Ansty Garden Community

Environmental Statement

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APPENDIX C: TRAFFIC AND TRANSPORT

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ARDENT
CONSULTING ENGINEERS
AN EMPLOYEE OWNED COMPANY

FAIRFAX ACQUISITIONS LTD

ANSTY GARDEN COMMUNITY

TRANSPORT ASSESSMENT

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HEAD OFFICE: 3rd Floor, The Hallmark Building, 52-56 Leadenhall Street, London, EC3M 5JE **T** | 020 7680 4088
ESSEX: 1 - 2 Crescent Court, Billericay, Essex, CM12 9AQ **T** | 01277 657 677
KENT: Suite 10, Building 40, Churchill Business Centre, Kings Hill, Kent, ME19 4YU **T** | 01732 752 155
MIDLANDS: Office 3, The Garage Studios, 41-43 St Mary's Gate, Nottingham, NG1 1PU **T** | 0115 697 0940
SOUTH WEST: Unit 2.2a, Temple Studios, Temple Gate, Redcliffe, Bristol, BS1 6QA **T** | 0117 456 4994
SUFFOLK: Suite 3.07, Suffolk Enterprise Centre, 44 Felaw Street, Ipswich, IP2 8SJ **T** | 01473 407 321

Email: enquiries@ardent-ce.co.uk

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Document Control Sheet

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Distribution

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EXECUTIVE SUMMARY

This document sets out the traffic and transport assessment of the proposed development at Land Adjoining Ansty, West Sussex. The Local Planning Authority is Mid Sussex District Council and the Local Highways Authority is West Sussex County Council.

The proposed development comprises a residential-led, mixed-use development comprising up to 1,450 homes, a local centre, two schools and other community uses such as sports pitches. Extensive pre-application discussions were held with the local highways authority with regards to the design, active and public transport strategies, and traffic assessment of the development.

The development is in an accessible location with a number of existing facilities nearby, with improvements to active travel connectivity and public transport included as part of proposals. The internal development layout has been designed in line with the principles of a Walkable Neighbourhood, with a network of LTN 1/20 compliant footway / cycleways supported by a series of recreational and leisure routes.

An indicative street hierarchy and indicative street geometries have been set out, which provides maximum flexibility for intermediary and final bus provision while also prioritising active travel. Access to the development by active modes is available at numerous points, with improvements to on-site and off-site public rights of way being considered. Vehicular access to the development is via three new standard roundabouts, which have been tested for capacity and found to operate suitably with minimal queuing and delays.

Car and cycle parking provision are to be provided in line with the principles agreed with the local highways authority, matching the standards set for outer areas of Haywards Heath. Public transport improvements have been discussed with local bus operators with a series of options available for both the intermediary and final stages of the development, with the final bus provision to be confirmed in agreement with bus operators and the local highways authority as part of the legal agreement for the development. A series of mobility hubs will be provided to encourage multi-modal sustainable travel, with the hubs centred around bus stops within the development and designed to CoMoUK's minimum silver accreditation and maximum gold accreditation. Car club provision will also be explored, with car club operators expressing interest in providing vehicles within the development.

The traffic assessment of the development is based on a version of the Mid Sussex strategic traffic model. The model was previously utilised as part of the Regulation 18 process for the Draft Mid Sussex Local Plan, with the strategic traffic model indicating significant effects at 4 junctions within Mid Sussex. The model has since been further refined, as per the recommendations set out within the local plan modelling report, with these refinements undertaken in conjunction with the local highways authority. The amendments were made in order to better represent the condition of the existing network as well as changes made to the proposed development since the preliminary considerations utilised for the Regulation 18 process.

The outputs from the updated strategic model have been used to assess a wide study area, with a sifting criteria used to determine the absolute and relative traffic impact of the proposed development. The sifting criteria identified two junctions where detailed assessment was required, one of which was one of the four junctions highlighted at Regulation 18 stage. The effect of the development at the remaining three junctions highlighted at the Regulation 18 stage was found to be negligible. Using the updated outputs, where mitigation was required, a mitigation scheme has been designed based on advice provided by the local highways authority to prioritise active travel improvements over vehicular capacity. Nonetheless, the mitigation scheme required delivers both sustainable travel improvements and vehicular capacity improvements to a better-than-nil-detriment level.

In conclusion, the information presented in this TA (and associated Appendices) confirms the suitability for a residential-led, mixed-use development at this location.

1. Introduction

1.1. This Transport Assessment (TA) has been produced by Ardent Consulting Engineers (ACE) on behalf of Fairfax Acquisitions Limited, to provide an assessment of the highways and transport conditions resulting from the proposed development at the Land Adjoining Ansty site in Mid Sussex.

1.2. The Local Planning Authority (LPA) is Mid Sussex District Council (MDSC) and the Local Highways Authority is West Sussex County Council (WSCC), with National Highways (NH) retaining specific responsibility for the A23 corridor to the west of the site. Also relevant to the consideration of the proposals are Active Travel England (ATE), who became a highways-relevant statutory consultee in June of 2023.

1.3. The location of the proposed development in its local context is shown on **Figure 1.1** below.

Figure 1.1: Site Location in Local Context

1.4. The site in its wider context, including in the context of the County and National Strategic Road Network (SRN) is shown in **Figure 1.2** below.

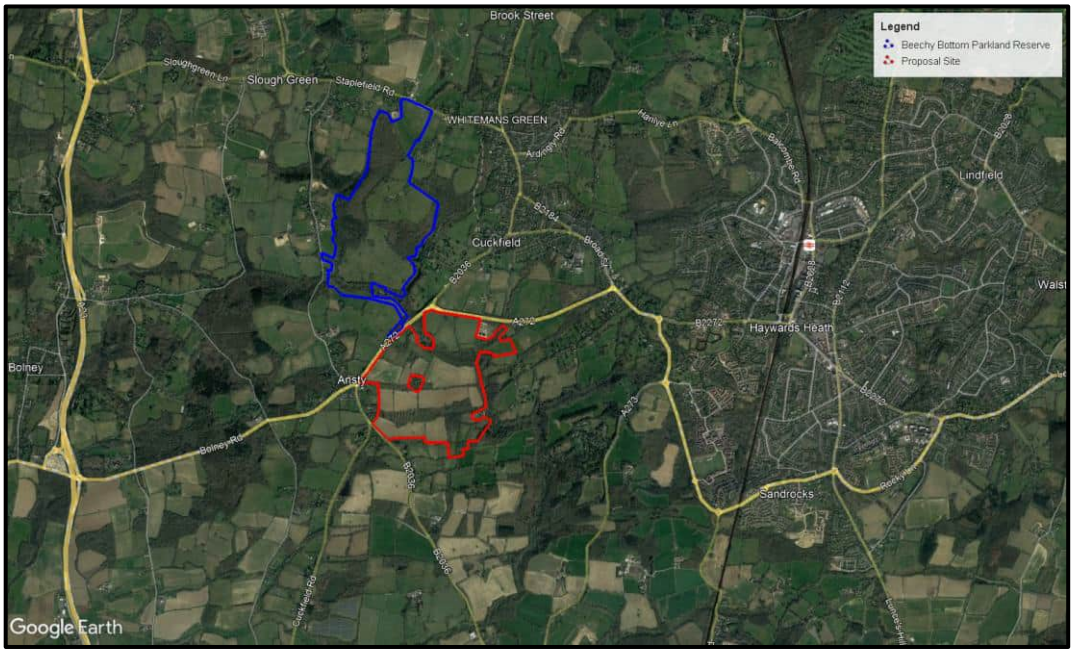


Figure 1.2: Site Location in Wider Context

Planning Background

1.5. The proposed development was initially considered for allocation within the draft Mid Sussex District Plan which is currently under review. As detailed in **Section 6.0** of this report, this TA builds on work undertaken as part of the Regulation 18 submissions for the above District Plan Review, including refinements to the strategic traffic modelling to better represent existing and future conditions. Details of the Regulation 18 work can be found within **ACE Report 2207280-01A**, with the updated strategic traffic modelling and resultant junction capacity / mitigation detailed in **Section 6.0** of this report.

Planning Strategy and Pre-Application Discussions

1.6. The proposals are to be subject to an Outline Planning Application (OPA), with all matters reserved excluding access. The Description of Development is as follows:

"Outline planning application (All matters reserved except for access) for the redevelopment of land to the east of Ansty to create a new Garden Community, comprising of the erection of up to 1,450 homes (including 30% affordable housing), up to 90 residential care (C2 units), a primary school, new SEND school, sports facilities including all weather hockey pitches and tennis centre, allotments, retail,

community and employment uses together with ancillary and associated development including new and enhanced pedestrian/cycle routes, open spaces, and landscaping"

1.7. In addition to the above the applicant is promoting a new Parkland Reserve, known as Beechy Bottom Parkland Reserve. The Parkland Reserve is subject to a separate planning application.

1.8. This TA follows on from extensive discussions with WSCC, NH and ATE with regards to the form and function of the proposed development, including discussions on the internal layout, street hierarchy and geometries, active travel and public transport strategies and strategic as well as local traffic modelling.

1.9. During these pre-application discussions, ACE produced a series of five Transport Technical Notes (TTNs) covering different aspects of the proposed development. These notes are listed below, along with which relevant bodies were consulted in defining the scope of agreement on the parameters that would be used within this TA:

- TTN #2 (Masterplanning Design Input) – WSCC & ATE.
- TTN #3 (Parking Strategy and Trip Rates) – WSCC & ATE.
- TTN #4 (Public Transport and Active Travel Strategy) – WSCC & ATE.
- TTN #5 (Local and Strategic Modelling) – WSCC & ATE.
- TTN #6 (National Highways Scoping) – WSCC, ATE & NH.

1.10. These TTNs, along with the overarching Transport Scoping Report, are provided in full at **Appendix A**. Pre-application responses were received from WSCC and NH, which are provided in full at **Appendix B**.

1.11. This TA incorporates comments received during pre-application discussions, and where relevant states where various aspects of the TA were agreed between ACE and the above consultees.

1.12. Following this introduction, this report is structured as follows:

- **Section 2.0** sets out the policy context in which the application is submitted, in terms of local, county and national policy.
- **Section 3.0** provides a review of the baseline accessibility of the proposal site.
- **Section 4.0** describes the proposed development, in terms of its quantum, mix, internal road layout and parking provision.
- **Section 5.0** outlines the Active Travel and Public Transport Strategy for the development, including details of mobility hubs within the development.
- **Section 6.0** details the strategic modelling approach for the countywide traffic assessment of the development.
- **Section 7.0** details the local junction capacity modelling conducted, on the basis of the output of the strategic modelling, as well as the proposed mitigation schemes.
- **Section 8.0** provides the summary and conclusions of the report.

2. Policy Context

Introduction

2.1. This section of the report reviews the policy context in which the application is made, addressing the policy base of MSDC, WSCC, NH and ATE where applicable.

MSDC Policy Context

Adopted Mid Sussex District Plan 2014 – 2031

2.2. The *Mid Sussex District Plan 2014 – 2031* is the current adopted Local Plan position of MSDC, being formally adopted in March of 2018. The plan outlines the vision and policies for development in Mid Sussex. The vision for Mid Sussex centres around four key themes:

- *"Protecting and enhancing the environment;*
- *Promoting economic vitality;*
- *Ensuring cohesive and safe communities; and*
- *Supporting healthy lifestyles."*

2.3. *Policy DP21 – Transport of the adopted Mid Sussex District Plan* reads as follows:

"Development will be required to support the objectives of the West Sussex Transport Plan 2011 – 2026, which are;

- *A high quality transport network that promotes a competitive and prosperous economy;*
- *A resilient transport network that complements the built and natural environment whilst reducing carbon emissions over time;*
- *Access to services, employment and housing; and*
- *A transport network that feels, and is, safer and healthier to use.*

To meet these objectives, decisions on development proposals will take account of whether:

- *The scheme is sustainably located to minimise the need for travel noting there might be circumstances where development needs to be located in the countryside, such as rural economic uses (see policy DP14: Sustainable Rural Development and the Rural Economy);*

- *Appropriate opportunities to facilitate and promote the increased use of alternative means of transport to the private car, such as the provision of, and access to, safe and convenient routes for walking, cycling and public transport, including suitable facilities for secure and safe cycle parking, have been fully explored and taken up;*
- *The scheme is designed to adoptable standards, or other standards agreed by the Local Planning Authority, including road widths and size of garages;*
- *The scheme provides adequate car parking for the proposed development taking into account the accessibility of the development, the type, mix and use of the development and the availability and opportunities for public transport; and with the relevant Neighbourhood Plan where applicable;*
- *Development which generates significant amounts of movement is supported by a Transport Assessment / Statement and a Travel Plan that is effective and demonstrably deliverable including setting out how schemes will be funded;*
- *The scheme provides appropriate mitigation to support new development on the local and strategic road network, including the transport network outside of the district, secured where necessary through appropriate legal agreements;*
- *The scheme avoids severe additional traffic congestion, individually or cumulatively, taking account of any proposed mitigation;*
- *The scheme protects the safety of road users and pedestrians; and*
- *The scheme does not harm the special qualities of the South Downs National Park or the High Weald Area of Outstanding Natural Beauty through its transport impacts.*

Where practical and viable, developments should be located and designed to incorporate facilities for charging plug-in and other ultra-low emission vehicles.

Neighbourhood Plans can set local standards for car parking provision that it is based upon evidence that provides clear and compelling justification for doing so."

2.4. *Policy DP22 – Rights of Way and other Recreational Routes* reads as follows:

"Rights of Way, Sustrans national cycle routes and recreational routes will be protected by ensuring development does not result in the loss of or does not adversely affect a right of way or other recreational routes unless a new route is provided which is of at least an equivalent value and which does not sever important routes.

Access to the countryside will be encouraged by:

- *Ensuring that (where appropriate) development provides safe and convenient links to rights of way and other recreational routes;*
- *Supporting the provision of additional routes within and between settlements that contribute to providing a joined up network of routes where possible;*
- *Where appropriate, encouraging making new or existing rights of way multi-functional to allow for benefits for a range of users. (Note 'multi-functional will generally mean able to be used by walkers, cyclists and horse-riders)."*

Draft Mid Sussex District Plan 2021 - 2039

2.5. Per National Policy, MSDC have commenced a District Plan Review, due to be completed in 2023. The draft Mid *Sussex District Plan 2021 – 2039* was published for the Regulation 18 consultation process between the 7th November and the 19th December 2022.

2.6. As with the adopted local plan, the draft local plan sets out the vision and objectives for Mid Sussex. The draft local plan sets out three key themes for Mid Sussex:

- *"Environment: Protecting and enhancing the natural, built, and historic environment;*
- *Economy: Promoting economic vitality; and*
- *Social: Ensuring cohesive, safe and healthy communities."*

2.7. Chapter 12 of the draft local plan concerns transport policy in Mid Sussex. *Policy DPT1: Placemaking and Connectivity* reads as follows:

"Development shall provide appropriate infrastructure to support the vision and objectives of the West Sussex Transport Plan 2022 – 2036 and meet the requirements of the NPPF.

To meet these objectives:

a) Development that is likely to generate significant amounts of movement and/or have a significant impact on the transport network shall provide a Transport Assessment / Statement, Sustainable Transport Strategy and Travel Plan to identify appropriate mitigation and demonstrate how development will be

accompanied by the necessary sustainable infrastructure to support it and to accord with the requirements of the NPPF.

b) *Demonstrate how all relevant sustainable travel interventions (for the relevant local network) will be maximised and taken into account in terms of their level of mitigation before considering physical highway infrastructure mitigation.*

c) *Development shall integrate relevant requirements of Chapter 4 of the Mid Sussex Design Guide SPD and be designed to prioritize sustainable and active modes of travel, providing safe and convenient routes for walking and cycling through the development and linking with existing and enhanced networks beyond; before the highway layout is planned.*

d) *Create liveable communities which strive to embody the 20-minute neighbourhood concept and deliver attractive, healthy places that have a permeable street network within the site with clearly defined route hierarchies that are safe and designed for all users and supporting desirable opportunities for people to choose not to travel by car.*

e) *New streets shall be designed to adoptable standard which can easily incorporate advanced digital infrastructure, including fibre."*

2.8. *Policy DPT2: Rights of Way and Other Recreational Routes* reads as follows:

"Rights of way, Sustrans national cycle routes and recreational routes will be protected by ensuring development does not result in the loss of or does not adversely affected right of way or other recreational routes unless a new route is provided which is of at least an equivalent value and which does not sever important routes.

Access to the countryside will be encouraged by:

Ensuring that (where appropriate) development provides safe and convenient links to rights of way and other recreational routes;

Supporting the provision of additional routes within and between settlements that contribute to providing a joined up network of routes where possible;

Where appropriate, encouraging making new or existing rights of way multi-functional to allow for benefits for a range of users. (Note: 'Multi-functional will generally mean able to be used by walkers, cyclists and horse-riders)."

2.9. *Policy DTP3: Active Travel* reads as follows:

"Development will be required to help remove barriers to active travel and create a healthy environment in which people chose to walk and wheel; facilitated by:

a) Where appropriate, providing high quality, fit for purpose active travel infrastructure, within the development which links to existing networks and builds on the schemes identified in the Mid Sussex Local Cycling and Walking Infrastructure Plan (LCWIP).

b) Providing appropriate levels of cycle parking facilities (taking account of WSCC Guidance on Parking at New Developments 2020 and subsequent iterations), well designed and laid out to be under cover, secure, conveniently located and easily accessible, close to the main entrance of the premises and in accordance with the guidance in the Mid Sussex Design Guide SPD."

2.10. *Policy DPT4: Parking and Electric Vehicle Charging Infrastructure* reads as follows:

"Development will be required to:

a) Provide adequate and well-integrated car parking, taking account of the guidance in the Mid Sussex Design Guide SPD and the WSCC Guidance on Parking at New Developments (2020 and subsequent iterations) along with the accessibility of the site to services and sustainable travel infrastructure, and the type, mix and use of development.

b) Parking associated with all new residential development shall be laid out to ensure the relevant requirements of Schedule 1 Part S of the Building Regulations regarding Electric Vehicle Charging are met.

c) All new non-residential buildings with more than 10 associated parking spaces within the site boundary, shall provide a minimum of 2 'Fast' (7kW) or faster, Electric Vehicle Charging points; cable routes shall be provided for 50% of the remaining total number of spaces."

WSCC Policy Context

West Sussex Transport Plan 2022 to 2036

2.11. The *West Sussex Transport Plan 2022 to 2036* sets out the overall strategy for WSCC as highways authority, being formally adopted in April of 2022. The plan outlines the vision and policies for transport across West Sussex. The plan focuses on the following four themes:

- *"Prosperous West Sussex*
- *Healthy West Sussex*
- *Protected West Sussex*
- *Connected West Sussex"*

2.12. These are supported by a further 17 objectives which are as follows:

"Objective 1: Support sustainable economic prosperity across the County by enabling recovery from the COVID-19 pandemic and levelling-up underperforming areas.

Objective 2: Support development and regeneration plans across the County by enabling local living and through strategic investments, particularly in sustainable modes of transport, at the right time and place to ensure the transport network is fit for the future.

Objective 3: Accommodate the needs of an ageing population that is expected to grow most in existing settlements in the Gatwick Diamond and Costal West Sussex Areas.

Objective 4: Avoid where possible and minimise air, noise and light pollution from use of the transport network to minimise impacts on public health and well-being.

Objective 5: Ensure the transport network allows residents and visitors (including people with disabilities) to live healthy lifestyles with good access to green and blue spaces, particularly the West Sussex coast and the protected South Downs, High Weald and Chichester Harbour.

Objective 6: Ensure rural communities can live locally by accessing local services or nearby towns.

Objective 7: Enable the transport network to achieve net zero carbon emissions by 2050.

Objective 8: Avoid where possible and minimise the impacts of the transport network on natural resources and on the natural, built and historic environment.

Objective 9: Improve the transport network whilst conserving and enhancing biodiversity.

Objective 10: To monitor and adapt infrastructure to the effects of climate change.

Objective 11: Reduce the need to travel by car by enabling local living.

Objective 12: Improve the efficiency of the County Strategic Road Network, particularly east-west routes including the A27, through targeted improvements to address congestion, pollution, rat-running and road safety issues on strategic or local routes.

Objective 13: Minimise the impacts on the transport network of surface access to Gatwick Airport by passengers and employees and ensure transport network improvements take the needs of other users and communities that share these routes into account.

Objective 14: Ensure the rail network is an attractive option for travel between West Sussex towns and to surrounding cities by improving the speed and quality of West Coastway and Arun Valley Line services, capacity on the Brighton Main Line and integration with other modes of transport.

Objective 15: Improve bus network efficiency and integration by reducing the effects of congestion into and within West Sussex towns, particularly where there are gaps in the rail network.

Objective 16: Ensure the bus network is customer focussed and integrated with other modes of transport to provide an attractive option for journeys to nearby towns.

Objective 17: Extend and improve the network of active travel facilities so it is coherent and high quality enough to make active travel an attractive, safe option for short distance trips and to transport interchanges."

National Highways

Department for Transport (DfT) – Circular 01/2022

2.13. Per the pre-application advise received from NH, the relevant overarching policy for NH is *DfT Circular 01/2022*, which was most recently updated in December of 2022. The Circular sets out the national level approach to the Strategic Road Network (SRN) maintained and operated by NH.

2.14. The circular sets out the recommended process by which developments should be designed. Of particular relevance to the proposed development is Paragraphs 47-51 of the Circular which lay out the NH approach to assessing development proposals:

"47. Where the company is requested to do so, it will engage with local planning authorities and development promoters at the pre-application stage on the scope of transport assessments/statements and travel plans. This process should determine the inputs and methodology relevant to establishing the potential impacts on the SRN and net zero principles that will inform the design and use of the scheme. Development promoters are strongly encouraged to engage with the company to resolve any potential issues and maximise opportunities for walking, wheeling, cycling, public transport and shared travel, as early as possible.

48. Where a transport assessment is required, this should start with a vision of what the development is seeking to achieve and then test a set of scenarios to determine the optimum design and transport infrastructure to realise this vision. Where such development has not been identified in an up-to-date development plan (or an emerging plan that is at an advanced stage), developers should demonstrate that the development would be located in an area of high accessibility by sustainable transport modes and would not create a significant constraint to the delivery of any planned improvements to the transport network or allocated sites.

49. A transport assessment for consideration by the company must also consider existing and forecast levels of traffic on the SRN, alongside any additional trips from committed developments that would impact on the same sections (link or junction) as the proposed development. Assumptions underpinning projected levels of traffic should be clearly stated to avoid the default factoring up of baseline traffic. The scenario(s) to be assessed, which depending on the development and local circumstances may include sensitivity testing, should be agreed with the company;

where a scenario with particularly high or low growth is proposed, this should be supported by appropriate evidence. Planned improvements to the SRN or local road network should also be considered in any assessment where there is a high degree of certainty that this will be delivered.

50. An opening year assessment to include trips generated by the proposed development, forecasted growth and committed development shall be carried out to establish the residual transport impacts of a proposed development. For multi-phase developments, additional assessments shall be provided based on the opening of each phase.

51. Where a transport assessment indicates that a development would have an unacceptable safety impact or the residual cumulative impacts on the SRN would be severe, the developer must identify when, in relation to the occupation of the development, transport improvements become necessary.

Ministry of Housing, Communities and Local Government

National Planning Policy Framework

2.15. The *National Planning Policy Framework* (NPPF) is the basis for all planning policy in England. Paragraph 10 states that *"… at the heart of the framework is a* ***presumption in favour of sustainable development****."* As such, all following plans and policies, including those of Local Planning Authorities, Local Highways Authorities, National Highways and Active Travel England.

2.16. Paragraph 111 sets the standard against which developments should be assessed in terms of their highways effects:

"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."

2.17. Further guidance is given on the highways priorities for development design which are as follows:

a) "Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment

area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) *Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*

c) *Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*

d) *Allow for the efficiency delivery of goods, and access by service and emergency vehicles; and*

e) *Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."*

2.18. In doing so, there is a recognition in Paragraph 110 (d) of the importance achieving growth in a manner than is cost effective and delivers improvements capable of mitigating the impact of development to an acceptable degree. This establishes that the outcome of a TA will be relevant within the overall decision-making process, when weighing up the balance of benefits and harm arising from a development.

Neighbourhood Plan

2.19. In February 2017, a *Neighbourhood Plan for Ansty, Staplefield and Brook Street* (ASBSNP) was formally adopted, following the designation of Neighbourhood Area by MSDC in 2012.

2.20. At the time of the ASBSNP, only the *2004 Mid Sussex District Local Plan* was adopted, and the neighbourhood plan did not at the time identify the proposed strategic development area.

2.21. The ASBSNP is considered relevant in so far as it set out some of the transport priorities for residents, which the proposed development may be able to address through its allocation and the subsequent OPA, including:

- A broader mix of housing, to improve availability for young families as well as older people wanting to downsize (Policy AS1 Part D and Policy AS4).
- A wish to see more improvements to community facilities such as leisure and recreational facilities (Policy AS8).
- Concerns over the loss of commercial land-uses within the villages, which provide vital services for some residents, with measures in place to seek retention or expansion of such facilities (Policy AS12);
- The need identified by the Community to improve cycling and walking routes to Cuckfield, Haywards Heath and the surrounding villages (Policy AS14).

2.22. Continuing engagement with the local parish councils is progressing, and a full programme of public consultation and events have been undertaken.

3. Accessibility Review

Introduction

3.1. This section sets out the accessibility of the site achievable by all relevant modes of travel. Through this review, the baseline accessibility of the site is presented reflective of current conditions, prior to any improvements being considered in response to the proposed development.

Local Amenities and Facilities

3.2. Several facilities catering for everyday needs are available within Ansty and Cuckfield, including Ansty Football and Cricket Club and a Co-Op foodstore within Cuckfield. The locations of these facilities are shown in **Figure 3.1**.

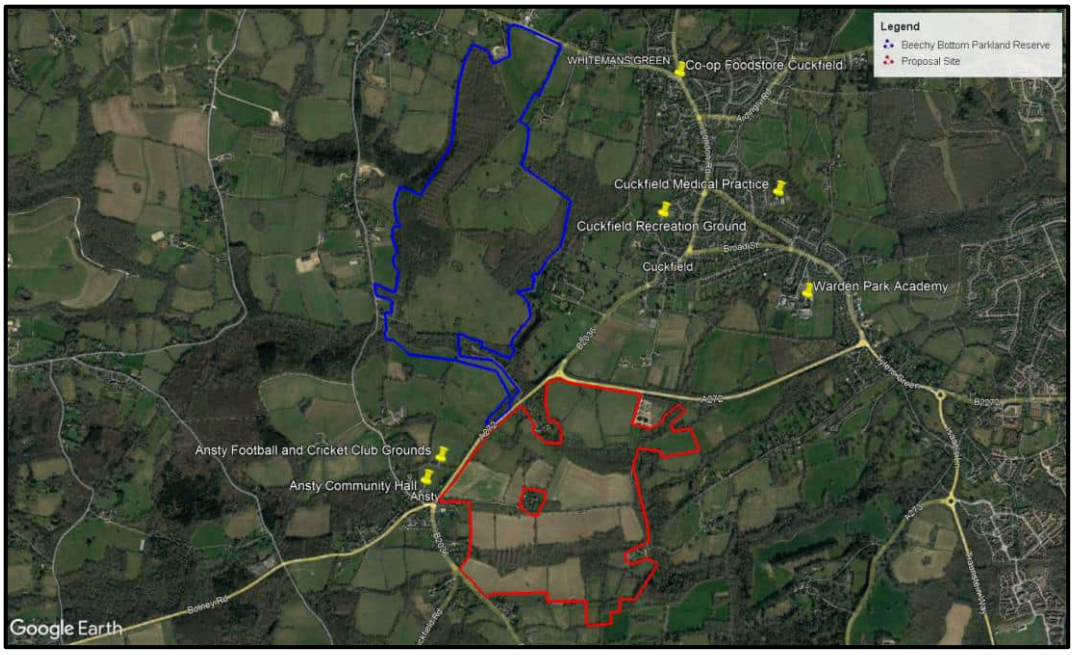


Figure 3.1: Existing Local Facilities

Accessibility by Foot

3.3. The Chartered Institution of Highways and Transportation (CIHT) document Providing for Journeys on Foot (2000) recommends acceptable walking distances of between 400m ("Desirable") for general journeys and 2km ("Preferred Maximum") for commuting and journeys to school purposes.

3.4. The Governments' Manual for Streets (MfS) itself identifies walkable neighbourhoods as being those typically characterised by having a range of facilities within an 800m (10-minute) walk distance. However, this is not an upper limit, with walking offering

the greatest potential to replace short car trips, particularly for those journeys under 2km.

3.5. A series of Public Rights of Way (PRoWs) run through the site including Footpaths 62CR, 65CR, 69CR and 72CR. The WSCC Local Land Charges Team have advised that there is also an outstanding application for the addition of a Public Right of Way between Courtmead Road and Newbury Lane in Cuckfield.

3.6. An extract from the West Sussex PRoW map showing the PRoWs that run through and surround the site, including the location of the application for a new footpath mentioned above, is shown in **Figure 3.2**.

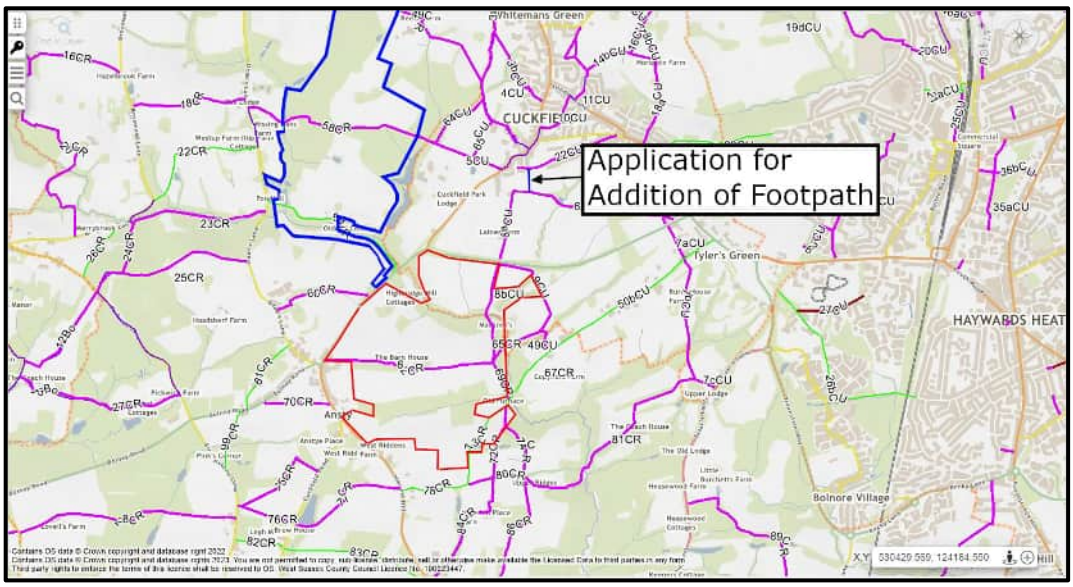


Figure 3.2: WSCC PRoWs within the Vicinity of Proposal Site

3.7. The PRoWs detailed in **Figure 3.2** connect the site to a variety of destinations, including the village of Ansty adjacent to the western edge of the proposal site, to the larger village of Cuckfield to the north of the proposal site and also towards Haywards East from routes on the eastern boundary of the site that extend eastwards, including Copyhold Lane. In the case of the latter, this is a bridleway and so can be used by both pedestrians and cyclists.

3.8. The A272 runs broadly along a north/south alignment to the west of the site and incorporates a footway on the western side. This footway extends north along the western side of the B2036 into the centre of Cuckfield, whilst it also extends south into the centre of Ansty where there are dropped kerb/tactile available at pedestrian crossing points.

3.9. Further south within Ansty, a footway is present along the eastern side of the B2036 from the A272 mini-roundabout junction to the Cuckfield Road/B2036 junction, where the footway terminates. There is currently no footway in place along the B2036 Harvest Hill along the site frontage.

Accessibility by Cycle

3.10. Bridleways 73CR and 67CR runs to the southwest of the proposal site, connecting the B2036 Harvest Hill to Copyhold Lane thorough towards Haywards Heath. A local cycle route is present to the east of the proposal site, connecting Tylers Green into central Haywards Heath.

3.11. An extract from OpenCycleMap.org showing the above local cycle route is shown in **Figure 3.3** below.

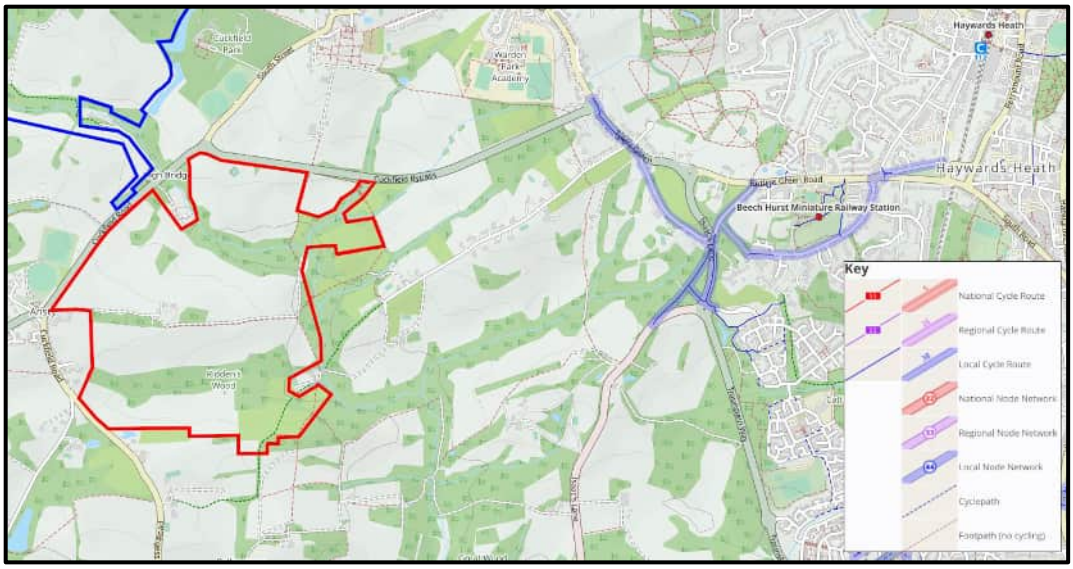


Figure 3.3: Cycle Routes within the Vicinity of the Site

3.12. Mid-Sussex published its Local Cycling and Walking Improvement Plan (LCWIP) in March 2023, as part of the WSCC Active Travel Strategy. The LCWIP forms part of the evidence base for the Mid Sussex District Plan review, specifically proposed Policy DPT 3 Active Travel which states:

"Development will be required to help remove barriers to active travel and create a healthy environment in which people chose to walk and wheel; facilitated by, where appropriate, providing high quality, fit for purpose active travel infrastructure, within the development which links to existing networks and builds on the schemes identified in the Mid Sussex Local Cycling and Walking Infrastructure Plan (LCWIP)".

3.13. Within the LCWIP, the typical origin-destination pairs are shown below, in **Figure 3.4** below. The site is denoted by a Red Star.

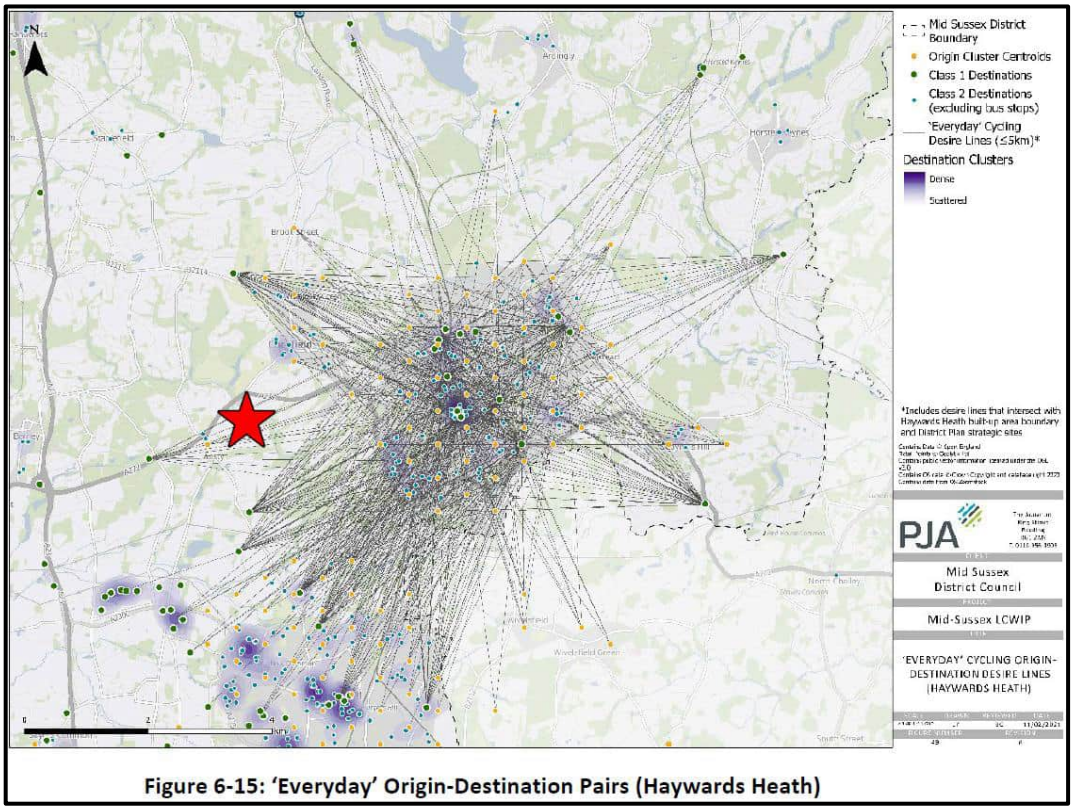


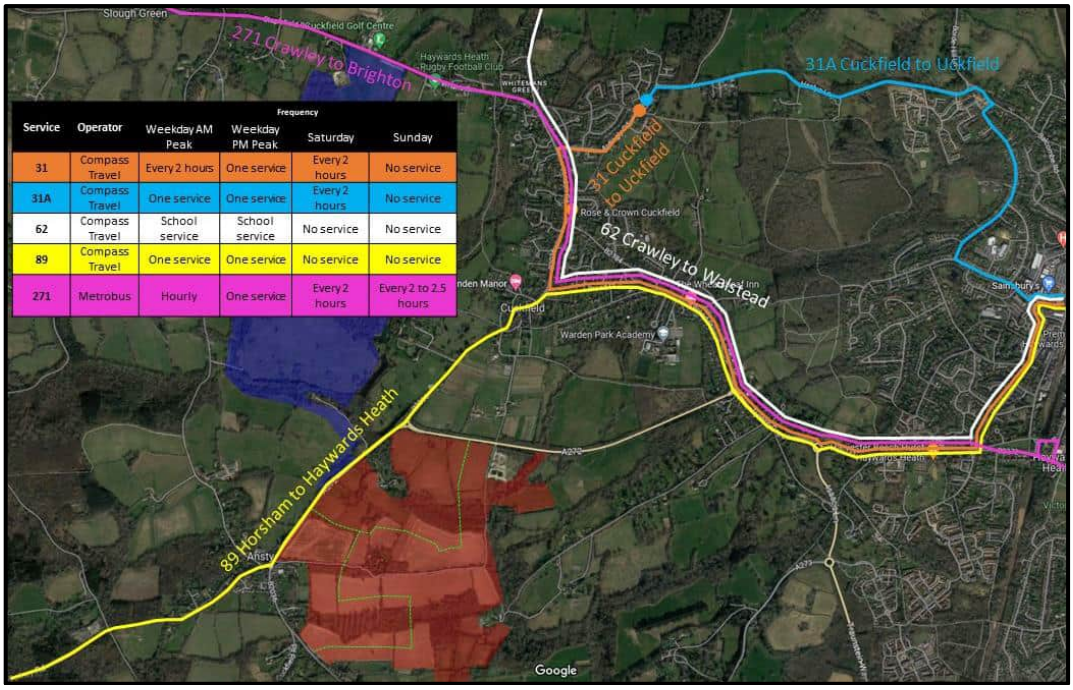
Figure 3.4: Every Day Origin-Destination Pairs (reproduced from Figure 6-15 of LCWIP 2023).

3.14. The above shows that the existing propensity for cycling to/from the village Ansty will mainly be towards Haywards Heath.

Accessibility by Public Transport

3.15. The closest existing bus stops to the site are located within Ansty, on either side of the A272 Bolney Road. Both stops are exclusively served by Compass Travel bus service no. 89 whose routes is between Horsham and Haywards Heath, and which operates at a frequency of one bus per hour on weekdays, with no service on Saturdays or Sundays.

3.16. Other bus routes run through Cuckfield and Haywards Heath, which are shown on the diagram in **Figure 3.5** below.



Service	Operator	Frequency: Weekday AM Peak	Weekday PM Peak	Saturday	Sunday
31	Compass Travel	Every 2 hours	One service	Every 2 hours	No service
31A	Compass Travel	One service	One service	Every 2 hours	No service
62	Compass Travel	School service	School service	No service	No service
89	Compass Travel	One service	One service	No service	No service
271	Metrobus	Hourly	One service	Every 2 hours	Every 2 to 2.5 hours

Figure 3.5: Local bus routes within the Vicinity of the Site

3.17. The nearest railway station to the proposal site is located within Haywards Heath, approximately 3.5km from the centre of the proposal site. Typical off-peak service for Haywards Heath Railway Station includes:

- 2 Trains per hour to Bedford
- 2 Trains per hour to Cambridge
- 6 Trains per hour to London Victoria
- 6 Trains per hour to Brighton
- 2 Trains per hour to Eastbourne
- 2 Trains per hour to Littlehampton

Summary

3.18. A summary of this section of the report is as follows:

- There are a number of local facilities located within Ansty and Cuckfield, which allows for a degree of 'local living' by catering for some of the needs to existing residents, thereby minimising the need to travel and/or reducing journey times.
- The site is surrounding by a network of PRoWs, including footpaths and bridleways, with a series of complementary routes located within the site boundary.
- There is an existing propensity to cycle from Ansty Village, with the primary pole of attraction being towards and East and Haywards Heath.
- Public transport in the area includes an existing bus service that runs directly adjacent to the proposal site, which also serves the closest train station.

4. Proposed Development

Introduction

4.1. This section of the report sets out the parameters for the proposed development, including the quantum of development, internal road layout and parking provision.

Development Composition

4.2. The Description of Development for the OPA is as follows:

"Outline planning application (All matters reserved except for access) for the redevelopment of land to the east of Ansty to create a new Garden Community, comprising of the erection of up to 1,450 homes (including 30% affordable housing), up to 90 residential care (C2 units), a primary school, new SEND school, sports facilities including all weather hockey pitches and tennis centre, allotments, retail, community and employment uses together with ancillary and associated development including new and enhanced pedestrian/cycle routes, open spaces, and landscaping"

Movement Principles

4.3. The site lies at the confluence of a number of movement corridors thereby providing access opportunities for the proposed development for future residents but also opportunity for improvements for existing residents of nearby settlements.

4.4. At the heart of the design of the Masterplan lies the principle of the 'walkable neighbourhood', which was originally enshrined within the Government's Manual for Streets guidance.

4.5. The concept has taken more prominence through the increasing focus there has been for new sustainable settlements to provide a range of facilities within the development that can be easily accessed, thereby reducing the overall travel distance required for people to meet basic needs.

4.6. The proposed development will be arranged in such a way that it delivers a permeable network of streets in order to enhance pedestrian and cycle movements and linking with existing PRoWs. Priority is also provided for public transport, through the establishment of a dedicated Bus Route, alongside this pedestrian/cycle infrastructure.

4.7. In designing the access and movement strategy for the development, a positive skew towards sustainable modes of travel has been centred, with private car travel being a lower priority. Therefore where active travel corridors are designed to be direct, legible and prioritised through the layout, the comparable vehicular routes are less direct and longer in length.

4.8. While the natural choice for internal travel and travel to/from Ansty will therefore always be for people to walk, cycle or wheel, some car travel must be facilitated in simple recognition that some end users may have originated from places that do not lend themselves as well to alternative modes of transport.

4.9. The design choices that have been made focus on increasing travel options for residents, employees, students and / or visitors and, where car travel is unavoidable, to ensure that sufficient provision is provided to ensure such movements can be accommodated, including through the provision of Electric Vehicle (EV) charging points.

4.10. The outcome of the approach is a form of development that is primarily designed to be at a human scale, with a clear focus on priority spaces and corridors for people to move freely or congregate, in line with objectives 2, 5 and 11 of the West Sussex Transport Plan.

Illustrative Masterplan

4.11. The proposed concept masterplan is provided at **Appendix C**.

4.12. The illustrative masterplan promotes permeability through the site and encourages non-car access and movement. This is considered in more detail later in this section and, but this focuses on achieving integration with the existing surrounding network and offering suitable improvements to encourage active travel.

4.13. The proposed wider active travel strategy will reduce reliance on private car use by making sustainable modes of transport attractive to future residents / visitors, and will supplement the bus strategy also detailed in **Section 5.0**.

Access Arrangements

4.14. Access to the site via active travel modes (including walking and cycling) will be possible from 10 locations:

- Via northern and southern multi-modal accesses, provided through new road junctions;
- At a new crossing point over the A272 into Beechy Bottom Parkland Reserve including a signalised crossing over the A272;
- Via Public Right of Way (PRoW) 62CR into Ansty;
- Via PRoWs 103CR, 69CR and 71CR on the eastern boundary of the site; and
- Via 72CR, 73CR and 74CR on the south eastern Boundary of the site.

4.15. The external vehicular access to the proposed development is to be at the three points:

- Access 1 – On the northern edge of the site onto the A272;
- Access 2 – On the western edge of the site onto the A272; and
- Access 3 – On the south-western edge of the site onto the B2036 Harvest Hill.

Access Principles

4.16. All three proposed access roundabouts comprise normal three-arm roundabouts, with the northern and southern junctions adopting 4.5m width entry and 4.5m width exit lanes on each arm and an Inscribed Circle Diameter (ICD) of between 28m and 100m.

4.17. It is anticipated that the western roundabout would cater for a higher volume of traffic than the northern and southern junctions (see **Section 6.0**) and so, whilst this is also a normal three-arm roundabout, it would incorporate two-lane entry/exits on the two A272 arms of the junction. It would have an ICD of 36m to ensure it suitably caters for the forecasted traffic demand.

4.18. Swept path analysis of each roundabout has been conducted, based on a 16.5m articulated Heavy Goods Vehicle (HGV) and the necessary turning manoeuvres are satisfactorily accommodated by the designs proposed.

4.19. The proposed roundabout geometries are based on standards included within the Design Manual for Roads and Bridges (DMRB) documents CD109 – Highway Link

Design and CD 116 – Geometric Design of Roundabouts. Visibility splays have been calculated based on the design speed of the road using the desirable minimum visibility from DMRB CD 109 – Highway Link Design. Footway and Cycleway widths have been based on Local Transport Note (LTN) 1/20 – Cycle Infrastructure Design and Manual for the Streets / Manual for Streets 2.

4.20. The design of all three access roundabouts are capable of providing visibility splays of 215m, commensurate with a 60mph design speed as per DMRB visibility standards. Therefore, the proposed access arrangements are not contingent on any changes to speed limits, but would secure additional benefits to deliver further traffic management.

4.21. Details of the public transport strategy for the site, including the proposed internal bus route through the development are provided in **Section 5.0** of this report, but all access points are able to accommodate the swept path of a public service vehicle to ensure permeability by buses as required from all access points.

4.22. As a complementary measure, the applicant is willing to work with WSCC to review existing speed limits in the vicinity and consider a change from the current national speed limit to 50mph on the A272 to the north of the proposal site and an extension of the 30mph zone to the south of Ansty.

4.23. The potential area of speed limit change to be considered is shown in **Figure 4.1** below, with existing 30mph limits shown blue, potential extension of 30mph limit shown yellow and potential change to 50mph limit shown in red.

Figure 4.1: Potential Change in Speed Limit (Indicative)

Access 1 – Northern Access

4.24. Plans showing the proposed northern access roundabouts are shown in **ACE Drawing 2207280-003F**.

4.25. The site arm of northern access roundabout includes a tiger crossing for pedestrians and cyclists, connecting the internal pedestrian / cycle network within the development to a 4.5m shared footway / cycleway on the southern side of the A272.

4.26. This shared footway / cycleway then continues to a signalised crossing on the A272 to provide a connection to a new footway on the northern side of the road that leads to ProW 8aCU further north, whilst the shared footway / cycleway extends further east towards Haywards Heath on the southern side of the A272.

4.27. The proposed northern access roundabout design has been subject to a Stage 1 Road Safety Audit (RSA1). The Designers' Response, including the RSA1 report, is provided within **ACE Report 2207280-R13**. The above drawing includes amendments made as a result of the RSA1.

Access 2 – Western Access

4.28. The layout of the proposed western access is shown in **ACE Drawing 2207280-004D**.

4.29. The new junction will cater for vehicles and on-road cyclists only, as other proposed segregated footways and cycle routes will diverge from the carriageway prior to this roundabout.

4.30. The proposed western access roundabout design has been subject to an RSA1. The Designers' Response, including the RSA1 report, is provided within **ACE Report 2207280-R14**. The above drawing includes amendments made as a result of the RSA1.

4.31. A signalised pedestrian crossing is however to be provided to the west of the site on the A272 in order to connect the internal pedestrian routes through the site to the proposed Beechy Bottom Parkland Reserve further west. The design of this crossing is shown on **ACE Drawing 2207280-010B**.

4.32. The proposed western access roundabout design has been subject to an RSA1. The Designers' Response, including the RSA1 report, is provided within **ACE Report 2207280-R17**. The above drawing includes amendments made as a result of the RSA1.

Access 3 – Southern Access

4.33. The layout of the proposed western access is shown in **ACE Drawing 2207280-005D**.

4.34. The site arm of the southern access roundabout include a crossing point for pedestrians and cyclists, with a dropped kerb cycle route leading onto the B2036 Harvest Hill to the south and a continuation of the 4.5m shared footway / cycleway to the north.

4.35. The proposed western access roundabout design has been subject to an RSA1. The Designers' Response, including the RSA1 report, is provided within **ACE Report 2207280-R15**. The above drawing includes amendments made as a result of the RSA1.

Junction Capacity

4.36. Each of the proposed access roundabouts has been modelled to determine their junction capacity and were found to operate satisfactorily. The details of the modelling tests conducted are provided in **Section 7.0** of this report.

Internal Street Layout

4.37. The illustrative Masterplan indicates how the development would be arranged around a permeable layout of inter-connected streets, with very few underlying constraints to delivering the concept of the walkable neighbourhood enshrined in the Government's Manual for Streets.

4.38. The MfS guidance recognises that streets have a number of functions, and it considers these to be as follows:

- Place;
- Movement;
- Access;
- Parking; and
- Drainage, Utilities and Street Lighting.

Street Hierarchy

4.39. Being subject to an OPA, the layout of the development is only intended to be illustrative, as it is only guided by the siting of the access and the relevant Parameter Plans (PP). Many of the decisions regarding the design of streets will therefore be subject to subsequent RM submission, and the adoption of any new highways will be subject to agreement with WSCC as part of a formal Technical Approval process entered into under Section 38 of the Highways Act 1980.

4.40. However, during pre-application discussions with WSCC, a hierarchy of six street-types were outlined. The street-type sequence was as follows:

1. Primary Spine Road (with Bus);
2. Primary Spine Road (Without Bus);
3. Secondary Routes (With Bus);
4. Secondary Routes (Without Bus);
5. Tertiary Routes (Individual Parcel Access); and
6. Shared Streets (Individual Dwelling Access).

4.41. Following discussions with bus operators, discussions with Design South East and further discussions with WSCC, the proposed street hierarchy has been refined into a total of four street types, which are as follows:

1. Bus Route ("Ansty Avenue");
2. Secondary Street ("The Crescent");
3. Tertiary Street ("The Lanes");
4. Shared Street ("The Walks").

4.42. The above street hierarchy provides some additional flexibility to address the requirement for buses, subject to the final bus route that would be specified at the OPA stage and, subsequently, incorporated into more detailed layouts when these are submitted at later Reserved Matters (RM) stage.

4.43. The design for each street type consists of four elements:

- Carriageway;
- Verge(s);
- Cycle Path(s); and
- Footway(s).

4.44. Local Transport Note (LTN) 1/20 – Cycle Infrastructure Design places the emphasis on the consistency of routes, as well as on the level of infrastructure within new strategic developments. The guidance sets out the principle that the standard of provision should reflect the expected number of users.

4.45. As such, carriageway widths, verges and segregated footways are based on WSCC guidance as well as Manual for Streets / Manual for Streets 2, while the shared footway / cycleway widths are based on the guidance contained in LTN 1/20.

4.46. Feedback from the *Design South East* review panel has also suggested that the geometries for the various elements are specified using ranges, as opposed to specific widths, as this provide maximum flexibility when later RM applications are being considered.

4.47. A plan based on this, showing the indicative street hierarchy across the site, is provided in **Appendix D**.

Bus Route (Ansty Avenue)

4.48. The configuration of the central route within the site (excluding one section of Secondary Street, as detailed below) will allow for a continuous Bus Route to be delivered, connecting the three site access roundabouts with all sections of the development.

4.49. The parameters for the Bus Route are anticipated to be as follows:

- Carriageway Width = 6.4m – 6.8m;
- Verge Width = 2m – 3m (both sides of the carriageway);
- Shared Footway / Cycleway = 3.0m – 4.5m (One side of the carriageway);
- Footway = (One side of the carriageway);
- Total Width = 15.4m – 19.3m.

4.50. A cross-section of the section of the Bus Route is shown in **Figure 4.2**, below.

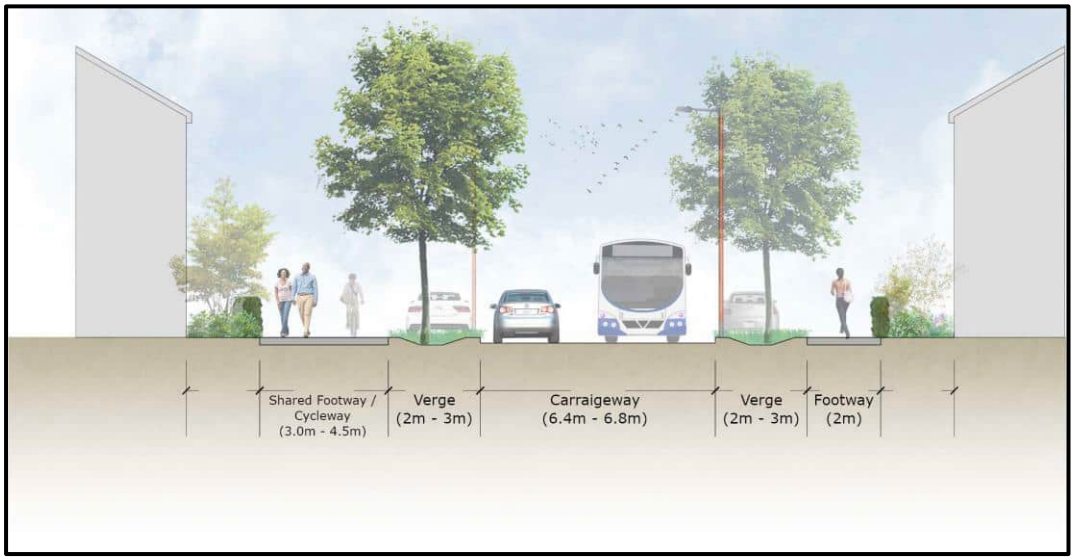


Figure 4.2: Indicative Bus Route Geometries

4.51. The final geometries of the Bus Route will be subject to refinement, depending on the exact routeing of the Bus Service, with non-selected sections being re-designated as Secondary Streets.

Secondary Streets

4.52. Only one section of the development is confirmed to have a Secondary Street, specifically the loop within the northern part of the development, the indicative parameters for which will be as follows:

- Carriageway Width = 4.5m – 5.5m;
- Verge Width = 2m – 2.5m (both sides of the carriageway);
- Shared Footway / Cycleway = 3.0m – 4.5m (One side of the carriageway);
- Footway = (One side of the carriageway);
- Total Width = 13.5m – 17m.

4.53. An indicative cross-section of a section of a secondary street is shown in **Figure 4.3**, below.

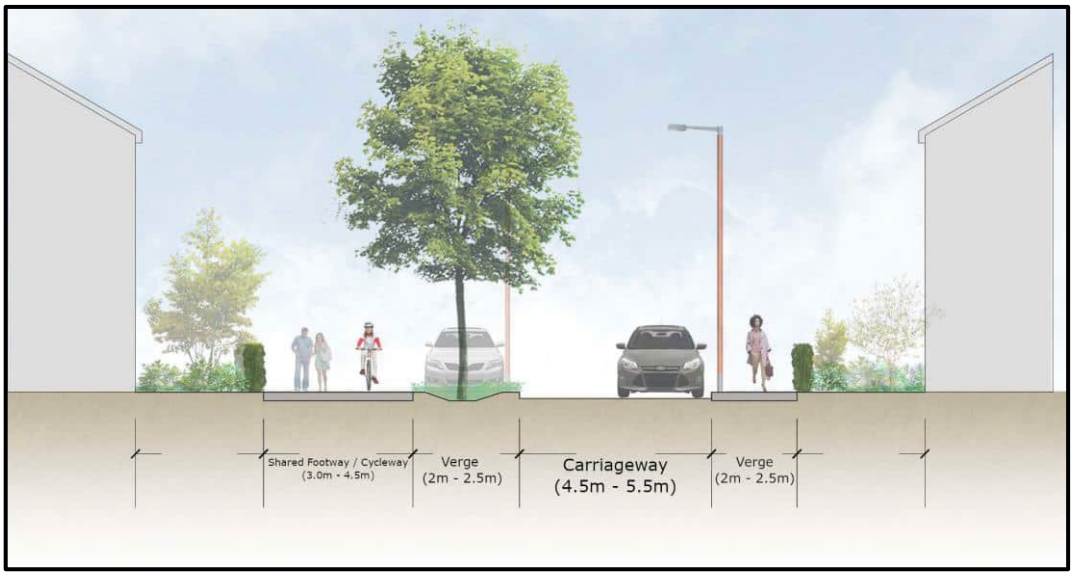


Figure 4.3: Indicative Secondary Street

Tertiary Streets

4.54. At present, four sections of tertiary street are included within the development in the north, central-east, central-west and south-east sections of the site.

4.55. To maintain a cohesive and direct cycle route throughout the site, cyclists are intended to travel on the carriageway on the tertiary streets before joining the main cycle route, and so no off-carriageway cycle route is provided for tertiary streets.

4.56. The indicative geometric parameters of the tertiary streets are as follows:

- Carriageway Width = 4.5m – 4.8m;
- Verge Width = 2m – 2.5m (one side of the carriageway);
- Footway = 2m (both sides of the carriageway including pinch points);
- Total Width = 10.5m – 13.8m

4.57. An indicative cross-section of the section of the tertiary street is shown in **Figure 4.4**, below.

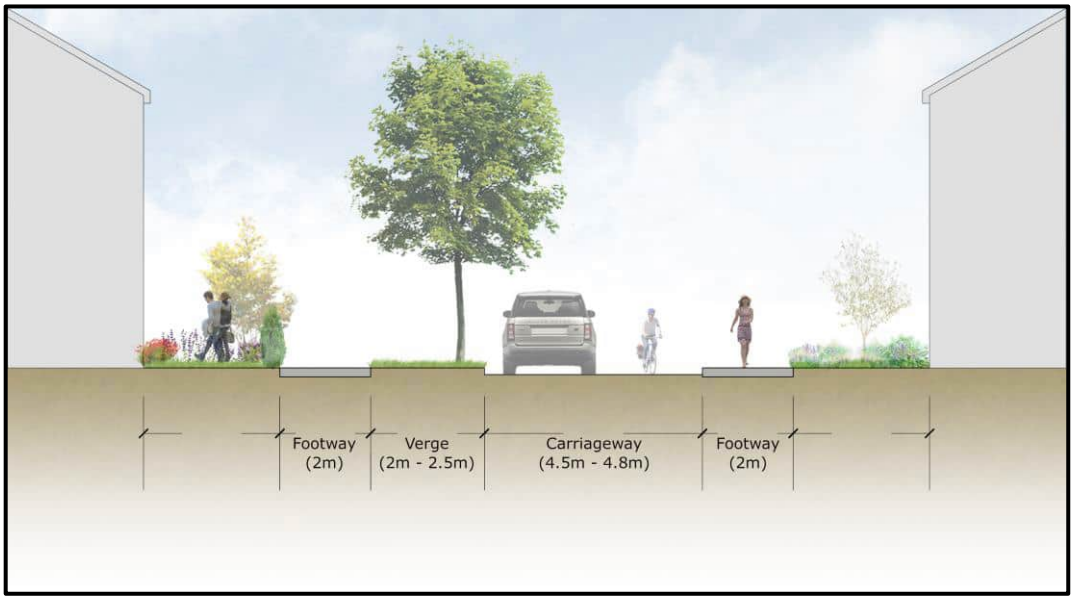


Figure 4.4: Indicative Tertiary Street

Shared Surface

4.58. Connections to cul-de-sacs, mews or individual dwellings will be via shared surface streets. Pedestrians, cyclists and vehicles will share the carriageway, with a change in surface finish of the carriageway denoting the transition from separated traffic to a shared surface.

4.59. Shared streets will be comprised of a shared 6m carriageway with 0.5m provided on both sides of the street for a utility margin. Traffic calming features, including build-outs and planting, will be used to reduce vehicle speeds. An indicative cross section of a shared surface is shown in **Figure 4.5**.

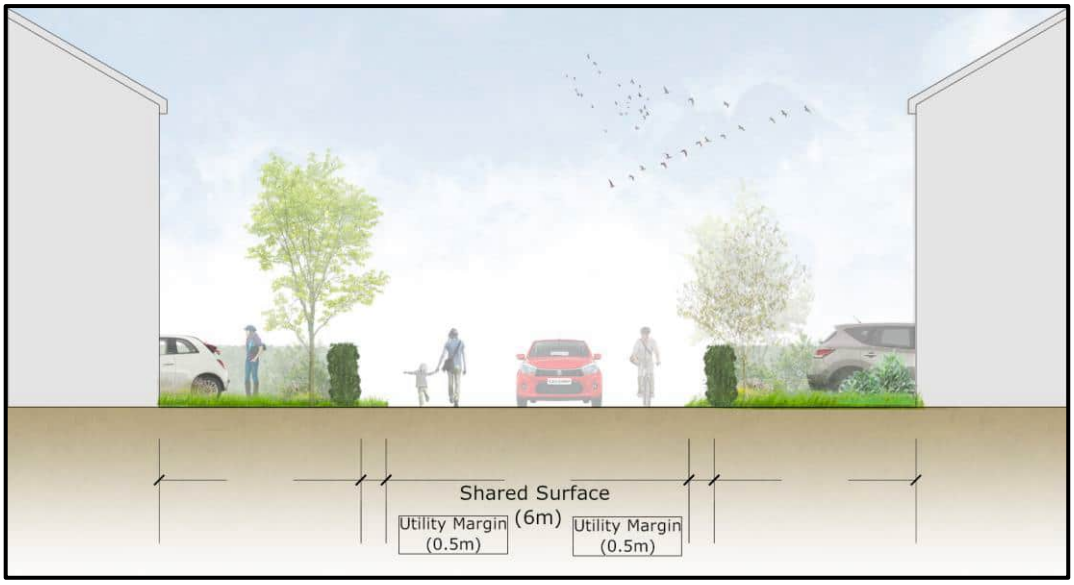


Figure 4.5: Indicative Shared Surface Street

West Sussex Parking Principles

4.60. The car parking standards for residential developments within West Sussex are stipulated within the WSCC document Guidance in Parking at New Developments, dated September 2020.

4.61. The guidance outlines a series of principles that form recommendations for car parking at new development. *Principle A* considers accommodating parking demand and notes that:

"Expected levels of parking demand in residential developments should be determined, where appropriate taking account of; location (parking behaviour zone), dwelling size (rooms), parking provision (allocated or unallocated), and arrangements for control/enforcement (charges, etc). Calculation of expected levels of parking demand should normally be based on local or comparable data taking account of forecast changes in demand for the local plan period."

4.62. The above approach seeks to provide sufficient car parking to meet the likely demand for development without, however, over-providing it to an extent that it could encourage greater car ownership.

4.63. Taking this further, Principle C considers the impact of sustainable transport and its impact upon parking demand/car ownership, outlining that:

"in some locations, limiting parking provision should form part of a strategy to exploit the potential for sustainable transport".

4.64. It goes on to outline that, in order to promote lower car ownership levels, this can be supported by travel plan measures, accessibility to non-car modes of travel and amenities/facilities and comprehensive parking controls. A Framework Travel Plan has been prepared as a separate document (**ACE Report Reference 2207280-R10**) to support the sustainability credentials of the site and encourage non-car modes of travel.

4.65. Noting that the site incorporates a range of uses, in association with these measures, rationalisation of parking provision between uses will be explored in order to avoid an over provision of parking spaces and promote non-car travel. This is be limited to uses that do not "compete" for parking and so are complimentary to each other.

4.66. Although an Outline planning application is being submitted, the design parameters set out within Principle E will be given due regard when the layout is considered in detail as part of a future Reserved Matters application.

Residential Car Parking Standards

4.67. The guidance splits West Sussex into Parking Behaviour Zones (PBZs) based on proximity to alternative transport modes and local amenities.

4.68. The car parking ratios guiding development in the different PBZs are outlined below in **Table 4.1**.

Number of Bedrooms	Number of Habitable Rooms	Car Parking Spaces per Unit				
		PBZ1	PBZ2	PBZ3	PBZ4	PBZ5
1	1 to 3	1.5	1.4	0.9	0.9	0.6
2	4	1.7	1.7	1.3	1.1	1.1
3	5 to 6	2.2	2.1	1.8	1.7	1.6
4+	7 or more	2.7	2.7	2.5	2.2	2.2

Table 4.1: WSCC Residential Car Parking Standards

4.69. The development is currently located within PBZ 1, as shown by the red star in **Figure 4.6** below.

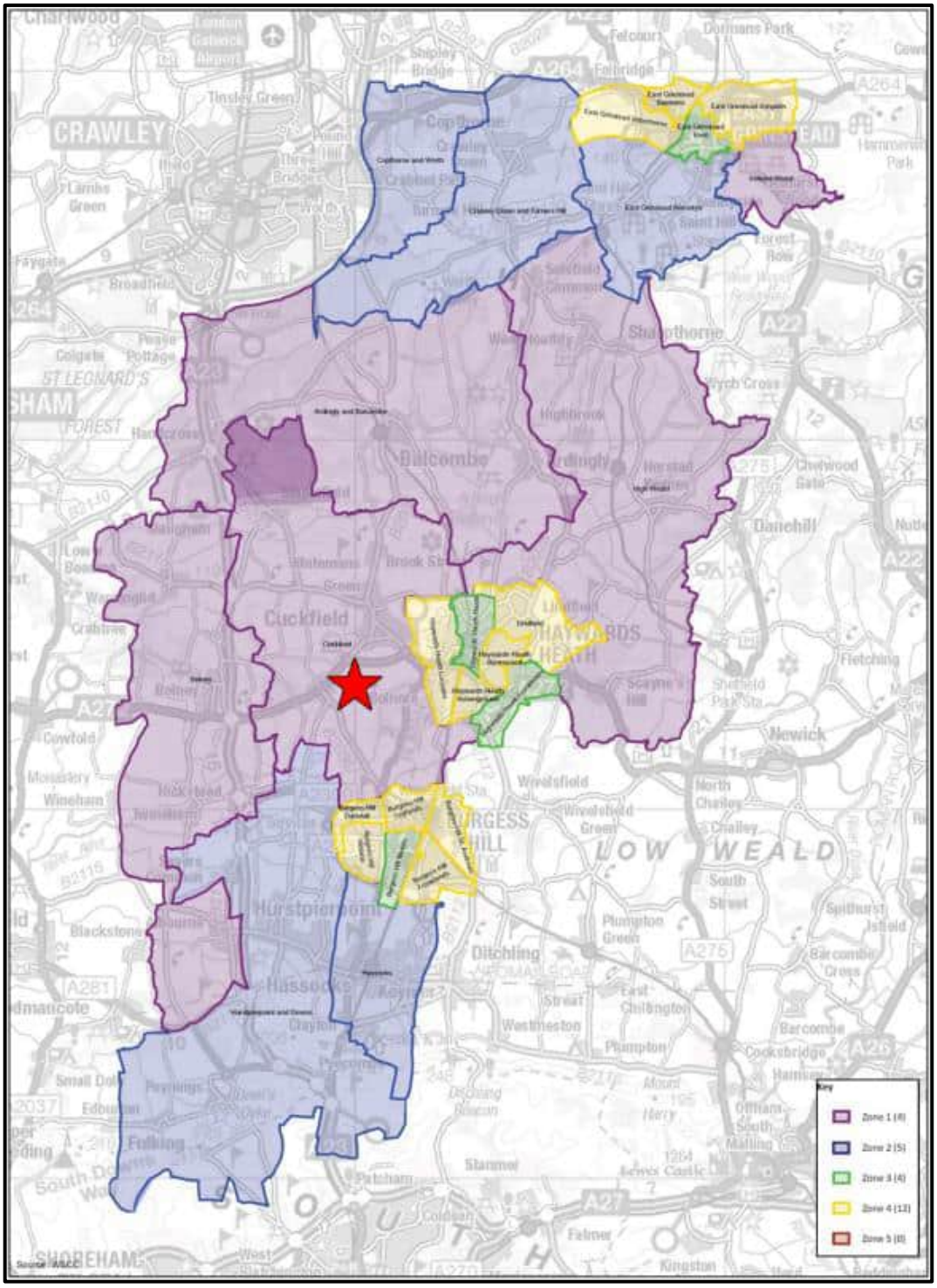


Figure 4.6: Mid Sussex Parking Behaviour Zones

4.70. As can be seen in Figure 4.6, PBZ1 covers predominantly rural areas with minimal public or active transport infrastructure. Considering the scale, land uses and betterments to public transport, walking and cycling infrastructure included within the proposed development, it is considered more appropriate to apply the parking standards for PBZ 3. This would mirror the standards applied to the other peripheral areas of Haywards Heath which will be more analogous with the fully delivered

development. This is in accordance with pre-application discussions with WSCC Highways. Furthermore, we note that the guidance goes on to state:

"to meet with current and emerging guidance on the promotion of sustainable travel modes and choices, consideration could also be given to reducing the expected level of parking demand by 10%. This is based on the Department for Transport's 'Smarter Choices' research that shows reductions in traffic movements can be achieved by up to 10 to 30% where a range of travel choices are available through provision of travel plans, public transport contributions, and other sustainable travel initiatives."

