Hayes Bridge Retail Park

Transport Note: Revised Scheme and Further Information for TfL

Client: **OXW Hayes S.à.r.l.**

27 September 2023

Document Reference: **C21035/TN05**

QUALITY MANAGEMENT

REPORT DETAILS

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NOTICE

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1. INTRODUCTION

1.1 Overview

1.1.1 This Transport Note (TN) has been produced in relation to a proposed development at the Hayes Bridge Retail Park, Uxbridge Road, Hayes in the London Borough of Hillingdon (LBH). This has been produced in support of planning application reference: 1911/APP/2022/1853.

1.1.2 The proposals comprise the demolition of existing buildings and the erection of a commercial building for employment purposes Class E(g)iii, B2 and B8, along with ancillary offices, gatehouse, associated infrastructure including; service yard, car parking, drainage and hard and soft landscaping.

1.1.3 The application site ('the site') is located to the south of Uxbridge Road and north of Bullsbrook Road with access obtained from both locations. It is a brownfield site with an existing retail use with a number of buildings located on the site.

1.1.4 The proposed development scheme has been revised to amend the building floorspace and layout, and this TN has been produced to consider the implications from a transport perspective. The revised scheme proposals are summarised in Section 2.

1.1.5 In addition, the TN provides further information to respond to the latest comments from TfL on the application, specifically in relation to the consideration of a toucan crossing at the site access and revisions to the walking / cycling route on Uxbridge Road, as well as undertaking junction modelling of the site access / Uxbridge Road junction.

1.2 Reports to Date

1.2.1 For ease, a summary of the transport reports produced to support the application has been set out as follows:

- Transport Assessment - C21096.TA01 - 9th May 2022
- Framework Travel Plan - C21096.TP01 - 9th May 2022
- Transport Note: Response to TfL - C21035.TN01 - 22nd November 2022
- Transport Note: Further Information for Highway Authority - C21035.TN02 - 22nd November 2022
- Transport Note: Response to TfL - C21035.TN04 - 7th March 2023
- Transport Note: Further Information for Highway Authority - C21035.TN03 - 7th March 2023
- Transport Assessment Addendum - C21096.TA02 - 19th May 2023
- Framework Travel Plan - C21096.TP01.Iss3 - 19th May 2023

1.2.2 Both TfL and the highway authority have provided consultation responses to these submitted reports, which have been responded to in turn. This TN covers the outstanding matters in relation to the latest comments received from TfL dated 19th June 2023. Where relevant, information from previous reports has been referred to or reproduced accordingly.

1.2.3 The information set out within the originally submitted TA, as well as the two follow up Transport Notes, and the TA Addendum remains valid, where this has not been superseded by or reproduced within this TN, which should therefore be read in conjunction with those reports. This is for ease of review for the LHA and TfL as this report considers the outstanding matters and changes to the scheme.

2. REVISED DEVELOPMENT PROPOSALS

2.1 Overview

2.1.1 The proposals are for a speculative development and the end user and specific operation of the site would not be known at this stage.

2.1.2 The proposals are for demolition of existing buildings and the erection of a commercial building for employment purposes Class E(g)iii, B2 and B8, along with ancillary offices, gatehouse, associated infrastructure including; service yard, car parking, drainage and hard and soft landscaping.

2.1.3 The revised proposals from the application set back the building from Uxbridge Road, removing the separated office block which was presented previously. The car parking layout has been revised to provide a circulatory arrangement, and there are revisions to the access and pedestrian / cyclist access. The details of the proposals are set out in this section, and changes noted, where applicable.

2.1.4 In summary, the scheme consists of the following:

	Proposals	Change from previous submission set out in the TA Addendum
Warehouse Area (GIA)	14,075 sqm	Increase of 88 sqm
Office Space and Core	1,706 sqm	Total Office decrease of 510 sqm
Ancillary Transport Office (GIA)	308 sqm	Decrease of 11 sqm
Total GIA	16,087 sqm	Decrease of 435 sqm
Car Parking Spaces	91 (inc. 5 accessible)	Remains the same
Cycle Spaces	54	Increase of 4 spaces
Dock Loading Doors	16	Remains the same
Level Access Doors	2	Remains the same
HGV Parking	16	Remains the same
Site Area	2.88 Ha	Remains the same

** Differences due to rounding*

2.1.5 Although there are offices, these are ancillary to the main B2/B8 warehousing use.

2.1.6 The revised site layout plan is provided within Appendix A.

2.2 Site Layout

2.2.1 The site layout has been designed to accommodate HGV traffic and separate pedestrians and light vehicles from operational vehicle movements. The site would use the existing retail park access road which links to a signal controlled junction with Uxbridge Road at its northern end. This junction can accommodate all vehicle movements in all directions appropriately, with minor changes proposed and set out in Section 2.3.

2.2.2 The on-site car park is situated at the northern end of the site and the HGV / operational entrance would be at the southern end of the internal access road to separate manoeuvring operational vehicles and light vehicles.

2.2.3 The aisle widths within the car park and the service yard area are appropriate to accommodate all movements. Swept path analysis is provided in Appendix B to demonstrate movements can be undertaken safely.

2.3 Access

Vehicular Access

2.3.1 The vehicular access into the site will be obtained from the existing signal controlled junction onto Uxbridge Road.

2.3.2 A Stage 1 Road Safety Audit (RSA) was undertaken by an independent specialist auditor of the existing site access junction in the context of the proposed development and likely change in vehicle movements. The full RSA and Designers Response has been set out in Appendix B of the initial Transport Note to the highway authority (C21096/TN02). This provided two recommendations, both of which have been considered in relation to amendments to the site access. Firstly, the exit arm from the site access has been reduced to a single lane, with minor changes to the radii on the west side and secondly the "no HGV access" signage within the site will be removed.

2.3.3 Following on from this, and in relation to comments from TfL, a further revision has been considered which incorporates a toucan crossing on the site access arm. This was considered in the context of junction modelling, which has been set out in Section 5 and the relevant design guidance for toucan crossings, including the TfL Streetscape Guidance.

2.3.4 Based on the junction modelling analysis, the most appropriate crossing at this location was considered to be a staggered crossing, as this minimises the impact on the operation of the junction. A straight across toucan crossing, would amend all phasing and staging at the site access / Uxbridge Road junction and have a material impact on the capacity of the junction, specifically for movements on Uxbridge Road. On this basis, the existing arrangements have been revised to provide a wider central island with a minimum width of 4m and length of 9m, in accordance with the Streetscape Guidance (page 147). A shared area on the west side of the carriageway has been provided to tie in the existing segregated walking and cycling route, with the guardrail and upstand kerb being amended accordingly. A minimum of 3m width is provided for pedestrians / cyclists waiting on each side, and on the east side of the access, the route would continue as a shared footway / cycleway. The stagger has been retained as per the current arrangements to minimise the impact on the signal timings.

2.3.5 In addition, the existing dropped kerb arrangement accessing the cycle lane on the western kerbline has been retained. This allows cyclists travelling on carriageway in a westbound direction to gain access to the cycle route, as currently, without using the crossing. On this basis, the improvements enable crossing for cyclists travelling eastbound, as well as those not travelling on the carriageway. This is a significant improvement over the existing situation. The detailed design of the crossing arrangements would be agreed via the technical approval process, which would include the consideration of street furniture and lighting. It is also noted that the improvements would fall outside of the adopted highway based on the adopted highway mapping, as per the existing crossing. The land is all in the control of the applicant, and as such there may be a requirement for a S38 agreement as part of the design.

2.3.6 A general arrangement drawing of the proposed layout at the site access is provided in Appendix C.

2.3.7 The junction has been amended to remove the two lane exit from the site. This has been reduced to a single lane exit for all movements so that vehicles cannot queue side by side to minimise the potential of collisions for vehicles exiting the site. The lane width has been maintained at a minimum of 3.7m to ease vehicle movements and the radii has been amended onto Uxbridge Road to 20m. This has improved the ability for HGVs to turn out of the site appropriately and the swept paths are shown in Appendix C. This accords with the recommendation in the RSA.

2.3.8 As the proposals would significantly reduce the number of vehicle movements into and out of the site, the amendment would not have a material impact on the capacity of this junction. Indeed, the only impact from a reduction from two lanes to one lane is on the site access arm which remains operating well within capacity. This is set out in Section 5.

2.3.9 A HGV can manoeuvre into and out of the site appropriately to and from the west. All HGVs will be required to route in this direction, which will be set out in a Delivery and Servicing Plan (DSP) and the operator would strictly adhere to. The routing will be enforced by the operator who would likely have tracking devices on all operational vehicles for logistics purposes and can discipline individual drivers if this routing is not followed. If on the rare occasions that there is a local delivery which requires vehicles to turn to or from the east of the junction, firstly this is extremely unlikely to be an articulated vehicle for a local journey, and secondly these would be required to U-turn at the A312 junction when leaving or arriving to the site (although movements to and from the east are achievable as shown in the swept path analysis submitted within the original Transport Assessment).

2.3.10 There can be signage placed within the site stating that HGVs are to turn left only out of the site. All drivers would be aware of the routing requirements as a condition of their employment. In addition, all suppliers and deliveries would be aware of this when delivering to the site.

2.3.11 As such, the access proposals are considered to be safe and suitable and in accordance with Vision Zero and London Plan policy T4. There are no outstanding issues from the independent RSA.

2.3.12 A further emergency site access is provided from the southern end of the site directly into the service yard area from Bullsbrook Road. This can accommodate an articulated vehicle, if needed, as shown in the swept path analysis in Appendix B. The emergency access provides appropriate visibility along Bullsbrook Road to the west, with at least 43m achievable to the nearside kerb and this can be accommodated within the site or the adopted highway, which is contiguous with the site boundary.

2.3.13 The existing site use generates HGV movements to and from the service yard which is accessed from the southern end of the site onto Bullsbrook Road.

2.3.14 As such, although there is an increase in HGVs generated by the site, these no longer access onto Bullsbrook Road / Springfield Road which are considered less appropriate as HGV routes by TfL, as set out within its previous consultation response. The movements access directly onto a higher standard A Road and would be within a short distance of a key TfL route at the A312, which is a benefit for this type of scheme and would minimise the impacts from HGV movements on the network. The significant reduction in total vehicle movements, as well as the improved crossing at the site access, are also considered to offset the potential impacts from the much smaller increase in HGVs.

2.3.15 A serious injury accident also occurred on Bullsbrook Road involving a HGV in 2015. The proposals would remove HGVs from this route and these would be accommodated directly onto Uxbridge Road, which would therefore provide a benefit on this less appropriate route.

2.3.16 The access arrangements are therefore considered safe and suitable for accommodating all movements appropriately and would not lead to an increase in road danger.

Pedestrian and Cyclist Access

2.3.17 The access arrangements show a 3m wide shared footway / cycleway connecting to the footway / cycleway route along the northern boundary of the site on Uxbridge Road via the proposed staggered toucan crossing arrangement. A general arrangement drawing is provided in Appendix C which shows how this ties in with the existing provision on Uxbridge Road, including the revisions for the toucan

and site access lane. There will be a 3m wide route connecting to the building and cycle parking area from Uxbridge Road, as well as a separate 2m route for pedestrians, as such cyclists can be accommodated within the site connecting to the cycle parking.

2.3.18 Signage will be provided showing the shared surface arrangements within the site and within the shared area adjacent to the toucan crossing, following which to the west the route becomes segregated and appropriate signage would be provided from this point. There is sufficient space for cyclists to pass any waiting pedestrians at the site access crossing. To incorporate this connection to the existing route and the toucan crossing proposals in general, a short section of guardrail and central kerbing will be removed as needed. The full details of this arrangement and the signage / line markings can be discussed and agreed as part of any detailed design discussions for S278 technical approval.

2.3.19 Pedestrians accessing the building from the car parking area will connect to the entrance separately from operational traffic, with the main entrances to the buildings adjacent to the car park. Pedestrians can therefore be accommodated appropriately and safely away from large vehicle movements.

2.4 Parking

Car Parking Provision

2.4.1 The parking standards within LBH are provided within the Local Plan Development Management Policies Appendix C (Jan 2020). For B2-B8 uses, the standards are suggested as two spaces plus 1 space per 50 – 100 sqm of GFA.

2.4.2 Applying the standards to the proposed development (16,087 sqm) would equate to a maximum requirement for between 161 and 322 spaces.

2.4.3 The proposals are for 91 car parking spaces, which is well within the maximum LBH levels.

2.4.4 However, the London Plan was adopted in March 2021, which was after the Local Plan, and this sets out revised car parking standards.

2.4.5 The London Plan suggests parking standards of up to 1 space per 100 sqm for office use in an Outer London borough (there are no specific B2 / B8 standards). Applied to the floorspace of 16,087 sqm, this equates to a provision of 161 car parking spaces.

2.4.6 Considering the level of potential employees, the PTAL of 2, the constraint target modal split in the Travel Plan for vehicles (30% of all movements) and the shift working nature of the site, the proposed level of parking is considered appropriate for the use and location and still well below the maximum level based on the parking standards within the LBH Local Plan.

2.4.7 The applicant considers the proposed level of 91 parking spaces to be the minimum required to ensure the site is operationally viable for this location and this also allows appropriate flexibility for staff changeover times, particularly for overnight shifts. This is consistent with the view of The Mayor of London in the *Land for Industry and Transport SPG* (2012) paragraph 5.23.

2.4.8 The proposed parking provision is suitable for the use and provides a balance between requests for parking provision from TfL and the LHA, is appropriate for the location and in accordance with the LBH standards. The reduction from the LBH maximum parking levels and constraint target for modal share of journeys is in accordance with the Mayor's Transport Strategy for reducing car use. Measures within the Travel Plan would also encourage sustainable transport and car sharing to minimise any impact from potential overspill parking.

2.4.9 The proposed car parking provision is also a significant reduction from the existing use of the site. This demonstrates that the proposals could generate a significant reduction in vehicle movements generated to and from the site compared with the existing use, particularly considering the existing uses would have a shorter length of stay and a greater turnover of spaces. The trip generation comparison has been considered further in Section 4.

2.4.10 The applicant is willing to accept a suitably worded planning condition to produce a parking management plan and agree this with LBH prior to occupation.

2.4.11 A full analysis and justification of the car parking has been set out in full in the Transport Assessment Addendum - C21096.TA02, within paragraphs 2.4.23 to 2.4.44. This analysis remains valid and has not been reproduced in this report.

Car Parking Design and Management

2.4.12 All car parking spaces have dimensions of 2.4m x 4.8m in accordance with the LBH standards and vehicles can enter and exit in forward gear, as shown in the swept path analysis in Appendix B.

2.4.13 Car parking will be managed through a permit scheme, for example by all employees providing number plates to the site manager, to ensure that only employees are able to park on the site. In addition, all visitor spaces will be required to be booked through reception and number plates provided in advance. This will ensure that members of the public do not use the car park. Private car park signage will also be provided at the car park entrance and the car park monitored, as needed.

2.4.14 In addition, all employees and visitors will be informed of the parking provision and encouraged to travel by sustainable modes through measures set out within the Travel Plan. This will minimise the demand for parking on the site and ensure the provision is appropriate and does not lead to overspill onto the highway.

Disabled Parking

2.4.15 The site provides five disabled parking bays, which is 5.5% of the total provision. The spaces allow for an additional 1.2m hatched area around the side and rear of the space to enable safe access to vehicles for people with mobility impairments. The spaces are situated close to the building entrance and will have step free access from the spaces to the building entrance.

2.4.16 The disabled parking provision is therefore considered to be acceptable.

Electric Vehicle Charging

2.4.17 The LBH standards require electric vehicle charging to be provided at a minimum of 5% of the total car parking provision (equating to 5 spaces) with an additional 5% providing passive provision (an additional 5 spaces). The site provides 20 electric vehicle charging points which is in excess of 20% of the overall provision, and in excess of the LBH standards.

2.4.18 The applicant is willing to accept a suitably worded planning condition in relation to providing full details of the electric vehicle charge points proposed, including rapid electric charging.

Cycle Parking

2.4.19 The cycle parking standards are also provided in the LBH Local Plan Development Management Policies Appendix C. For B2-B8 uses the standards are suggested as one space per 500 sqm of GFA.

2.4.20 Applying the standards to the proposed development (16,087 sqm) would equate to a minimum requirement for 32 spaces.

2.4.21 The London Plan suggests the same provision for long stay parking and additionally suggests short stay parking for visitors at 1 space per 1,000 sqm, which would equate to an additional 16 cycle parking spaces. This would equate to a total of 48 spaces in accordance with the guidance.

2.4.22 The proposals are for 38 secure and covered cycle parking spaces, internally within the main building. The site will also accommodate two adaptive cycles as part of this provision. There will also be 8 Sheffield Stands provided for short stay use (16 spaces). This would therefore total 54 cycle spaces overall, which is in excess of the minimum standards for a B2 / B8 use in LBH and the London Plan.

2.4.23 The cycle parking will be provided in accordance with the guidance contained in the London Cycling Design Standards, including where provision is made for adapted cycles for disabled people.

3. TRAFFIC FLOWS

3.1 Obtained Traffic Data

3.1.1 As set out in the Transport Assessment (C21096.TA01), a junction turning count survey has been undertaken by an independent specialist traffic data collection company (Auto Surveys Ltd) to record turning movements and queue lengths at the site access junction onto Uxbridge Road. The survey was undertaken on Thursday 21st October 2021 outside of school holiday times and recorded all movements by 15 minute period between 0700-1000 and 1600-1900. Queue lengths were recorded by five minute period.

3.1.2 The full results are set out in Appendix B of the Transport Assessment.

3.1.3 The survey has been reviewed for the peak hours of movements across all arms at the junction and this showed that peak hours were 0700-0800 in the AM peak and 1630-1730 in the PM peak. The total vehicle movements and HGV movements on each arm of the junction have been summarised in traffic flow diagrams in Appendix D. This also shows the bus lane for eastbound movements and it has been assumed that this accommodates Passenger Service Vehicles (PSV's) only, as summarised in the survey. All other movements have been assumed in the 'all traffic' lane for a worst case.

3.1.4 The queue lengths recorded indicate that the existing site access / Uxbridge Road signal controlled junction does not block back to upstream junctions. A summary of the mean maximum queue lengths across the peak hours by lane and arm is set out in Table 3-1.

Table 3-1: Maximum average queue lengths – Site Access / Uxbridge Road

Arm	AM Peak (0700 – 0800)				PM Peak (1630-1730			
	Lane 1	Lane 2	Lane 3	Overall	Lane 1	Lane 2	Lane 3	Overall
Arm A – Uxbridge Road East	0.3	4.8	4.2	**9.3**	0.6	6.4	4.9	**11.9**
Arm B – Site Access	0.1	0.2	N/A	**0.3**	2.0	0.5	N/A	**2.5**
Arm C – Uxbridge Road West	1.1	22.7	0.3	**24.1**	0.2	18.3	1.5	**20.0**

** The lanes are numbered from nearside to offside*

3.1.5 The survey included movements into and out of the site access during network peak hours. Although some of these would be associated with the Metro Bank, which does not form part of the application, the majority would relate to the wider site (the Metro Bank floorspace is c. 10% of the overall floorspace of the total existing site uses). During the peak hours of movements in and out of the site, the two-way flows into and out of the site access were as follows:

- 07:00 – 08:00: 62 vehicle movements

- 16:30 – 17:30: 277 vehicle movements

3.1.6 As such, there is a significant number of movements, in particular during the PM peak hour, in relation to the existing site use. These figures differ from those presented within the original Transport Assessment, as that report incorrectly only stated the flows out of the site. These movements are closer to those forecast as part of the TRICS analysis.

3.2 Future Year Baseline Flows

3.2.1 To consider a future year position against which the proposals can be assessed, the baseline 2021 data has been factored to a future year of 2026 which is the end of the LBH Local Plan period, and broadly in line with the potential year of opening for the scheme.

3.2.2 These growth factors have been calculated using the TEMPro 8.0 computer programme which considers growth in population, employment, and car ownership based on information derived from the National Trip Ends Model (NTEM). The future year growth rates from TEMPro Version 8.0 have also then been adjusted using the latest DfT NTM traffic forecast projections from December 2022.

3.2.3 The growth has been considered using the 'Core Scenario'. The Core Scenario provides a consistent, common comparator scenario for decision-making, to assess all projects and options against. A description of the Core Scenario is set out in the DfT - Transport Analysis Guidance (TAG) Unit M4, Forecasting and Uncertainty (paragraph 3.1.3):

"The core scenario represents a world in which future deviation from historic trends in the key drivers of demand and current government policies is minimal; not a world that is necessarily desirable. It does not represent a statistical 'expected value', but one possible outcome amongst many."

3.2.4 As such, the Core Scenario may not be a desirable outcome nor an expected one, but is based on historical trends in behaviour. An alternative assumption with modal shift and technological advances may see significantly lower growth rates, and that would be equally valid, but the Core Scenario is considered to be the most robust position for this assessment.

3.2.5 Within TEMPro growth rates have been obtained for car drivers from 2021 to 2026 based on the MSOA E02000519 - Hillingdon 026. The TEMPro calculations have been obtained without alternative assumptions for robustness in the peak periods and over an average day (in accordance with TAG Unit M4 Section 9.1). These are summarised for Hillingdon 026MSOA within Table 3-2.

Table 3-2: TEMPro Growth Rates and Alternative Assumptions - Hillingdon 026 MSOA

Scenario	AM Peak			PM Peak			Average Day		
	Ori	Dest	Ave	Ori	Dest	Ave	Ori	Dest	Ave
Core Scenario	1.0627	1.05	**1.0564**	1.0484	1.0554	**1.0519**	1.0524	1.0521	**1.0523**

3.2.6 Following on from this the NTM traffic growth forecasts have been calculated based on the latest DfT data, obtained from the National Road Traffic Projections page on the DfT website which were published in December 2022.

3.2.7 The DfT provides a calculation spreadsheet which enables a forecast of traffic growth using NTM up to 2060. The data query only enables analysis from 2025 to 2060 and provides a percentage change relative to 2025 in five year increments (i.e. 2030, 2035). As such, the NTM forecast growth from 2025 to 2030 has been obtained for London for all road and vehicle types in the core scenario. The average increase per year has then been obtained and this has been applied to the 2021-2026 period.

3.2.8 For the core scenario, the growth is forecast from 2025 to 2030 at 5.0% which equates to 1.0% per annum, on average. This therefore equates to a growth factor of **1.05** from 2021 to 2026.

3.2.9 The TAG Unit M4 (Page 42) sets out an example of how to quantify growth rates in a peak period through an NTEM (presented in TEMPro) / NTM (provided in the DfT forecasts) adjustment. This method has been applied to the obtained TEMPro and NTM growth factors, and provides the following growth rates:

- Adjusted AM peak period growth factor = 1.05 x 1.05635 / 1.05225 = 1.054
- Adjusted PM peak period growth factor = 1.05 x 1.0519 / 1.05225 = 1.050

3.2.10 These revised factors have therefore been applied to the 2021 base traffic flows to obtain the 2026 future baseline year flows against which the proposed development has been assessed in this note. The resultant 2026 Future Base AM and PM peak traffic flows are shown in the traffic flow diagrams in Appendix D.

3.2.11 The bus flows within the eastbound bus lane, and the flows to and from the site access have not been factored to a future year, as these have assumed to remain as currently.

3.2.12 The application of core scenario growth rates to the base data is considered appropriate to allow for the increase in movements which may result from committed development within the vicinity of the site. On this basis, separate additional vehicle movements have not been considered within the analysis. In addition, the addition of growth rates and specific committed developments would lead to double counting and an overestimation of background flows in a future year.

4. TRIP GENERATION AND DISTRIBUTION

4.1 Overview

4.1.1 The trip generation for the existing and proposed schemes was set out in the original Transport Assessment based on TRICS analysis based on the submitted proposals.

4.1.2 Additional analysis was undertaken within Transport Notes C21096.TN01 and C21096.TN02 to consider movements over a daily period, rather than a 12 hour period based on the available TRICS trip rates.

