is the largest urban area in Cheshire by some way and is one of the largest free standing urban areas in the North West of England outside the two conurbations of Merseyside and Greater Manchester.

The borough is 176 square kilometers in area, with an estimated population of 210,014 (mid-year 2020). Warrington's Local Plan was adopted in December 2023 and extends to 2038/2039. Within the Local Plan Warrington will aim to deliver a minimum of 14,688 new homes and 168 hectares of employment land.

A Car Dependent Place

Warrington is nestled at the heart of the regional motorway network. With junctions off the M6, M62 and M56, Warrington is within easy reach of every major UK city by road. Our location and accessibility from the Strategic Road Network has made Warrington an attractive location for investment, particularly with logistical and transport companies located at sites such as Omega Business Park.

By far the biggest operator in the bus market in Warrington is Warrington's Own Buses, who undertake 83% of BSOG claimable mileage. Arriva are responsible for 14% of mileage, with the remainder undertaken by Go North West, MD Buses, and MP Travel.

[1] Warrington local plan - 2021-22 - 2038-39 - Adopted December 2023
[2] Warrington local plan - 2021-22 - 2038-39 - Adopted December 2023

However, this accessibility by road, and the nature of our arterial road network, much of which was built as part of New Town development, creates significant challenges for our transport network.

One of the most significant challenges facing Warrington is the dependency on car travel. The New Town development pattern has favoured the car. Warrington has very high car ownership levels (81%) and this is above the 74% national average. As a result, the car is the travel mode of choice in Warrington and dominates the highways network. The travel to work modal split from 2001 and 2011 Census data, shows that nearly three quarters of Warrington residents who commute drive to work.

The dominance of the car has led to:

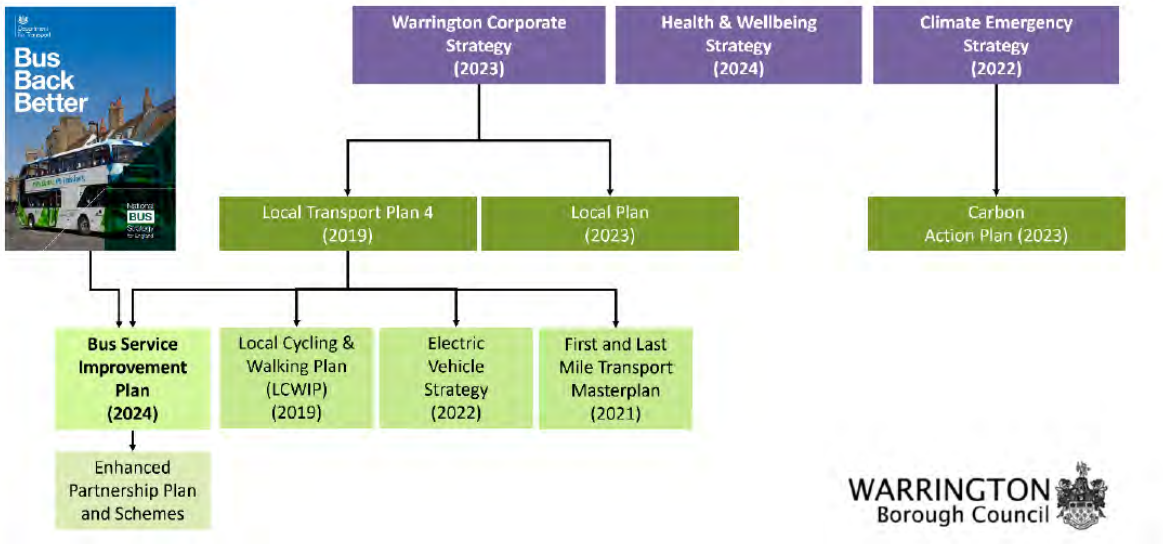
- Two Air Quality Management Areas
- Increased carbon emissions
- Priority for other travel modes being difficult to deliver
- Congestion at peak times on key routes within the town.

Cars, particularly when single occupancy, make poor use of available road space and offer a less energy efficient means of travel compared to sustainable transport modes. Car dependency in Warrington compares unfavourably nationally, with other parts of the North West, and with other new town areas across the U.K. As such, the A49 scheme as part of the BSIP aims to increase the attractiveness of public transport and active travel in Warrington.

1.4 Strategic Alignment

The Warrington BSIP sits within a wider policy framework as illustrated in Figure 1.2. It forms a subsidiary document to Warrington's statutory Local Transport Plan (LTP4) and guides the Enhanced Partnership Plan and Schemes implemented in the borough. The following section provides an overview of the key policy and strategy documents of relevance to the Warrington BSIP.

Figure 1.2 – Strategic Fit



The key policy and strategic documents are summarised in the following sub sections.

Bus Back Better

In 2021, the Government released **Bus Back Better: National Bus Strategy for England**, which set out the vision and opportunity to deliver better bus services for passengers across England. The central aim of the strategy is to get more people travelling by bus, which it will achieve by making buses more frequent, more reliable, easier to understand and use, better coordinated and cheaper. The strategy outlined the expectation for all Local Transport Authorities (LTAs), except those pursuing franchising, to commit to establishing Enhanced Partnerships (EPs) and for operators to cooperate with the process, which is a requirement for future Government funding. All LTAs were also required to publish a BSIP detailing how they intended to improve services.

Warrington's Bus Service Improvement Plan

Warrington Borough Council published an update to the DfT on its BSIP in June 2024. The Warrington BSIP sets out a high-level vision and a series of proposed interventions that will help to deliver the goals of the National Bus Strategy.

The BSIP was drafted to support the objectives of Warrington's Local Transport Plan (LTP)4 which is seeking to almost treble the public transport mode share to 15% by 2041 (when compared to 2011). This is to be achieved by making bus services more frequent and attractive to use, ensuring that people are connected to the places they want to get to, as well as managing the demand for car use.

In April 2022, DfT notified WBC of an indicative allocation of up to £16,198,420 (of which £9,898,000 was capital and £6,300,420 was revenue) as a contribution to deliver on the initiatives set out in the BSIP. Funding confirmation was conditional on submission and implementation of a transformational Enhanced Partnership (EP), including firmer and more detailed commitments from WBC and local bus operators, to deliver a package of prioritised and ambitious improvements to bus services.

As part of the BSIP refresh, an overarching shared vision for buses in Warrington has been defined. This draws from the local policy and strategy, aligning in particular with the LTP to provide a bus network that meets the needs of passengers. The BSIP Vision is:

Buses in Warrington will provide an excellent connection between residential areas, employment areas and key local services in a way that is reliable, efficient, safe, inclusive, and supports a carbon neutral future.

Local Transport Plan – LTP 4

LTP4 sets out the vision that:

Warrington will be a thriving, attractive, accessible, and well-connected place with popular, high-quality walking, cycling, and public transport networks supporting our carbon-neutral future.

There are ten objectives that support that vision. Seven of these are directly relevant to proposals for the proposals:

- Provide people with a choice about how they travel for each journey
- Encourage a culture change that reduces the need for people to travel by car
- Improve access to the town centre for all sustainable modes

- Develop a resilient and efficient transport network that supports the town's growth
- Reduce traffic congestion
- Reduce both exhaust and non-exhaust emissions from transport
- Make Warrington a more disabled friendly place

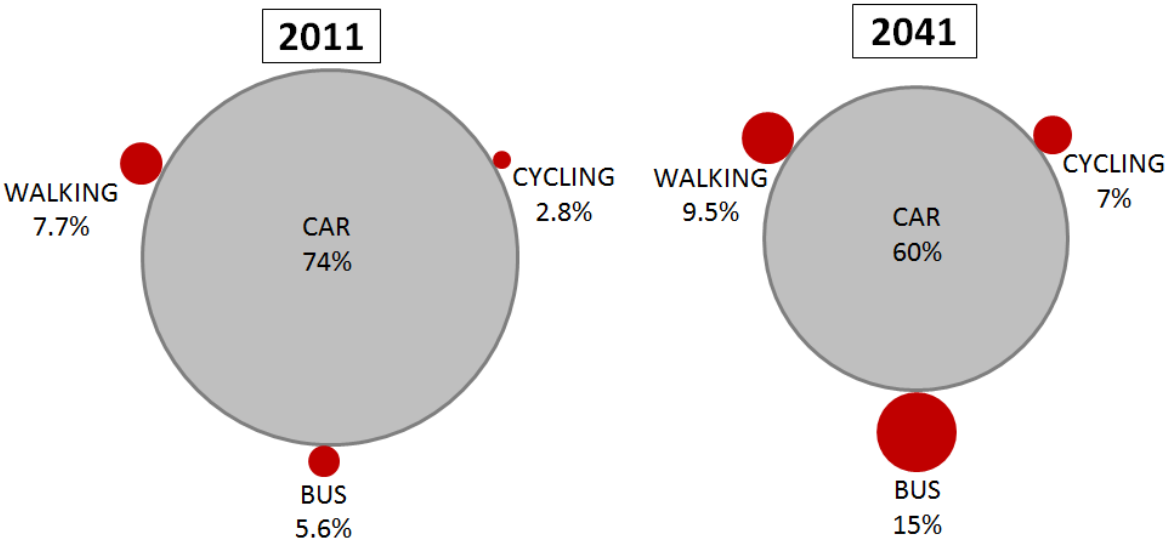
It is clear that through its strategic priorities, vision statement, and objectives, our LTP4 is closely aligned with DfT's strategic priorities of:

- Grow the Economy
- Reduce Environmental Impacts
- Improve Transport for the User

Fundamental to delivering our transport vision is reducing the number of trips made by private car. 73.9% of commuters drive to work according to Census data. Our aspiration is to reduce Journey to Work mode share for drivers of cars/vans to 60% by the first Census (2041) that will take place after the end of LTP/Local Plan period. To be successful in delivering this change in modal share for private car use we need to significantly increase the number of people that travel by other modes.

To have a transformative effect on the town we need to facilitate significant increases in cycling (approximate 2.5 times increase in the proportion of cycling), bus and local public transport (nearly 3 times the proportion for bus use) and increases in walking. These targets are shown in Figure 1.3.

Figure 1.3 – LTP Modal Shift Targets

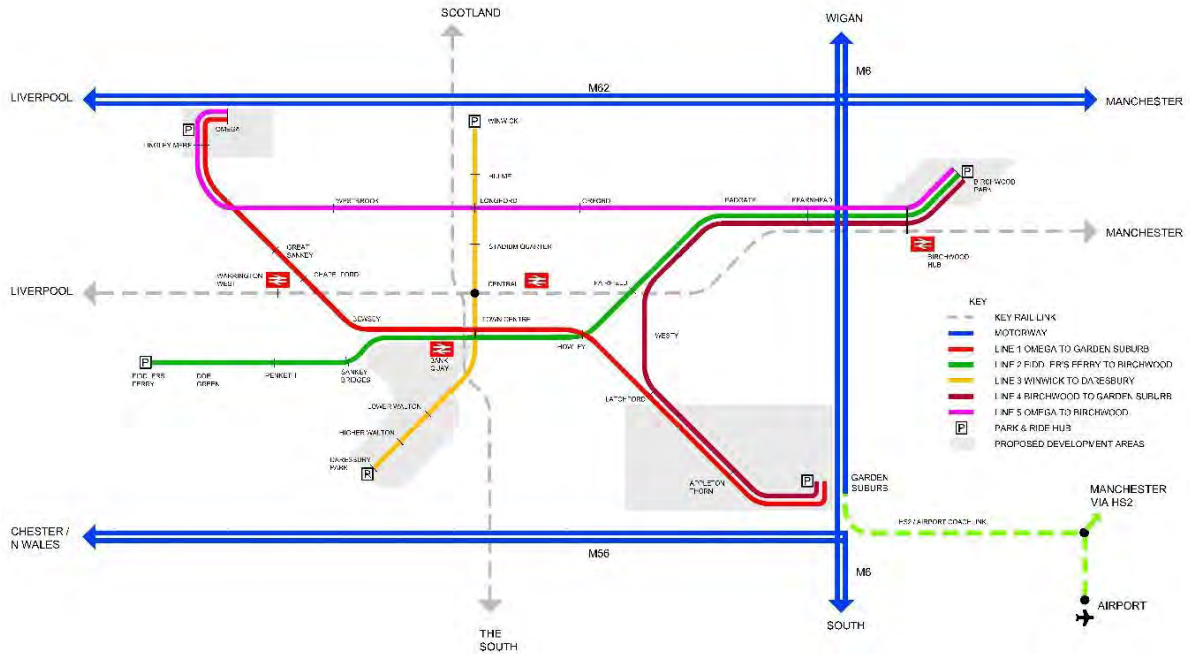


The following policies within LTP4 are relevant to the BSIP:

- Policy PT2 – We will work with partners to improve frequency and operational hours of services on key bus routes in Warrington where possible.
- Policy PT3 – We will work with bus operators to identify the highway improvement and bus priority measures that will improve journey times and reliability for buses, and identify funding sources for their delivery.
- Policy PT4 – We will give priority to supporting public transport services which enable disadvantaged groups and communities to access employment and services.

In LTP4 we recognised that achieving a 15% mode share for buses would require a transformation of the public transport offer in Warrington. To inform our LTP4 Vision we commissioned a study to look at options for doing this. An indicative mass transit network published in LTP4 is shown in Figure 1.4.

Figure 1.4 – Warrington's Mass Transit Aspirations



Local Cycling and Walking Infrastructure Plan (LCWIP)

The Local Transport Plan includes an ambitious target to more than treble cycling and walking over the next 20 years with a modal shift away from the car. The main delivery vehicle to enable this is the Warrington Local Cycling and Walking infrastructure Plan which has identified several key corridors for improvement, including the A49 corridor.

Warrington Wellbeing Strategy 2024 – 2028

Warrington's Health and Wellbeing Strategy "Living Well in Warrington", sets out WBC's plan for Warrington to be a place where people all work together to improve our collective health and wellbeing.

Warrington's Health and Wellbeing Strategy is comprised of eight priorities, two of which are relevant to the Bus Service Improvement Plan, they are as follows:

- **Priority 5:** Create and develop healthy and sustainable places and communities.
- **Priority 8:** Pursue environmental quality, sustainability, and health equity together.

Priority 8 states that Warrington wants to make better use of our natural space to tackle climate change and provide more sustainable green travel in Warrington.

The Local Transport Plan (LTP4) and climate change action plan details a range of measures which will promote active travel, including walking, cycling and greener public transport for education, work and leisure purposes. The replacement of Warrington own Buses entire fleet of diesel buses with 105 new

electric buses by the end of 2024 will give Warrington one of the biggest all electric bus fleets in the Country, funded from a successful bid for Zero Emission Bus Regional Areas (ZEBRA) funding.

Warrington Climate Change Action Plan

In June 2019, Warrington Council declared a Climate Emergency and committed the Council to taking steps to cut carbon emissions in line with an aspiration to achieve zero carbon by 2030. In March 2020 Cabinet agreed the formation of the Climate Emergency Commission.

Warrington's Green Energy Strategy is a key driving force behind our work to create a greener future. Launched in 2019, it is helping define, shape and guide our work to become carbon neutral by 2030. It sets out our goals, plans and projects, now and in the future – and how we will work with our communities and partners across Warrington, the region and the country, to deliver real change.

One of the priorities identified as part of our Climate Emergency work is Transport. We want to transform the way people travel around Warrington, reducing car-reliance and traffic congestion, making walking and cycling easier, and providing high quality public transport so that more of us will use it. This will support our work to tackle the climate emergency by reducing local air pollution caused by vehicle emissions.

Central Six Masterplan

The Masterplan focuses on communities within the Central 6 wards, and was developed after extensive engagement with these communities. These wards are most adversely affected by poor air quality, include the most bus movements, and include 9 Lower Super Output Areas (LSOAs) in the 10% most deprived in England.

Communities in central areas of Warrington have expressed the desire for less polluting public transport in Warrington very clearly through the Warrington Central 6 Masterplan. This was commissioned by the Warrington Central Area Neighbourhood Renewal Board that is made up of community, partner organisations and council representatives.

The Masterplan identifies seven themes around which enhancements should be made. One of these is "**Well connected affordable movement**". This aspires for there to be a movement network that has choices for how people get around including supporting improvements to the bus services and increasing patronage.

Warrington's Air Quality Action Plan

Warrington's Air Quality Action Plan was adopted in 2018 and sets out a series of measures to improve air quality, primarily within the Air Quality Management Areas (AQMAs) but also across the wider borough. This is aimed at meeting the national objective limits within the shortest time possible and improving air quality related health impacts across the borough.

The Plan sets out 5 key priorities. Two of these are directly relevant to this proposal:

- Priority 1: **reduce traffic volume and improve flows**
- Priority 3: **reduce emissions from bus and public transport**

Measure 2 within the Plan directly links into the Local Transport Plan to set out measures to encourage the uptake of electric vehicles and reduce emissions.

ZEBRA

The council submitted a successful funding bid for ZEBRA (Zero Emission Bus Regional Area) funding to Government with a proposal for a fleet of electric buses in Warrington. The DfT awarded over £20m to the Council to support the replacement of Warrington's Own Buses entire fleet of diesel buses with 105 new electric buses. The electric buses will introduce greener and cleaner transport options throughout Warrington and will come into service during 2024.

Electric Vehicle Strategy

Warrington has also developed an Electric Vehicle Strategy with the aims of supporting the increasing demand for electric vehicles, reducing tailpipe emissions, and supporting the ambitions outlined within LTP4.

Given Warrington through the ZEBRA is progressing with an all-electric bus fleet, any measures that improve bus journey times and reliability would increase the attractiveness of buses as a primary mode of transport and would have further positive impacts upon Air Quality.

1.5 Summary

The above section provides an overview of the proposed scheme, Warrington's growth, and the scheme's strategic fit in relation to adopted national and local policy.

The following section will provide more detail on the proposed scheme, the need for the scheme, a summary of the traffic modelling and public consultation response.

2. Project Scope

2.1 The Scheme

As described above, Warrington Borough Council is proposing to implement bus priority measures and improvements to walking and cycling facilities on the A50 Long Lane and the A49 Winwick Road southbound towards the town centre.

2.2 Scheme Requirements

Within LTP4 and the Warrington Mass Transit Study, the A49 Winwick Road corridor was highlighted as a key corridor capable of providing a high quality public transport route into Warrington Town Centre.

A series of bus improvement schemes across Warrington were developed and prioritised in the BSIP. The A49 proposals demonstrated the ability to deliver key corridor improvements to improve bus journey times and reliability.

The following sub sections set out the current bus landscape in Warrington.

Transport Focus

In relation to customer satisfaction, Transport Focus conduct a bus passenger survey to generate a comprehensive measure of passenger experience alongside overall satisfaction. The survey measures passenger satisfaction against a number of metrics, including:

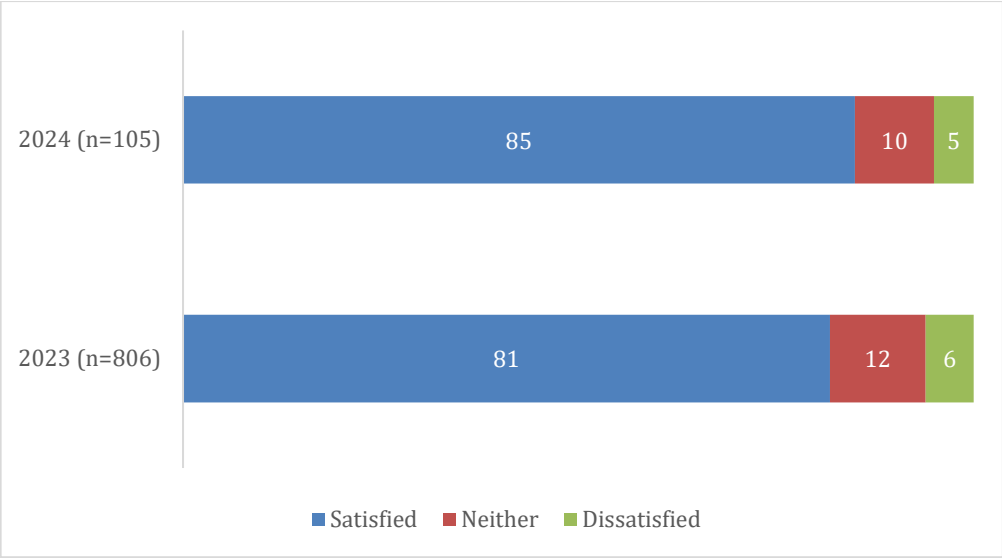
1. Overall satisfaction
2. Value for money
3. The bus driver
4. Journey length time
5. The bus arriving on time
6. The bus stop where the passenger caught the bus, and
7. Waiting times.

In 2024, a series of additional factors were added to gauge satisfaction. Most notably in relation to this scheme they include,:

- Personal safety at the bus stop
- The information provided at bus stops
- Smoothness of the ride during journey
- How near to the kerb the bus stopped
- Ease of getting to local amenities
- Connections with other forms of public transport
- Info provided about bus services
- Reliability of services
- Frequency of services

The overall levels of satisfaction for buses within Warrington in 2023 and 2024 until June is presented in Figure 2.1.

Figure 2.1 – Transport Focus – Overall Bus Satisfaction



As presented in Figure 2.1 above, the overall levels of satisfaction have increased from 81% in 2023 to 85% in 2024.

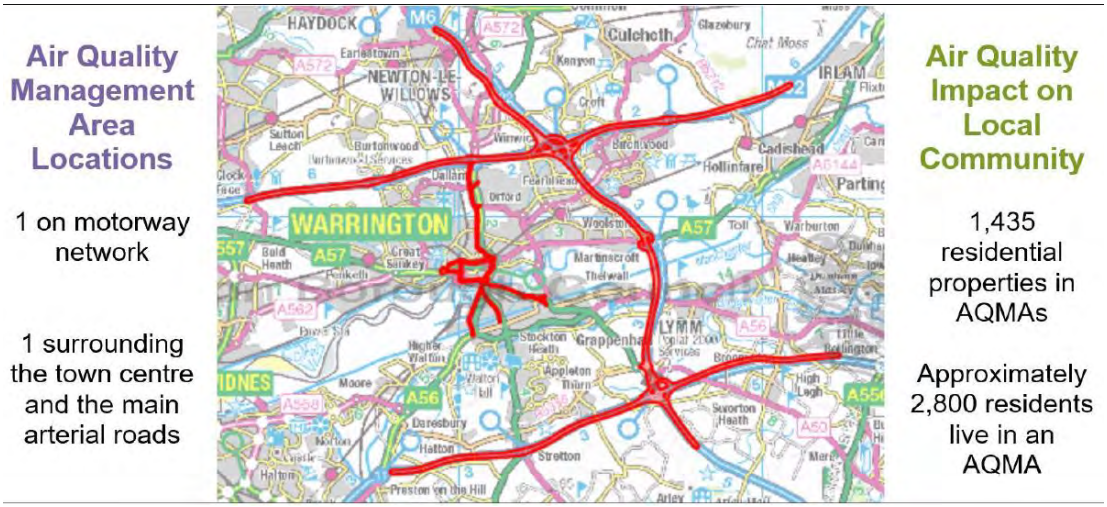
Improvements to the bus network would aid in achieving the LTP4 ambition for 15% of journeys in Warrington to be undertaken by bus.

Air Quality

Improvements to the bus network and the subsequent reduction in private vehicle trips are an important factor to improve air quality. Approximately 145 people annually in Warrington are expected to die prematurely from poor air quality.

Two air quality management areas are in place for exceedances in the annual mean nitrogen dioxide (NO2) objective limit. One is on the motorway network, the other surrounds the town centre and the main arterial roads. Approximately 1,435 residential properties, with approximately 2,800 residents are within these AQMAs. The AQMAs are presented in Figure 2.2 overleaf.

Figure 2.2 – Air Quality Management Areas in Warrington



Borough wide air quality modelling (contained within the Local Plan Air Quality Assessment, 2019) predicts that air quality in some areas will continue to exceed the national NO2 objective limit by 2026.

2.3 Development Context

The following section highlights some of the key future development within Warrington that would be impacted by the proposed A49 improvement scheme.

Peel Hall

Peel Hall was granted planning approval at Appeal in 2022 for an outline planning application for up to 1,200 homes, with a new district centre to the north of Poplars Lane. As a condition of the planning approval, it was agreed that the developer would provide a financial contribution towards the extension of the 20 and 25 bus services into the development site. These bus services would directly benefit from the improvements on the A50 Long Land and the A49 Winwick Road.

Given the scale of the development and the extension of the bus services into the development site, it is highly likely that the Peel Hall development would result in increased patronage on these routes and would benefit from the proposed infrastructure improvements.

Land at Goldborne Road

Planning approval has also been granted for 154 dwellings on Goldborne Road, Winwick. The proposed dwellings would also have access to bus services on the A49 which would benefit from the proposed infrastructure improvements on the A49 Winwick Road.

Parkside

It should also be noted that major developments are proposed outside of Warrington Borough Council's boundary. The approved Parkside Phase 1 located in St Helens has the potential to provide up to 1,300 jobs, with further phases likely to come forward. The Parkside development area could become a major employment area similar to Omega and provide employment opportunities for residents within Warrington. Therefore, bus services passing through the Parkside site traveling to Warrington would directly benefit from the bus priority measures along the A49 helping to creating a more attractive and viable public transport option.

Wider Planning Considerations

Whilst not directly impacted by the proposed improvements on the A49, it should also be noted that there are other growth areas within Warrington, notably Fiddler's Ferry and the South Warrington Urban extension.

2.4 Services from Neighbouring Authorities

The A49 also provides a key bus route into Warrington from neighbouring local authorities. A summary of the additional bus services is provided below:

329 – Warrington to St Helens
360 – Warrington to Wigan
19 – Warrington to Leigh
22 – Warrington to Ashton via Newton-le-Willows
22A – Warrington to Wigan
P6 – Warrington to Burtonwood.

The improvements provided on the A49 would also benefit inter-settlement bus journey times and reliability.

2.5 Design Iterations

The initial proposal submitted in October 2021 as part of the first Bus Service Improvement Plan submission included a continuous southbound bus lane between the A49 SB/Long Lane and Winwick Road/Silver Street, with signal adjustments to prioritise buses at A49 / Jubilee Way and A49 / Kerfoot St. In addition to the A49 corridor changes, a new southbound bus link was proposed at the Tesco Junction leading to Winwick Road south.

The selection of the A49 corridor came a result of a Mass Transit and Bus Priority Study commissioned following the adoption of LTP4 in December 2019. The A49 is one of the busiest bus corridors in Warrington in terms of frequency of services and range of destinations served.

After funding confirmation from DfT through the BSIP programme, further preliminary design work commenced, and an Early Contractor Involvement contractor was engaged to undertake a feasibility study of the scheme and to cost the proposals. Due in part to high inflationary pressures, this review resulted in a revised forecast cost that exceeded the level of funding awarded from the DfT.

Therefore, review of the proposals was required with a view to identify the highest benefit elements of the scheme, to in effect de-scope the project. The de-scoping exercise was evidence led supported by detailed traffic modelling to identify the measures that deliver the highest benefits, compared to their costs.

The results of the de-scoping exercise identified the addition of Northway/ Long Lane yellow box junction and signaled pedestrian and cycle (toucan) crossing which serves a number of purposes. Priority for buses by creating gaps in the traffic streams, also enhancing road safety for pedestrians and cyclists, where the large volumes of students accessing the adjacent Warrington and Vale Royal College would directly benefit from the scheme.

The descoping exercise also reaffirmed the importance of the bus gate at the Tesco junction to allow southbound buses to access Winwick Road directly and allow the bus gate to operate in both the existing (northbound) and southbound directions.

The “Plan for Drivers” published in 2023 also highlighted that the implementation of a 24/7 bus lane should be discouraged where possible. This is to ensure that bus lanes help rather than hinder traffic by operating only when buses are running, or traffic is heavy enough to cause delays to buses. As such, bus lanes were de-scoped from the design in favour of bus gates. The investment being targeted at the times and locations where it was most required.

Local Transport Note 1/24 provides advice on bus user priority measures. The proposed bus gates are designed in accordance with LTN 1/24 guidance by creating short sections of “no through road” for all traffic except for buses and cycles.

Bus gates are short sections of streets that are closed to other traffic, effectively creating a “no through road” for all traffic other than buses (and cycles, and emergency vehicles).

Within the scheme review process the traffic modelling identified the limited benefit of the continuous bus lane compared to the high costs of road widening to provide the infrastructure required. However, the exercise also identified that significant active travel improvements could still be retained within the funding envelope, both in the vicinity of the bus priority measures and along the corridor as a whole. The active travel measures along the length would not require costly road widening and limited need for utilities diversions.

Therefore, in conjunction with the bus infrastructure improvements, a series of active travel improvements are retained within the scheme. The provision of significant sections of a bi-directional cycle lane segregated from pedestrians represents a very high standard of design and is compliant with best practice set out in government guidance LTN1/20 (Cycle Infrastructure Design). The high quality of provision continues across side roads along the route, with measures to slow vehicle speeds and provide priority to pedestrians and cyclists.

In summary, the original proposals were subject to a thorough review process and the resulting proposals are listed below:

- Localised widening to provided short Bus Lane from A50 into A49, including improved bus layby and bus stop area
- A new pedestrian/cycle crossing on Long Lane for the benefit of pupils at Warrington and Vale Royal College.
- Bus gate and bus only section on approach to junction with Tesco to allow southbound buses to access Winwick Street directly and reducing journey distance and time for buses on route to the town centre.
- Traffic signal upgrades to improve the flow of traffic and provide buses with priority along the corridor.
- Complementary high quality active travel improvements in line with the council’s Local Cycling and Walking Infrastructure Plan (LCWIP)
- Upgraded bus stops along the route.

Visualisations of the northern and southern ends of the proposed scheme is presented in Figure 2.3.

Figure 2.3 – Visualisations of the Proposed Scheme

The General Arrangement drawings are provided in Appendix A.

2.6 Modelling Outputs

Warrington Borough Council commissioned AECOM to undertake a traffic modelling analysis of the proposed improvements along the A50 Long Lane and the A49 Winwick Road using the industry standard VISSIM software. The results of which were detailed in a Modelling Report which is provided in Appendix B.

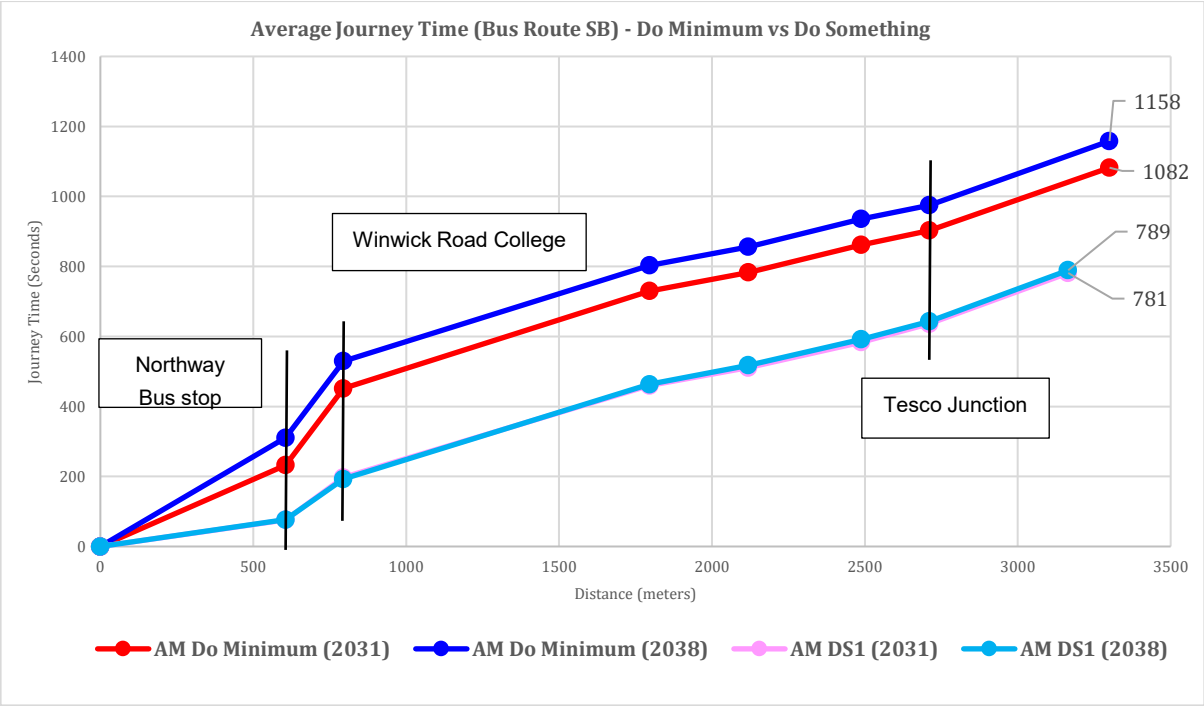
As part of the testing, traffic growth was applied to the corridor to estimate the potential savings depending on specific growth projections. Growth derived from NTEM 7.2, indicated a background traffic growth of 9% and 8% by 2031 for the AM and PM peaks respectively and 12% by 2038 for both peaks.

The southbound journey times are forecast to improve between 9% and 13% in the AM peak, allowing for greater reliability of the popular services. These improvements are important when considering the proposed development at Peel Hall which would extend the services and into the site and provide additional patronage.

The following figures are taken from the Modelling Report and present the journey times for the “Do Minimum” scenario whereby no infrastructure improvements are provided and the “Do Something” scenario whereby infrastructure improvements are provided along the A49 in the future assessment years of 2031 and 2038.

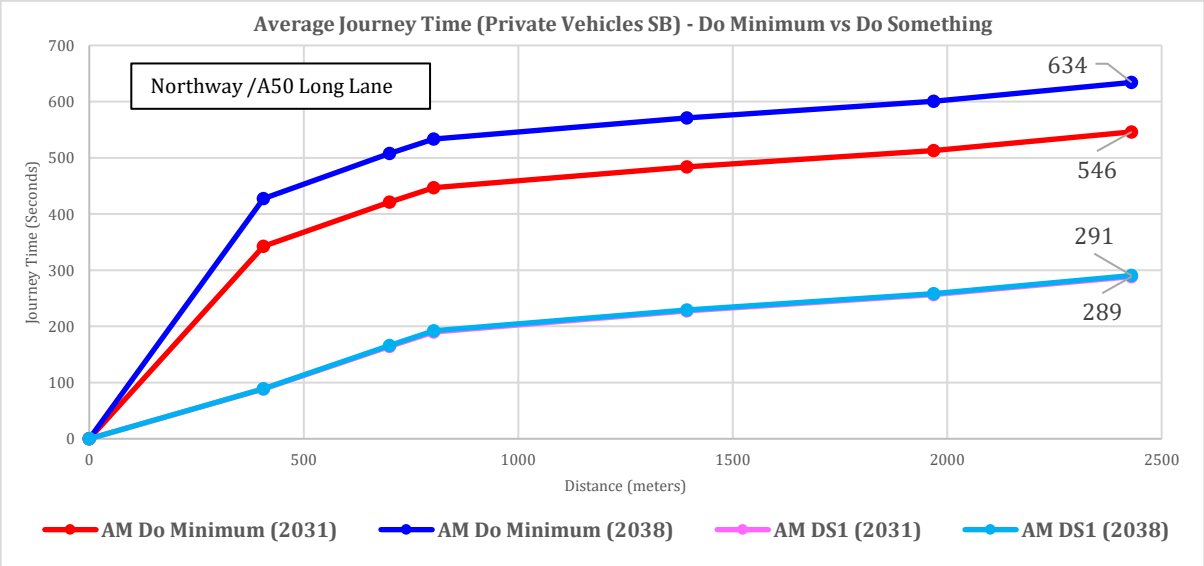
Figure 2.4 below presents the average journey times for buses southbound along the corridor, it is clear that in the Do Minimum scenario that the average bus journey time increases between 2031 and 2038. The Do Something scenario provides a clear average journey time improvement for buses along the corridor.

Figure 2.4 – Average Bus Journey Times – Do Minimum vs Do Something



The average modelled journey time for private vehicles is presented in Figure 2.5 below. Similar to the average bus journey times, the provision of infrastructure improvements along the A49 corridor would also decrease the average journey time for private vehicles.

Figure 2.5 – Average Private Vehicle Journey Times – Do Minimum vs Do Something



The journey time improvements for buses would provide improved reliability and less variability of bus journey times. The improvements provide an opportunity for a more efficient and reliable bus timetable and network within Warrington.

In summary, the modelling results show that most of the benefits are provided during the AM peak period in the southbound direction. During the PM peak there is some small benefit to private vehicles and public transport.

The increase in traffic further emphasised the potential benefits of the bus priority proposals with the AM peak southbound buses experiencing a 5-minute saving in 2031 and a 6-minute saving in 2038.

Therefore, the proposed scheme will provide journey time improvements **for bus users and in some sections of highway, private vehicles.**

2.7 Public and Stakeholder engagement

Public Consultation

Three public consultation events took place between November and December 2023 as follows:

- Warrington & Vale Royal College – Wednesday 29th November 2023 16:30-17:30
- Golden Square – Saturday 2nd of December 2023 – 10:00-14:00
- Warrington Interchange Buse Station – Wednesday 6th December 2023 – 15:00-18:00

At the public consultation events, attendees were asked to respond via a website link or QR code and their responses recorded online. There was a total of 202 responses from members of the public. The majority of which (87%) were residents within Warrington and almost half of the respondents (48%) did not use the bus.

The respondents were asked if they supported or opposed three scheme principles:

1) Reduce bus journey times along the A50/A49 corridor.
2) Upgrade existing active travel measures along the A50/A49.
3) Improve bus reliability along the A50/A49.

A summary of the results is provided below:

- 202 respondents completed the consultation feedback form.
- Almost half (48%) of the respondents never use the bus.
- 5% of respondents use the bus 5 or more times per week, whilst a further 12% use the bus but not every day.
- Amongst all responses the level of support is 45%
- Amongst bus users around 75% support the proposals.
- Amongst non-bus users, around 20% support the proposals.

Those respondents who did not support the proposals regularly stated in their responses that they felt the proposals would negatively impact car drivers, indeed some early misinformation on online media related to the mistaken assumption that one lane of the dual carriageway was to be reallocated to buses leaving just one lane for general traffic. This was incorrect but unfortunately seems to have influenced some respondents' perception of the scheme.

Other comments from respondents who did not support the scheme included that they felt the money should be spent on other things than public transport. In face-to-face discussion and in the consultation material it was explained that the funding is specifically for bus priority and sustainable transport measures on the A49.

A copy of the consultation report is provided in **Appendix C**.

Wider Stakeholder Views and Engagement

As well as public consultation exercise, the views and opinions of other stakeholders are important to consider.

In 2021 a consultation was held into the Bus Services Improvement Plan. The recent feedback from bus suers aligns with the earlier 2021 consultation where respondents clearly identified that important priorities for them were for buses to be faster and more punctual, reliable and not to be held up in traffic. This scheme was developed to address the initial feedback.

Further evidence to support the delivery of better bus services can be taken from consultation undertaken throughout 2023 on all aspects of bus travel in Warrington via the Your Bus Journey survey undertaken by Transport Focus. This is a survey which was done across 34 local transport authorities including Warrington and in Warrington some 822 passengers completed this survey.

The results of this survey provide further evidence for the need for bus priority measures on the A49 Winwick Road as Warrington's bus passenger satisfaction about waiting times for buses is well below the average figure with Warrington ranked 25th out of 34 authorities with a 66% satisfaction level compared with levels of satisfaction over 75% in many authorities and an average of 71% in other urban areas in England. Further to this bus punctuality and satisfaction with the length of time taken on a bus journey are both below the average levels.

One key stakeholder group to consider is the bus operators. As part of the development of the BSIP and through the Enhanced Partnership process, engagement with all bus operators has been an increasing focus of activity and critical to the shared objectives. In relation to this scheme, the relevant bus operators on this route have all confirmed their support for the proposals and that they will provide improvements in terms of journey time and reliability. One of the principles of the Enhanced Partnership is that operators will 'reinvest' or 'reallocate' any savings in terms of vehicles or staff which are captured by creating quicker and more reliable bus journeys.

2.8 Summary of Scheme Benefits

The objectives of the A49 infrastructure improvements as outlined in Section 1.2 are supported by a series of measures to ensure that the objectives are met. Table 2.1 below presents the measures and evidence supporting the overall objectives of the A49 infrastructure improvements.

Table 2.1– Scheme Objectives and Supporting Measures

Objectives	Measures to support objective
Enhance access to education, social, leisure, cultural, and employment opportunities by public transport and active travel modes	Key attractions which will benefit from better access by bus, on foot and by bike include: • Town Centre retail, leisure and employment opportunities • Warrington central station • Education facilities – UTC and Warrington and Vale Royal college • Tesco superstore • Halliwell Jones stadium and health facilities. • Orford Hub
Increase numbers of people uses buses, walking and cycling;	Higher quality active travel networks will support greater numbers of people of all ages and cycling abilities to consider cycling. More frequent and reliable bus journeys, delivered in parallel with cheaper fares, better quality vehicles and improved waiting facilities will encourage larger number of people to use the bus for day to day journeys
Reduce congestion through shifting users to sustainable modes of travel, with associated reductions in carbon emissions and improvements to air quality;	An increase in walking, cycling and public transport usage which results from the measures will help to reduce the reliance on the cars, support modal shift and help to meet the council targets on carbon reduction and improving air quality. Also as highway capacity is not being taken away from motor vehicles along the corridor, no overall increase in car journey time or delay is expected and consequently no negative impacts arising from an emissions perspective.
Reduce bus journey times; and	The traffic modeling carried out on the scheme demonstrates that bus journey times along this corridor will reduce by 1 minute 21 seconds (13%) in the AM peak and 1 minute 44 seconds (9%) in the PM peak now and by 5 minutes in 2031 and 6 minutes by 2038.
Reduce the variability in journey times and improve the punctuality of bus journeys.	The traffic modeling carried out on the scheme demonstrates that variability along this corridor will reduce, allowing bus operators to plan efficient timetables without factoring in delays along this corridor.