4.71. Based on the above, a mixed approach will be taken with up to a 10% reduction in the residential car parking provision, subject to the future mix and specification of house types.

Residential Cycle Parking

4.72. The residential cycle parking standards are also provided within the WSCC guidance and these are replicated in **Table 4.2** below.

Type	Dwelling Size	Cycle Parking Spaces per Unit
Houses	1 and 2 Bedroom	1
Houses	3+ Bedroom	2
Houses	Multiple Occupation	1
Flats	1 and 2 Bedroom	0.5 (if communal, otherwise 1)
Flats	3 Bedroom	1

Table 4.2: WSCC Residential Cycle Parking Standards

4.73. In terms of design, cycle parking will be provided in the following ways:

- Within garages, with appropriate minimum sizing to accommodate cycle storage
- Individual cycle store within front or rear gardens
- Communal secure cycle storage areas where parking is generally accommodated communally (e.g. flats)

Non-Residential Parking Standards

4.74. The WSCC document Guidance in Parking at New Developments also provides guidance on car and cycle parking for non-residential land uses.

4.75. It is, however, stated within the guidance that the standards should be used as an initial guide and that developers "*should undertake a site-specific assessment and seek to balance operational needs, space requirements, efficient use of land and cost attributed to providing parking and where relevant, attracting/retaining staff*".

4.76. A selection of the standards considered relevant to the proposals are provided in **Table 4.3**.

General Industrial	Vehicular Parking	Cycle Parking
General Industrial	1 space per 40 sqm	1 space per 200sqm for staff and 1 space per 500sqm for visitors
Storage	1 space per 100 sqm	1 space per 500sqm for staff and 1 space per 1000sqm for visitors
Shops and Retail	1 space per 14 sqm	1 space per 8 parking spaces provided
Food and Drink	1 space per 5 sqm of public space	1 space per 4 staff and 1 space per 25 sqm for customers
Office and Light Industrial	1 space per 30 sqm	1 space per 150sqm for staff and 1 space per 500sqm for visitors
Assembly and Leisure	1 space per 22 sqm	1 space per 4 staff plus visitor/customer cycle parking

General Industrial	Vehicular Parking	Cycle Parking
Community Hall and Outdoor Sport	1 space per 14 sqm	1 space per 100sqm for staff and 1 space per 100sqm for customers
Medical Centre and Nurseries	Site-specific assessment based on travel plan and needs	Site-specific assessment based on travel plan and needs

Table 4.3: WSCC Non-Residential Vehicular and Cycle Parking Standards

Car Parking

4.77. As previously mentioned, the sharing of parking between complementary land uses is to be explored at Reserved Matters stage to avoid overprovision of parking and to reduce the reliance on the private car, whilst it is further anticipated that the detail of cycle parking will also be a matter subject to a future Reserved Matters planning application to resolve in detail.

Cycle Parking

4.78. Cycle parking for non-residential land-uses will be provide communally in close proximity to the relevant land-uses.

Visitor Car Parking

4.79. The WSCC guidance outlines that:

"*Developers should take an approach that is consistent with national research which suggests, that no special provision should be made for visitors where at least half of the parking provision associated with the development is unallocated. In all other circumstances it may be appropriate to allow for additional demand for visitor parking of 0.2 spaces per dwelling*" (DCLG, 2007, Residential Car Parking Research)."

4.80. Visitor parking will be located conveniently within the development, potentially as on-street parking, inset parking within street verges, on driveways or in communal parking areas.

Disabled Car Parking Provision

4.81. In terms of disabled parking provision, the WSCC standards expect a minimum of 5% of the total number of parking spaces to be disabled parking spaces.

4.82. Paragraph 6.8 of the standards also states that:

"*In designing provision for disabled persons parking at non-residential development developments with over 200 spaces, consideration may be given to reducing the percentage of spaces for disabled persons below the minimum level…*".

4.83. This principle will be considered when designing the detailed layout as the design progresses.

Electric Vehicle Charging Provision

4.84. Electric vehicle charging provision will be provided in line with *Building Regulations Approved Document S: Infrastructure for the charging of electric vehicles* which requires the following minimum provision:

Requirement

The erection of new residential buildings

S1. (1) A new residential building with associated parking must have access to electric vehicle charge points as provided for in paragraph (2).

(2) The number of associated parking spaces which have access to electric vehicle charge points must be—

(a) the total number of associated parking spaces, where there are fewer associated parking spaces than there are dwellings contained in the residential building; or

(b) the number of associated parking spaces that is equal to the total number of dwellings contained in the residential building, where there are the same number of associated parking spaces as, or more associated parking spaces than, there are dwellings.

(3) Cable routes for electric vehicle charge points must be installed in any associated parking spaces which do not, in accordance with paragraph (2), have an electric vehicle charge point where—

(a) a new residential building has more than 10 associated parking spaces; and

(b) there are more associated parking spaces than there are dwellings contained in the residential building.

Figure 4.7: Building Regulations Extract

4.85. In addition to the above, *Appendix B* of the WSCC guidance provides a year-by-year proportion of spaces that should be active electric vehicle charging points, from 20% in 2018 to 70% 2030.

4.86. The above provision also aligns with Policy DPT4 of the draft Mid Sussex Local Plan and objectives 7 and 10 of the West Sussex Transport Plan.

Summary

4.87. This section of the report is summarised as follows:

- The proposed development comprises a residential led mixed-use development, including a primary school, local facilities and a country park.
- The proposed vehicular access arrangements include three standard roundabouts on the north, west and south sides of the site.
- Changes to speed limits could be facilitated to respond to local feedback for greater Traffic Management, including the consideration of a potential reduction from national speed limit on the A272 to 50mph and extension of the 30mph zone to the south of Ansty.
- The principle of delivering a hierarchy of street has been devised, with applicable geometric parameters sourced on WSCC guidance, Manual for the Street / Manual for Streets 2 and LTN 1/20.
- Car and cycle parking provision will be based on the relevant WSCC parking standards for both residential and non-residential parking. Parking standards for PBZ3 will be used as a basis for this, to reflect the agreed characteristics of the proposed development once implemented.

5. Active Travel and Public Transport Strategies

Introduction

5.1. This section of the report details the active travel strategy (including walking and cycling) and the public transport strategy in terms of access, internal layout and routing.

Active Travel Strategy

Principles

5.2. The primary desire lines associated with the site and surrounding area are to:

- Haywards Heath, including the rail station;
- Cuckfield, including Warden Park Academy;
- Ansty, including the community/leisure facilities at Ansty cricket club; and
- Burgess Hill northern arc mixed-use development located on the northern fringes of Burgess Hill.

5.3. Options have been explored to make improvements along each of the above desire lines where feasible within the applicant's land or designated highway, and where cost-effective improvements can be delivered commensurate with the development's impact.

5.4. With a focus on the continuity of routes, as per the LTN1/20 guidance, new shared pedestrian/cycle infrastructure will be delivered that knits together or plug the gaps in the existing network.

5.5. In doing so, a distinction is made between 'commuter' routes, which primarily link the proposed development with Haywards Heath and other 'leisure' routes which fulfil more of a recreational function.

5.6. The active travel strategy has been designed with reference to Policy DTP3 of the draft Mid Sussex Local Plan and objectives 5 and 11 of the West Sussex Transport Plan.

5.7. An overview of pedestrian and cycle routes in the vicinity are shown on **ACE Drawing 2207280-SK09A**.

Internal Active Travel Strategy

5.8. Within the site, the primary LTN 1/20 cycle route follows the Bus Route through the development, with a 3.0 – 4.5m shared footway / cycleway on one side of the street and a 2m footway on the other side. The principle of the shared footway / cycleway was agreed with WSCC during pre-application discussions.

5.9. As the majority of parcels within the development are located to the west of the primary north / south street through the development, it is expected that the shared footway / cycleway will be generally provided on the western side of the carriageway.

5.10. Where the share cycle/pedestrian route crosses side roads, Copenhagen-style facilities or drop kerbs could be provided to ensure that the appropriate priority to active modes is communicated to drivers.

5.11. Also included within the development are a series of recreational foot / cycle paths, which provide significant interconnectivity between parcels within the development and to the main cycle route through the development.

Public Rights of Way

5.12. As previously mentioned, there are a number of Public Rights of Way (PRoW) in the vicinity of and traversing the site, as shown in **ACE Drawing 2207280-SK04B**.

5.13. Following discussions with Public Rights of Way officers at WSCC, the proposals include the upgrading of all the existing footpaths within the site to Bridleways status. The applicant is open to exploring these upgrades where appropriate. Where these upgrades are made, they will adhere to WSCC's standards specification for Bridleways, shown in **Figure 5.1**, where achievable. Where not achievable, discussions will be held with WSCC to determine the most appropriate design.

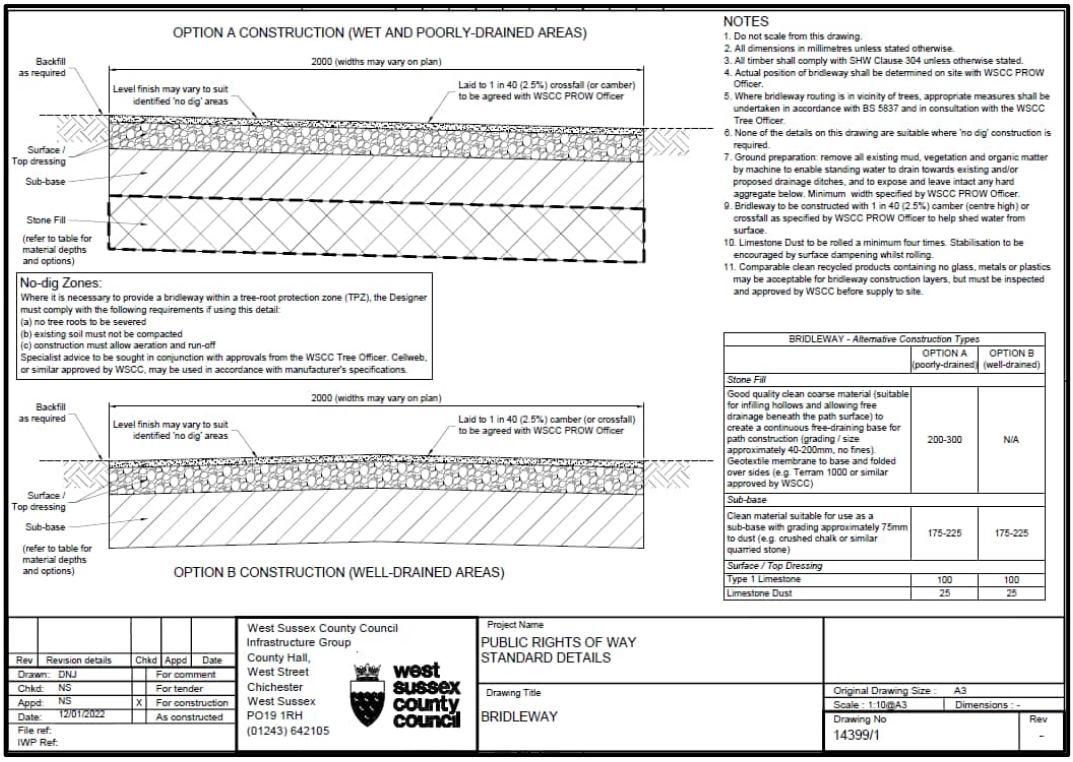


Figure 5.1: WSCC Bridleway Standard Specification

5.14. A minor diversion of existing Footpath 8bCU, which runs directly adjacent to the Sewage Works that abut the northeastern corner of the site, is included within the proposals. This diversion will relocate Footpath 8bCU to run along the proposed bridge within the site, before rejoining existing Footpath 65CR.

5.15. As part of the proposed northern access roundabout, a new signalised pedestrian and cycle crossing is to be provided on the eastern arm of the roundabout. Further to this, a 2m footway will then be provided along the north side of the A272 to connect into existing Footpath 8aCU, leading towards Cuckfield.

5.16. In addition, improvements will be made to the existing Bridleway between the proposal site and Tylers Green to the east of the site. Discussions are ongoing with WSCC with regards to the specification for the improvements than can be made in recognition of underlying constraints that exist along this route.

5.17. It is understood that the preference of the PRoW team within WSCC is for the improvements to be completed by the developer, as part of the Section 278 agreement, as opposed to seeking financial contribution through a Section 106 legal agreement. The applicant can confirm that this is suitable in principle subject to all necessary land being made available for delivery, with further discussions to be held

with WSCC to confirm the extent of works. The above is in line with Policy DP22 of the adopted Mid Sussex Local Plan and Policy DPT2 of the draft Mid Sussex Local Plan.

Active Travel Access Points

5.18. Access to the site via active travel modes (including walking and cycling) will be at a total of 10 locations:

- At the North and South vehicular accesses, via off-carriageway provision as detailed in **Section 3.0** above;
- At a new crossing point over the A272 into Beechy Bottom Parkland Reserve including a signalised crossing over the A272;
- Via Public Right of Way (PRoW) 62CR into Ansty;
- Via PRoWs 103CR, 69CR and 71CR on the eastern boundary of the site; and
- Via 72CR, 73CR and 74CR on the south eastern Boundary of the site.

Wider Cycle Improvement Schemes

5.19. **ACE Drawing 2207280-SK03C** summarises the existing cycle routes in the area and identified locations where there are opportunities to make improvements. The focus of these improvements is to provide a continuous route along existing desire lines.

5.20. A 4.5m shared footway / cycleway is proposed along the southern side of the A272 towards Haywards Health, from the northern site access roundabout to the A272 / Broad Street / Tylers Green roundabout to the east of the site, as shown in **ACE Drawings 2207280-SK05B**. At this point, the new footway / cycleway will tie into the existing shared footway / cycleway on the south side of Tylers Green.

5.21. Following the junction with Copyhold Lane, further improvements to pedestrian and cycle connectivity to Haywards Heath are proposed to be facilitated as part of the proposed development. As shown on **ACE Drawing 2207280-SK05B**, a shared 3m footway / cycleway will be provided on the north side of Tylers Green through to the B2272 / Bolnore Road / Paddockhall Road Double Mini-Roundabout junction, at which point the route again ties into the existing cycle routes within Haywards Heath, specifically Cycle Route A as designated by the WSCC *Local Walking and Cycle Improvement Plan*.

5.22. Finally on **ACE Drawing 2207280-SK05B**, a new pedestrian and cycle crossing point is proposed on the southern A272 arm of the A272 / B2036 roundabout adjacent to the northwest edge of the development. This crossing point will lead into a pedestrian and cycle only access point into the development, and to a new off-carriageway 4.5m shared footway cycleway provided towards Cuckfield via the B2036.

5.23. The proposed A272 cycle scheme has been subject to an RSA1. The Designers' Response, including the RSA1 report, is provided within **ACE Report 2207280-R16**. The above drawing includes amendments made as a result of the RSA1.

5.24. In addition to the above, sustainable transport improvements to the A272 / B2036 / Bolney Road mini-roundabout within Ansty have been considered as a continuation of the improvements to PRoW 62CR. **ACE Drawing 2207280-007B** provides details of this scheme, which includes a new refuge island on the northern A272 arm of the junction and improvements to the shared footway / cycleway to the northwest of the junction.

5.25. In addition, the proposed improvement scheme also allows for the provision of a two-lane vehicular entry on the Bolney Road arm of the junction, which will also increase vehicular capacity. The proposed mitigation scheme may require the relocation of the existing bus stop on Bolney Road, which will be discussed with WSCC.

5.26. The proposed A272 cycle scheme has been subject to an RSA1. The Designers' Response, including the RSA1 report, is provided within **ACE Report 2207280-R19**. The above drawing includes amendments made as a result of the RSA1.

Public Transport Strategy

5.27. Discussions have been held with the public transport operators Compass Travel and Metrobus, who operate bus services within the vicinity of the site.

5.28. The intended goal of the public transport strategy for the proposed development is to provide a regular connection to/from Haywards Heath, which can be achieved either through the provision of a new bus service or through the diversion of an existing bus service.

5.29. While the final bus strategy is subject to reaching agreement over a Section 106 agreement, a number of intermediate and final options are being considered and are presented below.

Intermediary Bus Service

5.30. In the intermediary stages, where the development is partially constructed / occupied and therefore the full final bus service would not be commensurate with demand, Demand Response Transport (DRT) could be employed. DRT allows for passengers to request a DRT vehicle from their location to provide transport to a location within the DRT operating zone.

5.31. Compass Travel operate two existing DRT bus services within West Sussex (the "99 Flex" and "98 Flex") which operates via passengers requesting a bus through the "Book-a-Bus" app or telephone number. Although the area covered by the above services does not currently include Ansty, Compass Travel have suggested that a hybrid DRT / Conventional bus service could be used in the intermediary stage, where peak time trips could be scheduled per the final conventional bus service timings but with off-peak bus trips requiring passengers to book, akin to a DRT service.

Final Bus Service

5.32. In terms of the final bus service, a number of potential options are being explored, which are summarised below, split by bus operator:

- Compass Travel:
  - New Bus Service between the development and Haywards Heath at a 20-minute / 30-minute / 60-minute frequency.
  - New Bus Service between the development, Haywards Heath and Burgess Hill at a 20-minute / 30-minute / 60 minute frequency.
- MetroBus:
  - Diversion of bus route 271 and increase of frequency to 20-minute / 30-minute / remain 60-minute frequency.
  - New Bus Service between Ansty Garden Community and Haywards Heath at a 20-minute / 30-minute / 60-minute frequency.

- New Bus Service between Ansty Garden Community, Haywards Heath and Burgess Hill at a 20-minute / 30-minute / 60 minute frequency.

5.33. Again, while the specific bus route, frequency and funding discussions with WSCC or the operator are to be determined at a later stage, the proposed development has been designed to accommodate any of the potential options outlined above.

Mobility Hubs

5.34. The development will deliver Mobility Hubs throughout the site, comprising of one large mobility hub and a series of micro-mobility hubs. Mobility Hubs can encourage sustainable multi-modal travel by concentrating different modes of travel, such as public transport and cycling, into a single convenient location.

5.35. All mobility hubs with the development are centred around bus stops, which themselves have been located to maximise the number of dwellings within the 400m nominal walk catchment for bus stops. The location of the mobility hubs can be seen on the plan provided at **Appendix D**. The design of the mobility hub has been based on guidance included in the *West Sussex Bus Service Improvement Plan*, with an example mobility hub shown in Figure 5.2, as well guidance provided by CoMoUK (Collaborative Mobility UK, a charity that promotes inclusive mobility), and accreditation to CoMo gold standard will be sought following delivery. For CoMo gold accreditation for New Housing Developments, a total of 5 "Desirable Elements" are required.

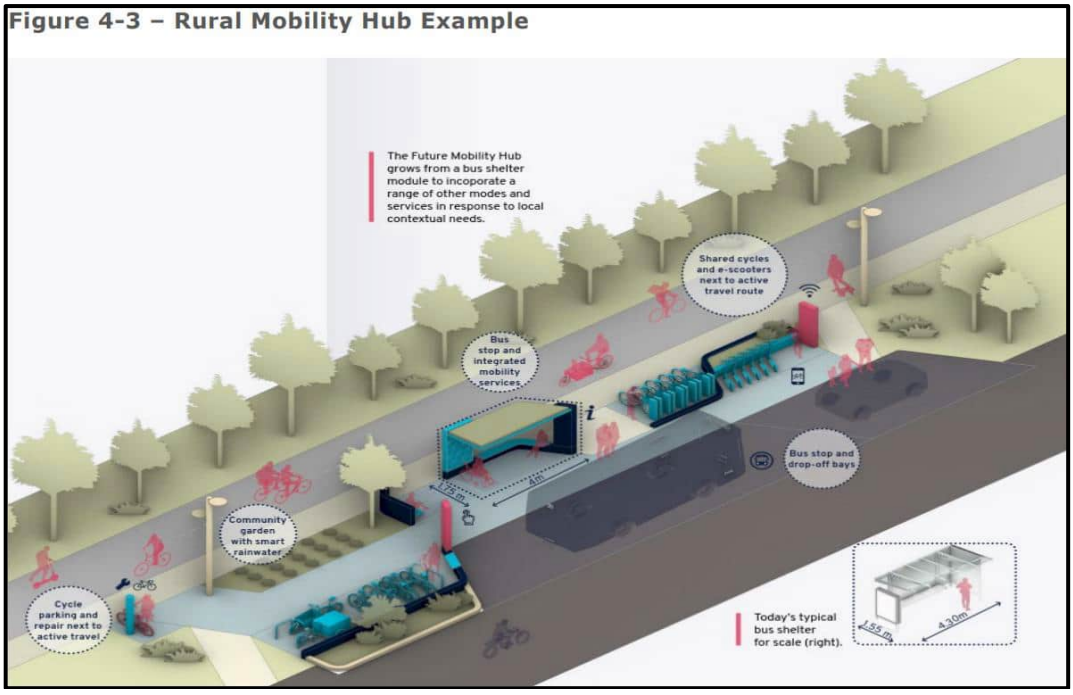


Figure 5.2: WSCC Example Mobility Hub (Figure 4-3 of West Sussex Bus Improvement Plan)

5.36. **ACE Drawing 2207280-SK01** provides an example layout for a gold standard mobility hub layout, while **ACE Drawing 2207280-SK06** provides an example layout for a mini-mobility hub. These example layouts are not site-specific, and have been approved in principle by CoMo.

5.37. The Mini-Mobility Hubs could contain the following features:

- Essential:
  - High Quality Public Transport Option
  - High Quality shared Mobility (Cycle Parking, Car Club)
  - Clear Signage
  - Located in prominent, well-lit location
  - Safe Crossings
  - Compatible with accessibility guidance
  - Information on what the hub is at the site
  - Co-located with linking signage
  - Easily accessible timetables
  - Steet lighting
  - Covered Seating

- Desirable:
  - Cycle Parking
  - Safe Cycle Routes
  - Plans for network of Hubs / Real Time Data

5.38. The proposed Mini-Mobility Hubs would therefore meet the 3 desirable elements required for silver CoMo accreditation.

5.39. The Large Mobility Hub could contain the following desirable elements:

- Cycle Parking
- Car Club Bay
- Safe Cycle Routes
- Plans for network of Hubs / Real Time Data
- Package Delivery Lockers

5.40. The proposed large mobility hub would therefore exceed the 5 required desirable elements for gold accreditation. The large mobility hub will also be located at the bus stop located closest to the local centre and school, thereby making sustainable travel within the site more attractive.

Car Club Provision

5.41. Discussions have been held with Enterprise Rent-a-Car and CoWheels, who both operate existing car club vehicles within West Sussex. While the exact number and location of car club vehicles is an item for reserved matters stage, both providers have expressed interest in working with the applicant to provide car club vehicles at an early stage of the development.

5.42. A letter of intent provided by Enterprise Rent-a-Car is attached at **Appendix E**.

Summary

5.43. In this regard, the first priority will be to demonstrate that the level of benefits that would arise from complementary land-uses, in terms of the way in which travel demand is 'contained' within the site (See **Section 7.0**).

5.44. The second priority is to outline those measures that would seek to reduce the 'residual' impact of car-borne traffic by promoting a sustainable transport strategy

that provides means to both promote better travel choices and control the level of traffic that a new settlement would generate.

5.45. Based on the above, this section of the report has sought to summarise the following benefit that future residents will be able to enjoy:

- The Active Travel Strategy for the site includes an internal LTN 1/20 compliant pedestrian / cycle route network supplemented by a series of commuter/recreational routes accessed from a variety of locations including PRoWs.
- The development includes the upgrading of all existing Footpath PRoWs within the development to Bridleway status, with improvements to meet the WSCC standard specification for Bridleways where achievable, and for improvements to be discussed with WSCC where the standard specification is not achievable.
- An off-carriageway shared footway / cycleway is proposed between the development and Haywards Heath, connecting to and improving existing cycle routes where appropriate.
- The development has been designed to maximise the options for public transport, details of which would be confirmed at a later stage. Multiple bus operators have expressed interest in the provision of a bus service for the development, either as a diversion of existing services or as a new service.
- A network of mobility hubs is proposed, with all bus stops being mobility hubs designed to CoMo silver accreditation minimum, and one mobility hub designed to CoMo gold accreditation.
- Multiple Car Club operators have expressed interest in providing car club vehicles within the development, and appropriate provision of preferential car parking spaces will be provided as part of the Mobility Hub.

6. Strategic Modelling

Introduction

6.1. This section of the report details the approach that has been taken in respect of the strategic traffic modelling of the proposed development.

Model Availability

6.2. The basis for the derivation of traffic flows, taking into account the effects of the proposed development, is the Mid Sussex Strategic Highway Model (MSSHM), which is coded within the SATURN strategic traffic modelling software. The model is maintained by Systra, on behalf of MSDC / WSCC.

6.3. This is a strategic model covering Mid Sussex, as part of its core area, as well as other parts of Sussex and Surrey. The Fully Modelled Area (FMA) comprises Mid Sussex district, Ashdown Forest (Wealden) and parts of Horsham, down to the coast at Brighton. The FMA is shown is **Figure 6.1** below.

6.4. This is a large area, and by necessity, such a model comprises both 'simulation' and 'buffer' coding areas. As a strategic tool, the model is able to take account of delays at intersections coupled with an assignment of the routes taken by traffic, based on travel demand, a matrix of origins/destinations and a set of convergence criteria.

6.5. SATURN is a suitable program for deriving appropriate traffic forecasts from a calibrated baseline model, and can be used in appraisals to determine the effects arising from spatial strategies and/or infrastructure schemes. This is especially the case where a strategic model requires to assess the consequences of peak hour congestion on the road network.

6.6. Strategic modelling is not necessarily a substitute for detailed junction assessment models (such as local capacity modelling via ARCADY, PICADY, LINSIG etc.), which are able to assess the operational effectiveness of junctions. However, strategic modelling can provide useful inputs to that process, by providing traffic flow outputs which can be used to subsequently model junction performance at a 'finer grain' level.

Figure 6.1: Fully Modelled Area of MSSHM

6.7. The current MSSHM is understood to be in the process of being updated by MSDC, including amendments to the Reference Case, and forecast scenarios. The updates are understood to include accounting for amendments to the underlying vehicular trip rates for the proposed development, by shifting the emphasis from '85th percentile' to 'average trip' rates.

6.8. Pending these further updates, the completion of which do not match the timelines for the OPA, the latest version of the MSSHM available has been used to assess the strategic traffic effect of the proposed development and provide the necessary inputs for the subsequent local modelling. This is considered to also confer a robust position from the perspective of quantifying the impact arising from the proposed development.

6.9. Also relevant to the consideration of forecast traffic scenarios, is the recently published National Road Traffic Projections 2022 from the Department of Transport (DfT). This guidance sets out uncertainty surrounding potential future changes in travel patterns and mode shift, with particular regard to the positive effects on traffic flows following the COVID-19 pandemic. The guidance sets out various modelling scenarios, for example the 'High Economy' and 'Low Economy' scenarios, which reflect two potential alternative scenarios for the long term growth of the economy.

6.10. Of particular relevance is the Behaviour Change Scenario, which seeks to account and estimate the potential long-term effect of flexible and remote working, online shopping and reduced driving licence uptake by young people through reductions in 'per person' trip rates, and vehicular trip generation in particular.

6.11. The outcome is a range of potential traffic growth between 2025 and 2060 of between 8% and 39%, which could have significant effect on future planning measures for development. Previous versions of strategic models, including the MSSHM, are therefore likely to provide robust traffic figures, including compared to the Core Scenario assumptions posited by the DfT.

6.12. As part of the pre-application discussions referenced above, ACE have been granted access by MSDC to the MSSHM in order obtain suitably robust traffic flows from which to undertake a more detailed analysis of the local road network, as is considered in the following chapters.

6.13. In this respect, the time periods covered by the MSSHM reflect the following morning and evening peak hours:

- AM Peak: 08:00-09:00
- PM Peak: 17:00-18:00

6.14. The latest version of the MSSHM from which the strategic assessment has been carried was based on Scenarios 4m1 / 4Bm1 which were produced by Systra in late 2022.

Local Plan Evidence Base

6.15. The District Local Plan 2031-2039 evidence base included a Draft Mid-Sussex Transport Study District Plan Review Scenario 4 Report (6 October 2022), which confirms the suitability of the strategic modelling approach more generally, with Para 1.3.1 stating that:

> *"The Mid Sussex Strategic Highway Model (MSSHM) was produced in accordance with standard good practice as set out in the Department for Transport's (DfT) transport analysis guidance (TAG), in particular TAG Unit M3-1 Highway Assignment Modelling. As such, the approaches to data processing, matrices and network production, along with model calibration are consistent with those of similar strategic highways models."*

6.16. Using the MSSHM, this study looks at 2039 development scenarios to inform the Council's District Plan Review process when selecting a preferred option.

6.17. The latest MSSHM Local Plan study considers the following modelled scenarios:

- *2039 Reference Case*
    - The Reference Case represents the road network in 2039, and includes any committed highway infrastructure, development in the district and background growth to this date. This acts as a baseline when assessing the impacts of the development scenarios.
- *2039 Scenario 4 and Scenario 4B*
    - *2039 Scenario 4* assess proposed Local Plan development and supporting infrastructure in 2039.
    - *2039 Scenario 4B* differs from Scenario 4 in that it additionally includes the development site at Ansty.
- *2039 Scenarios 4 and 4B* with Car Trip Rate Reduction
    - *2039 Scenarios 4m1* applies the reductions to Scenario 4
    - *2039 Scenario 4Bm1* applies the reductions to Scenario 4B

6.18. The outputs from the above scenarios were then used to determine the effect of the proposed development on the Mid Sussex road network for the purpose of site allocation within the draft Mid Sussex Local Plan. A total of four junctions were highlighted as having "severe" impacts.

6.19. ACE reviewed the outputs from the model and developed mitigation schemes for the effect of the development where necessary, details of which can be found in **ACE Report 2207280-01A**. The below assessment builds upon the assessment done for the draft Mid Sussex Local Plan but includes further refinements and improvements to the Model that were not completed for consideration at the Regulation 18 stage.

Strategic Model Amendments

6.20. It has been identified that the 2022 version of the MSSHM assumed that the proposed development would comprise a total of two access points, however the latest version of the proposed development includes a total of three access points, all of which are proposed to be standard roundabouts.

6.21. As identified with a separate Transport Technical Note (**Ardent Report Reference: 2007280-01**), certain technical elements of the network could benefit from refinement to improve the quality of the model.

6.22. As such, ACE have developed an amended version of the MSSHM, which includes the following refinements to better reflect the proposals under consideration:

- No through route across the development, to ensure there are no local diversions. The internal road network is not intended to be a through route, which will be secured through horizontal alignment and speed limits measures, as opposed to physical restriction.
- Amending coding of the A272 / B2036 / Bolney Road mini-roundabout within Ansty which uses the main road number of lanes, not the junction flare lanes.
- Amending capacities and other parameters coded for the 4 junctions which are affected in Scenario 4b.
- Amending minor discrepancies within the model relating to the arms on the Fox Hill roundabout - the northeast arm should not be Colwell Road, but is Kennard Lane (a missing fifth arm) which leads to a cul-de-sacs. Junction to be remodelled and new delays derived.
- Amending the access arrangements of the proposed development to three access points.

6.23. The above model refinements were agreed with WSCC at pre-application stage, allowing the respective scenarios to be run. This amended version of the MSSHM, hereby referred to as ACE-MSSHM, will form the basis of the strategic traffic modelling of the proposed development.

Scenario Selection

6.24. A total of 3 development-specific scenarios have been assessed within the ACE-MSSHM, which are as follows:

- 2019 Baseline – The calibrated model.
- 2039 Without Development ('Do Minimum') – Based on 2019 baseline model, with committed developments and infrastructure included within the existing MSSHM 2039 Reference Case (as described above), plus generalised TEMPro Growth.
- 2039 With Development ('Do Something') – Based on the Do Minimum scenario with the effect of the development added.

6.25. The above scenarios were agreed with WSCC to be the most applicable for assessment. The primary comparison from which to reach conclusions on impact of the proposed development will therefore rely on a comparison between the 2039 Do Minimum and 2039 Do Something scenarios, which will identify the specific traffic effect of the proposed development.

TEMPro Growth

6.26. To derive future forecast 2039 Do Minimum scenario, and as agreed with WSCC during pre-application discussions, growth factors were applied using the "High Economy" scenario within the TEMPro v8.0 database, to account for future generalised development growth within Mid Sussex, as the committed developments already contained within the 2039 Reference Case are not the totality of development expected to be delivered between 2019 - 2039.

6.27. To account for the committed developments included within the Reference Case, the recognised 'Alternative Assumptions' feature contained within TEMPro was used.

6.28. As confirmed by WSCC, a total of 8039 additional Households and a total of 6,500 additional jobs are included within the Reference Case committed developments.

6.29. As such the following parameters were utilised to create the 2039 Do Minimum scenario:

- For zones within Mid Sussex Local Authority Administrative Zone:
  - Base Households = 70,655
  - Base Jobs = 79,897

6.30. These growth factors were applied for all vehicle user classes and all purposes. For all other existing Local Authority Administrative areas, standard TEMPro growth factors for the 'High Economy' scenario were used.

Vehicular Trip Rates

6.31. Looking ahead to the future MHSMM revisions, the following vehicular trip rates have been used to replace the 85th percentile on which the existing Local Plan *2039 Scenario 4* assessment was run. The agreed TRICS outputs are provided at **Appendix F** and summarised in **Table 6.1**.

Peak Hours	Arrivals	Departures	Totals
AM (08:00 - 09:00)	0.135	0.377	0.512
PM (17:00 - 18:00)	0.317	0.142	0.459

Table 6.1: Proposed Development Trip Rates (Baseline)

6.32. Both the Local Plan MSSHM *Scenario 4m1* and *Scenario 4Bm1* made an allowance for the application of trip rate reductions "*as a result of home working, internalisation and mode share assumptions for to and from the scenario's significant site developments*" (extract taken from the Systra Scenario 4 Report). The vehicular trip rate reductions assumed for the Crabbet Park, West of Burgess Hill, Sayers Common and the proposed development are as follows:

- 15% reduction on residential unit car trip rates to account for home working, internalisation and future mode share assumptions.
- 80% reduction on primary school car trip rates to account for internalisation of trips.

6.33. It is understood that the above reductions are applied at the matrix level, prior to the route assignment.

6.34. In addition to the above, as agreed with WSCC during pre-application discussions, a 25% trip rate reduction is to be applied to the proposed development to reflect the effects of the active and public transport strategies. This reduction consisted of a

20% reduction, to reflect the high proportion of employment types suited to working from home in Mid Sussex, as well as a further 5% for sites with local retail and community facilities.

6.35. This reduction was disaggregated using distance banding, to reflect the likelihood of active travel being used over car trips. For example, a trip rate reduction of 22% was applied to trips under 1km in length and a trip rate reduction of 14% was applied to trips between 1-3km in length.

6.36. The resultant total vehicular trips assumed for the development without and with the application of the above reduction and distance banding are shown in **Table 6.2**.

Peak Hour	Total Development Trips (Without Reduction)			Total Development Trips (With Reduction)		
	Arr	Dep	Tot	Arr	Dep	Tot
AM (08:00 - 09:00)	196	547	743	181	514	695
PM (17:00 - 18:00)	460	206	666	190	427	617

Table 6.2: Total Development Trips With & Without Reduction

Strategic Model Outputs

6.37. SATURN utilises a zonal system and follows an iterative process to allow for the re-distribution of trips based on changes in journey times between all Origin-Destination pairs within the assigned matrix.

6.38. As such, it is possible that the addition of new trips or new infrastructure can result in changes in traffic on certain routes or at certain junctions due to changes in delay affecting background traffic routing. The changes can be expressed as decreases or increases in traffic compared to the corresponding baseline scenarios (i.e. in this case, the 2039 Do Minimum scenario)

6.39. The outputs from the 2039 Do Minimum and 2039 Do Something runs of the MSSHM have been obtained in the form of turning counts for each junction within the traffic study area, as detailed in **Section 7.0**.

6.40. Traffic flow diagrams showing the 2019 Baseline, 2039 Do Minimum, 2039 Do Something are also provided at **Appendix G**.

6.41. The outputs extracted from SATURN reflect 'Actual Flows' (rather than 'Demand Flows'), therefore include the effect of capacity and queuing to present the most likely forecast of traffic across the local highway network.

Summary

6.42. This section of the report is summarised as follows:

- Strategic modelling was agreed as the best means of forecasting traffic volumes on the local highway network, given regard to changes in background growth and development generated traffic.
- The Mid Sussex Strategic Highways Model (MSSHM), using the SATURN software, was previously used by MSDC to help inform its Local Plan Review process. The Local Plan MSSHM scenarios previously considered included a *2039 Reference Case* scenario and variations to *2039 Scenario 4*.
- The MSSHM is in the process of being updated to reflect more contemporary trip generation forecast and this update does not align with the current timescales for the submission of the OPA.
- As such, a bespoke version of the MSSHM has been developed by ACE for the purpose of this TA. This version takes into account certain refinements to the coding of the network as well as changes to the access arrangements, to better reflect the form and function of the proposed development.
- A total of three scenarios have been modelled, as agreed with during pre-application discussions with WSCC Highway officers.
    - 2019 Baseline – The calibrated model.
    - 2039 Do Minimum ('Without Development').
    - 2039 Do Something ('With Development').
- In the above scenarios, a reduction of 25% to the vehicular trip rate for the proposed development has been applied via distance banding, as agreed during pre-application discussions.
    - The vehicular trip rate reduction is intended to reflect the post-COVID19 changes in commuting patterns during the peak hours, such as home-working and / or peak spreading.

- This reflects the anticipated changes that MSDC are looking to include in its re-consideration of its future Local Plan evidence base, which additionally models the effects of cumulative development.

- The purpose of the strategic modelling runs undertaken in this TA is to provide suitable traffic estimates for used within detailed junction capacity tests. The purpose of these tests is to establish what the impact of the proposed development is on the operational performance of local junctions, and whether the effects can be reduced or mitigated in a cost effective manners, in line with the requirements of Para 110 of the NPPF.

7. Highway Mitigation Strategy

Introduction

7.1. This section of the report provides details of the local junction capacity modelling approach, including the traffic study area, the sifting process involved in selecting junctions for more detailed modelling, and subsequent mitigation strategy for the proposed development.

Impact Definition

7.2. Any improvements or scheme required to mitigate the transport impact(s) of the proposed development needs to adhere to the Regulation 122 of the Community Infrastructure Levy Regulations 2010. This states that:

"A planning obligation may only constitute a reason for granting planning permission for the development if the obligation is—

(a) necessary to make the development acceptable in planning terms;

(b) directly related to the development; and

(c) fairly and reasonably related in scale and kind to the development."

7.3. The implications for this Transport Assessment are that any mitigation will first need to reflect the 'stand-alone' impacts of the proposed development.

7.4. Notwithstanding this, the current status of the proposals against the backdrop of the emerging District Plan may also mean that additional mitigation could be identified to accommodate the 'cumulative' impacts of growth.

7.5. The first aspects will be easier to define in the current context of this TA, particularly as any cumulative assessment will be the responsibility of MSDC to undertake.

7.6. Should this assessment result in the identification of transport schemes or measures on no one development is wholly responsible for, the expectation is that MDSC would need to establish a means of apportioning the cost of mitigation so that the proportion attributed to any one development is fair and reasonable.

7.7. The following sections consider the outcome of the strategic modelling and detailed capacity tests from the perspective of any 'stand-alone' mitigation.

Stand-Alone Mitigation

Principles

7.8. When considering mitigation, the first step is to consider what measures are inherent to the form and function of the development that would minimise the need to travel. In this respect, **Section 4.0** has demonstrated how the mixed-use nature of the development would lead to the internalisation of trips within the development.

7.9. Secondly, the layout of the development has been shown to promote active travel by prioritising routes for pedestrian and cyclists.

7.10. Thirdly, improvements to the PRoW network has been proposed which ensures maximum connectivity to/from nearby destinations and settlements, from Ansty to Haywards Heath.

7.11. This mitigation is indicative of the 'Decide and Provide' paradigm, which requires the visioning of outcomes when setting out the requirements for mitigation.

7.12. In its review of the above technical note, WSCC officers noted that:

"The West Sussex Transport Plan policies states that on non-strategic roads mitigation proposals must be directed towards improvements for active or sustainable modes…".

7.13. Paragraph 4.12 of the *West Sussex Transport Plan 2022-2036* states that:

"Even if high levels of sustainable transport mode share are achieved at development sites, there is still expected to be an overall increase in the number of trips on the transport network."

7.14. This is consistent with the NPPF which outcome of these mitigation measures leads, finally, to a requirement to assessment the 'residual' impact of car trips.

7.15. In doing so, it is important to note the extent of a development's responsibility when judging the outcomes of mitigation proposals against the corresponding baseline conditions. Indeed, paragraph 4.14 of the West Sussex Transport Plan 2022-2036 states that:

"While a number of major schemes and junction improvements are planned to mitigate development, developer-led highway mitigation schemes are not

intended to resolve pre-existing issues. This can result in gaps between development-led mitigation and those required to address cumulative impacts and/or pre-existing issues. There is also a challenge to ensure that these schemes do not overprovide capacity which could lead to unmanaged traffic growth."

7.16. The implications are that any mitigation would be expected to deliver at least a 'nil detriment' situation, when compared to the underlying situation.

7.17. Even then, a certain degree of judgement can be exercised when determining the benefits arising from mitigation by recognising the importance of active travel and the priority that should be given to investment in pedestrian and cycle infrastructure.

7.18. This is line with paragraph 8.12 of the *West Sussex Transport Plan 2022-2036* states:

"The County Council would like to see LPAs and developers taking a 'vision-led' approach to development and improvement of the transport network. This approach should place emphasis on place-shaping and creating liveable neighbourhoods with infrastructure to support travel by a range of modes of transport rather than designing to cater for forecast traffic demand."

7.19. As can be seen above, there is a clear preference for mitigation that prioritises sustainable modes of transport over the provision of vehicular capacity within the West Sussex Transport Plan.

As such, when considering mitigation for affected junctions, priority has been given to providing improvements to sustainable modes of transport with improvements to vehicular capacity being a secondary objective.

Methodology

Traffic Study Area

7.20. An extensive traffic study area has been assessed, including junctions within Ansty, Cuckfield, Haywards Heath and Burgess Hill. A full list of study junctions is provided below and in **Figures 7.1 – 7.5**.

- Junction A – B2114 / Sloughgreen Lane Priority Junction
- Junction B – B2036 Brook Street / Whitemans Green Roundabout
- Junction C – B2036 London Road / Ardingly Road Mini-Roundabout
- Junction D – B2036 / B2184 Mini-Roundabout
- Junction E – A272 / B2036 Roundabout
- Junction F – Northern Site Access Roundabout
- Junction G – A272 / Tylers Green / Broad Street Roundabout
- Junction H – B2272 / Tylers Green / Issac's Lane Roundabout
- Junction I/J - B2272 / Bolnore Road / Paddockhall Road Double Mini-Roundabouts
- Junction K – B2272 Square Gyratory
- Junction L – Western Site Access Roundabout
- Junction M – A273 / Issac's Lane / Traunstein Way / Parkfield Way Roundabout
- Junction N – B2272 / B2112 Roundabout
- Junction O – A23 / London Road Roundabout
- Junction P – A272 Cowfold Road / London Road Priority Junction
- Junction Q – A23 / Bolney Road / Cowfold / Crossroads Roundabout
- Junction R - A272 / B2036 / Bolney Road Roundabout
- Junction S - A272 / Rocky Lane / Highbank Roundabout
- Junction T - A272 / Rocky Lane / Rocky Drive Roundabout
- Junction U – Foxhill Roundabout
- Junction V – B2036 Cuckfield Road Priority Junction
- Junction W – Southern Site Access Roundabout
- Junction X – B2036 / A273 / Fairbridge Way Roundabout
- Junction Y – A2300 / Cuckfield Road Roundabout
- Junction Z – A2300 / A273 Roundabout
- Junction AA - A273 / Sussex Way Roundabout
- Junction AB - A273 / B2036 Marchants Way Roundabout

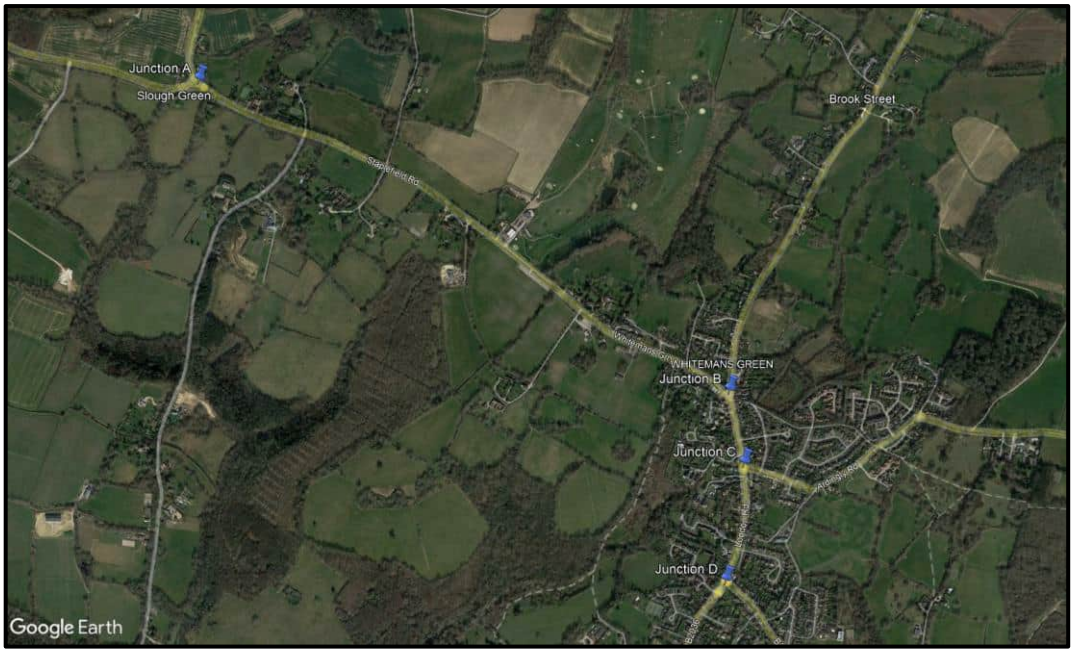


Figure 7.1: Traffic Study Area #1

Figure 7.2: Traffic Study Area #2

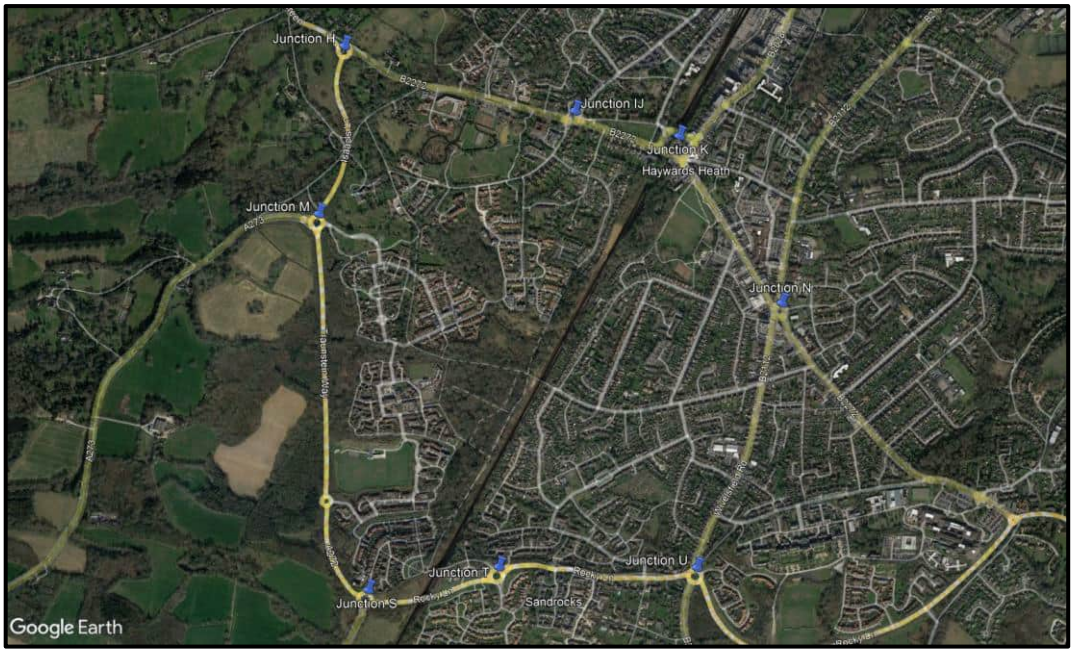


Figure 7.3: Traffic Study Area #3

Figure 7.4: Traffic Study Area #4

Figure 7.5: Traffic Study Area #5

7.21. The above study was agreed with WSCC and NH during pre-application discussions.

Sifting Criteria

7.22. WSCC's typical criterion, originally outlined in the Highway Impacts Assessment section of its Transport Assessment Methodology (21 June 2007) states the scope of a TA should:

"… include all junctions where there is a predicted increase in total entry flows of 30 or more vehicles in any hour - or if the junction already experiences peak period congestion an increase of 10 or more vehicles - as a result of the development proposals"

7.23. It has previously been agreed with WSCC where other strategic developments are concerned that some means of undertaking an initial 'sifting' of the junctions within the study area could be used to focus the assessment at locations where there is likely to be a material change in traffic which could affect the operation of the road network.

7.24. Similarly, the below sifting criteria was presented to WSCC during pre-application discussions for the proposed development specifically.

7.25. Prior to the application of any thresholds, the sifting criteria first excludes from further analysis any junctions where forecasted traffic volumes reported in the 2039

Do Something 'with development' scenarios are lower than under the corresponding 2039 Do Minimum. As previously referenced the introduction of new trips and infrastructure to a network can result in the redistribution of background trips, thereby allowing for the traffic to both increase as well as decrease along certain routes.

7.26. Of the remaining locations, a graduated approach has been adopted when determining the significance of any increase in forecasted traffic flow, based around the following nested criteria:

- The volume of development related trips at each junction; and
- The percentage impact of development generated traffic at each junction.

7.27. Considering the criteria above in further detail, the following sequenced methodology has been employed in determining the candidate junctions that have been subject to further detailed analysis and modelling.

- **Stage 1** - Number of Predicted New Trips
    - Stage 1 involves examining the absolute trip numbers to determine whether junctions are to be excluded or included within our detailed assessment.
    - Per the WSCC guidance from 2007, a threshold of 30 PCUs (in the peak hour) will be used as the initial screening criteria.
- **Stage 2** - Percentage Impact Analysis
    - Stage 2 then reviews the percentage change in traffic at the junction as a result of the traffic effect of the proposed development.
    - This further filtering allows the absolute traffic figures to be reviewed in context of the existing conditions, where an absolute traffic effect beyond the 30 trip threshold could have a negligible effect compared to existing background traffic.
    - While a 10% change in traffic is considered to be within expected daily fluctuations, per guidance from the Institute of Environmental Assessment, a robust threshold of a 5% increase in traffic at a junction will be used in this sifting stage.

7.28. The above filtering process has been applied to all junctions located within the traffic study network, and the results are summarised in **Table 7.1** below.

	Absolute Effect		Percentage Effect (vs Do Minimum)		>30 Absolute & >5% Relative?	
Junction	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Junction A – B2114 / Sloughgreen Lane Priority Junction	8	53	0.7%	4.7%	NO	NO
Junction B – B2036 Brook Street / Whitemans Green Roundabout	17	71	0.9%	4.3%	NO	NO
Junction C – B2036 London Road / Ardingly Road Mini-Roundabout	88	103	4.1%	5.8%	NO	YES
Junction D – B2036 / B2184 Mini-Roundabout	51	54	3.4%	4.7%	NO	NO
Junction E – A272 / B2036 Roundabout	-24	-16	-1.3%	-0.8%	NO	NO
Junction F – Northern Site Access Roundabout						
Junction G – A272 / Tylers Green / Broad Street Roundabout	38	54	1.5%	2.5%	NO	NO
Junction H – B2272 / Tylers Green / Issac's Lane Roundabout	58	69	1.5%	2.0%	NO	NO
Junction I - Bolnore Road Mini-Roundabout	19	22	0.6%	0.8%	NO	NO
Junction J - Paddockhall Road Mini-Roundabout	15	22	0.5%	0.8%	NO	NO
Junction K – B2272 Square Gyratory	8	22	0.4%	2.9%	NO	NO
Junction L – Western Site Access Roundabout						
Junction M – A273 / Issac's Lane / Traunstein Way / Parkfield Way Roundabout	76	60	2.5%	2.4%	NO	NO
Junction N – B2272 / B2112 Roundabout	27	49	1.0%	1.7%	NO	NO
Junction O – A23 / London Road Roundabout	107	18	16.8%	3.0%	YES	NO
Junction P – A272 Cowfold Road / London Road Priority Junction	76	24	3.3%	1.0%	NO	NO
Junction Q – A23 / Bolney Road / Cowfold / Crossroads Roundabout	95	50	4.4%	2.1%	NO	NO
Junction R - A272 / B2036 / Bolney Road Roundabout	48	-2	2.2%	-0.1%	NO	NO
Junction S - A272 / Rocky Lane / Highbank Roundabout	44	52	1.9%	2.5%	NO	NO
Junction T - A272 / Rocky Lane / Rocky Drive Roundabout	29	21	1.9%	1.3%	NO	NO
Junction U – Foxhill Roundabout	51	23	2.1%	0.9%	NO	NO
Junction V – B2036 Cuckfield Road Priority Junction	-107	-64	-11.4%	-8.2%	NO	NO
Junction W – Southern Site Access Roundabout						
Junction X – B2036 / A273 / Fairbridge Way Roundabout	12	19	0.7%	1.0%	NO	NO
Junction Y – A2300 / Cuckfield Road Roundabout	147	103	3.3%	2.9%	NO	NO
Junction Z – A2300 / A273 Roundabout	44	-82	1.9%	-4.3%	NO	NO
Junction AA - A273 / Sussex Way Roundabout	44	-40	1.7%	-2.0%	NO	NO
Junction AB - A273 / B2036 Marchants Way Roundabout	17	21	0.7%	0.9%	NO	NO

Table 7.1: Sifting Criteria Summary

7.29. As can be seen above, Junction C (B2036 London Road / Ardingly Road Mini-Roundabout) and Junction O (A23 / London Road Roundabout) are the only junctions to meet both stage 1 and stage 2 of the sifting criteria. Notably, of the four junctions identified during the Regulation 18 process (Junctions C, G, IJ and U) only Junction C was identified as needing additional assessment using the sifting criteria.

7.30. As such, junctions C and O will be looked at in detail for the more detailed junction capacity tests. In addition, all three of the proposed site access roundabouts will be tested for junction capacity, in order to provide the confidence required that they would be capable of accommodating the forecast traffic flows.

7.31. Junction Capacity Modelling Results

Detailed Assessment Criteria

7.32. Junction capacity is specified with reference to the Ratio of Flow over Capacity (RFC) for priority and roundabout junctions. In doing so, a value of 0.85 would typically indicate the practical design capacity at which congestion is likely to begin to occur with a value of 1.00 being the theoretical point at which this congestion is forecast to occur regularly during the assessment period.

7.33. As all junctions to be tested for capacity are roundabouts, the ARCADY module of Junctions10 will be utilised as this is industry standard software for the modelling of roundabouts.

7.34. Queues in Junctions10 are reported in terms of the average maximum forecast queue during the modelled period (in vehicles), with delay reported as seconds per vehicle.

7.35. While the above indicators are industry standard for the review of junctions, it is notable that the indicators provide a purely quantitative perspective of specifically the worst time period. As such, it is not uncommon for higher congestion levels to be reported by capacity modelling but for this congestion to be short lived in practice.

7.36. Values should also be taken in the context of the NPPF guidance that requires decision-makers to consider the severity of impacts, particularly where other benefits of development are judged to outweigh any transport implications. Assessing the residual impact of development is therefore a matter of judgement based on the comparison between individual scenarios, recognising (where applicable) the overall benefits of changing network conditions.

7.37. Geometric properties for the junction models will primarily be based on measurements from OS mapping, with topographical data taking preference over OS mapping where available. Geometries for roundabouts will be measured following best practice from the TRL Junctions10 User Guide.

Junction C – B2036 / Ardingly Road Mini-Roundabout

7.38. As set out in **ACE Report 2207280-01**, the 'Standard Roundabout' option has been used for the detailed modelling of Junction D, as opposed to the "Mini-Roundabout" option, as traffic flows at this junction are weighted towards the North and South arms, reflecting its role as a major vs minor road junction[1].

7.39. Similarly, and as also set out in **ACE Report 2207280-01**, the 'FLAT' demand profile option in ARCADY, which utilises uniform traffic flows across the modelled period, has been used to assess Junction C. This was justified by an analysis of the existing traffic flow profile of each 15-minute segment in the peak hours, derived from surveys of the junction that were conducted in September 2022, which showed that traffic flows across the modelled peak hours were broadly uniform across the peak hours. Full details of the flow analysis can be found in Appendix C of **ACE Report 2207280-01**.

7.40. The results of the junction capacity modelling for the existing arrangement of Junction C are summarised in **Table 7.2** below, with full outputs provided at **Appendix H**.

[1] This is based on advice given by TRL with regards to the assessment of the B2036 / B2115 Mini-Roundabout in Cuckfield as part of the Transport Assessment for the Penland Farm development (Planning Reference: DM/16/1803).

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2019 Baseline					
1 - B2036 Whitemans Green (N)	3.4	17.23	0.78	2.1	11.17	0.68
2 - Ardingly Road (E)	1.1	9.58	0.52	1.4	11.95	0.59
3 - B2036 London Road (S)	5.8	24.87	0.86	0.8	5.91	0.43
	2039 Do Minimum					
1 - B2036 Whitemans Green (N)	28.2	103.05	1.02	8.7	35.5	0.91
2 - Ardingly Road (E)	2.2	17.61	0.7	2	16.27	0.67
3 - B2036 London Road (S)	7.6	32.1	0.9	1.2	7.87	0.55
	2039 Do Something					
1 - B2036 Whitemans Green (N)	47.5	162.71	1.08	11.8	46.61	0.94
2 - Ardingly Road (E)	1.9	15.28	0.67	3.9	27.88	0.81
3 - B2036 London Road (S)	17.5	65.45	0.98	1.3	8.35	0.56

Table 7.2: ARCADY – Junction C (Existing Layout)

7.41. As can be seen above, the B2036 Whiteman's Green arm operates over its theoretical capacity and the B2036 London Road arm operates above its practical capacity in the future year with the proposed development in place.

7.42. A mitigation design has been prepared following the approach set out above, with improvements to sustainable travel infrastructure taking priority over increases to junction capacity.

7.43. The proposed mitigation scheme can be seen on **ACE Drawing 2207280-002B**, comprising improvements to sustainable travel at this junction to include the provision of a new parallel crossing point on the southern arm of the junction and a new zebra crossing point on the northern arm of the junction. The provision of a new 3m shared footway / cycleway on the western side of the junction is also proposed, to fill gaps in existing provision per the active travel strategy outlined in **Section 4.0**.

7.44. With regards to increases to vehicular capacity, the proposed mitigation scheme allows for two lane entry on all arms of the junction, as opposed to the single lane entry on all arms as existing.

7.45. The proposed mitigation scheme has been modelled for vehicular capacity under 2039 traffic conditions, with the results of the capacity modelling summarised in **Table 7.3**, and full outputs provided at **Appendix H**.

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2039 Do Something					
1 – B2036 Whitemans Green (N)	2.4	9.22	0.71	1.7	6.48	0.64
2 - Ardingly Road (E)	1.5	11.82	0.61	2.4	16.52	0.71
3 - B2036 London Road (S)	3.8	14.11	0.8	0.8	5.43	0.46

Table 7.3: ARCADY – Junction C (Mitigation Layout)

7.46. As can be seen above, the proposed mitigation scheme results in all arms delivers better than a nil detriment situation, in respect of the operation of the junction, compared to the 2039 Do Minimum situation.

7.47. The proposed mitigation scheme therefore meets the sustainable travel preferences of WSCC and also provides satisfactory mitigation to accommodate the vehicular capacity required.

7.48. The proposed mitigation scheme has also been subject to an RSA1. The Designers' Response, including the RSA1 report, is provided within **ACE Report 2207280-R18**. The above drawing includes amendments made as a result of the RSA1.

Junction O – A23 / London Road Roundabout

7.49. The results of the junction capacity modelling for the existing arrangement of Junction O are summarised in **Table 7.4** below, with full outputs provided at **Appendix H**.

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2019 Baseline					
1 - London Rd (N)	0.1	2.14	0.06	0	1.88	0.04
4 - A23 Northbound offslip	0.2	1.62	0.13	0.2	1.58	0.13
5 - London Rd (S)	0.1	1.57	0.11	0.1	1.5	0.09
	2039 Do Minimum					
1 - London Rd (N)	0	0	0	0	0	0
4 - A23 Northbound offslip	0.1	1.49	0.11	0.1	1.52	0.13
5 - London Rd (S)	0.2	1.65	0.15	0.1	1.56	0.12
	2039 Do Something					
1 - London Rd (N)	0	0	0	0	0	0
4 - A23 Northbound offslip	0.1	1.48	0.11	0.1	1.51	0.13
5 - London Rd (S)	0.3	1.75	0.2	0.2	1.57	0.13

Table 7.4: ARCADY – Junction O (Existing Layout)

7.50. As can be seen above, all arms of Junction O are forecasted to operate within capacity in the 2039 Do Minimum and 2039 Do Something scenarios.

7.51. This indicates that there are not specific mitigation requirements at this location arising from the proposed development.

Junction F – Northern Site Access Roundabout

7.52. Geometries for the northern site access roundabout have been taken from **ACE Drawing 22072800-003F**. The results of the junction capacity modelling under 2030 Do Something traffic conditions are shown in **Table 7.5**, with full outputs provided at **Appendix H**.

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2039 Do Something					
1 - A272 (E)	0.6	4.48	0.39	2.5	9.38	0.72
2 - Site Access 1	0.2	4.08	0.16	0.1	4.77	0.08
3 - A272 (W)	3	14.4	0.75	1	6.12	0.49

Table 7.5: ARCADY – Junction F

7.53. As can be seen above, all arms of Junction F operate within capacity in the 2039 Do Something scenarios.

Junction L – Western Site Access Roundabout

7.54. Geometries for the northern site access roundabout have been taken from **ACE Drawing 22072800-004D**. The results of the junction capacity modelling under 2030 Do Something traffic conditions are shown in **Table 7.6**, with full outputs provided at **Appendix H**.

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2039 Do Something					
1 - A272 (NE)	0.7	3.97	0.42	2.3	7.59	0.7
2 - Site Access 2	0.4	4.99	0.28	0.1	5.36	0.08
3 - A272 (SW)	4.8	14.67	0.83	1.8	6.69	0.64

Table 7.6: ARCADY – Junction L

7.55. As can be seen above, all arms of Junction L operate within capacity in the 2039 Do Something scenario with the proposed development in place.

Junction W – Southern Site Access Roundabout

7.56. Geometries for the northern site access roundabout have been taken from **ACE Drawing 22072800-005D**. The results of the junction capacity modelling are shown in **Table 7.7**, with full outputs provided at **Appendix H**.

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2039 Do Something					
1 - B2036 (N)	0.1	3.58	0.12	0.5	4.8	0.34
a2 - Site Access 3	0	3.26	0.04	0	3.71	0.04
3 - B2036 (S)	0.6	4.68	0.37	0.5	4.28	0.33

Table 7.7: ARCADY – Junction W

7.57. As can be seen above, all arms of Junction W operate within capacity in the 2039 Do Something scenarios.

Cumulative Impact

7.58. Initial mitigation design work was conducted by ACE on the four junctions which were identified in the cumulative assessment undertaken pursuant to the Regulation 18 process for the *Draft Mid Sussex District Local Plan 2021-2039*.

7.59. Initial mitigation schemes were considered for the following:

- B2036 London Road / Ardingly Road Mini-Roundabout
    - The proposals include the minor relocation of the junction to allow for increased flares on the over-capacity arms.
- B2272 / Bolnore Road / Paddockhall Road Double Mini-Roundabouts.
    - The proposal comprise the signalisation of the Bolnore Road junction and the conversion of the Paddockhall Road junction into a priority junction.

7.60. These mitigation schemes showed that the cumulative impact of background traffic, Local Plan allocations as well as traffic from the proposed development could be accommodated.

7.61. Specific details of the mitigation schemes can be found within **ACE Report Reference 2007280-01**.

7.62. It is important to note that these above locations were not identified as requiring mitigation specifically under the 'stand-alone' scenarios outlined in this section.

7.63. As such, the responsibility for the identified mitigation schemed is only considered to be 'shared' between the strategic allocations should the District Local Plan be progressed, and a means of apportioning the cost of mitigation is identified.

Summary

7.64. This section of the report is summarised as follows:

- The basis for the traffic assessment of the development is an amended version of the MSSHM, using new growth factors, baseline trip rates and trip rate reductions as agreed with WSCC.
- A sifting criteria has been applied to determine the scale of changes in traffic attributable to the development and, in turn, which existing junctions would be triggered for further detailed capacity modelling.
- Two existing off-site junctions being selected for junction capacity modelling.
    - Junction C was found to operate above theoretical capacity, requiring a mitigation scheme, as designed in **ACE Drawing 2207280-002B**.
    - Junction O was found to operate within theoretical capacity, negating any requirement for mitigation specifically as a result of the proposed development.
- The primary focus of any infrastructure mitigation has been on active modes with vehicular capacity being a secondary issue.
- The consequent overall mitigation delivers both sustainable transport improvements a better-than-nil-detriment increase to vehicular capacity.
- The proposed site access roundabouts were also modelled for capacity, and were found to operate within the limits of satisfactory highway capacity.

8. Summary and Conclusion

Summary

8.1. This report is summarised as follows:

- The proposed development is to be subject to an Outline Planning Application with all matters reserved excluding access, and comprises a residential-led, mixed-use development.
- Extensive pre-application discussions have been held with WSCC, the Local Highways Authority, with regards to the design and traffic assessment of the development.
- The development is located in an accessible location, within a range of existing facilities accessible by multiple modes of transport, including active and public transport.
- The basis for the access and movement strategy is the principle of the walkable neighbourhood, with an emphasis on design at a human scale through prioritising active and public transport over the private car.
- Access to the development via active travel modes will be possible from 10 locations. Access to the site by vehicle will be from three new standard roundabouts on the northern, western and southern edges of the development. The access arrangements have been subject to relevant road safety audits, and amended based on the recommendations provided where appropriate.
- The indicative street hierarchy and geometries have been outlined based on standards provided by WSCC and feedback from Design South East. The proposed street hierarchy allows for maximum flexibility with regards to bus provision with refinements expected at RM stage.
- Cycle and car parking provision have been agreed with WSCC and are based on standards set out by WSCC and Buildings Regulations.
- The active travel strategy follows the principles and geometries set out in LTN 1/20, as agreed with WSCC, with a network of internal footway / cycleways connecting to an improved, off-carriageway cycle route connecting the site to Haywards Heath. Additional improvements to off-site public rights of way are also being explored to expand the benefits arising from the improved connectivity which the proposed development will bring.