4.1.3 Further information was set out in the Transport Assessment Addendum, particularly in relation to the existing site movements, which are considered to remain valid.

4.1.4 However, this section updates the analysis, where applicable, which in relation to the existing site use is to correctly state the traffic flows from the observed survey. In relation to the proposed development, the flows have been amended to reflect the reduced floorspace from the revised scheme.

4.2 Existing Site Use

4.2.1 The obtained survey does not reflect what the site could legitimately generate, if it were fully occupied and/or occupied by different end users within its existing use class. On this basis, it was considered appropriate to obtain trip rates from other similar sites within the TRICS database by way of comparison to the survey. It is noted that the difference in vehicle movements between the survey (as now correctly presented in Section 3 of this TN) and the TRICS sites (as set out in the original TA) are broadly similar with a difference of just 30 vehicle movements in the AM peak and 6 vehicle

movements in the PM peak. This could reflect that during the traffic survey period, one unit was not occupied on the site.

4.2.2 In addition, the site has a retail planning use which is not restricted by the type of retail use. As such, the site could be re-occupied by any potential operator within this use class without the requirement for planning permission, including higher trip generating occupiers. On this basis, the TRICS data is considered appropriate to form the fallback position and what the forecast vehicle generation should be considered against.

4.2.3 However, within this assessment, for a robust worst case, the existing site movements have been considered as those obtained within the traffic survey, and the change in the site access junction operation as a result of the forecast movements for the proposed development considered against these flows.

4.2.4 The obtained survey flows also include those generated by the Metro bank which will remain in place as part of the proposals. On this basis, a total of 10% of the trip generation observed turning into and out of the site has been allocated to Metro bank, to reflect the floorspace ratio from this site against the overall retail park. The remaining 90% of movements turning into and out of the site at the site access are considered to reflect the existing site uses which would be replaced and these movements have been removed from the network in the 'with proposed development' assessment scenario.

4.2.5 As such, in the 'with proposed development' scenario, the movements to and from the site would be those forecast as being generated by the proposals, plus 10% of the observed traffic movements into and out of the access. By way of summary, the Metro Bank flows have therefore been assumed as follows:

- 07:00 – 08:00: 6 vehicle movements
- 16:30 – 17:30: 28 vehicle movements

4.3 Proposed Trip Generation

4.3.1 The proposals are for a speculative B2 / B8 development and the end user and specific operation of the site would not be known at this stage. As such, the trip generation analysis within the originally submitted TA presented the forecast generation using similar B8 commercial warehousing TRICS sites (as far as possible) and applying an average position. This presents a robust position of the potential trip generation by both the total number of vehicles and the number of HGVs.

4.3.2 The B8 trip rates have been used as these generate a higher level of HGV movements and are therefore considered a robust worst case analysis on this basis. The B2 generation was set out in the TA Addendum which demonstrated a lower level of vehicle movements and as such this has not been considered further within this TN.

B8 Commercial Warehousing

4.3.3 The following search criteria have been applied in TRICS to obtain surveys of similar uses to the proposals, if these were occupied for a B8 use:

- 02 – Employment/F - Warehousing (commercial)
- Located in South East England and Greater London
- Surveys from Monday to Friday
- Units with a GFA of between 5,000sqm and 20,000sqm
- Vehicle surveys carried out since 2006

- Manual removal of sites in a non-comparable location

4.3.4 The above search criteria resulted in the identification of six similar sites. The forecast vehicle and HGV trip rates per 100sqm GFA and trip generation are set out in Table 4-1 and Table 4-2. The full TRICS reports are included in the originally submitted Transport Assessment. The PM peak flows have utilised the 17:00-18:00 trip rates as these were higher than those in 16:00 to 17:00.

Table 4-1: Proposed Warehouse development – Vehicle Trip Generation

Time Period	Trip Rates (per 100sqm GFA)			Trip Generation (16,087 sqm)		
	Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
AM Peak (07:00-08:00)	0.241	0.113	0.354	39	18	57
PM Peak (17:00-18:00)	0.108	0.295	0.403	17	47	64
12 Hour (07:00-19:00)	2.160	2.242	4.402	347	361	708

Table 4-2: Proposed Warehouse development – HGV Trip Generation

Time Period	Trip Rates (per 100sqm GFA)			Trip Generation (16,087 sqm)		
	Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
AM Peak (07:00-08:00)	0.035	0.042	0.077	6	7	13
PM Peak (17:00-18:00)	0.027	0.035	0.062	4	6	10
12 Hour (07:00-19:00)	0.563	0.501	1.064	91	81	172

4.3.5 The proposed warehouse use is forecast to generate 57 two-way vehicle trips in the AM network peak hour and 64 two-way vehicle trips in the PM network peak hour. Over a 12 hour period (over which the TRICS data extends), the site is forecast to generate around 708 two-way vehicle movements.

4.4 Net Change

4.4.1 The net change in vehicle movements between the existing use based on the observed traffic survey movements and the proposed use, including the Metro bank movements has been considered in Table 4-3.

Table 4-3: Net Change in Two-Way Vehicle Generation

Time Period	Existing	Proposed	Net Change
AM Peak (07:00-08:00)	62	63	1
PM Peak (17:00-18:00)	277	92	-185

4.4.2 The trip generation analysis demonstrates that the proposals are forecast to generate a significant reduction in vehicle movements in comparison to the existing use in the PM peak hour and just a one vehicle increase in the AM peak hour.

4.5 Daily Movements

4.5.1 The forecast 24 hour movements by vehicle type for a B8 use (being the worst case movements) have been set out in Table 4-4. These movements were calculated for the Air Quality Assessment, although these have been updated for the amended floorspace for the revised proposals.

4.5.2 These have compared 24 hour movements throughout the day between the existing and proposed site planning uses. The level of overnight generation is based on the only 24 hour survey of B2 or B8 uses in TRICS, which is for a food distribution use. The percentage of movements in each hour from that survey has been applied to the 12 hour obtained trip rates for the proposals and factored to each hour accordingly. The existing retail park movements have been obtained directly from the TRICS analysis as presented in the Transport Assessment.

Table 4-4: Forecast 24 Hour Vehicle Trip Generation and Net Change compared with Existing Site

Time Period	Proposed B8 Use (16,087 sqm GFA)			Existing Retail Park - based on TRICS (10,000 sqm GFA)			Net Change		
	Two-Way			Two-Way			Two-Way		
	HGV	Lights	Total	HGV	Lights	Total	HGV	Lights	Total
00:00-01:00	14	44	58	0	0	0	14	44	58
01:00-02:00	6	22	28	0	0	0	6	22	28
02:00-03:00	8	26	34	0	0	0	8	26	34
03:00-04:00	8	24	32	0	0	0	8	24	32
04:00-05:00	10	34	44	0	0	0	10	34	44
05:00-06:00	12	40	52	0	0	0	12	40	52
06:00-07:00	24	70	94	0	0	0	24	70	94
07:00-08:00	13	44	57	2	14	16	11	30	41
08:00-09:00	14	52	66	1	92	93	13	-40	-27
09:00-10:00	15	45	60	4	213	217	11	-168	-157
10:00-11:00	20	31	51	3	296	299	17	-265	-248
11:00-12:00	19	46	65	4	338	342	15	-292	-277
12:00-13:00	16	47	63	4	366	370	12	-319	-307
13:00-14:00	19	47	66	4	382	386	15	-335	-320
14:00-15:00	17	42	59	4	364	368	13	-322	-309
15:00-16:00	11	42	53	4	338	342	7	-296	-289
16:00-17:00	12	45	57	3	313	316	9	-268	-259
17:00-18:00	10	54	64	3	280	283	7	-226	-219
18:00-19:00	8	38	46	1	315	316	7	-277	-270
19:00-20:00	8	24	32	0	275	275	8	-251	-243
20:00-21:00	8	24	32	1	80	81	7	-56	-49
21:00-22:00	6	20	26	0	138	138	6	-118	-112
22:00-23:00	10	34	44	0	0	0	10	34	44
23:00-24:00	8	24	32	0	0	0	8	24	32
Daily	**296**	**919**	**1215**	**38**	**3804**	**3842**	**258**	**-2885**	**-2627**

4.5.3 This shows that the proposals would significantly reduce total vehicle movements over a 24 hour period, compared with the existing site use. Throughout the busiest hours of the day on the network the proposals would significantly reduce vehicle movements in comparison with the existing use. On this basis, the proposals would offer a betterment over the existing situation.

4.5.4 The light vehicle movements be a mixture of operational and employee movements so would not all result in a demand for car parking on the site and do not reflect employee movements.

4.5.5 The proposals are forecast to significantly reduce total vehicle movements in comparison to the existing scheme (2,627 movements), although there is a forecast increase in HGV movements at a much lower level (258 movements).

4.5.6 The existing site use generates HGV movements to and from the service yard which is accessed from the southern end of the site onto Bullsbrook Road.

4.5.7 As such, although there is an increase in HGVs generated by the site, these no longer access onto Bullsbrook Road / Springfield Road which are considered less appropriate as HGV routes by TfL. The movements access directly onto a higher standard A Road and would be within a short distance of a key TfL route at the A312, which is a benefit to this type of scheme and would minimise the impacts from HGV movements on the network. The significant reduction in total vehicle movements is also considered to offset the potential impacts from the much smaller increase in HGVs.

4.6 Movements for Air Quality Neutral Assessment

4.6.1 The TRICS analysis is based on forecasts which are extremely robust using sites with significantly higher levels of parking, to ensure that the assessments present a robust position. By way of

reference, the TRICS sites have an average of 161 spaces for an average GFA of 11,064sqm for the B8 uses. Extrapolated to the site floorspace that would equate to 239 spaces, which is a significantly higher level than what is proposed on the site.

4.6.2 As these also include operational vehicle movements, these are not considered appropriate as movements for an Air Quality Neutral assessment. The benchmark figure is based on non-operational movements, and the two worked examples in the Appendix of the guidance show car trips only.

4.6.3 On this basis, a first principles analysis based on building capacity and shift patterns is considered a more accurate reflection of the non-operational trip generation based on a site with limited parking provision with constraint measures in place.

4.6.4 As such, to calculate this appropriately, the following steps have been taken:

- The floorspace of the entire building is 16,087 sqm
- The capacity of the building for B8 use is one employee per 70 sqm GEA (230 employees) – *Density Guide 3rd Edition, Homes & Communities Agency, 2015*
  - » For the purposes of this assessment the GEA has been assumed as equivalent to GIA
- It is assumed 85% of the capacity is the number of employees on the site at one time (196 employees). This allows for absence / leave / business meetings etc
- There is an 80:20 warehouse to office staff split (157 warehouse and 39 office staff)
- There are three shifts for warehouse staff and office staff work 'typical' daytime hours
- The overnight shift has 60% of the staff numbers of the other two shifts (94 staff)
- So this equates to 408 warehouse staff and 39 office staff on a typical day (447 staff total)
- There is a modal share of 30% car use for all employees. This is a 25% reduction on movements in the surrounding area (55% by car driver) and is in line with the constraints target in the Travel Plan (30% by car driver)
- This equates to 134 employees travelling by car
- All employees travelling by car, generate two vehicle movements– one to the site and one from the site
- This equates to 134 vehicles / 268 two-way movements
- It is assumed there are 15 visitors / deliveries (non-operational) per day and all arrive by car – this equates to 30 two-way movements
- **In total this equates to 149 vehicles / 298 two-way non-operational car movements per day**
- To calculate the annual figures it is then considered appropriate to multiply by 313 days to allow for some reduced activity at weekends (assumed half that of weekdays, therefore trip generation multiplied by a 6 day week over 12 months). For robustness, a reduction for bank holidays has not been applied.
- **This equates to 93,274 annual two-way movements**

4.6.5 This is also considered a more appropriate figure for non-operational movements and is also considered robust as the building capacities stated in the HCA guidance actually relate to the number of employees on the site on one day, rather than at one time, so the level of employee movements could be lower still.

4.6.6 It is considered that this first principles analysis also demonstrates the robustness of the TRICS analysis, which shows a significantly higher level of vehicle movements. The difference is assumed to relate to operational vehicle movements, but it is considered unlikely that this site would generate operational vehicle movements at this level. On this basis, all analysis and assessments are considered extremely robust.

4.7 Trip Distribution and Assignment

4.7.1 In terms of the distribution of movements, this would not be known at this speculative application stage where an operator is not currently in place. However, all HGV movements to and from the site would be required to travel west to the A312 roundabout as part of the routing agreement which would be set out in detail in the DSP. The operator would enforce this as appropriate through measures within the DSP and any driver/s found to be in breach of this routing would be subject to a potential disciplinary procedure.

4.7.2 As such, all HGV movements would distribute to and from the west of the site access.

4.7.3 In terms of light vehicle movements, the location of employees and visitor arrivals and departures is also unknown and as such the distribution at the site access junction has been based on the combined observed turning movements in the AM and PM peak for the existing use. This shows that 29% of movements travel to and from the east and 71% of movements to and from the west.

4.7.4 The distribution percentages at the site access are shown in the traffic flow diagrams in Appendix D. The development generated traffic has also been assigned onto the network at the site access and is also shown in Appendix D as total vehicles and HGV movements.

4.7.5 In addition, as the proposals are significantly reducing vehicle movements on the network, including in the majority of the network peak hours, the distribution of movements has not been considered in detail as there would not be a material impact during peak hours regardless of the end user. Given the scale of the total reduction, the minimal increase in HGV movements would also not have an impact on passenger car units.

4.7.6 The assigned development flows have been added to the 2026 Future Base, with the addition of the Metro bank flows, and the resultant 2026 Future Base + Development Flows have been provided in the traffic flow diagrams in Appendix D.

4.7.7 For further robustness, the worst case development peak hour flows in the PM peak (1700-1800) have been added to the worst case observed network PM peak hour flow (1630-1730).

5. JUNCTION MODELLING

5.1 Introduction

5.1.1 This section sets out the assessment scenarios and details of the operational assessment undertaken at the site access / Uxbridge Road.

5.1.2 Although the analysis in this report demonstrates that the proposals would generate a significant reduction in vehicle movements in the PM peak hour compared with the existing situation, and a minimal change in the AM peak hour, an assessment of the site access junction has been undertaken to inform the mitigation strategy in terms of the provision of a toucan crossing, as well as establishing the impact of the increase in HGV movements, and the change from two lanes to one lane on the site access arm, and subsequent change in traffic phases.

5.1.3 The approach to the modelling has considered the TfL Traffic Modelling Guidance to ensure the modelling is robust and reflects the observed operation of the junction.

5.2 Assessment Scenarios

5.2.1 Assessments have been undertaken during the network AM (0700 - 0800) and PM (1630 - 1730) peak hours. The scenarios which have been assessed are summarised as follows:

- 2021 Base
- 2026 Future Base
- 2026 Future Base + Development

5.3 Model Inputs

5.3.1 The operational assessment of the site access junction has been undertaken using the JCT software LinSig V3.

5.3.2 The modelling has been undertaken applying the cycle time, minimum green times, phasing, staging, intergreens and phase delays from the signal control plan which has been obtained from TfL.

5.3.3 Modelling for the signal controlled junction has been undertaken using passenger car units (PCUs) with a value of two PCU's being applied to all bus and HGV movements. All other movements, including motorcycles have been assumed as one PCU.

5.3.4 The saturation flows have been calculated based on the TRL RR67 methodology, using the in-built calculation within the LinSig software. The parameters for this in terms of lane widths and lengths, as well as turning radii have been based on geometric measurements using topographical survey data and as such are considered accurate. The saturation flows have then been adjusted as set out within Section 2.3.9.1 of the TfL Traffic Modelling Guidance, reducing the calculated values by 5% to reflect the good to average characteristics of the junction based on Table 4. The calculations can be provided separately to TfL within the models, if needed as these are not shown on the model outputs.

5.3.5 A comparison of the 2021 base modelled queue lengths against the surveyed queue lengths has been made to assist with model validation and to consider whether the model represents observed conditions. It is noted that the queue lengths in both the model and from the surveys represent average conditions on one day and that there are typical daily fluctuations in queues and flows, however, it is considered that this is an appropriate method to enable the impact of the development to be considered at the junction and assist with ensuring the proposed mitigation is suitable.

5.3.6 Based on both the reduction in saturation flows and the application of signal timing data to set up the model, as well as considering queue lengths, the methodology for undertaking the model is considered appropriate.

5.4 Model Reporting Outputs

5.4.1 LinSig provides a number of measures of junction capacity and operation, being traffic intensity (Degree of Saturation – DoS and Practical Reserve Capacity – PRC) as well as queue lengths and delays.

5.4.2 Within LinSig the PRC (practical reserve capacity) provides a measure of overall capacity, and this is reported for the junction as a whole as a positive or negative value. A Degree of Saturation (DoS) is reported for each junction arm, with a value of less than 90% generally considered acceptable. A value of 100% indicates that traffic demand is equal to capacity.

5.4.3 Queue lengths provide an indication of how the overall junction performance may affect adjacent junctions on the highway network. The queue lengths are presented as Mean Maximum Queues (MMQ) over an hourly period. These can be compared with the obtained queue length data to verify that the model is broadly similar to the observed operation of the junction. Changes in queue lengths provide a useful indicator as to a development's impact on the operation of a junction, and whether this will impact upstream junctions.

5.4.4 The total delay in PCU/hour is provided within the LinSig outputs. This provides another useful indicator as to the impact of development generated traffic on the operation of junctions through the change in delay for individual vehicles and the network as a whole.

5.4.5 When considering the change in the operation of the junction all of these factors will be considered to form a view as to whether the impact of development generated traffic or the amendment to the site access arm would result in a severe impact on the network.

5.5 Junction Assessment Results Summary - Existing Junction Layout

2021 Base Scenario

5.5.1 The results of the 2021 base assessment, with the existing junction arrangements are summarised in Table 5-1. The full outputs are included in Appendix E.

Table 5-1: 2021 Base LinSig summary – Site Access / Uxbridge Road

Arm / Lane	AM Peak (0700 - 0800)			PM Peak (1630 - 1730)		
	Queue (PCU)	Total Delay (PCU / Hr)	DoS	Queue (PCU)	Total Delay (PCU / Hr)	DoS
1/1 - Uxbridge Road East - Left	0.1	0.0	1.3%	0.6	0.2	5.8%
1/2 + 1/3 - Uxbridge Road East - Ahead	11.9	4.8 (2.3+2.5)	74.7 : 74.7%	17.9	6.8 (3.3+3.5)	84.7 : 84.7%
2/1 + 2/2 - Site Access - Right Left	0.5	0.3 (0.2+0.1)	7.7 : 7.7%	2.2	1.3 (0.9+0.4)	30.0 : 30.0%
3/1 - Uxbridge Road West - Ahead	0.7	0.2	5.1%	0.6	0.1	4.5%
3/2 + 3/3 - Uxbridge Road West - Ahead Right	15.7	4.6 (4.3+0.3)	71.3 : 71.3%	22.6	8.2 (6.6+1.5)	86.0 : 86.0%
Overall PRC	20.5%			4.6%		
Total Delay	9.87 PCU / Hr			16.57 PCU / Hr		
Cycle Time	96 seconds			96 seconds		

5.5.2 Table 5-1 demonstrates that the site access / Uxbridge Road junction operates within its maximum theoretical capacity (DoS of 1) with a maximum DoS of 86% reported in the PM peak on the Uxbridge Road West Ahead / Right lane. The queue lengths do not extend back to upstream junctions.

5.5.3 The base model has been reviewed to ensure, as far as possible, that it reasonably represents the observed operation of the junction. This process has been informed by queue length surveys, although it is recognised these are a snapshot of one specific day. Table 5-2 provides a comparison between the modelled queue length outputs shown in Table 5-1 and the queue survey data.

Table 5-2: Maximum average queue length comparison – Site Access / Uxbridge Road

Arm	AM Peak (0700 - 0800)			PM Peak (1630 - 1730)		
	Observed (vehicles)	Model (vehicles)	+ / -	Observed (vehicles)	Model (vehicles)	+ / -
Uxbridge Road East	9.3	12.0	+2.7	11.9	18.5	+6.6
Site Access	0.3	0.5	+0.2	2.5	2.2	-0.3
Uxbridge Road West	24.1	16.4	-7.7	20.0	23.2	+3.2

5.5.4 It is considered that the queue length analysis demonstrates that the modelled and observed queues are within typical daily variations and broadly comparable. Therefore given all the parameters used in the model are robust and signal timings taken from TfL data, the base model appropriately reflects the existing operation of the junction and is therefore valid and acceptable to assess future year conditions.

Future Year Base

5.5.5 The results of the 2026 future year base assessment, with the existing junction arrangements are summarised in Table 5-3. The full outputs are included in Appendix E.

Table 5-3: 2026 Future Base LinSig summary – Site Access / Uxbridge Road

Arm / Lane	AM Peak (0700 - 0800)			PM Peak (1630 - 1730)		
	Queue (PCU)	Total Delay (PCU / Hr)	DoS	Queue (PCU)	Total Delay (PCU / Hr)	DoS
1/1 - Uxbridge Road East - Left	0.1	0.0	1.3%	0.6	0.2	5.8%
1/2 + 1/3 - Uxbridge Road East - Ahead	14.0	5.4 (2.6+2.8)	78.8 : 78.8%	21.8	8.3 (4.0+4.3)	88.8 : 88.8%
2/1 + 2/2 - Site Access - Right Left	0.5	0.3 (0.2+0.1)	7.7 : 7.7%	2.2	1.3 (0.9+0.4)	30.0 : 30.0%
3/1 - Uxbridge Road West - Ahead	0.7	0.2	5.1%	0.6	0.1	4.5%
3/2 + 3/3 - Uxbridge Road West - Ahead Right	17.4	5.2 (4.9+0.3)	75.2 : 75.2%	26.0	9.8 (8.2+1.7)	90.0 : 90.0%
Overall PRC	14.2%			0.0%		
Total Delay	11.10 PCU / Hr			19.71 PCU / Hr		
Cycle Time	96 seconds			96 seconds		

5.5.6 Table 5-3 demonstrates that the site access / Uxbridge Road junction operates at a DoS of 90% in the PM peak on the Uxbridge Road West Ahead / Right lane. The queue lengths do not extend back to upstream junctions.

Future Year Base + Development

5.5.7 The results of the 2026 future year base plus development assessment, with the existing junction arrangements are summarised in Table 5-4. The full outputs are included in Appendix E.

Table 5-4: 2026 Future Base + Development LinSig summary – Site Access / Uxbridge Road

Arm / Lane	AM Peak (0700 - 0800)			PM Peak (1630 - 1730)		
	Queue (PCU)	Total Delay (PCU / Hr)	DoS	Queue (PCU)	Total Delay (PCU / Hr)	DoS
1/1 - Uxbridge Road East - Left	0.1	0.0	1.3%	0.1	0.0	1.0%
1/2 + 1/3 - Uxbridge Road East - Ahead	14.0	5.4 (2.6+2.8)	78.8 : 78.8%	21.8	8.3 (4.0+4.3)	88.8 : 88.8%
2/1 + 2/2 - Site Access - Right Left	0.4	0.2 (0.1+0.0)	4.7 : 4.7%	1.0	0.6 (0.4+0.2)	14.8 : 14.8%
3/1 - Uxbridge Road West - Ahead	0.7	0.2	5.1%	0.6	0.1	4.5%
3/2 + 3/3 - Uxbridge Road West - Ahead Right	17.4	5.3 (4.9+0.4)	75.4 : 75.4%	23.2	7.6 (7.3+0.3)	86.1 : 86.1%
Overall PRC	14.2%			1.3%		
Total Delay	11.11 PCU / Hr			16.66 PCU / Hr		
Cycle Time	96 seconds			96 seconds		

5.5.8 Table 5-4 demonstrates that with the addition of the development traffic and the subsequent reduced flows into and out of the site in the PM peak, the proposals would improve the operation of the junction compared with the future base situation, if the layout were to remain the same as currently. There is no material change in the operation in the AM peak. As such, the proposals are considered to provide a net benefit at the junction, if the layout did not change.