3. Funding

The scheme was submitted to government as part of the BSIP in October 2021 and the authority was subsequently awarded £16.2m, including £9,898,000 for the delivery of bus priority measures on the A49 as part of a government programme to 'speed up journeys and make services more reliable and greener. It is noted that the DfT funding award is the 9th highest award per capita in funding from the initial BSIP funding round.

Additional funding is also provided from Warrington Borough Council and the LCWIP. The scheme's funding sources are provided in Table 3.1 below.

Table 3.1 – Funding Provision

Funding Source	Funding Type	Allocation
DfT BSIP	Capital	£9,898,000
WBC Contribution	Capital	£1,500,000
LCWIP	Capital	£1,102,000
		£12,500,000

The BSIP funding obtained from the DfT is time constrained, with an expectation that it will be committed spend by the end of the 2024/2025 financial year. The programme is reliant upon the completion of the stats diversions, with the construction to commence once the diversions are complete.

The most recent update on the project budget is presented in Table 3.2.

Table 3.2 – Cost Update

Task		Estimated Cost
Scheme Development and supervision	PM/Design/Modelling/ Consultation/TROs/Site supervision	£1,604,236
	Property/Legal/Land	£91,781
	Contingency	£1,096,575
Contractor and construction cost	SCAPE Fees	£461,174
	Pre-Construction Services	£318,243
	Enabling Works	£389,942
	Utility Design/Diversions	£1,680,718
	Construction Risk	£212,903
	Construction Cost	£6,644,428
	TOTAL	£12,500,000

The June 2023 Cabinet paper outlined an anticipated cost of utility diversions of £3.37m. The current expected cost following the diversion design and costing process (C3s & C4s) is circa £1.7m, well within the approved amount.

4. Delivery and Programme

The programme for delivering the scheme is being managed in partnership with Balfour Beatty and AECOM consultants, who are one of our appointed Transportation and Public Realm Framework consultants.

The appointment of Balfour Beatty has been through the Scape Civils and Infrastructure Framework, which is a national framework for highway construction projects. This procurement route is approved by the Council's Procurement Team and has been used on previous major projects such as Warrington West Station and Centre Park Link.

The Scape Framework allows for and promotes early contractor involvement (ECI). Balfour Beatty have been engaged from the Feasibility stage alongside our design consultants (AECOM), and they have provided intelligence in terms of buildability, risk, programme and costs. Through the framework we also sourced advice on statutory diversions and have seen considerable cost savings and reductions of network disruption though designing out costly diversions and co-ordinating work between the statutory authorities.

The current programme milestones for delivery are set out below:

- Cabinet Approval to Proceed with construction — September 2024
- Commence Statutory Utility Diversions — Summer 2024
- Commence Construction (post utility diversions) — Spring 2025
- Completion of Bus Improvement Measures — Late Summer 2025
- Construction Completion (Active Travel) — Late 2025

It should be noted that under the conditions of the BSIP funding award the scheme needs to have been fully committed to by the end of the 2024/25 financial year in March 2025. The DfT are fully appraised of our intended programme and the extension into 2025/2026 for the actual delivery of the scheme.

It is important to note that the delivery of this scheme on the A49 Winwick Road will cause disruption to traffic flows during the construction period due to the required traffic management measures needed to ensure the works can proceed safely. The works are being planned carefully, with intelligence gained from traffic modelling to assess the likely impact of the works during different time periods of the day. This has allowed the project team, working alongside the contractors to develop as cost efficient and short a construction period as reasonable, whilst balancing the need to maintain a functioning highway network. The main construction activity, for instance will not take place during the morning peak hour.

It will be vital for these works to be carefully managed with advanced signage and information are to be provided, including use of variable message signs, to make the traveling public aware of the works and any alternative routes available at appropriate times during the works. The council will also work with any statutory utilities companies whose equipment needs to be diverted in advanced of the main construction works on the A49 to minimise disruption as far as possible.

5 Summary

This Strategic Business Case document has been produced to provide an overview of the proposed improvements to bus and active travel infrastructure on the A50 Long Lane and the A49 Winwick Road.

The scheme is part of Warrington's BSIP, which sits within a wider policy framework as presented in Section 1.4 and forms part of Warrington's Local Transport Plan.

The A49 was identified as a priority route in Warrington's Mass Transit Study and demonstrated the ability to improve journey times and bus reliability for a number of key journeys. The design of the scheme has been supported by a traffic modelling exercise and a series of public consultation events.

The scheme was submitted to the Department for Transport in October 2021 as part of the BSIP and the authority was awarded £16.2 million, £9,898,000 for the delivery of bus priority measures. Additional funding will be provided by Warrington Borough Council and the LCWIP.

The proposed scheme forms part of Warrington's Bus Service Improvement Plan. The proposals include the following:

- The construction of sections of new carriageway that only buses can use (known as a bus gate) alongside the existing carriageway with two lanes maintained for other traffic.
- A new pedestrian crossing on Long Lane for the benefit of pupils at Warrington and Vale Royal College.
- Traffic signal upgrades to improve the flow of traffic and provide buses with priority.
- Complementary high quality active travel improvements in line with the council's Local Cycling and Walking Infrastructure Plan (LCWIP)
- Upgraded bus stops along the route.

It should be noted throughout that the number of existing lanes for cars would not change and therefore no overall impact of journey times for general traffic is expected.

The scheme proposed fully meets its original objectives with expected outcomes being:

- Enhanced access to education, social, leisure, cultural, and employment opportunities along the corridor by public transport and active travel modes. Key locations including the town centre, Warrington and Vale Royal Collage, Orford Hub and Halliwell Jones stadium.
- Increase numbers of people using buses, walking and cycling though provision of high-quality infrastructure
- Reduced congestion through shifting users to sustainable modes of travel, with associated reductions in carbon emissions and improvements to air quality;
- Reduce bus journey times; and
- Improved reliability and punctuality of bus journeys.

Subject to Cabinet approval, it is anticipated that construction would start in April 2025 and complete in November 2025.

Appendix A – General Arrangement Drawings

CONTENTS:

1. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0121_0138 FOR PROPOSED CONTOURS.
2. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0141_0158 FOR PROPOSED ISOPACHYTE.
3. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0159_0164 FOR PROPOSED CROSS SECTIONS.
4. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0165_0170 FOR PROPOSED LONGSECTIONS.
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12. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1101_1118 FOR PROPOSED KERBS, FOOTWAY AND PAVED AREAS.
13. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1201_1219 FOR PROPOSED ROAD MARKINGS.
14. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1221_1240 FOR PROPOSED TRAFFIC SIGNS.
15. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1241_1249 FOR PROPOSED TRAFFIC SIGN FOUNDATION.

KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
- PROPOSED BUS LANE
- PROPOSED SEGREGATED CYCLE PATH
- PROPOSED FOOTWAY
- PROPOSED SHARED USE
- PROPOSED BUFFER AREA (HIGH FRICTION SURFACING)
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- PROPOSED GUARDRAIL
- PROPOSED TIMBER KNEE RAIL FENCE
- PROPOSED STEEL FENCE

AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

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DETAILED DESIGN

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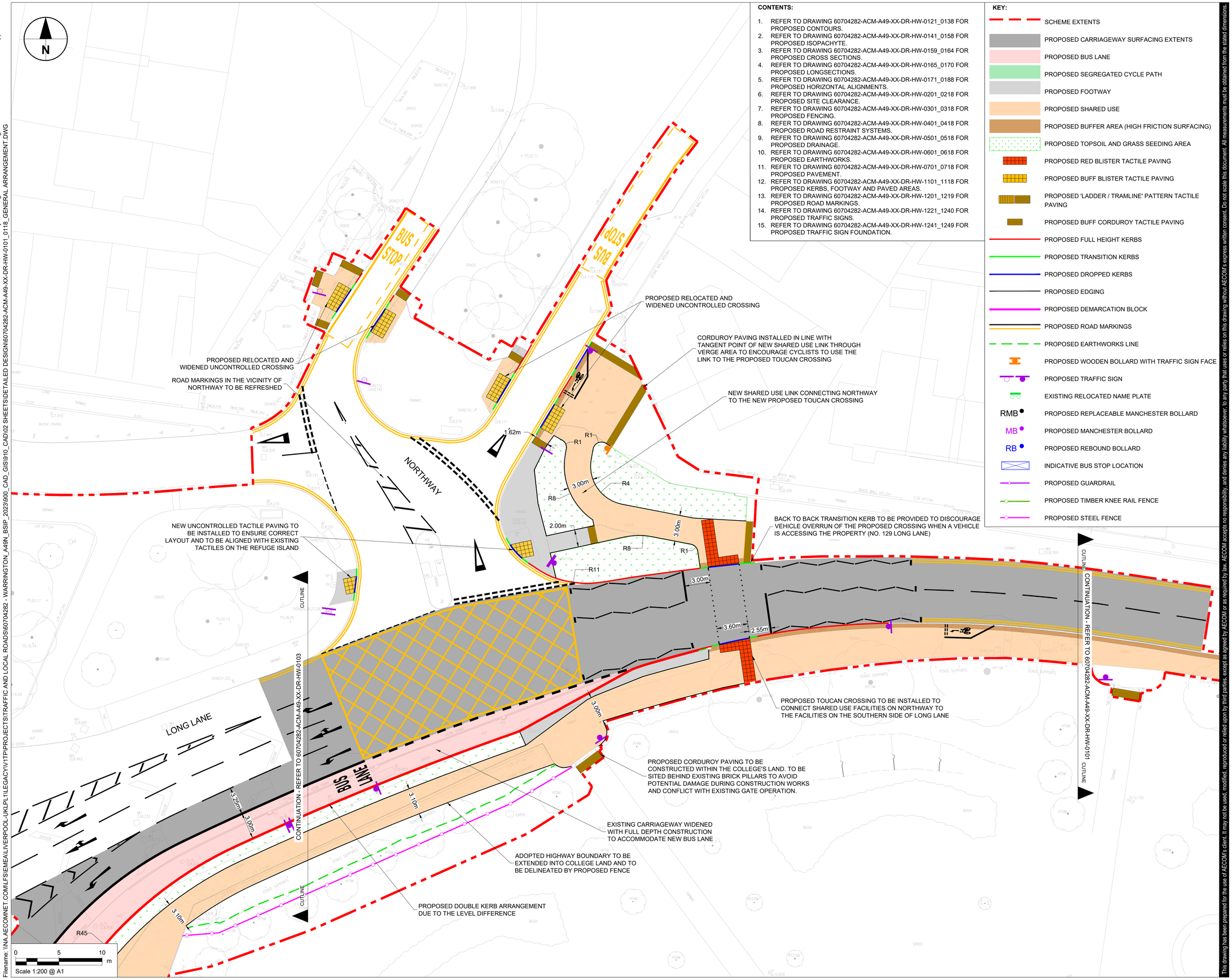

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AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

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ISSUE/REVISION

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SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 02

SHEET NUMBER

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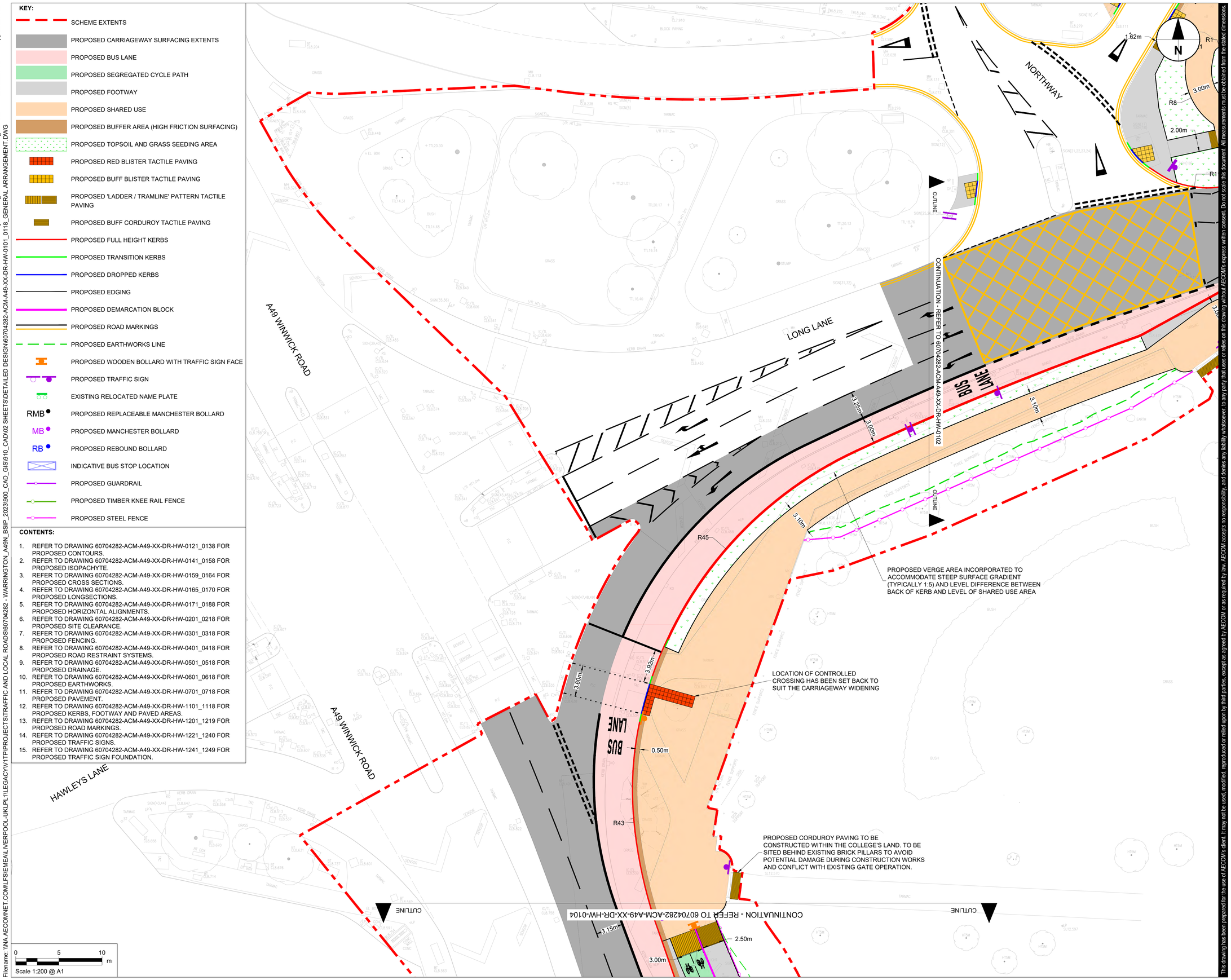

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AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

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D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 03

SHEET NUMBER

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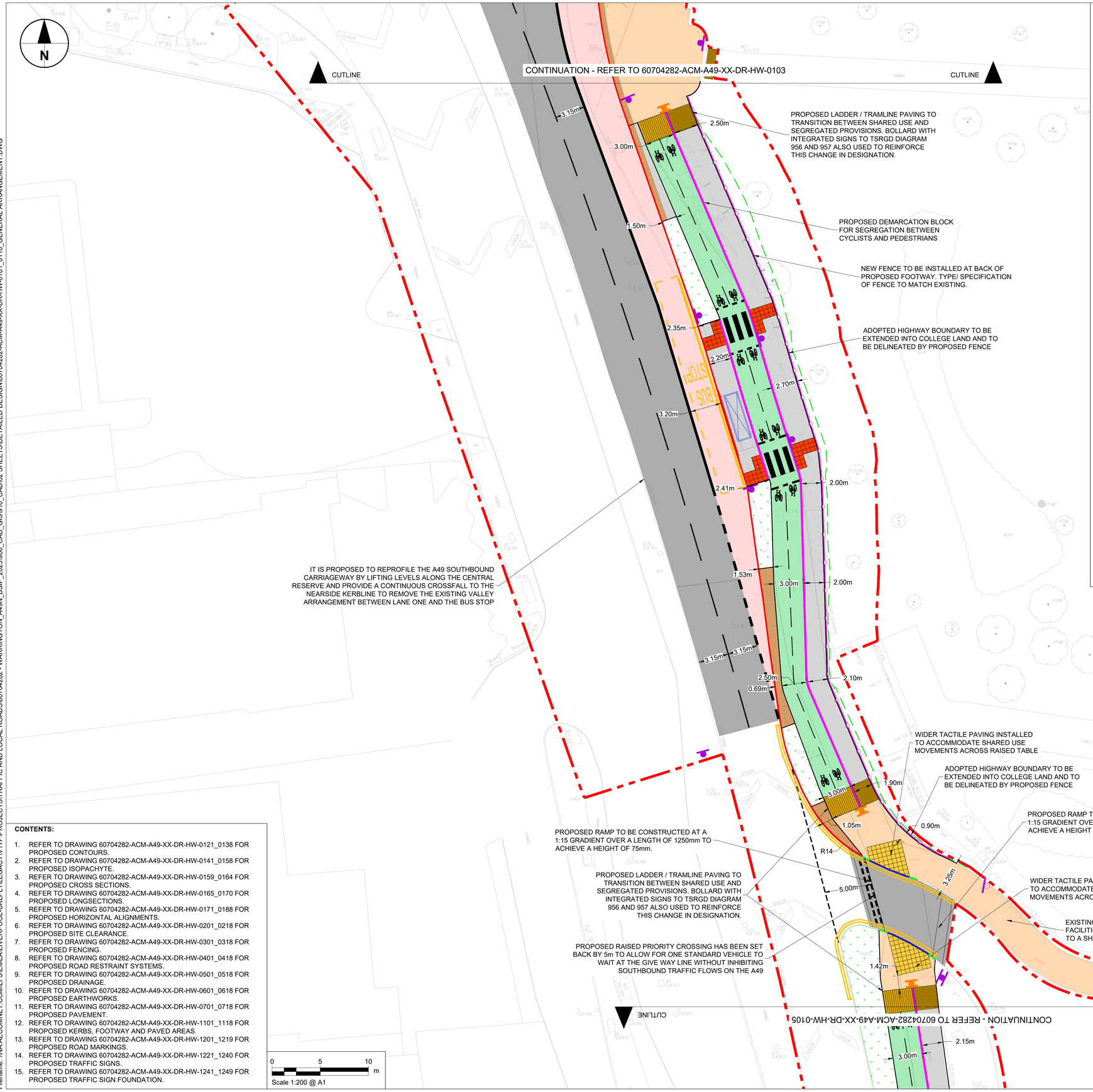

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3. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0159_0164 FOR PROPOSED CROSS SECTIONS.
4. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0165_0170 FOR PROPOSED LONGSECTIONS.
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14. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1221_1240 FOR PROPOSED TRAFFIC SIGNS.
15. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1241_1249 FOR PROPOSED TRAFFIC SIGN FOUNDATION.

KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
- PROPOSED BUS LANE
- PROPOSED SEGREGATED CYCLE PATH
- PROPOSED FOOTWAY
- PROPOSED SHARED USE
- PROPOSED BUFFER AREA (HIGH FRICTION SURFACING)
- PROPOSED TOPSOIL AND GRASS SEEDING AREA
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- PROPOSED ROAD MARKINGS
- PROPOSED EARTHWORKS LINE
- PROPOSED WOODEN BOLLARD WITH TRAFFIC SIGN FACE
- PROPOSED TRAFFIC SIGN
- EXISTING RELOCATED NAME PLATE
- RMB PROPOSED REPLACEABLE MANCHESTER BOLLARD
- MB PROPOSED MANCHESTER BOLLARD
- RB PROPOSED REBOUND BOLLARD
- INDICATIVE BUS STOP LOCATION
- PROPOSED GUARDRAIL
- PROPOSED TIMBER KNEE RAIL FENCE
- PROPOSED STEEL FENCE

AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

East Annexe, Town Hall
Sankey Street, Warrington
WA1 1UH
tel: 01925 442 531
www.warrington.gov.uk

CONSULTANT

AECOM
Ground Floor, Exchange Station
Tithebarn Street
Liverpool, L2 2QP
www.aecom.com

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DETAILED DESIGN

ISSUE/REVISION

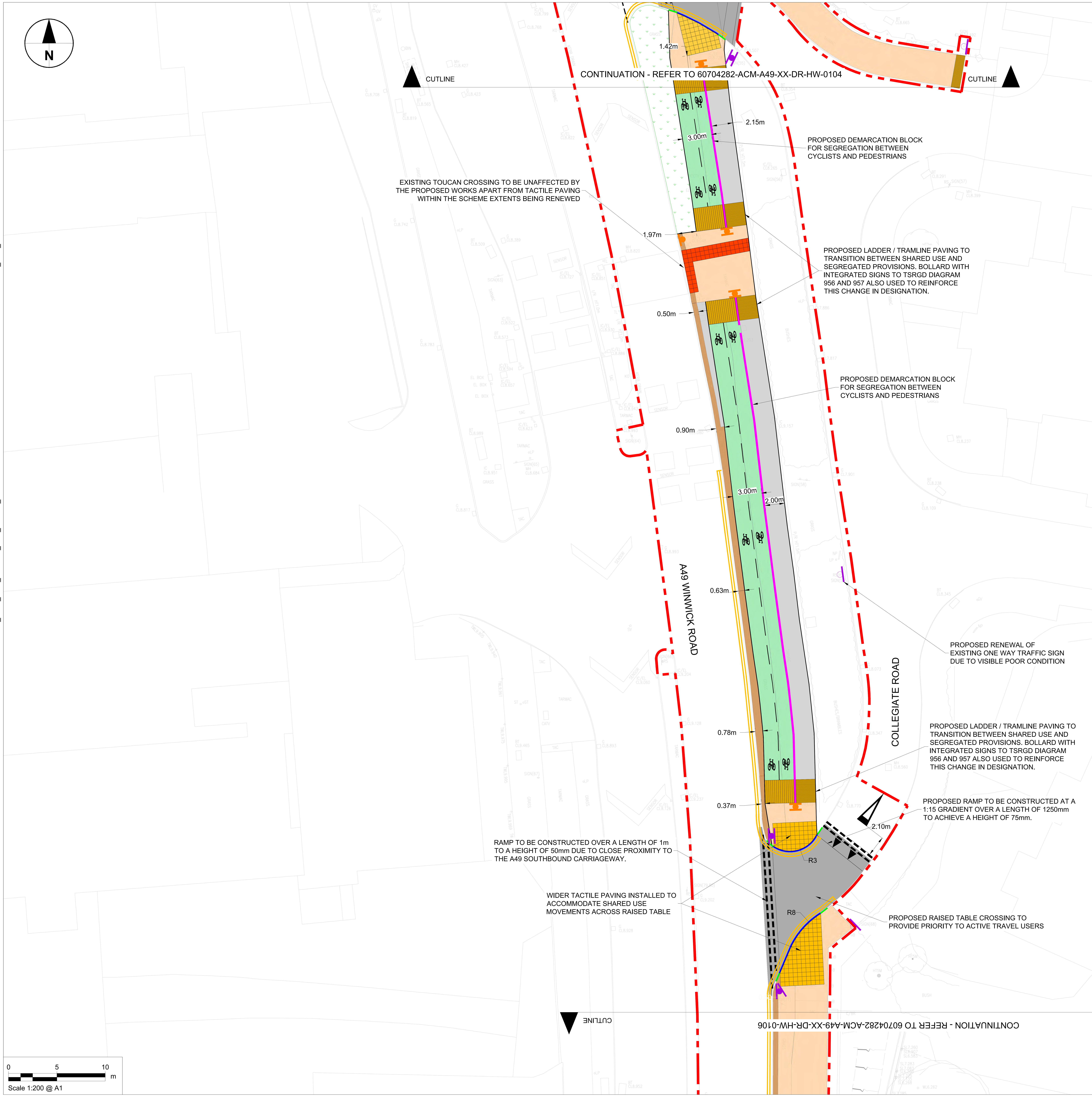
D01	31.05.2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 04

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0104



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AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

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Sankey Street, Warrington
WA1 1UH
tel: 01925 442 531
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CONSULTANT

AECOM
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DETAILED DESIGN

ISSUE/REVISION

I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 05

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0105

KEY:

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- PROPOSED CARRIAGEWAY SURFACING EXTENTS
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- PROPOSED FOOTWAY
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- EXISTING RELOCATED NAME PLATE
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- MB PROPOSED MANCHESTER BOLLARD
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- INDICATIVE BUS STOP LOCATION
- PROPOSED GUARDRAIL
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- PROPOSED STEEL FENCE

CONTENTS:

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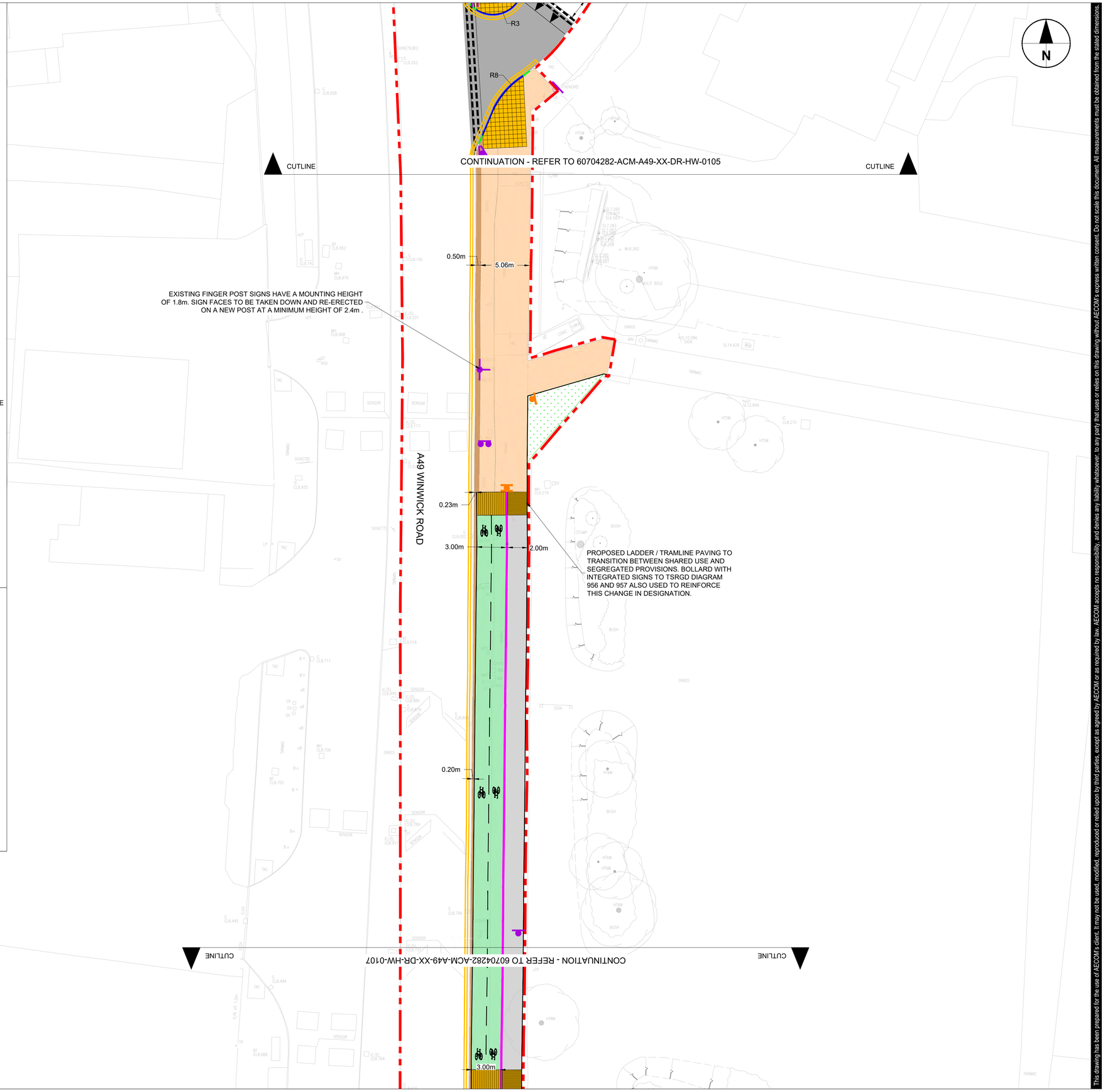

0 5 10 m
Scale 1:200 @ A1

AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council
East Annexe, Town Hall
Sankey Street, Warrington
WA1 1UH
tel: 01925 442 531
www.warrington.gov.uk

CONSULTANT

AECOM
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DETAILED DESIGN

ISSUE/REVISION

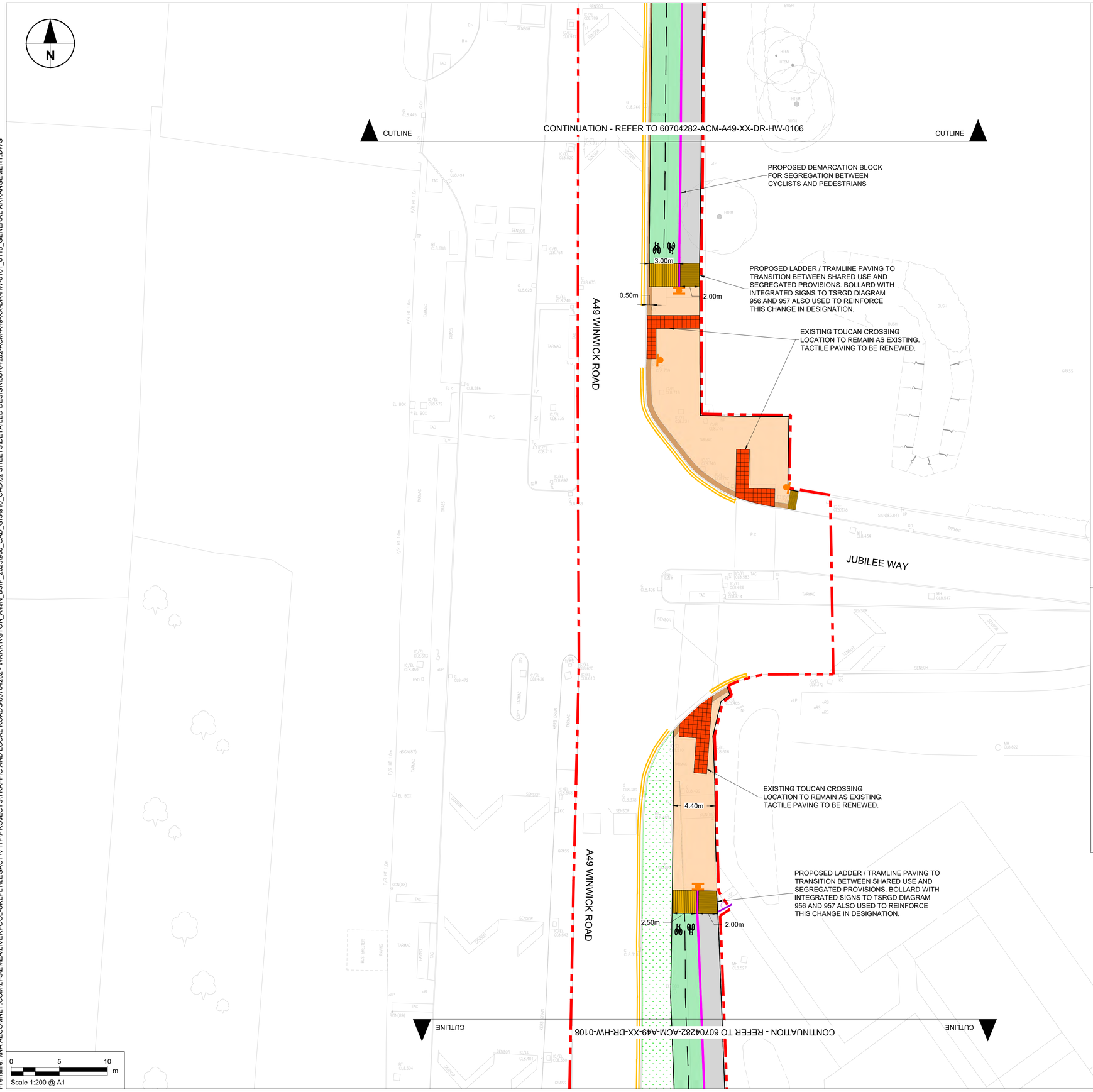
I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 06

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0106



KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
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- PROPOSED STEEL FENCE

CONTENTS:

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AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

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Sankey Street, Warrington
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tel: 01925 442 531
www.warrington.gov.uk

CONSULTANT

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DETAILED DESIGN

ISSUE/REVISION

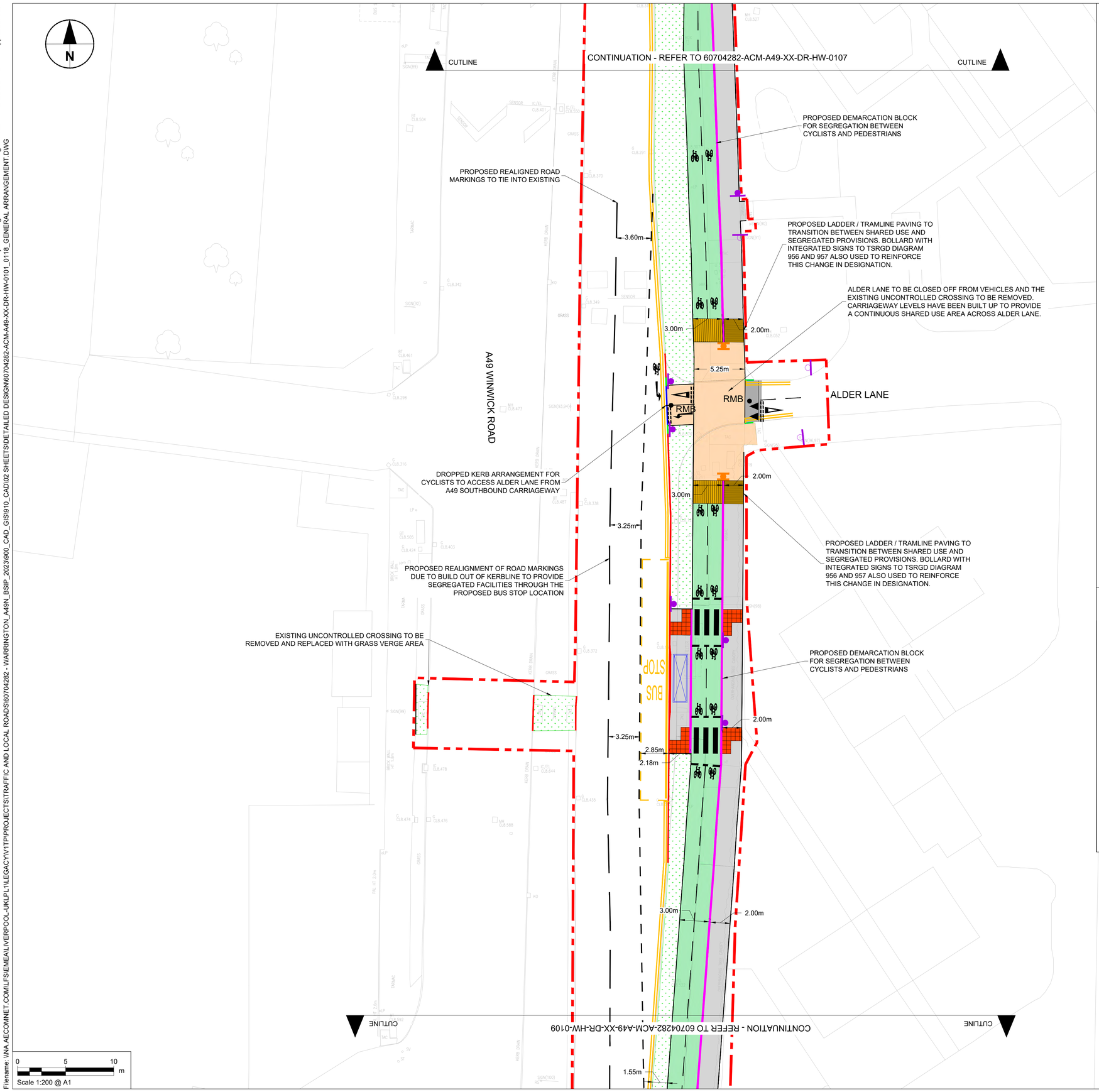
I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 07

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0107



KEY:

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AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

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CONSULTANT

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DETAILED DESIGN

ISSUE/REVISION

I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 08

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0108

ISO A1 594mm x 841mm
Approved: AS
Checked: TD
Designer: AC
Project Management Initials:
Filename: \\NA.AECOMNET.COM\LFS\EMEAILIVERPOOL-UKLPL1\LEGACY\V1TP\PROJECTS\TRAFFIC AND LOCAL ROADS\60704282 - WARRINGTON_A49N_BSIP_20239\00_CAD_GIS\910_CAD\02 SHEETS\DETAILED DESIGN\60704282-ACM-A49-XX-DR-HW-0101_0118_GENERAL ARRANGEMENT.DWG

KEY:

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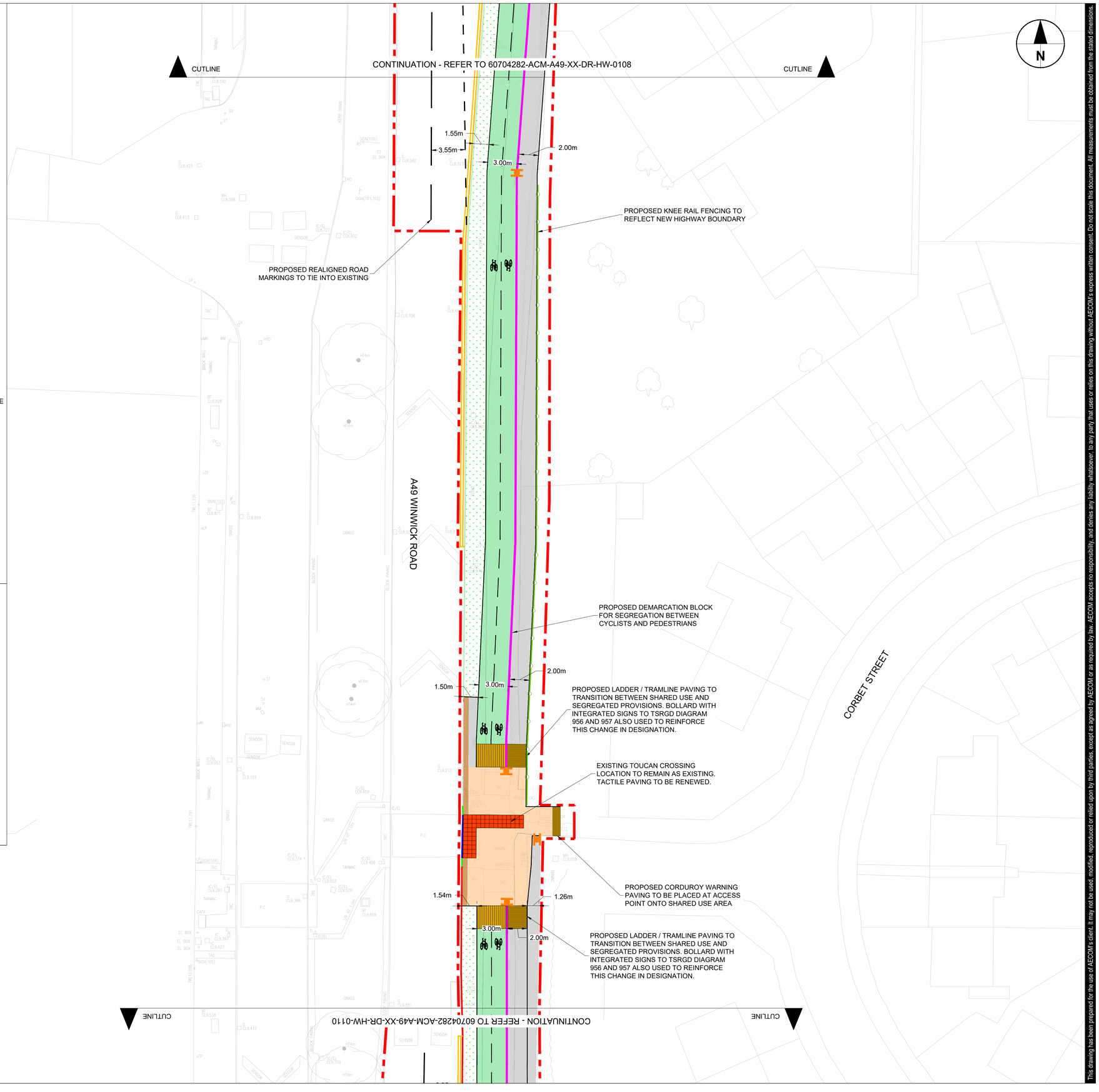
- PROPOSED STEEL FENCE

CONTENTS:

1. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0121_0138 FOR PROPOSED CONTOURS.
2. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0141_0158 FOR PROPOSED ISOPACHYTE.
3. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0159_0164 FOR PROPOSED CROSS SECTIONS.
4. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0165_0170 FOR PROPOSED LONGSECTIONS.
5. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0171_0188 FOR PROPOSED HORIZONTAL ALIGNMENTS.
6. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0201_0218 FOR PROPOSED SITE CLEARANCE.
7. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0301_0318 FOR PROPOSED FENCING.
8. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0401_0418 FOR PROPOSED ROAD RESTRAINT SYSTEMS.
9. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0501_0518 FOR PROPOSED DRAINAGE.
10. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0601_0618 FOR PROPOSED EARTHWORKS.
11. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0701_0718 FOR PROPOSED PAVEMENT.
12. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1101_1118 FOR PROPOSED KERBS, FOOTWAY AND PAVED AREAS.
13. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1201_1219 FOR PROPOSED ROAD MARKINGS.
14. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1221_1240 FOR PROPOSED TRAFFIC SIGNS.
15. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1241_1249 FOR PROPOSED TRAFFIC SIGN FOUNDATION.