- The intended goal of the public transport strategy is to provide a regular connection to / from Haywards Heath. Various options are being considered for both the intermediary stage, while the development is being delivered, and the final bus service.
- A network of mobility hubs is proposed within the development, with the potential for additional cycle parking and Realtime Passenger Information at each bus stop.
    - The Mobility Hubs will be designed to CoMo silver accreditation at minimum, with one mobility hub meeting Como gold accreditation.
    - The Mobility Hubs may also include Electric Vehicle (EV) charging ports, and preferential spaces for car club vehicles, which car club operators have expressed interest in providing.
- When considering mitigation, this TA considered how the need to travel would be minimised through the internalisation of trips, promotion of active travel modes, and connectivity to/from nearby destinations and settlements.
- This mitigation is indicative of the 'Decide and Provide' paradigm, which requires the visioning of outcomes when setting out the requirements for mitigation. This is consistent with the NPPF which outcome of these mitigation measures leads, finally, to a requirement to assessment the 'residual' impact of car trips.
- The basis for traffic assessment of the proposed development was undertaken with reference to a sequential process:
    - An amended version of the MSSHM, using refined parameters on traffic growth, trip rates and trip rate reductions as agreed with WSCC.
    - A sifting criteria applied to an analysis of traffic changes between the following scenarios:
        - 2019 Baseline – The calibrated model.
        - 2039 Do Minimum ('Without Development').
        - 2039 Do Something ('With Development').
- From this comparison of the results for the 2039 Do Minimum and 2039 Do Something scenarios, two junctions were selected for further detailed assessment via junction capacity modelling.

- A mitigation scheme was developed for one of the above junctions, focusing first on sustainable travel per WSCC advice, which both improves sustainable travel opportunities and provides a better-than-nil-detriment improvement to vehicular capacity.
- The three proposed site access roundabouts were also modelled and found to operate within capacity in the future year with the proposed development in place.
- Finally, consideration has been given to the 'cumulative' effects of the District Local Plan 2021-2039 and the 'shared' responsibility that the proposed development may have towards the funding of additional measures. However, this is subject to the Local Plan being progressed and a means of apportioning the cost of mitigation, both of which MSDC would be responsible in identifying.

Conclusion

8.2. In conclusion, the information presented in this TA (and associated Appendices) confirms the suitability for a residential-led, mixed-use development at this location.

8.3. Taken together, this TA provides the justification necessary to ensure that the proposed development can be considered in a favourable light and secure a positive determination of the planning application.

Drawings

N

CUCKFIELD

HAYWARDS HEATH

BOLNORE VILLAGE

ANSTY

SITE

FOR MORE DETAIL SEE ARDENT DRAWING 2207280-SK05 CYCLE ROUTE IMPROVEMENT PLAN

FOR MORE DETAIL SEE ARDENT DRAWING 2207280-009 B2036 CYCLE IMPROVEMENT PLAN

FOR MORE DETAIL SEE ARDENT DRAWING 2207280-010 A272 PROPOSED TOUCAN CROSSING

FOR MORE DETAIL SEE ARDENT DRAWING 2207280-SK05.1 CYCLE ROUTE IMPROVEMENT PLAN

PROPOSED CYCLE IMPROVEMENT TIEING WITH PROW INTO THE SITE

BURGESS HILL NORTHERN ARC MIXED-USE DEVELOPMENT

Abbotsford

Copyhold Gill

Holmbush Gill

Fox Hill

Lunce's Common

BROAD STREET

PENLAND ROAD

HARLANDS ROAD

CHOWNES MEAD LANE

BOLNORE ROAD

BOLNORE FARM LANE

SUNNYWOOD DRIVE

COPYHOLD LANE

CUCKFIELD ROAD

A272

A273

A2300

B2036

B2272

KEY:

- THE SITE
- PROPOSED CYCLE ROUTE
- EXISTING CYCLE ROUTE
- BURGESS HILL NORTHERN ARC MIXED-USE DEVELOPMENT
- BEECHY BOTTOM PARKLAND RESERVE
- EXISTING FOOTPATHS (24CU)
- EXISTING BRIDLEWAYS (24CU)
- RAILWAY STATION

FOR INFORMATION ONLY

WORK IN PROGRESS

Rev	Description	Drn	Chk	App	Date
A	PARKLAND RESERVE BOUNDARY ADDED (BLUE LINE)	HP	JS	DH	20.10.23

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Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client: FAIRFAX ACQUISITIONS LTD

Project Title: LAND AT ANSTY FARM, MID SUSSEX

Drawing Title: CYCLE & PEDESTRIAN ROUTES

A1 Scale	Date	Designed by
NTS	28.09.23	ADS
Drawn by	**Checked by**	**Approved by**
ADS	JS	DH

Drawing Number: 2207280-SK09 Rev A

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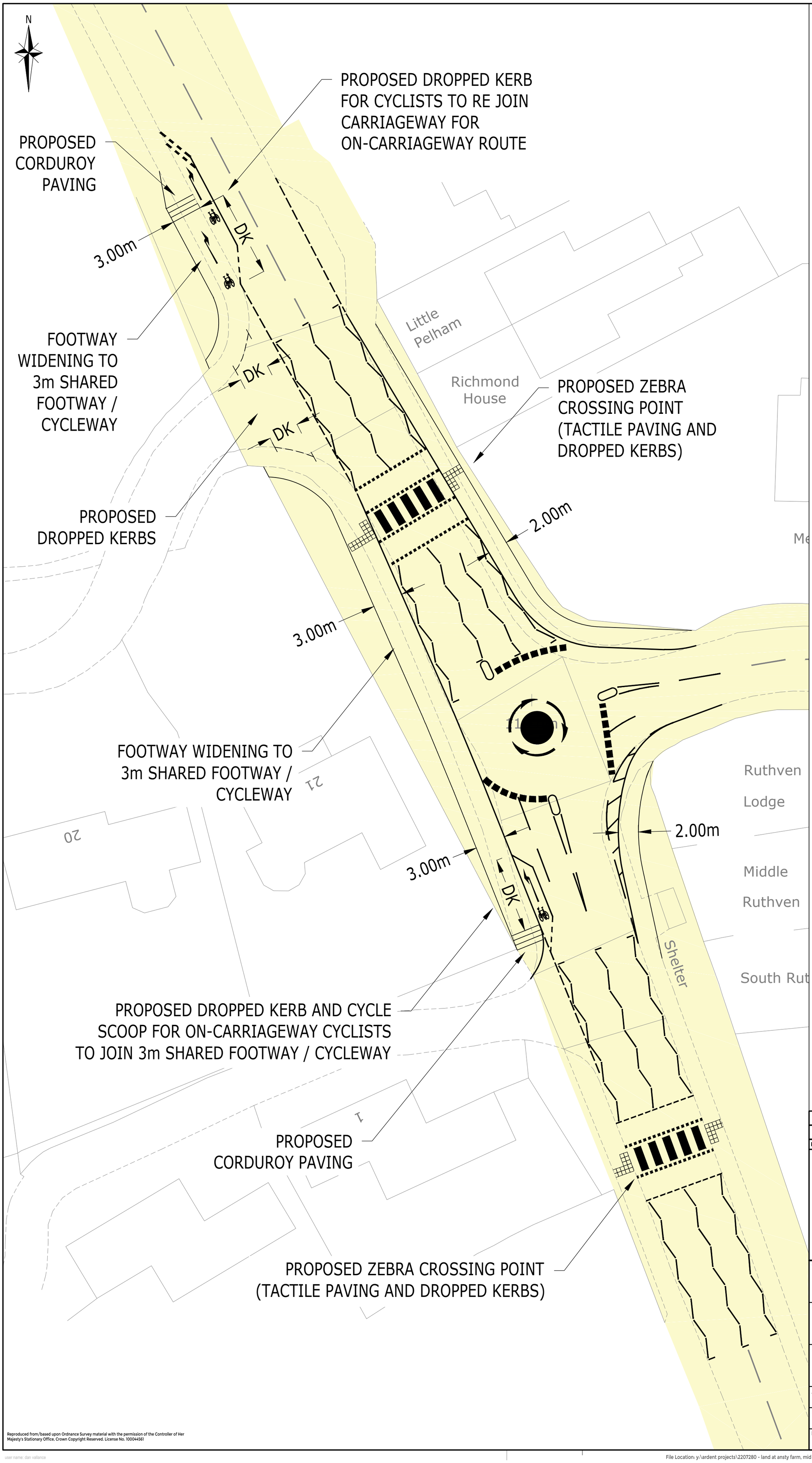
File Location: \\ace-host01\projects\ap recovered\ardent projects\2207280 - land at ansty farm, mid sussex\technical\acad\drawings\sketches\2207280-sk09a cycle & pedestrian routes.dwg



NOTES:

DRAWING IS SUBJECT TO: TOPOGRAPHICAL SURVEY, DETAILED DESIGN AND HIGHWAYS APPROVAL.

SIGNAGE DETAILS TO BE PROVIDED IN ACCORDANCE WITH TSRGD AND LT1/20 STANDARDS

KEY:

HIGHWAY BOUNDARY TRANSCRIBED FROM MSCC RECORDS

DRAFT

Rev	Description	Drn	Chk	App	Date
B	UPDATED FOLLOWING STAGE 1 RSA COMMENTS	DV	DV	DH	17.10.23
A	CYCLE IMPROVEMENTS ADDED	BT	SAF	DH	20.09.23

ARDENT | CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

FAIRFAX ACQUISITIONS LTD

Project Title:

LAND AT ANSTY FARM, MID SUSSEX

Drawing Title:

POTENTIAL ROUNDABOUT IMPROVEMENTS

A2 Scale	Date	Designed by
1:250	14.12.22	BT
Drawn by	**Checked by**	**Approved by**
BT	SAF	DH

Drawing Number: 2207280-002 — Rev B

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ARCADY ROUNDABOUT GEOMETRY:	(ARM 1) A272 EAST	(ARM 2) DEVELOPMENT ACCESS	(ARM 3) A272 WEST
APPROACH ROAD HALF WIDTH	3.65m	3.25m	3.50m
ENTRY WIDTH	4.50m	4.50m	4.50m
EFFECTIVE FLARE LENGTH	13.50m	12.50m	4.50m
ENTRY RADIUS	40.00m	42.00m	15.00m
INSCRIBED CIRCLE DIAMETER	30.00m	30.00m	30.00m
CONFLICT ANGLE	26.00°	23.00°	31.00°
DEFLECTION	81.29m	96.25m	92.79m

Sports Pavilion

N

215m FORWARD VISIBILITY ON APPROACH BASED ON 60mph SPEED LIMIT (POSTED SPEED LIMIT)

TIE INTO EXISTING ROAD ALINGMENT

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 15m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m SHOULD BE USED AT SINGLE LANE ENTRIES

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 92.79m

CIRCULATORY CARRIAGEWAY WIDTH AS PER PARA 3.6 OF CD116
THE WIDTH OF THE CIRCULATORY CARRIAGEWAY FOR NORMAL OR COMPACT ROUNDABOUTS SHALL BE BETWEEN 1.0 AND 1.2 TIMES THE MAXIMUM ENTRY WIDTH, EXCLUDING ANY OVERRUN AREA - 5.40m

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 40.00m

PROPOSED SIGNALISED CROSSING POINT / FOOTWAY CONNECTION TO EXISTING PROW

TIE INTO EXISTING ROAD ALIGNMENT

PROPOSED FOOTWAY

EXISTING PUBLIC RIGHT OF WAY

2m x 215m VISIBILITY SPLAY

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 42.00m

ENTRY WIDTH AS PER PARA 3.14.1OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m SHOULD BE USED AT SINGLE LANE ENTRIES

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 42m

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 96.25m

2m x 43m VISIBILITY SPLAY

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 81.29m

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 40m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m SHOULD BE USED AT SINGLE LANE ENTRIES

2m x 43m VISIBILITY SPLAY

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 40.00m

PROPOSED CROSSING POINT

NOTE DEVELOPMENT ACCESS ARM TO BE A 20/30mph SPEED LIMIT

2m x 43m VISIBILITY SPLAY

PROPOSED DEVELOPMENT

PROPOSED FOOT/CYCLEWAY

2m x 120m VISIBILITY SPLAY

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

2m x 120m VISIBILITY SPLAY

2m x 215m VISIBILITY SPLAY

215m FORWARD VISIBILITY ON APPROACH BASED ON 60mph SPEED LIMIT (POSTED SPEED LIMIT)

CONTINUATION OF PROPOSED FOOT/CYCLEWAY

EXISTING PUBLIC RIGHT OF WAY

Tanks

Sewage Treatment Works

Tanks

A272 (WEST)

A272 (EAST)

CUTLINE

CUTLINE

CUTLINE

VISIBILITY SPLAY EXTENSIONS

ROUNDABOUT SWEPT PATHS

1m OVERRUN STRIP REQUIRED FOR HGV SWEPT PATHS

NOTES:

ROUNDABOUT DESIGNED TO CD 116 GEOMETRIC DESIGN OF ROUNDABOUTS (FORMERLY TD 16/07, TD 50/04, TD 51/17, TD 54/07, TA 23/81, TA 78/97, TA 86/03, TD 70/08)

DESIGN IS BASED ON TOPOGRAPHICAL SURVEY PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023

ROUNDABOUT SUBJECT TO FURTHER DESIGN REFINEMENT OF NON-VEHICULAR WORKS, SPEED SURVEYS, ROAD SAFETY AUDIT, LAND OWNERSHIP CONFIRMATION, ARBORICULTURAL SURVEY AND DISCUSSIONS WITH HIGHWAYS

THE PEDESTRIAN/CYCLE ACCESS STRATEGY IS SUBJECT TO DISCUSSIONS WITH HIGHWAYS BUT INDICATIVE ROUTING/CROSSING LOCATIONS HAVE BEEN SHOWN SUBJECT TO REVIEW AGAINST LAND OWNERSHIP/CONSTRAINTS INFORMATION, ECOLOGY INFORMATION AND ARBORICULTURAL SURVEY.

STREET LIGHTING TO BE CONSIDERED.

SPEED DISCRIMINATION EQUIPMENT TO BE CONSIDERED IF REQUIRED.

VEGETATION WITHIN VISIBILITY SPLAYS TO BE TRIMMED AND CUT BACK TO KEEP VISIBILITY SPLAYS CLEAR.

DESIGN IN ACCORDANCE WITH THE CURRENT POSTED SPEED LIMIT, ANY REDUCTION IN SPEED LIMIT IS SUBJECT TO REVIEW BY WSCC.

SIGNAGE TO BE IN ACCORDANCE WITH TSRGD AND LTN 1/ 20 STANDARDS.

KEY:

- INDICATIVE SITE BOUNDARY
- INDICATIVE APPLICATION ACCESS WORKS BOUNDARY TO BE CONFIRMED
- EXISTING PUBLIC RIGHT OF WAY
- DEFLECTION ANGLE
- FORWARD VISIBILITY SPLAY BASED ON 40mph SPEED LIMIT
- FORWARD VISIBILITY SPLAY BASED ON 60mph SPEED LIMIT
- 120m PEDESTRIAN VISIBILITY SPLAY
- 215m PEDESTRIAN VISIBILITY SPLAY
- 43m PEDESTRIAN VISIBILITY SPLAY
- HIGHWAY BOUNDARY TRANSCRIBED FROM WEST SUSSEX RECORDS

VEHICLE SPECIFICATION:

Max Legal Articulated Vehicle (16.5m)	
Overall Length	16.500m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.295m
Max Track Width	2.500m
Lock to Lock Time	6.0s
Kerb to Kerb Turning Radius	8.870m

DRAFT

Rev	Description	Drn	Chk	App	Date
F	UPDATED FOLLOWING STAGE 1 RSA COMMENTS	DV	DV	DH	17.10.23
E	UPDATED TO LATEST PROPOSALS	DV	DH	KM	14.09.23
D	UPDATED TO WSCC COMMENTS	DV	DH	KM	12.07.23
C	OFF-SITE WORKS UPDATED	DV	DH	KM	15.06.23
B	ACCESS SHIFTED WEST AS PER MASTERPLAN	DV	DH	KM	16.05.23
A	TREES SURVEY ADDED / REDLINE UPDATED	DV	DH	KM	13.04.23

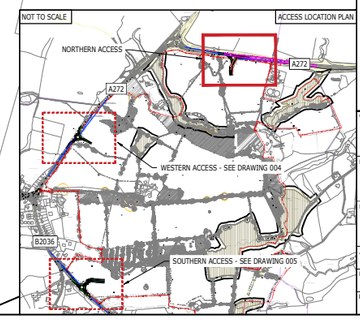
ARDENT | CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

ACCESS LOCATION PLAN

NOT TO SCALE



Client: FAIRFAX ACQUISITIONS LTD

Project Title: LAND AT ANTSY FARM, MID SUSSEX

Drawing Title: PROPOSED ROUNDABOUT NORTHERN ACCESS (A272)

AO Scale	Date	Designed by
1:500	22.02.23	DV
Drawn by: DV	Checked by: DV	Approved by: DH

Drawing Number: 2207280-003 Rev: F

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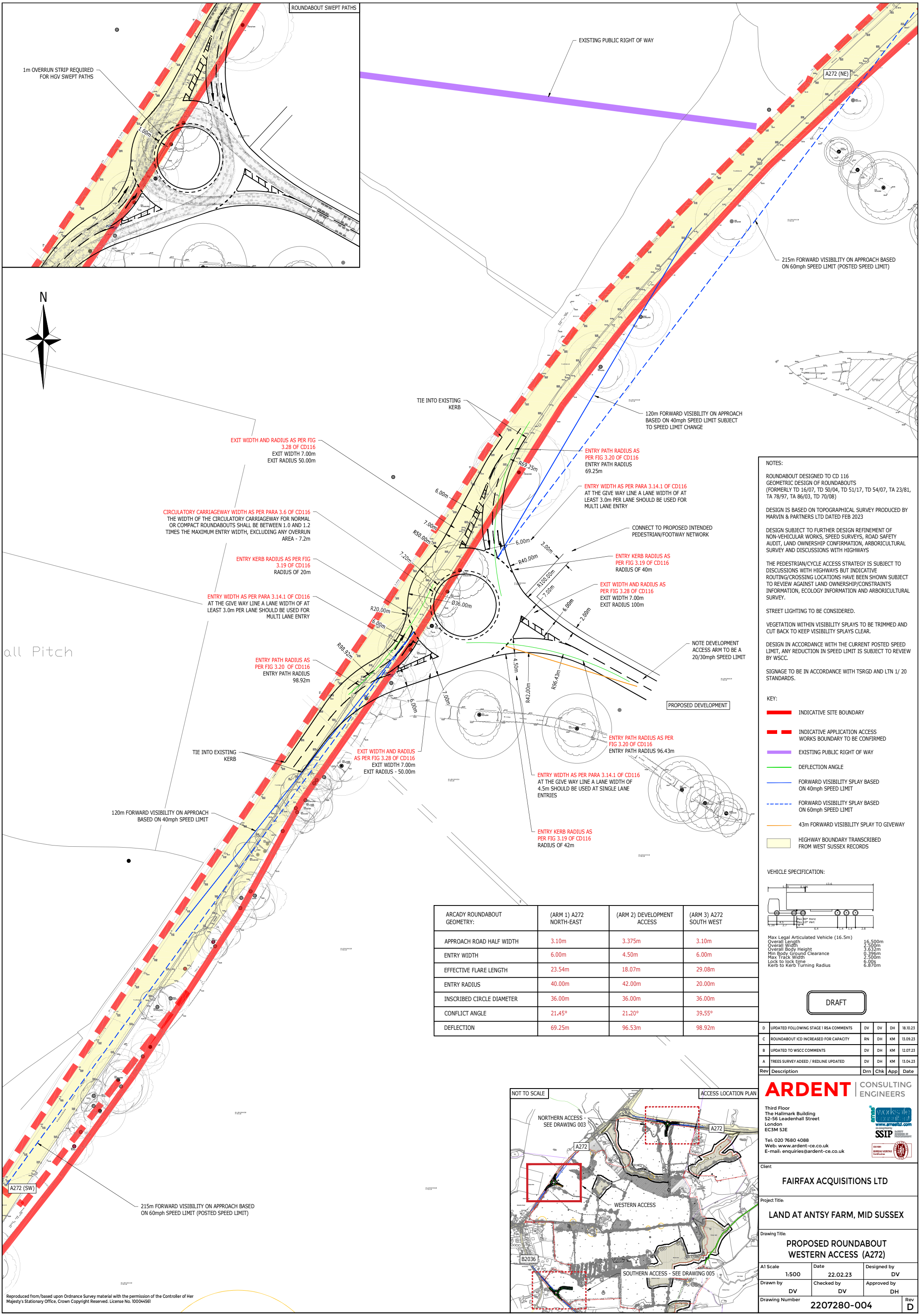

ARCADY ROUNDABOUT GEOMETRY:	(ARM 1) A272 NORTH-EAST	(ARM 2) DEVELOPMENT ACCESS	(ARM 3) A272 SOUTH WEST
APPROACH ROAD HALF WIDTH	3.10m	3.375m	3.10m
ENTRY WIDTH	6.00m	4.50m	6.00m
EFFECTIVE FLARE LENGTH	23.54m	18.07m	29.08m
ENTRY RADIUS	40.00m	42.00m	20.00m
INSCRIBED CIRCLE DIAMETER	36.00m	36.00m	36.00m
CONFLICT ANGLE	21.45°	21.20°	39.55°
DEFLECTION	69.25m	96.53m	98.92m

NOTES:

ROUNDABOUT DESIGNED TO CD 116
GEOMETRIC DESIGN OF ROUNDABOUTS
(FORMERLY TD 16/07, TD 50/04, TD 51/17, TD 54/07, TA 23/81, TA 78/97, TA 86/03, TD 70/08)

DESIGN IS BASED ON TOPOGRAPHICAL SURVEY PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023

DESIGN SUBJECT TO FURTHER DESIGN REFINEMENT OF NON-VEHICULAR WORKS, SPEED SURVEYS, ROAD SAFETY AUDIT, LAND OWNERSHIP CONFIRMATION, ARBORICULTURAL SURVEY AND DISCUSSIONS WITH HIGHWAYS

THE PEDESTRIAN/CYCLE ACCESS STRATEGY IS SUBJECT TO DISCUSSIONS WITH HIGHWAYS BUT INDICATIVE ROUTING/CROSSING LOCATIONS HAVE BEEN SHOWN SUBJECT TO REVIEW AGAINST LAND OWNERSHIP/CONSTRAINTS INFORMATION, ECOLOGY INFORMATION AND ARBORICULTURAL SURVEY.

STREET LIGHTING TO BE CONSIDERED.

VEGETATION WITHIN VISIBILITY SPLAYS TO BE TRIMMED AND CUT BACK TO KEEP VISIBILITY SPLAYS CLEAR.

DESIGN IN ACCORDANCE WITH THE CURRENT POSTED SPEED LIMIT, ANY REDUCTION IN SPEED LIMIT IS SUBJECT TO REVIEW BY WSCC.

SIGNAGE TO BE IN ACCORDANCE WITH TSRGD AND LTN 1/ 20 STANDARDS.

KEY:

- INDICATIVE SITE BOUNDARY
- INDICATIVE APPLICATION ACCESS WORKS BOUNDARY TO BE CONFIRMED
- EXISTING PUBLIC RIGHT OF WAY
- DEFLECTION ANGLE
- FORWARD VISIBILITY SPLAY BASED ON 40mph SPEED LIMIT
- FORWARD VISIBILITY SPLAY BASED ON 60mph SPEED LIMIT
- 43m FORWARD VISIBILITY SPLAY TO GIVEWAY
- HIGHWAY BOUNDARY TRANSCRIBED FROM WEST SUSSEX RECORDS

VEHICLE SPECIFICATION:

Max Legal Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.396m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.870m

DRAFT

Rev	Description	Drn	Chk	App	Date
D	UPDATED FOLLOWING STAGE 1 RSA COMMENTS	DV	DV	DH	18.10.23
C	ROUNDABOUT ICD INCREASED FOR CAPACITY	RN	DH	KM	13.09.23
B	UPDATED TO WSCC COMMENTS	DV	DH	KM	12.07.23
A	TREES SURVEY ADEED / REDLINE UPDATED	DV	DH	KM	13.04.23

ARDENT | CONSULTING ENGINEERS
Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE
Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client
FAIRFAX ACQUISITIONS LTD

Project Title:
LAND AT ANTSY FARM, MID SUSSEX

Drawing Title:
PROPOSED ROUNDABOUT
WESTERN ACCESS (A272)

A1 Scale	Date	Designed by
1:500	22.02.23	DV
Drawn by	Checked by	Approved by
DV	DV	DH

Drawing Number: 2207280-004
Rev: D

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N

EXISTING PUBLIC RIGHT OF WAY

Mount Noddy Cottage

West Riddens Cottages

Little Orchard

Ansty Lodge

Anstye Place

Pond

West Riddens Farm

West Riddens

215m FORWARD VISIBILITY ON APPROACH BASED ON 60mph (NOTE APPROACHING WITHIN 30mph SPEED LIMIT)

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

CONNECT TO EXISTING FOOTWAY

PROPOSED DROPPED KERB FOOTWAY/CYCLEWAY TIE INTO EXISTING KERBS

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 70.18m

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 40.00m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m
SHOULD BE USED AT SINGLE LANE ENTRIES

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 40.00m

POTENTIAL CROSSING POINT AND TRANSITION FROM SEGREGATED CYCLE ROUTE TO SHARED FOOT/CYCLEWAY

SIGNAGE AND DETAILS TBC

NOTE DEVELOPMENT ACCESS ARM TO BE A 20/30mph SPEED LIMIT

PROPOSED DEVELOPMENT

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 67.00m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m
SHOULD BE USED AT SINGLE LANE ENTRIES

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 20.00m

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 42.00m

PROPOSED DROPPED KERB FOOTWAY/CYCLEWAY TIE INTO EXISTING KERBS

TIE INTO EXISTING ROAD ALIGNMENT

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 60.00m

CIRCULATORY CARRIAGEWAY WIDTH AS PER PARA 3.6 OF CD116
THE WIDTH OF THE CIRCULATORY CARRIAGEWAY FOR NORMAL OR COMPACT ROUNDABOUTS SHALL BE BETWEEN 1.0 AND 1.2 TIMES THE MAXIMUM ENTRY WIDTH, EXCLUDING ANY OVERRUN AREA - 5.40m

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 15m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m SHOULD BE USED AT SINGLE LANE ENTRIES

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 99.84m

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

215m FORWARD VISIBILITY ON APPROACH BASED ON POSTED SPEED LIMIT (60mph)

B2036 SOUTH

61.7m

68.2m

ARCADY ROUNDABOUT GEOMETRY:	(ARM 1) B2036 NORTH	(ARM 2) DEVELOPMENT ACCESS	(ARM 3) B2036 SOUTH
APPROACH ROAD HALF WIDTH	3.00m	3.25m	3.30m
ENTRY WIDTH	4.50m	4.50m	4.50m
EFFECTIVE FLARE LENGTH	10.00m	11.00m	14.50m
ENTRY RADIUS	40.00m	20.00m	15.00m
INSCRIBED CIRCLE DIAMETER	30.00m	30.00m	30.00m
CONFLICT ANGLE	30.00°	37.00°	29.00°
DEFLECTION	70.18m	67.00m	99.84m

NOTES:

ROUNDABOUT DESIGNED TO CD 116 GEOMETRIC DESIGN OF ROUNDABOUTS (FORMERLY TO 16/07, TO 50/04, TD 51/17, TD 54/07, TA 23/81, TA 78/97, TA 86/03, TD 70/08)

DESIGN IS BASED ON TOPOGRAPHICAL SURVEY PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023

ROUNDABOUT SUBJECT TO FURTHER DESIGN REFINEMENT OF NON-VEHICULAR WORKS, SPEED SURVEYS, ROAD SAFETY AUDIT, LAND OWNERSHIP CONFIRMATION, ARBORICULTURAL SURVEY AND DISCUSSIONS WITH HIGHWAYS

THE PEDESTRIAN/CYCLE ACCESS STRATEGY IS SUBJECT TO DISCUSSIONS WITH HIGHWAYS BUT INDICATIVE ROUTING/CROSSING LOCATIONS HAVE BEEN SHOWN SUBJECT TO REVIEW AGAINST LAND OWNERSHIP/CONSTRAINTS INFORMATION, ECOLOGY INFORMATION AND ARBORICULTURAL SURVEY.

STREET LIGHTING TO BE CONSIDERED.

VEGETATION WITHIN VISIBILITY SPLAYS TO BE TRIMMED AND CUT BACK TO KEEP VISIBILITY SPLAYS CLEAR.

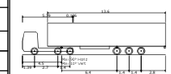
DESIGN IN ACCORDANCE WITH THE CURRENT POSTED SPEED LIMIT, ANY REDUCTION IN SPEED LIMIT IS SUBJECT TO REVIEW BY WSCC.

SIGNAGE TO BE IN ACCORDANCE WITH TSRGD AND LTN 1/ 20 STANDARDS.

KEY:

- INDICATIVE SITE BOUNDARY
- INDICATIVE APPLICATION ACCESS WORKS BOUNDARY TO BE CONFIRMED
- EXISTING PUBLIC RIGHT OF WAY
- DEFLECTION ANGLE
- FORWARD VISIBILITY SPLAY BASED ON 40mph SPEED LIMIT
- FORWARD VISIBILITY SPLAY BASED ON 60mph SPEED LIMIT
- 43m FORWARD VISIBILITY SPLAY
- 43m PEDESTRIAN VISIBILITY SPLAY
- HIGHWAY BOUNDARY TRANSCRIBED FROM WEST SUSSEX RECORDS

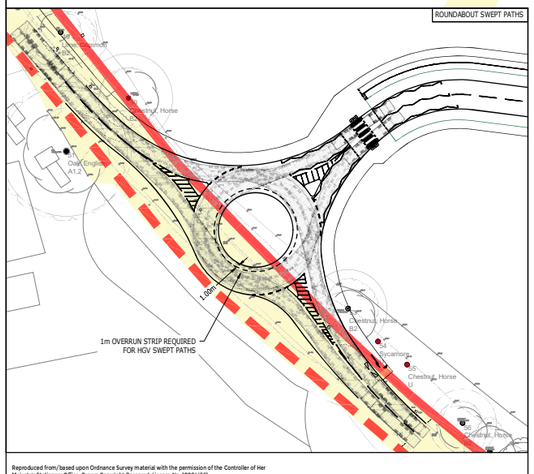
VEHICLE SPECIFICATION:



Max Legal Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.500m
Min Body Ground Height	0.530m
Min Body Ground Clearance	0.530m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.870m

ROUNDABOUT SWEPT PATHS



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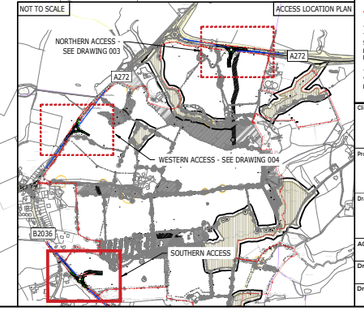
NOT TO SCALE — ACCESS LOCATION PLAN



DRAFT

Rev	Description	Dsn	Chk	App	Date
D	UPDATED FOLLOWING STAGE 1 RSA COMMENTS	DV	DV	DH	17.10.23
C	CYCLE ROUTE EXTENDED ALONG SOUTHERN ARM	ADS	DH	KM	28.09.23
B	UPDATED TO WSCC COMMENTS	DV	DH	KM	12.07.23
A	TREES SURVEY ADDED / REDLINE UPDATED	DV	DH	KM	13.04.23

ARDENT | CONSULTING ENGINEERS
Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE
Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client: FAIRFAX ACQUISITIONS LTD

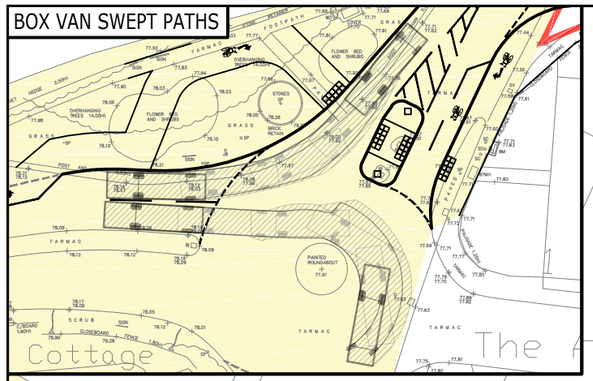
Project Title: LAND AT ANTSY FARM, MID SUSSEX

Drawing Title: PROPOSED ROUNDABOUT SOUTHERN ACCESS (B2036)

AO Scale	Date	Designed by
1:500	22.02.23	DV
Drawn by	Checked by	Approved by
DV	DV	DH

Drawing Number: 2207280-005 — Rev: D

BOX VAN SWEPT PATHS



N

1.5m x 36m VISIBILITY SPLAY (MAX ACHIEVABLE)

1.5m x 31m VISIBILITY SPLAY (MAX ACHIEVABLE)

EXISTING REFUGE ISLAND WIDENED TO PROVIDE CONNECTION TO SHARED FOOT/CYCLEWAY

PROPOSED CORDUROY PAVING

1.5m x 43m VISIBILITY SPLAY (SHOWN TO TANGENT)

DROPPED KERB FOR ACCESS TO SHARED FOOT/CYCLEWAY

DROPPED KERB FOR ACCESS / EGRESS SHARED FOOT/CYCLEWAY

EXISTING ACCESS

EXISTING PROW (FOOT/CYCLE CONNECTION TO THE DEVELOPMENT)

EXISTING FOOTWAY WIDENED TO 3m SHARED FOOT/CYCLEWAY SUBJECT TO LAND BOUNDARIES

PROPOSED CORDUROY PAVING

EXISTING ACCESS

EXISTING PETROL STATION ACCESS

EXISTING 2m FOOTWAY (NOTE OUTSIDE OF HIGHWAY LAND)

EXISTING 2m FOOTWAY (NOTE OUTSIDE OF HIGHWAY LAND)

EXISTING UNCONTROLLED PEDESTRIAN CROSSING

DEAK'S LANE

BOLNEY ROAD

A272

B2036

3.75m

3.17m

3.00m

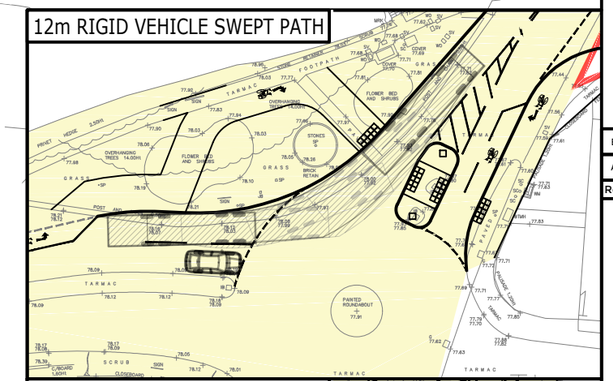
5.00m

2.47m

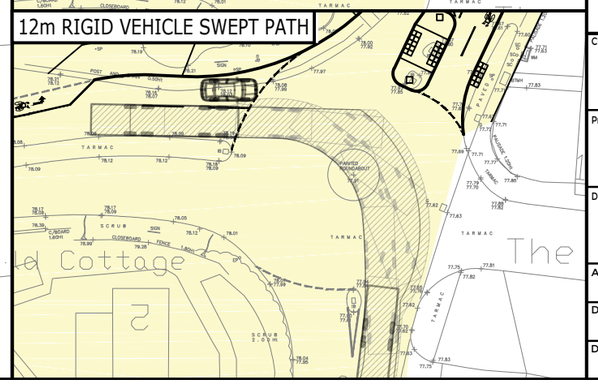
2.00m

1.79m

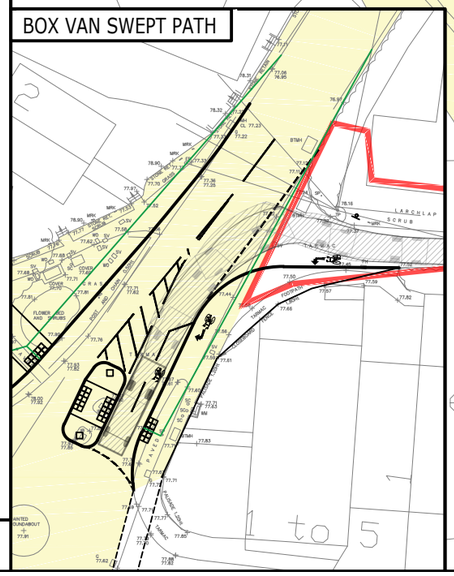
12m RIGID VEHICLE SWEPT PATH



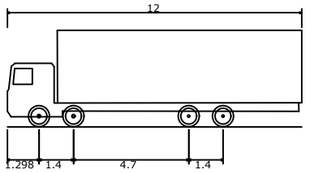
12m RIGID VEHICLE SWEPT PATH



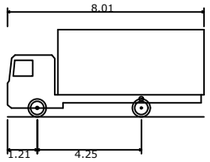
BOX VAN SWEPT PATH



VEHICLE SPECIFICATIONS:



Rigid Truck	
Overall Length	12.000m
Overall Width	2.500m
Overall Body Height	3.928m
Min Body Ground Clearance	0.412m
Track Width	2.471m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	11.900m



7.5t Box Van	
Overall Length	8.010m
Overall Width	2.100m
Overall Body Height	3.556m
Min Body Ground Clearance	0.351m
Track Width	2.064m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m

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NOTES:

THE PEDESTRIAN/CYCLE ACCESS STRATEGY IS SUBJECT TO DISCUSSIONS WITH HIGHWAYS BUT INDICATIVE ROUTING/CROSSING LOCATIONS HAVE BEEN SHOWN SUBJECT TO REVIEW AGAINST LAND OWNERSHIP/CONSTRAINTS INFORMATION, ECOLOGY INFORMATION AND ARBORICULTURAL SURVEY.

VISIBILITY SPLAYS SUBJECT TO SPEED LIMIT CHANGE AND DISCUSSIONS WITH HIGHWAYS.

SIGNAGE TO BE IN ACCORDANCE WITH TSRGD AND LTN/1 20 STANDARDS.

KEY:

INDICATIVE SITE BOUNDARY TO BE CONFIRMED

HIGHWAY BOUNDARY TRANSCRIBED FROM MID SUSSEX RECORDS

DRAFT

Rev	Description	Drn	Chk	App	Date
B	UPDATED FOLLOWING STAGE 1 RSA COMMENTS	DV	DV	DH	17.10.23
A	UPDATED TO ALLOW 5m ENTRY WIDTH	DV	DV	DH	22.09.23

ARDENT | CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

FAIRFAX ACQUISITIONS LTD

Project Title:

LAND AT ANTSY FARM, MID SUSSEX

Drawing Title:

PROPOSED CYCLE CONNECTIONS
A272 / BOLNEY ROAD / B2036

A3 Scale	Date	Designed by
1:500	03.08.23	DV
Drawn by	**Checked by**	**Approved by**
DV	DV	KM

Drawing Number: 2207280-007 Rev B

N

PROPOSED TOUCAN CROSSING EXTENT

1:250 SCALE

ALIGNMENT SHOWN INDICATIVELY

3.00m

PROPOSED CYCLE GATES

PROPOSED TOUCAN CROSSING

INTERNAL FOOTPATH CONNECTION

3.00m

3.00m

INSET 1

CUTLINE - SOUTHERN VISIBILITY SPLAY EXTENT

1:500 SCALE

CUTLINE - SOUTHERN VISIBILITY SPLAY EXTENSION - SEE INSET 1

A272

Issues

Pond

BSM

SM

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1:500 SCALE

NOTES:

1. THE PEDESTRIAN/CYCLE ACCESS STRATEGY IS SUBJECT TO DISCUSSIONS WITH HIGHWAYS BUT INDICATIVE ROUTING/CROSSING LOCATIONS HAVE BEEN SHOWN SUBJECT TO REVIEW AGAINST LAND OWNERSHIP/CONSTRAINTS INFORMATION, ECOLOGY INFORMATION AND ARBORICULTURAL SURVEY.
2. DESIGN IS BASED ON TOPOGRAPHICAL SURVEY PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023
3. INTERNAL FOOTPATH CONNECTION ALIGNMENT FROM DRAWING D3012-FAB-00-XX-M2-Y-1012-D102_Concept masterplan (08-09-23)
4. STREET LIGHTING TO BE CONSIDERED.
5. SPEED DISCRIMINATION EQUIPMENT TO BE CONSIDERED IF REQUIRED.
6. VEGETATION WITHIN VISIBILITY SPLAYS TO BE TRIMMED AND CUT BACK TO KEEP VISIBILITY SPLAYS CLEAR.
7. SIGNAGE TO BE IN ACCORDANCE WITH TSRGD AND LTN 1/ 20 STANDARDS.
8. DESIGN IN ACCORDANCE WITH THE CURRENT POSTED SPEED LIMIT, ANY REDUCTION SPEED LIMIT IS SUBJECT TO REVIEW BY WSCC.

KEY:

- INDICATIVE SITE BOUNDARY
- BEECHY BOTTOM RESERVE BOUNDARY (INDICATIVELY SHOWN)
- PROPOSED FOOT/CYCLEWAY
- HIGHWAY BOUNDARY TRANSCRIBED FROM WEST SUSSEX RECORDS
- PROPOSED ROAD MARKINGS
- EXISTING ROAD MARKINGS
- 215m VISIBILITY SPLAYS
- 215m VISIBILITY SPLAY TO SIGNAL HEAD

DRAFT

Rev	Description	Drn	Chk	App	Date
B	UPDATED FOLLOWING STAGE 1 RSA COMMENTS	DV	DV	DH	17.10.23
A	PROPOSED CYCLE/PEDESTRIAN ROUTE SHOWN NORTHERN SIDE OF THE A272 TO BEECHY BOTTOM RESERVE	ADS	DH	KM	28.09.23

ARDENT | CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

FAIRFAX ACQUISITIONS LTD

Project Title:

LAND AT ANTSY FARM, MID SUSSEX

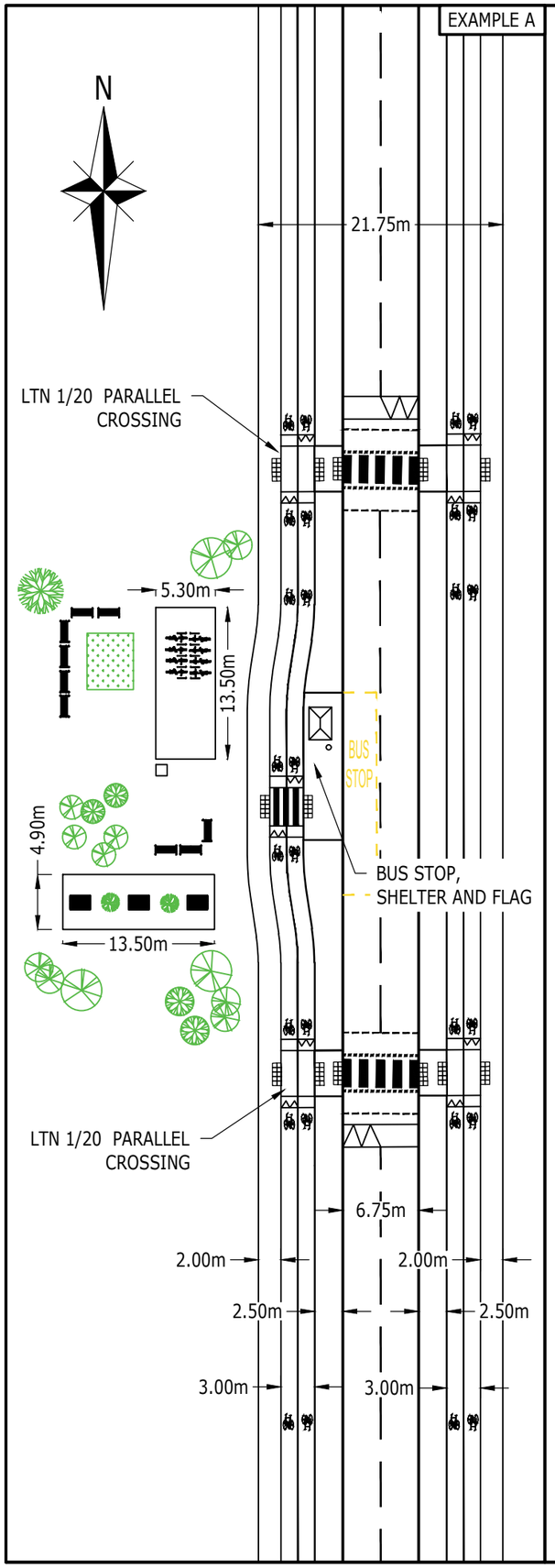
Drawing Title:

A272 PROPOSED TOUCAN CROSSING

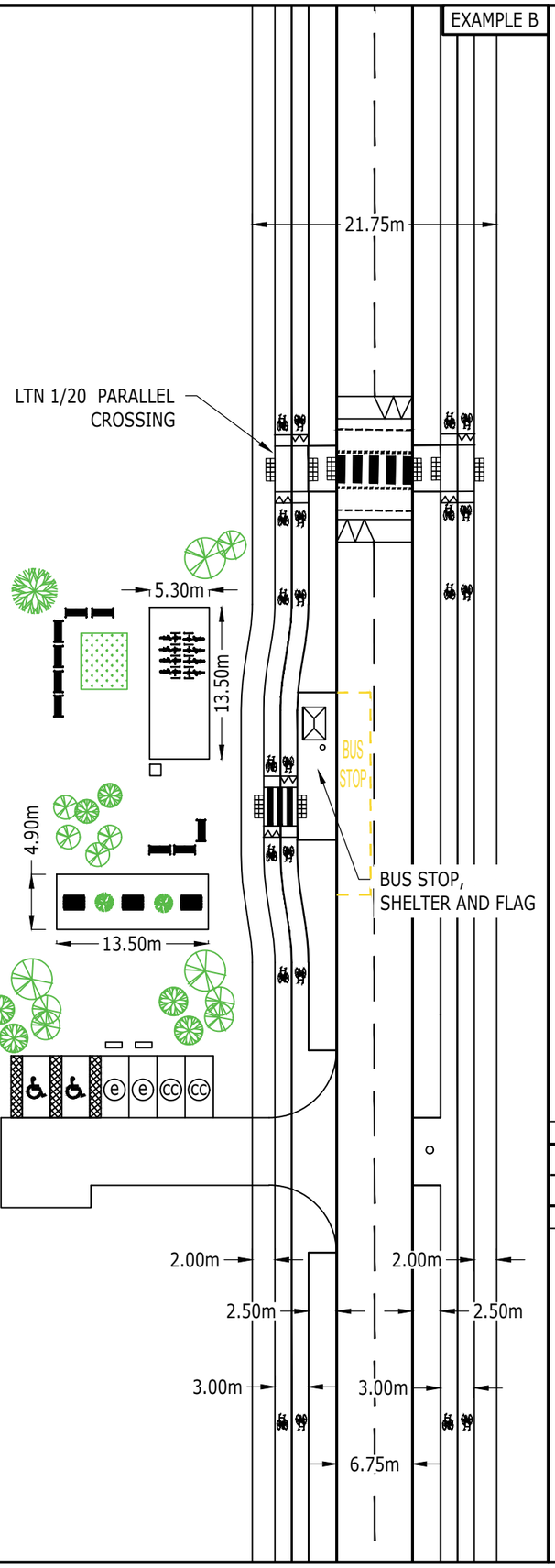
A1 Scale	Date	Designed by
AS SHOWN	08.09.23	DV
Drawn by	**Checked by**	**Approved by**
DV	DV	KM

Drawing Number: 2207280-010 Rev B

EXAMPLE A



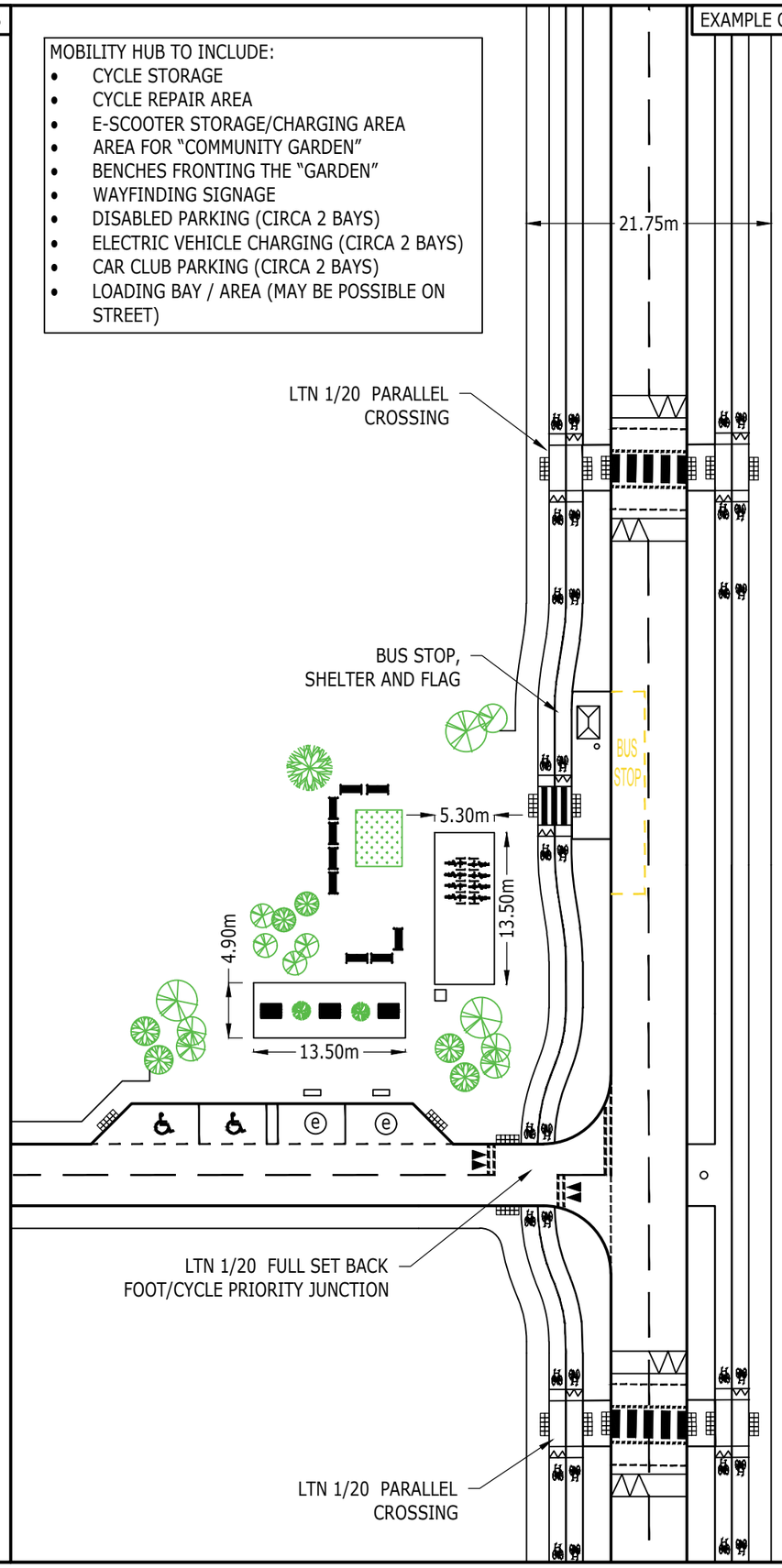
EXAMPLE B



MOBILITY HUB TO INCLUDE:

- CYCLE STORAGE
- CYCLE REPAIR AREA
- E-SCOOTER STORAGE/CHARGING AREA
- AREA FOR "COMMUNITY GARDEN"
- BENCHES FRONTING THE "GARDEN"
- WAYFINDING SIGNAGE
- DISABLED PARKING (CIRCA 2 BAYS)
- ELECTRIC VEHICLE CHARGING (CIRCA 2 BAYS)
- CAR CLUB PARKING (CIRCA 2 BAYS)
- LOADING BAY / AREA (MAY BE POSSIBLE ON STREET)

EXAMPLE C



NOTES:

DESIGNED IN ACCORDANCE WITH LTN 1/20 & COMO UK 'THE DESIGN PROCESS - MOBILITY HUBS REALISED'.

EXAMPLES SHOWN INDICATIVELY AND SUBJECT TO INTERNAL LAYOUT, FURTHER DESIGN AND HIGHWAYS DISCUSSIONS.

DRAFT

Rev	Description	Drn	Chk	App	Date

ARDENT CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

FAIRFAX ACQUISITIONS LTD

Project Title:

LAND AT ANTSY FARM, MID SUSSEX

Drawing Title:

MOBILITY HUB EXAMPLES

A3 Scale	Date	Designed by
1:500	27.02.23	DV
Drawn by	**Checked by**	**Approved by**
DV	DV	KM

Drawing Number: 2207280-SK01 | Rev: -

user name: ben tong

File Location: y:\ardent projects\2207280 - land at ansty farm, mid sussex\technical\acad\drawings\sketches\2207280-sk01 mobility hub example.dwg

N

CUCKFIELD

HAYWARDS HEATH

BOLNORE VILLAGE

ANSTY

SITE

FOR MORE DETAIL SEE ARDENT DRAWING 2207280-SK05.1 CYCLE ROUTE IMPROVEMENT PLAN

FOR MORE DETAIL SEE ARDENT DRAWING 2207280-010 A272 PROPOSED TOUCAN CROSSING

PROPOSED CYCLE IMPROVEMENT TIEING WITH PROW INTO THE SITE

BURGESS HILL NORTHERN ARC MIXED-USE DEVELOPMENT

PENLAND ROAD
HARLANDS ROAD
BROAD STREET
CHOWNES MEAD LANE
COPYHOLD LANE
BOLNORE ROAD
BOLNORE FARM LANE
SUNNYWOOD DRIVE
CUCKFIELD ROAD
B2036
A272
B2272
A273
A2300

KEY:

- THE SITE
- PROPOSED CYCLE ROUTE
- EXISTING CYCLE ROUTE
- EDUCATION FACILITIES
- EMPLOYMENT AREA
- BURGESS HILL NORTHERN ARC MIXED-USE DEVELOPMENT
- BEECHY BOTTOM PARKLAND RESERVE
- FOOTPATH
- BRIDLEWAY
- RETAIL FACILITIES / SHOPPING PARADES
- HOSPITAL
- DOCTORS
- DENTIST
- RAILWAY STATION

FOR INFORMATION ONLY

WORK IN PROGRESS

Rev	Description	Drn	Chk	App	Date
C	PARKLAND RESERVE BOUNDARY ADDED (BLUE LINE)	HP	JS	DH	20.10.23
B	DRAWING REFERENCES, FOOTPATHS, BRIDLEWAYS AND FACILITIES ADDED	ADS	JS	DH	26.09.23
A	AMENDMENT OF CYCLE ROUTE PER WSCC COMMENTS	HP	JS	KM	14.08.23

ARDENT CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

FAIRFAX ACQUISITIONS LTD

Project Title:

LAND AT ANSTY FARM, MID SUSSEX

Drawing Title:

CYCLE ROUTE IMPROVEMENT STRATEGY

A1 Scale	Date	Designed by
NTS	12.05.23	ADS
Drawn by	Checked by	Approved by
ADS	JS	DH

Drawing Number: 2207280-SK03 Rev C

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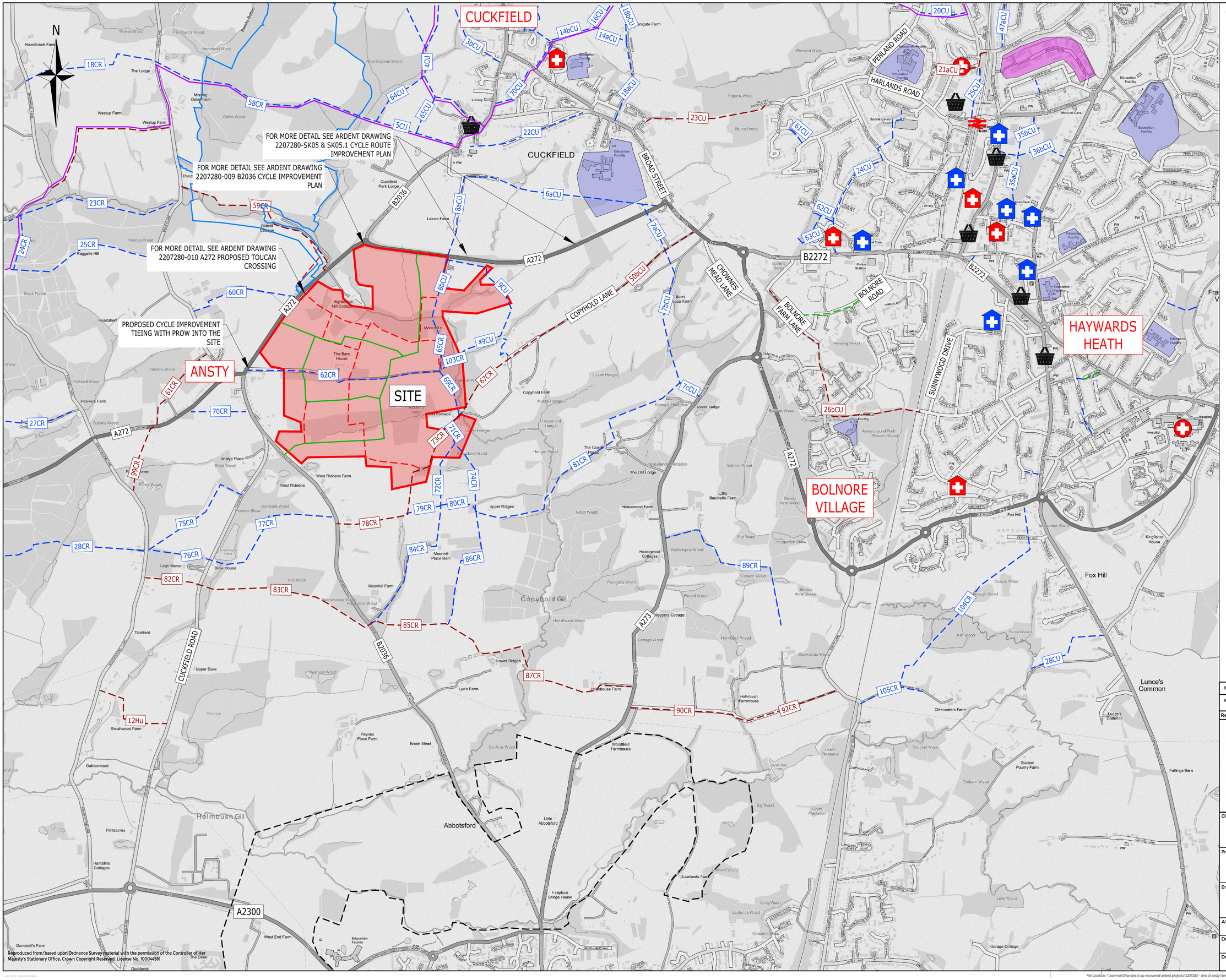

KEY:

- THE SITE
- EDUCATION FACILITIES
- EMPLOYMENT AREA
- BURGESS HILL NORTHERN ARC MIXED-USE DEVELOPMENT
- BEECHY BOTTOM PARKLAND RESERVE
- FOOTPATH
- BRIDLEWAY
- BYWAY
- LONG DISTANCE TRAILS
- RETAIL FACILITIES / SHOPPING PARADES
- HOSPITAL
- DOCTORS
- DENTIST
- RAILWAY STATION
- PROPOSED ONSITE FOOTWAY/CYCLE ROUTES
- POTENTIAL ONSITE ANSTY AVENUE BUS ROUTE

FOR INFORMATION ONLY

WORK IN PROGRESS

Rev	Description	Drn	Chk	App	Date
B	PARKLAND RESERVE BOUNDARY ADDED (BLUE LINE)	HP	JS	DH	20.10.23
A	DRAWING REFERENCES, PROPOSED ONSITE FOOTWAYS, BUS ROUTES ADDED	HP	DH	KM	29.09.23

ARDENT CONSULTING ENGINEERS
Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE
Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client: FAIRFAX ACQUISITIONS LTD

Project Title: LAND AT ANSTY FARM, MID SUSSEX

Drawing Title: PEDESTRIAN ROUTE IMPROVEMENT STRATEGY

A1 Scale	Date	Designed by
NTS	12.05.23	ADS
Drawn by	Checked by	Approved by
ADS	JS	DH

Drawing Number: 2207280-SK04 Rev B

File Location: \\ace-host01\projects\ap recovered\ardent projects\2207280 - land at ansty farm, mid sussex\technical\acad\drawings\sketches\2207280-sk04b pedestrian route improvement strategy.dwg

N

120m FORWARD VISIBILITY SO SIGNAL HEAD

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

OUTLINE

SEE DWG FOR CONTINUATION OF PROPOSED CWL FACILITIES

EXISTING SHARED FOOT/CYCLEWAY

PROPOSED ON-CARRIAGEWAY LINK FROM EXISTING SHARED FOOT/CYCLEWAY TO PROPOSED CROSSING AND FOOT/CYCLEWAY FACILITIES

PROPOSED SHARED FOOT/CYCLEWAY

PROPOSED CROSSING POINT

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

PROPOSED KERB WORKS TO ACCOMMODATE VISIBILITY SPLAYS TO PROPOSED CROSSING TO THE WEST

PROPOSED SHARED FOOT/CYCLEWAY

PROPOSED SHARED FOOT/CYCLEWAY

PROPOSED SHARED FOOT/CYCLEWAY - WIDENING INTO CARRIAGEWAY

EXISTING CROSSING POINT

PROPOSED SHARED FOOT/CYCLEWAY

EXISTING SHARED FOOT/CYCLEWAY

EXISTING ON CARRIAGEWAY CYCLE ROUTE

EXISTING ON CARRIAGEWAY CYCLE ROUTE

EXISTING ON CARRIAGEWAY CYCLE ROUTE

EXISTING SIGNALISED CROSSING POINT

ISAACS LANE

BUTLERS GREEN ROAD

RELOCATED BUS SHELTER AND REMOVAL OF LAYBY FOR PROPOSED BUS CAGE WITH A BUS STOP BYPASS LAYOUT

PROPOSED SHARED FOOT/CYCLEWAY - 2.5m MAX ACHIEVABLE WIDTH FOR CIRCA 50m LENGTH (SUBJECT TO TOPOGRAPHICAL SURVEY)

VIEWPORT 1

VEHICLE SWEPT PATHS

TWO BUSES PASSING

1:500 SCALE

VEHICLE SWEPT PATHS

TWO BUSES PASSING ON BEND

1:500 SCALE

VEHICLE SWEPT PATHS

BUS SWEPT PATH

1:500 SCALE

VEHICLE SWEPT PATHS

TWO BUSES PASSING

1:500 SCALE

VEHICLE SWEPT PATHS

BUS SWEPT PATH

1:500 SCALE

LOCATION PLAN - NOT TO SCALE

SEE VIEWPORT 1

SEE VIEWPORT 2

1:1000 SCALE

VIEWPORT 2

EXISTING ON CARRIAGEWAY CYCLE ROUTE

EXISTING ON CARRIAGEWAY CYCLE ROUTE TO HAYWARDS HEATH STATION

PROPOSED SHARED FOOT/CYCLEWAY / CROSSING POINT

PROPOSED SHARED FOOT/CYCLEWAY - 2.8m MAX ACHIEVABLE WIDTH

EXISTING ON CARRIAGEWAY CYCLE ROUTE

EXISTING ON-STREET PARKING BAYS

EXISTING ON CARRIAGEWAY CYCLE ROUTE

AREA IN ABEYANCE TO BE CONFIRMED

EXISTING SIGNALISED CROSSING POINT

VEHICLE SWEPT PATHS

BUS PASSING A CAR AT ROUNDABOUT

BUS PASSING A CAR AT ROUNDABOUT

1:500 SCALE

1:1000 SCALE

NOTES:

DESIGN SUBJECT TO HIGHWAY BOUNDARY, LAND OWNERSHIP / CONSTRAINTS INFORMATION, ECOLOGY INFORMATION, ARBORICULTURAL SURVEY, SPEED SURVEYS, SWEPT PATHS AND HIGHWAYS AGREEMENT.

DESIGN IS BASED ON TOPOGRAPHICAL SURVEY PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023 & ORDNANCE SURVEY DATA.

STREET LIGHTING TO BE CONSIDERED.

VEGETATION WITHIN VISIBILITY SPLAYS TO BE TRIMMED AND CUT BACK TO KEEP VISIBILITY SPLAYS CLEAR. MATURE TREES TO HAVE REFLECTIVE BANDING.

DESIGN IN ACCORDANCE WITH THE CURRENT POSTED SPEED LIMIT, ANY REDUCTION IN SPEED LIMIT IS SUBJECT TO REVIEW BY WSCC.

SIGNAGE TO BE IN ACCORDANCE WITH TSRGD AND LTN 1/ 20 STANDARDS.

ANY STREET FURNITURE TO BE RELOCATED IS TO BE POSITIONED TO THE BACK OF THE FOOT/CYCLEWAY.

KEY:

- PROPOSED FOOT/CYCLEWAY
- EXISTING FOOT/CYCLEWAY
- HIGHWAY BOUNDARY TRANSCRIBED FROM WEST SUSSEX RECORDS
- PROW FOOTPATH TRANSCRIBED FROM WSCC RECORDS
- PROW BRIDLEWAY TRANSCRIBED FROM WSCC RECORDS
- PROPOSED ROAD MARKINGS
- EXISTING ROAD MARKINGS
- PEDESTRIAN VISIBILITY SPLAY
- FORWARD VISIBILITY SPLAY BASED ON 40mph SPEED LIMIT

VEHICLE SPECIFICATION:

Single Deck Bus	
Overall Length	11.980m
Overall Width	2.440m
Overall Body Height	3.020m
Min Body Ground Clearance	0.306m
Track Width	2.500m
Lock to lock time	6.2sec
Kerb to Kerb Turning Radius	10.368m

Rev	Description	Dm	Chk	App	Date
B	UPDATED FOLLOWING STAGE 1 RSA COMMENTS	DV	DV	DH	18.10.23
A	MINOR AMENDMENTS	ADS	KM	DH	23.09.23

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Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client: FAIRFAX ACQUISITIONS LTD

Project Title: LAND AT ANSTY FARM, MID SUSSEX

Drawing Title: CYCLE ROUTE IMPROVEMENT PLAN (SHEET 2)

A0 Scale	Date	Designed by
AS SHOWN	15.06.23	DV
Drawn by	**Checked by**	**Approved by**
DV	DV	DH

Drawing Number: 2207280-SK05.1 Rev B

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VIEWPORT 1

N

Sports Pavilion

PROPOSED DROPPED KERB FOOTWAY/CYCLEWAY TIE INTO EXISTING KERB

PROPOSED SHARED FOOT/CYCLEWAY

TIE INTO EXISTING FOOTWAY CORDUROY PAVING / SIGNAGE TO BE PROVIDED

PROPOSED CROSSING POINT

PEDESTRIAN VISIBILITY SPLAY SHOWN TO ROUNDABOUT EXIT

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

ALIGNMENT WITHIN SITE BOUNDARY TO TIE INTO MASTERPLAN LAYOUT WHERE NEEDED

PROPOSED SIGNALISED CROSSING POINT

PROPOSED DEVELOPMENT ACCESS

0.5m BUFFER TO 4.5m WIDE PEDESTRIAN/CYCLE ROUTE

PROPOSED CROSSING POINT

PROPOSED SHARED FOOT/CYCLEWAY

0.5m BUFFER TO 4.5m WIDE PEDESTRIAN/CYCLE ROUTE

215m FORWARD VISIBILITY ON APPROACH BASED ON 60mph SPEED LIMIT (POSTED SPEED LIMIT)

High Bridge

Spring

Tanks

Sewage Treatment Works

Tanks

OUTLINE

OUTLINE

LOCATION PLAN - NOT TO SCALE

SEE VIEWPORT 1

SEE VIEWPORT 2

SEE VIEWPORT 3

VIEWPORT 3

Pond

PROPOSED SIGNALISED CROSSING POINT - SEE DRAWING 2207280-010

VIEWPORT 2

EXISTING SHARED FOOT/CYCLEWAY

EXISTING SIGNALISED CROSSING POINT

TIE INTO EXISTING SHARED FOOT/CYCLEWAY

EXISTING SHARED FOOT/CYCLEWAY

PROPOSED SHARED FOOT/CYCLEWAY

0.5m BUFFER TO 4.5m WIDE PEDESTRIAN/CYCLE ROUTE

120m FORWARD VISIBILITY SO SIGNAL HEAD

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

OUTLINE

SEE SWEPT PATH CONSTRUCTION OF ACCESS/EGRESS FACILITIES

PROPOSED SHARED FOOT/CYCLEWAY

0.5m BUFFER TO 4.5m WIDE PEDESTRIAN/CYCLE ROUTE

OUTLINE

OUTLINE

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NOTES:

DESIGN SUBJECT TO HIGHWAY BOUNDARY, LAND OWNERSHIP / CONSTRAINTS INFORMATION, ECOLOGY INFORMATION, ARBORICULTURAL SURVEY, SPEED SURVEYS, SWEPT PATHS AND HIGHWAYS AGREEMENT.

