

Energy & Sustainability Statement

Bromfords Developments Limited

March 2022



Snow Capel Farm, Gloucester

REV A 12/05/2022



Energy & Design

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2.0 Methodology

2.1 Assessment Methodology

Energy & Design Ltd have modelled each plot using SAP 2012 methodology to calculate the energy demand of the 190 dwellings.

This will allow us to show compliance in two steps

- 1) Baseline Energy Demand – this will be calculated and given in Total CO₂ emissions (kgCO₂/year). SAP uses the Target Emission Rate (TER = CO₂ kilograms, per M₂ of total useful floor area, per year) to create the baseline for compliance with the approved document Part L 2013, this is then multiplied by the total useful floor area to give the overall CO₂ emissions
- 2) Improved Fabric – The reduction of CO₂ emissions (kgCO₂/year) using the fabric first principle to get to 10% in total.

3.0 Baseline Energy Demand

3.1 The Development Baseline

To evaluate the proposed energy strategy, it is important to determine firstly the base line. In this case it is the Target Emission Rate for CO₂ emissions per year.

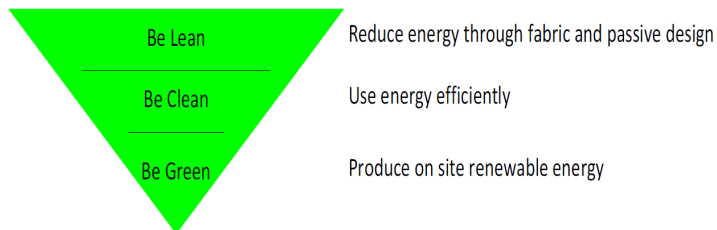
The proposed dwellings have been modelled in SAP L1a2013 and the total maximum CO₂ emissions permitted to comply with L1a2013 are 287,706.34kgCO₂/year.

The base line energy demand is shown below

Target Emission Rate: Compliant with AD L 2013	
Total CO ₂ emissions – kgCO ₂ /year	287,706.34

4.0 CO₂ Reduction Strategy - Fabric First Approach

4.1 Energy Hierarchy



The proposed dwellings have been designed in accordance with the 'energy hierarchy', which aims to reduce energy demand through passive design measures and a fabric first approach before utilising low carbon energy and the production of on-site renewable energy

Most importantly to the delivery of low carbon and energy efficient buildings is the 'Fabric First' principle which recognises the most effective way of minimising carbon emissions is to reduce the demand for heat and power through a well-insulated, energy efficient building fabric and services.

Reducing the primary energy demand of a building using an efficient fabric and services is widely regarded as best practice and is promoted by the Zero Carbon Hub so this should be the first and most important step to reducing carbon emissions.

This 'fabric first' approach has several benefits including:

- Little to no reliance on an occupier's behaviour to deliver carbon reductions. Achieving carbon savings from renewable energy technologies requires education, awareness and often, behavioural changes from occupants.
- Virtually no maintenance and/or replacement costs to maintain carbon reductions through improved fabric; and
- Carbon savings delivered are 'locked-in' for the lifetime of the building (60 years or more) rather than the much shorter lifespan (around 25 years) of a renewable energy technology.

4.2 Efficiency Measures

The proposed design will aim to reduce thermal energy demand by targeting improved insulation levels and air leakage and fabric u-values in line with current Building Regulations requirements.

The following measures to reduce energy use and carbon emissions have been included in the design of the new dwellings:

- Design of new homes to optimise natural daylight in all the habitable spaces with suitable window sizes relative to living spaces and bedrooms;
- Design and layout to promote passive solar gains, maximise natural daylight, sunlight and ventilation, with the majority of homes orientated to the South;
- Development which balances minimising the direct adverse impact of shading from other buildings and landscape features and improving access to passive solar gains;
- High performance glazing with appropriate window u-values and g-values to reduce heat loss and optimise positive solar gain while reducing the potential for overheating.
- 100% low energy lighting.
- Use of Accredited Construction Details, and bespoke designed PSI values
- The ventilation strategy will be intermittent extracts with passive trickle vents

4.3 Proposed Fabric First Specification

The following is the values of the proposed fabric

Element	Limiting Average Values - Part L1a 2013	Proposed Average Values
Ground Floor U-Value (W/m ² K)	0.25	0.16
External Wall U-Value (W/m ² K)	0.30	0.20
Party Wall U-Value (W/m ² K)	0.20	0.00 (fully filled & Sealed)
Roof - Insulated at ceiling U-Value (W/m ² K)	0.20	0.11
Window U-Value (W/m ² K)	2.00	1.40
Door U-Value (W/m ² K)	2.00	1.50
Design Air Permeability m ³ /h.m ² at 50 Pa	10.00	5.10

4.4 Fabric First Results

After incorporating the improved fabric, the total site demand is 258,859.80kgCO₂/year.

Target Emission Rate: Compliant with AD L 2013		
Total CO ₂ emissions – kgCO ₂ /year	287,706.34	
After improved fabric	258,859.80	
Total achieved reduction	28,846.54	10.03%

Due to 10% being achieved by fabric improvements, low carbon energy and the production of on-site renewable energy will not be assessed in this study.

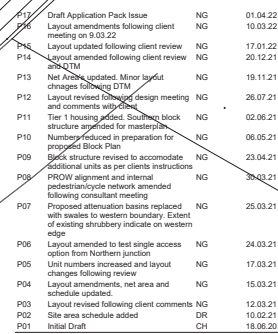
5.0 Conclusion

5.1 Carbon Reduction

By use of enhanced fabric specifications it is shown that the required reduction of 10% from the Target Emission Rate (TER) as set out in Part L of the Building Regulations (2013) has been met as follows

Target Emission Rate: Compliant with AD L 2013		
Total CO ₂ emissions – kgCO ₂ /year	287,706.34	
After improved fabric	258,859.80	
Total achieved reduction	28,846.54	10.03%

Appendix A – Site Layout




Drawing Title
Proposed Site Plan

Drawn	Checked	Date
CH	DB	09.06.20

Job No	Drawing No	Rev
3250	0030	P17

Status **PRELIMINARY**

Sheet ID
3250-O3S-ZZ-XX-GA-A-0030-S0-P17

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Appendix B – Proposed Draft Construction Specification

Draft L1a2013 Energy Specification – Snow Capel

- Ground floor – assumed 0.16 U value
- External cavity walls - 0.20 U value = 135mm fully filled cavity with Knauf supafill 34 (or similar 0.034 w/mk) with 100mm aircrete block (0.15 w/mk)
- Party Walls – 0.0 U Value = fully filled with sealed edges
- Dormer wall – 0.25 U Value = 140mm Frametherm between studs
- Roof Main - 0.11 U value = Knauf loft roll 44 (or similar 0.044 w/mk) 400mm total - 100mm between joists and 300mm cross laid over
- Sloping Roof – 0.20 U Value = 150mm Cellotex XR4150 (Or similar 0.022 w/mk insulation) between rafters underlined with plasterboard
- Windows / French Doors– 1.4 U value
- Entrance Doors – 1.5 U value
- Rear Doors – 1.5 U value
- Heating
 - Ideal logic Combi ESP1 30 (Mains GAS)
 - Time and Temperature Zone Control
 - PRT3 Compensator
- 100% energy efficient light bulbs
- Design air permeability 5.1 (all plots tested)
- no secondary fire or flue
- Extract Fans – Intermittent
- Selected thermal Linear bridging details (all others ACD)

Junctions with an external wall

- E2 - Lintels (0.050 separated lintels)
- E3 - Sill (0.009)
- E4 - Jamb (0.014)
- E5 - Ground Floor (0.051)
- E6 - Intermediate floor with a dwelling (-0.001)
- E10 – Eaves - insulation at ceiling level (0.046)
- E24 - Eaves - insulation at ceiling level Inverted (0.24)
- E12 - Gable - insulation at ceiling level (0.052)
- E13 – Gable – Rafter (0.04)
- E16 - Corner – normal (0.058)
- E18 – Party wall height (0.041)

Junctions with a party wall

- P1 - Ground Floor (0.0525)
- P2 – Intermediate in dwelling (0.0)
- P4 – Roof at ceiling level (0.072)
- P5 – Roof Rafters (0.08)

Appendix C - Reduction of CO₂ Emissions (kgCO₂/year) Calculation

* = Data taken from TER SAP worksheet Section 12a box 272 (L1a2013 SAP 9.92)
 ** = Data taken from DER SAP worksheet Section 12a box 272 (L1a2013 SAP 9.92)
 # = Data assumed

= Data assumed

Snow Capel, Matson, Gloucester
OPEN SPACE ASSESSMENT

on behalf of Bromford Housing Group
April 2022

~	DRAFT	CR	AS	JBA	April 2022
Revision	Purpose	Originated	Checked	Authorised	Date
Document Number: JBA 21/169 Doc 2		Document Reference: OPEN SPACE ASSESSMENT Snow Capel, Matson, Gloucester JAMES BLAKE A S S O C I A T E S			

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A	Sources of Information
B	Gloucester City Council Occupancy & Open Space Multiplier
C	Snow Capel Site Occupancy & Open Space Multiplier
D	Gloucester City Council: Open Space Strategy 2021-2026

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EXECUTIVE SUMMARY

General

This Open Spaces Assessment has been prepared by James Blake Associates Ltd, Chartered Landscape Architects on behalf of Bromford Housing regarding the proposed residential development at Snow Capel, Matson, Gloucester.

The application Site at Snow Capel, Matson, is seeking outline planning permission, for the residential development of up to 190 dwellings, associated parking, and open space provision.

The aims and objectives of this assessment are therefore:

- To determine the open space requirements of the proposed Site;
- To assess the open space provision and facilities within the wider area; and
- To assess the requirements for Public Open Space for the proposed development in line with the criteria set out within the Gloucester City Council’s ‘New Housing and Open Space’ Supplementary Planning Document.

Open Space Requirements and Provision

The open space requirements of the proposed new development are shown in Table A below.

As shown in Table A, the total quantity of open space to be provided within the site to meet the anticipated increase in residents arising from the proposed development is 18,928m². Assuming a total number of 676 occupants, a surplus of open space is anticipated.

Table A: Open Space Requirements and Provision

Dwelling Type	No. of Occupants	No. of Dwellings	Minimum POS Required Sq /m	Total POS Sq/m
1 Bed Apartment	2	22	56	1,232
2 Bed House	3	58	84	4,872
3 Bed House	4	92	112	10,304
4 Bed House	5	18	140	2,520
TOTAL		190		18,928

Table B: Open Space Typology Requirements and Provision

Open Space Typology	Required Quantity Standard Arising from Development (676 occupants)	Actual Provision Arising From Development	Variance
Children’s Playspace	4,424	1,700	-2,724
Formal Sport Open Space	11,492	0	-11,492
General Public Open Space	3,012	30,056	+27,044
TOTAL	18,928	31,756	+12,828

As a whole, the site provides an over provision of open space, with a deficit in children’s play space, and substantial over provision of general public open space. Although there is no provision on Site for formal sports, the wider area and neighbouring Winnycroft Lane residential allocation includes ample formal sports open spaces.

The assessment considers that certain open space types (outdoor sports facilities) are better considered in terms of the broader strategic need within the City, and therefore provided on a Ward-wide basis. Provision should therefore be accommodated off-site or through appropriate developer’s contributions to enhance the quality of existing facilities arising from increased use.

In terms of accessibility, the open space network retained and enhanced as part of the Snow Capel development, will greatly improve access to green spaces and historic assets for local residents, and, in combination with the immediately adjoining development of Winnycroft Lane, provide a range of leisure opportunities including natural green space, natural play space, historic asset and setting, allotments and formal sports pitches.

Based on an assessment of the open space provided as part of the development proposal, and provision within the wider environs, it is considered that the application site has the capacity to provide a substantial amount of open space, whilst supporting particular typologies where there is an imbalance.

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1. INTRODUCTION

1.1 Rationale

- 1.1.1 James Blake Associates has been instructed by Bromford Housing Group to undertake an assessment into the provision of open space arising from the proposed residential development of up to 190 dwellings, for land located off Winnycroft Lane, Snow Capel, Matson, Gloucester.
- 1.1.2 The application site, which extends to approximately 7.9ha, with central open space surrounding a SM moat, is bound by the M5 to the east and Winnycroft Lane to the west, with agricultural fields to the remaining boundaries and beyond the transport routes, along with scattered dwellings. The fields to the north form part of an allocation for residential dwellings, associated open space and sports pitches. An existing homestead, Green Farm, bounds the southern boundary of the site with agricultural land beyond the M5 and Winnycroft Lane bridge over the M5. The site lies within the jurisdiction of Gloucester City Council.

1.2 Background

- 1.2.1 This report establishes the requirements for open space associated with the proposed site for the development of 190 residential dwellings. It also considers the quantity of open space provided by the neighbouring allocation (Policy A6 - Winnycroft) and the existing local facilities (**Figure 2 - Allocation at Winnycroft and Figure 3 - Designated Open Spaces**). The report considers the quantity, quality and accessibility of open space areas to be provided on site, along with an assessment of any off-site developers contributions that may be required.
- 1.2.2 In order to inform this assessment, the report considers the following:
- Planning policies that set out the requirement for open space within residential developments;
 - Relevant benchmark standards (in terms of the quantity, accessibility and quality) of open space provision along with existing strategies relevant to open space and green infrastructure provision;
 - The current provision in the area (with reference to existing studies) including the identification of existing deficits and surpluses of different open space types;
 - An assessment of the amount of open space to be provided on site;
 - Open space design principles; and
 - Any off-site developers contributions that may be required.

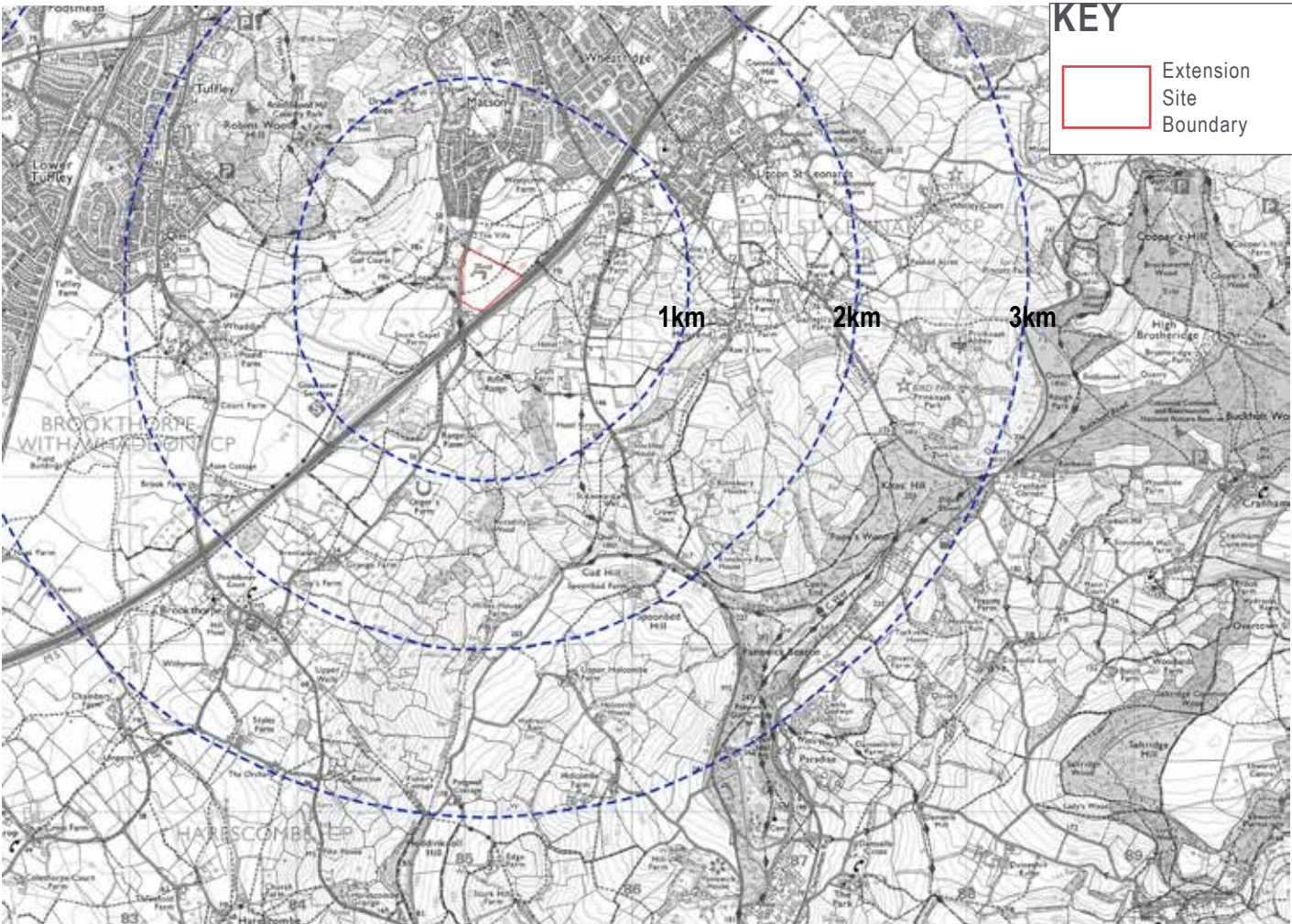


Figure 1: Site Location.
Source: Ordnance Survey Crown Copyright. All rights reserved. License Number 100022432

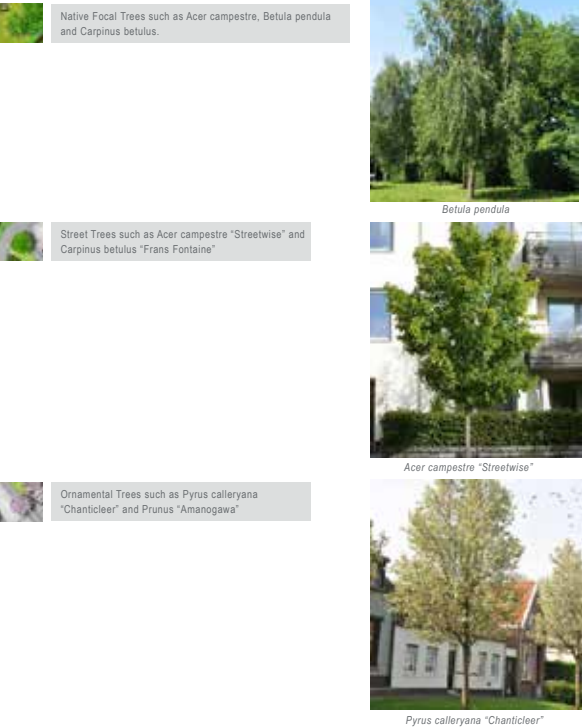




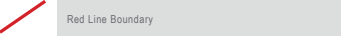
PROPOSED LANDSCAPE AREAS



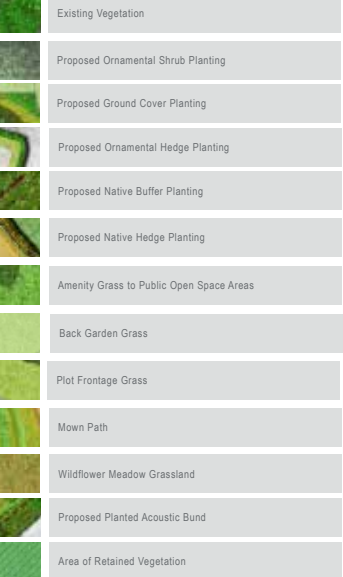
TREE PALETTE



KEY TO MASTERPLAN



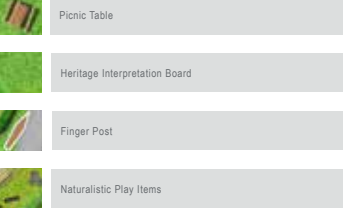
Soft Landscape



Hard Landscape



Streetscape Items



Rev.	Date	Initials	Comments
A	10.05.2022	CR	Amended to client comments
Site			Drg Number
Snow Capel, Matson, Gloucester			JBA 21/1169- SK01
Client			
Edward Ware Homes			
Drawn by	Date	Scale	Rev
HNG	APRIL 2022	1:1000@A1	-
James Blake Associates Ltd.			
LANDSCAPE ARCHITECTURE • LANDSCAPE PLANNING • ECOLOGY • ARBORICULTURE			
34-32 Out Westgate, Bury St Edmunds, Suffolk, IP33 3PA			
Tel: 01284 330197 E-mail: james.blake@jba-associates.com			
JAMES BLAKE			
ASSOCIATES			

Snow Capel, Matson, Gloucester

Figure 2: Landscape Masterplan.
Source: JBA, April 2022



2. POLICY CONTEXT

2.1 The National Planning Policy Framework

- 2.1.1 The National Planning Policy Framework (NPPF, July 2021), sets out the Government's planning policies for England and how these are expected to be applied. The NPPF sets out a clear presumption in favour of sustainable development, which means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). These three dimensions to sustainable development are: economic, social and environmental.
- 2.1.2 The NPPF sets out that public space is an integral part of achieving well-designed, beautiful and safe places (para. 8). It is recognised that public space is one of a number of elements that can ‘support communities’ health, social and cultural well-being.’ Local planning policies and decisions should ‘play an active role in guiding development towards sustainable solutions, but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area.’ To deliver social, recreational and cultural facilities planning policies should ‘plan positively’ for the provision and use of shared community facilities, and services to ‘enhance the sustainability of communities and residential environments’ (para. 93).
- 2.1.3 The NPPF states that ‘access to a network of high quality open spaces and opportunities for sport and physical activity is important for the health and well-being of communities’ (para. 98). As such, local planning policies should be based on ‘robust and up-to-date assessments’ of the needs for open space, sports and recreation facilities including the identification of opportunities for new provision. Specific needs and quantitative or qualitative surpluses and deficits should provide information to determine what open space, sports and recreational provision are required within the area (para. 98).
- 2.1.4 Strategic policies should set out an overall strategy for the pattern, scale and design quality of development, and make sufficient provision for Green Infrastructure (GI) (para. 20). GI is described as a ‘network of multi-functional green and blue spaces and other natural features, urban and rural, which is capable of delivering a wide range of environmental, economic, health and wellbeing benefits for nature, climate, local and wider communities and prosperity’ (NPPF, Annex 2: Glossary, 2021). Open spaces of varying types are an integral part of the network of GI; however, it is recognised that GI also has a role to play in the management of climate change and flooding, through mitigation and adaptation as part of planning for new development (para. 20).
- 2.1.5 The significance of GI is recognised by National Government, as set out in the 25 Year Environment Plan and the development of the GI Framework, supported by Natural England (2022) and other statutory and non-statutory bodies including, the Landscape Institute (2013), Environment Agency, English Heritage, Forestry Commission and Wildlife Trusts. The GI Framework, Principles and Mapping are currently available online with the remaining elements such as Standards, Design Guide, Case Studies and Process Journeys fully accessible by autumn 2022.

2.2 National Planning Practice Guidance

- 2.2.1 The ‘Open space, sports and recreation facilities, public rights of way and local green space’ (2014) Planning Practice Guidance, adds further context to the National Planning Policy Framework (“NPPF”) in terms of green spaces. It should be noted that Planning Practice Guidance will, where necessary, be updated to reflect changes to the National Planning Policy Framework (2021).

- 2.2.2 The NPPG states that ‘open space, which includes all open space of public value, can take many forms, from formal sports pitches to open areas within a development, linear corridors and country parks. It can provide health and recreation benefits to people living and working nearby; have an ecological value and contribute to green infrastructure..., as well as being an important part of the landscape and setting of built development, and an important component in the achievement of sustainable development...’
- 2.2.3 ‘It is for local planning authorities to assess the need for open space and opportunities for new provision in their areas. In carrying out this work, they should have regard to the duty to cooperate where open space serves a wider area’.

2.3 The Gloucester, Cheltenham and Tewkesbury Joint Core Strategy (Dec 2017).

- 2.3.1 The Gloucester, Cheltenham and Tewkesbury Joint Core Strategy sets out the planning vision for growth throughout the from 2011- 2031.The Joint Core Strategy was adopted in December 2017.
- 2.3.2 Policies of relevance to the proposed development in relation to this assessment are as follows:
- **Policy SD4 - Design Requirements**
 - ‘Public Realm and Landscape
 - New development should ensure that the design of landscaped areas, open space and public realm are of high quality, provide a clear structure and constitute an integral and cohesive element within the design. The contribution of public realm designs, at all scales, to facilitate the preferential use of sustainable transport modes should be maximised’*
 - **Policy SD6 - Landscape**
 - ‘Development will seek to protect landscape character for its own intrinsic beauty and for its benefit to economic, environmental and social well-being’
 - ‘Proposals will have regard to the local distinctiveness and historic character of the different landscapes in the JCS area, drawing, as appropriate, upon existing Landscape Character Assessments and the Landscape Character and Sensitivity Analysis. They will be required to demonstrate how the development will protect or enhance landscape character and avoid detrimental effects on types, patterns and features which make a significant contribution to the character, history and setting of a settlement or area’
 - **Policy SD8 - Historic Environment**
 - ‘Designated and undesignated heritage assets and their settings will be conserved and enhanced as appropriate to their significance, and for their important contribution to local character, distinctiveness and sense of place. Consideration will also be given to the contribution made by heritage assets to supporting sustainable communities and the local economy. Development should aim to sustain and enhance the significance of heritage assets and put them to viable uses consistent with their conservation whilst improving accessibility where appropriate.’

2. POLICY CONTEXT Continued.

- **Policy SD9 - Biodiversity and Geodiversity**

- *‘The biodiversity and geological resource of the JCS area will be protected and enhanced in order to establish and reinforce ecological networks that are resilient to current and future pressures. Improved community access will be encouraged so far as is compatible with the conservation of special features and interests.’*

- **Policy INF3: Green Infrastructure**

- *‘The green infrastructure network of local and strategic importance will be conserved and enhanced, in order to deliver a series of multifunctional, linked green corridors across the JCS area by:*
 - i. improving the quantity and/or quality of assets*
 - ii. improving linkages between assets in a manner appropriate to the scale of development, and*
 - iii. designing improvements in a way that supports the cohesive management of green infrastructure.*
- *Development proposals should consider and contribute positively towards green infrastructure, including the wider landscape context and strategic corridors between major assets and populations’*
- *‘Existing green infrastructure will be protected in a manner that reflects its contribution to ecosystem services (including biodiversity, landscape/townscape quality, the historic environment, public access, recreation and play) and the connectivity of the green infrastructure network.’*

- **Policy A6: Winnycroft**

- *‘The Strategic Allocation identified at Winnycroft (immediately north of the proposed Site) will be expected to deliver at least 620 new homes; a comprehensive green infrastructure network, including the provision of on-site allotments, a new on-site community orchard; areas of formal and informal recreation space on-site including the provision of permanent changing facilities.’*

2.4 The Pre-Submission Gloucester City Plan (Reg 19, 2019)

- 2.4.1 The Gloucester City Plan (GCP), together with the Joint Core Strategy (JCS), will provide the development framework to guide the City’s future growth up to 2031. The GCP delivers the JCS at the local level, setting out policies to address local issues and opportunities in the City. It will also set out a framework for managing and enhancing the historic and natural environment such as open spaces, areas of recreation and the historic environment.
- 2.4.2 Policies of relevance to this assessment include the following:
 - **Policy E1 - Landscape character and sensitivity.** Applications should make clear how retained features will be effectively managed and maintained in the future.
 - **Policy E4 - Trees, woodlands and hedgerows.** *‘All new planting, either on site or elsewhere in the city as part of biodiversity net gain must be provided to the satisfaction of the City Council’.*
 - **Policy E5 - Green Infrastructure: Building with Nature.** *‘Development must contribute towards the provision, protection and enhancement of Gloucester’s Green Infrastructure Network. Contributions should be appropriate and commensurate to the proposal. Major development proposals will be designed in accordance with ‘Building with Nature’ standards.’*

- **Policy F2 - Landscape and planting.** *‘Major development proposals must be accompanied by a landscape scheme, incorporating hard landscape and planting details. Such plans must: Indicate areas of public open space and amenity land that are proposed for adoption and provide full details of who will be adopting and maintaining the spaces.’*

2.5 Supplementary Planning Documents (SPDs)

Joint Core Strategy Green Infrastructure Strategy SPD (June 2014)

- 2.5.1 *‘The fundamental aim of GI is to deliver a higher quality of life for people who live, work and visit in the JCS area, as well as providing a sustainable habitat for wildlife. It does this through providing economic, social and environmental benefits.’*

Open Space Strategy 2021-2026 SPD (Feb 2021)

- 2.5.2 The open space strategy sets out how Gloucester City Council plans to protect, manage and enhance its open spaces over the next five years and beyond.
- 2.5.3 *‘The strategy has a threefold purpose, it provides;*
 - a sound body of evidence for developing robust, sustainable open space policies within the proposed City Plan;*
 - a series of objectives for council officers and partner organisations to work towards and;*
 - a clear understanding, for city residents, of the city council’s open space aspirations and open space priorities, including opportunities for residents to get involved in caring for their local green spaces.’*
- 2.5.4 The document assesses the existing quality and quantity of open space provision within the city. In terms of overall open space provision, it identifies that the distribution of open space across the city is adequate, but rather uneven. It helps to identify key themes for protecting existing spaces, identifying priorities for improvement, as well as considering the need for future additional provision as a result of further population increase.
- 2.5.5 *‘Wherever possible, new green space provision will be secured within major housing developments or existing spaces will be provided with improved facilities, funded by developer contributions, to cater for additional users.’* It sets out *‘the anticipated new residential developments in Gloucester and criteria for any resulting open space provision.’*
- 2.5.6 The Open Space Strategy sets out that any new open spaces are to be a minimum of 0.2ha in size and of a usable/practical shape, pointing to its own Appendix 6 for full details of the council’s locally set standards and requirements. However this simply states ‘To Follow’. The only available SPD document for methodology and to calculate new open space provision, is the one set out below and utilised for this assessment.

New Housing and Open Space SPD (June 2001)
- 2.5.7 This defines ‘public open space’ as: *‘open space that is available for sport, active recreation or children’s play, which is of a suitable size and nature for its intended purpose, and safely accessible and available to the general public’.*
- 2.5.8 *‘The provision of public open space is required for most new housing development in recognition that the new residents will generate demand on facilities that will put pressure on the existing provision of public open space and facilities in the locality of the proposal. The provision of safe, conveniently located and attractive communal public open space integrated into, or within close proximity to residential areas can improve the quality of life and residents which in turn has social and health benefits to the residents of the proposed development.’*
- 2.5.9 The Gloucester City Council New Housing and Open Space SPD will be considered in **Section 3.2.**

3. BENCHMARK STANDARDS FOR OPEN SPACE PROVISION

3.1 Planning for Outdoor Sport and Play (Fields in Trust)

- 3.1.1

First published in the 1930's 'The Six Acre Standard' guidance is based on a broad recommendation that 6 acres (2.4 hectares) of accessible green space per 1,000 head of population enables residents of all ages to participate in sport and play; 75% of local authorities adopt this or an equivalent standard (2014 Fields in Trust / David Lock Associates Survey). The Fields In Trust (FIT) definition of outdoor playing space is 'space that is accessible and available to the general public, and of a suitable size and nature for sport, active recreation and play.' Such areas therefore include playing fields, training areas, outdoor sports, designated areas for children's play, amenity open space suitable for casual or informal play and facilities for teenagers and young people. While sport and play are the primary purpose, such areas may contribute to informal recreation, amenity and biodiversity; however, not all open spaces may provide outdoor playing space and therefore certain types of open space are excluded.
- 3.1.2

The latest version of these standards is 'Planning and Design for Outdoor Sport and Play: Beyond the Six Acre Standard' (Nov 2020). **Tables 1a and 1b** set out Fields in Trust Benchmark Guidelines for a range of open space and equipped play areas. These benchmarks reflect the findings of the survey of local standards for open space applied by local planning authorities. Quantity guidelines should not be interpreted as maximum levels of provision, and it is recommended that these are adjusted to take account of local circumstances and obstacles to pedestrian and cycle movement.
- 3.1.3

The guidance states that the standards should be properly considered by local authorities and others (including developers) as one of a number of tools in the process of determining local standards. Local circumstances supported by appropriate evidence, including assessment of local need, should be taken into account. The quantity, accessibility and quality of open spaces should be given equal weight.
- 3.1.4

The level of sports provision is supported by Sport England guidance (2013) which states that playing pitch assessments should inform priorities for the provision of sports pitches.

3.2 Gloucester City Council's New Housing and Open Space SPD

- 3.2.1

This Supplementary Planning Document (SPD) sets out guidance for the provision, adoption and future maintenance of outdoor recreational facilities needed as a result of new residential development across the City of Gloucester. Such space includes children's play space as well as formal sport provision and general public open space.
- 3.2.2

Development thresholds of 150 dwellings or more will be expected to provide play, formal sport and general public open space in accordance with the criteria set in **Table 2** opposite, to meet the requirements of the City Plan, in particular Policy E5 for Green Infrastructure and Policy F2 Landscape and planting.
- 3.2.3

A definition of each open space classification (as given in the Gloucester City New Housing and Open Spaces SPD) is stated below:

Formal Sport - 'Formal sport should be provided as tennis courts or a multi use games area (MUGA) on medium sized housing developments and full size winter playing pitches and changing facilities will be sought on larger housing schemes. Equivalent formal sport provision may be considered depending upon the nature and scale of the proposed development'.

Table 1a: Fields in Trust recommended benchmark guidelines - formal outdoor space

Open space typology	Quantity Guide (m ² per 1,000 population)	Walking Guideline (walking distance: metres from dwellings)
Playing pitches	12,000	1,200
All outdoor sports	16,000	1,200
Equipped/designated play areas	2,500	LAPs – 100 LEAPs – 400 NEAPs – 1,000
Other outdoor provision (MUGAs and skateboard parks)	3,000	700

Table 1b: Fields in Trust recommended benchmark guidelines - informal outdoor space

Open space typology	Quantity Guide (m ² per 1,000 population)	Walking Guideline (walking distance: metres from dwellings)
Parks and Gardens	8,000	710
Amenity Green Space	6,000	480
Natural and Semi-Natural	18,000	720

Table 2: Gloucester City Council On-Site Provision for Development Threshold of 150 Dwellings

Recreational Open Space Classification	Provision
Formal Sport	A full size winter playing pitch & changing rooms, a multi-use games area (MUGA) and a tennis court or equivalent
Children's Play	A Neighbourhood Area for Play (NEAP) and a Local Equipped Area for Play (LEAP) or equivalent
General Public Open Space	Provided on-site

3. BENCHMARK STANDARDS FOR OPEN SPACE PROVISION Continued.

Children’s Play Space - *‘Equipped and informal children’s play space should be overlooked by surrounding properties and properly landscaped to the satisfaction of the Council. There should be an adequate buffer zone between the children’s play space and residential properties. The type and size of equipped play areas will depend on the number of new dwellings that are proposed. Equipped play areas include Local Equipped Areas for Play (LEAPs) and Neighbourhood Equipped Areas for Play (NEAPs). Informal children’s play space includes kickabout areas’.*

General Public Open Space - *‘Public open space of a size and location suitable for general recreational use such as passive recreation should have surfaced footpaths and seating and be well landscaped to the satisfaction of the Council’.*

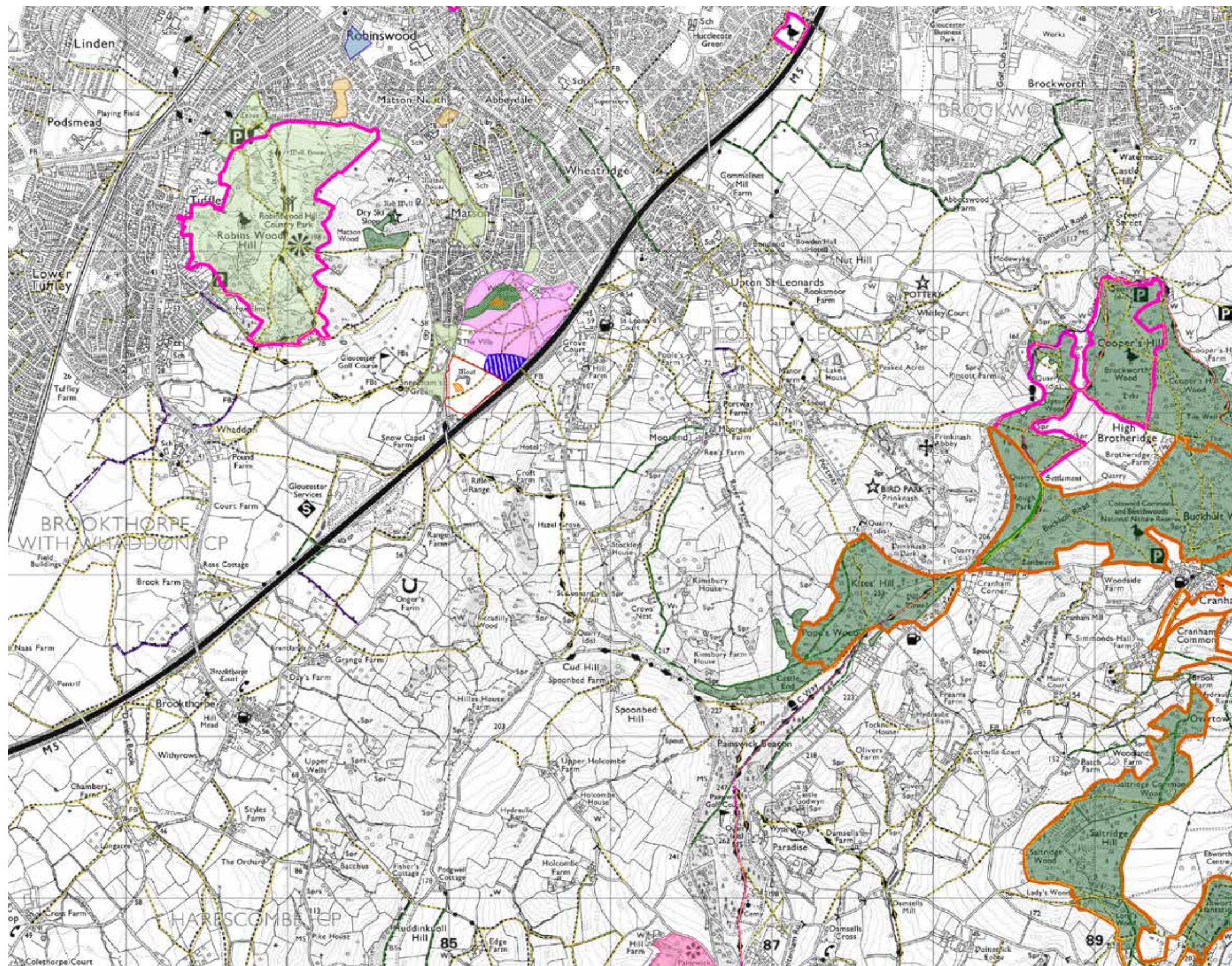
3.3 Securing Open Space Provision

- 3.3.1 Chapter 10 of the Gloucester City Council Open Space Strategy SPD, sets out how the new recreational provision in relation to proposed developments within the City will be secured/funded. At the strategic level, Community Infrastructure Levy (CIL) income will be used to help provide sport and play provision to serve the needs of Gloucester City communities. At the local level, Section 106 agreements or planning conditions will be used to secure the elements of playspace and recreational open space necessary to make a development acceptable in planning terms.
- 3.3.2 In some circumstances it may be appropriate for the Council to agree the off-site delivery of formal sports provision and commuted sums where on-site delivery proves to be impractical or unreasonable (for example, the presence of a protected Scheduled Monument and its setting along with an emerging formal sports provision as part of the Winnycroft A6 Allocation that is accessible to the proposed development Site via Public Right of Way).
- 3.3.3 Developers will be expected to provide all the categories of public open space and associated facilities on, or adjacent to, the development site wherever possible, to meet the demands of new residents unless it can be clearly demonstrated and agreed that an off-site contribution or commuted sum would be a more appropriate option.
- 3.3.4 The SPD states that *‘The Council’s minimum standard for public open space provision is 2.8 hectares per 1000 population. This equates to 28 square meters of public open space per person.... It is recognised that some modern dwellings are designed to provide greater flexibility in their internal arrangement. The assessment of the occupancy rate of a dwelling should therefore include rooms shown for other purposes, but capable of being used as a bedroom, once an allowance has been made for the appropriate number of living rooms or living area.’*
- 3.3.5 *‘The requirements for each category of public open space per person is 17m2 for formal sport, 7m2 for children’s play and 4m2 for (general open space) which is based on the Council public open space standard. For any given single dwelling the public open space requirements are very small. Clearly in many smaller developments the provision of some categories of public open space on-site would be worthless and therefore there is a need to group provision from a number of developments to provide a useable area in a convenient location’.*

4. QUANTITY, ACCESSIBILITY AND QUALITY OF EXISTING OPEN SPACE PROVISION

4.1 Quantity, Accessibility and Quality of Existing Open Space

- 4.1.1 The recently published Gloucester City Open Space Strategy 2021-2026 sets out its assessment data regarding the existing level of open space provision and / or any deficit at the local level, refer to Appendix D. As demonstrated in **Figure 3** there is significant open space within the wider study area including:
- Matson Park;
 - Sneedham's Green (north and South);
 - Robins Wood Hill Country Park; and
 - The Tredworth Road Cemeteries (east and west).
- 4.1.2 In addition to this it should be noted that the Winnycroft Allocation will provide formal sports provision and changing facilities immediately north of the Site, directly accessible via the Public Right of Way that connects the two Sites, and adding to the local provision. This is further considered in **Section 6.0**.
- 4.1.3 In total within the Matson and Robinswood Ward (Appendix D), there is 137.84ha of green open space, which, divided by the population figure as stated within the report stands at 9,541 (2017), establishes that 144m² is available per person in this Ward. With the Council's own minimum standard at 28m² per person, this equates to an over-provision of 116m² per person.
- 4.1.4 It should be noted that it is difficult to compare like for like for the Open Space typologies and requirements, due to the fact that the 2001 SPD does not use the same open space typologies as the most recent Open Space Assessment 2021 SPD. Unfortunately this document does not include an up-to-date calculation for open space requirements at Appendix 6 and thus the reliance on the 2001 SPD.
- 4.1.5 To analyse this further, the subdivision of the existing provision within the Ward for Formal Open Space stands at 5.39ha, (Appendix D). If the approximate provision at the Winnycroft allocation is included, along with the privately owned open space (where figures are provided), 9.12ha for formal sports provision is available within the Ward, excluding the Golf Club and Ski Slope as these do not meet the FiT designation (due to their size and wider catchment areas). This equates to 9.5m² of Formal Sports provision per person, an overall deficit within the Ward (likely to be much greater if the Golf Club and Ski slope sports provisions were to be included).
- 4.1.6 The current provision of the open scape subdivision and typology for Children's Play Space, stands at 0.86m² per person within the Ward. This equates to a significant deficit within the Ward.
- 4.1.7 The current provision of the subdivision of open green space, stands at 121.4m² per person. This includes typologies listed as natural, amenity and parks, equating to the 2001 SPD as general open space. This provides a significant over-provision within the Ward.
- 4.1.8 It should be noted that the 2001 SPD does not include allotments or cemeteries, and thus these aspects are not examined any further.



KEY
















-  Site Boundary
-  Publicly Accessible Recreation Space
-  Equipped Play Area
-  Sports Area
-  Allocated Development
-  Allocated Publicly Accessible Recreation Space
-  Allocated Equipped Play Area
-  Allocated Development Sports Area
-  Local Nature Reserve
-  Country Park
-  National Nature Reserve England
-  Ancient Woodlands
-  PRoW Footpath
-  PRoW Bridleway
-  PRoW Byway

Figure 3: Designated Open Spaces.

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5. ASSESSMENT OF OPEN SPACE REQUIREMENTS

5.1 Open Space Requirements

- 5.1.1
- The required demand for open space in relation to the Gloucester City benchmark standards are set out in **Table 3**. The quantity of open space is based on the anticipated population density of each part of the development (see Appendix B). As the Gloucester City guidelines draw upon the FiT benchmarks, the FiT benchmarks will not be discussed any further.
- 5.1.2
- The total demand for open space areas arising from the proposed development of the Site, (refer to Appendix C), amounts to 18,928m². This can be broken down into:
 - 4,424m² of Children's Play Space;
 - 11,492m² of Formal Sports provision; and
 - 3,012m² of General Open Space.
- 5.1.3
- The open space typologies at a local level establish a hierarchy from strategic City wide facilities (such as outdoor sports areas) to local facilities (play areas) that primarily provide facilities for the local communities in which they are situated. It is acknowledged that some spaces may provide a range of different functions, for example outdoor sports areas can also provide some amenity green space and natural and semi-natural areas. This can ensure that local deficits in certain types (at either the local or strategic level) can be addressed in part by access to other areas.

5.2 Funding Mechanisms

- 5.2.1
- Gloucester City Council requires the on-site provision of recreational open space where practicable. *‘Where the opportunity exists for public open space to be provided on-site as an integral part of the development, it should be provided on-site. Where full, or part provision, is not possible within the development site a financial contribution system for public open space provision has been set up which allows developers to make appropriate financial contribution to create new or fund improvements to the public open space facilities in the locality. All financial contributions will be paid into the Public Open Space Fund ’.*
- 5.2.2
- The CIL Regulations 2019 requires annual infrastructure funding statements setting out how much money has been raised through developer contributions(both CIL and S106 obligations). These recent changes will allow authorities to use funds from both CIL and section 106 obligations to pay for the same piece of infrastructure. This is expected by Government to “enable more flexible and faster infrastructure and housing delivery “.
- 5.2.3
- The type of infrastructure and other items to be funded through a Section 106 agreement (or secured through planning condition) include the on-site provision of formal open space and play space, or a commuted sum to cover the off-site provision of such facilities. The provision of maintenance for such facilities and any necessary transfer of land to secure the long-term future of such facilities are also necessary.

Table 3: Open Space Requirements Gloucester City Council - Snow Capel Site

Open Space Typology	Required Quantity Standard (m²/1000 population)	Required Quantity Standard Arising from Development (676 occupants)
Children's Play Space	7,000	4,424
Formal Sport Open Space	17,000	11,492
General Public Open Space	4,000	3,012
TOTAL	28,000	18,928

- 5.2.4
- Maintenance contributions will be required for all sites, whether the recreational open space is provided on-site, at an off-site location or by off-site contributions.
- 5.2.5
- Financial contributions for any off-site provision will be based on the size of the development and calculated in accordance with any equipment costs, with specific terms to be negotiated and agreed in writing by all interested parties. A commuted sum will also be required to be paid to cover the cost to establish/ refurbish and maintain recreational open space for a ten-year period.

6. OPEN SPACE PROVISION AND DESIGN PRINCIPLES

6.1 Open Space Quantity

- 6.1.1 The development Site includes a high standard of landscape design, carefully considered to ensure the SM moat and its setting are suitably addressed and incorporated into a comprehensive Green Infrastructure (GI) strategy. The GI, in tandem with the masterplan, has been developed to minimise the effects arising from the development, and ensure that the development reflects local design characteristics and is integrated into the wider landscape.
- 6.1.2 The GI strategy also seeks to deliver long-term landscape, biodiversity, recreation and sustainability benefits through the conservation of ecological habitats, the introduction of new habitats, landscape enhancement and the creation of accessible natural greenspace, contributing to the wider GI network.
- 6.1.3 The areas of open space to be provided on the development site are shown on **Figure 4**. The total quantity and breakdown according to type of open space is set out in **Table 4**. Whilst the proposed site does not meet the benchmark standards for formal sports provision, (this is expected to be provided via financial contributions) it can be seen that it broadly meets the benchmark standards with a shortfall in terms of children's playspace and an over-provision of general public open space. This is considered to reflect the urban edge location, the special characteristics of the Site including SM moat and the importance of these particular open spaces on this Site in respect of the setting to the historic asset.
- 6.1.4 As stated in the Gloucester City New Housing and Open Spaces SPD, children's LEAP should include a minimum Activity Zone of 400m². The requirement for children's play space arising from this development is 4,424m², with actual provision being 1,700m², a variance of -2,724m². As there is a deficit within the proposed development, and the wider development broadly meets this standard in terms of the Gloucester City benchmark and the FIT walking distances (see **Figure 5**) it is suggested that off-site contributions are sought. As a whole, the development Site provides a substantial over provision of general public open space.

6.2 Walking Distances

- 6.2.1 The Gloucester City New Housing and Open Space SPD only specifies walking distances to children's equipped play areas; LEAP located within 400 metres walking distance (about five minutes' walk), and NEAP located within 15minutes walking distance (1,000m). **Figure 5** shows the location of existing children's play areas alongside proposed, the purple shading is any area within 400m walk of at least one of these existing playspaces, with the blue shown for the proposed.

6.3 Design Principles

- 6.3.1 All of the open space across the development have been imaginatively designed in order to be multi-functional, safe and secure, promoting healthy lifestyles and quality of life. The open space areas include footpaths and cycleways, formal and informal recreational space, sustainable drainage and wildlife habitat. The design principles of each of the key areas, as set out on the Landscape Strategy Plan for the Site, are set out below.
- 6.3.2 New access points are proposed off Winnycroft Lane, these are located to the northern and southern ends of the western boundary to the Lane. As set out in the Proposed Site Plan, the main road loops around the site towards the eastern edge, with a footpath to one side. Private drives, shared surface areas and courtyards lead off this to dwellings and car parking courtyards. Pedestrian and cycle routes will link up the roads in between and around the development, with the existing PRow through the site diverted to traverse around the central green open space.

Footpaths are then proposed to link to other existing and proposed connections outside of the proposed site.

- 6.3.3 The central green is the key open space within the wider development's masterplan, its distinctive character is established due to the Schedule Monument moat, the area being protected and enhanced to sensitively retain a natural landscape around it, and allow views out over it towards Sneedham's Green common, immediately opposite the Site to the west, extending out to Robinswood Hill.
- 6.3.4 The frontage of the Site to Winnycroft Lane is formed by existing hedgerow and tree vegetation, with a footpath access route on the internal Site boundary. This allows access through and across the Site and allows a clear route through for the redirected Public Right of Way.
- 6.3.5 Play space will be design-led and specific for their location. All open spaces will encourage opportunities for innovative, inclusive, explorative, imaginative and challenging play, allowing children of different ages and abilities to play together in different ways and providing opportunities for access to the natural environment and learning.
- 6.3.6 Within the central green area, an equipped area of play will be located to the south west corner and west of the restored historic hedgerow, so as not to detract from the view across the SM moat from the north east corner. A sense of enclosure will be achieved through the use of low fencing; this feature will also result in exclusion of dogs from playing areas. The view from the north east corner will be accompanied by an attractive information board, explaining the Sites history and key views out across the moat to the common and Hill beyond. Tables and benches set in mown areas of grass will provide another experiential local play space for picnics and informal play. These areas seats will be provided to allow for picnics and resting places, along with the appropriate numbers of litter bins, to allow for playspaces to remain aesthetically pleasing.
- 6.3.7 Provisions for small informal grassland areas providing appropriate natural play spaces and or low key games can be found towards the eastern edge of the housing development. These are located, along with all the play spaces, in well over-looked positions, resulting in appropriate integration into the development, with informal boulders and timber logs.
- 6.3.8 All areas of open space are accessible for maintenance purposes as they all stem from vehicular routes or the contours of residential building curtilages.

6.4 Beyond The Boundary

- 6.4.1 The particular characteristics of the Site, with the historic central moat feature, means that it is not feasible to include any formal recreation area pitches or allotments. However, it should be noted that to the immediate north east of the Site is the Winnycroft Allocation Site, accessed via the existing PRow across this Site, through the boundary hedgerow and into an open space that is to provide sports pitches, with allotments just further along to the north east. There are also, within the Matson and Robinswood Ward, further opportunities such as the Golf Club and Ski Slope, privately owned open space. Although these are not specifically mentioned in the FiT guidance, it recognises golf courses as belonging to a much wider strategic scale in terms of 'walking' distances, beyond the scope of the guidance. However, it does not mean that they are ruled out, as within the Glossary is clearly states that 'Other Outdoor Sports' includes greens comprising natural or artificial surfacing.
- 6.4.2 It is acknowledged within the New Housing and Open Space SPD (2001) that new residential development will be expected to provide appropriate provision of open space via children's play, formal sports and general open that are necessary and reasonable for the development. On this Site, due to its particular characteristics of the historic setting to the SM moat to be preserved, it is expected that financial contributions will be made in lieu of on site formal sports provision, and possibly a partial contribution to children's play space.