0 5 10 m
Scale 1:200 @ A1



AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council
East Annexe, Town Hall
Sankey Street, Warrington
WA1 1UH
tel: 01925 442 531
www.warrington.gov.uk

CONSULTANT

AECOM
Ground Floor, Exchange Station
Tithebarn Street
Liverpool, L2 2QP
www.aecom.com

NOTES

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DETAILED DESIGN

ISSUE/REVISION

I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 09

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0109

ISO A1 594mm x 841mm
Approved: AS
Checked: TD
Designer: AC
Project Management Initials:
Filename: \\NA.AECOMNET.COM\LFS\EMEA\LIV\ERPOOL-UK\LPL1\LEGACY\V1TP\PROJECTS\TRAFFIC AND LOCAL ROADS\60704282 - WARRINGTON_A49N_BSIP_2023\900_CAD_GIS\910_CAD\02 SHEETS\DETAILED DESIGN\60704282-ACM-A49-XX-DR-HW-0101_0118_GENERAL ARRANGEMENT.DWG

KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
- PROPOSED BUS LANE
- PROPOSED SEGREGATED CYCLE PATH
- PROPOSED FOOTWAY
- PROPOSED SHARED USE
- PROPOSED BUFFER AREA (HIGH FRICTION SURFACING)
- PROPOSED TOPSOIL AND GRASS SEEDING AREA
- PROPOSED RED BLISTER TACTILE PAVING
- PROPOSED BUFF BLISTER TACTILE PAVING
- PROPOSED 'LADDER / TRAMLINE' PATTERN TACTILE PAVING
- PROPOSED BUFF CORDUROY TACTILE PAVING
- PROPOSED FULL HEIGHT KERBS
- PROPOSED TRANSITION KERBS
- PROPOSED DROPPED KERBS
- PROPOSED EDGING
- PROPOSED DEMARCATION BLOCK
- PROPOSED ROAD MARKINGS
- PROPOSED EARTHWORKS LINE
- PROPOSED WOODEN BOLLARD WITH TRAFFIC SIGN FACE
- PROPOSED TRAFFIC SIGN
- EXISTING RELOCATED NAME PLATE
- RMB PROPOSED REPLACEABLE MANCHESTER BOLLARD
- MB PROPOSED MANCHESTER BOLLARD
- RB PROPOSED REBOUND BOLLARD
- INDICATIVE BUS STOP LOCATION
- PROPOSED GUARDRAIL
- PROPOSED TIMBER KNEE RAIL FENCE
- PROPOSED STEEL FENCE

CONTENTS:

1. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0121_0138 FOR PROPOSED CONTOURS.
2. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0141_0158 FOR PROPOSED ISOPACHYTE.
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5. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0171_0188 FOR PROPOSED HORIZONTAL ALIGNMENTS.
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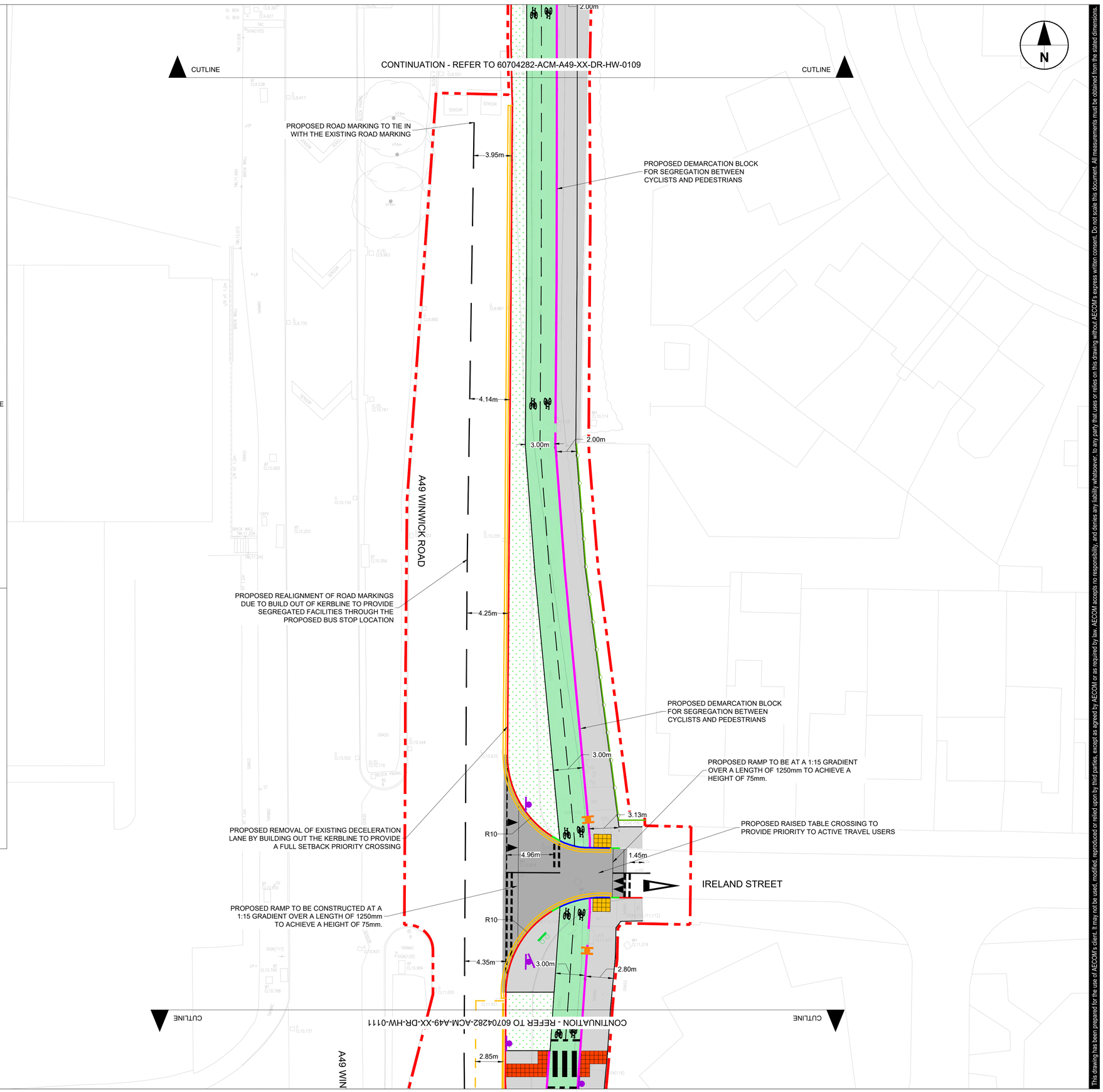

0 5 10 m
Scale 1:200 @ A1

AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

East Annexe, Town Hall
Sankey Street, Warrington
WA1 1UH
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www.warrington.gov.uk

CONSULTANT

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DETAILED DESIGN

ISSUE/REVISION

D01	31.05.2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 10

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0110

ISO A1 594mm x 841mm
Approved: AS
Checked: TD
Designer: AC
Project Management Initials:
N:\NA.AECOMNET.COM\LFS\EMEA\LIVERPOOL-1\KLPL1\LEGACY\V1TP\PROJECTS\TRAFFIC AND LOCAL ROADS\60704282 - WARRINGTON_A49N_BSIP_2023\900_CAD_GIS\910_CAD\02 SHEETS\DETAILED DESIGN\60704282-ACM-A49-XX-DR-HW-0101_0118_GENERAL ARRANGEMENT.DWG

KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
- PROPOSED BUS LANE
- PROPOSED SEGREGATED CYCLE PATH
- PROPOSED FOOTWAY
- PROPOSED SHARED USE
- PROPOSED BUFFER AREA (HIGH FRICTION SURFACING)
- PROPOSED TOPSOIL AND GRASS SEEDING AREA
- PROPOSED RED BLISTER TACTILE PAVING
- PROPOSED BUFF BLISTER TACTILE PAVING
- PROPOSED 'LADDER / TRAMLINE' PATTERN TACTILE PAVING
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- INDICATIVE BUS STOP LOCATION
- PROPOSED GUARDRAIL
- PROPOSED TIMBER KNEE RAIL FENCE
- PROPOSED STEEL FENCE

CONTENTS:

1. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0121_0138 FOR PROPOSED CONTOURS.
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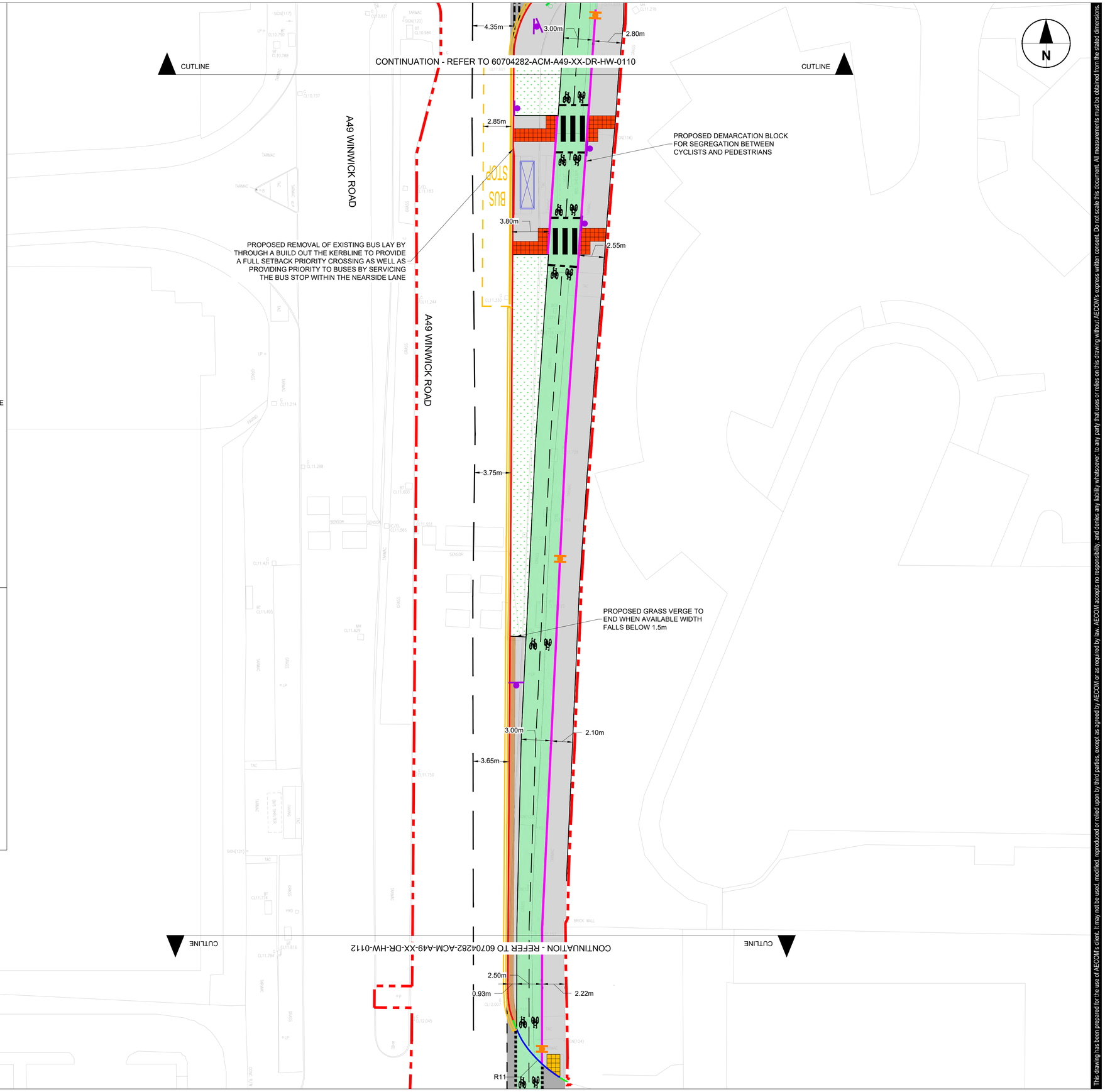

AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

East Annexe, Town Hall
Sankey Street, Warrington
WA1 1UH
tel: 01925 442 531
www.warrington.gov.uk

CONSULTANT

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DETAILED DESIGN

ISSUE/REVISION

I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 11

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0111

ISO A1 594mm x 841mm
Approved: AS
Checked: TD
Designer: AC
Project Management Initials:
N:\NA.AECOMNET.COM\LFS\EMEA\LIVERPOOL-1\KLPL1\LEGACY\1TP\PROJECTS\TRAFFIC AND LOCAL ROADS\60704282 - WARRINGTON_A49N_BSIP_2023\900_CAD_GIS\910_CAD\02 SHEETS\DETAILED DESIGN\60704282-ACM-A49-XX-DR-HW-0101_0118_GENERAL ARRANGEMENT.DWG

KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
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- MB PROPOSED MANCHESTER BOLLARD
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- INDICATIVE BUS STOP LOCATION
- PROPOSED GUARDRAIL
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- PROPOSED STEEL FENCE

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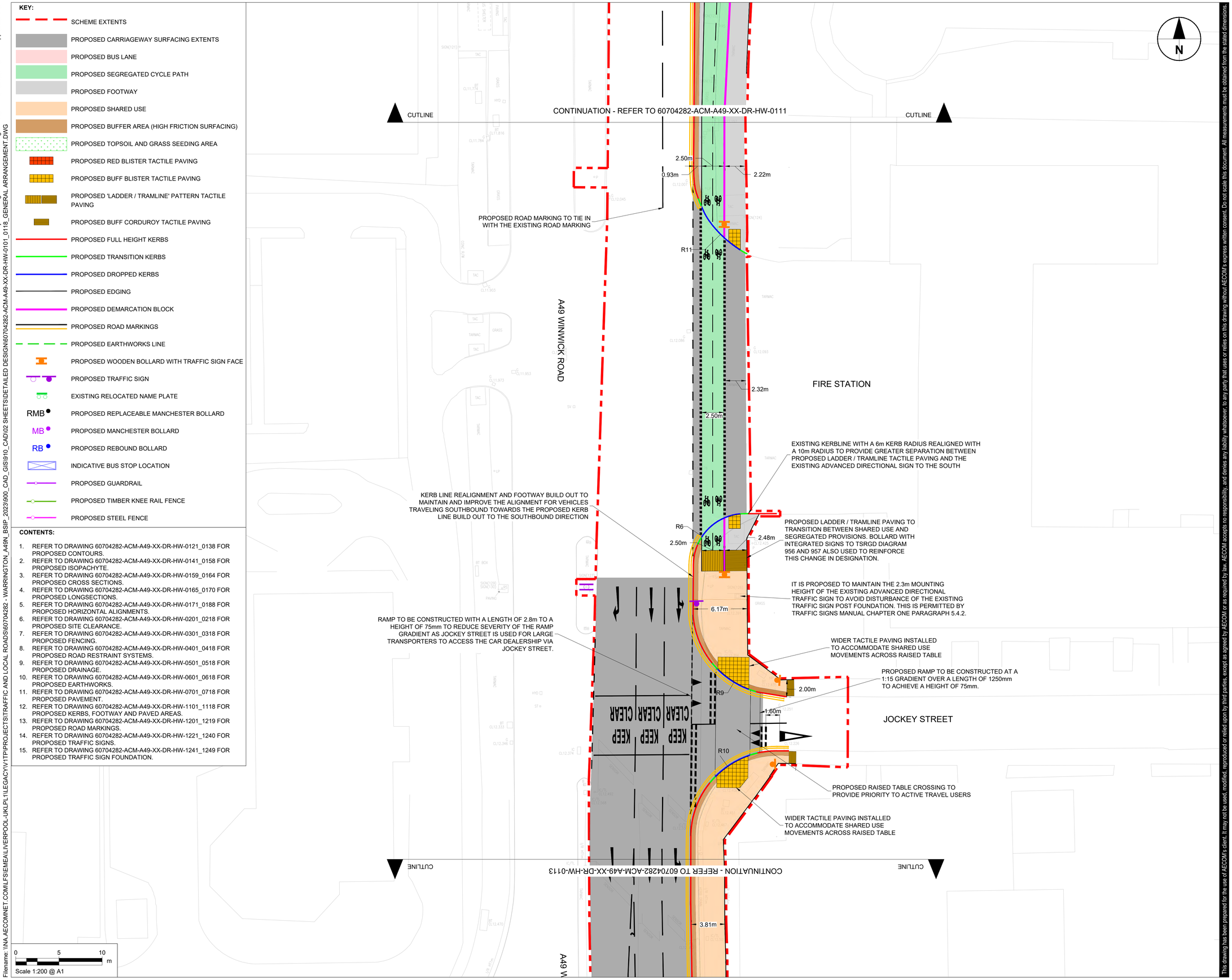

0 5 10 m
Scale 1:200 @ A1

AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

East Annexe, Town Hall
Sankey Street, Warrington
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tel: 01925 442 531
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DETAILED DESIGN

ISSUE/REVISION

I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 12

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0112

ISO A1 594mm x 841mm
Approved: AS
Checked: TD
Designer: AC
Project Management Initials:
Filename: \\NA.AECOMNET.COM\LFS\EMEA\LIVERPOOL-UKLPL1\LEGACY\V1TP\PROJECTS\TRAFFIC AND LOCAL ROADS\60704282 - WARRINGTON_A49N_BSIP_2023\900_CAD_GIS\910_CAD\02 SHEETS\DETAILED DESIGN\60704282-ACM-A49-XX-DR-HW-0101_0118_GENERAL ARRANGEMENT.DWG

KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
- PROPOSED BUS LANE
- PROPOSED SEGREGATED CYCLE PATH
- PROPOSED FOOTWAY
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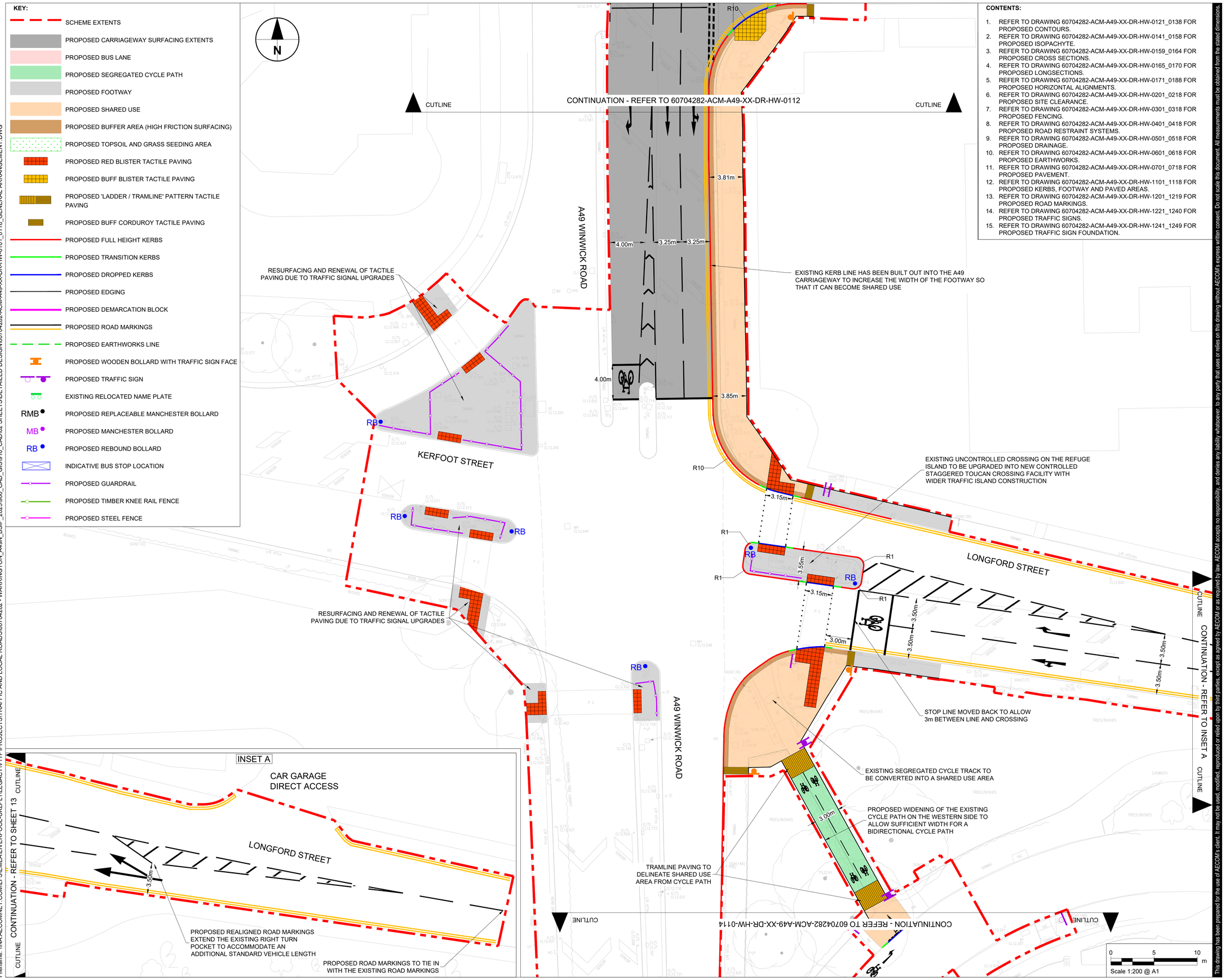

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AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

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DETAILED DESIGN

ISSUE/REVISION

D01	31.05.2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 13

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0113

KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
- PROPOSED BUS LANE
- PROPOSED SEGREGATED CYCLE PATH
- PROPOSED FOOTWAY
- PROPOSED SHARED USE
- PROPOSED BUFFER AREA (HIGH FRICTION SURFACING)
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- PROPOSED BUFF CORDUROY TACTILE PAVING
- PROPOSED FULL HEIGHT KERBS
- PROPOSED TRANSITION KERBS
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- PROPOSED EDGING
- PROPOSED DEMARCATION BLOCK
- PROPOSED ROAD MARKINGS
- PROPOSED EARTHWORKS LINE
- PROPOSED WOODEN BOLLARD WITH TRAFFIC SIGN FACE
- PROPOSED TRAFFIC SIGN
- EXISTING RELOCATED NAME PLATE
- RMB PROPOSED REPLACEABLE MANCHESTER BOLLARD
- MB PROPOSED MANCHESTER BOLLARD
- RB PROPOSED REBOUND BOLLARD
- INDICATIVE BUS STOP LOCATION
- PROPOSED GUARDRAIL
- PROPOSED TIMBER KNEE RAIL FENCE
- PROPOSED STEEL FENCE

CONTENTS:

1. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-0121_0138 FOR PROPOSED CONTOURS.
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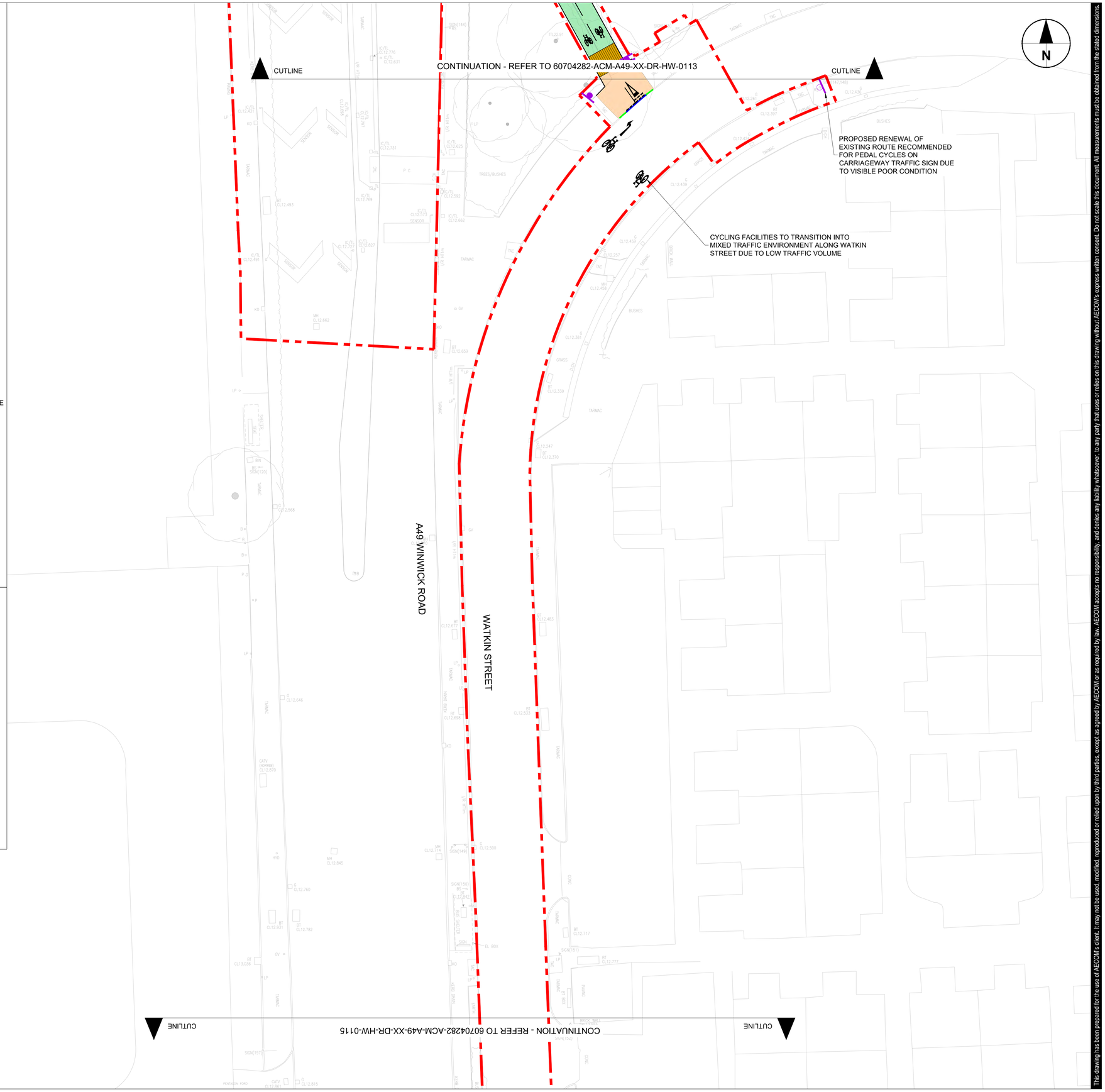

0 5 10 m
Scale 1:200 @ A1

AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council
East Annexe, Town Hall
Sankey Street, Warrington
WA1 1UH
tel: 01925 442 531
www.warrington.gov.uk

CONSULTANT

AECOM
Ground Floor, Exchange Station
Tithebarn Street
Liverpool, L2 2QP
www.aecom.com

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DETAILED DESIGN

ISSUE/REVISION

I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 14

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0114

KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
- PROPOSED BUS LANE
- PROPOSED SEGREGATED CYCLE PATH
- PROPOSED FOOTWAY
- PROPOSED SHARED USE
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- PROPOSED GUARDRAIL
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- PROPOSED STEEL FENCE

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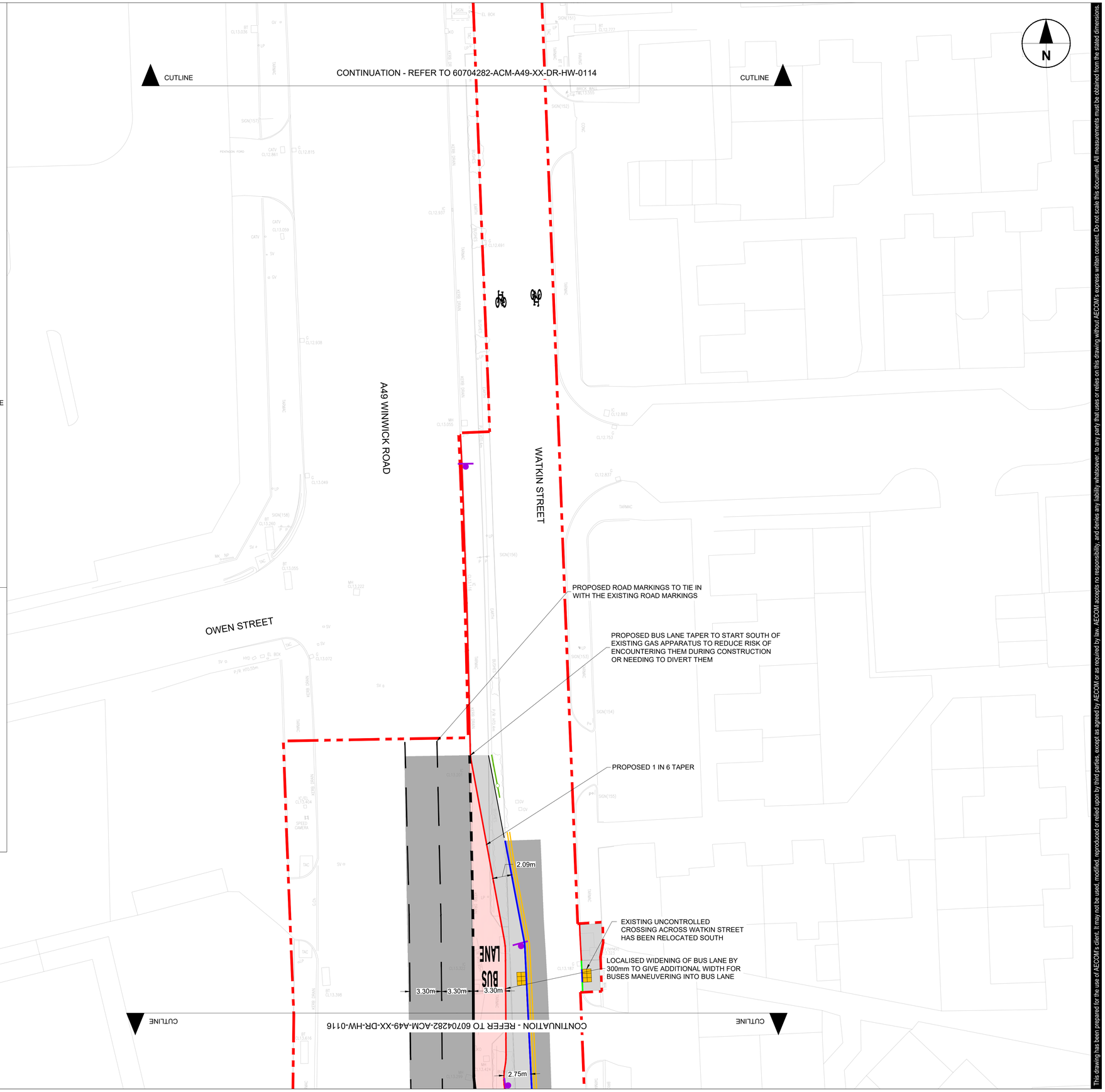

0 5 10 m
Scale 1:200 @ A1

AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

East Annexe, Town Hall
Sankey Street, Warrington
WA1 1UH
tel: 01925 442 531
www.warrington.gov.uk

CONSULTANT

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DETAILED DESIGN

ISSUE/REVISION

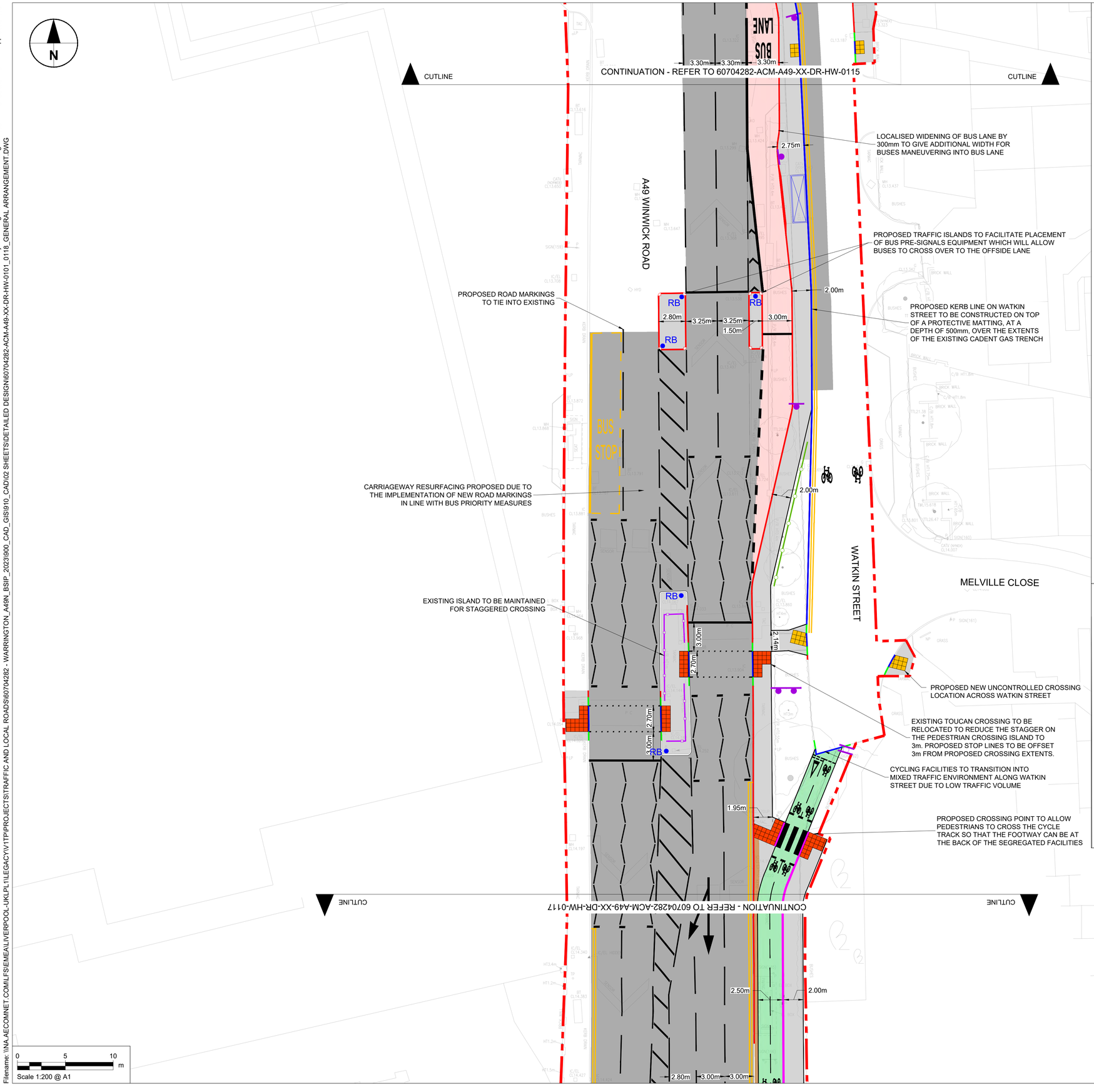
I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 15

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0115



KEY:

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- PROPOSED CARRIAGEWAY SURFACING EXTENTS
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15. REFER TO DRAWING 60704282-ACM-A49-XX-DR-HW-1241_1249 FOR PROPOSED TRAFFIC SIGN FOUNDATION.

AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

East Annexe, Town Hall
Sankey Street, Warrington
WA1 1UH
tel: 01925 442 531
www.warrington.gov.uk

CONSULTANT

AECOM
Ground Floor, Exchange Station
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Liverpool, L2 2QP
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DETAILED DESIGN

ISSUE/REVISION

I/R	DATE	DESCRIPTION
D01	31.05.2024	DETAILED DESIGN

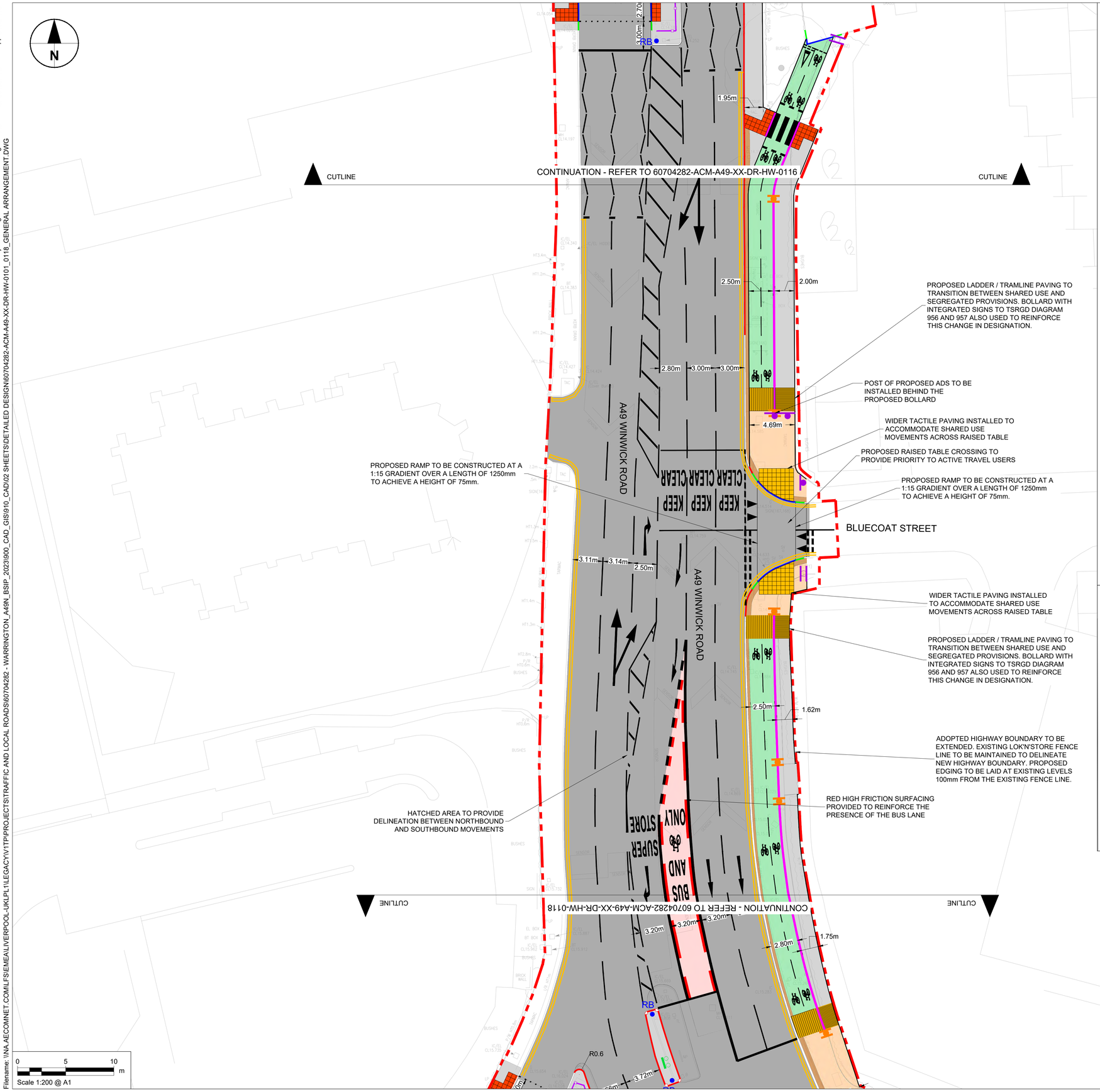
SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 16

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0116

ISO A1 594mm x 841mm
Approved: AS
Checked: TD
Project Management Initials: Designer: AC
Filename: \\NA.AECOMNET.COM\LFS\EMEA\LIVERPOOL-UKLPL1\LEGACY\V1TP\PROJECTS\TRAFFIC AND LOCAL ROADS\60704282 - WARRINGTON_A49N_BSIP_20239003_CAD_GIS\910_CAD\02 SHEETS\DETAILED DESIGN\60704282-ACM-A49-XX-DR-HW-0101_0118_GENERAL ARRANGEMENT.DWG



KEY:

- SCHEME EXTENTS
- PROPOSED CARRIAGEWAY SURFACING EXTENTS
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AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

Warrington Borough Council

East Annexe, Town Hall
Sankey Street, Warrington
WA1 1UH
tel: 01925 442 531
www.warrington.gov.uk

CONSULTANT

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DETAILED DESIGN

ISSUE/REVISION

D01	31.05.2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 17

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0117

ISO A1 594mm x 841mm
Approved: AS
Checked: TD
Designer: AC
Project Management Initials:
Filename: \\NA.AECOMNET.COM\LFSIEMEA\LIVERPOOL-UKLPL1\LEGACY\V1TP\PROJECTS\TRAFFIC AND LOCAL ROADS\60704282 - WARRINGTON_A49N_BSIP_20230900_CAD_GIS\910_CAD\02 SHEETS\DETAILED DESIGN\60704282-ACM-A49-XX-DR-HW-0101_0118_GENERAL ARRANGEMENT.DWG

KEY:

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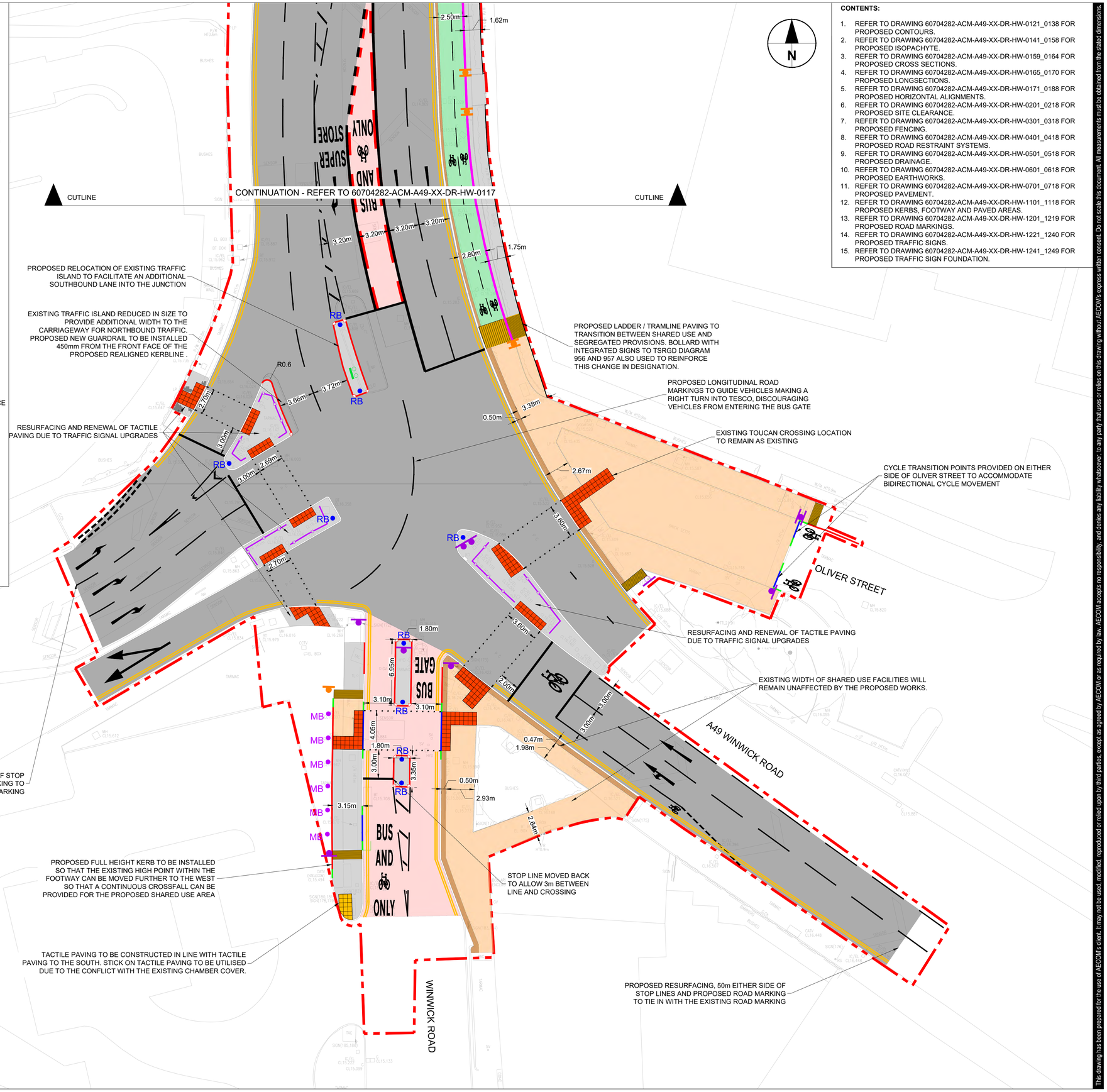

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AECOM

PROJECT

BSIP: A49
Bus Priority Scheme

CLIENT

WARRINGTON Borough Council

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DETAILED DESIGN

ISSUE/REVISION

D01	31.05.2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION

SHEET TITLE

A49 BSIP:
GENERAL ARRANGEMENT
SHEET 18

SHEET NUMBER

60704282-ACM-A49-XX-DR-HW-0118

Appendix B – Modelling Report

AECOM

A49 Warrington Bus Service Improvement Plan - Transport Modelling

Modelling Report

[Warrington Borough Council]

Project number: [60704282]

July 2024

Delivering a better world

Prepared for:

Warrington Borough Council

Executive Summary

Warrington Borough Council (WBC) required a detailed operational assessment of a bus priority scheme along the A49 corridor to assess the impact on network performance to ensure that the objectives of improving bus journey times could be achieved by the proposed design option. In order to achieve this objective, the Council engaged AECOM to develop a micro-simulation traffic model aimed at evaluating proposed bus priority measures along the A49 corridor, including Northway and Long Lane. The micro-simulation model was chosen for its ability to reflect driver behaviour, traffic signal operations, traffic conditions and most importantly public transport operation and priorities systems.