5.5.9 However, given the proposals would reduce the site access arm from two lanes to one lane, this would have an impact on the signal phasing as currently the site access operates with two separate phases for left and right turning movements. The proposals would therefore require the site to operate with a single traffic phase for all exiting movements, which would slightly amend the staging plans.

5.5.10 As such, the revised arrangements have been assessed in the future base plus development scenario to ascertain the impact of the proposed arrangements on the operation of the junction.

5.6 Junction Assessment Results Summary - Proposed Junction Layout

5.6.1 The proposals would reduce the two phases on the site access arm to one phase and this affects the staging plans as the right turn into the site can no longer run in the same stage as the left turn out of the site. The staging plans have therefore been adjusted to reflect this and the intergreens amended accordingly. The staging and phasing has been amended so the signal timings and green times on Uxbridge Road do not change, so the only impact is on the site access arm.

5.6.2 The results of the 2026 future year base plus development assessment, with the proposed junction arrangements (including the toucan crossing) are summarised in Table 5-5. The full outputs are included in Appendix F.

Table 5-5: 2026 Future Base + Development LinSig summary – Site Access / Uxbridge Road Proposed Layout

Arm / Lane	AM Peak (0700 - 0800)			PM Peak (1630 - 1730)		
	Queue (PCU)	Total Delay (PCU / Hr)	DoS	Queue (PCU)	Total Delay (PCU / Hr)	DoS
1/1 - Uxbridge Road East - Left	0.1	0.0	1.3%	0.1	0.0	1.0%
1/2 + 1/3 - Uxbridge Road East - Ahead	14.0	5.4 (2.6+2.8)	78.8 : 78.8%	21.8	8.3 (4.0+4.3)	88.8 : 88.8%
2/1 + 2/2 - Site Access - Right Left	0.6	0.3	12.3%	1.7	0.9	34.5%
3/1 - Uxbridge Road West - Ahead	0.7	0.2	5.1%	0.6	0.1	4.5%
3/2 + 3/3 - Uxbridge Road West - Ahead Right	17.4	5.3 (4.9+0.4)	75.4 : 75.4%	23.2	7.6 (7.3+0.3)	86.1 : 86.1%
Overall PRC	14.2%			1.3%		
Total Delay	11.22 PCU / Hr			17.00 PCU / Hr		
Cycle Time	96 seconds			96 seconds		

5.6.3 The mitigation option remains within capacity, and has no impact on queue lengths or DoS on Uxbridge Road compared with if no amendments to the junction are provided. The impact of reducing to one phase on the site access arm is also minimal with short queue lengths and delays.

5.6.4 As such, the proposed revisions to the site access to change to a single lane on exit and provide a toucan crossing will have a negligible impact on the junction operation, and the proposed development traffic will provide a benefit over the movements generated by the existing site use, in the PM peak hour.

5.6.5 As such, the development generated traffic on the network is considered to have a beneficial impact on capacity and the revised site access arrangements to incorporate a toucan crossing are considered to be suitable mitigation to appropriately encourage and enhance active travel movements.

5.7 Mitigation

5.7.1 The proposed level of contribution towards active travel improvements on Uxbridge Road was set out within the Transport Assessment Addendum and the level of contribution would remain the same as

set out in Section 3 of that report. the applicant would accept a total proposed contribution of £46,718.75 towards sustainable travel / active travel improvements.

5.7.2 This does not include the works being undertaken at the site access to incorporate a new staggered toucan crossing and the supporting works to tie this into the footway / cycleway arrangements on either side of the access, which would be delivered via a S278 agreement (as well as within land in the control of the applicant, which could be offered for adoption via S38 agreement).

5.7.3 In relation to the further consideration of 'straight across' toucan crossings on both Uxbridge Road and the site access, junction modelling was undertaken to consider this further, but this resulted in a significant impact due to the requirement for an all red traffic stage. A straight across toucan crossing on Uxbridge Road would also extend over 10m in length, which is not in accordance with the Streetscape Guidance. On the basis of the significant impact on traffic flows and likely impact on upstream junctions from the additional queuing, the provision of straight over crossings on both Uxbridge Road and the site access arms was not considered to be viable.

5.7.4 In considering the potential for a straight across toucan crossing on the site access arm only, again this resulted in significant changes to the phasing and staging at the junction, which had a significant impact on the capacity of the junction. The distance of the crossing would also exceed 10m, which would require the crossing to be placed further to the south on the site access arm, away from the desire line. As such, again this was not considered to be viable or suitable in this location and the arrangements as proposed are considered to be appropriate, in accordance with the relevant design guidance and offer a significant improvement over the existing situation. They would also appropriately accommodate movements safely at the site access, and fully consider all recommendations from the road safety audit.

5.7.5 On this basis, the mitigation strategy for a toucan crossing and separate active travel contribution, would provide appropriate highway mitigation for the proposed redevelopment of the site.

5.7.6 In addition, the site is liable for the Mayoral Community Infrastructure Levy (CIL) which would be based on the floorspace of the building. It is considered that this CIL payment would provide a suitable contribution towards wider sustainable transport improvements and as such any additional specific contributions have been considered on this basis as these would need to be proportionate to the impact of the development. The site would generate a significant reduction in vehicle movements on the wider network and improves the operation of the site access junction in the busiest network peak hour.

6. SUMMARY AND CONCLUSIONS

6.1.1 This Note has set out full details of the revised development proposals, including the trip generation and impacts from the revised scheme. It clearly demonstrates that the proposals would significantly reduce vehicle movements from the existing site use, and that this results in an improvement to the operation of the site access / Uxbridge Road junction.

6.1.2 It has set out full details of the proposed parking and access, and how this differs from the originally submitted scheme.

6.1.3 Based on the work within this Note, the conclusions within the originally submitted Transport Assessment, as well as the Addendum Report would remain valid. These have been reproduced as follows.

6.1.4 The proposals offer a choice of travel options and represent sustainable development in line with the requirements of the NPPF, London Plan, Mayors Transport Strategy and Local Plan.

6.1.5 The proposed parking provision is appropriate and acceptable and is in accordance with the London Plan as well as the objectives for encouraging sustainable travel and reducing car use as set out in London Plan and the Local Plan.

6.1.6 A staggered toucan crossing is proposed at the site access, to improve active travel routes adjacent and connecting to the site. The applicant will agree to a contribution for further sustainable transport improvements along Uxbridge Road. The CIL payment would also provide a suitable contribution towards wider sustainable transport, healthy streets and junction improvements. As such, suitable mitigation for sustainable transport can be provided to accommodate the scheme.

6.1.7 The development proposals, inclusive of the proposed mitigation, would not have a severe impact on the operation of the surrounding highway network or an unacceptable impact on road safety and are therefore in accordance with the NPPF as well as the London Plan and Local Plan.

6.1.8 As such, the analysis presented within this report should allow TfL and the LHA to provide a positive recommendation on the planning application.

Appendix A Revised Site Layout

Proposed Site Layout Scale 1:500

10m SCALE 1:500

- Dimensions are in millimeters, unless stated otherwise.
- Scaling of this drawing is not recommended.
- It is the recipients responsibility to print this document to the correct scale.
- All relevant drawings and specifications should be read in conjunction with this drawing.

Internal arrangement shown for illustrative purposes only.

N

Schedule of Accommodation

Unit 100

Warehouse Area	151,500 ft²	14,075 m²
Ground Floor Core	1,661 ft²	154 m²
Escape Core	490 ft²	46 m²
First Floor Office	8,102 ft²	753 m²
Second Floor Floor Office	8,102 ft²	753 m²
Transport Office GF	1,652 ft²	154 m²
Transport Office FF	1,652 ft²	154 m²
Total GIA Area	**173,159 ft²**	**16,087 m²**

Key

Application Boundary 7.11 Ac (2.88 Ha)

Ownership Boundary 7.84 Ac (3.17 Ha)

Cycle Parking - 91 Parking Spaces(5 Accessible)

rev	amendments	by	ckd	date
K	Geometry of Hayes Road Entrance Adjusted.	jrh	AJL	28/09/23
J	Updated site layout to suit planners comments.	LAH	AJL	15.08.23
H	Alterations to landscaping, access alignment and cycle parking	RS	AJL	18/05/23
G	New site layout to include an extension of 3 storey offices, updated car park arrangement and additional landscaping.	TH	AJL	30/03/23
F	Transport office green roof updated	TH	AJL	08/12/22
E	Car parking arrangement amended - Entrance island and 6 larger spaces added	LBR	AJL	22/11/22
D	Estate road access amended to suit highway road design	TH	AJL	21/11/22
C	Additional landscaping indicated	TH	AJL	21/10/22
B	Watercourse offset indicated.	JWY	AJL	26/09/22

Bridge Retail Park, Hayes

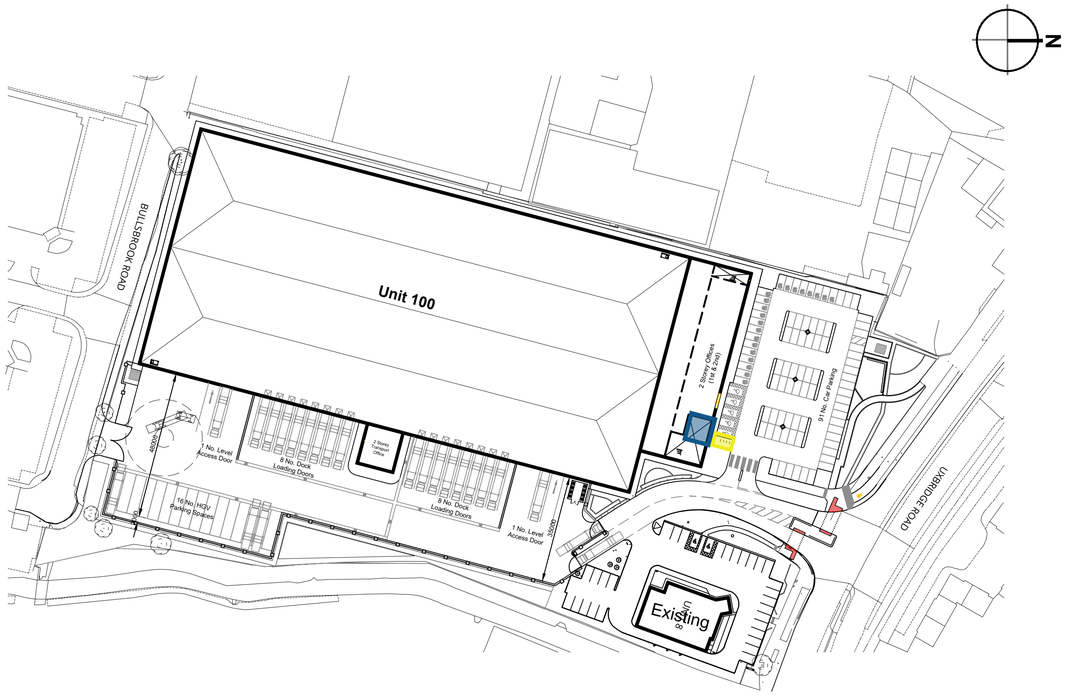
Proposed Site Layout

OXENWOOD REAL ESTATE

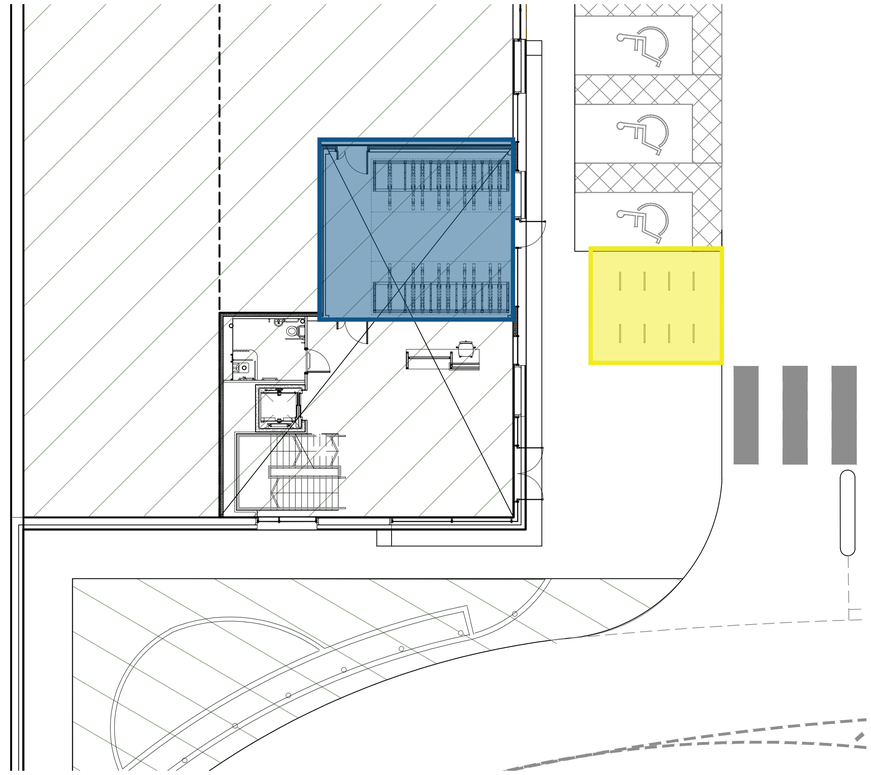
GRAFTONGATE

umc architects
Newark Beacon, Cafferata Way, Newark, Nottinghamshire NG24 2TN
t: +44 (0)1636 653027 e: info@umcarchitects.com

Drawing Status:	Preliminary
Drawn / Checked:	jrh /AJL
Date:	21/11/2022
Scale:	1:500 A1
Drawing no:	Revision:
21048 P0001	K

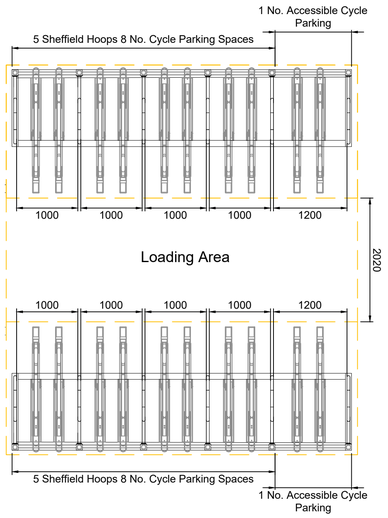


Key Plan Scale 1:1000

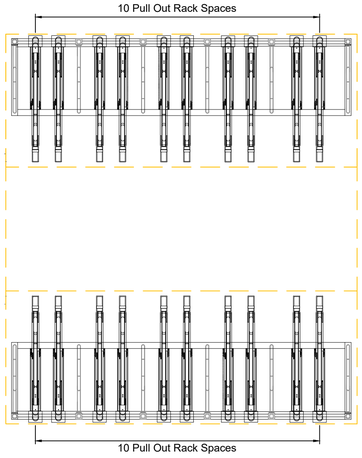


Cycle Shleter and Shefiled Hoops Scale 1:125

- Dimensions are in millimeters, unless stated otherwise.
- Scaling of this drawing is not recommended.
- It is the recipients responsibility to print this document to the correct scale.
- All relevant drawings and specifications should be read in conjunction with this drawing.



Ground Level Internal Cycle Provision Plan Scale 1:50



Top Level Internal Cycle Provision Plan Scale 1:50

Broxap Easi-Riser Cycle Parking System BXMW/EASI-RISER

Internal cycle parking type to be Broxap Easi-Riser - with two tier pull out cycle rack. Each set of five cycle spaces consists of two upper-tier gas strut assisted troughs and one lower-tier Sheffield hoop.

Finish: Polyester powder coated
Colour: Slate Grey (RAL 7012)

Shefield Hoops

NOTE: Foundation pads to be below block paving. Concrete pads not to be exposed.

1m SCALE 1:50
2.5m SCALE 1:125
10m SCALE 1:1000

rev	amendments	by	ckd	date
D	Geometry of Hayes Road Entrance Adjusted.	jrh	AJL	28/09/23
C	Drawing updated to suit new site layout	TH	AJL	15.09.23
B	Drawing updated to suit new site layout	TH	AJL	31/03/23
A	Initial issue	jrh	AJL	01/12/21

Bridge Retail Park, Hayes

Proposed Cycle Shelter Layout

PLANNING
THIS DRAWING IS FOR PLANNING CONSIDERATION ONLY AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE

OXENWOOD REAL ESTATE

GRAFTONGATE

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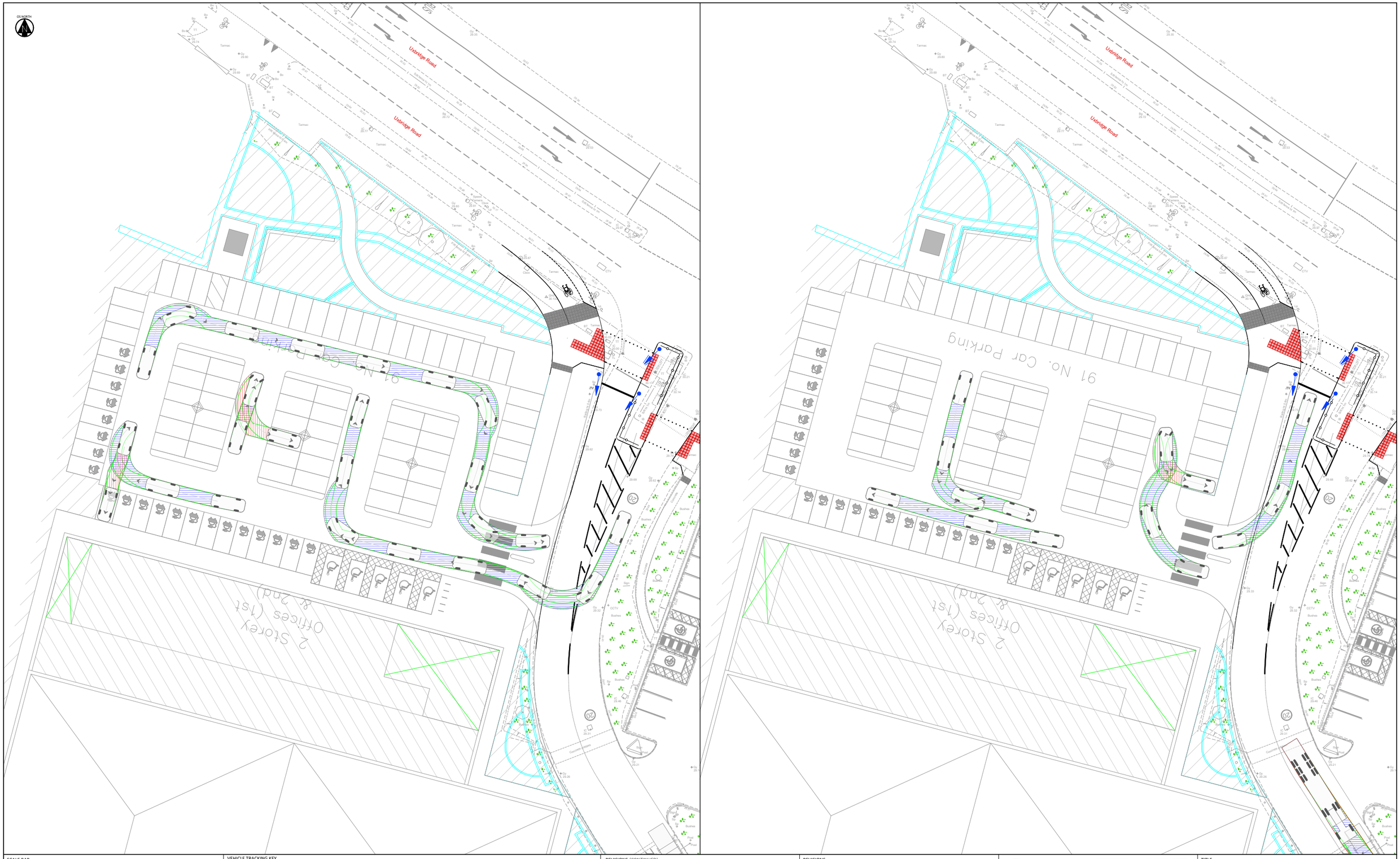
Drawing Status:	Planning
Drawn / Checked:	jrh / AJL
Date:	01/12/2021
Scale:	As Noted A1
Drawing no:	Revision:
21048 P0007	D

Appendix B Swept Path Analysis of Site Layout



SCALE BAR

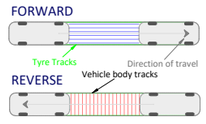
0m 10m 20m

SCALE BAR (1:500)

VEHICLE TRACKING KEY

2010 BMW 5-Series

	metres
Width	: 1.86
Track	: 1.85
Lock to Lock Time	: 6.0
Steering Angle	: 36.9



REVISIONS *(CONTINUED)*

1. Please do not scale from this drawing
2. Background mapping utilising topographical survey from Greenhatch Group - November 2021. Drawing No: 42047_T
3. Site layout plan using UMC Architects Drawing Number 21048 P0001 RevJ.

REVISIONS

Rev	Date	Description	By	App
P02	27/09/23	First Issue	SD	DC

Apex TRANSPORT PLANNING
11-13 PENHILL ROAD CARDIFF CF11 9PQ t: 02920 619 361 e: cardiff@apextp.co.uk
101 VICTORIA STREET BRISTOL BS1 6PU t: 0117 427 0414 e: bristol@apextp.co.uk

CLIENT
OXW Hayes S.à.r.l.

PROJECT
HAYES BRIDGE RETAIL PARK

TITLE
SWEPT PATH ANALYSIS - LARGE CAR

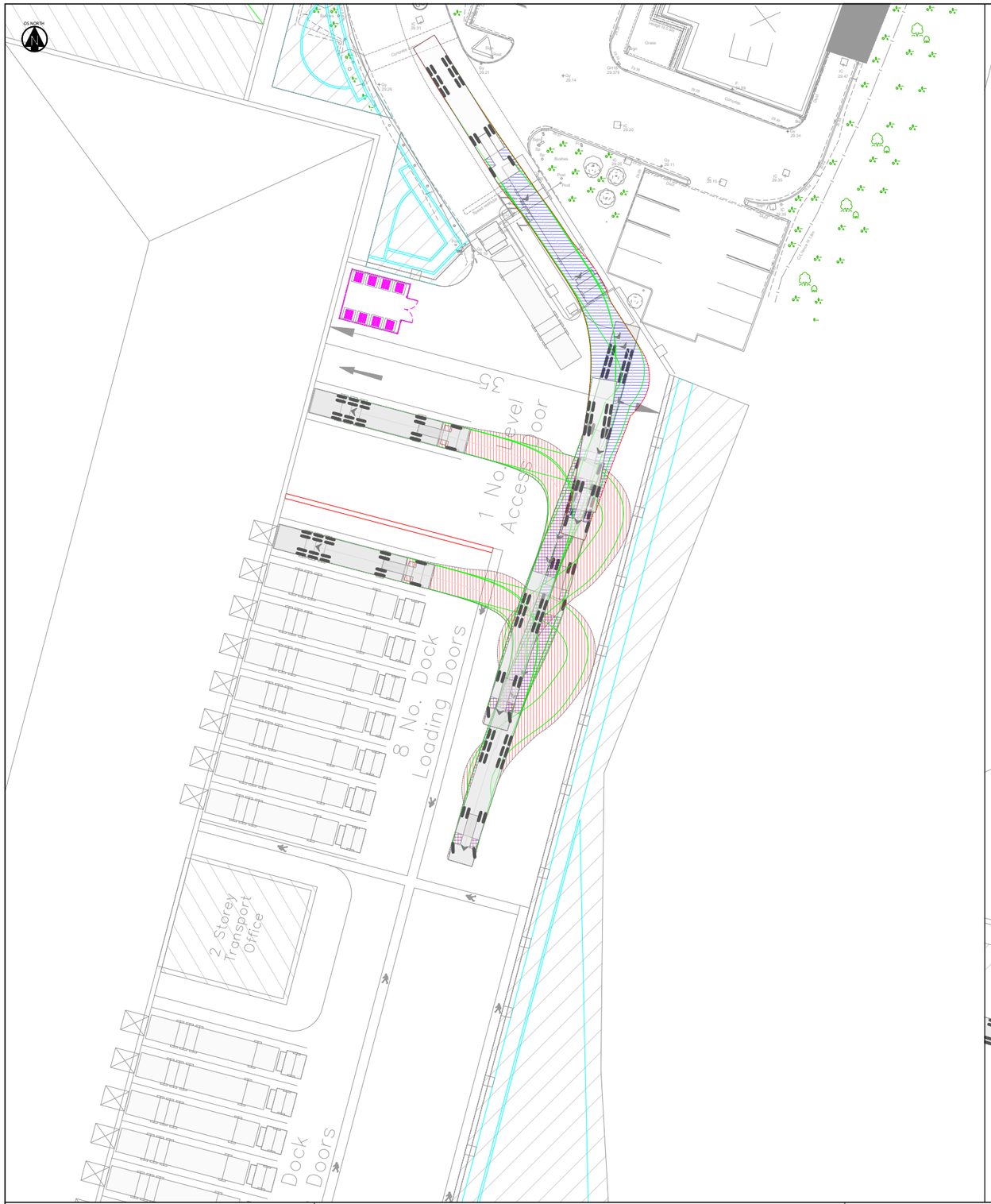
PROJECT NO. C21096

SCALE @ A3 1:500

STATUS DESCRIPTION INFORMATION

STATUS S2

DRAWING NO. C21096-ATP-DR-TP-010

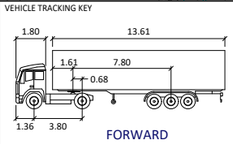


SCALE BAR

0m 10m 20m

SCALE BAR (1:500)

VEHICLE TRACKING KEY



FTA - Articulated max legal 16.5m

	metres
Tractor Width	: 2.55
Trailer Width	: 2.55
Tractor Track	: 2.55
Trailer Track	: 2.55
Lock to Lock Time	: 6.0
Steering Angle	: 25.5
Articulating Angle	: 70.0

FORWARD

REVERSE

Tyre Tracks

Vehicle body tracks

Direction of travel

REVISIONS *(CONTINUED)*

1. Please do not scale from this drawing
2. Background mapping utilising topographical survey from Greenhatch Group - November 2021. Drawing No: 42047_T
3. Site layout plan using UMC Architects Drawing Number 21048 P0001 RevJ.