DESIGN IS BASED ON TOPOGRAPHICAL SURVEY PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023 & ORDNANCE SURVEY DATA.

STREET LIGHTING TO BE CONSIDERED.

VEGETATION WITHIN VISIBILITY SPLAYS TO BE TRIMMED AND CUT BACK TO KEEP VISIBILITY SPLAYS CLEAR. MATURE TREES TO HAVE REFLECTIVE BANDING.

DESIGN IN ACCORDANCE WITH THE CURRENT POSTED SPEED LIMIT, ANY REDUCTION IN SPEED LIMIT IS SUBJECT TO REVIEW BY WSCC.

SIGNAGE TO BE IN ACCORDANCE WITH TSRGD AND LTN 1/ 20 STANDARDS.

ANY STREET FURNITURE TO BE RELOCATED IS TO BE POSITIONED TO THE BACK OF THE FOOT/CYCLEWAY.

KEY:

- INDICATIVE SITE BOUNDARY TO BE CONFIRMED
- PROPOSED FOOT/CYCLEWAY
- EXISTING FOOT/CYCLEWAY
- HIGHWAY BOUNDARY TRANSCRIBED FROM WEST SUSSEX RECORDS
- PROW FOOTPATH TRANSCRIBED FROM WSCC RECORDS
- PROW BRIDLEWAY TRANSCRIBED FROM WSCC RECORDS
- PROPOSED ROAD MARKINGS
- EXISTING ROAD MARKINGS
- 2m x 120m PEDESTRIAN VISIBILITY SPLAY
- 2m x 215m PEDESTRIAN VISIBILITY SPLAY
- FORWARD VISIBILITY SPLAY BASED ON 40mph SPEED LIMIT
- FORWARD VISIBILITY SPLAY BASED ON 60mph SPEED LIMIT

WORK IN PROGRESS

DRAFT

Rev	Description	Dm	Chk	App	Date
B	UPDATED FOLLOWING STAGE 1 RSA COMMENTS	DV	DV	DH	18.10.23
A	AMENDMENTS TO PROPOSED CYCLE LANES ON B0236 ROAD	AOS	JS	DH	27.09.23

ARDENT | CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client: FAIRFAX ACQUISITIONS LTD

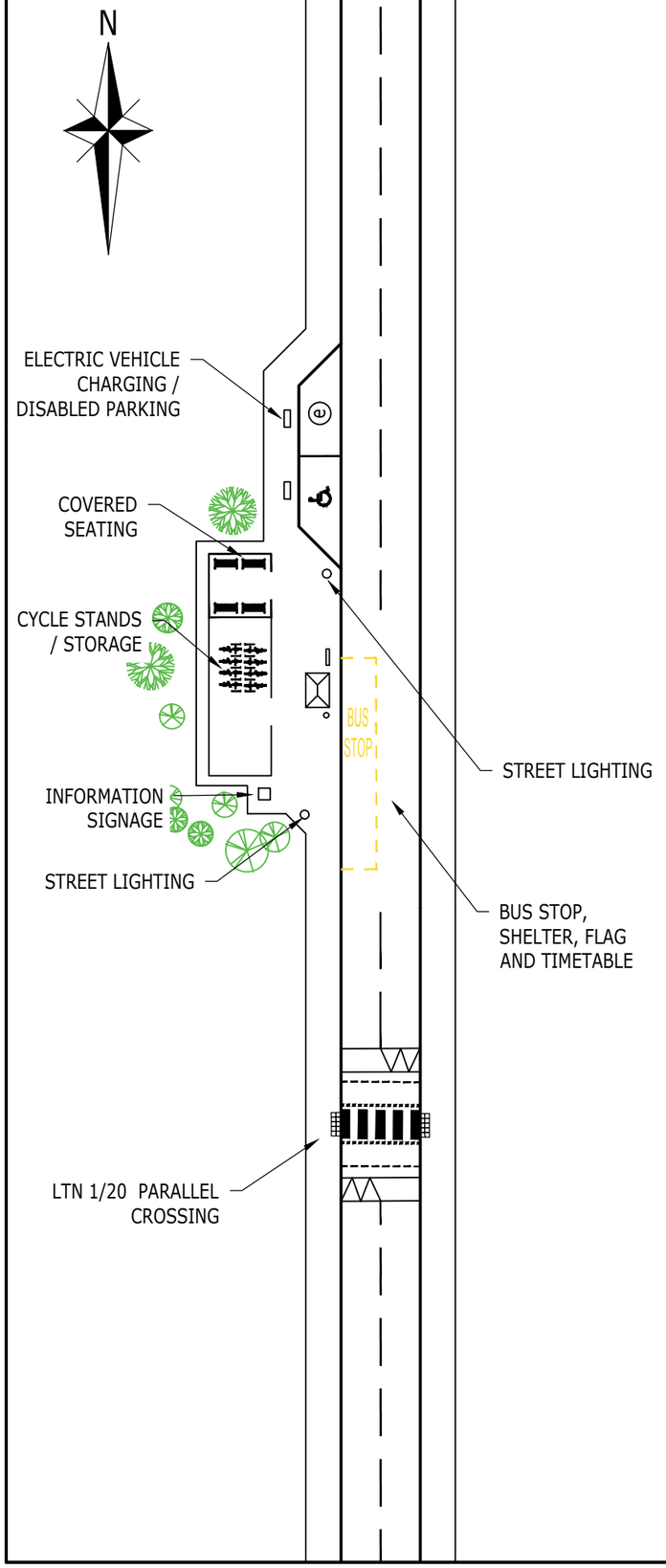
Project Title: LAND AT ANSTY FARM, MID SUSSEX

Drawing Title: CYCLE ROUTE IMPROVEMENT PLAN (SHEET 1)

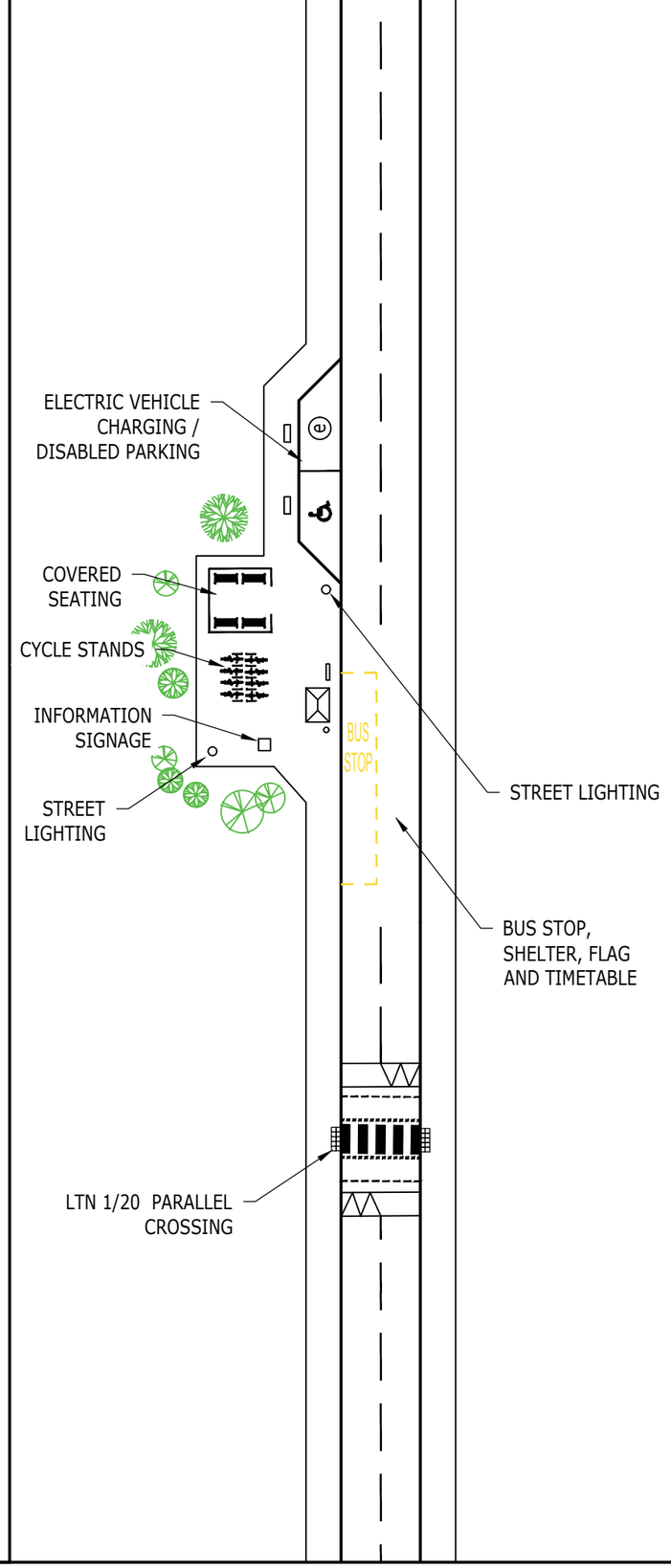
AO Scale	Date	Designed by
1:1000	07.06.23	DV
Drawn by	Checked by	Approved by
DV	DV	DH

Drawing Number: 2207280-SK05 Rev B

EXAMPLE A



EXAMPLE B



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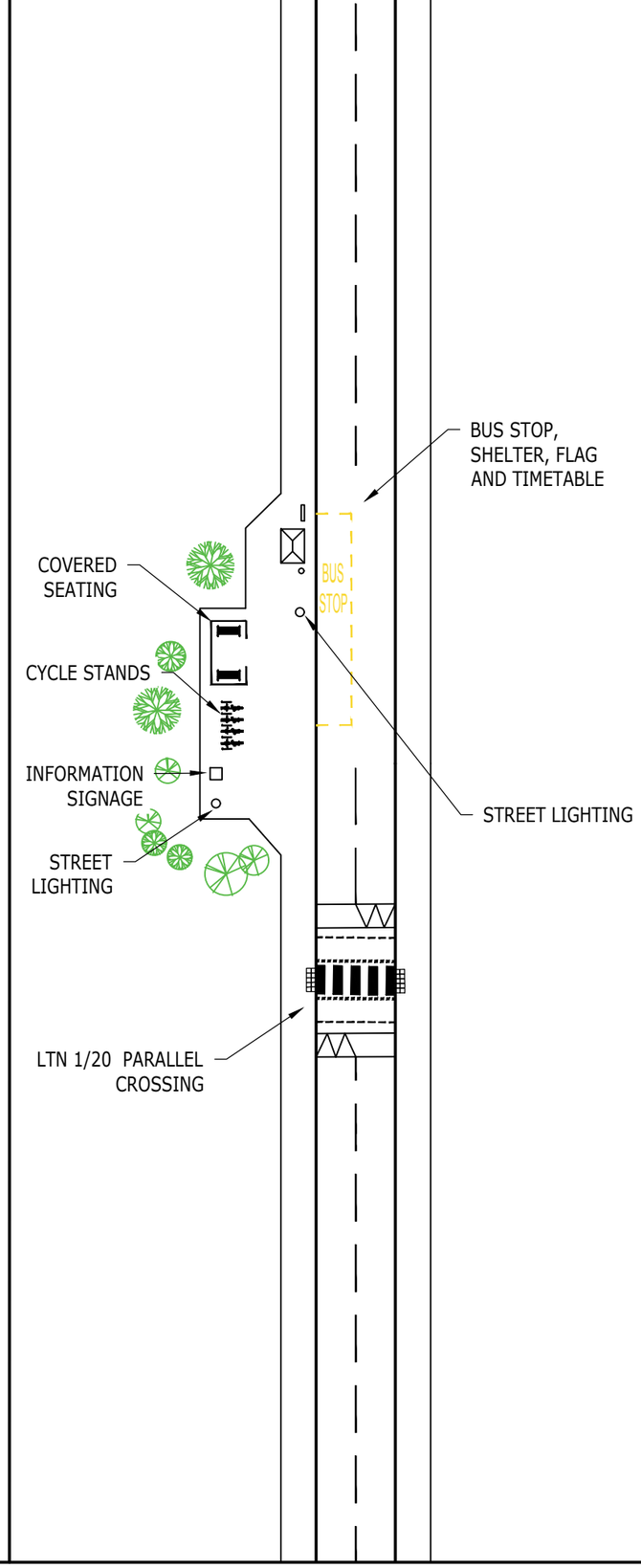

NOTES:

DESIGNED IN ACCORDANCE WITH LTN 1/20 & COMO UK 'THE DESIGN PROCESS - MOBILITY HUBS REALISED'.

EXAMPLES SHOWN INDICATIVELY AND SUBJECT TO INTERNAL LAYOUT, FURTHER DESIGN AND HIGHWAYS DISCUSSIONS.

MINI MOBILITY HUB TO INCLUDE:

- 1 HIGH QUALITY TRANSPORT OPTION
- 1 HIGH QUALITY SHARED MOBILITY OPTION
- CLEAR SIGNAGE / INFORMATION BOARD
- SAFE CROSSINGS
- LOCATED IN WELL LIT LOCATION
- EASILY ACCESSIBLE TRANSPORT TIMETABLE
- STREET LIGHTING
- COVERED SEATING
- MODERN CLEAN INFRASTRUCTURE

DRAFT

Rev	Description	Drn	Chk	App	Date

ARDENT CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

FAIRFAX ACQUISITIONS LTD

Project Title:

LAND AT ANTSY FARM, MID SUSSEX

Drawing Title:

MINI MOBILITY HUB EXAMPLE

A3 Scale	Date	Designed by
1:500	13.07.23	DV
Drawn by	**Checked by**	**Approved by**
DV	DV	KM

Drawing Number: 2207280-SK06 | Rev: -

user name: ben tong

File Location: y:\ardent projects\2207280 - land at ansty farm, mid sussex\technical\acad\drawings\sketches\2207280-sk06 mini mobility hub example.dwg

Transport Assessment Appendix A

Pre-Application Notes

FAIRFAX ACQUISITIONS LTD

LAND ADJOINING ANSTY

TRANSPORT SCOPING REPORT

REPORT REF.
2207280-R07

May 2023

HEAD OFFICE: 3rd Floor, The Hallmark Building, 52-56 Leadenhall Street, London, EC3M 5JE **T** | 020 7680 4088
ESSEX: 1 - 2 Crescent Court, Billericay, Essex, CM12 9AQ **T** | 01277 657 677
KENT: Suite 10, Building 40, Churchill Business Centre, Kings Hill, Kent, ME19 4YU **T** | 01732 752 155
MIDLANDS: Office 3, The Garage Studios, 41-43 St Mary's Gate, Nottingham, NG1 1PU **T** | 0115 697 0940
SOUTH WEST: Unit 2.2a, Temple Studios, Temple Gate, Redcliffe, Bristol, BS1 6QA **T** | 0117 456 4994
SUFFOLK: Suite 3.07, Suffolk Enterprise Centre, 44 Felaw Street, Ipswich, IP2 8SJ **T** | 01473 407 321

Email: enquiries@ardent-ce.co.uk

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Appendices

Appendix 1 Transport Technical Note #2 (Masterplanning Design Input)

Appendix 2 Transport Technical Note #3 (Parking Strategy & Trip Rates)

Appendix 3 Transport Technical Note #4 (Public Transport & Active Travel Strategy)

Appendix 4 Transport Technical Note #5 (Strategic Modelling)

Appendix 5 Transport Technical Note #6 (National Highways)

Document Control Sheet

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
-	Final	JS	DH	KM	19/05/2023

Distribution

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1. Introduction

1.1. This Transport Scoping Report (TSR) has been produced by Ardent Consulting Engineers (ACE) on behalf of Fairfax Acquisitions Limited, to provide highways input into the masterplanning process for the proposed development at the Land Adjoining Ansty in Mid Sussex.

1.2. The Local Planning Authority (LPA) is Mid Sussex District Council (MDSC) and the Local Highways Authority is West Sussex County Council (WSCC), with National Highways (NH) retaining specific responsibility for the A23 corridor.

1.3. The location of the proposed development is shown on **Figure 1.1** below.

Figure 1.1: Site Location

1.4. A summary of the development is as follows:

- New Settlement comprising up to 1600 high quality new homes, including up to 480 new affordable homes;
- New 2 Form Entry Primary School;
- New village centre with local facilities;
- 99 hectare Country Park for wider public use, offering significant opportunities for Biodiversity Net Gain;
- Enhanced bus services;
- A low carbon sustainable settlement; and
- New sports and recreation facilities as well as amenity greenspace embedded within the garden community.

1.5. This TSR sets out the approach to the various strands of the Transport study that will be utilised to assess the development proposals and consider the impact and mitigation measures required to support future construction of the scheme in accordance with local policy, and in line with the requirements of the National Planning Policy Framework (NPPF).

1.6. The approach set out within this TSR will subsequently form part of the basis for the Transport Assessment (TA) accompanying a planning application for these proposals.

1.7. To this end, ACE have undertaken preliminary discussions with WSCC Highways in respect to the development proposals and the scope / approach reflects the outcome of stakeholder consultation to date, building upon those discussions in preparing the details contained within this TSR.

1.8. ACE have split the study into key components of the study and they are considered in turn within this TSR. Following this introduction, the remainder of this report is structured as follows:

- **Section 2.0** considers Masterplanning Design;
- **Section 3.0** considers the Parking Strategy & Trip Rates;
- **Section 4.0** considers Public Transport & Active Travel Strategy
- **Section 5.0** considers Local & Strategic Modelling;
- **Section 6.0** considers National Highways specific Modelling; and
- **Section 7.0** provides a summary.

2. Masterplanning Design Input

2.1. Transport Technical Note #2 (**ACE Report Reference: 2207280-R02**) has been produced to set out the highway design requirements for the Masterplanning process for the proposed development, including the proposed vehicular access strategy, details of street geometries and the indicative access and movement strategy for the site.

2.2. Transport Technical Note #2 is attached at **Appendix 1**.

Summary

2.3. Transport Technical Note #2 is summarised as follows:

- Access to the site for vehicles will be via 3 roundabouts on the northern, western and southern edges of the site.
- Buses are to access the site by the north and south roundabouts and follows the primary and secondary streets to the 5 bus stops throughout the site.
- A mobility hub is to be provided at the westernmost bus stop within the site.
- A total of 10 access points for active travel modes are provided across the site, with an internal network of cycle and pedestrian routes that generally follow the road network.
- The internal street hierarchy has been divided into primary, secondary, tertiary and shared surface streets, with geometries provided for each road type taking into account the need for buses provision.
- Geometries for each road type are based on a combination of WSCC guidance, Manual for the Streets, Manual for Streets 2 and LTN 1/20 where applicable.

Way Forward

2.4. The proposed way forward is for ACE to progress the masterplanning process based on the parameters set out above. Specific comment from WSCC on the following matters is sought from WSCC:

- The principle of the access and movement strategy for each mode of travel.
- The design of the proposed access roundabouts, including the non-vehicular provision.
- The geometric design of each street type.
- Feedback on application of LTN1/20 parameters.

3. Parking Strategy & Trip Rates

3.1. Transport Technical Note #3 (**ACE Report Reference: 2207280-R03**) has been produced to set out high-level information in relation to the parking strategy and trip generation methodology for the proposed development, including details of parking standards, estimated provision and predicted trip rates.

3.2. Transport Technical Note #3 is attached at **Appendix 2**.

Summary

3.3. Transport Technical Note #3 is summarised as follows:

- The residential car and cycle parking standards applicable to the development are located within the WSCC document 'Guidance in parking at New Developments'.
- The proposed development currently lies within Parking Behaviour Zone (PBZ) 1, however given the scale, land uses and public and active travel betterments included within the proposals, the standards applicable to PBZ4 are considered more appropriate.
- The non-residential parking, visitor parking, disabled parking and electric vehicle charging standards are also located within the above WSCC document.
- Rationalisation of parking provision through the sharing of spaces between complimentary uses will be explored, along with a 10% reduction to promote active and sustainable travel.
- Trip rates for the proposed development will be based on the trip rates and reductions assumed within Scenario 4Bm1 of the MSSHM.
- A further scenario set with trip rate reductions will be considered by ACE, to reflect the site specific promotion of sustainable transport, as well as the promotion of sustainable transport within the West Sussex Transport Plan.

Way Forward

3.4. The proposed way forward is for ACE to progress the design and traffic assessment on the basis of the strategy outlined above, with specific comment from WSCC requested on the following areas:

- Confirmation on the above proposed approach to applying WSCC parking standards is appropriate and acceptable.
- Confirmation on the trip rates being accurate and appropriate for use in our analysis (the detail of which is covered in a separate TTN).

- The principle of an additional scenario set using trip rate reductions to reflect the promotion of sustainable transport (the detail of which is covered in a separate TTN).

4. Public Transport & Active Travel Strategy

4.1. Transport Technical Note #4 (**ACE Report Reference: 2207280-R04**) has been produced to set out the public transport and active travel strategy for the proposed development, including details of existing bus services, possible improvements to these services and wider works which could be provided within the local area to aid active travel for future residents and users of the site.

4.2. Transport Technical Note #4 is attached at **Appendix 3**.

4.3. Transport Technical Note #4 is summarised as follows:

- The proposed public transport strategy will involve consideration of the diversion of current services, new services or improving the frequency of services.
- Buses are to access the site by the north and south roundabouts, and follows the primary and secondary streets to the 5 bus stops throughout the site.
- The westernmost mobility hub / bus stop is to be a full mobility hub, with the other mobility hub / bus stops being 'mini-mobility hubs'.
- A total of 10 access points for active travel modes are provided across the site, with an internal network of cycle and pedestrian routes that generally follow the road network.
- Improvements to active travel modes will better connect the site with the surrounding areas, including facilities within Haywards Heath (including the station) and Burgess Hill.
- Improvements to PRoW will be explored to offer recreational route options for prospective site users, including the existing population.
- A bridge over the A272 will be considered to connect the site with Ansty through a traffic-free route.
- There are opportunities for improvements to be made to "fill in gaps" within the existing cycle network to and within Haywards Heath. This will ensure connections to existing facilities and opportunities for travel by train using Haywards Heath station.
- The form of cycle infrastructure will be dictated by land ownership constraints and with continuity of route in mind so that a consistent quality of provision is offered.

- Geometries for pedestrian/cycle infrastructure will be based on a combination of WSCC guidance, Manual for the Streets, Manual for Streets 2 and LTN 1/20 where applicable.

Way Forward

4.4. The proposed way forward is for ACE to progress the public transport and active travel strategy based on the parameters/approach set out above. Specific comment from WSCC on the following matters is sought from WSCC:

- Public transport improvement strategy and form that would be recommended to allow discussions to progress.
- The principle of the cycle improvement strategy to reflect land constraints and prioritise consistency of route to ensure wayfinding is easy and that users are not confused by changes in provision.
- The principle of offering PRoW improvements is acceptable to better the leisure route offering as part of the proposals.
- The principle of a new bridge and gateway feature on the western boundary to better connect the site with Ansty.
- The geometric design and WSCC application of LTN1/20 parameters in order that we can consider these in developing preliminary designs for further comment.

5. Local & Strategic Modelling

5.1. Transport Technical Note #5 (**ACE Report Reference: 2207280-R05**) has been produced to set out the approach to the strategic and local junction modelling that will underpin the assessment of the residual traffic generated by the proposed development. The scope includes the choice of scenarios to be modelled, the study area, the parameters involved in detailed capacity assessments and the approach to mitigation, where necessary.

5.2. Transport Technical Note #5 is attached at **Appendix 4**.

Summary

5.3. Transport Technical Note #5 is summarised as follows:

- The basis of the traffic assessment of the proposed development will be the latest version of the Mid Sussex Strategic Highways Model (MSSHM), with amendments made to reflect recent changes and to improve the quality of the model.
- The model will provide turning count outputs for the AM and PM peak hours, which will be used within local junction capacity modelling.
- The comprehensive traffic study area for the proposed traffic assessment has been provided in full.
- A total of 5 scenarios will be run, including 2019 Baseline Year, 2039 Do Nothing, 2039 Do Something Isolated, 2039 Do Minimum and 2039 Do Something Cumulative scenarios.
- The scenarios selected allow for an assessment of the development separate from the draft Mid Sussex Local Plan and in the context of the draft Mid Sussex Local Plan coming forward.
- The two-track assessment methodology allows for the identification of junctions where 'Isolated Development' mitigation schemes are required, and where 'Draft Local Plan' mitigation are required.
- 'Isolated Development' mitigation schemes are required for the proposed development to come forward in isolation, whereas 'Draft Local Plan' mitigation schemes are required for the proposed development to come forward in the context of the draft Mid Sussex Local Plan.
- Responsibility for the delivery of the 'Isolated Development' schemes will be with the proposed development in isolation, whereas delivery of the 'Draft Local

Plan' schemes will be shared with all allocated developments within the Mid Sussex Local Plan.

- The mitigation design strategy is to provide two options where mitigation is required; One design that maximises the sustainable transport opportunities, while seeking to retain or minimise any loss in vehicular capacity, and a second design that mitigates for the vehicular traffic effect of the development, with sustainable transport improvements provided where possible.

Way Forward

5.4. The proposed way forward is for ACE to progress the traffic assessment on the basis of the strategy outlined above, with specific comment from WSCC requested on the following areas:

- The principle of using the 2022 version of the MSSHM.
- The principle of amending the MSSHM to more accurately assess the proposed development.
- The proposed scenario set, including the assessment of the development with and without the draft Mid Sussex Local Plan.
- The proposed traffic study area.
- The proposed mitigation strategy, specifically the mitigation design approach.

6. National Highways

6.1. Transport Technical Note #6 (**ACE Report Reference: 2207280-R06**) has been produced to set out the approach to the strategic and local junction modelling that will underpin the assessment of the residual traffic generated by the proposed development giving regard to the promotion of sustainable modes of transport, in line with the requirement of the National Planning Policy Framework (NPPF), specifically with regards to the network maintained by National Highways (NH).

6.2. Transport Technical Note #6 is attached at **Appendix 5**.

6.3. Whilst Transport Technical Note #6 will be submitted to NH, we have also included it within this TSR in order to make clear that a consistency in approach is proposed across the study area.

7. Summary and Way Forward

Summary

7.1. This note has considered the key transport aspects of the proposed development the Land Adjoining Ansty in Mid Sussex and sets out a proposed approach to review the impact of the proposed development in transport terms.

7.2. ACE have presented within separate chapters each of the key elements of a future study, covering the internal masterplan design, access strategy, parking strategy, public transport & active travel strategy, considered trip rates and junction capacity modelling/assessment methodologies, and also confirmed that consistency in approach will be applied to the National Highways road network as well as the WSCC road network.

Way Forward

7.3. The proposed way forward is for ACE to progress preparation of a Transport Assessment on the basis of the approach summarised within this TSR. We would welcome further engagement with WSCC to confirm agreement to the principles set out within this document.

Appendix 1

Transport Technical Note #2
Masterplanning Design Input

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LAND ADJOINING ANSTY

TECHNICAL TRANSPORT NOTE #2 (MASTERPLANNING HIGHWAY DESIGN)

REPORT REF. 2207280-R02

May 2023

HEAD OFFICE: 3rd Floor, The Hallmark Building, 52-56 Leadenhall Street, London, EC3M 5JE **T** | 020 7680 4088
ESSEX: 1 - 2 Crescent Court, Billericay, Essex, CM12 9AQ **T** | 01277 657 677
KENT: Suite 10, Building 40, Churchill Business Centre, Kings Hill, Kent, ME19 4YU **T** | 01732 752 155
MIDLANDS: Office 3, The Garage Studios, 41-43 St Mary's Gate, Nottingham, NG1 1PU **T** | 0115 697 0940
SOUTH WEST: Unit 2.2a, Temple Studios, Temple Gate, Redcliffe, Bristol, BS1 6QA **T** | 0117 456 4994
SUFFOLK: Suite 3.07, Suffolk Enterprise Centre, 44 Felaw Street, Ipswich, IP2 8SJ **T** | 01473 407 321

Email: enquiries@ardent-ce.co.uk

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Drawings

2207280-004B	Proposed Northern Access Roundabout
2207280-005A	Proposed Western Access Roundabout
2207280-006A	Proposed Southern Access Roundabout
2207280-SK01	Mobility Hub Examples

Appendices

Appendix A	Indicative Access and Movement Strategy
Appendix B	Indicative Street Hierarchy Plan

Document Control Sheet

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
-	Draft	JS	DH	DRAFT	12/05/2023
-	Final	JS	JS	DH	19/05/2023

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1.2. The Local Planning Authority (LPA) is Mid Sussex District Council (MDSC) and the Local Highways Authority is West Sussex County Council (WSCC).

1.3. The location of the proposed development is shown on **Figure 1.1** below.

Figure 1.1: Site Location

1.4. A summary of the development is as follows:

- New Settlement comprising up to 1600 high quality new homes, including up to 480 new affordable homes;
- New 2 Form Entry Primary School;
- New village centre with local facilities;
- 99 hectare Country Park for wider public use, offering significant opportunities for Biodiversity Net Gain;
- Enhanced bus services;
- A low carbon sustainable settlement;
- New sports and recreation facilities as well as amenity greenspace embedded within the garden community.

1.5. This Transport Technical Note (TTN) has been produced to set out the highway design requirements for the Masterplanning process for the proposed development, including the proposed vehicular access strategy, details of street geometries and the indicative access and movement strategy for the site.

2. Access and Movement Strategy

Access and Movement Strategy

2.1. This section of the note provides a brief outline of the access and movement strategy for the proposed development. Additional detail on the Public Transport and Active Travel strategies is provided within **ACE Report Reference 2207280-R04**.

2.2. An indicative Access and Movement Strategy is provided on the plan at **Appendix A**.

Private Vehicle Access and Movement Strategy

2.3. Vehicular access to the site is to be at three points: a northern access from the A272 on the northern edge of the site; a western access onto the A272 on the western edge of the site; and a southern access onto the B2036 Harvest Hill.

2.4. The primary spine road will connect from the A272 at the north access to the B2036 Harvest Hill and will include two bridges through the site. Secondary and tertiary streets will be provided to connect individual dwellings to the internal street network and the access points, with sufficient parking provision for each dwelling per the parking standards set out in **ACE Report Reference 2207280-R03**.

Public Transport Access and Movement Strategy

2.5. Buses are expected to access the site via the northern and southern accesses. The indicative bus route through the site has been made so that the service would operate along the primary spine road initially, before turning into the secondary streets to loop back via the local centre onto the primary spine road. As such, the spine road and secondary streets are divided into "with bus" and "without bus" sections.

2.6. A total of 5 mobility hubs will be provided within the site each with a bus stop to maximise the number of dwellings within the catchment area. The catchment area is based on the notional 300m catchment referenced in the Chartered Institution of Highways and Transportation (CIHT) document 'Buses in Urban Developments'. One of these bus stops, specifically the westernmost bus stop, will incorporate a Mobility Hub, with the other 4 comprising 'mini-mobility hubs'.

2.7. The design of the mobility hubs will be based on best guidance from CoMo (a UK-based accessible mobility charity) as well as on successfully implemented examples, including those not within the UK. We also understand that the Department for Transport (DfT) is expected to issue guidance on mobility hub design. Reference will be made to this guidance, if available. A set of example mobility hub designs is provided on **ACE Drawing 2207280-SK01**.

2.8. The Mobility hub will also consider electric scooters, subject to their legal status, as well as lockers for online deliveries., whilst the mini-mobility hubs will provide a mixture of these facilities appropriate for the location within the site.

Active Travel Access and Movement Strategy

2.9. Access to the site via active travel modes (including walking and cycling) will be at a total of 10 locations:

- At the North and South vehicular accesses, via off-carriageway provision;
- At a new crossing point over the A272 into Beechy Bottom Country Park including a bridge over the A272 to connect to the Ansty Cricket and Football club grounds;
- Via Public Right of Way (PRoW) 62CR into Ansty;
- Via PRoWs 103CR, 69CR and 71CR on the eastern boundary of the site; and
- Via 72CR, 73CR and 74CR on the south eastern Boundary of the site.

2.10. Consideration of an additional pedestrian/cycle only connection at the northwestern corner of the site near the A272/B2036 roundabout junction is also being explored separately, with access through the residential streets provided in this corner of the site.

2.11. The primary cycle route through the site follows a similar route to the bus routing described above, however the cycle route continues along the full length of the primary road, including the section where buses are not expected to travel.

2.12. The cycle route also continues along the full length of the secondary street, with the exception of the westernmost section onto the A272, where the cycle route will separate from the carriageway to route into Beechy Bottom Country Park.

2.13. On tertiary and lower streets, cyclists will utilise the carriageway or the shared surface, as described in **Section 4.0**.

3. Access Arrangements

Vehicular Access Strategy

3.1. Vehicular access to the site is to be at three points: A northern access from the A272 on the northern edge of the site; a western access onto the A272 on the western edge of the site; and a southern access onto the B2036 Harvest Hill.

3.2. All three access points are to be three arm roundabouts, with the north and south accesses connecting to the primary spine road and acting as the access points for buses, whilst the western access will connect to a secondary street but is not proposed to accommodate buses.

3.3. The proposed roundabout geometries are based on the standards included within the Design Manual for Roads and Bridges (DMRB) documents CD109 – Highway Link Design and CD 116 – Geometric Design of Roundabouts. Visibility splays have been calculated based on the design speed of the road using the desirable minimum visibility from DMRB CD 109 – Highway Link Design. Footway and Cycleway widths have been based on Local Transport Note (LTN) 1/20 – Cycle Infrastructure Design and Manual for the Streets / Manual for Streets 2.

Northern Access

3.4. A plan showing the proposed northern access roundabout is provided at **ACE Drawing 2207280-003A**. The proposed roundabout is to have one 4.5m lane on each arm, with an overall diameter of 30m.

3.5. The roundabout is also to include a tiger crossing on its southern and eastern arms, as part of the continuation of the cycle route through the site and towards Haywards Heath to the east. The cycle route will be on the west side of the primary spine road into the site, crossing to the east side of the carriageway on the southern arm of the roundabout to become a 4.5m shared footway / cycleway, and then crossing to the north side of the A272 on the eastern arm of the roundabout to extend further east. The final cycle strategy along the A272 extending east is to be confirmed and is for discussion as per **ACE Report Reference 2207280-R04**.

3.6. As a change in the speed limit on the A272 in the vicinity of the site from 60mph to 40mph is proposed as part of the access strategy, the proposed roundabout has been designed to achieve forward visibility splays of 120m from the east and west.

3.7. The proposed roundabout has been designed to minimise impacts on local trees and vegetation, however this is subject to arboriculture and ecological checks.

Western Access

3.8. A plan showing the proposed western access roundabout is provided at **ACE Drawing 2207280-004B**. The proposed roundabout is to have one, 4.5m lane on each arm, with an overall diameter of 30m.

3.9. This roundabout is to be for vehicles only, as the proposed footways and cycle route is to separate from the carriageway prior to this roundabout. It is anticipated that a bridge over the A272 south of the western access will be provided to connect through to the Ansty cricket and football club grounds. Levels in the area support a bridge and would help connect the site with the existing built up area of Ansty, but is subject to further discussions/review.

3.10. As with the northern access, a change in the speed limit on the A272 in the vicinity of the site from 60mph to 40mph is proposed as part of the access strategy. The proposed roundabout has been designed to achieve forward visibility splays of 120m from the east and west.

3.11. As with the northern access, the proposed roundabout has been designed to minimise impacts on local trees and vegetation, however this is subject to arboriculture and ecological checks.

Southern Access

3.12. A plan showing the proposed southern access roundabout is provided at **ACE Drawing 2207280-005A**. The proposed roundabout is to have one 4.5m lane on each arm, with an overall diameter of 30m.

3.13. The roundabout is to be the terminus of the cycle route through the site, with onward connections to Ansty to the north, where sufficient space is available within adopted highway land. A pedestrian crossing will be provided on the eastern arm of the roundabout, to provide connectivity within the site. A suitable connection to Cuckfield Road is also being explored and is discussed further within **ACE Report Reference 2207280-R04**.

3.14. The proposed roundabout has been designed to achieve forward visibility splays of 120m from the east and west, in line with the existing 40mph speed limit of the B2036 Harvest Hill.

3.15. As with the other accesses, the proposed roundabout has been designed to minimise impacts on local trees and vegetation, however this is subject to arboriculture and ecological checks.

4. Street Geometries

Street Makeup

4.1. To determine the geometric requirements for the various streets within the development, a hierarchy of five street-types been designed. The street-type hierarchy is as follows:

1. Primary Spine Road (with Bus);
2. Primary Spine Road (Without Bus);
3. Secondary Routes (With Bus);
4. Secondary Routes (Without Bus);
5. Tertiary Routes (Individual Parcel Access); and
6. Shared Streets (Individual Dwelling Access).

4.2. The design for each street type consists of four elements:

- Carriageway;
- Verge(s);
- Cycle Path(s); and
- Footway(s).

4.3. Due to the recent national adoption of Local Transport Note (LTN) 1/20 – Cycle Infrastructure Design, there is considerable uncertainty about the accessibility infrastructure requirements within new strategic developments.

4.4. As such, this TTN explores latest guidance and practice by providing a range of geometries for comment by WSCC, and seeks feedback from officers on their requirements for pedestrian/cycle improvements.

4.5. Carriageway widths, verges and segregated footways are based on WSCC guidance as well as Manual for Streets / Manual for Streets 2, while footway widths and cycleway widths are based on LTN 1/20.

4.6. A plan showing the indicative street hierarchy across the site is provided on the drawing provided at **Appendix B**.

Primary Spine Road

4.7. The primary spine road for the site is to follow a broadly north / south orientation connecting the A272 on the northern edge of the site to the B2036 Harvest Hill on the southern edge of the site.

4.8. The primary spine road is split into three sections, with the north and south sections being bus routes and a short section between that will not be a bus route. As such, the geometries for the primary spine road are divided into the section of the road with buses and the section without buses:

- Primary Spine Road (With Bus):
  - Carriageway Width = 6m – 6.75m;
  - Verge Width = 2m – 3m (both sides of the carriageway);
  - Cycle Path = 3m (two-way on one side of the carriageway, including light segregation);
  - Footway = 1.8m – 2m (both sides of the carriageway, including light segregation and pinch points);
  - Total Width = 18m – 22.75m.

- Primary Spine Road (Without Bus):
  - Carriageway Width = 5.5m;
  - Verge Width = 2m – 3m (both sides of the carriageway);
  - Cycle Path = 3m (two-way on one side of the carriageway, including light segregation);
  - Footway = 1.8m – 2m (both sides of the carriageway, including light segregation and pinch points);
  - Total Width = 17.5m – 21.5m.

4.9. An indicative cross-section of the section of the primary spine road with buses is shown in **Figure 4.1**, below.

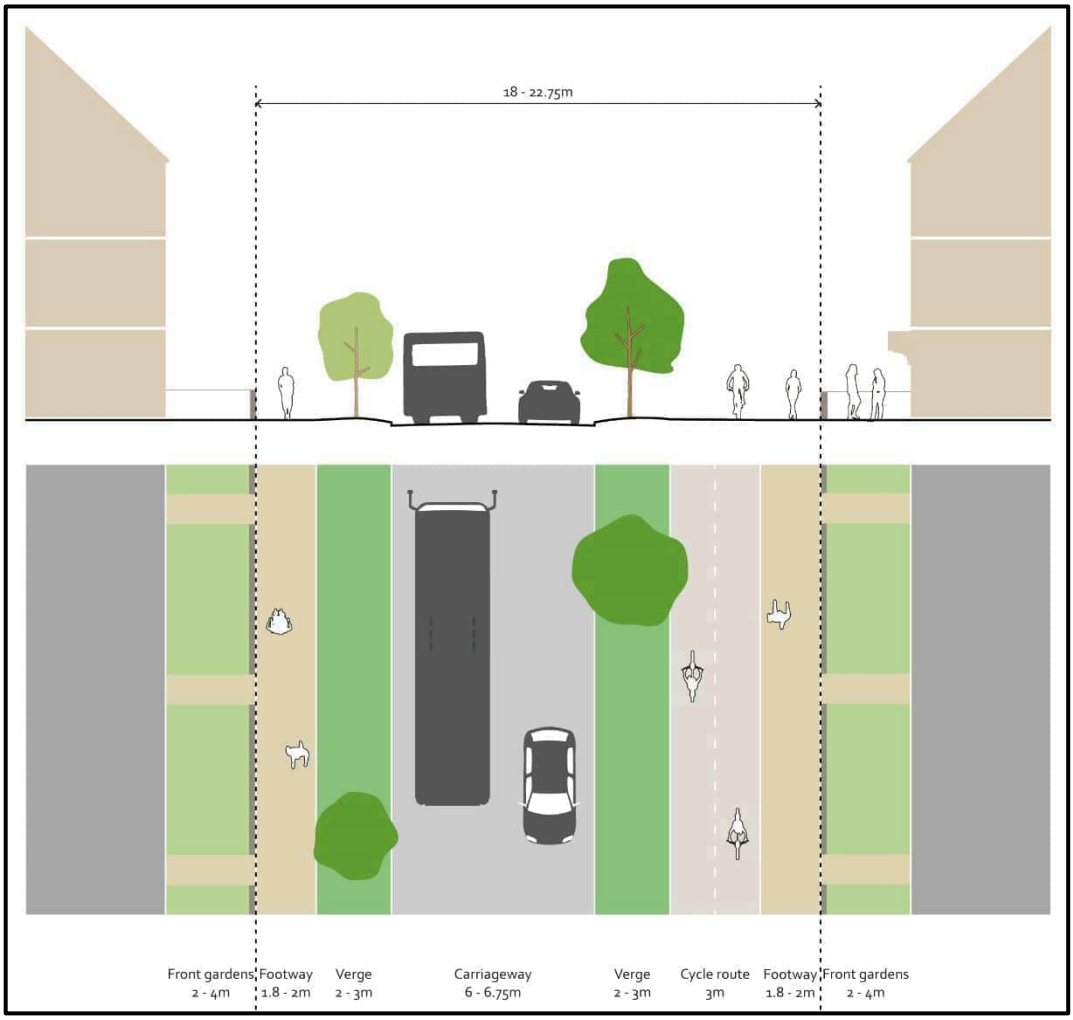

Figure 4.1: Indicative Primary Spine Road With Bus

Secondary Street

4.10. The secondary streets within the site are broadly concentrated within the central and western sections of the site, serving to connect parcels to the primary spine road and to continue the cycle route and footpaths throughout the site.

4.11. As with the primary spine road, sections of the secondary streets will be expected to accommodate buses and other sections will not be expected to accommodate buses. To encourage sustainable travel towards the school and local centre, the section of secondary street through the centre of the site will be made bus-only with appropriate signage and traffic controls included within the design.

4.12. In addition to the with / without and bus-only sections, the westernmost section of the cycle route through the site is expected to separate from the carriageway, being

route through the open space within the site. At this point, only a footway will be provided on both sides of the carriageway.

4.13. The total three types of secondary street will follow the below geometries:

- Secondary Street (Cycle Route, With Bus & Bus-Only):
  - Carriageway Width = 6m – 6.75m;
  - Verge Width = 2m – 2.5m (both sides of the carriageway, potential for inset parking and tree planting);
  - Cycle Path = 3m (two-way on one side of the carriageway, including light segregation);
  - Footway = 1.8m – 2m (including light segregation and pinch points);
  - Total Width = 17m – 18.75m.

- Secondary Street (Cycle Route, Without Bus):
  - Carriageway Width = 4.8m;
  - Verge Width = 2m – 2.5m (both sides of the carriageway);
  - Cycle Path = 3m (two-way on one side of the carriageway, including light segregation);
  - Footway = 1.8m – 2m (both sides of the carriageway, including light segregation and pinch points);
  - Total Width = 15.8m – 16.8m.

- Secondary Street (Without Cycle Route, Without Bus):
  - Carriageway Width = 4.8m;
  - Verge Width = 2m – 2.5m (both sides of the carriageway);
  - Footway = 2m (both sides of the carriageway, including light segregation and pinch points);
  - Total Width = 12.8m – 13.8m.

4.14. An indicative cross-section of a section of secondary street with buses is shown in **Figure 4.2**, below.

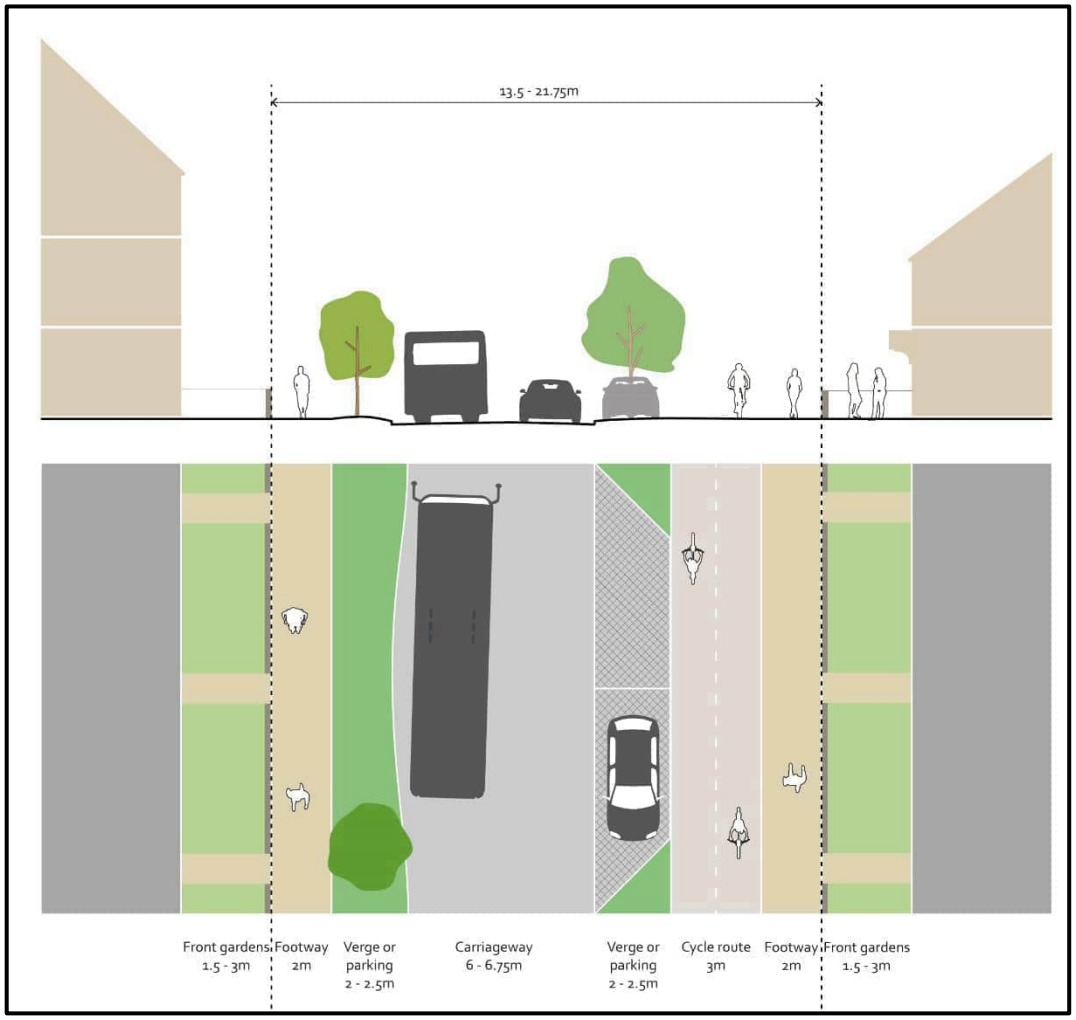

Figure 4.2: Indicative Secondary Street With Bus

Tertiary Streets

4.15. Short sections of tertiary street have been included in areas of the site where the primary road is sufficiently close and where a section of secondary street is not suitable for the level of development in the area of the site. At present, only three sections of tertiary street are included within the development in the north, central-east and south-east sections of the site.

4.16. To maintain a cohesive and direct cycle route throughout the site, cyclists are indeed to travel on the carriageway on the tertiary streets before joining the main cycle route on the secondary streets / primary spine road, and so no cycle route is provided alongside the tertiary street carriageway.

4.17. The geometries of the tertiary streets are as follows:

- Carriageway Width = 4.1m – 4.8m;
- Verge Width = 2m – 2.5m (one side of the carriageway);
- Footway = 2m (both sides of the carriageway including pinch points);
- Total Width = 10.1m – 11.3m

4.18. An indicative cross-section of the section of the tertiary street is shown in **Figure 4.3**, below.

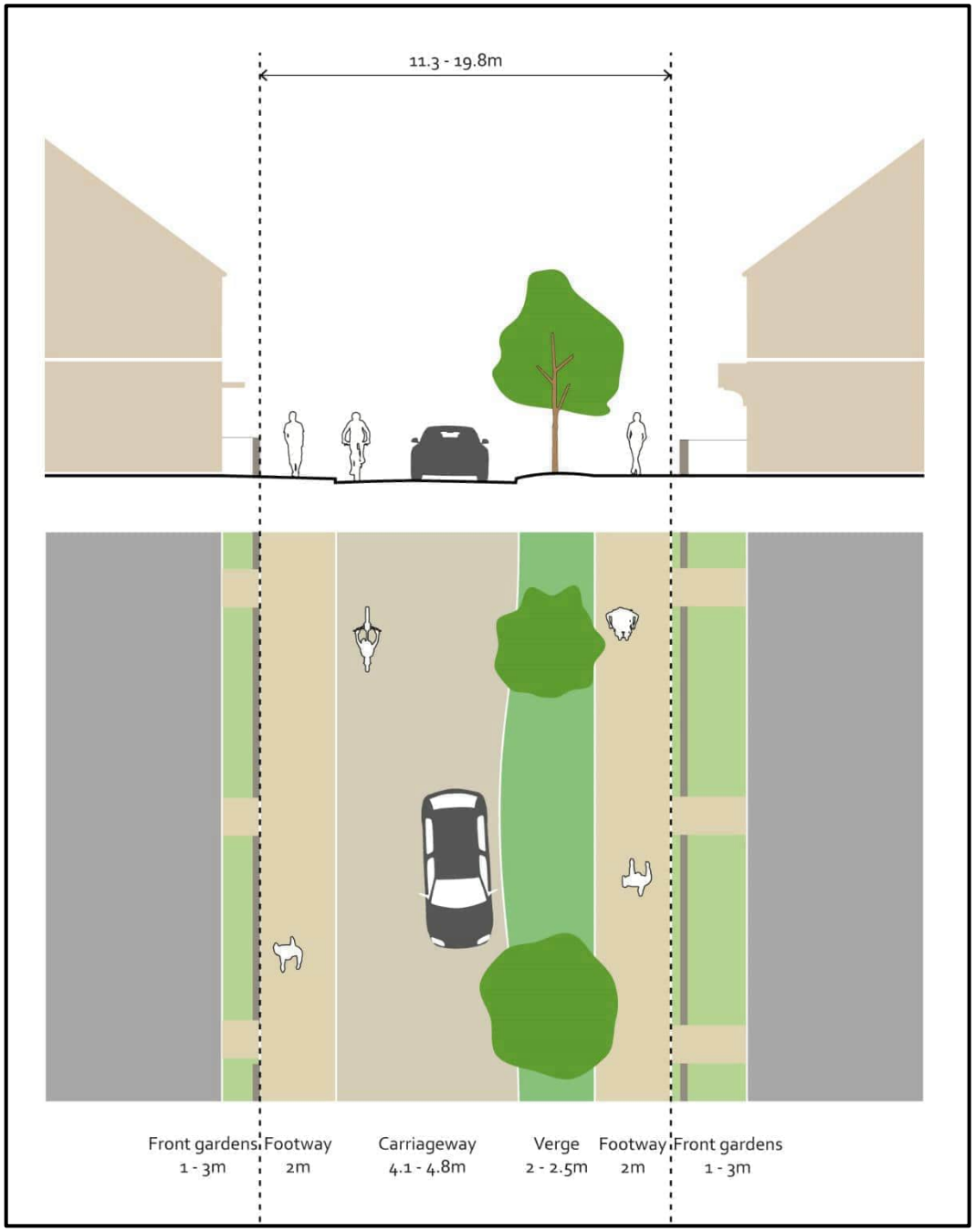

Figure 4.3: Indicative Tertiary Street

Shared Surface

4.19. Finally, connections to cul-de-sacs, mews or individual dwellings will be via shared surface streets. Pedestrians, cyclists and vehicles will share the carriageway, with a change in surface finish of the carriageway denoting the transition from separated traffic to a shared surface.

4.20. Shared streets will be comprised of a shared 6m carriageway, at level to dwellings. Traffic calming features, including build-outs and planting, will be used to reduce vehicle speeds. An indicative cross section of a shared surface is shown in **Figure 4.4**.

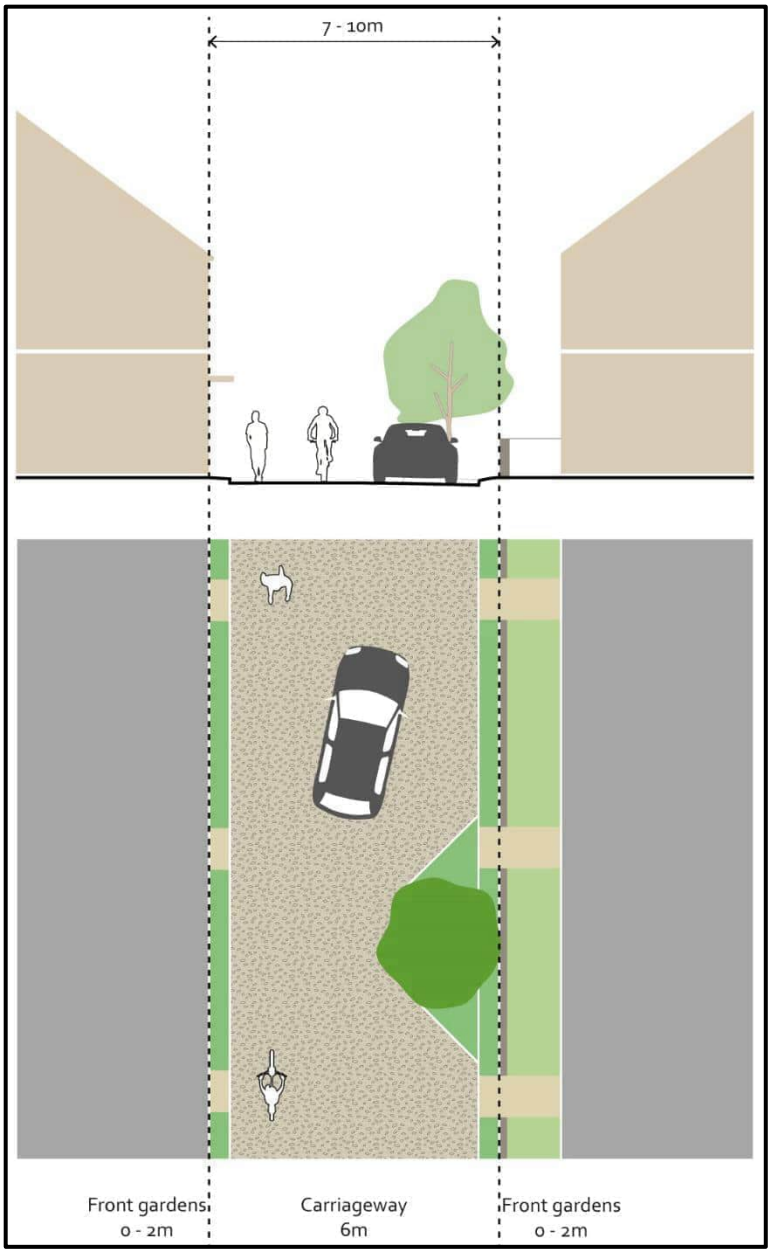

Figure 4.4: Indicative Shared Surface Street

5. Summary and Way Forward

Summary

5.1. This note is summarised as follows:

- Access to the site for vehicles will be via 3 roundabouts on the northern, western and southern edges of the site.
- Buses are to access the site by the north and south roundabouts, and follows the primary and secondary streets to the mobility hubs throughout the site.
- The westernmost mobility hub / bus stop is to be a full mobility hub, with the other mobility hub / bus stops being 'mini-mobility hubs'.
- A total of 10 access points for active travel modes are provided across the site, with an internal network of cycle and pedestrian routes that generally follow the road network.
- The internal street hierarchy has been divided into Primary, Secondary, Tertiary and shared surface streets, with geometries provided for each road type taking into account the need for buses provision.
- Geometries for each road type are based on a combination of WSCC guidance, Manual for the Streets, Manual for Streets 2 and LTN 1/20 where applicable.

Way Forward

5.2. The proposed way forward is for ACE to progress the masterplanning process based on the parameters set out above. Specific comment from WSCC on the following matters is sought from WSCC:

- The principle of the access and movement strategy for each mode of travel.
- The design of the proposed access roundabouts, including the non-vehicular provision.
- The geometric design of each street type.
- Feedback on application of LTN1/20 parameters.

Drawings

N

EXISTING PUBLIC RIGHT OF WAY

B2036

Mount Noddy Cottage

West Riddens Cottages

Little Orchard

Ansty Lodge

Anstye Place

61.7m

68.2m

Pond

West Riddens Farm

West Riddens

CONNECT TO EXISTING FOOTWAY

120m FORWARD VISIBILITY ON APPROACH
BASED ON 40mph SPEED LIMIT

EXISTING CHANGE OF SPEED LIMIT SIGNS
TO BE RELOCATED TO THE SOUTH
30mph NORTHBOUND
NATIONAL SPEED LIMIT SOUTHBOUND

TIE INTO EXISTING

POTENTIAL FOOT/CYCLE CONNECTION TO
EXISTING FOOTWAY

NOTE CYCLISTS TO REJOIN CARRIAGEWAY
DETAILS TBC

POTENTIAL CROSSING POINT AND
TRANSITION FROM SEGREGATED
CYCLE ROUTE TO SHARED
FOOT/CYCLEWAY

SIGNAGE AND DETAILS TBC

PROPOSED DEVELOPMENT

R70.18m

R67.50m

R99.84m

4.50m

4.40m

5.40m

POTENTIAL RELOCATED CHANGE OF
SPEED LIMIT SIGNS
30mph NORTHBOUND
NATIONAL SPEED LIMIT SOUTHBOUND

TIE INTO EXISTING

120m FORWARD VISIBILITY ON APPROACH
BASED ON 40mph SPEED LIMIT

215m FORWARD VISIBILITY ON APPROACH
BASED ON POSTED SPEED LIMIT (60mph)

ROUNDABOUT SWEPT PATHS

1.00m

1m OVERRUN STRIP REQUIRED
FOR HGV SWEPT PATHS

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NOT TO SCALE

ACCESS LOCATION PLAN

NORTHERN ACCESS -
SEE DRAWING 003

WESTERN ACCESS - SEE DRAWING 004

SOUTHERN ACCESS

A272

B2036

NOTES:

ROUNDABOUT DESIGNED BY CD 116
GEOMETRIC DESIGN OF ROUNDABOUTS
(FORMERLY TD 16/07, TD 50/04, TD 51/17, TD 54/07, TA 23/81,
TA 78/97, TA 86/03, TD 70/08)

ROUNDABOUT DESIGNED ON TOPOGRAPHICAL SURVEY
PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023

ROUNDABOUT SUBJECT TO CAPACITY ANALYSIS, FURTHER
DESIGN REFINEMENT OF NON-VEHICULAR WORKS, SPEED
SURVEYS, ROAD SAFETY AUDIT, LAND OWNERSHIP
CONFIRMATION, ARBORICULTURAL SURVEY AND DISCUSSIONS
WITH HIGHWAYS

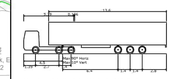
THE PEDESTRIAN/CYCLE ACCESS STRATEGY IS SUBJECT TO
DISCUSSIONS WITH HIGHWAYS BUT INDICATIVE
ROUTING/CROSSING LOCATIONS HAVE BEEN SHOWN SUBJECT
TO REVIEW AGAINST LAND OWNERSHIP/CONSTRAINTS
INFORMATION, ECOLOGY INFORMATION AND ARBORICULTURAL
SURVEY.

VISIBILITY SPLAYS SUBJECT TO SPEED LIMIT CHANGE AND
DISCUSSIONS WITH HIGHWAYS.

KEY:

- INDICATIVE SITE BOUNDARY TO BE CONFIRMED
- INDICATIVE APPLICATION WORKS BOUNDARY TO BE CONFIRMED
- DEFLECTION ANGLE
- HIGHWAY BOUNDARY TRANSCRIBED FROM MID SUSSEX RECORDS

VEHICLE SPECIFICATION:



Max Legal Articulated Vehicle (16.5m)	
Overall Length	16.500m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.396m
Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.870m

DRAFT

Rev	Description	Drn	Chk	App	Date
A	TREES SURVEY ADDED / REDLINE UPDATED	DV	DH	KM	13.04.23

ARDENT | CONSULTING ENGINEERS
Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE
Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client: FAIRFAX ACQUISITIONS LTD

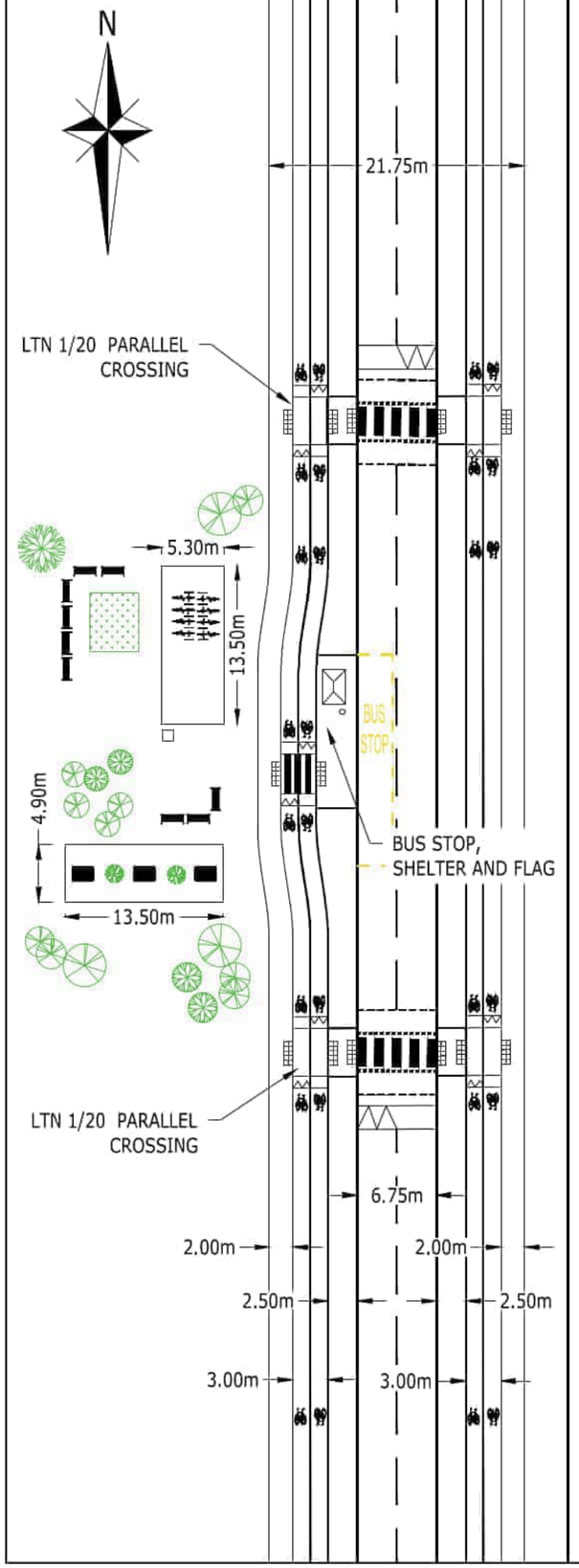
Project Title: LAND AT ANTSY FARM, MID SUSSEX

Drawing Title: PROPOSED ROUNDABOUT SOUTHERN ACCESS (B2036)

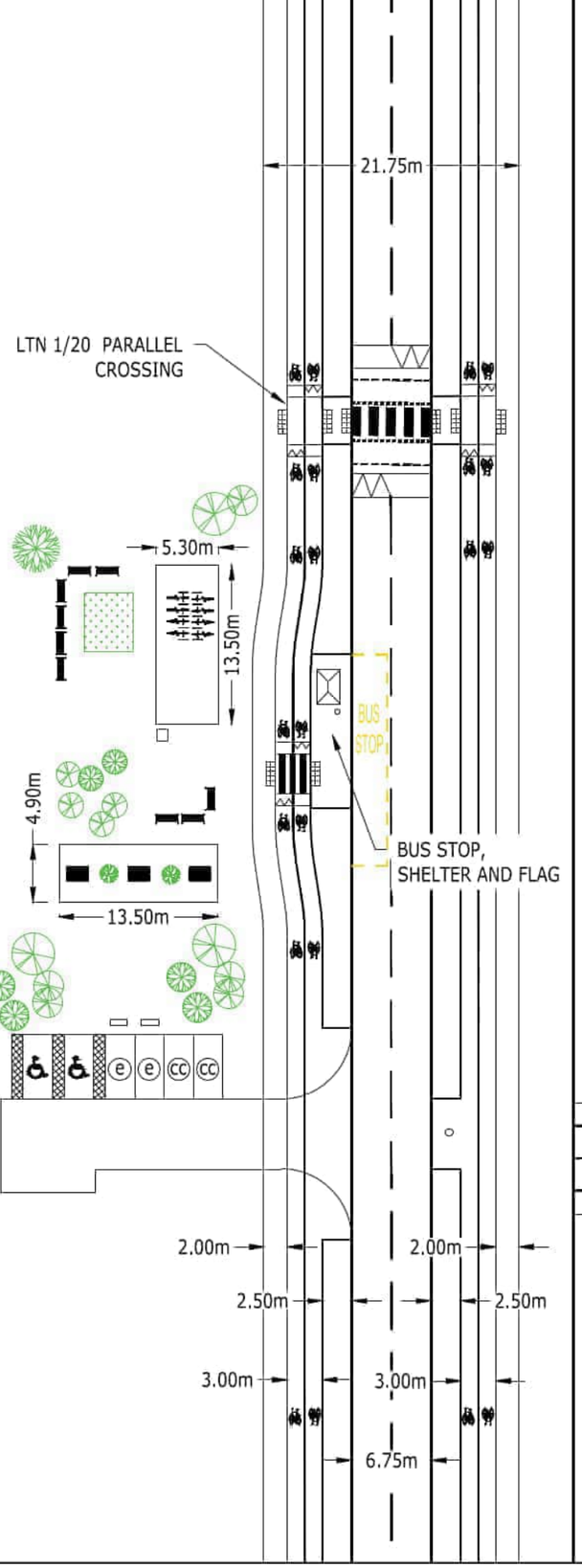
A0 Scale	Date	Designed by
1:500	22.02.23	DV
Drawn by	Checked by	Approved by
DV	DV	DH

Drawing Number: 2207280-005 Rev A

EXAMPLE A



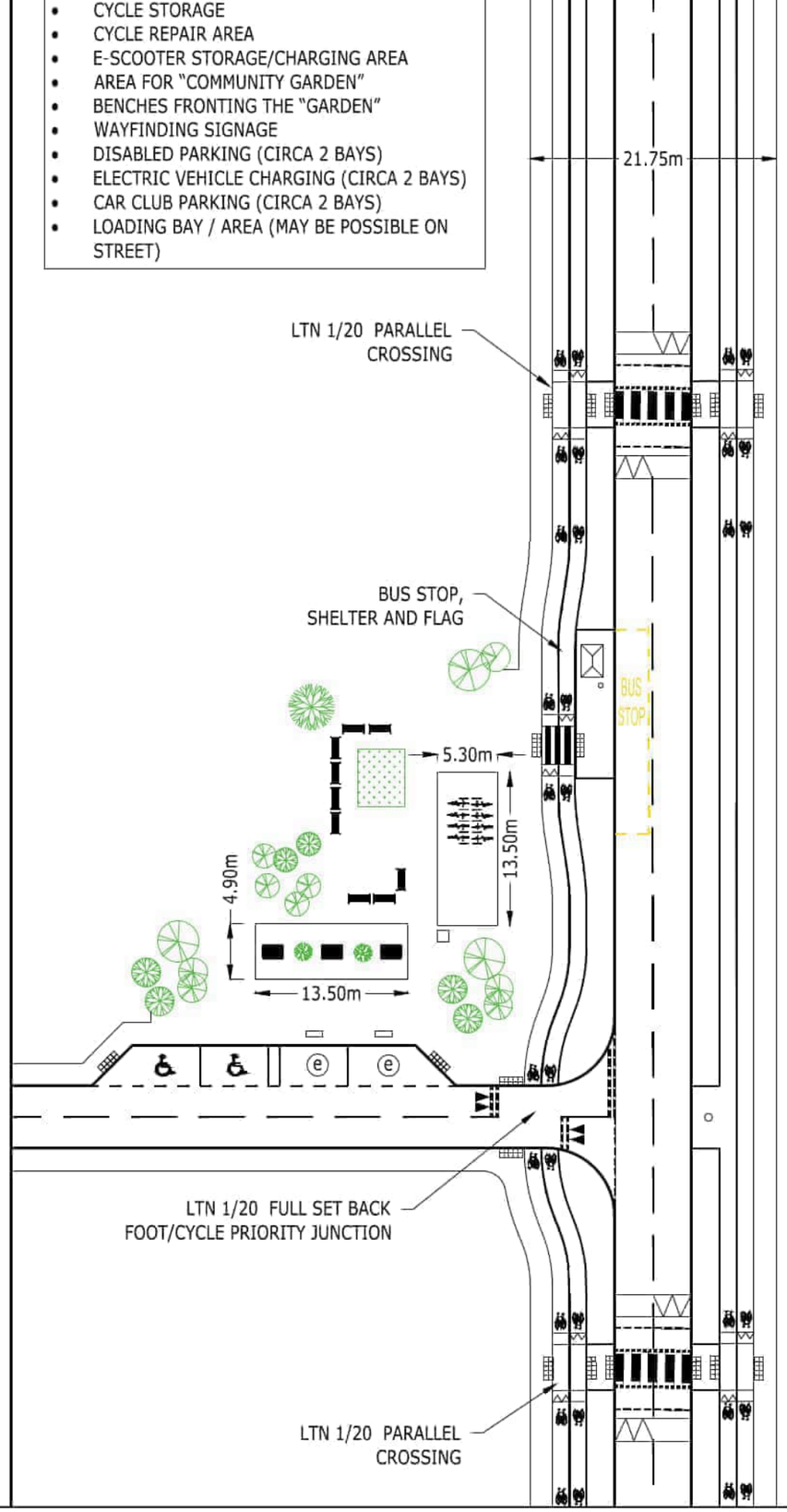
EXAMPLE B



MOBILITY HUB TO INCLUDE:

- CYCLE STORAGE
- CYCLE REPAIR AREA
- E-SCOOTER STORAGE/CHARGING AREA
- AREA FOR "COMMUNITY GARDEN"
- BENCHES FRONTING THE "GARDEN"
- WAYFINDING SIGNAGE
- DISABLED PARKING (CIRCA 2 BAYS)
- ELECTRIC VEHICLE CHARGING (CIRCA 2 BAYS)
- CAR CLUB PARKING (CIRCA 2 BAYS)
- LOADING BAY / AREA (MAY BE POSSIBLE ON STREET)

EXAMPLE C



NOTES:

DESIGNED IN ACCORDANCE WITH LTN 1/20 & COMO UK 'THE DESIGN PROCESS - MOBILITY HUBS REALISED'.