The initial design proposed which consisted of a 1.5km continuous southbound bus lane from Long Lane to the junction with the Tesco Supermarket with prioritisation for buses at the signalised junctions did not provide material benefits along all sections, therefore the design was scaled back. Further considerations were given as to whether bus services serving the Jubilee Hub could exit from Alder Lane southbound to avoid delays at the Jubilee Way / A49 signalised junction. However, there was resistance from bus operators to implement this. Following on from this initial design review, various iterations of the scheme were examined to further develop and enhance the designs, as summarised below:

- The Long Lane / Northway junction is a known congestion hotspot for buses and private vehicles exiting Northway due to high traffic volumes along Long Lane in the morning peak. Therefore, a controlled pedestrian crossing on Long Lane east of Northway was introduced. This had a two-fold benefit, firstly improving pedestrian safety as this was seen as a desire line toward the Warrington & Vale Royal College and, secondly, provides opportunities for Northway traffic to exit onto Long Lane by holding back Long Lane westbound traffic.
- A new bus priority lane was introduced from Long Lane onto the A49 southbound to reduce delays by segregating buses from general traffic.
- A new southbound bus gate/pre-signal at a relocated bus stop (from Owen Street to Melville Close) was introduced to allow buses quicker access to the Tesco Junction by allowing the buses to move ahead of the main southbound traffic stream.
- A new southbound bus gate and signal adjustment at the Tesco junction was also introduced to improve bus journey times to the bus station, this allowed buses to bypass the Pinner's Brow "triangle" and travel a more direct route along Winwick Road to Warrington Central Station and the bus interchange.

The figure below illustrates the final proposed design.

Proposed Scheme

The package of measures is expected to reduce bus journey times in the morning peak by around 5 minutes and 6 minutes by 2031 and 2038 respectively. Private vehicle journey times are also projected to improve during the morning peak, with saving of around 4 minutes and 5 minutes by 2031 and 2038 (as shown in the Table below), these savings have been attributed to the Northway / Long Lane junction improvements. Furthermore, reliability of bus services is also likely to improve, with less variable delays at key pinch point areas, enabling bus services to closely follow their scheduled timetables.

Journey Times (Seconds)	AM 2023 Base	AM 2031 Do Minimum	AM 2038 Do Minimum	AM 2031 Do Something	AM 2038 Do Something
Journey Time	00:14:20	00:18:02	00:19:18	00:13:01	00:13:09
Journey Time Variability	00:00:25	00:01:02	00:00:53	00:00:09	00:00:12

Generally, the evening peak there is marginal benefit with the scheme in place, given the tidality of the corridor with less congestion being experienced in the key improvement areas.

With the increase in bus journey time benefits and reliability, plus improvements to the bus fleet and upgrading of active travel facilities, there is an expectation that mode shift will be achieved from private vehicles to public transportation / active travel, this would lead to environmental benefits, such as a decrease in harmful emissions like carbon monoxide, nitrogen oxides etc.

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1. Introduction

This report outlines the methodology adopted to produce a VISSIM micro-simulation traffic model of a section of the A49 in Warrington. The report provides information on the validity of the model against observed traffic data to provide a suitable level of confidence to test various bus service improvements along the A49 and Long Lane / Northway.

1.1 Background

Warrington Borough Council (WBC) has commissioned AECOM to create this model to test a number of bus priority measures in the area and assess the impact on network performance.

The Council require a detailed operational assessment to ensure that the stated objectives of journey time savings of any design options can be achieved. There will also be a need to provide visualisations from the model of how the scheme will operate to aid consultation / engagement with both internal (WBC) and external stakeholders.

Given the nature of the proposed scheme and the need to reflect details of traffic signal operations, varying traffic flows and consequent queuing, the most appropriate tool is micro-simulation. This also offers the necessary visualisation capabilities.

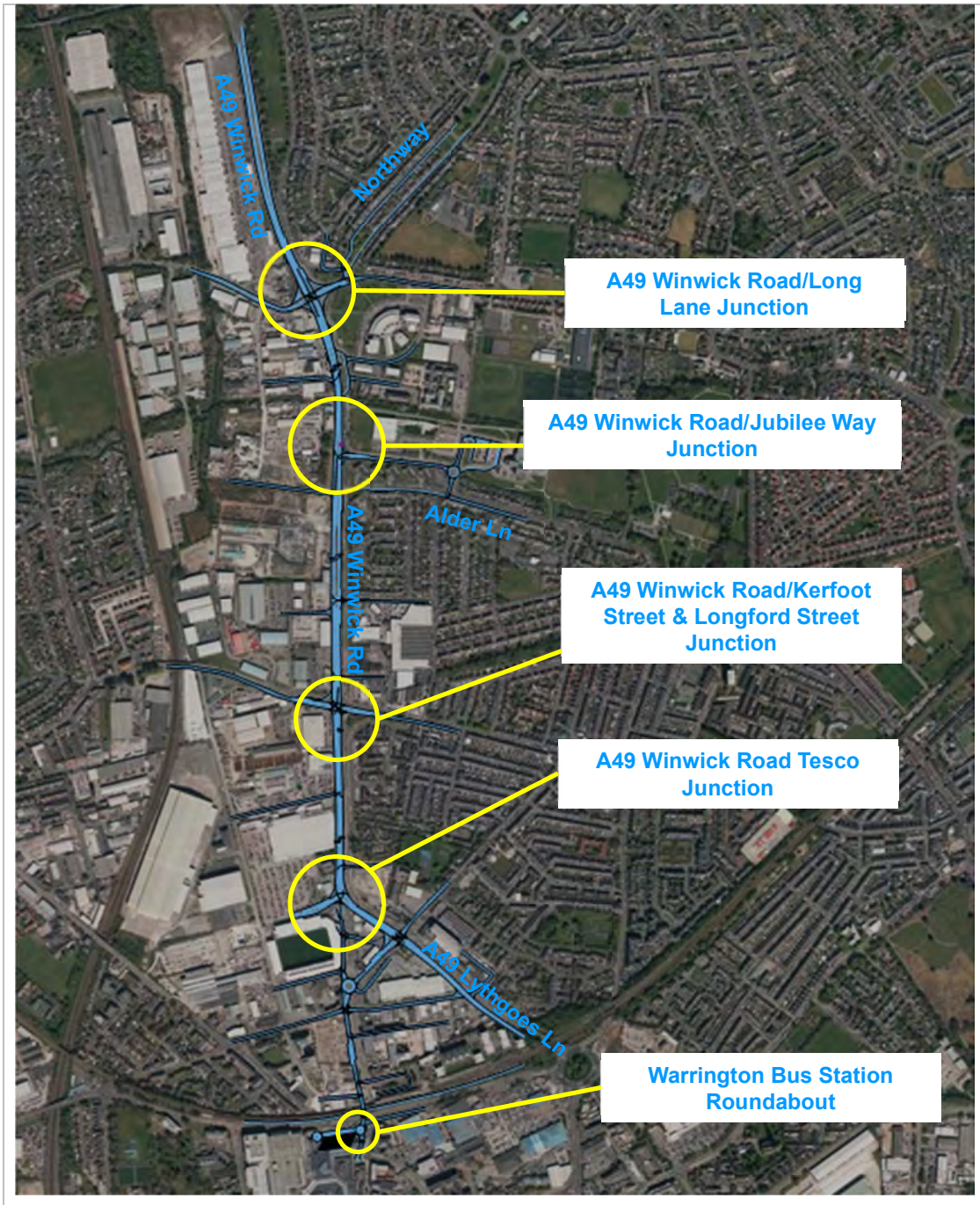
A comparison between the modelled and observed data has been undertaken to evidence that the model realistically replicates on-site traffic behaviour and can be adapted to test future forecasting and option testing.

1.2 Study Objectives

The objective of the study is primarily to help WBC to understand the effects of the proposed A49 bus priority scheme which includes the introduction of short sections of southbound bus lanes and bus gates, and changes to signal settings (to allow for bus priority).

The study area is set out in **Figure 1**. The A49 is a key arterial route into Warrington town centre from the north and access to/from the M62, whilst also providing access to a large number of residential and employment development sites.

Figure 1: Model Extents and Areas of Interest



1.3 Model Software

The traffic model has been developed using the microsimulation software package VISSIM which allows for the simulation of traffic patterns with a great level of detail, displaying all road users and their interactions in one single model.

The version used for developing the model is VISSIM 2022, Service Pack 7.

1.4 Report Structure

The structure of the report is as follows:

- Section 2 – Observed data, detailing the data collected and used to build the model;
- Section 3 – Model Description, providing details about the model structure;
- Section 4 – Network Development, describing the process of creating the model;
- Section 5 – OD Matrix Development, detailing the development of origin-destination matrices;
- Section 6 – Model Standards, introducing the criteria used to judge the suitability of the model;
- Section 7 – Calibration and Validation Results, detailing how well the model performs against the observed data;
- Section 8 – Development of the refined scheme, providing detailed information on the development steps undertaken;
- Section 9 –Refined scheme results including, network wide performance, journey time and queue lengths;
- Section 10 –Future forecasting results including, network wide performance, journey time and queue lengths; and
- Section 11 – Summary and Conclusions.

2. Observed Data

2.1 Overview

This chapter describes the different data sources that were used to calibrate and validate the base model, including:

- Existing Data;
- Survey Data; and
- Strategic Model.

2.2 Existing Data

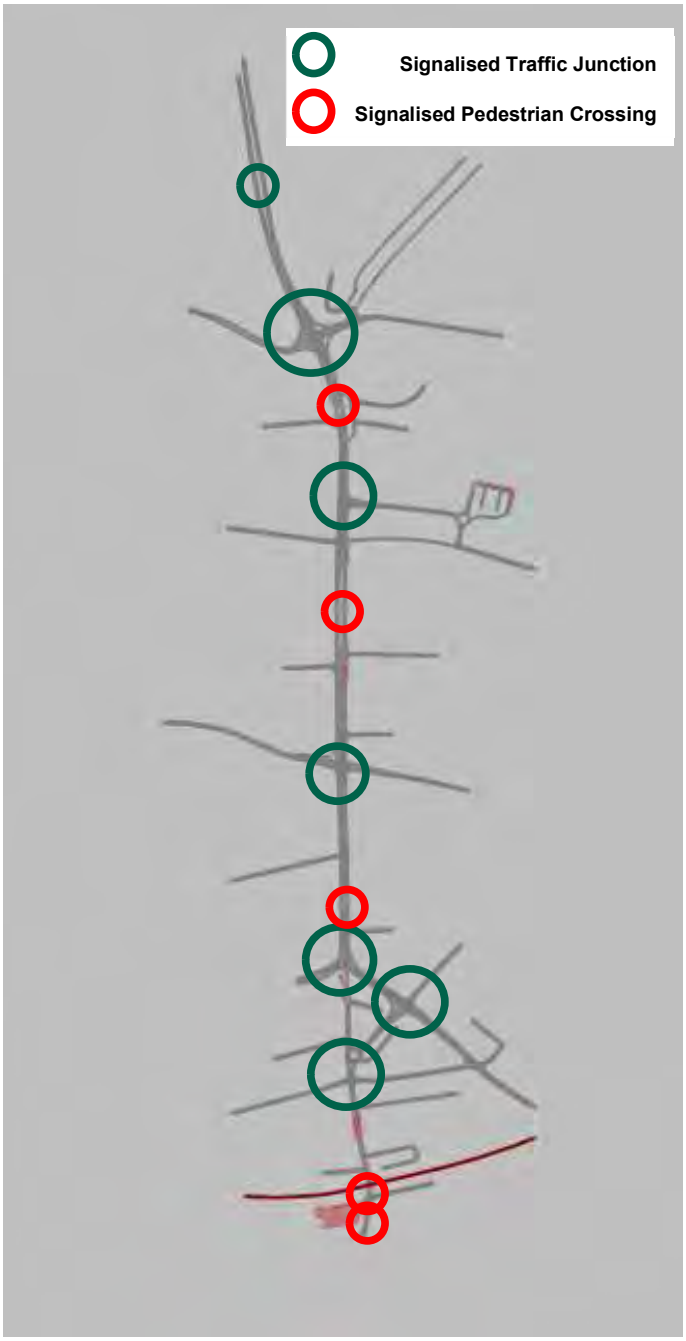
AECOM were provided with the following data by WBC:

- Access to the strategic Warrington Multi Modal Traffic Model (WMMTM16);
- Signal Specifications for all signalised junctions and crossings in the study corridor; and
- As-built layout drawings.

2.2.1 Signal Specifications

Signal timing data was provided by WBC for seven signalised traffic junctions and five signalised pedestrian crossings in the study area as shown in **Figure 2**. This information was used to define the signal timings and inter-greens for input into the model.

Figure 2: Signalised Junction Locations



2.3 Survey Data

AECOM, on behalf of WBC, commissioned Nationwide Data Collection (NDC) to undertake traffic surveys of the highway network in the study area, in February/March 2023. The surveys, which included Manual Classified Turning Counts (MCTCs) and Automatic Traffic Counts (ATCs), were undertaken for the following dates:

- **MCTCs:** Monday 27th Feb 2023 to Sunday 5th March 2023, 07:00-19:00; and
- **ATCs:** Monday 27th Feb 2023 to Sunday 12th March 2023, 24-hours period.

AECOM subsequently undertook checks of the traffic survey data provided by Nationwide Data Collection (NDC) to confirm the suitability of this data to develop the Base VISSIM model.

This traffic survey data has been used to calibrate and validate the Base VISSIM model.

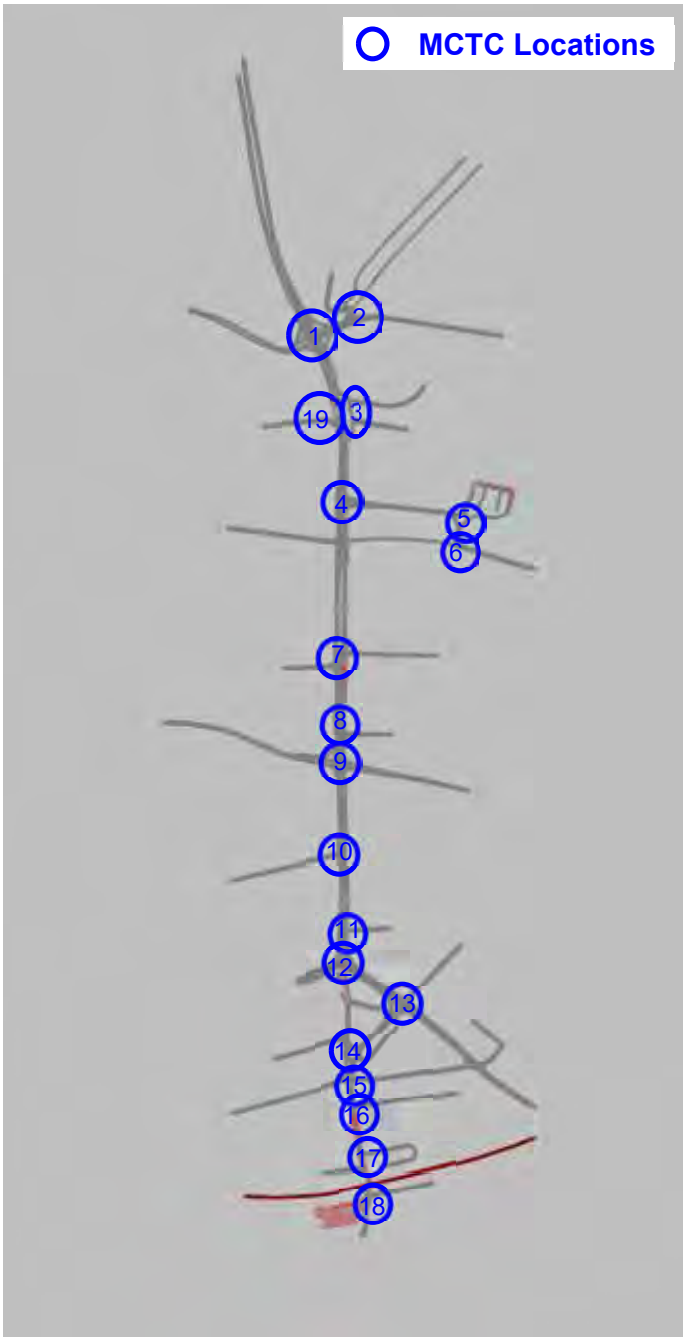
2.3.1 Manual Classified Turning Count Data (MCTC)

Manual Classified Turning Counts (MCTCs) were carried out at the following junctions in February/March 2023 between 07:00 and 19:00:

- **Site 1**: A49 Winwick Road/Long Lane Junction;
- **Site 2**: A50 Long Lane/Northway Junction and Densham Avenue / Northway;
- **Site 3**: Collegiate Road and Floyd Drive;
- **Site 4**: A49 Winwick Road/Jubilee Way Junction;
- **Site 5**: Orford Hub Roundabout;
- **Site 6**: Alder Lane/Jubilee Way Junction;
- **Site 7:** A49 Winwick Road/Ireland Street Junction;
- **Site 8**: A49 Winwick Road/Jockey Street;
- **Site 9:** A49 Winwick Road/Kerfoot Street & Longford Street Junction;
- **Site 10**: A49 Winwick Road/Owen Street;
- **Site 11:** A49 Winwick Road/Bluecoat Street Junction;
- **Site 12**: A49 Winwick Road Tesco Junction;
- **Site 13:** A49 Winwick Road & Lythgoes Lane/B5210 Pinners Brow & Orford Lane;
- **Site 14**: Pinners Brow Roundabout/Buckley Street;
- **Site 15:** B5210/Haydock Street Junction;
- **Site 16:** Winwick Steet/John Street Junction;
- **Site 17**: Winwick Street/Central Way;
- **Site 18:** Warrington Bus Station Roundabout; and
- **Site 19:** A49 Winwick Road/Industrial & Retail units.

The site locations are shown in **Figure 3**.

Figure 3: Manual Classified Turning Count Locations



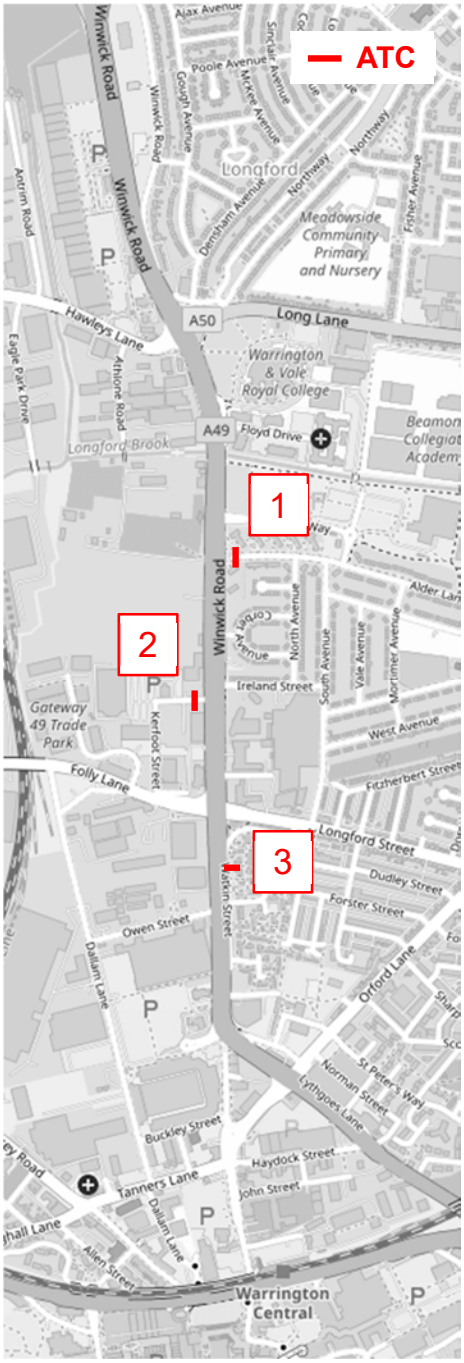
MCTCs were summarised for all surveyed junctions and the difference in flow between consecutive junctions was estimated to identify any significant flow differences or inconsistencies in the survey data.

2.3.2 Automatic Traffic Count (ATC) Data

ATCs were utilised to assess the appropriate survey data and agree the peak hour to be modelled. ATCs were carried out at the following locations in the AM and PM peaks and are shown in **Figure 4**:

1. Alder Lane, near the junction with A49 Winwick Road (in front of the Bus gate);
2. Unnamed road, entrance/exit Gateway 49 Retail Park off A49 Winwick Road; and
3. Watkin Street, north of Owen St including cycle count.

Figure 4: Automatic Traffic Count Locations



2.3.3 Pedestrian Count Data

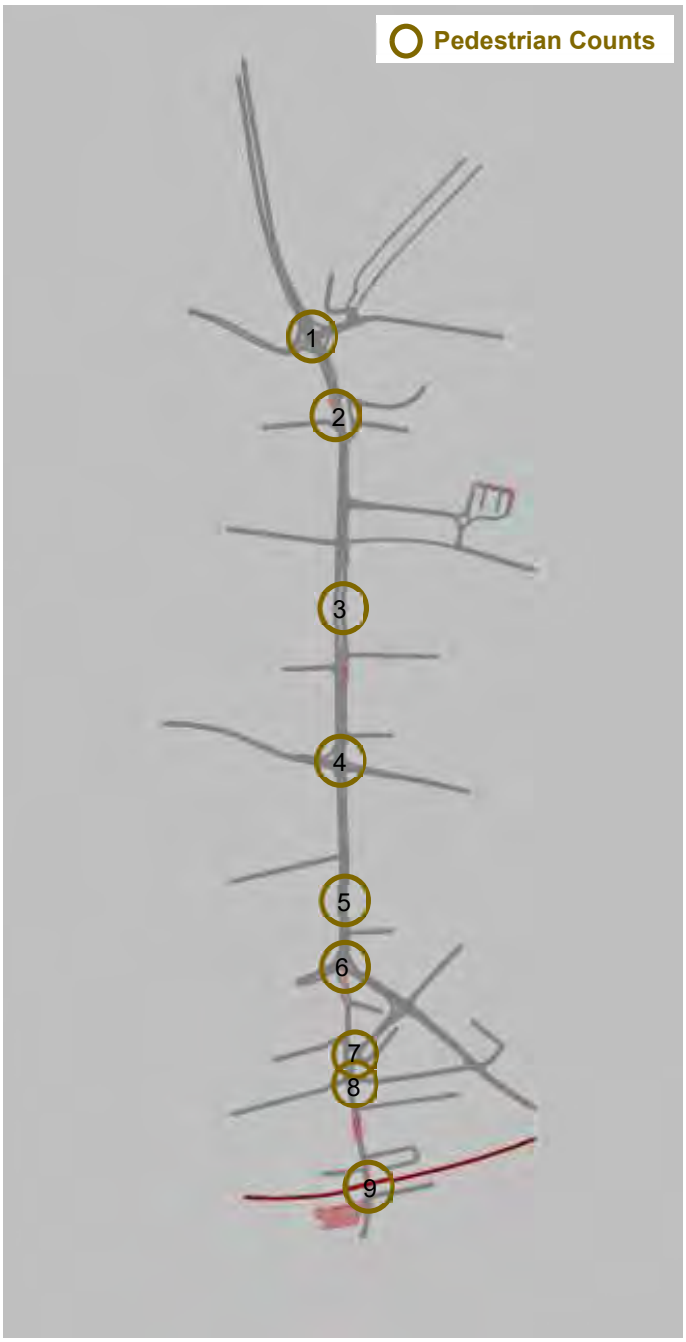
Pedestrian counts were carried out on seven consecutive days between Monday 27th Feb and Sunday 5th March between 07:00 and 19:00 at the following locations:

- **Site 1**: All pedestrian crossing at A49 Winwick Road/Long Lane Junction;
- **Site 2**: Signalised pedestrian crossing on A49 Winwick Road near Collegiate Road;
- **Site 3**: Signalised pedestrian crossing on A49 Winwick Road near Corbet Street;
- **Site 4:** All pedestrian crossing at A49 Winwick Road/Kerfoot Street & Longford Street Junction;
- **Site 5**: Signalised pedestrian crossing on A49 Winwick Road near Melville Close;

- **Site 6:** All pedestrian crossing at A49 Winwick Road Tesco Junction;
- **Site 7:** All pedestrian crossing on A49 Winwick Road & Lythgoes Lane/B5210 Pinners Brow & Orford Lane;
- **Site 8:** All pedestrian crossing at B5210/Haydock Street Junction; and
- **Site 9:** Signalised pedestrian crossing on A49 Winwick Street under railway bridge.

Pedestrians were counted bi-directionally in 15-minute intervals. The pedestrian count sites are shown in **Figure 5**.

Figure 5: Pedestrian Count Survey Locations



2.4 Journey Time Data

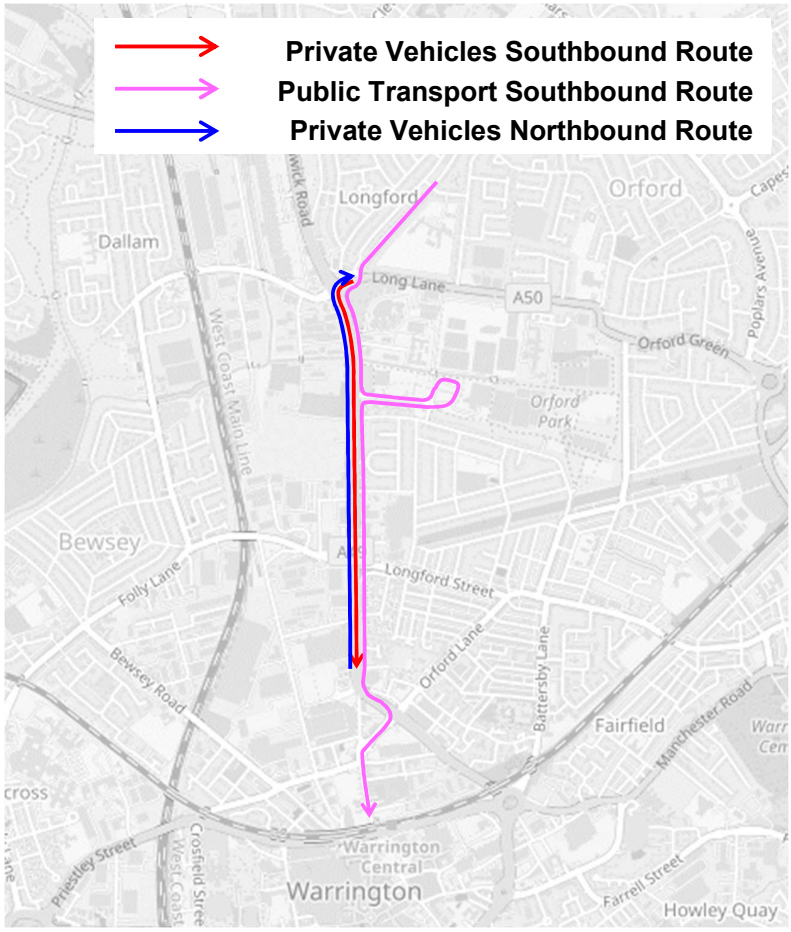
Private vehicles journey time data was extracted from the 'Highways Analyst – Base Map Cloud' journey time database, which provides information on journey times within the network. For the purpose of this study an average of Tuesday, Wednesday, and Thursday between 01/03/2021 and 31/03/2021 was extracted.

Public transport journey time data is taken from 'bustimes.org' real time database, which provides a real time track record of buses travelling through the road network. Data was obtained between 18/4/2023 and 4/5/2023 for Tuesday, Wednesday and Thursday.

Northbound public transport journey time data has not been collected for the model. This decision was based on two factors, firstly the proposed scheme is in the southbound direction, and secondly the journey time for both bus and private vehicles will be similar when excluding bus stop dwell times given there is no segregation of the two vehicle classes.

The data was analysed along the routes shown within **Figure 6**.

Figure 6: Journey Time Routes



2.5 Strategic Model Data

Modelling has also been informed by data from the Warrington Multi Modal Transport Model (WMMTM16) which was used to create prior demand matrices of the study area. In the absence of, for example, Automatic Number Plate Recognition (ANPR) data, the demand matrices provide reasonable origin and destination movements through the corridor for the matrix estimation process. Details on matrix estimation are provided in **Section 5.2**.

3. Model Description

As mentioned in **Section 1,** the model has been developed using the microsimulation software VISSIM, a software package which has the functionality to model the interaction of individual vehicles within a simulation road network.

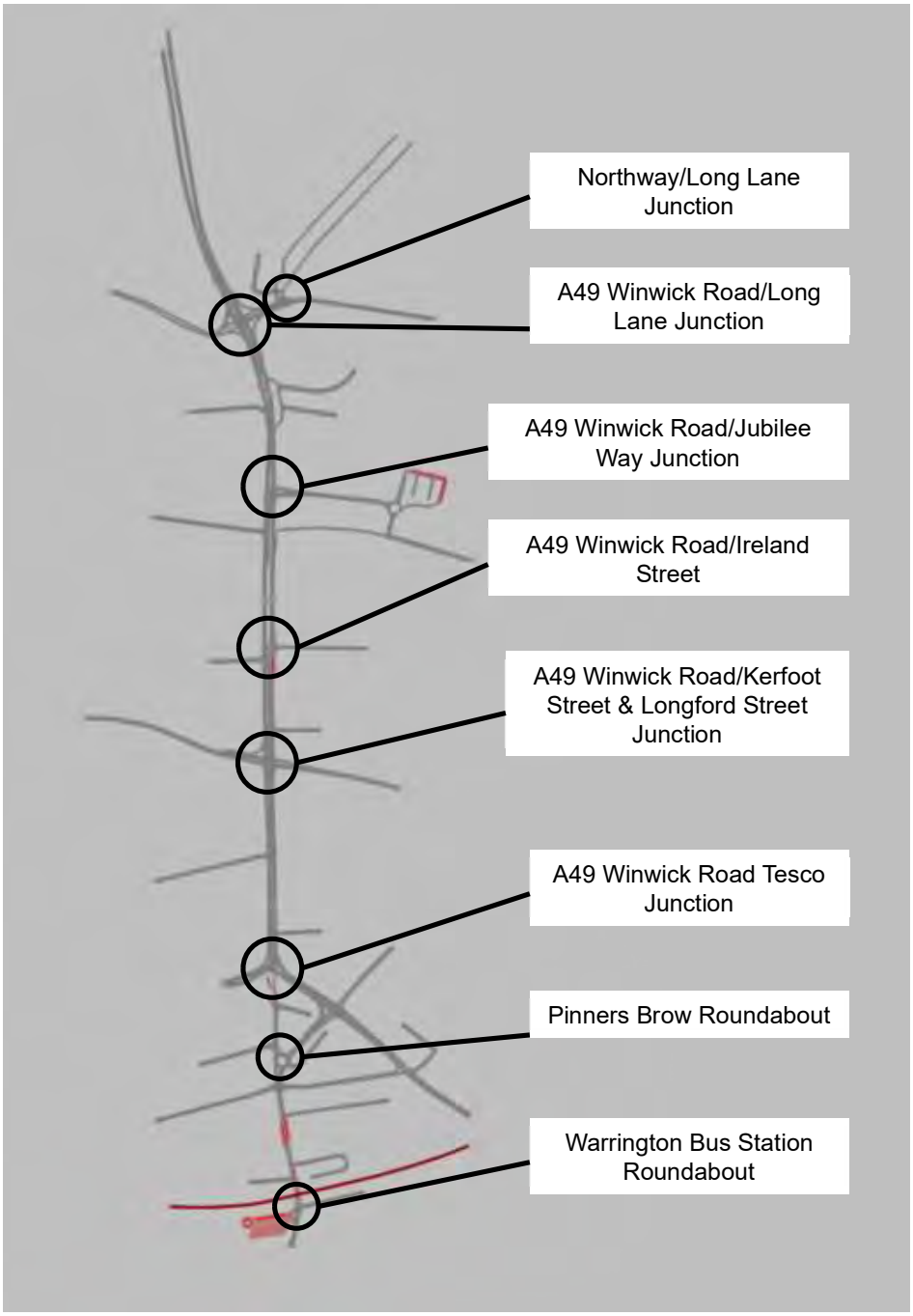
The following sections describe the model in more detail, including:

- Modelled area;
- Network structure;
- Time periods;
- User classes;
- Public transport modelling; and
- Traffic assignment methodology.

3.1 Modelled Area

The modelled area in VISSIM relates to the area over which significant impacts of interventions are certain. This is also known as the Area of Detailed Modelling. **Figure 7** presents a screenshot of the modelled area and the key junctions which have been modelled.

Figure 7: Overview of the modelled area



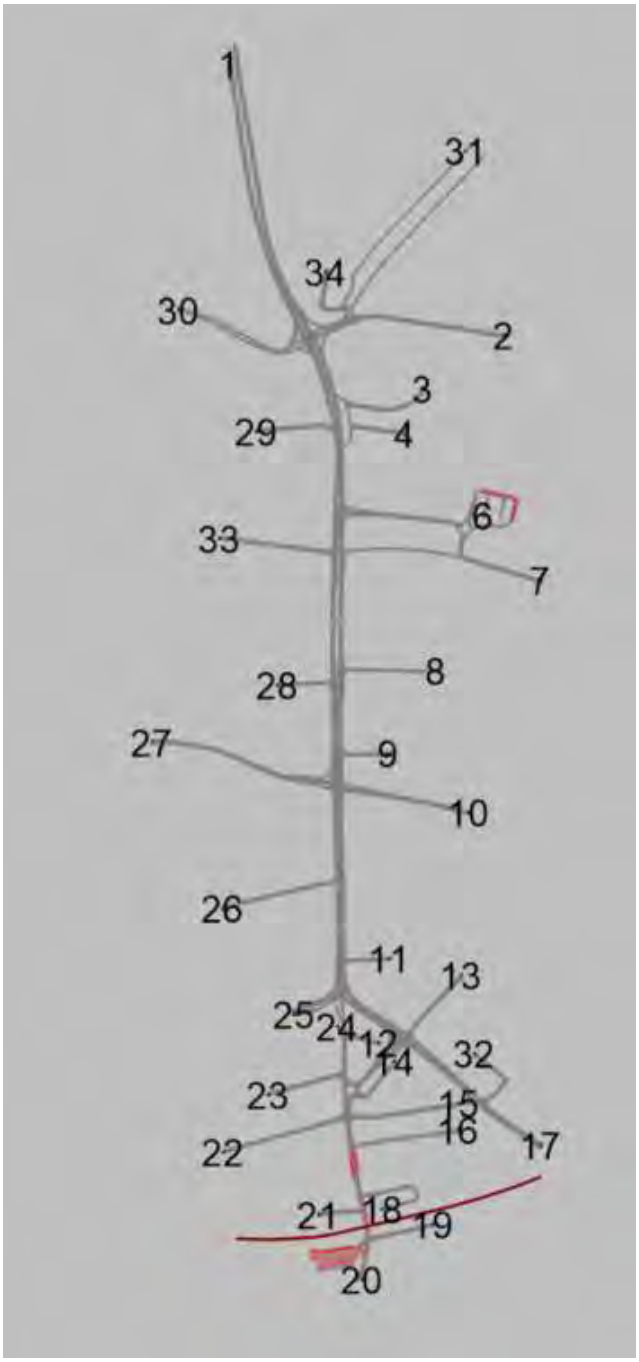
The modelled network also contains minor roads which were not surveyed, these are referred to as "sinks" and are used to balance any discrepancies between survey flows between adjacent junctions.

3.2 Network Structure

3.2.1 Zoning System

The model network contains 33 zones from which traffic enters and leaves the network via external points, known as parking lots in VISSIM. Model zones are represented in VISSIM by one or multiple parking lot pairs with separate lots acting as entry and exit points. The model zones are illustrated in **Figure 8**.

Figure 8: Zone References



3.3 Time Periods

The model covers two peak periods representing morning and evening peaks, from 08:00 to 09:00 and from 17:00 to 18:00 with a 15-minute build up period.

3.4 Vehicle Types / Classes

A vehicle type is a vehicle with a defined set of technical driving characteristics e.g. articulated HGV or rigid truck. These can then be aggregated into a vehicle class (e.g. HGV). Vehicles may also be defined as a Type by Origin, Destination, Occupancy, Private, Taxi etc. All of these Types can then be grouped into a Class (e.g. Car / LGV). This is used for a number of modelling features in VISSIM, such as defining groups of vehicles with speed or acceleration behaviours or segmenting vehicles with similar vehicle lengths or widths.

Based on the requirements of this study, default vehicle types provided in VISSIM are adequate for this network, therefore the following vehicle types have been used within the model:

- Lights (Car, LGV);
- HGVs; and
- Bus.

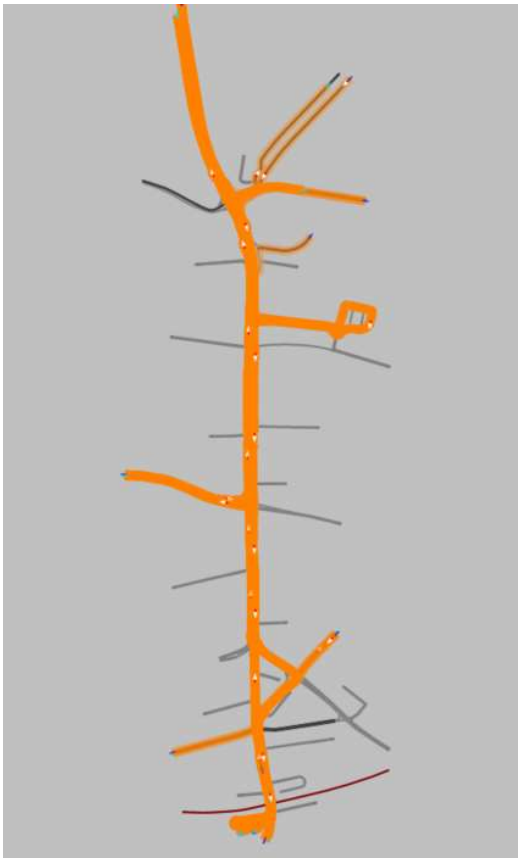
3.5 Public Transport Modelling

34 public transport routes and 24 bus stops have been coded in the model, as shown in **Figure 9**.