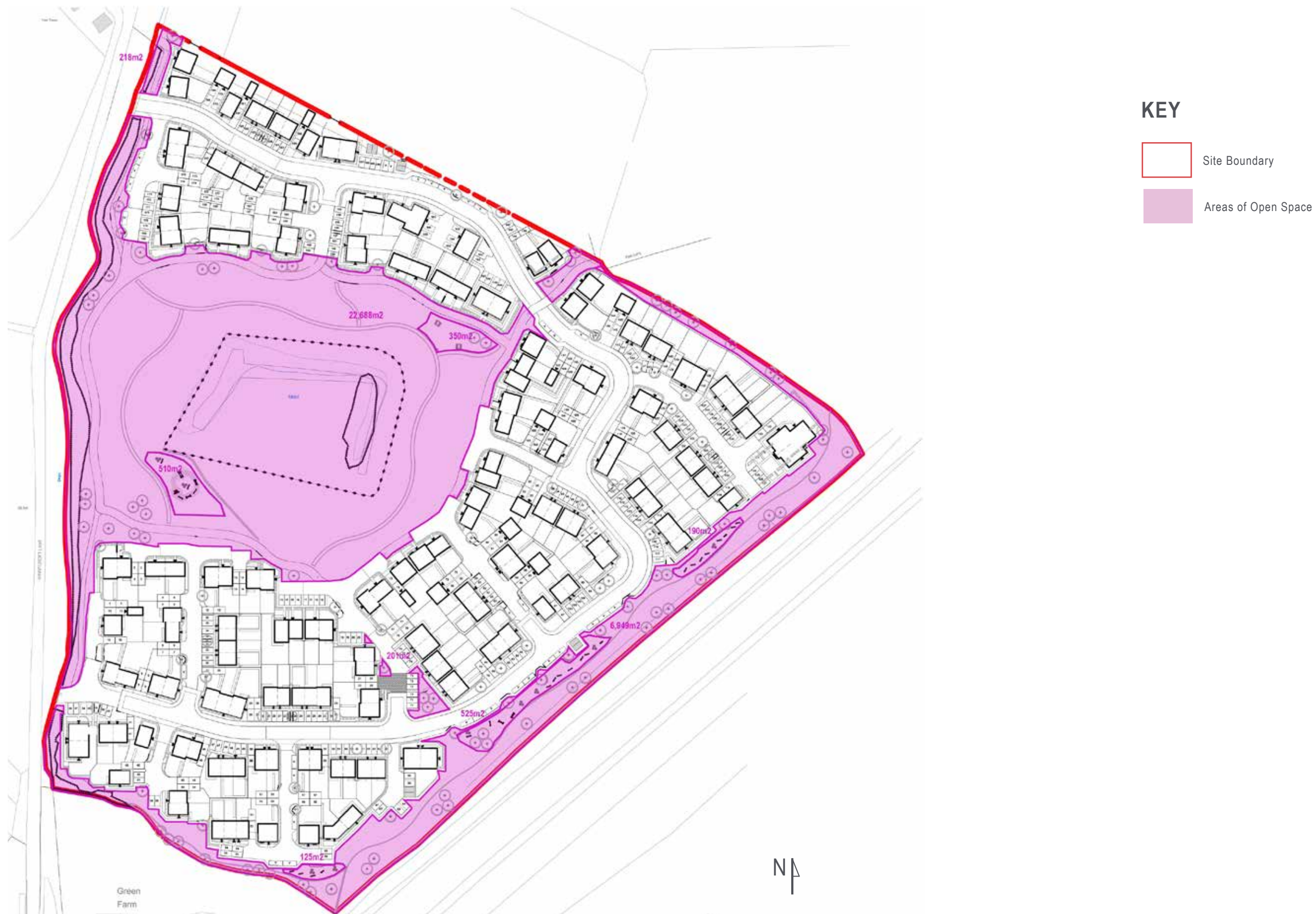


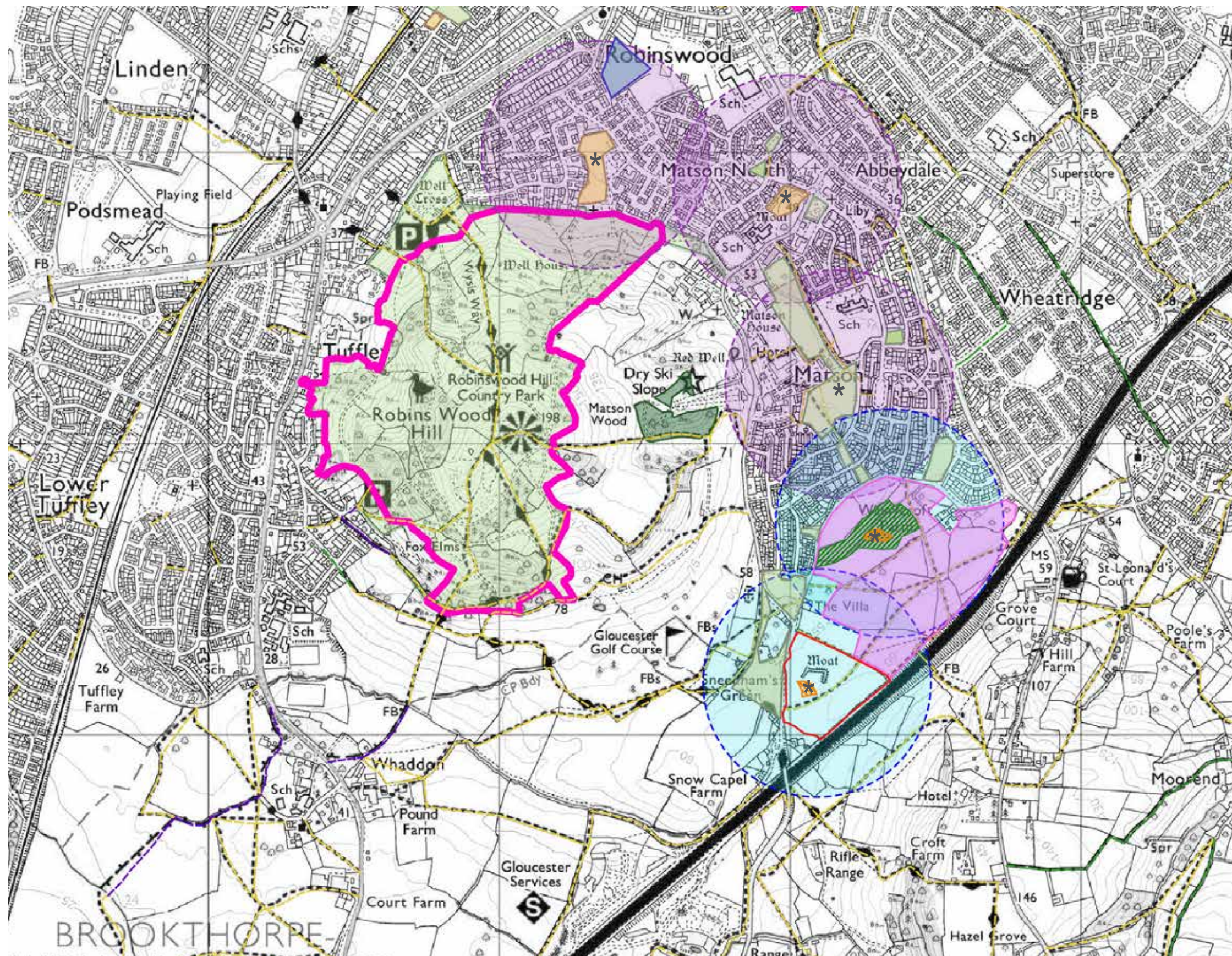
Figure 4: Open Space Provision On-Site.

Source: JBA, May 2022.

6. OPEN SPACE PROVISION AND DESIGN PRINCIPLES Continued.

Table 4: Open Space Provision - Snow Capel, Matson Site

Open Space Typology	Required Quantity Standard (m²/1000 population)	Required Quantity Standard Arising from Development (676 occupants)	Actual Provision Arising From Development	Variance
Children's Playspace	7,000	4,424	1,700	-2,724
Formal Sport Open Space	17,000	11,492	0	-11,492
General Public Open Space	4,000	3,012	30,056	+27,044
TOTAL	28,000	18,928	31,756	+12,828



KEY

- * Existing Children's Play Spaces (Equipped)
- Areas within 400m of an existing Children's Play Space
- *
 Proposed Children's Play Spaces (Equipped)
- Areas within 400m of a Proposed Children's Play Space

Figure 5: Walking Distances to Open Spaces.

Source: JBA, May 2022.



7. CONCLUSION

7.1 General

- 7.1.1 This development includes a high standard of landscape design and incorporates a comprehensive Green Infrastructure (GI) strategy. This GI strategy seeks to deliver long-term landscape, biodiversity, recreation and sustainability benefits through the preservation of historic SM moat and conservation of ecological habitats, the introduction of new habitats, landscape enhancement and the creation of accessible natural green space, contributing to the regional GI network.
- 7.1.2 All of the open spaces have been imaginatively designed to be multi-functional, safe and secure, promoting healthy lifestyles and quality of life in accordance with planning policy. The design and management of open spaces will ensure that they are of high quality and a management plan will be prepared setting out how the open spaces should be managed to ensure they are accessible, usable and to promote biodiversity in the long-term. The proposed extension site will also be subject to these management conditions.
- 7.1.3 The total quantity of open space to be provided on site to meet the anticipated increase in residents arising from the proposed extension site is 31,756m². Assuming a total number of 676 occupants, a quantity surplus in open space is anticipated. Whilst there is a imbalance in terms of the provision of the particular typologies of children's play, formal sports and general open space within the Site, the wider environs includes ample open spaces, which includes equipped play areas with overlapping 400m walking distances across the Ward and down to the Site itself, and sports facilities, including the neighbouring Allocation of Winnycroft Lane, along with the local Golf Club and Ski slope.
- 7.1.4 The assessment considers that certain open space types (Formal Sports facilities) provide borough-wide strategic facilities. It would be inappropriate to provide for these types of open space on the proposed Site. Provision should therefore be accommodated off-site or through appropriate developer's contributions to enhance the quality of existing facilities arising from increased use.
- 7.1.5 In terms of accessibility, the open space network provided as part of the Snow Capel development will greatly improve access to green spaces for local residents and provide a range of leisure opportunities including picnic spaces and passive enjoyment within a historic asset setting, equipped play area and natural play spaces.
- 7.1.6 Based on an assessment of the open space provided as part of the development proposal and provision within the wider environs, it is considered that the application site has the capacity to provide a substantial amount of open space, whilst supporting particular typologies where there is an imbalance on Site.

APPENDIX A: SOURCES OF INFORMATION

Planning and the Natural Environment

- Green Infrastructure: Connected and Multifunctional Landscapes: Position Statement. Landscape Institute, 2013.
- National Planning Policy Framework (NPPF), Department of Communities and Local Government. July, 2021.
- Natural Environment White Paper The Natural Choice: Securing the Value of Nature, Department of Environment, Food and Rural Affairs. June, 2011.
- Playing Pitch Strategy Guidance. An approach to developing and delivering a playing pitch strategy. Sport England, 2013.
- Gloucester City Council Open Space Strategy 2021-2026 SPD. Feb, 2021, excl. Appendix 6.
- Gloucester City Council New Housing and Open Space SPD. June, 2001.

APPENDIX B:
Gloucester City Council: OCCUPANCY & OPEN SPACE MULTIPLIER

Table 1: Occupancy of Dwellings and Public Open Space Requirement

Size of Dwelling	Number of Occupants	Minimum POS Requirement m2
Elderly Person Dwelling	1	28
1 bedroom	2	56
2 bedrooms	3	84
3 bedrooms	4	112
4 bedrooms	5	140
5 bedrooms	6	168
6+ bedrooms	7	196

Table 2: Public Open Space Requirements per Dwelling

Size of Dwelling	Formal Sport m2	Children's Play m2	General Public Open Space m2	Total m2
Elderly Person Dwelling	17	0	11	28
1 bedroom	34	0	22	56
2 bedrooms	51	21	12	84
3 bedrooms	68	28	16	112
4 bedrooms	85	35	20	140
5 bedrooms	102	42	24	168
6+ bedrooms	119	49	28	196

APPENDIX C:

Snow Capel Site: OCCUPANCY & OPEN SPACE MULTIPLIER

Table 3: Occupancy of Dwellings and Public Open Space Requirement for Snow Capel Site

Size of Dwelling	Number of Occupants	Actual No. of Dwellings	Actual Minimum POS Requirement m2
Elderly Person Dwelling	1	-	-
1 bedroom	2	22	1,232
2 bedrooms	3	58	4,872
3 bedrooms	4	92	10,304
4 bedrooms	5	18	2,520
5 bedrooms	6	-	-
6+ bedrooms	7	-	-

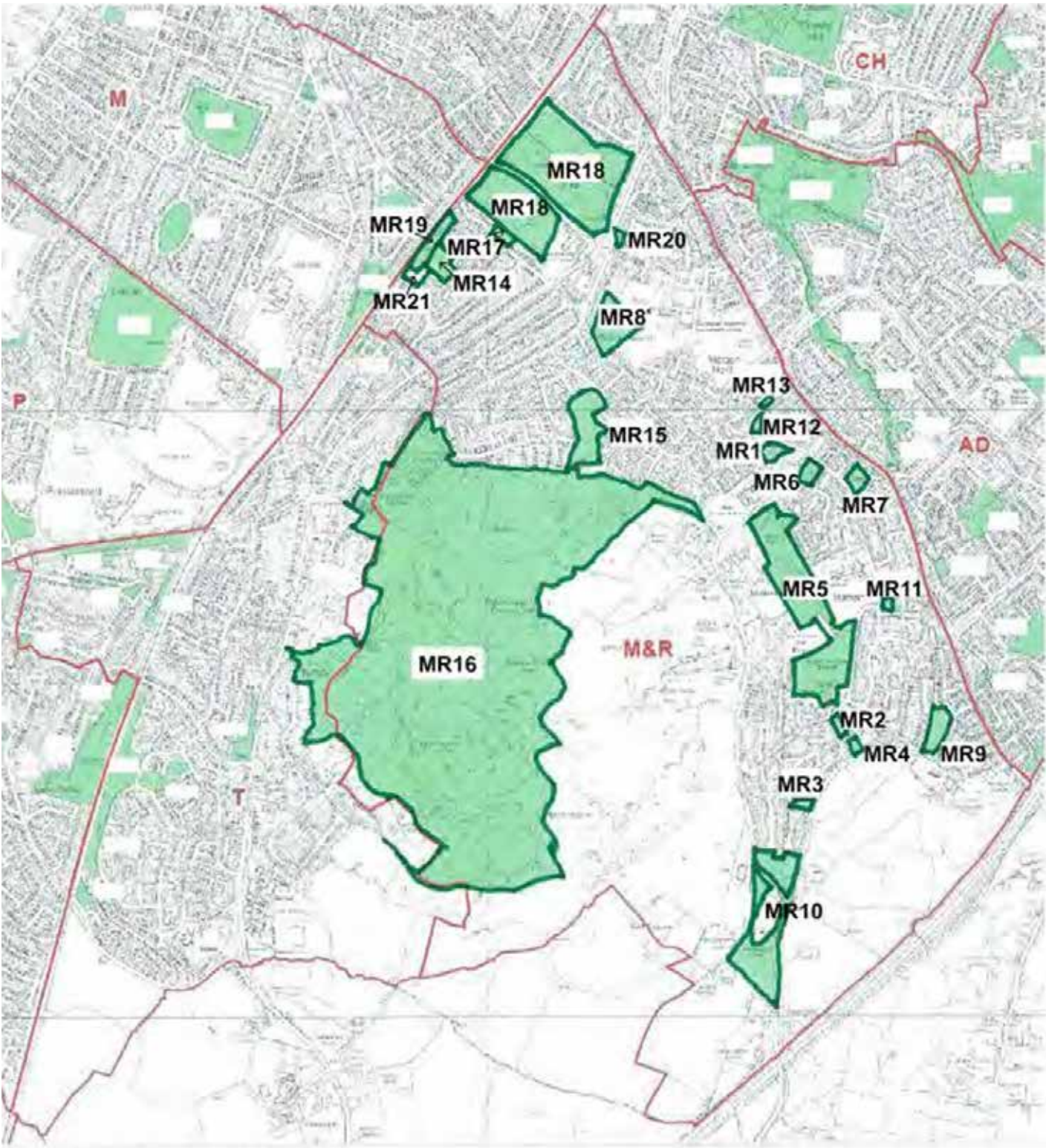
Table 4: Actual Public Open Space Requirements per Dwelling for Snow Capel Site

Size of Dwelling	Formal Sport m2	Children’s Play m2	General Public Open Space m2	Total m2
Elderly Person Dwelling	-	-	-	-
1 bedroom	748	0	484	1,232
2 bedrooms	2,958	1,218	696	4,872
3 bedrooms	6,256	2,576	1,472	10,304
4 bedrooms	1,530	630	360	2,520
5 bedrooms	-	-	-	-
6+ bedrooms	-	-	-	-
TOTAL m2	11,492	4,424	3,012	18,928

Extract: Matson and Robinswood Ward - Publicly accessible open space page 60-61

Matson and Robinswood ward

Previous ref number	Site number	Ward and site name	Size (ha)	Primary Typology & size	2nd type & size	3rd type & size	4th type and size	Pop figure (2017)		
		Matson and Robinswood (MR)						9541		
MR1	MR1	Evan's Walk	0.42	amenity 0.38	play 0.04					
MR2	MR2	Matson Ave/Redwell Rd	0.19	amenity						
MR3	MR3	Caledonian Avenue	0.09	amenity						
MR4	MR4	Matson Ave/Winneycroft Lane	0.2	amenity						
MR5	MR5	Matson Park (incl new Marlstone Close area)	8.99	PARK 4.34	sport 3.45	natural 1.0	play 0.2			
MR6	MR6	Rectory Rd gardens	0.48	amenity						
MR7	MR7	Matson Library	0.41	amenity						
MR8	MR8	Saintbridge Recreation Ground	1.94	sport						
MR9	MR9	Haycroft Drive	1	amenity						
MR10	MR10	Sneedhams Green (North and South)	4.43	natural						
MR11	MR11	St Peter's Rd/Matson Ave	0.14	amenity						
MR12/1	MR12	Penhill Rd (south)	0.21	amenity						
MR12/2	MR13	Penhill Rd (north)	0.14	amenity						
MR13	MR14	Northfield Road open space	0.72	amenity						
MR15	MR15	Baneberry Road	2.28	amenity 2.24	play 0.04					
MR17/TU12	MR16	Robinswood Hill Country Park	99.73	99.63 natural	play 0.1					
MR18	MR17	Bibury Road	0.25	amenity						
MR19	MR18	Tredworth Road cemeteries (east 9.85 and west 5.13)	14.98	cemetery						
MR20	MR19	White City Allotments	0.7	Allotments						
MR21	MR20	Cotteswold Rd allotments	0.1	Allotments						
	MR21	The Venture white city adventure playground	0.44	play						
		Total	137.84	natural 105.06	amenity 6.45	sport 5.39	play 0.82	allotments 0.8	cemetery 14.98	parks 4.34




Matson & Robinswood ward

Extract: Matson and Robinswood Ward - Privately owned open space page 77

Matson & Robinswood Ward		
Gloucester Academy, Painswick Road	-	Some shared use pitches/facilities
Old Centralians ground, Painswick Road	0.9ha	Rugby pitches (some shared use, linked with Gloucester Academy?)
Matson Shops island Matson Avenue	0.23ha	Highway or housing land, in public use, informal green space
Gloucester Golf Club, Matson Lane	-	Golf - not included in FiT sports pitch designation
Gloucester Ski and Snowboard Centre, Matson Lane	-	Not included in FiT sports pitch designation

Extract: Matson and Robinswood Ward - Quality and Value Assessment page 87

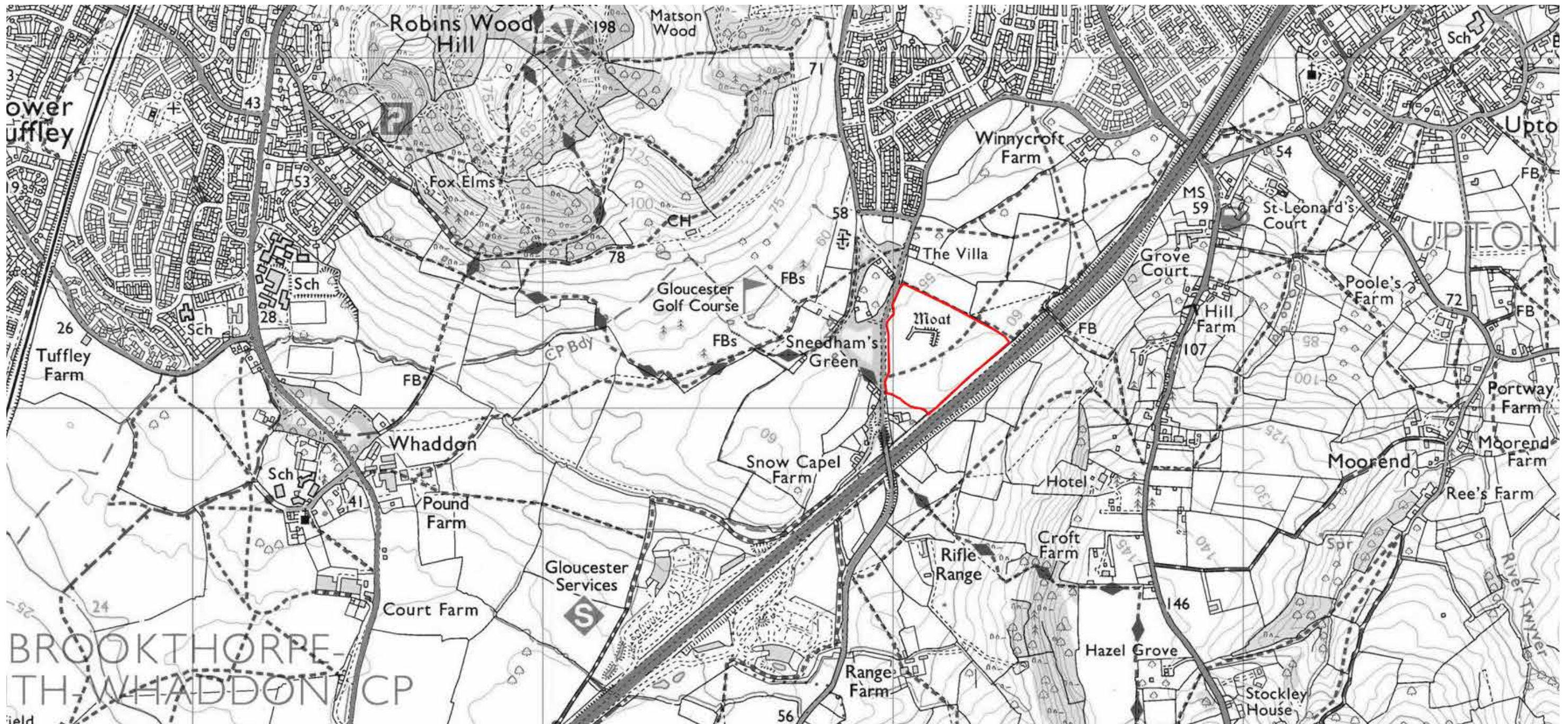
Ward	Site name	Assessment rating (quality and value)			
		Site Quality	Community Value	Biodiversity value	
Site ref no:				Existing	Potential
Matson & Robinswood					
MR1	Evan's Walk	med	med	low	med
MR2	Matson Avenue/Redwell Rd	med	med	low	med
MR3	Caledonian Avenue	med	med	low	med
MR4	Matson Ave/Winneycroft Lane	med	med	low	med
MR5	Matson Park (inc Marlstone Close)	low	high	high	high
MR6	Rectory Rd Gardens	low	high	low	med
MR7	Matson Library	med	med	low	med
MR8	Saintbridge Recreation Ground	low	low	low	med
MR9	Haycroft Drive	med	med	med	high
MR10	Sneedham's Green	med	med	med	high
MR11	St Peter's Road/Matson Ave	med	med	med	med
MR12	Penhill Road (South)	med	med	med	med
MR13	Penhill Rd (North)	med	med	low	med
MR14	Northfield Rd open space	low	high	low	med
MR15	Baneberry Road	med	high	low	med
 MR16	Robinswood Hill Country Park	high	high	high	high
MR17	Bibury Road	low	high	low	med
MR18	Tredworth Rd cemeteries	med	med	med	med
MR19	White City Allotments	med	high	med	med
MR20	Cotteswold Road Allotments	med	med	low	low
MR21	The Venture (White City)	med	high	low	low



Snow Capel, Matson, Gloucester LANDSCAPE AND VISUAL IMPACT ASSESSMENT

On behalf of **Edward Ware Homes**

June 2021



B	Updated	CR	AS	JBA	April 2022
A	Updated	CR	BJB	JBA	April 2022
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1. INTRODUCTION

1.1 Background

1.1.1 James Blake Associates Ltd, Chartered Landscape Architects, have been instructed by Edward Ware Homes to produce a Landscape and Visual Impact Assessment for the proposed residential development located off Winnycroft Lane, Matson, Gloucester ('the Site').

1.1.2 Matson is a small suburb of the city of Gloucester, Gloucestershire. The city is bordered to the west by the River Severn and to the east by the M5 and the Cotswold escarpment. Matson lies 4.5km from Gloucester cathedral, with Cheltenham 12km to the north east and Stroud 9.8km to the south.

1.2 Scope

1.2.1 The aims and objectives of this assessment are:

- To describe and evaluate the current landscape character of the site and its surroundings, including heritage assets, and identify potential landscape receptors with reference to published character types / areas and their characteristic landscape elements;
- To identify potential visual receptors (i.e. people who would be able to see the site and the proposed development) and their representative views;
- To evaluate the sensitivity of landscape and visual receptors to the type of development proposed;
- To describe and assess any impacts of the development in so far as they affect the landscape and/or views of it and to evaluate the magnitude of change and the scale of effect; and
- To identify any specific mitigation or monitoring measures that are required to reduce residual landscape and visual effects.

1.2.2 The methodology for undertaking the assessment is in accordance with the 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA3) and best practice.

1.2.3 The assessment has been carried out as an integral part of the design process. The initial evaluation (baseline) was used to identify the landscape and visual constraints as well as opportunities of both the site and its surrounding landscape. The potential landscape and visual effects subsequently informed a landscape strategy that was incorporated into the development masterplan as primary/embedded mitigation through an iterative design approach.

1.2.4 As such the assessment and design process aims to ensure that:

- Aspects which make an essential contribution to landscape character are maintained and managed;
- The development and associated change can be accommodated within the existing landscape and visual context; and
- Improvements and enhancements can be made where uncharacteristic features detract from the character and visual amenity of the area.

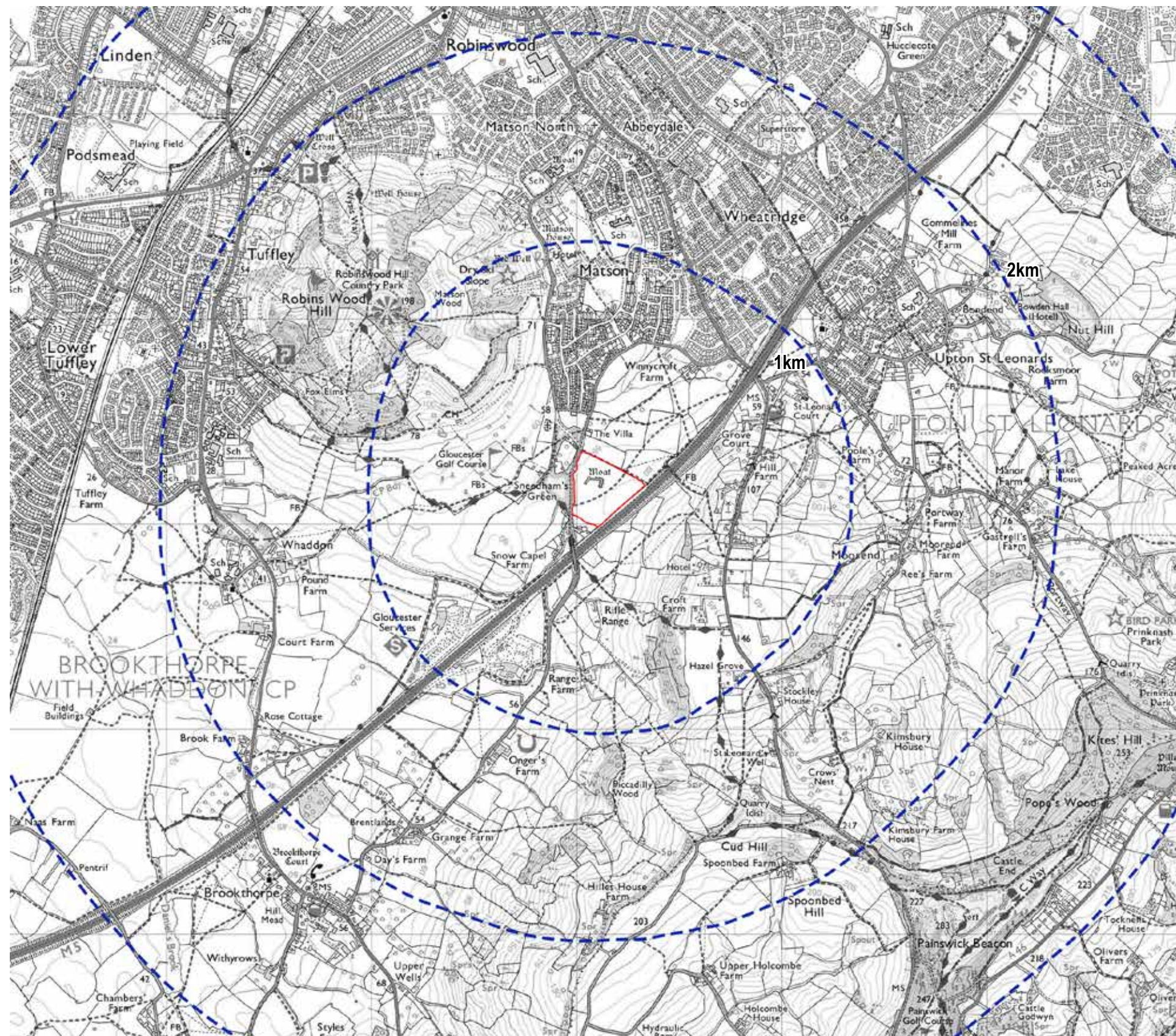


Figure 1: Site Location and Study Area. NTS

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1.3 Study Area and Landscape Context

- 1.3.1 The site, which extends eastwards from Winnycroft Road to the M5 which forms its eastern boundary, is located to the south east of the centre of Gloucester in the suburb of Matson. The boundary of the site (approximately 7.9ha) and the extent of the study area are shown on **Figure 1**. The majority of the site, consists of meadow grass with a central moat Scheduled Monument and good to moderately vegetated boundaries. The proposed residential development extends across the site in a U shape, protecting and retaining the central moat, with the addition of a new vehicular access points off Winnycroft Lane.
- 1.3.2 The Site, which forms a wedge shape, is bound by the M5 to the east and Winnycroft Lane to the west, with agricultural fields to the remaining boundaries and beyond the transport routes, along with scattered dwellings. An existing homestead, Green Farm, bounds the southern boundary of the site with agricultural land beyond the M5 and Winnycroft Lane bridge over the M5.
- 1.3.3 The extent of the study area is based on the potential visual envelope of the Site and proposed development i.e. the area from which views of the development may be visible, informed by topographical maps and field survey. The study area is shown on **Figure 1** and extends approximately 3km to the east and south, and a short distance to the north and west, where views are then curtailed by the local topography, existing vegetation and settlement.
- 1.3.4 The landscape within the study area comprises the Severn and Avon Vales National Character Area(NCA 106). More locally, the Site lies within the Vale of Berkeley LCA (as identified by the Landscape Character Assessment of Gloucester City). For further details as relevant to this assessment refer to **Section 5.0**.

2. METHODOLOGY

2.1 Background

- 2.1.1 This report identifies and assesses the landscape and visual effects of the proposed development over the course of the project from construction through to its completion.
- 2.1.2 Throughout the report a clear distinction is made between landscape (the landscape as a resource) and visual:
- **Landscape Assessment (Section 5.0):** The landscape resource incorporates the physical characteristics or elements of the urban and rural environment which together establish the character of each area e.g. geology, soils, topography, hydrology, land cover, land use, vegetation and settlement and the way it is experienced. Landscape effects can arise from changes to individual landscape components, landscape character and sense of place. This includes effects on areas recognised for their landscape value.
 - **Visual Assessment (Section 6.0):** The visual assessment considers the nature of existing views and visual amenity including the extent of visibility of the site and the proposed development, and the people who might experience them. Visual effects considers how the views of individuals and how they are perceived will change.
- 2.1.3 The assessment of the site, the surrounding landscape character and visibility are based on a period of desk study and field survey carried out in January 2020.

2.2 Assessment Approach

- 2.2.1 The assessment of landscape and visual effects is based on the following good practice guidelines:
- Landscape Character Assessment Guidance for England and Scotland¹; and
 - Guidelines for Landscape and Visual Impact Assessment (GLVIA3)².
- 2.2.2 In accordance with the guidelines and best practice, LVIA uses a combination of quantitative and qualitative information including informed and reasoned professional judgement. The assessment of the scale of landscape and visual effects follows a systematic and consistent step-by-step process so that rational and transparent conclusions can be drawn.

1 Landscape Character Assessment Guidance for England and Scotland, Countryside Agency and Scottish Natural Heritage, 2002

2 Guidelines for Landscape and Visual Impact Assessment, Landscape Institute and Institute of Environmental Management and Assessment, Third Edition 2013

- 2.2.3 In accordance with GLVIA3 the approach and methodology used is proportional to the scale of the project and the nature of the likely effects; the emphasis being on those that are likely to be important.
- 2.2.4 The process of LVIA is based on the following process:
- Baseline appraisal including desk based and field surveys to identify the nature of the existing resource. Sources of information for the desk study are listed in **Appendix A**;
 - Identification of the individual receptors likely to experience change from the proposal and a description of the impacts, both negative and positive;
 - An assessment of the scale of the effects identified; and
 - Identification of mitigation or monitoring measures that may be required.
- 2.2.5 For the purposes of this report, the term ‘impact’ refers to the cause of the change and ‘effects’ are the results or changes on the landscape and visual context.
- 2.2.6 It is recognised that the scale and nature of the change will vary throughout the course of the project. To provide an indication of the changes that will occur through the various stages, the magnitude of change and scale of effect is assessed at the following key points:
- Construction phase – estimated duration of 6months. Parts of the development may be completed and occupied within this time;
 - Completion Year 1 – to represent the worst case scenario, where planting has been implemented, but before any planted mitigation can take effect. This commences on the full practical completion of the proposed development; and
 - Completion Year 15 – to represent the best case scenario, where planting mitigation measures can be expected to be effective. These are considered to be the residual effects.
- 2.2.7 In terms of the description of visual effects it is acknowledged that this will vary according to the season based on the extent of vegetation cover. The assessment at all stages is based on the worst case scenario when vegetation is not in leaf.
- 2.2.8 The LVIA process is an integral part of the design process. Following an initial assessment of the baseline, primary mitigation measures (for example the retention of vegetation, the location of buildings / open space, building heights and new planting) were embedded into the design of the development proposals as part of an iterative approach. These measures are identified in the description of the development. The assessment of landscape effects is based on the final submitted scheme.

2.3 Landscape Assessment

- 2.3.1 The assessment of landscape effects addresses the effects of change and development on landscape as a resource i.e:
- The landscape components within the site that contribute to the landscape

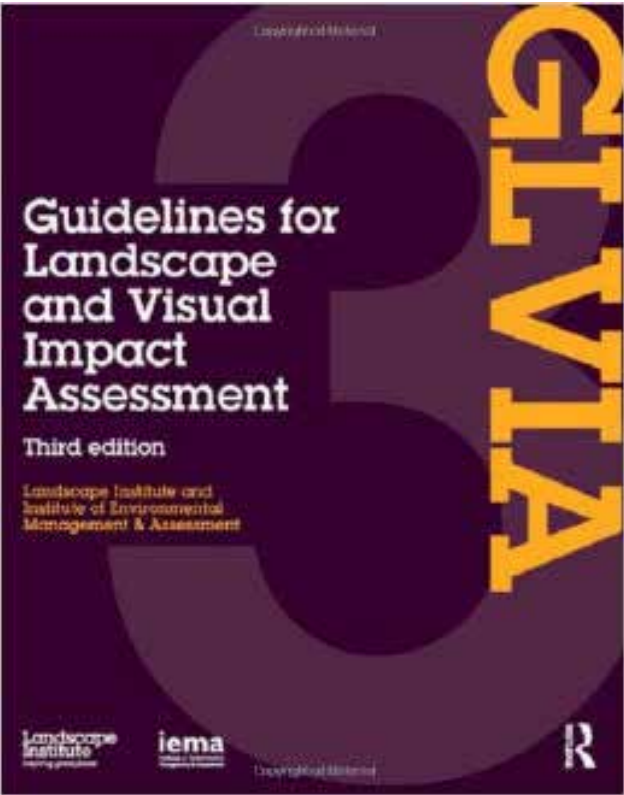


Plate 1: GLVIA3

- topography, land cover, land use, vegetation, settlement and buildings for example; and
- Landscape character and the key characteristics that contribute to it including aesthetic and perceptual aspects.

Landscape Baseline

- 2.3.2 The baseline study includes a combination of desk and fieldwork in order to identify the existing character of the landscape, and the elements, features and aesthetic and perceptual aspects that contribute to it. Landscapes that share similar components and characteristics can be classified into generic Landscape Character Types (LCTs) and/or locational specific Landscape Character Areas (LCAs) at a range of scales from national through to local.
- 2.3.3 Within the study area a hierarchy of published Landscape Character Assessments has been undertaken. The study of the assessments within the hierarchy is important to aid understanding of the landscape and to allow the identification of landscape components that may be present at different scales.
- 2.3.4 Published assessments at the national and county level were reviewed to provide a broad landscape context. These existing documents were used to determine the extent of different LCTs and LCAs within the study area, along with their key characteristics, condition and inherent sensitivity to change along with any applicable management or development recommendations.

- 2.3.5

Field work was used to record the specific characteristics within the study area to determine the extent to which the site and its immediate surroundings are representative of the wider area, and to identify other characteristics potentially not identified in published documents, but which are important when considering the effects of the proposed development at a local level.
- 2.3.6

Following the baseline study, the potential landscape receptors (landscape components and character areas) were identified and their sensitivity to the proposed development assessed. Sensitivity is defined by a combination of value and susceptibility to change based on word based scales (for criteria refer to **Appendix B: Table B1**).
- 2.3.7

The value of each receptor is assessed taking into account the presence of statutory and non-statutory designations and the reasons for their designation, in conjunction with published Landscape Character Assessments and the findings of the baseline assessment including:

• The condition and overall strength of character of the site and its surrounding area;

• The importance, value or special qualities placed on the receptor; and

• The objectives of landscape strategies and guidance.
- 2.3.8

The susceptibility to the proposed development is assessed on:

• The capacity of the landscape to accommodate the proposed development;

• The extent of the proposals being in accordance with management or policy objectives; and

• The potential for mitigation.
- 2.3.9

The sensitivity of landscape components is classified on a sliding scale from high to low and is determined by combining value and susceptibility as set out in **Appendix B: Table B3**.
- 2.3.10

Those landscape components which make a notable contribution to the area and can not accommodate the proposed development without affecting the baseline situation and/or achievement of landscape planning strategies are of high sensitivity, while those which are replaceable or contribute little to the overall character of the landscape and can accommodate the change without affecting the baseline situation are of low sensitivity.
- Identification and Description of Landscape Change
- 2.3.11

For each landscape receptor, the likely changes arising from the development during the construction and following its completion were identified and described. Such interactions include changes to or loss of existing elements, the introduction of new elements and the combined effect of these changes on the overall character of the area.
- 2.3.12

The magnitude of landscape impacts is classified on a sliding word based scale as set out **Appendix C: Table C1** from high to negligible. High is described as a prominent and notable change, while low or negligible applies where changes are small and/or localised. The nature of the impact can be positive or negative; however, there may be instances where an effect is

neither. These effects are considered to be neutral in nature.

2.4 Visual Assessment

- 2.4.1

The visual assessment considers the direct effect of changes to existing views and the visual amenity arising from the proposed development.

Visual Baseline

- 2.4.2

The baseline for assessing visual effects establishes the area from which the site and proposed development may be visible and the nature and number of different groups of people who are likely to experience change.
- 2.4.3

For visual effects the receptors may include:

• Users of properties: such as residents, employees or visitors;

• Users of public rights of way: public footpaths, bridleways, byways and permissive paths;

• Users of transport routes: main roads and residential streets; and

• Places accessible to the public including open space areas, public gardens and other destinations.
- 2.4.4

The area from which the site and proposed development will be visible was determined using a Zone of Theoretical Visibility (ZTV).
- 2.4.5

Light Detection and Ranging (LIDAR) data was sourced from the Environment Agency. LIDAR is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground. Up to 100,000 measurements per second are made of the ground, allowing highly detailed terrain models to be generated.
- 2.4.6

Composite data was used which is derived from a combination of the full dataset which has been merged and re-sampled. Due to gaps within the existing data, a combination of 50cm and 2m resolution was used in order to generate the best coverage.
- 2.4.7

Zones of Theoretical Visibility were plotted using two types of data. The first being a Digital Terrain Model (DTM) which represents the elevation of the bare earth without taking into account of any overground features. The second set of data used was the Digital Surface Model (DSM) which takes account of the height of features in the landscape (such as trees and buildings) as well as the topography of the land. Both sets of data were used to show how the intervening vegetation which surrounds the Site acts as a natural screen in both near and longer distance views.
- 2.4.8

This assessment assumes that the maximum height of development will be 10m with an assumed observer height of 1.65m (eye level).
- 2.4.9

In order to assess the theoretical visibility of the proposed development a set of points were plotted around the perimeter of the proposed development areas which will be refined as required as the design progresses. These points are as accurate as reasonably possible when using the GIS software.
- 2.4.10

The search radius adopted was 5km. Across some parts of the study area

no data was available, this data was given a value of 0 and as such the ZTV does not encompass these areas

- 2.4.11

The ZTV was then refined by manual analysis of topographical data combined with aerial images, this forms the visual envelope. As the extent of the VE is locally influenced by landform, vegetation and existing built development, fieldwork was used to verify the views actually available using publicly accessible locations.
- 2.4.12

The ZTV shows the cumulative effect a 8m high buildings at each of the points on the grid.
- 2.4.13

A number of viewpoints were selected for inclusion in the assessment to demonstrate the extent of visibility of the site and the future development as well as the visual amenity currently experienced. At each viewpoint, baseline photographs were taken to record the existing view. The viewpoints and supporting photographs do not provide continuous coverage of all locations within the vicinity, but provide a sample of the following:

• Representative: illustrating views from within a wider area e.g. views representative of a group of houses or a street or along a public right of way;

• Specific: demonstrating views from key locations such as visitor destinations or recognised viewpoints, views from protected landscapes or with particular cultural associations; and

• Illustrative: demonstrating a particular effect or specific issue e.g. restricted visibility in an area where views might be anticipated.
- 2.4.14

As such all views and visual amenity are best experienced in the field.
- 2.4.15

All photographs were taken during the day with a digital camera at a focal length of 35mm (equivalent to 50mm on a full frame sensor) and an eye height of 1.65m in accordance with technical guidance and best practice. To achieve a wider field of view, a series of overlapping photographs were taken, and later joined together to form panoramic images with minor retouching to eliminate slight variations in colour tone. For ease of reference, visible elements within the site and surrounding area, including the approximate extent of the site are identified.
- 2.4.16

Following the baseline study, the potential visual receptors were identified and their sensitivity to the proposed development assessed. Sensitivity is defined by a combination of value and susceptibility to change based on word based scales (for criteria refer to **Appendix B: Table B2**).
- 2.4.17

The value of existing views was identified taking into account the presence of statutory and non-statutory designations and with reference to other indicators such as their appearance in guidebooks or maps and the frequency of use.
- 2.4.18

The susceptibility of visual receptors is dependent on the location and context of the view, the number of people likely to be affected by the change, as well as the expectations and the occupation/activity of the receptor.
- 2.4.19

The sensitivity of visual receptors is classified on a sliding scale from high to low and is determined by combining value and susceptibility as set out in

Appendix B: Table B3.

2.4.20 Those receptors which are classified as being of high sensitivity may include users of rights of way or nearby residents, while those of low sensitivity may include people in their place of work or travelling through the landscape in cars or other modes of transport. The assessment of views from private residences, particularly those bordering the site, is based on representative views from groups of dwellings or streets based on the nearest possible publicly accessible location.

Identification and Description of Visual Change

- 2.4.21 Changes to views identified during the baseline study and the subsequent effect on visual receptors were identified and described with reference to the following:
- The nature of the view of the development e.g. a full or partial view, or only a glimpse;
 - The proportion of the development or particular features that would be visible;
 - The distance of the viewpoint from the site and whether the viewer would focus on the development due to its scale and/or proximity or whether it would comprise a small, minor element in a panoramic view;
 - Whether the view is stationary/fixed, transient, or one of a sequence of views experienced along a route or moving vehicle; and
 - The nature of the change resulting from the development through the removal or introduction of features (both natural and man-made) and any associated changes to the profile of the skyline, visual simplicity/complexity, enclosure/openness and scale.
- 2.4.22 The magnitude of visual effects is classified on a sliding scale as set out in **Appendix C: Table C2** from high to negligible where high is a prominent and notable change in the view to low or negligible where changes are small and/or barely perceptible. The nature of the impact can be either positive or negative; however, there may be instances where an impact results in an effect that is neither. These effects are considered to be neutral in nature.

2.5 Scale of Effects

- 2.5.1 The importance of landscape and visual effects is a function of the sensitivity of the landscape resource and visual receptors against the magnitude of change that they would experience. In accordance with GLVIA3, importance is not absolute and whilst a judgement is made on both the overall sensitivity of each identified receptor and the magnitude of change, the conclusion is based on the professional judgement of the assessor.
- 2.5.2 The nature and relative importance of the effects depends on the degree to which the development:
- Complements, respects and fits into the existing landscape and views;
 - Enables the retention, enhancement or restoration of landscape character and visual amenity and delivers landscape guidelines and/or policy

aspirations; and

- Influences the visual context and in particular strategic and important views.
- 2.5.3 The importance or scale of landscape and visual effects is determined by combining the sensitivity of the receptor and the magnitude of the change likely to occur. The scale effect is described as Major, Moderate, Minor or Negligible as set out in **Appendix C: Table C3**. Effects can be either adverse or beneficial.
- 2.5.4 The final assessment of the scale of effects can be summarised as:
- **Major adverse:** The development would cause a total permanent loss or major alteration to key elements or features of the landscape and/or introduce elements that are totally uncharacteristic of the surrounding area. The development would be visually intrusive and would result in a substantial deterioration to visual amenity;
 - **Moderate adverse:** The development would cause a substantial permanent loss or alternation to one or more key elements or features of the landscape and/or introduce elements that are prominent but may not be substantially characteristic of the surrounding area. The development would be visually intrusive and would result in a noticeable deterioration to visual amenity.
 - **Minor adverse:** The development would cause a minor permanent and/or temporary loss or alteration to one or more key elements or features of the landscape and/or introduce elements that may not be uncharacteristic of the surrounding area. The development would cause limited visual intrusion and would result in a barely perceptible deterioration to visual amenity;
 - **Negligible:** The development would result in very limited change to the existing landscape resource or visual amenity.
 - **Minor beneficial:** The development would complement the key elements or features of the landscape and/or introduce elements that are characteristic of the surrounding area maintaining landscape character. The development would visually complement the existing view and would result in a barely perceptible improvement to visual amenity;
 - **Moderate beneficial:** The development would fit in well with and enhance the key elements or features of the landscape and/or introduce elements that maintain and/or enhance landscape character. The development would visually integrate into the existing view and would result in a noticeable improvement to visual amenity;
 - **Major beneficial:** The development would entirely fit in well with and substantially enhance the key elements or features of the landscape and/or introduce elements that substantially enhance landscape character. The development would visually integrate into the existing view and would result in a substantial improvement to visual amenity.

2.6 Limitations and Assumptions

- 2.6.1 The visual survey and baseline photographs were completed in early June 2021. The images represent a time when deciduous trees and hedgerows were in leaf, representing a best case scenario in terms of the extent of visibility likely to be experienced. Winter months would represent the worst case scenario with leafs off trees.
- 2.6.2 The assessment assumes that the proposed development will be constructed over a period of 1 year. Although parts of the development will be completed and occupied within this time, this represents the construction phase. Operational effects commence on the full completion of the proposed development (Year 1).
- 2.6.3 In assessing both landscape and visual effects the influence of time, particularly on the growth of new vegetation, can be substantial. The post-completion effects have therefore been assessed at two stages (Year 1 and Year 15). The time that new planting takes to establish is dependent on species, stock size, the nature of the growing conditions and other factors such as maintenance and vandalism. It is assumed that planting will be implemented following the substantial completion of each phase and fully implemented by Year 1 with an average growth rate of 300-400mm/year.

3. APPLICATION SITE AND PROPOSED DEVELOPMENT

3.1 Site Description

3.1.1 The Site, approximately 7.9ha, is situated off Winnycroft Lane, Matson. It lies immediately south west and abutting the boundary of the Joint Core Strategy Strategic Allocation site at Winnycroft, outside of the main settlement boundary. Refer to section 4.3.1 Policy A6: Winnycroft (see **Figure 2 - Site View Location Plan** and **Figure 3 - Site Photographs**).

3.2 Proposed Development

3.2.1 The proposal seeks for the construction of a residential development of 190 dwellings, associated infrastructure and 2 new accesses on to Winnycroft Lane. The proposals can be seen in **Figure 4**.

Principles

3.2.2 The principles of the scheme are set out within the Vision Document, May 2021, and on the Proposed Site Plan produced by Origin3 for Edward Ware Homes Ltd and Bromford.

3.2.3 The main aspects of the development are outlined below:

Circulation and Access

3.2.4 New access points are proposed off Winnycroft Lane, these are located to the northern and southern ends of the western boundary to the Lane. As set out in the Proposed Site Plan, the main road loops around the site towards the eastern edge, with a footpath to one side. Private drives, shared surface areas and courtyards lead off this to dwellings and car parking courtyards. Pedestrian and cycle routes will link up the roads in between and around the development, with the existing PRoW through the site diverted to traverse around the central green open space. Footpaths are then proposed to link to other existing and proposed connections outside of the proposed site.

Built Form

3.2.5 The proposals incorporate a range of residential typologies-

- 22 no. 1b apartments
- 58 no. 2b houses
- 92 no. 3b houses
- 18 no. 4b houses

3.2.6 The design intent is to propose a well designed scheme, with a simple palette of materials and detailing that will provide a sympathetic reflection of the existing traditional context.

Landscape

- 3.2.7 As set out within the Proposed Site Plan the landscape proposals include:
- 3.2.8 Trees and hedges along boundaries are to be retained, along with the central moat SM with large open space surrounding and protecting it, with green corridors through the site and pedestrian links to encourage walking and cycling.
- 3.2.9 Open green spaces for public use and informal children's play for social interaction, passively overlooked. Bunding with accoustic fence and vegetation to eastern boundary with M5, will form a natural buffer to reduce the audible noise.
- 3.2.10 The existing trees along boundaries are to be retained as this will help to soften the impact of the development, while acting as an ecological corridor around the site. Although there are few trees within the central open area of the site, efforts will be made to ensure these are retained and enhanced. Furthermore it will mean retention of the existing ecosystems.

3.3 Constraints and Opportunities

- 3.3.1 An analysis of constraints and opportunities has identified the following to development:
- The site is outside of the main settlement boundary of Gloucester city;
 - The central moat Scheduled Monument;
 - The existing PRoW that cuts across the Site;
 - The existing vegetation on and around the site, including the hedgerows and mature trees;
 - Views across to the Site from adjacent visual receptors, including Cotswolds AONB, PRoWs, local roads and residential properties;
 - The major transport route of the M5 to the eastern boundary.



KEY



Site boundary



Site Views (see Figure 3)



PRoW Footpath

Figure 2: Site Views Location Plan. Scale NTS@A3
Source: Base Aerial Map: Google Maps, 2021

N



Viewpoint A: View south across the site from the north west Boundary



Viewpoint B: View north across the site looking towards Robinswood Hill and Matson to the right

Figure 3: Site Views.

Source: JBA, June 2021



Viewpoint C: View north west across the site from the southern boundary



Viewpoint D: View west across the site from the south eastern boundary

Figure 3: Site Views.

Source: JBA, June 2021



Viewpoint E: View north west across the Site from the south east corner



Viewpoint F: View west across the site from the eastern boundary

Figure 3: Site Views.

Source: JBA, June 2021



Viewpoint G: View south across the site from the northern boundary



Viewpoint H: View north looking across the Moat towards Robinswood Hill and Matson from PRow

Figure 3: Site Views.

Source: JBA, June 2021



Viewpoint I: View west across the Moat



Viewpoint J View east across the Moat

Figure 3: Site Views.
Source: JBA, June 2021

4. PLANNING POLICY FRAMEWORK

4.1 Background

4.1.1 This section provides an overview of planning policy as relevant to landscape. The assessment includes the identification of both statutory and non-statutory designations within the study area (including protected landscapes, historical and ecological assets).

4.1.2 The assessment considers the following:

- The National Planning Policy Framework (NPPF), February 2019;
- Gloucester City Council Local Plan (1983) - Saved Policies (A1.a Heights of buildings and protection of views);
- Gloucester City Council Joint Core Strategy (2017); and
- Pre-Submission Gloucester City Plan (Nov 2020).