EXAMPLES SHOWN INDICATIVELY AND SUBJECT TO INTERNAL LAYOUT, FURTHER DESIGN AND HIGHWAYS DISCUSSIONS.

DRAFT

Rev	Description	Drn	Chk	App	Date

ARDENT CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client:
FAIRFAX ACQUISITIONS LTD

Project Title:
LAND AT ANTSY FARM, MID SUSSEX

Drawing Title:
MOBILITY HUB EXAMPLES

A3 Scale	Date	Designed by
1:500	27.02.23	DV
Drawn by	**Checked by**	**Approved by**
DV	DV	KM

Drawing Number: 2207280-SK01 Rev -

Sports Pavilion

N

EXISTING PUBLIC RIGHT OF WAY

POTENTIAL CHANGE IN SPEED LIMIT SIGNS
60mph WESTBOUND
30-40mph EASTBOUND

120m FORWARD VISIBILITY ON APPROACH
BASED ON 40mph SPEED LIMIT (SUBJECT
TO SPEED LIMIT CHANGE)

POTENTIAL FOOT/CYCLE CONNECTIONS
& CROSSING POINT SUBJECT TO SPEED
LIMIT REDUCTION (<37mph)

POTENTIAL 3m - 4.5m SHARED
FOOT/CYCLEWAY CONNECTION

120m FORWARD VISIBILITY ON APPROACH
BASED ON 40mph SPEED LIMIT (SUBJECT
TO SPEED LIMIT CHANGE)

POTENTIAL TIE IN TO EXISTING PROW

CROSSING DETAIL TBC

POTENTIAL CHANGE IN SPEED LIMIT SIGNS
30-40mph WESTBOUND
60mph EASTBOUND

TIE INTO EXISTING

TIE INTO EXISTING

PROPOSED DEVELOPMENT

EXISTING PUBLIC RIGHT OF WAY

A272

B2036

R97.79m

R96.25m

4.50m

5.25m

30.00m

4.51m

H631
Mixed Broadleaves
C2

H631a
Mixed Species
C2

H632
Mixed Broadleaves
C2

H630
Mixed Broadleaves
C2

H634
Mixed Broadleaves
C2

T25
Maple, Field
B2

T26
Oak, English
B2

T27
Ash, Common
B2

G26
Ash, Common
C2

G27
Ash, Common
C2

G28
Ash, Common
C2

G29
Ash, Common
C2

G30
Ash, Common
C2

G31
Ash, Common
C2

G32
Ash, Common
C2

G33
Ash, Common
C2

G34
Ash, Common
C2

G35
Ash, Common
C2

ROUNDABOUT SWEPT PATHS

1m OVERRUN STRIP REQUIRED FOR HGV SWEPT PATHS

EXISTING PUBLIC RIGHT OF WAY

POTENTIAL RELOCATED CHANGE IN SPEED LIMIT SIGNS
60mph NORTHBOUND
30mph SOUTHBOUND

POTENTIAL FOOT/CYCLE CONNECTIONS & CROSSING POINT SUBJECT TO SPEED LIMIT REDUCTION (<37mph)

Higher risk of failure trees
- further investigation required

TIE INTO EXISTING

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT SUBJECT TO SPEED LIMIT CHANGE

POTENTIAL FOOT/CYCLE CONNECTIONS & CROSSING POINT SUBJECT TO SPEED LIMIT REDUCTION (<37mph)

TIE INTO EXISTING

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT SUBJECT TO SPEED LIMIT CHANGE

EXISTING CHANGE IN SPEED LIMIT SIGNS TO BE RELOCATED NORTH
60mph NORTHBOUND
30mph SOUTHBOUND

PROPOSED DEVELOPMENT

A272

B2036

N

all Pitch

Veteran RPA

NOTES:

ROUNDABOUT DESIGNED BY CD 116
GEOMETRIC DESIGN OF ROUNDABOUTS
(FORMERLY TD 16/07, TD 50/04, TD 51/17, TD 54/07, TA 23/81, TA 78/97, TA 86/03, TD 70/08)

ROUNDABOUT DESIGNED ON TOPOGRAPHICAL SURVEY PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023

ROUNDABOUT SUBJECT TO CAPACITY ANALYSIS, FURTHER DESIGN REFINEMENT OF NON-VEHICULAR WORKS, SPEED SURVEYS, ROAD SAFETY AUDIT, LAND OWNERSHIP CONFIRMATION, ARBORICULTURAL SURVEY AND DISCUSSIONS WITH HIGHWAYS

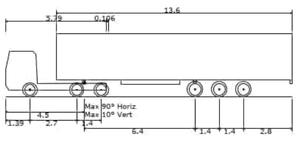
THE PEDESTRIAN/CYCLE ACCESS STRATEGY IS SUBJECT TO DISCUSSIONS WITH HIGHWAYS BUT INDICATIVE ROUTING/CROSSING LOCATIONS HAVE BEEN SHOWN SUBJECT TO REVIEW AGAINST LAND OWNERSHIP/CONSTRAINTS INFORMATION, ECOLOGY INFORMATION AND ARBORICULTURAL SURVEY.

VISIBILITY SPLAYS SUBJECT TO SPEED LIMIT CHANGE AND DISCUSSION WITH HIGHWAYS.

KEY:

- INDICATIVE SITE BOUNDARY TO BE CONFIRMED
- INDICATIVE APPLICATION WORKS BOUNDARY TO BE CONFIRMED
- DEFLECTION ANGLE
- HIGHWAY BOUNDARY TRANSCRIBED FROM MID SUSSEX RECORDS

VEHICLE SPECIFICATION:

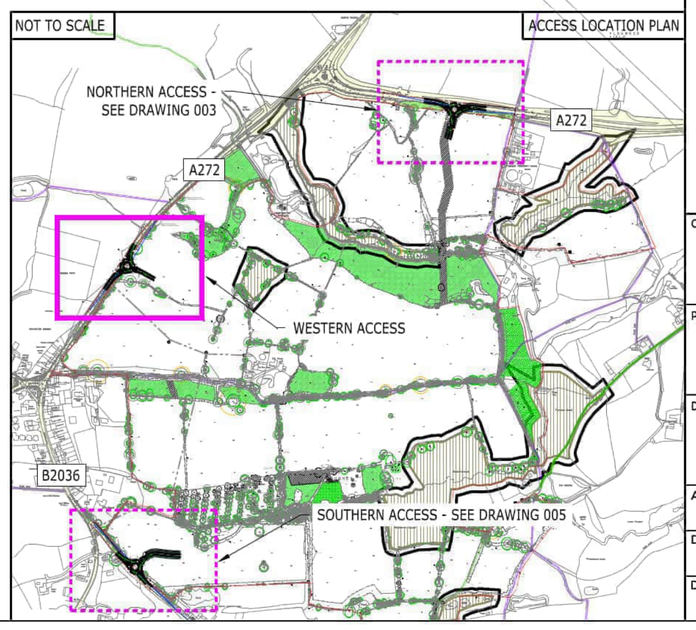


Max Legal Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.396m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.870m

NOT TO SCALE

ACCESS LOCATION PLAN



DRAFT

Rev	Description	Drn	Chk	App	Date
A	TREES SURVEY ADEED / REDLINE UPDATED	DV	DH	KM	13.04.23

ARDENT CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

FAIRFAX ACQUISITIONS LTD

Project Title:

LAND AT ANTSY FARM, MID SUSSEX

Drawing Title:

PROPOSED ROUNDABOUT
WESTERN ACCESS (A272)

A1 Scale	Date	Designed by
1:500	22.02.23	DV
Drawn by	**Checked by**	**Approved by**
DV	DV	DH

Drawing Number: 2207280-004 Rev A

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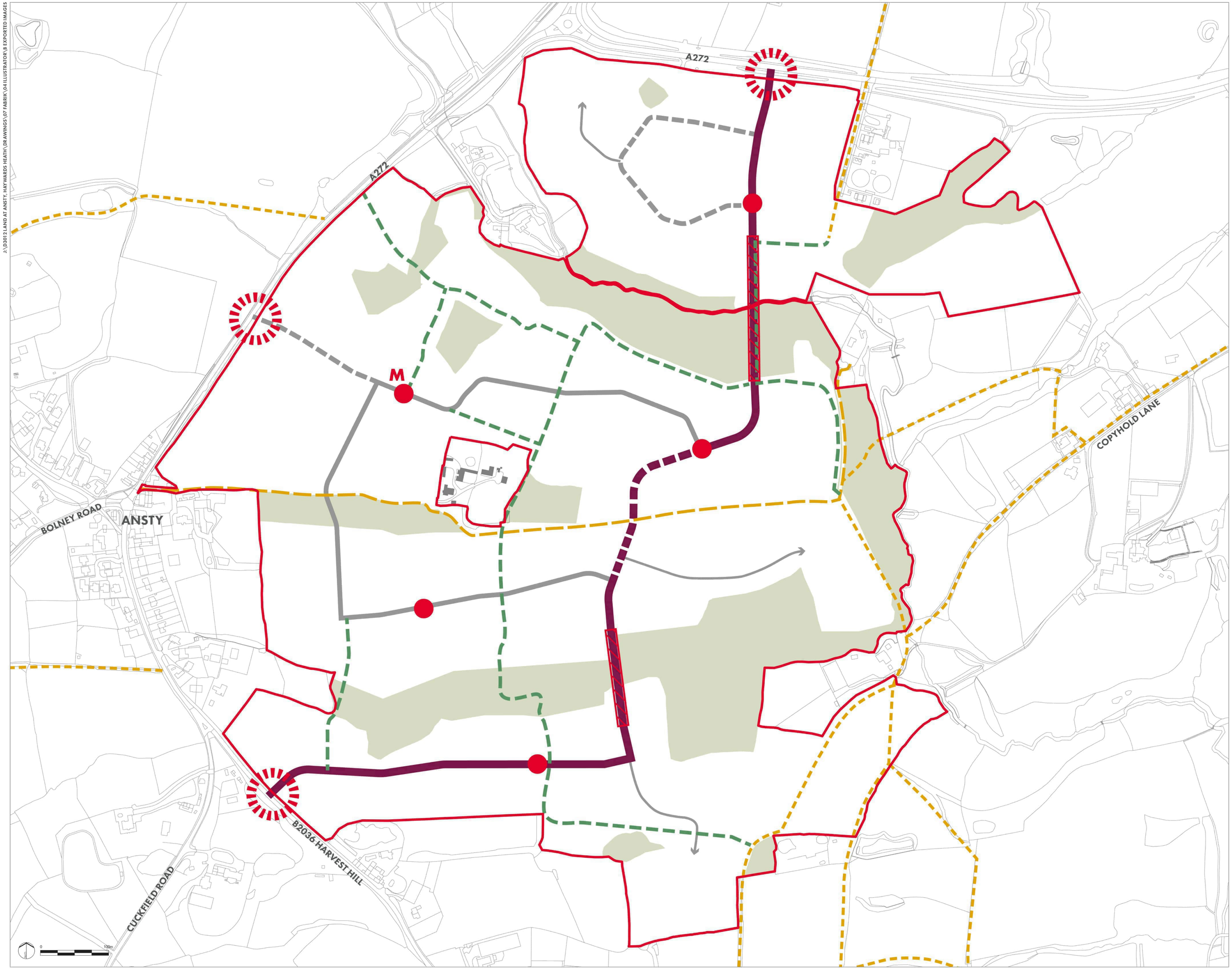
Appendix A

Indicative Access & Movement Strategy

J:\D3012 LAND AT ANSTY, HAYWARDS HEATH\ DRAWINGS \07 FABRIK \04 ILLUSTRATOR \8 EXPORTED IMAGES



LEGEND

- SITE BOUNDARY
- WOODLAND
- BRIDGE
- PRIMARY STREET
- PRIMARY STREET (NO BUS)
- SECONDARY STREET
- SECONDARY STREET (NO BUS)
- TERTIARY STREET
- EXISTING PUBLIC RIGHT OF WAY RETAINED
- EXISTING VEHICULAR ACCESS TO MACKERELL'S RETAINED
- PROPOSED FOOT/CYCLE PATH
- MOBILITY HUB LOCATION
- SITE ACCESS
- NODES/BUS STOPS

NOTE: RED LINE BOUNDARY WILL NEED TO BE AMENDED TO INCLUDE THE NEW ACCESSES, ONCE DESIGNS ARE FINALISED

REV.	DESCRIPTION	APP.	DATE
01	Updated site boundary and bus stop locations	BS	12.04.23

fabrik

PROJECT TITLE

ANSTY GARDEN COMMUNITY

DRAWING TITLE

ACCESS & MOVEMENT PARAMETER PLAN

ISSUED BY	London	T: 020 7620 1453	
DATE	APR 2023	**DRAWN**	ID
SCALE@A1	1:2,500	**CHECKED**	ID
STATUS	DRAFT	**APPROVED**	BS
DWG. NO.	D3012-FAB-00-XX-DR-Y-036		

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Appendix B

Indicative Street Hierarchy Plan

LEGEND

- SITE BOUNDARY
- SPINE STREET (BUS ROUTE)
- SPINE STREET (NO BUS)
- SECONDARY STREET (BUS ROUTE)
- SECONDARY STREET (BUS ONLY)
- SECONDARY STREET (NO BUS)
- SECONDARY STREET (NO BUS, NO CYCLE)
- TERTIARY STREET
- SHARED STREET / PRIVATE DRIVE (EDGE OF BLOCKS, SERVING UP TO 6 HOMES, TO BE DETAILED AT NEXT STAGE OF DESIGN)
- EXISTING FOOTPATH
- EXISTING LONG DISTANCE PATH
- PROPOSED FOOT/CYCLE PATH
- SITE ACCESS
- BUS STOP

REV.	DESCRIPTION	APP.	DATE
01	Amended hierarchy	BS	21.03.23

fabrik

PROJECT TITLE
LAND AT ANSTY, HAYWARDS HEATH

DRAWING TITLE
STREET HIERARCHY PLAN

ISSUED BY	London	T: 020 7620 1453	
DATE	JAN 2023	**DRAWN**	ID
SCALE@A0	1:2,500	**CHECKED**	ID
STATUS	DRAFT	**APPROVED**	BS

DWG. NO. D3012-FAB-00-XX-DR-Y-041

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J:\D3012 LAND AT ANSTY, HAYWARDS HEATH\DRAWINGS\07 FABRIK\02 PHOTOSHOP\4 EXPORTED IMAGES

Appendix 2

Transport Technical Note #3
Parking Strategy & Trip Rates

FAIRFAX ACQUISITIONS LTD

LAND ADJOINING ANSTY

TECHNICAL TRANSPORT NOTE #3 (PARKING STRATEGY & TRIP RATES)

REPORT REF. 2207280-R03

May 2023

HEAD OFFICE: 3rd Floor, The Hallmark Building, 52-56 Leadenhall Street, London, EC3M 5JE **T** | 020 7680 4088
ESSEX: 1 - 2 Crescent Court, Billericay, Essex, CM12 9AQ **T** | 01277 657 677
KENT: Suite 10, Building 40, Churchill Business Centre, Kings Hill, Kent, ME19 4YU **T** | 01732 752 155
MIDLANDS: Office 3, The Garage Studios, 41-43 St Mary's Gate, Nottingham, NG1 1PU **T** | 0115 697 0940
SOUTH WEST: Unit 2.2a, Temple Studios, Temple Gate, Redcliffe, Bristol, BS1 6QA **T** | 0117 456 4994
SUFFOLK: Suite 3.07, Suffolk Enterprise Centre, 44 Felaw Street, Ipswich, IP2 8SJ **T** | 01473 407 321

Email: enquiries@ardent-ce.co.uk

Contents Page

1. Introduction 1
2. Parking Strategy 3
3. Proposed Trip Rates 10
4. Summary and Way Forward 12

Document Control Sheet

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
-	Draft	SR / JE / JS	DH / KM	DRAFT	12/05/2023
-	Final	SR / JE / JS	JS JS	DH DH	19/05/2023

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1. Introduction

1.1. This Technical Transport Note (TTN) has been produced by Ardent Consulting Engineers (ACE) on behalf of Fairfax Acquisitions Limited, to provide input into the parking strategy and trip generation methodology for the proposed development at the Land Adjoining Ansty in Mid Sussex.

1.2. The Local Planning Authority (LPA) is Mid Sussex District Council (MDSC) and the Local Highways Authority is West Sussex County Council (WSCC).

1.3. The location of the proposed development is shown on **Figure 1.1** below.

Figure 1.1: Site Location

1.4. A summary of the development is as follows:

- New Settlement comprising up to 1600 high quality new homes, including up to 480 new affordable homes;
- New 2 Form Entry Primary School;
- New village centre with local facilities;
- 99 hectare Country Park for wider public use, offering significant opportunities for Biodiversity Net Gain;
- Enhanced bus services;
- A low carbon sustainable settlement;

- New sports and recreation facilities as well as amenity greenspace embedded within the garden community.

1.5. This Transport Technical Note (TTN) has been produced to set out high-level information in relation to the parking strategy and trip generation methodology for the proposed development, including details of parking standards, estimated provision and predicted trip rates.

1.6. This note is to be issued to WSCC as well as to Active Travel England (ATE), who will be a statutory consultee for the upcoming planning application for the development.

2. Parking Strategy

2.1. The parking strategy for the site will be reviewed to ensure that the approach is in accordance with the prevailing planning policy guidance at the time of submission of an application.

Current Parking Standards

Parking Principles

2.2. It is understood that the parking standards for residential developments within West Sussex are stipulated within the WSCC document 'Guidance in Parking at New Developments', dated September 2020.

2.3. The guidance outlines a series of principles that form the recommendations for parking at new development. Principle A considers accommodating parking demand and notes that:

"*Expected levels of parking demand in residential developments should be determined, where appropriate taking account of; location (parking behaviour zone), dwelling size (rooms), parking provision (allocated or unallocated), and arrangements for control/enforcement (charges, etc). Calculation of expected levels of parking demand should normally be based on local or comparable data taking account of forecast changes in demand for the local plan period.*"

2.4. Principle B considers the need for electric vehicle charging infrastructure and outlines that a minimum of 20% of all parking spaces should incorporate active charging points with passive provision incorporating ducting accommodated for all other parking provision for the spaces to be upgraded in the future. Suitable electric vehicle charging infrastructure will therefore need to be accommodated within the scheme.

2.5. Principle C considers the impact of sustainable transport and its impact upon parking demand/car ownership, outlining that "*in some locations, limiting parking provision should form part of a strategy to exploit the potential for sustainable transport*". It goes on to outline that to promote lower car ownership levels that this needs to be supported by travel plan measures, accessibility to non-car modes of travel and amenities/facilities and comprehensive parking controls.

2.6. Noting that the site incorporates a range of uses, in association with these measures, it is likely that rationalisation of parking provision between uses could be explored in order to avoid an over provision of parking spaces and promote non-car travel. This would be limited to uses that would not "compete" for parking and so would be complimentary to each other. We therefore propose to adopt a rationalisation of parking provision across appropriate land uses when determining suitable parking provision for the development as a whole.

2.7. Although an Outline planning application is to be submitted, the design parameters set out within Principle E will be given due regard when the layout is considered in detail as part of a future Reserved Matters application.

Residential Car Parking Standards

2.8. The guidance splits the county into Parking Behaviour Zones (PBZs) based on proximity to alternative transport modes and local amenities. The site is currently located within PBZ 1, as shown by the red star in **Figure 2.1** below.

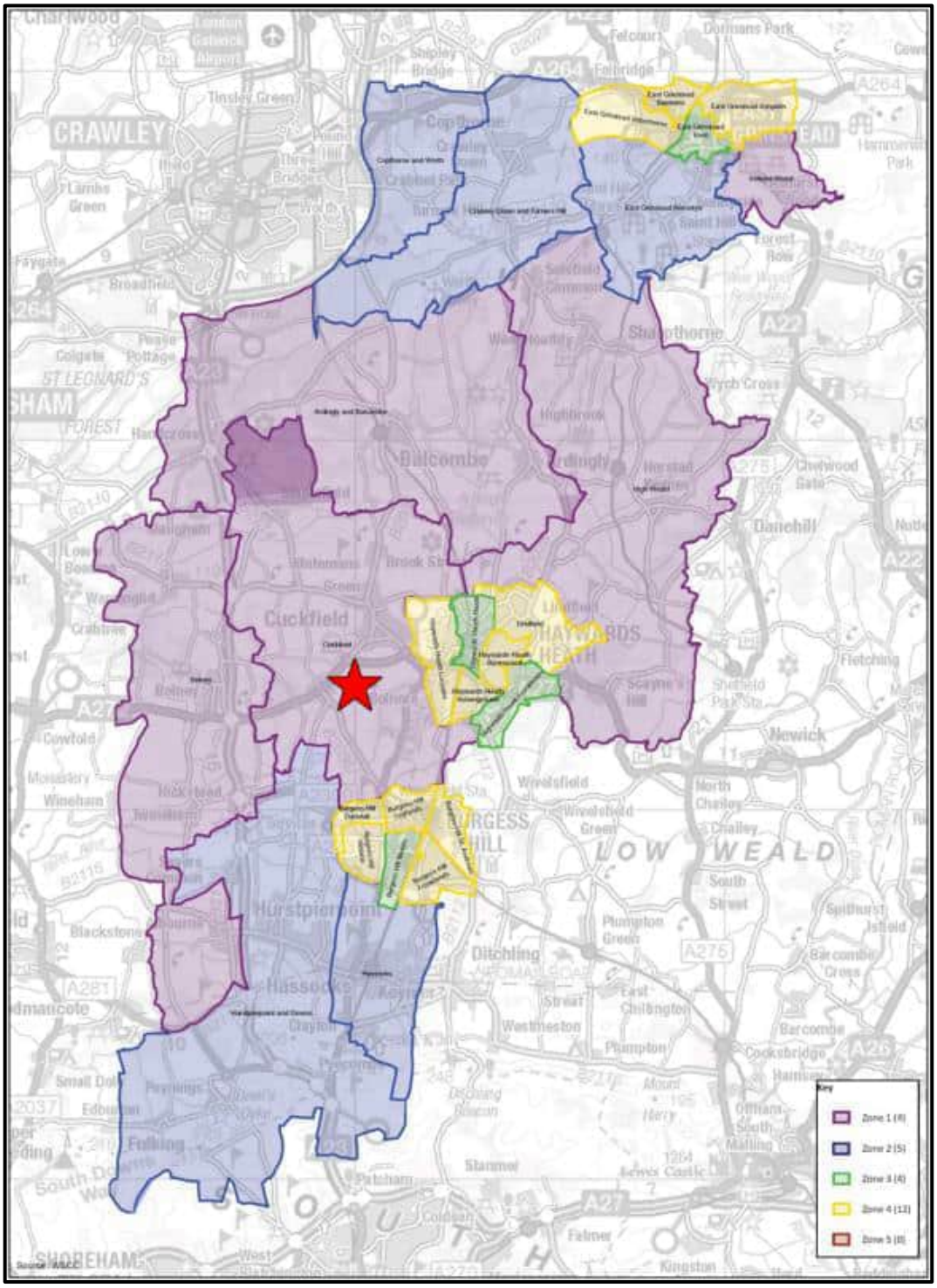

Figure 2.1: Mid Sussex Parking Behaviour Zones

2.9. As can be seen above, PBZ1 covers predominantly rural areas with minimal public or active transport infrastructure. Considering the scale, land uses and betterments to public transport, walking and cycling infrastructure included within the proposed development, it is considered more appropriate to apply the parking standards for

PBZ 4. This would mirror the standards applied to the outer sections of Haywards Heath which will be more closely analogous to the fully delivered development.

2.10. Considering that the PBZs are based on data from the 2011 census, a review of this data may also be conducted when considering parking provision.

2.11. Notwithstanding the above, the standards for all PBZs are outlined below in **Table 2.1**.

Number of Bedrooms	Number of Habitable Rooms	Car Parking Spaces per Unit				
		PBZ1	PBZ2	PBZ3	PBZ4	PBZ5
1	1 to 3	1.5	1.4	0.9	0.9	0.6
2	4	1.7	1.7	1.3	1.1	1.1
3	5 to 6	2.2	2.1	1.8	1.7	1.6
4+	7 or more	2.7	2.7	2.5	2.2	2.2

Table 2.1: WSCC Residential Car Parking Standards

2.12. Furthermore, we note that the guidance goes on to state: *"to meet with current and emerging guidance on the promotion of sustainable travel modes and choices, consideration could also be given to reducing the expected level of parking demand by 10%. This is based on the Department for Transport's 'Smarter Choices' research that shows reductions in traffic movements can be achieved by up to 10 to 30% where a range of travel choices are available through provision of travel plans, public transport contributions, and other sustainable travel initiatives."*

2.13. Based on the above, it is proposed that a mixed approach will be taken with up to a 10% reduction in parking provision provided where appropriate considering provision of active/sustainable modes of travel, and subject to feedback from WSCC and ATE.

Residential Cycle Parking Standards

2.14. The residential cycle parking standards are also provided within the WSCC standards and are replicated in **Table 2.2** below.

Type	Dwelling Size	Cycle Parking Spaces per Unit
Houses	1 and 2 Bedroom	1
Houses	3+ Bedroom	2
Houses	Multiple Occupation	1
Flats	1 and 2 Bedroom	0.5 (if communal, otherwise 1)
Flats	3 Bedroom	1

Table 2.2: WSCC Residential Cycle Parking Standards

Non-Residential Parking

2.16. The WSCC document 'Guidance in Parking at New Developments' also provides guidance on car and cycle parking for non-residential land uses. It is, however, stated within the guidance that the standards should be used as an initial guide and that developers *"should undertake a site-specific assessment and seek to balance operational needs, space requirements, efficient use of land and cost attributed to providing parking and where relevant, attracting/retaining staff"*. A selection of the standards considered relevant to the proposals are provided in **Table 2.3**.

General Industrial	Vehicular Parking	Cycle Parking
General Industrial	1 space per 40 sqm	1 space per 200sqm for staff and 1 space per 500sqm for visitors
Storage	1 space per 100 sqm	1 space per 500sqm for staff and 1 space per 1000sqm for visitors
Shops and Retail	1 space per 14 sqm	1 space per 8 parking spaces provided

General Industrial	Vehicular Parking	Cycle Parking
Food and Drink	1 space per 5 sqm of public space	1 space per 4 staff and 1 space per 25 sqm for customers
Office and Light Industrial	1 space per 30 sqm	1 space per 150sqm for staff and 1 space per 500sqm for visitors
Assembly and Leisure	1 space per 22 sqm	1 space per 4 staff plus visitor/customer cycle parking
Community Hall and Outdoor Sport	1 space per 14 sqm	1 space per 100sqm for staff and 1 space per 100sqm for customers
Medical Centre and Nurseries	Site-specific assessment based on travel plan and needs	Site-specific assessment based on travel plan and needs

Table 2.3: WSCC Non-Residential Vehicular and Cycle Parking Standards

2.17. As previously mentioned, the sharing of parking between complementary land uses is to be explored as the masterplan progresses to avoid overprovision of parking and to reduce the reliance on the private car.

Visitor Parking

2.18. The guidance in the WSCC standards outlining the provision of visitor parking states that: *"Developers should take an approach that is consistent with national research which suggests, "that no special provision should be made for visitors where at least half of the parking provision associated with the development is unallocated. In all other circumstances it may be appropriate to allow for additional demand for visitor parking of 0.2 spaces per dwelling" (DCLG, 2007, Residential Car Parking Research)."*

2.19. The visitor provision outlined within the DCLG report is based on a case study of one site in Lower Early, Reading, in 1995 and so is not considered representative. As the

intention is for parking provision within the development be majority unallocated, the above standard is not expected to apply.

Disabled Parking Provision

2.20. In terms of disabled parking provision, the WSCC standards expect a minimum of 5% of the total number of parking spaces to be disabled parking spaces.

2.21. Paragraph 6.8 of the standards also states that: "*In designing provision for disabled persons parking at non-residential development developments with over 200 spaces, consideration may be given to reducing the percentage of spaces for disabled persons below the minimum level…*". This principle will be considered when designing the detailed layout as the masterplan progresses.

Electric Vehicle Charging Provision

2.22. Appendix B of the WSCC standards provides a year-by-year proportion of spaces that should be active electric vehicle charging points, from 20% in 2018 to 70% 2030.

2.23. As the development is unlikely to be fully delivered by 2030, clarification on the provision of electric parking spaces for the development is sought from WSCC.

Proposed Parking Provision

2.24. At this stage, a detailed breakdown of the proposed land uses on site is not available and therefore a full review of the anticipated parking provision will be undertaken at a later date. However, it is anticipated that due to a mix of complementary land uses and accessibility by active / sustainable modes, the quantum of parking could be significantly reduced from the standards above.

2.25. It should be noted that any application will be prepared with regard to the most up to date policy regarding parking standards at the time of submission.

3. Proposed Trip Rates

3.1. The basis for the traffic assessment of the proposed development is the Mid Sussex Strategic Highway Model (MSSHM), which is coded within the SATURN strategic traffic modelling software. The model is maintained by Systra, on behalf of MSDC / WSCC.

3.2. General vehicular trip rates for the various uses included within the model are based on the TRICS database and provided in Table 1 of the Systra document 'Mid Sussex Transport Study – District Plan Review – Scenario 4 Report', dated October 2022. Table 1 of the above report is replicated in **Figure 3.1** below.

Table 1. General Vehicle Trip Rates

USE (TRICS CATEGORY)	PARAMETER	AM ORIG	AM DEST	PM ORIG	PM DEST
Private Houses and Flats	dwellings	**0.397**	0.191	0.143	**0.486**
Office	employees	0.043	**0.511**	**0.394**	0.021
Business Park	employees	0.183	**0.367**	**0.465**	0.045
Industrial Estate	employees	0.300	**0.700**	**0.844**	0.067
Hotel	rooms	**0.284**	0.104	0.151	**0.252**
Retail (Food Superstore)	per 100sqm	3.428	3.532	6.281	5.140
Primary School	per pupil	0.388	0.482	0.060	0.034
Secondary School	per pupil	0.179	0.237	0.041	0.039

Figure 3.1: MSSHM Trip Rates By Land Use (Source: Systra Report)

3.3. The assessment of the proposed development is to be based on Scenario 4Bm1, which includes trip rate reductions to the significant sites of Crabbet Park, West of Burgess Hill, Sayers Common and the proposed development as follows:

- 15% reduction on residential unit car trip rates to account for home working, internalisation and mode share assumptions; and
- 80% reduction on primary school car trip rates to account for internalisation of trips.

3.4. Taking the trip rates for the land uses from **Figure 3.1** and applying the above trip rates reductions results in the trip rate assumptions shown in **Table 3.1** below.

Use Class	Parameter	AM Origin	AM Destination	PM Origin	PM Destination
Private Houses & Flats	Dwellings	0.337	0.162	0.122	0.413
Office	Employees	0.043	0.511	0.394	0.021
Business Park	Employees	0.183	0.367	0.465	0.045
Industrial Estate	Employees	0.300	0.700	0.844	0.067
Hotel	Rooms	0.284	0.104	0.151	0.252
Retail (Food Superstore)	Per 100sq.m	3.428	3.532	6.281	5.140
Primary School	Per Pupil	0.078	0.096	0.120	0.007
Secondary School	Per Pupil	0.179	0.237	0.041	0.039

Table 3.1: MSSHM Trip Rates By Land Use (Including Scenario 4Bm1 Reductions)

3.5. As detailed in a separate Technical Transport Note (**ACE Report Reference: 2207280-R05**), a further scenario set will be considered by ACE beyond Scenario 4Bm1, which will include an appropriate reduction in the trip rates for the proposed development to reflect the promotion of sustainable travel both within the site and within the West Sussex Transport Plan.

4. Summary and Way Forward

Summary

4.1. This note is summarised as follows:

- The residential car and cycle parking standards applicable to the development are located within the WSCC document 'Guidance in parking at New Developments'.
- The proposed development currently lies within Parking Behaviour Zone 1, however given the scale, land uses and public and active travel betterments included within the proposals, the standards applicable to PBZ4 are considered more appropriate.
- The non-residential parking, visitor parking, disabled parking and electric vehicle charging standards are also located within the above WSCC document.
- Rationalisation of parking provision through the sharing of spaces between complimentary uses will be explored, along with a 10% reduction to promote active and sustainable travel.
- Trip rates for the proposed development will be based on the trip rates and reductions assumed within Scenario 4Bm1 of the MSSHM.
- A further scenario set with trip rate reductions will be considered by ACE, to reflect the site specific promotion of sustainable transport, as well as the promotion of sustainable transport within the West Sussex Transport Plan.

Way Forward

4.2. The proposed way forward is for ACE to progress the design and traffic assessment on the basis of the strategy outlined in this technical note, with specific comment from WSCC requested on the following areas:

- Confirmation on the above proposed approach to applying WSCC parking standards is appropriate and acceptable.
- Confirmation on the trip rates being accurate and appropriate for use in our analysis (the detail of which is covered in a separate TTN).
- The principle of an additional scenario set using trip rate reductions to reflect the promotion of sustainable transport (the detail of which is covered in a separate TTN).

Appendix 3

Transport Technical Note #4
Public Transport & Active Travel Strategy

FAIRFAX ACQUISITIONS LTD

LAND ADJOINING ANSTY

TECHNICAL TRANSPORT NOTE #4 (PUBLIC TRANSPORT AND ACTIVE TRAVEL STRATEGY)

REPORT REF. 2207280-R04

May 2023

HEAD OFFICE: 3rd Floor, The Hallmark Building, 52-56 Leadenhall Street, London, EC3M 5JE **T** | 020 7680 4088
ESSEX: 1 - 2 Crescent Court, Billericay, Essex, CM12 9AQ **T** | 01277 657 677
KENT: Suite 10, Building 40, Churchill Business Centre, Kings Hill, Kent, ME19 4YU **T** | 01732 752 155
MIDLANDS: Office 3, The Garage Studios, 41-43 St Mary's Gate, Nottingham, NG1 1PU **T** | 0115 697 0940
SOUTH WEST: Unit 2.2a, Temple Studios, Temple Gate, Redcliffe, Bristol, BS1 6QA **T** | 0117 456 4994
SUFFOLK: Suite 3.07, Suffolk Enterprise Centre, 44 Felaw Street, Ipswich, IP2 8SJ **T** | 01473 407 321

Email: enquiries@ardent-ce.co.uk

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Document Control Sheet

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
-	Draft	JE	DH	DRAFT	12/05/2023
-	Final	JE	JS	DH	19/05/2023

Distribution

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1. Introduction

1.1. This Technical Transport Note (TTN) has been produced by Ardent Consulting Engineers (ACE) on behalf of Fairfax Acquisitions Limited, to provide highways input into the public transport and active travel strategy for the proposed development at the Land Adjoining Ansty in Mid Sussex.

1.2. The Local Planning Authority (LPA) is Mid Sussex District Council (MSDC) and the Local Highways Authority is West Sussex County Council (WSCC).

1.3. The location of the proposed development is shown on **Figure 1.1** below.

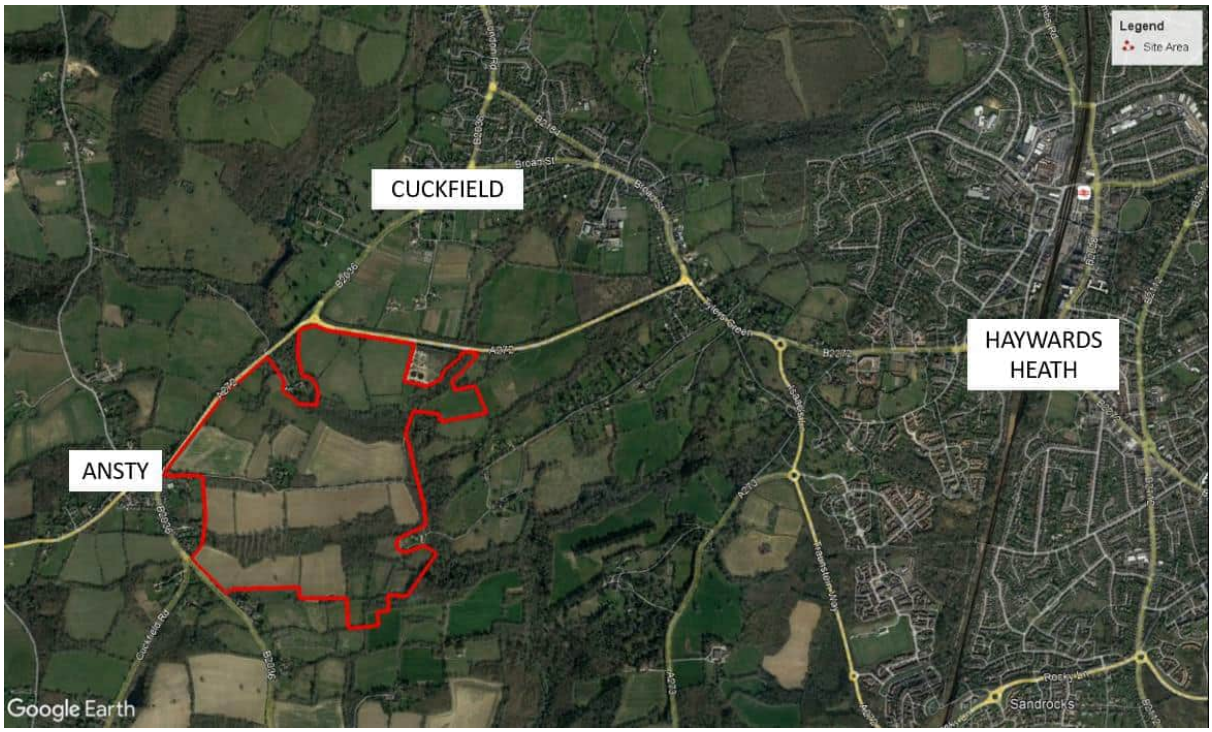


Figure 1.1: Site Location

1.4. A summary of the development is as follows:

- New Settlement comprising up to 1600 high quality new homes, including up to 480 new affordable homes;
- New 2 Form Entry Primary School;
- New village centre with local facilities;
- 99 hectare Country Park for wider public use, offering significant opportunities for Biodiversity Net Gain;
- Enhanced bus services;
- A low carbon sustainable settlement; and

- New sports and recreation facilities as well as amenity greenspace embedded within the garden community.

1.5. This Transport Technical Note (TTN) has been produced to set out the public transport and active travel strategy for the proposed development, including details of existing bus services, possible improvements to these services and wider works which could be provided within the local area to aid active travel for future residents and users of the site.

1.6. The public transport and active transport strategy for the site has been prepared with due regard to the following local / national policy documents and guidance based on promoting non-car access:

- National Planning Policy Framework [NPPF] (MHCLG, July 2021);
- Planning for Walking (CIHT, April 2015);
- Local Transport Note 1/20 [LTN 1/20] – Cycle Infrastructure Design (DfT, July 2020); and
- Mid Sussex District Plan 2014-2031 (MSDC, March 2018).

2. Public Transport

Existing Conditions

2.1. Given the current nature of the site and much of its surroundings, which are predominantly occupied by farming land, existing bus routes are infrequent and have a natural draw towards local centres such as Cuckfield and Haywards Heath to the east, with a through service operating within the smaller settlement of Ansty.

2.2. The closest bus stops to the site are located on Cuckfield Road close to the north-western corner of the site and on Bolney Road within central Ansty to the west. These stops serve route 89, which runs between Horsham and Haywards Heath. Further stops are available om Tylers Green to the east and within Cuckfield to the north, offering access to routes 31/31A and 271. A summary of the local routes is provided in **Table 2.1**.

Service	Route	Frequency			
		Weekday AM Peak	Weekday PM Peak	Saturday	Sunday
31	Cuckfield to Uckfield (via Haywards Heath)	Every 2 hours	One service	Every 2 hours	No service
31A	Cuckfield to Uckfield (via Haywards Heath)	One service	One service	Every 2 hours	No service
89	Horsham to Haywards Heath	One service	One service	No service	No service
271	Crawley to Brighton (via Haywards Heath)	Hourly	One service	Every 2 hours	Every 2 to 2.5 hours

Table 2.1: Local Bus Services

2.3. **Table 2.1** shows that there are routes operating within the vicinity of the site that provide a connection to Haywards Heath. There are no services towards Burgess Hill to the south within the vicinity of the site and would require interchange at Haywards Heath to connect.

2.4. The closest railway stations to the site are located in Haywards Heath and Burgess Hill. Haywards Heath station benefits from 312 cycle parking spaces and offers regular services to key destinations such as London and Brighton, whilst Burgess Hill station is located south on the same rail route. A summary of services from Haywards Heath station is provided in **Table 2.2**, with routes which also pass through Burgess Hill indicated.

Service	Frequency		
	Weekday	Saturday	Sunday
Bedford via London Bridge	2 per hour (all via Burgess Hill)	2 per hour (all via Burgess Hill)	2 per hour (all via Burgess Hill)
Cambridge via London Bridge	2 per hour (all via Burgess Hill)	2 per hour (all via Burgess Hill)	1 per hour (via Burgess Hill)
London Victoria	6 per hour (2 via Burgess Hill)	6 per hour (2 via Burgess Hill)	6 per hour (2 via Burgess Hill)
Brighton	6 per hour (4 via Burgess Hill)	6 per hour (4 via Burgess Hill)	5 per hour (3 via Burgess Hill)
Eastbourne	1 per hour	1 per hour	1 per hour
Ore via Hastings	1 per hour	1 per hour	1 per hour
Littlehampton via Worthing	2 per hour (all via Burgess Hill)	2 per hour (all via Burgess Hill)	2 per hour (all via Burgess Hill)

Table 2.2: Local Rail Services

2.5. **Table 2.2** indicates that there are frequent services to a number of key destinations. Typical travel time from Haywards Heath to London Bridge is 46 minutes, whilst to London Victoria it is 47 or 49 minutes and to Brighton it is 14 to 21 minutes.

Proposed Bus Strategy

2.6. As part of the wider active travel strategy for the site it is proposed that buses will pass through the development to reduce reliance on the private car. It is considered that improved access to local centres Haywards Heath and Burgess Hill would be of particular benefit to future residents due to the amenities and employment opportunities, whilst it would also provide access to regular rail services that connect through to London and Brighton with good travel times.

2.7. A key connection for public transport services will be to help integrate the site with existing facilities to the east within Haywards Heath, including shops and leisure/education/employment facilities/opportunities, but also to rail services from Haywards Heath station, which is operated by Southern Railway with numerous services per hour to key destination such as London and Brighton.

2.8. Given there are currently services operating locally that connect to Haywards Heath, there are opportunities to improve these existing services. Details are to be discussed with WSCC and operators as appropriate, but there are options available to improve bus services: diversion of an existing service to run through the site; increase the frequency of an existing service at key periods; or consideration of additional service. The most appropriate approach and funding contributions is to be discussed to best serve the site, and provide access to the site for the surrounding areas too.

2.9. The existing bus routes close to the site do not offer any access towards Burgess Hill to the south and therefore a connection towards Burgess Hill from the site would provide a benefit to new residents. It is noted that there is a consented science park under construction to the south of the site on the northern fringes of Burgess Hill and a bus service that connects the site to the northern fringes of the town would therefore offer sustainable access to a developing major employment area. Consideration of a new shuttle service may be beneficial to both the Ansty site and the business park and so details of the public transport offering associated with the science park is requested from WSCC in order that due consideration can be given to a contribution towards that service in order that it can call at the Ansty site.

2.10. Details of the masterplan design is incorporated into Technical Transport Note 2 (**ACE Report Reference: 2207280-R02**) but it is proposed that the design of the site will cater for a bus to pass through the new local centre. Bus stops will be located to maximise the number of future residents are within 300m of a bus stop. Mobility hubs within the site will allow residents to cycle to catch a bus if required.

2.11. It will be necessary for the implementation of bus service improvements to be tied to the phased build out of the site. It is therefore anticipated that there will be triggers for implementation of bus service improvements that will be tied to the build out of the site. It is possible for the Travel Plan to be utilised as a tool to help manage the phased roll out of bus service improvements to ensure that services are available to promote bus use from the outset, and to also increase bus patronage in order to make services viable going forward too. Phasing details are to be discussed further in liaison with Highways.

3. Active Travel Strategy

3.1. A key aspect of the masterplan development is to promote permeability through the site and encourage non-car access and movement. This is considered in more detail within Technical Transport Note 2 (**ACE Report Reference: 2207280-R02**) but involve connections with the existing surrounding network and improvements to encourage active travel. The proposed wider active travel strategy will reduce reliance on private car use by making sustainable modes of transport attractive to future residents, and will supplement the bus strategy summarised in **Section 2.0** of this Technical Transport Note.

3.2. The key desire lines associated with the site and surrounding area are to:

- Haywards Heath, including the rail station;
- Cuckfield, including Warden Park Academy;
- Ansty, including the community/leisure facilities at Ansty cricket club; and
- Burgess Hill northern arc mixed-use development located on the northern fringes of Burgess Hill.

3.3. We have explored options to make improvements along each of the above desire lines where feasible within land constraints and commensurate with the scheme impact.

3.4. We have summarised within **ACE Drawing 2207280-SK03** the existing cycle routes in the area and identified locations where there are opportunities to make improvements. The focus of the improvements is to provide a continuous route towards existing key destinations along desire lines.

3.5. The final form of improvement is to be discussed but key to the works is to ensure continuity of route rather than offering shorter sections of wider/narrower route of different types. The improvements will follow the aims of LTN1/20 and can take the form of shared pedestrian/cycle routes to knit together gaps in existing shared pedestrian/cycle routes, whilst there is also the opportunity to explore traffic-free route provision and to enhance the cycle offering with on-road routes to incorporate cyclists. In the context of available land, cycle route choice will reflect the nature of

cyclist flows and whether segregation from vehicles can be delivered or is necessary, in order to offer a benefit that will help achieve a change in mode choice.

3.6. In addition to cyclist improvements, opportunities to promote pedestrian access in the wider area will be explored. There are a number of Public Rights of Way (PRoW) in the vicinity of the site and passing within the site that will be sensitively considered when development the masterplan layout but also when considering the wider active travel strategy.

3.7. It is proposed that there will be improvements to the nearby PRoW within the site to follow the most direct path through upgrades to existing PRoW, whilst there will also be connections made to the country park on the western side of the A272 and to Copyhold Lane too. Some of the routes will serve as recreational and integrate with the masterplan to offer a more comprehensive network of routes than are currently available.

3.8. It is also proposed that a crossing is to be considered over the A272 for pedestrians/cyclists to better connect the site with the existing Ansty population, and allow Ansty to access the site and new range of facilities available, as well as offering a new through route towards Haywards Heath. The final form/position of the crossing is to be discussed further but could act as a gateway feature to Ansty along the A272 and given the levels on the western frontage would offer a high quality connection through to the community facilities at the cricket ground.

4. Summary

Summary

4.1. This note is summarised as follows:

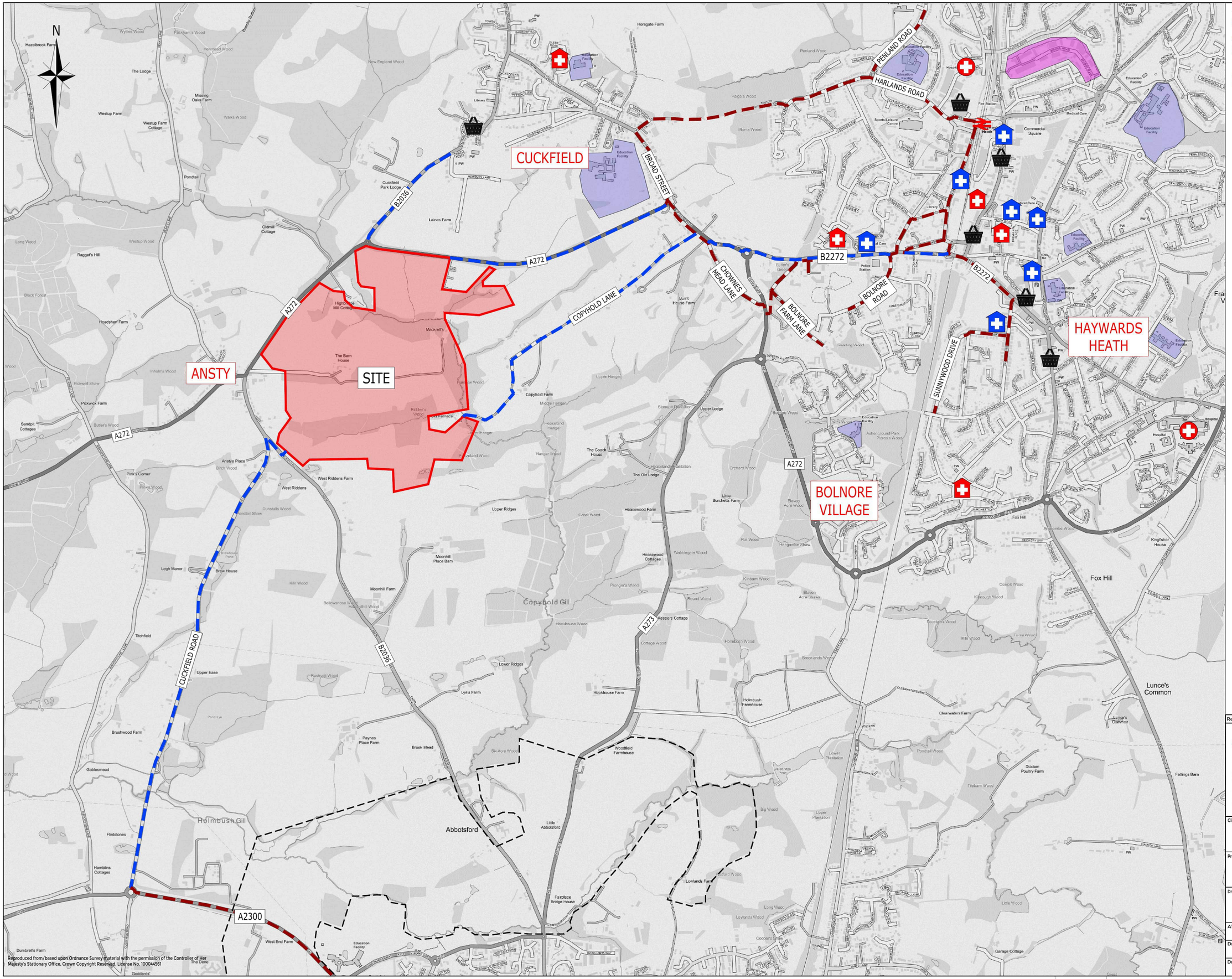
- The proposed public transport strategy will involve consideration of the diversion of current services, new services or improving the frequency of services.
- Buses are to access the site by the north and south roundabouts, and follows the primary and secondary streets to the mobility hubs throughout the site.
- The westernmost mobility hub / bus stop is to be a full mobility hub, with the other mobility hub / bus stops being 'mini-mobility hubs'.
- A total of 10 access points for active travel modes are provided across the site, with an internal network of cycle and pedestrian routes that generally follow the road network.
- Improvements to active travel modes will better connect the site with the surrounding areas, including facilities within Haywards Heath (including the station) and Burgess Hill.
- Improvements to PRoW will be explored to offer recreational route options for prospective site users, including the existing population.
- A crossing over the A272 will be considered to connect the site with Ansty through a traffic-free route.
- There are opportunities for improvements to be made to "fill in gaps" within the existing cycle network to and within Haywards Heath. This will ensure connections to existing facilities and opportunities for travel by train using Haywards Heath station.
- The form of cycle infrastructure will be dictated by land ownership constraints and with continuity of route in mind so that a consistent quality of provision is offered.
- Geometries for pedestrian/cycle infrastructure will be based on a combination of WSCC guidance, Manual for the Streets, Manual for Streets 2 and LTN 1/20 where applicable.

Way Forward

4.2. The proposed way forward is for ACE to progress the public transport and active travel strategy based on the parameters/approach set out above. Specific comment from WSCC on the following matters is sought from WSCC:

- Public transport improvement strategy and form that would be recommended to allow discussions to progress;
- The principle of the cycle improvement strategy to reflect land constraints and prioritise consistency of route to ensure wayfinding is easy and that users are not confused by changes in provision;
- The principle of offering PRoW improvements is acceptable to better the leisure route offering as part of the proposals;
- The principle of a new crossing and gateway feature on the western boundary to better connect the site with Ansty;
- The geometric design and WSCC application of LTN1/20 parameters in order that we can consider these in developing preliminary designs for further comment; and
- Any other matters that should be considered at this stage.

Drawings



KEY:

- THE SITE
- PROPOSED CYCLE ROUTE
- EXISTING CYCLE ROUTE
- EDUCATION FACILITIES
- EMPLOYMENT AREA
- BURGESS HILL NORTHERN ARC MIXED-USE DEVELOPMENT
- RETAIL FACILITIES / SHOPPING PARADES
- HOSPITAL
- DOCTORS
- DENTIST
- RAILWAY STATION

FOR INFORMATION ONLY

WORK IN PROGRESS

Rev	Description	Drn	Chk	App	Date

ARDENT CONSULTING ENGINEERS

Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE

Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client

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Project Title:

LAND AT ANSTY FARM, MID SUSSEX

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CYCLE ROUTE IMPROVEMENT STRATEGY

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Appendix 4

Transport Technical Note #5
Local & Strategic Modelling

ARDENT
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LAND ADJOINING ANSTY

TECHNICAL TRANSPORT NOTE #5 (STRATEGIC & LOCAL MODELLING)

REPORT REF. 2207280-R05

May 2023

HEAD OFFICE: 3rd Floor, The Hallmark Building, 52-56 Leadenhall Street, London, EC3M 5JE **T** | 020 7680 4088
ESSEX: 1 - 2 Crescent Court, Billericay, Essex, CM12 9AQ **T** | 01277 657 677
KENT: Suite 10, Building 40, Churchill Business Centre, Kings Hill, Kent, ME19 4YU **T** | 01732 752 155
MIDLANDS: Office 3, The Garage Studios, 41-43 St Mary's Gate, Nottingham, NG1 1PU **T** | 0115 697 0940
SOUTH WEST: Unit 2.2a, Temple Studios, Temple Gate, Redcliffe, Bristol, BS1 6QA **T** | 0117 456 4994
SUFFOLK: Suite 3.07, Suffolk Enterprise Centre, 44 Felaw Street, Ipswich, IP2 8SJ **T** | 01473 407 321

Email: enquiries@ardent-ce.co.uk

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Document Control Sheet

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1. Introduction

1.1. This Technical Transport Note (TTN) has been produced by Ardent Consulting Engineers (ACE) on behalf of Fairfax Acquisitions Limited, to provide highways input into the masterplanning process for the proposed development at the Land Adjoining Ansty in Mid Sussex.

1.2. The Local Planning Authority (LPA) is Mid Sussex District Council (MDSC) and the Local Highways Authority is West Sussex County Council (WSCC), with National Highways (NH) retaining specific responsibility for the A23 corridor.

1.3. The location of the proposed development is shown on **Figure 1.1** below.

Figure 1.1: Site Location

1.4. A summary of the development is as follows:

- New Settlement comprising up to 1600 high quality new homes, including up to 480 new affordable homes;
- New 2 Form Entry Primary School;
- New village centre with local facilities;
- 99 hectare Country Park for wider public use, offering significant opportunities for Biodiversity Net Gain;
- Enhanced bus services;
- A low carbon sustainable settlement; and
- New sports and recreation facilities as well as amenity greenspace embedded within the garden community.

1.5. This Transport Technical Note (TTN) sets out the approach to the strategic and local junction modelling that will underpin the assessment of the residual traffic generated by the proposed development given regard to the promotion of sustainable modes of transport, in line with the requirement of the National Planning Policy Framework (NPPF).

1.6. The scope includes the suggested choice of scenarios to be modelled, the study area, the parameters involved in detailed capacity assessments and the approach to mitigation, where necessary. This approach will subsequently form part of the basis for the assessment Transport Assessment (TA) accompanying a planning application for these proposals.

1.7. To this end, ACE have undertaken preliminary discussions with WSCC Highways in respect to the development proposals and the scope / approach reflects the outcome of this stakeholder consultation, and seek to continue this engagement to agree the scope of assessment to accompany an upcoming planning submission.

1.8. A separate TTN (**ACE Report Reference: 2207280-R06**) is to be sent to National Highways, to set out the assessment methodology specifically in relation to the Strategic Road Network.

2. Strategic Modelling

Model Version

2.1. The basis for the derivation of traffic flows, taking into account the effects of the proposed development, is Scenario 4Bm1 of the Mid Sussex Strategic Highway Model (MSSHM), which is coded within the SATURN strategic traffic modelling software. The model is maintained by Systra, on behalf of MSDC / WSCC.

2.2. This is a strategic model covering Mid Sussex, as part of its core area, as well as other parts of Sussex and Surrey. The Fully Modelled Area (FMA) comprises Mid Sussex district, Ashdown Forest (Wealden) and parts of Horsham, down to the coast at Brighton. The FMA is shown is **Figure 2.1** below.

2.3. This is a large area, and by necessity, such a model comprises both 'simulation' and 'buffer' coding areas. As a strategic tool, the model is able to take account of delays at intersections coupled with an assignment of the routes taken by traffic, based on a matrix of travel demand and convergence criteria.

2.4. SATURN is a suitable program for deriving appropriate traffic forecasts from a calibrated baseline model, and can be used in appraisals to determine the effects arising from spatial strategies and/or infrastructure schemes.

2.5. It is not a substitute for detailed junction assessment models (such as local capacity modelling via ARCADY, PICADY, LINSIG etc.), which is able to assess the operational effectiveness of junctions. However, strategic modelling an provide useful inputs to that process, by providing traffic flow outputs which can be used to subsequently model junction performance at a 'finer grain' level.

Figure 2.1: Fully Modelled Area of MSSHM

2.6. The current MSSHM model is understood to be in the process of being updated, including amendments to the Reference Case, the Without Development Case and With Development Case. These updates are not yet complete and so, due to timescales available in advance of a planning submission, the latest version of the MSSHM available will be used to assess the strategic traffic effect of the proposed development and provide the necessary inputs for the subsequent tests.

2.7. Also relevant is the recently published National Road Traffic Projections 2022 from the Department of Transport (DfT). This guidance sets out uncertainty surrounding potential future changes in travel patterns and mode shift, with particular regard to the effects of the COVID-19 pandemic. The guidance sets out various modelling scenarios, for example the High Economy and Low Economy scenarios, which reflect two potential scenarios for the long term growth of the economy.

2.8. Of particular relevance is the Behaviour Change Scenario, which estimates the long term effect of the increased prevalence of flexible and remote working, online shopping and reduced driving licence uptake by young people through reductions in person trip rates.

2.9. The modelling scenarios create a range of potential traffic growth between 2025 and 2060 of between 8% and 39%, which could have significant effect on future planning measures for development. Previous versions of strategic models, including the MSSHM, are therefore likely to provide robust traffic figures, including compared to the Core Scenario assumptions posited by the DfT.

2.10. It is not clear whether the DfT guidance is being taken into account as part of the updating of the MSSHM and clarification is sought from WSCC on this matter.

2.11. As part of the pre-application discussions referenced above, ACE have obtained access to the MSSHM in order obtain suitably robust traffic flows from which to undertake a more detailed analysis of the local road network, as is considered in the following chapters.

2.12. Specifically, the latest version of the MSSHM that was produced to assess Scenario 4m1 / 4Bm1 in late 2022, will be used.

Local Plan Evidence Base

2.13. The District Local Plan 2031-2039 evidence base included a Draft Mid-Sussex Transport Study District Plan Review Scenario 4 Report (6 October 2022), which confirms the suitability of the strategic modelling approach, with Para 1.3.1 stating that:

> *"The Mid Sussex Strategic Highway Model (MSSHM) was produced in accordance with standard good practice as set out in the Department for Transport's (DfT) transport analysis guidance (TAG), in particular TAG Unit M3-1 Highway Assignment Modelling. As such, the approaches to data processing, matrices and network production, along with model calibration are consistent with those of similar strategic highways models."*

2.14. Using the MSSHM, this study looks at 2039 development scenarios forming part of the Council's decision making process, including sustainability appraisal, to help inform preparation of the District Plan Review and select a preferred option. The scenarios build on the establishment of a Reference Case and the study assesses proposed Local Plan development and supporting infrastructure under a 2039 assessment horizon.

2.15. As referenced above, as per the DfT guidance, there is significant uncertainty in traffic forecasting which may effect the long term decision making of MSDC / WSCC.

2.16. The MSSHM study considers the following modelled scenarios:

- *2039 Reference Case*
  - The Reference Case represents the road network in 2039, and includes any committed highway infrastructure, development in the district and background growth to this date. This acts as a baseline when assessing the impacts of the development scenarios.
- *2039 Scenario 4 and Scenario 4B*
  - *2039 Scenario 4* assess proposed Local Plan development and supporting infrastructure in 2039.
  - *2039 Scenario 4B* differs from Scenario 4 in that it additionally includes the development site at Ansty.

- *2039 Scenarios 4 and 4B* with Car Trip Rate Reduction
  - *2039 Scenarios 4m1* applies the reductions to Scenario 4
  - *2039 Scenario 4Bm1* applies the reductions to Scenario 4B

Model Amendments

2.17. It has been identified that the 2022 version of the MSSHM assumed that the proposed development would have a total of two access points, however the latest version of the proposed development includes a total of three access points, all of which are proposed to be standard roundabouts.

2.18. As identified with a separate Transport Technical Note (**Ardent Report Reference: 2007280-01**), certain technical elements of the network could benefit from refinement to improve the quality of the model.

2.19. A future version of the model will therefore be undertaken by ACE, amended to include the additional access point, and re-run to account for any potential changes in traffic flows that the additional access point may create. The additional site access would have a very limited impact on the area-wide traffic assignment associated with the development itself and therefore any refinement would only have a relatively localised effect.

2.20. Other amendments will also be included, where appropriate, to provide a more accurate assessment of the traffic effect of the proposed development.

Scenario Selection

2.21. A total of 5 development-specific scenarios will be assessed within the 2022-MSSHM, which are as follows:

- **2019 Baseline** – The calibrated model.
- **2039 Reference Case ('Do Nothing')** – Based on 2019 calibrated model with background and external growth, but with no allocated developments or highways mitigation schemes identified within the Draft Mid Sussex Local Plan brought forward.
- **2039 Reference Case With Development ('Do Something Isolated')** – Based on the Do Nothing scenario with the effect of the development added in isolation from the Draft Mid Sussex Local Plan.
- **2039 Without Development ('Do Minimum')** – Based on Mid-Sussex Study 2039 Scenario 4m1, i.e. 2019 Baseline + Background Growth + MSDC Draft Local Plan.
- **2039 With Development ('Do Something Cumulative')** – Based on Mid-Sussex Study 2039 Scenario 4Bm1, i.e. 2019 Baseline + Background Growth + MDSC Draft Local Plan + Proposed Development.

2.22. The primary comparison will be made between the 2039 Do Nothing and 2039 Do Something Isolated scenarios, which will identify the specific traffic effect of the proposed development, should the draft Mid Sussex Local Plan not come forward, either prior to the proposed development obtaining planning permission, or in the eventuality that the draft plan is not brought forward without significant changes.

2.23. A second comparison will be between the 2039 Do Minimum and 2039 Do Something Cumulative scenarios, which show the specific traffic effect of the proposed development on a baseline that already includes the other Local Plan allocated site. This is essentially a cumulative assessment of the proposed development.

2.24. This two-track comparison methodology will provide the LHA confidence that a comprehensive transport strategy for the proposed development can be delivered regardless of the status of the draft Mid Sussex Local Plan. The results of these comparisons will feed into the mitigation strategy, which is discussed in detail in the next section of this note.

Trip Rate Reductions

2.25. Both The 2039 Do Minimum and 2039 Do Something Cumulative scenarios make an allowance for the application of trip rate reductions "*as a result of home working, internalisation and mode share assumptions for to and from the scenario's significant site developments*" that were included within Scenarios 4m1 and 4Bm1 (extract taken from the Systra Scenario 4 Report). The trip rate reductions assumed for the Crabbet Park, West of Burgess Hill, Sayers Common and the proposed development are as follows:

- 15% reduction on residential unit car trip rates to account for home working, internalisation and future mode share assumptions.
- 80% reduction on primary school car trip rates to account for internalisation of trips.

2.26. It is understood that the above reductions are applied at the matrix level, prior to the route assignment. It is also understood that the refinements being made by Systra to the MSSHM include the exploration of further trip rate reductions.

2.27. No allowance is made within the derivation of the vehicular trips rates to account for the effect of a development-specific Travel Plan nor development-specific public and/or active travel infrastructure. Given that WSCC requires promoters to implement this as a condition of planning, the traffic flows obtained from the above scenarios, and proposed to be utilised in the assessment (as is discussed further below), can therefore be considered robust.

2.28. To reflect the approach with regards to mitigation, specifically the mode shift expected, a further scenario set of all five of the aforementioned development-specific scenarios will be considered by ACE, which will include an appropriate reduction in the trip rates for the proposed development. The reduction will be considered adopting site specific data together with applicable policy/guidance and is anticipated to amount to a reduction of up to 50% in line with the aspirations of Active Travel England (ATC) set out below.

2.29. It is expected that, in its new statutory role, ATE will be expecting to audit development proposals, in helping the organisation to achieve its stated goal of increasing levels of walking and cycling up to 50% of journeys in towns and cities by 2030.