REVISIONS

Rev	Date	Description	By	App
P02	27/09/23	First Issue	SD	DC

Apex TRANSPORT PLANNING

11-13 PENHILL ROAD
CARDIFF
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t: 02920 619 361
e: cardiff@apextp.co.uk

101 VICTORIA STREET
BRISTOL
BS1 6PU
t: 0117 427 0414
e: bristol@apextp.co.uk

CLIENT

OXW Hayes S.à.r.l.

PROJECT

HAYES BRIDGE RETAIL PARK

TITLE

SWEPT PATH ANALYSIS - ARTICULATED VEHICLE

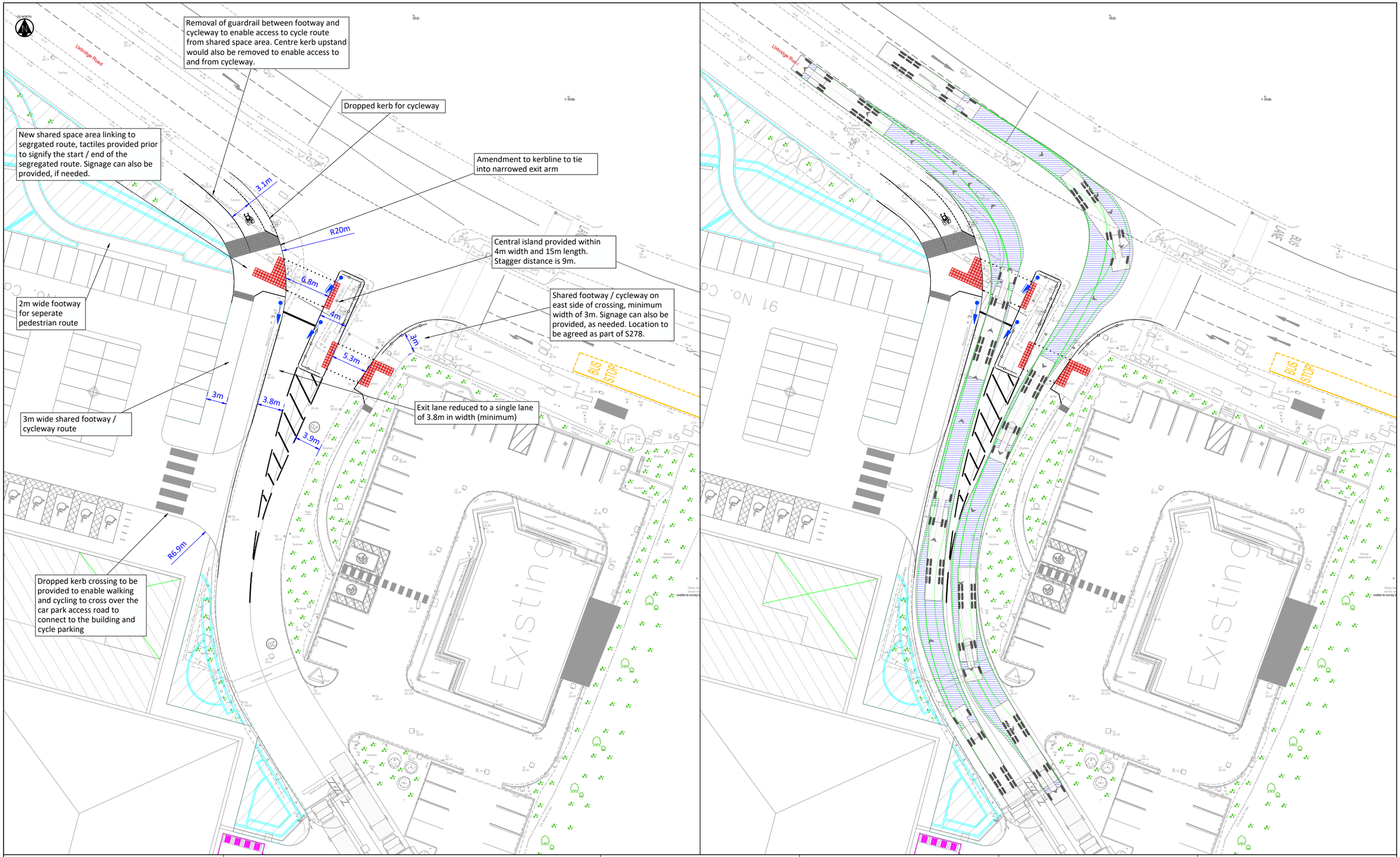
PROJECT NO.	SCALE @ A3
C21096	1:500

STATUS DESCRIPTION	STATUS
INFORMATION	S2

DRAWING NO.

C21096-ATP-DR-TP-011

Appendix C Proposed Access Arrangements and Toucan Crossing

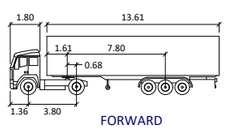


SCALE BAR

0m 10m 20m

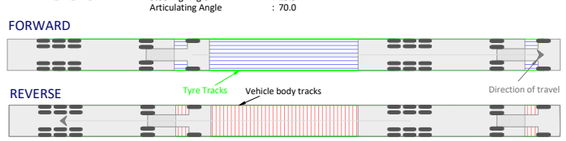
SCALE BAR (1:500)

VEHICLE TRACKING KEY



FTA - Articulated max legal 16.5m

	metres
Tractor Width	: 2.55
Trailer Width	: 2.55
Tractor Track	: 2.55
Trailer Track	: 2.55
Lock to Lock Time	: 6.0
Steering Angle	: 25.5
Articulating Angle	: 70.0



REVISIONS *(CONTINUED)*

1. General Arrangement drawing suitable for planning purposes only. This drawing is not suitable for construction
2. The content of this drawing will require further work at S278 detailed design stage to incorporate drainage, surfacing, lighting and signage.
3. Please do not scale from this drawing
4. Background mapping utilising topographical survey from Greenhatch Group - November 2021. Drawing No: 42047_T
5. Site layout plan using UMC Architects Drawing Number 21048 P0001 RevJ.

REVISIONS

Rev	Date	Description	By	App
P02	27/09/23	Second Issue	RS	DC
P01	21/09/23	First Issue	RS	DC

Apex TRANSPORT PLANNING

11-13 PENHILL ROAD
CARDIFF
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t: 02920 619 361
e: cardiff@apextp.co.uk

101 VICTORIA STREET
BRISTOL
BS1 6PU
t: 0117 427 0414
e: bristol@apextp.co.uk

CLIENT
OXW Hayes S.à.r.l.

PROJECT
HAYES BRIDGE RETAIL PARK

TITLE
GENERAL ARRANGEMENT OF PROPOSED ACCESS LAYOUT AND TOUCAN CROSSING

PROJECT NO.
C21096

SCALE @ A3
1:500

STATUS DESCRIPTION
INFORMATION

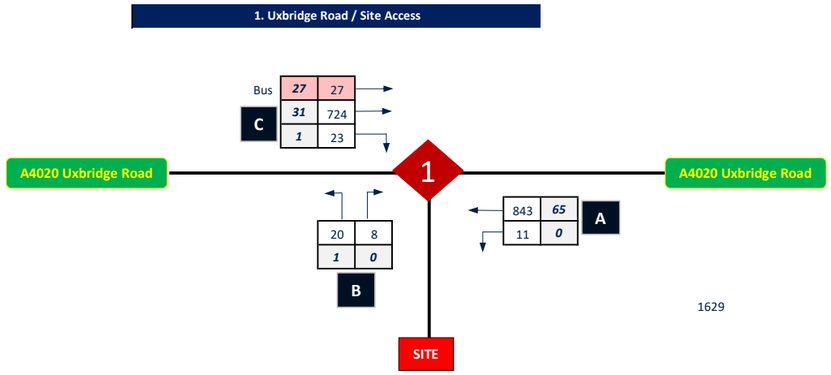
STATUS
S2

DRAWING NO.
C21096-ATP-DR-TP-009

Appendix D Traffic Flow Diagrams

KEY

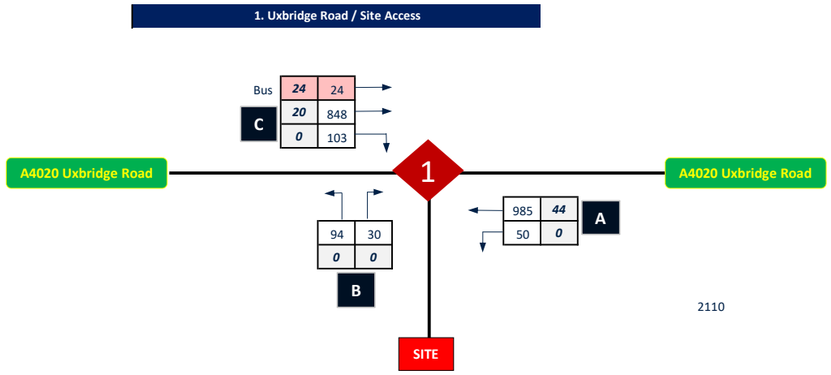
12	Total Vehicles
12	HGVs



Apex TRANSPORT PLANNING	**NOTES:**	**PROJECT:** Hayes Bridge Retail Park **TIME PERIOD:** AM Peak Hour (07:00 - 08:00)	**PLAN TITLE:** Traffic Figure Diagrams 2021 Base Traffic Flows
		DATE: September 23 / **JOB NUMBER:** C21096	**DRAWN BY:** DC / **FIGURE:** 001

KEY

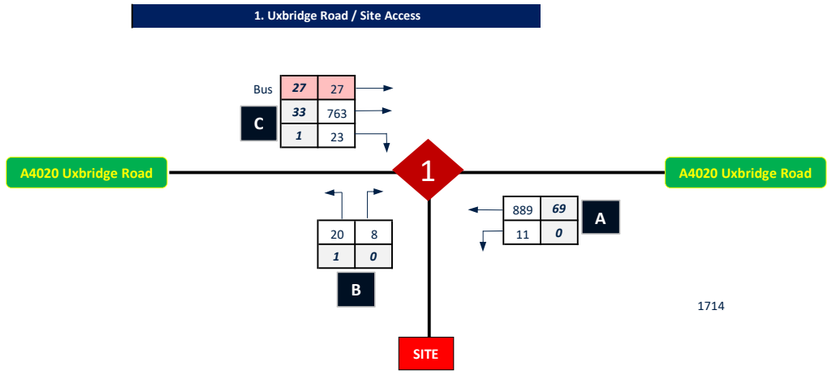
12	Total Vehicles
12	HGVs



Apex TRANSPORT PLANNING	**NOTES:**	**PROJECT:** Hayes Bridge Retail Park **TIME PERIOD:** PM Peak Hour (16:30 - 17:30)	**PLAN TITLE:** Traffic Figure Diagrams 2021 Base Traffic Flows
		DATE: September 23 / **JOB NUMBER:** C21096	**DRAWN BY:** DC / **FIGURE:** 002

KEY

12	Total Vehicles
12	HGVs

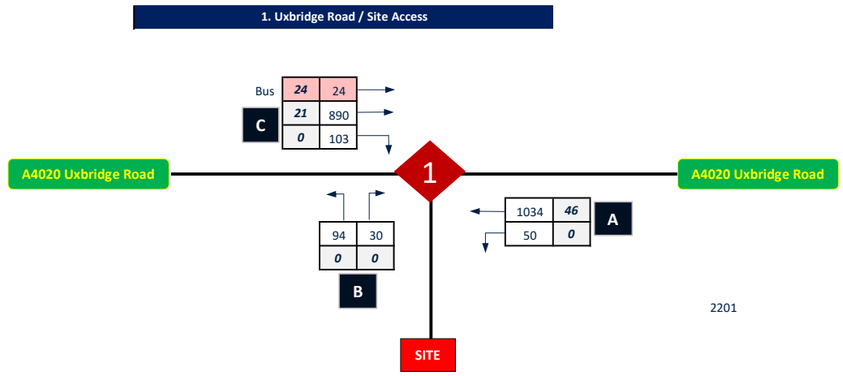


NOTES:		**PROJECT:**	**PLAN TITLE:**
Growth Rate 2021-2026	1.054	Hayes Bridge Retail Park	Traffic Figure Diagrams
No growth has been applied to movements into and out of the site		**TIME PERIOD:** AM Peak Hour (07:00 - 08:00)	2026 Future Base Traffic Flows
		DATE: September 23 / **JOB NUMBER:** C21096	**DRAWN BY:** DC / **FIGURE:** 003

Apex TRANSPORT PLANNING

KEY

12	Total Vehicles
12	HGVs

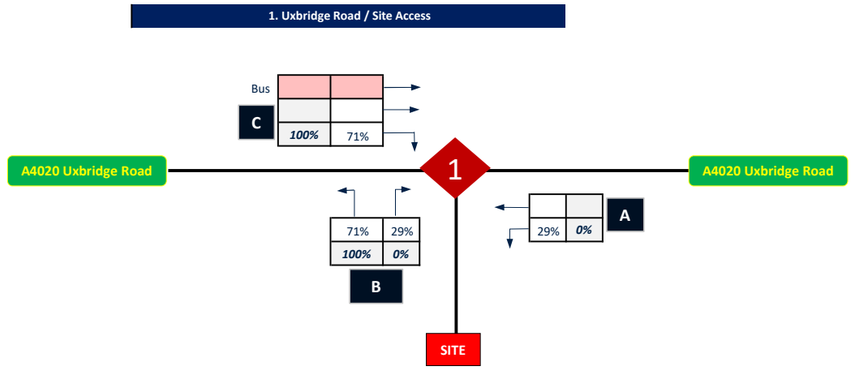


NOTES:		**PROJECT:**	**PLAN TITLE:**
Growth Rate 2021-2026	1.050	Hayes Bridge Retail Park	Traffic Figure Diagrams
No growth has been applied to movements into and out of the site		**TIME PERIOD:** PM Peak Hour (16:30 - 17:30)	2026 Future Base Traffic Flows
		DATE: September 23 / **JOB NUMBER:** C21096	**DRAWN BY:** DC / **FIGURE:** 004

Apex TRANSPORT PLANNING

KEY

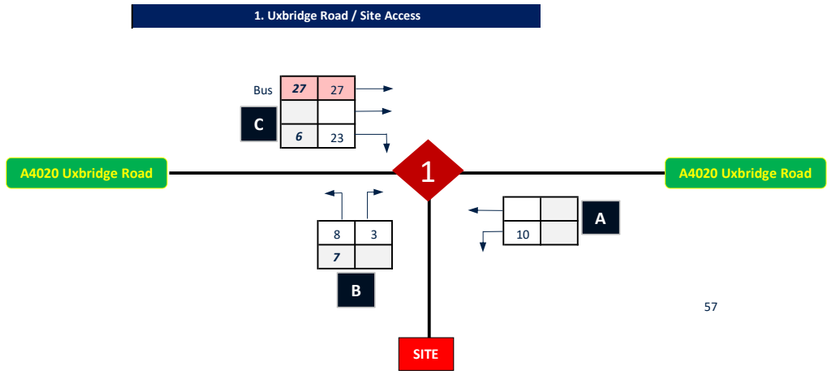
12	Total Vehicles
12	HGVs



Apex TRANSPORT PLANNING	**NOTES:**	**PROJECT:** Hayes Bridge Retail Park **TIME PERIOD:** All	**PLAN TITLE:** Traffic Figure Diagrams Development Distribution
		DATE: September 23 / **JOB NUMBER:** C21096	**DRAWN BY:** DC / **FIGURE:** 005

KEY

12	Total Vehicles
12	HGVs



57

Apex TRANSPORT PLANNING

NOTES:

Trip Generation

	Arrive	Depart	
Light	33	11	
HGV	6	7	
Total	39	18	57

PROJECT: Hayes Bridge Retail Park

TIME PERIOD: AM Peak Hour (07:00 - 08:00)

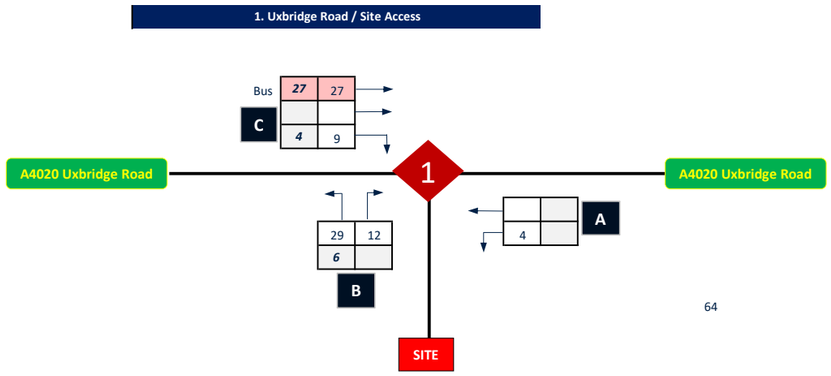
PLAN TITLE: Traffic Figure Diagrams

Development Flows

DATE:	JOB NUMBER:	DRAWN BY:	FIGURE:
September 23	C21096	DC	006

KEY

12	Total Vehicles
12	HGVs



64

Trip Generation (using dev flows from 1700-1800 as worst case)

	Arrive	Depart	
Light	13	41	
HGV	4	6	
Total	17	47	64

APEX TRANSPORT PLANNING

NOTES:

PROJECT: Hayes Bridge Retail Park

TIME PERIOD: PM Peak Hour (16:30 - 17:30)

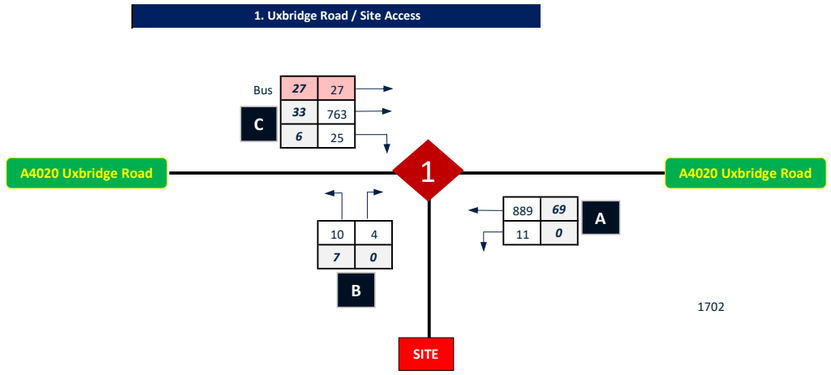
PLAN TITLE: Traffic Figure Diagrams

Development Flows

DATE:	JOB NUMBER:	DRAWN BY:	FIGURE:
September 23	C21096	DC	007

KEY

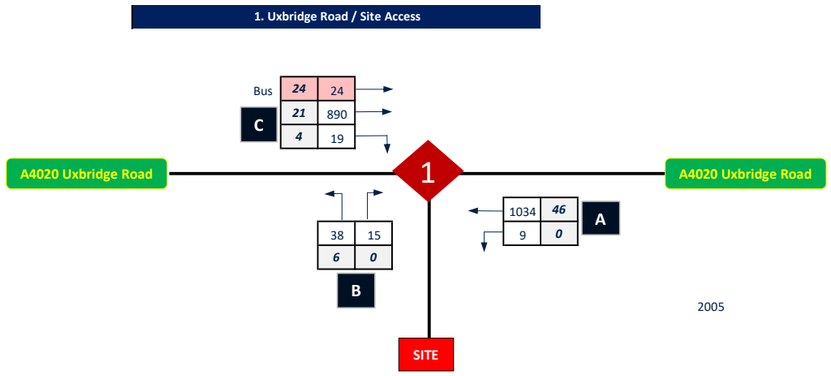
12	Total Vehicles
12	HGVs



NOTES: Existing Flows turning into and out of site have been removed and replaced by development traffic flows, although 10% of existing traffic flows into and out of the site have been retained for Metro Bank	**PROJECT:** Hayes Bridge Retail Park		**PLAN TITLE:** Traffic Figure Diagrams
	TIME PERIOD: AM Peak Hour (07:00 - 08:00)		2026 Future Base + Scheme Traffic Flows
	DATE: September 23	**JOB NUMBER:** C21096	**DRAWN BY:** DC / **FIGURE:** 008

KEY

12	Total Vehicles
12	HGVs



NOTES: Existing Flows turning into and out of site have been removed and replaced by development traffic flows, although 10% of existing traffic flows into and out of the site have been retained for Metro Bank	**PROJECT:** Hayes Bridge Retail Park		**PLAN TITLE:** Traffic Figure Diagrams
	TIME PERIOD: PM Peak Hour (16:30 - 17:30)		2026 Future Base + Scheme Traffic Flows
	DATE: September 23	**JOB NUMBER:** C21096	**DRAWN BY:** DC / **FIGURE:** 009