4.1.3 The application site lies within the south eastern fringes of Gloucester, in the suburb of Matson. The Site sits adjacent to the M5, immediately east of which is the Cotswolds AONB landscape designations (see **Figure 2: Policy Context**).

4.2 The National Planning Policy Framework

4.2.1 The NPPF sets out the Government’s planning policies for England and how these are expected to be applied. The NPPF sets out a clear presumption in favour of sustainable development, which should be seen as a ‘golden thread’ running through plan-making and decision-taking. There are three dimensions to sustainable development: economic, social and environmental.

4.2.2 NPPF Section 12: Achieving well-designed places sets out that good quality and inclusive design is a key aspect of sustainable development. As such all new developments should ‘*function well and add to the overall quality of the area..;*’ be ‘*visually attractive as a result of good architecture, layout and appropriate and effective landscaping*’ and ‘*sympathetic to local character and history, including the surrounding built environment and landscape setting*’. These principles are supported by NPPG 26: Design.

4.2.3 NPPF Section 15: Conserving and Enhancing the Natural Environment sets out that the planning system should contribute to and enhance the environment by protecting and enhancing valued landscapes. This includes designated landscapes but also the wider countryside. In this respect Local planning authorities could achieve this by ‘*protecting and enhancing valued landscapes*’; ‘*recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services*’ and ‘*minimising impacts on and providing net gains for biodiversity*’. Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues

4.2.4 NPPF Section 16: Conserving and Enhancing the Historic Environment places emphasis on the conservation and enjoyment of the historic environment,

recognising that ‘*heritage assets are an irreplaceable resource*’ and should be ‘*conserved in a manner appropriate to their significance*’. These principles are supported by NPPG 18a: Conserving and Enhancing the Historic Environment.

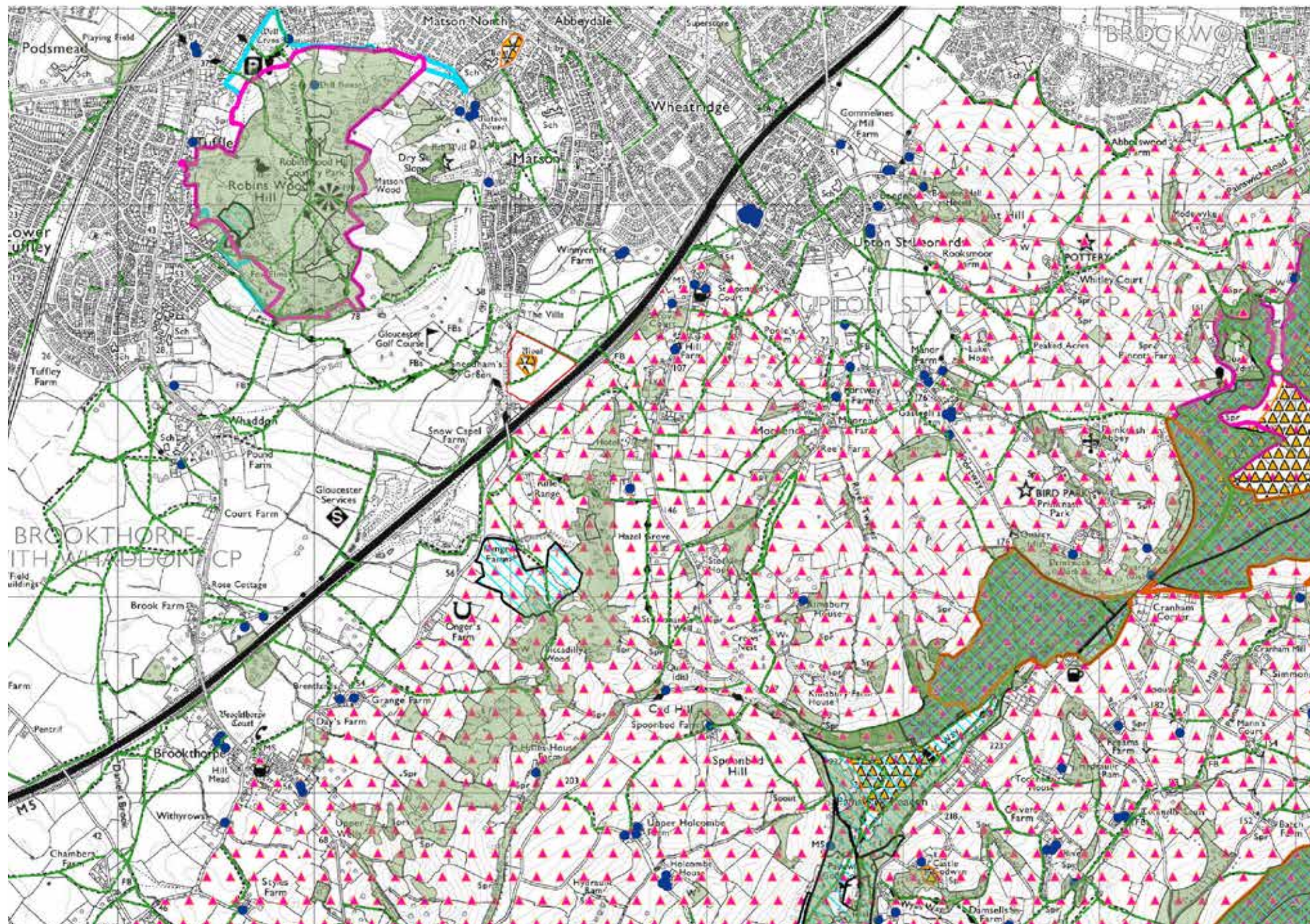
4.3 County Level Planning Policy

4.3.1 The Gloucester, Cheltenham and Tewkesbury Joint Core Strategy sets out the planning vision for growth throughout the from 2011- 2031. The Joint Core Strategy was adopted in December 2017. Relevant policies included in the JCS are listed below:

- Policy SD4 - Design Requirements
 - ‘*Public Realm and Landscape*
New development should ensure that the design of landscaped areas, open space and public realm are of high quality, provide a clear structure and constitute an integral and cohesive element within the design. The contribution of public realm designs, at all scales, to facilitate the preferential use of sustainable transport modes should be maximised’
- Policy SD6 - Landscape
 - ‘*Development will seek to protect landscape character for its own intrinsic beauty and for its benefit to economic, environmental and social well-being*’
 - ‘Proposals will have regard to the local distinctiveness and historic character of the different landscapes in the JCS area, drawing, as appropriate, upon existing Landscape Character Assessments and the Landscape Character and Sensitivity Analysis. They will be required to demonstrate how the development will protect or enhance landscape character and avoid detrimental effects on types, patterns and features which make a significant contribution to the character, history and setting of a settlement or area’
 - ‘All applications for development will consider the landscape and visual sensitivity of the area in which they are to be located or which they may affect. Planning applications will be supported by a Landscape and Visual Impact Assessment where, at the discretion of the local planning authority, one is required. Proposals for appropriate mitigation and enhancement measures should also accompany applications’
- Policy SD7 - The Cotswolds AONB
 - ‘*All development proposals within the setting of the Cotswolds AONB will be required to conserve and, where appropriate, enhance its landscape, scenic beauty, wildlife, cultural heritage and other special qualities. Proposals will be required to be consistent with the policies set out in the Cotswolds AONB Management Plan*’
- Policy SD8 - Historic Environment
 - ‘*Designated and undesignated heritage assets and their settings will be conserved and enhanced as appropriate to their significance, and for their important contribution to local character, distinctiveness and sense of place. Consideration will also be given to the contribution made by heritage assets to supporting sustainable communities and the local economy. Development should aim to sustain and enhance the significance of heritage assets and put them to viable uses consistent*

with their conservation whilst improving accessibility where appropriate.’
◦ ‘*Proposals that will secure the future conservation and maintenance of heritage assets and their settings that are at risk through neglect, decay or other threats will be encouraged. Proposals that will bring vacant or derelict heritage assets back into appropriate use will also be encouraged.*’

- Policy SD9 - Biodiversity and Geodiversity
 - ‘*The biodiversity and geological resource of the JCS area will be protected and enhanced in order to establish and reinforce ecological networks that are resilient to current and future pressures. Improved community access will be encouraged so far as is compatible with the conservation of special features and interests.*’
- Policy SD10- Residential Development
 - ‘*Within the JCS area, new housing will be planned in order to deliver the scale and distribution of housing development set out in Policies SP1 and SP2.*
 - ‘*Residential development should seek to achieve the maximum density compatible with good design, the protection of heritage assets, local amenity, the character and quality of the local environment, and the safety and convenience of the local and strategic road network.*’
- Policy INF3: Green Infrastructure
 - ‘*The green infrastructure network of local and strategic importance will be conserved and enhanced, in order to deliver a series of multifunctional, linked green corridors across the JCS area by:*
 - i. *improving the quantity and/or quality of assets*
 - ii. *improving linkages between assets in a manner appropriate to the scale of development, and*
 - iii. *designing improvements in a way that supports the cohesive management of green infrastructure.*
 - ‘*Development proposals should consider and contribute positively towards green infrastructure, including the wider landscape context and strategic corridors between major assets and populations*’
 - ‘*Existing green infrastructure will be protected in a manner that reflects its contribution to ecosystem services (including biodiversity, landscape/ townscape quality, the historic environment, public access, recreation and play) and the connectivity of the green infrastructure network.*’
 - ‘*Where assets are created, retained or replaced within a scheme, they should be properly integrated into the design and contribute to local character and distinctiveness. Proposals should also make provisions for future maintenance of green infrastructure*’
- Policy A6: Winnycroft
 - ‘*The Strategic Allocation identified at Winnycroft (immediately north of the proposed Site) will be expected to deliver at least 620 new homes; a comprehensive green infrastructure network; formal and informal recreation; respect the local landscape character; respect the setting of heritage assets.*’



KEY




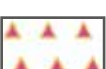







-  Site Boundary
-  Scheduled Ancient Monument
-  Sites of Special Scientific Interest
-  Area of Outstanding Natural Beauty
-  Local Nature Reserve
-  Country Park
-  National Nature Reserve England
-  Woodpastures and Parkland
-  Ancient Woodlands
-  Listed Buildings
-  PRow Footpath



Figure 5: Designations Plan. Scale: 1:20,000 at A3.

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4.4 District Level Planning Policy

- 4.4.1 The Gloucester City Plan (GCP), together with the Joint Core Strategy (JCS), will provide the development framework to guide the City’s future growth up to 2031. The GCP delivers the JCS at the local level, setting out policies to address local issues and opportunities in the City. It will also set out a framework for managing and enhancing the historic and natural environment such as open spaces, areas of recreation and the historic environment.
- 4.4.2 Relevant policies pertinent to landscape and visual issues include;
- Policy E1 - Landscape character and sensitivity
 - ‘Development proposals in areas of Gloucester outside of the Joint Core Strategy (JCS) Landscape Characterisation and Sensitivity Analysis (supporting JCS Policy SD6) will be judged on their own merits. Applicants will be expected to adopt a balanced approach, providing for housing, employment and/or other needs whilst seeking to protect and enhance features of the local landscape which contribute to a sense of environmental quality and local distinctiveness.
 - Trees, hedgerows and areas of green (not otherwise protected) but which contribute to local landscape character should, where at all possible, be retained and utilised to enhance development. Applications should make clear how retained features will be effectively managed and maintained in the future.
 - For major development proposals, a Landscape Visual Impact Assessment will be required where it is considered that the local landscape is particularly sensitive. ’

• Policy E4 - Trees, woodlands and hedgerows
 - ‘Development proposals should seek to ensure there are no significant adverse impacts on existing trees, woodlands or hedgerows and that every opportunity is taken for appropriate new planting on site.
 - On development sites where existing trees to be retained, applicants will be required to demonstrate how these trees will be protected through all phases of development. It is expected that the protection measures will adhere to those contained within BS 5837:2012 Trees in relation to design, demolition and construction – recommendations, or subsequent revisions.
 - All new planting, either on site or elsewhere in the city as part of biodiversity net gain must be provided to the satisfaction of the City Council.

• Policy E5 - Green Infrastructure: Building with Nature
 - ‘Development must contribute towards the provision, protection and enhancement of Gloucester’s Green Infrastructure Network. Contributions should be appropriate and commensurate to the proposal. Major development proposals will be designed in accordance with ‘Building with Nature’ standards.

• Policy F2 - Landscape and planting
 - ‘Major development proposals must be accompanied by a landscape scheme, incorporating hard landscape and planting details. Such plans must:
 1. Exhibit a design and choice of hard materials, boundary treatment
- and planting appropriate to the particular location and existing landscape character, or create a new and distinctive character where this is currently lacking; and

 2. Retain and incorporate existing natural features such as trees, hedges and watercourses, where possible; and
 3. Ensure, in appropriate developments, especially housing schemes, that adequate space is provided for the planting and maturing of suitable large-scale trees; and
 4. Indicate areas of public open space and amenity land that are proposed for adoption and provide full details of who will be adopting and maintaining the spaces.

◦ Where appropriate, the use of native species in planting schemes will be required.
- 4.5 Other Guidance
- 4.5.1 Joint Core Strategy Green Infrastructure Strategy SPD (June 2014)

4.5.2 ‘The fundamental aim of GI is to deliver a higher quality of life for people who live, work and visit in the JCS area, as well as providing a sustainable habitat for wildlife. It does this through providing economic, social and environmental benefits.’

4.5.3 Sneedham’s Green, opposite the Site, is identified as green open space. Refer to **Figure 6**.
- 16 | Snow Capel, Matson, Gloucester

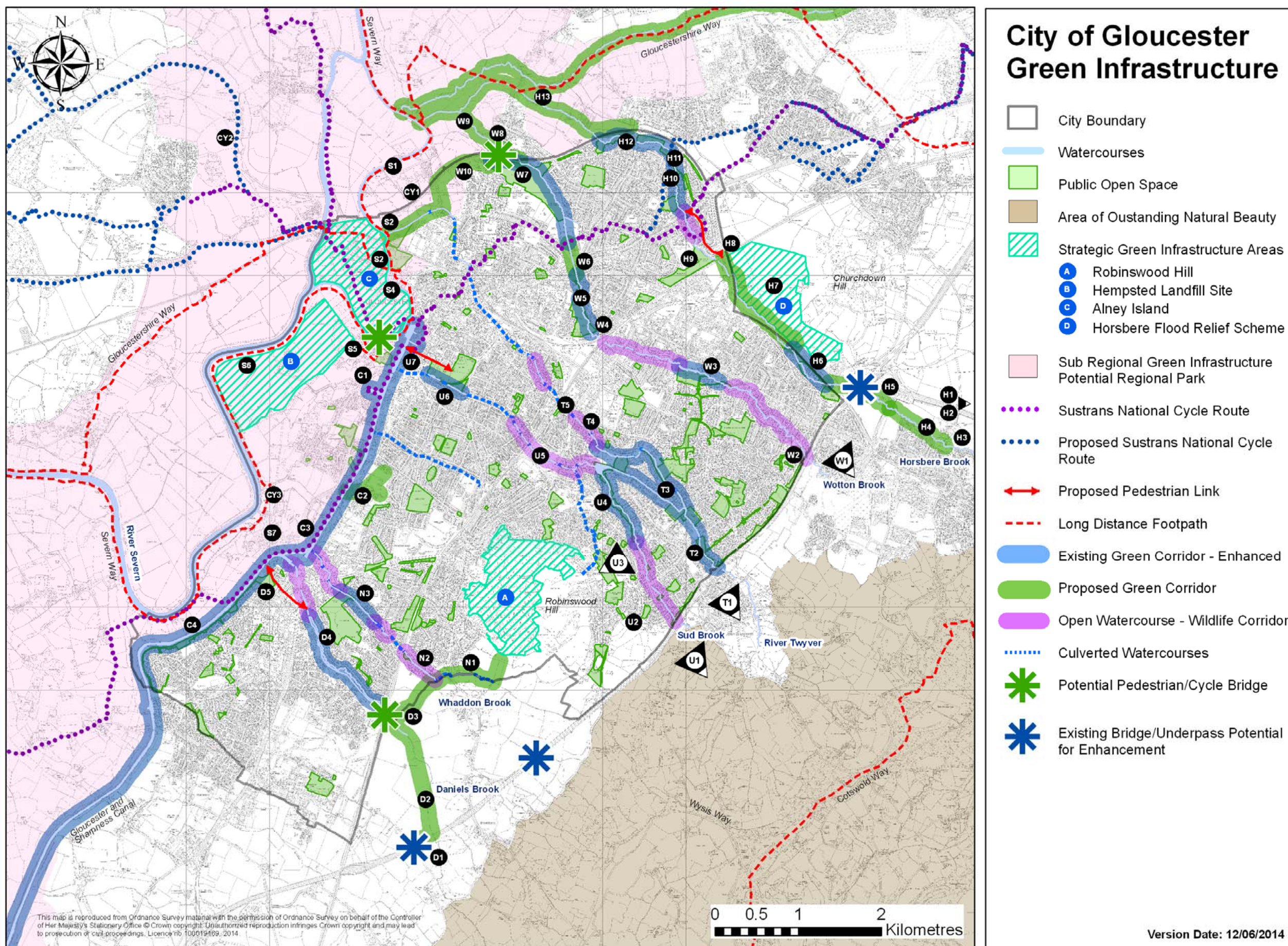


Figure 6: Joint Core Strategy - Green Infrastructure Strategy. Scale: Not to Scale at A3.

Source: Gloucester City Council, 2019

5. LANDSCAPE ASSESSMENT

5.1 Scope

- 5.1.1 In accordance with National and Local guidance, this section considers the existing landscape character of the site and its environs.
- 5.1.2 The character of the landscape evolves over time as a result of the interaction of human activity and the natural environment (people and place). Factors used to assess landscape character include:
 - Physical – geology, land-form, climate, soils, fauna and flora;
 - Cultural and Social – land-use, settlement, enclosure & history;
 - Aesthetics – colour, texture, pattern, form and perception.
- 5.1.3 It should be noted that landscape is a continuum and character does not generally change abruptly on the ground. More commonly, the character of the landscape will change gradually and therefore the boundaries between both Landscape Character Types (LCTs) and Landscape Character Areas (LCAs) should be considered to reflect zones of transition.
- 5.1.4 The published LCTs and LCAs from the national to local level within the study area are shown on **Figure 7** and are summarised in **Table 1** below:

Table 1: Hierarchy of Landscape Character Types and Character Areas

National: National Character Area Profiles, Natural England, 2012
Severn and Avon Vales National Character Area NCA 106
County: Gloucester Landscape Character Assessment Cotswold AONB Landscape Character Assessment
Settled Unwooded Vale LCT Vale of Berkeley LCA

5.2 National Character Baseline

- 5.2.1 At the national level (Natural England, 2012) the Site lies within the Severn and Avon Vales National Character Area (NCA 106).
- 5.2.2 The NCA extends from north east from Chittingen to the north of Worcester.
- 5.2.3 Key Characteristics of the Severn and Avon Vales National Character Area (NCA 106) of relevance to the proposals include:
 - ‘A diverse range of flat and gently undulating landscapes strongly influenced and united by the Severn and Avon rivers which meet at Tewkesbury.’
 - ‘Woodland is sparsely distributed across this landscape but a well wooded impression is provided by frequent hedgerow trees.’
 - ‘Small pasture fields and commons are prevalent in the west with a regular pattern of parliamentary enclosure in the east. Fields on the floodplains are divided by ditches (called rhines south of Gloucester) fringed by willow

pollards and alders.’

- ‘Pasture and stock rearing predominate on the floodplain and on steeper slopes, with a mixture of livestock rearing, arable, market gardening and hop growing elsewhere.’
- ‘A strong historic time line is visible in the landscape, from the Roman influences centred at Gloucester, earthwork remains of medieval settlements and associated field systems.’
- ‘Highly varied use of traditional buildings materials, with black and white timber frame are intermixed with deep-red brick buildings, grey Lias and also Cotswolds stone.’
- ‘Many ancient market towns and large villages are located along the rivers, their cathedrals and churches standing as prominent features in the relatively flat landscape.’

5.2.4 Key Statements of Environmental Opportunity for the Severn and Avon Vales National Character Area (NCA 106) of relevance to the proposals include:

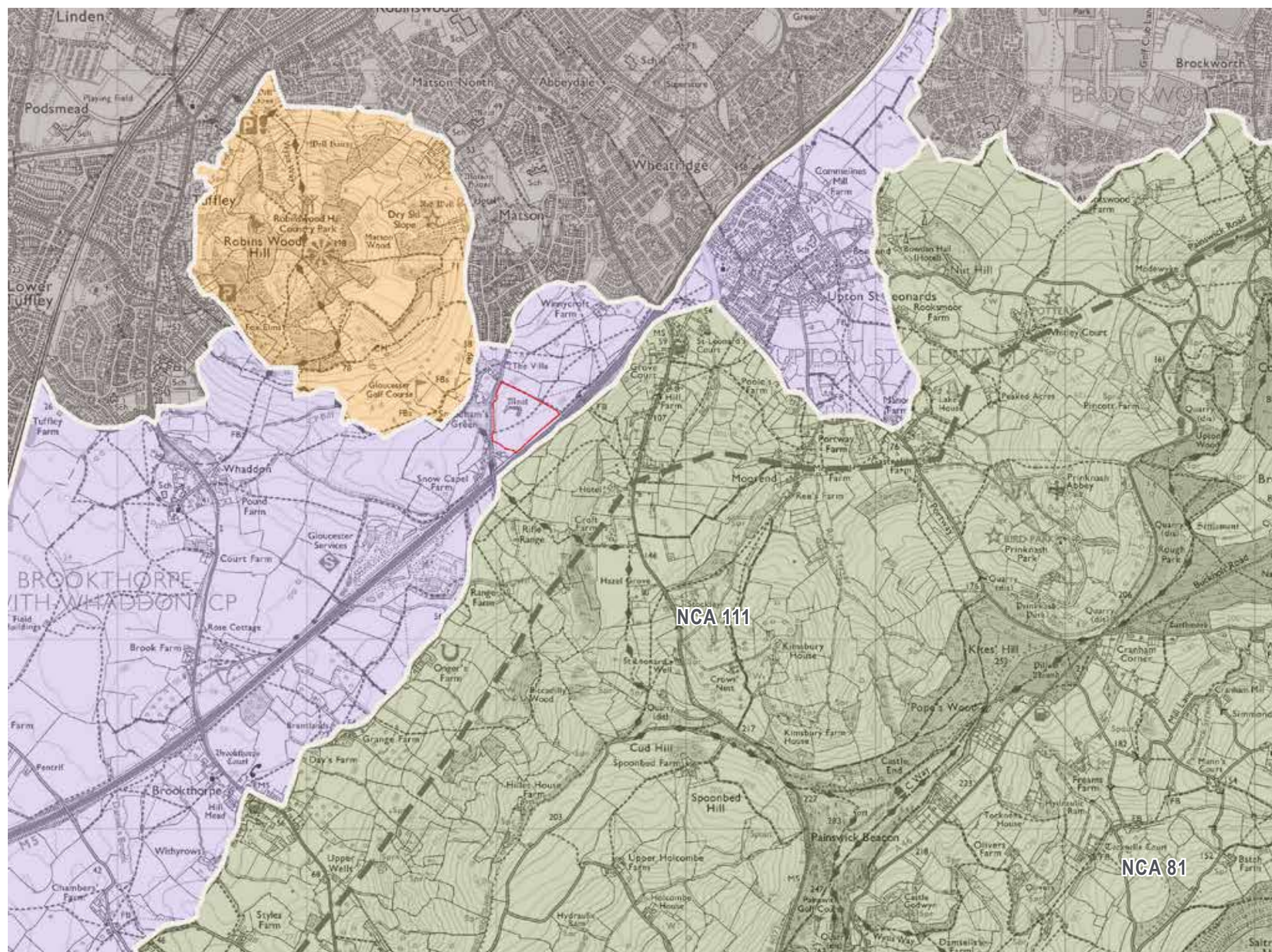
- SEO 1:** ‘Protect and manage the landscape, heritage and biodiversity associated with the Severn Estuary, the river valleys and other hydrological features, planning for a landscape scale expansion of wetlands, intertidal habitats and unimproved grasslands along river floodplains through, restoration, expansion and re-linkage of existing remnant areas of seminatural habitat.’
- SEO 2:** ‘Seek to safeguard and enhance this area’s distinctive patterns of field boundaries, ancient hedgerows, settlements, orchards, parkland, small woodlands, chases, commons and floodplain management with their strong links to past land use and settlement history, and for the benefits this will bring to soil erosion, soil quality and biodiversity.’
- SEO 3:** ‘Reinforce the existing landscape structure as part of any identified growth of urban areas, hard infrastructure and other settlements ensuring quality green infrastructure is incorporated enhancing health, access, recreation, landscape, biodiversity and geodiversity.’
- SEO 4:** ‘Protect geological exposures and maintain, restore and expand semi natural habitats throughout the agricultural landscape, linking them together to create a coherent and resilient habitat network enabling ecosystems to adapt to climate change.’

5.3 County Character Baseline

- 5.3.1 The Gloucester Landscape Character Assessment shows that the Site lies within the Severn Vale and more specifically the Settled Unwooded Vale LCT
- 5.3.2 **Settled Unwooded Vale LCT**
- 5.3.3 Key characteristics of Settled Unwooded Vale include:
 - ‘Soft, gently undulating to flat landscape, but with intermittent locally elevated areas that project above the otherwise flatter landform;
 - ‘Mixed arable and pastoral land use enclosed by hedgerow network, in

places forming a strong landscape pattern;

- Limited woodland cover with mature hedgerow trees and occasional orchards;*
- Rural areas bordered by large urban and suburban areas and interspersed with commercial and industrial premises;*
- Varied mix of buildings materials including brick, timber and stone, and slate and thatch roofing;*
- Proliferation of modern ‘suburban’ buildings styles and materials;*
- Major transport corridors pass through the Vale, frequently aligned north south, beyond which is a network of local roads and lanes linking villages and hamlets; and*
- Widespread network of pylons and transmission lines;*
- 5.3.4 The Settled Unwooded Vale LCT is broken down further into several Landscape Character Areas (LCAs) and the Site lies within the Vale of Berkeley LCA.
- Vale of Berkeley Landscape Character Area**
- 5.3.5 Key characteristics of Vale of Berkeley Landscape Character Area include:
 - ‘Vale of Berkeley comprises a large scale, gently undulating landscape but with extensive almost flat areas commonly lying between the undulations.’
 - ‘Views towards the escarpment and Rolling Hills and Valleys landscape type give a distant sense of enclosure in many areas of the vale and the Robins Wood Outlier and Hockley Hill both form prominent elevated landmark features when viewed from the northern portion of the vale.’
 - ‘Land use in the Vale of Berkeley comprises a combination of arable and pastoral agriculture with arable cultivation tending to occupy large to medium fields with pasture enclosed in fields varying in size from small to large.’
 - ‘Pasture includes a mixture of improved and semi-improved grazing with scrubby pasture commonly aligning watercourses and communication routes, e.g. the M5.’
 - ‘Low hedgerows form the common boundary treatment in the character area, with their management and condition varying across the landscape.’
 - ‘Although the patchwork pattern of land uses and tree cover in the vale give this area a strong rural character, the presence of several major transportation corridors in the area disrupt the rural tranquillity and contribute to its settled character.’
 - ‘Pedestrian access to the countryside of the vale is provided by a relatively dense public rights of way network.’
 - ‘There are a number of moated sites scattered throughout the vale.’
 - ‘Settlement forms a strong influence on the overall character of the Vale of Berkeley with views towards built form commonly occurring in the wider landscape.



KEY

- Site Boundary
- Landscape Character Boundary

NCA 106 Severn and Avon Vales

NCA 107 Cotswolds

Landscape Character Assessment of Gloucester District

Urban Gloucester

SV14A Robins Wood Hill

SC6A Vale of Berkely

Cotswolds AONB



Figure 7: Landscape Character Plan. Scale 1:25 000 @ A3.

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5.4 Cotswold AONB Landscape Character Types

5.4.1 The Cotswold AONB Landscape Character Assessment (June 2016), covers the area immediately east of the M5 which defines the Site’s eastern boundary. It also classifies the character of the area as Settled Unwooded Vale LCT.

5.4.2 Key characteristics of Settled Unwooded Vale (AONB) include:

- *Soft rolling or gently undulating landform, with the Cotswolds Escarpment defining the eastern limit of the Vale and providing a dramatic backdrop to vale settlements and landscapes;*
- *Mixed arable and pasture land use with occasional orchards, indicates a productive agricultural landscape and varying growing conditions;*
- *Well maintained hedgerows forming a strong landscape pattern define fields and indicate different periods of enclosure;*
- *Limited woodland and ancient woodland cover indicative of widespread clearance for agriculture;*
- *Quiet winding lanes linking villages, hamlets and farms at the foot of the escarpment contrast to major transportation corridors running through the wider vale landscape. Many roads are dead-ends, terminating at the base of the scarp;*
- *Varied and complicated mix of building materials, with use of brick, timber and stone, and stone, Welsh slate, tile and thatch roofing, with Oolitic Limestone still prevalent within the vale villages in closer proximity to the Cotswolds escarpment, the latter providing a link to the Cotswolds where quarries have provided a locally available source of the building stone;*
- *Proliferation of modern ‘suburban’ building styles and materials indicating close proximity of large urban centres;*
- *Major transport corridors through vale with effects of noise, traffic movement, and light pollution at night;*
- *Rural areas bordered by large urban and suburban areas and interspersed with commercial and industrial uses indicating the close proximity of large urban centres and major transportation links; and*
- *Widespread network of pylons and transmission lines are a significant feature on the fringes of urban areas and form prominent vertical elements in otherwise flat or gently undulating landscapes.*

5.4.3 Potential implications of new residential development includes:

- *Erosion of the rural setting of the AONB;*
- *Intrusion of expanded settlement fringes including urban fringe into the landscape including within the setting of the AONB;*
- *Upgrading of minor roads and lanes associated with new development and the introduction of suburbanising features such as mini roundabouts, street lighting, Highway fencing, kerbs and traffic calming measures;*
- *Potential loss of archaeological remains and historic features.*

5.4.4 AONB Strategies and Guidelines for new development includes:

- *Maintain the open, sparsely settled character of the Unwooded Vale by limiting new development to existing settlements and avoiding development between existing villages;*
- *Avoid development that will intrude negatively into the landscape and cannot be successfully mitigated, for example, extensions to settlements in areas of open landscape;*
- *Ensure that new development does not adversely affect the wider rural landscape and views to and from the AONB;*
- *Avoid developments incorporating standardised development layout, suburban style lighting, construction details and materials that cumulatively can lead to the erosion of peaceful landscape character;*
- *Promote the use of traditional materials, including local stone, and building styles in the construction of new buildings and extensions to existing dwellings. (New buildings should, at least, respect local vernacular style);*
- *Retain existing trees, dry stone walls, hedges etc as part of the scheme for green infrastructure and to reflect the former landscape, field patterns etc;*
- *Preserve archaeological and historical features and deposits and promote initiatives that remove heritage assets from at risk’ status in the Heritage at Risk Register; and*
- *Ensure development proposals safeguard and provide new links and enhancements to the Public Rights of Way network.*

5.5 Gloucester JCS Landscape Characterisation Assessment and Sensitivity Analysis

5.5.1 As part of the evidence for the Joint Core Strategy, a Landscape Character and Sensitivity Analysis around the urban centres of Gloucester, Cheltenham and Tewkesbury, was prepared in Sept 2013.

5.5.2 The proposed development Site sits within the Settled Unwooded Vale, further subdivided into areas, with the Site located within the South Matson character area. Noted characteristics include;

- *Can appear as highly treed locally owing to tree lined field boundaries, remnant orchard trees and close proximity to the wooded landscape of Robinswood Hill and the AONB.*
- *Field pattern is quite irregular, with medium to small sized fields of unimproved pasture bound by structurally diverse hedge/tree boundaries and post and wire fence.*
- *Field pattern, with the exception of the dissection in the east caused by the M5, is unaltered from the 1884 OS map.*
- *Significant urban expansion of Matson in the west, and the M5 located on the higher ground in the east, are large scale detractors in an otherwise very rural environment, and impact upon views and tranquillity.*

5.5.3 Visually, the area is very much enclosed by the landform of Robinswood Hill to the west, and the Cotswold AONB Escarpment to the east. Furthermore a small hill south of Snow Capel Farm and the built form of Matson contain views to the south and north, respectively.

5.5.4 South Matson area is further analysed and sits with G27 and is considered as Medium Sensitivity. This indicates ‘*Potential for housing and commercial development though will need to take account of landscape sensitivity and quality in any developable area.*’

5.6 Local Character

5.6.1 Matson is situated approximately 4km south-east of Gloucester City Cathedral and forms a suburb of the city, located on the lower slopes of Robinswood Hill. Matson is bordered primarily by Robinswood Hill to the west, a large hill that rises to 283 metres above sea level, the M5 to the south east and Gloucester city to the north and east.

5.6.2 Matson contains a ski slope on Robinswood Hill, a pub, a shopping parade, doctor’s surgery, Neighbourhood Project and several churches.. The town is connected to its surrounds by the B4073 Painswick Road to the north, Matson Lane to the west and the Winnycroft Lane to the south. Matson and Robinswood ward has a population of 9,408 (2019).

5.6.3 The small surburb opens out to the relatively open arable countryside to the south east, with occasional the well wooded Robinswood Hill to the west. The local landscape is well vegetated, giving an intimate feeling, views opening out to longer distances as one ascends the local hills.

Historical & Cultural Influences

5.6.4 Unlike neighbouring villages, such as Brookthorpe and Upton St Leonards, Matson is not mentioned in the Domesday Book. It appears to have been a part of Kings Barton at the time of the survey. The origins of the name are unclear but early versions recorded include Matesknolle, Mattesdune and Matesden, and it is likely that the names refer to Robinswood Hill, the large hill which lay entirely within the ancient parish of Matson and on the flanks of which the village lies.

5.6.5 It has been suggested that iron ore was mined from Robinswood Hill in Saxon times, although there is little evidence for this. A spring called the Red Well rising just above Matson is ferruginous in nature.

5.6.6 Prinknash Abbey (pronounced locally variously as “Prinidge/Prinnish”) is a Roman Catholic monastery in the Vale of Gloucester. For nearly 900 years the land known as Prinknash has been associated with Benedictine monks. In 1096 the Giffard family, who had come to England with William the Conqueror, made a gift of the land to Serlo, Abbot of Saint Peter’s, Gloucester. A large part of the present building was built during the abbacy of William Parker, the last Abbot of Gloucester, around the year 1520.

5.6.7 It remained in the abbey’s hands until the suppression of the monasteries in 1539 when it was rented from the Crown by Sir Anthony Kingston who was to provide 40 deer annually to King Henry VIII, who used the House as a hunting

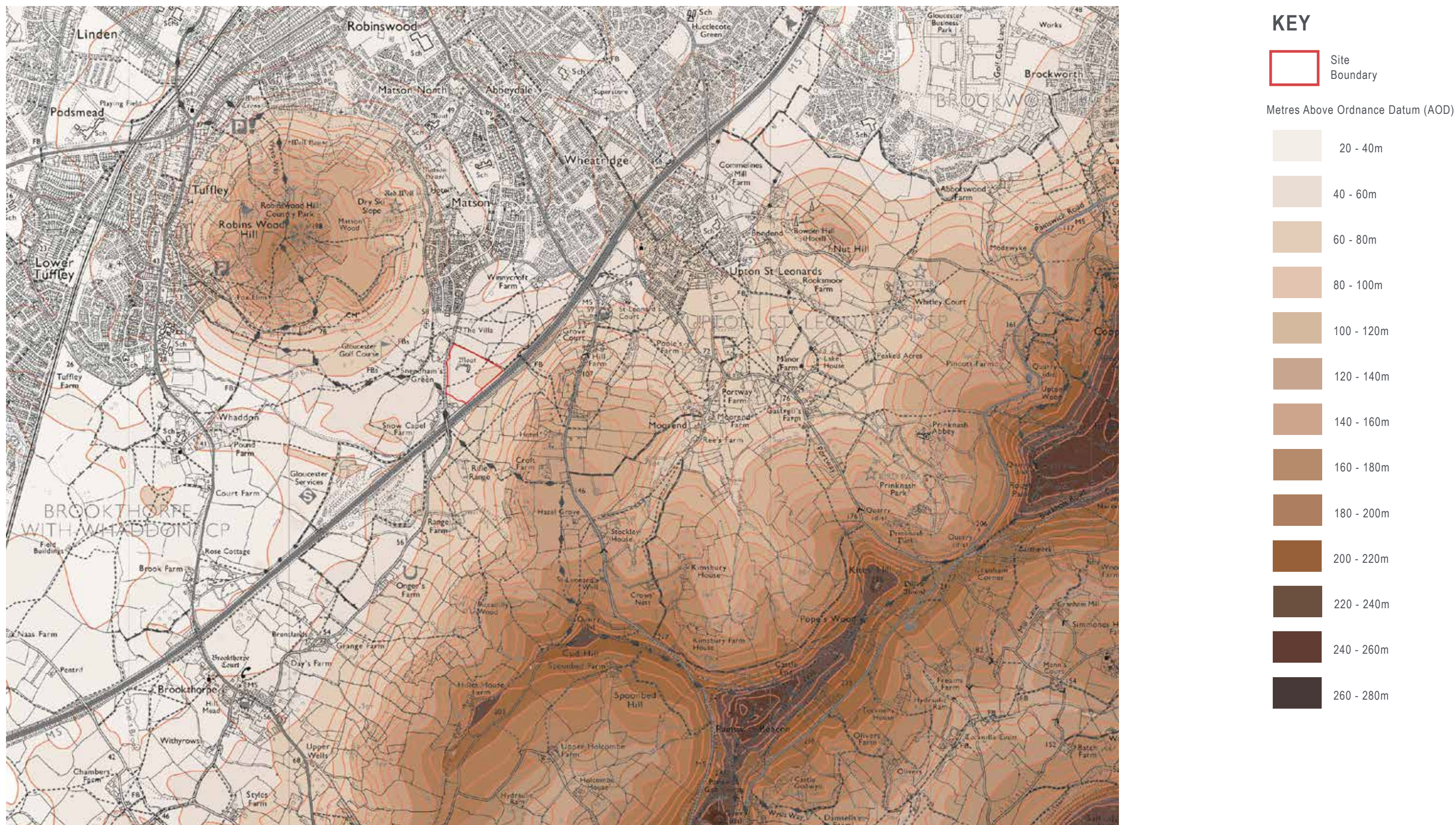


Figure 8: Landform Analysis. Scale 1:20 000 @ A3.

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lodge. Prinknash Park continued to be used as a home for the gentry and nobility of Gloucestershire during the next few centuries and each generation left its mark on the property. In August 1928 a Deed of Covenant was made out by the twentieth Earl of Rothes, the grandson of Thomas Dyer Edwards, a Catholic convert, whose wish was that Prinknash should be given to the Benedictine monks.

- 5.6.8
- In the early 1940s, one of the monks, Brother Gilbert OSB set up the Prinknash Pottery having discovered a supply of clay nearby.
- 5.6.9
- The monks moved into the new abbey in 1972 and the old abbey was re-roofed, re-furnished, and converted into a retreat and conference centre, known as “St Peter’s Grange”. However, by 2008 the now smaller community of monks moved back to St Peter’s Grange, on the Feast of Saints Peter and Paul (30 June).
- 5.6.10
- Matson House, a large manorial house, was the headquarters of King Charles during the Siege of Gloucester. The Siege of Gloucester took place between 10 August and 5 September 1643 during the First English Civil War. It was part of a Royalist campaign led by King Charles I to take control of the Severn Valley from the Parliamentarians. It subsequently became the property of Major General William Selwyn in 1679. It is now (2017) the Selwyn Care Home.

Settlement and Landuse

- 5.6.11
- Today Matson forms a small suburb of the city of Gloucester situated in the Vale of Gloucester, in the Gloucester district at the southern end of the Vale. It is served by the B4073 Painswick Road and some local Lanes, with the M5 to the south east, accessible further to the north and south.
- 5.6.12
- The suburb itself is predominantly residential semi detached or terraced houses, typically dating from the post war housing boom era. There are small pocket greens dotted regularly throughout the housing estates, with local school, pharmacy and shops. In terms of leisure facilities it benefits from the Gloucester Ski & Snowboard Centre, along with the Gloucester Golf Course and the numerous PRowWs that connect to a wide network for public access and enjoyment of the surrounding landscape, such as the Cotswold AONB that sits just east of the M5. To the south and south east are agricultural fields.

Landscape Designations

- 5.6.13
- As shown on **Figure 5: Policy Context** the study area incorporates a number of statutory and non-statutory designations. These are summarised below:
- The Site itself includes a Scheduled Monument ‘Moated site at Sneedham’s Green’. The date at which the moated site was constructed is not clear, although it is likely to have been built during the main period of moat building, between 1250 and 1350. It is worth noting that during construction of the M5, much of the Site was covered with fill material. Further to the north, approximately 1.5km lies Matson moated site. To the south east, approximately 2.5km lies Painswick Hill (or Kimsbury) camp, a historic hillfort monument, with High Brotheridge camp, just to the north east, lying 3.4km from the Site.

- There are a number of Listed Buildings in the vicinity of the site. The closest is the cluster at Winnycroft Farm, approximately 0.6km to the north east, a Grade II Listed Farmhouse, Barn and Cider House and Byre a ‘good group of late C18 buildings at Winneycroft Farm’. Former Larkham Farmhouse, now country club and restaurant, approximately 0.8km to the north, Grade II Listed, c1600 with addition to front dated 1866, converted to country club with substantial additions c1974. The Duke of Buckingham was billeted in the farm house in 1643 while Charles I was at the former Matson House, during the Siege of Gloucester by Royalist forces. Matson House, Grade II* Listed, approximately 1.1km to the north, former manor house, now residential care home. c1575. The C16 house formed a compact U comprising a lateral range, which originally contained the great hall, and two wings flanking a narrow entrance court facing Matson Lane. In 1643 the house was requisitioned as the lodging for King Charles I and his sons, Charles and James, and the headquarters for the Royalist forces, during the Siege of Gloucester. Grooves cut into a stone sill in an attic bedroom are believed to have been made by the young Princes.

- Range Farm Fields, SSSI, is located approximately 0.8km to the south of the Site. Robins Wood Hill Quarry SSSI lies 1.5km to the north west of the Site. The Cotswold Commons and Beechwoods SSSI, lies approximately 2.5km to the south east of the Site.

- Painswick House Registered Parks and Gardens, Grade II* Listed lies approximately 3.6km to the south east of the Site.

- The Cotswold AONB lies at its closest point 80m from the Site, to the south east of the M5 motorway.

- 5.6.14
- The Site itself is not covered by any landscape designation, other than the Moat SM mentioned above.

Topography, Hydrology and Geology

- 5.6.15
- The historic core of Matson centred around Matson House lies along the north western lower slopes of the Robinswood Hill, approximately 70m AOD, the rest of the suburb gradually spreading outwards from the core ranging from 56m AOD in the south at Sneedhams Green to 41m AOD in the north at the library, approximately.

- 5.6.16
- A floodplain is the area that would naturally be affected by flooding if a river rises above its banks. There are two different types of flood zone shown on the Matson Flood Map for Planning;

- Flood Zone 3 - an area that could be affected by flooding if there were no flood defences. This area could be flooded from a river by a flood that has a 1 percent (1 in 100) or greater chance of happening each year.
- Flood Zone 2 - additional extent of an extreme flood. These outlying areas are likely to be affected by a major flood, with up to a 0.1percent (1 in 1000) chance of occurring each year.

- 5.6.17
- The tributaries of, and the Twyver River lie to the north of Matson and rise

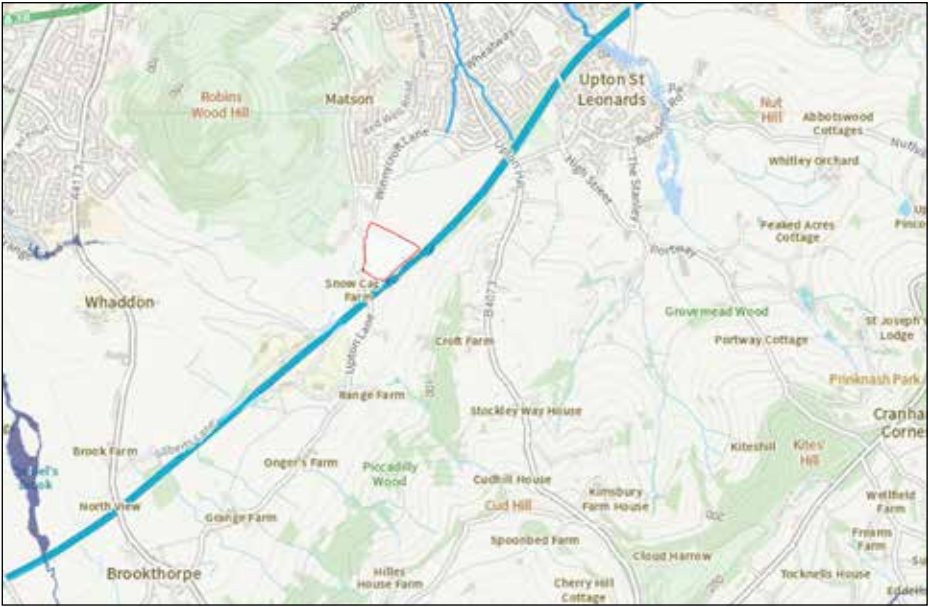


Figure 9: Flood Risk Map. Scale NTS
Source: Flood Map for Planning: Gov.UK, 2021

from springs along the escarpment to the east along Kites Hill. This River continues to the north west and feeds into the River Severn, which along with the Gloucester and Sharpness Canal, lie approximately 4.5km to the north west from the Site. The River Severn forms the western boundary to Gloucester city.

- 5.6.18
- The geology is sedimentary bedrock formed in the Jurassic and Triassic Periods, specifically Lias Group - Mudstone, Siltstone, Limestone And Sandstone. The area of the Site and surrounds lies within a transition zone of different soil types, some consists of lime-rich loamy and clayey soils with impeded drainage with naturally high fertility, some consists of slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils of moderate natural fertility.

Vegetation Cover

- 5.6.19
- Field sizes and shapes are varied varying from medium to large. Low hedgerows are a common boundary treatment in varying condition.
- 5.6.20
- Vegetation lines commonly align with watercourses, field and communication routes, for example the M5.
- 5.6.21
- Many of the hilltops are wooded, such as Robinswood Hill, Churchdown Hill and Kites Hill.

Access and Rights Way

- 5.6.22
- The M5 runs parrallel to the Site boundary from south east to north east. This major transport route conntects the area with both Birmingham and Bristol.
- 5.6.23
- The trainline running from Gloucester to Stroud is located approximately 2.5km to the west of the Site, the nearest train station is in Gloucester itself.
- 5.6.24
- Villages, hamlets and farms within the Vale at the foot of the Escarpment are linked by a network of quiet, winding lanes.

5.6.25 There is a relatively dense network of PRoW across the local area, leading up the Hills and into the Cotswold AONB. There are two national trails within the local vicinity, the Wysis Way and the Cotswolds Way.

5.7 Site Location and Characteristics

- 5.7.1 The site extends to the east from Winnycroft Lane, to the M5 defining its eastern boundary.
- 5.7.2 The majority of the site consists of meadow grass, with a central moat, a Scheduled Monument, with boundary hedgerows that remain in tact in the majority. Refer to **Figure 2 - Site View Location Plan** and **Figure 3 - Site Photographs**.

Context

- 5.7.3 The existing Site entrance is located at the south west corner of the Site off Winnycroft Lane. Winnycroft Lane itself extends northwards to form the southern access road into Matson, and southwards, over the M5 becoming Upton Lane and continuing onto the south west to Brookthorpe. It is a typical rural lane with soft verges. Existing residential dwellings are dotted along the Lane, including at Sneedhams Green opposite the Site, and the settlement edge of Matson just to the north. Residential development allocated to the fields immediately north of the proposed Site, will extend the settlement substantially, from Winnycroft Lane along its northern edge to the M5 in the south. Further to the south the landscape transitions from edge of Gloucester city to rural countryside with smaller villages and where residential development becomes more sporadic and isolated.
- 5.7.4 The suburb of Matson has a range of educational, community, leisure, recreational, employment facilities and shopping opportunities. Gloucester city itself provides an even wider range of facilities, with the railway station located to the north west.
- 5.7.5 The north of the Site is currently bound by existing fields, however these form the JCS Strategic Allocation, which now has detailed permission for residential development. The south of the Site is bound by a residential property, Green Farm, and its associated driveway and grounds. Existing hedging provides separation between the Site and farm.
- 5.7.6 There is a PRoW running through the Site itself to the south of the moat. This connects to the relatively dense network of PRoW beyond the Site boundaries and within the local context.

Topography and Hydrology

- 5.7.7 The Site is relatively flat with a gentle slope from west to east, rising from approximately 58m AOD along Winnycroft Lane to 60-64m AOD alongside the M5. During construction of the M5, much of the Site was covered with fill material. The Proposed Development will not require any major regrading of the existing land form in order to facilitate the proposed residential development.
- 5.7.8 The Flood Map for Planning Service provides accurate mapping of the floodplain area that would naturally be affected by flooding if a river rises above its banks. It illustrates the extent of the natural floodplain if there

were no flood defences or certain other man-made structures and channel improvements. The proposal Site is located within Flood Zone 1, an area where flooding from rivers is very unlikely, and therefore of the lowest risk. This can be seen in **Figure 9**.

Land Use, Land Cover and Vegetation

- 5.7.9 The Site currently comprises meadow grassland, with good boundary vegetation, although gappy in places along Winnycroft Lane and the M5. To the centre of the Site lies the moat Scheduled Monument and an area of scrub. There is a belt of mature trees and shrubs to the eastern boundary with the M5.

5.8 Landscape Receptors

- 5.8.1 Based on the above assessment of landscape and settlement character, a number of landscape receptors have been identified. Within the study area, the following landscape elements and characteristic landscape components (in no particular order) that may be effected by the proposed development are:
- The Site including:
 - Topography;
 - Land use;
 - On Site Vegetation;
 - The overall Character of the Site;
 - Designations:
 - The Cotswolds AONB
 - Landscape Character
 - The character of the Vale of Berkeley LCA
 - The Settlement Character of Matson
- 5.8.2 An assessment of their sensitivity are described in **Table 2**. The table should be read in conjunction with **Tables B1 and B3** in **Appendix B** setting out the criteria used to determine sensitivity to change.
- 5.8.3 The wider LCTs are considered not to be affected by the proposed development due to intervening vegetation, topography and/or the built environment.

5.9 Landscape Effects

- 5.9.1 The assessment of landscape effects during construction and after completion (Year 1 and Year 15) on the landscape resource identified in the baseline study is set out in **Table 2** and are described below.
- 5.9.2 The tables should be read in conjunction with the criteria for determining the magnitude of change in **Appendix C: Table C1**, the matrix of scale of importance in **Appendix C: Table C3** and the methodology described in **Section 2.0** of this report.

Construction and Temporary Effects

5.9.3 During the construction phase direct adverse effects to landscape components will result from changes in land cover and alterations to the existing topography, for example through excavation for foundations, access and services. This will occur alongside the provision of temporary infrastructure such as access, the storage of materials; the use of operational plant; and general construction works. All are uncharacteristic features of the landscape, but will generally be temporary and short-term. All construction works will be carried out in full accordance with best practice to avoid, reduce or limit the extent of effects as far as possible. The existing arable land cover within the area identified as developable, will be stripped and topsoil temporarily removed and stored.

5.9.4 Across the Site there will be a temporary disturbance of the existing ground levels arising from the removal and storage of topsoil and excavation for roads, foundations, services and sustainable drainage. The scale of the effect on the topography of the site during construction will be temporary **Minor Adverse**.

5.9.5 The proposed development will result in a permanent change in land use to approximately two thirds of the Site. The existing greenfield land, within the area identified as developable, will be replaced with a temporary construction site. There will be a localised extent of change to land use within the Site boundary which partially alters the character or nature of the wider landscape. This change will result in a permanent **Moderate Adverse** scale of effect at the site level.

5.9.6 Existing vegetation within and on the boundaries of the Site is to be retained where possible and protected during construction. Some removal of existing hedgerow and hedgerow trees will be necessary in order to implement the proposed access points into the Site off Winnycroft Lane. Any vegetation removed will be replaced where possible, resulting in a **Minor Adverse** scale of effect during construction.

5.9.7 The overall character of the Site will temporarily change from a greenfield site to a construction site. Uncharacteristic components will be introduced alongside characteristic features or elements. There will be a noticeable, temporary and localised **Moderate Adverse** scale of effect on the character of the Site and its immediately surrounding area.