2.30. The input of ATE is welcomed and likely to be focused on spatial and land-use interventions which are capable of shortening and/or substituting car-based journey with active travel trips.

2.31. Information from the Office for National Statistics (ONS) also suggests that there have been further changes in travel choices in relation to home working. In February 2022, the most common hybrid working pattern that workers planned to use was working mostly from home, and sometimes from their usual place of work. 42% reported this, which is an increase from 30% in April 2021. Meanwhile, the proportion who planned to split their time equally between work and home, or work mostly from their place of work and occasionally from home, has fallen. The proportion who planned to return to their place of work permanently fell from 11% in April 2021 to 8% in February 2022.

2.32. The ONS data therefore suggests that there will be a higher proportion of home working than will have been assumed to date within the Model, and so it would be appropriate to consider further adjustments to account for this change.

2.33. Given that development promoters will be implementing a range of sustainable travel improvements, is expected to commit to implementing a Travel Plan (and to monitor compliance with it over the build-out period), and there have been changes in travel behaviour post-COVID19 (further to those previously considered), it is therefore appropriate that its effects should be taken into consideration within the assumptions that underpin the strategic modelling.

Strategic Model Outputs

2.34. The outputs from the MSSHM will be in the form of turning counts for each junction within the traffic study area, as detailed in **Section 3.0**. Turning count data will be provided for the AM and PM peak hours (08:00 – 09:00 and 17:00 – 18:00, respectively). The turning counts will be displayed as traffic flow diagrams for reference within the TA.

3. Operational Modelling

Modelling Software

3.1. Individual junction capacity modelling will be conducted using the PICADY / ARCADY modules of the Junctions10 software package, for priority junctions and priority roundabouts, respectively.

3.2. The LINSIG3 software package will be used for signalised junctions.

Performance Indicators

3.3. Junction capacity is specified with reference to the Ratio of Flow over Capacity (RFC) for priority and roundabout junctions and Degree of Saturation (DoS) for signalised junctions. In doing so, values of 0.85 and 90%, respectively, would typically indicate the practical design capacity at which congestion is likely to begin to occur with values of 1.00 and 100% being the theoretical point at which this congestion is forecast to occur regularly during the assessment period.

3.4. At signalised junctions, an indication of the overall spare capacity at the junction is also given by the Practical Reserve Capacity (PRC) within LINSIG. PRC denotes the maximum desirable flow through a junction and typically a PRC of 0% is reached when one or more approaches to the junction are at 90% of their actual capacity. A DoS of 90% (i.e. a headroom of 10%) therefore indicates that there is still some spare capacity to deal with fluctuations in traffic volumes.

3.5. Queues in Junctions 10 are reported in terms of the average maximum forecast queue during the modelled period (in vehicles or Passenger Car Units (PCUs), as indicated), while queues in LinSig are reported in terms of the Mean Maximum Queue (MMQ), measured in PCUS during the modelled period.

3.6. While the above indicators are industry standard for the review of junctions, it is notable that the indicators provide a purely quantitative perspective of specifically the worst time period. As such, it is not uncommon for high congestion to be reported by capacity modelling but for this congestion to be short lived, in practice.

3.7. Values should also be taken in the context of the NPPF guidance that requires decision-makers to consider the severity of impacts, particularly where other benefits of development are judged to outweigh any transport implications. Assessing the residual impact of development is therefore a matter of judgement based on the

comparison between individual scenarios, recognising (where applicable) the overall benefits of changing network conditions.

Model Geometries and Parameters

3.8. Geometries for the junction models will primarily be based on OS mapping, with topographical data taking preference over OS mapping where available. Geometries for priority junctions will be measured following best practice.

3.9. Where necessary for existing signalised junctions, the signal timing sheets will be requested from WSCC highways, with lane widths and turning radii measured using OS mapping or topographical data as above.

3.10. Full model outputs will be provided for the junctions modelled within the TA accompanying the planning application.

3.11. Capacity modelling will be conducted for the AM and PM peak hours, using the turning count data obtained from the strategic modelling outputs.

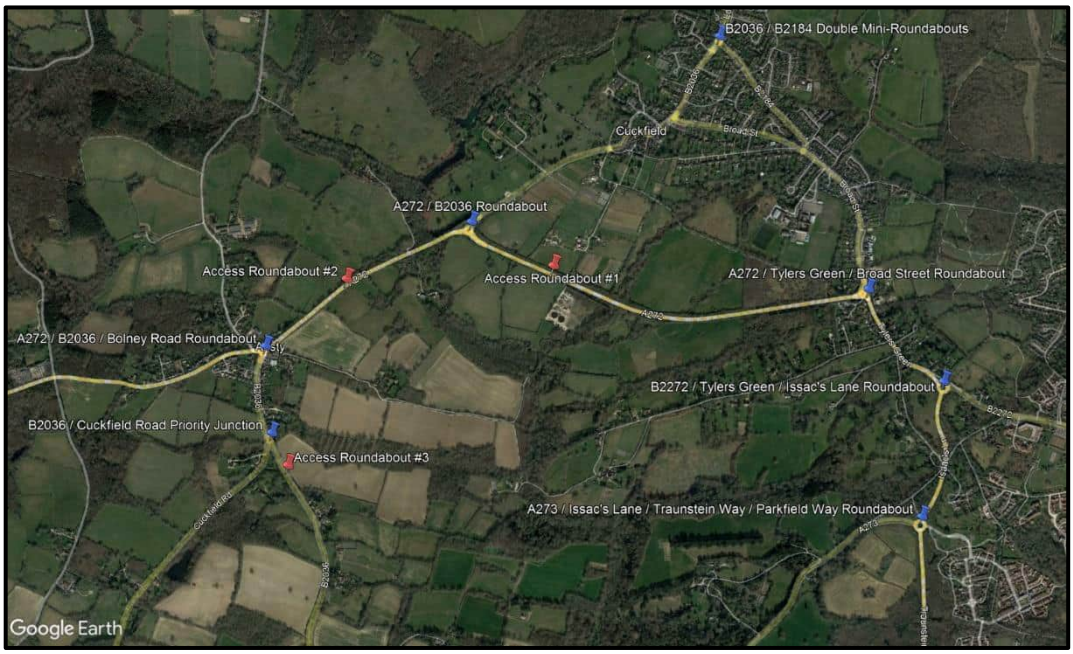
Traffic Study Area

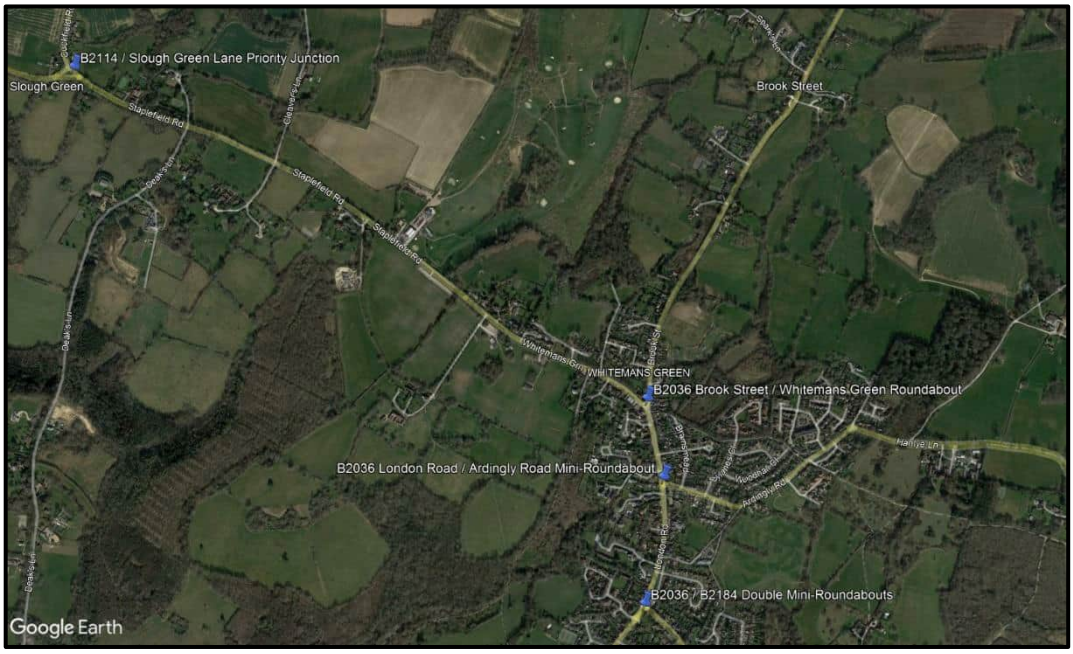
3.12. A comprehensive traffic study area has been considered, with reference to the comparison that would be undertaken using the MSSHM outputs.

3.13. The following junctions will form our proposed study area, as shown on **ACE Drawing 2207280-SK02A**:

- x3 Site Access Roundabouts
- A272 / B2036 / Bolney Road Roundabout
- B2036 / Cuckfield Road Priority Junction
- A272 / B2036 Roundabout
- B2036 / B2184 Double Mini-Roundabouts
- B2272 / Bolnore Road / Paddockhall Road Double Mini-Roundabouts
- B2036 London Road / Ardingly Road Mini-Roundabout
- B2036 Brook Street / Whitemans Green Roundabout
- B2114 / Sloughgreen Lane Priority Junction
- A23 / Bolney Road / Cowfold / Crossroads Roundabout
- Cowfold Road / London Road Priority Junction

- A23 / London Road Roundabout
- A272 / Tylers Green / Broad Street Roundabout
- B2272 / Tylers Green / Issac's Lane Roundabout
- B2272 / Bolnore Road / Paddockhall Road Double Mini-Roundabouts
- B2272 Square Gyratory
- B2272 / B2112 Roundabout
- A273 / Issac's Lane / Traunstein Way / Parkfield Way Roundabout
- A272 / Rocky Lane / Highbank Roundabout
- A272 / Rocky Lane / Rocky Drive Roundabout
- Foxhill Roundabout
- A2300 / Cuckfield Road Roundabout
- A2300 / A273 Roundabout
- A273 / Sussex Way roundabout
- B2036 / A273 / Fairbridge Way Roundabout
- A273 / B2036 Marchants Way Roundabout

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Slough Green
Brook Street
WHITEMANS GREEN
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B2036 / B2184 Double Mini-Roundabouts
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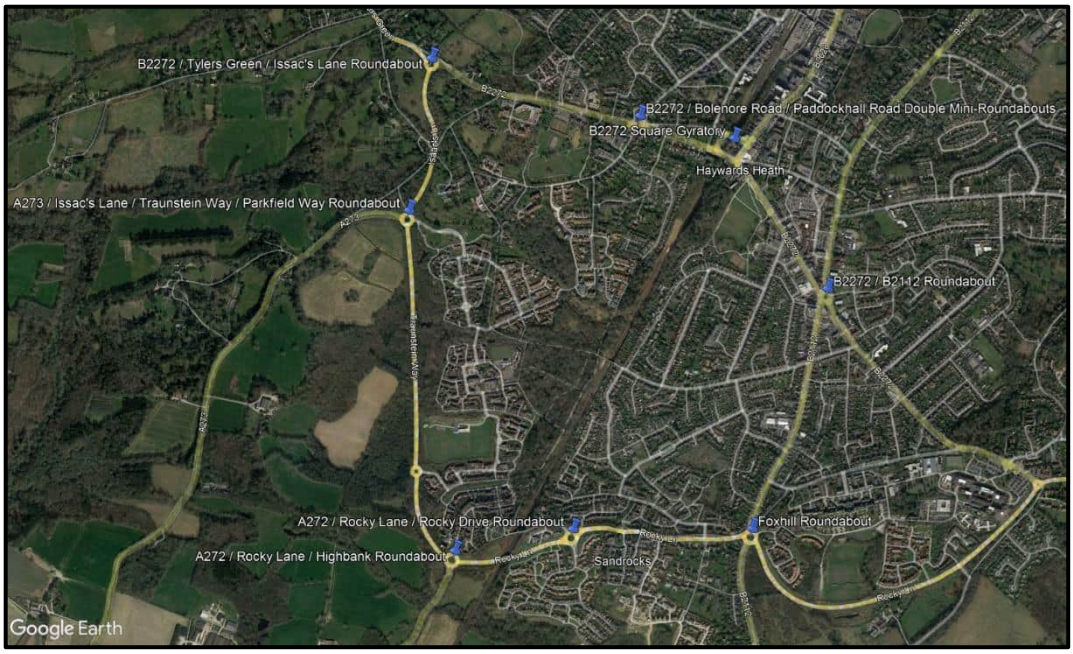
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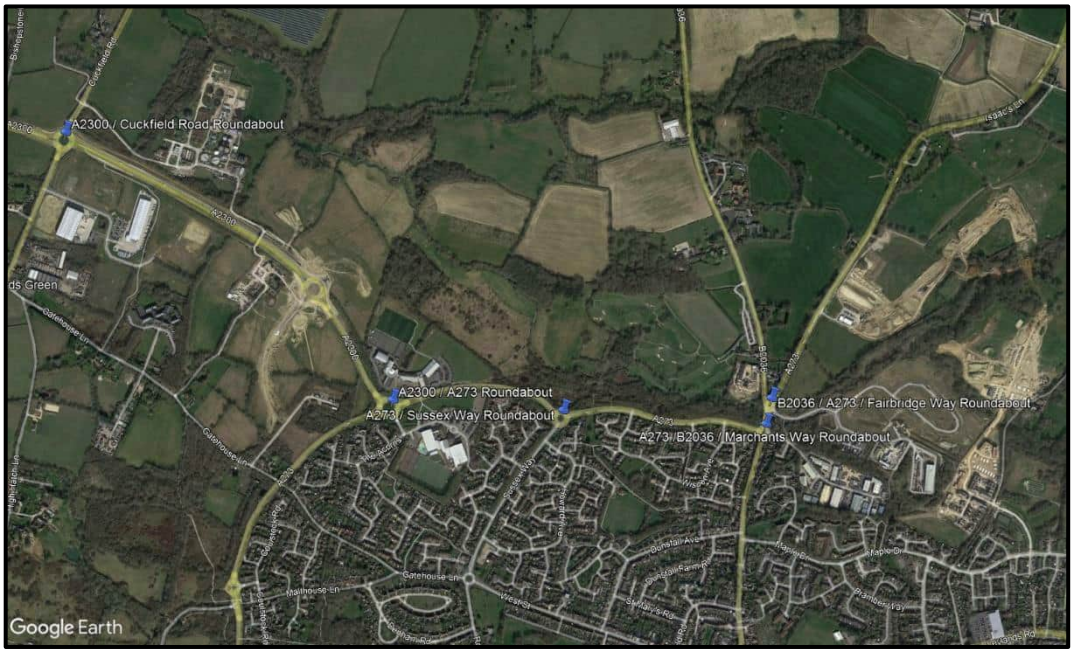
B2272 / Bolenore Road / Paddockhall Road Double Mini-Roundabouts
B2272 Square Gyratory
Haywards Heath
A273 / Issac's Lane / Traunstein Way / Parkfield Way Roundabout
B2272 / B2112 Roundabout
A272 / Rocky Lane / Rocky Drive Roundabout
Foxhill Roundabout
A272 / Rocky Lane / Highbank Roundabout
Sandrocks
Google Earth



Sifting Criteria

3.14. WSCC's typical criterion, originally outlined in the Highway Impacts Assessment section of its Transport Assessment Methodology (21 June 2007) states the scope of a TA should:

"… include all junctions where there is a predicted increase in total entry flows of 30 or more vehicles in any hour - or if the junction already experiences peak period congestion an increase of 10 or more vehicles - as a result of the development proposals"

3.15. It has previously been agreed with WSCC where other strategic developments are concerned that some means of undertaking an initial 'sifting' of the junctions within the study area could be used to focus the assessment at locations where there is likely to be a material change in traffic which could affect the operation of the road network.

3.16. The sifting criteria to be applied would first of all exclude from further analysis any junctions where forecasted traffic volumes reported in 'with development' scenarios (Do Something Isolated and Do Something Cumulative) are lower than under the corresponding 2039 'Without Development' scenarios (Do Nothing and Do Minimum, respectively).

3.17. Of the remaining locations, a graduated approach will be adopted when determining the significance of any increase in forecasted traffic flow, based around the following nested criteria:

- The volume of development related trips at each junction; and
- The percentage impact of development generated traffic at each junction.

3.18. Considering the criteria above in further detail, the following sequenced methodology will be employed in determining the candidate junctions that will be subject to further detailed analysis and modelling.

- **Stage 1** - Number of Predicted New Trips
  - Stage 1 involves examining the absolute trip numbers to determine whether junctions are to be excluded or included within our detailed assessment.
  - Per the WSCC guidance from 2007, a threshold of 30 PCUs (in the peak hour) will be used as the initial screening criteria.

- **Stage 2** - Percentage Impact Analysis
  - Stage 2 then reviews the percentage change in traffic at the junction as a result of the traffic effect of the proposed development.
  - This further filtering allows the absolute traffic figures to be reviewed in context of the existing conditions, where an absolute traffic effect beyond the 30 trip threshold could have a negligible effect compared to existing background traffic.
  - As a 10% change in traffic is considered to be within expected daily fluctuations, per guidance from the Institute of Environmental Assessment,

therefore a robust threshold of a 5% increase in traffic at a junction will be used in this sifting stage.

3.19. Following the filtering process, a list of junctions where the absolute effect of the development and the percentage effect of the development are significant will be produced. These junctions will then be subject to individual junction capacity modelling and potential mitigation designs, per the approach described in the next section of this report.

4. Mitigation Approach

Previous Mitigation Designs

4.1. Initial mitigation design work was conducted by ACE on the four junctions which were identified in the cumulative assessment undertaken pursuant to the Regulation 18 process for the Draft Mid Sussex District Local Plan 2021-2039.

4.2. Initial mitigation schemes were prepared for the following:

- B2036 London Road / Ardingly Road Mini-Roundabout
  - The proposals include the minor relocation of the junction to allow for increased flares on the over-capacity arms.
- B2272 / Bolnore Road / Paddockhall Road Double Mini-Roundabouts.
  - The proposal comprise the signalisation of the Bolnore Road junction and the conversion of the Paddockhall Road junction into a priority junction.

4.3. These mitigation schemes showed that the cumulative impact of background traffic, Draft Local Plan allocations as well as traffic from the proposed development could be accommodated.

4.4. Specific details of the mitigation schemes can be found within **Ardent Report Reference: 2007280-01**.

Evolving Mitigation Strategy

4.5. In their review of the above technical note, WSCC officers noted that:

"The West Sussex Transport Plan policies states that on non-strategic roads mitigation proposals must be directed towards improvements for active or sustainable modes…".

4.6. Paragraph 4.12 of the West Sussex Transport Plan 2022-2036 states that:

"Even if high levels of sustainable transport mode share are achieved at development sites, there is still expected to be an overall increase in the number of trips on the transport network."

4.7. This is consistent with the NPPF which requires an assessment of 'residual' car trips to be undertaken as part of a Transport Assessment.

4.8. However, paragraph 4.14 states that:

> *"While a number of major schemes and junction improvements are planned to mitigate development, developer-led highway mitigation schemes are not intended to resolve pre-existing issues. This can result in gaps between development-led mitigation and those required to address cumulative impacts and/or pre-existing issues. There is also a challenge to ensure that these schemes do not overprovide capacity which could lead to unmanaged traffic growth."*

4.9. Furthermore, paragraph 8.12 of the West Sussex Transport Plan 2022-2036 states:

> *"The County Council would like to see LPAs and developers taking a 'vision-led' approach to development and improvement of the transport network. This approach should place emphasis on place-shaping and creating liveable neighbourhoods with infrastructure to support travel by a range of modes of transport rather than designing to cater for forecast traffic demand."*

4.10. As can be seen above, there is a clear preference for mitigation that prioritises sustainable modes of transport over the provision of vehicular capacity within the West Sussex Transport Plan.

4.11. <u>Proposed Approach</u>

Cumulative Assessment

4.12. For its part, the MSSHM modelling presented in the Draft Mid-Sussex Transport Study District Plan Review Scenario 4 Report had identified a list of junctions which would be 'triggered' by the Local Plan under different scenarios. This has been summarised in **Table 4.1** below.

Table 4.1 List of Junction Where Cumulative Local Plan Impacts are Expected

Junctions List	Scenario 4	Scenario 4B	Scenario 4m1	Scenario 4Bm1
N1 Copthorne A264 / A2220 Copthorne	TRIGGERED	TRIGGERED	OK	OK
N7 Crawley Down B2028 Turners Hill Road / Wallage Lane	TRIGGERED	TRIGGERED	OK	OK
N8 Turners Hill B2110 / B2028 Turners Hill	TRIGGERED	TRIGGERED	TRIGGERED	TRIGGERED
N16 Crawley B2036 Balcombe Rd / B2037 Antlands Ln (CRAWLEY)	TRIGGERED	TRIGGERED	OK	OK
C6 Cuckfield B2036 / Ardingly Road, Whitemans Green	OK	TRIGGERED	OK	TRIGGERED
C7 Ansty A272 / B2036	TRIGGERED	OK	TRIGGERED	OK
C10 Bolney A23 / A272 Bolney Road	TRIGGERED	OK	TRIGGERED	TRIGGERED
C10a Bolney London Road / A272 Cowfold Road	TRIGGERED	OK	OK	OK
C12 Haywards Heath A273 / Isaac's Lane / Traustein Way	TRIGGERED	TRIGGERED	TRIGGERED	OK
C13 Haywards Heath A272 Rocky Lane / B2112	OK	TRIGGERED	OK	
C14 Haywards Heath A272 / Rocky Lane	OK	TRIGGERED	OK	OK
C15 Haywards Heath B2272 / Bolnore Road	OK	TRIGGERED	OK	TRIGGERED
C16 Haywards Heath A272 / B2272	OK	TRIGGERED	OK	TRIGGERED
S2 Burgess Hill A23 / A2300 Eastern Roundabout (planned scheme)	TRIGGERED	TRIGGERED	TRIGGERED	TRIGGERED
S3 Burgess Hill A2300 / Cuckfield Road (planned scheme)	TRIGGERED	TRIGGERED	TRIGGERED	TRIGGERED
S6 Burgess Hill Junction Road / B2113, Burgess Hill	TRIGGERED	TRIGGERED	TRIGGERED	TRIGGERED
S7 Hurstpierpoint B2117 / B2116 Hurstpierpoint	OK	TRIGGERED	OK	OK
S8 Hassocks A273 / B2116 Hassocks (Stonepound)	TRIGGERED	TRIGGERED	TRIGGERED	TRIGGERED
S21 Burgess Hill B2112 / Green Road (LEWES DISTRICT)	TRIGGERED	TRIGGERED	TRIGGERED	TRIGGERED
S22 Burgess Hill Valebridge Road / Junction Road / Leylands Road	TRIGGERED	TRIGGERED	TRIGGERED	TRIGGERED
S34 Burgess Hill B2036 Cuckfield Road / A273 Isaacs Lane	OK	TRIGGERED	OK	OK
S35 Sayers Common A23 / B2118 Sayers Common	OK	TRIGGERED	OK	OK
S45 Burgess Hill A2300 / A273 Jane Murray Way	OK	TRIGGERED	OK	OK

4.13. The above presents a record of where cumulative impacts will require mitigation at a Local Plan level, where Green indicates a 'triggered' junction and red indicates a junction that was not triggered.

4.14. In the event that junction(s) are identified as requiring mitigation as a result of the proposed development on top of the cumulative traffic effect of the Mid Sussex Local Plan (through the comparison of the Do Minimum and Do Something Cumulative scenarios outlined above), ACE proposes to provide indicative 'Full' mitigation schemes.

4.15. Depending on the status of the Local Plan, and the Site allocation within this, the proposed development at Ansty could have some responsibility towards the 'Full' mitigation schemes. However the proposed development would not have sole responsibility of delivering the improvements, particularly where the majority of the existing spare capacity (in the 2019 scenario) is depleted through either background growth (i.e. in the Do Nothing scenario) or through the cumulative effect of draft Mid Sussex Local Plan allocations (i.e. the Do Minimum Scenario).

4.16. Any such requirements for securing the necessary commitment towards the overall mitigation, will need to be pursued by MSDC through a mechanism for apportioning the works, so that they can be proportionate to the relative contribution which each development is making towards the identified need for mitigation; or proportionate mitigation associated with Ansty in isolation depending on the status of the Draft Local Plan.

4.17. What it is important to determine in respect of being able to submit a compliant Transport Assessment to support a planning application for the proposed development at Ansty is the following:

- The share of the proposed development's exposure to the need for delivering the mitigation identified in the cumulative assessment;
- Whether the proposed development is capable of being delivered independently from the delivery of the above strategic mitigation scheme, so that it is not 'burdened' from coming forward or limited in terms of being able to contribute to housing need.

4.18. It is considered that in addressing the first point, Select Link Analysis (SLA) outputs will produced covering each of the strategic developments. These SLA outputs will

provide an understanding, for each of the above junctions listed, of the scale of traffic that emanates from each of the Draft MHDC Local Plan development sites. This includes the proposed development at Ansty.

Stand-Alone Assessment

4.19. However, there may also be a requirement to show the independent delivery of the development, assuming that the draft Mid Sussex Local Plan did not come forward. This 'stand-alone' assessment would be completed assuming the completion of the proposed development, in other words at an 'end-state'.

4.20. As the distribution of trips associated with the proposed development will be affected by the trips from the allocated developments within the Mid Sussex Local Plan, it will be necessary to produce a model run where the proposed development is brought forward in full, but with all elements of the Mid Sussex Local Plan removed from the MSSHM.

4.21. The 2039 Reference Case (the 'Do Nothing' scenario) provides the initial baseline without the draft Mid Sussex Local Plan, and a new model run will be commissioned by ACE to specifically assess the effect of the proposed development in isolation (the 'Do Something Isolated' scenario).

4.22. The traffic flows thereby obtained would allow a 'stand-alone' assessment to identify whether there would be any 'Isolated Development' mitigation required at the above junctions to allow the proposed development to proceed, as an alternative to 'Draft Local Plan' mitigation schemes to accommodate the cumulative effect of the Mid Sussex Local Plan (subject to the mechanism for apportionment discussed above).

Mitigation Design Strategy

4.23. Any further benefits that could be realised from the prioritisation of sustainable modes, through the careful allocation of road space, will also be considered.

4.24. As such, ACE intends to consider two options for each 'Isolated Development' and 'Draft Local Plan' mitigation design being proposed:

- One design that maximises the sustainable transport opportunities, while seeking to retain or minimise any loss in vehicular capacity; and,
- A second design that mitigates for the vehicular traffic effect of the proposed development, with a baseline level of sustainable transport intervention.

4.25. Comment on this approach is sought from WSCC.

Design Criteria

4.26. Relevant design standards will be adopted in the design of the proposed accesses, applied in the consideration of any off-site junction mitigation proposed within the constraints of the existing situation in such circumstances (e.g. topography, extent of highway boundary, etc.)

4.27. In this respect, the following highway standards are referred to:

- CD 123 Geometric design of at-grade priority and signal-controlled junctions;
- CD 122 Geometric design of grade separated junctions;
- Manual for Streets 1 & 2;
- LTN 1/20 Cycle Infrastructure Design;
- Inclusive Mobility – A Guide to Best Practice on Access to Pedestrian and Transport; and,
- West Sussex County Council, Local Design Guide, Supplementary Guidance for Residential Development Proposals.

5. Summary and Way Forward

Summary

5.1. This note is summarised as follows:

- The basis of the traffic assessment of the proposed development will be the latest version of the MSSHM, with amendments made to reflect recent changes and to improve the quality of the model.
- The model will provide turning count outputs for the AM and PM peak hours, which will be used within local junction capacity modelling.
- The comprehensive traffic study area for the proposed traffic assessment has been provided in full.
- A total of 5 scenarios will be run, including 2019 Baseline Year, 2039 Do Nothing, 2039 Do Something Isolated, 2039 Do Minimum and 2039 Do Something Cumulative scenarios.
- The scenarios selected allow for an assessment of the development separate from the draft Mid Sussex Local Plan and in the context of the draft Mid Sussex Local Plan coming forward.
- The two-track assessment methodology allows for the identification of junctions where 'Isolated Development' mitigation schemes are required, and where 'Draft Local Plan' mitigation are required.
- 'Isolated Development' mitigation schemes are required for the proposed development to come forward in isolation, whereas 'Draft Local Plan' mitigation schemes are required for the proposed development to come forward in the context of the draft Mid Sussex Local Plan.
- Responsibility for the delivery of the 'Isolated Development' schemes will be with the proposed development in isolation, whereas delivery of the 'Draft Local Plan' schemes will be shared with all allocated developments within the Mid Sussex Local Plan.
- The mitigation design strategy is to provide two options where mitigation is required; One design that mitigates for the vehicular traffic effect of the development, with sustainable transport improvements provided where possible, and a second design that maximises the sustainable transport opportunities, while seeking to retain or minimise any loss in vehicular capacity.

Way Forward

5.2. The proposed way forward is for ACE to progress the traffic assessment on the basis of the strategy outlined in this technical note, with specific comment from WSCC requested on the following areas:

- The principle of using the 2022 version of the MSSHM.
- The principle of amending the MSSHM to more accurately assess the proposed development.
- The proposed scenario set, including the assessment of the development with and without the draft Mid Sussex Local Plan.
- The proposed traffic study area.
- The proposed mitigation strategy, specifically the mitigation design approach.

Drawings

N

B2036 BROOK STREET/WHITEMANS GREEN ROUNDABOUT

B2036 LONDON ROAD/ARDINGLY ROAD ROUNDABOUT

B2036/B2184 DOUBLE MINI

SITE ACCESS 1

A272/BROAD STREET ROUNDABOUT

B2114/SLOUGHGREEN LANE PRIORITY

A272 TYLERS GREEN/B2272 ROUNDABOUT

A272/B2036 ROUNDABOUT

B2272/BOLNORE ROAD DOUBLE MINI (TO BE A PRIORITY AND SIGNALS)

SITE ACCESS 2

B2272 SQUARE GYRATORY

A272/B2036 ROUNDABOUT

B2272/B2112 ROUNDABOUT

B2036/CUCKFIELD ROAD PRIORITY

A273 BOLNORE ROUNDABOUT

A23/A272 INTERCHANGE/SLIPS

A272 FOXHILL ROUNDABOUT

SITE BOUNDARY

SITE ACCESS 3

A272/ROCKY DRIVE ROUNDABOUT

A2300/CUCKFIELD ROAD ROUNDABOUT

A273/A2300 ROUNDABOUT

A272/ROCKY LANE ROUNDABOUT

A273/SUSSEX WAY ROUNDABOUT

A273 FAIRPLACE HILL NORTH AND SOUTH ROUNDABOUTS

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WORK IN PROGRESS

Rev	Description	Drn	Chk	App	Date
A	DRAWING SHEET NUMBERS REMOVED	ADS	DH	KM	09.05.2023

ARDENT CONSULTING ENGINEERS
Third Floor
The Hallmark Building
52-56 Leadenhall Street
London
EC3M 5JE
Tel: 020 7680 4088
Web: www.ardent-ce.co.uk
E-mail: enquiries@ardent-ce.co.uk

Client: FAIRFAX ACQUISITIONS LTD

Project Title: LAND AT ANSTY FARM, MID SUSSEX

Drawing Title: PRELIMINARY JUNCTION STUDY AREA

A1 Scale	Date	Designed by
NTS	25.04.23	BT
Drawn by	**Checked by**	**Approved by**
BT	DH	KM

Drawing Number: 2207280-SK02 Rev A

Appendix 5

Transport Technical Note #6
National Highways

FAIRFAX ACQUISITIONS LTD

LAND ADJOINING ANSTY

TECHNICAL TRANSPORT NOTE #6 (NATIONAL HIGHWAYS)

REPORT REF. 2207280-R06

May 2023

HEAD OFFICE: 3rd Floor, The Hallmark Building, 52-56 Leadenhall Street, London, EC3M 5JE **T** | 020 7680 4088
ESSEX: 1 - 2 Crescent Court, Billericay, Essex, CM12 9AQ **T** | 01277 657 677
KENT: Suite 10, Building 40, Churchill Business Centre, Kings Hill, Kent, ME19 4YU **T** | 01732 752 155
MIDLANDS: Office 3, The Garage Studios, 41-43 St Mary's Gate, Nottingham, NG1 1PU **T** | 0115 697 0940
SOUTH WEST: Unit 2.2a, Temple Studios, Temple Gate, Redcliffe, Bristol, BS1 6QA **T** | 0117 456 4994
SUFFOLK: Suite 3.07, Suffolk Enterprise Centre, 44 Felaw Street, Ipswich, IP2 8SJ **T** | 01473 407 321

Email: enquiries@ardent-ce.co.uk

Contents

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2. Strategic Modelling 2
3. Operational Modelling 9
4. Mitigation Approach 13
5. Summary and Way Forward 15

Document Control Sheet

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
-	Draft	JS	DH	DRAFT	17/05/2023
-	Final	JS	JS	DH	19/05/2023

Distribution

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1. Introduction

1.1. This Technical Transport Note (TTN) has been produced by Ardent Consulting Engineers (ACE) on behalf of Fairfax Acquisitions Limited, to provide highways input into the masterplanning process for the proposed development at the Land Adjoining Ansty in Mid Sussex.

1.2. The Local Planning Authority (LPA) is Mid Sussex District Council (MDSC) and the Local Highways Authority is West Sussex County Council (WSCC), with National Highways (NH) retaining specific responsibility for the A23 corridor.

1.3. The location of the proposed development is shown on **Figure 1.1** below.

Figure 1.1: Site Location

1.4. A summary of the development is as follows:

- New Settlement comprising up to 1600 high quality new homes, including up to 480 new affordable homes;
- New 2 Form Entry Primary School;
- New village centre with local facilities;
- 99 hectare Country Park for wider public use, offering significant opportunities for Biodiversity Net Gain;
- Enhanced bus services;
- A low carbon sustainable settlement; and
- New sports and recreation facilities as well as amenity greenspace embedded within the garden community.

1.5. This Transport Technical Note (TTN) sets out the approach to the strategic and local junction modelling that will underpin the assessment of the residual traffic generated by the proposed development giving regard to the promotion of sustainable modes of transport, in line with the requirement of the National Planning Policy Framework (NPPF), specifically with regards to the network maintained by National Highways (NH).

1.6. The scope includes the choice of scenarios to be modelled, the study area, the parameters involved in detailed capacity assessments and the approach to mitigation, where necessary. This approach will subsequently form part of the basis for the assessment Transport Assessment (TA) accompanying a planning application for these proposals.

1.7. To this end, ACE have undertaken preliminary discussions with WSCC Highways in respect to the development proposals and the scope / approach reflects the outcome of stakeholder consultation to date.

2. Strategic Modelling

Model Version

2.1. The basis for the derivation of traffic flows, taking into account the effects of the proposed development, is Scenario 4Bm1 of the Mid Sussex Strategic Highway Model (MSSHM), which is coded within the SATURN strategic traffic modelling software. The model is maintained by Systra, on behalf of MSDC / WSCC.

2.2. This is a strategic model covering Mid Sussex, as part of its core area, as well as other parts of Sussex and Surrey. The Fully Modelled Area (FMA) comprises Mid Sussex district, Ashdown Forest (Wealden) and parts of Horsham, down to the coast at Brighton. The FMA is shown is **Figure 2.1** below.

2.3. This is a large area, and by necessity, such a model comprises both 'simulation' and 'buffer' coding areas. As a strategic tool, the model is able to take account of delays at intersections coupled with an assignment of the routes taken by traffic, based on a matrix of travel demand and convergence criteria.

2.4. SATURN is a suitable program for deriving appropriate traffic forecasts from a calibrated baseline model, and can be used in appraisals to determine the effects arising from spatial strategies and/or infrastructure schemes.

2.5. It is not a substitute for detailed junction assessment models (such as local capacity modelling via ARCADY, PICADY, LINSIG etc.), which is able to assess the operational effectiveness of junctions. However, strategic modelling can provide useful inputs to that process, by providing traffic flow outputs which can be used to subsequently model junction performance at a 'finer grain' level.

Figure 2.1: Fully Modelled Area of MSSHM

2.6. The current MSSHM model is understood to be in the process of being updated, including amendments to the Reference Case, the Without Development Case and With Development Case. These updates are not yet complete and so, due to timescales, the latest version of the MSSHM available will be used to assess the strategic traffic effect of the proposed development and provide the necessary inputs for the subsequent tests.

2.7. As part of the pre-application discussions referenced above, ACE have obtained access to the MSSHM in order obtain suitably robust traffic flows from which to undertake a more detailed analysis of the local road network, as is considered in the following chapters.

2.8. Specifically, the version of the MSSHM that was produced to assess Scenario 4m1 / 4Bm1 in late 2022, will be used. As described later within this report, refinements to the MSSHM are to be made, which will likely result in a reduction in trips compared to the above scenario run, and so the initial version of the model can be considered robust.

Local Plan Evidence Base

2.9. The District Local Plan 2031-2039 evidence base included a Draft Mid-Sussex Transport Study District Plan Review Scenario 4 Report (6 October 2022), which confirms the suitability of the strategic modelling approach, with Para 1.3.1 stating that:

> *"The Mid Sussex Strategic Highway Model (MSSHM) was produced in accordance with standard good practice as set out in the Department for Transport's (DfT) transport analysis guidance (TAG) , in particular TAG Unit M3-1 Highway Assignment Modelling. As such, the approaches to data processing, matrices and network production, along with model calibration are consistent with those of similar strategic highways models."*

2.10. Using the MSSHM, this study looks at 2039 development scenarios forming part of the Council's decision-making process, including sustainability appraisal, to help inform preparation of the District Plan Review and select a preferred option. The scenarios build on the establishment of a Reference Case and the study assesses proposed Local Plan development and supporting infrastructure under a 2039 assessment horizon.

2.11. The MSSHM study considers the following modelled scenarios:

- *2039 Reference Case*
  - The Reference Case represents the road network in 2039, and includes any committed highway infrastructure, development in the district and background growth to this date. This acts as a baseline when assessing the impacts of the development scenarios.
- *2039 Scenario 4 and Scenario 4B*
  - *2039 Scenario 4* assess proposed Local Plan development and supporting infrastructure in 2039.
  - *2039 Scenario 4B* differs from Scenario 4 in that it additionally includes the development site at Ansty.
- *2039 Scenarios 4 and 4B* with Car Trip Rate Reduction
  - *2039 Scenarios 4m1* applies the reductions to Scenario 4
  - *2039 Scenario 4Bm1* applies the reductions to Scenario 4B

Model Amendments

2.12. It has been identified that the 2022 version of the MSSHM assumed that the proposed development would have a total of two access points, however the latest version of the proposed development includes a total of three access points, all of which are proposed to be standard roundabouts.

2.13. As identified with a separate Transport Technical Note (**Ardent Report Reference: 2007280-01**), certain technical elements of the network could benefit from refinement to improve the quality of the model.

2.14. A future version of the model will therefore be commissioned by ACE, amended to include the additional access point, and re-run to account for any potential changes in traffic flows that the additional access point may create. The additional site access would have a very limited impact on the area-wide traffic assignment associated with the development itself and therefore any refinement would only have a relatively localised effect.

2.15. Other amendments will also be included, where appropriate, to provide a more accurate assessment of the traffic effect of the proposed development.

Scenario Selection

2.16. A total of 5 development-specific scenarios will be assessed within the 2022-MSSHM, which are as follows:

- 2019 Baseline – The calibrated model.
- 2039 Reference Case ('Do Nothing') – Based on 2019 calibrated model with all background and external growth, but with no allocated developments or highways mitigation schemes within the Draft Mid Sussex Local Plan brought forward.
- 2039 Reference Case With Development ('Do Something Isolated') – Based on the Do Nothing scenario with the effect of the development added in isolation from the Draft Mid Sussex Local Plan.
- 2039 Without Development ('Do Minimum') – Based on Mid-Sussex Study 2039 Scenario 4m1, i.e a + MSDC Draft Local Plan.
- 2039 With Development ('Do Something Cumulative') – Based on Mid-Sussex Study 2039 Scenario 4Bm1, i.e. 2019 Baseline + Background Growth + MDSC Draft Local Plan + Proposed Development.

2.17. The primary comparison will be made between the 2039 Do Nothing and 2039 Do Something Isolated scenarios, which will identify the specific traffic effect of the proposed development, should the draft Mid Sussex Local Plan not come forward, either prior to the proposed development obtaining planning permission, or in the eventuality that the draft plan is not brought forward without significant changes.

2.18. A second comparison will be between the 2039 Do Minimum and 2039 Do Something Cumulative scenarios, which show the specific traffic effect of the proposed development on a baseline that already includes the other Local Plan allocated site. This is essentially a cumulative assessment of the proposed development.

2.19. This two-track comparison methodology will provide the LHA / NH confidence that a comprehensive transport strategy for the proposed development can be delivered regardless of the status of the draft Mid Sussex Local Plan. The results of these comparisons will feed into the mitigation strategy, which is discussed in detail in the next section of this note.

Trip Rate Reductions

2.20. Both The 2039 Do Minimum and 2039 Do Something Cumulative scenarios make an allowance for the application of trip rate reductions "*as a result of home working, internalisation and mode share assumptions for to and from the scenario's significant site developments*" that were included within Scenarios 4m1 and 4Bm1 (extract taken from the Systra Scenario 4 Report). The trip rate reductions assumed for the Crabbet Park, West of Burgess Hill, Sayers Common and the proposed development are as follows:

- 15% reduction on residential unit car trip rates to account for home working, internalisation and future mode share assumptions.
- 80% reduction on primary school car trip rates to account for internalisation of trips.

2.21. It is understood that the above reductions are applied at the matrix level, prior to the route assignment. It is also understood that the refinements being made by Systra to the MSSHM include the exploration of further trip rate reductions.

2.22. No allowance is made within the derivation of the vehicular trips rates to account for the effect of a development-specific Travel Plan nor development-specific public and/or active travel infrastructure. Given that WSCC requires promoters to implement this as a condition of planning, the traffic flows obtained from the above scenarios, and proposed to be utilised in the assessment (as is discussed further below), can therefore be considered robust.

2.23. To reflect the approach with regards to mitigation, specifically the mode shift expected, a further scenario set of all five of the aforementioned development-specific scenarios will be considered by ACE, which will include an appropriate reduction in the trip rates for the proposed development. The reduction will be considered adopting site specific data together with applicable policy/guidance and is anticipated to amount to a reduction of up to 50% in line with the aspirations of Active Travel England (ATC) set out below.

2.24. Furthermore, it should be borne in mind that it is expected that, in its new statutory role, Active Travel England (ATE) will be expecting to audit development proposals, in helping the organisation to achieve its stated goal of increasing levels of walking and cycling up to 50% of journeys in towns and cities by 2030.

2.25. The input of ATE is therefore likely to be focused on spatial and land-use interventions which are capable of shortening and/or substituting car-based journey with active travel trips.

2.26. Information from the Office for National Statistics (ONS) also suggests that there have been further changes in travel choices in relation to home working. In February 2022, the most common hybrid working pattern that workers planned to use was working mostly from home, and sometimes from their usual place of work. 42% reported this, which is an increase from 30% in April 2021. Meanwhile, the proportion who planned to split their time equally between work and home, or work mostly from their place of work and occasionally from home, has fallen. The proportion who planned to return to their place of work permanently fell from 11% in April 2021 to 8% in February 2022.

2.27. The ONS data therefore suggests that there will be a higher proportion of home working than will have been assumed to date within the Model, and so it would be appropriate to consider further adjustments to account for this change.

2.28. Given that development promoters will be expected to commit to implementing a Travel Plan, and to monitor compliance with it over the build-out period, it therefore appropriate that its effects should be taken into consideration within the assumptions that underpin the strategic modelling.

Strategic Model Outputs

2.29. The outputs from the MSSHM will be in the form of turning counts for each junction within the traffic study area, as detailed in **Section 3.0**. Turning count data will be provided for the AM and PM peak hours (08:00 – 09:00 and 17:00 – 18:00, respectively). The turning counts will be displayed as traffic flow diagrams for reference within the TA.

3. Operational Modelling

Modelling Software

3.1. Individual junction capacity modelling will be conducted using the PICADY / ARCADY modules of the Junctions10 software package, for priority junctions and priority roundabouts, respectively.

3.2. The LINSIG3 software package will be used for an signalised junctions.

Performance Indicators

3.3. Junction capacity is specified with reference to the Ratio of Flow over Capacity (RFC) for priority and roundabout junctions and Degree of Saturation (DoS) for signalised junctions. In doing so, values of 0.85 and 90%, respectively, would typically indicate the practical design capacity at which congestion is likely to begin to occur with values of 1.00 and 100% being the theoretical point at which this congestion is forecast to occur regularly during the assessment period.

3.4. At signalised junctions, an indication of the overall spare capacity at the junction is also given by the Practical Reserve Capacity (PRC) within LINSIG. PRC denotes the maximum desirable flow through a junction and typically a PRC of 0% is reached when one or more approaches to the junction are at 90% of their actual capacity. A DoS of 90% (i.e. a headroom of 10%) therefore indicates that there is still some spare capacity to deal with fluctuations in traffic volumes.

3.5. Queues in Junctions are reported in terms of the average maximum forecast queue during the modelled period (in vehicles or Passenger Car Units (PCUs), as indicated), while queues in LINSIG are reported in terms of the Mean Maximum Queue (MMQ), measured in PCUS during the modelled period.

3.6. Values should also be taken in the context of the NPPF guidance that requires decision-makers to consider the severity of impacts, particularly where other benefits of development are judged to outweigh any transport implications. Assessing the residual impact of development is therefore a matter of judgement based on the comparison between individual scenarios, recognising (where applicable) the overall benefits of changing network conditions.

Model Geometries and Parameters

3.7. Geometries for the junction models will primarily be based on OS mapping, with topographical data taking preference over OS mapping where available. Geometries for priority junctions will be measured following best practice.

3.8. Full model outputs will be provided for the junctions modelled within the TA accompanying the planning application.

3.9. Capacity modelling will be conducted for the AM and PM peak hours, using the turning count data obtained from the strategic modelling outputs.

Traffic Study Area

3.10. A comprehensive traffic study area has been considered, with reference to the comparison that would be undertaken using the MSSHM outputs. However, for the purposes of NH specific interest, the relevant junctions that will be included in the proposal study area are as follows:

- A23 / Bolney Road / Cowfold / Crossroads Roundabout
- Cowfold Road / London Road Priority Junction
- A23 / London Road Roundabout

Sifting Criteria

3.11. WSCC's typical criterion, originally outlined in the Highway Impacts Assessment section of its Transport Assessment Methodology (21 June 2007) suggests that the scope of a TA should:

"… include all junctions where there is a predicted increase in total entry flows of 30 or more vehicles in any hour - or if the junction already experiences peak period congestion an increase of 10 or more vehicles - as a result of the development proposals"

3.12. A graduated approach will be adopted when determining the significance of any increase in forecasted traffic flow, based around the following nested criteria:

- The volume of development related trips at each junction; and
- The percentage impact of development generated traffic at each junction.

3.13. Looking at the criteria above in further detail, the following sequenced methodology will be employed in determining the candidate junctions that will be subject to further detailed analysis and modelling.

- Stage 1 - Number of Predicted New Trips
    - Stage 1 involves examining the absolute trip numbers to determine whether junctions are to be excluded or included within our detailed assessment.
    - Per the WSCC guidance from 2007, a threshold of 30 trips will be used as the initial screening criteria, with the threshold of 10 trips used for junctions with known peak hour congestion concerns.

- Stage 2 - Percentage Impact Analysis
    - Stage 2 then reviews the percentage change in traffic at the junction as a result of the traffic effect of the proposed development.
    - This further filtering allows the absolute traffic figures to be reviewed in context of the existing conditions, where an absolute traffic effect beyond the 30 trip threshold could have a negligible effect compared to existing background traffic.
    - As a 10% change in traffic is considered to be within expected daily fluctuations, per guidance from the Institute of Environmental Assessment,

therefore a robust threshold of a 5% increase in traffic at a junction will be used in this sifting stage.

3.14. Following the filtering process, a list of junctions where the absolute effect of the development and the percentage effect of the development are significant will be produced. These junctions will then be subject to individual junction capacity modelling and potential mitigation designs, per the approach described in the next section of this report.

3.15. For consistency, the same thresholds and methodologies will be applied to the junctions maintained by NH.

4. Mitigation Approach

4.1. Proposed Approach

Cumulative Assessment

4.2. For its part, the MSSHM modelling presented in the Draft Mid-Sussex Transport Study District Plan Review Scenario 4 Report had identified a list of junctions which would be 'triggered' by the Local Plan under different scenarios.

4.3. In the event that junction(s) are identified as requiring mitigation as a result of the proposed development on top of the cumulative traffic effect of the Mid Sussex Local Plan (through the comparison of the Do Minimum and Do Something Cumulative scenarios outlined above), ACE proposes to provide indicative 'Draft Local Plan' mitigation schemes.

4.4. Depending on the status of the Local Plan, and the Site allocation within this, the proposed development at Ansty would have some responsibility towards the 'Full' mitigation schemes. However the proposed development would not have sole responsibility of delivering the improvements, particularly where the majority of the existing spare capacity (in the 2019 scenario) is depleted through either background growth (i.e. in the Do Nothing scenario) or through the cumulative effect of draft Mid Sussex Local Plan allocations (i.e. the Do Minimum Scenario).

4.5. What it is important to determine in respect of being able to submit a compliant Transport Assessment to support a planning application for the proposed development at Ansty is the following:

- The share of the proposed development's exposure to the need for delivering the mitigation identified in the cumulative assessment;
- Whether the proposed development is capable of being delivered independently from the delivery of the above strategic mitigation scheme, so that it is not 'burdened' from coming forward or limited in terms of being able to contribute to housing need.

4.6. It is considered that in addressing the first point, Select Link Analysis (SLA) outputs will be obtained, covering each of the strategic developments. These SLA outputs will provide an understanding, for each of the above junctions listed, of the scale of

traffic that emanates from each of the Draft MSDC Local Plan development sites. This includes the proposed development at Ansty.

Stand-Alone Assessment

4.7. However, there may also be a requirement to show the independent delivery of the development, assuming that the draft Mid Sussex Local Plan did not come forward. This 'stand-alone' assessment would be completed assuming the completion of the proposed development, in other words at an 'end-state'.

4.8. As the distribution of trips associated with the proposed development will be affected by the trips from the allocated developments within the Mid Sussex Local Plan, it will be necessary to produce a model run where the proposed development is brought forward in full, but with all elements of the Mid Sussex Local Plan removed from the MSSHM.

4.9. The 2039 Reference Case (the 'Do Nothing' scenario) provides the initial baseline without the draft Mid Sussex Local Plan, and a new model run will be commissioned by ACE to specifically assess the effect of the proposed development in isolation (the 'Do Something Isolated' scenario).

4.10. The traffic flows thereby obtained would allow a 'stand-alone' assessment to identify the whether there would be any 'Isolated Development' mitigation required at the above junctions to allow the proposed development to proceed, as an alternative to 'Draft Local Plan' mitigation schemes to accommodate the cumulative effect of the Mid Sussex Local Plan (subject to the mechanism for apportionment discussed above).

Mitigation Strategy

4.11. Should any of the junctions maintained by NH require mitigation as a result of the cumulative or stand-alone assessments, discussions will be held with NH to determine an appropriate way forward.

5. Summary and Way Forward

Summary

5.1. This note is summarised as follows:

- The basis of the traffic assessment of the proposed development will be the latest version of the MSSHM, with amendments made to reflect recent changes and to improve the quality of the model.
- The model will provide turning count outputs for the AM and PM peak hours, which will be used within local junction capacity modelling.
- The comprehensive traffic study area for the proposed traffic assessment has been proposed, with the junctions relevant to NH highlighted.
- A total of 5 scenarios will be run, including 2019 Baseline Year, 2039 Do Nothing, 2039 Do Something Isolated, 2039 Do Minimum and 2039 Do Something Cumulative scenarios.
- The scenarios selected allow for an assessment of the development separate from the draft Mid Sussex Local Plan and in the context of the draft Mid Sussex Local Plan coming forward.
- The two-track assessment methodology allows for the identification of junctions where 'Isolated Development' mitigation schemes are required, and where 'Draft Local Plan' mitigation are required.
- Should mitigation be required at junctions maintained by NH, discussions will be held with NH to determine a way forward.

Way Forward

5.2. The proposed way forward is for ACE to progress the traffic assessment on the basis of the strategy outlined in this technical note, with specific comment from NH requested on the following areas:

- The principle of using the 2022 version of the MSSHM.
- The proposed scenario set, including the assessment of the development with and without the draft Mid Sussex Local Plan.
- The proposed traffic study area.
- The proposed mitigation strategy.

Transport Assessment Appendix B

Pre-application Responses

Tech Note

Spatial Planning Framework Commission

Job number:	SB612		
Job title:	Land at Ansty Farm Nr Haywards Heath		
To:	Elizabeth Cleaver	**cc:**	Matt Lewis
Topic:	Pre-Application Review: Land at Ansty Farm Nr Haywards Heath, mixed-use development		

	Prepared:	**Checked/Approved**
Name:	Alan Philp	Derek Jones
Date:	31/05/2023	31/05/2023

Throughout this response any **ACTION POINTS** for the applicant are shown as **bold underlined**.

Introduction

1 National Highways has been consulted on a pre-application Technical Transport Note #6 (TTN6) dated May 2023, prepared by Ardent Consulting Engineers (ACE) in relation to a proposed mixed-use development including up to 1,600 residential dwellings as well as educational, commercial and employment uses, on land to west of Haywards Heath and the east of Ansty, West Sussex.

2 The site location is approximately 2 miles to the east of the strategic road network (SRN) at the A23 junction with A272 Bolney Road and Cowfold Road as shown below.

Figure 1: Site Location Plan

Source: Technical Transport Note #6 (Ardent, May 2023)

3 The site falls within the boundary of Mid Sussex District Council (MDSC) who are the local planning authority (LPA), with West Sussex County Council (WSCC) as the local highway authority (LHA).

4 It is our belief that the site is not allocated within the adopted Mid Sussex District Plan 2014-2031 or the emerging Mid Sussex District Plan 2021-2039. Our response has been prepared on this basis. However, **should the applicant contend that the site is included in the current or emerging local plan, appropriate evidence will need to be provided.**

5 There is understood to have been no previous consultation with National Highways in association with this proposed development.

6 The TTN6 sets out the approach to the strategic and local junction modelling that will be undertaken in association with the development and form the basis of the Transport Assessment (TA) accompanying the planning application. Our comments on TTN6 are provided below.

Development Proposals

7 The applicant proposes to submit a planning application for the following:

- New Settlement comprising up to 1,600 high quality new homes, including up to 480 new affordable homes
- New 2 Form Entry Primary School
- New village centre with local facilities
- 99-hectare Country Park for wider public use, offering significant opportunities for Biodiversity Net Gain
- Enhanced bus services
- A low carbon sustainable settlement
- New sports and recreation facilities as well as amenity greenspace embedded within the garden community

Technical Transport Note #6

Policy Context

8 **There is a need for reference and adherence to be made to the following key document:**

- **Department for Transport Circular 01/2022 (DfT 01/2022)**

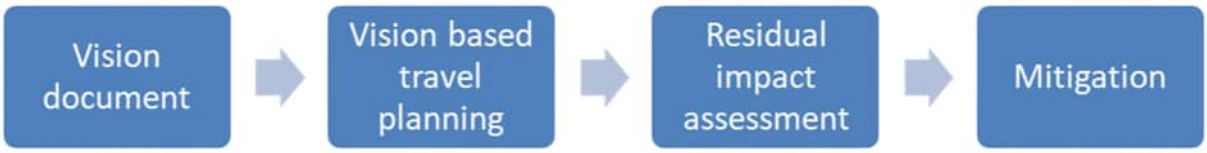
DfT Circular 01/2022

9 The Department for Transport released a new document setting out the policy of the Secretary of State in relation to the SRN on 23 December 2022. The document, entitled 'Strategic Road network and the delivery of sustainable development', replaces the policies in the Department for Transport circular 02/2013 of the same title.

10 The document can be accessed online:

https://www.gov.uk/government/publications/strategic-road-network-and-the-delivery-of-sustainable-development/strategic-road-network-and-the-delivery-of-sustainable-development.

11 The below diagram illustrates the iterative process and evidence base that is now required in line with the circular.



12 With reference the circular, we require the vision for the development. This should describe the aims of the development in terms of transport and explain how the aims are in line with the circular. We expect development promoters to enable a reduction in the need to travel by private car and prioritise sustainable transport opportunities, ahead of capacity enhancements and new connections on the Strategic Road Network.

13 For residential-led developments, due consideration should be given to home and street layouts, broadband infrastructure, safe and secure cycle parking, and access to local amenities and open space in support of these aims, while mobility or micro mobility hubs should be provided in larger schemes. In addition, high-powered and open-access EV charge points should be installed where developments include on-street or communal parking to support the government's objective to end the sale of new conventional petrol and diesel cars/vans by 2030 and HGVs by 2040, and its commitment to decarbonise transport by 2050.

14 **Once the vision and supporting approach are agreed upon, it would be appropriate to move onto an assessment of residual transport impacts. This should be undertaken in line with the circular, particularly paragraphs 47-54. The analysis must relate to the development quantum as per the submitted scoping information.**

15 **Where an assessment indicates that a development would have an unacceptable safety impact or the residual cumulative impacts on the SRN would be severe, the developer must identify when, in relation to the occupation of the development, transport improvements become necessary.**

16 **Whilst two approaches to trip generation are put forward, to align with DfT 01/2022 a single scenario should be put forward as a vision that can be realistically achieved, along with sufficient evidence to demonstrate how that vision can be realised. This could include a package of measures, such as key active travel links to support connections to existing services, provision of mixed-use schemes to assist with internalisation of trips, consideration of connections to public transport, provision of high-quality broadband, ensuring homes have space for a home office, etc.**

17 **We will then review and confirm whether suitable evidence has been supplied to support the vision.**

Strategic Modelling

18 The Mid Sussex Strategic Highway Model (MSSHM) is proposed to be utilised as the basis of the traffic forecasting required in association with the TA. It is noted that the current MSSHM model is in the process of being updated, including adjustments to the Reference Case, Without Development Case and With Development Case. However, as these updates are not available, assessment is proposed to be undertaken using the latest available version of the model which is Scenario 4m1/4Bm1 which is reported to have been produced in late 2022.

19 Scenario 4m1/4Bm1 was produced in support of the Draft Mid Sussex Transport Study District Plan Review Scenario 4. The study assessed 'proposed Local Plan development and supporting infrastructure under a 2039 assessment horizon'.

20 2039 Scenario 4 (model Scenario 4m1) does not include the development at Ansty, while 2039 Scenario 4B (model Scenario 4Bm1) is consistent with Scenario 4 other than the addition of the proposed development at Ansty.

21 It is noted that Scenario 4B model currently has two access points for the development, whereas the current proposal is for three access points. TTN6 notes that ACE will commission additional modelling which considers the additional access point. **ACE highlight that 'other' amendments will also be included where appropriate, however no details are provided; this information is required for review.**

22 **Whilst the use of MSSHM is accepted in principle, subject to satisfactory resolution of the above point, we require a single scenario for the trip generation to apply to the modelling demand matrices.**

Trip Rates and Trip Generation

23 TTN6 notes that Scenarios 4m1/4Bm1 of the MSSHM include trip rate reductions 'as a result of home working, internalisation, and mode share assumptions for to and from the scenario's significant site developments' that were included within Scenarios 4 and 4B.

24 The trip rate reductions assumed for the Crabbet Park, West of Burgess Hill, Sayers Common and the proposed development are as follows:

- 15% reduction on residential unit car trip rates to account for home working, internalisation and future mode share assumptions
- 80% reduction on primary school car trip rates to account for internalisation of trips

25 TTN6 notes that in addition to the above trip rate reduction scenario, a further trip rate scenario is proposed to be considered by ACE which comprises 'a reduction of up to 50% in line with the aspirations of Active Travel England (ATE)'.

26 In *principle* we support the applicant's aspiration to set out a preferred future scenario, which aligns with current policy and prioritises sustainable travel modes and to provide the infrastructure to realise that vision. **However, as noted above, there is a need for one trip generation scenario to be developed which must be supported by appropriate evidence.**

Assessment Scenarios

27 TTN6 proposes that the following assessment scenarios are undertaken:

- 2019 Baseline
- 2039 Reference Case (Do Nothing)
- 2039 Reference Case with Development (with the proposed development but not considering the Draft Mid Sussex Local Plan)
- 2039 Without Development (based on the Draft Mid Sussex Local Plan)
- 2039 With Development (based on Draft Mid Sussex Local Plan plus the proposed development)

28 The year 2039 assessment scenarios are accepted *in principle*, however attention is also drawn to paragraph 37 below.

Committed Developments

29 There is a need to ensure that the modelling reflects any committed developments which are not currently included within the model.

30 **There is need to review the committed developments considering the requirements of DfT Circular 01/2022. There is also a need to agree the committed developments and committed highway schemes with the LPA and to then provide this information to us for review, with**

evidence of the LPA's acceptance. Paragraph 49 of the Circular states 'Assumptions underpinning projected levels of traffic should be clearly stated to avoid the default factoring up of baseline traffic'.

Junction Assessment

31 Junctions 10 software package and LinSig are proposed to be used for the purpose of detailed junction assessment during the AM and PM peak hours and this is accepted.

32 The assessment locations of relevance to National Highways are noted by the applicant to be:

- A23 / Bolney Road / Cowfold / Crossroads Roundabout
- Cowfold Road / London Road Priority Junction
- A23 / London Road Roundabout

33 **In addition to the above identified junctions, we require to understand the forecast traffic impact at the following locations:**

- **A23 / B2115 Sloughgreen Lane / B2115 Cuckfield Lane junction**
- **A23 / Broxmead Lane junction**
- **A23 / A2300 junction**

34 **An absolute threshold of 30 trips to establish the need for junction assessment is not accepted. In addition, percentage impact analysis is not accepted. It should be noted that junction modelling may be required at SRN locations even if the development trip threshold of 30 vehicles is not met, and any percentage impact argument put forward will be disregarded.** The junctions requiring assessment can be determined following agreement of the trip generation, distribution, assignment, and STATS 19 collision analysis.

35 **The base year model for each junction model must be suitably validated, for example with queue data.**

Collision Analysis

36 **At those locations on the SRN where capacity analysis is required, STATS 19 analysis of the relevant SRN location(s) will need to be undertaken for the five years pre-pandemic, as well as the pandemic period.**

Mitigation

37 As previously set out, the development proposals should provide a single scenario for trip generation that is in line with the development vision. **Following the agreement of residual impacts, any required mitigation will need to be formulated in relation to development impacts for the with and without Emerging Local Plan scenarios. The developer must identify when, in relation to the occupation of the development, transport improvements become necessary. Accordingly, interim assessment year(s) are likely to be required.** In due course, it will be possible to consider any mechanism required to secure such mitigation works at the appropriate stage of development build out.

Travel Plan

38 Travel plans are an effective means of incentivising the use of sustainable modes of transport. **To support the overarching vision for the development a Travel Plan will be required.**

39 In line with DfT 01/2022 the Travel Plan must put forward clear targets and commitments to manage down the traffic impact of development and maximise the accessibility of and within sites by walking, wheeling, cycling, public transport and shared travel. Targets for achieving a modal shift to sustainable transport will need to be subject to sustained monitoring and management by an appointed travel plan coordinator.

Next Steps

40 As detailed above, a number of actions have been identified which will require further consideration and additional information to be submitted for review. Please note that the above represents our *current* requirements. As the analysis progresses, it is possible that we will have further requirements.

41 As previously noted, it is important for an agreement on a single trip generation scenario to be reached, which will inform subsequent assessments. The provision of an updated TTN6 to reach this stage of agreement would be welcomed.

42 We look forward to further engagement with the project and being consulted as the proposals develop.

Conclusion

Further information required – ideally at the pre-application stage

WEST SUSSEX COUNTY COUNCIL **DATE: 07th July 2023**

PLANNING SERVICES CONSULTATION

FROM: County Highways Team and Strategic Transport Team (WSCC)

TO: Ardent Consulting Engineers

FAO: Fairfax Developers

[Land Adjoining Ansty _ PRE-98-22]

Highways Comments on the Scoping Report and additional Drawings

TN2 is pretty much a high-level design strategy for the access works and on-site roads. The principle of roundabouts as access points are fine but the form of roundabout is not what would be expected for well trafficked roads such as the A272. The proposed speed limit changes may also be non-starters but that shouldn't preclude the accesses coming forward, it just might mean a more onerous design. The on-site arrangements are just conceptual.

Unless stated otherwise, comments are made against the specific numbered points within the TN.

Technical Transport Note #2 – Masterplanning Highway Design (reference 2207280-R02, dated May 2023)

2.4 – Where are the two proposed bridges? It would be beneficial to understand where these are and how these fit in with the wider movement strategy.

2.5 – The proposed bus routing is noted. Is it intended that an existing bus service is to be re-routed into the development or will this be an entirely new service? The point of asking is that this may then determine how and where the bus arrives and departs into the wider network.

2.9 – There are a quite a number of active travel connections. The ability to improve the surfacing of those connections using public rights of way will need to be assessed along with the potential requirement to include new or improved crossings where these meet the highway.

3.3. – Whilst reference is made to the roundabouts being designed to CD 116 standards, no Design Audit is provided to demonstrate how the design complies with the necessary requirements. Design Audits would be required for all the roundabouts.

As a point of principle, compact roundabouts are shown for the three accesses. CD 116 (2.3.3, note 2) makes reference to compact roundabouts being used where the speed limit is 40mph or less and where traffic levels of 8,000 or less two way AADT are expected on all approaches. No flow information has been provided to determine the suitability of compact roundabouts. Traffic flow information would be required for all of the roundabouts to support the proposed design.

It's also recognised that a lower speed limit is being proposed in association with two of the roundabouts. The highway designs for these roundabouts are then based on the potential 40mph speed limit. It's generally not advised that the design is based on a potential speed limit given the proposed design speed cannot be secured by condition or legal obligation. At this time, no consideration appears to have been given as to whether the proposed speed limit complies with the current WSCC Speed Limit Policy and therefore has any potential to succeed.

For all of the roundabouts, it's recommended that the designs are based upon recorded 85th percentile speeds rather than a future potential speed limit.

It's also advised that Arcady modelling is provided for the roundabouts to ensure that these will operate with sufficient capacity; in all instances where roundabouts are proposed, the context of the road network is one of vehicle movement. The design of the roundabouts should not introduce significant or unnecessary delays.

At present, the use of compact roundabouts has not been appropriately demonstrated. Design Audits demonstrating how the layouts accord with all relevant standards, along with details of traffic flows and 85th percentile speeds will also be required to ensure the form of roundabout is appropriate. Modelling would also be required to demonstrate the suitability of the roundabout design.

3.4 and 3.6 – The comments made within 3.3 above relevant to these points.

3.5 – A Tiger/parallel crossing is not considered appropriate on the A272 in this location. Even if speeds are reduced, due to the expected traffic flows and composition it's highly unlikely that any pedestrian or cyclist would step out and exert their priority over traffic especially in the dark or wet weather. If a crossing is considered necessary here, if would have to be a Toucan. Traffic signals could otherwise be considered for the development vehicle access that then include a suitable crossing phase.

3.8 and 3.10 – The comments made within 3.3 above relevant to these points.

3.12 and 3.14 - The comments made within 3.3 above relevant to these points.

3.13 – It's noted that the internal cycle way ends at the southern roundabout. What consideration has been given to the ability to provide onwards connectivity for cyclists? The consented Northern Arc/Brookleigh development is not a significant distance southwards for cyclists.

4.8 – The widths appear suitable for both primary spine roads. Confirmation would be sought as to what is meant by 'light segregation'; it would typically be expected for a cycle way and footway to be segregated by a low heigh kerb.

The only other point is whether the primary spine road should include measures to prevent this becoming a through route between the B2036 and A272. This is perhaps a matter to be considered as the design progresses but also relies on the proposed accesses not introducing any significant delays that could make this an attractive alternative.

4.13 – For the secondary street with/without bus, there's very little difference compared with the primary road. It may be difficult to clearly identify the hierarchy between primary and secondary streets. In practice, it may be prudent to identify a potential bus routing arrangement and from that determine matters of layout rather than designing significant sections of the development to accommodate a two way bus service.

4.17 – Although a more detailed matter, WSCC are unlikely to adopt carriageways of 4.1 metre width.

4.20 – Again, this is more of a detailed matter but WSCC will require adoptable margins along both sides of a shared surface; the shared surface couldn't simply abut right up to a private garden.

Regarding the drawings,

2207280-005 Revision A (Proposed Roundabout Southern Access) – There are a number of references on this drawing to a potential 30mph speed limit. A reduction to 30mph is unlikely to be acceptable when viewed against the WSCC Speed Limit Policy. The references are also inconsistent with the details in the TN.