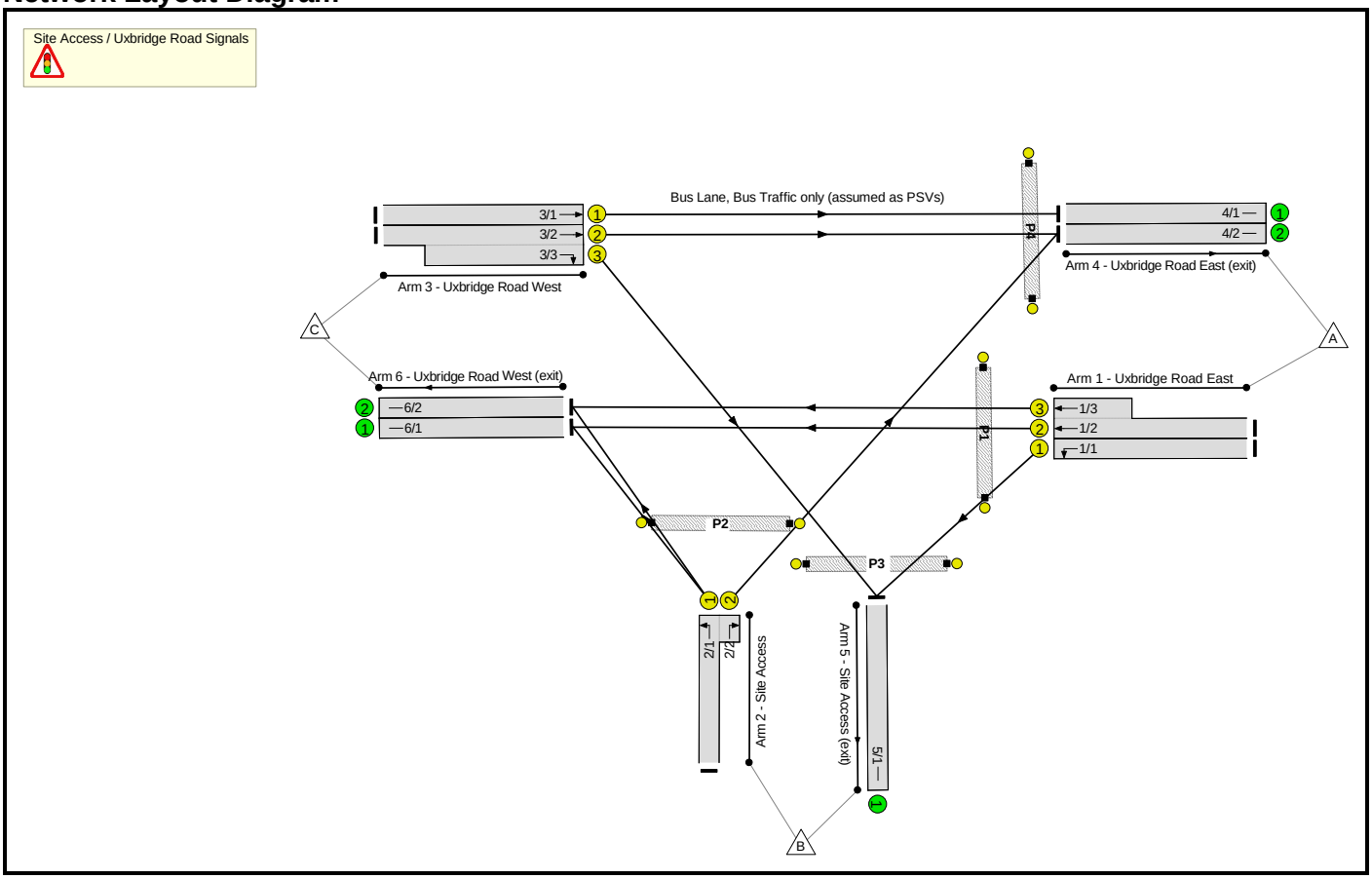
Appendix E LinSig Outputs - Site Access / Uxbridge Road Existing Layout

Full Input Data And Results

User and Project Details

Project:	**Hayes Bridge Retail Park**
Title:	**Uxbridge Road / Site Access Junction**
Location:	
Additional detail:	
File name:	Site Access_Uxbridge Road Jct.lsg3x
Author:	DC
Company:	Apex Transport Planning
Address:	Cardiff

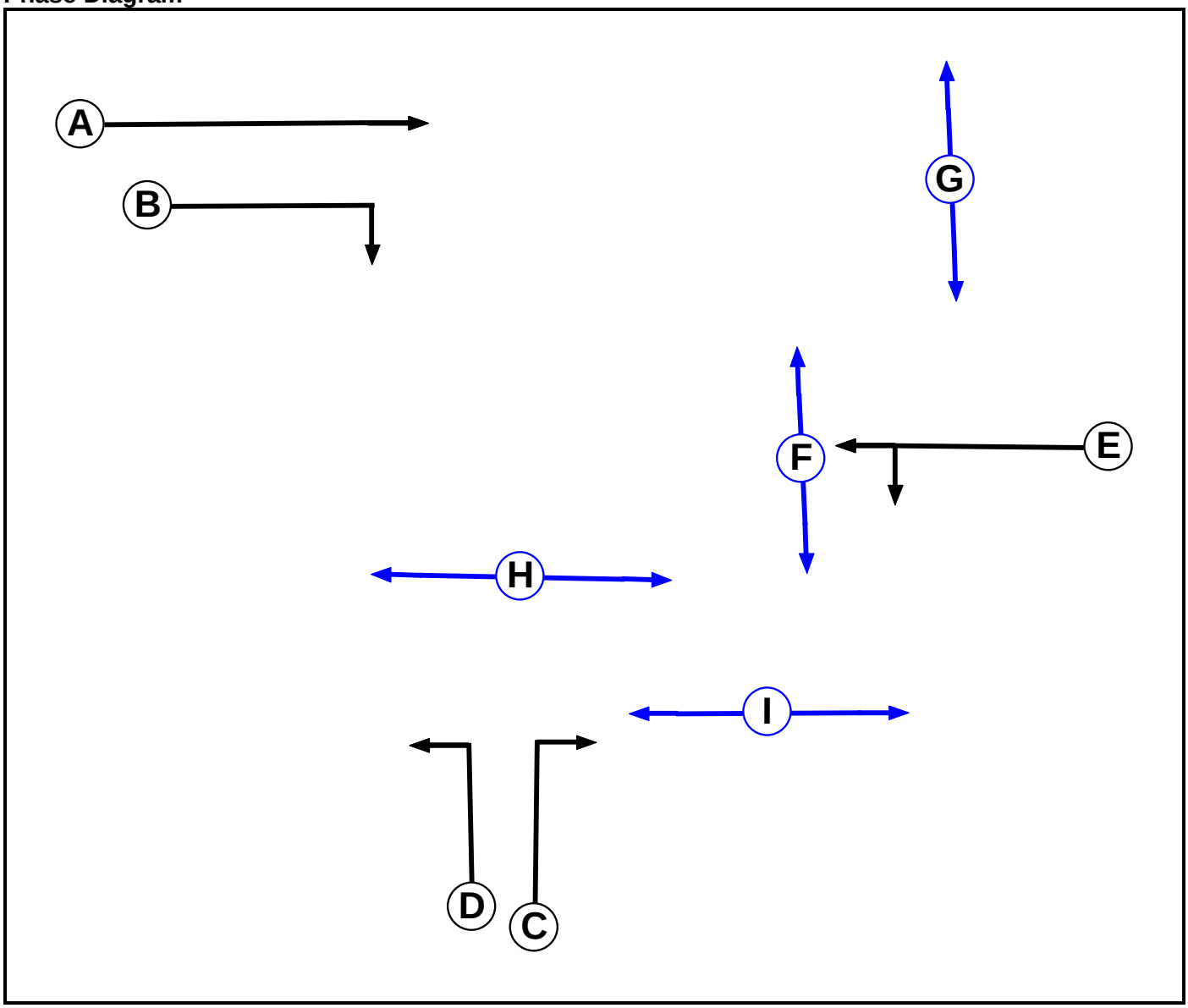
Network Layout Diagram



Full Input Data And Results

Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		4	4
E	Traffic		7	7
F	Pedestrian		6	6
G	Pedestrian		6	6
H	Pedestrian		6	6
I	Pedestrian		6	6

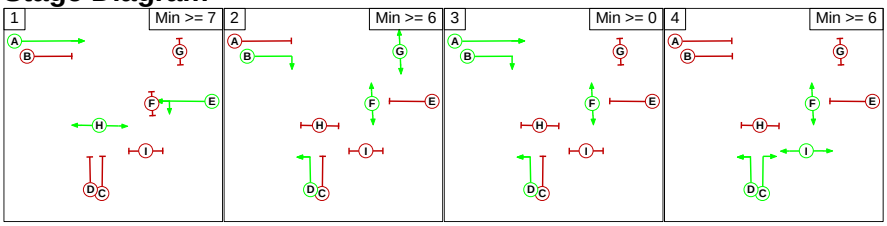
Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		-	8	-	-	-	12	-	-
	B	-		8	-	9	-	-	-	12
	C	6	6		-	6	-	12	5	-
	D	-	-	-		5	-	-	5	-
	E	-	8	8	8		9	-	-	9
	F	-	-	-	-	11		-	-	-
	G	9	-	9	-	-	-		-	-
	H	-	-	9	9	-	-	-		-
	I	-	8	-	-	8	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A E H
2	B D F G
3	A B D F
4	C D F I

Stage Diagram



Full Input Data And Results

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	E	Losing	3	3
1	2	H	Losing	3	3

Full Input Data And Results

Lane Input Data

Junction: Site Access / Uxbridge Road Signals												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Uxbridge Road East)	U	E	2	3	2.6	User	1565	-	-	-	-	-
1/2 (Uxbridge Road East)	U	E	2	3	60.0	User	1740	-	-	-	-	-
1/3 (Uxbridge Road East)	U	E	2	3	5.8	User	1868	-	-	-	-	-
2/1 (Site Access)	U	D	2	3	60.0	User	1621	-	-	-	-	-
2/2 (Site Access)	U	C	2	3	2.0	User	1698	-	-	-	-	-
3/1 (Uxbridge Road West)	U	A	2	3	60.0	User	1850	-	-	-	-	-
3/2 (Uxbridge Road West)	U	A	2	3	60.0	User	1847	-	-	-	-	-
3/3 (Uxbridge Road West)	U	B	2	3	11.8	User	1702	-	-	-	-	-
4/1 (Uxbridge Road East (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2 (Uxbridge Road East (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Site Access (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Uxbridge Road West (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2 (Uxbridge Road West (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2021 Base AM'	07:00	08:00	01:00	
2: '2021 Base PM'	16:30	17:30	01:00	
3: '2026 Future Base AM'	07:00	08:00	01:00	
4: '2026 Future Base PM'	16:30	17:30	01:00	
5: '2026 Future Base + Scheme AM'	07:00	08:00	01:00	
6: '2026 Future Base + Scheme PM'	16:30	17:30	01:00	

Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	11	908	919
	B	8	0	21	29
	C	809	24	0	833
	Tot.	817	35	929	1781

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2021 Base AM
Junction: Site Access / Uxbridge Road Signals	
1/1	11
1/2 (with short)	908(In) 438(Out)
1/3 (short)	470
2/1 (with short)	29(In) 21(Out)
2/2 (short)	8
3/1	54
3/2 (with short)	779(In) 755(Out)
3/3 (short)	24
4/1	54
4/2	763
5/1	35
6/1	448
6/2	481

Lane Saturation Flows

Junction: Site Access / Uxbridge Road Signals								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Uxbridge Road East Lane 1)	This lane uses a directly entered Saturation Flow						1565	1565
1/2 (Uxbridge Road East Lane 2)	This lane uses a directly entered Saturation Flow						1740	1740
1/3 (Uxbridge Road East Lane 3)	This lane uses a directly entered Saturation Flow						1868	1868
2/1 (Site Access Lane 1)	This lane uses a directly entered Saturation Flow						1621	1621
2/2 (Site Access Lane 2)	This lane uses a directly entered Saturation Flow						1698	1698
3/1 (Uxbridge Road West Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
3/2 (Uxbridge Road West Lane 2)	This lane uses a directly entered Saturation Flow						1847	1847
3/3 (Uxbridge Road West Lane 3)	This lane uses a directly entered Saturation Flow						1702	1702
4/1 (Uxbridge Road East (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Uxbridge Road East (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Site Access (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

6/1 (Uxbridge Road West (exit) Lane 1)	Infinite Saturation Flow	Inf	Inf
6/2 (Uxbridge Road West (exit) Lane 2)	Infinite Saturation Flow	Inf	Inf

Scenario 2: '2021 Base PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	50	1029	1079
	B	30	0	94	124
	C	916	103	0	1019
	Tot.	946	153	1123	2222

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2021 Base PM
Junction: Site Access / Uxbridge Road Signals	
1/1	50
1/2 (with short)	1029(In) 496(Out)
1/3 (short)	533
2/1 (with short)	124(In) 94(Out)
2/2 (short)	30
3/1	48
3/2 (with short)	971(In) 868(Out)
3/3 (short)	103
4/1	48
4/2	898
5/1	153
6/1	543
6/2	580

Lane Saturation Flows

Junction: Site Access / Uxbridge Road Signals								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Uxbridge Road East Lane 1)	This lane uses a directly entered Saturation Flow						1565	1565
1/2 (Uxbridge Road East Lane 2)	This lane uses a directly entered Saturation Flow						1740	1740
1/3 (Uxbridge Road East Lane 3)	This lane uses a directly entered Saturation Flow						1868	1868
2/1 (Site Access Lane 1)	This lane uses a directly entered Saturation Flow						1621	1621
2/2 (Site Access Lane 2)	This lane uses a directly entered Saturation Flow						1698	1698
3/1 (Uxbridge Road West Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
3/2 (Uxbridge Road West Lane 2)	This lane uses a directly entered Saturation Flow						1847	1847
3/3 (Uxbridge Road West Lane 3)	This lane uses a directly entered Saturation Flow						1702	1702
4/1 (Uxbridge Road East (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Uxbridge Road East (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Site Access (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

6/1 (Uxbridge Road West (exit) Lane 1)	Infinite Saturation Flow	Inf	Inf
6/2 (Uxbridge Road West (exit) Lane 2)	Infinite Saturation Flow	Inf	Inf

Scenario 3: '2026 Future Base AM' (FG3: '2026 Future Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	11	958	969
	B	8	0	21	29
	C	850	24	0	874
	Tot.	858	35	979	1872

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2026 Future Base AM
Junction: Site Access / Uxbridge Road Signals	
1/1	11
1/2 (with short)	958(In) 462(Out)
1/3 (short)	496
2/1 (with short)	29(In) 21(Out)
2/2 (short)	8
3/1	54
3/2 (with short)	820(In) 796(Out)
3/3 (short)	24
4/1	54
4/2	804
5/1	35
6/1	472
6/2	507

Lane Saturation Flows

Junction: Site Access / Uxbridge Road Signals								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Uxbridge Road East Lane 1)	This lane uses a directly entered Saturation Flow						1565	1565
1/2 (Uxbridge Road East Lane 2)	This lane uses a directly entered Saturation Flow						1740	1740
1/3 (Uxbridge Road East Lane 3)	This lane uses a directly entered Saturation Flow						1868	1868
2/1 (Site Access Lane 1)	This lane uses a directly entered Saturation Flow						1621	1621
2/2 (Site Access Lane 2)	This lane uses a directly entered Saturation Flow						1698	1698
3/1 (Uxbridge Road West Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
3/2 (Uxbridge Road West Lane 2)	This lane uses a directly entered Saturation Flow						1847	1847
3/3 (Uxbridge Road West Lane 3)	This lane uses a directly entered Saturation Flow						1702	1702
4/1 (Uxbridge Road East (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Uxbridge Road East (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Site Access (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

6/1 (Uxbridge Road West (exit) Lane 1)	Infinite Saturation Flow	Inf	Inf
6/2 (Uxbridge Road West (exit) Lane 2)	Infinite Saturation Flow	Inf	Inf

Scenario 4: '2026 Future Base PM' (FG4: '2026 Future Base PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	50	1080	1130
	B	30	0	94	124
	C	959	103	0	1062
	Tot.	989	153	1174	2316

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2026 Future Base PM
Junction: Site Access / Uxbridge Road Signals	
1/1	50
1/2 (with short)	1080(In) 521(Out)
1/3 (short)	559
2/1 (with short)	124(In) 94(Out)
2/2 (short)	30
3/1	48
3/2 (with short)	1014(In) 911(Out)
3/3 (short)	103
4/1	48
4/2	941
5/1	153
6/1	568
6/2	606

Lane Saturation Flows

Junction: Site Access / Uxbridge Road Signals								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Uxbridge Road East Lane 1)	This lane uses a directly entered Saturation Flow						1565	1565
1/2 (Uxbridge Road East Lane 2)	This lane uses a directly entered Saturation Flow						1740	1740
1/3 (Uxbridge Road East Lane 3)	This lane uses a directly entered Saturation Flow						1868	1868
2/1 (Site Access Lane 1)	This lane uses a directly entered Saturation Flow						1621	1621
2/2 (Site Access Lane 2)	This lane uses a directly entered Saturation Flow						1698	1698
3/1 (Uxbridge Road West Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
3/2 (Uxbridge Road West Lane 2)	This lane uses a directly entered Saturation Flow						1847	1847
3/3 (Uxbridge Road West Lane 3)	This lane uses a directly entered Saturation Flow						1702	1702
4/1 (Uxbridge Road East (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Uxbridge Road East (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Site Access (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

6/1 (Uxbridge Road West (exit) Lane 1)	Infinite Saturation Flow	Inf	Inf
6/2 (Uxbridge Road West (exit) Lane 2)	Infinite Saturation Flow	Inf	Inf

Scenario 5: '2026 Future + Scheme Base AM' (FG5: '2026 Future Base + Scheme AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	11	958	969
	B	4	0	17	21
	C	850	31	0	881
	Tot.	854	42	975	1871

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2026 Future + Scheme Base AM
Junction: Site Access / Uxbridge Road Signals	
1/1	11
1/2 (with short)	958(In) 462(Out)
1/3 (short)	496
2/1 (with short)	21(In) 17(Out)
2/2 (short)	4
3/1	54
3/2 (with short)	827(In) 796(Out)
3/3 (short)	31
4/1	54
4/2	800
5/1	42
6/1	470
6/2	505

Lane Saturation Flows

Junction: Site Access / Uxbridge Road Signals								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Uxbridge Road East Lane 1)	This lane uses a directly entered Saturation Flow						1565	1565
1/2 (Uxbridge Road East Lane 2)	This lane uses a directly entered Saturation Flow						1740	1740
1/3 (Uxbridge Road East Lane 3)	This lane uses a directly entered Saturation Flow						1868	1868
2/1 (Site Access Lane 1)	This lane uses a directly entered Saturation Flow						1621	1621
2/2 (Site Access Lane 2)	This lane uses a directly entered Saturation Flow						1698	1698
3/1 (Uxbridge Road West Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
3/2 (Uxbridge Road West Lane 2)	This lane uses a directly entered Saturation Flow						1847	1847
3/3 (Uxbridge Road West Lane 3)	This lane uses a directly entered Saturation Flow						1702	1702
4/1 (Uxbridge Road East (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Uxbridge Road East (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Site Access (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

6/1 (Uxbridge Road West (exit) Lane 1)	Infinite Saturation Flow	Inf	Inf
6/2 (Uxbridge Road West (exit) Lane 2)	Infinite Saturation Flow	Inf	Inf

Scenario 6: '2026 Future + Scheme Base PM' (FG6: '2026 Future Base + Scheme PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	9	1080	1089
	B	15	0	44	59
	C	959	23	0	982
	Tot.	974	32	1124	2130

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2026 Future + Scheme Base PM
Junction: Site Access / Uxbridge Road Signals	
1/1	9
1/2 (with short)	1080(In) 521(Out)
1/3 (short)	559
2/1 (with short)	59(In) 44(Out)
2/2 (short)	15
3/1	48
3/2 (with short)	934(In) 911(Out)
3/3 (short)	23
4/1	48
4/2	926
5/1	32
6/1	543
6/2	581

Lane Saturation Flows

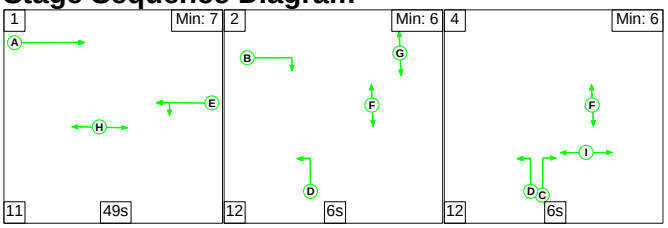
Junction: Site Access / Uxbridge Road Signals								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Uxbridge Road East Lane 1)	This lane uses a directly entered Saturation Flow						1565	1565
1/2 (Uxbridge Road East Lane 2)	This lane uses a directly entered Saturation Flow						1740	1740
1/3 (Uxbridge Road East Lane 3)	This lane uses a directly entered Saturation Flow						1868	1868
2/1 (Site Access Lane 1)	This lane uses a directly entered Saturation Flow						1621	1621
2/2 (Site Access Lane 2)	This lane uses a directly entered Saturation Flow						1698	1698
3/1 (Uxbridge Road West Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
3/2 (Uxbridge Road West Lane 2)	This lane uses a directly entered Saturation Flow						1847	1847
3/3 (Uxbridge Road West Lane 3)	This lane uses a directly entered Saturation Flow						1702	1702
4/1 (Uxbridge Road East (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Uxbridge Road East (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Site Access (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

6/1 (Uxbridge Road West (exit) Lane 1)	Infinite Saturation Flow	Inf	Inf
6/2 (Uxbridge Road West (exit) Lane 2)	Infinite Saturation Flow	Inf	Inf

Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

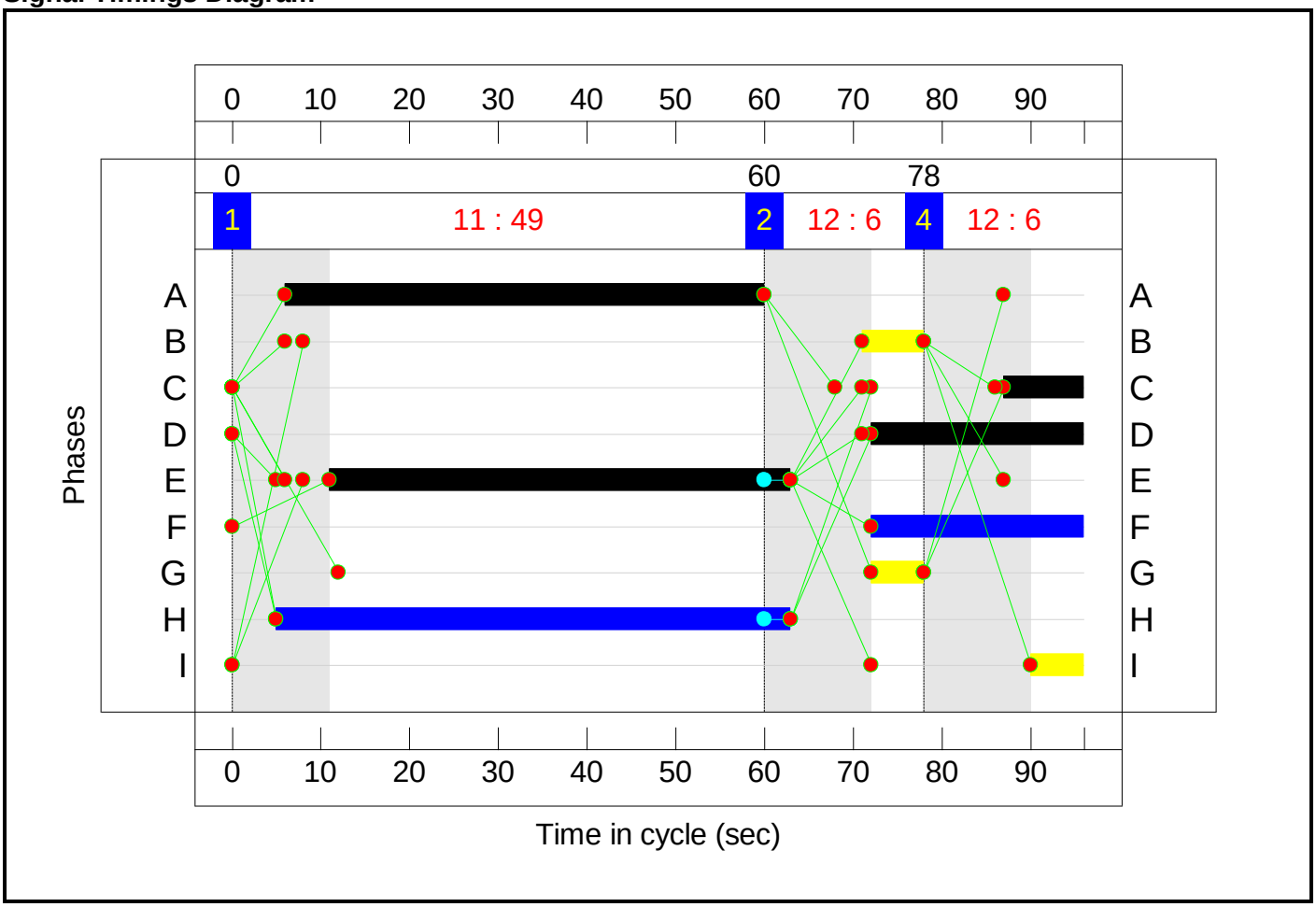
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	49	6	6
Change Point	0	60	78