5.9.8 All construction works will be carried out in full accordance with best practice to reduce adverse landscape effects. Construction activity will introduce uncharacteristic elements to the landscape. However these will be short term
- and temporary in nature, as such the Vale of Berkeley LCA, of which the Application Site forms part, will experience a temporary **Moderate Adverse** effect during the construction phase. The setting to the Cotswolds AONB will also experience a temporary **Negligible** effect during the construction phase.
- Permanent Development and Effects at Year 1 / Year 15
- 5.9.9 The Proposed Development has been designed to minimise its effects and to integrate the site into the wider landscape to include the retention and enhancement of the existing landscape structure.

5.9.10 There will be a permanent change to the topography of the Site however this will not alter once the development has been completed resulting in a permanent scale of effect of **Negligible** at Year 1 with no further change.

5.9.11 The Proposed Development would result in the loss of some arable land within the Application Site due to the construction of residential dwellings, and the associated access and planting. There will be a permanent change in land use, of the identified developable area, to a development consisting residential dwellings, open space, and strategic landscape. The Site abuts existing residential areas to the north west and south, along with residential allocation to the north, therefore residential land use is considered appropriate on the Site. There will be a permanent **Moderate Adverse** scale of effect on land use at the site level.

5.9.12 The retained boundary vegetation will provide a mature landscape setting to the proposed development. Proposed Development includes areas of new tree and shrub planting internally and around the perimeter of the Proposed Development. The effect of new planting will initially be limited resulting in a **Minor Adverse** scale of effect. As this planting matures, improving both landscape and ecological diversity the scale of effect will reach **Minor Beneficial** by Year 15.

5.9.13 The area of the Site identified as developable will permanently change from greenfield land to a residential development. The design, scale, layout and landscape of the proposed development considers the character of the surrounding landscape. Vegetation to the site boundaries, within residential areas and open space areas will incorporate locally appropriate native species, with a mix of native and ornamental species to complement and integrate the built form. The effect on the character of the Site will initially be **Moderate Adverse** decreasing to **Minor Adverse** over time as vegetation matures and the proposals integrate into the surrounding landscape.

5.9.14 The proposed development of land identified as developable will be relatively contained by existing vegetated boundaries, with its visibility decreasing over time as the proposed landscaping framework matures. A study of historic maps shows vegetated boundaries, small copses and woodland; indicating a strong agricultural past. However, intensification of farming in the area, including the removal of hedgerow field boundaries and the major transport route of the M5, has changed the landscape dramatically. The overall scale of effect on the wider Vale of Berkeley LCA Landscape Character Area will be **Moderate Adverse** in Year 1 and decreasing over time. By Year 15 the effect on the LCA is considered to be **Minor Adverse** as a result of enhancements to the local vegetation framework and retention of large open space around the central moat SM.
- 5.9.15 The proposed development respects the setting of the surrounding area and will be carefully positioned to maximize the value of existing vegetation. In landscape terms the overall scale of effect on the setting of the residential settlement of Matson will be **Negligible**. The overall scale of effect on the setting of the Cotswolds AONB will be **Negligible**.
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Table 2: Landscape Receptors and Sensitivity

Receptor	Value	Susceptibility	Description	Sensitivity	Development Phase	Magnitude of Change size/scale: extent:	Scale of Effect
Site features							
Topography	Medium	Low	The Site is relatively flat with a gentle slope from west to east, rising from approximately 58m AOD to 60-64m AOD, characteristic of the vale landscape. The Proposed Development will not require any major regrading of the existing land form in order to facilitate the proposed residential development.	Low	Construction	Medium Negative	Minor Adverse
					Completion Year 1	Low Negative	Negligible
					Completion Year 15	Low Negative	Negligible
Land use	Medium	Low	The Site consists of arable agricultural land with a moat Scheduled Monument and an area of scrub at the centre.	Low	Construction	High Negative	Moderate Adverse
					Completion Year 1	High Negative	Moderate Adverse
					Completion Year 15	High Negative	Moderate Adverse
On-site vegetation	Medium	Low	The Site currently comprises meadow grassland, with good boundary vegetation, although gappy in places along Winnycroft Lane and the M5. To the centre of the Site lies the moat Scheduled Monument and an area of scrub. There is a belt of mature trees and shrubs to the eastern boundary with the M5. The Proposed Development will retain, protect and enhance the SM, with new residential development forming a U shape around it, protecting it within a new area of open green space. Boundary vegetation does curtail views in and out of the Site.	Low	Construction	Medium Negative	Minor Adverse
					Completion Year 1	Medium Negative	Minor Adverse
					Completion Year 15	Medium Positive	Minor Beneficial
Landscape Character							
Character of the Site	Medium	Medium	The Site consists of meadow grassland and is surrounded by well vegetated boundaries, although gappy in places. Views out of the site are contained, with wooded horizons, often wooded Hills, giving the character of intimate wooded enclosure. Glimpses of residential dwellings and the audible M5 connect the site to the developed vale it sits within. There are no landscape designations covering the Site.	Medium	Construction	Medium Negative	Moderate Adverse
					Completion Year 1	Medium Negative	Moderate Adverse
					Completion Year 15	Low Negative	Minor Adverse
The Character of the Vale of Berkeley LCA	Medium	Medium	Key characteristics of the Vale of Berkeley include: ‘a large scale, gently undulating landscape but with extensive almost flat areas commonly lying between the undulations.’ ‘Views towards the escarpment and Rolling Hills and Valleys landscape type give a distant sense of enclosure in many areas of the vale and the Robins Wood Outlier and Hockley Hill both form prominent elevated landmark features when viewed from the northern portion of the vale.	Medium	Construction	Medium Negative	Moderate Adverse
					Completion Year 1	Medium Negative	Moderate Adverse
					Completion Year 15	Low Negative	Minor Adverse
The Settlement Character of Matson	Medium	Medium	Matson forms a small suburb of the city of Gloucester situated in the Vale of Gloucester, at the southern end of the Vale. It is served by the B4073 Painswick Road and some local Lanes, with the M5 to the south east, accessible further to the north and south. The suburb itself is predominantly residential semi detached or terraced houses, typically dating from the post war housing boom era. There are small pocket greens dotted regularly throughout the housing estates, with local school, pharmacy and shops, set within a well vegetated landscape, with a wooded, intimate and enclosed character.	Medium	Construction	Low Negative	Minor Adverse
					Completion Year 1	Low Negative	Minor Adverse
					Completion Year 15	Negligible	Negligible
Designations							
Setting of Cotswolds AONB	High	High	The proposed site is greenfield land on the south-eastern settlement edge of Matson, Gloucester. The Site comprises a large agricultural field with central moat, situated in the relatively flat vale.The Cotswold AONB is located immediately east of the M5 which borders the proposed Site. The Site therefore forms part of the setting, to the AONB. Due to local topography, the well vegetated nature of the Vale and wooded upper slopes and hilltops, the Site is not discernable from the AONB.	High	Construction	Negligible	Negligible
					Completion Year 1	Negligible	Negligible
					Completion Year 15	Negligible	Negligible

6. VISUAL ASSESSMENT

6.1 Scope

- 6.1.1
- The following section examines the visibility of the site from the surrounding area. This appraisal is based on a zone of theoretical visibility and aerial images which have then been refined by the field survey.
- 6.1.2
- The zone of theoretical visibility demonstrates the extent of potential visibility to or from a specific area. The approximate visibility of the Site off Steeple Road is demonstrated in **Figure 10** and **Representative Views 1-18**.

6.2 Visual Receptors

- 6.2.1
- The visual receptors and an assessment of their sensitivity are described below. The table should be read in conjunction with **Section 2.0** and **Tables B1 and B4** in **Appendix B** setting out the criteria used to determine sensitivity to change.
- 6.2.2
- Within the visual envelope, visual receptors i.e. those individuals who will see the Site and may experience a change in their view as a result of the proposed development have been identified as follows:
- Users of local roads:

◦ Winnycroft Lane

◦ Painswick Road

◦ Upton Road

• Residents:

◦ Matson

◦ Winnycroft Lane

◦ Sneedhams Green

◦ Painswick Road

◦ Upton Road

• Users of Access routes:

◦ M5

◦ Local PRoWs including through the Site

◦ Wysis Way

◦ Cotswolds Way

• Designations:

◦ Cotswolds AONB

• Visitors to areas of Recreation:

◦ Robinswood Hill Country Park

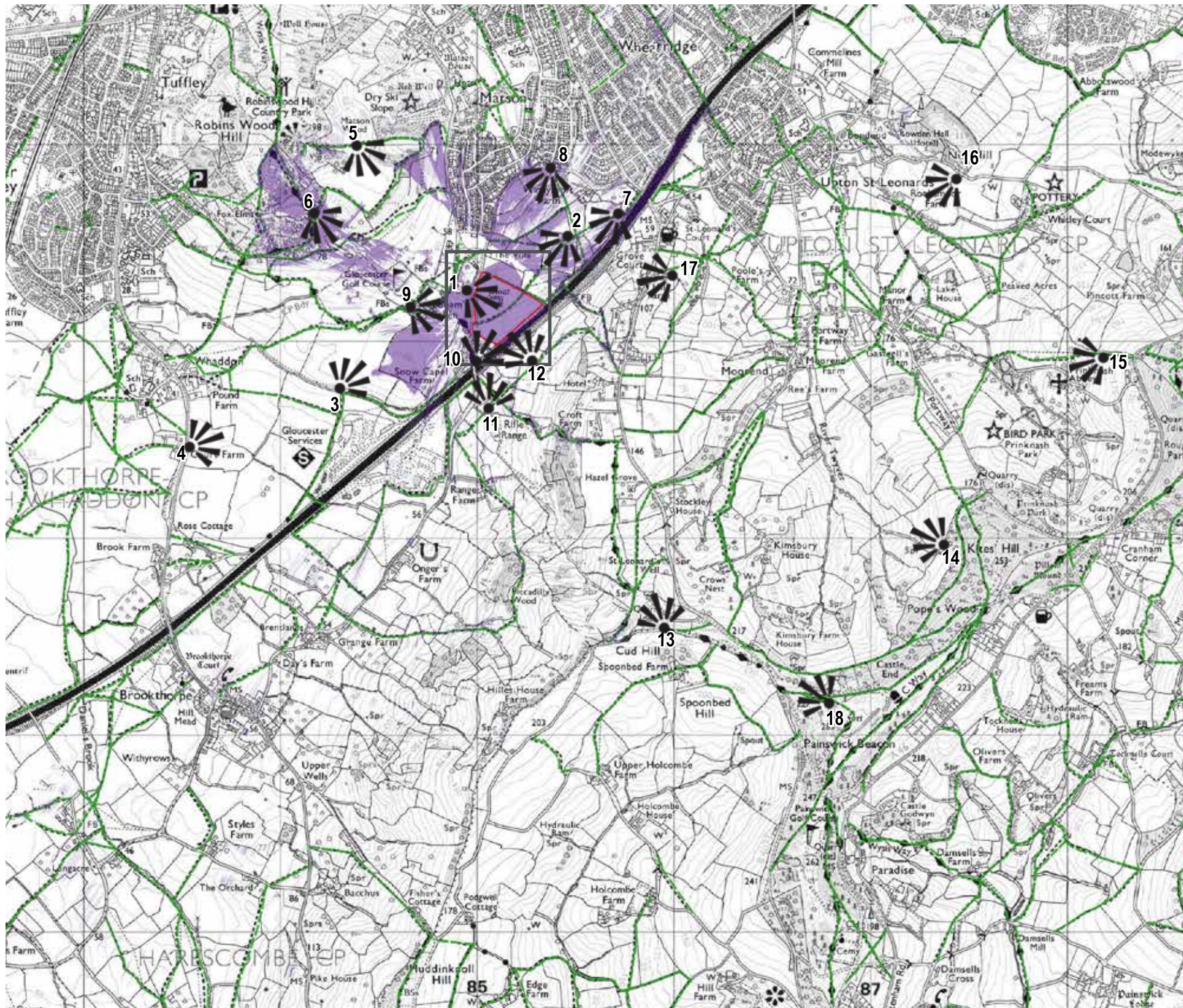
- Gloucester Golf Course

◦ Gloucester Ski and Snowboarding Centre








◦ Painswick Beacon
- 6.2.3
- This includes receptors within the secondary visual envelope where views are predominantly glimpsed or filtered by intervening vegetation and development and as such the proposal is likely to form a minor aspect of the views currently experienced.
- 6.2.4
- GLVIA3 places emphasis on assessing visual effects on public areas and viewpoints, rather than individual private residential properties; however, it is acknowledged that residents may be particularly sensitive to changes in their visual amenity. As part of this assessment the combined effects on a number of different groups of residential properties within the visual envelope have been considered to assess the effect on the community as a whole. When considering views from groups of properties, views from ground floor windows and garden space (which are occupied during waking/daylight hours) are considered to be the most sensitive. It should be noted that in planning terms there is not a private right to a view.

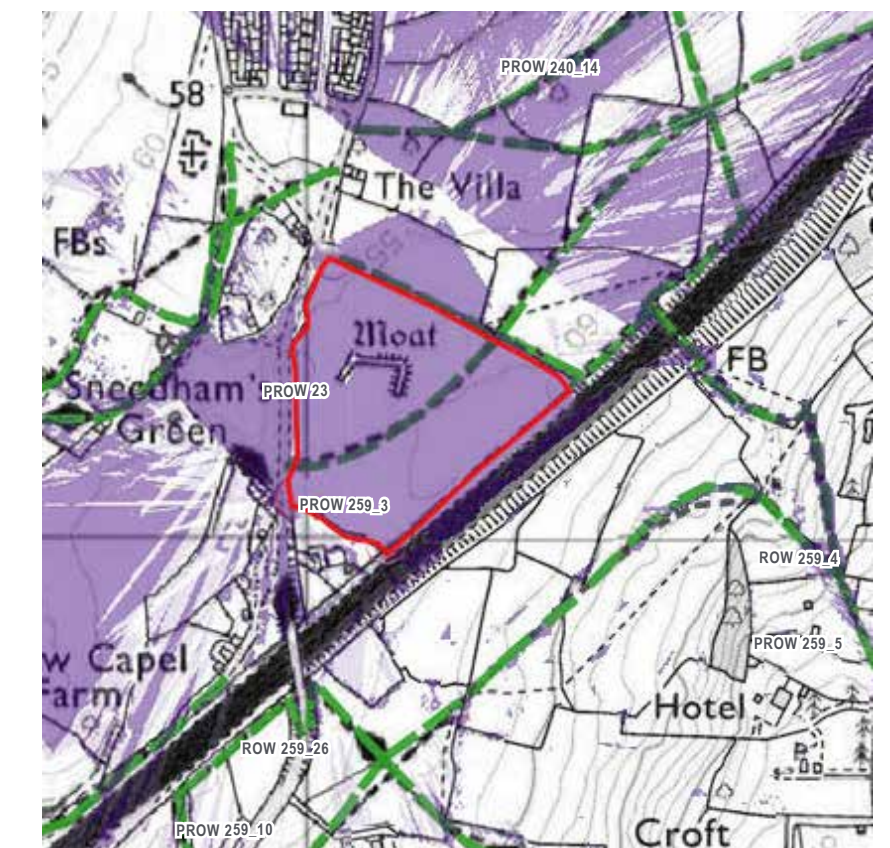
6.3 Representative Views

- 6.3.1
- Within the study area a number of representative and illustrative views of the site have been selected to demonstrate the existing visual amenity and the change likely to be experienced. The viewpoint locations have been chosen based on distance, the degree of visibility, the nature of the view and the anticipated number or type of potential receptors.
- 6.3.2
- Photographs were taken in early June 2021 and demonstrate a best case scenario when vegetation was in full leaf. Visibility will be lower in summer when deciduous vegetation is in full leaf, and greater during winter months, the worst case scenario.
- 6.3.3
- For each viewpoint the visual receptors are identified and their sensitivity assessed. The effects of the proposed development are then subsequently described and assessed.



KEY

-  Site Boundary
-  Representative Viewpoints
-  Inset A for PRoW's
-  Primary Visual Envelope
-  Secondary Visual Envelope (Glimpsed views)
-  PRoW Footpath
-  PRoW Bridleway



Inset A: PRoW's associated with Site.

Figure 10: Visual Analysis and Locations of Representative Views.

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VIEWPOINT 1

View towards the Site from Winnycroft Lane looking south east



SENSITIVITY: MEDIUM

Description of View	Magnitude of Change		
	Construction	Completion Year 1	Completion Year 15
<p>View from Winnycroft Lane into and across the Site. A gap in the vegetation allows views of the Moat Scheduled Monument located inthe middle of the Site. Boundary vegetation along Winnycroft Lane is formed by intermittent small trees and shrubs.</p> <p>Rising land on the horizon is formed by Kites Hill and Spoonbed Hill, well vegetated with mature trees and located within the Cotswold AONB. The M5 forms the south eastern Site boundary, traversing the valley floor and separating the extended settlement of Gloucester from the AONB. The M5 cannot be distinguished visually, but is noticeable audibly.</p> <p>Receptors</p> <ul style="list-style-type: none">Users of Winnycroft LaneResidents/ worker of Knightswood Court	<p>In the short term, there will be disturbance of existing ground levels arising from removal/ storage of topsoil and excavation for foundations, access driveway, and services. There will be clear views of construction activities to the left and right hand side of the view and beyond the Moat in the middle distance. A proposed cycleway along the western boundary will also cause some temporary disturbance. The magnitude of change will be Medium Negative.</p>	<p>The development will be clearly visible and recognisable but not dominant in views, set back from the retained and protected Moat and its immediate setting. Initially the landscape mitigation will provide minimal softening and screening effects and so built form will have greater influence.</p> <p>The magnitude of change will remain Medium Negative.</p>	<p>Over time strategic green infrastructure will mature, such as the hedgerows and trees to boundaries. This will screen and soften views of the development. In the long-term there are likely to be partially screened views of the development from this viewpoint.</p> <p>The magnitude of change will decrease to reach Low Negative.</p>


SIGNIFICANCE			
	MODERATE ADVERSE	MODERATE ADVERSE	MINOR ADVERSE

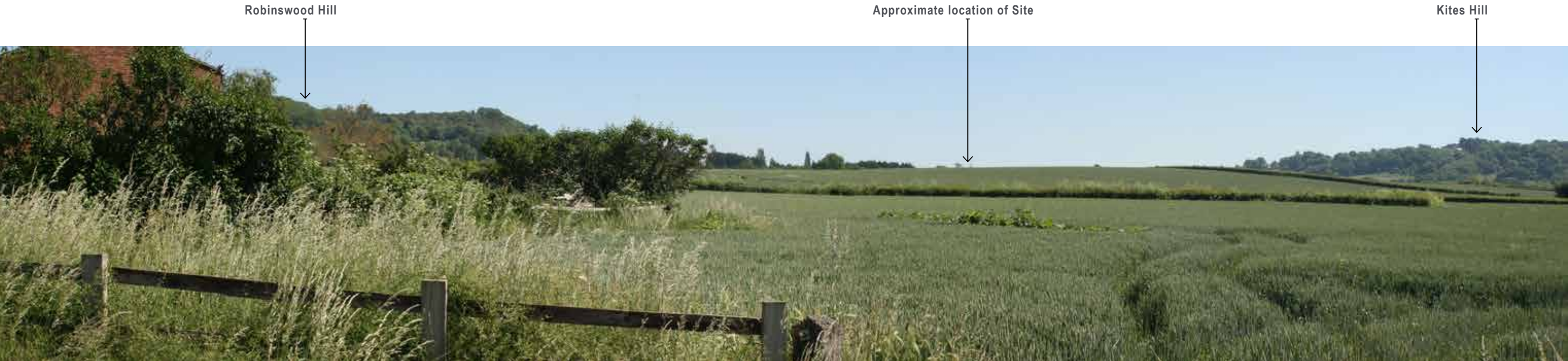
Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432	
Distance from site: 24m	Viewpoint height (AOD): 57m
OS grid reference: 384974 214240	
Camera make + model:CANON EOS 400	Date of photograph: 03.06.21



VIEWPOINT 2						
View towards the Site from PRow 20/22/23 looking south west						
	SENSITIVITY: HIGH	Description of View		Magnitude of Change		
				Construction	Completion Year 1	Completion Year 15
		View from the junction of 3 PRowS towards the Site. View over the immediate field, curtailed by mature trees and shrubs. Site is not visible. Receptors <ul style="list-style-type: none">Users of PRowS 20/22/23		No change of view.	No change of view.	No change of view.
				The magnitude of change will be None .	The magnitude of change will be None .	The magnitude of change will be None .
Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432		SIGNIFICANCE				
Distance from site: 388m		Viewpoint height (AOD): 57m		NONE		
OS grid reference: 385492, 214537				NONE		
Camera make + model:CANON EOS 400		Date of photograph: 03.06.21		NONE		



VIEWPOINT 3						
View towards the Site from PRow 9 looking east adjacent to M5 Services		Description of View	Magnitude of Change			
			Construction	Completion Year 1	Completion Year 15	
	SENSITIVITY: HIGH	View from PRow 9 towards the Site. Views over boundary hedgerow into the adjacent field. Robins Hill clearly visible on the horizon line. Views towards the Site are curtailed by rising topography of the field, boundary hedgerows, mature trees and shrubs. Site is not visible	No change of view.	No change of view.	No change of view.	
		Receptors <ul style="list-style-type: none">Users of PRow 9				
			The magnitude of change will be None .	The magnitude of change will be None .	The magnitude of change will be None .	
		SIGNIFICANCE				
					NONE	NONE
Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432						
Distance from site: 793m	Viewpoint height (AOD): 50m					
OS grid reference: 384311,213750						
Camera make + model:CANON EOS 400	Date of photograph: 03.06.21					



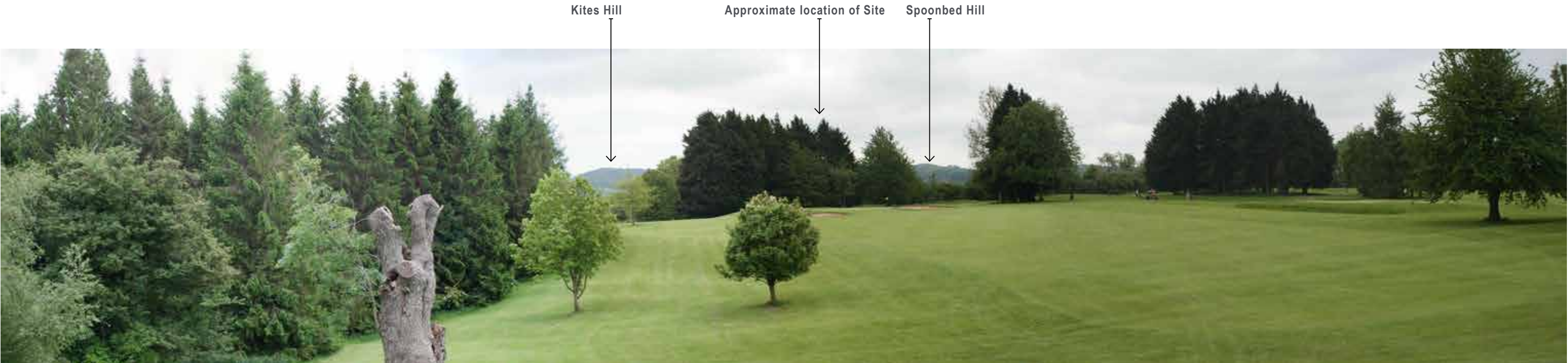
VIEWPOINT 4

View towards the Site from A4173- Stroud Road looking north east towards site

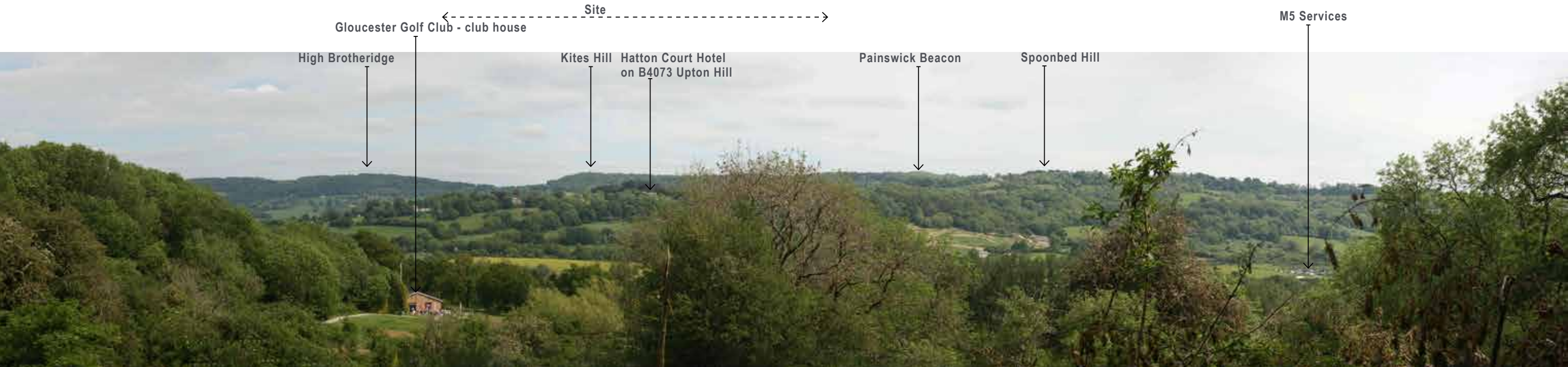


Description of View	Magnitude of Change		
	Construction	Completion Year 1	Completion Year 15
Taken from Stroud Road looking north east looking towards the Site. Views over fields within the valley between Robins Hill, visible on the left hand side of the view, and Kites Hill on the right hand side of the view. Views towards the Site are predominantly curtailed by rising topography of the fields, along with layers of vegetation consisting of boundary hedgerows, mature trees and shrubs. Site is not visible.	No change of view.	No change of view.	No change of view.
Receptors <ul style="list-style-type: none">Users of the A4173 Stroud Road	The magnitude of change will be None .	The magnitude of change will be None .	The magnitude of change will be None .
SIGNIFICANCE			
	NONE	NONE	NONE

Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432	
Distance from site: 1565m	Viewpoint height (AOD): 35m
OS grid reference: 383534, 213534	
Camera make + model: CANON EOS 400	Date of photograph: 03.06.21



VIEWPOINT 5		
View towards the Site looking south from Gloucester Golf Course on PRow 16		
	<div>SENSITIVITY: HIGH</div>	
	<div><div>Description of View</div><div>Magnitude of Change</div></div>	
	<div>Construction</div> <div>Completion Year 1</div> <div>Completion Year 15</div>	
	<div>Taken from PRow 16, just west of Matson Wood on Robinswood Hill, looking south east towards the Site. Mature trees, many of which are evergreen, and shrub vegetation, help define the tees and greens of Gloucester Golf Course on the slopes of Robinswood Hill. Long distance views are afforded out to the opposite high ground of Kites Hill and Spoonbed Hill. This connects to a wider network of PRowS, including the Wysis Way national trail.</div> <div>Receptors<ul style="list-style-type: none">Users of PRow 16Users of Gloucester Golf Course</div>	<div>No change of view.</div> <div>No change of view.</div> <div>No change of view.</div>
	<div>The magnitude of change will be None.</div> <div>The magnitude of change will be None.</div> <div>The magnitude of change will be None.</div>	
<div>SOURCE: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432</div> <div><div>Distance from site: 896m</div><div>Viewpoint height (AOD): 128m</div><div>OS grid reference: 384439, 214949</div><div>Camera make + model: CANON EOS 400</div><div>Date of photograph: 03.06.21</div></div>		<div>SIGNIFICANCE</div> <div>NONE</div> <div>NONE</div> <div>NONE</div>



VIEWPOINT 6

View towards the Site looking south east from PRoW 17 in Robinswood Hill Park




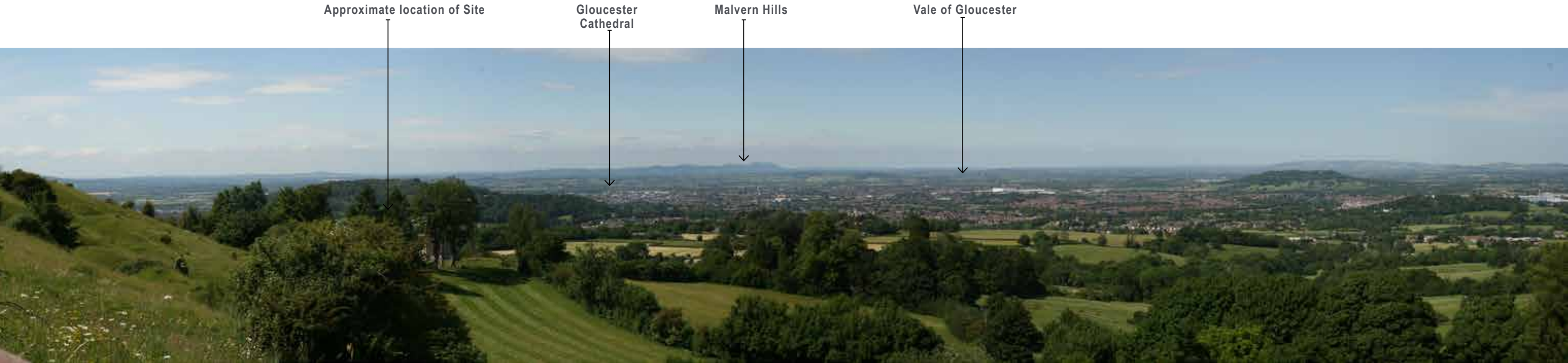
Description of View	Magnitude of Change		
	Construction	Completion Year 1	Completion Year 15
<div><div>SENSITIVITY: HIGH</div><div><p>Taken from PRoW 17 looking south east towards the Site. Views are afforded into the northern half of the Site from this elevated position, the yellow field in the centre of the view, with the southern half screened by existing mature vegetation of Robinswood Hill. Set within a well vegetated landscape, the wooded hills form the horizon line in the distance.</p><p>This connects to a wider network of PRoWs, including the Wysis Way national trail.</p><p>Receptors</p><ul style="list-style-type: none">Users of PRoW 17</div></div>	<p>In the short term, there will be disturbance of existing ground levels arising from removal/ storage of topsoil and excavation for foundations, access driveway, and services. There will be clear views of construction activities across the northern half of the Site.</p> <p>The magnitude of change will be Medium Negative.</p>	<p>The development will be clearly visible and recognisable but not dominant in views, set within a well vegetated landscape, the wide landscape towards the hills opposite being the focus of the view. Initially the landscape mitigation will provide minimal softening and screening effects and so the built form will have greater influence.</p> <p>The magnitude of change will remain Medium Negative.</p>	<p>Over time strategic green infrastructure will mature, such as the hedgerows and trees within the development breaking up built form. Protection and retention of the central Moat SM will provide a centre green focal area, with built form set around it to the north, east and south. In the long-term there are likely to be partially screened views of the development along the northern and eastern boundaries.</p> <p>The magnitude of change will decrease to reach Low Negative.</p>

Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432	
Distance from site: 935	Viewpoint height (AOD): 138m
OS grid reference: 384214, 214706	
Camera make + model: CANON EOS 400	Date of photograph: 03.06.21

SIGNIFICANCE		
MAJOR ADVERSE	MAJOR ADVERSE	MODERATE ADVERSE



VIEWPOINT 7						
View towards the Site looking south west from PRow 22#1			Description of View	Magnitude of Change		
				Construction	Completion Year 1	Completion Year 15
	SENSITIVITY: HIGH	Taken from PRow 22#1 looking south west towards the Site. Views over fields in the valley with Robinswood Hill, visible on the right hand side of the view. Residential settlement can also be seen below Robinswood Hill, located along Winnycroft Lane and Sneedhams Road. Views towards the Site are curtailed, predominantly by layers of vegetation consisting of boundary hedgerows, mature trees and shrubs, along with a slight rise in topography. Site is not visible.	No change of view.	No change of view.	No change of view.	
		Receptors <ul style="list-style-type: none">Users of PRow 22#1	The magnitude of change will be None .	The magnitude of change will be None .	The magnitude of change will be None .	
Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432		SIGNIFICANCE				
Distance from site: 640m	Viewpoint height (AOD): 58m			NONE	NONE	NONE
OS grid reference: 385757, 214656						
Camera make + model: CANON EOS 400		Date of photograph: 03.06.21				



VIEWPOINT 13

View towards the Site from Sevenleaze Lane looking north west, located within the Cotswolds AONB



SENSITIVITY: MEDIUM


Description of View	Magnitude of Change		
	Construction	Completion Year 1	Completion Year 15
<p>Taken from Sevenleaze Lane, looking north west across the city of Gloucester to the wide Vale of Gloucester, with the Malvern Hills in the far distance. Gloucester Cathedral can just be distinguished on the north western fringes of the city.</p> <p>The Site itself cannot be seen, siting at the base of Robinswood Hill, screened by mature trees and shrubs in the well vegetated landscape to the south of Gloucester city itself.</p> <p>This view presents a settled vale landscape, with well wooded hills punctuating the relatively flat landscape of the vales.</p> <p>Receptors</p> <ul style="list-style-type: none">Users of Sevenleaze Lane	<p>No change of view.</p> <p>The magnitude of change will be None.</p>	<p>No change of view.</p> <p>The magnitude of change will be None.</p>	<p>No change of view.</p> <p>The magnitude of change will be None.</p>
SIGNIFICANCE			
	NONE	NONE	NONE

Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432	
Distance from site: 1,741m	Viewpoint height (AOD): 223m
OS grid reference: 385999, 212525	
Camera make + model: CANON EOS 400	Date of photograph: 06.03.21




VIEWPOINT 9						
View towards the Site from Sneedhams Green Common Land / PRoW 2 looking south			Description of View	Magnitude of Change		
				Construction	Completion Year 1	Completion Year 15
		SENSITIVITY: HIGH	<p>There are glimpsed views across the common land into the Site from this viewpoint, through gaps in the boundary vegetation to Winnycroft Lane. The landscape is very wooded and has a recognisable pattern of more intimate and enclosed fields with longer distant views to the Hills, which are mostly wooded, but allow occasional glimpses to open green fields.</p> <p>Receptors</p> <ul style="list-style-type: none">• Users of PRoW 2• Users of Sneedhams Green• Residents along Sneedhams Green	<p>In the short term, there will be disturbance of existing ground levels arising from removal/ storage of topsoil and excavation for foundations, access driveway, and services. There will be clear views of construction activities across the Site.</p> <p>The magnitude of change will be <i>Medium Negative</i>.</p>	<p>The development will be clearly visible and recognisable but not dominant in views, set within a well vegetated landscape, the wider landscape with views towards the hills opposite being the focus. Initially the landscape mitigation will provide minimal softening and screening effects and so the built form will have greater influence.</p> <p>The magnitude of change will remain <i>Medium Negative</i>.</p>	<p>Over time strategic green infrastructure will mature, such as the hedgerows and trees within the development breaking up built form. Protection and retention of the central Moat SM will provide a centre green focal area, with built form set around it to the north, east and south. In the long-term there are likely to be partially screened views of the development along the western boundary.</p> <p>The magnitude of change will decrease to reach <i>Low Negative</i>.</p>
Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432			SIGNIFICANCE			
Distance from site: 150m		Viewpoint height (AOD): 59m		MAJOR ADVERSE		
OS grid reference: 384849, 214233				MAJOR ADVERSE		
Camera make + model: CANON EOS 400		Date of photograph: 06.03.21		MODERATE ADVERSE		




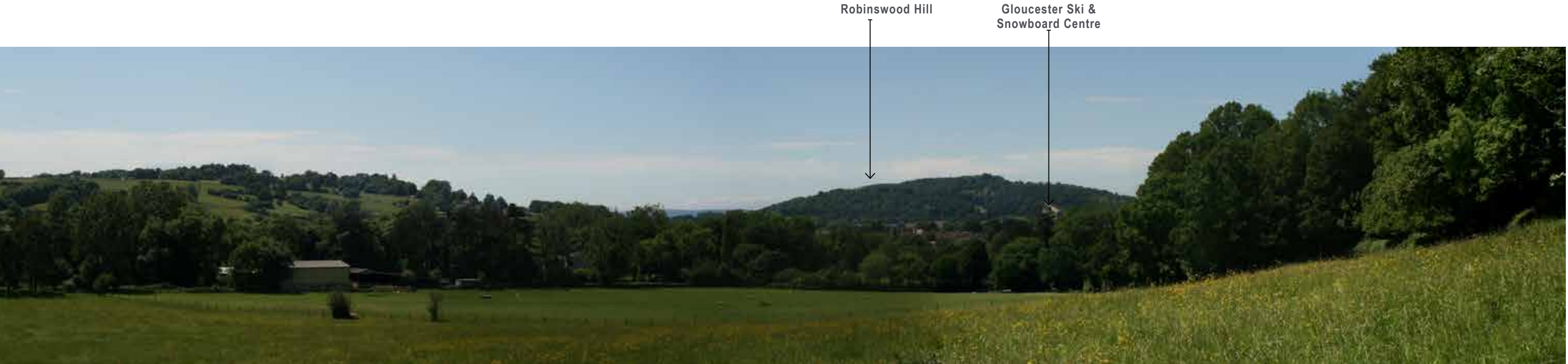
VIEWPOINT 10						
View towards the Site from Winnycroft/Upton Lane bridge looking north east						
	SENSITIVITY: MEDIUM	Description of View	Magnitude of Change			
			Construction	Completion Year 1	Completion Year 15	
		Taken from the bridge over the M5 on Winnycroft / Upton Lane road. From this elevated viewpoint there are no views afforded into the Site, with views curtailed to the near distance by mature, dense trees and shrub vegetation. The M5 is very audible.	No change of view.	No change of view.	No change of view.	
		Receptors <ul style="list-style-type: none">• Users of Winnycroft Lane / Upton Lane				
			The magnitude of change will be None .	The magnitude of change will be None .	The magnitude of change will be None .	
Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432		SIGNIFICANCE				
Distance from site: 190m	Viewpoint height (AOD): 62m		NONE	NONE	NONE	
OS grid reference: 384990,213849						
Camera make + model:CANON EOS 400	Date of photograph: 03.06.21					



VIEWPOINT 11						
View towards the Site from PRoW 25 looking north, located within the Cotswolds AONB			Description of View	Magnitude of Change		
				Construction	Completion Year 1	Completion Year 15
		SENSITIVITY: HIGH	<p>Views over the immediate field to mature trees forming the horizon line. Views towards the Site are curtailed by layers of vegetation consisting of boundary hedgerows, mature trees and shrubs, along with a slight rise in topography. Site is not visible.</p> <p>Receptors</p> <ul style="list-style-type: none">• Users of PRoW 25	No change of view.	No change of view.	No change of view.
				The magnitude of change will be None .	The magnitude of change will be None .	The magnitude of change will be None .
Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432			SIGNIFICANCE			
Distance from site: 390m		Viewpoint height (AOD): 65m		NONE	NONE	NONE
OS grid reference: 385049, 213616						
Camera make + model: CANON EOS 400		Date of photograph: 06.03.21				



VIEWPOINT 12					
View towards the Site from PRoW 25 looking north, located within the Cotswolds AONB					
	SENSITIVITY: HIGH	Description of View	Magnitude of Change		
			Construction	Completion Year 1	Completion Year 15
		Views over the immediate field to mature trees and shrubs forming the horizon line. Views towards the Site are curtailed by layers of vegetation consisting of boundary hedgerows, mature trees and shrubs. Site is not visible.	No change of view.	No change of view.	No change of view.
		Receptors			
		<ul style="list-style-type: none">Users of PRoW 25			
Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432		SIGNIFICANCE			
Distance from site: 200m	Viewpoint height (AOD): 71m				
OS grid reference: 385257, 213851					
Camera make + model: CANON EOS 400	Date of photograph: 06.03.21				



VIEWPOINT 16

View towards the Site from Nuthill looking south west, located within the Cotswolds AONB



SENSITIVITY: MEDIUM

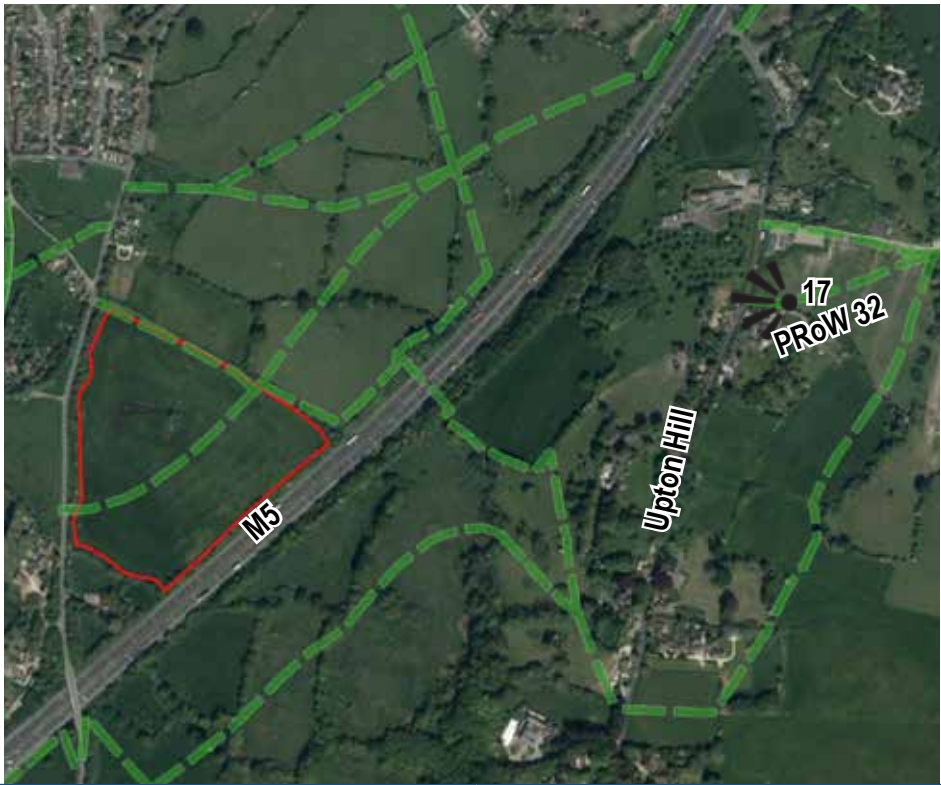
Description of View	Magnitude of Change		
	Construction	Completion Year 1	Completion Year 15
Taken from Nuthill, looking south west towards the Site. From this point the hilly, well vegetated landscape fills the view, with the occasional agricultural barn nestled in amongst mature trees. Robinswood Hill with the Ski slope are visible from this slightly elevated position. The Site is not visible.	No change of view.	No change of view.	No change of view.
Receptors <ul style="list-style-type: none">Users of Nuthill	The magnitude of change will be None .	The magnitude of change will be None .	The magnitude of change will be None .
SIGNIFICANCE			
	NONE	NONE	NONE

Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432	
Distance from site: 1,987m	Viewpoint height (AOD): 82m
OS grid reference: 387325,214924	
Camera make + model: CANON EOS 400	Date of photograph: 06.03.21



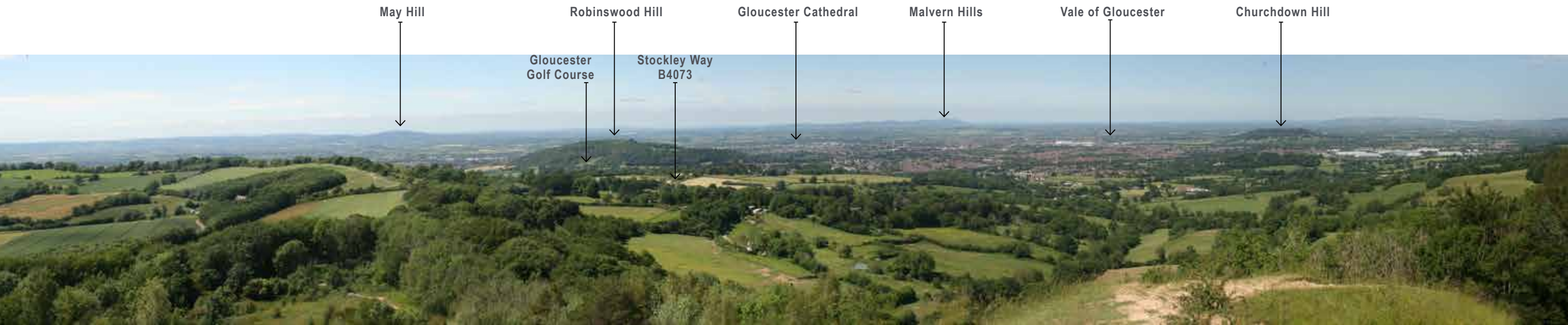
VIEWPOINT 17

View towards the Site from PRoW 32 off Upton Hill, located within the Cotswolds AONB



Source: Ordnance Survey Crown Copyright 2019. All rights reserved. License Number 100022432	
Distance from site: 650m	Viewpoint height (AOD): 86m
OS grid reference: 385927, 214362	
Camera make + model: CANON EOS 400	Date of photograph: 06.03.21

Description of View	Magnitude of Change		
	Construction	Completion Year 1	Completion Year 15
Taken from PRoW 32, looking south west towards the Site. The small community of Upton Hill is visible in the foreground, set amongst mature trees and hedgerows. The settlement of Matson is visible in the middle ground to the right hand side of the view, the residential areas leading off Winnycroft Lane. The Site is not visible, screened by existing mature vegetation.	No change of view.	No change of view.	No change of view.
Receptors <ul style="list-style-type: none">Users of PRoW 32			
SIGNIFICANCE			
	NONE	NONE	NONE



VIEWPOINT 18

View towards the Site from Painswick Beacon Viewpoint looking north



Description of View	Magnitude of Change		
	Construction	Completion Year 1	Completion Year 15
<div>Sensitivity: High</div> <p>Taken from Painswick Beacon Viewpoint, with sweeping extending views out over the wide landscape below. From this point the Site is hidden from view by Upton Hill, tucked in the valley at the foot of Robinswood Hill. Long distance views extend out over the Vale of Gloucester, with the Cathedral just visible in the far distance. Robinswood Hill marks the southern end of the city of Gloucester, while Churchdown Hill marks the northern end. The hills and vales are a distinctive landscape, often wooded hilltops and well vegetated vales. This Beacon connects to a wide network of PRow including the national trail the Cotswold Way and the Wysis Way.</p> <p>Receptors</p> <ul style="list-style-type: none">Users of Painswick Beacon Viewpoint	No change of view.	No change of view.	No change of view.
	The magnitude of change will be None .	The magnitude of change will be None .	The magnitude of change will be None .

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SIGNIFICANCE

6.4 Zone of Theoretical Visibility

- 6.4.1 The extent of potential visibility of the proposed development has been informed by a Zone of Theoretical Visibility (ZTV). Whilst the ZTV is able to give a reasonably accurate representation of where views may be possible, it should be noted that landscapes can change between data collections resulting in potential views being screened.
- 6.4.2 Following the Site visit the ZTV has been refined to omit areas where the Site is not visible beyond layers of intervening vegetation and/or built development.

6.5 Visual Effects

- 6.5.1 Initially a broad study area extending to 3km and beyond from the Site boundary was adopted as a desk study to understand the relationship of the Site with its wider surroundings. Following the assessment in the field, views are classified as either:
 - Near Distance 0-0.5km
 - Middle Distance Views 0.5-0.1km
 - Long Distance Views 1.0km +
- 6.5.2 The Site is enclosed by mature hedgerows and trees along its boundaries, set within a well vegetated vale with wooded hilltops, which, along with changes in local topography, ensure that the site is relatively well screened in the majority of views. This existing vegetation is dense and mature enough to provide a good level of filtering and screening during winter months, especially as there are some mature evergreen trees to the Gloucester Golf Course and to Upton Hill and the hotels along here.
- 6.5.3 Due to the gently undulating vale topography, local Hills, mature well vegetated local landscape and existing dwellings, the majority of middle and all long distance views are screened.
- 6.5.4 The 18 viewpoints appraise the site and surroundings and the potential effects of the proposed introduction of residential development and retained open space on the Site. Three views experience adverse effects, two determined as Moderate Adverse, and one viewpoint is determined as experiencing Minor Adverse effects.
- 6.5.5 The Moderate Adverse Viewpoint 6, is taken from an elevated view from Robinswood Hill, where views are also afforded of traffic along the M5.
- 6.5.6 None of the fifteen remaining viewpoints would experience any change in view following development of the proposals.

Table 3 - Summary of Visual Effects

Viewpoint	Distance of View	Significance of Effect Post Completion 15 Years
1	Near	Minor Adverse
2	Near	None
3	Middle	None
4	Long	None
5	Middle	None
6	Middle	Moderate Adverse
7	Middle	None
8	Middle	None
9	Near	Moderate Adverse
10	Near	None
11	Near (view from AONB)	None
12	Near (view from AONB)	None
13	Long (view from AONB)	None
14	Long (view from AONB)	None
15	Long (view from AONB)	None
16	Long (view from AONB)	None
17	Middle (view from AONB)	None
18	Long (view from AONB)	None

- 6.5.7 The Zone of Theoretical Visibility, or Influence (ZTV), the area from within which the proposed development may have an effect, is relatively contained and does not extend across the majority of middle or any long distances. Located within a gently undulating vale landscape with well vegetated boundaries, and wooded hilltops to the Hills and escarpment of the Cotswolds AONB, views are restricted to near distances in the majority. Where longer distance views are afforded, they are from elevated positions, with layers of vegetation aiding screening and softening. Of the eight viewpoints from within the AONB, none experience any change in view.
- 6.5.8 The spatial layout of development areas, open space and strategic green infrastructure, as well as existing features to be retained such as the central moat SM within its own large green open space, has been designed to complement and respect the character and context of the settlement and the surrounding countryside.
- 6.5.9 New structural planting will soften views of the proposed development from the surrounding landscape and road network. At Year 1 of completion, planting will have a minimal effect and there is generally no change to the scale of visual effects. As planting matures the magnitude of change will decrease, reducing the significance of effect by Year 15.
- 6.5.10 Following the completion of the Proposed Development the greatest levels of effects will still be experienced by those receptors in close proximity to the Application Site. Such effects have been mitigated by the design of the Proposed Development in conjunction with planting, which over time will become established and help to integrate the built form into the surrounding landscape.

7. MITIGATION AND MONITORING MEASURES

7.1 Primary Mitigation and Design Measures

- 7.1.1 The proposed development of Snow Capel, Winnycroft Lane, Matson, Gloucester, has been carefully designed to minimise landscape and visual effects. Primary mitigation or those aspects integrated into the development masterplan and detailed design are described in Section 3 of this report.
- 7.1.2 These are inherent parts of the design included in the project description and are considered in the assessment of landscape and visual effects.

7.2 Secondary Mitigation and Monitoring Measures

- 7.2.1 The following section identifies and describes secondary mitigation and monitoring measures to minimise the probability of landscape and visual effects occurring, and ensure the successful completion of the scheme.
- 7.2.2 Such measures are identified at the key stages of the project post planning namely detailed design (including discharge of planning conditions); demolition and construction; implementation and monitoring; and long-term management.

Detailed Design

- 7.2.3 As highlighted a number of aspects of the proposed development will form part of the detailed design. The key issues relating to secondary mitigation are set out below:
- Proposed external ground and finished floor levels: Levels (unless otherwise agreed) should broadly follow the existing contours of the site as far as possible. Significant changes in level (such as retaining walls) should be avoided;
 - External building materials: The specification of materials including colour and finish with samples to be submitted and agreed by the local planning authority. Materials should match existing to minimise visual effects;
 - Proposed drainage and services: The detailed design of proposed drainage and services, including the location of the proposed surface water attenuation. The details should be fully coordinated with the landscape scheme;
 - External lighting: The detailed lighting design should comply with British Standards, Codes of Practice and County Council street lighting specification. Consideration should be given to the location of lighting, light source and the type of luminaries to ensure that the effects of light pollution and sky glow are kept to a minimum.
 - Hard landscape: The arrangement and specification of hard surfacing, enclosures / fencing, street furniture and other structures. The proposals should be in accordance with the submitted Landscape Masterplan;
 - Tree retention and protection: A final Arboricultural Method Statement, Tree Protection Plan and Schedule of Tree Works must be prepared to

ensure the retention of important existing vegetation as identified in this report. The details shall be in accordance with the submitted Arboricultural Impact Assessment and should include full consideration of proposed changes in level, construction of hard surfaces, services and drainage as well as the monitored required during and post construction.

- Soft landscape: The detailed design of all landscaped areas including existing vegetation to be retained, in conjunction with details of proposed planting. The proposals must be in accordance with the submitted Landscape Masterplan. Particular details must include the following:
 - The detailed design of soft landscape including species, planting density, and stock size. The size of plant stock should provide some immediate impact in key areas whilst predominantly utilising stock of more modest size to naturally succeed and deliver a mature green framework in the long-term;
 - A specification setting out the standards and time frames for the implementation of soft landscape to include soil preparation / cultivation, details of planting and seeding, along with initial maintenance to ensure the successful establishment of vegetation; and
 - An implementation programme. The implementation of planting (and in particular strategic vegetation to the site boundaries) should be phased in conjunction with the substantial completion of each area.
- Management: A Landscape and Ecological Management Plan (LEMP) to ensure the long-term management and maintenance. The management plan should include appropriate measures for the management of strategic planting to ensure its successful establishment and long-term maintenance. This should include the implementation of replacement vegetation as may be required to develop and maintain the landscape framework.