2207280-SK01 (Mobility Hub Examples) - the cycle way details shown don't alignment with other cross sections or the text in the TN.

2207280-003 revision B (Proposed Roundabout Northern Access) – where does the footway proposed on the A272 lead to and what existing infrastructure will this eventually tie into?

Again references are made on this drawing to a 30mph speed limit. This is unlikely to comply with the current WSCC Speed Limit Policy and is inconsistent with other aspects of the TN.

Technical Transport Note #3 – Parking Strategy and Trip Rates (reference 2207280-R03, dated May 2023)

2.4 – This requirement has now been superseded by those within Part S of the Building Regulations.

2.6 – In principle, the shared use of car parking would be supported. The actual ability to achieve this would be a matter to be determined as the design progresses.

2.9 – In principle the use of parking behaviour zone 4 for this development wouldn't be supported. Even though details of the bus service and cycle route improvements aren't presented or agreed, the location of the development is such that this is unlikely to allow for significant mode share to justify zone 4 parking levels. It should be noted that certain areas of Haywards Heath are parking behaviour zone 3. Whilst the further reduction of the parking provision by 10% is permissible within the WSCC Parking Guidance, it would still need to be quite clearly demonstrated at the appropriate time how demands will be accommodated to ensure obstructive parking does not become an issue across the site.

2.22 and 2.23.- As noted in 2.4, the requirement in the WSCC Parking Guidance has been superseded by Part s of the Building Regulations.

3.2 – Using those trip rates agreed for the MSDC Local Plan traffic model would be accepted.

3.3 – The suggested scenario will need to be checked with Guy; I don't know what's available or whether this is suitable. If this site is coming forward ahead of the Local Plan, it would be appropriate to test a scenario with only committed growth and identify mitigation without other LP growth. Testing with potential LP development scenarios may be fairly meaningless if the developments included within these come to nothing.

Regarding the assumption for the primary school, how many primary school age pupils are forecast for the development? Will the 2FE school provide a sufficient number of spaces to meet demand from the development?

Additional Comments

A revised drawing has been submitted for the proposed northern roundabout access (drawing number 2207280-003 Revision C). The development roundabout access arrangement appears to remain unchanged. As such, those comments relating to the roundabout design remain applicable.

The revised drawing shows an alternate arrangement for the pedestrian/cyclist parallel crossing. The arrangement now shows a push button parallel crossing rather than a zebra style arrangement. The crossing has also been moved some distance eastwards to coincide with the existing public right of way that crosses the A272.

It remains WSCC Highways view that a push button type crossing is more appropriate for the A272. A key point is that whilst a revised speed limit is indicated in the vicinity of the roundabout, this aspect will be subject to a separate legal process. It would be inappropriate to base the signals design on a future speed limit that may not be realised. However, it is accepted that a standalone crossing can be installed on roads with a speed limit/vehicle speeds of up to 50mph. It may be more appropriate to revise the crossing location and place this nearer to the proposed roundabout where traffic speeds will be reduced.

It is recognised that the crossing as shown would accommodate the existing public right of way. The right of way is only a footpath (cyclists would not be able to continue northwards once they have crossed). It's questionable therefore whether the crossing should or needs to accommodate cyclists too. This is more a matter to be determined as part of the assessment of offsite walking and cycling improvements.

Strategic Transport team Comments on the Active Travel Strategy

Technical Transport Note #4 – public transport and active travel strategy, reference 2207280-r04, dated May 2023)

TN4 depicts the site sustainability in terms of Active Travel mode in a more or less accurate light: few elements will need clarifying. The site promoters will need to present and defend their strategy on how the site will achieve a certain level of modal share for cycles and buses to reduce the traffic levels on the road network between two major towns of the district, i.e Haywards Heath to the North East of the site and Burgess Hill to the South East of the site.

Unless stated otherwise, comments are made against the specific numbered points within the TN.

1.6 - The WS TP, the Mid Sussex LCWIP 2023, the WS Bus Services Improvement Plans were not mentioned in the list; this may raise some concerns as to that some arguments in the follow up of the TN might not align to these guidance documents.

2.1 – Has Ardent investigated the existing of private bus services in Ansty?

2.4 – It would have been useful to have some indications on the bus services available from Ansty to Haywards Heath Rail Station, indications about the car parking spaces available in both Burgess Hill and Haywards Heath Rail stations, indications about the bike spaces available in Burgess Hill?

The table 2.2 seems to show only direct services between Haywards Heath (& Burgess Hill) and the various destinations; the text preceding the table just need to clarify this. Also, Table 2.2 shows only 1 direct service between Haywards Heath and Eastbourne when in fact there are 2 direct services between the two towns. The table will need to be updated accordingly.

2.8 – The following measures :

- Diversion of existing bus services
- Increased frequency
- Additional Services

These measures may have their merits but has Ardent thought about the cost implications, the specific of the deviations, the number of additional services they would like to have. This information are needed before a discussion with WSCC and the bus operators can be initiated.

2.9 – same as in 2.8, the shuttle bus to the science centre / business centre is a sound proposal, however the cost implications and the developer contributions are yet to be defined.

2.11 – The production of a transport plan for the development is something that would be highly supported by the county

3.8 – Can you provide more details on the through route to Haywards Heath? Are there such through route to Burgess Hill?

4.1 – It would be ideal to provide Ardent's understanding of "mobility hub" and "mini mobility hub"

ACE Drawing 2207280-SK03 – in section 3.3, it is mentioned that the desired line has been adopted in the cycle route proposal; could the B2036 Pains flat not be considered as a viable cycle route between Ansty and Burgess Hill? As indicated at the beginning, some attention needs to be given to the Mid Sussex LCWIP; the entirety of the B2036 is considered in the Burgess Hill 20 min cycle neighbourhood; the route is the relatively flat and is the shortest path to the town centre and its rail station. Cuckfield road which is considered in the drawing as a potential cycle route has along it slopes and hills (see Burgess Hill topographic map in Mid Sussex LCWIP). Also, that route has had incident events (see Burgess Hill analysis plan in Mid Sussex LCWIP) according to the cycle route core design principle (i.e. comfort, directness, gradient, safety, connectivity), the B2036 Pains Flat should have been the first choice.

What arrangement will be made to convert the PROW within the development into cycle routes to Haywards Heath?

Strategic Transport team Comments on the Strategic and Local Modelling

Technical Transport Note #5 – STRATEGIC & LOCAL MODELLING, reference 2207280-r05, dated May 2023)

Trip Generation

In principle the choice of using trip generation rates which reflect the strategic Local Plan transport study work is supported. However the current Scenario 5 tests will be using adjusted trip generations in comparison to those used for the Scenario 4/4B tests. The base rates have until now been derived from 85%ile rates and will now move to average trip rates. I do not yet have the revised trip rates but will naturally expect them to be a little lower than used before. The Mid Sussex Scenario 5 work is starting later than I had previously been expected, so I have asked Systra if they can expedite circulation of the updated trip generation rates to allow for harmonisation with individual strategic site transport assessments.

Assumptions on internalisation

Using internalisation assumptions in line with the Local Plan transport study is supported. Further reductions need to be justified against specific provisions on site.

Strategic Modelling

Ref paragraph 2.6 – yes the Mid Sussex Transport study model forecasting is in the process of being updated, with a refresh of reference case assumptions and further analysis of mitigation strategy to develop an evidence base for the District Council's final preferred spatial strategy. This work has started later than was previously envisaged due to the need for the new Council to confirm how

they intended to take the Local plan process forward, following a change of political control in the recent Local elections.

Reference paragraphs 2.7 to 2.9 the recent updates to NTEM version 8.0 provide a range of scenarios for background traffic growth. However for a Local Development plan study which the District Council are undertaking the use of NTEM is confirmed to trip productions external to the District. This would have lesser impact on traffic flows within the study area than for a site or scheme specific model assessment. However the point is correct that previous assessment using NTEM 7.2 would lead to lower external background growth than on most analytical scenarios within NTEM 8.0. Reference paragraph 2.10 I am currently discussing use of NTEM for new scenarios external growth with Systra. NTEM 8.0 household and jobs growth assumptions generally fall short of planned new housing and employment provision in adopted Local Plans across the Southeast, so if we update to NTEM 8.0 from NTEM 7.2 then use of high rather than core growth as a starting point is likely to mitigate against this issue, although currently still under discussion.

Reference paragraphs 2.17 to 2.20 which refer to model amendments. The information provided in the scoping report relating to model amendments was insufficiently clear in relation to amendments off-site. However, following discussion at our MS Team meeting on 28th June, you have provided additional information in an email received on 3 July. I will respond to these points in turn:

1) Access routes across the site. I am happy for these to be modelled in accordance with the masterplan road layouts provided in your report as Appendix A: Indicative Access & Movement Strategy. If the model is coded such that through movement is not possible this will be a maximal stress test of the capacity of the A272/B2036 Ansty mini roundabout and we will be able to see if delay times at this junction exceed the likely time penalty for diverting through the site or if flows increase on other alternative routes.

2) The existing A272/B2036 Ansty mini roundabout has no more than one lane marked at any entry and although there is flaring immediately approaching the entry line this is highly restricted in length. The A272 approaches have islands which do not look to permit two vehicles to queue alongside each other on entry, whilst for the B2036 approach it is likely that no more than one PCUs could do so within the existing lane markings. Coding of lanes and saturation flow for the unimproved junction should reflect this. An improvement is planned at this junction from mitigation for the Goddards Green Science and Technology Park, which is allocated in the adopted Mid Sussex Site Allocations DPD, but is not yet consented nor a live application. The improvement would increase the A272 flares to 2 lanes for a short distance, but is not yet guaranteed to be funded, so the modelling should reflect that development at Ansty may have to provide this mitigation instead should it come forward prior to the Science and Technology Park. To supply updated .dat coding for checking by WSCC

3) Agreed in principle; updated .dat file should be supplied for WSCC to check coding.

4) This is agreed.

5) This is agreed

WSCC will expect to see the revised coding to ensure that this is agreed prior to receiving and commenting on reporting of model runs using this revised coding.

Reference paragraph 2.21 Note that existing Mid Sussex Strategic Highway Modelling forecasts do not include NTEM background growth within Mid Sussex, only committed development growth and external growth. This is suitable for the purpose of modelling a Local Development Plan where strategic allocations, non-strategic allocations, neighbourhood plan allocations and forecasted windfall are included alongside each other to develop a transport strategy suitable for the combined impact, however it is less suitable for assessment of impact of a single strategic site on its own. A single site transport assessment would use a reference case which included NTEM background growth within the District with appropriate adjustments to the NTEM planning assumptions for growth of households and jobs to avoid double-counting of the committed developments modelled. This methodology with a sperate reference case would be needed for a fully robust single site assessment of the proposed Ansty development; a single site assessment using the existing reference case assumptions would have to be acknowledged as optimistic in network conditions and would not be considered to have weight as a robust assessment, as it would effectively assume that no other planned development beyond existing commitments took place within the District other than the proposed Ansty site.

Reference paragraph 2.26 yes trip reductions are made prior to trip assignment but following trip distribution to ensure that they are applied appropriately to trips of different lengths with short distance trips having the greatest reductions and strategic long distance trips not being reduced.

Reference paragraph 2.27 existing TRICS rates do include a high proportion of sites with existing travel plans, although it is acknowledged that older travel plans may be less effectively monitored and enforced than the most recent ones and the extent of this will be variable from location to location.

Reference paragraphs 2.28 and 2.29 a 50% reduction target at Ansty should not be justified against an Active Travel England target for proportion of walking and cycling trips within towns and cities. Ansty will remain a village after this development and separated from the town of Haywards Heath by distance, even when/if linked by new or upgraded walking and cycling infrastructure. A realistic appraisal should be made of what services will be provided within walking distance and cycling distance of homes within the development and existing village and what services would require journeys into Haywards Heath town. Then consider the proportion of these trips which could be made and encouraged to be chosen by cycling and public transport into Haywards Heath. I would not expect a significant proportion of trips between the development and the town centre on foot for utility purposes, although there could be some. Please further consider mode share targets in this light.

Reference paragraphs 2.31 and 2.32, this data is interesting but home working patterns may be continuing to evolve and this may not necessarily be a continuous trend to increase as people and employers have longer experience of both the upsides and downsides of continuous home working and continue to evolve their preferred hybrid working patterns. On this basis further adjustments for this trend should be on a sensitivity scenario basis rather than a part of core forecasting assumptions, to reflect the high level of uncertainty over future trends.

Local/Operational Modelling

The proposed software at paragraphs 3.1 and 3.2 is agreed.

Reference paragraph 3.6 overestimation of peak time period congestion is acknowledged as an issue where synthetic peak profiles are used on congested networks which more typically have a flatter profile within the peak hour. This can be mitigated against where an observed count is available which could be used to generate a site-specific peak profile to be applied against modelled forecast hourly flows. This method is not perfect because the forecasted growth can itself cause further amendment to the traffic profile with further peak spreading but it can be accepted as more realistic than standard synthetic peak profiles which do not necessarily reflect up to date or local traffic network conditions.

Reference paragraph 3.13 bullet list of junctions for operational modelling. I do not wish to add any further locations for consideration.

Reference paragraphs 4.1 to 4.3 the Ardingly Road highway mitigation scheme previously provided showed traffic capacity impacts mitigated by increased carriageway widths at footway crossings which did not accord with WSTP objectives. The proposed scheme was not accepted on this basis.

Reference paragraph 4.24 the first bulleted approach is more appropriate for non-strategic roads, the second could be considered at strategic roads, although it is preferable to improve both sustainable and strategic highway capacity in those locations where site constraints permit. The only likely purpose for the second bullet highway designs on non-strategic roads would be to use as a proxy for costing to provide a sum for contribution to wider sustainable transport measures, although this may be redundant where the first bulleted design principle is successful in identifying a site-specific sustainable improvement.

Transport Assessment Appendix C

Indicative Concept Masterplan

J:\D3012 LAND AT ANSTY, HAYWARDS HEATH\DRAWINGS\07 FABRIK\02 PHOTOSHOP\4 EXPORTED IMAGES

BEECHY BOTTOM PARKLAND RESERVE
CUCKFIELD
HOLY TRINITY CHURCH, CUCKFIELD
WARDEN PARK ACADEMY
CUCKFIELD CRICKET CLUB
B2036
HAYWARDS HEATH
A272
SEWAGE WORKS
ANSTY CRICKET & FOOTBALL CLUB
MACKERELL'S FARM COTTAGE
RECREATION GROUND & PLAY AREA
DEAK'S LANE
COPYHOLD LANE
THE PLACE
ANSTY
COPYHOLD FARM
BOLNEY ROAD
B2036 HARVEST HILL
WEST RIDDENS FARM
CUCKFIELD ROAD
BURGESS HILL

LEGEND

- ANSTY GARDEN COMMUNITY BOUNDARY
- PARKLAND RESERVE BOUNDARY
- DEVELOPMENT BLOCK
- ANCIENT WOODLAND
- EXISTING WOODLAND
- PROPOSED TREES AND WOODLAND
- PROPOSED SUDS

1. SITE ACCESS
2. TREE-LINED SPINE STREET
3. TREE-LINED SECONDARY LOOP
4. TERTIARY STREET
5. FEATURE NODE WITH BUS STOP
6. LOCAL CENTRE
7. RETIREMENT LIVING/CARE HOME
8. 2FE PRIMARY & SEND SCHOOLS
9. EXISTING ACCESS TRACK TO MACKERELL'S FARM COTTAGE RETAINED
10. RETAINED WOODLAND WITH BUFFER
11. RETAINED ANCIENT WOODLAND WITH BUFFER
12. RETAINED HEDGEROW
13. PARKLAND RESERVE
14. RETAINED PROW
15. NEW FOOT/CYCLE LINK
16. SPORTS FACILITY, INCLUDING HOCKEY, OUTDOOR TENNIS, INDOOR TENNIS AND PADEL COURTS
17. PUBLIC OPEN SPACE
18. FORMAL CHILDREN'S PLAY
19. ALLOTMENTS
20. BRIDGE ACROSS WOODED VALLEY
21. MOBILITY HUB

REV.	DESCRIPTION	APP.	DATE
08	Updated footpths	ID	17.10.23
07	Updated footpths	ID	13.10.23
06	Updated accesses and minor amends	ID	04.10.23
05	Parkland reserve in blue boundary	ID	08.09.23
04	Updates to sports facility, northern blocks and northern site access	ID	19.05.23
03	Updates to bus stops	ID	13.04.23
02	Update to sports centre	ID	05.04.23
01	Update to street widths and layout	ID	31.03.23

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PROJECT TITLE
LAND AT ANSTY, HAYWARDS HEATH

DRAWING TITLE
CONCEPT MASTERPLAN

ISSUED BY	London	T: 020 7620 1453	
DATE	MAR 2023	DRAWN	JH
SCALE@A0	1:2,500	CHECKED	ID
STATUS	FINAL	APPROVED	BS

DWG. NO. D3012-FAB-00-XX-DR-Y-009

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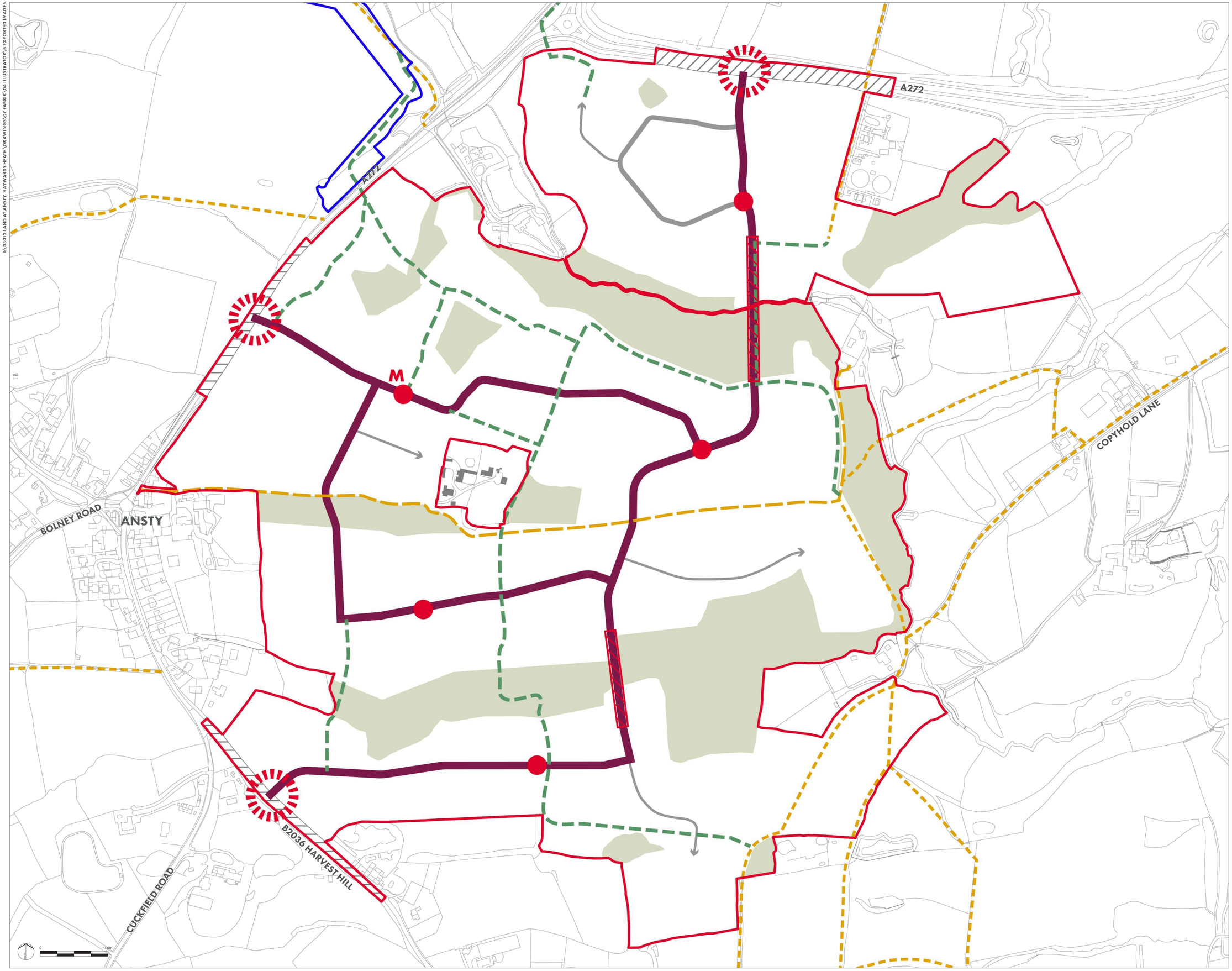
Transport Assessment Appendix D

Indicative Access and Movement Parameter Plan

J:\D3012 LAND AT ANSTY, HAYWARDS HEATH\DRAWINGS\07 FABRIK\04 ILLUSTRATOR\8 EXPORTED IMAGES



LEGEND

- SITE BOUNDARY
- PARKLAND RESERVE BOUNDARY
- AREA REQUIRED FOR SITE ACCESS & VISIBILITY SPLAYS
- EXISTING WOODLAND
- BRIDGE
- ANSTY AVENUE (BUS ROUTE)
- SECONDARY STREET (NO BUS)
- TERTIARY STREET
- EXISTING PUBLIC RIGHT OF WAY RETAINED
- EXISTING VEHICULAR ACCESS TO MACKERELL'S RETAINED
- PROPOSED FOOT/CYCLE ROUTE
- M MOBILITY HUB
- MINI-MOBILITY HUB
- SITE ACCESS

NOTE:

PLAN TO BE READ IN CONJUNCTION WITH SUITE OF PARAMETER PLANS:
D3012-FAB-00-XX-DR-Y-037 (GREEN INFRASTRUCTURE)
D3012-FAB-00-XX-DR-Y-039 (LAND USE)
D3012-FAB-00-XX-DR-Y-040 (BUILDING HEIGHTS)
D3012-FAB-00-XX-DR-Y-045 (DENSITY)

REV.	DESCRIPTION	APP.	DATE
08	Updated NW ped access	BS	20.10.23
07	Updated key regarding mini-mobility hubs	BS	05.10.23
06	Parkland reserve boundary change to blue	BS	04.10.23
05	Amended street hierarchy	BS	13.09.23
04	Added note	BS	15.06.23
03	Added country park boundary	BS	26.05.23
02	Updated site boundary, access area and spine street	BS	25.05.23
01	Updated site boundary and bus stop locations	BS	12.04.23

fabrik

PROJECT TITLE

ANSTY GARDEN COMMUNITY

DRAWING TITLE

ACCESS & MOVEMENT PARAMETER PLAN

ISSUED BY	London	T: 020 7620 1453	
DATE	APR 2023	**DRAWN**	ID
SCALE@A1	1:2,500	**CHECKED**	ID
STATUS	FINAL	**APPROVED**	BS

DWG. NO. D3012-FAB-00-XX-DR-Y-036

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Transport Assessment Appendix E

Enterprise Rent-a-car Letter of Intent

14th September 2023

To Jamie Symington at Ardent CE

Dear Jamie,

Thank you for your time today. Please find this letter as an expression of intent to provide Enterprise Car Club at the Ansty West Sussex site.

Enterprise Car Club will provide the following at this site:

- An agreed number of vehicles across the site at mobility hubs.
- An agreed number of Year's Free Membership of Enterprise Car Club to residents, giving them access to over 2500 vehicles across the UK.
- An agreed amount of driving credit to get residents using the service.
- Use of our fleet in local and national network.
- Briefing of sales staff and promotional material for the development.
- 24/7 Clubhouse customer service team.
- 24/7 Booking Tool on web desktop, android, and apple devices.
- Vehicle insurance.
- Vehicle Maintenance and Valeting.
- Creation of reports and statistics for the developer and local council.
- Discount for active car club members with Enterprise Rent-A-Car.

.

Yours sincerely

Tony Barnard
Head of Car Club Southeast Region – Enterprise Car Club

Transport Assessment Appendix F

TRICS Outputs

Calculation Reference: AUDIT-746001-230811-0811

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : M - MIXED PRIVATE/AFFORDABLE HOUSING
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	OX	OXFORDSHIRE	1 days
	SC	SURREY	2 days
	WS	WEST SUSSEX	2 days
03	SOUTH WEST		
	SM	SOMERSET	1 days
	WL	WILTSHIRE	1 days
04	EAST ANGLIA		
	NF	NORFOLK	5 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 100 to 544 (units:)
Range Selected by User: 100 to 1874 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 17/03/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Wednesday	9 days
Thursday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	9 days
Directional ATC Count	3 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Neighbourhood Centre (PPS6 Local Centre)	12

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	1
Village	11

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Secondary Filtering selection:

Use Class:

C3	12 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	7 days
5,001 to 10,000	3 days
10,001 to 15,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	4 days
50,001 to 75,000	2 days
75,001 to 100,000	2 days
125,001 to 250,000	4 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

1.1 to 1.5	11 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	12 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	12 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 NF-03-M-32 MIXED HOUSES & FLATS NORFOLK
MACMILLAN WAY
NEAR NORWICH
LITTLE PLUMSTEAD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 240
Survey date: WEDNESDAY 12/09/18 Survey Type: DIRECTIONAL ATC COUNT

2 NF-03-M-52 MIXED HOUSES NORFOLK
STALHAM ROAD
HOVETON

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 120
Survey date: WEDNESDAY 21/09/22 Survey Type: DIRECTIONAL ATC COUNT

3 NF-03-M-55 MIXED HOUSES NORFOLK
CAISTOR LANE
NEAR NORWICH
PORINGLAND
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 150
Survey date: WEDNESDAY 28/09/22 Survey Type: MANUAL

4 NF-03-M-58 MIXED HOUSES NORFOLK
PIGOT LANE
NEAR NORWICH
FRAMINGHAM EARL
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 100
Survey date: WEDNESDAY 21/09/22 Survey Type: DIRECTIONAL ATC COUNT

5 NF-03-M-61 MIXED HOUSES & FLATS NORFOLK
LONG LANE
NEAR NORWICH
MULBARTON
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 180
Survey date: WEDNESDAY 28/09/22 Survey Type: MANUAL

6 OX-03-M-02 MIXED HOUSES & FLATS OXFORDSHIRE
GODSTOW ROAD
OXFORD
WOLVERCOTE
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 117
Survey date: WEDNESDAY 20/10/21 Survey Type: MANUAL

7 SC-03-M-11 SEMI-DETACHED & FLATS SURREY
HEWITT ' S ROAD
CRANLEIGH

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 110
Survey date: MONDAY 17/10/22 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 SC-03-M-14 MIXED HOUSES & FLATS SURREY
CHOBHAM LANE
LONGCROSS

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 179
Survey date: WEDNESDAY *16/11/22* *Survey Type: MANUAL*

9 SM-03-M-01 DETACHED & TERRACED HOUSES SOMERSET
MILTON HILL
TAUNTON
MONKTON HEATHFIELD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 135
Survey date: WEDNESDAY *26/09/18* *Survey Type: MANUAL*

10 WL-03-M-04 MIXED HOUSES & FLATS WILTSHIRE
WARNEFORD CRESCENT
NEAR SALISBURY
LONGHEDGE
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 544
Survey date: THURSDAY *18/11/21* *Survey Type: MANUAL*

11 WS-03-M-20 MIXED HOUSES & FLATS WEST SUSSEX
OLD GUILDFORD ROAD
HORSHAM
BROADBRIDGE HEATH
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 121
Survey date: THURSDAY *24/10/19* *Survey Type: MANUAL*

12 WS-03-M-26 MIXED HOUSES & FLATS WEST SUSSEX
MILL STRAIGHT
SOUTHWATER

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 193
Survey date: WEDNESDAY *16/03/22* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
HF-03-M-01	11/06/21	Covid

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	182	0.079	12	182	0.296	12	182	0.375
08:00 - 09:00	12	182	0.135	12	182	0.377	12	182	0.512
09:00 - 10:00	12	182	0.146	12	182	0.138	12	182	0.284
10:00 - 11:00	12	182	0.101	12	182	0.121	12	182	0.222
11:00 - 12:00	12	182	0.119	12	182	0.122	12	182	0.241
12:00 - 13:00	12	182	0.129	12	182	0.120	12	182	0.249
13:00 - 14:00	12	182	0.129	12	182	0.126	12	182	0.255
14:00 - 15:00	12	182	0.137	12	182	0.179	12	182	0.316
15:00 - 16:00	12	182	0.242	12	182	0.156	12	182	0.398
16:00 - 17:00	12	182	0.271	12	182	0.161	12	182	0.432
17:00 - 18:00	12	182	0.317	12	182	0.142	12	182	0.459
18:00 - 19:00	12	182	0.237	12	182	0.118	12	182	0.355
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.042			2.056			4.098

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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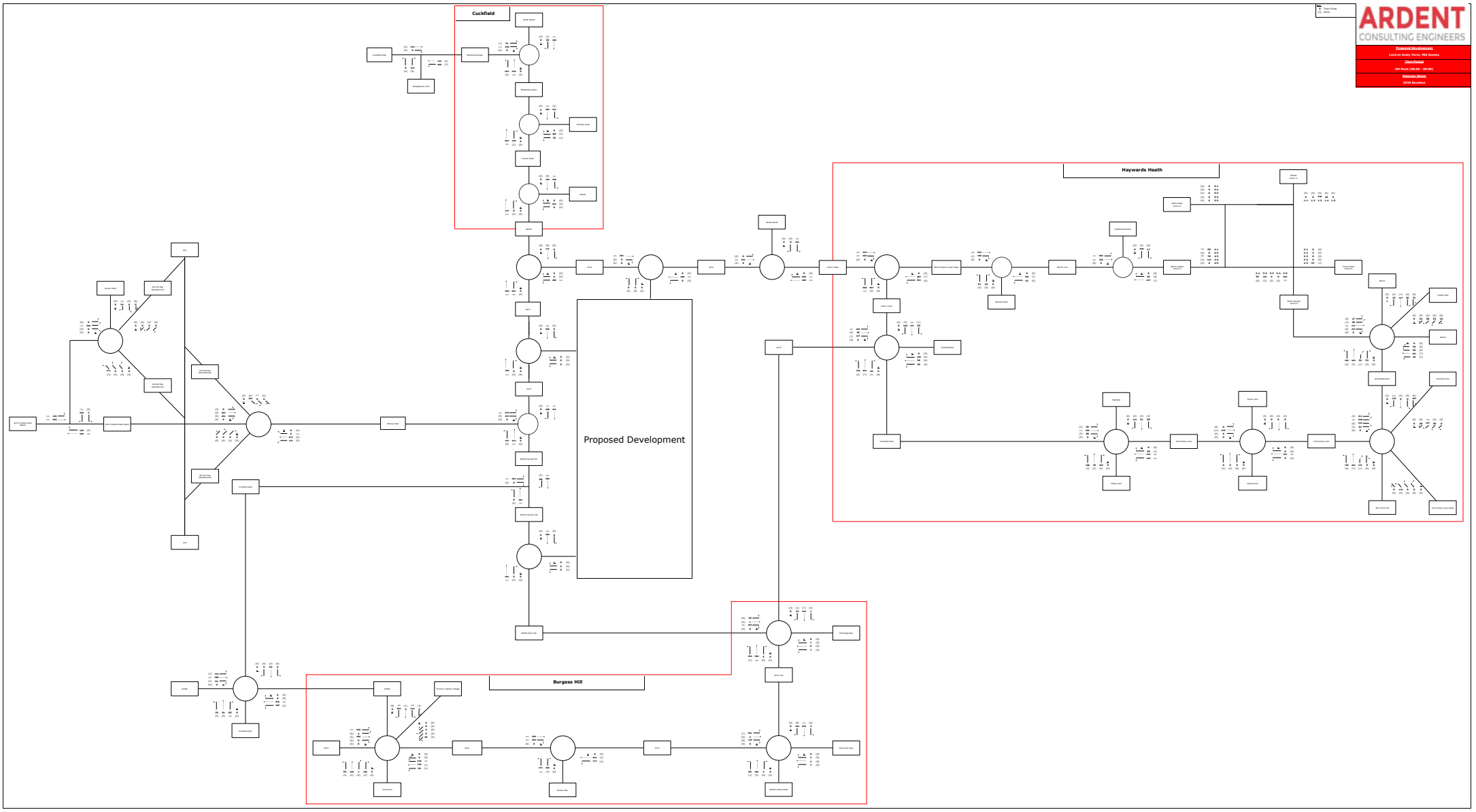
Parameter summary

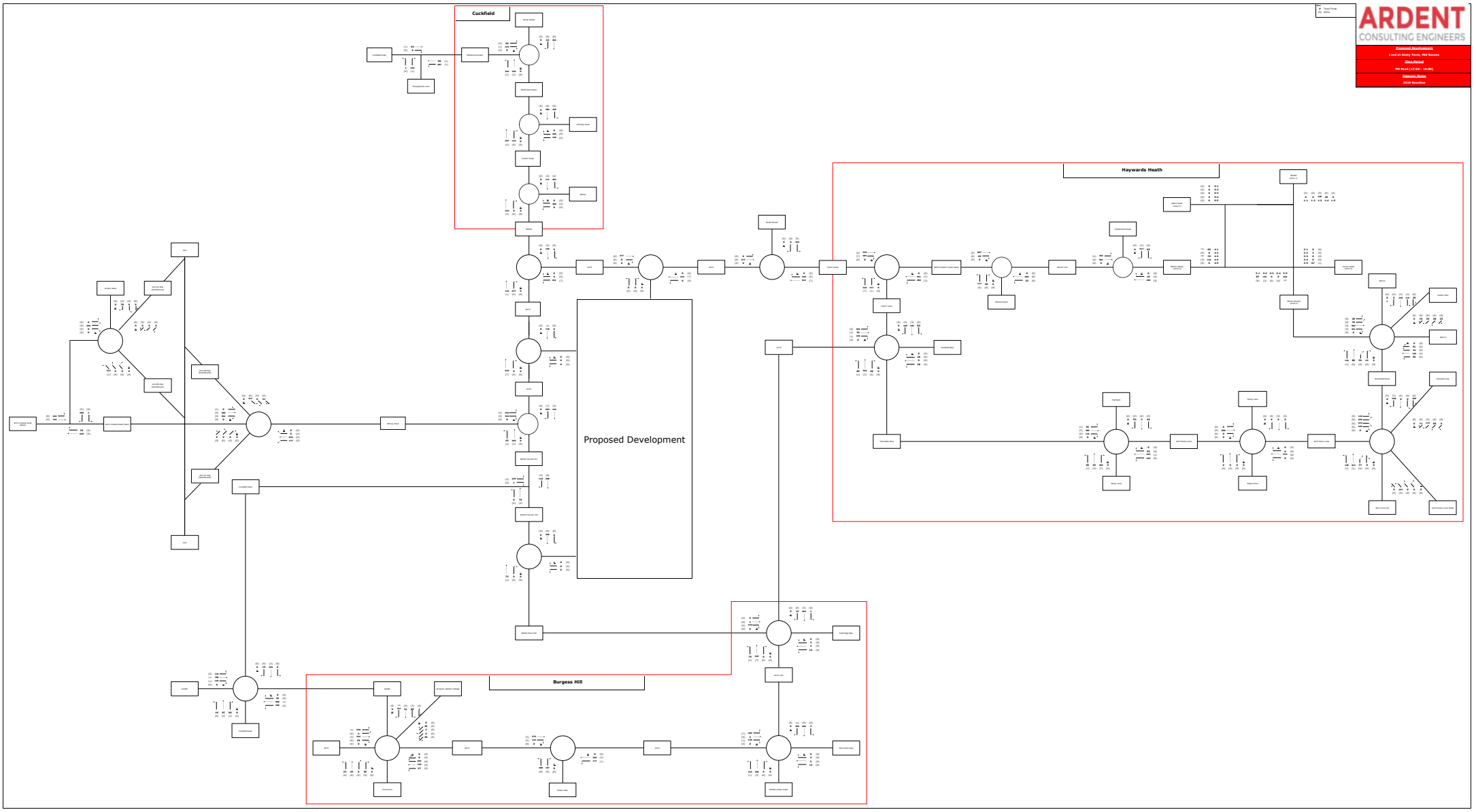
Trip rate parameter range selected:	100 - 544 (units:)
Survey date date range:	01/01/15 - 17/03/23
Number of weekdays (Monday-Friday):	13
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	24
Surveys manually removed from selection:	0

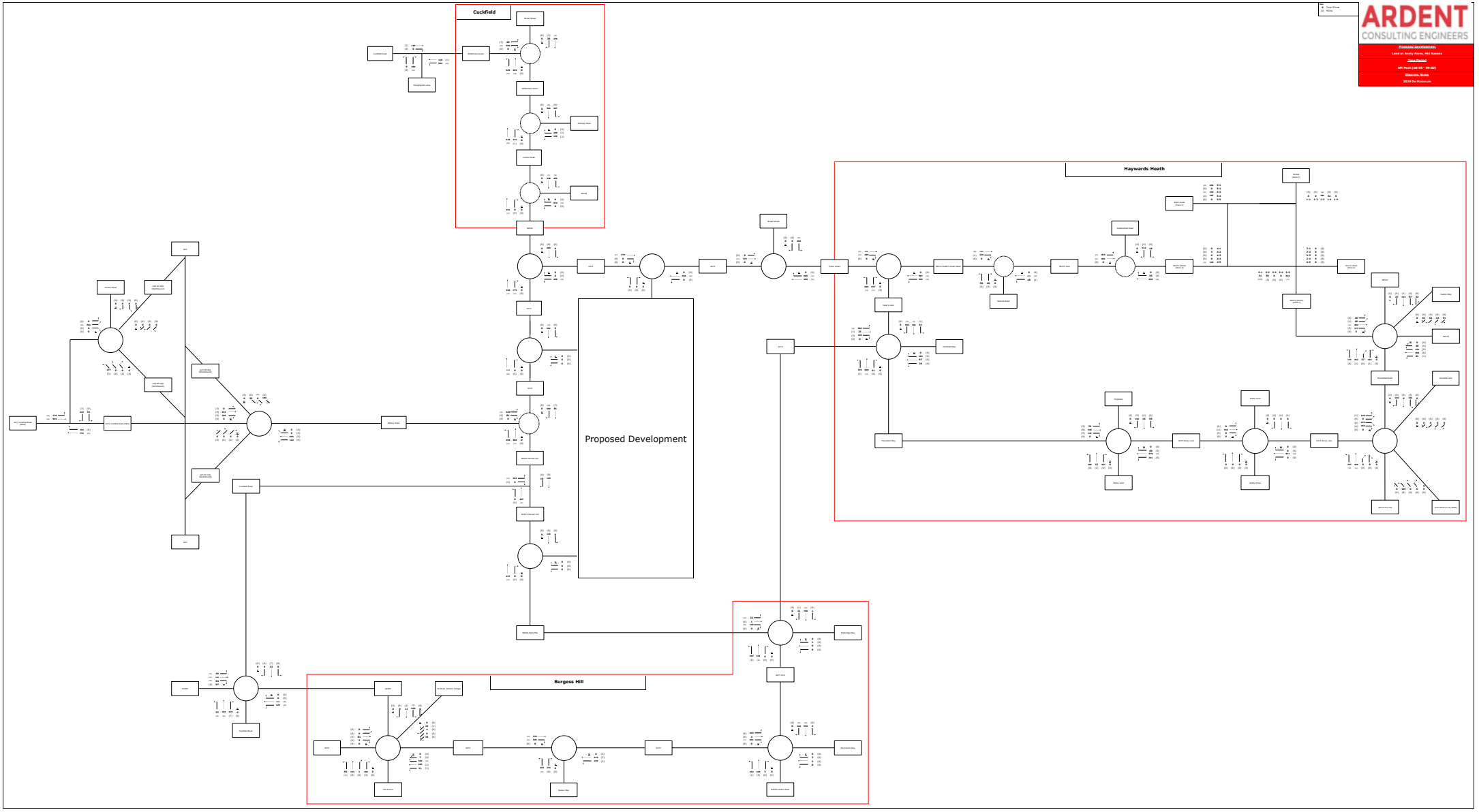
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

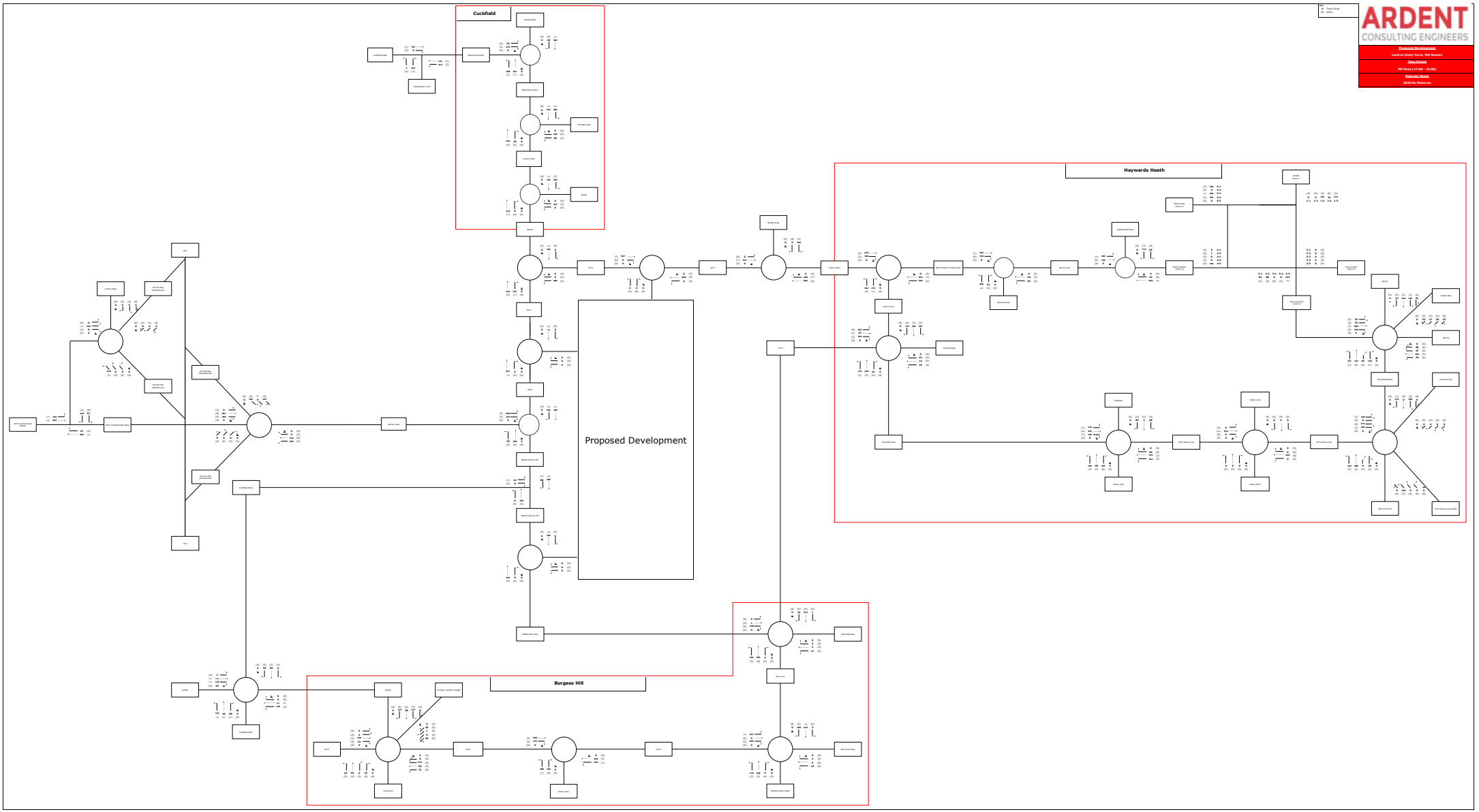
Transport Assessment Appendix G

Traffic Flow Diagrams


Cuckfield
Haywards Heath
Burgess Hill
Proposed Development
Total Flow (l/s): 442l/s
ARDENT
CONSULTING ENGINEERS
Flooding Mechanism
Land at Scaby Farm, Mid Sussex
Time Period
AM Peak (08:00 - 09:00)
Return Period
2019 Baseline


Cuckfield
Haywards Heath
Burgess Hill
Proposed Development
Key
Total Flow (2) Hints
ARDENT
CONSULTING ENGINEERS
Proposed Development
Land at Scaby Farm, Hal Sussex
Time Period
PM Peak (17:00 - 18:00)
Scenario Name
2039 Baseline


Cuckfield
Haywards Heath
Proposed Development
Burgess Hill
Total Flow (2) 1930s
ARDENT
CONSULTING ENGINEERS
Transport Assessment
Land at Scaby Farm, Mid Sussex
Time Period
AM Peak (08:00 - 09:00)
Forecast Year
2039 Do Minimum

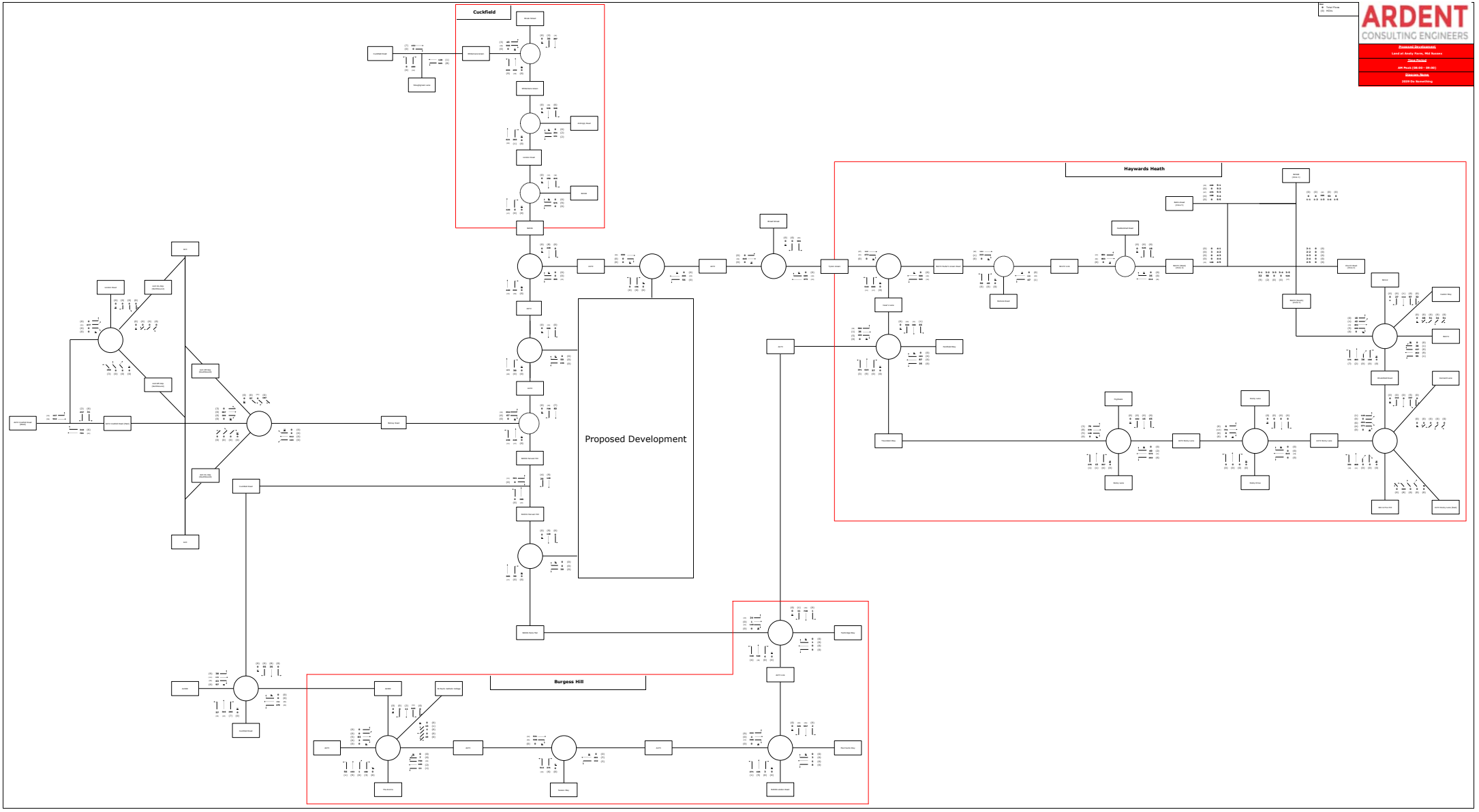


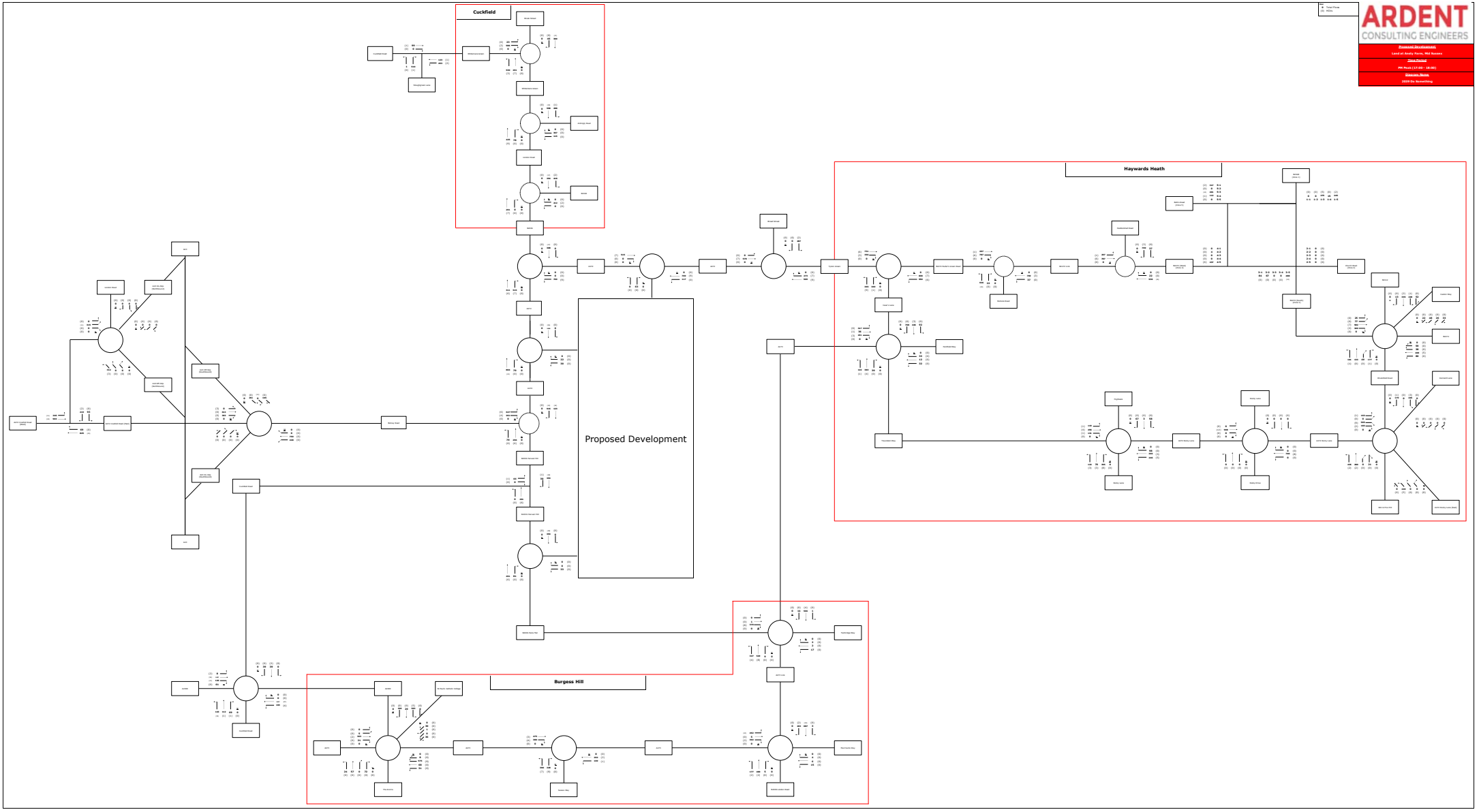
ARDENT
CONSULTING ENGINEERS

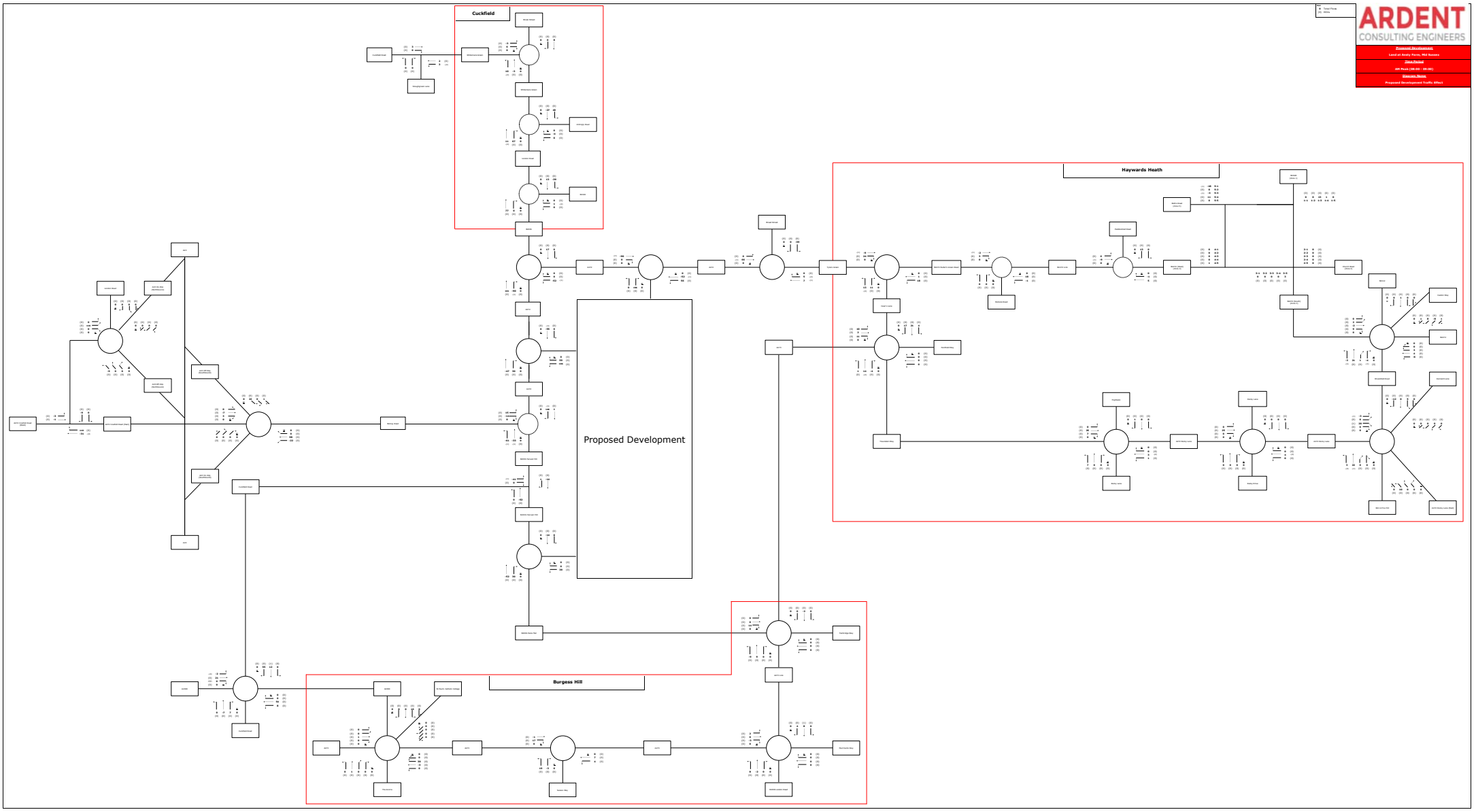
Proposed Development
Land at Scaby Farm, Mid Sussex

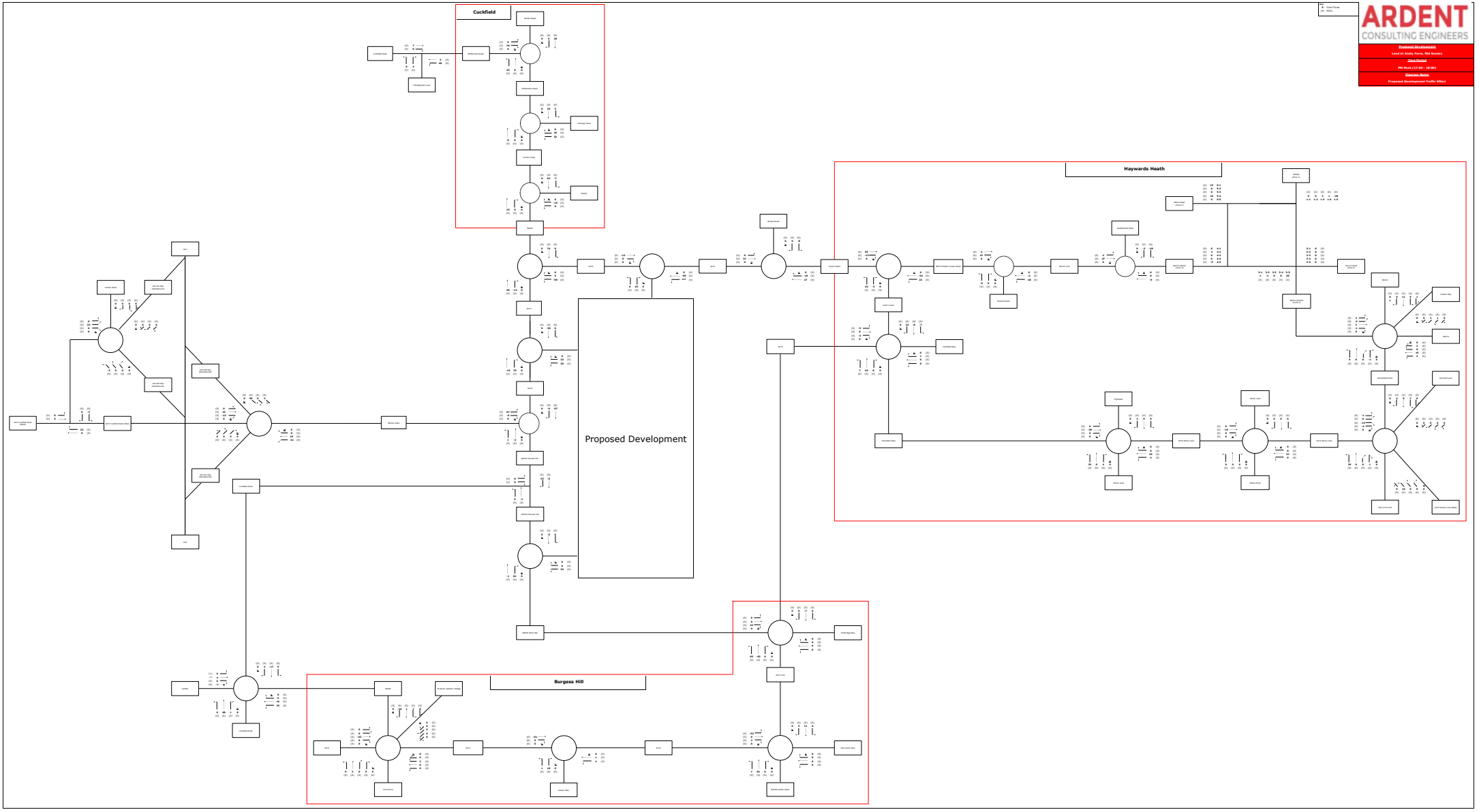
Time Period
PM Peak (17:00 - 18:00)

Forecast Year
2039 Do Minimum


Cuckfield
Haywards Heath
Proposed Development
Burgess Hill
ARDENT
CONSULTING ENGINEERS
Proposed Development
Land at Scaby Farm, Mid Sussex
Time Period
AM Peak (08:00 - 09:00)
Scenario Name
2029 Do Something


Cuckfield
Haywards Heath
Burgess Hill
Proposed Development
Key
Total Flow (2) 95l/s
ARDENT
CONSULTING ENGINEERS
Proposed Development
Land at Scaly Farm, Mid Sussex
Time Period
PM Peak (17:00 - 18:00)
Summary Sheet
2029 Do Something


Cuckfield
Haywards Heath
Burgess Hill
Proposed Development
Key
Total Flow (2) Hours
ARDENT
CONSULTING ENGINEERS
Proposed Development
Land at Scaly Farm, Hal Sussex
Time Period
AM Peak (08:00 - 09:00)
Scenario Name
Proposed Development Traffic Effect


Cuckfield
Haywards Heath
Burgess Hill
Proposed Development
Total Flows (2) 1930s
ARDENT
CONSULTING ENGINEERS
Proposed Development
Land at Scaly Farm, Mid Sussex
Time Period
PM Peak (17:00 - 18:00)
Scenario Name
Proposed Development Traffic Effect

Transport Assessment Appendix H

ARCADY Outputs

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.4.1693
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Filename: Jct O - London Rd.A23 NB Slips.j10
Path: Y:\ARDENT PROJECTS\2207280 - Land at Ansty Farm, Mid Sussex\Transport\ARCADY
Report generation date: 27/09/2023 12:35:11

«2039 Do Something Isolated, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of junction performance

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2019 Baseline					
1 - London Rd (N)	0.1	2.14	0.06	0.0	1.88	0.04
4 - A23 Northbound offslip	0.2	1.62	0.13	0.2	1.58	0.13
5 - London Rd (S)	0.1	1.57	0.11	0.1	1.50	0.09
	2039 Do Nothing					
1 - London Rd (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - A23 Northbound offslip	0.1	1.49	0.11	0.1	1.52	0.13
5 - London Rd (S)	0.2	1.65	0.15	0.1	1.56	0.12
	2039 Do Something Isolated					
1 - London Rd (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - A23 Northbound offslip	0.1	1.48	0.11	0.1	1.51	0.13
5 - London Rd (S)	0.3	1.75	0.20	0.2	1.57	0.13

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

File summary

File Description

Title	London Rd / A23 Northbound Slips Rbt
Location	
Site number	
Date	20/06/2023
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Hour	perHour

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

2039 Do Something Isolated, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	5 - London Rd (S) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Large Roundabout	1 - London Rd (N) - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	London Rd / A23 Northbound Slips Rbt	Large Roundabout		1, 3, 4, 5	1.54	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.54	A

Arms

Arms

Arm	Name	Description	No give-way line
1	London Rd (N)		
3	A23 Northbound onslip		
4	A23 Northbound offslip		
5	London Rd (S)		

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - London Rd (N)	3.65	6.80	10.5	25.0	49.0	46.0		
3 - A23 Northbound onslip								✓
4 - A23 Northbound offslip	5.50	7.00	7.0	25.0	49.0	35.0	✓	
5 - London Rd (S)	3.90	6.80	31.0	25.0	49.0	31.0		

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Has entry-to-exit separation	Entry-to-exit separation (m)
1 - London Rd (N)	0		0.00
3 - A23 Northbound onslip	0		0.00
4 - A23 Northbound offslip	0	✓	19.00
5 - London Rd (S)	0		0.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - London Rd (N)	1.210	2387
3 - A23 Northbound onslip		
4 - A23 Northbound offslip	1.397	2749
5 - London Rd (S)	1.385	2738

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - London Rd (N)		ONE HOUR	✓	0	100.000
3 - A23 Northbound onslip					
4 - A23 Northbound offslip		ONE HOUR	✓	312	100.000
5 - London Rd (S)		ONE HOUR	✓	315	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - London Rd (N)	3 - A23 Northbound onslip	4 - A23 Northbound offslip	5 - London Rd (S)
From	1 - London Rd (N)	0	0	0	0
	3 - A23 Northbound onslip	0	0	0	0
	4 - A23 Northbound offslip	0	0	0	312
	5 - London Rd (S)	0	315	0	0

Vehicle Mix

HV %s

		To			
		1 - London Rd (N)	3 - A23 Northbound onslip	4 - A23 Northbound offslip	5 - London Rd (S)
From	1 - London Rd (N)	0	0	0	96
	3 - A23 Northbound onslip	0	0	0	0
	4 - A23 Northbound offslip	0	0	0	1
	5 - London Rd (S)	0	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - London Rd (N)	0.00	0.00	0.0	A	0	0
3 - A23 Northbound onslip						
4 - A23 Northbound offslip	0.13	1.51	0.1	A	286	429
5 - London Rd (S)	0.13	1.57	0.2	A	289	434

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Rd (N)	0	0	237	1833	0.000	0	0	0.0	0.0	0.000	A
3 - A23 Northbound onslip			0				237				
4 - A23 Northbound offslip	235	59	0	2722	0.086	235	0	0.0	0.1	1.446	A
5 - London Rd (S)	237	59	0	2633	0.090	237	235	0.0	0.1	1.502	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Rd (N)	0	0	283	1782	0.000	0	0	0.0	0.0	0.000	A
3 - A23 Northbound onslip			0				283				
4 - A23 Northbound offslip	280	70	0	2722	0.103	280	0	0.1	0.1	1.473	A
5 - London Rd (S)	283	71	0	2633	0.108	283	280	0.1	0.1	1.531	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Rd (N)	0	0	347	1712	0.000	0	0	0.0	0.0	0.000	A
3 - A23 Northbound onslip			0				347				
4 - A23 Northbound offslip	344	86	0	2722	0.126	343	0	0.1	0.1	1.512	A
5 - London Rd (S)	347	87	0	2633	0.132	347	343	0.1	0.2	1.574	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Rd (N)	0	0	347	1712	0.000	0	0	0.0	0.0	0.000	A
3 - A23 Northbound onslip			0				347				
4 - A23 Northbound offslip	344	86	0	2722	0.126	344	0	0.1	0.1	1.512	A
5 - London Rd (S)	347	87	0	2633	0.132	347	344	0.2	0.2	1.574	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Rd (N)	0	0	283	1782	0.000	0	0	0.0	0.0	0.000	A
3 - A23 Northbound onslip			0				283				
4 - A23 Northbound offslip	280	70	0	2722	0.103	281	0	0.1	0.1	1.476	A
5 - London Rd (S)	283	71	0	2633	0.108	283	281	0.2	0.1	1.533	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Rd (N)	0	0	237	1833	0.000	0	0	0.0	0.0	0.000	A
3 - A23 Northbound onslip			0				237				
4 - A23 Northbound offslip	235	59	0	2722	0.086	235	0	0.1	0.1	1.449	A
5 - London Rd (S)	237	59	0	2633	0.090	237	235	0.1	0.1	1.502	A

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.4.1693
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

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Filename: Jct W - South Site Access.j10
Path: Y:\ARDENT PROJECTS\2207280 - Land at Ansty Farm, Mid Sussex\Transport\ARCADY
Report generation date: 27/09/2023 12:30:35

»2039 Do Something Isolated, AM
»2039 Do Something Isolated, PM

Summary of junction performance

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2039 Do Something Isolated					
1 - B2036 (N)	0.1	3.58	0.12	0.5	4.80	0.34
2 - Site Access 3	0.0	3.26	0.04	0.0	3.71	0.04
3 - B2036 (S)	0.6	4.68	0.37	0.5	4.28	0.33