Bus stop dwell times have been set to a normal distribution that ranges between:

- 20 seconds; and
- 5 seconds (Some of the routes using the Alder Lane stop, Ireland Street stop, Owen Street stop and Tesco stop. These stops are observed that there are small amount boarding and alighting activities in the peak period).

Figure 9: Bus Routes and numbered Bus Stops in the model



Assignment Methodology – Dynamic Assignment

The model has been built using a dynamic (matrix-based) assignment in which vehicles choose their route through the network based on a cost coefficient relating to time and distance. However, given that there is no route choice in the model, the use of a matrix-based assignment is based on the matrix estimation process which requires a matrix of movements and to simplify forecasting procedures.

3.5.1 Time Slices

In dynamic assignment, traffic demand and infrastructure are not assumed to be constant over time, therefore the use of time slices has been taken into consideration for modelling the effects of varying traffic levels within peak periods. These have been set to 15-minute time slices or evaluation intervals.

3.6 Running the Model

VISSIM is a microsimulation package which requires multiple runs with varying seed values (a seed specifies a unique set of distributions within a specified range to cause slight variability within the model).

The average of 50 randomly seeded model runs generates the modelled data used in the calibration and validation processes. This ensures that the volume of data and analyses required is manageable whilst ensuring that the data reflects variation in the model runs.

The spread of results was checked to ensure there are no outliers.

4. Network Development

The development of the modelled network has been undertaken in line with DfT TAG guidance.

4.1 Network Data and Coding

The basic element of a road network in VISSIM is the link, which can be defined as a unidirectional representation of a section of highway.

In addition, several elements are needed to model the flow/speed and flow/delay relationships at both link and junction levels.

4.1.1 Link and Connector Structure

AutoCAD drawings have been used as background drawings for coding the road layout in VISSIM. The use of this data has allowed the appropriate replication of the existing layout of links and junctions.

For the flowing of traffic through the network, VISSIM makes use of connectors for joining the highway links; in this way, the road network can be built.

4.1.1.1 Lane Widths

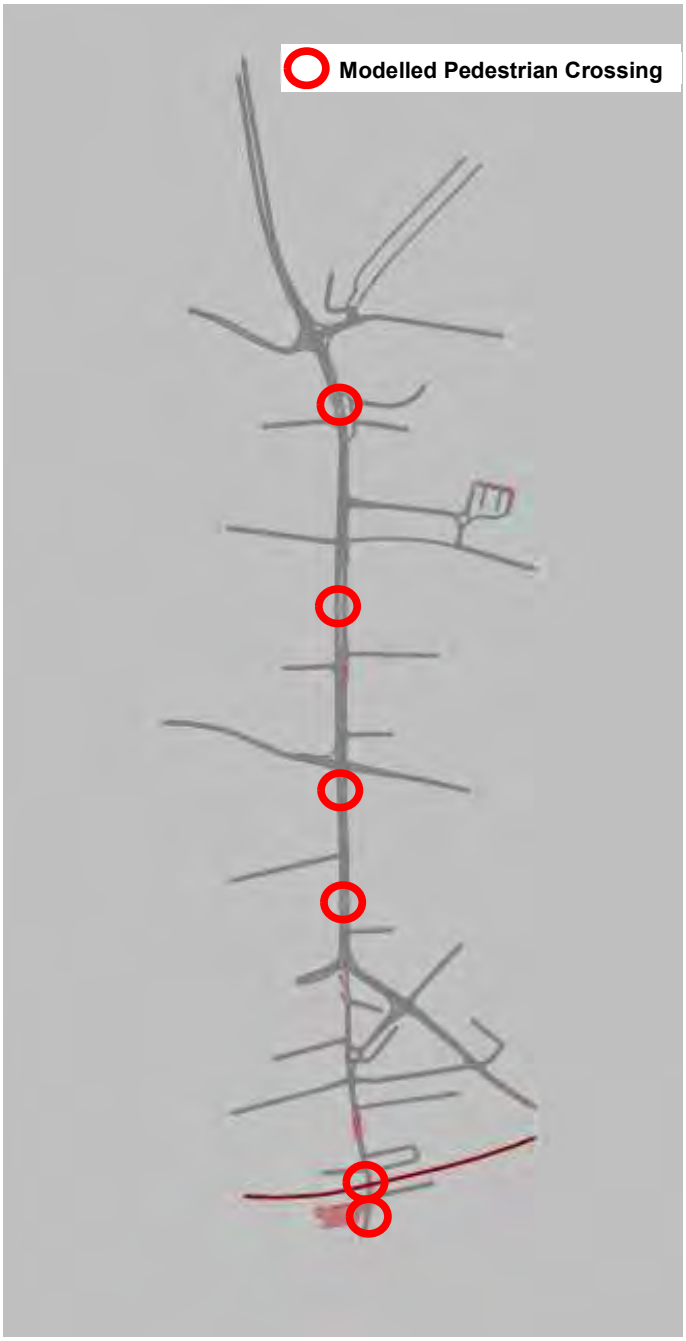
Different lane widths were used based on the AutoCAD background drawings. These were carefully chosen and further checked using Aerial Imagery provided by the inbuilt Bing Maps background within VISSIM.

For the local network, lane widths used vary from 2.5m – 7m, depending on the average lane width measured using Aerial Photography. Roundabouts located at Warrington Bus Interchange have a lane width of 7m. However, it should be noted that lane widths have no impact on the flow within microsimulation packages.

4.1.2 Pedestrian Crossings

Pedestrian crossings were modelled in order to capture the interactive delay to vehicles. Individual pedestrians have not been modelled. **Figure 10** shows the locations of all pedestrian crossings in the model.

Figure 10. Modelled pedestrian crossings



4.1.3 Lane Change and Emergency Stop Distances

Lane change and emergency stop distances are used to model the lane changing behaviour of vehicles following their route. The default value of 200 metres for a lane change and 5 metres for an emergency stop has remained unchanged for the majority of the connectors, however, to better reflect driver behaviour at key locations, adjustments were made to both the lane change distance and the emergency stop distance as per best practice.

4.1.4 Lane Restrictions

Lane restrictions are applied to restrict certain vehicle classes from using a particular lane on a link.

The following lane restrictions have been applied:

- At all bus stop laybys, a ban on Lights and HGVs has been applied; and
- At all bus gates, a ban on Lights and HGVs has been applied.

4.2 Flow/Delay and Flow/Speed Relationships

VISSIM computes flow/delay and flow/speed relationships based on randomly generated “micro” gap acceptance and car-following behaviours.

At the junction level, the operational characteristics become a more predominant element, with signal timings and phasing specification as well as give-way models playing a key role. Conversely, the driving behaviours based on car-following models are more important at the link level.

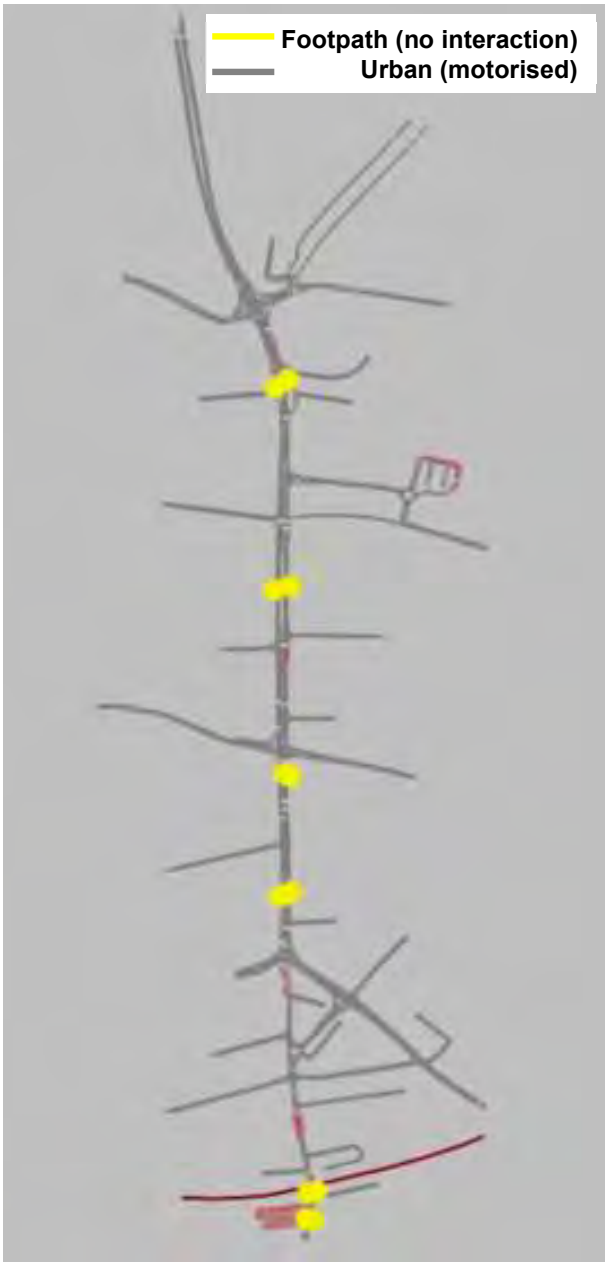
4.2.1 Driving Behaviours

By default, there are five behaviours to represent the various types of transport mode and properties in the network operation.

1. Urban (motorised)
2. Right-side rule (motorised);
3. Freeway (free lane selection);
4. Footpath (no interaction) and;
5. Cycle-Track (free overtaking).

Since there are controlled pedestrian facilities in the network area, the default driving behaviour 1: Urban (motorised) and 4: Footpath (no interaction) which have been utilised to model driver behaviours and pedestrian behaviours in the network. They have been assigned to link and connectors across the modelled network based on the individual characteristics of the road section to be represented. This is shown in **Figure 11**.

Figure 11. Network Development – Driving Behaviours



4.3 Signal Control

All 12 signalised junctions and crossings within the model network have been modelled using the VISSIM add-on VisVAP. VisVAP is a platform for creating signal programs. The created program file, VAP file, acts like a signal controller in VISSIM. These 12 signalised junctions are controlled by 12 different VAP files in VISSIM to replicate the current situations in reality. The location of these twelve signalised junctions and crossings is shown in **Figure 2**.

Interstage timings and phase minimums / maximums were based on the controller specifications provided by WBC.

4.4 Give-Way Model

For non-signalised junctions in VISSIM, the 'right-of-way' is modelled using priority rules and conflict areas.

No stop signs fall within the modelled area.

4.4.1 Conflict Areas

With respect to conflict areas, the movement priority, visibility, gaps and safety distance factors must be specified accurately and realistically enough to reflect on-street observation[2].

To avoid issues with overlapping vehicles, conflict areas have been used for conflicts while priority rules have been used as the main give-way object at junctions.

In total, 35 conflict areas have been set within the model to be used for modelling branching conflicts and minimising overlapping.

4.4.2 Priority Rules

Priority rules have been used to control the entry of vehicles into junctions, modelling the give way control of junctions and providing observed yellow box behaviours. Priority markers at junction stop lines were placed or adjusted to reflect observed driving behaviour.

4.5 Speed Control

Speed control measures are required where vehicles move between different mandatory speed limits and whenever on-street road geometry causes drivers to decelerate as this is not directly captured within the car-following model.

4.5.1 Desired Speed Decisions (DSD)

DSDs have been placed across the modelled network to code mandatory speed limits. Parking lot desired speed distributions have been used to define desired speeds of vehicles entering the network.

4.5.2 Desired Speed Distributions

The distribution function of desired speeds is a particularly important parameter, as it has an impact on link capacity and achievable travel times. If not hindered by other vehicles or network objects, e.g. signal controls, a driver will travel at his desired speed, establishing the baseline for free-flowing conditions[3].

Desired speed distributions are defined per vehicle class and have been modelled to replicate the Department for Transport's (DfT) 2021 speed compliance statistics (SPE0111). For 40 mph, a legacy speed profile was used which was incorporated into another VISSIM model in Warrington built by AECOM.

4.5.3 Reduced Speed Areas (RSA)

Reduced Speed Areas (RSAs) have been used as follows:

- To slow vehicles down before they reach a non-signalised junction to replicate the deceleration of vehicles stopping and waiting for their right of way; and
- To replicate local speeds, such as on tight and wide bends.

[2] Transport for London (TfL) Traffic Modelling Guidelines 3.0. Para 5.3.3.4.
[3] PTV Vissim User Manual, Para. 5.6.1.

5. OD Matrix Development

5.1 Zoning System

The VISSIM models were built using a dynamic (matrix-based) demand assignment in which vehicles choose their route through the network based on calculated 'cost paths'. A dynamic assignment was chosen because of data availability, the functionality to respond to demand changes, and the ease of amending a dynamic model. The nature of the network is also suited to dynamic assignment due to the lane-changing characteristics, which are best replicated by 'forward' thinking route choice rather than a static set of paths. However, in practice, due to the extents of the model (a single corridor with adjacent side roads) and the network characteristics (no parallel links), the model operates more like a fixed route assignment as there is no route choice.

The zoning system, on which dynamic assignments are based, provides a series of vehicular entry and exit points on the network. The inter-zonal movements, which are generated by the assignment process, provide a representation of the vehicle paths between the origins and destinations in the model network.

The zoning system for the VISSIM model is shown in **Figure 8** along with the traffic entry and exit points.

5.2 Matrix Development

As mentioned in **Section 3**, it was concluded that the MCTC survey data collected between 28th February to 2nd March was considered suitable for use and has therefore been used for the matrix development process. The MCTC data has been used for both AM and PM peak models.

The matrix construction for the AM and PM VISSIM models was undertaken in four stages as outlined below.

5.2.1 Stage 1 – Cordoning

AECOM have used the WMMTM16 for cordoning the demand matrices for AM and PM peak models. Prior matrices are generated for matrix estimation.

5.2.2 Stage 2 – Matrix Estimation

Matrix Estimation was undertaken in VISUM, this was undertaken by initially assigning the cordon matrices from WMMTM16 (known as prior matrices), the turning count data was then added to the model as target values for the estimation process. Estimated demand with single hour matrices is produced for AM and PM periods.

5.2.3 Stage 3 – Profiling

After matrix estimation in VISUM, hourly demand matrices were split into VISSIM 15-minute matrices, using the profiles from the observed 15-minute turning counts. The profiles shown in

Table 1 were applied across the full matrix.

Table 1. Proportions of splitting in 15-minute intervals

AM	Proportion	PM	Proportion
07:45 – 08:00	25%	16:45 – 17:00	25.9%
08:00 – 08:15	25%	17:00 – 17:15	25.9%
08:15 – 08:30	26%	17:15 – 17:30	24.9%
08:30 – 08:45	24%	17:30 – 17:45	25.5%
08:45 – 09:00	25%	17:45 – 18:00	23.7%

5.2.4 Stage 4 – Refinement

In order to tighten the calibration and validation results, refinements were made to the demand matrices to improve the accuracy.

In total, for each of the AM and PM peak models, five 15-minute-interval O-D matrices were constructed for each vehicle class (Lights and Heavies):

- AM period (AM peak)
  - Build-Up (1 matrix): from 07:45 to 08:00
  - Peak (4 matrices): from 08:00 to 09:00
- PM period (PM peak)
  - Build-Up (1 matrix): from 16:45 to 17:00
  - Peak (4 matrices): from 17:00 to 18:00

5.3 Demand Totals

The trip totals by matrix level, assigned within the model are provided in **Table 2** and

Table 3.

Table 2. Assigned Demand Totals, Lights

AM	Base Demand	PM	Base Demand
07:45 – 08:00	1,392	16:45 – 17:00	1,491
08:00 – 09:00	5,412	17:00 – 18:00	5,603

Table 3. Assigned Demand Totals, Heavies

AM	Base Demand	PM	Base Demand
07:45 – 08:00	50	16:45 – 17:00	11
08:00 – 09:00	203	17:00 – 18:00	44

6. Model Standards

It is important to clearly define calibration and validation.

Calibration describes the process of placing verifiable data into a traffic model to replicate observed street conditions. Calibration may require the adjustment of model parameters to recreate observed conditions.

Validation is the process of comparing model output against independently measured data that was not used during the calibration process.

The differences between modelled and observed data should be quantified and then assessed using specific criteria.

The purpose of validation is to verify that a model has been correctly calibrated and is therefore capable of producing valid predictions for proposed scenarios.

6.1 Calibration & Validation Criteria and Acceptability Guidelines (TAG 3.1)

The calibration and validation of a model should include comparisons of the following:

- Assigned flows and counts totalled for each screenline or cordon, as a check on the quality of the trip matrices;
- Assigned flows and counts on individual links and turning movements at junctions as a check on the quality of the assignment; and
- Modelled and observed journey times along routes, as a check on the quality of the network and the assignment.

6.1.1 Trip Matrix Calibration

For trip matrix calibration, the measure used is the percentage differences between modelled flows and counts. The calibration criterion and acceptability guideline for screenline flows are defined in **Table 4** below.

Table 4. Screenline Calibration – Criteria and Acceptability.

Description of Criteria	Acceptability
Differences between modelled and observed counts < 5%	All or nearly all screenlines

6.1.2 Link / Turning Movement Calibration

For link flow calibration, the measures used are:

- The absolute and percentage differences between modelled flows and counts; and
- The GEH statistic, which is a form of the Chi-squared statistic that incorporates both relative and absolute differences, and is defined as follows:

$$GEH = \sqrt{\frac{2(M-C)^2}{(M+C)}}$$

where M is the modelled flow and C is the observed flow.

The calibration criteria and acceptability guidelines for link flows and turning movements are defined in **Table 5**.

Table 5. Link / Turning Movement Calibration – Criteria and Acceptability.

Description of Criteria	Acceptability
Individual flows within 100 veh/hr of counts for flows less than 700 veh/hr	> 85%
Individual flows within 15% of counts for flows from 700 to 2700 veh/hr	> 85%
Individual flows within 400 veh/hr of counts for flows more than 2700 veh/hr	> 85%
GEH < 5 for individual flows	> 85%

6.1.3 Journey Time Validation

For journey time validation, the measure used is the percentage difference between modelled and observed journey times, subject to a maximum absolute difference. The validation criterion and acceptability guideline for journey times are defined in **Table 6**.

Table 6. Journey Time Validation – Criteria and Acceptability.

Description of Criteria	Acceptability
Differences between modelled and observed journey times < 15% and 60s	> 85%

6.2 Convergence Criteria

Given that the model is an “all or nothing” assignment, meaning only one route between any origin and destination pairs, there is no convergence criteria.

6.3 Confidence Intervals

Due to the nature of dynamic assignment, modelling results from each seed will vary. The range in this variation is based on the characteristics of the model, i.e. levels of congestion, route choice, variable signals etc. Therefore, it is essential that a sufficient number of seed runs are carried out to provide a suitable level of confidence in the model outputs.

The level of confidence and confidence interval of this model has been set at 95% confidence with a ±5 second confidence interval, which means there is a 95% confidence that the average result presented is within ±5 seconds.

The performance indicator chosen for the confidence assessment is the average delay per vehicle, as this provides a general overview of the network performance and will provide a good indication of whether any “rogue seeds” – seed runs which perform outside the normal range of the other seeds – have been generated. **Table 7** presents the confidence level and confidence intervals for the AM and PM peak models.

Table 7: Confidence and Confidence Interval for AM and PM models

AM Peak			PM Peak		
Number of Runs	Confidence Level	Confidence Interval (seconds)	Number of Runs	Confidence Level	Confidence Interval (seconds)
50	95%	± 1.8sec	**50**	95%	± 0.9sec

As highlighted in **Table 7**, the model required 50 seed runs for the AM and PM peak respectively to achieve the confidence criteria set above. During the PM model runs, there were no “rogue” seed runs observed, therefore all seed runs were used in the confidence analysis and calibration / validation outputs. Two rogue seed were observed in AM, however we believe the model is acceptable as they only slightly exceeded the acceptable range. It is recommended that option

models adopt the same confidence level criteria to that of the base model, to ensure conclusions and recommendations are informed by statistically robust outputs.

7. Calibration and Validation

In addition to evidence of network and route choice validation, evidence of the validation of the assignment has been included in the following primary terms:

- Turning counts and;
- Journey times.

The following section includes calibration and validation summaries of the AM and PM peak base models.

7.1 Turning Count Calibration

MCTC data has been compared against modelled data at the locations outlined in **Figure 3**: Manual Classified Turning Count Locations. Results in

Table 8 and **Table 9** assess the level of turning flow calibration achieved against acceptability guidelines. The link flow criteria and acceptability guidelines are given in **Table 5** to illustrate that correct levels of traffic are getting through the junctions.

Table 8. Turning Counts Calibration, AM

		Movement		Pass		Criteria Fulfilled?	
Peak	VISSIM Node	Reference	Turns	<5 GEH?	<3 GEH?	Individual Flow Criteria?	Met either criteria?
AM	1001	A49 Winwick Road/Long Lane Junction	12	12	10	12	100%
	1002	A49 Winwick Road/Industrial & Retail units	5	4	4	5	100%
	1003	A49 Winwick Road/Jubilee Way Junction	6	5	2	6	100%
	1004	A49 Winwick Road/Ireland Street Junction	6	6	3	6	100%
	1005	A49 Winwick Road/Kerfoot Street & Longford Street Junction	12	12	8	12	100%
	1006	A49 Winwick Road/Bluecoat Street Junction	5	5	4	5	100%
	1007	A49 Winwick Road Tesco Junction	8	8	6	8	100%
	1009	A49 Winwick Road & Lythgoes Lane/B5210 Pinners Brow & Orford Lane	12	7	3	12	100%
	1010	PinnersBrow Roundabout/Buckley Street	20	19	18	20	100%
	1011	B5210/Haydock Street Junction	11	10	8	11	100%
	1012	Winwick Steet/John Street Junction	5	4	3	5	100%
	1013	Warrington Bus Station Roundabout	12	12	9	12	100%
	1015	A50 Long Lane/Northway Junction	13	13	11	13	100%
	1018	Collegiate Road and Floyd Dr	5	5	4	5	100%
	1020	Orford Hub Roundabout	12	10	6	12	100%
	1012	Winwick Steet/John Street Junction	5	4	3	5	100%
	1024	A49 Winwick Road/Jockey Street	6	6	3	6	100%
	1025	A49 Winwick Road/Owen Street	6	6	5	6	100%
	1026	Winwick Street/Central Way	6	6	5	6	100%
	All	**Total**	**166**	**152**	**114**	**166**	**100%**

Table 9. Turning Counts Calibration, PM

		Movement		Pass			Criteria Fulfilled?
Peak	Vissim Node	Reference	Turns	<5 GEH?	<3 GEH?	Individual Flow Criteria?	Met either criteria?
PM	1001	A49 Winwick Road/Long Lane Junction	12	12	11	12	100%
	1002	A49 Winwick Road/Industrial & Retail units	5	5	5	5	100%
	1003	A49 Winwick Road/Jubilee Way Junction	6	6	5	6	100%
	1004	A49 Winwick Road/Ireland Street Junction	6	6	6	6	100%
	1005	A49 Winwick Road/Kerfoot Street & Longford Street Junction	12	12	11	12	100%
	1006	A49 Winwick Road/Bluecoat Street Junction	5	5	5	5	100%
	1007	A49 Winwick Road Tesco Junction	8	8	7	8	100%
	1009	A49 Winwick Road & Lythgoes Lane/B5210 Pinners Brow & Orford Lane	12	12	11	12	100%
	1010	PinnersBrow Roundabout/Buckley Street	20	20	17	20	100%
	1011	B5210/Haydock Street Junction	11	10	8	11	100%
	1012	Winwick Steet/John Street Junction	5	3	3	5	100%
	1013	Warrington Bus Station Roundabout	12	10	7	12	100%
	1015	A50 Long Lane/Northway Junction	13	13	13	13	100%
	1018	Collegiate Road and Floyd Dr	5	4	2	5	100%
	1020	Orford Hub Roundabout	12	11	7	12	100%
	1022	Alder Lane/Jubilee Way Junction	4	2	1	4	100%
	1024	A49 Winwick Road/Jockey Street	6	6	6	6	100%
	1025	A49 Winwick Road/Owen Street	6	5	5	6	100%
	1026	Winwick Street/Central Way	6	6	5	6	100%
	All	**Total**	**166**	**156**	**135**	**166**	**100%**

Calibration analysis of all turning counts for the nodes mentioned in

Table 8 and **Table 9** can be seen in **Appendix A** and calculated from above that the AM and PM peak models meet calibration criteria. Thus, the model is considered be calibrated based on turning counts.

7.2 Journey Time Validation

Modelled and observed journey times have been compared section-by-section and end-to-end for both morning and evening peaks.

In total, three routes have been analysed; two private vehicle journey routes and one public transport route. Using the journey time criteria and acceptability guidelines given in **Table 6** for illustrating that appropriate levels of delay at both junction and link levels are achieved. This is shown below in **Table 10** and **Table 11** with a detailed breakdown in **Appendix B**.

Table 10. Journey Time Validation, AM

			Route Journey Time (MM:SS)		Difference		Tag Criteria (+/- 15% or within 60s)		
From	To	Direction	Observed	Modelled	%	Absolute (MM:SS)	% Criteria Met?	Abs Criteria Met?	Overall Criteria
A49 Tesco Junction	Long Lane	Northbound	04:18	04:18	0%	00:00	Pass	Pass	Pass
Long Lane	A49 Tesco Junction	Southbound	03:32	03:14	-8%	00:18	Pass	Pass	Pass
Longford Clough Avenue	Warrington Central Station	Southbound (Bus)	14:40	14:20	-2%	00:20	Pass	Pass	Pass

Table 11. Journey Time Validation, PM

			Route Journey Time (MM:SS)		Difference		Tag Criteria (+/- 15% or within 60s)		
From	To	Direction	Observed	Modelled	%	Absolute (MM:SS)	% Criteria Met?	Abs Criteria Met?	Overall Criteria
A49 Tesco Junction	Long Lane	Northbound	03:43	04:08	11%	00:24	Pass	Pass	Pass
Long Lane	A49 Tesco Junction	Southbound	03:05	02:40	-14%	00:25	Pass	Pass	Pass
Longford Clough Avenue	Warrington Central Station	Southbound (Bus)	12:30	12:15	-2%	00:15	Pass	Pass	Pass

The modelled journey times are all within 15% of the observed values for both morning and evening peak periods. Further to this, all of the routes are within 60 seconds of the observed values in both peak periods. As such, the model is considered validated for journey times based on TAG criteria.

8. Development of Proposed Options

8.1 Introduction

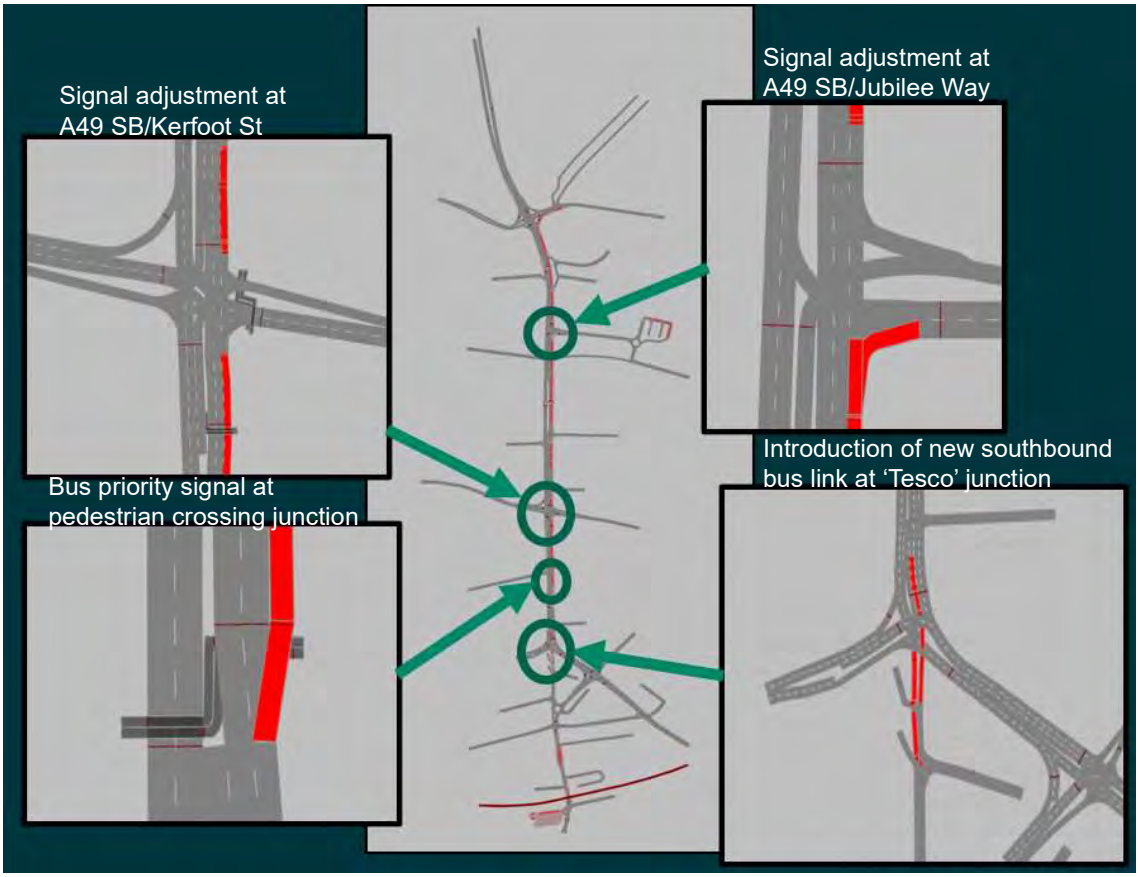
The following chapter provides information on the various stages in the development of the proposed bus improvement option. The chapter describes in chronological order the various amendments to the design and testing which was undertaken to optimise the various elements of the design. The importance of the chapter is to provide a record of the various options tested to support the proposed option.

The evolution of the design went through the following stages which are described in greater detail in the following sections.

8.2 Initial Design Proposal

The initial design proposed a continuous southbound bus lane for approximately 1.5km between the A49 SB/Long Ln and Winwick Rd/Silver St junctions, with signal adjustments to prioritise buses at A49 / Jubilee Way and A49 / Kerfoot St. In additional to the A49 corridor changes, a new southbound bus link at the Tesco Junction accessing downstream Winwick Road. **Figure 12** presents the proposal.

Figure 12. Initial Design Proposal

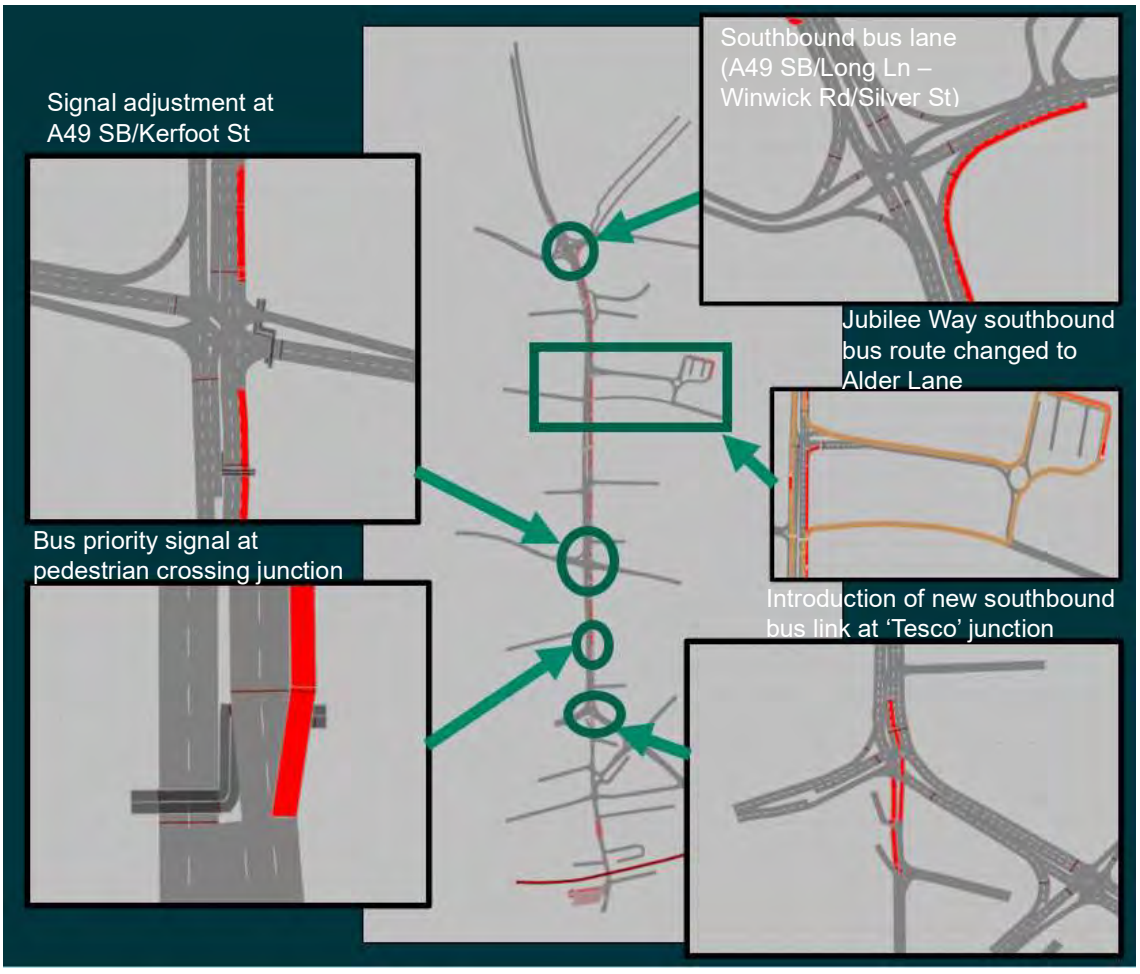


The results from the initial proposal highlighted that journey times increased during the PM peak for buses travelling southbound. This disbenefit was due to the additional bus stage at Jubilee Way which provided less green time to the buses in comparison to current operations. Further disbenefits were observed at the Kerfoot St signals due to the isolated bus stage set up at this junction causing buses to wait until the next bus stage rather than running with the general traffic stage.

The conclusion from this analysis indicated that a continuous bus lane between Long Lane and the Tesco junction would not provide a material benefit, therefore the design was significantly scaled back which in turn would generate significant additional savings on the construction costs.

8.3 Design Proposal 2nd Iteration

To mitigate against the increase in southbound bus journey times, a revised model was developed which included adjustments to signal times at Long Lane westbound approach to improve the journey times within this congested section of the network, specifically Northway where the majority of buses enter the network, and the rerouting of buses from Jubilee Way onto Alder Lane to improve the journey times.



These adjustments resulted in a saving of around 3 minute and 34 seconds for buses in the southbound journey time for the AM and PM peaks respectively. In the NB direction, bus journey times marginally increased due to the additional southbound bus stage at Jubilee Way reducing green time for northbound traffic.

8.4 Design Proposal 3rd Iteration

Although the original focus of the corridor was the section between the A49 / Long Lane signalised junction and the Tesco Junction, the modelling results and the observations were highlighting poor

journey time reliability along Northway and the entry onto Long Lane. From examination of the onsite videos and the model, it was proposed that a pedestrian crossing located on Long Lane east of Northway may provide sufficient time when activated, to release general and public traffic out of Northway. Furthermore, video evidence indicated a desired route for pedestrians (mainly students) crossing the road at the location of the proposed pedestrian crossing, therefore introducing a controlled crossing point would also improve pedestrian safety in this area. The pedestrian crossing activations were synchronised with the signals setting at the A49 / Long Lane / Hawleys Lane signalised junction.

Two option tests were developed incorporating the pedestrian crossing with different signal operations:

1. A pedestrian crossing on Long Lane activated every cycle (activation is linked to the signal cycle for the main A49/A50 Long Lane junction and activates in cycle stages 3 and 4. This junction, on average, operates a 120 second cycle therefore the pedestrian crossing could be called up to 30 times in the peak hour); and
2. A pedestrian crossing on Long Lane activated by bus detection on Northway (model assumes 4 buses per hour, therefore 4 pedestrian crossing cycles activated during the peak hour).

Both options included a clearly marked out yellow box to reduce the number of vehicles blocking Northway traffic from entering onto Long Lane.

The results from these two option tests indicated that activating the pedestrian crossing more often reduced the journey times from buses traversing along Northway onto the A49 via Long Lane, with an 80 second and 45 second benefit being observed during the AM peak in option test 1 and 2 respectively. The increase in benefit has been attributed to better queue management on Northway with more opportunities for private vehicles to access Long Lane which in turn, reduced delay to buses.

In practice the number of activations will be somewhere between the two extremities modelled, given that the pedestrian crossing will be activated by both bus detection and pedestrians. These two tests allow for a range of benefits to be established and understood.

8.5 Extension of Modelling Area

With the Northway / Long Lane junction improvements providing journey time savings to buses, it was deemed necessary to better replicate the network structure and vehicle interactions within this area, therefore additional modelling was undertaken to include the Densham Avenue entrance onto Northway. Furthermore, there were option tests to change the priority configuration at the Densham Ave / Northway area to assess whether bus journey times could be further improved (see **Section 8.6** and

Figure 13 for details). This required additional data analysis and adjustments to the driver behaviour via video evidence from the NDC surveys.

8.6 Design Proposals Final Iteration

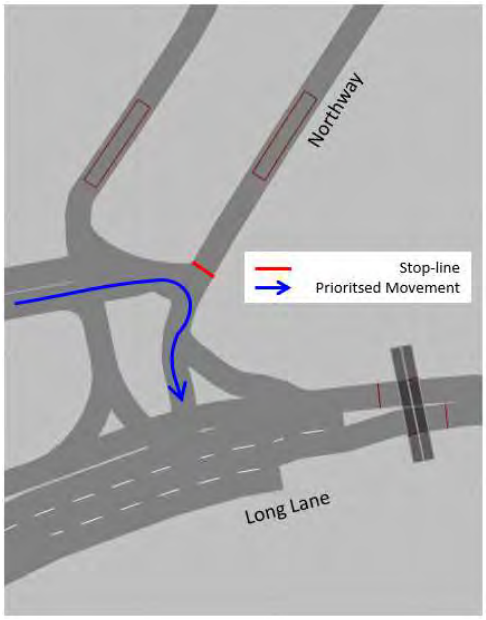
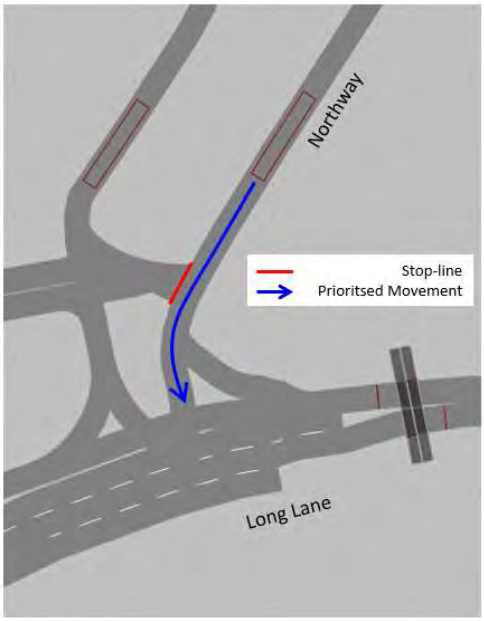
With Densham Avenue now included in the base model, a final set of four tests where undertaken. These were:

1. Pedestrian crossing activated every cycle on Long Lane (see

2. **Figure** 13 for existing arrangement);
3. Pedestrian crossing activated by bus detection on Long Lane;
4. Priority rearrangement on Northway (see

5. Figure 13 for priority rearrangement) and Pedestrian crossing activated every cycle on Long Lane; and
6. Priority rearrangement on Northway and Pedestrian crossing activated by bus detection on Long Lane.

Figure 13: Existing Arrangement and Priority Rearrangement on Northway

Existing Arrangement	Priority Rearrangement
	

The figure above displays two figures, the figure on the left presents the existing network with a blue arrow highlight the priority movement for traffic with a red line presenting the location where vehicles must give way, whereas the figure on the right presents the priority rearranged.

The results indicated that changing the priority for Northway provided a significant improvement to the bus journey times, with an 11 second and 44 second benefit in the southbound journey time during the AM with the activation every cycle and activation with bus only respectively, however there were safety concerns raised due to the close proximity of the Northway / Long Lane junction and the proposed reconfigured Densham / Northway Junction and therefore the existing arrangement was retained and taken forward into the descoping stage.

It should be noted that the refined design south of Long Lane is fixed and remains consistent across all tests.

Prior to the completion of the proposed option, updates to the refined scheme were undertaken to ensure optimum performance, these included:

- Repositioning of the bus detection loop on Northway from the bus stop to 35m downstream from the bus stop, this mitigated against some of the delay being experienced by westbound traffic on Long Lane by flushing out Northway traffic only when the bus was in a position to exit Northway; and
- The pedestrian crossing was restricted to stage 4[4] rather than stages 3 and 4 due to delays being experienced in both directions along Long Lane.

Figure 14 presents the final proposals.