- 7.2.4 All of these measures can be successfully addressed and monitored by the local planning authority prior to the commencement of the development via conditions of the planning consent.

Construction

- 7.2.5 A number of residual adverse landscape and visual effects are highlighted during the construction phase. To manage the potential effects arising during construction work, it is recommended that in advance of works commencing a Construction Management Plan is prepared. The Construction Management Plan will include an outline of the proposed development, the sequencing of construction works and the management controls required with consideration of environmental effects.

- 7.2.6 The Construction Management Plan will include:

- The location and arrangement of site access, compounds (including accommodation and cabins) and parking;
- The use of hoardings and fencing (including temporary fencing);
- The storage of construction materials and waste;
- The handling and storage of topsoil (including imported topsoil);

- Measures for the protection of existing vegetation and landscape areas (in accordance with BS5837:2012);
- Permitted working hours;
- The implementation of planting; and
- Responsibilities, and monitoring/reporting measures.

- 7.2.7 Implementation and Monitoring

- 7.2.8 During construction and at suitable intervals post completion the protection and condition of existing vegetation should be monitored, as established in the Arboricultural Method Statement.

- 7.2.9 The influence of vegetation is highlighted in the assessment of both landscape and visual effects as it provides the structure and framework for the new buildings. All new planting must therefore be implemented in accordance with the detailed landscape drawings, specification and implementation programme.

Long-term Management

- 7.2.10 Landscape conditions should be used to ensure that planting within areas conveyed to private residents is retained for at least a minimum period of five years. This can be supported by guidance on general landscape maintenance included with information provided at the point of purchase.

- 7.2.11 All such areas should be managed in accordance with the standards and annual maintenance regime set out in the Landscape and Ecological Management Plan to ensure that it is retained in a sustainable and well maintained condition in perpetuity.

8. SUMMARY AND CONCLUSIONS

8.1 General

- 8.1.1 This report assesses the landscape and visual impact of the proposed residential development of land at Snow Capel, Matson Gloucester, to support the planning application.
- 8.1.2 The report assesses the effects of the scheme on landscape character and visual amenity from the surrounding properties, roads, footpath network and public open spaces; from construction to completion. The assessment of effects is based on the submitted planning application drawings.
- 8.1.3 The principles of the proposed residential development have been developed from the Landscape baseline as part of a landscape led approach. Throughout the landscape and visual assessment, potential effects were reviewed and assessed as part of this iterative design.

8.2 Baseline Conditions

- 8.2.1 The site, which extends eastwards from Winnycroft Road to the M5 which forms its eastern boundary, is located to the south east of the centre of Gloucester in the suburb of Matson. The boundary of the site (approximately 7.9ha) and the extent of the study area are shown on **Figure 1**. The majority of the site ,consists of meadow grass with a central moat Scheduled Monument and good to moderately vegetated boundaries. The proposed residential development extends across the site in a U shape, protecting and retaining the central moat, with the addition of a new vehicular access points off Winnycroft Lane.
- 8.2.2 The Site, which forms a wedge shape, is bound by the M5 to the east and Winnycroft Lane to the west, with agricultural fields to the remaining boundaries and beyond the transport routes, along with scattered dwellings. An existing homestead, Green Farm, bounds the southern boundary of the site with agricultural land beyond the M5 and Winnycroft Lane bridge over the M5.
- 8.2.3 The extent of the study area is based on the potential visual envelope of the Site and proposed development i.e. the area from which views of the development may be visible, informed by topographical maps and field survey. The study area extends approximately 3km to the east and south, and a short distance to the north and west, where views are then curtailed by the local topography, existing vegetation and settlement.
- 8.2.4 The landscape within the study area comprises the Severn and Avon Vales National Character Area(NCA 106). More locally, the Site lies within the Vale of Berkeley LCA (as identified by the Landscape Character Assessment of Gloucester City).

8.3 Landscape and Visual Effects

- 8.3.1 Land use of the site, and hence character, will alter as a direct result of development of the Site. However the Site itself is relatively contained by mature trees and shrub boundary vegetation. The majority of the residual landscape effects are considered to be Minor Adverse to None.
- 8.3.2 The surrounding gently undulating vale topography and larger Hills, existing vegetation and areas of existing settlement of Matson establishes a Visual Envelope (VE), which is curtailed to the near distance, with one middle distance view from an elevated position on Robinswood Hill, with the majority of middle distance and all long distance views being screened. Of the eight viewpoints from within the AONB, none experience any change in view. Sensitive receptors within the near distance VE include local PRoWs adjoining residents and users of existing roads surrounding the Site.
- 8.3.3 The greatest level of visual effects will be experienced by those receptors within the near distance. Such effects will be mitigated by the design of the Proposed Development in terms of the area to be developed and the area to preserved as open space, in conjunction with planting, although it will take time for new planting to become established. Long-term adverse effects will be restricted to users and residents immediately adjoining the Proposed Development along Winnycroft Lane and those utilising the immediately adjoining PRoW network that also cuts through the Site.

8.4 Mitigation and Enhancement

- 8.4.1 The Proposed Development has been designed to minimise landscape and visual effects and create a positive setting to the surrounding area. As primary mitigation, the proposed landscape strategy seeks to deliver long-term landscape, biodiversity, recreation and sustainability benefits. Residual adverse effects can be mitigated following the secondary mitigation strategy set out in section 7.2. Detailed design will incorporate comprehensive information on the specification and implementation of strategic planting.

8.5 Conclusion

- 8.5.1 It should be acknowledged that any development will give rise to change in the landscape of the area and the views of receptors. The degree of change will influence the judgement on acceptability and will need to be balanced with the overall benefits delivered by the scheme.
- 8.5.2 Although there will be localised visual and landscape effects, the sensitively considered and designed layout, strategic landscape infrastructure, areas of retained open space and enhancement of existing vegetation, along with new internal development planting will help to visually integrate the development into the surrounding landscape.
- 8.5.3 On balance, the Site is well contained within the wider landscape and visual effects are localised, with no impact upon the AONB. In conclusion, in landscape terms there are no overriding landscape or visual effects that should prevent the development of the Site as proposed.

Appendix A: Sources of Information

Planning

- The National Planning Policy Framework (NPPF), February 2019;
- Gloucester City Council Local Plan (1983) - Saved Policies (A1.a Heights of buildings and protection of views);
- Gloucester City Council Joint Core Strategy (2017); and
- Pre-Submission Gloucester City Plan (Nov 2020).

Mapping and Other Data

- Ordnance Survey maps (1:20,000 Explorer Series);
- Historic Ordnance Survey maps;
- All LIDAR data © Environment Agency copyright and/or database right 2015. All rights reserved;
- Aerial images;
- Multi-Agency Geographic Information for the Countryside (MAGIC) (<http://magic.gov.uk/>).

Landscape Character Documents

- National Character Area Profiles: NCA 106 Severn and Avon Vales National Character Area (Natural England, 2012);
- The Gloucester Landscape Character Assessment, Gloucester City Council.

General

- Guidelines for Landscape and Visual Impact Assessment (Landscape Institute and Institute of Environmental Management and Assessment, Third Edition 2013);
- Landscape Character Assessment: Guidance for England and Scotland (The Countryside Agency and Scottish Natural Heritage, 2002);
- Visual Representation of Development Proposals. Technical Guidance Note 06/19. Landscape Institute, September 2019; and
- BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations (BSi, April 2012).

APPENDIX B: Criteria for Assessing Sensitivity

Table B1: Landscape Receptor Value and Susceptibility

Level	Value	Susceptibility
High	Landscape elements that are in good to excellent condition and are a fundamental component of landscape character. Alternatively a distinctive or rare landscape feature. These are likely, but not necessarily subject to statutory protection e.g. TPO's or Listed Buildings and/or given significant protection by planning policy.	<ul style="list-style-type: none">• Low potential for mitigation.• No or very limited potential for substitution or replacement.• Limited / no capacity to accommodate the proposed development or change without affecting the baseline situation.• Proposals may substantially contradict management or policy objectives.
	Landscapes that are in good condition, with a high prevalence of important landscape elements giving rise to a strong or unique character and sense of place. There are generally few detractors or uncharacteristic features present. These are likely, but not necessarily, statutory protected landscapes e.g. AONB, National Park, Registered Parks and Gardens recognised for their quality or cultural associations.	
	Management objectives generally focused on conservation of landscape character.	
Medium	Landscape elements that are in good to average condition and make a contribution to defining landscape character. Elements may be protected by local planning policy.	<ul style="list-style-type: none">• Some potential for mitigation.• Some potential for substitution or replacement.• Some capacity to accommodate the proposed development or change without affecting the baseline situation.• Proposals may be partly, but not entirely, in accordance with management or policy objectives.
	Landscapes that are in good to average condition with some important landscape elements giving rise to a positive character and recognisable sense of place, although some detracting features may be present. These may include local landscape designations e.g. Special Landscape Areas or other designations indicating local cultural or historic value.	
	Management objectives generally focused on conservation and enhancement of landscape character.	
Low	Landscape elements that are in average to poor condition. They may make a limited contribution to the character of the area or their contribution is reduced by their condition. Features or elements that are uncharacteristic and detract from the landscape character of the area.	<ul style="list-style-type: none">• Good or significant opportunities for mitigation.• Good potential for substitution or replacement.• Capacity to accommodate the proposed development / change without affecting the baseline situation, or with potential to enhance it.• Proposals generally in accordance with management or policy objectives.
	Landscapes that are in average to poor condition with evidence of erosion and limited sense of place. Some important landscape elements, however, detracting features notable. Designations are unlikely.	
	Management objectives generally focused on enhancement and restoration of landscape character.	

Table B2: Visual Receptor Value and Susceptibility

Level	Value	Susceptibility
High	Visual amenity assessed as good to excellent; an area of high scenic value to include: Nationally recognised or important views such as those protected by policy e.g. National Park / AONB or a national trail / route. Designed views. Views to or from designated heritage assets. Views from recognised tourist destinations, views marked on maps or referred to in art / literature.	<ul style="list-style-type: none">• Observers whose attention or interest may be focused on the landscape to include:• Users of rights of way and recreation trails• Users of land with public access including Open Access and National Trust land.• Residential properties with views from rooms occupied during daylight / waking hours (predominantly ground floor).
	Visual amenity assessed as average to good to include: Views which are locally recognised including those protected by local policy eg. visually important open space or special landscape area. To or from locally important heritage assets. Views from local destinations and well used footpath routes.	<ul style="list-style-type: none">• Observers where views of the landscape are part of, but not the sole purpose of the activity to include:• Those playing or spectating at outdoor sports or undertaking formal outdoor recreation.• Users of local roads where there are clear / open views across the landscape and low levels of traffic.• Residential properties with views from rooms unoccupied during daylight / waking hours (predominantly first floor rooms).
	Areas of average to low visual amenity to include: Views which are not recognised or have limited value, such as footpaths which are not well used. Detracting features may be clearly apparent.	<ul style="list-style-type: none">• Observers where attention is focused upon the activity and not the wider landscape to include:• Receptors engaged in sports or other activities.• Users of main roads travelling at speed, or local roads where the focus is on the road ahead.• Places of work / study.

Table B3: Sensitivity

		VALUE		
		HIGH	MEDIUM	LOW
SUSCEPTIBILITY	HIGH	High	High	Medium
	MEDIUM	High	Medium	Low
	LOW	Medium	Low	Low

APPENDIX C: Criteria for Assessing Magnitude of Change and Scale of Effect

Table C1: Magnitude of Landscape Change.

Magnitude of Effect Extent of change	Change Experienced as a result of development	
High	<ul style="list-style-type: none">• Result in the permanent loss of characteristic landscape elements and features and/or their setting.• Introduce uncharacteristic or dominant elements.• Be at complete variance with the landform, scale and pattern of the landscape.• Substantially erode the landscape character and/or condition of the area.• Undermine any designation or the nature of a vulnerable landscape.	NEGATIVE
	<ul style="list-style-type: none">• Retain the majority of existing landscape components and/or enable the full restoration and/or replacement of characteristic landscape elements and features.• Introduce new landscape elements and features that through good design enables a sense of place to be fully restored.• Have a strong contextual fit with the scale, landform and pattern of the landscape.• Substantially enhance the landscape character and/or condition of the area.	POSITIVE
Medium	<ul style="list-style-type: none">• Result in the partial loss or alteration of characteristic landscape elements and features and/or reduce or remove their setting.• Introduce uncharacteristic components alongside characteristic features or elements.• Be at odds with the landform, scale and pattern of the landscape.• Be a noticeable change, although not necessarily uncharacteristic when set within the attributes of the receiving landscape.• Result in a deterioration of landscape character and/or condition.	NEGATIVE
	<ul style="list-style-type: none">• Retain existing key features and/or enable partial restoration of characteristic landscape elements and features.• Introduce new landscape elements and features that through good design enables sense of place to be restored.• Fits well with the landform, scale and pattern of the landscape.• Enhance the landscape character and/or condition of the area.	POSITIVE

Table C1: Magnitude of Landscape Change. Continued

Magnitude of Effect Extent of change	Change Experienced as a result of development	
Low	<ul style="list-style-type: none">• Result in the temporary or minor loss or alteration of landscape elements and features and/or reduce their setting.• Introduce some uncharacteristic components alongside characteristic features or elements.• Not quite fit with the landform, scale and pattern of the landscape.• Be a discernible change, although not uncharacteristic when set within the attributes of the receiving landscape.• Result in a minor deterioration of landscape character and/or condition.	NEGATIVE
	<ul style="list-style-type: none">• Retain existing key features and/or allow limited restoration of characteristic landscape elements and features.• Introduce new landscape elements and features that through good design enables some sense of place to be restored.• Respects the landform, scale and pattern of the landscape.• Enables limited enhancement of the landscape character and/or condition of the area.	POSITIVE
Negligible	The development would introduce barely discernible elements or physical change to the landscape. Key characteristics of the landscape and its integrity are unaffected.	

Table C2: Nature and Magnitude of Visual Effects

Magnitude of Effect <i>Extent of change</i>	Change Experienced	
High	<ul style="list-style-type: none">Proposal results in the total, permanent loss of a highly valued view.Proposal introduces dominant or discordant elements altering the composition or balance of the view.Proposal introduces features not already present on / or part of the skyline.	NEGATIVE
	<ul style="list-style-type: none">Proposal removes substantial visual detractors.Proposal introduces positive elements that substantially enhance the composition of the view.Development introduces an immediately apparent landmark or feature.	POSITIVE
Medium	<ul style="list-style-type: none">Proposal is clearly visible and recognisable but not prominent in views.Proposal introduces elements that are not necessarily already characteristic and/or are incongruous;Development may form skyline features amongst existing development and/or vegetation.	NEGATIVE
	<ul style="list-style-type: none">Proposal removes some visual detractors.Proposal is a visible but characteristic element complementing the composition of the view.	POSITIVE
Low	<ul style="list-style-type: none">Proposal is only a minor component or slightly uncharacteristic part of the view and does not introduce incongruous features and subsequentlyProposal does not alter the overall composition of the view or dominance or balance of elements within it and therefore might be missed by a casual observer.	NEGATIVE
	<ul style="list-style-type: none">Proposal removes limited visual detractors.Proposal is only a minor component of the view and compliments the composition and balance of existing elements.	POSITIVE
Negligible	<ul style="list-style-type: none">Proposals perceived as a background component in view or are subservient to other elements within it.The development would be barely discernible.	

Table C3: Scale of Effect for Landscape and Visual Effects

		MAGNITUDE OF CHANGE			
		HIGH	MEDIUM	LOW	NEGLECTIBLE
SENSITIVITY	HIGH	Major	Major	Moderate	Minor
	MEDIUM	Major	Moderate	Minor	Negligible
	LOW	Moderate	Minor	Negligible	Negligible

Transport Assessment.

Land at Snow Capel, Matson, Gloucester, GL4 6HY

Residential development of 190 dwellings (Class C3); vehicular, pedestrian and cycle access from Winnycroft Lane; public open space and landscaping; drainage attenuation and other associated works” (the ‘Proposal’).

On behalf of Bromford Developments Limited.

Date: MAY 2022 | Pegasus Ref: P2O-1432/TR/O2



Document Management.

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0. Executive Summary

- 0.1. This Transport Assessment has been prepared by Pegasus Group on behalf of Bromford Developments Limited. It supports a development proposal at land at Snow Capel, to the east of Winnycroft Lane and northwest of the M5 Motorway in Gloucester for 190 dwellings. The scheme is the subject of a full planning application.
- 0.2. **Part A** sets out the background policy and accessibility information, in order to provide context. It is considered that the proposed development is broadly in accordance with the transport policies of local and national government.
- 0.3. **Part B** sets out the development proposals and matters including strategies for access, walking and cycling and parking provision. It is considered that the site is located within walking and cycling distance of existing services and amenities that would typically be required by future residents on a daily basis.
- 0.4. **Part C** sets out matters relating to the trip impact of the scheme on the operation and safety of the local highway network, as well as the proposed mitigation measures. It is considered that the proposed development will not have a material impact on the future operation of the local highway network.
- 0.5. **Part D** provides the Transportation Assessment's summary and conclusions. It is concluded that the site is suitably located and that appropriate measures are proposed to ensure that there are opportunities for travel by sustainable transport modes, as a realistic alternative to single occupancy vehicular travel. It is also concluded that the trips associated with the scheme can be accommodated on the local highway network and that operational and safety issues are addressed.
- 0.6. It will finally be concluded that there are no transportation related reasons why the development proposal should not be permitted.

1. Introduction

- 1.1. This Transport Assessment (TA) has been prepared by Pegasus Group on behalf of Bromford Developments Limited, in order to address the highways and transportation issues associated with the proposed development of 190 dwellings on land at Snow Capel, Matson, Gloucester. The scheme is the subject of a full planning application.
- 1.2. The site is located to the immediate east of Winnycroft Lane, to the south of Matson. The M5 Motorway abuts the site's eastern boundary.
- 1.3. A pre-application enquiry submission was made to Gloucestershire County Council (GCC), as the local highway authority, in June 2021. This included a Scoping Note for agreement. Comments were subsequently received from GCC on 30th July 2021 and ongoing dialogue has been requested. The following key transportation aspects and issues are subsequently addressed within this TA:
 - i. Relevant transport policy.
 - i. Highway safety within the vicinity of the site.
 - ii. The relative accessibility of the scheme.
 - iii. The nature of the development proposals, including access and parking.
 - iv. Future forecast trips associated with the scheme.
 - v. Distribution of vehicular trips associated with the scheme.
 - vi. Junction capacity assessments; and
 - vii. The proposed measures to encourage sustainable travel and to mitigate traffic impact.
- 1.4. This TA concludes that the proposed development site is accessibly located and provides the opportunity for future residents to travel by sustainable transport modes, as a realistic alternative to single occupancy vehicular travel.
- 1.5. This TA also concludes that suitable access arrangements for all modes can be achieved to serve the proposed development and that the trips associated with the scheme proposals will not have a material impact of the operation and safety of the local highway network.
- 1.6. It is concluded that there are no highway or transportation reasons which should prevent the proposed development of the site.



PART A – CONTEXT

2. Relevant Policy and Guidance

2.1. Relevant transportation policies and guidance is set out in the following documents:

- i. National Planning Policy Framework (2021).
- ii. National Planning Practice Guidance (2014).
- iii. Manual for Streets (2007).
- iv. Manual for Streets 2: Wider Application for the Principles (2010).
- v. Local Transport Note 1/20: Cycle Infrastructure Design (2020).
- vi. Draft Gloucester City Plan (2020).
- vii. Gloucester, Cheltenham, and Tewkesbury Joint Core Strategy 2011–2031 (2017).
- viii. Central Severn Vale Cycling and Walking Infrastructure Plan (2020).
- ix. Gloucestershire's Local Transport Plan (2020 – 2041).
- x. Manual for Gloucestershire Streets (2020).
- xi. Manual for Gloucestershire Streets – Addendum (2021).
- xii. Gloucester City Council Matson Estate Supplementary Planning Document (2019).

2.2. The main transportation objectives within the national and local policy guidance are to:

- i. reduce the need to travel;
- ii. reduce car dependency; and
- iii. encourage sustainable travel.

National Planning Policy

2.3. In transport terms the thrust of the National Planning Policy Framework (NPPF) is:

- i. a presumption in favour of sustainable development (paragraph 11);
- ii. to make the fullest use of public transport, walking and cycling (paragraph 104) and when making planning decisions ensuring the opportunities for sustainable transport modes have been taken up (paragraph 108) whilst noting that opportunities will vary between urban and rural areas (paragraph 105);
- iii. to locate and design development to give priority to pedestrians and cycle movements, and have access to high quality public transport facilities (paragraph 112);
- iv. ensuring safe and suitable access to the site can be achieved for all users (paragraph 110); and
- v. that development should only be refused on transport grounds where there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network are severe (paragraph 111).

- 2.4. National Planning Policy Guidance (2014) provides advice on when Transport Assessment and Transport Statements are required and what they should contain. The NPPG confirms that these types of documents can positively contribute to:
- i. encouraging sustainable travel.
 - ii. lessening traffic generation and its detrimental impacts.
 - iii. reducing carbon emissions and climate impacts.
 - iv. creating accessible, connected, inclusive communities.
 - v. improving health outcomes and quality of life.
 - vi. improving road safety; and
 - vii. reducing the need to increase existing road capacity or provide new roads to serve new development.

Local Planning Policy

- 2.5. Gloucestershire's Local Transport Plan provides the county's transport vision, including overarching policies and targets to meet the plan objectives. This includes enabling safe and affordable community connectivity and promoting the benefits of sustainable modes of transport.
- 2.6. At the time of writing, the Gloucester City Plan has been submitted to the Planning Inspectorate for an Examination in Public. The pre-submission document sets out aspirations for regeneration in Matson, referring to its Supplementary Planning Document (SPD).
- 2.7. The Matson Estate SPD, dated November 2019, sets out a framework for the regeneration of the area. The SPD sets out Gloucester City's aspirations to positively connect the Matson Estate with new development off Winnycroft Lane, at Winneycroft Farm, with opportunities for improved gateways into neighbourhoods (comprising of public realm and open space) and strengthened permeability.

Conclusion

- 2.8. It is concluded with reference to other findings in the TA that the development site is generally compliant with local and national policy. The site can positively contribute towards local aspirations of neighbourhood gateways and enhance the permeability of the local area.

3. Site Context and Local Highway Network

Site Location and Context

- 3.1. The site is located approximately six kilometres southeast of Gloucester city centre. The Matson estate is located to the north of the site. The location of the site is shown at **Figure 3.1**.
- 3.2. The SPD for the Matson estate confirms at pages 16 that there are 'generally good bus services' in Matson, and that 'residents are within reasonable walking and cycling distance to local primary and secondary schools'.
- 3.3. The site comprises around 7.8 hectares of undeveloped land and is bound by land benefitting from planning permission 14/01063/OUT 450 dwellings immediately to the north, the M5 motorway to the east, undeveloped land to the south and Winnycroft Lane to the west. Access to the site is currently provided via two existing field accesses off Winnycroft Lane. The site to the immediate north is currently being built out.
- 3.4. The transport work provided as part of the planning submission to the north includes proposals for to pedestrian and public transport improvements, such as tactile paving at crossing points along Matson Avenue and Public Right of Way (PRoW) diversions and improvements as part of the scheme. It also includes junction improvements at both the Corncroft Lane / B4073 priority junction and at the Heron Way / B4073 / Norbury Avenue signalised junction.
- 3.5. The internal layout for that scheme, agreed under reserved matters application 18/0114/REM, includes a six metres wide spine road (future proofed for use by buses, as agreed with GCC in their consultation response) with two metre wide footways on both sides. The public rights of way are proposed to be diverted to follow estate roads. At the time of writing, it is understood that an application to divert the PRoW has not been submitted.

Local Highway Network

Winnycroft Lane

- 3.6. Winnycroft Lane is unlit in the vicinity of the site and the carriageway measures approximately six metres wide. It is subject to a '7.5 tonne except or loading' weight limit, between the carriageway's junction with Sneedhams Road in the north and Upton Lane at Brookthorpe village to the south.
- 3.7. Winnycroft Lane is subject to the National Speed Limit of 60mph in the vicinity of the site, reducing to 30mph approximately 170 metres north of the northern site boundary. Footway provision commences on the western side of Winnycroft Lane at its junction with Sneedhams Road. The footway here measures approximately two metres wide and is lit.

3.8. The grass verge between the western site boundary and the Winnycroft Lane carriageway is Common Land, the records for which are included at **Appendix A.1**. GCC confirms¹ that Common Land is “*land, usually in private ownership, that has rights of common over it. It is generally open, unfenced and remote. The Countryside and Public Rights of Way (CROW) Act 2000 gives the public a right of access on foot to certain areas of 'access land' which includes registered common land*”. Walking along the verge between the site boundary and Winnycroft Lane’s boundary is permitted. It is understood that the Common Land along Winnycroft Lane is owned by Gloucester City Council, and maintained by Gloucestershire County Council, as highway authority.

3.9. Winnycroft Lane changes name to Corncroft Lane around 820 metres to the northeast of the site and becomes Upton Lane around 210 metres to the south of the site. The road generally serves a number of residential dwellings as well as larger residential areas which are served through its junctions with Sneedhams Road and Birchall Avenue.

Matson Lane

3.10. Matson Lane is a single track linking Winnycroft Lane in the south with the B4073 Painswick Road in the north. It forms the minor arm of a priority T-junction with Winnycroft Lane near the northwest corner of the site.

3.11. The carriageway measures approximately 4.5 metres wide and is subject to the National Speed Limit of 60mph within the vicinity of the site. Approximately 210 metres to the northwest of the Winnycroft Lane junction the carriageway connects with Sneedhams Road at a simple priority junction where the road becomes restricted to 30mph. A footway is provided at this point, located on the eastern side of the carriageway. There is no footway provision along the southernmost section of Matson Lane.

Corncroft Lane

3.12. Corncroft Lane forms the minor arm of a simple priority junction with the B4073 Painswick Road 820 metres to the northeast of the site. There are continuous footways on both sides of the carriageway, measuring between one and two metres wide.

3.13. The carriageway is lit, measures approximately six metres wide and there is a continuous footway on the northern side measuring approximately 1.5 metres in width. It is subject to a 30mph speed limit and provides direct access to private residential dwellings as well as residential estate roads to the north.

B4073 Painswick Road

3.14. The B4073 connects Painswick in the south with Gloucester city centre in the north. The carriageway is lit, subject to a 40mph speed limit and generally measures approximately 7.5 metres wide.

¹ [Common land and village greens – Gloucestershire County Council](#)

- 3.15. There are continuous footways on both sides of the carriageway, measuring between one and two metres wide. To the north of the Corncroft Lane junction footways are separated from the carriageway by a grass verge.

Wheatway

- 3.16. Wheatway connects the B4073 at a signalised junction in the west with a four-arm roundabout between Heron Way, Abbeymead Avenue and Glevum Way in the east.
- 3.17. The carriageway is approximately 7.5 metres wide and subject to a 30mph speed limit. It serves residential dwellings and estate roads on both sides of the carriageway. Continuous footways and lighting are provided, with the footways measuring approximately 1.5 metres wide on both sides of the carriageway. Verges with a minimum width of 1.5 metres are located between the footway and the carriageway on both sides of Wheatway.

Norbury Avenue / Heron Way / B4073 Signalised Junction

- 3.18. Heron Way meets the B4073 at a signalised junction with Norbury Avenue, located approximately 2.2 kilometres north of the site. Signalised crossings are provided on the Painswick Road northern and southern arms of the junction. Uncontrolled pedestrian facilities with tactile paving and dropped kerbs are provided on all other arms. Pedestrian refuge islands are located on each arm except Norbury Avenue.
- 3.19. As part of planning permission 14/01063/OUT, improvements are to be provided at the junction comprising Microprocessor Optimised Vehicle Actuation (MOVA). The modelling results for the proposed mitigation provided as part of the planning submission show that the junction would be close to capacity in the AM peak in the future year (inclusive of committed developments and development traffic) scenario, at 99.1% capacity, and overcapacity in the PM peak at 121.8% capacity.
- 3.20. Norbury Avenue serves Matson and Gloucester Academy, which is located on the northern side of the carriageway at the signalised junction, around 2.2 kilometres from the site. The carriageway measures approximately 6.5 metres in width and is subject to Traffic Regulation Orders (TROs) in the form of double yellow lines within the vicinity of the signalised junction and the school. On the south side of Norbury Avenue, there are sections of carriageway that are not subject to any TROs, and subsequently on street parking is available and observed to occur in places.
- 3.21. Heron Way forms the eastern arm of the B4073 signalised junction, linking with the east of Gloucester and the roundabout junction with Wheatway. The carriageway is lit and measures approximately 7.5 metres wide.

Highway Safety

- 3.22. Personal Injury Collision (PIC) data has been provided by GCC for the most recent five-year period. The study area included a 1.5 kilometre stretch of Winnycroft lane, extending from the eastern side of Gloucester Services (Southbound) in the south, to 300 metres past the Sneedhams Road junction on Winnycroft Lane. This confirms that there have been two reported incidents resulting in one slight and one serious injury. The full PIC data is contained at **Appendix A.2**.

- 3.23. The serious incident was recorded on 8th May 2017, occurring in fine and dry conditions during daylight hours. The incident occurred at 05:30, not within 20 metres of a junction. A pedestrian was walking from Matson to work at Gloucester Services Southbound, facing oncoming traffic. The incident appears to have occurred when a vehicle approached from behind and overtook the pedestrian using the verge and collided with the pedestrian. This incident occurred approximately 200 metres south of the Matson Lane junction with Winnycroft Lane junction.
- 3.24. The slight incident was recorded on 3rd September 2019, occurring in fine and dry conditions during the day. The incident occurred at 15:30, not within 20 metres of a junction. The incident appears to have occurred when vehicle one was slowing down whilst travelling along Winnycroft Lane, whilst vehicle two did not slow and drove into the rear of vehicle one. This incident occurred approximately 180 metres west of Winnycroft Lane junction with Birchall Avenue junction.
- 3.25. The CrashMap database has been reviewed for the off-site junctions shown in **Figure 3.1**. This confirms that there have been two slight incidents recorded at the Corncroft Lane junction with Painswick Road in the most recent five year period; two slight and one serious incident at the Wheatway junction with Painswick Road; and three slight and one serious incidents at the Norbury Avenue / Heron Way / B4073 signalised junction.
- 3.26. The records indicate that the incidents recorded are randomly located with no pattern or cluster. There have been no incidents recorded at the location of the proposed access points on Winnycroft Lane. It is concluded that there are no existing highway safety patterns or problems with the local highway network.

Baseline Traffic Flows

- 3.27. Manual turning count traffic surveys have been recorded on Tuesday 18th January 2022 between the hours of 0700 & 1000, and 1600 & 1900 (representing the weekday typical peak periods) at the following junctions:
- i. Matson Lane priority junction with Winnycroft Lane.
 - ii. B4073 Painswick Road priority junction with Corncroft Lane and Upton Hill.
 - iii. B4073 signalised T junction with Wheatway; and
 - iv. B4073 signalised crossroad junction with Heron Way and Norbury Avenue.
- 3.28. The locations of the traffic surveys are shown at **Figure 3.1** and the traffic survey records are contained at **Appendix A.3**. The AM peak hour has been calculated as 0800–0900 and the PM peak hour as 1700–1800.
- 3.29. It is acknowledged that the surveys were undertaken towards the end of Plan B Covid-19 restrictions which included advice to work from home, where possible. If considered necessary by the highway authority, additional surveys can be carried out in due course.
- 3.30. An Automatic Traffic Count (ATC) survey was also carried out between 18th and 24th January 2022 on Winnycroft Lane, approximately 75 metres to the south of the Matson Lane junction.

- 3.31. The location and full results of the ATC is shown at **Appendix A.3**, and the vehicle flow and 85th percentile speed results are shown below in **Table 3.1** and **Table 3.2** respectively. These speeds have not been adjusted for wet weather (as set out in DMRB CA 185) as it was not raining during the time of the survey.

Table 3.1 –Winnycroft Lane Recorded Weekday Vehicle Flows

	Northbound	Southbound	Two-Way
AM Peak (0800–0900)	199	258	457
PM Peak (1700–1800)	219	168	387

Table 3.2 –Recorded Weekday 85th Percentile Speeds

	Traffic Direction	Time Period 1000–1200	Time Period 1400–1600	Averaged 85th%ile Speeds
Winnycroft Lane	Northbound	43.1mph	42.1mph	42.6mph
	Southbound	43.9mph	43.4mph	43.7mph

- 3.32. The ATC confirms an averaged two-way traffic flow up to around 457 vehicles and 387 vehicles per hour respectively in the 0800 to 0900 and 1700 to 1800 periods on a weekday. The results also indicate that vehicles travel along Winnycroft Lane adjacent to the site's frontage at 85th percentile speeds of 45.1mph northbound and 46.2mph southbound, which are lower than the 60mph National Speed Limit in place.

4. Accessibility

Facilities and Amenities

- 4.1. The Department for Transport (DfT) document Manual for Streets (MfS) published in 2007 states at paragraph 4.4.1 that walking offers the greatest potential to replace short car trips, particularly those under two kilometres.
- 4.2. The July 2020 DfT Local Transport Note 1/20 Cycle Infrastructure states that 'two out of every three personal trips are less than five miles (eight kilometres) in length – an achievable distance to cycle for most people, with many shorter journeys also suitable for walking'.
- 4.3. Statutory walking distances for school children are set out in the 'Home to School Travel and Transport Guidance' document by Department for Education (DfE) (2014). The distance for pupils under the age of 8 years old is 3.2 kilometres (2 miles), and the distance for pupils between 8 and 16 years is 4.8 kilometres (3 miles).
- 4.4. **Figure 4.1** illustrates that the local area offers everyday services including bus stops, a Primary School (Robinswood Primary Academy), a pharmacy, Post Office, local stores and a library.
- 4.5. **Table 4.1** summarises the typical facilities available, the distance from the site and the associated walking and cycling times.

Table 4.1 – Summary of Local Facilities and Amenities

Facility	Location	Distance from the site (kilometres)	Walking Time (minutes) ²	Cycling Time (minutes) ³
Winnycroft bus stop	Matson Avenue	0.8	10	3
Gloucestershire Golf Club	Matson Lane	1.2	15	4
Farm Shop	Gloucestershire Services	1.2	15	4
Redwell Community Centre	Red Well Road	1.2	14	4
Matson Rugby Football club	Red Well Road	1.2	15	4

² Based on a walking speed of 80m/minute (Providing for Journeys on Foot (2000))

³ Based on a cycling speed of 270m/minute (LTN 1/20)

Facility	Location	Distance from the site (kilometres)	Walking Time (minutes) ²	Cycling Time (minutes) ³
Matson Pharmacy	Matson Avenue	1.3	16	5
Jade Gardens Chinese Takeaway	Matson Avenue	1.3	16	5
Janes Bakery	Matson Avenue	1.3	16	5
Premier Matson Mini Market	Matson Avenue	1.3	16	5
Matson Post Office	Matson Avenue	1.3	16	5
The Matson Store (convenience store)	Matson Avenue	1.3	16	5
Robinswood Primary Academy	Matson Avenue	1.6	20	6
Matson Park	Matson Avenue	1.6	20	6

4.6. **Figure 4.1** demonstrates that the facilities and amenities described in **Table 4.1** are all within a two kilometre walking distance from the site. **Figure 4.1** also demonstrates that the Gloucester city centre boundary can be reached within five kilometres cycling distance, indicating that the majority of Gloucester city centre would be accessible within eight kilometres cycle distance.

4.7. Figure 4.1 also shows that the Gloucester Academy to the north is located within walking distance, noting that **paragraph 3.20** confirms it is around 2.2 kilometres from the site, and that **paragraph 4.3** confirms that pupil statutory walking distances are defined at 4.8km.

Pedestrian Facilities

4.8. There are no footways adjacent to the site along Winnycroft Lane. However, an existing footway is located on the western side of Winnycroft Lane approximately 250 metres to the north of the proposed site access point at the Sneedhams Road junction. The footway is illuminated and measures approximately two metres wide. This footway links the local area with Matson Avenue and a number of wider facilities and amenities located in Matson. Matson Avenue and Winnycroft Lane are linked via two adopted footpaths.

Public Rights of Way

- 4.9. There are two Public Right of Way (PRoW) routes which cross the site, as shown in **Figure 3.1**.
- 4.10. Footpath EUL23 is around 720 metres long and is aligned southwest to northeast between Winnycroft Lane and the northern site boundary where it continues northwards into the adjacent development site. It is understood that the footpath is proposed to be diverted within that site as part of those proposals.
- 4.11. Footpath EUL24 is around 470 metres long and is aligned broadly east to west between Winnycroft Lane and Footpath EUL23. To the east of the site, the footpath continues over the M5 via a footbridge.

Cycling Facilities

- 4.12. With the exception of two short sections of advisory cycle lanes on Winnycroft Lane, there are no dedicated cycle facilities in the vicinity of the site. However, the majority of the local roads to the north are considered to be generally appropriate for cyclists as they are relatively flat, lit and the speed limits are typically restricted to 30mph. Local facilities and amenities within Matson are within achievable and reasonable cycle distance.
- 4.13. As per the Gloucester Cycle Map (2016) produced by GCC, the majority of the carriageways within the vicinity of the site are identified as quiet roads. The cycle map is included at **Appendix A.4**.

Public Transport

Local Bus Provision

- 4.14. The closest bus stop to the site is located around 800 metres walking distance to the north of the centre of the site on Matson Avenue.
- 4.15. This bus stop is serviced by Stagecoach route number 1 with buses to Gloucester City Centre every 15–20 minutes throughout the day on weekdays. The first bus departing the stop towards Gloucester on weekdays is at 05:18 and the last bus arriving at the stop from Gloucester is at 23:46. Services on Saturdays run at approximate 15–20 minute intervals, with the first service departing the stop at 06:36 and the last service returning to the stop at 23:46. On Sundays, the bus service runs at approximately 20 minute intervals, with the first bus departing to Gloucester at 07:16 and the final bus returning at 20:41.
- 4.16. The Gloucester Transport Hub (Bus Station) can also be accessed within approximately 120 metres (two minute walk) of the Clarence Street (Stand T) bus stop which serves the route number 1. Gloucester Transport Hub has 12 bus stands and provides access to over 25 routes, including three National Express routes which provide intercity travel.

Rail Provision

- 4.17. The nearest railway station is Gloucester Railway Station, located around 5.2 kilometres to the northwest of the site. This provides regular peak and off-peak services to Nottingham, London Paddington, and Cheltenham Spa (approximately every hour), with additional services to Cardiff Central, Frome and Worcester Foregate Street on a less frequent basis.

- 4.18. This station can be accessed via bus route 1, with the final stop on Clarence Street (Stand T) a 350 metre walk (five minute) from Gloucester Railway Station. There are also 32 sheltered bicycle stands with CCTV coverage at the station.

Conclusion

- 4.19. The site is located within walking and cycling distance of existing services and amenities that are typically required by future residents on a daily basis. It is concluded that the site's position and relative distance to these services will encourage trips by non-car modes and relatively short trips using car journeys.
- 4.20. The scheme will include measures to minimise the need to travel and which will also minimise single occupancy vehicle travel, which will be established as part of the Travel Plan process and through schemes to encourage walking and cycling between the site and local services and facilities, as set out at **Sections 6 and 7**.



PART B – STRATEGY

5. Highway Strategy

Summary of the Development Proposals

- 5.1. The proposals comprise the comprehensive development of the site for 190 dwellings.
- 5.2. It is proposed that there will be a mix of flats and houses on site, with 50% being affordable dwellings. The mix proposed is as follows:
- One-bed apartments.
 - 62 x Two-bedroom houses.
 - 92 x Three-bedroom houses; and
 - 16 x Four-bedroom houses.

Principles of the Highway Strategy

- 5.3. This Highway Strategy confirms the vehicular routes proposed to serve the development site. Other connection points provided specifically for non-motorised users are identified at **Section 7**.

Access Strategy

- 5.4. A plan showing the proposed access arrangements for the site is included at **Figure 5.1**. It is proposed to provide one principal vehicular access point onto Winnycroft Lane at the northwest corner with a separate emergency access point located near the southwest corner.
- 5.5. The proposed site access point will provide a 5.5 metre carriageway and junction radii of ten metres.
- 5.6. Visibility splays will be provided at 2.4 x 119.3 metres to the north, and at 2.4 x 114.4 metres to the south, in accordance with Design Manual for Roads and Bridges (DMRB) requirements for the recorded 5-day 85th percentile speeds detailed in **Table 3.2**.
- 5.7. As part of the access strategy, it is proposed to relocate the 30mph speed limit to the south of the site, as shown on **Figure 5.1**.

Emergency Access

- 5.8. An access point for emergency vehicles, pedestrian and cycles only is proposed on Winnycroft Lane approximately 175 metres south of the main site access, as shown on **Figure 5.2**. The access is proposed at 3.5 metres wide with radii of six metres on each side.
- 5.9. Visibility splays will be provided in line with the recorded speeds, as set out at **paragraph 5.6**.
- 5.10. The emergency access will be enforced with lockable bollards, or similar.

The Masterplan

- 5.11. The proposed masterplan is included as part of the wider planning submission. The principal internal access road will measure 5.5 metres wide with two metre wide footways generally provided on both sides. Secondary and tertiary roads are proposed to be provided as shared surfaces. All internal roads will be offered for adoption.

Site Servicing and Fire Access

- 5.12. As shown at **Figure 5.3**, the internal road layout is suitable to accommodate an 11 metre long refuse vehicle, which is the standard Gloucester City Council vehicle size. It is understood that all dwellings have been designed by the Architect to be within 45 metres of a fire appliance, as per Building Regulation requirements.

Conclusion on Highway Strategy

- 5.13. It is considered that the design of the vehicular site access arrangement is appropriate, and the internal site layout is suitable.
- 5.14. The suitability of junctions on the wider key routes to accommodate the vehicular trips that are forecast to be associated with the development proposal is set out at **Section 12**.

6. Parking Strategy

Vehicle Parking

- 6.1. Parking guidance is set out in the Manual for Gloucestershire Streets (MfGS) addendum (2021). The suggested minimum external parking provision for the residential development is summarised in **Table 6.1**.

Table 6.1 – Suggested Minimum Parking Standards

Dwelling Size	Parking Guidance
1–2 bedroom units	1 space
3–4 bedroom units	2 spaces
5 bedroom units	3 spaces
6 bedroom units	Subject to discussion with Highway Authority

- 6.2. With reference to the guidance stated in **Table 6.1**, and the dwelling mix stated at **paragraph 5.2**, this equates to a minimum of 298 allocated external car parking spaces.
- 6.3. The guidance also sets out that unallocated spaces within laybys should be provided to at least a 10% ratio of 4 bedroom dwellings and cited close to areas where they are grouped. Laybys are provided throughout the layout, as appropriate.
- 6.4. A total of 351 allocated, external car parking spaces are proposed on site. In addition to this, 26 garages and 32 visitor parking spaces – provided in laybys across the site – will be provided. The level of car parking proposed is therefore considered appropriate.

Electric Vehicle Parking

- 6.5. In accordance with guidance contained within MfGS, properties will be equipped with an Ultra-Low Emission Vehicles (ULEV) charging point..

Cycle Parking

- 6.6. MfGS suggests that cycle parking should be provided in accordance with table 11-1 of LTN1/20. This states that a minimum of one cycle parking space should be provided per bedroom.
- 6.7. Given the information at **paragraph 5.2**, this equates to a minimum of 484 cycle parking spaces required on site. The development proposals provide cycle parking in line with these requirements.



Conclusions on Parking Strategy

- 6.8. The proposed car and cycle parking provision is appropriate and reflects local and national guidance, as appropriate.

7. Walking and Cycling Strategy

Principles of the Walking and Cycling Strategy

- 7.1. This Walking and Cycling Strategy identifies two principal movement routes between the scheme and local services and facilities. As part of this, high quality walking and cycling facilities within the scheme will be available to promote strong links with the existing highway infrastructure in Matson. This will help encourage sustainable patterns of travel, working hand-in-hand with travel plan initiatives that will be promoted.
- 7.2. **Figure 3.1** shows the principal routes for pedestrian movements and **Figure 5.1** shows the proposed footways at the site access point.

Internal Walking and Cycling Strategy

- 7.3. Footways measuring two metres wide will be provided at the proposed site access with Winnycroft Lane and generally on both sides of the roads within the site. A number of shared spaces will provide safe pedestrian environments that are legible and permeable, so it is easy to navigate and so as to encourage lower speeds and a pedestrian-friendly public realm.
- 7.4. A 3.7m wide multi-user route will be provided through the site circling an existing Moat. It is proposed that this route could be used by emergency vehicles if required. Bollards will be provided where the path borders the internal highway to prevent access by general vehicle traffic. The route will link the emergency access on the southwestern boundary of the site, to the principal vehicular access at the northwest corner of the site. This will provide the potential for continuous pedestrian and cycle routes between the site and local facilities.

Connections with Public Rights of Way

- 7.5. As set out in **Section 4**, PRoW EUL24 crosses the site in an east to west direction. As part of the proposals, this footpath will be diverted on to the proposed estate road, joining PRoW EUL23 at the point of the existing stile on the northern site boundary, as shown on **Figure 7.1**.
- 7.6. As part of the proposals, PRoW EUL23 (the part within the site) will be diverted to connect with an existing stile and which currently connects the site to forthcoming residential development in the north. It is proposed to upgrade this section to include new surfacing and widening to three metres with a one metre wide buffer on both sides for use by pedestrian and cyclists. Way finding signs are also provided in this location and there is no path available on the alignment of the definitive route.
- 7.7. It is understood that Gloucestershire County Council, in its capacity as the local highway authority, has footpath widening powers through s26 and s72 of the Highways Act. It is also understood that the Council also has powers to implement cycle track orders using the Cycle Tracks Act 1984 and Cycle Track Regulations 1984. The Applicant is willing in principle to provide a reasonable financial contribution to enable the highway authority to implement a localised scheme of widening and improvement works at parts of Footpath EUL23, as considered necessary in the public interest.

- 7.8. With reference to Table 6.3 of LTNI/20 Cycle Infrastructure Design, a shared cycleway/footway is considered appropriate due to the forecast volumes of pedestrians and cyclists being relatively low. The route will be a minimum width of 3.0m, based on up to 300 cyclists per hour on a shared use route with up to 300 pedestrians per hour.

External Walking and Cycling Strategy

- 7.9. As stated in **paragraph 3.8**, the grass verge adjacent to Winnycroft Lane is Common Land where walking along and across the verge is permitted and it is understood that this is currently used by existing pedestrians.
- 7.10. A new footway link is proposed within the Common Land, as indicated in **Figure 7.2**, which will connect the site with existing pedestrian infrastructure at Sneedhams Road. The footway will measure two metres wide and it is proposed to comprise hoggin surfacing material.
- 7.11. Pedestrian visibility splays of 2.4 x 119.3 metres to the north and 2.4 x 114.4 metres to the south are shown at a new proposed crossing point on Winnycroft Lane. These visibility splays are commensurate with DMRB requirements for the recorded 5-day 85th percentile speeds detailed in **Table 3.2**, and therefore considered suitable.

Summary

- 7.12. The Walking and Cycling Strategy confirms that appropriate routes for pedestrians and cyclists are available and that there are potential enhancements which can be made to the pedestrian and cycle network in order to improve access for future users.

8. Residential Travel Plan

- 8.1. A Residential Travel Plan (RTP) is submitted as part of the wider planning submission, which aims to minimise single occupancy vehicle use by future residents of the scheme. As part of the Travel Plan process, appropriate targets and initiatives relating to sustainable travel will be developed and monitored and measured by a dedicated Travel Plan Co-ordinator (TPC). The RTP has been produced with reference to the GCC Travel Plan Guide for Developers (2011).
- 8.2. An important aspect of the transport strategy for the site will be managing travel demand; particularly single occupancy car travel. The RTP includes measures and initiatives to encourage sustainable travel. A target and monitoring regime is anticipated further to occupation and are currently set out in draft. This will be considered alongside the physical measures in Section 6 to encourage walking, cycling and the use of bus.
- 8.3. The Travel Plan sets out a number of ways through which travel demand can be influenced and managed, including:
- i. The provision of good high-quality alternatives to single occupancy car travel, for both internal and external trips – to encourage the use of sustainable modes; and
 - ii. A suite of complimentary non-physical measures (e.g. information provision and marketing) to encourage maximum take up to the alternatives provided. It is expected that a Sustainable Travel Voucher will be provided for residents, which can be redeemed against walking apparel, cycle, bus or rail season ticket purchase.
- 8.4. An example travel leaflet, agreed elsewhere with GCC, is included at **Appendix B.1**.
- 8.5. The GCC guidance on Travel Plans confirms that there are two options for Travel Plan contributions, which are as follows:
- (i) Option 1 = The Developer is responsible for funding and implementing the Travel Plan. This requires a non-refundable monitoring fee and bond / deposit.
 - (ii) Option 2 = GCC absorbs all risk and is responsible for the implementation of the Travel Plan. This requires a non-refundable monitoring fee and a contribution via Section 106
- 8.6. It is the preference of the Applicant that Option 2 is exercised, with the contribution secured via Section 106.



PART C – TRIP IMPACT

9. Forecast Trip Generation

9.1. A trip assessment exercise has been carried out using the TRICS v7.8.4 database to forecast the total peak hour, weekday people trips associated with the proposed development of 190 residential dwellings. The assessment using TRICS applies the following selection criteria:

- Residential, Houses Privately Owned.
- Suburban / Edge of Town locations.
- England, Scotland and Wales excluding Greater London; and
- No Travel Plans.

9.2. The TRICS data is included at **Appendix C.1** and is summarised below in **Table 9.1**.

Table 9.1 – Multi-Modal Total People Trips for 190 Dwellings (Houses Privately Owned)

	Arrivals		Departures		Two-way	
	Trip Rate	Trip No.	Trip Rate	Trip No.	Trip Rate	Trip No.
AM Peak (0800–0900)	0.13	25	1.348	256	1.478	281
PM Peak (1700–1800)	0.972	185	0.299	57	1.271	241
Daily	5.571	1058	6.571	1248	12.142	2307

9.3. **Table 9.1** forecasts that 190 open market residential dwellings could be associated with up to around 281 two-way total people movements in the AM peak and 241 two-way total people movements in the PM peak.

Disaggregation by Journey Purpose

9.4. Table NTS0502 of the National Travel Survey, titled 'Trip start time by journey purpose (Monday to Friday only): England 2015/2019' illustrates the purpose of trips generated in the peak hours. The full data set is provided at **Appendix C.2**. This 2019 dataset has been selected as a result of the coronavirus pandemic potentially affecting 2020 results and it is therefore considered more appropriate.

9.5. The journey purpose trip percentages identified from this data has been applied to the total person trip generation identified in **Table 8.1** to forecast the total trips in the AM and PM for each journey purpose. The results of this are identified in **Table 9.2** and the calculations can be seen at **Appendix C.3**.

Table 9.2 – Total Person Trips by Journey Purpose

Model Category	AM %	AM Trips	PM %	PM Trips
Commuting and Business	23%	65	35%	85
Total Education	52%	146	5%	12
Primary	67%	98	0%	0
Secondary	33%	48	100%	12
Retail	4%	11	12%	29
Personal Business	14%	39	20%	48
Visiting, Entertainment, Sport	3%	8	20%	48
Other	4%	11	8%	19
Total	100%	281	100%	241

- 9.6. **Table 9.2** forecasts that there will be approximately 65 commuting and business trips in the AM peak and 85 in the PM peak, accounting for a large percentage of the journeys. It is also estimated that there will be approximately 146 education trips in the AM peak but only 12 in the PM peak, which is likely to be due to schools finishing before the PM peak.

Commuting

- 9.7. The commuting modal share has been calculated using Census data contained within the QS701EW dataset for the Middle Super Output Area (MSOA) for E02004646: Gloucester 011, within which the site is located. The Census mode share data is contained at **Appendix C.4** and the commuting and business trips are summarised in **Table 9.3**.

Table 9.3 – Commuting and Business Trips Modal Share and Trips

	Train	Bus	Motorcycle	Car Driver	Car Passenger	Bicycle	On Foot	Other
Trips AM	0	8	42	5	1	3	5	0
Trips PM	0	10	55	7	2	4	6	0
%	0.6%	11.7%	1.8%	65.4%	7.8%	4.8%	7.3%	0.4%

- 9.8. **Table 9.3** forecasts that the main mode of travel to all workplace destinations is car driver journeys, which is typically expected.

Education

- 9.9. Data contained within the 'Gloucestershire County Council Primary and Secondary Schools – School Places Strategy 2021 – 2026' document identifies a pupil yield for new housing of 41 primary school age children and 20 secondary school age children per 100 dwellings. Therefore, 67% of education trips are considered to be primary school related and 33% of education trips are considered to be secondary school related. Based on these assumptions, the proposed 190 dwellings are predicted at this stage to generate 78 primary school pupils and 38 secondary school pupils.
- 9.10. For the purpose of this assessment, it has been assumed that only secondary school trips will be on the network in the PM peak as it is reasonable to consider that the vast majority of primary school trips would be complete by the 1700 to 1800 PM network peak period.
- 9.11. The mode share of the education trips has been derived using NTS table NTS0613 which details trips to and from school per child per year by main mode. The full data set can be seen at **Appendix C.5**. Due to uncertainties regarding Covid-19, the 2019 data has been used.
- 9.12. The results are summarised in **Table 9.4** and the calculations identified at **Appendix C.6**.