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Mean Max Queue (pcu)
Network: Uxbridge Road / Site Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-
Site Access / Uxbridge Road Signals	-	-	**N/A**	-	-		-	-	-	-	-	-	-
1/1	Uxbridge Road East Left	U	N/A	N/A	E		1	52	-	11	1565	864	0.1
1/2+1/3	Uxbridge Road East Ahead	U	N/A	N/A	E		1	52	-	908	1740:1868	586+629	11.9
2/1+2/2	Site Access Right Left	U	N/A	N/A	D C		1	24:9	-	29	1621:1698	271+103	0.5
3/1	Uxbridge Road West Ahead	U	N/A	N/A	A		1	54	-	54	1850	1060	0.7
3/2+3/3	Uxbridge Road West Ahead Right	U	N/A	N/A	A B		1	54:7	-	779	1847:1702	1058+34	15.7
Ped Link: P1	Uxbridge Rd (wb)	-	N/A	-	F		1	24	-	0	-	0	-
Ped Link: P2	Site Access Ped	-	N/A	-	H		1	58	-	0	-	0	-
Ped Link: P3	Site Access (exit) ped	-	N/A	-	I		1	6	-	0	-	0	-
Ped Link: P4	Uxbridge Rd (eb)	-	N/A	-	G		1	6	-	0	-	0	-

Full Input Data And Results

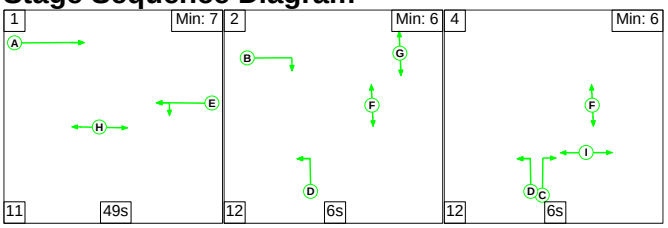
Item	Total Delay (pcuHr)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**9.9**	**74.7%**	**-**	**-**	**0**	**0**	**0**	**7.1**	**2.8**	**0.0**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**9.9**	**74.7%**	**-**	**-**	**0**	**0**	**0**	**7.1**	**2.8**	**0.0**	**-**	**-**	**-**
1/1	0.0	1.3%	11	11	-	-	-	0.0	0.0	-	12.0	0.1	0.0
1/2+1/3	4.8 (2.3+2.5)	74.7 : 74.7%	908	908	-	-	-	3.3	1.5	-	18.9 (18.9:18.9)	10.5	1.5
2/1+2/2	0.3 (0.2+0.1)	7.7 : 7.7%	29	29	-	-	-	0.2	0.0	-	35.2 (31.8:44.2)	0.4	0.0
3/1	0.2	5.1%	54	54	-	-	-	0.1	0.0	-	10.8	0.6	0.0
3/2+3/3	4.6 (4.3+0.3)	71.3 : 71.3%	779	779	-	-	-	3.4	1.2	-	21.3 (20.5:46.7)	14.5	1.2
Ped Link: P1	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P2	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P3	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P4	-	0.0%	0	0	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 20.5 Total Delay for Signalled Lanes (pcuHr): 9.87 Cycle Time (s): 96
PRC Over All Lanes (%): 20.5 Total Delay Over All Lanes(pcuHr): 9.87

Full Input Data And Results

Scenario 2: '2021 Base PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

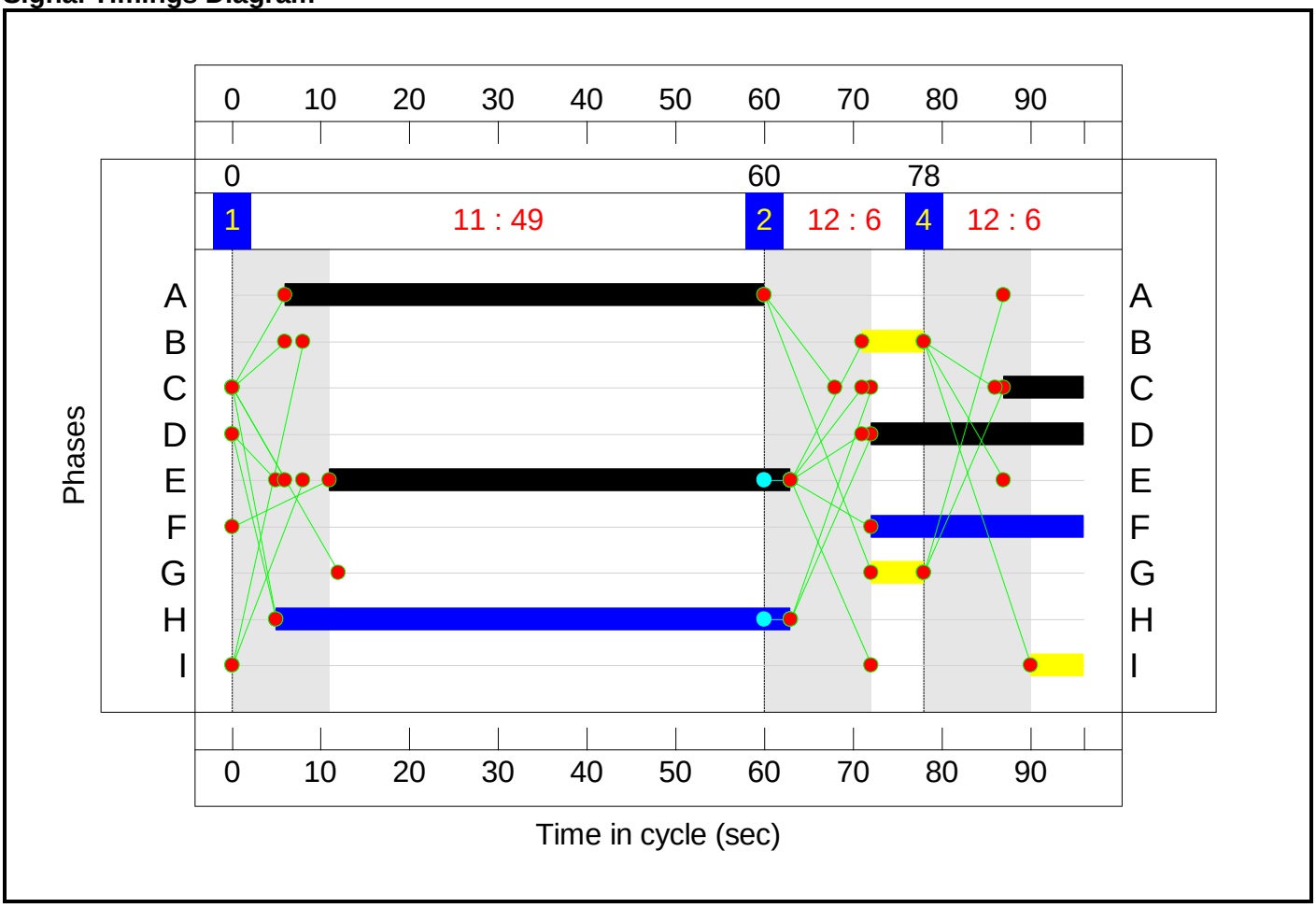
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	49	6	6
Change Point	0	60	78

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Mean Max Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**-**
1/1	Uxbridge Road East Left	U	N/A	N/A	E		1	52	-	50	1565	864	0.6
1/2+1/3	Uxbridge Road East Ahead	U	N/A	N/A	E		1	52	-	1029	1740:1868	586+630	17.9
2/1+2/2	Site Access Right Left	U	N/A	N/A	D C		1	24:9	-	124	1621:1698	313+100	2.2
3/1	Uxbridge Road West Ahead	U	N/A	N/A	A		1	54	-	48	1850	1060	0.6
3/2+3/3	Uxbridge Road West Ahead Right	U	N/A	N/A	A B		1	54:7	-	971	1847:1702	1009+120	22.6
Ped Link: P1	Uxbridge Rd (wb)	-	N/A	-	F		1	24	-	0	-	0	-
Ped Link: P2	Site Access Ped	-	N/A	-	H		1	58	-	0	-	0	-
Ped Link: P3	Site Access (exit) ped	-	N/A	-	I		1	6	-	0	-	0	-
Ped Link: P4	Uxbridge Rd (eb)	-	N/A	-	G		1	6	-	0	-	0	-

Full Input Data And Results

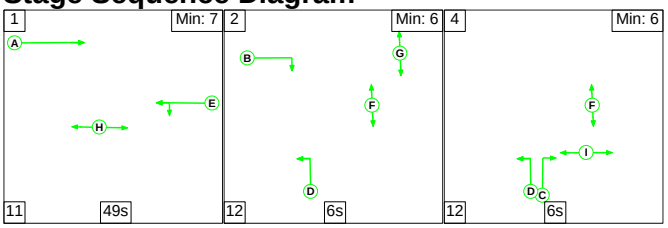
Item	Total Delay (pcuHr)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**16.6**	**86.0%**	**-**	**-**	**0**	**0**	**0**	**10.6**	**5.9**	**0.0**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**16.6**	**86.0%**	**-**	**-**	**0**	**0**	**0**	**10.6**	**5.9**	**0.0**	**-**	**-**	**-**
1/1	0.2	5.8%	50	50	-	-	-	0.1	0.0	-	12.2	0.6	0.0
1/2+1/3	6.8 (3.3+3.5)	84.7 : 84.7%	1029	1029	-	-	-	4.1	2.7	-	23.8 (23.8:23.8)	15.2	2.7
2/1+2/2	1.3 (0.9+0.4)	30.0 : 30.0%	124	124	-	-	-	1.1	0.2	-	36.9 (34.1:45.5)	2.0	0.2
3/1	0.1	4.5%	48	48	-	-	-	0.1	0.0	-	10.8	0.6	0.0
3/2+3/3	8.2 (6.6+1.5)	86.0 : 86.0%	971	971	-	-	-	5.2	3.0	-	30.4 (27.6:54.0)	19.6	3.0
Ped Link: P1	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P2	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P3	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P4	-	0.0%	0	0	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 4.6 Total Delay for Signalled Lanes (pcuHr): 16.57 Cycle Time (s): 96
PRC Over All Lanes (%): 4.6 Total Delay Over All Lanes(pcuHr): 16.57

Full Input Data And Results

Scenario 3: '2026 Future Base AM' (FG3: '2026 Future Base AM', Plan 1: 'Network Control Plan 1')

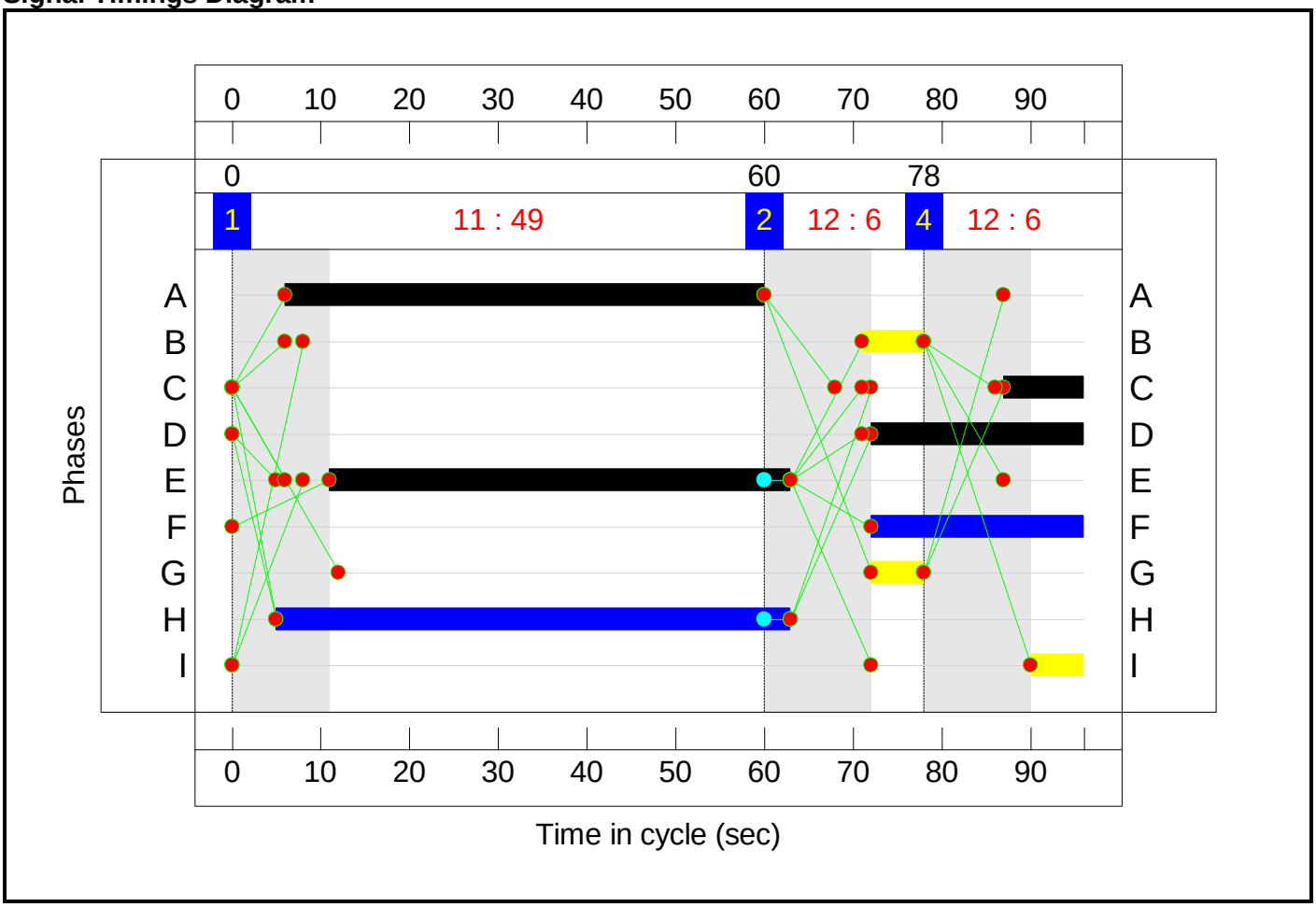
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	49	6	6
Change Point	0	60	78

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Mean Max Queue (pcu)
Network: Uxbridge Road / Site Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-
Site Access / Uxbridge Road Signals	-	-	**N/A**	-	-		-	-	-	-	-	-	-
1/1	Uxbridge Road East Left	U	N/A	N/A	E		1	52	-	11	1565	864	0.1
1/2+1/3	Uxbridge Road East Ahead	U	N/A	N/A	E		1	52	-	958	1740:1868	586+629	14.0
2/1+2/2	Site Access Right Left	U	N/A	N/A	D C		1	24:9	-	29	1621:1698	271+103	0.5
3/1	Uxbridge Road West Ahead	U	N/A	N/A	A		1	54	-	54	1850	1060	0.7
3/2+3/3	Uxbridge Road West Ahead Right	U	N/A	N/A	A B		1	54:7	-	820	1847:1702	1058+32	17.4
Ped Link: P1	Uxbridge Rd (wb)	-	N/A	-	F		1	24	-	0	-	0	-
Ped Link: P2	Site Access Ped	-	N/A	-	H		1	58	-	0	-	0	-
Ped Link: P3	Site Access (exit) ped	-	N/A	-	I		1	6	-	0	-	0	-
Ped Link: P4	Uxbridge Rd (eb)	-	N/A	-	G		1	6	-	0	-	0	-

Full Input Data And Results

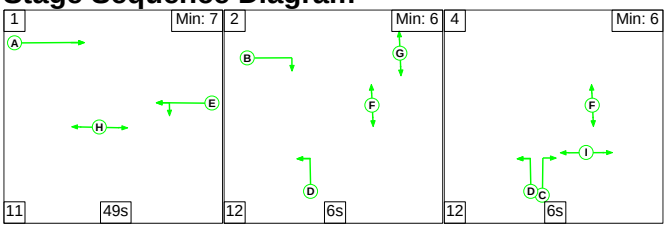
Item	Total Delay (pcuHr)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**11.1**	**78.8%**	**-**	**-**	**0**	**0**	**0**	**7.7**	**3.4**	**0.0**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**11.1**	**78.8%**	**-**	**-**	**0**	**0**	**0**	**7.7**	**3.4**	**0.0**	**-**	**-**	**-**
1/1	0.0	1.3%	11	11	-	-	-	0.0	0.0	-	12.0	0.1	0.0
1/2+1/3	5.4 (2.6+2.8)	78.8 : 78.8%	958	958	-	-	-	3.6	1.8	-	20.5 (20.5:20.5)	12.2	1.8
2/1+2/2	0.3 (0.2+0.1)	7.7 : 7.7%	29	29	-	-	-	0.2	0.0	-	35.2 (31.8:44.2)	0.4	0.0
3/1	0.2	5.1%	54	54	-	-	-	0.1	0.0	-	10.8	0.6	0.0
3/2+3/3	5.2 (4.9+0.3)	75.2 : 75.2%	820	820	-	-	-	3.7	1.5	-	22.7 (22.0:47.6)	15.9	1.5
Ped Link: P1	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P2	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P3	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P4	-	0.0%	0	0	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 14.2 Total Delay for Signalled Lanes (pcuHr): 11.10 Cycle Time (s): 96
PRC Over All Lanes (%): 14.2 Total Delay Over All Lanes(pcuHr): 11.10

Full Input Data And Results

Scenario 4: '2026 Future Base PM' (FG4: '2026 Future Base PM', Plan 1: 'Network Control Plan 1')

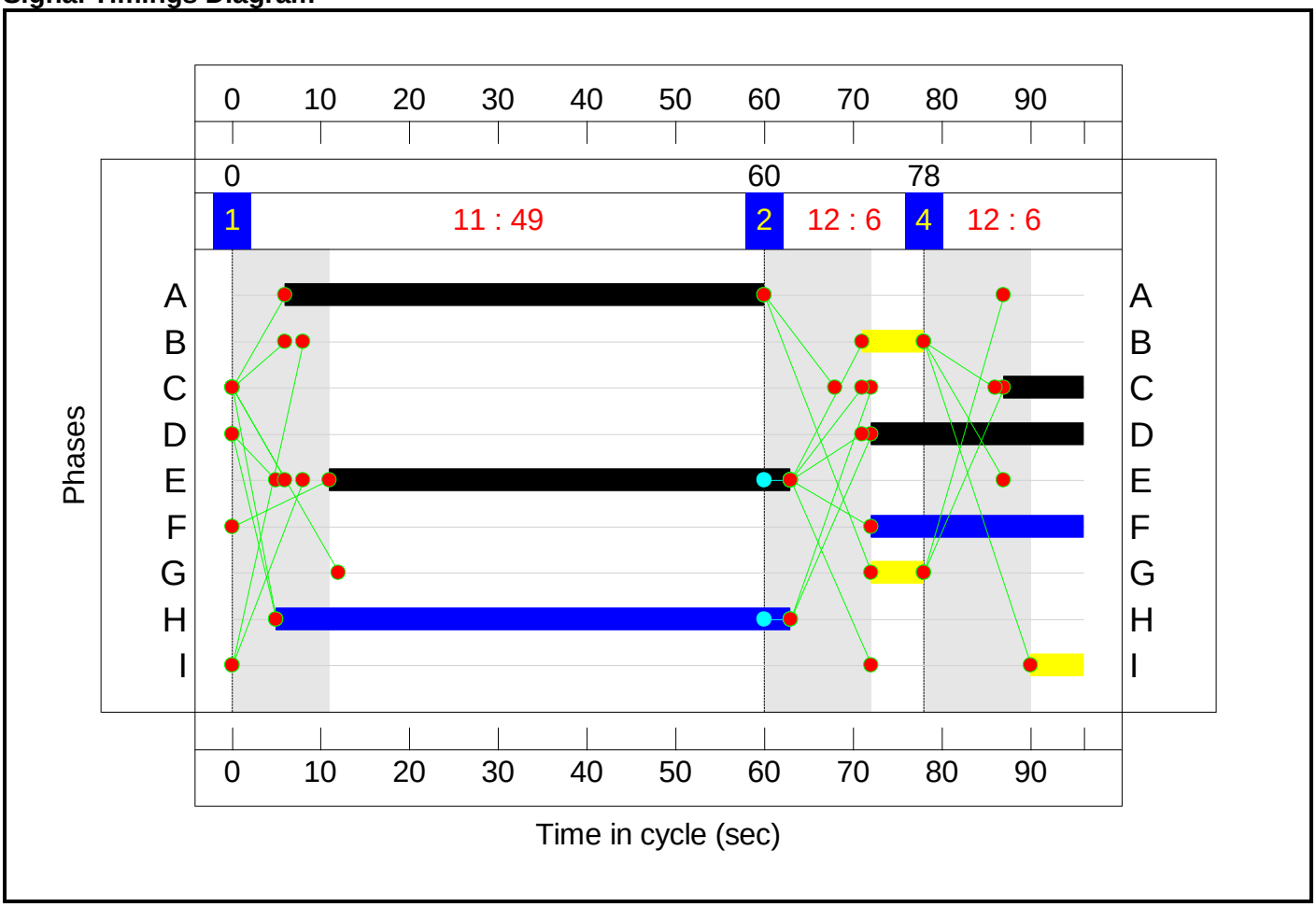
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	49	6	6
Change Point	0	60	78

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Mean Max Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**-**
1/1	Uxbridge Road East Left	U	N/A	N/A	E		1	52	-	50	1565	864	0.6
1/2+1/3	Uxbridge Road East Ahead	U	N/A	N/A	E		1	52	-	1080	1740:1868	586+629	21.8
2/1+2/2	Site Access Right Left	U	N/A	N/A	D C		1	24:9	-	124	1621:1698	313+100	2.2
3/1	Uxbridge Road West Ahead	U	N/A	N/A	A		1	54	-	48	1850	1060	0.6
3/2+3/3	Uxbridge Road West Ahead Right	U	N/A	N/A	A B		1	54:7	-	1014	1847:1702	1012+114	26.0
Ped Link: P1	Uxbridge Rd (wb)	-	N/A	-	F		1	24	-	0	-	0	-
Ped Link: P2	Site Access Ped	-	N/A	-	H		1	58	-	0	-	0	-
Ped Link: P3	Site Access (exit) ped	-	N/A	-	I		1	6	-	0	-	0	-
Ped Link: P4	Uxbridge Rd (eb)	-	N/A	-	G		1	6	-	0	-	0	-

Full Input Data And Results

Item	Total Delay (pcuHr)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**19.7**	**90.0%**	**-**	**-**	**0**	**0**	**0**	**11.5**	**8.2**	**0.0**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**19.7**	**90.0%**	**-**	**-**	**0**	**0**	**0**	**11.5**	**8.2**	**0.0**	**-**	**-**	**-**
1/1	0.2	5.8%	50	50	-	-	-	0.1	0.0	-	12.2	0.6	0.0
1/2+1/3	8.3 (4.0+4.3)	88.8 : 88.8%	1080	1080	-	-	-	4.5	3.8	-	27.7 (27.7:27.7)	18.0	3.8
2/1+2/2	1.3 (0.9+0.4)	30.0 : 30.0%	124	124	-	-	-	1.1	0.2	-	36.9 (34.1:45.5)	2.0	0.2
3/1	0.1	4.5%	48	48	-	-	-	0.1	0.0	-	10.8	0.6	0.0
3/2+3/3	9.8 (8.2+1.7)	90.0 : 90.0%	1014	1014	-	-	-	5.6	4.2	-	34.9 (32.3:57.9)	21.8	4.2
Ped Link: P1	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P2	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P3	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P4	-	0.0%	0	0	-	-	-	-	-	-	-	-	-