[4] Stages referred to here are linked to the signal cycle activation stage. The pedestrian crossing activation is linked to the signal cycle for the main A49/A50 Long Lane junction.

Figure 14: Proposed Scheme

9. Refined Scheme Results

9.1 Introduction

The following chapter discusses the refined option and provides evidence on the possible improvements to bus journey times and reliability being presented by the scheme.

9.2 Refined Scheme

The iterative optioneering process described in **Chapter 8** to develop the final scheme from its inception has resulted in the following proposals:

- Introduction of a Toucan crossing on Long Lane east of Northway;
- Introduction of southbound bus lane at A49/A50 junction (from Northway to Collegiate Road);
- Introduction of southbound bus gate / pre-signal at the relocated bus-stop (from Owen Street to Melville Close); and
- Introduction of new southbound bus gate and signal adjustment at 'Tesco' junction.

As noted in **Section 8.6**, two variations in the operation of the pedestrian crossing on Long Lane have also been considered.

The model options presented below are as follows:

- Base Model – Existing network;
- DS1 - Refined Option with Pedestrian Crossing on Long Lane activating every cycle (around 30 activations per hour); and
- DS2 - Refined Option with Pedestrian Crossing on Long Lane activating with bus activation (around 4 activations per hour).

9.3 Performance Indicators

Three performance indicators were utilised to assess the performance of the proposed options:

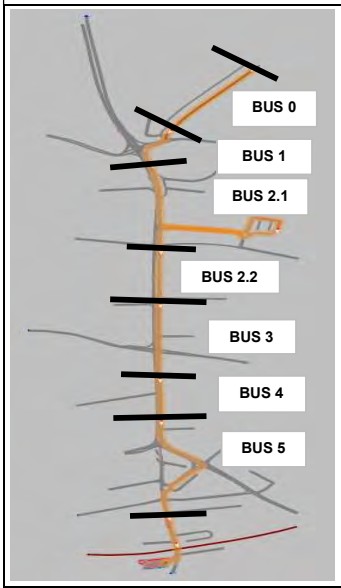
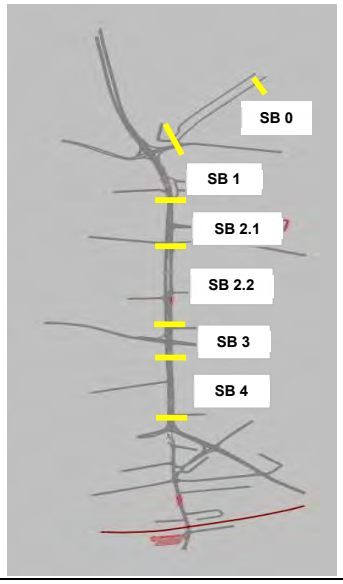
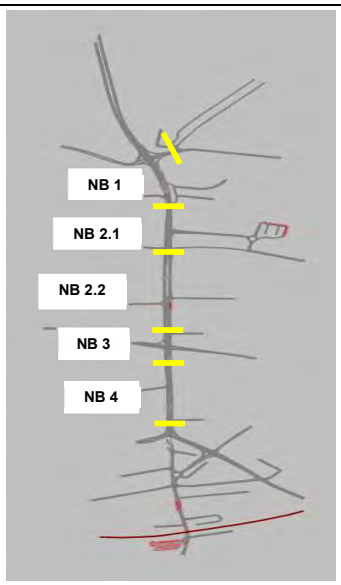
1. Journey times;
2. Journey time variability (confidence); and
3. Queue lengths.

The journey time analysis considered whether the bus services have seen a material improvement in their travel times along the corridor. Private vehicles have also been examined to determine whether the network proposals have had a detriment on their journey times. Journey time profiles along the corridor are provided to identify the location where travel time gain / losses are being experienced.

To study the journey time in detail, the southbound bus route is divided into 7 sections. The southbound private vehicle route is divided into 6 sections. Northbound routes for buses and private vehicles are divided into 5 sections as presented below in

Figure 15.

Figure 15: Journey Time Sections

Southbound Journey Time Sections for Buses	Southbound Journey Time Sections for Private vehicles	Northbound Journey Time Sections
		

Journey time variability analysis is used to assess whether a bus service is experiencing greater reliability to the scheduled timetable. This is presented using confidence intervals whereby a tightening of the confidence range will indicate a closer correlation with the timetable.

In order to capture the performance of other sections of the network, a queue length analysis has been undertaken. Queue length profiles provide a good indication on the impact caused by the proposed network changes which are not captured by the journey time analysis. The analysis has focused on the Long Lane section of the network, which has been directly impacted by the addition of the pedestrian crossing. Queue lengths have been analysed at the following locations:

- Long Lane westbound;
- Hawleys Lane eastbound;
- A49 Winwick Road southbound Left turn; and
- A49 Winwick Road northbound right turn.

9.4 Model Results

The following section presents the modelling results from the option tests. The section only presents the highlights from the analysis, however **Appendix C** provides a comprehensive review of the modelling results.

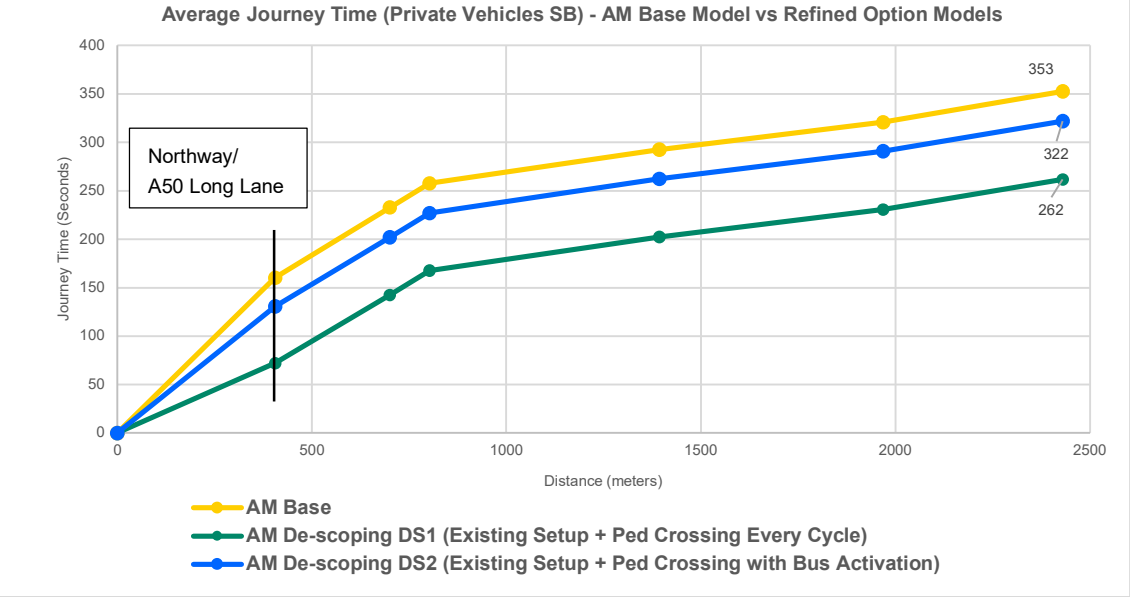
9.4.1 AM Peak Journey Times

Results for the southbound bus journey times are shown in **Figure 16**. The results show a 1 minute 45 second (12%), and 1 minute 23 second (10%) journey time saving for DS1 and DS2 respectively. The majority of this journey time improvement (45-80s) comes from the section between Northway, the Long Lane junction and southbound along the A49 opposite the Winwick Road College . Further journey time benefits of roughly half a minute are also provided between the Tesco junction and Warrington Central Station, due to the shorter distance as a result of buses travelling through Winwick Road rather than the Pinners Brow 'triangle'.

Figure 16: Average Bus Journey Time Southbound

Benefits are also seen for private vehicles as shown in **Figure 17**. A benefit of 1 minute 31 seconds (26%), and 31 seconds (9%) journey time saved for DS1 and DS2 respectively is experienced for private vehicles. The major saving in journey time is experienced within Northway which means the Long Lane pedestrian crossing is not only beneficial to buses but all vehicles. It should be noted that reducing journey times within Northway for private vehicles may increase the attractiveness of this route, especially if the queueing on Long Lane increases as a result of the proposed pedestrian crossing (this is discussed further in **Section 9.4.3** and **9.4.6**).

Figure 17: Average Private Vehicles Journey Time Southbound



In the northbound direction, the journey times for buses show an increase of 18 and 16 seconds for the DS1 and DS2 respectively. However, due to the small sample of buses making this journey from Warrington Bus Station to Long Lane, the confidence in this increase in delay is very low. Therefore,

measuring with private vehicles provides a more accurate measurement given the larger sample size. Private vehicle journey times NB indicate little impact on journey times, around a 9 second increase, therefore buses are likely to experience similar negligible change in their journey time.

9.4.2 AM Peak Journey Times Variability

Figure 18 and **Table 12** presents the results of the confidence test for the southbound bus journey times between the base model and option tests in the AM peak. The confidence interval range in the AM base model is 50 seconds (±25 seconds) however, once the proposals are in place, the DS1 and DS2 reduces the confidence interval range in the AM to between 16 seconds and 28 seconds depending on the number of pedestrian activations. This indicates that the reliability of the bus journey time has improved significantly with the bus priority schemes in place.

Figure 18: AM Peak Southbound Journey Time Confidence Interval

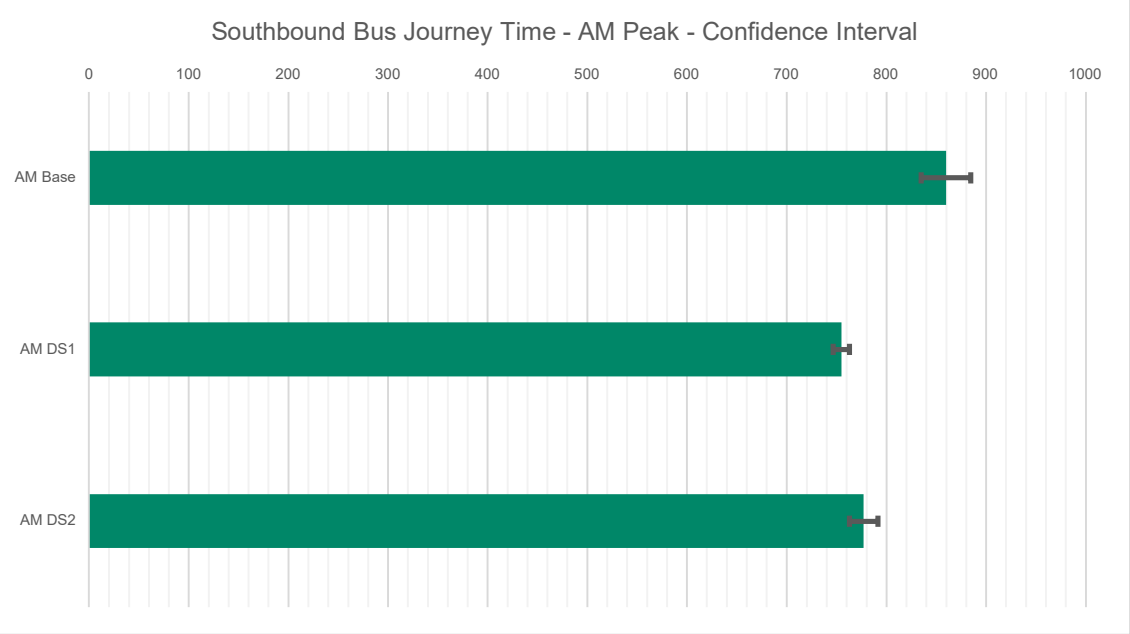


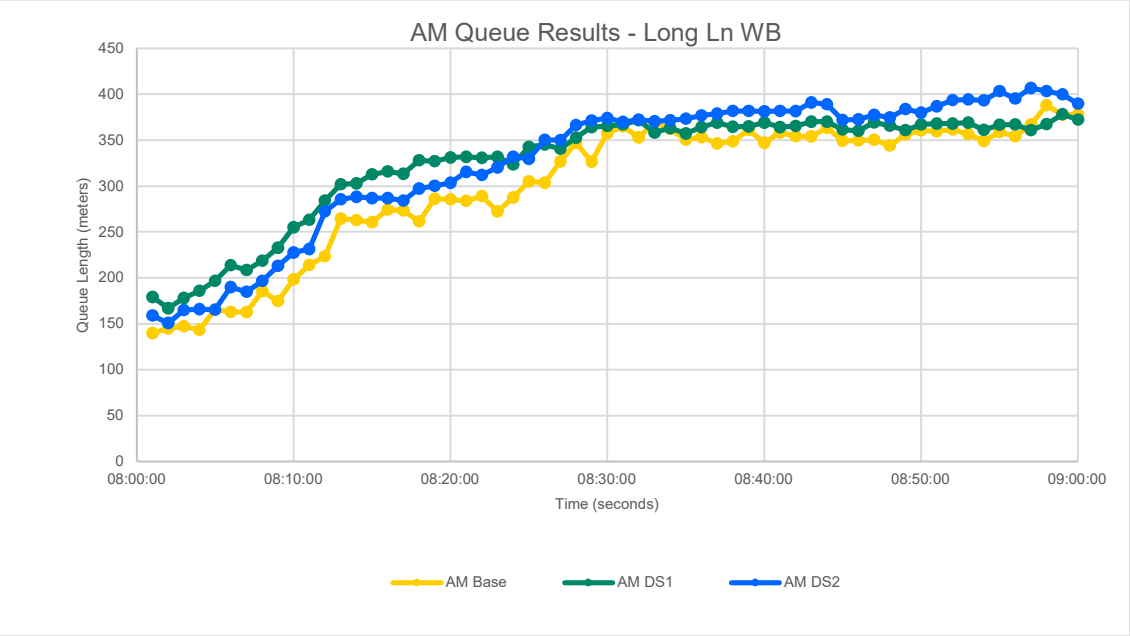
Table 12: AM Peak Southbound Journey Time Confidence Interval

Journey Times (Seconds)	AM Base	AM DS1	AM DS2
Lower Bound	835	746	763
Mean	860	755	777
Upper Bound	885	763	791
Error	25	8	14

9.4.3 AM Peak Queue Lengths

Figure 19 presents the queue length profile during the AM peak period.

Figure 19: AM Peak Long Lane Queue Profile

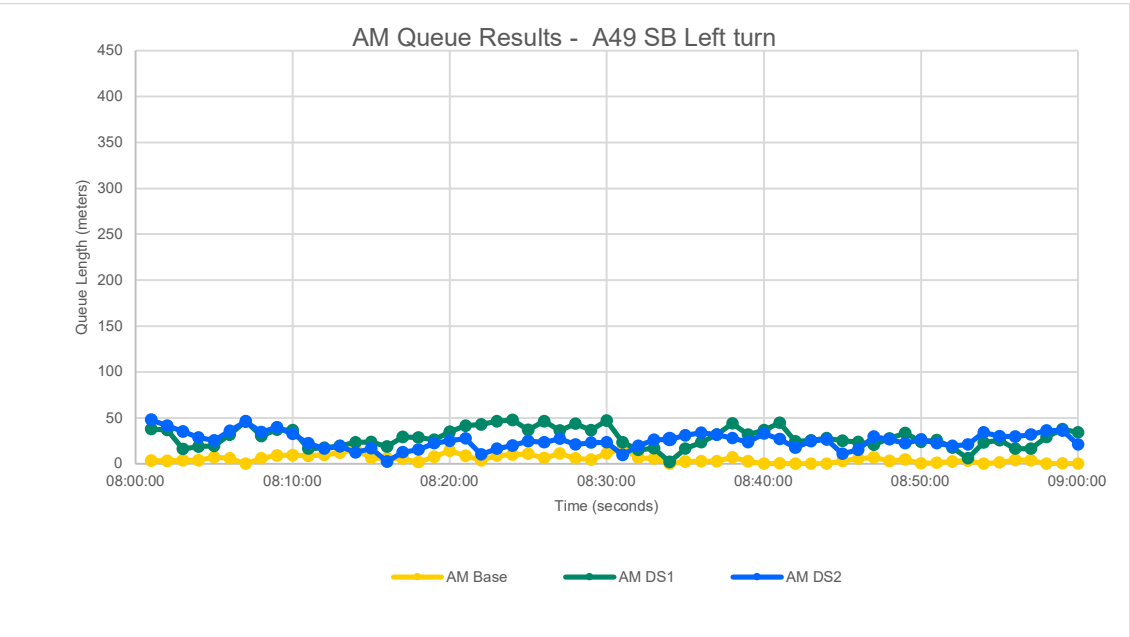


Base and option tests all indicate that the queue will extend with the pedestrian crossing in place, by between 13 to 23 vehicle lengths depending on the number of crossing activations. This is a mix of additional queueing but also as a result of the additional space taken up by the pedestrian crossing and the extended length of the yellow box at the Northway junction. The extent of the queue lengths are likely to extend to the Fisher Avenue / Long Lane junction.

The only other extended queue length of note is on the A49 southbound left turn approach into Long Lane. Although this queue length overall is relatively short, there is a noticeable increase in the option models, which has been attributed to the pedestrian crossing which can impede A49 traffic entering Long Lane eastbound.

Any local impacts in terms of queuing should be considered alongside the proposed bus and pedestrian benefits as part of the decision-making process.

Figure 20: AM Peak A49 southbound Left Turn into Long Lane Queue Profile



9.4.4 PM Peak Journey Times

Results for the southbound bus journey times show a 52 second (7%) and 46 second (6%) journey time saving for DS1 and DS2 respectively. The journey time saving is located between the Tesco junction and Warrington Central Station and is due to the shorter distance with buses able to travel through Winwick Road rather than via Pinners Brow.

The proposed bus improvements have a negligible impact on private vehicle journey times with all three models showing similar journey times within 2 to 3 seconds of each other.

In the northbound, both private and public transport show no impact on their baseline journey times with the southbound bus priority proposals in place.

9.4.5 PM Peak Journey Times Variability

Figure 21 and **Table 13** presents the result of the confidence test for the southbound bus journey time between the base model and option tests in the PM peak. Due to the lower levels of delay in the PM peak, the confidence interval remains similar between the base and option tests.

Figure 21: PM Peak Southbound Journey Time Confidence Interval

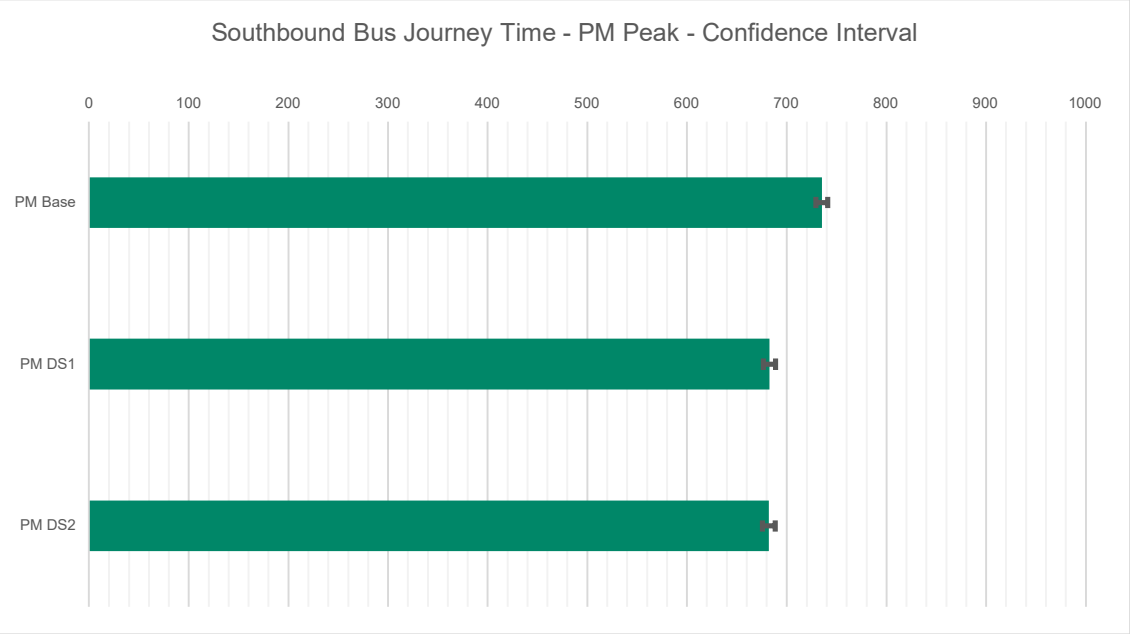


Table 13: PM Peak Southbound Journey Time Confidence Interval

Journey Times (Seconds)	PM Base	PM DS1	PM DS2
Lower Bound	729	677	676
Mean	735	683	682
Upper Bound	741	689	688
Error	6	6	6

9.4.6 PM Peak Queue Lengths

The pedestrian crossing is having a negligible impact on the queue length in the PM peak on Long Lane. Other approach arms to Hawley's' Lane signalised junction show similar impacts.

10. Forecast Modelling Results

10.1 Introduction

This chapter provides evidence on the possible impacts on bus journey times and network conditions in future years. Two forecast assessments have been undertaken to predict the bus benefits in terms of journey time saving and reliability. The description for these two tests is as follows:

- Do Minimum – Using the current road network with future forecast demand.
- Do Something – Refined option* as discussed in **Chapter 9** with future forecast demand.

*only the DS1 - Refined Option with Pedestrian Crossing on Long Lane activating every cycle (around 30 activations) was assessed.

10.2 Forecast Demand Process

Growth factors from the National Trip End Model (NTEM) 7.2 have been used in our forecast test to estimate the traffic demand and develop the forecast demand matrices. This aligns with the strategic WMMTM16 model. **Table 14** presents the growth factors from 2016 to 2022, 2031 and 2038.

Across the borough, the WMMTM16 Local Plan growth is higher than NTEM growth but in the vicinity of the corridor, NTEM growth was higher than the proposed Local Plan growth due to Local Plan infrastructure drawing traffic from the corridor. Therefore, the higher NTEM growth was applied to represent a 'worst-case' scenario.

Table 14: Growth Factors from NTEM 7.2

	AM Peak	PM Peak
2016-2022	1.03	1.03
2016-2031	1.12	1.11
2016-2038	1.15	1.15

Given that the base VISSIM model is representing the demand in 2023, a percentage growth factor for 2031 and 2038 was recalculated as shown in **Table 15**.

Table 15: Growth Factors in 2031 and 2038

	AM Peak	PM Peak
2023-2031	~9%	~8%
2023-2038	~12%	~12%

Based on the growth factors provided above, the base model demand can be scaled up to meet the future year level. Eight scenarios have been generated and analysed in the future forecast test. These eight models are:

- AM Do Minimum in 2031;
- AM Do Something in 2031;
- AM Do Minimum in 2038;
- AM Do Something in 2038;
- PM Do Minimum in 2031;
- PM Do Something in 2031;
- PM Do Minimum in 2038; and
- PM Do Something in 2038.

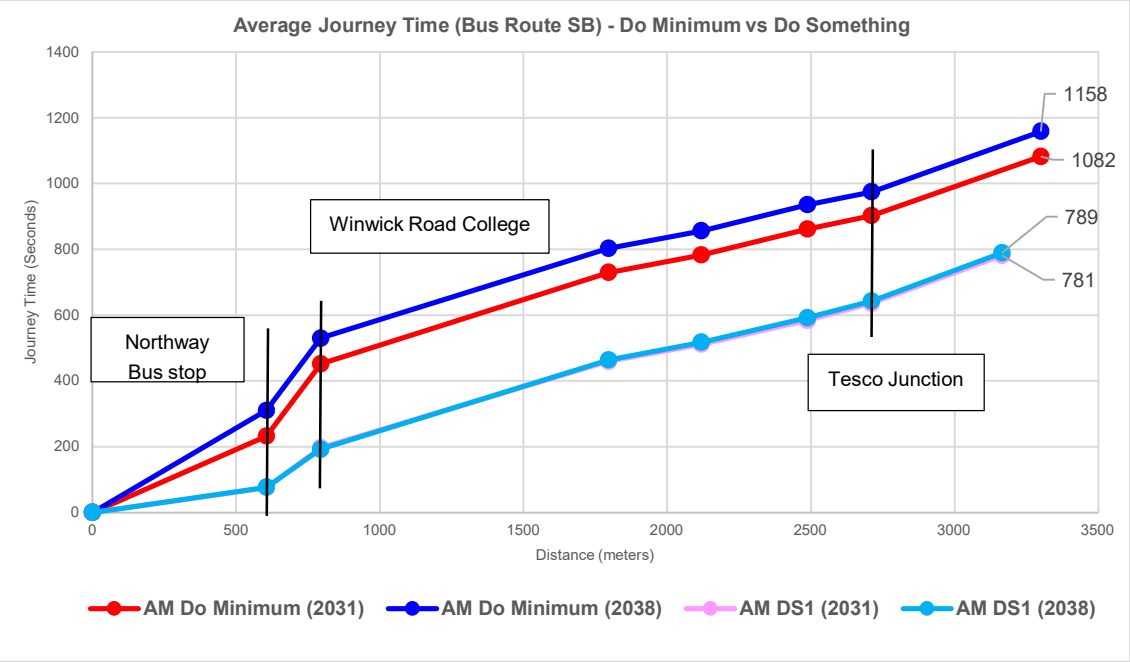
10.3 Model Results

The following section presents the modelling results from the future forecast test. The section only presents the highlights from the analysis, however **Appendix D** provides a comprehensive review of all the forecast modelling results.

10.3.1 AM Observations

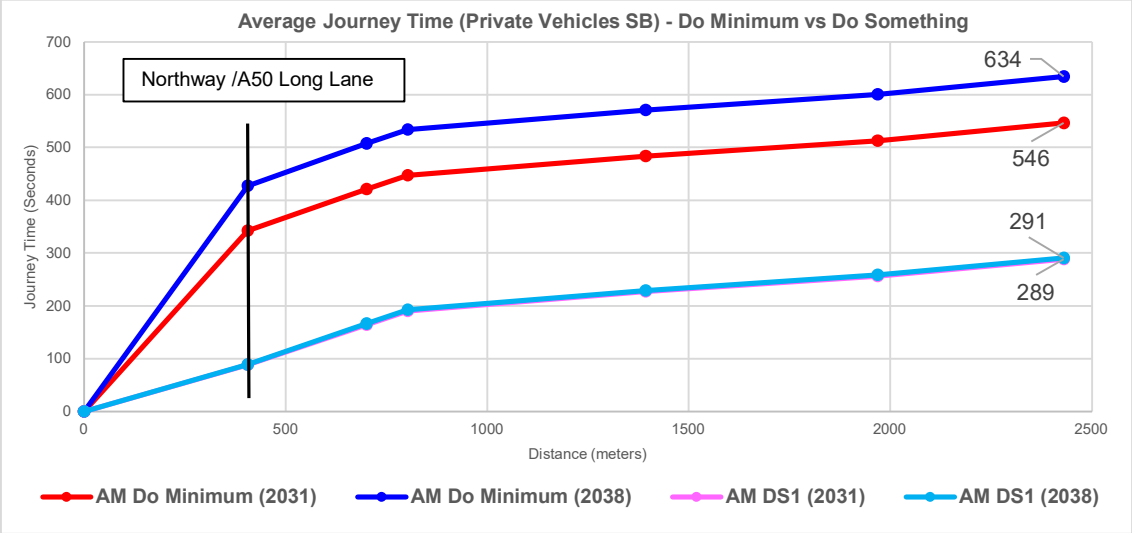
As mentioned in **Section 9.4**, the southbound bus journey time in the base model is 860 seconds. Due to the future growth of 9% and 12% in 2031 and 2038 respectively in the AM peak, the Do Minimum scenarios see delays significantly increase as shown in **Figure 22**. However, with the bus improvements in place, the southbound buses see a 301 second benefit in 2031, which increases to 369 seconds saving in 2038. The majority of the journey time saving (>330s) comes from the section between Northway the Long Lane junction and southbound along the A49 opposite the Winwick Road College and additional benefit is delivered by the bus gate located south of the Tesco Junction, this more direct route reduces the distance in which buses require to travel to reach the bus depot.

Figure 22: Average Bus Journey Time Southbound – Do Minimum vs Do Something



In **Section 9.4,** southbound private vehicle journey times in the base model is 353 seconds. Do Minimum scenarios show an increase in delay as shown in **Figure 23** due to the growth in demand in 2031 and 2038. Similar to the 2023 Do Something (DS1) model, the Long Lane crossing brings significant journey time savings on Northway. Southbound private vehicle journey times in the Do Something models present a reduction of 289 seconds and 291 seconds in 2031 and 2038 respectively.

Figure 23: Average Private Vehicles Journey Time Southbound - Do Minimum vs Do Something



The journey times in the northbound direction for public transport show an increase of 27 seconds in 2038 but a decrease of 4 seconds in 2031. As there is a small sample size of buses on this route, the confidence in this difference is low, and it is felt that the northbound private vehicles journey time gives a more accurate result because of the larger sample size. Northbound private vehicle journey times show around a 9 second increase in 2031 and 2038 respectively, therefore it is expected that a similar change in bus journey times is to be expected.

As shown in **Figure 18** and **Table 12**, the confidence interval range in the AM base model is 50 seconds (±25 seconds). When the future demand in 2031 and 2038 is in place, the confidence interval range in the Do Minimum 2031 and 2038 deteriorate significantly to 124 seconds and 106 seconds respectively. Nevertheless, the future year Do Something models show the confidence interval range remains reasonably tight with 18 and 24 seconds for 2031 and 2038 respectively. The confidence interval range in the AM between Do Minimum and Do Something is displayed in **Figure 24** and

Table 16.

Figure 24: AM Peak Southbound Confidence Interval, Do Minimum vs Do Something

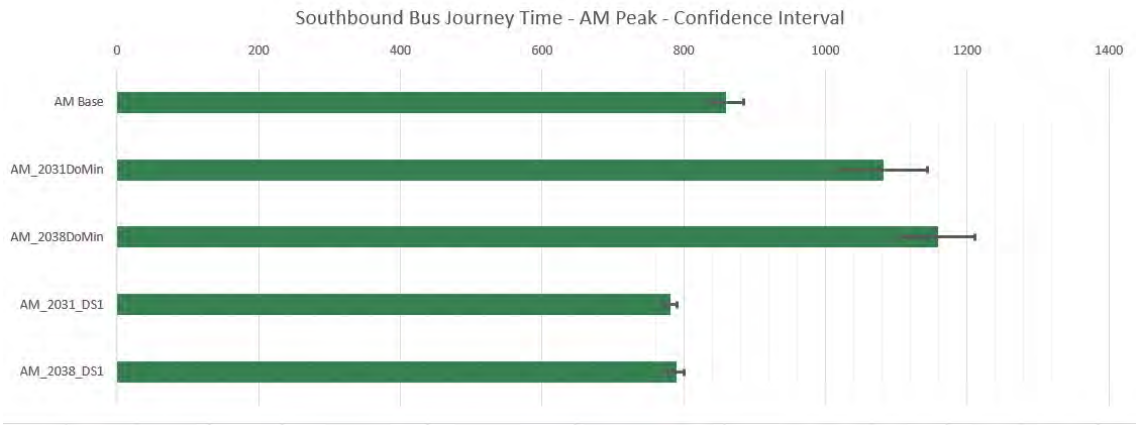


Table 16: AM Peak Southbound Confidence Interval, Do Minimum vs Do Something

Journey Times (Seconds)	AM Base	AM 2031 DoMin	AM 2038 DoMin	AM 2031 DS1	AM 2038 DS1
Lower Bound	835	1,020	1,105	772	777
Mean	860	1,082	1,158	781	789
Upper Bound	885	1,145	1,211	790	801
Error	25	62	53	9	12

With the future growth in traffic demand, it is anticipated that the network will be more congested than the current situation. In the AM baseline, Long Lane queueing extends marginally beyond Fisher Avenue, however as discussed in **Section 9.4**, the queue extends further as a result of the introduction of the pedestrian crossing on Long Lane. By 2031 and 2038 the queue continues to grow**.**

10.3.2 PM Observations

Southbound bus journey times present a 61 second and 72 second journey time saving for the differences between Do Minimum and Do Something in 2031 and 2038 respectively. Compared with the 52 second saving in 2023, the bus priority scheme will have a better performance in the future. The majority of journey time savings are located between the Tesco junction and Warrington Central Station, due to the shorter distance with buses able to travel through Winwick Road rather than via Pinners Brow.

The proposed bus improvements have a negligible impact on private vehicle journey times with all four future year models showing similar journey times within 5 seconds of each other.

Similar to the 2023 model results, the northbound private vehicle and public transport journey times show little change with the bus priority proposals in place.

11. Summary and Conclusions

11.1 Baseline

The A49 VISSIM model has been developed, calibrated and validated in line with WebTAG standards. Two base models were developed for the morning peak (08:00 – 09:00) and evening peak (17:00 – 18:00) periods using traffic counts and journey time data to replicate the traffic conditions for both private vehicles and public transport. Therefore, the model is a robust baseline in which to test the bus priority proposals.

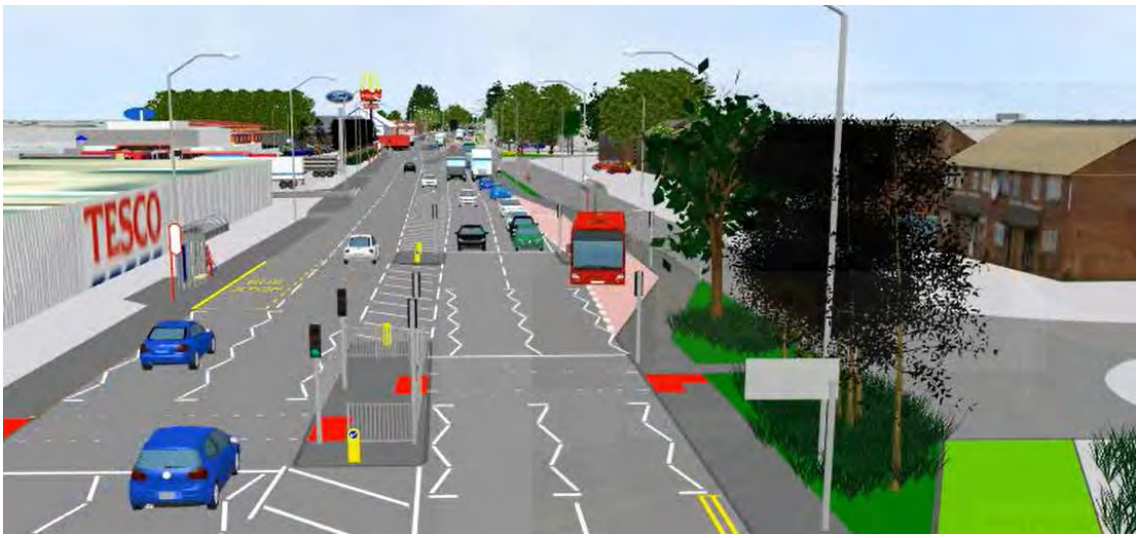
11.2 Option Model Development

The scheme option models have gone through a detailed iterative optioneering and optimisation process to ensure all sections of the corridor minimise delay to buses. This has included the removal of proposed bus lanes which were deemed to have little benefit with high associated construction costs.

Of most note were the improvements at Northway / Long Lane and Tesco Junctions both of which provided additional benefits to bus journey times. The inclusion of a pedestrian crossing on Long Lane east of Northway allows buses to exit out of Northway more freely when activated and, furthermore, observed video evidence indicated there is a pedestrian desire line at the location of the proposed pedestrian crossing which, if delivered, would provide a safe crossing area, especially for school children. The proposed Tesco junction improvements enable buses to be detected at two locations; firstly from the upstream bus stop to allow the buses to move ahead of the main traffic stream across the lanes from the left hand side into the right lane (

Figure 25) and then, secondly, on the approach to the Tesco junction to allow quick access into Winwick Road.

Figure 25: Pre-signals upstream from the Tesco Junction allowing Bus Priority (traffic model).



The expected number of activations at the proposed pedestrian crossing at Long Lane is uncertain at this stage, therefore two sensitivity tests were examined; bus only activation (~4 activations per hour) and an activation every cycle based on the cycle time at the main A49 / Long Lane junction (~30 activations). This provided a reasonable range to assess the possible benefits.

11.3 Model Results

The modelling results show that, using baseline demand, the majority of benefits are present during the AM peak period in the southbound direction. During the PM peak there is some small benefit to private vehicles and public transport but less than what is observed in the AM.

The 2023 AM Peak model results indicated the following:

- Southbound bus journey time benefits of between 1 minute 21 seconds (13%) and 1 minute 44 seconds (9%) journey time saving;
- Southbound journey time variation reduces from 50 seconds (±25 seconds around the mean time), to between 16 seconds and 30 seconds; and
- The back of the queue on Long Lane extends as a result of the installation of the pedestrian crossing from Northway to the college by an additional 13 to 23 vehicle lengths, depending on how often the crossing is activated.

As part of the testing, traffic growth was applied to the corridor to estimate the potential savings depending on specific growth projections.

Growth derived from NTEM 7.2, indicated a background traffic growth of 9% and 8% by 2031 for the AM and PM peaks respectively and 12% by 2038 for both peaks.

The increase in traffic further emphasised the potential benefits of the bus priority proposals with the AM peak southbound buses experiencing a 5-minute saving in 2031 and a 6-minute saving in 2038.

11.4 Conclusions

The modelling results from the 2023 model tests indicate a clear reduction in journey times for southbound buses during the AM peak, these benefits are expected to improve significantly as the growth in traffic increases over the next 15 years. Furthermore, providing a pedestrian crossing on Long Lane will also satisfy pedestrian desire lines towards the college making crossing Long Lane safer. However, the improved journey times on Northway for both public and private vehicles, combined with some additional queueing along Long Lane, may result in minor localised rerouting within this area, which has not been assessed within this VISSIM model. Therefore, it is recommended that both the possible benefits to public transport and any potential impacts on Long Lane are considered alongside other evidence when implementing the proposals.

Appendix A – Turning Count Calibration Tables, All Vehicles

A.1 Turning Count Calibration, All Vehicles, AM

A.2 Turning Count Calibration, All Vehicles, PM

Appendix B - Journey Time Validation Tables

B.1 Journey Time Validation, AM

B.2 Journey Time Validation, PM

Appendix C - Journey Time Tables, Refined Scheme

C.1 Refined Scheme Journey Time, AM

C.2 Refined Scheme Journey Time, PM

Appendix D - Journey Time Tables, 2031 and 2038 Forecast

D.1 Future Forecast Journey Time, AM

D.2 Future Forecast Journey Time, PM

aecom.com

Appendix C – Consultation Report

WARRINGTON
Borough Council

Bus Service Improvement Plan – A49 Infrastructure Improvements

Consultation Report

August 2024

Document Control Information

Document Ref:	BSIP – A49 Infrastructure Improvements	Version:	Final
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Approved by:	AD	Date:	August 2024
Circulation List: (Internal/Project Team/Public)	Public		

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Version	Date	Summary of Changes
1		

Data Protection

Does this report contain any personal or sensitive information? (Yes/No)	No **(IF YES, ENSURE EACH PAGE IS PROTECTIVELY WATERMARKED WITH 'CONFIDENTIAL')**		
Checked by:	CP	Date:	Aug 2024
Approved by:	AD	Date:	Aug 2024

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Appendix E – Warrington Guardian Press Release
Appendix F – Public Exhibition Display Boards
Appendix G – Example Social Media Posts
Appendix H – Feedback Questionnaire
Appendix I – Equalities Monitoring Responses

1. INTRODUCTION

1.1. Report Purpose

The purpose of this report is to document the public engagement activities conducted in relation to the proposed bus priority and improvements to walking and cycling facilities on the A50 Long Lane near the junction of Northway and the A49 Winwick Road southbound towards the town centre.

The report outlines the consultation methodology, summarises the feedback received.

1.2. The Issue

Warrington Borough Council is proposing to implement bus priority measures and improvements to walking and cycling facilities on the A50 Long Lane and the A49 Winwick Road southbound towards the town centre. Improving walking and cycling facilities along the corridor helps to deliver the parallel active travel strategies set out in the Local Cycle and Walking Infrastructure Plan and provides attractive routes for passengers to access bus services along the route, it is also a more cost effective to undertake the works in conjunction with one another and reduced disruption to residents and the general public.