Table 9.4 – Primary and Secondary Percentages and Trips

Mode	Education and Escort Education		Primary (67%)		Secondary (33%)	
	Primary	Secondary	AM	PM	AM	PM
Walk	46%	39%	45	0	19	5
Car Driver	23.5%	13.5%	23	0	6	2
Car Passenger / Car Share	23.5%	13.5%	23	0	6	2
Bus	5%	29%	5	0	14	4
Cycle	1%	3%	1	0	1	0
Other	1%	2%	1	0	1	0
Total	100%	100%	98	0	48	12

- 9.13. The education NTS table specifically relates to "education trips" and not escort education, which is defined as dropping off a child, or other household member, at school, college or university. It sets out the number of children travelling alone (4% of primary school children and 43% of secondary school children). Any child travelling alone must do so by non-car modes as they are under the legal age to drive. As a result, it is reasonable to assume that any escort trip is associated with an education trip, and any child travelling by car must also have an escort. As a robust case, it is assumed that there is one driver and a maximum of one child per car.

Other Journey Purposes

- 9.14. Shopping, visiting friends/family, entertainment, sport, holidays and personal business have all been assigned to a collective category, defined here as 'other' journey purposes. To derive the modal share for these trips, data has been taken from the NTS Table NTS0409a which details the average number of trips (trip rates) by purposes and main mode. This data can be seen at **Appendix C.7**. These trips by mode have been calculated and set out at **Appendix C.8**. The two-way trips associated with each trip purpose are multiplied by the modal percentages derived from NTS Table NTS0409a.

Trips by Journey Purpose

- 9.15. **Table 9.5** summarises the forecast trips in the AM and PM peak periods by purpose and mode. This is a result of the total person trips identified in **Table 9.2** being applied to the mode percentages for each trip purpose identified in **Table 9.3** and **8.4**, **Appendix C.7** and **Appendix C.8**.

Table 9.5 – Trips Distributed by Mode and Purpose

Mode	Commuting and Business		Education		Retail		Personal Business		Visiting friends		Other (Holidays and Day Trips)		Total	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Train	0	0	0	0	0	1	1	1	0	1	0	0	2	3
Walk	5	6	64	5	3	8	11	13	2	13	3	5	88	51
Car Driver	42	55	30	2	5	12	16	20	3	20	5	8	101	117
Car Passenger	5	7	30	2	2	6	9	11	2	11	2	4	50	40
Bus	8	10	19	4	0	1	1	1	0	1	0	1	28	18
Cycle	3	4	2	0	0	1	1	1	0	1	0	1	7	7
Motorcycle	1	2	0	0	0	0	0	0	0	0	0	0	1	2
Other	0	0	2	0	0	1	1	1	0	1	0	0	4	4
Total	64	84	146	12	11	29	39	48	8	48	11	19	281	241

9.16. **Table 9.5** forecasts that the development of 190 dwellings would generate approximately 281 person trips in the AM of which 101 would be vehicle trips (car drivers). In the PM it is estimated that there would be 241 person trips of which 117 would be vehicle trips (car drivers). The proposed Travel Plan would include the aim of minimising single occupancy vehicle travel, although its influence in suppressing single occupancy vehicular travel is not specifically accounted for here in order to provide a robust assessment.

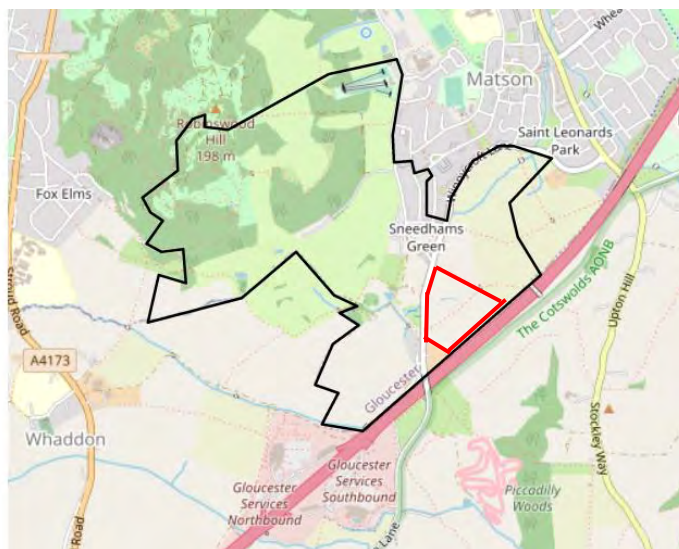
10. Vehicular Trip Distribution

- 10.1. A vehicular distribution has been forecast for commuting and business, education and 'other' trips onto the local highway network, in order to inform junction capacity work at **Section 10**.

Commuting Distribution

- 10.2. The National Census Data from 2011 has been used to confirm workplace travel destinations for trips originally from this area. The 'E02004646: Gloucester O11' Middle Super Output Area (MSOA) has been used as this covers the site area. This area is illustrated in **Plate 10.1**.

Plate 10.1 – Gloucester O11 MSOA Area



- 10.3. The top 25 journey to work locations with 10 or more car or van drivers are contained at **Appendix C.9**.
- 10.4. Journey times have been calculated using Google Maps fastest journey times to establish the key routes and associated journey times from the 'E02004646: Gloucester O11' MSOA to places of employment. The full distribution calculation is included at **Appendix C.10**.

Education Distribution

- 10.5. It has been assumed that 100% of primary and secondary school vehicular trips will be routed towards the closest schools to the site, which are Robinswood Primary Academy and Gloucester Academy respectively. It has also been assumed that the majority of school trips will route via the B4073, with a minority routing along Matson Lane, to ensure a robust assessment.

Other Distribution

- 10.6. It is assumed that a majority of retail trips are assumed to route to central Gloucester, with some routing to Morrisons supermarket (and surrounding facilities and amenities) via Wheatway. A minority of retail trips will route into the centre of Matson, the nearest local centre with shopping facilities available. The trips associated with retail have therefore been mostly routed along the B4073 north.
- 10.7. Personal business trips are assumed to be mostly contained in central Gloucester because of the concentration of facilities here and have therefore been routed on the B4073 north. It is assumed that 90% of traffic will use this route. The remaining 10% of traffic is assumed to route to local facilities within Matson, accessed via Matson Lane.
- 10.8. 'Visiting friends, entertainment and sports' trips are assumed to be contained within the nearby area, considering the locations of nearby residential areas. It has therefore been assumed that 100% of traffic will be routed along B4073 north, accessing nearby residential areas in Matson, and some via Wheatway for those slightly further afield.
- 10.9. Trips defined as 'Other' are considered to mainly represent day trips and holidays. It is therefore assumed that these trips will be external to Matson, using the nearby motorway junction. Therefore, 100% of traffic is assumed to route along Winnycroft Lane south to access the M5 Junction 12.
- 10.10. The distribution of commuting, education, visiting and 'other' development trips is indicated at **Appendix C.11**.
- 10.11. It is noted that local resident concerns have been raised regarding the use of Matson Lane as a 'rat-run'. If considered necessary by the highway authority, mitigation measures in the form of additional traffic calming will be investigated. Implementation of a one-way system for the section of Matson Lane between Winnycroft Lane and the junction with Sneedhams Road/ Matson Lane could also be considered.

11. Baseline Traffic Forecasts

Extent of Assessment

- 11.1. This TA assesses the impact of the proposed development's forecast traffic upon the operational efficiency of the following junctions:
1. Proposed site access (Junction 1)
 2. B4073 Painswick Road priority junction with Corncroft Lane and Upton Hill (Junction 2);
 3. B4073 signalised T junction with Wheatway (Junction 3); and
 4. B4073 signalised crossroad junction with Heron Way and Norbury Avenue (Junction 4).
- 11.2. The junctions are identified on **Figure 3.1**.

Assessment Scenarios

- 11.3. Traffic capacity assessments have been completed for the weekday AM and weekday PM peak periods, between 0800 – 0900 and 1700 – 1800 respectively, across the network.

Assessment Years

- 11.4. The assessments of the development have been carried out in the following scenarios as appropriate for the weekday AM and PM peak periods:
- iii. 2022 – Base year (year of application);
 - iv. 2027 – (5 years after submission of the planning application) – future year baseline (no development);
 - v. 2027 – (5 years after submission of the planning application) – future year baseline – with committed development; and
 - vi. 2027 – (5 years after submission of the planning application) – future year baseline – with committed development + with development.

Background Growth

- 11.5. In order to assess the impact of the development on the existing traffic data identified at **Section 3** has been growthed to the future year of 2027 using TEMPRO v.2 National Trip End Model (NTEM).
- 11.6. The NTEM forecasts the growth in trip origin–destinations for future years, taking into account national projections of population, employment, housing, car ownership and trip rates. Projected growth is derived using data obtained from the housing trajectories contained within Local Authority reports such as Strategic Household Land Availability Assessment or local plan information.

11.7. The following parameters have been applied:

- Weekday AM (0700 – 0959) and PM (1600 – 1859) periods;
- Car driver;
- Trip end type: Origin / Destination;
- Urban area type; and
- Minor road type.

11.8. Local growth rates for MSOA Gloucester O11, within which the site is located, have been considered. The future year growth factors are tabulated at **Table 11.1**.

11.9. Growth rates for Urban and Rural area types were assessed and the Urban area resulted in high levels of growth. As such, Urban area type growth rates have been applied within the traffic assessments, as set out in **Table 11.1**.

Table 11.1 – Future Year Growth Factors

	TEMPO Growth Rate: 'EO2004646: Gloucester O11'	
	AM	PM
2022 – 2027	1.0672	1.0678

11.10. Traffic flow diagrams for the base and future year scenarios, with and without development, are included at **Appendix C.12**.

Committed Development

11.11. The following committed development sites have been included in the assessment:

- 14/O1063/OUT for up to 420 dwellings at Land of Winnycroft Lane, Matson; and
- 14/O1470/OUT for up to 217 dwellings at Winneycroft Farm, Corncroft Lane.

11.12. Vehicle trip numbers have been obtained from the respective Transport Assessments for each site. The relevant extracts are included at **Appendix C.13**.

11.13. To ensure a robust assessment, the forecast development traffic flows from the reports of each development have been used within the traffic impact assessment for this application, as shown in the traffic flow diagrams at **Appendix C.12**. It is considered that this is robust as there could be an element of double counting, including the TEMPRO growth rates.

12. Local Highway Network Operation

- 12.1. An assessment has been carried out to confirm the forecast traffic impact of the scheme on the operation of nearby junctions identified at **paragraph 11.1**. This has been carried out using the Manual Classified Count data from January 2022 and using the development traffic assignment and base traffic growth forecast at **Chapter 11**.

Percentage Impact Assessment

- 12.2. A percentage impact assessment has been carried out to assess the impact of proposed development trips routing to all off-site junctions, assessed against the 2027 base scenarios, which includes committed development. The results are contained at **Table 12.1**.

Table 12.1 – Percentage Impact Assessment

Junction	Two-Way Development Flow	2027 + Committed Development	
		Two-Way Base Flow	Percentage Impact
Junction 2: B4073/ Corncroft Lane/ Upton Hill			
AM Peak (0800–0900)	89	1314	6.8%
PM Peak (1700–1800)	151	1324	11.4%
Junction 3: B4073/ Wheatway			
AM Peak (0800–0900)	70	1448	4.8%
PM Peak (1700–1800)	98	1542	6.4%
Junction 4: B4073/ Heron Way/ Norbury Avenue			
AM Peak (0800–0900)	58	1840	3.2%
PM Peak (1700–1800)	92	1991	4.6%

- 12.3. **Table 12.1** demonstrates that the proposed development is forecast to have a five percent or higher impact at junctions 2 and 3. A percentage impact lower than five percent is forecast at Junction 4. Junction modelling has been carried out at all junctions in order to provide a comprehensive assessment of the traffic impact. However, As set out in **Table 9.5**, the proposed development is forecast to be associated with up to 101 two-way vehicle trips in the AM peak and 117 in the PM peak at this junction. In real terms this can be expressed as approximately two additional vehicles every minute, on average. This is considered to be within the typical daily variation of flows.

Junction Modelling

- 12.4. The industry standard Junctions 10 PICADY and LinSig modelling software has been used to assess the development traffic impact at the junctions.

Definition of Modelling Terms

RFC – Ratio Flow to Capacity

- 12.5. The ratio of flow to capacity provides a measure of the utilised capacity of a junction approach arm. Arms exceeding a ratio of 0.85 (i.e. 85% capacity utilised) are considered to be approaching capacity at times within the modelling period. Junction arms exceeding a ratio of 1.00 (i.e. 100% capacity utilised) are considered to be over capacity and are characterised as typically having heavy volumes of queued traffic at peak times.
- 12.6. Results that exceed RFCs of 1.00 are associated with queue lengths that are subject to exponential growth. For this reason, queue lengths attributed to overcapacity approach arms should be considered indicative rather than representative.

PCU – Passenger Carrier Unit

- 12.7. A Passenger Carrier Unit (PCU) is a unit of measurement used to assess highway capacity for modelling purposes. Different vehicles are assigned different values, according to the space they take up within the highway. A car has a value of 1.0; smaller vehicles will have lower values, and larger vehicles will have higher values. PCU values are used within the LinSig models, but not Junctions10.

DoS – Degree of Saturation

- 12.8. In traffic signal modelling, the Degree of Saturation (DoS) of an arm or overall junction measures the demand relative to the total capacity available. A DoS value of 100% would indicate that demand and capacity are equal and no further traffic is able to progress through the junction. Therefore, a DoS greater than 100% indicates that a junction is operating over theoretical capacity.

Queue Length

- 12.9. The queue length stated in the capacity assessment results represents the average maximum queue lengths in vehicles on each arm across the peak hour. They are therefore indicative of queuing extent at the busiest times within the peak hour.

PRC – Practical Reserve Capacity

- 12.10. Practical Reserve Capacity (PRC) is used in signal modelling and is calculated from the maximum degree of saturation on a lane. It is a measure of how much additional traffic could pass through a junction whilst maintaining a maximum degree of saturation of 90% on all lanes.

MOVA – Microprocessor Optimised Vehicle Actuation

- 12.11. Microprocessor Optimised Vehicle Actuation (MOVA) is a product developed to overcome some of the problems associated with traditional Vehicle Activation control at traffic signals. MOVA is more responsive to traffic conditions and often leads to a significant increase in capacity at a junction.

Modelling Results

Junction 1 (Winnycroft Lane, Proposed Site Access and Matson Lane Staggered Junction)

- 12.12. Due to the proximity of the proposed site access to the Matson Lane junction, Junction 1 has been modelled as a staggered crossroad junction with Winnycroft Lane as the major arm and the proposed site access and Matson Lane as the minor arms of the junction.
- 12.13. The future year with development modelling results for Junction 1 are included at **Appendix C.14** and summarised in **Table 12.2**.

Table 12.2 – Junction 1 Modelling Results

Arm	AM		PM	
	Queue (veh)	RFC	Queue (veh)	RFC
	2027 + CD + Dev			
Site Access	0.0	0.03	0.6	0.38
Winnycroft Lane (N)	0.0	0.00	0.0	0.0
Matson Lane	0.2	0.14	0.1	0.06
Winnycroft Lane (S)	0.1	0.04	0.0	0.01

- 12.14. The modelling confirms that the junction is forecast to operate within capacity with a maximum RFC of 0.38 in the PM peak on the Site Access arm, with a highest delay of 12.78 seconds and the largest queue at 0.6 vehicles.

Junction 2 (B4073 Painswick Road priority junction with Corncroft Lane and Upton Hill)

- 12.15. The full modelling results for Junction 2 are included at **Appendix C.15** and summarised in **Table 12.3**.

Table 12.3 – Junction 2 Modelling Results

Arm	AM		PM	
	Queue (veh)	RFC	Queue (veh)	RFC
	2022 Base			
B4037 (S)	0.3	0.24	0.3	0.21
Corncroft Lane	0.2	0.18	0.1	0.12
B4073 (N)	0.3	0.24	0.3	0.24
	2027 Future Year Baseline			
B4037 (S)	0.3	0.26	0.3	0.23
Corncroft Lane	0.2	0.20	0.1	0.13
B4073 (N)	0.3	0.26	0.3	0.26
	2027 + CD			
B4037 (S)	2.1	0.68	0.8	0.45
Corncroft Lane	0.5	0.34	0.3	0.21
B4073 (N)	0.6	0.38	1.9	0.66
	2027 + CD + DEV			
B4037 (S)	4.1	0.82	1.1	0.52
Corncroft Lane	0.8	0.44	0.3	0.26
B4073 (N)	0.7	0.40	5.5	0.85

- 12.16. The modelling confirms that the junction is forecast to operate within capacity, with a maximum RFC of 0.82, delay of 28.39 seconds and queue of 4.1 vehicles in the AM peak on the B4037 (S) arm in the future year plus committed development and proposed development trips modelling scenario. The junction is also forecast to operate with a highest RFC of 0.85, delay of 31.90 seconds and queue of 5.5 vehicles in the PM peak on the B4037 (S) arm in the future year plus committed development and proposed development trips modelling scenario.

- 12.17. The junction has been shown to operate within capacity with the traffic flows associated with the future year plus committed development and proposed development trips modelling scenario, which includes for traffic growth, committed developments and all development traffic.

Junction 3 (B4073 signalised T junction with Wheatway)

- 12.18. The full modelling results for Junction 3 are included at **Appendix C.16** and summarised in **Table 12.4**.

Table 12.4 – Junction 3 Modelling Results

Arm	AM		PM	
	Degree of Saturation (%)	Mean Max Queue (PCU)	Degree of Saturation (%)	Mean Max Queue (PCU)
	2022 Base			
B4073 (N)	60.9%	7.8	63.3%	7.5
Wheatway	29.5%	3.2	33.5%	3.5
B4073 (S)	35.3%	3.9	32.0%	3.5
	Overall PRC: 47.8%		Overall PRC: 42.1%	
	2027 Baseline Future Year			
B4073 (N)	32.6%	8.3	65.0%	8.1
Wheatway	32.7%	3.6	38.4%	3.8
B4073 (S)	36.8%	4.1	34.9%	3.9
	Overall PRC: 43.7%		Overall PRC: 38.5%	
	2027 + CD			
B4073 (N)	74.1%	9.5	75.1%	9.3
Wheatway	60.6%	8.7	59.2%	6.2
B4073 (S)	42.3%	5.2	59.2%	8.7
	Overall PRC: 21.4%		Overall PRC: 19.9%	

	2027 + CD + DEV			
B4073 (N)	74.3%	9.5	77.4%	9.9
Wheatway	67.9%	10.3	71.2%	6.7
B4073 (S)	43.1%	5.3	66.4%	10.6
	Overall PRC: 21.1%		Overall PRC: 16.2%	

- 12.19. The modelling confirms that the junction is forecast to operate within capacity, with a maximum DoS of 74.3% and delay of 44.5 seconds on the B4073 (N) arm, and a queue of 10.3 vehicles on the Wheatway arm in the AM peak in the future year plus committed development and proposed development trips modelling scenario. The junction is also forecast to operate with a maximum DoS of 77.4% and delay of 47.9 seconds on the B4073 (N) arm and queue of 10.6 vehicles on the B4073 (S) in the PM peak in the future year plus committed development and proposed development trips modelling scenario.
- 12.20. The junction has been shown to operate within capacity with the traffic flows associated with the future year plus committed development and proposed development trips modelling scenario, which includes for traffic growth, committed developments and all development traffic.

Junction 4 (B4073 signalised crossroad junction with Heron Way and Norbury Avenue)

Existing Committed Mitigation

- 12.21. The B4073/ Heron Way/ Norbury Avenue is understood to be subject to a committed mitigation scheme as part of the 14/01063/OUT planning permission. Details of the mitigation and the modelling results for the mitigation design are provided within the TA Addendum 21099/02-15/3895 document which was submitted in support of the application. The appropriate extract of the TA Addendum is included at **Appendix C.17**, with the results of the highest DoS and MMQ on each arm taken from Table 8 of the Addendum summarised in **Table 12.5**. The junction was modelled with a 120 second cycle time. It is also noted that MOVA will be implemented at the junction, but it is understood that it was not specifically accounted for.

Table 12.5 – 14/O1063/OUT Junction 4 Mitigation Modelling Results

Arm	AM		PM	
	Degree of Saturation (%)	Mean Max Queue (veh)	Degree of Saturation (%)	Mean Max Queue (veh)
	2018 Future Year Traffic Flows plus Development Traffic			
Painswick Road (North)	73.3%	14.9	121.2%	104.4
Heron Way	94.6%	13.8	116.4%	36.2
Painswick Road (South)	97.2%	28.7	113.3%	8.5
Norbury Avenue	99.1%	15.6	121.8%	41.6
	Overall PRC: -10.1%		Overall PRC: -35.3%	

- 12.22. As shown in **Table 12.5**, the forthcoming mitigation as part of the 14/O1063/OUT development would result in the junction operating with a maximum DoS of 99.1% in the AM peak and 121.8% in the PM peak. It is understood that this was agreed with GCC.

Modelling

- 12.23. For the purpose of modelling the mitigation scheme committed as part of planning permission 14/O1063/OUT has been reconstructed as far as possible, although it is noted that there are a number of inconsistencies between mitigation drawing included at Appendix C of the TA Addendum and the results provided in the TA Addendum. On this basis, Pegasus Group has adjusted the model to reflect our views on the proposed mitigation design. The pedestrian intergreen times have been retained, noting that they appeared to have been provided by GCC. The modelling results for the 2027 plus committed development and development traffic using the adjusted model are summarised in **Table 12.6**, with the full output report available at **Appendix C.18**.

Table 12.6 – Adjusted Existing Committed Mitigation Modelling Results

Arm	AM		PM	
	Degree of Saturation (%)	Mean Max Queue (PCU)	Degree of Saturation (%)	Mean Max Queue (PCU)
	2027 Future Year + Committed Development + Development Trips			
Painswick Road (North)	61.2%	12.2	113.2%	75.6
Heron Way	92.2%	11.4	107.0%	34.0
Painswick Road (South)	94.6%	31.0	65.1%	12.5
Norbury Avenue	89.6%	11.7	115.2%	37.6
	Overall PRC: -5.2%		Overall PRC: -28.0%	

- 12.24. **Table 12.6** illustrates that the modelling results for 2027 plus committed development and development traffic is forecast to operate with a highest DoS of 94.6% in the AM peak and 115.2% in the PM peak. These results indicate improved capacity in comparison to what was understood to be agreed with GCC.

Additional Mitigation

- 12.25. In order to provide some resilience in the conclusions, further mitigation has been considered for the junction. This is shown in **Figure 12.1** and summarised below:
- Painswick Road (North) – Ahead and left lane adjusted to 2.75 metres wide and right turn lane to 2.0 metres wide at the stop line;
 - Heron Way – increased width at stop line to 3.5 metres on each lane. Increased the lane width to a minimum of 4.75 metres, 70 metres east of the stop lines (via kerbline adjustments);
 - Painswick Road (South) – increased the lane width to a minimum of 4.75 metres. 60 metres south of the stop lines (via road marking adjustments); and
 - Norbury Avenue – increased lane width to 3.8 metres.
- 12.26. The proposed additional mitigation has been modelled, with the full output report available at **Appendix C.19** and the results summarised in **Table 12.7**.

Table 12.7 – Proposed Additional Mitigation Modelling Results

Arm	AM		PM	
	Degree of Saturation (%)	Mean Max Queue (PCU)	Degree of Saturation (%)	Mean Max Queue (PCU)
	2027 Future Year + Committed Development + Development Trips			
Painswick Road (North)	60.8%	12.3	107.8%	35.5
Heron Way	87.1%	9.5	105.1%	28.2
Painswick Road (South)	95.0%	30.6	65.1%	11.3
Norbury Avenue	88.3%	11.4	113.5%	59.9
	Overall PRC: -5.6%		Overall PRC: -26.1%	

- 12.27. As shown in **Table 12.7**, the additional mitigation modelling results for 2027 plus committed development and development traffic is forecast to operate with a highest DoS of 95.0% in the AM peak and 113.5% in the PM peak. These results indicate a non-material change in the AM peak and improved capacity in the PM peak in comparison to the results set out in **Table 12.6**.

Conclusions

- 12.28. It is concluded that the proposed development will not have a material impact on the future operation of junction 1, 2 or 3. Accounting for a refined assessment at junction 4 indicates that the traffic associated with the development can be accommodated within the level of capacity previously accepted by GCC. However, additional mitigation is proposed for resilience.
- 12.29. The forthcoming implementation of MOVA at junction 4 should also provide capacity benefits, that are not illustrated here.
- 12.30. As set out in **paragraph 3.30**, it is acknowledged that the traffic surveys were undertaken towards the end of Plan B Covid restrictions and the Applicant is willing to retest the junctions, if considered necessary by the highway authority in due course.

13. Summary of Proposed Mitigation Measures

Walking and Cycling Strategy

- 13.1. The following mitigation measures are proposed to facilitate and encourage additional walking and cycling trips from the site:
- i. Comprehensive network of walking and cycling routes within the site.
 - ii. The diversion of existing PRoW EUL 24, and the diversion and upgrade of the PRoW EUL23, as well as funding to provide an off-site shared footway / cycleway route; and
 - iii. The provision of a two metre wide footway along Winnycroft Lane, connecting to the existing pedestrian infrastructure provided to the north of Sneedhams Road.

Residential Travel Plan

- 13.2. A Residential Travel Plan (RTP) is submitted as part of the wider planning submission, which aims to minimise single occupancy vehicle use by future residents of the scheme and encourage sustainable travel.
- 13.3. The physical measures set out above will form part of the Travel Planning Strategy at the site, alongside a parking strategy, to encourage the use of sustainable modes.

Highway Strategy

- 13.4. Mitigation is proposed at Junction 4 which is the Heron Way signalised junction with Norbury Avenue and Heron Way. The proposed mitigation is shown in **Figure 12.1** and comprises kerb adjustments and lane reallocation.
- 13.1. If considered necessary by the highway authority, mitigation measures for Matson Lane in the form of additional traffic calming or a one-way implementation on Matson Lane between the Winnycroft Lane and Sneedhams Road/ Matson Lane junction will be investigated. The intention of this mitigation would look to avoid 'rat-running' along Matson Lane.

Construction Traffic Management Plan

- 13.2. A Construction Traffic Management Plan will be provided in order to take into considered the routing of staff and construction vehicle associated with the proposed development, their arrival and departure times and how to mitigate their impacts. The routing of construction vehicles will ensure that construction vehicle use the principal local roads and avoid residential areas where possible. This can be secured through the provision of an appropriately worded planning condition.



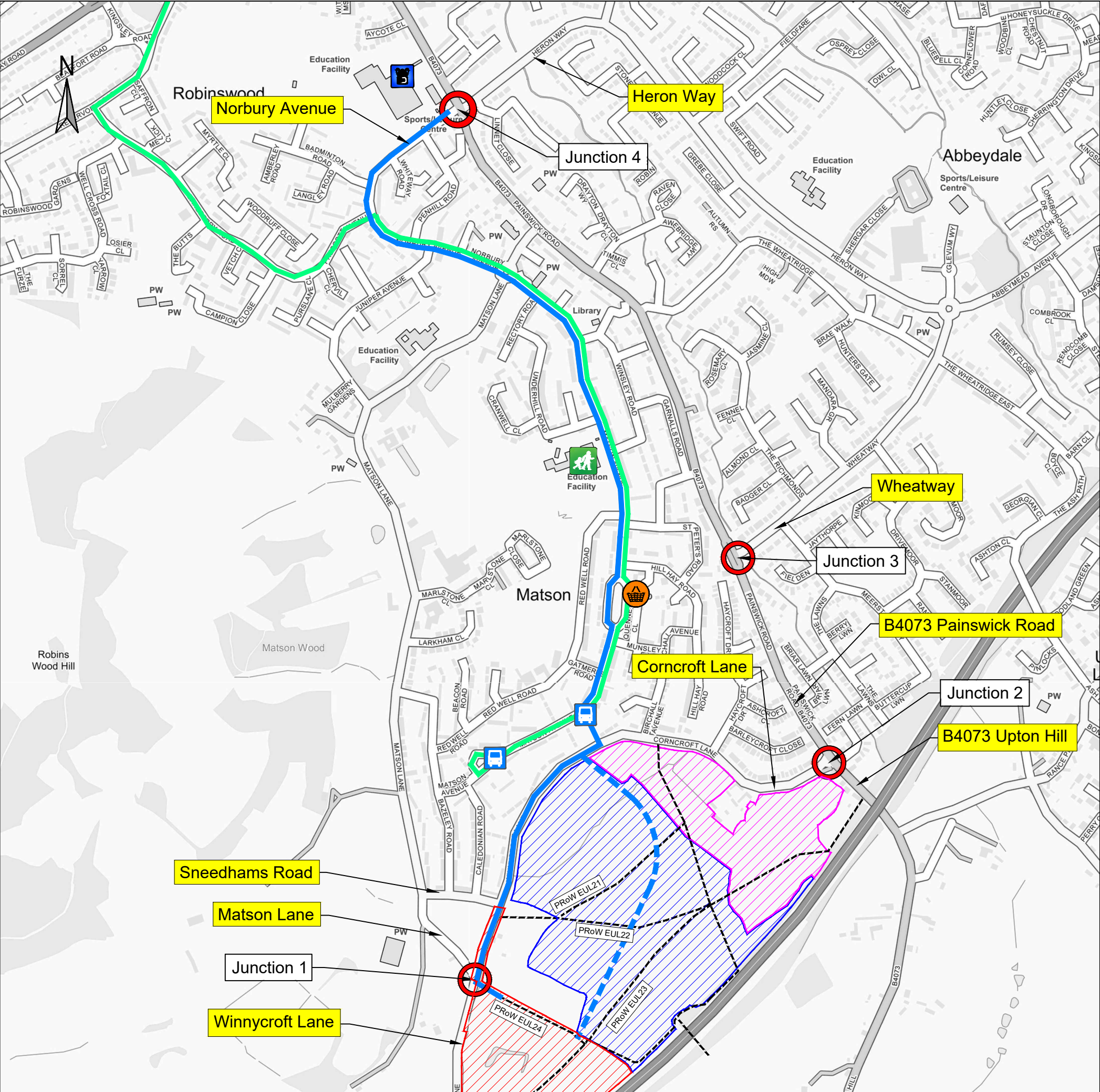
PART D – SUMMARY AND CONCLUSIONS

14. Summary and Conclusions

- 14.1. This Transport Assessment (TA) has been prepared by Pegasus Group on behalf of Bromford Developments Limited, in order to address the transportation issues associated with the proposed development of 190 dwellings on land at Snow Capel, Matson, Gloucester. The scheme is the subject of a full planning application.
- 14.2. It is concluded that the site is located where there are opportunities to facilitate pedestrian and cyclist journeys to local services and amenities. It is concluded that an appropriate walking and cycling strategy can be provided to encourage a reduction in the number of vehicle trips. It is also concluded that suitable measures can be introduced through the Residential Travel Plan to encourage more sustainable travel.
- 14.3. It has been demonstrated that the development site is generally compliant with local and national policy and that the site can positively contribute towards local aspirations for the local area.
- 14.4. There are no existing highway safety patterns or problems with the local highway network that would be exacerbated by the proposed development.
- 14.5. This TA confirms that suitable vehicular access arrangements can be achieved. Traffic Impact Assessment work has been carried out for traffic scenarios, which includes the traffic associated with the proposed development. It is concluded that all junctions assessed will not incur material changes in operational efficiency of the existing local highway network.
- 14.6. It is finally concluded that there are no transportation reasons why the development proposal should not be allowed.



Figures



Key:

Approximate Site Boundary

Approximate Barratt Homes Site Boundary

Approximate Linden Homes Site Boundary

Existing Public Right of Way (PRoW)

Traffic Survey Locations

Desire Line

Potential Additional Desire Line

Matson Local Centre

Bus Stop

Bus Route 1 (Stagecoach West)

Robinswood Primary School

Gloucester Academy Secondary School

Planning | Design | Environment | Economics

CLIENT: BROMFORD DEVELOPMENTS LTD	SCALE @ A3: 1:10,000	CHECKED: KSS	APPROVED: CMR
PROJECT: LAND AT SNOW CAPEL	DATE: 04/04/2022	DESIGN-DRAWN: JAN	DRAWING-STATUS: FOR INFO
TITLE: SITE LOCATION PLAN AND LOCAL HIGHWAY NETWORK	PROJECT No: P20-1432	DRAWING No: FIGURE 3.1	REV: -

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X:\BRISTOL PROJECTS\BRISTOL - LIVE PROJECTS\P20\P20-1401-1500\P20-1432 - BROMFORD DEVELOPMENTS LTD - LAND AT SNOW CAPEL, MATSON\TRANSPORT2. DRAWINGS\C. FIGURES\P20-1432. FIGURE 5.1 - ACCESS ISSUE.DWG



2.4m x 119.3m visibility splay to nearside kerline, commensurate with recorded 5-day 85th percentile speeds of 43.7mph of southbound traffic.

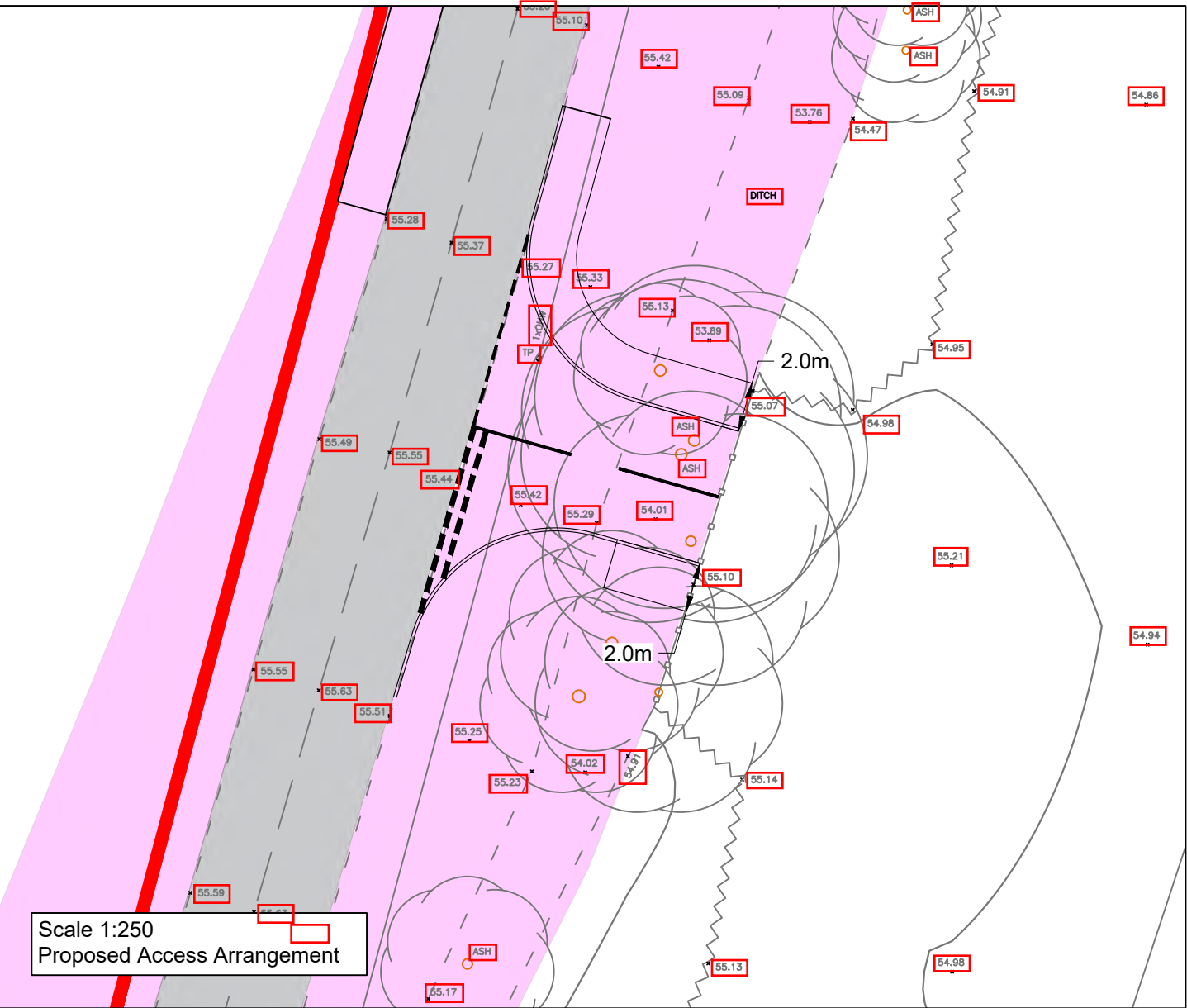
Approximate 2.4m x 25.4m achievable visibility splay to nearside kerline, without the removal of trees (subject to topographic survey)

2.4m x 93.2m achievable visibility splay to nearside kerline (subject to topographic survey and trimming of trees)

Proposed location new speed gate (40mph northbound, National Speed Limit southbound). Details are subject to confirmation at a later date.

2.4m x 114.4m visibility splay to nearside kerline, commensurate with recorded 5-day 85th percentile speeds of 42.6mph of northbound traffic.

Scale 1:1000
Visibility Splay at Proposed Access



Scale 1:250
Proposed Access Arrangement

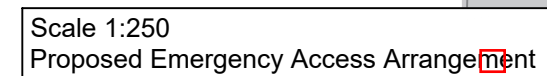
- Key:
- Site Boundary
 - Approximate Extents of Adopted Highway
 - Approximate Extents of Common Land
 - Visibility Splay
 - Proposed area of berm / rollover to accommodate level change

<div><div></div><div>ASUS Group</div><div>Planning Design Environment Economics</div></div>	REV	DATE	BY	DESCRIPTION	CHK	APD
CLIENT: BROMFORD DEVELOPMENTS LTD		SCALE @ A3: AS SHOWN		CHECKED: KSS	APPROVED: CMR	
PROJECT: LAND AT SNOW CAPEL		DATE: 04/04/2022		DESIGN-DRAWN: JAN	DRAWING-STATUS: SK	
TITLE: PROPOSED SITE ACCESS ARRANGEMENT		PROJECT No: P20-1432		DRAWING No: FIGURE 5.1	REV: -	





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2.4m x 114.4m visibility splay to nearside kerbline, commensurate with recorded 5-day 85th percentile speeds of 42.6mph of northbound traffic.

Scale 1:1000
Visibility Splay at Emergency Access



Key:

-  Site Boundary
 Approximate Extents of Adopted Highway
 Approximate Extents of Common Land
 Visibility Splay

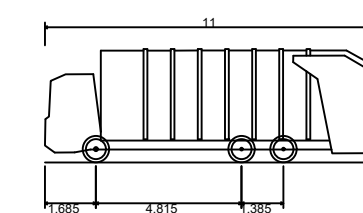
 Planning Design Environment Economics	REV	DATE	BY	DESCRIPTION	CHK	APD
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	AS SHOWN		KSS	CMR		
PROJECT: LAND AT SNOW CAPEL	DATE:		DESIGN-DRAWN:	DRAWING-STATUS:		
	04/04/2022		JAN	SK		
TITLE: PROPOSED EMERGENCY ACCESS ARRANGEMENT	PROJECT No:		DRAWING No:	REV:		
	P20-1432		FIGURE 5.2	-		



Swept Path Analysis of a 11m Refuse Vehicle Entering Site



Swept Path Analysis of a 11m Refuse Vehicle Egressing Site



11m Phoenix 2 One-Pass (with Elite 6x4 chassis)
Overall Length 11.000m
Overall Width 2.500m
Overall Body Height 3.751m
Min Body Ground Clearance 0.304m
Track Width 2.500m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 9.000m

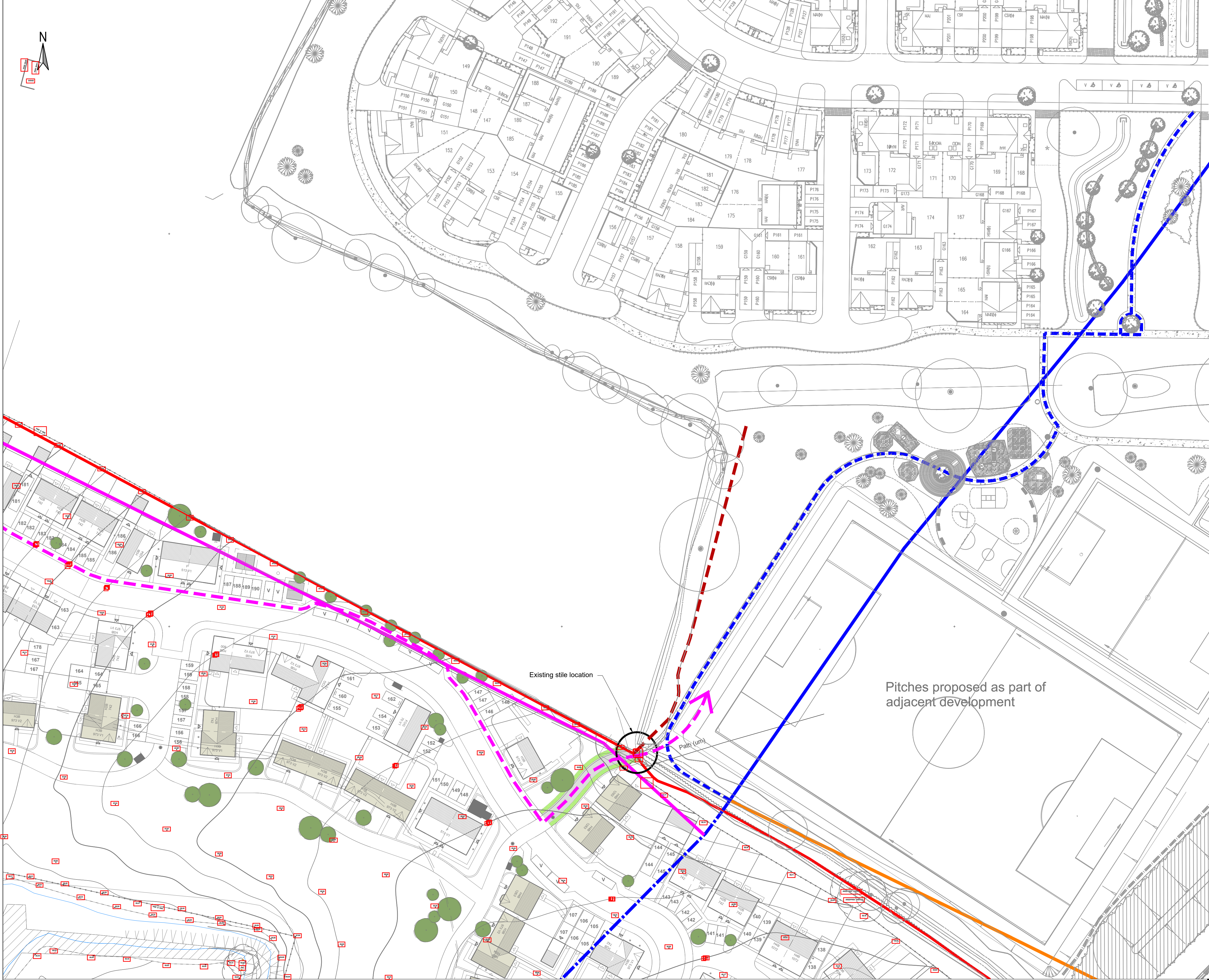













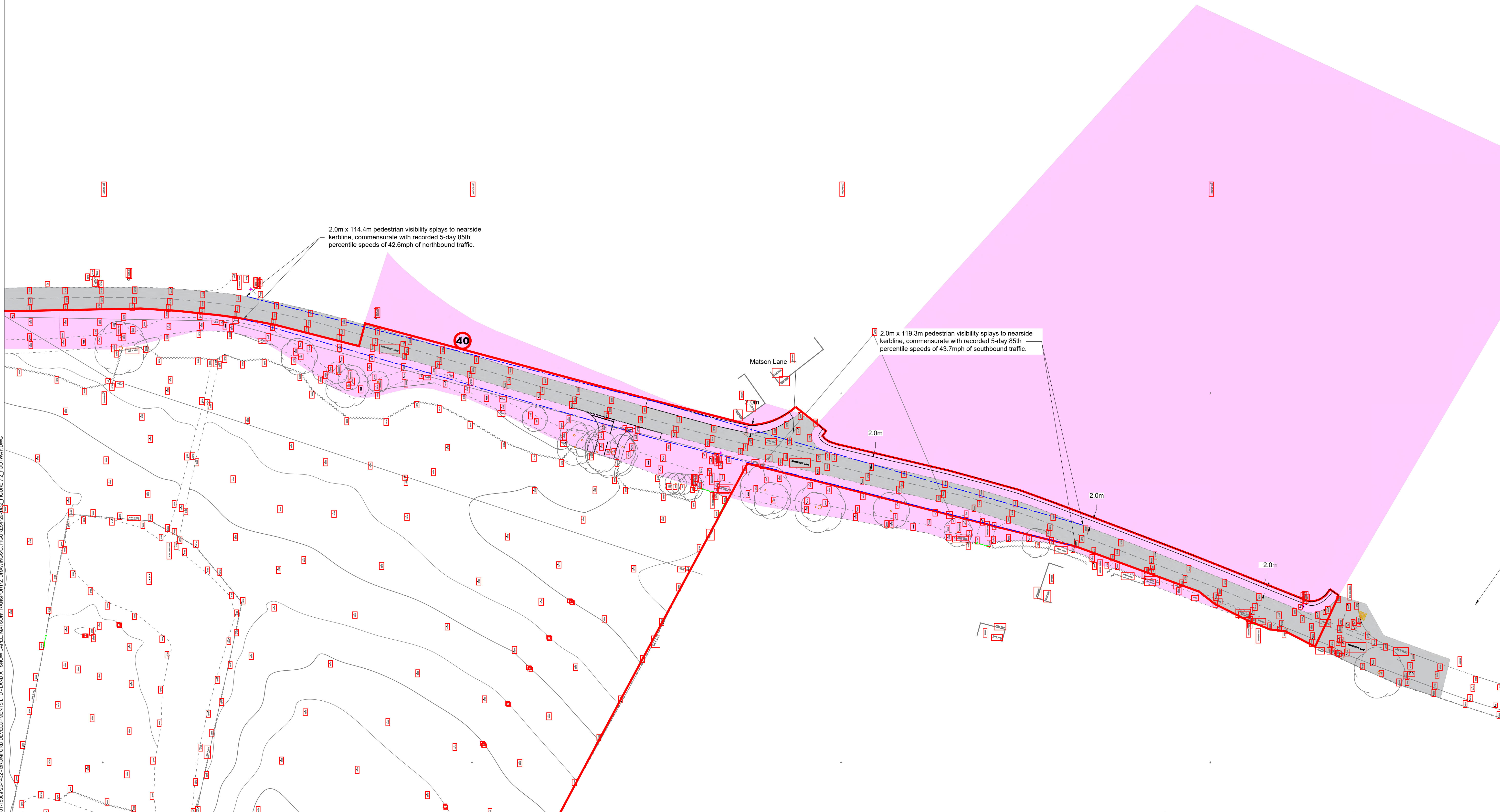
Image 1: Picture showing trodden route, as observed during site visit undertaken 27.01.22



Image 2: Picture showing existing stile from south from the proposed site, as observed during site visit undertaken 27.01.22

Key:

- | | | | | | |
|--|---|---|--|---|---|
|  | Site Boundary |  | Approximate Alignment of Existing PRoW EUL23 |  | Approximate Alignment of Existing EUL24 to be retained |
|  | Proposed 3m Footway/Cycleway & Part Diversion of Footpath EUL24 |  | Approximate Alignment of Existing PRoW EUL23 to be stopped up as part of the development proposals |  | Approximate Alignment of PRoW EUL23 diversion understood to be coming forward as part of Barratt Scheme |
|  | Proposed 1m Buffer |  | Approximate Alignment of Existing PRoW EUL24 |  | Approximate Alignment of Trodden Route |
| | |  | Approximate Alignment of Existing PRoW EUL24 to be diverted as part of the development proposals | | |
| | |  | Potential Continuation of Footway/ Cycleway (exact location to be determined) | | |



Key:

- Site Boundary
- Approximate Extents of Adopted Highway
- Approximate Extents of Common Land
- Pedestrian Visibility Splay
- Proposed area of berm / rollover to accommodate level change

NOTE:
Surface of footway anticipated to be hoggins or other suitable material.