C1

PRC for Signalled Lanes (%): -0.0
PRC Over All Lanes (%): -0.0

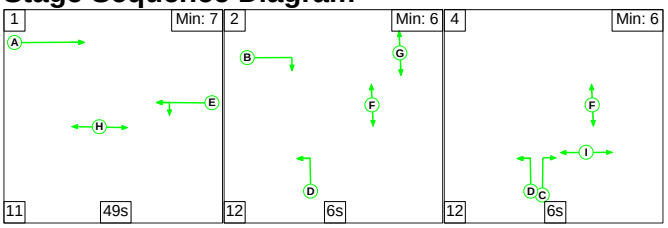
Total Delay for Signalled Lanes (pcuHr): 19.71
Total Delay Over All Lanes(pcuHr): 19.71

Cycle Time (s): 96

Full Input Data And Results

Scenario 5: '2026 Future + Scheme Base AM' (FG5: '2026 Future Base + Scheme AM', Plan 1: 'Network Control Plan 1')

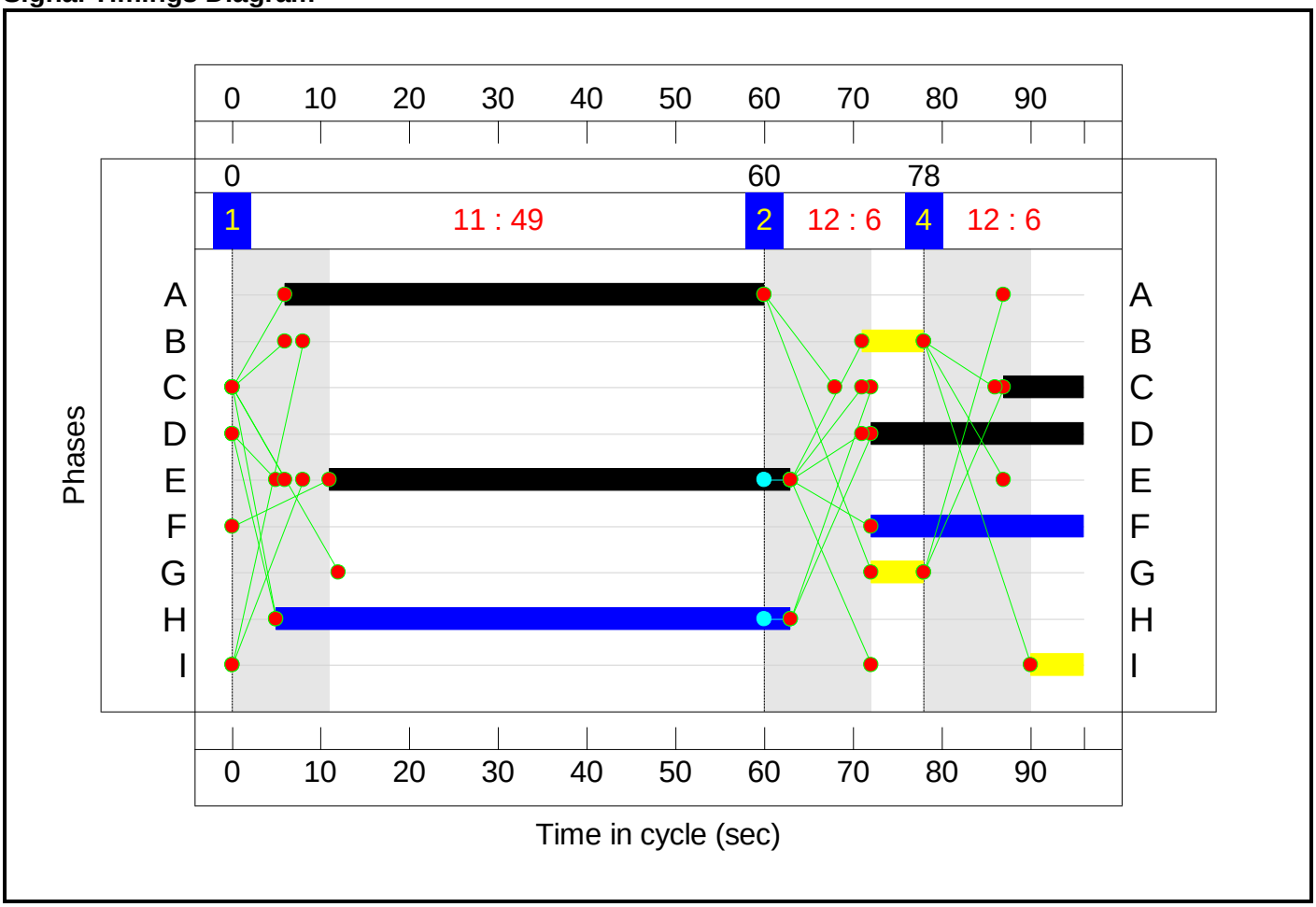
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	49	6	6
Change Point	0	60	78

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Mean Max Queue (pcu)
Network: Uxbridge Road / Site Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-
Site Access / Uxbridge Road Signals	-	-	**N/A**	-	-		-	-	-	-	-	-	-
1/1	Uxbridge Road East Left	U	N/A	N/A	E		1	52	-	11	1565	864	0.1
1/2+1/3	Uxbridge Road East Ahead	U	N/A	N/A	E		1	52	-	958	1740:1868	586+629	14.0
2/1+2/2	Site Access Right Left	U	N/A	N/A	D C		1	24:9	-	21	1621:1698	364+86	0.4
3/1	Uxbridge Road West Ahead	U	N/A	N/A	A		1	54	-	54	1850	1060	0.7
3/2+3/3	Uxbridge Road West Ahead Right	U	N/A	N/A	A B		1	54:7	-	827	1847:1702	1055+41	17.4
Ped Link: P1	Uxbridge Rd (wb)	-	N/A	-	F		1	24	-	0	-	0	-
Ped Link: P2	Site Access Ped	-	N/A	-	H		1	58	-	0	-	0	-
Ped Link: P3	Site Access (exit) ped	-	N/A	-	I		1	6	-	0	-	0	-
Ped Link: P4	Uxbridge Rd (eb)	-	N/A	-	G		1	6	-	0	-	0	-

Full Input Data And Results

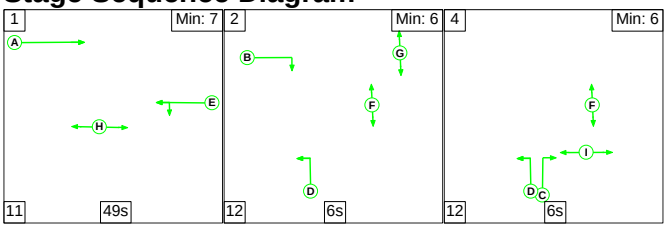
Item	Total Delay (pcuHr)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**11.1**	**78.8%**	**-**	**-**	**0**	**0**	**0**	**7.7**	**3.4**	**0.0**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**11.1**	**78.8%**	**-**	**-**	**0**	**0**	**0**	**7.7**	**3.4**	**0.0**	**-**	**-**	**-**
1/1	0.0	1.3%	11	11	-	-	-	0.0	0.0	-	12.0	0.1	0.0
1/2+1/3	5.4 (2.6+2.8)	78.8 : 78.8%	958	958	-	-	-	3.6	1.8	-	20.5 (20.5:20.5)	12.2	1.8
2/1+2/2	0.2 (0.1+0.0)	4.7 : 4.7%	21	21	-	-	-	0.2	0.0	-	33.2 (30.8:43.2)	0.3	0.0
3/1	0.2	5.1%	54	54	-	-	-	0.1	0.0	-	10.8	0.6	0.0
3/2+3/3	5.3 (4.9+0.4)	75.4 : 75.4%	827	827	-	-	-	3.8	1.5	-	23.0 (22.0:47.7)	15.9	1.5
Ped Link: P1	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P2	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P3	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P4	-	0.0%	0	0	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 14.2 Total Delay for Signalled Lanes (pcuHr): 11.11 Cycle Time (s): 96
PRC Over All Lanes (%): 14.2 Total Delay Over All Lanes(pcuHr): 11.11

Full Input Data And Results

Scenario 6: '2026 Future + Scheme Base PM' (FG6: '2026 Future Base + Scheme PM', Plan 1: 'Network Control Plan 1')

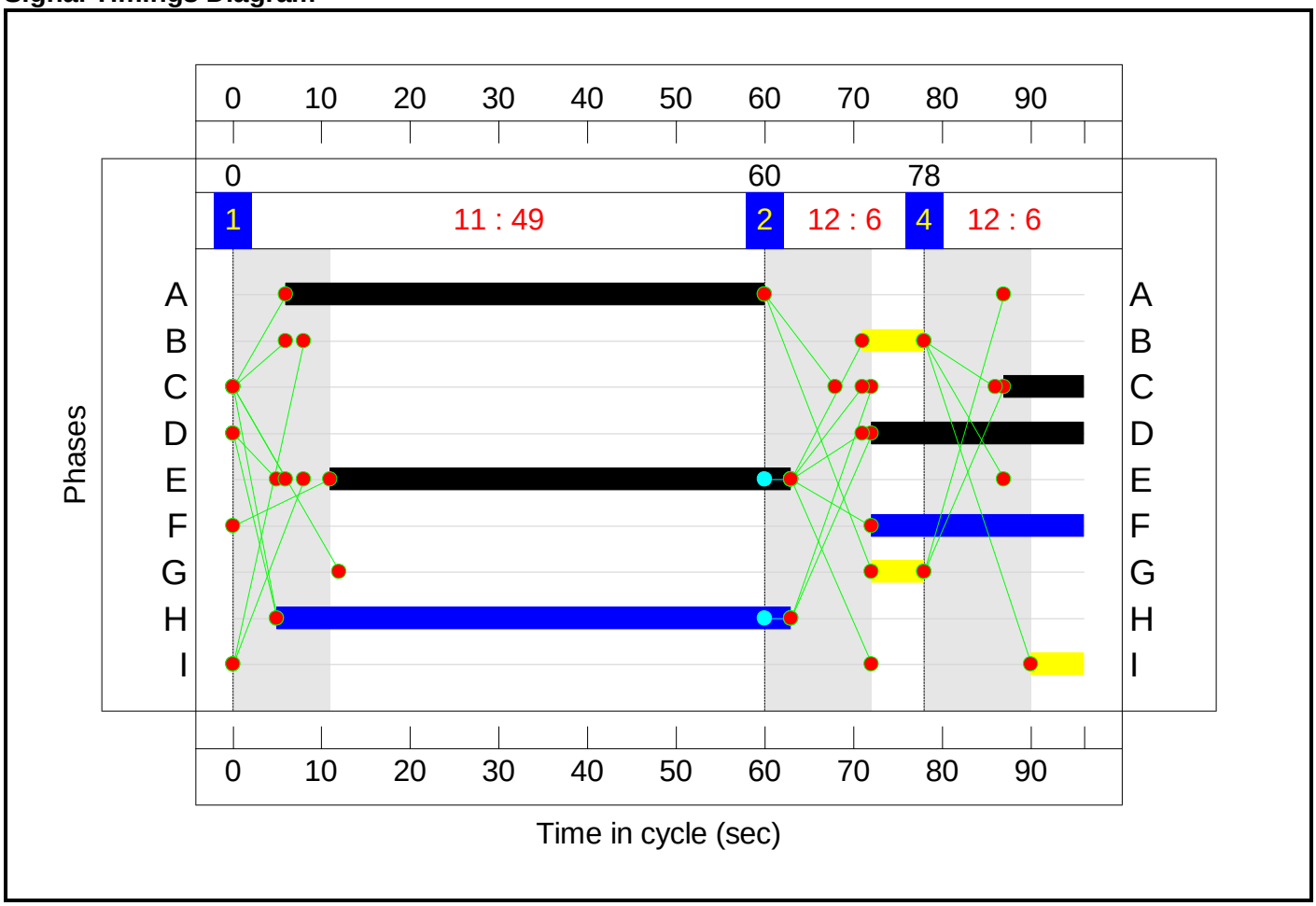
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	49	6	6
Change Point	0	60	78

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Mean Max Queue (pcu)
Network: Uxbridge Road / Site Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-
Site Access / Uxbridge Road Signals	-	-	**N/A**	-	-		-	-	-	-	-	-	-
1/1	Uxbridge Road East Left	U	N/A	N/A	E		1	52	-	9	1565	864	0.1
1/2+1/3	Uxbridge Road East Ahead	U	N/A	N/A	E		1	52	-	1080	1740:1868	586+629	21.8
2/1+2/2	Site Access Right Left	U	N/A	N/A	D C		1	24:9	-	59	1621:1698	296+101	1.0
3/1	Uxbridge Road West Ahead	U	N/A	N/A	A		1	54	-	48	1850	1060	0.6
3/2+3/3	Uxbridge Road West Ahead Right	U	N/A	N/A	A B		1	54:7	-	934	1847:1702	1058+27	23.2
Ped Link: P1	Uxbridge Rd (wb)	-	N/A	-	F		1	24	-	0	-	0	-
Ped Link: P2	Site Access Ped	-	N/A	-	H		1	58	-	0	-	0	-
Ped Link: P3	Site Access (exit) ped	-	N/A	-	I		1	6	-	0	-	0	-
Ped Link: P4	Uxbridge Rd (eb)	-	N/A	-	G		1	6	-	0	-	0	-

Full Input Data And Results

Item	Total Delay (pcuHr)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**16.7**	**88.8%**	**-**	**-**	**0**	**0**	**0**	**9.8**	**6.9**	**0.0**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**16.7**	**88.8%**	**-**	**-**	**0**	**0**	**0**	**9.8**	**6.9**	**0.0**	**-**	**-**	**-**
1/1	0.0	1.0%	9	9	-	-	-	0.0	0.0	-	12.0	0.1	0.0
1/2+1/3	8.3 (4.0+4.3)	88.8 : 88.8%	1080	1080	-	-	-	4.5	3.8	-	27.7 (27.7:27.7)	18.0	3.8
2/1+2/2	0.6 (0.4+0.2)	14.8 : 14.8%	59	59	-	-	-	0.5	0.1	-	35.4 (32.3:44.3)	0.9	0.1
3/1	0.1	4.5%	48	48	-	-	-	0.1	0.0	-	10.8	0.6	0.0
3/2+3/3	7.6 (7.3+0.3)	86.1 : 86.1%	934	934	-	-	-	4.6	3.0	-	29.3 (28.8:52.4)	20.2	3.0
Ped Link: P1	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P2	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P3	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P4	-	0.0%	0	0	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 1.3 Total Delay for Signalled Lanes (pcuHr): 16.66 Cycle Time (s): 96
PRC Over All Lanes (%): 1.3 Total Delay Over All Lanes(pcuHr): 16.66

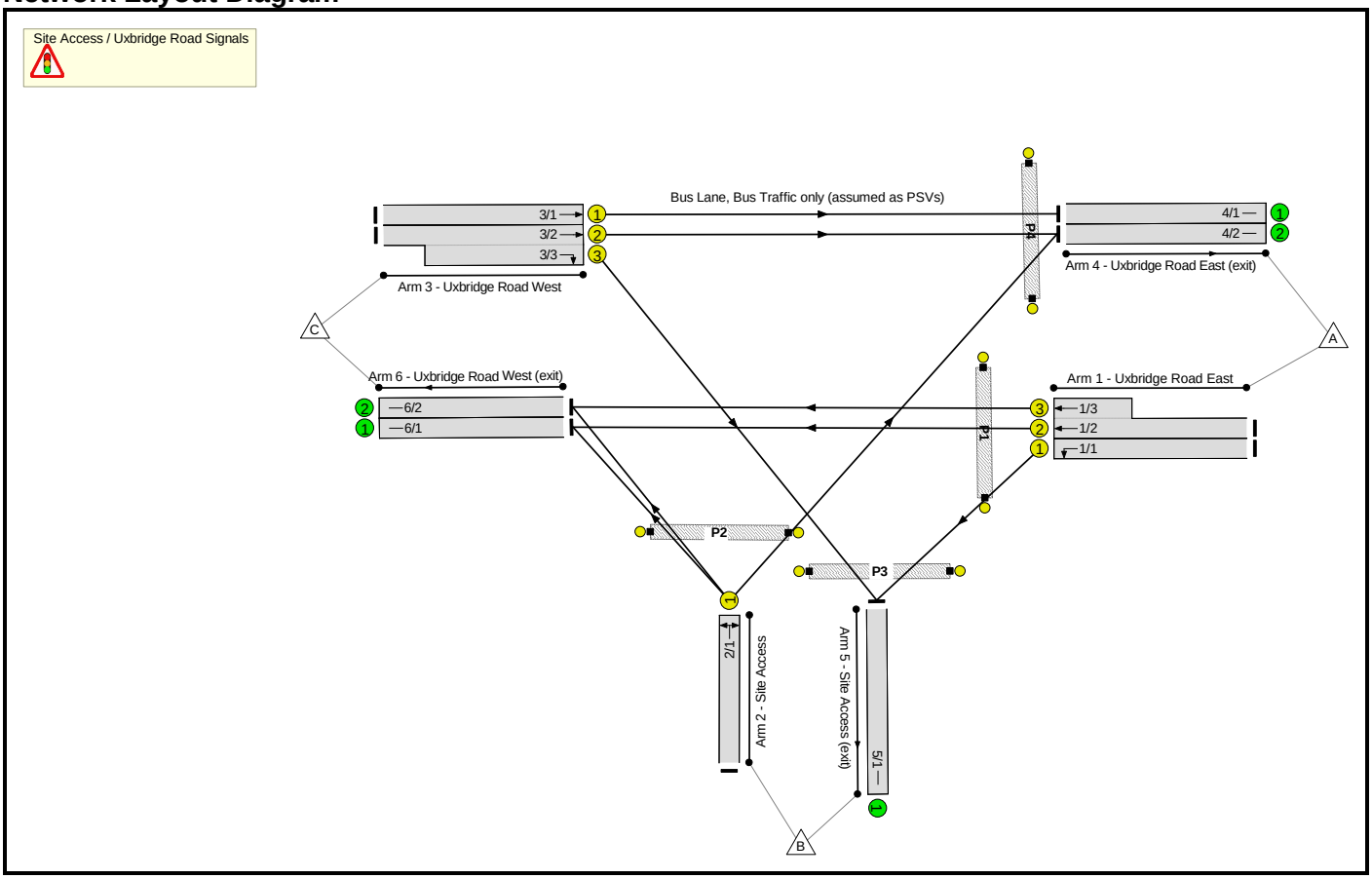
Appendix F LinSig Outputs - Site Access / Uxbridge Road Proposed Layout

Full Input Data And Results

User and Project Details

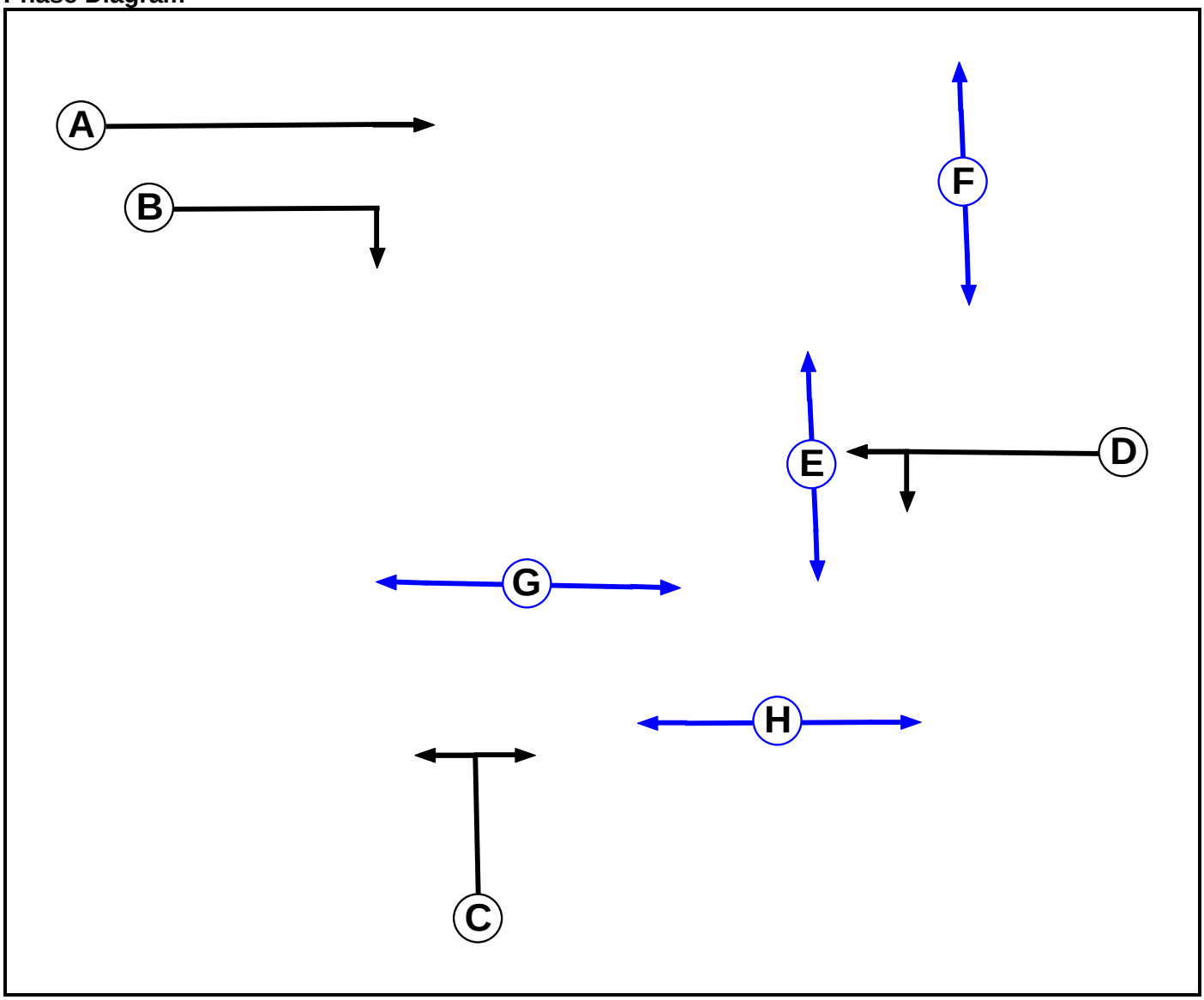
Project:	**Hayes Bridge Retail Park**
Title:	**Uxbridge Road / Site Access Junction**
Location:	
Additional detail:	
File name:	Site Access_Uxbridge Road Jct - Toucan Op2.lsg3x
Author:	DC
Company:	Apex Transport Planning
Address:	Cardiff

Network Layout Diagram



Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		6	6
F	Pedestrian		6	6
G	Pedestrian		6	6
H	Pedestrian		6	6

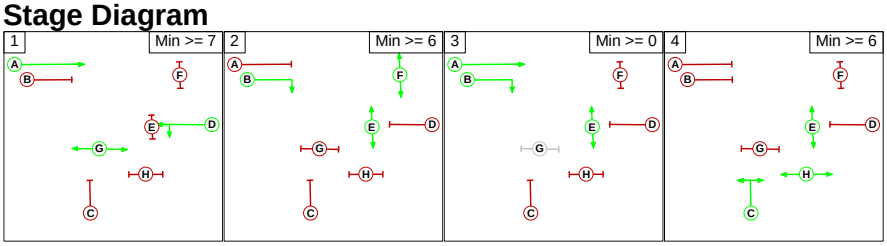
Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	8	-	-	12	-	-
	B	-		8	9	-	-	-	12
	C	6	6		5	-	12	5	-
	D	-	8	8		9	-	-	9
	E	-	-	-	11		-	-	-
	F	9	-	9	-	-		-	-
	G	-	-	9	-	-	-		-
	H	-	8	-	8	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A D G
2	B E F
3	A B E
4	C E H