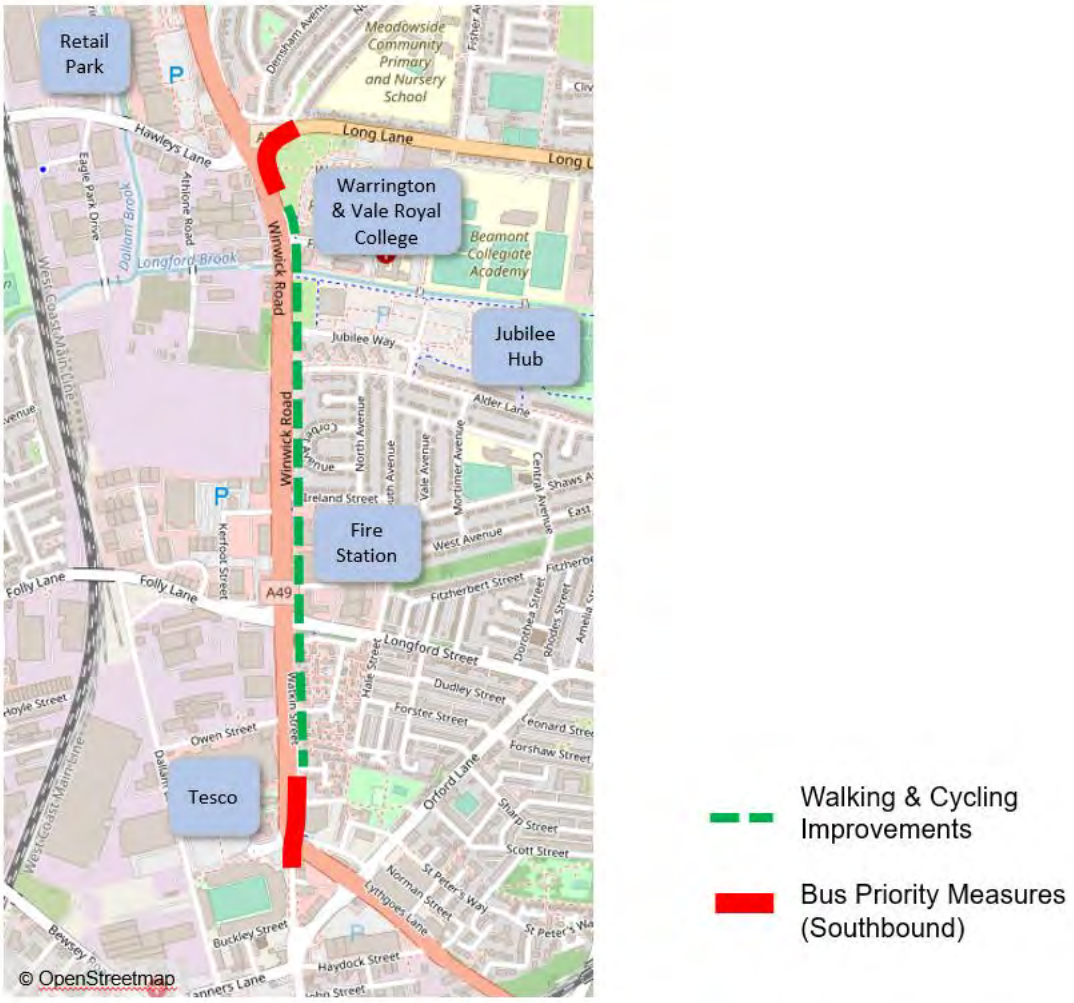
The proposals include the following:

- The construction of sections of new carriageway that only buses can use (known as a bus gate) alongside the existing carriageway with two lanes maintained for other traffic.
- A new pedestrian crossing on Long Lane for the benefit of pupils at Warrington and Vale Royal College.
- Traffic signal upgrades to improve the flow of traffic and provide buses with priority.
- Complementary high quality active travel improvements in line with the council's Local Cycling and Walking Infrastructure Plan (LCWIP)
- Upgraded bus stops along the route.

The number of existing lanes for cars would not change. New carriageway would be built, and the existing grass verge repurposed to provide bus, walking and cycling infrastructure. Motorists would not lose any lanes of traffic as part of the proposals, as such capacity for general traffic would remain the same and journey car journey times would remain approximately as they are now.

The extent of the proposed scheme is presented in Figure 1.

Figure 1 – Scheme Extent



Scheme Objectives

The objectives of the scheme are summarised below:

1. Enhance access to education, social, leisure, cultural, and employment opportunities by public transport and active travel modes
2. Increase numbers of people uses buses, walking and cycling;
3. Reduce congestion through shifting users to sustainable modes of travel, with associated reductions in carbon emissions and improvements to air quality;
4. Reduce bus journey times; and
5. Reduce the variability in journey times and improve the punctuality of bus journeys.

Visualisations of the proposed scheme is presented in Figure 2.

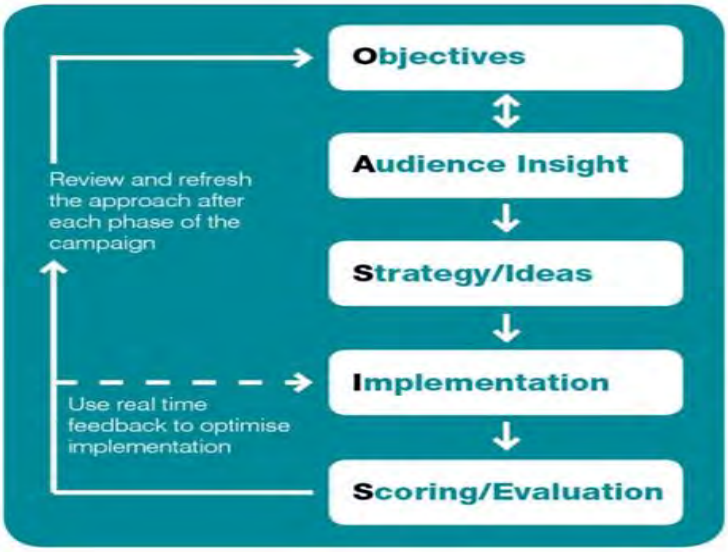
Figure 2 – A49 Scheme Visualisations

2. METHODOLOGY

2.1. Methodology

The consultation process applied to this scheme is consistent with the Government Communication Service recommended OASIS model (Figure 3), which is routinely followed by Warrington Borough Council.

Figure 3 - The OASIS model



Each step shown in Figure 3 is discussed in sections 2.2 to 2.6 below.

2.2. Objectives

The objective of the consultation was to obtain feedback from users of the A49 Corridor on new bus priority measures and improvements to walking and cycling facilities along the A50 Long Lane and the A49 Winwick Road.

Respondents were surveyed on whether or not they supported the proposed measures and whether they would improve bus journey times, active travel measures and bus reliability.

2.3. Audience Insight

The consultation aimed to reach the following target audiences:

- Residents living within the vicinity of the A50 Long Lane and the A49 Winwick Road.
- Bus users on the A50 Long Lane and the A49 Winwick Road.
- Road users along the A50 Long Lane and the A49 Winwick Road.
- Local businesses
- Ward Councillors
- Local media

The wide range of approaches taken would also allow the wider public and residents across the borough to comment on the proposals.

2.4. Strategy

The consultation strategy is built upon the need to ensure accurate, timely, and targeted communication through a variety of online and offline channels. Effective stakeholder engagement by the project team underpins this strategy.

The key messages of the consultation are as follows:

- Reduce bus journey times along the A50/A49 corridor.
- Upgrade existing active travel measures along the A50/A49.
- Improve bus reliability along the A50/A49.

2.5. Implementation

The consultation period took place between Monday 20th November 2023 and Sunday 17th December 2023. Table 1 outlines the implementation programme of this consultation activity.

Table 1 - Engagement Programme Overview

Milestone	Activities	Dates
Information distribution and project promotion	Ward Member Consultation briefing	October 2023
	1500 promotional leaflets delivered to residents and businesses on and in the vicinity of the A49 Winwick Road	November 2023
	Dedicated web pages on Council website with details of the proposals, details of the consultation events and an online feedback form	Launched 20th November 2023
	Press release	20th November 2023
	Use of Council's X (formally known as Twitter) and Facebook pages to promote the consultation events	Various dates between Monday 20th November 2023 and Sunday 17th December 2023
Public consultation events	WBC officers attended three exhibition events: one on a weekend (Saturday), from 10 am to 1 pm at Golden Square shopping centre, and two weekday events (Wednesday), one at Warrington & Vale College 16:30-17:30 and one at Warrington Bus Interchange 15:00-18:00	29th November -6th December
Feedback deadline (Online link)	Online link from the Warrington.gov.uk/consultations and a QR code provided at the consultation events.	Closed 17th December 2023

2.5.1 Promotional Leaflets

1500 copies of a promotional consultation leaflet were delivered to residents and businesses in the vicinity of the A49 Winwick Road. The leaflet provided information on the proposed scheme, the purpose of the consultation, details regarding the timing and locations of public exhibition events, and instructions on how to provide feedback. The leaflets were delivered by an external distribution company, which conducted tracking operations to ensure that the leaflets were delivered correctly, as agreed upon.

A copy of the consultation leaflet is provided in Appendix A, and the distribution area is outlined in Appendix B. Additionally, copies of the leaflet were made available at the drop-in exhibition events for attendees to take with them.

2.5.2 Website

A dedicated project webpage was provided on the Council website at https://www.warrington.gov.uk/consultations. The webpage included information about the available options, a direct link to the feedback form, details regarding drop-in events, and contact information for reaching the project team. This ensured that those unable to attend the events could access the consultation materials online. A screenshot of the webpage is available in Appendix C.

A Council press release was also issued and can be found on the Council News webpage at https://www.warrington.gov.uk/news. A screenshot is provided in Appendix D.

To provide ongoing updates regarding the consultation, a dedicated webpage has been established at the following location: A49 Bus Service Improvement Plan Consultation | warrington.gov.uk

The Warrington Guardian also featured an article on the consultation, an extract of which is included in Appendix E.

2.5.3 Public Exhibition Events

Three consultation events were held between November and December 2023 as shown in Table 2. The aim was to arrange times to maximise attendance for as many of the target audiences as possible.

Table 2 - Public Exhibition Drop-in Events

Venue	Date	Times
Warrington & Vale Royal College	29/11/23	16:30-17:30
Golden Square	02/12/23	10:00-14:00
Warrington Interchange Bus Station	06/12/23	15:00-18:00

The exhibitions featured seven display boards containing information about the options, as well as details on how to provide feedback to the project team. The display information can be found in Appendix F.

Council officers from the Transport Planning, Traffic Management, Road Safety, and Infrastructure Delivery teams staffed the events.

2.5.4 Promotion

In addition to promoting the events through leaflets and the project website, the exhibitions were also publicised through the following channels:

- Press releases were issued by the Council and made available on the Council News webpage (see Appendix D).
- Regular posts and tweets were shared on the Council's social media pages on Facebook and X (formally known as Twitter) (see Appendix G).
- Ward councillors received a consultation briefing note and briefing meetings in advance of the consultation, which included details of the proposed schemes and the consultation strategy.

2.6 Scoring/Evaluation

Feedback on the project proposals was gathered through various means:

- Online feedback questionnaires were made available on the Council's consultation page. The form consisted of thirteen questions, including three related to the project and ten mandated by the Equality Act, covering aspects such as age, gender, disability, and ethnic origin.
- Paper copies of the questionnaires were available at each exhibition and upon request for those without internet access.
- Consultations also took place through face-to-face conversations with members of the project team at the public exhibitions. Attendees were encouraged to complete a questionnaire.

A copy of the questionnaire is provided in Appendix H.

3. RESPONSES

Consultation feedback received is summarised in the sub-sections below.

3.1. Drop in events

The primary aim of the events was to inform attendees about their options, answer questions, and explain the feedback process. Attendees were encouraged to use the online or paper questionnaire to document their views.

Attendees were encouraged to complete the questionnaire to ensure that their views were documented.

3.2. Online comments

Whilst the council would not routinely refer to online chat rooms and other similar online forums to understand the views of the public, it became clear early in the consultation period that misinformation was circulating online about the scheme, its design and outcomes.

Following the launch of the consultation a number of people commented online that the scheme was taking a lane away from general traffic and that this would have a negative impact on delays for general traffic. The council took steps though social media channels to attempt to correct this misinformation and allay any fears around the removal of a lane, but it is clear from some of the online response to the questionnaire (see later sections) that some people had responded prior to or had not seen these attempted clarifications. The project web page was very clear that's there was no removal of a lane for general traffic, but it is clear some respondents relied on the information in the chat rooms online.

Figure 4 below provided an example of one of the social media post the council issued in order to attempt to deal with the misinformation online.

Figure 4 – Example Social Media Post

3.3. Questionnaire Responses

There was a total of 202 responses from members of the public. The majority of which (87%) were residents within Warrington and almost half of the respondents (48%) did not use the bus, 96% of respondents travel along the A50 Long Lane or the A49 Winwick Road. Figure 5 presents all respondent locations, whilst Figure 6 presents respondents in Warrington

Figure 5 – All Respondent Locations

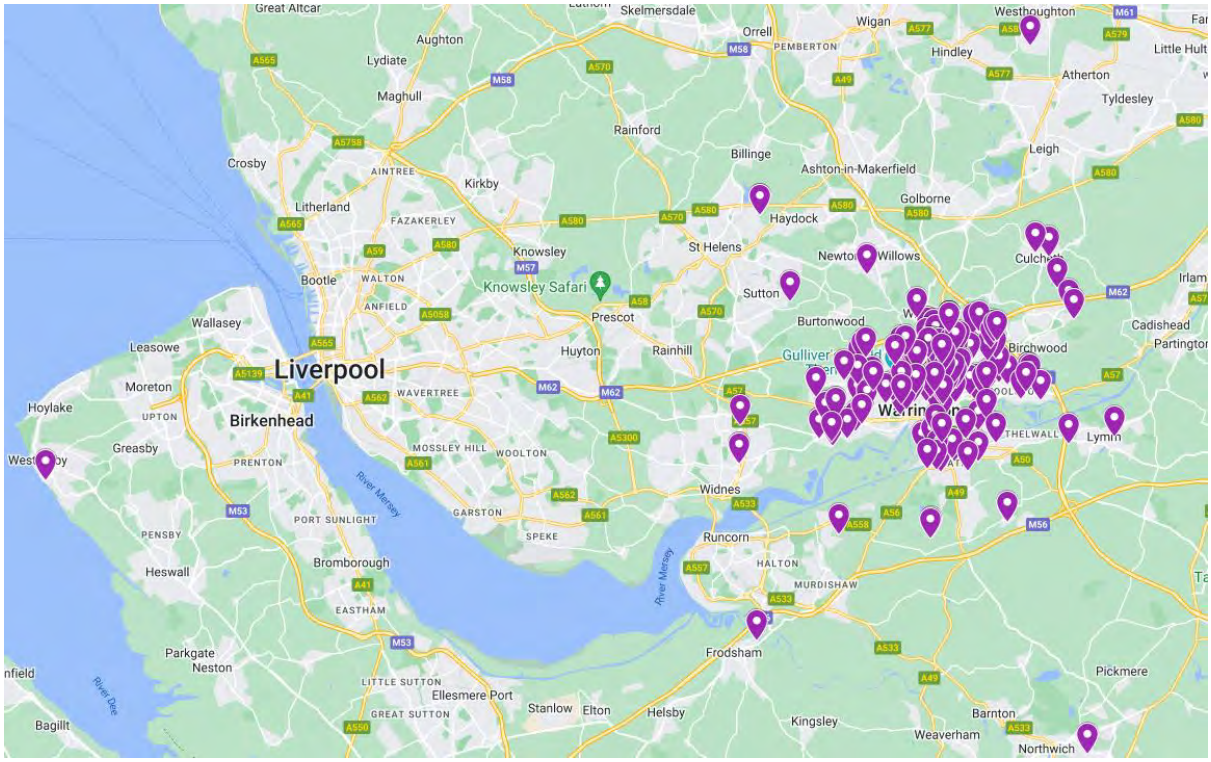
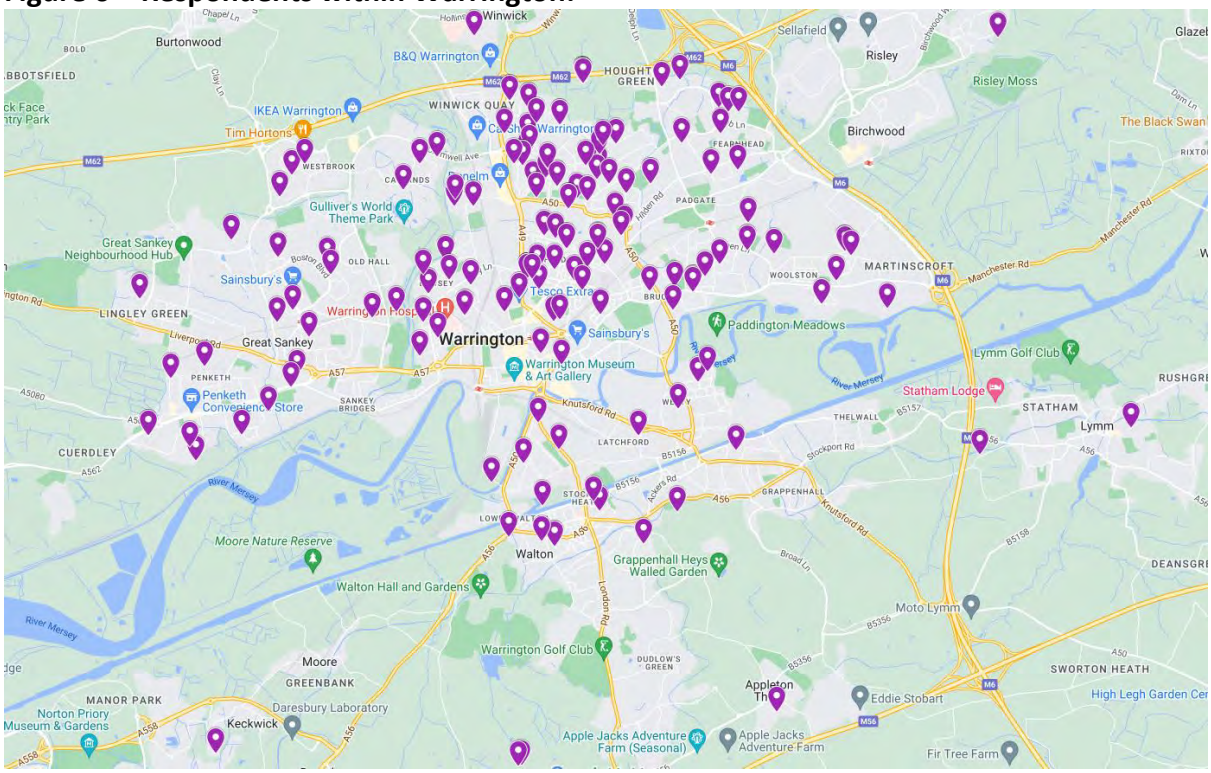


Figure 6 – Respondents within Warrington.



With regards to bus use, 16% of respondents used the bus at least once per week, whilst 32% of respondents used the bus at least once per month whilst 48% do not ever use the bus.

Respondents who used the buses in Warrington were asked about their journey purpose and could select multiple choices. The most popular responses are as follows:

- Social / leisure / recreation -53%
- Shopping – 42%
- Commuting – 27%

Other choices included medical appointments, education, business purposes, visiting family and friends, and personal business.

Regardless of whether the respondent uses the bus in Warrington, 90% of overall respondents had access to a car and 57% had access to a bicycle.

Questions relating to the demographic information of the respondents were optional, 49% of respondents answered the questions relating to demographic information.

Of the respondents who chose to answer the demographic questions, 56% were male and 40% female with the remainder preferring not to say. With regards to ethnicity, 91% of respondents identified as white.

The respondents were asked if they supported or opposed three scheme principles:

1) Reduce bus journey times along the A50/A49 corridor.
2) Upgrade existing active travel measures along the A50/A49.
3) Improve bus reliability along the A50/A49.

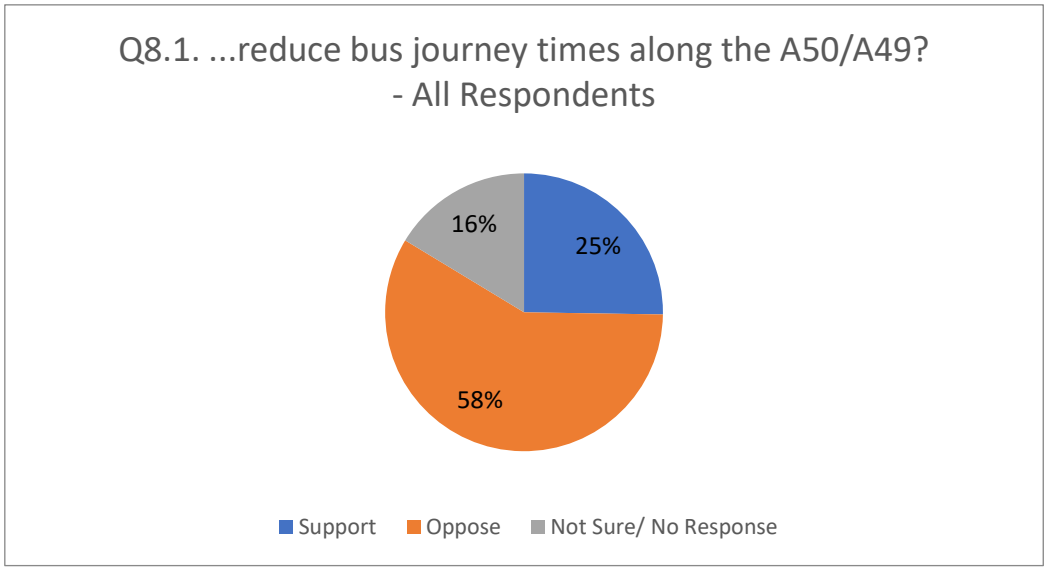
A summary of the responses to the project related questions are presented below.

Question 8.1 – Which of the below describes your support for the proposal to reduce bus journey times along the A50/A49?

All Respondents

The majority of all respondents (58%) did not believe that the proposals would reduce journey times for buses along the A50 and A49. Whilst, 25% of respondents did support the proposals' ability to reduce bus journey times along the route. 16% of respondents did not know, or did not answer this question. The results are presented graphically in Figure 7.

Figure 7: Feedback from all respondents on whether the proposals would improve bus journey times

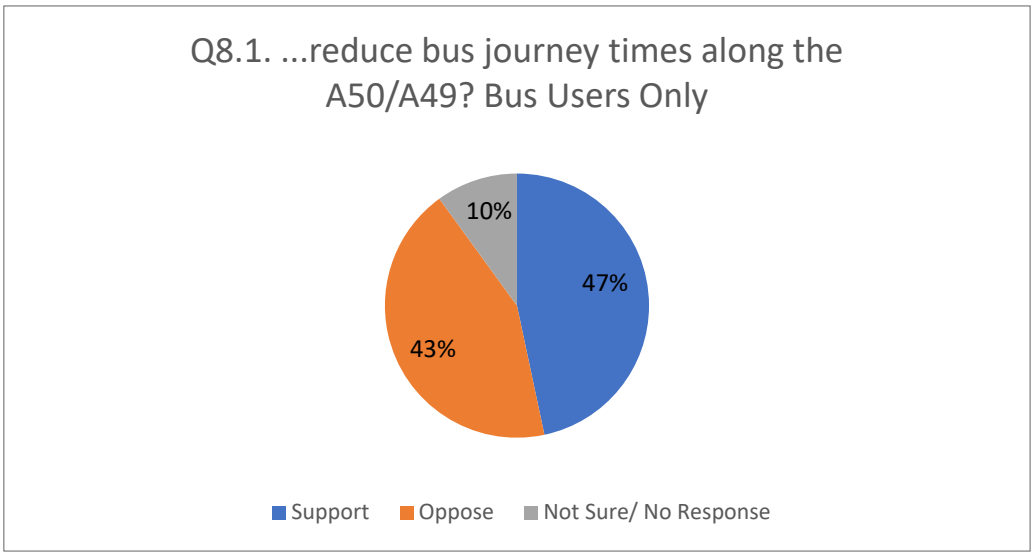


No. responses: 202

Bus Users Only

When considering bus users only, 47% of bus users believed that the proposals would improve journey times along the A50/A49. 43% of bus users did not support the proposals to improve bus journey times, whilst 10% did not know or respond to the question. The results from the bus users are presented in Figure 8.

Figure 8: Responses from bus users only

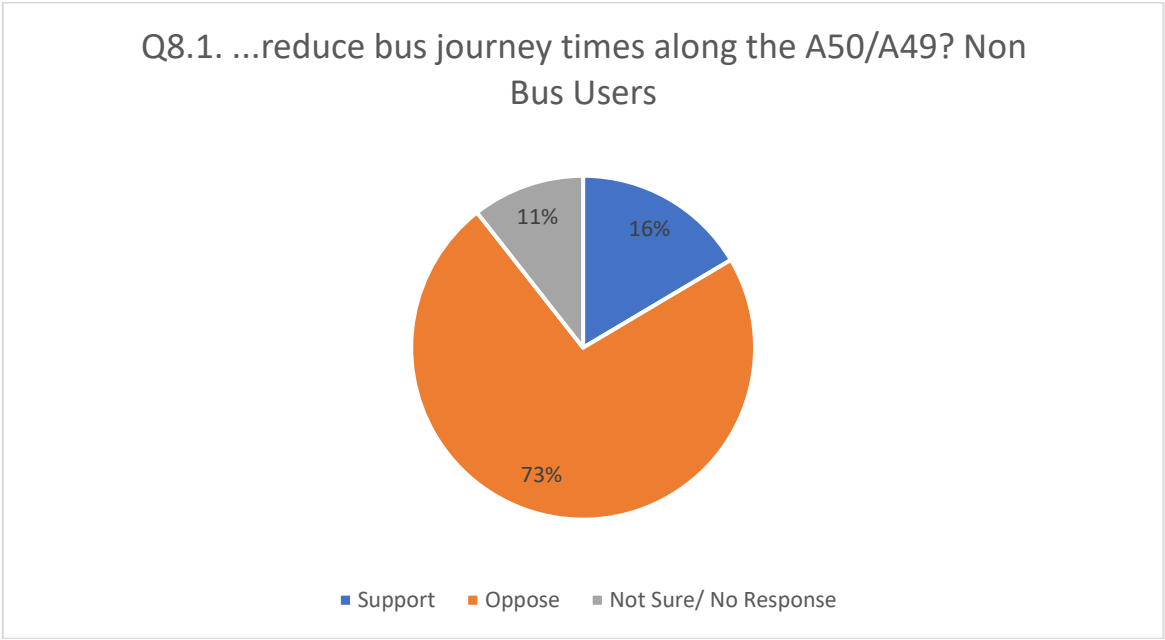


No. responses: 30

Non-Bus Users Only

Amongst non-bus users, 73% of respondents did not support the measure in relation to reducing bus journey times along the A50/A49, compared to 16% who did support the measures. 11% of respondents did not answer the question or did not have an opinion on the measures. These results are presented graphically in Figure 9.

Figure 9: Responses from non bus users



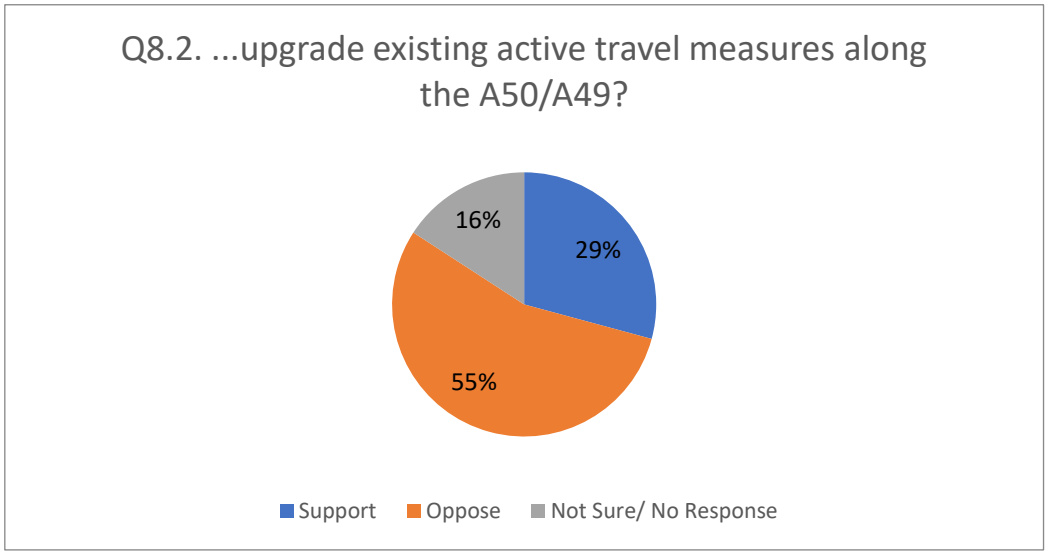
No. of responses: 85

Question 8.2 – Which of the below describes your support for the proposal to upgrade existing active travel measures along the A50/A49?

All Respondents

The majority of all respondents (55%) were opposed to upgrading active travel measures along the A49/A50, whilst 29% did support the improvements and 16% did not know or did not answer. The results from all respondents is presented graphically in Figure 10.

Figure 10: Feedback from all respondents as to whether they support active travel improvements along the corridor

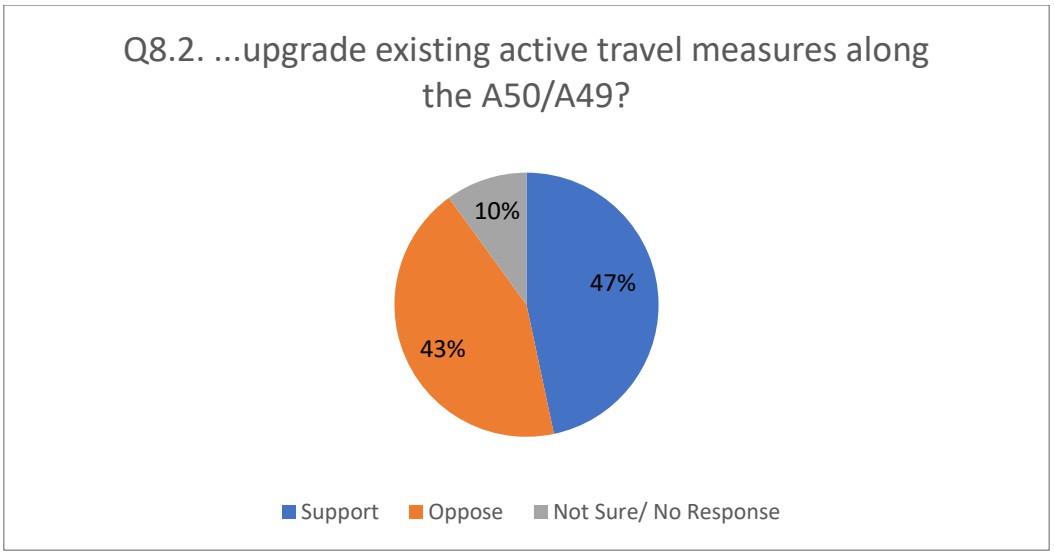


No. of responses: 202

Bus Users

Amongst bus users, 47% supported active travel improvements along the corridor, whilst 43% opposed the improvements. 10% of respondents did not know or did not respond to this question. The results are presented graphically in Figure 11.

Figure 11: Bus user response to active travel improvements.

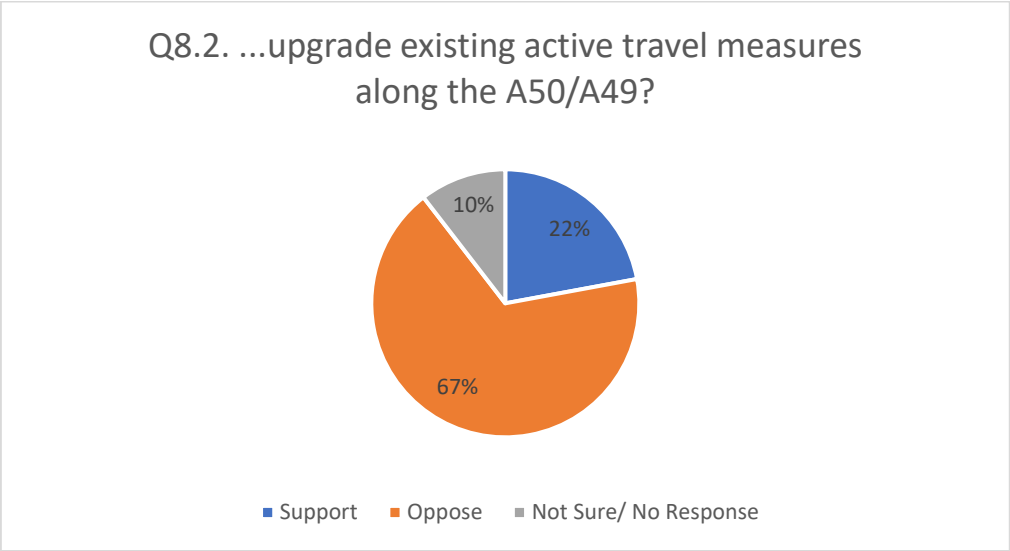


No. responses: 30

Non Bus Users

Amongst non bus users, 67% did not support improving active travel measures along the A50/A49 whilst 22% did support the measures. 10% of non bus users did not respond or did not know. The results are presented graphically in Figure 12.

Figure 12: Non-bus user response to active travel improvements.



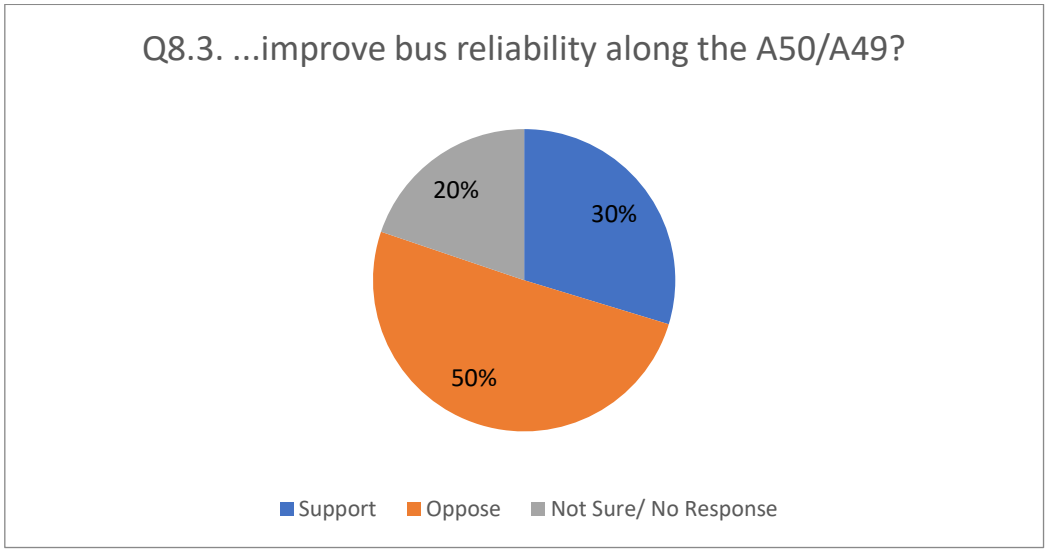
No. of responses: 85

Question 8.3 – Which of the below describes your support for the proposal to improve bus reliability along the A50/A49?

All Respondents

The majority of all respondents (50%) did not believe that the proposals would improve bus service reliability along the A50 and A49. Whilst 30% of respondents did support the proposals' ability to improve bus reliability along the route. 20% of respondents did not know, or did not answer this question. The results are presented graphically in Figure 13.

Figure 13: Feedback from all respondents as to whether the measures will improve bus reliability

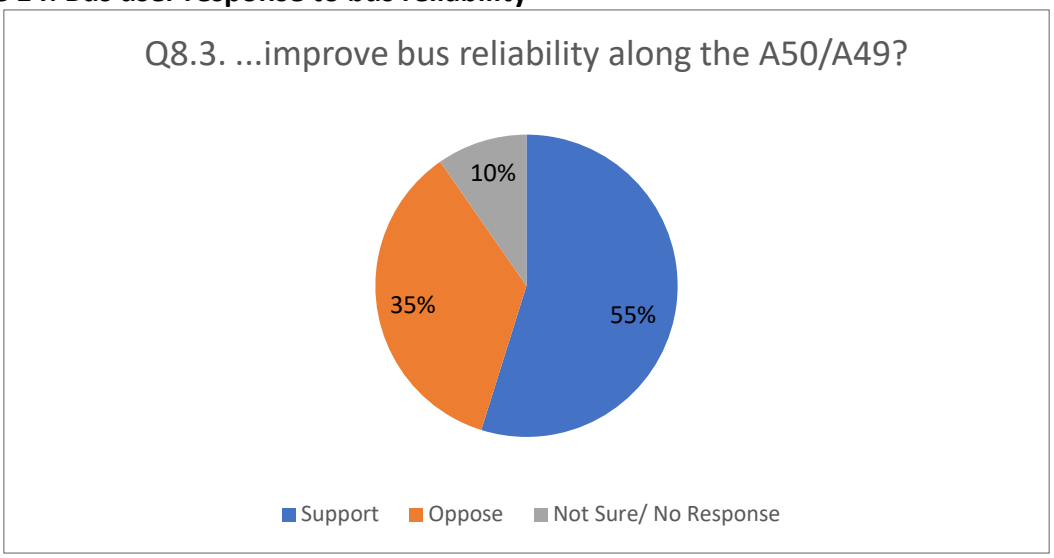


No. responses: 202

Bus Users

Amongst bus users, 55% support the proposals in its ability to improve bus reliability along the corridor, whilst 35% did not support the measures. 10% of respondents did not know or did not respond to this question. The results are presented graphically in Figure 14.

Figure 14: Bus user response to bus reliability

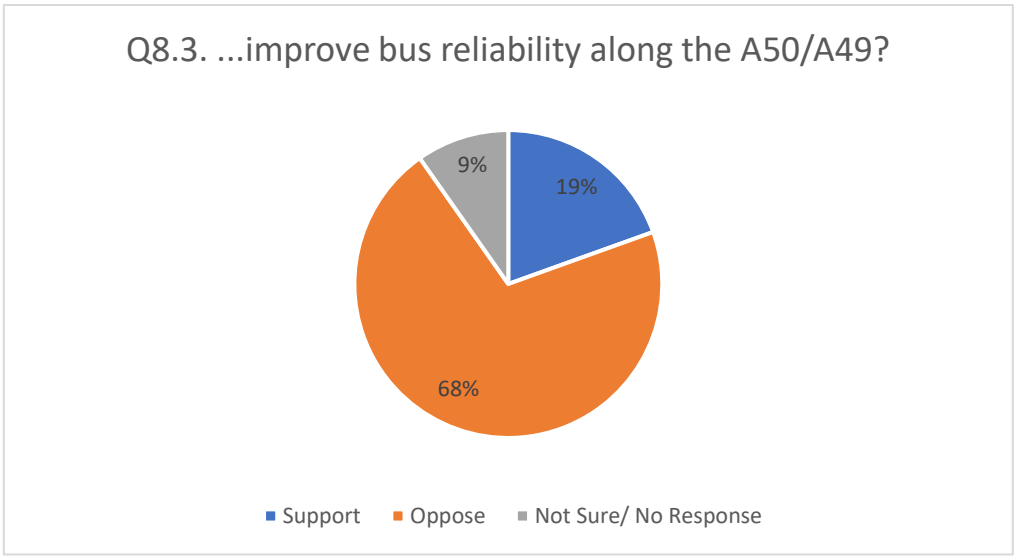


No. responses: 31

Non Bus Users

Amongst non bus users, 68% did believe that the measures would improve bus reliability along the corridor, whilst 19% did support the measures. 9% of non-bus users did not respond or did not know. The results are presented graphically in Figure 15.

Figure 15: Non-bus user response to bus reliability



No. responses: 85

3.4. Key Themes

During the consultation, respondents were asked if they had any comments on the proposals, a large number of comments were received, and common themes were identified. The following table presents the common themes and a response to the themes.

Theme	Response
Proposals would negatively impact car drivers	The proposals would not take road space away from car drivers, buses would have new sections of carriageway to allow them to be separated from general traffic improving journey time and reliability. Comments were raised about how the proposals would impact emergency services – emergency vehicles would be able to use the bus lanes to bypass general traffic.
Money should be spent elsewhere	The funding allocation is primarily provided by the Department for Transport to improve bus journeys in Warrington and support sustainable travel. The funding would be lost if not spent on this type of project and would be handed back to government.
Proposals won't work	The modelling demonstrates that there would be an improvement to bus journey times and the operation of key junctions along the route.
No one uses the buses	The proposals aim to improve bus journey times and reliability to make them an attractive mode of transport. The council has targets to broadly treble the number bus passengers in Warrington.
General support for the proposals	The proposals would improve journeys for bus users and non-bus users alike.
More bus services are required or an increased frequency of services	The bus service improvement plan would create a better environment for buses,
Improvements required for car drivers	The proposals would not result in a loss of space for car drivers. The proposals would resurface sections of the A50 and A49. Improvements to bus journeys could result in less people using their cars and improve journeys for car drivers.

3.5. Equality and Diversity Questions

The feedback questionnaire contained ten questions required under the Equality Act on age, gender, disability, and ethnic origin. Anonymous responses to these questions are provided in Appendix I.

4. SUMMARY

4.1. Summary

Public consultation was undertaken between November and December 2023 comprising an online survey and project web-page, featuring 3D fly through videos and details of the proposals, a localised leaflet drop to residents in the vicinity of the scheme, social media adverts and press releases and a series of publicised drop in public exhibitions.

Three public consultation events were held as follows:

- Warrington & Vale Royal College – Wednesday 29th November 2023 4.30pm-5.30pm
- Golden Square – Saturday 2nd of December 2023 – 10:00am-2.00pm
- Warrington Bus Interchange – Wednesday 6th December 2023 – 3.00pm – 6.00pm

At both the public consultation events and through online press coverage, residents were asked to respond via an online link or QR code to a questionnaire and their responses recorded online. There was a total of 202 responses from members of the public. The majority of which (87%) were residents within Warrington and almost half of the respondents (48%) did not use the bus.

The respondents were asked if they supported or opposed three scheme principles:

1. Reduce bus journey times along the A50/A49 corridor.
2. Upgrade existing active travel measures along the A50/A49.
3. Improve bus reliability along the A50/A49.

A summary of the results is provided below:

- 202 respondents completed the consultation feedback form.
- Almost half (48%) of the respondents never use the bus.
- 5% of respondents use the bus 5 or more times per week, whilst a further 12% use the bus but not every day.
- Amongst all responses the level of support is 45%
- Amongst bus users around 75% support the proposals.
- Amongst non-bus users, around 20% support the proposals.

Those respondents who did not support the proposals regularly stated in their responses that they felt the proposals would negatively impact car drivers, indeed some early misinformation on online media related to the mistaken assumption that one lane of the dual carriageway was to be reallocated to buses leaving just one lane for general traffic. This was incorrect but unfortunately seems to have influenced some respondents' perception of the scheme.