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CLIENT: BROMFORD DEVELOPMENTS LTD
PROJECT: LAND AT SNOW CAPEL
TITLE: WINNYCROFT LANE PROPOSED FOOTWAY ARRANGEMENT

REV	DATE	BY	DESCRIPTION	CHK	APD

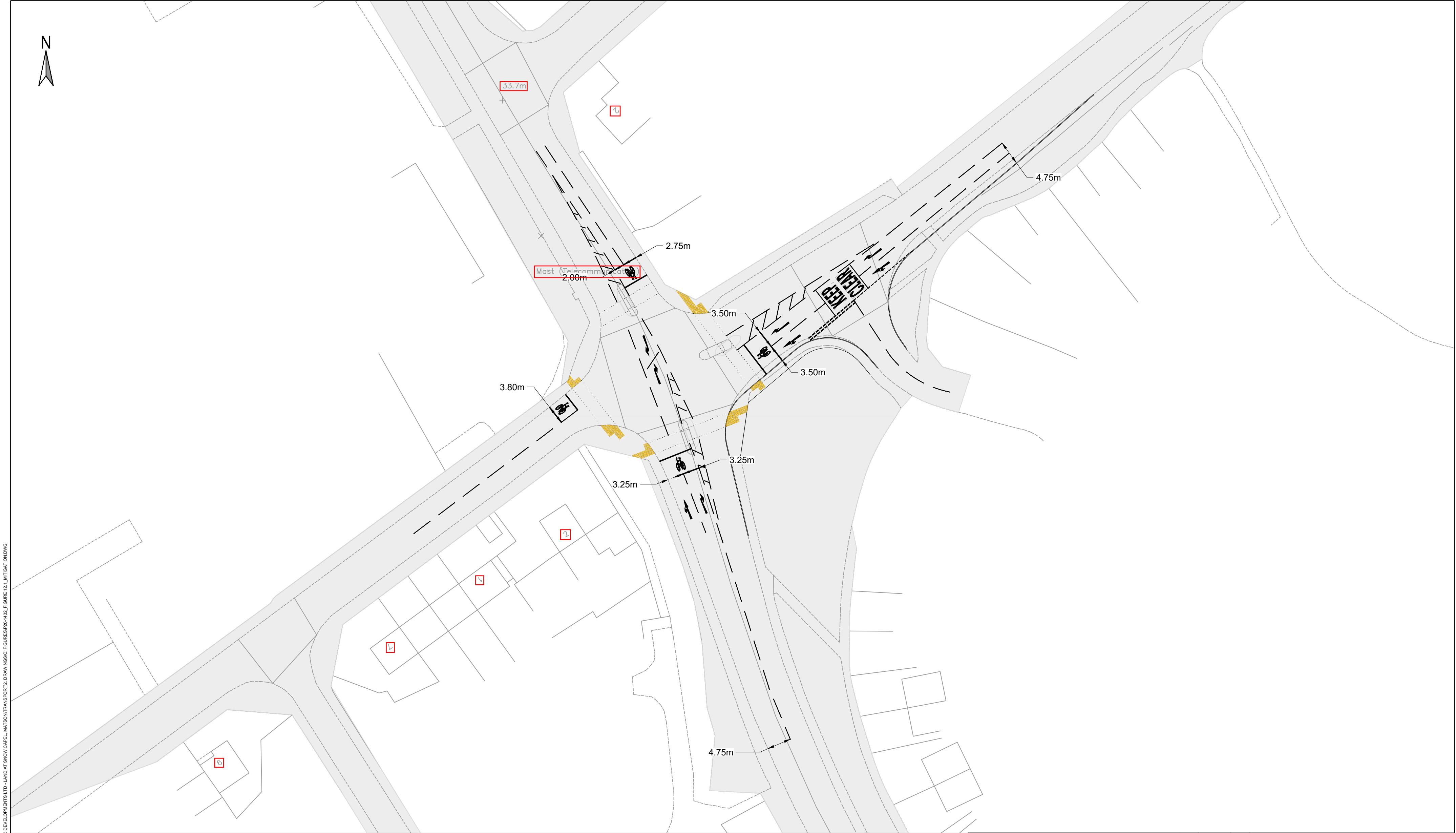
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DATE: 17/03/2021

CHECKED:	APPROVED:
KSS	CMR

DESIGN DRAWN:	DRAWING STATUS:
JAN	SK

PROJECT No:	DRAWING No:	REV:
P20-1432	FIGURE 7.2	-

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Key:

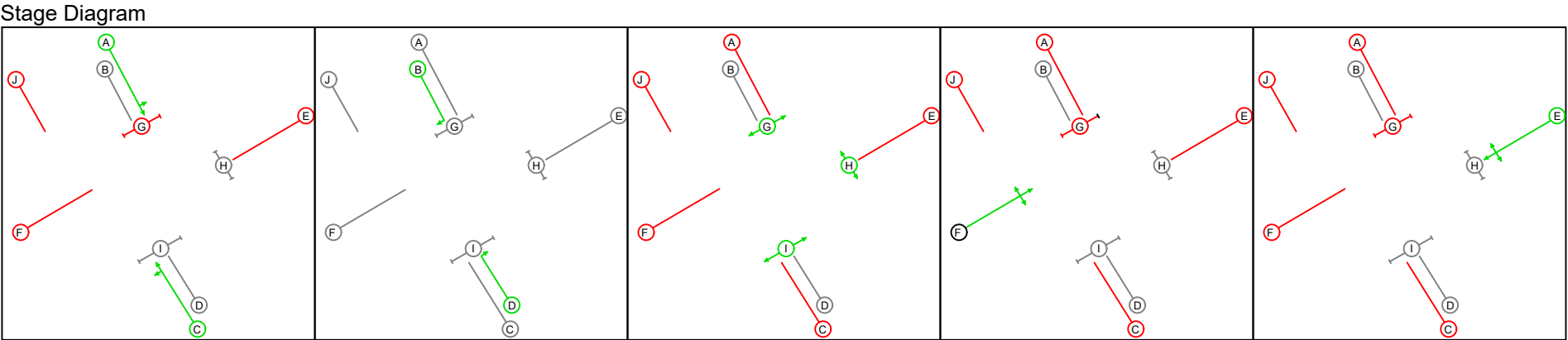
Approximate Extent of Adopted Highway

Phases

Traffic:
A, B, C, D, E, F

Pedestrian:
G, H, I

Dummy:
J



Planning | Design | Environment | Economics

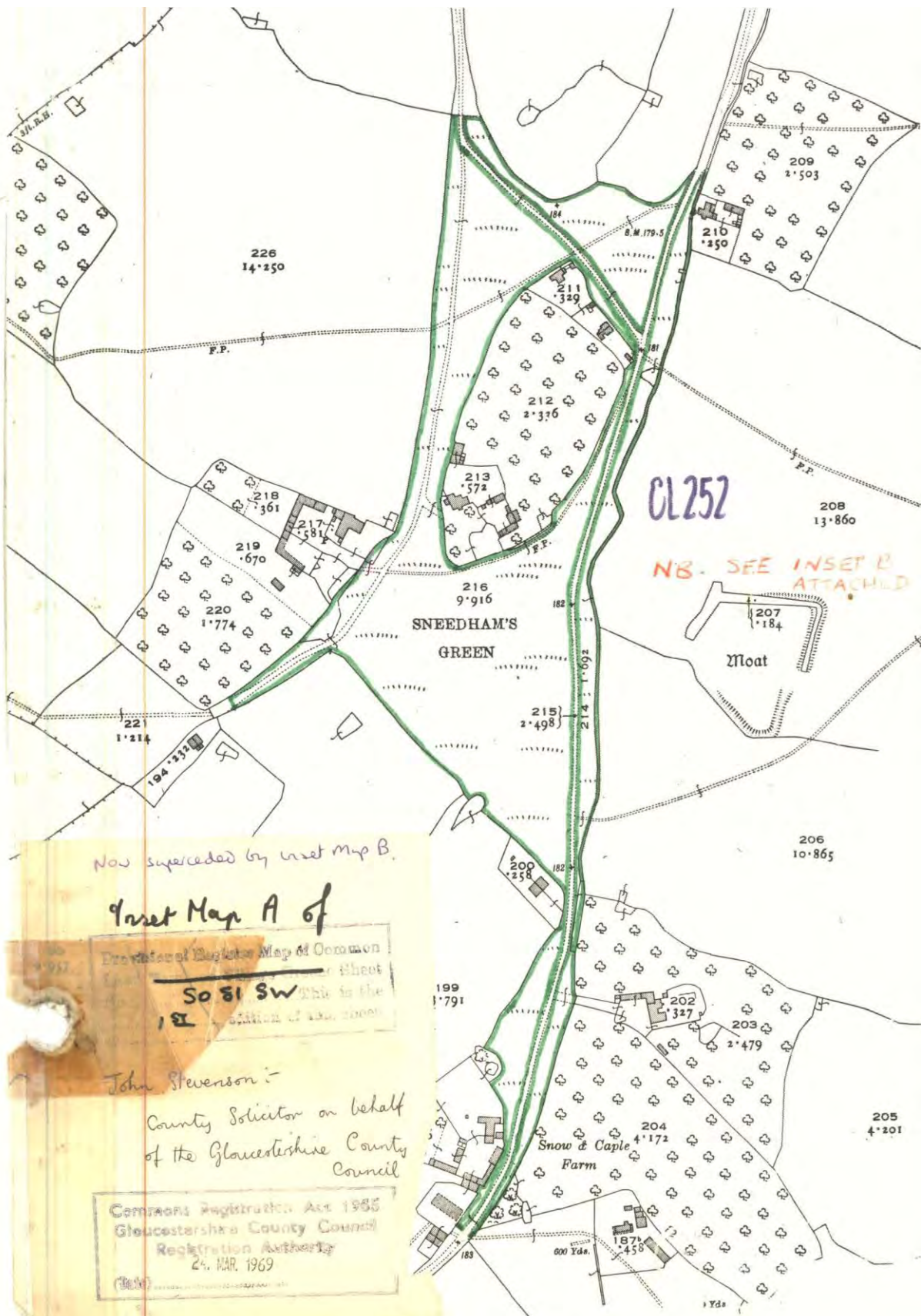
REV	DATE	BY	DESCRIPTION	CHK	APD

CLIENT: BROMFORD DEVELOPMENTS LTD	SCALE @ A2: 1:500	CHECKED: CMR	APPROVED: CMR
PROJECT: LAND AT SNOW CAPEL	DATE: 06/04/2022	DESIGN-DRAWN: ADWS	DRAWING-STATUS: SK
TITLE: B4073/ NORBURY AVENUE/ HERON WAY POTENTIAL MITIGATION	PROJECT No: P20-1432	DRAWING No: FIGURE 12.1	REV: -

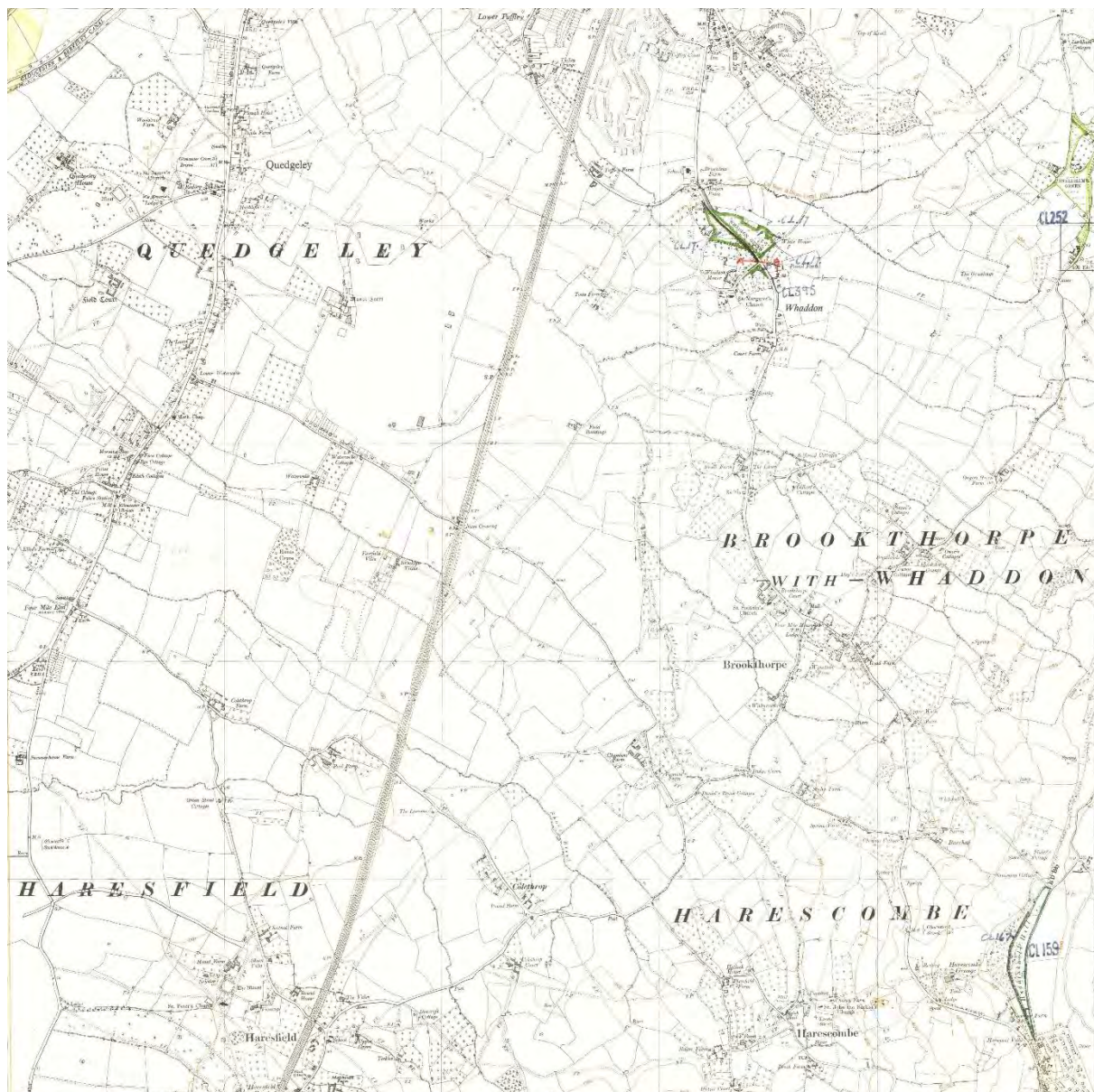
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Appendix A.1







Register of COMMON LAND

Register unit No. CL 252
Edition No. 1st.

LAND SECTION—Sheet No. 1

See Overleaf
for Notes

No. and date of entry	Description of the land, reference to the register map, registration particulars, etc.
1 24 MAR. 1969 (See entry No. 2 below)	The piece of land known as Speedhams Green containing 11.512 acres or thereabouts in the parish of Upton St. Leonards, Gloucestershire, as marked with a green verge line inside the boundary on sheets SO 81 SW and SO 81 SE and inset Map A of sheet SO 81 SW of the register map and distinguished by the number of this register unit. Registered pursuant to application number 691 made 5th June, 1968 by the Upton St. Leonards Parish Council, Upton St. Leonards, Gloucestershire. (Registration cancelled)
2. 30th July 1973	The registration at entry No. 1 above, being undisputed, became final on 1st August, 1972. REGISTRATION AMENDMENT SEE ENTRY NO. 3 BELOW
3 17th March 1982	REGISTRATION AMENDMENT the part of the land comprised in this register unit edged ^{red} green on the inset Map B on sheet SO 81 SW of the register map and distinguished by the number of this register unit ceased to be common land on 15/5/89 and is removed from the register pursuant to an application made 19/4/79 by the Dept. of Transport, South West Region, Victoria House, 266 Five Star, Taunton, Somerset.
4 17th March 1982	The piece of land known as part of Speedhams Green in the parish of Upton St. Leonards Gloucestershire and edged ^{green} red on the inset Map B on sheet No. SO 81 SW on the register map and distinguished by the number of this register unit Registered pursuant to application number 1970 made 15/12/81 by the Department of Transport, South West Region, Victoria House, 266 Five Star, Taunton, Somerset under Section 13 of the Act. This said land became common land on 15/5/89 in substitution for the land removed from the register at entry No. 3 above by virtue of compulsory purchase order and became on 15/5/89 subject to the rights of common which were immediately before the said date exercisable over the said removed land.

No. and date of note	Notes	No. and date of note	Notes
1 11 th July, 1975	Daniel Davis, Margery May Davis, Roland Davis and Ethel Davis, all of Hillview Cottage, Incehouse Green, Upton St. Leonards, Gloucester, in application Number 195 to made 9 th July, 1975, claim a right of access for vehicles to and from Hillview Cottage, Incehouse Green, Upton St. Leonards, for all purposes in connection with the use of that property as a private residence over the road coloured brown on the plan annexed to C.R. Form 16 (Revised) on 9 th July ^{Application} Application Number 195.		

NOTE: This section contains the registration of every right of common registered under the Act as exercisable over the whole or any part of the land described in the land section of this register unit.

Registration authority

GLOUCESTERSHIRE COUNTY COUNCIL.

Register unit No. CL 252.

Edition No. 1st.

See Overleaf
for Notes

Register of COMMON LAND.

RIGHTS SECTION—Sheet No. 1.

1 No. and date of entry	2 No. and date of application	3 Name and address of every applicant for registration, and the capacity in which he applied	4 Particulars of the right of common, and of the land over which it is exercisable	5 Particulars of the land (if any) to which the right is attached
1. 21. 11. 1969 (See entry No. 4 below)	1143. 27th June, 1968.	Colin George Herbert, deceased The Homestead, Speedham Green, Upton St. Leonards, Glos. Owner. Now Mr J. G Herbert (8 MARCH 2011) See 12th on file	The right to graze 12 ewes and their lambs over the whole of the land comprised in this register unit. (Registration terminated).	"The Homestead", Speedham Green, Upton St. Leonards, Glos, as shown edged red on the supplemental map bearing the number of this registration.
2. -9. OCT. 1969 (See entry No. 5 below)	1147. 27th June, 1968.	Brian Gordon Folland, "Edmunds", Station Road, South Cirencester, Glos. Owner.	The registration at Entry No. 1 of Register Unit CL claimed over the whole of the land comprised in this (Registration terminated)	251 includes the right of common register unit.

*No. and date
of note*

Notes

*No. and date
of note*

Notes

NOTE: This section contains the registration of every right of common registered under the Act as exercisable over the whole or any part of the land described in the land section of this register unit.

Registration authority

Gloucestershire
County Council

Register unit No. CL ~~100~~ 252.

Edition No. 127

Register of Common Land.

See Overleaf
for Notes

RIGHTS SECTION—Sheet No. 2

1 No. and date of entry	2 No. and date of application	3 Name and address of every applicant for registration, and the capacity in which he applied	4 Particulars of the right of common, and of the land over which it is exercisable	5 Particulars of the land (if any) to which the right is attached
3. -S. 100. 100. (See entry No. 4 below)	1929. 2nd Jan: 1970.	Lionel John Hughes, Snow Capel Farm, Sneedham Green, Gloucestershire. Tenant.	The right of grazing for 10 animals over the whole of the land comprised in this register unit. (Registration provisional).	Snow Capel Farm, Sneedham Green, Gloucestershire comprising O.S. Parcel Nos. 208, 207, 206, 199, 196, 198, 190, 191, 192, 193, 71 and 69 on O.S. Sheet Glou. 33/11 of the Parish of Upton St. Leonards, Gloucestershire.
4 30 th July, 1973.		The	registrations at entries Nos. 1 and 3 above, being undisputed, became final on 1 st August, 1972.	
5 30 th July, 1973.		The	registration at entry No. 2 above, being undisputed, became final on 26 th July, 1973.	

*No. and date
of note*

Notes

*No. and date
of note*

Notes

NOTE: This section contains the registration of every person registered under the Act as owner of any of the land described in the land section of this register unit. It does not contain any registration in respect of land of which the freehold is registered under the Land Registration Acts 1925 and 1936, but the absence from this section of a registration in respect of any land described in the land section does not necessarily indicate that the freehold of that land is registered under those Acts.

Register unit No. CL. 252
Edition No. 1st

OWNERSHIP SECTION—Sheet No. 3

No. and date of entry	No. and date of application	Name and Address of person registered as owner	Particulars of the land to which the registration applies
1	692	Upton St. Leonard's Parish Council, COUNCIL	The whole of the land comprised in this register unit.
(See entry No. 2 below)	5th June, 1960.	GloUCESTER-shire. (Registration provisioned)	
2		THE DOCKS GLOS. App 692	
3rd July 1973.		The registration at entry No. 1 above, being undisputed, became final on 1st August, 1972.	

No. and date
of note

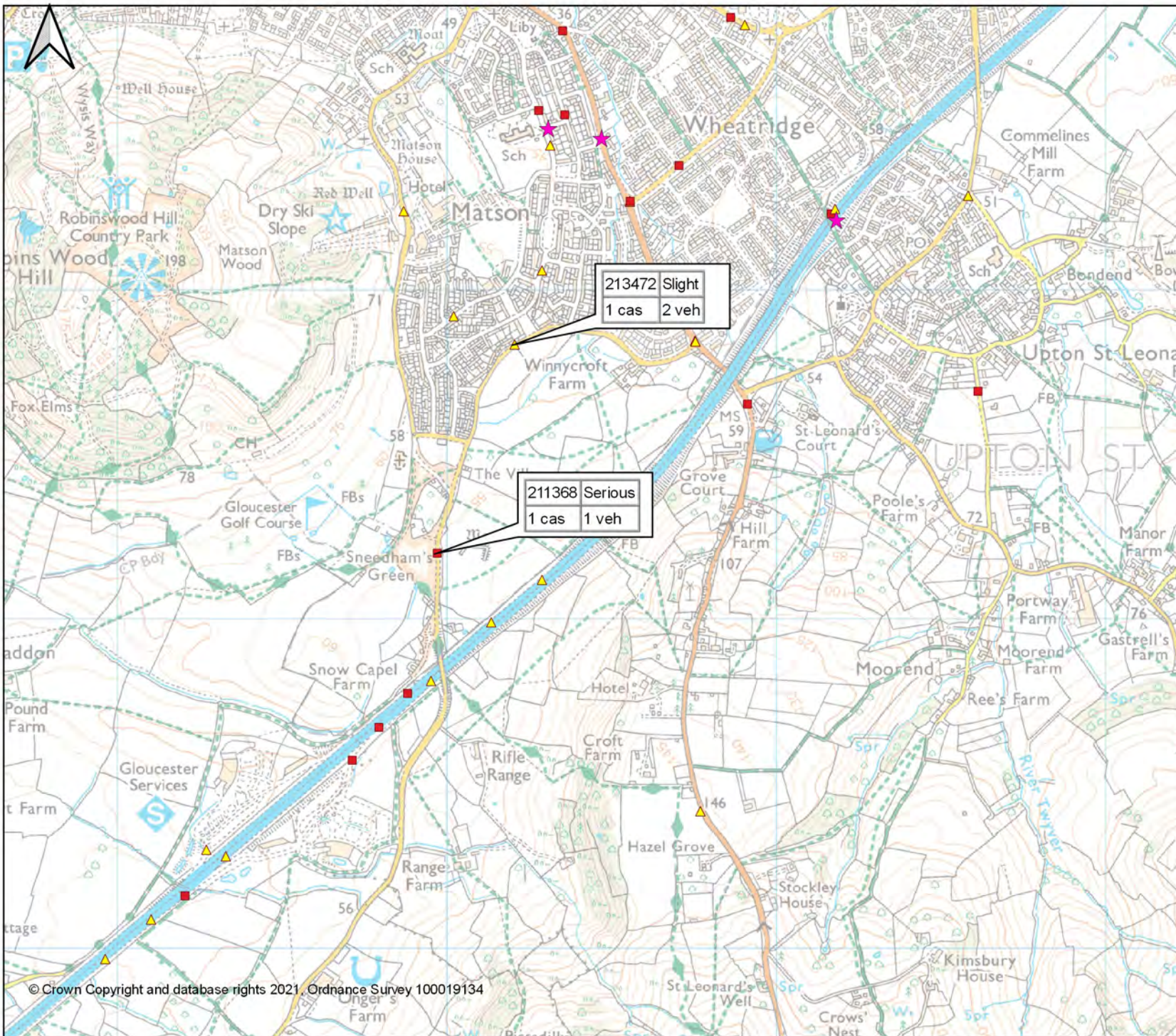
Notes

No. and date
of note

Notes



Appendix A.2



Winnycroft Lane - Matson Collision Plot

Date Range
1st Dec 16 to 30th Nov 21

Accidents	
Fatal	★
Serious	■
Slight	▲

DRAWN BY **Graham simpson**
Road Safety and Transport Data Team

DATE: **21/12/2021**
SCALE: **1:16,344.69197**

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RTA2480 Detailed Collision Report

Compiled from an original report by Gloucestershire County Council

Accident Investigation and Prevention Section

Copyright Gloucestershire County Council / Gloucestershire Police

Database as at 23-DEC-21

Collisions within GLOUCESTERSHIRE

For period 01-DEC-2016 TO 30-NOV-2021

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This information is compiled from data held in the Council's live database as at the date of production. The data is subject to change at any point in the future, as a result of more accurate information becoming available.

DETAILED COLLISION REPORT

Ref	211368	Severity	SERIOUS		
Day	MONDAY	Date	08 MAY 2017	Time	0530
Light	DAYLIGHT	Weather	FINE	Surface	DRY
Grid ref	384972 214200	Major rd	3 215	Minor rd	
Control		Junction	NOT WITHIN 20M	Speed lim	60
Lighting	LIGHTS	Condition	NONE	C'way	SINGLE CWAY
UNIFI Ref	179592	Type	PI	Hazard	NONE

LOCATION

WINNYCROFT LANE, MATSON, GLOUCESTER

DESCRIPTION

PED WALKING FROM MATSON TO WORK AT SERVICES, FACING ONCOMING TRAFFIC. V1 APPROACHED FROM BEHIND CROSSED CENTRAL MARKINGS, PUT OFFSIDE WHEELS ON GRASS VERGE, CONTINUED, HIT C1. V1 SLOWED THEN ACCELERATED AWAY.

VEHICLE DETAILS

No	Type	Manoeuvre	From-to	Driver Age
1	Car	GO AHEAD OTHER	N S	42

CASUALTY DETAILS

No	Severity	Casualty Age	Veh	Further Details
1	SERIOUS	54	1	PEDESTRIAN

DETAILED COLLISION REPORT

Ref	213472	Severity	SLIGHT		
Day	TUESDAY	Date	03 SEP 2019	Time	1530
Light	DAYLIGHT	Weather	FINE	Surface	DRY
Grid ref	385207 214834	Major rd	3 215	Minor rd	
Control		Junction	NOT WITHIN 20M	Speed lim	30
Lighting	LIGHTS	Condition	NONE	C'way	SINGLE CWAY
UNIFI Ref	878383	Type	Q	Hazard	NONE

LOCATION

WINNYCROFT LANE - 102 METRES FROM JUNCTION WITH UNCLASSIFIED ROAD, GLOUCESTER

DESCRIPTION

V1 SLOWED DOWN DRIVING DOWN WINNYCROFT LANE. CAR V2 KEPT GOING FASTER AND DROVE INTO THE BACK OF V1. OFFENDING VEHICLE DID NOT STOP.

VEHICLE DETAILS

No	Type	Manoeuvre	From-to	Driver Age
1	Car	STOPPING	N S	69
2	Car	GO AHEAD OTHER	N S	29

CASUALTY DETAILS

No	Severity	Casualty Age	Veh	Further Details
1	SLIGHT	69	1	DRIVER



Appendix A.3

Matson, Tuesday 18th January 2022

Junction: 1
Approach: Painswick Road North



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Left to Heron Way							Ahead to Painswick Road (South)							Right to Norbrink Avenue						
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	3	0	13	0	0	16	13.0	0	0	22	0	0	22	22.0	0	0	1	0	0	1	1.0
07:15 - 07:30	0	0	21	0	0	21	21.0	0	0	29	0	1	30	31.0	0	0	3	0	0	3	3.0
07:30 - 07:45	1	0	33	0	1	35	35.0	0	0	36	1	2	39	42.3	0	0	5	0	0	5	5.0
07:45 - 08:00	3	0	36	0	0	39	36.0	5	1	40	1	1	48	44.5	0	0	6	0	0	6	6.0
Hourly Total	7	0	103	0	1	111	105.0	5	1	127	2	4	139	139.8	0	0	15	0	0	15	15.0
08:00 - 08:15	0	0	39	0	1	40	41.0	0	0	49	0	0	49	49.0	0	0	5	0	0	5	5.0
08:15 - 08:30	0	0	38	0	0	38	38.0	0	0	53	0	0	53	53.0	0	0	4	0	0	4	4.0
08:30 - 08:45	0	0	33	0	0	33	33.0	0	0	56	0	0	56	56.0	0	0	3	0	0	3	3.0
08:45 - 09:00	0	0	36	0	1	37	38.0	0	1	60	0	1	62	62.2	0	0	5	0	0	5	5.0
Hourly Total	0	0	146	0	2	148	150.0	0	1	63	1	1	220	220.2	0	0	17	0	0	17	17.0
09:00 - 09:15	0	0	30	0	0	30	30.0	0	2	63	1	0	66	65.7	0	0	4	0	0	4	4.0
09:15 - 09:30	1	0	29	0	0	30	29.0	0	0	61	0	0	61	61.0	2	0	5	0	0	7	5.0
09:30 - 09:45	0	0	25	0	0	25	25.0	1	0	59	0	0	60	59.0	0	0	5	0	0	5	5.0
09:45 - 10:00	0	0	23	0	0	23	23.0	0	0	65	0	2	67	69.0	0	0	6	0	0	6	6.0
Hourly Total	1	0	107	0	0	108	107.0	1	2	248	1	2	254	254.7	2	0	20	0	0	22	20.0
TOTAL	8	0	356	0	3	367	362.0	6	4	438	4	7	613	614.7	2	0	52	0	0	54	52.0
16:00 - 16:15	0	0	42	0	2	44	46.0	5	1	56	0	0	62	56.2	23	0	6	0	0	29	6.0
16:15 - 16:30	0	1	49	0	0	50	49.2	5	0	66	0	1	72	68.0	5	0	8	0	0	13	8.0
16:30 - 16:45	0	1	45	0	0	46	45.2	2	0	58	1	0	61	60.3	0	0	6	0	0	6	6.0
16:45 - 17:00	3	0	50	1	0	54	52.3	0	0	69	0	0	69	69.0	0	0	4	0	0	4	4.0
Hourly Total	3	2	186	1	2	194	192.7	12	1	249	1	1	264	253.5	28	0	24	0	0	52	24.0
17:00 - 17:15	0	0	55	0	0	55	55.0	0	1	62	0	0	63	62.2	0	0	5	0	0	5	5.0
17:15 - 17:30	0	0	67	0	1	68	69.0	1	0	51	0	1	53	53.0	0	1	7	0	0	8	7.2
17:30 - 17:45	0	0	50	0	0	50	50.0	3	0	68	0	0	71	68.0	0	0	8	0	0	8	8.0
17:45 - 18:00	0	0	45	0	0	45	45.0	0	0	54	1	0	55	56.3	0	0	7	0	0	7	7.0
Hourly Total	0	0	217	0	1	218	219.0	4	1	235	1	1	242	239.5	0	1	27	0	0	28	27.2
18:00 - 18:15	0	0	42	0	1	43	44.0	4	0	55	0	0	59	55.0	0	0	9	0	0	9	9.0
18:15 - 18:30	0	1	34	0	0	35	34.2	0	0	57	0	0	57	57.0	0	0	6	0	0	6	6.0
18:30 - 18:45	0	0	27	0	0	27	27.0	2	0	60	0	0	62	60.0	0	0	6	0	0	6	6.0
18:45 - 19:00	0	0	24	1	0	25	26.3	0	0	63	1	0	64	65.3	0	0	5	0	0	5	5.0
Hourly Total	0	1	127	1	1	130	131.5	6	0	235	1	0	242	237.3	0	0	26	0	0	26	26.0
TOTAL	3	3	530	2	4	542	543.2	22	2	719	3	2	748	730.3	28	1	77	0	0	106	77.2

PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	4
705	2
710	4
715	3
720	3
725	4
730	4
735	6
740	5
745	6
750	6
755	6
800	6
805	7
810	8
815	7
820	9
825	8
830	9
835	9
840	9
845	10
850	11
855	8
900	7
905	9
910	8
915	8
920	8
925	7
930	8
935	8
940	8
945	6
950	9
955	8

TIME	Queue Lengths (Vehicles)
1600	12
1605	12
1610	10
1615	15
1620	14
1625	16
1630	13
1635	20
1640	13
1645	16
1650	17
1655	15
1700	15
1705	18
1710	16
1715	12
1720	12
1725	9
1730	16
1735	15
1740	12
1745	11
1750	11
1755	9
1800	8
1805	10
1810	11
1815	13
1820	12
1825	9
1830	10
1835	10
1840	10
1845	8
1850	10
1855	7

Matson, Tuesday 18th January 2022

Junction: 1
Approach: Heron Way



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)
Lane 1 is nearside lane

TIME	Left to Painswick Road (South)							Ahead to Norbury Avenue							Right to Painswick Road (North)						
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	3	0	0	3	3.0	0	0	24	0	0	24	24.0	0	0	17	0	0	17	17.0
07:15 - 07:30	2	0	5	0	1	8	7.0	0	0	20	0	0	20	20.0	0	1	20	0	0	21	20.2
07:30 - 07:45	1	0	8	0	0	9	8.0	0	1	31	0	0	32	31.2	0	0	28	0	1	29	30.0
07:45 - 08:00	0	0	7	0	0	7	7.0	0	0	29	0	0	29	29.0	0	0	33	0	0	33	33.0
Hourly Total	3	0	23	0	1	27	25.0	0	1	104	0	0	105	104.2	0	1	98	0	1	100	100.2
08:00 - 08:15	1	0	10	0	0	11	10.0	0	0	32	0	2	34	36.0	5	0	36	0	0	41	36.0
08:15 - 08:30	0	0	12	0	0	12	12.0	0	0	35	0	0	35	35.0	0	1	32	0	0	33	32.2
08:30 - 08:45	0	0	11	0	0	11	11.0	0	0	32	0	0	32	32.0	2	0	29	0	1	32	31.0
08:45 - 09:00	0	0	8	0	0	8	8.0	0	0	30	0	0	30	30.0	4	0	31	0	2	37	35.0
Hourly Total	1	0	41	0	0	42	41.0	0	0	129	0	2	131	133.0	11	1	128	0	3	143	134.2
09:00 - 09:15	0	0	13	0	0	13	13.0	0	0	33	0	0	33	33.0	3	1	27	0	0	31	27.2
09:15 - 09:30	0	0	9	0	0	9	9.0	0	0	31	0	1	32	33.0	1	0	30	0	1	32	32.0
09:30 - 09:45	0	0	12	0	0	12	12.0	0	0	28	0	0	28	28.0	0	1	28	1	0	30	30.5
09:45 - 10:00	1	0	15	0	0	16	15.0	0	0	30	0	0	30	30.0	0	0	26	0	1	27	28.0
Hourly Total	1	0	49	0	0	50	49.0	0	0	122	0	1	123	124.0	4	2	111	1	2	120	117.7
TOTAL	5	0	113	0	1	119	115.0	0	1	355	0	3	359	361.2	15	4	337	1	6	363	352.1
16:00 - 16:15	1	0	20	0	0	21	20.0	0	0	29	0	0	29	29.0	0	0	42	0	0	42	42.0
16:15 - 16:30	0	0	22	0	0	22	22.0	0	0	35	0	0	35	35.0	0	0	40	0	1	41	42.0
16:30 - 16:45	0	0	19	0	0	19	19.0	0	0	36	0	0	36	36.0	0	0	43	0	0	43	43.0
16:45 - 17:00	1	0	21	0	0	22	21.0	0	0	40	0	0	40	40.0	0	0	39	0	0	39	39.0
Hourly Total	2	0	82	0	0	84	82.0	0	0	140	0	0	140	140.0	0	0	164	0	1	165	166.0
17:00 - 17:15	0	0	23	0	1	24	25.0	0	0	44	0	0	44	44.0	0	1	34	0	0	35	34.2
17:15 - 17:30	0	0	26	0	0	26	26.0	0	0	39	0	0	39	39.0	0	0	32	0	0	32	32.0
17:30 - 17:45	0	0	20	0	0	20	20.0	0	0	36	0	0	36	36.0	0	0	35	0	0	35	35.0
17:45 - 18:00	0	0	18	0	0	18	18.0	0	0	39	0	0	39	39.0	0	0	30	0	1	31	32.0
Hourly Total	0	0	87	0	1	88	89.0	0	0	158	0	0	158	158.0	0	1	131	0	1	133	133.2
18:00 - 18:15	0	0	17	0	1	18	19.0	0	0	31	0	0	31	31.0	0	0	33	0	0	33	33.0
18:15 - 18:30	1	0	13	0	0	14	13.0	0	0	29	0	0	29	29.0	0	0	29	0	0	29	29.0
18:30 - 18:45	2	0	10	0	0	12	10.0	0	0	27	0	0	27	27.0	0	0	26	0	0	26	26.0
18:45 - 19:00	0	0	7	0	0	7	7.0	0	0	24	0	0	24	24.0	2	0	22	0	0	24	22.0
Hourly Total	3	0	47	0	1	51	49.0	0	0	111	0	0	111	111.0	2	0	110	0	0	112	110.0
TOTAL	5	0	216	0	2	223	220.0	0	0	409	0	0	409	409.0	2	1	405	0	2	410	409.2

PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)	
	Lane 1	Lane 2
700	2	2
705	3	0
710	2	2
715	4	2
720	4	2
725	3	2
730	2	3
735	5	2
740	4	2
745	5	2
750	6	3
755	6	0
800	5	3
805	6	4
810	5	3
815	7	4
820	4	4
825	6	5
830	6	4
835	5	4
840	6	4
845	7	3
850	7	6
855	7	4
900	7	5
905	7	5
910	7	5
915	5	4
920	6	6
925	4	5
930	4	4
935	7	5
940	6	4
945	7	5
950	7	5
955	7	5

TIME	Queue Lengths (Vehicles)	
	Lane 1	Lane 2
1600	5	5
1605	6	7
1610	5	6
1615	5	7
1620	5	8
1625	5	8
1630	5	8
1635	6	8
1640	6	8
1645	4	5
1650	7	7
1655	5	7
1700	6	7
1705	6	7
1710	5	8
1715	5	8
1720	7	8
1725	7	7
1730	7	8
1735	8	8
1740	7	8
1745	8	7
1750	8	6
1755	8	7
1800	5	6
1805	6	6
1810	6	6
1815	4	5
1820	4	3
1825	4	5
1830	3	4
1835	2	3
1840	3	4
1845	2	4
1850	2	4
1855	2	4

Matson, Tuesday 18th January 2022

Junction: 1
Approach: Painswick Road South



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Left to Norbury Avenue							Ahead to Painswick Road (North)							Right to Heron Way						
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	3	0	0	3	3.0	0	0	62	0	0	62	62.0	0	0	9	0	0	9	9.0
07:15 - 07:30	0	0	5	0	0	5	5.0	0	2	63	0	0	65	63.4	0	0	10	0	0	10	10.0
07:30 - 07:45	0	0	4	0	0	4	4.0	0	0	66	0	0	66	66.0	0	0	9	0	0	9	9.0
07:45 - 08:00	0	0	5	0	0	5	5.0	4	0	76	0	0	80	76.0	0	0	11	0	1	12	13.0
Hourly Total	0	0	17	0	0	17	17.0	4	2	267	0	0	273	267.4	0	0	39	0	1	40	41.0
08:00 - 08:15	0	0	6	0	0	6	6.0	5	2	94	0	0	101	94.4	3	0	14	0	0	17	14.0
08:15 - 08:30	0	0	7	0	0	7	7.0	7	0	88	1	0	96	90.3	0	0	16	0	0	16	16.0
08:30 - 08:45	0	0	5	0	0	5	5.0	18	2	81	1	0	102	83.7	0	0	13	0	0	13	13.0
08:45 - 09:00	0	0	6	0	0	6	6.0	7	0	77	0	1	85	79.0	0	0	15	0	1	16	17.0
Hourly Total	0	0	24	0	0	24	24.0	37	4	340	2	1	384	347.4	3	0	58	0	1	62	60.0
09:00 - 09:15	0	0	5	0	0	5	5.0	0	1	75	0	0	76	75.2	0	0	14	0	0	14	14.0
09:15 - 09:30	0	0	5	0	0	5	5.0	3	2	69	1	0	75	71.7	0	0	15	0	0	15	15.0
09:30 - 09:45	0	0	4	0	0	4	4.0	0	0	63	0	1	64	65.0	0	0	13	0	0	13	13.0
09:45 - 10:00	0	0	3	0	0	3	3.0	0	0	51	1	0	52	53.3	0	0	10	0	0	10	10.0
Hourly Total	0	0	17	0	0	17	17.0	3	3	258	2	1	267	265.2	0	0	52	0	0	52	52.0
TOTAL	0	0	58	0	0	58	58.0	44	9	865	4	2	924	880.0	3	0	149	0	2	154	153.0
16:00 - 16:15	0	0	5	0	0	5	5.0	0	0	50	0	1	51	52.0	0	0	17	0	0	17	17.0
16:15 - 16:30	0	0	6	0	0	6	6.0	0	0	55	0	0	55	55.0	0	0	16	0	0	16	16.0
16:30 - 16:45	0	0	4	0	0	4	4.0	0	0	61	1	0	62	63.3	0	0	13	0	0	13	13.0
16:45 - 17:00	0	0	7	0	0	7	7.0	2	0	52	0	1	55	54.0	0	0	11	0	0	11	11.0
Hourly Total	0	0	22	0	0	22	22.0	2	0	218	1	2	223	224.3	0	0	57	0	0	57	57.0
17:00 - 17:15	0	0	4	0	0	4	4.0	0	0	56	0	0	56	56.0	0	0	10	0	0	10	10.0
17:15 - 17:30	0	0	6	0	0	6	6.0	1	0	60	0	0	61	60.0	0	0	12	0	0	12	12.0
17:30 - 17:45	0	0	3	0	0	3	3.0	0	0	66	0	0	66	66.0	0	0	14	0	0	14	14.0
17:45 - 18:00	1	0	4	0	0	5	4.0	0	0	61	1	1	63	65.3	0	0	13	0	0	13	13.0
Hourly Total	1	0	17	0	0	18	17.0	1	0	242	1	1	245	246.3	0	0	49	0	0	49	49.0
18:00 - 18:15	0	1	3	0	0	4	3.2	0	0	54	0	0	54	54.0	2	0	11	0	0	13	11.0
18:15 - 18:30	0	0	4	0	0	4	4.0	0	0	59	0	0	59	59.0	0	0	10	0	0	10	10.0
18:30 - 18:45	0	0	2	0	0	2	2.0	0	1	50	1	0	52	52.5	0	0	9	0	0	9	9.0
18:45 - 19:00	0	0	2	0	0	2	2.0	0	0	45	0	0	45	45.0	0	0	6	0	0	6	6.0
Hourly Total	0	1	11	0	0	12	11.2	0	1	208	1	0	210	210.5	2	0	36	0	0	38	36.0
TOTAL	1	1	50	0	0	52	50.2	3	1	668	3	3	678	681.1	2	0	142	0	0	144	142.0

PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	9
705	10
710	10
715	1
720	8
725	11
730	12
735	13
740	12
745	12
750	13
755	12
800	15
805	18
810	16
815	15
820	15
825	17
830	13
835	12
840	13
845	12
850	12
855	12
900	9
905	12
910	10
915	11
920	11
925	8
930	8
935	10
940	10
945	7
950	10
955	8

TIME	Queue Lengths (Vehicles)
1600	7
1605	6
1610	7
1615	8
1620	8
1625	8
1630	7
1635	9
1640	7
1645	10
1650	10
1655	10
1700	8
1705	10
1710	9
1715	11
1720	11
1725	9
1730	12
1735	15
1740	17
1745	22
1750	10
1755	12
1800	11
1805	10
1810	11
1815	12
1820	10
1825	12
1830	10
1835	8
1840	8
1845	9
1850	7
1855	8

Matson, Tuesday 18th January 2022

Junction: 1
Approach: Norbury Avenue



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Left to Painswick Road (North)							Ahead to Heron Way							Right to Painswick Road (South)						
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	2	0	4	0	0	6	4.0	0	0	15	0	0	15	15.0	0	0	1	0	0	1	1.0
07:15 - 07:30	2	0	8	0	0	10	8.0	0	0	19	0	0	19	19.0	0	0	2	0	0	2	2.0
07:30 - 07:45	0	0	13	0	0	13	13.0	0	0	30	0	0	30	30.0	2	0	1	0	0	3	1.0
07:45 - 08:00	4	0	11	0	0	15	11.0	0	0	33	0	0	33	33.0	0	0	2	0	0	2	2.0
Hourly Total	8	0	36	0	0	44	36.0	0	0	97	0	0	97	97.0	2	0	6	0	0	8	6.0
08:00 - 08:15	0	0	13	0	0	13	13.0	0	0	39	0	0	39	39.0	0	0	2	0	0	2	2.0
08:15 - 08:30	29	1	12	0	0	42	12.2	0	0	35	0	0	35	35.0	0	0	3	0	0	3	3.0
08:30 - 08:45	3	0	11	0	0	14	11.0	0	0	31	0	0	31	31.0	0	0	5	0	0	5	5.0
08:45 - 09:00	2	1	15	0	0	18	15.2	0	0	30	0	0	30	30.0	0	0	4	0	0	4	4.0
Hourly Total	34	2	51	0	0	87	51.4	0	0	135	0	0	135	135.0	0	0	14	0	0	14	14.0
09:00 - 09:15	0	0	13	0	0	13	13.0	0	0	33	0	0	33	33.0	0	0	6	0	0	6	6.0
09:15 - 09:30	1	0	15	0	0	16	15.0	0	0	29	0	0	29	29.0	0	0	5	0	0	5	5.0
09:30 - 09:45	0	0	14	0	0	14	14.0	0	0	22	0	0	22	22.0	0	0	5	0	0	5	5.0
09:45 - 10:00	0	0	16	0	0	16	16.0	0	0	17	0	0	17	17.0	1	0	6	0	0	7	6.0
Hourly Total	1	0	58	0	0	59	58.0	0	0	101	0	0	101	101.0	1	0	22	0	0	23	22.0
TOTAL	43	2	145	0	0	190	145.4	0	0	333	0	0	333	333.0	3	0	42	0	0	45	42.0
16:00 - 16:15	3	0	6	0	0	9	6.0	0	0	38	0	0	38	38.0	0	0	6	0	0	6	6.0
16:15 - 16:30	0	0	9	0	0	9	9.0	0	0	42	0	0	42	42.0	0	0	5	0	0	5	5.0
16:30 - 16:45	0	0	7	0	0	7	7.0	0	0	49	0	0	49	49.0	0	0	8	0	0	8	8.0
16:45 - 17:00	5	0	11	0	0	16	11.0	0	0	51	0	0	51	51.0	0	0	9	0	0	9	9.0
Hourly Total	8	0	33	0	0	41	33.0	0	0	180	0	0	180	180.0	0	0	28	0	0	28	28.0
17:00 - 17:15	0	0	13	0	0	13	13.0	0	0	55	0	0	55	55.0	0	0	7	0	0	7	7.0
17:15 - 17:30	0	0	15	0	0	15	15.0	0	0	63	0	0	63	63.0	0	0	8	0	0	8	8.0
17:30 - 17:45	1	0	10	0	0	11	10.0	0	0	59	0	0	59	59.0	0	0	6	0	0	6	6.0
17:45 - 18:00	0	0	12	0	0	12	12.0	0	0	49	0	0	49	49.0	0	0	7	0	0	7	7.0
Hourly Total	1	0	50	0	0	51	50.0	0	0	226	0	0	226	226.0	0	0	28	0	0	28	28.0
18:00 - 18:15	0	0	11	0	0	11	11.0	0	0	44	0	0	44	44.0	0	0	9	0	0	9	9.0
18:15 - 18:30	0	0	10	0	0	10	10.0	0	0	36	0	0	36	36.0	0	0	6	0	0	6	6.0
18:30 - 18:45	0	0	9	0	0	9	9.0	0	0	31	0	0	31	31.0	0	0	5	0	0	5	5.0
18:45 - 19:00	0	0	12	0	0	12	12.0	0	0	20	0	0	20	20.0	0	0	6	0	0	6	6.0
Hourly Total	0	0	42	0	0	42	42.0	0	0	131	0	0	131	131.0	0	0	26	0	0	26	26.0
TOTAL	9	0	125	0	0	134	125.0	0	0	537	0	0	537	537.0	0	0	82	0	0	82	82.0

PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	2
705	3
710	2
715	3
720	3
725	3
730	2
735	4
740	3
745	4
750	4
755	4
800	3
805	2
810	5
815	4
820	4
825	4
830	2
835	4
840	3
845	3
850	3
855	3
900	3
905	5
910	3
915	5
920	5
925	5
930	3
935	4
940	3
945	3
950	3
955	3

TIME	Queue Lengths (Vehicles)
1600	4
1605	5
1610	4
1615	5
1620	5
1625	5
1630	6
1635	7
1640	7
1645	7
1650	8
1655	8
1700	7
1705	7
1710	7
1715	7
1720	8
1725	7
1730	7
1735	7
1740	7
1745	5
1750	6
1755	5
1800	5
1805	5
1810	5
1815	5
1820	5
1825	3
1830	5
1835	4
1840	5
1845	4
1850	4
1855	5

Matson, Tuesday 18th January 2022

From: 1) 07:00

Show Peak Hour: ☐

To: 1) 10:00

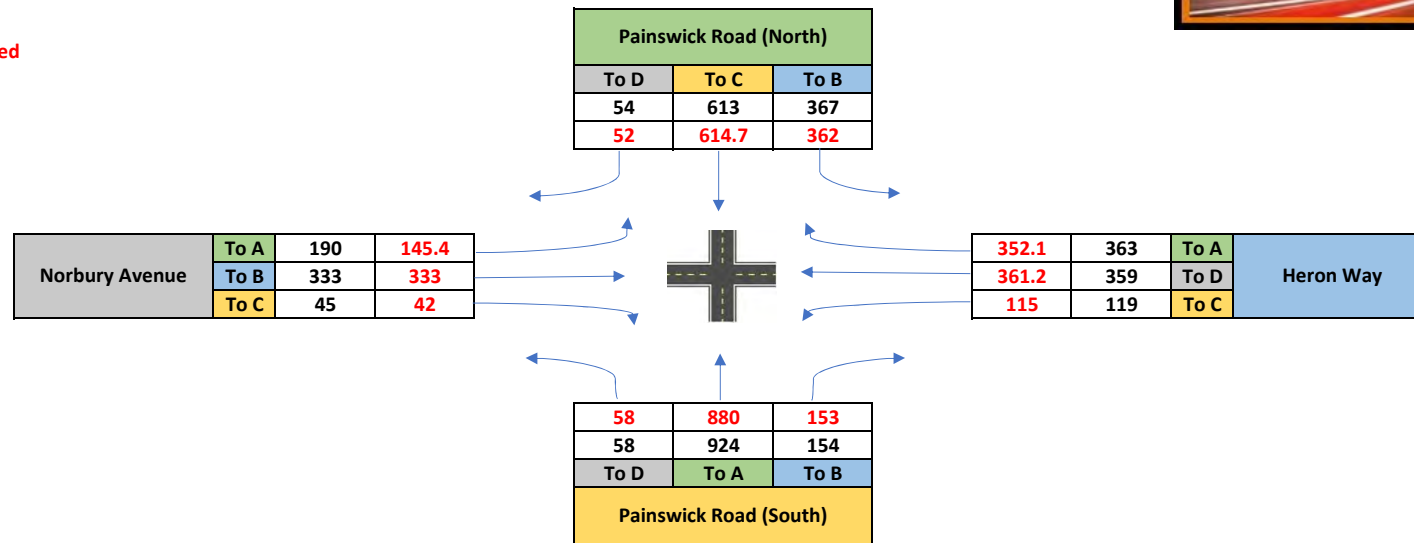
Show PCUs: ☒

Class: All Vehicles

Show Session 2



PCUs in red



Matson, Tuesday 18th January 2022

Junction: 2
Approach: Painswick Road North



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Left to Wheatway							Ahead to Painswick Road (South)						
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	1	0	15	0	0	16	15.0	0	0	20	0	0	20	20.0
07:15 - 07:30	0	0	12	0	0	12	12.0	0	0	37	0	0	37	37.0
07:30 - 07:45	4	0	17	0	1	22	19.0	0	0	31	1	0	32	33.3
07:45 - 08:00	5	0	25	0	0	30	25.0	0	0	40	1	0	41	42.3
Hourly Total	10	0	69	0	1	80	71.0	0	0	128	2	0	130	132.6
08:00 - 08:15	3	0	31	0	0	34	31.0	1	0	46	0	0	47	46.0
08:15 - 08:30	1	0	33	0	0	34	33.0	1	2	47	0	0	50	47.4
08:30 - 08:45	1	0	35	1	0	37	37.3	1	0	62	0	0	63	62.0
08:45 - 09:00	3	0	32	0	0	35	32.0	0	0	54	0	0	54	54.0
Hourly Total	8	0	131	1	0	140	133.3	3	2	209	0	0	214	209.4
09:00 - 09:15	5	0	29	0	1	35	31.0	0	0	25	2	0	27	29.6
09:15 - 09:30	0	0	26	0	0	26	26.0	1	0	25	0	0	26	25.0
09:30 - 09:45	2	0	27	0	0	29	27.0	0	0	26	0	0	26	26.0
09:45 - 10:00	0	0	24	0	0	24	24.0	0	0	22	0	0	22	22.0
Hourly Total	7	0	106	0	1	114	108.0	1	0	98	2	0	101	102.6

TOTAL	25	0	306	1	2	334	312.3	4	2	435	4	0	445	444.6
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16:00 - 16:15	1	0	33	0	0	34	33.0	3	1	44	1	0	49	46.5
16:15 - 16:30	0	0	35	0	0	35	35.0	0	0	38	0	0	38	38.0
16:30 - 16:45	4	0	37	0	0	41	37.0	1	0	33	0	0	34	33.0
16:45 - 17:00	0	1	40	0	0	41	40.2	1	1	40	0	0	42	40.2
Hourly Total	5	1	145	0	0	151	145.2	5	2	155	1	0	163	157.7
17:00 - 17:15	0	0	36	0	1	37	38.0	1	0	37	0	0	38	37.0
17:15 - 17:30	2	0	32	0	0	34	32.0	0	0	42	0	0	42	42.0
17:30 - 17:45	0	0	34	0	0	34	34.0	0	0	38	0	0	38	38.0
17:45 - 18:00	0	0	31	0	0	31	31.0	1	1	39	1	0	42	41.5
Hourly Total	2	0	133	0	1	136	135.0	2	1	156	1	0	160	158.5
18:00 - 18:15	1	0	29	0	0	30	29.0	0	0	35	0	0	35	35.0
18:15 - 18:30	0	0	32	0	0	32	32.0	1	0	29	0	0	30	29.0
18:30 - 18:45	2	1	28	0	0	31	28.2	0	0	26	0	0	26	26.0
18:45 - 19:00	0	0	24	0	0	24	24.0	0	0	24	1	0	25	26.3
Hourly Total	3	1	113	0	0	117	113.2	1	0	114	1	0	116	116.3

TOTAL	10	2	391	0	1	404	393.4	8	3	425	3	0	439	432.5
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PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	2
705	2
710	0
715	2
720	2
725	2
730	3
735	2
740	0
745	3
750	3
755	3
800	2
805	3
810	2
815	3
820	3
825	3
830	4
835	2
840	3
845	4
850	4
855	4
900	2
905	4
910	3
915	3
920	3
925	3
930	2
935	0
940	3
945	2
950	2
955	0

TIME	Queue Lengths (Vehicles)
1600	3
1605	2
1610	3
1615	4
1620	4
1625	3
1630	4
1635	4
1640	6
1645	5
1650	5
1655	6
1700	5
1705	5
1710	5
1715	4
1720	6
1725	5
1730	5
1735	5
1740	5
1745	4
1750	3
1755	4
1800	3
1805	3
1810	3
1815	4
1820	4
1825	3
1830	3
1835	3
1840	3
1845	3
1850	3
1855	3

Matson, Tuesday 18th January 2022

Junction: 2
Approach: Wheatway



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

	Left to Painswick Road (South)							Right to Painswick Road (North)						
TIME	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	20	0	1	21	22.0	1	0	21	0	0	22	21.0
07:15 - 07:30	0	0	21	0	1	22	23.0	2	0	28	0	0	30	28.0
07:30 - 07:45	0	0	37	0	0	37	37.0	1	0	34	0	0	35	34.0
07:45 - 08:00	0	0	42	0	1	43	44.0	0	0	39	0	0	39	39.0
Hourly Total	0	0	120	0	3	123	126.0	4	0	122	0	0	126	122.0
08:00 - 08:15	0	0	51	0	1	52	53.0	0	0	49	0	0	49	49.0
08:15 - 08:30	0	0	47	0	0	47	47.0	1	0	46	0	0	47	46.0
08:30 - 08:45	0	0	36	0	1	37	38.0	1	0	38	0	0	39	38.0
08:45 - 09:00	0	0	22	0	1	23	24.0	0	0	32	0	0	32	32.0
Hourly Total	0	0	156	0	3	159	162.0	2	0	165	0	0	167	165.0
09:00 - 09:15	0	0	25	0	0	25	25.0	1	0	34	0	0	35	34.0
09:15 - 09:30	0	0	22	0	0	22	22.0	0	0	29	0	1	30	31.0
09:30 - 09:45	0	0	23	0	1	24	25.0	4	0	28	0	0	32	28.0
09:45 - 10:00	0	0	21	0	1	22	23.0	0	0	25	0	0	25	25.0
Hourly Total	0	0	91	0	2	93	95.0	5	0	116	0	1	122	118.0