Stage Diagram



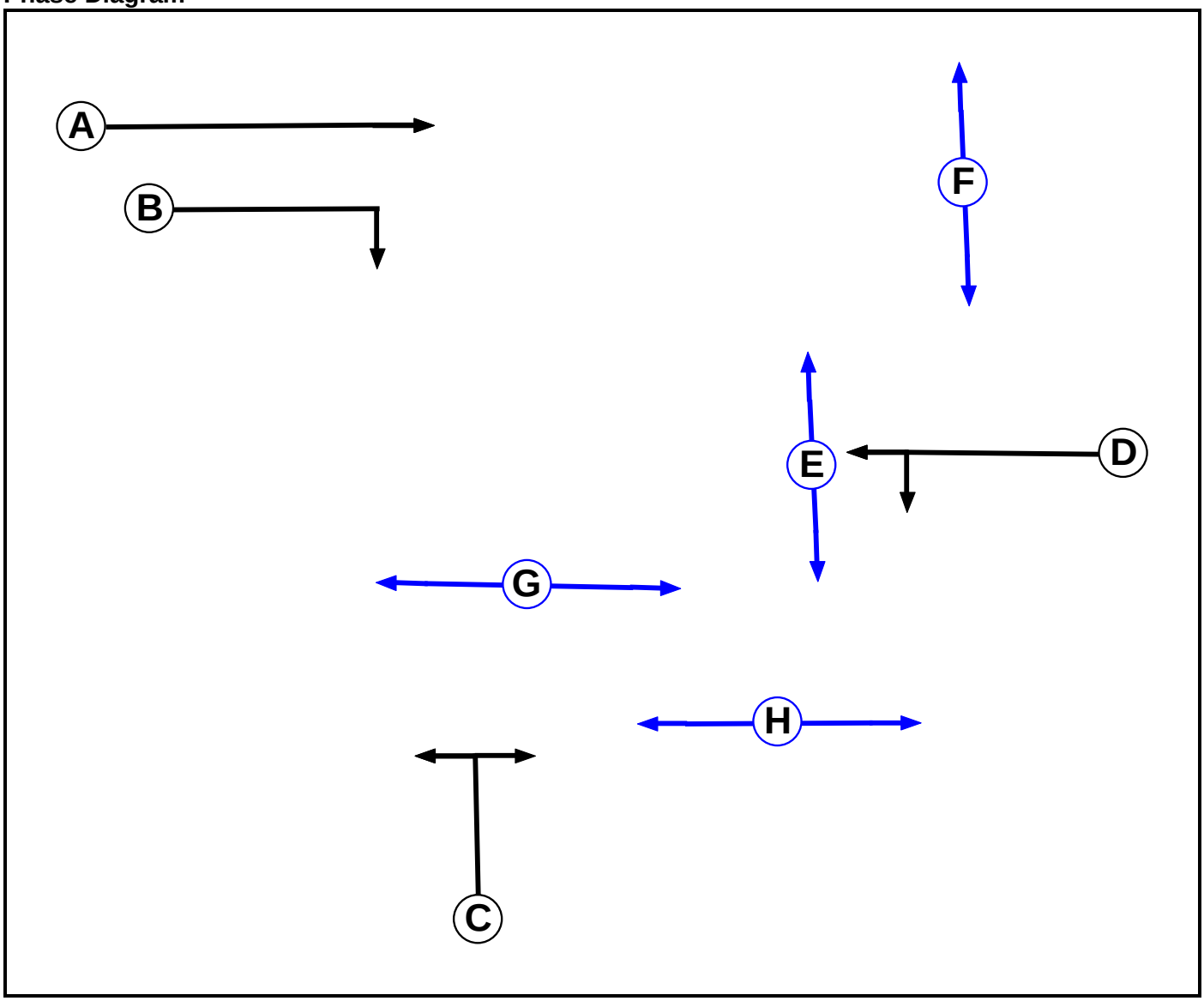
Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	D	Losing	3	3
1	2	G	Losing	3	3

Full Input Data And Results

Scenario 5: '2026 Future + Scheme Base AM' (FG5: '2026 Future Base + Scheme AM', Plan 1: 'Network Control Plan 1')

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		6	6
F	Pedestrian		6	6
G	Pedestrian		6	6
H	Pedestrian		6	6

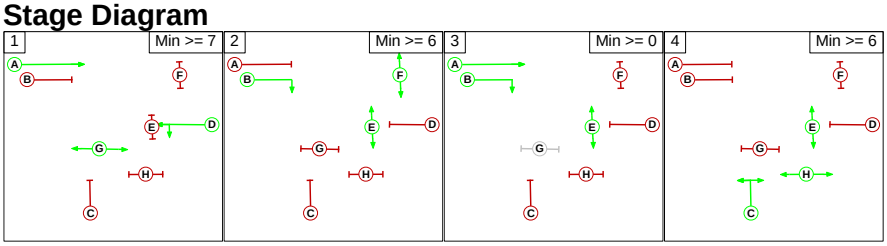
Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	8	-	-	12	-	-
	B	-		8	9	-	-	-	12
	C	6	6		5	-	12	5	-
	D	-	8	8		9	-	-	9
	E	-	-	-	11		-	-	-
	F	9	-	9	-	-		-	-
	G	-	-	9	-	-	-		-
	H	-	8	-	8	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A D G
2	B E F
3	A B E
4	C E H

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	D	Losing	3	3
1	2	G	Losing	3	3

Full Input Data And Results

Lane Input Data

Junction: Site Access / Uxbridge Road Signals

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Uxbridge Road East)	U	D	2	3	2.6	User	1565	-	-	-	-	-
1/2 (Uxbridge Road East)	U	D	2	3	60.0	User	1740	-	-	-	-	-
1/3 (Uxbridge Road East)	U	D	2	3	5.8	User	1868	-	-	-	-	-
2/1 (Site Access)	U	C	2	3	60.0	User	1640	-	-	-	-	-
3/1 (Uxbridge Road West)	U	A	2	3	60.0	User	1850	-	-	-	-	-
3/2 (Uxbridge Road West)	U	A	2	3	60.0	User	1847	-	-	-	-	-
3/3 (Uxbridge Road West)	U	B	2	3	11.8	User	1702	-	-	-	-	-
4/1 (Uxbridge Road East (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2 (Uxbridge Road East (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Site Access (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Uxbridge Road West (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2 (Uxbridge Road West (exit))	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
5: '2026 Future Base + Scheme AM'	07:00	08:00	01:00	
6: '2026 Future Base + Scheme PM'	16:30	17:30	01:00	

Scenario 5: '2026 Future + Scheme Base AM' (FG5: '2026 Future Base + Scheme AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	11	958	969

Full Input Data And Results

	B	4	0	17	21
	C	850	31	0	881
	Tot.	854	42	975	1871

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2026 Future + Scheme Base AM
Junction: Site Access / Uxbridge Road Signals	
1/1	11
1/2 (with short)	958(In) 462(Out)
1/3 (short)	496
2/1	21
3/1	54
3/2 (with short)	827(In) 796(Out)
3/3 (short)	31
4/1	54
4/2	800
5/1	42
6/1	470
6/2	505

Lane Saturation Flows

Junction: Site Access / Uxbridge Road Signals

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Uxbridge Road East Lane 1)	This lane uses a directly entered Saturation Flow						1565	1565
1/2 (Uxbridge Road East Lane 2)	This lane uses a directly entered Saturation Flow						1740	1740
1/3 (Uxbridge Road East Lane 3)	This lane uses a directly entered Saturation Flow						1868	1868
2/1 (Site Access Lane 1)	This lane uses a directly entered Saturation Flow						1640	1640
3/1 (Uxbridge Road West Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
3/2 (Uxbridge Road West Lane 2)	This lane uses a directly entered Saturation Flow						1847	1847
3/3 (Uxbridge Road West Lane 3)	This lane uses a directly entered Saturation Flow						1702	1702
4/1 (Uxbridge Road East (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Uxbridge Road East (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Site Access (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Uxbridge Road West (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Uxbridge Road West (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 6: '2026 Future + Scheme Base PM' (FG6: '2026 Future Base + Scheme PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	9	1080	1089
	B	15	0	44	59
	C	959	23	0	982
	Tot.	974	32	1124	2130

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2026 Future + Scheme Base PM
Junction: Site Access / Uxbridge Road Signals	
1/1	9
1/2 (with short)	1080(In) 521(Out)
1/3 (short)	559
2/1	59
3/1	48
3/2 (with short)	934(In) 911(Out)
3/3 (short)	23
4/1	48
4/2	926
5/1	32
6/1	543
6/2	581

Lane Saturation Flows

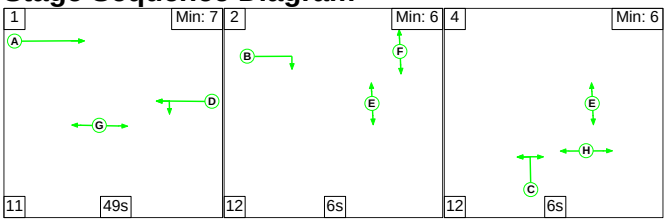
Junction: Site Access / Uxbridge Road Signals

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Uxbridge Road East Lane 1)	This lane uses a directly entered Saturation Flow						1565	1565
1/2 (Uxbridge Road East Lane 2)	This lane uses a directly entered Saturation Flow						1740	1740
1/3 (Uxbridge Road East Lane 3)	This lane uses a directly entered Saturation Flow						1868	1868
2/1 (Site Access Lane 1)	This lane uses a directly entered Saturation Flow						1640	1640
3/1 (Uxbridge Road West Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
3/2 (Uxbridge Road West Lane 2)	This lane uses a directly entered Saturation Flow						1847	1847
3/3 (Uxbridge Road West Lane 3)	This lane uses a directly entered Saturation Flow						1702	1702
4/1 (Uxbridge Road East (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
4/2 (Uxbridge Road East (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf
5/1 (Site Access (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Uxbridge Road West (exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Uxbridge Road West (exit) Lane 2)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: '2026 Future + Scheme Base AM' (FG5: '2026 Future Base + Scheme AM', Plan 1: 'Network Control Plan 1')

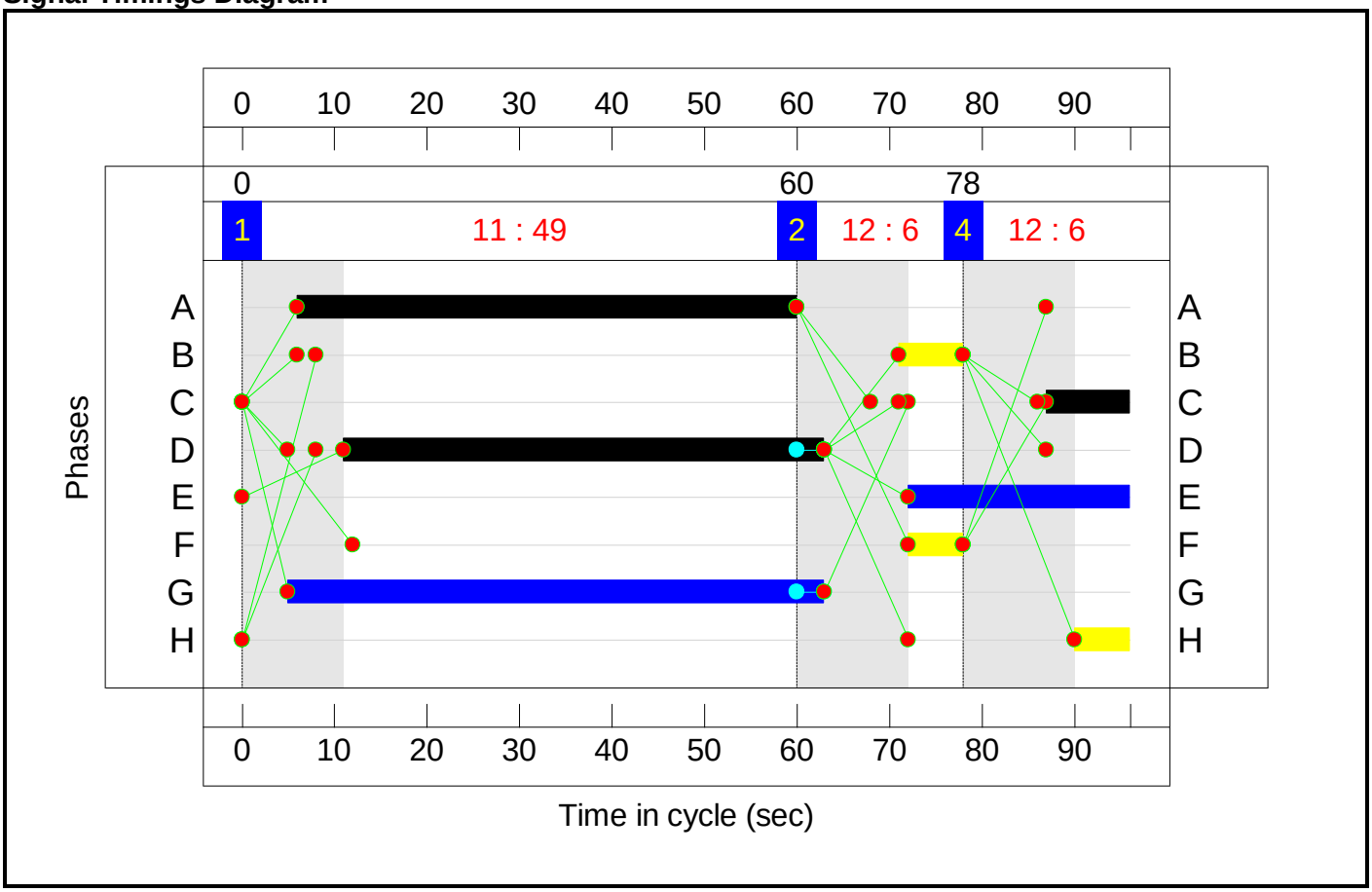
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	49	6	6
Change Point	0	60	78

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Mean Max Queue (pcu)
Network: Uxbridge Road / Site Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-
Site Access / Uxbridge Road Signals	-	-	**N/A**	-	-		-	-	-	-	-	-	-
1/1	Uxbridge Road East Left	U	N/A	N/A	D		1	52	-	11	1565	864	0.1
1/2+1/3	Uxbridge Road East Ahead	U	N/A	N/A	D		1	52	-	958	1740:1868	586+629	14.0
2/1	Site Access Right Left	U	N/A	N/A	C		1	9	-	21	1640	171	0.6
3/1	Uxbridge Road West Ahead	U	N/A	N/A	A		1	54	-	54	1850	1060	0.7
3/2+3/3	Uxbridge Road West Ahead Right	U	N/A	N/A	A B		1	54:7	-	827	1847:1702	1055+41	17.4
Ped Link: P1	Uxbridge Rd (wb)	-	N/A	-	E		1	24	-	0	-	0	-
Ped Link: P2	Site Access Ped	-	N/A	-	G		1	58	-	0	-	0	-
Ped Link: P3	Site Access (exit) ped	-	N/A	-	H		1	6	-	0	-	0	-
Ped Link: P4	Uxbridge Rd (eb)	-	N/A	-	F		1	6	-	0	-	0	-

Full Input Data And Results

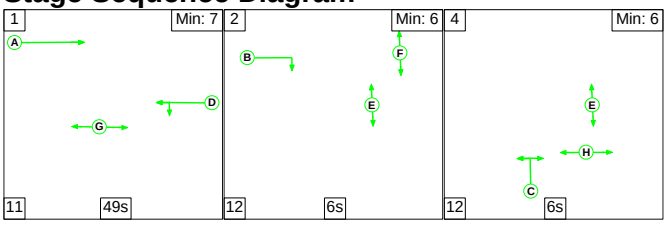
Item	Total Delay (pcuHr)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**11.2**	**78.8%**	**-**	**-**	**0**	**0**	**0**	**7.8**	**3.5**	**0.0**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**11.2**	**78.8%**	**-**	**-**	**0**	**0**	**0**	**7.8**	**3.5**	**0.0**	**-**	**-**	**-**
1/1	0.0	1.3%	11	11	-	-	-	0.0	0.0	-	12.0	0.1	0.0
1/2+1/3	5.4 (2.6+2.8)	78.8 : 78.8%	958	958	-	-	-	3.6	1.8	-	20.5 (20.5:20.5)	12.2	1.8
2/1	0.3	12.3%	21	21	-	-	-	0.2	0.1	-	51.1	0.5	0.1
3/1	0.2	5.1%	54	54	-	-	-	0.1	0.0	-	10.8	0.6	0.0
3/2+3/3	5.3 (4.9+0.4)	75.4 : 75.4%	827	827	-	-	-	3.8	1.5	-	23.0 (22.0:47.7)	15.9	1.5
Ped Link: P1	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P2	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P3	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P4	-	0.0%	0	0	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 14.2 Total Delay for Signalled Lanes (pcuHr): 11.22 Cycle Time (s): 96
PRC Over All Lanes (%): 14.2 Total Delay Over All Lanes(pcuHr): 11.22

Full Input Data And Results

Scenario 6: '2026 Future + Scheme Base PM' (FG6: '2026 Future Base + Scheme PM', Plan 1: 'Network Control Plan 1')

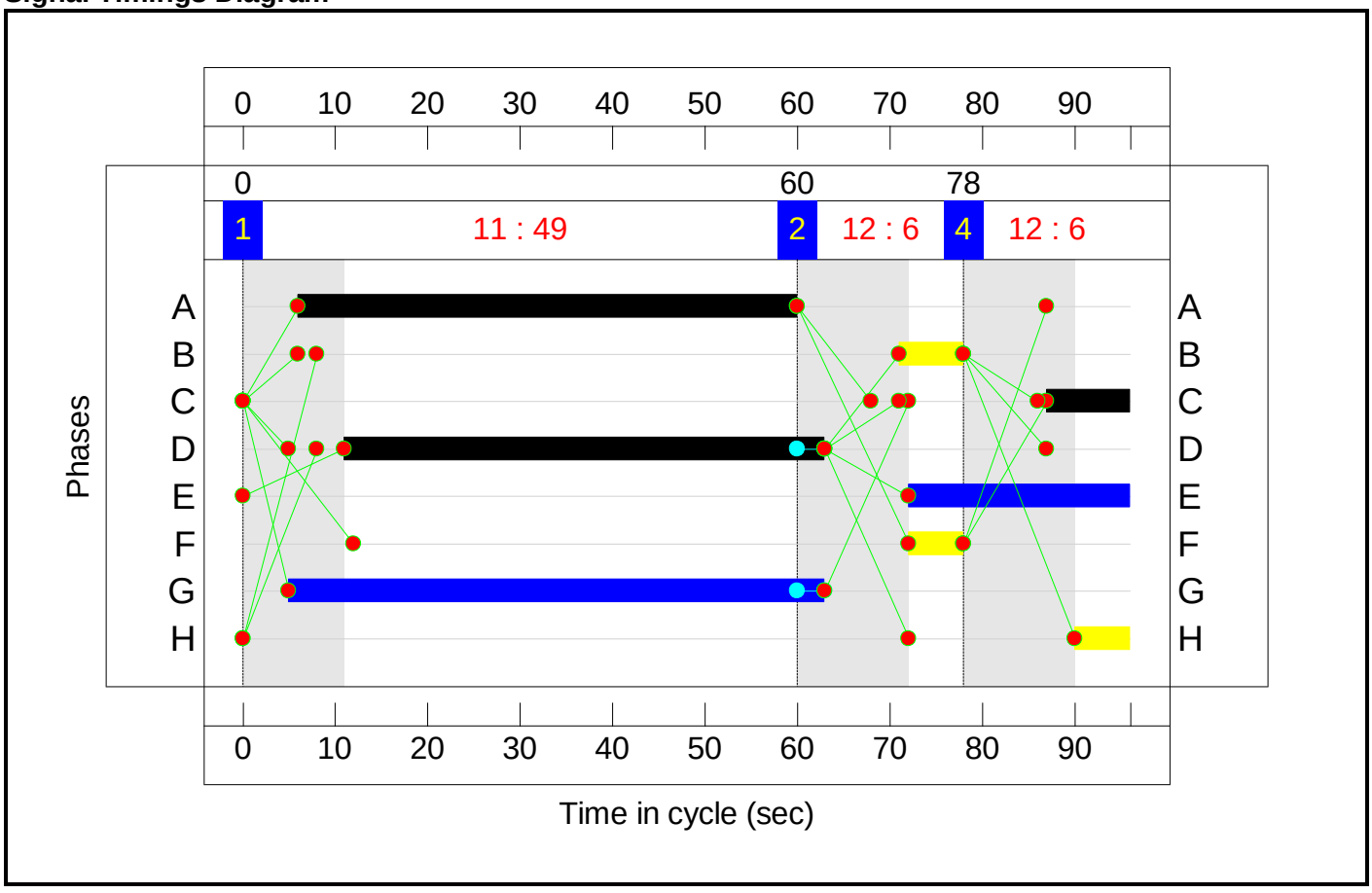
Stage Sequence Diagram



Stage Timings

Stage	1	2	4
Duration	49	6	6
Change Point	0	60	78

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Mean Max Queue (pcu)
Network: Uxbridge Road / Site Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-
Site Access / Uxbridge Road Signals	-	-	**N/A**	-	-		-	-	-	-	-	-	-
1/1	Uxbridge Road East Left	U	N/A	N/A	D		1	52	-	9	1565	864	0.1
1/2+1/3	Uxbridge Road East Ahead	U	N/A	N/A	D		1	52	-	1080	1740:1868	586+629	21.8
2/1	Site Access Right Left	U	N/A	N/A	C		1	9	-	59	1640	171	1.7
3/1	Uxbridge Road West Ahead	U	N/A	N/A	A		1	54	-	48	1850	1060	0.6
3/2+3/3	Uxbridge Road West Ahead Right	U	N/A	N/A	A B		1	54:7	-	934	1847:1702	1058+27	23.2
Ped Link: P1	Uxbridge Rd (wb)	-	N/A	-	E		1	24	-	0	-	0	-
Ped Link: P2	Site Access Ped	-	N/A	-	G		1	58	-	0	-	0	-
Ped Link: P3	Site Access (exit) ped	-	N/A	-	H		1	6	-	0	-	0	-
Ped Link: P4	Uxbridge Rd (eb)	-	N/A	-	F		1	6	-	0	-	0	-

Full Input Data And Results

Item	Total Delay (pcuHr)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network: Uxbridge Road / Site Access Junction	**17.0**	**88.8%**	**-**	**-**	**0**	**0**	**0**	**10.0**	**7.0**	**0.0**	**-**	**-**	**-**
Site Access / Uxbridge Road Signals	**17.0**	**88.8%**	**-**	**-**	**0**	**0**	**0**	**10.0**	**7.0**	**0.0**	**-**	**-**	**-**
1/1	0.0	1.0%	9	9	-	-	-	0.0	0.0	-	12.0	0.1	0.0
1/2+1/3	8.3 (4.0+4.3)	88.8 : 88.8%	1080	1080	-	-	-	4.5	3.8	-	27.7 (27.7:27.7)	18.0	3.8
2/1	0.9	34.5%	59	59	-	-	-	0.7	0.3	-	56.0	1.5	0.3
3/1	0.1	4.5%	48	48	-	-	-	0.1	0.0	-	10.8	0.6	0.0
3/2+3/3	7.6 (7.3+0.3)	86.1 : 86.1%	934	934	-	-	-	4.6	3.0	-	29.3 (28.8:52.4)	20.2	3.0
Ped Link: P1	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P2	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P3	-	0.0%	0	0	-	-	-	-	-	-	-	-	-
Ped Link: P4	-	0.0%	0	0	-	-	-	-	-	-	-	-	-

C1 PRC for Signalled Lanes (%): 1.3 Total Delay for Signalled Lanes (pcuHr): 17.00 Cycle Time (s): 96
PRC Over All Lanes (%): 1.3 Total Delay Over All Lanes(pcuHr): 17.00