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

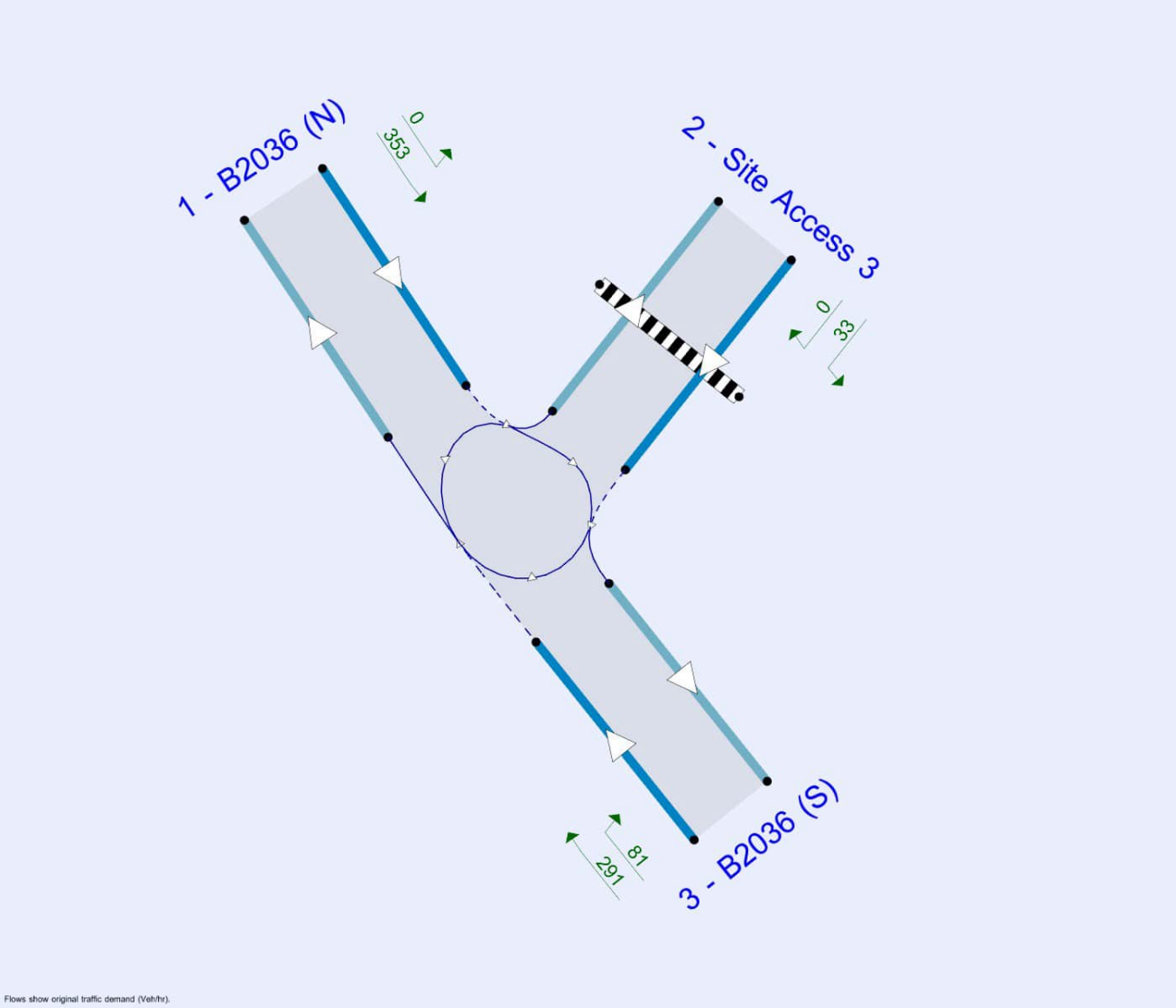
File summary

File Description

Title	B2036 / Site Access 3
Location	
Site number	
Date	28/04/2023
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Hour	perHour



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓
D2	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2039 Do Something Isolated, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B2036 / Site Access 3	Standard Roundabout		1, 2, 3	4.34	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.34	A

Arms

Arms

Arm	Name	Description	No give-way line
1	B2036 (N)		
2	Site Access 3		
3	B2036 (S)		

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - B2036 (N)	3.00	4.50	10.0	40.0	30.0	30.0		
2 - Site Access 3	3.25	4.50	11.0	20.0	30.0	37.0		
3 - B2036 (S)	3.30	4.50	14.5	15.0	30.0	29.0		

Zebra Crossings

Arm	VGAP (PCU)	Vehs queueing on exit (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
2 - Site Access 3	3.00	3.00		Distance	6.50	4.64

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - B2036 (N)	0.573	1246
2 - Site Access 3	0.555	1232
3 - B2036 (S)	0.566	1271

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 (N)		ONE HOUR	✓	129	100.000
2 - Site Access 3		ONE HOUR	✓	39	100.000
3 - B2036 (S)		ONE HOUR	✓	415	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - B2036 (N)		
2 - Site Access 3	[ONEHOUR]	100.00
3 - B2036 (S)		

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 (N)	2 - Site Access 3	3 - B2036 (S)
From	1 - B2036 (N)	0	0	129
	2 - Site Access 3	0	0	39
	3 - B2036 (S)	385	30	0

Vehicle Mix

HV %s

		To		
		1 - B2036 (N)	2 - Site Access 3	3 - B2036 (S)
From	1 - B2036 (N)	0	0	7
	2 - Site Access 3	0	0	0
	3 - B2036 (S)	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 (N)	0.12	3.58	0.1	A	118	178
2 - Site Access 3	0.04	3.26	0.0	A	36	54
3 - B2036 (S)	0.37	4.68	0.6	A	381	571

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	97	24	22		1152	0.084	97	289	0.0	0.1	3.410	A
2 - Site Access 3	29	7	97	75.29	1174	0.025	29	22	0.0	0.0	3.143	A
3 - B2036 (S)	312	78	0		1225	0.255	311	126	0.0	0.3	3.932	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	116	29	27		1150	0.101	116	346	0.1	0.1	3.480	A
2 - Site Access 3	35	9	116	89.90	1163	0.030	35	27	0.0	0.0	3.191	A
3 - B2036 (S)	373	93	0		1225	0.304	373	151	0.3	0.4	4.220	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	142	36	33		1147	0.124	142	423	0.1	0.1	3.582	A
2 - Site Access 3	43	11	142	110.10	1147	0.037	43	33	0.0	0.0	3.258	A
3 - B2036 (S)	457	114	0		1225	0.373	456	185	0.4	0.6	4.676	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	142	36	33		1147	0.124	142	424	0.1	0.1	3.582	A
2 - Site Access 3	43	11	142	110.10	1147	0.037	43	33	0.0	0.0	3.258	A
3 - B2036 (S)	457	114	0		1225	0.373	457	185	0.6	0.6	4.684	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	116	29	27		1150	0.101	116	347	0.1	0.1	3.484	A
2 - Site Access 3	35	9	116	89.90	1163	0.030	35	27	0.0	0.0	3.191	A
3 - B2036 (S)	373	93	0		1225	0.304	374	151	0.6	0.4	4.231	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	97	24	23		1152	0.084	97	290	0.1	0.1	3.411	A
2 - Site Access 3	29	7	97	75.29	1174	0.025	29	23	0.0	0.0	3.146	A
3 - B2036 (S)	312	78	0		1225	0.255	313	127	0.4	0.3	3.946	A

2039 Do Something Isolated, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B2036 / Site Access 3	Standard Roundabout		1, 2, 3	4.50	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.50	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 (N)		ONE HOUR	✓	353	100.000
2 - Site Access 3		ONE HOUR	✓	33	100.000
3 - B2036 (S)		ONE HOUR	✓	372	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - B2036 (N)		
2 - Site Access 3	[ONEHOUR]	100.00
3 - B2036 (S)		

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 (N)	2 - Site Access 3	3 - B2036 (S)
From	1 - B2036 (N)	0	0	353
	2 - Site Access 3	0	0	33
	3 - B2036 (S)	291	81	0

Vehicle Mix

HV %s

		To		
		1 - B2036 (N)	2 - Site Access 3	3 - B2036 (S)
From	1 - B2036 (N)	0	0	5
	2 - Site Access 3	0	0	0
	3 - B2036 (S)	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 (N)	0.34	4.80	0.5	A	324	486
2 - Site Access 3	0.04	3.71	0.0	A	30	45
3 - B2036 (S)	0.33	4.28	0.5	A	341	512

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	266	66	61		1153	0.230	265	218	0.0	0.3	4.045	A
2 - Site Access 3	25	6	265	75.29	1078	0.023	25	61	0.0	0.0	3.418	A
3 - B2036 (S)	280	70	0		1251	0.224	279	289	0.0	0.3	3.697	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	317	79	73		1147	0.277	317	261	0.3	0.4	4.336	A
2 - Site Access 3	30	7	317	89.90	1047	0.028	30	73	0.0	0.0	3.537	A
3 - B2036 (S)	334	84	0		1251	0.267	334	347	0.3	0.4	3.924	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	389	97	89		1138	0.342	388	320	0.4	0.5	4.798	A
2 - Site Access 3	36	9	388	110.10	1006	0.036	36	89	0.0	0.0	3.712	A
3 - B2036 (S)	410	102	0		1251	0.327	409	424	0.4	0.5	4.273	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	389	97	89		1138	0.342	389	320	0.5	0.5	4.804	A
2 - Site Access 3	36	9	389	110.10	1005	0.036	36	89	0.0	0.0	3.713	A
3 - B2036 (S)	410	102	0		1251	0.327	410	425	0.5	0.5	4.276	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	317	79	73		1147	0.277	318	262	0.5	0.4	4.347	A
2 - Site Access 3	30	7	318	89.90	1047	0.028	30	73	0.0	0.0	3.539	A
3 - B2036 (S)	334	84	0		1251	0.267	335	348	0.5	0.4	3.931	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	266	66	61		1153	0.230	266	219	0.4	0.3	4.060	A
2 - Site Access 3	25	6	266	75.29	1077	0.023	25	61	0.0	0.0	3.424	A
3 - B2036 (S)	280	70	0		1251	0.224	280	291	0.4	0.3	3.708	A

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.4.1693
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Jct C - Ardingly Road Mini-Roundabout (Existing).j10
Path: Y:\ARDENT PROJECTS\2207280 - Land at Ansty Farm, Mid Sussex\Transport\ARCADY
Report generation date: 06/10/2023 10:53:53

»2019 Baseline, AM
»2019 Baseline, PM
»2039 Do Nothing, AM
»2039 Do Nothing, PM
»2039 Do Something Isolated, AM
»2039 Do Something Isolated, PM

Summary of junction performance

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
2019 Baseline						
1 - B2036 Whitemans Green (N)	3.4	17.23	0.78	2.1	11.17	0.68
2 - Ardingly Road (E)	1.1	9.58	0.52	1.4	11.95	0.59
3 - B2036 London Road (S)	5.8	24.87	0.86	0.8	5.91	0.43
2039 Do Nothing						
1 - B2036 Whitemans Green (N)	28.2	103.05	1.02	8.7	35.50	0.91
2 - Ardingly Road (E)	2.2	17.61	0.70	2.0	16.27	0.67
3 - B2036 London Road (S)	7.6	32.10	0.90	1.2	7.87	0.55
2039 Do Something Isolated						
1 - B2036 Whitemans Green (N)	47.5	162.71	1.08	11.8	46.61	0.94
2 - Ardingly Road (E)	1.9	15.28	0.67	3.9	27.88	0.81
3 - B2036 London Road (S)	17.5	65.45	0.98	1.3	8.35	0.56

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

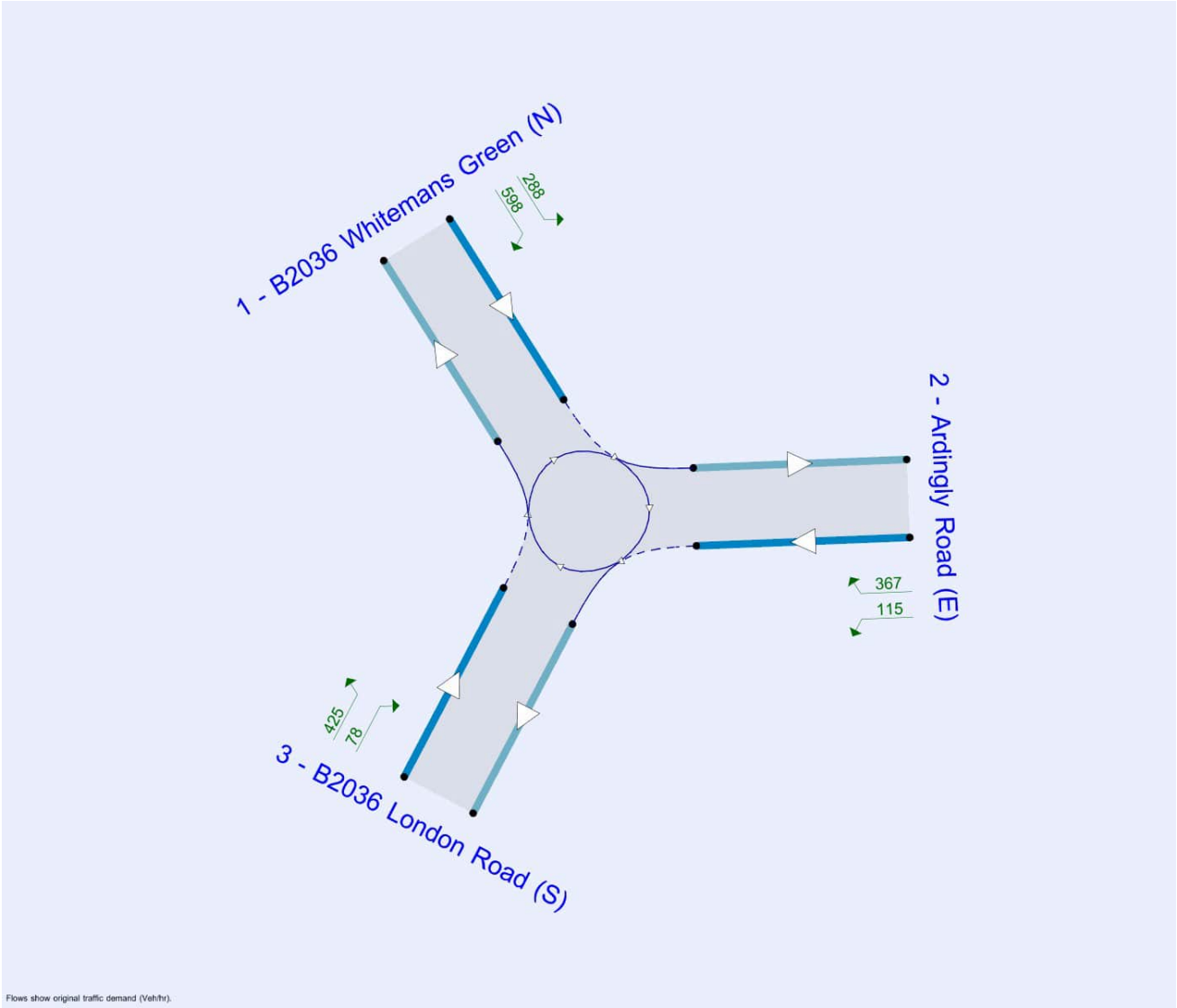
File summary

File Description

Title	B2036 / Ardingly Rd Mini Rbt
Location	
Site number	
Date	06/12/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ARDENTCE\jsymington
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D3	2039 Do Nothing	AM	ONE HOUR	07:45	09:15	15	✓
D4	2039 Do Nothing	PM	ONE HOUR	16:45	18:15	15	✓
D5	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓
D6	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2019 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	19.07	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	19.07	C

Arms

Arms

Arm	Name	Description	No give-way line
1	B2036 Whitemans Green (N)		
2	Ardingly Road (E)		
3	B2036 London Road (S)		

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - B2036 Whitemans Green (N)	3.40	4.10	1.1	10.8	13.0	18.0		
2 - Ardingly Road (E)	3.00	4.29	1.6	10.4	13.0	21.0		
3 - B2036 London Road (S)	3.40	4.10	2.8	20.2	13.0	6.5		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - B2036 Whitemans Green (N)	0.542	1100
2 - Ardingly Road (E)	0.518	1004
3 - B2036 London Road (S)	0.597	1242

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	676	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	365	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	799	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	313	363
	2 - Ardingly Road (E)	286	0	79
	3 - B2036 London Road (S)	601	198	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	1	5
	2 - Ardingly Road (E)	1	0	2
	3 - B2036 London Road (S)	4	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.78	17.23	3.4	C	620	930
2 - Ardingly Road (E)	0.52	9.58	1.1	A	335	502
3 - B2036 London Road (S)	0.86	24.87	5.8	C	733	1100

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	509	127	148	988	0.515	505	663	0.0	1.0	7.382	A
2 - Ardingly Road (E)	275	69	271	846	0.325	273	382	0.0	0.5	6.259	A
3 - B2036 London Road (S)	602	150	214	1078	0.558	597	330	0.0	1.2	7.403	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	608	152	177	973	0.625	605	794	1.0	1.6	9.736	A
2 - Ardingly Road (E)	328	82	325	817	0.401	327	457	0.5	0.7	7.338	A
3 - B2036 London Road (S)	718	180	257	1053	0.682	715	396	1.2	2.1	10.540	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	744	186	215	953	0.781	738	966	1.6	3.3	16.225	C
2 - Ardingly Road (E)	402	100	396	779	0.516	400	556	0.7	1.0	9.465	A
3 - B2036 London Road (S)	880	220	314	1020	0.863	867	483	2.1	5.4	21.837	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	744	186	218	951	0.782	744	975	3.3	3.4	17.228	C
2 - Ardingly Road (E)	402	100	399	777	0.517	402	562	1.0	1.1	9.583	A
3 - B2036 London Road (S)	880	220	315	1019	0.863	878	486	5.4	5.8	24.867	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	608	152	181	970	0.626	615	809	3.4	1.7	10.304	B
2 - Ardingly Road (E)	328	82	330	815	0.403	330	466	1.1	0.7	7.444	A
3 - B2036 London Road (S)	718	180	258	1052	0.683	732	401	5.8	2.2	11.722	B

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	509	127	150	987	0.516	511	671	1.7	1.1	7.610	A
2 - Ardingly Road (E)	275	69	275	844	0.325	276	387	0.7	0.5	6.337	A
3 - B2036 London Road (S)	602	150	216	1077	0.559	605	334	2.2	1.3	7.696	A

2019 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	9.84	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.84	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	633	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	386	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	421	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	150	483
	2 - Ardingly Road (E)	246	0	140
	3 - B2036 London Road (S)	297	124	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	0	1
	2 - Ardingly Road (E)	0	0	0
	3 - B2036 London Road (S)	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.68	11.17	2.1	B	581	871
2 - Ardingly Road (E)	0.59	11.95	1.4	B	354	531
3 - B2036 London Road (S)	0.43	5.91	0.8	A	386	579

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	477	119	93	1042	0.457	473	406	0.0	0.8	6.292	A
2 - Ardingly Road (E)	291	73	361	815	0.357	288	205	0.0	0.5	6.808	A
3 - B2036 London Road (S)	317	79	184	1124	0.282	315	466	0.0	0.4	4.442	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	569	142	111	1032	0.551	568	487	0.8	1.2	7.723	A
2 - Ardingly Road (E)	347	87	433	777	0.446	346	246	0.5	0.8	8.325	A
3 - B2036 London Road (S)	378	95	221	1103	0.343	378	559	0.4	0.5	4.964	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	697	174	136	1019	0.684	693	596	1.2	2.1	10.946	B
2 - Ardingly Road (E)	425	106	529	727	0.584	423	301	0.8	1.4	11.732	B
3 - B2036 London Road (S)	464	116	269	1074	0.432	463	682	0.5	0.8	5.883	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	697	174	137	1019	0.684	697	598	2.1	2.1	11.171	B
2 - Ardingly Road (E)	425	106	532	726	0.585	425	302	1.4	1.4	11.948	B
3 - B2036 London Road (S)	464	116	271	1073	0.432	464	686	0.8	0.8	5.907	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	569	142	112	1032	0.551	573	490	2.1	1.3	7.894	A
2 - Ardingly Road (E)	347	87	437	775	0.447	349	247	1.4	0.8	8.491	A
3 - B2036 London Road (S)	378	95	223	1101	0.344	379	564	0.8	0.5	4.993	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	477	119	94	1042	0.457	478	410	1.3	0.9	6.404	A
2 - Ardingly Road (E)	291	73	365	813	0.357	292	207	0.8	0.6	6.916	A
3 - B2036 London Road (S)	317	79	186	1123	0.282	317	471	0.5	0.4	4.470	A

2039 Do Nothing, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	58.52	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	58.52	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2039 Do Nothing	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	869	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	428	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	826	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	307	562
	2 - Ardingly Road (E)	298	0	130
	3 - B2036 London Road (S)	610	216	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	2	5
	2 - Ardingly Road (E)	1	0	1
	3 - B2036 London Road (S)	4	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	1.02	103.05	28.2	F	797	1196
2 - Ardingly Road (E)	0.70	17.61	2.2	C	393	589
3 - B2036 London Road (S)	0.90	32.10	7.6	D	758	1137

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	654	164	161	974	0.672	646	678	0.0	2.0	10.753	B
2 - Ardingly Road (E)	322	81	418	769	0.419	319	390	0.0	0.7	7.958	A
3 - B2036 London Road (S)	622	155	222	1073	0.579	616	515	0.0	1.3	7.789	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	781	195	193	957	0.816	773	812	2.0	4.0	18.767	C
2 - Ardingly Road (E)	385	96	500	725	0.531	383	466	0.7	1.1	10.486	B
3 - B2036 London Road (S)	743	186	267	1047	0.709	739	616	1.3	2.3	11.505	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	957	239	233	936	1.022	899	984	4.0	18.5	58.802	F
2 - Ardingly Road (E)	471	118	581	681	0.692	467	551	1.1	2.1	16.508	C
3 - B2036 London Road (S)	909	227	325	1013	0.897	892	723	2.3	6.8	26.364	D

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	957	239	237	934	1.025	918	997	18.5	28.2	103.048	F
2 - Ardingly Road (E)	471	118	594	674	0.699	471	561	2.1	2.2	17.605	C
3 - B2036 London Road (S)	909	227	328	1012	0.899	906	737	6.8	7.6	32.098	D

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	781	195	199	954	0.819	872	834	28.2	5.4	58.014	F
2 - Ardingly Road (E)	385	96	564	690	0.557	389	508	2.2	1.3	12.072	B
3 - B2036 London Road (S)	743	186	271	1045	0.710	763	682	7.6	2.6	13.563	B

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	654	164	164	972	0.673	667	689	5.4	2.1	12.271	B
2 - Ardingly Road (E)	322	81	432	762	0.423	324	400	1.3	0.7	8.274	A
3 - B2036 London Road (S)	622	155	226	1071	0.580	626	530	2.6	1.4	8.172	A

2039 Do Nothing, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	23.24	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	23.24	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2039 Do Nothing	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	857	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	407	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	504	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	283	574
	2 - Ardingly Road (E)	324	0	83
	3 - B2036 London Road (S)	426	78	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	0	3
	2 - Ardingly Road (E)	0	0	0
	3 - B2036 London Road (S)	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.91	35.50	8.7	E	786	1180
2 - Ardingly Road (E)	0.67	16.27	2.0	C	373	560
3 - B2036 London Road (S)	0.55	7.87	1.2	A	462	694

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	645	161	58	1048	0.616	639	561	0.0	1.6	8.681	A
2 - Ardingly Road (E)	306	77	428	776	0.395	304	269	0.0	0.6	7.588	A
3 - B2036 London Road (S)	379	95	242	1079	0.352	377	490	0.0	0.5	5.112	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	770	193	70	1042	0.740	766	672	1.6	2.7	12.842	B
2 - Ardingly Road (E)	366	91	513	730	0.501	365	323	0.6	1.0	9.802	A
3 - B2036 London Road (S)	453	113	290	1051	0.431	452	587	0.5	0.7	6.003	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	944	236	86	1033	0.913	924	821	2.7	7.7	28.625	D
2 - Ardingly Road (E)	448	112	619	674	0.665	444	391	1.0	1.9	15.438	C
3 - B2036 London Road (S)	555	139	354	1014	0.547	553	709	0.7	1.2	7.787	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	944	236	86	1033	0.913	940	825	7.7	8.7	35.498	E
2 - Ardingly Road (E)	448	112	629	668	0.670	448	396	1.9	2.0	16.269	C
3 - B2036 London Road (S)	555	139	356	1012	0.548	555	721	1.2	1.2	7.870	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	770	193	70	1041	0.740	793	679	8.7	3.0	15.684	C
2 - Ardingly Road (E)	366	91	531	721	0.508	370	332	2.0	1.1	10.359	B
3 - B2036 London Road (S)	453	113	294	1049	0.432	455	607	1.2	0.8	6.078	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	645	161	59	1047	0.616	651	567	3.0	1.6	9.193	A
2 - Ardingly Road (E)	306	77	436	772	0.397	308	274	1.1	0.7	7.790	A
3 - B2036 London Road (S)	379	95	245	1077	0.352	380	499	0.8	0.5	5.171	A

2039 Do Something Isolated, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	95.14	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	95.14	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	883	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	425	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	904	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	348	535
	2 - Ardingly Road (E)	294	0	131
	3 - B2036 London Road (S)	621	283	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	2	5
	2 - Ardingly Road (E)	1	0	1
	3 - B2036 London Road (S)	4	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	1.08	162.71	47.5	F	810	1215
2 - Ardingly Road (E)	0.67	15.28	1.9	C	390	585
3 - B2036 London Road (S)	0.98	65.45	17.5	F	830	1244

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	665	166	211	949	0.701	656	682	0.0	2.2	11.957	B
2 - Ardingly Road (E)	320	80	397	780	0.410	317	469	0.0	0.7	7.732	A
3 - B2036 London Road (S)	681	170	219	1077	0.632	674	495	0.0	1.7	8.796	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	794	198	253	927	0.857	782	817	2.2	5.1	23.243	C
2 - Ardingly Road (E)	382	96	474	739	0.517	381	561	0.7	1.0	10.010	B
3 - B2036 London Road (S)	813	203	263	1051	0.773	807	591	1.7	3.2	14.365	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	972	243	299	902	1.078	882	978	5.1	27.7	81.348	F
2 - Ardingly Road (E)	468	117	534	706	0.662	465	647	1.0	1.9	14.681	B
3 - B2036 London Road (S)	995	249	321	1017	0.979	955	677	3.2	13.2	42.597	E

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	972	243	306	898	1.082	893	995	27.7	47.5	162.712	F
2 - Ardingly Road (E)	468	117	541	703	0.666	468	658	1.9	1.9	15.281	C
3 - B2036 London Road (S)	995	249	324	1016	0.980	978	685	13.2	17.5	65.450	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	794	198	272	917	0.866	898	862	47.5	21.5	142.241	F
2 - Ardingly Road (E)	382	96	544	701	0.545	385	625	1.9	1.2	11.480	B
3 - B2036 London Road (S)	813	203	266	1049	0.774	868	663	17.5	3.7	24.624	C

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	665	166	215	946	0.703	741	696	21.5	2.5	23.744	C
2 - Ardingly Road (E)	320	80	449	752	0.425	322	507	1.2	0.8	8.397	A
3 - B2036 London Road (S)	681	170	223	1075	0.633	688	548	3.7	1.8	9.492	A

2039 Do Something Isolated, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	31.53	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	31.53	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	886	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	482	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	503	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	288	598
	2 - Ardingly Road (E)	367	0	115
	3 - B2036 London Road (S)	425	78	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	0	3
	2 - Ardingly Road (E)	0	0	0
	3 - B2036 London Road (S)	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.94	46.61	11.8	E	813	1220
2 - Ardingly Road (E)	0.81	27.88	3.9	D	442	663
3 - B2036 London Road (S)	0.56	8.35	1.3	A	462	692

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	667	167	58	1048	0.637	660	592	0.0	1.7	9.142	A
2 - Ardingly Road (E)	363	91	446	766	0.474	359	273	0.0	0.9	8.773	A
3 - B2036 London Road (S)	379	95	274	1061	0.357	376	531	0.0	0.6	5.244	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	796	199	70	1041	0.765	791	709	1.7	3.1	14.074	B
2 - Ardingly Road (E)	433	108	534	719	0.602	431	327	0.9	1.5	12.387	B
3 - B2036 London Road (S)	452	113	328	1029	0.440	451	637	0.6	0.8	6.223	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	976	244	86	1033	0.944	948	864	3.1	9.9	34.508	D
2 - Ardingly Road (E)	531	133	640	663	0.801	522	394	1.5	3.6	24.319	C
3 - B2036 London Road (S)	554	138	398	988	0.561	552	765	0.8	1.3	8.222	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	976	244	86	1033	0.944	968	871	9.9	11.8	46.605	E
2 - Ardingly Road (E)	531	133	653	656	0.809	529	400	3.6	3.9	27.878	D
3 - B2036 London Road (S)	554	138	403	985	0.562	554	779	1.3	1.3	8.348	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	796	199	70	1041	0.765	830	720	11.8	3.5	19.296	C
2 - Ardingly Road (E)	433	108	560	705	0.614	442	340	3.9	1.7	14.126	B
3 - B2036 London Road (S)	452	113	337	1024	0.442	454	666	1.3	0.8	6.342	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	667	167	59	1047	0.637	674	599	3.5	1.8	9.803	A
2 - Ardingly Road (E)	363	91	455	761	0.477	366	278	1.7	0.9	9.163	A
3 - B2036 London Road (S)	379	95	279	1058	0.358	380	542	0.8	0.6	5.316	A

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.4.1693
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

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Filename: Jct C - Ardingly Road Mini-Roundabout (Mitigation).j10
Path: Y:\ARDENT PROJECTS\2207280 - Land at Ansty Farm, Mid Sussex\Transport\ARCADY
Report generation date: 06/10/2023 10:56:51

»2019 Baseline, AM
»2019 Baseline, PM
»2039 Do Nothing, AM
»2039 Do Nothing, PM
»2039 Do Something Isolated, AM
»2039 Do Something Isolated, PM

Summary of junction performance

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2019 Baseline					
1 - B2036 Whitemans Green (N)	1.1	5.25	0.52	0.8	4.39	0.46
2 - Ardingly Road (E)	0.8	7.58	0.46	1.1	9.02	0.52
3 - B2036 London Road (S)	2.3	9.66	0.70	0.5	4.23	0.35
	2039 Do Nothing					
1 - B2036 Whitemans Green (N)	2.1	8.00	0.68	1.6	6.13	0.62
2 - Ardingly Road (E)	1.6	12.65	0.62	1.4	11.45	0.59
3 - B2036 London Road (S)	2.7	10.74	0.73	0.8	5.21	0.45
	2039 Do Something Isolated					
1 - B2036 Whitemans Green (N)	2.4	9.22	0.71	1.7	6.48	0.64
2 - Ardingly Road (E)	1.5	11.82	0.61	2.4	16.52	0.71
3 - B2036 London Road (S)	3.8	14.11	0.80	0.8	5.43	0.46

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

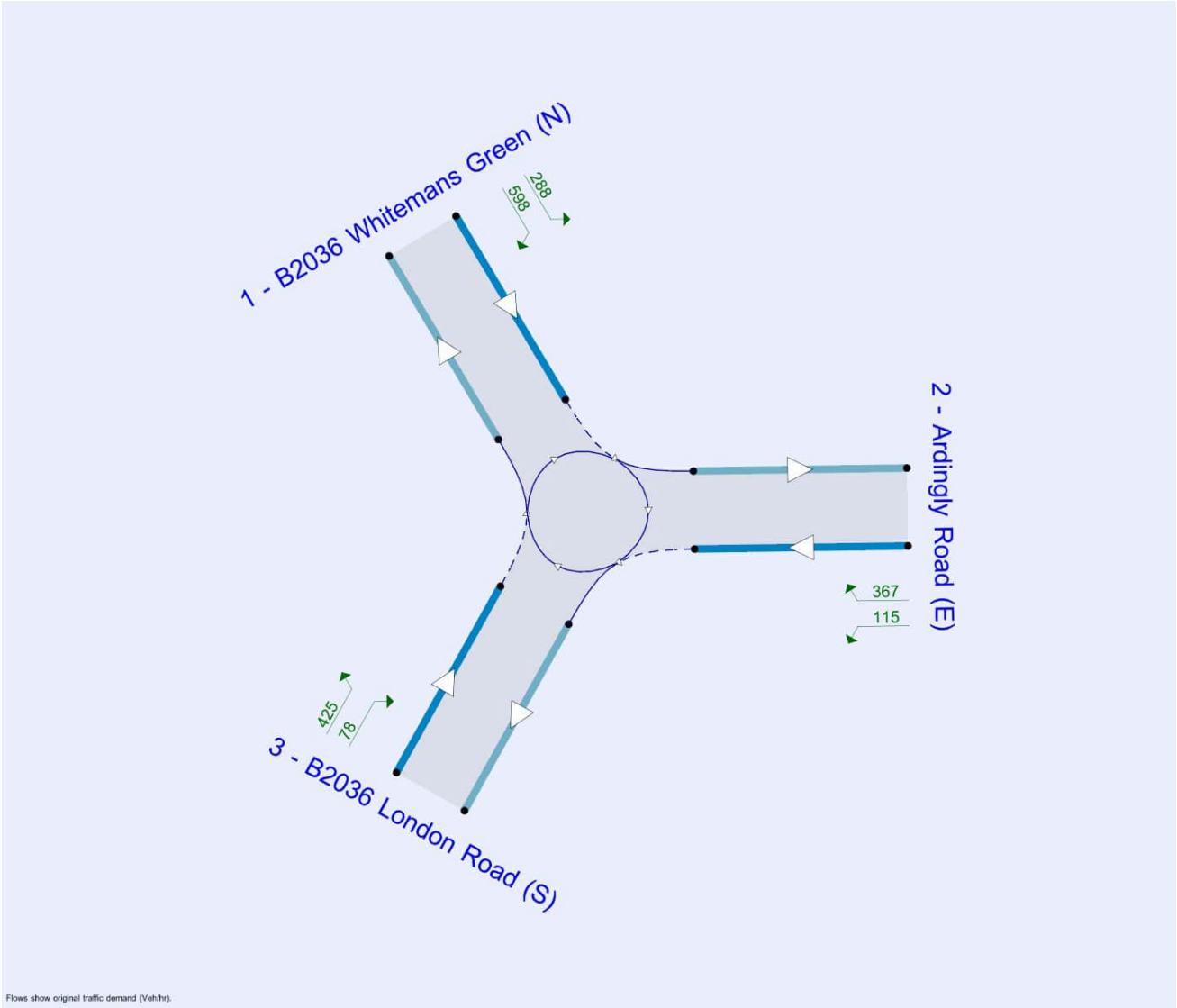
File summary

File Description

Title	B2036 / Ardingly Rd Mini Rbt
Location	
Site number	
Date	06/12/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ARDENTCE\jsymington
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D3	2039 Do Nothing	AM	ONE HOUR	07:45	09:15	15	✓
D4	2039 Do Nothing	PM	ONE HOUR	16:45	18:15	15	✓
D5	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓
D6	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2019 Baseline, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	7.63	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.63	A

Arms

Arms

Arm	Name	Description	No give-way line
1	B2036 Whitemans Green (N)		
2	Ardingly Road (E)		
3	B2036 London Road (S)		

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - B2036 Whitemans Green (N)	3.66	6.67	13.2	10.0	13.0	19.2		
2 - Ardingly Road (E)	3.20	5.76	2.1	10.0	13.5	18.7		
3 - B2036 London Road (S)	3.75	5.41	5.3	20.0	13.5	6.5		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - B2036 Whitemans Green (N)	0.646	1617
2 - Ardingly Road (E)	0.542	1115
3 - B2036 London Road (S)	0.650	1499

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	676	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	365	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	799	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	313	363
	2 - Ardingly Road (E)	286	0	79
	3 - B2036 London Road (S)	601	198	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	1	5
	2 - Ardingly Road (E)	1	0	2
	3 - B2036 London Road (S)	4	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.52	5.25	1.1	A	620	930
2 - Ardingly Road (E)	0.46	7.58	0.8	A	335	502
3 - B2036 London Road (S)	0.70	9.66	2.3	A	733	1100

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	509	127	148	1474	0.345	507	664	0.0	0.5	3.714	A
2 - Ardingly Road (E)	275	69	272	949	0.290	273	383	0.0	0.4	5.316	A
3 - B2036 London Road (S)	602	150	214	1316	0.457	598	331	0.0	0.8	4.993	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	608	152	178	1455	0.418	607	796	0.5	0.7	4.239	A
2 - Ardingly Road (E)	328	82	326	918	0.357	328	459	0.4	0.6	6.085	A
3 - B2036 London Road (S)	718	180	257	1289	0.557	717	397	0.8	1.2	6.274	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	744	186	217	1431	0.520	743	973	0.7	1.1	5.225	A
2 - Ardingly Road (E)	402	100	399	877	0.458	401	561	0.6	0.8	7.533	A
3 - B2036 London Road (S)	880	220	314	1252	0.702	876	486	1.2	2.3	9.450	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	744	186	218	1430	0.521	744	976	1.1	1.1	5.250	A
2 - Ardingly Road (E)	402	100	400	877	0.458	402	563	0.8	0.8	7.575	A
3 - B2036 London Road (S)	880	220	315	1252	0.703	880	487	2.3	2.3	9.660	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	608	152	179	1455	0.418	609	801	1.1	0.7	4.265	A
2 - Ardingly Road (E)	328	82	327	918	0.358	329	461	0.8	0.6	6.127	A
3 - B2036 London Road (S)	718	180	258	1288	0.558	722	398	2.3	1.3	6.413	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	509	127	149	1473	0.345	510	670	0.7	0.5	3.738	A
2 - Ardingly Road (E)	275	69	274	948	0.290	275	385	0.6	0.4	5.359	A
3 - B2036 London Road (S)	602	150	216	1315	0.458	603	333	1.3	0.9	5.073	A

2019 Baseline, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	5.58	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.58	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	633	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	386	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	421	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	150	483
	2 - Ardingly Road (E)	246	0	140
	3 - B2036 London Road (S)	297	124	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	0	1
	2 - Ardingly Road (E)	0	0	0
	3 - B2036 London Road (S)	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.46	4.39	0.8	A	581	871
2 - Ardingly Road (E)	0.52	9.02	1.1	A	354	531
3 - B2036 London Road (S)	0.35	4.23	0.5	A	386	579

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	477	119	93	1545	0.308	475	407	0.0	0.4	3.357	A
2 - Ardingly Road (E)	291	73	362	917	0.317	289	206	0.0	0.5	5.716	A
3 - B2036 London Road (S)	317	79	184	1370	0.231	316	467	0.0	0.3	3.412	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	569	142	111	1533	0.371	568	487	0.4	0.6	3.729	A
2 - Ardingly Road (E)	347	87	434	878	0.395	346	246	0.5	0.6	6.764	A
3 - B2036 London Road (S)	378	95	221	1346	0.281	378	559	0.3	0.4	3.718	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	697	174	136	1517	0.459	696	596	0.6	0.8	4.376	A
2 - Ardingly Road (E)	425	106	531	824	0.516	423	301	0.6	1.0	8.942	A
3 - B2036 London Road (S)	464	116	270	1315	0.353	463	685	0.4	0.5	4.224	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	697	174	137	1517	0.459	697	598	0.8	0.8	4.387	A
2 - Ardingly Road (E)	425	106	532	824	0.516	425	302	1.0	1.1	9.018	A
3 - B2036 London Road (S)	464	116	271	1314	0.353	464	686	0.5	0.5	4.232	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	569	142	112	1533	0.371	570	490	0.8	0.6	3.743	A
2 - Ardingly Road (E)	347	87	435	877	0.396	349	247	1.1	0.7	6.831	A
3 - B2036 London Road (S)	378	95	222	1345	0.281	379	561	0.5	0.4	3.726	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	477	119	93	1545	0.308	477	410	0.6	0.4	3.372	A
2 - Ardingly Road (E)	291	73	364	916	0.317	291	207	0.7	0.5	5.771	A
3 - B2036 London Road (S)	317	79	186	1369	0.232	317	470	0.4	0.3	3.426	A

2039 Do Nothing, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	9.98	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.98	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2039 Do Nothing	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	869	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	428	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	826	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	307	562
	2 - Ardingly Road (E)	298	0	130
	3 - B2036 London Road (S)	610	216	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	2	5
	2 - Ardingly Road (E)	1	0	1
	3 - B2036 London Road (S)	4	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.68	8.00	2.1	A	797	1196
2 - Ardingly Road (E)	0.62	12.65	1.6	B	393	589
3 - B2036 London Road (S)	0.73	10.74	2.7	B	758	1137

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	654	164	162	1454	0.450	651	679	0.0	0.8	4.464	A
2 - Ardingly Road (E)	322	81	421	867	0.372	320	392	0.0	0.6	6.554	A
3 - B2036 London Road (S)	622	155	223	1311	0.474	618	518	0.0	0.9	5.174	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	781	195	194	1434	0.545	780	814	0.8	1.2	5.488	A
2 - Ardingly Road (E)	385	96	504	820	0.469	384	469	0.6	0.9	8.228	A
3 - B2036 London Road (S)	743	186	267	1283	0.579	741	621	0.9	1.4	6.620	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	957	239	237	1407	0.680	953	994	1.2	2.1	7.878	A
2 - Ardingly Road (E)	471	118	616	757	0.623	468	573	0.9	1.6	12.359	B
3 - B2036 London Road (S)	909	227	326	1245	0.730	904	759	1.4	2.6	10.413	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	957	239	238	1407	0.680	957	999	2.1	2.1	7.995	A
2 - Ardingly Road (E)	471	118	619	755	0.624	471	576	1.6	1.6	12.646	B
3 - B2036 London Road (S)	909	227	328	1244	0.731	909	762	2.6	2.7	10.736	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	781	195	195	1433	0.545	785	822	2.1	1.2	5.584	A
2 - Ardingly Road (E)	385	96	508	818	0.470	388	473	1.6	0.9	8.418	A
3 - B2036 London Road (S)	743	186	270	1281	0.580	748	625	2.7	1.4	6.811	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	654	164	163	1453	0.450	656	686	1.2	0.8	4.523	A
2 - Ardingly Road (E)	322	81	424	865	0.372	323	395	0.9	0.6	6.660	A
3 - B2036 London Road (S)	622	155	225	1309	0.475	624	522	1.4	0.9	5.267	A

2039 Do Nothing, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	7.07	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.07	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2039 Do Nothing	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	857	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	407	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	504	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	283	574
	2 - Ardingly Road (E)	324	0	83
	3 - B2036 London Road (S)	426	78	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	0	3
	2 - Ardingly Road (E)	0	0	0
	3 - B2036 London Road (S)	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.62	6.13	1.6	A	786	1180
2 - Ardingly Road (E)	0.59	11.45	1.4	B	373	560
3 - B2036 London Road (S)	0.45	5.21	0.8	A	462	694

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	645	161	58	1548	0.417	642	562	0.0	0.7	3.963	A
2 - Ardingly Road (E)	306	77	430	875	0.350	304	271	0.0	0.5	6.286	A
3 - B2036 London Road (S)	379	95	242	1320	0.288	378	492	0.0	0.4	3.816	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	770	193	70	1541	0.500	769	673	0.7	1.0	4.659	A
2 - Ardingly Road (E)	366	91	515	827	0.442	365	324	0.5	0.8	7.765	A
3 - B2036 London Road (S)	453	113	290	1289	0.352	453	590	0.4	0.5	4.303	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	944	236	86	1531	0.616	941	823	1.0	1.6	6.080	A
2 - Ardingly Road (E)	448	112	630	763	0.587	446	397	0.8	1.4	11.254	B
3 - B2036 London Road (S)	555	139	355	1248	0.445	554	721	0.5	0.8	5.183	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	944	236	86	1531	0.616	944	826	1.6	1.6	6.129	A
2 - Ardingly Road (E)	448	112	632	762	0.588	448	397	1.4	1.4	11.446	B
3 - B2036 London Road (S)	555	139	357	1246	0.445	555	723	0.8	0.8	5.206	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	770	193	70	1541	0.500	773	677	1.6	1.0	4.703	A
2 - Ardingly Road (E)	366	91	518	826	0.443	368	325	1.4	0.8	7.902	A
3 - B2036 London Road (S)	453	113	293	1287	0.352	454	593	0.8	0.5	4.329	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	645	161	59	1548	0.417	646	566	1.0	0.7	3.997	A
2 - Ardingly Road (E)	306	77	433	873	0.351	307	272	0.8	0.5	6.371	A
3 - B2036 London Road (S)	379	95	245	1318	0.288	380	496	0.5	0.4	3.840	A

2039 Do Something Isolated, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	11.71	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.71	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	883	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	425	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	904	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	348	535
	2 - Ardingly Road (E)	294	0	131
	3 - B2036 London Road (S)	621	283	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	2	5
	2 - Ardingly Road (E)	1	0	1
	3 - B2036 London Road (S)	4	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.71	9.22	2.4	A	810	1215
2 - Ardingly Road (E)	0.61	11.82	1.5	B	390	585
3 - B2036 London Road (S)	0.80	14.11	3.8	B	830	1244

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	665	166	212	1425	0.467	661	684	0.0	0.9	4.696	A
2 - Ardingly Road (E)	320	80	401	878	0.364	318	472	0.0	0.6	6.396	A
3 - B2036 London Road (S)	681	170	220	1315	0.518	676	499	0.0	1.1	5.602	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	794	198	254	1398	0.568	792	820	0.9	1.3	5.922	A
2 - Ardingly Road (E)	382	96	480	834	0.458	381	566	0.6	0.8	7.934	A
3 - B2036 London Road (S)	813	203	264	1287	0.632	810	597	1.1	1.7	7.514	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	972	243	309	1363	0.713	968	1000	1.3	2.4	8.999	A
2 - Ardingly Road (E)	468	117	586	774	0.605	465	691	0.8	1.5	11.576	B
3 - B2036 London Road (S)	995	249	322	1250	0.796	987	730	1.7	3.7	13.335	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	972	243	311	1362	0.714	972	1007	2.4	2.4	9.221	A
2 - Ardingly Road (E)	468	117	589	772	0.606	468	695	1.5	1.5	11.816	B
3 - B2036 London Road (S)	995	249	324	1249	0.797	995	733	3.7	3.8	14.109	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	794	198	257	1396	0.569	798	830	2.4	1.3	6.066	A
2 - Ardingly Road (E)	382	96	484	832	0.459	385	572	1.5	0.9	8.102	A
3 - B2036 London Road (S)	813	203	266	1285	0.632	821	602	3.8	1.8	7.882	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	665	166	214	1423	0.467	667	691	1.3	0.9	4.770	A
2 - Ardingly Road (E)	320	80	404	877	0.365	321	477	0.9	0.6	6.493	A
3 - B2036 London Road (S)	681	170	222	1313	0.518	683	503	1.8	1.1	5.737	A

2039 Do Something Isolated, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardingly Road Mini-Roundabout	Standard Roundabout		1, 2, 3	8.75	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.75	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 Whitemans Green (N)		ONE HOUR	✓	886	100.000
2 - Ardingly Road (E)		ONE HOUR	✓	482	100.000
3 - B2036 London Road (S)		ONE HOUR	✓	503	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	288	598
	2 - Ardingly Road (E)	367	0	115
	3 - B2036 London Road (S)	425	78	0

Vehicle Mix

HV %s

		To		
		1 - B2036 Whitemans Green (N)	2 - Ardingly Road (E)	3 - B2036 London Road (S)
From	1 - B2036 Whitemans Green (N)	0	0	3
	2 - Ardingly Road (E)	0	0	0
	3 - B2036 London Road (S)	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 Whitemans Green (N)	0.64	6.48	1.7	A	813	1220
2 - Ardingly Road (E)	0.71	16.52	2.4	C	442	663
3 - B2036 London Road (S)	0.46	5.43	0.8	A	462	692

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	667	167	58	1548	0.431	664	593	0.0	0.8	4.059	A
2 - Ardingly Road (E)	363	91	448	865	0.420	360	274	0.0	0.7	7.091	A
3 - B2036 London Road (S)	379	95	274	1299	0.291	377	534	0.0	0.4	3.897	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	796	199	70	1541	0.517	795	710	0.8	1.1	4.822	A
2 - Ardingly Road (E)	433	108	537	815	0.531	432	329	0.7	1.1	9.342	A
3 - B2036 London Road (S)	452	113	329	1264	0.358	452	640	0.4	0.6	4.427	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	976	244	86	1531	0.637	973	867	1.1	1.7	6.422	A
2 - Ardingly Road (E)	531	133	657	749	0.709	526	402	1.1	2.3	15.838	C
3 - B2036 London Road (S)	554	138	400	1218	0.455	553	782	0.6	0.8	5.400	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	976	244	86	1531	0.637	975	872	1.7	1.7	6.481	A
2 - Ardingly Road (E)	531	133	658	748	0.710	530	403	2.3	2.4	16.522	C
3 - B2036 London Road (S)	554	138	404	1216	0.455	554	785	0.8	0.8	5.434	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	796	199	70	1540	0.517	799	717	1.7	1.1	4.872	A
2 - Ardingly Road (E)	433	108	539	814	0.532	438	330	2.4	1.2	9.698	A
3 - B2036 London Road (S)	452	113	334	1261	0.359	453	644	0.8	0.6	4.461	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 Whitemans Green (N)	667	167	59	1548	0.431	668	598	1.1	0.8	4.100	A
2 - Ardingly Road (E)	363	91	451	863	0.420	365	276	1.2	0.7	7.244	A
3 - B2036 London Road (S)	379	95	278	1297	0.292	379	538	0.6	0.4	3.925	A

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.4.1693
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

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Filename: Jct F - Northern Site Access.j10
Path: Y:\ARDENT PROJECTS\2207280 - Land at Ansty Farm, Mid Sussex\Transport\ARCADY
Report generation date: 27/09/2023 12:06:06

»2039 Do Something Isolated, AM
»2039 Do Something Isolated, PM

Summary of junction performance

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2039 Do Something Isolated					
1 - A272 (E)	0.6	4.48	0.39	2.5	9.38	0.72
2 - Site Access 1	0.2	4.08	0.16	0.1	4.77	0.08
3 - A272 (W)	3.0	14.40	0.75	1.0	6.12	0.49

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

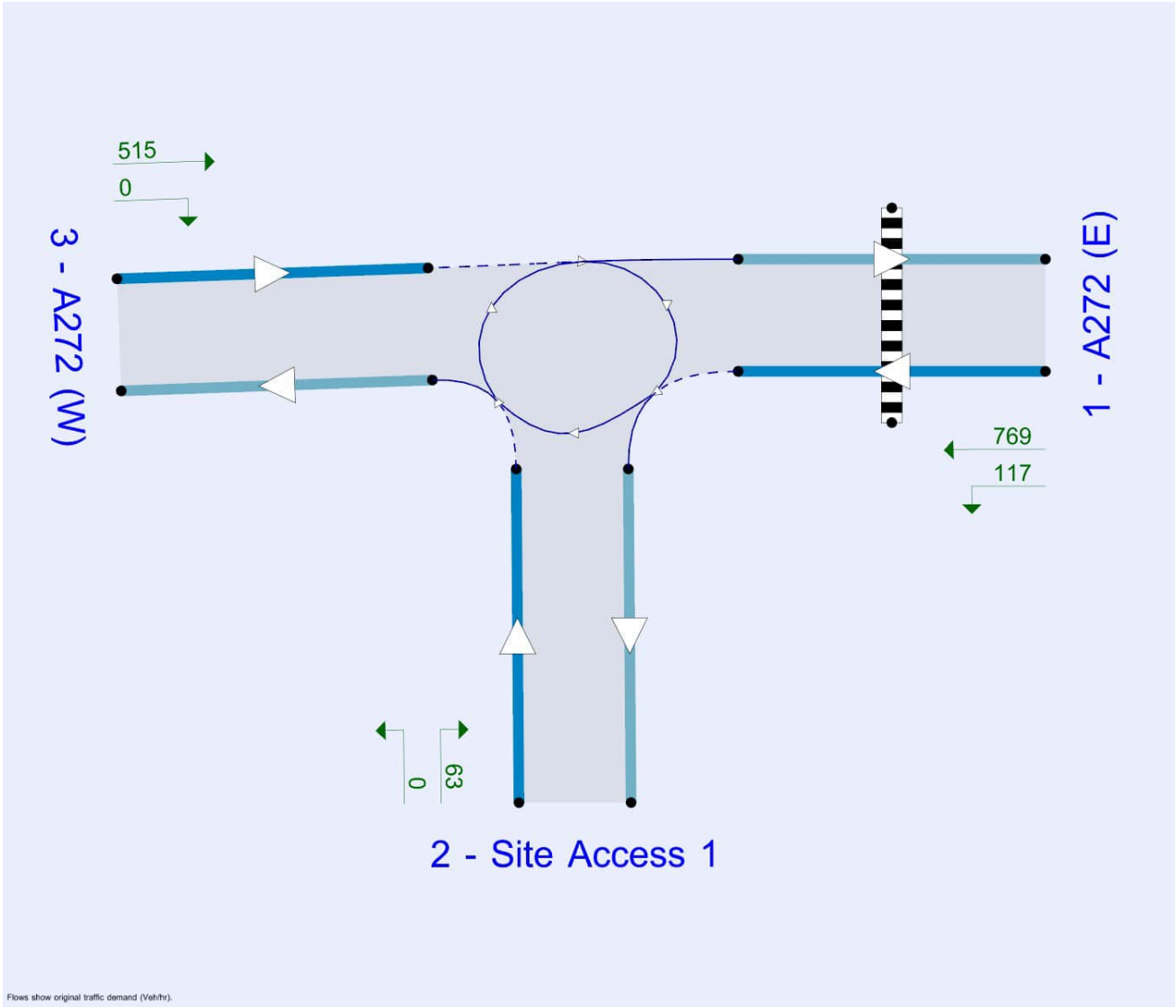
File summary

File Description

Title	A272 / Site Access 1
Location	
Site number	
Date	27/04/2023
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Hour	perHour



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓
D2	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2039 Do Something Isolated, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A272 / Site Access 1	Standard Roundabout		1, 2, 3	9.71	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.71	A

Arms

Arms

Arm	Name	Description	No give-way line
1	A272 (E)		
2	Site Access 1		
3	A272 (W)		

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - A272 (E)	3.65	4.50	13.5	40.0	30.0	26.0		
2 - Site Access 1	3.25	4.50	12.5	42.0	30.0	23.0		
3 - A272 (W)	3.50	4.50	4.5	15.0	30.0	31.0		

Zebra Crossings

Arm	VGAP (PCU)	Vehs queueing on exit (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1 - A272 (E)	3.00	3.00		Distance	7.30	5.21

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A272 (E)	0.602	1371
2 - Site Access 1	0.599	1335
3 - A272 (W)	0.552	1213

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - A272 (E)		ONE HOUR	✓	462	100.000
2 - Site Access 1		ONE HOUR	✓	156	100.000
3 - A272 (W)		ONE HOUR	✓	690	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - A272 (E)	[ONEHOUR]	100.00
2 - Site Access 1		
3 - A272 (W)		

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - A272 (E)	2 - Site Access 1	3 - A272 (W)
From	1 - A272 (E)	0	56	406
	2 - Site Access 1	156	0	0
	3 - A272 (W)	690	0	0

Vehicle Mix

HV %s

		To		
		1 - A272 (E)	2 - Site Access 1	3 - A272 (W)
From	1 - A272 (E)	0	0	5
	2 - Site Access 1	0	0	0
	3 - A272 (W)	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A272 (E)	0.39	4.48	0.6	A	424	636
2 - Site Access 1	0.16	4.08	0.2	A	143	215
3 - A272 (W)	0.75	14.40	3.0	B	633	950

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	348	87	0	75.29	1313	0.265	346	633	0.0	0.4	3.720	A
2 - Site Access 1	117	29	304		1144	0.103	117	42	0.0	0.1	3.504	A
3 - A272 (W)	519	130	117		1085	0.479	516	304	0.0	0.9	6.324	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	415	104	0	89.90	1313	0.316	415	759	0.4	0.5	4.007	A
2 - Site Access 1	140	35	365		1106	0.127	140	50	0.1	0.1	3.726	A
3 - A272 (W)	620	155	140		1061	0.585	618	365	0.9	1.4	8.097	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	509	127	0	110.10	1312	0.388	508	925	0.5	0.6	4.471	A
2 - Site Access 1	172	43	446		1055	0.163	172	62	0.1	0.2	4.076	A
3 - A272 (W)	760	190	172		1010	0.752	754	446	1.4	2.9	13.730	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	509	127	0	110.10	1312	0.388	509	931	0.6	0.6	4.478	A
2 - Site Access 1	172	43	447		1054	0.163	172	62	0.2	0.2	4.079	A
3 - A272 (W)	760	190	172		1008	0.753	759	447	2.9	3.0	14.401	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	415	104	0	89.90	1313	0.316	416	767	0.6	0.5	4.016	A
2 - Site Access 1	140	35	366		1105	0.127	140	50	0.2	0.1	3.730	A
3 - A272 (W)	620	155	140		1060	0.585	626	366	3.0	1.4	8.417	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	348	87	0	75.29	1313	0.265	348	639	0.5	0.4	3.734	A
2 - Site Access 1	117	29	306		1143	0.103	118	42	0.1	0.1	3.511	A
3 - A272 (W)	519	130	118		1084	0.479	522	306	1.4	0.9	6.417	A

2039 Do Something Isolated, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A272 / Site Access 1	Standard Roundabout		1, 2, 3	8.04	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.04	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - A272 (E)		ONE HOUR	✓	886	100.000
2 - Site Access 1		ONE HOUR	✓	63	100.000
3 - A272 (W)		ONE HOUR	✓	515	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - A272 (E)	[ONEHOUR]	100.00
2 - Site Access 1		
3 - A272 (W)		

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - A272 (E)	2 - Site Access 1	3 - A272 (W)
From	1 - A272 (E)	0	117	769
	2 - Site Access 1	63	0	0
	3 - A272 (W)	515	0	0

Vehicle Mix

HV %s

		To		
		1 - A272 (E)	2 - Site Access 1	3 - A272 (W)
From	1 - A272 (E)	0	0	1
	2 - Site Access 1	0	0	0
	3 - A272 (W)	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A272 (E)	0.72	9.38	2.5	A	813	1220
2 - Site Access 1	0.08	4.77	0.1	A	58	87
3 - A272 (W)	0.49	6.12	1.0	A	473	709

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	667	167	0	75.29	1359	0.491	663	433	0.0	1.0	5.147	A
2 - Site Access 1	47	12	576		987	0.048	47	88	0.0	0.1	3.830	A
3 - A272 (W)	388	97	47		1174	0.330	386	576	0.0	0.5	4.555	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	796	199	0	89.90	1359	0.586	795	519	1.0	1.4	6.361	A
2 - Site Access 1	57	14	690		918	0.062	57	105	0.1	0.1	4.178	A
3 - A272 (W)	463	116	57		1167	0.397	462	690	0.5	0.7	5.101	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	976	244	0	110.10	1359	0.718	971	635	1.4	2.5	9.193	A
2 - Site Access 1	69	17	843		825	0.084	69	128	0.1	0.1	4.761	A
3 - A272 (W)	567	142	69		1156	0.491	566	843	0.7	1.0	6.090	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	976	244	0	110.10	1359	0.718	975	636	2.5	2.5	9.384	A
2 - Site Access 1	69	17	847		823	0.084	69	129	0.1	0.1	4.774	A
3 - A272 (W)	567	142	69		1156	0.491	567	847	1.0	1.0	6.116	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	796	199	0	89.90	1359	0.586	801	521	2.5	1.4	6.500	A
2 - Site Access 1	57	14	695		915	0.062	57	106	0.1	0.1	4.195	A
3 - A272 (W)	463	116	57		1167	0.397	464	695	1.0	0.7	5.129	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (E)	667	167	0	75.29	1359	0.491	669	436	1.4	1.0	5.232	A
2 - Site Access 1	47	12	581		984	0.048	47	88	0.1	0.1	3.845	A
3 - A272 (W)	388	97	47		1174	0.330	388	581	0.7	0.5	4.587	A

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.4.1693
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

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Filename: Jct L - Western Site Access.j10
Path: Y:\ARDENT PROJECTS\2207280 - Land at Ansty Farm, Mid Sussex\Transport\ARCADY
Report generation date: 27/09/2023 12:19:30

»2039 Do Something Isolated, AM
»2039 Do Something Isolated, PM

Summary of junction performance

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2039 Do Something Isolated					
1 - A272 (NE)	0.7	3.97	0.42	2.3	7.59	0.70
2 - Site Access 2	0.4	4.99	0.28	0.1	5.36	0.08
3 - A272 (SW)	4.8	14.67	0.83	1.8	6.69	0.64

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

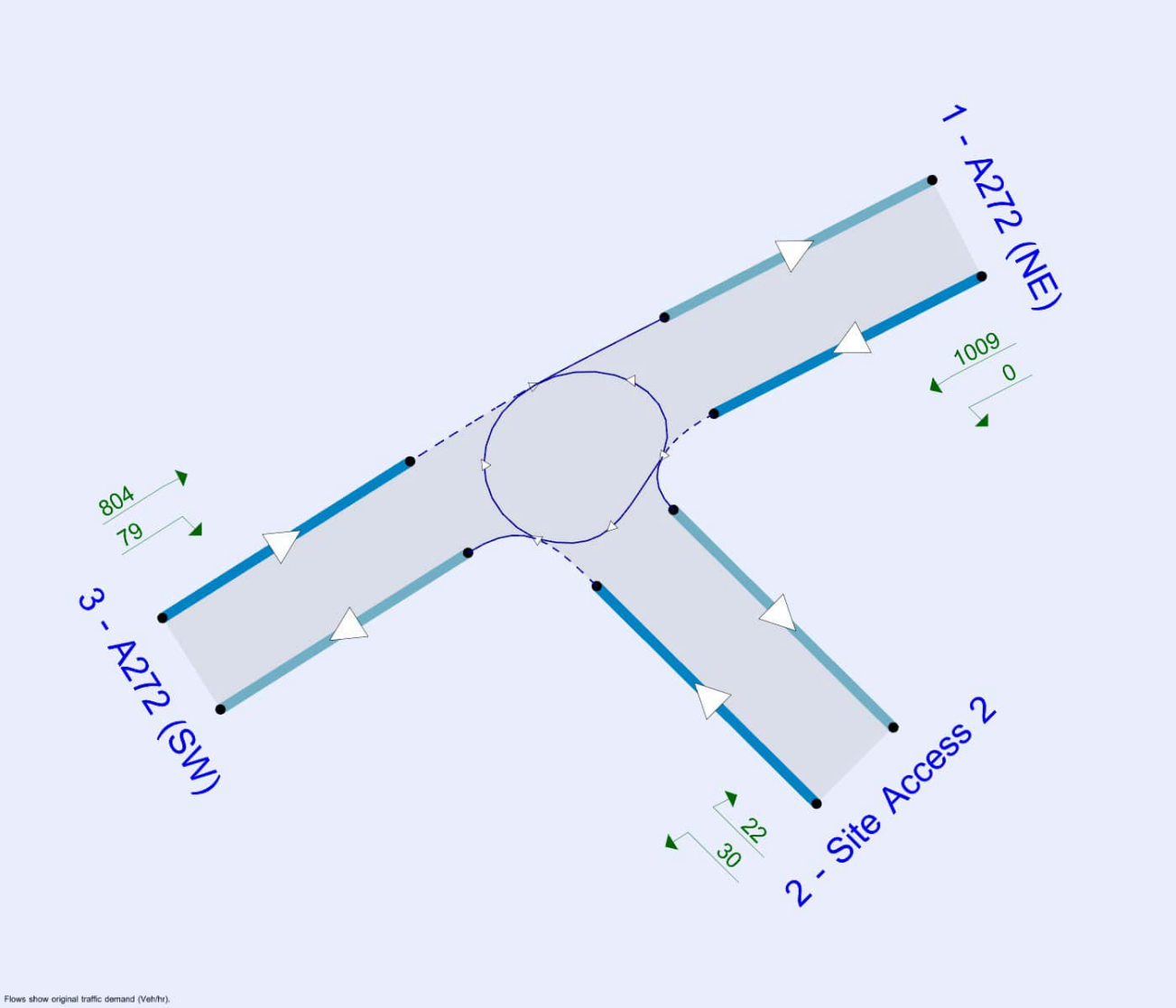
File summary

File Description

Title	A272 / Site Access 2
Location	
Site number	
Date	28/04/2023
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Hour	perHour



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓
D2	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2039 Do Something Isolated, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A272 / Site Access 2	Standard Roundabout		1, 2, 3	10.11	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.11	B

Arms

Arms

Arm	Name	Description	No give-way line
1	A272 (NE)		
2	Site Access 2		
3	A272 (SW)		

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - A272 (NE)	3.10	6.00	23.5	40.0	36.0	17.8		
2 - Site Access 2	3.38	4.50	18.1	42.0	36.0	7.4		
3 - A272 (SW)	3.10	6.00	29.1	20.0	36.0	39.6		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A272 (NE)	0.665	1675
2 - Site Access 2	0.630	1443
3 - A272 (SW)	0.610	1552

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - A272 (NE)		ONE HOUR	✓	606	100.000
2 - Site Access 2		ONE HOUR	✓	255	100.000
3 - A272 (SW)		ONE HOUR	✓	1102	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - A272 (NE)	2 - Site Access 2	3 - A272 (SW)
From	1 - A272 (NE)	0	0	606
	2 - Site Access 2	59	0	196
	3 - A272 (SW)	1072	30	0

Vehicle Mix

HV %s

		To		
		1 - A272 (NE)	2 - Site Access 2	3 - A272 (SW)
From	1 - A272 (NE)	0	0	5
	2 - Site Access 2	0	0	0
	3 - A272 (SW)	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A272 (NE)	0.42	3.97	0.7	A	556	834
2 - Site Access 2	0.28	4.99	0.4	A	234	351
3 - A272 (SW)	0.83	14.67	4.8	B	1011	1517

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	456	114	22	1581	0.289	455	846	0.0	0.4	3.193	A
2 - Site Access 2	192	48	455	1142	0.168	191	22	0.0	0.2	3.782	A
3 - A272 (SW)	830	207	44	1468	0.565	825	602	0.0	1.3	5.551	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	545	136	27	1578	0.345	544	1014	0.4	0.5	3.481	A
2 - Site Access 2	229	57	544	1083	0.212	229	27	0.2	0.3	4.215	A
3 - A272 (SW)	991	248	53	1463	0.677	988	720	1.3	2.0	7.522	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	667	167	33	1574	0.424	666	1235	0.5	0.7	3.963	A
2 - Site Access 2	281	70	666	1002	0.280	280	33	0.3	0.4	4.984	A
3 - A272 (SW)	1213	303	65	1456	0.833	1203	882	2.0	4.6	13.705	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	667	167	33	1574	0.424	667	1245	0.7	0.7	3.969	A
2 - Site Access 2	281	70	667	1001	0.280	281	33	0.4	0.4	4.994	A
3 - A272 (SW)	1213	303	65	1456	0.833	1213	883	4.6	4.8	14.671	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	545	136	27	1578	0.345	546	1027	0.7	0.5	3.492	A
2 - Site Access 2	229	57	546	1082	0.212	230	27	0.4	0.3	4.226	A
3 - A272 (SW)	991	248	53	1463	0.677	1001	722	4.8	2.2	7.966	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	456	114	23	1581	0.289	457	855	0.5	0.4	3.204	A
2 - Site Access 2	192	48	457	1141	0.168	192	23	0.3	0.2	3.795	A
3 - A272 (SW)	830	207	44	1468	0.565	833	604	2.2	1.3	5.700	A

2039 Do Something Isolated, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A272 / Site Access 2	Standard Roundabout		1, 2, 3	7.12	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.12	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - A272 (NE)		ONE HOUR	✓	1009	100.000
2 - Site Access 2		ONE HOUR	✓	52	100.000
3 - A272 (SW)		ONE HOUR	✓	883	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - A272 (NE)	2 - Site Access 2	3 - A272 (SW)
From	1 - A272 (NE)	0	0	1009
	2 - Site Access 2	22	0	30
	3 - A272 (SW)	804	79	0

Vehicle Mix

HV %s

		To		
		1 - A272 (NE)	2 - Site Access 2	3 - A272 (SW)
From	1 - A272 (NE)	0	0	2
	2 - Site Access 2	0	0	0
	3 - A272 (SW)	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - A272 (NE)	0.70	7.59	2.3	A	926	1389
2 - Site Access 2	0.08	5.36	0.1	A	48	72
3 - A272 (SW)	0.64	6.69	1.8	A	810	1215

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	760	190	59	1603	0.474	756	619	0.0	0.9	4.232	A
2 - Site Access 2	39	10	756	957	0.041	39	59	0.0	0.0	3.921	A
3 - A272 (SW)	665	166	16	1515	0.439	662	779	0.0	0.8	4.206	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	907	227	71	1596	0.569	905	741	0.9	1.3	5.203	A
2 - Site Access 2	47	12	905	861	0.054	47	71	0.0	0.1	4.420	A
3 - A272 (SW)	794	198	20	1513	0.525	793	932	0.8	1.1	4.990	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	1111	278	87	1585	0.701	1107	907	1.3	2.3	7.467	A
2 - Site Access 2	57	14	1107	732	0.078	57	87	0.1	0.1	5.338	A
3 - A272 (SW)	972	243	24	1510	0.644	969	1140	1.1	1.8	6.628	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	1111	278	87	1585	0.701	1111	909	2.3	2.3	7.585	A
2 - Site Access 2	57	14	1111	729	0.079	57	87	0.1	0.1	5.357	A
3 - A272 (SW)	972	243	24	1510	0.644	972	1144	1.8	1.8	6.691	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	907	227	71	1595	0.569	911	745	2.3	1.3	5.291	A
2 - Site Access 2	47	12	911	858	0.055	47	71	0.1	0.1	4.442	A
3 - A272 (SW)	794	198	20	1513	0.525	796	938	1.8	1.1	5.045	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - A272 (NE)	760	190	60	1603	0.474	761	623	1.3	0.9	4.285	A
2 - Site Access 2	39	10	761	954	0.041	39	60	0.1	0.0	3.938	A
3 - A272 (SW)	665	166	17	1515	0.439	666	784	1.1	0.8	4.249	A