Other comments from respondents who did not support the scheme included that they felt the money should be spent on other things than public transport. In face-to-face discussion

and in the consultation material it was explained that the funding is specifically for bus priority and sustainable transport measures on the A49.

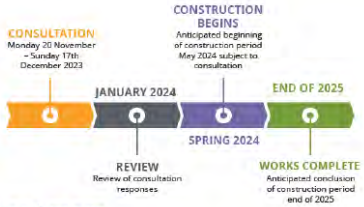
APPENDIX A – CONSULTATION LEAFLET

Department for Transport

Better BY BUS!

A49 Winwick Road Bus Priority Consultation

Next Steps



Find out more

We will be holding public exhibitions at the following dates and times:

Date	Time	Place
Wednesday 29th November	16.00 to 19.30	Warrington and Vale Royal College, Crescent Room, Winwick Road WA2 8QA
Saturday 2nd December	10.00 to 14.00	Golden Square Shopping Centre, WA1 1UZ. Use the Old Market Square access, we will be based near Shoe Zone
Wednesday 6th December	15.00 to 18.00	Warrington Bus Interchange, Winwick Street WA1 1TS

Officers from the Council's transport team will be on hand to answer any questions you might have. There is an online feedback form which you can complete from 20th November to let us know your views. This can be found at: **warrington.gov.uk/consultations** or by scanning the QR code.

Alternatively, paper copies of the questionnaire will be available at the Consultation events. The closing date for feedback is the 17th December.

If you require additional information, please contact the project team at **buses@warrington.gov.uk** or **01925 44 33 22**

Scan here to have your say

Public Consultation

The Council is enhancing bus services and infrastructure across the borough through a Bus Service Improvement Plan. New bus priority and improved walking and cycling measures are proposed in a southbound direction (towards the Town Centre) along the A49 Winwick Road between the A50 Long Lane and Lythgoes Lane. The plan below shows the extents of the proposals.

The proposals aim to reduce bus journey times, increase bus reliability and enhance walking and cycling facilities. The number of traffic lanes will not be reduced along the A50 Long Lane and A49 Winwick Road.

Working with the Department for Transport (DfT) and local bus operators, this scheme is one of a number of steps we are taking across the borough to improve the availability and reliability of bus services.

More information on the proposals and the Bus Service Improvement Plan can be found at **www.warrington.gov.uk/bus-service improvement-plan-bsip**

Walking and Cycling Improvements

Bus Priority Measures (Southbound)

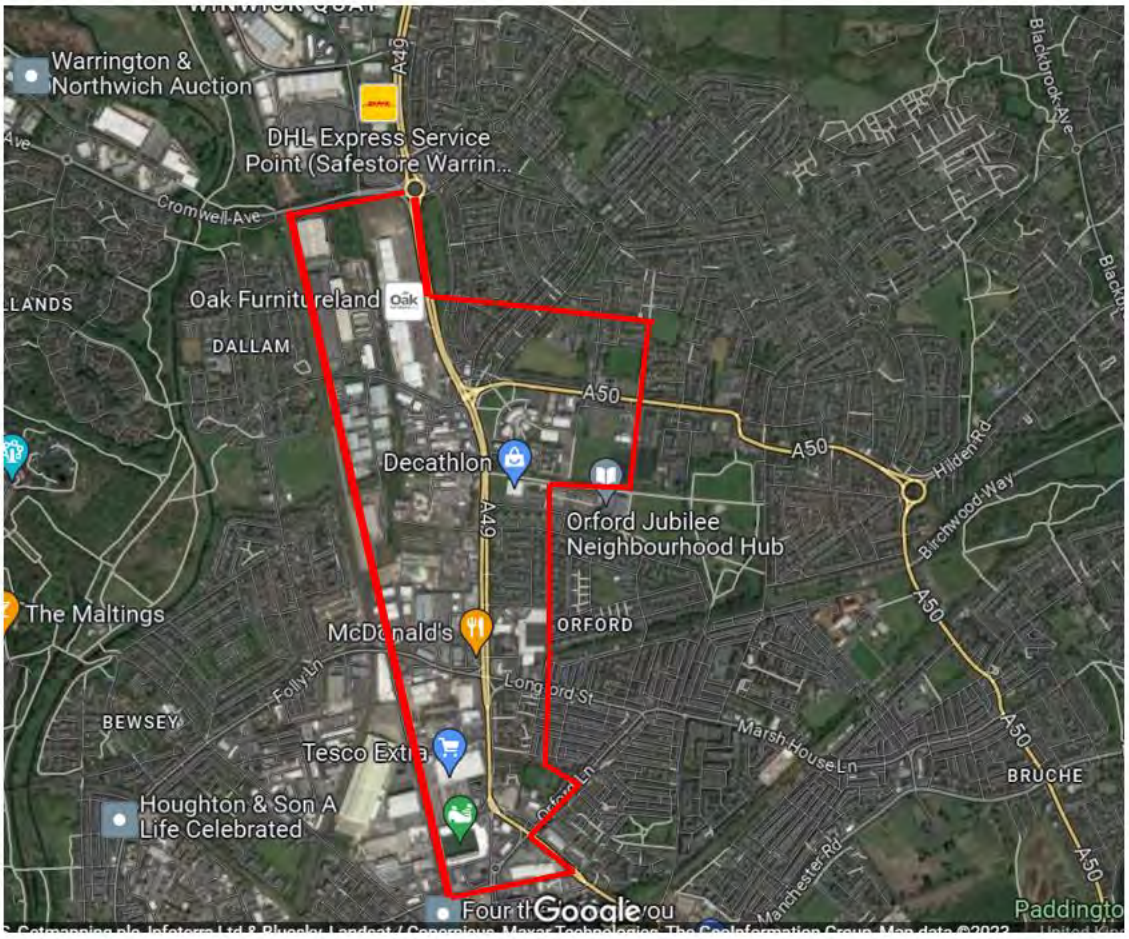
WARRINGTON Borough Council

3D visualisations of the proposals

WARRINGTON Borough Council

APPENDIX B

Consultation Leaflet Distribution Area



APPENDIX C

Consultation Web Page - 2023

warrington.gov.uk

Home / Budget, policies and data / Past consultations / A49 Bus Service Improvement Plan Consultation

A49 Bus Service Improvement Plan Consultation

We are enhancing bus services and infrastructure across the borough, through our Bus Service Improvement Plan (BSIP).

New bus priority measures and improvements to walking and cycling facilities are being proposed along the A50 Long Lane westbound (towards Junction Nine Retail Park) and the A49 Winwick Road in a southbound direction (towards the town centre). The proposals consist of four short lengths of road that only buses can use (bus gates) which will make bus journeys quicker in this area.

Working with the Department for Transport (DfT) and local bus operators, this is one of a number of steps we are taking across the borough to improve the availability and reliability of our bus network. Our plans include delivering infrastructure improvements, reducing fares and extending bus services across Warrington.

Public consultation

We ran a consultation from Monday 20 November until Sunday 17 December 2023. This consultation is now closed.

Warrington & Vale Royal College

Wednesday 29 November, 4pm - 7.30pm

Golden Square

Saturday 2 December, 10am - 2pm

Warrington Interchange Bus Station

Wednesday 6 December, 3pm - 6pm

The proposal

New bus priority and improved walking and cycling measures are proposed in a southbound direction along the A49 Winwick Road between the A50 Long Lane and Lythgoes Lane. The plans aim to enhance the bus user experience by reducing bus journey times and making services more reliable while minimising the impact on other forms of traffic.

The number of existing lanes for cars would not change, new carriageway will be built and the current road space remodelled. Motorists will not lose any lanes of traffic as part of the proposals and car journey times will remain approximately as they are now.

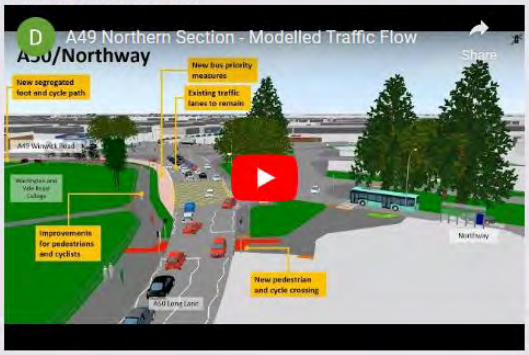
Objectives and Benefits

- Enhanced access to social, leisure, cultural and employment opportunities by public transport and active travel modes.
- More people using buses, walking and cycling.
- Reduced congestion from a shift to sustainable modes of travel will reduce carbon emissions and improve air quality.
- Reduced bus journey times.
- Reduce the variability and improve the punctuality of bus journeys.
- Increase bus usage on services operating on the A49 and across the borough.

Northern section

The junction of the A49 Winwick Road and A50 Long Lane.

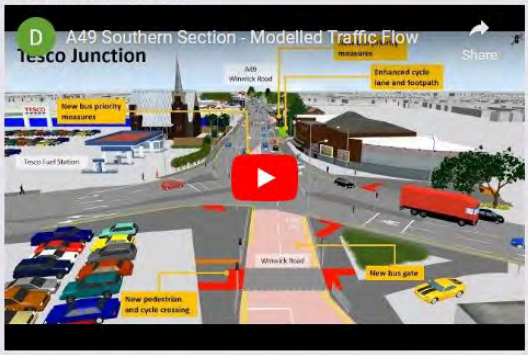
Modelled traffic flow



Southern section

The junction of the A49 Winwick Road and Lythgoes Lane.

Modelled traffic flow



Share your views by completing the online survey

Frequently asked questions

- What is proposed? +
- How will I benefit from the proposals? +
- How much do the proposals cost? +
- How will car users be impacted? +
- How much quicker will my bus journey be? +
- Why are you upgrading the existing foot and cycle paths? +
- When will construction start/end? +
- How much disruption and delay to traffic will be caused by the works? +
- Will the A49 be closed? +
- Why can't taxis use the proposed bus gates? +
- What about the rest of Warrington, what else is being done to improve bus travel? +

APPENDIX D

Council Press Release

[Have your say on bus priority plans | warrington.gov.uk]

Have your say on bus priority plans

Warrington residents are being invited to share their views on plans to introduce new bus priority measures on Winwick Road and Long Lane.

Tuesday, 21 November 2023

Business | Climate | Community | Health | Transport

The proposals form part of the council's investment in sustainable transport, and the ongoing work to transform bus travel in Warrington, with faster, more reliable journeys.

Delivered through Warrington's Bus Service Improvement (BSIP) programme, the scheme would see new bus priority measures and improvements to walking and cycling facilities introduced along the A50 Long Lane westbound (towards Junction Nine Retail Park) and the A49 Winwick Road in a southbound direction (towards the town centre).

The bus priority proposals consist of four short lengths of road that only buses can use (bus gates) which will make bus journeys quicker in this area. The bus gates are proposed in the following locations:

- **A50 Long Lane/A49 Winwick Road** – a bus gate is proposed on the corner of the A50/A49 outside Warrington and Vale Royal College. This will allow buses turning left onto the A49 to enter directly into the bus stop outside the college on the A49.
- **A49 Winwick Road (near Tesco)** – a set of signals and new road will be installed to allow buses to gain priority over queuing traffic to get to the bus stop.
- **A49 Winwick Road/Lythgoes Lane** – The Winwick Road arms of this junction will be remodelled to form two short lanes for buses to create a new southbound bus gate and quicker route to Warrington Bus Interchange.

The plans aim to enhance the bus user experience by reducing bus journey times and making services more reliable while minimising the impact on other forms of traffic.

Therefore, the number of existing lanes for cars would not change, with new carriageway to be built and existing road space remodelled. This means that motorists will not lose any lanes of traffic as part of the proposals and car journey times will remain approximately as they are now.

Walking and cycling facilities will be improved by creating and widening segregated walking and cycling paths where possible and providing two new toucan (walking and cycling) crossings - one outside Warrington and Vale Royal College on Long Lane and the other on Winwick Road, near the Halliwell Jones stadium.

Construction is expected to start in May 2024 and complete in December 2025. The construction would be phased to minimise disruption as much as possible and keep traffic flowing, while delivering the improvements in a quick and efficient manner.

The project will cost approximately £12.5 million to deliver, with the majority of funding (£10m) provided by the Department of Transport following a successful bid based on Warrington's BSIP, and the remainder funded by the council.

The council has launched a four-week public consultation on the plans, and is seeking feedback from residents, motorists, bus users and business owners. You can have your say by completing the online survey

You can also get involved in the consultation, learn more about plans, ask questions, and share your thoughts by attending one of the public events at:

- Warrington & Vale Royal College – Wednesday 29 November, 4pm-7.30pm
- Golden Square – Saturday 2 December, 10am-2pm
- Warrington bus interchange – Wednesday 6 December, 3pm-6pm

The A49 bus priority consultation runs until Sunday 17 December. You can find out more about the plans by visiting warrington.gov.uk/a49-bus-service-improvement-plan-consultation

Last update: 21 November 2023

APPENDIX E

Warrington Guardian Article

[Four new bus lanes proposed on some of Warrington's busiest roads | Warrington Guardian]

Four new bus lanes proposed on some of town's busiest roads – how to have your say

Four new bus lanes proposed on some of Warrington's busiest roads

Local government
Transport
By Nathan Okell @NathanOkell Chief Reporter

New bus lanes are planned on Winwick Road
New bus lanes are planned on Winwick Road
FOUR new bus lanes are being proposed on some of Warrington's busiest stretches of roads.

Warrington Borough Council is proposing bus gates – short lengths of road that only buses can use – on Winwick Road and Long Lane.

The first would be on the A50 Long Lane and A49 Winwick Road, on the corner of both outside Warrington and Vale Royal College.

The council says this would allow buses turning left onto the A49 to enter directly into the bus stop outside the college on Winwick Road.

A second is on Winwick Road near to Tesco, with a set of signals and new road proposed to allow buses to gain priority over queuing traffic to get to the bus stop.

Two more are proposed on the A49 Winwick Road and Lythgoes Lane, with the Winwick Road arms of the junction remodelled to form two short lanes for buses, creating a new southbound bus gate and quicker route to Warrington Bus Station.

Warrington residents are being invited to share their views on the plans, with Warrington Borough Council stating they will 'transform bus travel in the town, with faster, more reliable journeys'.

Councillors say the number of existing lanes for cars would not change, with new carriageways to be built and existing road space remodelled.

Warrington Guardian: How one of the bus lanes would look on the corner of Long Lane and Winwick RoadHow one of the bus lanes would look on the corner of Long Lane and Winwick Road (Image: WBC)

This means that motorists will not lose any lanes of traffic as part of the proposals, and car journey times will remain approximately as they are now, the council says.

Walking and cycling facilities would also be improved by creating and widening segregated walking and cycling paths where possible.

Plans also propose two new toucan (walking and cycling) crossings – one outside Warrington and Vale Royal College on Long Lane and the other on Winwick Road, near Halliwell Jones Stadium.

Construction is expected to start in May next year and be completed by December 2025.

The construction would be phased to minimise disruption as much as possible and keep traffic flowing, while delivering the improvements in a quick and efficient manner.

The project will cost approximately £12.5million to deliver, with £10million provided by the Department of Transport following a successful bid, and the remainder funded by the council.

The council has launched a four-week public consultation on the plans and is seeking feedback from residents, motorists, bus users and business owners.

You can have your say by visiting smartsurvey.co.uk/s/wbcBSIPconsultation/

You can also get visit a public event on November 29 between 4pm and 7.30pm at Warrington and Vale Royal College, December 2 between 10am and 2pm at Golden Square, or December 6 between 3pm and 6pm at Warrington Bus Station. The consultation runs until December 17.

APPENDIX F

Public Exhibition Display Boards

A49 Bus Service Improvement Plan Consultation

Better BY BUS!

Department for Transport

WARRINGTON Borough Council

Warrington Borough Council is enhancing bus services and infrastructure across the borough through a Bus Service Improvement Plan (BSIP).

New bus priority and improved walking and cycling measures are proposed in a southbound direction along the A49 Winwick Road between the A50 Long Lane and Lythgoes Lane. These boards set out the details of these proposals, and we are welcoming feedback.

Working with the Department for Transport (DfT) and local bus operators, this is one of a number of steps we are taking across the borough to improve the availability and reliability of our bus network.

Our plans include delivering infrastructure improvements, reducing fares and extending bus services across Warrington.

You can share your thoughts on our A49 plans either by filling out the online feedback form or by using the paper form available at today's consultation event. You can also give feedback using the contact details provided on the final board.

This consultation is open between Monday 20 November and Sunday 17 December 2023.

3D Visualisation of northern section

HAVE YOUR SAY

You can have your say by using your phone to scan this QR code, completing a feedback form online, or collecting a paper copy on request.

You can also share your feedback by visiting www.warrington.gov.uk/consultations

The proposals

Better BY BUS!

Department for Transport

WARRINGTON Borough Council

3D Visualisation of northern section

3D Visualisation of southern section

HAVE YOUR SAY

You can have your say by using your phone to scan this QR code, completing a feedback form online, or collecting a paper copy on request.

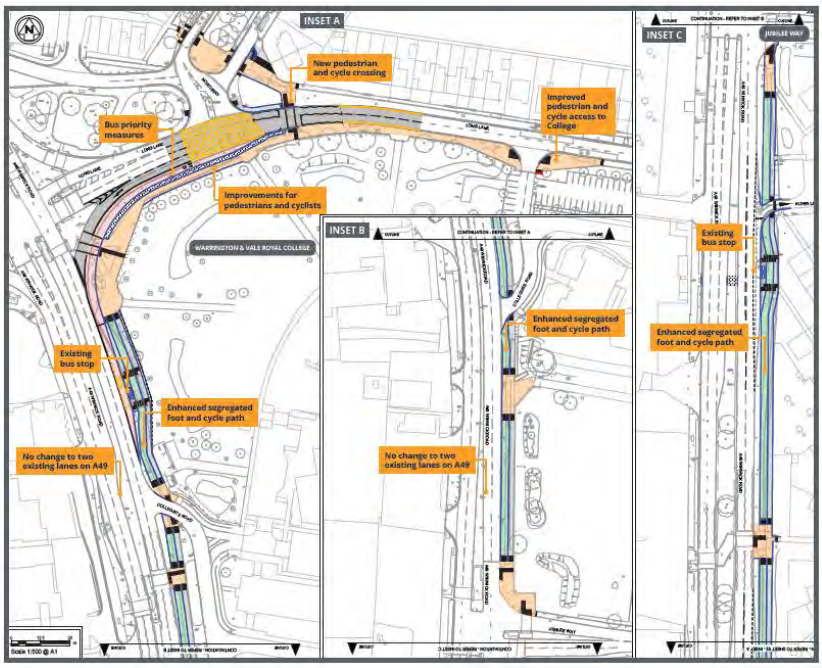
You can also share your feedback by visiting www.warrington.gov.uk/consultations

Scheme details: northern section

Better BY BUS!

Department for Transport

WARRINGTON Borough Council



HAVE YOUR SAY

You can have your say by using your phone to scan this QR code, completing a feedback form online, or collecting a paper copy on request.

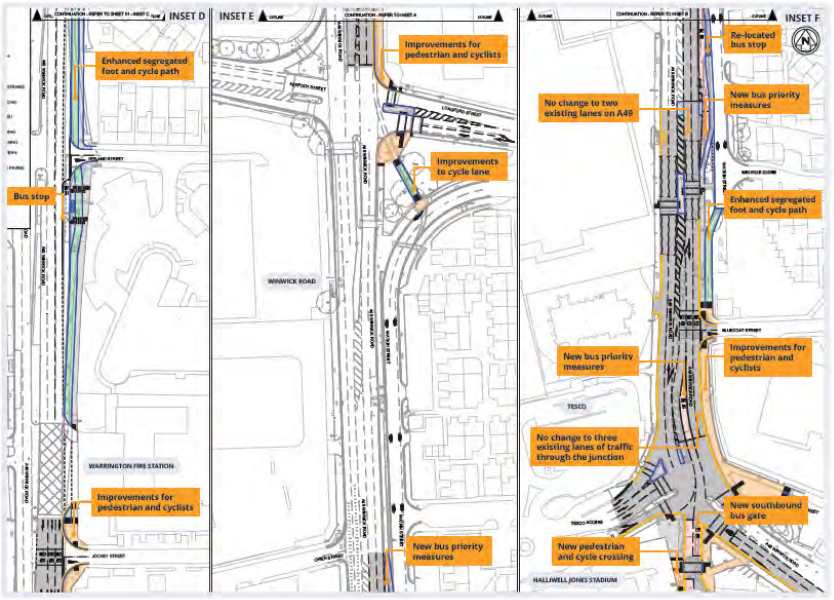
You can also share your feedback by visiting www.warrington.gov.uk/consultations

Scheme details: southern section

Better BY BUS!

Department for Transport

WARRINGTON Borough Council



HAVE YOUR SAY

You can have your say by using your phone to scan this QR code, completing a feedback form online, or collecting a paper copy on request.

You can also share your feedback by visiting www.warrington.gov.uk/consultations

Objectives and Benefits

Better BY BUS!

Department for Transport

WARRINGTON Borough Council

TOWN

Enhanced access to social, leisure, cultural and employment opportunities by public transport and active travel modes.

More people using buses, walking and cycling.

PEOPLE

Reduced congestion from a shift to sustainable modes of travel will reduce carbon emissions and improve air quality

Enhanced access to employment, training, goods and services by bus and active travel modes.

TRAVEL

Reduced bus journey times.

Reduce the variability and improve the punctuality of bus journeys.

Increase bus patronage on services operating on the A49 and across the borough.

HAVE YOUR SAY

You can have your say by using your phone to scan this QR code, completing a feedback form online, or collecting a paper copy on request.

You can also share your feedback by visiting www.warrington.gov.uk/consultations

Improving bus services in Warrington

Better BY BUS!

Department for Transport

WARRINGTON Borough Council

We were successful in bidding for funding from the DfT to improve bus services and infrastructure across Warrington.

Beginning with the opening of our new bus depot in Spring 2023, and running through until 2025, we're improving bus services in Warrington by...

JANUARY 2023
£2 adult fare cap introduced for adults across England

APRIL 2023
Improvements to evening services

AUTUMN 2023
New, fit-for-purpose, bus shelters delivered across the borough.

Significant increase in bus service frequencies, particularly in the evenings and weekends

LATE 2024
All electric buses will be in operation from the end of 2024

SUMMER '22 | JANUARY | MARCH | APRIL | JULY | AUTUMN '23 | SPRING '24 | LATE '24 | END 2025

SUMMER 2022
Enhanced Partnership signed with all bus operators committing to improve bus services.

Super Summer Service introduced with capped fares after 7pm.

MARCH 2023
A new bus depot opened for Warrington's Own Buses which will accommodate its all-electric fleet.

Our 105-strong all-electric bus fleet arrives in 2024, which will transform bus services in the borough – providing cheaper, comfortable, accessible, more reliable and environmentally friendly services for everyone.

JULY 2023
£1 fares for all under 19s introduced and £2 fare for adults extended. Concessionary travel extended to before 9:30am on weekdays.

SPRING 2024
Works begin on improvements to the A49

BY END 2025
New bus priority measures will be introduced on the A49 (subject to consultation)

HAVE YOUR SAY

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New and Improved bus services in Warrington

Better BY BUS!

Department for Transport

WARRINGTON Borough Council

> It is essential that buses remain an attractive option that encourages people to use them.
>
> The Winwick Road bus priority package will ensure the most used bus corridor in Warrington remains on time and gives speedy journeys for the town's people.
>
> The Bus Priority measures will also assist sustainable modes, which again encourages the use of buses instead of cars, helping the environment, local air quality and reducing the overall number of cars clogging roads.
>
> This benefits everyone in Warrington with no loss of road space overall.
>
> Warrington's Own Buses (Ben Wakerley - Managing Director)

> We are delighted that the new Bus Priority measures on Winwick Road will help speed up our B52 bus service and make journey times that bit quicker and smoother for our passengers who are travelling to and from work at the Omega site.
>
> Omega Busways (Ian Howard - Director)

Service Number	Description	Operator	Status	Days of operation
23	Warrington - Cinnamon Brow - Orange Grove and Ryfields Village Daytime shopper - hourly service	MD	New	Monday-Saturday
31 / 31A / 33	Penketh local services with connections to Westbrook / Gemini Daytime shopper - hourly service	MD	New	Monday-Saturday
B29	Burtonwood - Omega - Gemini - Westbrook Daytime shopper - hourly service	MD	New	Monday-Saturday
24	Woolston - Padgate - Birchwood	WOB	New	Monday-Saturday
47	Warrington - Weaste Lane - Statham Daytime - hourly service	Howards	New	Monday-Saturday
329	Warrington - Burtonwood - St Helens Hourly Evening Service (trialled using LTF)	Arriva	New	Daily
10	Warrington - Walton (Daresbury) - Hatton Daytime and Peak	Howards	New	Monday-Saturday
22	Warrington - Earlstown (Daytime)	WOB	Enhanced	Sunday / Pub Holidays
17	Warrington - Birchwood - Gorse Covert (Hourly - Evenings)	WOB	Enhanced	Monday-Saturday
3 / 13 / 22	Warrington - Martinscroft - Hollins Green Warrington - Chapelford - Omega Warrington - Earlstown (Evenings - each hourly)	WOB	Enhanced	Monday-Saturday
1 / 2	Warrington - Westy Evenings (e. 30 mins)	WOB	Enhanced	Monday-Saturday
11 / 12 / 32	Warrington - Gainsborough Rd - Westy Warrington - Penketh - Widnes	WOB	Enhanced	Monday-Saturday
16	Warrington - Hospital - Dallam Evenings (e.30 mins)	WOB	Enhanced	Monday-Saturday
19	Warrington - Croft - Culcheth Evenings (hourly)	WOB	Enhanced	Monday-Saturday
20 / 21	Warrington - Orford - Longford - Warrington Evenings (e.30 mins combined)	WOB	Enhanced	Monday-Saturday
25 / 28A	Warrington - Birchwood Warrington - Leigh (Evenings hourly)	WOB	Enhanced	Monday-Saturday
19 / 28	Warrington - (Croft) - Culcheth - Leigh	WOB	Enhanced	Saturday

HAVE YOUR SAY

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You can also share your feedback by visiting www.warrington.gov.uk/consultations

Next steps and get in touch

Better BY BUS!

Department for Transport

WARRINGTON Borough Council

This consultation closes on Sunday, 17 December. We will carefully consider all feedback and suggestions submitted during this period. Results from the consultation will be made available on the Council's website.

CONSULTATION
Monday 20 November – Sunday 17 December 2023

JANUARY 2024

REVIEW
Review of consultation responses

CONSTRUCTION BEGINS
Anticipated beginning of construction subject to consultation

SPRING 2024

LATE 2025

WORKS FINISHED
Anticipated conclusion of construction period

Contact us:

Email: buses@warrington.gov.uk

Phone number: 01925 44 33 22

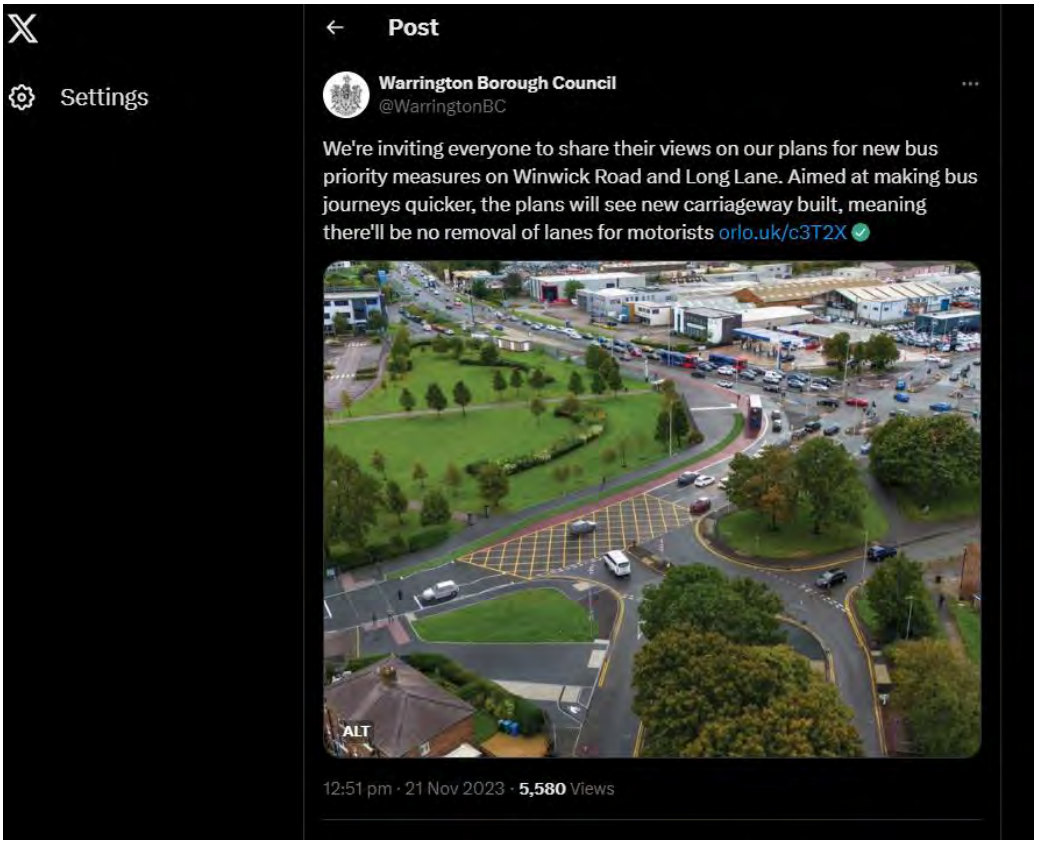
HAVE YOUR SAY

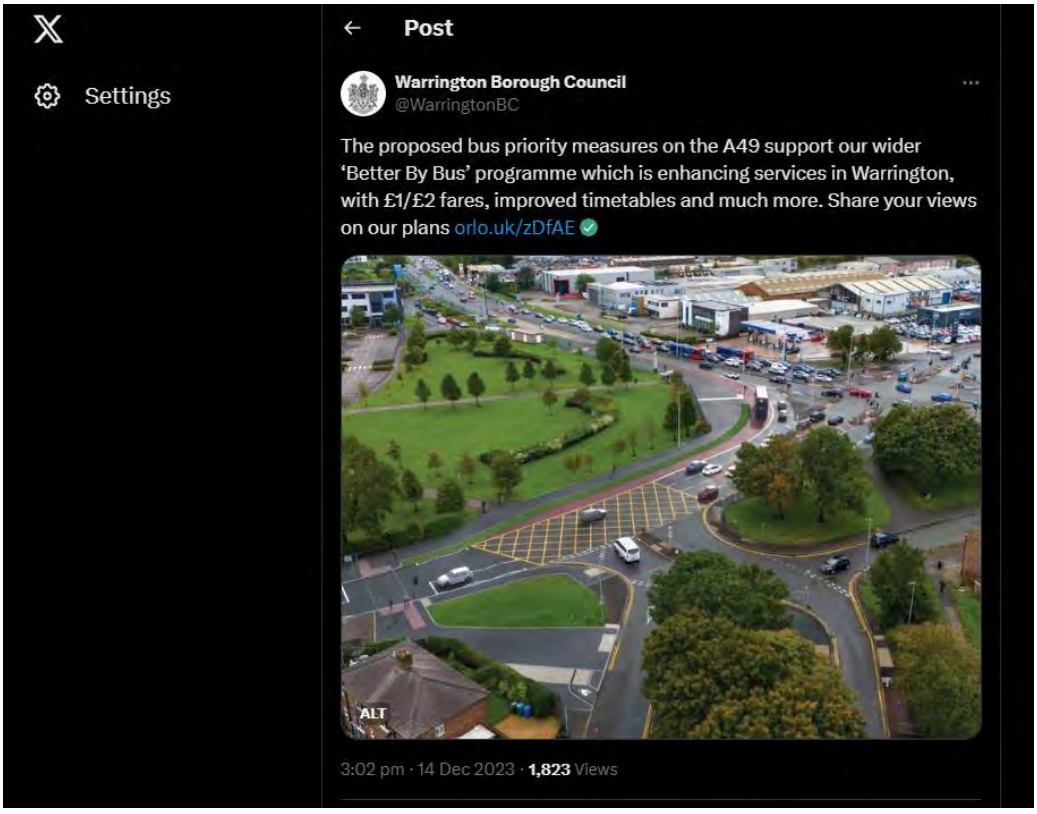
You can have your say by using your phone to scan this QR code, completing a feedback form online, or collecting a paper copy on request.

You can also share your feedback by visiting www.warrington.gov.uk/consultations

APPENDIX G

Example Sample Social Media Posts





APPENDIX H

Consultation Questionnaire

Q1

Which of the following best describes your interest in the survey? Please select one option.

Answer Choices
A local resident who lives in Warrington
A person who works in Warrington
Local Borough, Town or Parish Councillor
Local Business owner/Manager
A group or organisation
Visitor to Warrington

Q2

What is your postcode? For example WA1 2NH, WA13 0AB. This is used for geographical analysis only and will not be used to identify or contact you.

Q3

How often do you use the bus services in Warrington? Select one option.

Answer Choices
5 days a week or more
3 – 4 days a week
1 – 2 days a week
Less than once a week but more than once a month
Once a month
Less than once a month
Never

Q4

For what journey purposes do you use the bus in Warrington? Select all that apply.

Answer Choices
Commuting to / from work
Business purposes
Travel to / from education
Shopping
Visiting friends / family
Medical / Hospital appointments
Personal business (e.g. bank, hairdressers etc)
Social / leisure / recreation
Other (please specify): Show

Q5

Do you have access to the following vehicles? Select one option in each row.

Answer Choices
Car
Motorbike/ moped
Van/ Light Goods Vehicle
Bicycle

Q6

Do you travel along the A49 Winwick Road/A50 Long Lane? Select one option. View MAP

Answer Choices
Yes
No (go to the next page)

Q7

During a typical week how often would you say you travel along the A49 Winwick Road/A50 Long Lane. Select one option.

Answer Choices
More than 4 times a day
2-3 times a day
Once a day
Once every couple of days
Less often

Q8

Which of the below best describes your support for the proposal to... Select one option in each row.

Answer Choices
...reduce bus journey times along the A50/A49?
...upgrade existing active travel measures along the A50/A49?
...improve bus reliability along the A50/A49?

Q9

If you have any further comments about the Bus Service Improvement Plan write in the space below.

APPENDIX I

Equalities Monitoring Responses

1. Age. Please select one option.				
Answer Choices			Response Percent	Response Total
1	Below 16 If below 16, please state age in the box below		0.00%	0
2	16-24		3.45%	3
3	25-34		18.39%	16
4	35-44		25.29%	22
5	45-54		19.54%	17
6	55-64		20.69%	18
7	65-74		9.20%	8
8	75-84		1.15%	1
9	85 or over		0.00%	0
10	Prefer not to say		2.30%	2
			answered	87
			skipped	115

2. Gender. Please select one option.				
Answer Choices			Response Percent	Response Total
1	Male		55.68%	49
2	Female		39.77%	35
3	Non-Binary		0.00%	0
4	Prefer not to say		4.55%	4
			answered	88
			skipped	114

3. Is your gender identity the same as your sex registered at birth? Please select one option.			
Answer Choices		**Response Percent**	**Response Total**
1	Yes	95.40%	83
2	No	1.15%	1
3	Prefer not to say	3.45%	3
		answered	87
		skipped	115

4. What is your relationship status? Please select one option.			
Answer Choices		**Response Percent**	**Response Total**
1	Single	15.12%	13
2	Married	55.81%	48
3	Co-habiting	18.60%	16
4	Separated	0.00%	0
5	Divorced	3.49%	3
6	Widowed	1.16%	1
7	In a same sex marriage	0.00%	0
8	In a same sex civil partnership	0.00%	0
9	Prefer not to say	5.81%	5
		answered	86
		skipped	116

5. How would you describe your ethnic origin? Please select one option.

	Answer Choices	Response Percent	Response Total
1	White	90.91%	80
2	Asian or Asian British	1.14%	1
3	Mixed or multiple ethnic groups	2.27%	2
4	Black, Black British, Caribbean or African	0.00%	0
5	Other ethnic group	0.00%	0
6	Prefer not to say	5.68%	5
		answered	88
		skipped	114

White. Please select one option.

	Answer Choices	Response Percent	Response Total
1	English, Welsh, Scottish, Northern Irish or British	94.94%	75
2	Irish	2.53%	2
3	Gypsy or Irish Traveller	0.00%	0
4	Roma	0.00%	0
5	Any other white background (please state)	2.53%	2
		answered	79
		skipped	123

Any other white background (please state) (2)

1	21/11/2023 21:22 PM ID: 232069161	Hungarian
2	21/11/2023 21:35 PM ID: 232071526	European

Asian or Asian British. Please select one option.			
Answer Choices		Response Percent	Response Total
1	Indian	0.00%	0
2	Pakistani	0.00%	0
3	Bangladeshi	0.00%	0
4	Chinese	0.00%	0
5	Any other Asian background (please state)	100.00%	1
		answered	1
		skipped	201

Any other Asian background (please state) (1)

1	12/12/2023 13:57 PM ID: 233768601	Hong Kong

Mixed or multiple ethnic groups. Please select one option.			
Answer Choices		Response Percent	Response Total
1	White and Black Caribbean	0.00%	0
2	White and Black African	0.00%	0
3	White and Asian	0.00%	0
4	Any other mixed background (please state)	100.00%	2
		answered	2
		skipped	200

Any other mixed background (please state) (2)

1	21/11/2023 16:46 PM ID: 232011498	White, Maltese, irish
2	14/12/2023 05:30 AM ID: 233916813	White and Indian

Black, Black British, Caribbean or African. Please select one option.				
Answer Choices			Response Percent	Response Total
1	Caribbean		0.00%	0
2	African		0.00%	0
3	Any other Black, Black British or Caribbean background (please state)		0.00%	0
			answered	0
			skipped	202
Any other Black, Black British or Caribbean background (please state) (0)				
No answers found.				

Other ethnic group. Please select one option.				
Answer Choices			Response Percent	Response Total
1	Arab		0.00%	0
2	Any other ethnic group (please state)		0.00%	0
			answered	0
			skipped	202
Any other ethnic group (please state) (0)				
No answers found.				

6. How would you describe yourself? Please select one option.				
Answer Choices			Response Percent	Response Total
1	Straight/Heterosexual		85.54%	71
2	Lesbian/Gay woman		1.20%	1
3	Gay man		4.82%	4
4	Bisexual		2.41%	2
5	Other sexual orientation		0.00%	0

6. How would you describe yourself? Please select one option.				
6	Prefer not to say		6.02%	5
			answered	83
			skipped	119

7. Your religion or belief. Which group below do you most identify with? Please select one option.				
Answer Choices			Response Percent	Response Total
1	No religion or belief		45.98%	40
2	Christian (Church of England,Catholic,Protestant and all other Christian denominations)		44.83%	39
3	Buddhist		1.15%	1
4	Hindu		0.00%	0
5	Muslim		1.15%	1
6	Jewish		0.00%	0
7	Sikh		0.00%	0
8	Prefer not to say		3.45%	3
9	Any other religion.(please specify):		3.45%	3
			answered	87
			skipped	115

Any other religion.(please specify): (3)		
1	22/11/2023 14:57 PM ID: 232187977	Jedi
2	23/11/2023 17:22 PM ID: 232328161	I don't think you have the right to ask this question I'm
3	11/12/2023 18:40 PM ID: 233674781	Pagan

8. Are you currently pregnant or have you been pregnant in the last year? Please select one option.			
Answer Choices		Response Percent	Response Total
1	Yes	1.15%	1

Data exported from Smart Survey 191223. consultation@warrington.gov.uk

8. Are you currently pregnant or have you been pregnant in the last year? Please select one option.			
2	No	93.10%	81
3	Prefer not to say	5.75%	5
		answered	87
		skipped	115

9. Outside of work is there anyone who relies on you for care and attention AND that you assist with their daily routine? Please select one option.			
Answer Choices		Response Percent	Response Total
1	Yes	46.59%	41
2	No	45.45%	40
3	Prefer not to say	7.95%	7
		answered	88
		skipped	114

9.1 If you answered yes to the above question, please indicate the circumstances. Please select all that apply.			
Answer Choices		Response Percent	Response Total
1	Child/Children	59.09%	26
2	Grandchild/Grandchildren	11.36%	5
3	Adult (18+)	18.18%	8
4	Disabled adult/s	22.73%	10
5	Older person/people aged 70+	29.55%	13
6	Prefer not to say	9.09%	4
		answered	44
		skipped	158

10. Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months? Please select one option.				
1	Yes a little		15.29%	13
2	Yes a lot		14.12%	12
3	No		65.88%	56
4	Prefer not to say		4.71%	4
			answered	85
			skipped	117

10.1 If you answered 'yes' to the previous question, please state the type of impairment. If you have more than one, please tick all that apply.				
Answer Choices			Response Percent	Response Total
1	Autistic Spectrum		14.81%	4
2	Learning Disability/Difficulty		11.11%	3
3	Long-standing illness		37.04%	10
4	Mental Health condition		33.33%	9
5	Other Developmental Condition		3.70%	1
6	Physical Impairment		51.85%	14
7	Sensory Impairment		18.52%	5
8	Other (please specify):		22.22%	6
			answered	27
			skipped	175

Other (please specify): (6)

1	21/11/2023 13:18 PM ID: 231951795	
2	21/11/2023 13:40 PM ID: 231958193	Old age
3	22/11/2023 12:19 PM ID: 232158095	arthritis
4	27/11/2023 09:52 AM ID: 232512976	you should cater to a minority group, cater the to the town
5	11/12/2023 19:24 PM ID: 233678797	Osteoarthritis
6	14/12/2023 05:30 AM ID: 233916813	Ambulatory wheelchair user