TOTAL	0	0	367	0	8	375	383.0	11	0	403	0	1	415	405.0
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16:00 - 16:15	0	0	28	0	2	30	32.0	2	0	30	0	0	32	30.0
16:15 - 16:30	0	0	27	0	0	27	27.0	3	0	33	0	0	36	33.0
16:30 - 16:45	0	0	30	0	0	30	30.0	2	0	36	0	1	39	38.0
16:45 - 17:00	0	0	24	0	0	24	24.0	8	0	43	0	0	51	43.0
Hourly Total	0	0	109	0	2	111	113.0	15	0	142	0	1	158	144.0
17:00 - 17:15	0	0	28	0	1	29	30.0	0	0	49	0	0	49	49.0
17:15 - 17:30	0	0	30	0	0	30	30.0	2	1	51	0	0	54	51.2
17:30 - 17:45	0	0	29	0	1	30	31.0	0	0	43	0	0	43	43.0
17:45 - 18:00	0	0	27	0	0	27	27.0	0	1	40	0	0	41	40.2
Hourly Total	0	0	114	0	2	116	118.0	2	2	183	0	0	187	183.4
18:00 - 18:15	0	0	22	0	1	23	24.0	1	0	38	0	0	39	38.0
18:15 - 18:30	0	0	26	0	0	26	26.0	0	1	32	0	0	33	32.2
18:30 - 18:45	0	0	19	0	0	19	19.0	0	0	27	0	0	27	27.0
18:45 - 19:00	0	0	16	0	0	16	16.0	0	0	30	0	0	30	30.0
Hourly Total	0	0	83	0	1	84	85.0	1	1	127	0	0	129	127.2

TOTAL	0	0	306	0	5	311	316.0	18	3	452	0	1	474	454.6
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PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	3
705	5
710	4
715	5
720	5
725	5
730	4
735	6
740	5
745	6
750	6
755	7
800	5
805	8
810	7
815	8
820	8
825	8
830	7
835	7
840	7
845	7
850	7
855	5
900	7
905	6
910	7
915	5
920	5
925	3
930	5
935	4
940	5
945	3
950	3
955	4

TIME	Queue Lengths (Vehicles)
1600	5
1605	6
1610	5
1615	7
1620	7
1625	5
1630	6
1635	7
1640	6
1645	7
1650	7
1655	8
1700	7
1705	7
1710	9
1715	9
1720	9
1725	9
1730	6
1735	9
1740	8
1745	8
1750	8
1755	8
1800	6
1805	7
1810	7
1815	5
1820	7
1825	6
1830	6
1835	5
1840	6
1845	6
1850	6
1855	6

Matson, Tuesday 18th January 2022

Junction: 2
Approach: Painswick Road South



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Ahead to Painswick Road (North)							Right to Wheatway						
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	16	0	0	16	16.0	0	0	11	1	0	12	13.3
07:15 - 07:30	0	0	18	0	0	18	18.0	0	0	13	0	0	13	13.0
07:30 - 07:45	0	0	31	0	0	31	31.0	0	0	15	0	0	15	15.0
07:45 - 08:00	1	0	44	0	0	45	44.0	0	0	19	0	0	19	19.0
Hourly Total	1	0	109	0	0	110	109.0	0	0	58	1	0	59	60.3
08:00 - 08:15	0	0	57	0	0	57	57.0	0	0	25	0	0	25	25.0
08:15 - 08:30	0	0	45	1	0	46	47.3	0	0	28	0	0	28	28.0
08:30 - 08:45	2	0	45	0	0	47	45.0	0	0	30	0	0	30	30.0
08:45 - 09:00	1	0	29	0	0	30	29.0	0	0	36	0	0	36	36.0
Hourly Total	3	0	176	1	0	180	178.3	0	0	119	0	0	119	119.0
09:00 - 09:15	1	2	26	0	0	29	26.4	0	0	30	0	0	30	30.0
09:15 - 09:30	3	0	19	0	0	22	19.0	1	0	26	0	0	27	26.0
09:30 - 09:45	0	0	23	0	0	23	23.0	0	0	18	0	0	18	18.0
09:45 - 10:00	1	0	22	0	0	23	22.0	0	0	14	0	0	14	14.0
Hourly Total	5	2	90	0	0	97	90.4	1	0	88	0	0	89	88.0
TOTAL	9	2	375	1	0	387	377.7	1	0	265	1	0	267	267.3
16:00 - 16:15	1	0	40	0	0	41	40.0	0	0	35	0	0	35	35.0
16:15 - 16:30	3	0	44	0	0	47	44.0	3	0	37	0	0	40	37.0
16:30 - 16:45	1	0	55	0	0	56	55.0	0	0	40	0	0	40	40.0
16:45 - 17:00	0	0	58	0	0	58	58.0	0	0	42	0	0	42	42.0
Hourly Total	5	0	197	0	0	202	197.0	3	0	154	0	0	157	154.0
17:00 - 17:15	0	0	51	0	0	51	51.0	0	0	48	0	0	48	48.0
17:15 - 17:30	1	0	55	1	0	57	57.3	0	0	39	0	0	39	39.0
17:30 - 17:45	0	0	46	0	1	47	48.0	0	0	36	0	0	36	36.0
17:45 - 18:00	0	0	43	0	0	43	43.0	0	0	29	0	0	29	29.0
Hourly Total	1	0	195	1	1	198	199.3	0	0	152	0	0	152	152.0
18:00 - 18:15	0	0	38	0	0	38	38.0	0	1	23	0	0	24	23.2
18:15 - 18:30	1	1	29	0	0	31	29.2	0	0	18	0	0	18	18.0
18:30 - 18:45	1	0	27	0	1	29	29.0	0	0	15	0	0	15	15.0
18:45 - 19:00	0	0	24	0	0	24	24.0	0	0	11	1	0	12	13.3
Hourly Total	2	1	118	0	1	122	120.2	0	1	67	1	0	69	69.5
TOTAL	8	1	510	1	2	522	516.5	3	1	373	1	0	378	375.5

PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	0
705	0
710	2
715	2
720	2
725	0
730	3
735	2
740	3
745	3
750	3
755	3
800	4
805	2
810	3
815	5
820	5
825	4
830	5
835	3
840	5
845	5
850	6
855	6
900	4
905	4
910	4
915	3
920	4
925	3
930	3
935	3
940	2
945	2
950	2
955	2

TIME	Queue Lengths (Vehicles)
1600	4
1605	5
1610	5
1615	5
1620	4
1625	5
1630	5
1635	5
1640	6
1645	6
1650	5
1655	6
1700	6
1705	8
1710	7
1715	7
1720	7
1725	7
1730	5
1735	4
1740	5
1745	5
1750	5
1755	5
1800	3
1805	3
1810	3
1815	3
1820	2
1825	3
1830	2
1835	2
1840	2
1845	2
1850	2
1855	2

Matson, Tuesday 18th January 2022

From: 1) 07:00

To: 1) 10:00

Class: All Vehicles

Show Peak Hour: ☐

Show PCUs: ☒

Show Session 2

PCUs in red



Painswick Road (North)	
To C	To B
445	334
444.6	312.3



405	415	To A	Wheatway
383	375	To C	

377.7	267.3
387	267
To A	To B
Painswick Road (South)	

Matson, Tuesday 18th January 2022

Junction: 3
Approach: Painswick Road



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Ahead to Upton Hill							Right to Corncroft Lane						
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	1	0	22	0	1	24	24.0	0	0	18	0	0	18	18.0
07:15 - 07:30	2	0	30	0	0	32	30.0	0	0	29	0	0	29	29.0
07:30 - 07:45	0	0	35	0	1	36	37.0	1	0	33	1	0	35	35.3
07:45 - 08:00	0	0	42	1	1	44	46.3	0	0	40	0	0	40	40.0
Hourly Total	3	0	129	1	3	136	137.3	1	0	120	1	0	122	122.3
08:00 - 08:15	0	0	52	0	1	53	54.0	0	0	45	0	0	45	45.0
08:15 - 08:30	0	2	55	0	0	57	55.4	1	0	39	0	0	40	39.0
08:30 - 08:45	1	0	61	0	1	63	63.0	0	0	36	0	0	36	36.0
08:45 - 09:00	0	0	47	0	0	47	47.0	0	0	29	0	0	29	29.0
Hourly Total	1	2	215	0	2	220	219.4	1	0	149	0	0	150	149.0
09:00 - 09:15	0	0	35	1	1	37	39.3	0	0	15	1	0	16	17.3
09:15 - 09:30	0	0	30	0	0	30	30.0	0	0	17	0	0	17	17.0
09:30 - 09:45	0	0	27	0	1	28	29.0	0	0	20	0	0	20	20.0
09:45 - 10:00	0	0	23	0	1	24	25.0	0	0	21	0	0	21	21.0
Hourly Total	0	0	115	1	3	119	123.3	0	0	73	1	0	74	75.3

TOTAL	4	2	459	2	8	475	480.0	2	0	342	2	0	346	346.6
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16:00 - 16:15	1	1	35	1	1	39	39.5	0	0	37	0	0	37	37.0
16:15 - 16:30	0	0	33	0	1	34	35.0	2	0	31	0	0	33	31.0
16:30 - 16:45	1	0	31	0	0	32	31.0	0	0	32	0	0	32	32.0
16:45 - 17:00	1	0	29	0	0	30	29.0	0	0	35	0	0	35	35.0
Hourly Total	3	1	128	1	2	135	134.5	2	0	135	0	0	137	135.0
17:00 - 17:15	0	1	27	0	1	29	29.2	1	0	37	0	0	38	37.0
17:15 - 17:30	0	0	30	0	0	30	30.0	0	0	40	0	0	40	40.0
17:30 - 17:45	0	0	34	0	1	35	36.0	0	0	35	0	0	35	35.0
17:45 - 18:00	0	1	32	1	0	34	34.5	1	0	33	0	0	34	33.0
Hourly Total	0	2	123	1	2	128	129.7	2	0	145	0	0	147	145.0
18:00 - 18:15	0	0	28	0	1	29	30.0	0	0	29	0	0	29	29.0
18:15 - 18:30	0	0	31	0	0	31	31.0	0	0	22	0	0	22	22.0
18:30 - 18:45	0	0	28	0	0	28	28.0	0	0	18	0	0	18	18.0
18:45 - 19:00	0	0	25	1	0	26	27.3	0	0	16	0	0	16	16.0
Hourly Total	0	0	112	1	1	114	116.3	0	0	85	0	0	85	85.0

TOTAL	3	3	363	3	5	377	380.5	4	0	365	0	0	369	365.0
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PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

Matson, Tuesday 18th January 2022

Junction: 3
Approach: Upton Hill



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

	Left to Corncroft Lane							Ahead to Painswick Road						
TIME	PED	CYCLE	LGW	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGW	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	3	0	0	3	3.0	0	0	13	1	0	14	15.3
07:15 - 07:30	0	0	7	0	0	7	7.0	0	0	16	0	0	16	16.0
07:30 - 07:45	0	0	10	0	0	10	10.0	0	0	29	0	0	29	29.0
07:45 - 08:00	0	0	12	0	0	12	12.0	0	0	41	0	0	41	41.0
Hourly Total	0	0	32	0	0	32	32.0	0	0	99	1	0	100	101.3
08:00 - 08:15	0	0	21	0	0	21	21.0	0	0	50	0	0	50	50.0
08:15 - 08:30	0	0	19	0	0	19	19.0	0	0	35	1	0	36	37.3
08:30 - 08:45	0	0	18	0	0	18	18.0	1	0	29	0	0	30	29.0
08:45 - 09:00	0	0	13	0	0	13	13.0	0	0	27	0	0	27	27.0
Hourly Total	0	0	71	0	0	71	71.0	1	0	141	1	0	143	143.3
09:00 - 09:15	0	0	8	0	0	8	8.0	1	2	28	0	0	31	28.4
09:15 - 09:30	0	0	10	0	0	10	10.0	2	0	25	0	0	27	25.0
09:30 - 09:45	0	0	9	0	0	9	9.0	0	0	27	0	0	27	27.0
09:45 - 10:00	0	0	7	0	0	7	7.0	0	0	26	0	0	26	26.0
Hourly Total	0	0	34	0	0	34	34.0	3	2	106	0	0	111	106.4

TOTAL	0	0	137	0	0	137	137.0	4	2	346	2	0	354	351.0
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16:00 - 16:15	0	0	17	0	0	17	17.0	1	0	38	0	0	39	38.0
16:15 - 16:30	0	0	19	0	0	19	19.0	3	0	42	0	0	45	42.0
16:30 - 16:45	0	0	22	0	0	22	22.0	0	0	53	0	0	53	53.0
16:45 - 17:00	0	0	18	0	0	18	18.0	0	0	60	0	0	60	60.0
Hourly Total	0	0	76	0	0	76	76.0	4	0	193	0	0	197	193.0
17:00 - 17:15	0	0	15	0	0	15	15.0	0	0	62	0	0	62	62.0
17:15 - 17:30	0	0	17	0	0	17	17.0	0	0	55	1	0	56	57.3
17:30 - 17:45	0	0	13	0	0	13	13.0	1	0	48	0	1	50	50.0
17:45 - 18:00	0	0	11	0	0	11	11.0	0	0	42	0	0	42	42.0
Hourly Total	0	0	56	0	0	56	56.0	1	0	207	1	1	210	211.3
18:00 - 18:15	0	0	9	0	0	9	9.0	0	1	33	0	0	34	33.2
18:15 - 18:30	0	0	7	0	0	7	7.0	1	0	24	0	0	25	24.0
18:30 - 18:45	0	0	6	0	0	6	6.0	0	0	19	0	1	20	21.0
18:45 - 19:00	0	0	3	0	0	3	3.0	0	0	17	1	0	18	19.3
Hourly Total	0	0	25	0	0	25	25.0	1	1	93	1	1	97	97.5

TOTAL	0	0	157	0	0	157	157.0	6	1	493	2	2	504	501.8
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PCU Factors:	
PED	0.0
CYCLE	0.2
LGW	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

Matson, Tuesday 18th January 2022

Junction: 3
Approach: Corncroft Lane



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

	Left to Painswick Road							Right to Upton Hill						
TIME	PED	CYCLE	LGW	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGW	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	13	0	0	13	13.0	0	0	5	0	0	5	5.0
07:15 - 07:30	0	0	14	0	0	14	14.0	0	0	8	0	0	8	8.0
07:30 - 07:45	1	0	18	0	0	19	18.0	0	0	14	0	0	14	14.0
07:45 - 08:00	1	0	24	0	0	25	24.0	0	0	10	0	0	10	10.0
Hourly Total	2	0	69	0	0	71	69.0	0	0	37	0	0	37	37.0
08:00 - 08:15	0	0	32	0	0	32	32.0	0	0	12	0	0	12	12.0
08:15 - 08:30	2	0	39	0	0	41	39.0	0	0	16	0	0	16	16.0
08:30 - 08:45	0	0	46	0	0	46	46.0	0	0	28	0	0	28	28.0
08:45 - 09:00	0	0	35	0	0	35	35.0	0	0	14	0	0	14	14.0
Hourly Total	2	0	152	0	0	154	152.0	0	0	70	0	0	70	70.0
09:00 - 09:15	1	0	27	0	0	28	27.0	0	0	9	0	0	9	9.0
09:15 - 09:30	1	0	20	0	0	21	20.0	0	0	8	0	0	8	8.0
09:30 - 09:45	0	0	15	0	0	15	15.0	0	0	7	0	0	7	7.0
09:45 - 10:00	0	0	11	0	0	11	11.0	0	0	6	0	0	6	6.0
Hourly Total	2	0	73	0	0	75	73.0	0	0	30	0	0	30	30.0

TOTAL	6	0	294	0	0	300	294.0	0	0	137	0	0	137	137.0
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16:00 - 16:15	1	0	37	0	0	38	37.0	0	0	8	0	0	8	8.0
16:15 - 16:30	2	0	39	0	0	41	39.0	0	0	10	0	0	10	10.0
16:30 - 16:45	0	0	43	0	0	43	43.0	0	0	11	0	0	11	11.0
16:45 - 17:00	1	0	39	0	0	40	39.0	0	0	14	0	0	14	14.0
Hourly Total	4	0	158	0	0	162	158.0	0	0	43	0	0	43	43.0
17:00 - 17:15	0	0	36	0	0	36	36.0	0	0	13	0	0	13	13.0
17:15 - 17:30	0	0	39	0	0	39	39.0	0	0	11	0	0	11	11.0
17:30 - 17:45	0	0	34	0	0	34	34.0	0	0	13	0	0	13	13.0
17:45 - 18:00	0	0	30	0	0	30	30.0	0	0	8	0	0	8	8.0
Hourly Total	0	0	139	0	0	139	139.0	0	0	45	0	0	45	45.0
18:00 - 18:15	0	0	29	0	0	29	29.0	0	0	10	0	0	10	10.0
18:15 - 18:30	1	1	21	0	0	23	21.2	0	0	12	0	0	12	12.0
18:30 - 18:45	0	0	23	0	0	23	23.0	0	0	9	0	0	9	9.0
18:45 - 19:00	0	0	18	0	0	18	18.0	0	0	8	0	0	8	8.0
Hourly Total	1	1	91	0	0	93	91.2	0	0	39	0	0	39	39.0

TOTAL	5	1	388	0	0	394	388.2	0	0	127	0	0	127	127.0
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PCU Factors:	
PED	0.0
CYCLE	0.2
LGW	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	3
740	2
745	4
750	2
755	3
800	4
805	4
810	5
815	4
820	4
825	5
830	3
835	6
840	5
845	6
850	6
855	6
900	5
905	3
910	4
915	0
920	0
925	3
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
1600	2
1605	4
1610	3
1615	3
1620	3
1625	5
1630	2
1635	6
1640	4
1645	3
1650	5
1655	5
1700	3
1705	3
1710	4
1715	2
1720	5
1725	5
1730	3
1735	4
1740	4
1745	3
1750	2
1755	3
1800	0
1805	3
1810	2
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

Matson, Tuesday 18th January 2022

From: 1) 07:00

To: 1) 10:00

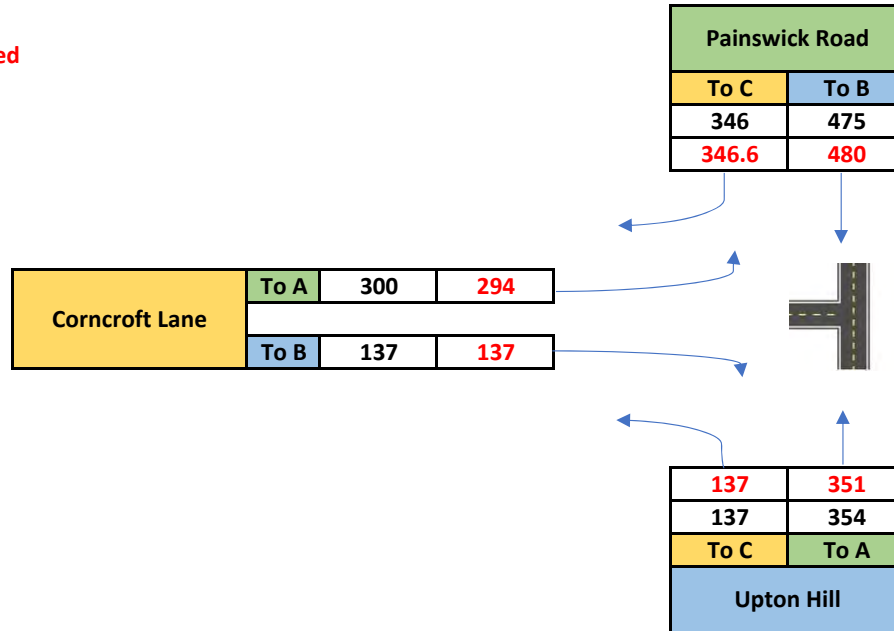
Class: All Vehicles

Show Peak Hour: ☐

Show PCUs: ☒

Show Session 2

PCUs in red



Matson, Tuesday 18th January 2022

Junction: 4
Approach: Winnycroft Lane North



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Left to Farm Access								Ahead to Winnycroft Lane (South)								Right to Matson Lane							
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs			
07:00 - 07:15	0	0	0	0	0	0	0.0	0	0	20	0	0	20	20.0	0	0	0	0	0	0	0.0			
07:15 - 07:30	0	0	0	0	0	0	0.0	0	0	27	0	0	27	27.0	0	0	0	0	0	0	0.0			
07:30 - 07:45	0	0	0	0	0	0	0.0	0	0	33	0	0	33	33.0	0	0	0	0	0	0	0.0			
07:45 - 08:00	0	0	0	0	0	0	0.0	0	0	55	0	0	55	55.0	0	0	0	0	0	0	0.0			
Hourly Total	0	0	0	0	0	0	0.0	0	0	135	0	0	135	135.0	0	0	0	0	0	0	0.0			
08:00 - 08:15	0	0	0	0	0	0	0.0	0	0	75	0	0	75	75.0	0	0	0	0	0	0	0.0			
08:15 - 08:30	0	0	0	0	0	0	0.0	0	0	60	0	0	60	60.0	0	0	0	0	0	0	0.0			
08:30 - 08:45	0	0	0	0	0	0	0.0	0	0	71	0	0	71	71.0	0	0	0	0	0	0	0.0			
08:45 - 09:00	0	0	0	0	0	0	0.0	0	0	42	0	0	42	42.0	0	0	0	0	0	0	0.0			
Hourly Total	0	0	0	0	0	0	0.0	0	0	248	0	0	248	248.0	0	0	0	0	0	0	0.0			
09:00 - 09:15	0	0	0	0	0	0	0.0	0	0	25	0	0	25	25.0	0	0	0	0	0	0	0.0			
09:15 - 09:30	0	0	0	0	0	0	0.0	0	0	16	0	0	16	16.0	0	0	0	0	0	0	0.0			
09:30 - 09:45	0	0	0	0	0	0	0.0	2	0	36	0	0	38	36.0	0	0	0	0	0	0	0.0			
09:45 - 10:00	0	0	0	0	0	0	0.0	0	0	24	0	0	24	24.0	0	0	0	0	0	0	0.0			
Hourly Total	0	0	0	0	0	0	0.0	2	0	101	0	0	103	101.0	0	0	0	0	0	0	0.0			
TOTAL	0	0	0	0	0	0	0.0	2	0	484	0	0	486	484.0	0	0	0	0	0	0	0.0			
16:00 - 16:15	0	0	0	0	0	0	0.0	0	0	38	0	0	38	38.0	0	0	0	0	0	0	0.0			
16:15 - 16:30	0	0	0	0	0	0	0.0	0	0	36	0	0	36	36.0	0	0	1	0	0	0	1.0			
16:30 - 16:45	0	0	0	0	0	0	0.0	0	0	43	0	0	43	43.0	0	0	1	0	0	0	1.0			
16:45 - 17:00	0	0	0	0	0	0	0.0	0	0	32	0	0	32	32.0	0	0	0	0	0	0	0.0			
Hourly Total	0	0	0	0	0	0	0.0	0	0	149	0	0	149	149.0	0	0	2	0	0	0	2.0			
17:00 - 17:15	0	0	0	0	0	0	0.0	0	0	36	0	0	36	36.0	0	0	0	0	0	0	0.0			
17:15 - 17:30	0	0	0	0	0	0	0.0	0	0	37	0	0	37	37.0	0	0	0	0	0	0	0.0			
17:30 - 17:45	0	0	0	0	0	0	0.0	0	0	32	0	0	32	32.0	0	0	0	0	0	0	0.0			
17:45 - 18:00	0	0	0	0	0	0	0.0	0	0	25	0	0	25	25.0	0	0	0	0	0	0	0.0			
Hourly Total	0	0	0	0	0	0	0.0	0	0	130	0	0	130	130.0	0	0	0	0	0	0	0.0			
18:00 - 18:15	0	0	0	0	0	0	0.0	0	0	16	0	0	16	16.0	0	0	0	0	0	0	0.0			
18:15 - 18:30	0	0	0	0	0	0	0.0	0	0	19	0	0	19	19.0	0	0	0	0	0	0	0.0			
18:30 - 18:45	0	0	0	0	0	0	0.0	0	0	14	0	0	14	14.0	0	0	0	0	0	0	0.0			
18:45 - 19:00	0	0	0	0	0	0	0.0	0	0	17	0	0	17	17.0	0	0	1	0	0	0	1.0			
Hourly Total	0	0	0	0	0	0	0.0	0	0	66	0	0	66	66.0	0	0	1	0	0	0	1.0			
TOTAL	0	0	0	0	0	0	0.0	0	0	345	0	0	345	345.0	0	0	3	0	0	0	3.0			

PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

Matson, Tuesday 18th January 2022

Junction: 4
Approach: Farm Access



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Left to Winnycroft Lane (South)								Ahead to Matson Lane								Right to Winnycroft Lane (North)							
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs		PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs		PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	
07:00 - 07:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
07:15 - 07:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
07:30 - 07:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
07:45 - 08:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
08:00 - 08:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
08:15 - 08:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
08:30 - 08:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
08:45 - 09:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
09:00 - 09:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
09:15 - 09:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
09:30 - 09:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
09:45 - 10:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
TOTAL	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
16:00 - 16:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
16:15 - 16:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
16:30 - 16:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
16:45 - 17:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
17:00 - 17:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
17:15 - 17:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
17:30 - 17:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
17:45 - 18:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
18:00 - 18:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
18:15 - 18:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
18:30 - 18:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
18:45 - 19:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0
TOTAL	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0	0.0

PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

Matson, Tuesday 18th January 2022

Junction: 4
Approach: Winnycroft Lane South



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Left to Matson Lane							Ahead to Winnycroft Lane (North)							Right to Farm Access						
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	0	0	0	0	0.0	0	0	10	0	0	10	10.0	0	0	0	0	0	0	0.0
07:15 - 07:30	0	0	0	0	0	0	0.0	0	0	15	0	0	15	15.0	0	0	0	0	0	0	0.0
07:30 - 07:45	0	0	1	0	0	1	1.0	0	0	19	0	0	19	19.0	0	0	0	0	0	0	0.0
07:45 - 08:00	0	0	7	0	0	7	7.0	0	0	20	0	0	20	20.0	0	0	0	0	0	0	0.0
Hourly Total	0	0	8	0	0	8	8.0	0	0	64	0	0	64	64.0	0	0	0	0	0	0	0.0
08:00 - 08:15	0	0	6	0	0	6	6.0	0	0	25	0	0	25	25.0	0	0	0	0	0	0	0.0
08:15 - 08:30	0	0	10	0	0	10	10.0	1	0	45	0	0	46	45.0	0	0	0	0	0	0	0.0
08:30 - 08:45	0	0	4	0	0	4	4.0	0	1	59	0	0	60	59.2	0	0	0	0	0	0	0.0
08:45 - 09:00	0	0	7	0	0	7	7.0	0	0	43	0	0	43	43.0	0	0	0	0	0	0	0.0
Hourly Total	0	0	27	0	0	27	27.0	1	1	172	0	0	174	172.2	0	0	0	0	0	0	0.0
09:00 - 09:15	0	0	3	0	0	3	3.0	0	0	33	0	0	33	33.0	0	0	0	0	0	0	0.0
09:15 - 09:30	0	0	4	0	0	4	4.0	0	0	14	0	0	14	14.0	0	0	0	0	0	0	0.0
09:30 - 09:45	0	0	2	0	0	2	2.0	0	0	36	0	0	36	36.0	0	0	0	0	0	0	0.0
09:45 - 10:00	0	0	2	0	0	2	2.0	0	0	21	0	0	21	21.0	0	0	0	0	0	0	0.0
Hourly Total	0	0	11	0	0	11	11.0	0	0	104	0	0	104	104.0	0	0	0	0	0	0	0.0
TOTAL	0	0	46	0	0	46	46.0	1	1	340	0	0	342	340.2	0	0	0	0	0	0	0.0
16:00 - 16:15	0	1	6	0	0	7	6.2	0	0	49	0	0	49	49.0	0	0	0	0	0	0	0.0
16:15 - 16:30	0	0	7	0	0	7	7.0	2	0	50	0	0	52	50.0	0	0	0	0	0	0	0.0
16:30 - 16:45	0	0	7	0	0	7	7.0	0	0	54	0	0	54	54.0	0	0	0	0	0	0	0.0
16:45 - 17:00	2	0	3	0	0	5	3.0	0	0	57	0	0	57	57.0	0	0	0	0	0	0	0.0
Hourly Total	2	1	23	0	0	26	23.2	2	0	210	0	0	212	210.0	0	0	0	0	0	0	0.0
17:00 - 17:15	0	0	4	0	0	4	4.0	0	0	43	0	0	43	43.0	0	0	0	0	0	0	0.0
17:15 - 17:30	0	0	8	0	0	8	8.0	0	0	60	0	0	60	60.0	0	0	0	0	0	0	0.0
17:30 - 17:45	0	0	5	0	0	5	5.0	0	0	37	0	0	37	37.0	0	0	0	0	0	0	0.0
17:45 - 18:00	0	0	2	0	0	2	2.0	0	0	31	0	0	31	31.0	0	0	0	0	0	0	0.0
Hourly Total	0	0	19	0	0	19	19.0	0	0	171	0	0	171	171.0	0	0	0	0	0	0	0.0
18:00 - 18:15	0	0	1	0	0	1	1.0	0	0	26	0	0	26	26.0	0	0	0	0	0	0	0.0
18:15 - 18:30	0	0	0	0	0	0	0.0	0	0	23	0	0	23	23.0	0	0	0	0	0	0	0.0
18:30 - 18:45	0	0	0	0	0	0	0.0	0	0	11	0	0	11	11.0	0	0	0	0	0	0	0.0
18:45 - 19:00	0	0	2	0	0	2	2.0	0	0	6	0	0	6	6.0	0	0	0	0	0	0	0.0
Hourly Total	0	0	3	0	0	3	3.0	0	0	66	0	0	66	66.0	0	0	0	0	0	0	0.0
TOTAL	2	1	45	0	0	48	45.2	2	0	447	0	0	449	447.0	0	0	0	0	0	0	0.0

PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

Matson, Tuesday 18th January 2022

Junction: 4
Approach: Matson Lane



Queues Measured as Stationary Vehicles (Maximum Queue every 5 Minutes)

TIME	Left to Winnycroft Lane (North)								Ahead to Farm Access								Right to Winnycroft Lane (South)							
	PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs		PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs		PED	CYCLE	LGV	HEAVY	BUS	TOTAL	PCUs	
07:00 - 07:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	1	0	0	1	1.0	
07:15 - 07:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0	
07:30 - 07:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	1	0	0	1	1.0	
07:45 - 08:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	2	0	0	2	2.0	
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	4	0	0	4	4.0	
08:00 - 08:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0	
08:15 - 08:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	3	0	0	3	3.0	
08:30 - 08:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	2	0	0	2	2.0	
08:45 - 09:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	1	0	0	1	1.0	
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	6	0	0	6	6.0	
09:00 - 09:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	2	0	0	2	2.0	
09:15 - 09:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	2	0	0	2	2.0	
09:30 - 09:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	2	0	0	2	2.0	
09:45 - 10:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	1	0	0	1	1.0	
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	7	0	0	7	7.0	
TOTAL	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	17	0	0	17	17.0	
16:00 - 16:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	1	0	0	1	1.0	
16:15 - 16:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	2	0	0	2	2.0	
16:30 - 16:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	1	0	0	1	1.0	
16:45 - 17:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	3	0	0	3	3.0	
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	7	0	0	7	7.0	
17:00 - 17:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	2	0	0	2	2.0	
17:15 - 17:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	6	0	0	6	6.0	
17:30 - 17:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	3	0	0	3	3.0	
17:45 - 18:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	5	0	0	5	5.0	
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	16	0	0	16	16.0	
18:00 - 18:15	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0	
18:15 - 18:30	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	1	0	0	1	1.0	
18:30 - 18:45	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	1	0	0	1	1.0	
18:45 - 19:00	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	2	0	0	2	2.0	
Hourly Total	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	4	0	0	4	4.0	
TOTAL	0	0	0	0	0	0	0.0		0	0	0	0	0	0	0.0		0	0	27	0	0	27	27.0	

PCU Factors:	
PED	0.0
CYCLE	0.2
LGV	1.0
HEAVY	2.3
BUS	2.0

TIME	Queue Lengths (Vehicles)
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0
935	0
940	0
945	0
950	0
955	0

TIME	Queue Lengths (Vehicles)
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0
1805	0
1810	0
1815	0
1820	0
1825	0
1830	0
1835	0
1840	0
1845	0
1850	0
1855	0

Matson, Tuesday 18th January 2022

From: 1) 07:00

To: 1) 10:00

Class: All Vehicles

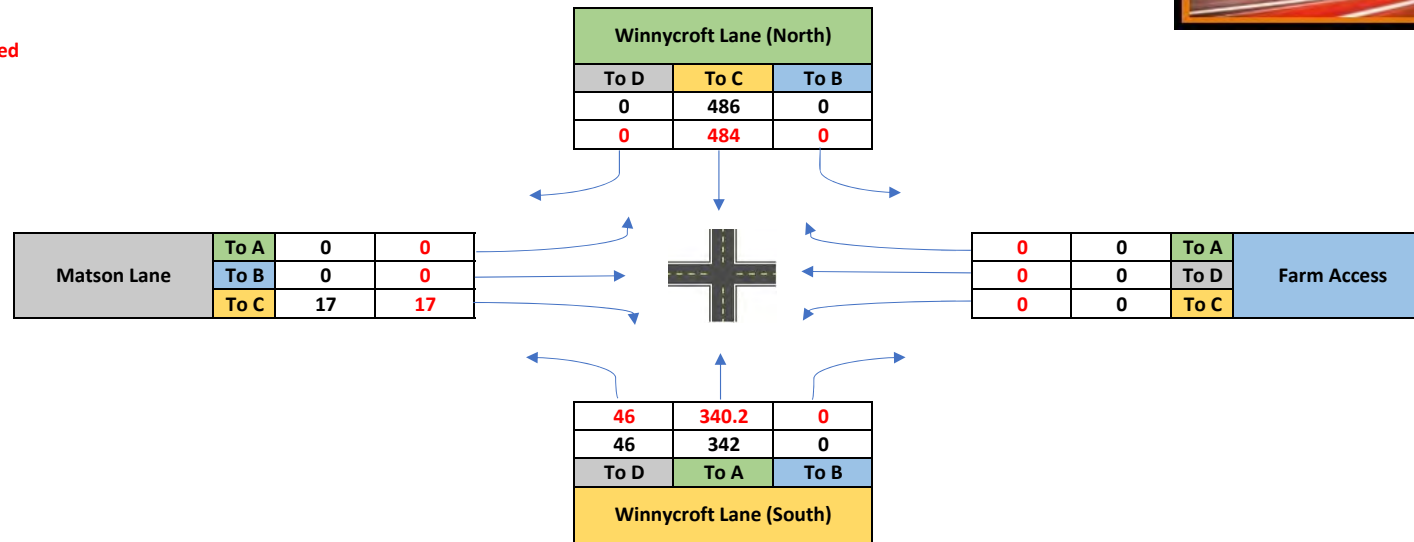
Show Peak Hour: ☐

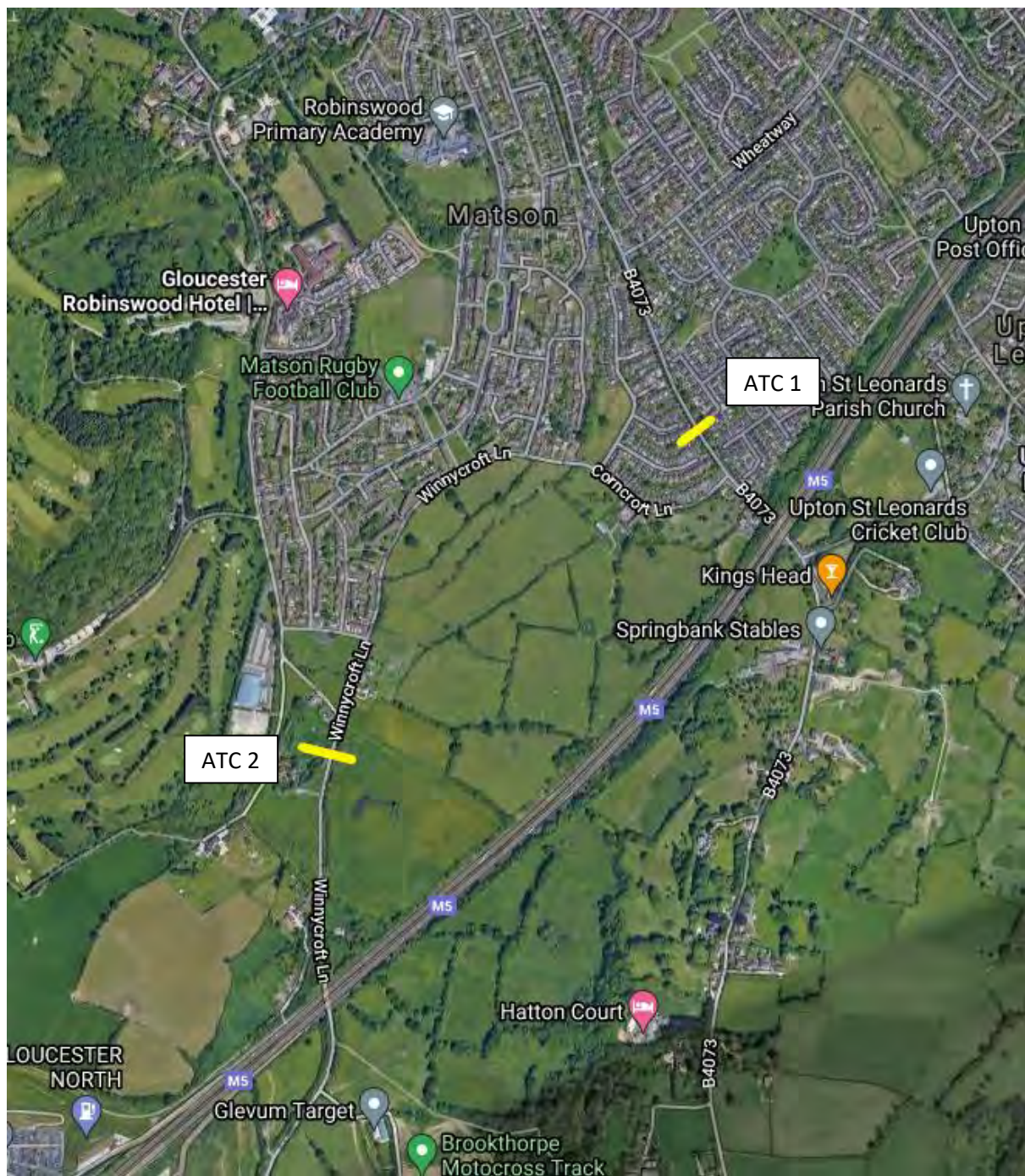
Show PCUs: ☒

Show Session 2



PCUs in red





Matson ATC 1, B4073 Painswick Road



Direction: Northbound

Hour	Tue	Wed	Thu	Fri	Sat	Sun	Mon	5-Day	7-Day
Beginning	18/01/2022	19/01/2022	20/01/2022	21/01/2022	22/01/2022	23/01/2022	24/01/2022	Ave.	Ave.
00:00	8	8	5	7	15	14	7	7	9
01:00	2	5	1	3	8	11	4	3	5
02:00	3	2	2	2	6	7	1	2	3
03:00	0	0	1	2	4	8	3	1	3
04:00	0	4	4	5	1	4	7	4	4
05:00	22	19	14	18	11	7	25	20	17
06:00	85	84	77	86	16	17	87	84	65
07:00	168	163	185	165	56	21	154	167	130
08:00	292	290	317	317	110	43	252	294	232
09:00	177	198	196	174	160	93	169	183	167
10:00	152	176	170	172	193	186	153	165	172
11:00	187	149	152	192	196	173	158	168	172
12:00	129	164	161	188	244	202	154	159	177
13:00	168	151	197	251	232	219	182	194	203
14:00	197	236	215	258	204	195	200	221	215
15:00	264	276	327	399	221	199	275	308	280
16:00	349	360	394	341	234	161	322	353	309
17:00	344	376	362	327	172	125	295	341	286
18:00	182	186	158	214	111	75	150	178	154
19:00	97	112	109	107	58	84	105	106	96
20:00	70	81	83	66	64	67	60	72	70
21:00	54	57	59	52	43	42	46	54	50
22:00	41	50	45	56	53	29	30	44	43
23:00	14	21	22	21	37	6	33	18	19
Total									
12H(7-19)	2629	2725	2834	2998	2133	1692	2464	2730	2496
18H(6-22)	2935	3059	3162	3309	2314	1902	2762	3045	2778
18H(6-24)	2990	3130	3229	3386	2404	1937	2805	3108	2840
24H(0-24)	3025	3168	3256	3423	2449	1988	2852	3145	2880
AM Peak	08:00	08:00	08:00	08:00	11:00	10:00	08:00	08:00	08:00
	292	290	317	317	196	186	252	294	232
PM Peak	16:00	17:00	16:00	15:00	12:00	13:00	16:00	16:00	16:00
	349	376	394	399	244	219	322	353	309

360 TSL Ltd

Direction: Southbound

Hour	Tue	Wed	Thu	Fri	Sat	Sun	Mon	5-Day	7-Day
Beginning	18/01/2022	19/01/2022	20/01/2022	21/01/2022	22/01/2022	23/01/2022	24/01/2022	Ave.	Ave.
00:00	7	4	11	6	7	11	3	6	7
01:00	2	5	2	6	6	12	2	3	5
02:00	5	4	2	3	7	6	5	4	5
03:00	2	1	4	6	4	8	2	3	4
04:00	3	7	9	6	8	5	7	6	6
05:00	19	20	17	26	12	8	22	21	18
06:00	82	83	74	81	31	18	79	80	64
07:00	252	285	247	241	65	43	250	255	198
08:00	362	397	397	354	140	62	348	372	294
09:00	190	210	203	192	201	136	161	191	185
10:00	137	155	161	170	202	153	135	152	159
11:00	155	146	176	168	212	187	178	165	175
12:00	175	177	183	217	239	231	165	183	198
13:00	155	185	184	199	245	238	187	182	198
14:00	223	205	197	240	226	196	200	213	212
15:00	241	242	236	273	192	193	247	248	232
16:00	268	259	259	289	202	150	256	266	240
17:00	270	275	279	251	159	122	273	270	233
18:00	195	187	213	185	135	77	163	189	165
19:00	115	142	112	105	97	68	118	118	108
20:00	83	81	75	77	45	69	84	80	73
21:00	46	62	60	66	53	33	50	57	53
22:00	39	32	44	53	46	22	28	39	38
23:00	10	8	24	26	41	10	10	16	18
Total									
12H(7-19)	2623	2723	2735	2779	2218	1778	2563	2685	2488
18H(6-22)	2949	3091	3056	3108	2444	1966	2894	3020	2787
18H(6-24)	2998	3131	3124	3187	2531	1998	2932	3074	2843
24H(0-24)	3036	3172	3169	3240	2575	2048	2973	3118	2888
AM Peak	08:00	08:00	08:00	08:00	11:00	11:00	08:00	08:00	08:00
	362	397	397	354	212	187	348	372	294
PM Peak	17:00	17:00	17:00	16:00	13:00	12:00	17:00	17:00	16:00
	270	275	279	289	245	231	273	270	240

360 TSL Ltd

Direction: Total Flow

Hour	Tue	Wed	Thu	Fri	Sat	Sun	Mon	5-Day	7-Day
Beginning	18/01/2022	19/01/2022	20/01/2022	21/01/2022	22/01/2022	23/01/2022	24/01/2022	Ave.	Ave.
00:00	15	12	16	13	22	25	10	13	16
01:00	4	10	3	9	14	23	6	6	10
02:00	8	6	4	5	13	13	6	6	8
03:00	2	1	5	8	8	16	5	4	6
04:00	3	11	13	11	9	9	14	10	10
05:00	41	39	31	44	23	15	47	40	34
06:00	167	167	151	167	47	35	166	164	129
07:00	420	448	432	406	121	64	404	422	328
08:00	654	687	714	671	250	105	600	665	526
09:00	367	408	399	366	361	229	330	374	351
10:00	289	331	331	342	395	339	288	316	331
11:00	342	295	328	360	408	360	336	332	347
12:00	304	341	344	405	483	433	319	343	376
13:00	343	336	381	450	477	447	369	376	400
14:00	420	441	412	498	430	391	400	434	427
15:00	505	518	563	672	413	392	522	556	512
16:00	617	619	653	630	436	311	578	619	549
17:00	614	651	641	578	331	247	568	610	519
18:00	377	373	371	399	246	152	313	367	319
19:00	212	254	221	212	155	152	223	224	204
20:00	153	162	158	143	109	136	144	152	144
21:00	100	119	119	118	96	75	96	110	103
22:00	80	82	89	109	99	51	58	84	81
23:00	24	29	46	47	78	16	23	34	38
Total									
12H(7-19)	5252	5448	5569	5777	4351	3470	5027	5415	4985
18H(6-22)	5884	6150	6218	6417	4758	3868	5656	6065	5564
18H(6-24)	5988	6261	6353	6573	4935	3935	5737	6182	5683
24H(0-24)	6061	6340	6425	6663	5024	4036	5825	6263	5768
AM Peak	08:00	08:00	08:00	08:00	11:00	11:00	08:00	08:00	08:00
	654	687	714	671	408	360	600	665	526
PM Peak	16:00	17:00	16:00	15:00	12:00	13:00	16:00	16:00	16:00
	617	651	653	672	483	447	578	619	549

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	3025	2844	171	1	9
Wed 19 Jan 2022	3168	2964	189	2	13
Thu 20 Jan 2022	3256	3059	182	3	12
Fri 21 Jan 2022	3423	3200	211	4	8
Sat 22 Jan 2022	2449	2346	99	1	3
Sun 23 Jan 2022	1988	1924	61	0	3
Mon 24 Jan 2022	2852	2655	182	3	12
5 Day Ave.	3145	2944	187	3	11
7 Day Ave.	2880	2713	156	2	9

Direction: Southbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	3036	2869	130	0	37
Wed 19 Jan 2022	3172	2984	153	1	34
Thu 20 Jan 2022	3169	3001	136	2	30
Fri 21 Jan 2022	3240	3097	123	3	17
Sat 22 Jan 2022	2575	2477	77	3	18
Sun 23 Jan 2022	2048	1991	49	3	5
Mon 24 Jan 2022	2973	2805	139	4	25
5 Day Ave.	3118	2951	136	2	29
7 Day Ave.	2888	2746	115	2	24

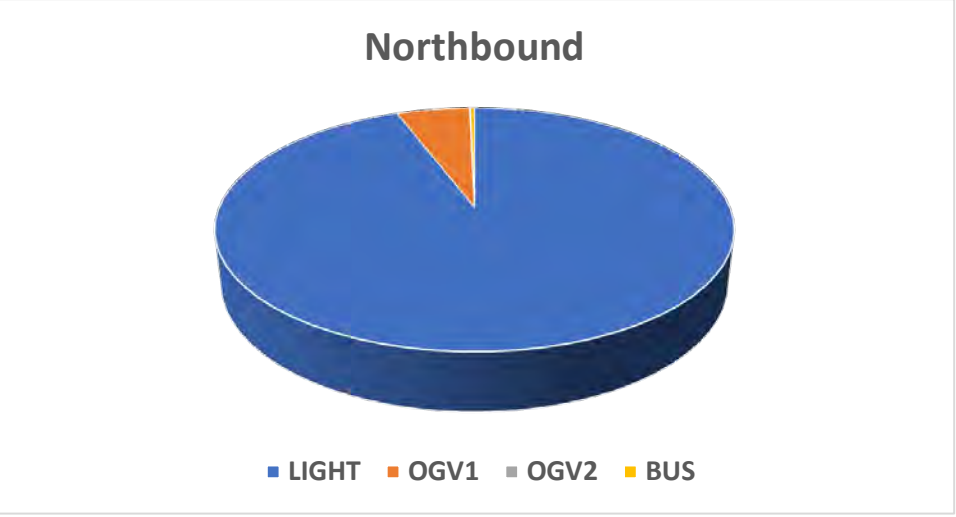
Direction: Total Flow					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	6061	5713	301	1	46
Wed 19 Jan 2022	6340	5948	342	3	47
Thu 20 Jan 2022	6425	6060	318	5	42
Fri 21 Jan 2022	6663	6297	334	7	25
Sat 22 Jan 2022	5024	4823	176	4	21
Sun 23 Jan 2022	4036	3915	110	3	8
Mon 24 Jan 2022	5825	5460	321	7	37
5 Day Ave.	6263	5896	323	5	39
7 Day Ave.	5768	5459	272	4	32

	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	100.0%	94.0%	5.7%	0.0%	0.3%
Wed 19 Jan 2022	100.0%	93.6%	6.0%	0.1%	0.4%
Thu 20 Jan 2022	100.0%	93.9%	5.6%	0.1%	0.4%
Fri 21 Jan 2022	100.0%	93.5%	6.2%	0.1%	0.2%
Sat 22 Jan 2022	100.0%	95.8%	4.0%	0.0%	0.1%
Sun 23 Jan 2022	100.0%	96.8%	3.1%	0.0%	0.2%
Mon 24 Jan 2022	100.0%	93.1%	6.4%	0.1%	0.4%
5 Day Ave.	100.0%	93.6%	5.9%	0.1%	0.3%
7 Day Ave.	100.0%	94.2%	5.4%	0.1%	0.3%

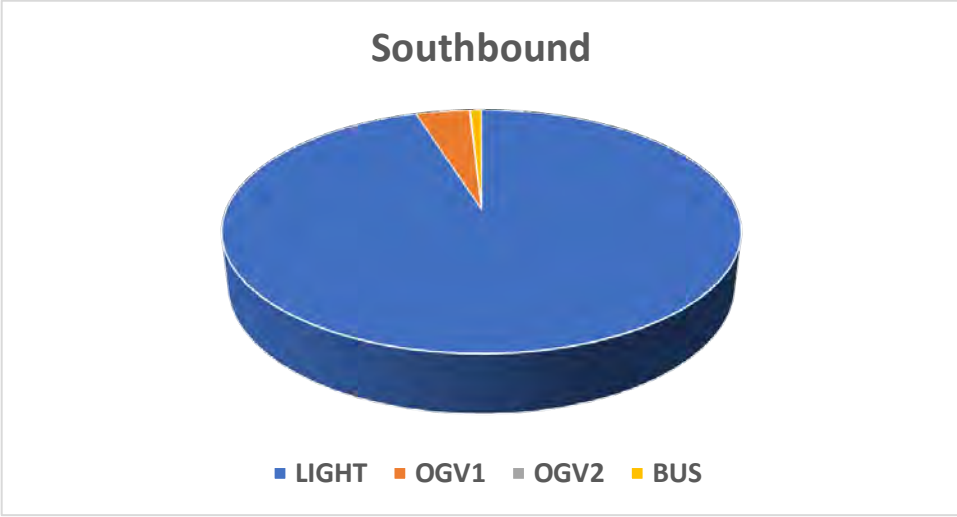
	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	100.0%	94.5%	4.3%	0.0%	1.2%
Wed 19 Jan 2022	100.0%	94.1%	4.8%	0.0%	1.1%
Thu 20 Jan 2022	100.0%	94.7%	4.3%	0.1%	0.9%
Fri 21 Jan 2022	100.0%	95.6%	3.8%	0.1%	0.5%
Sat 22 Jan 2022	100.0%	96.2%	3.0%	0.1%	0.7%
Sun 23 Jan 2022	100.0%	97.2%	2.4%	0.1%	0.2%
Mon 24 Jan 2022	100.0%	94.3%	4.7%	0.1%	0.8%
5 Day Ave.	100.0%	94.7%	4.4%	0.1%	0.9%
7 Day Ave.	100.0%	95.1%	4.0%	0.1%	0.8%

	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	100.0%	94.3%	5.0%	0.0%	0.8%
Wed 19 Jan 2022	100.0%	93.8%	5.4%	0.0%	0.7%
Thu 20 Jan 2022	100.0%	94.3%	4.9%	0.1%	0.7%
Fri 21 Jan 2022	100.0%	94.5%	5.0%	0.1%	0.4%
Sat 22 Jan 2022	100.0%	96.0%	3.5%	0.1%	0.4%
Sun 23 Jan 2022	100.0%	97.0%	2.7%	0.1%	0.2%
Mon 24 Jan 2022	100.0%	93.7%	5.5%	0.1%	0.6%
5 Day Ave.	100.0%	94.1%	5.2%	0.1%	0.6%
7 Day Ave.	100.0%	94.7%	4.7%	0.1%	0.6%

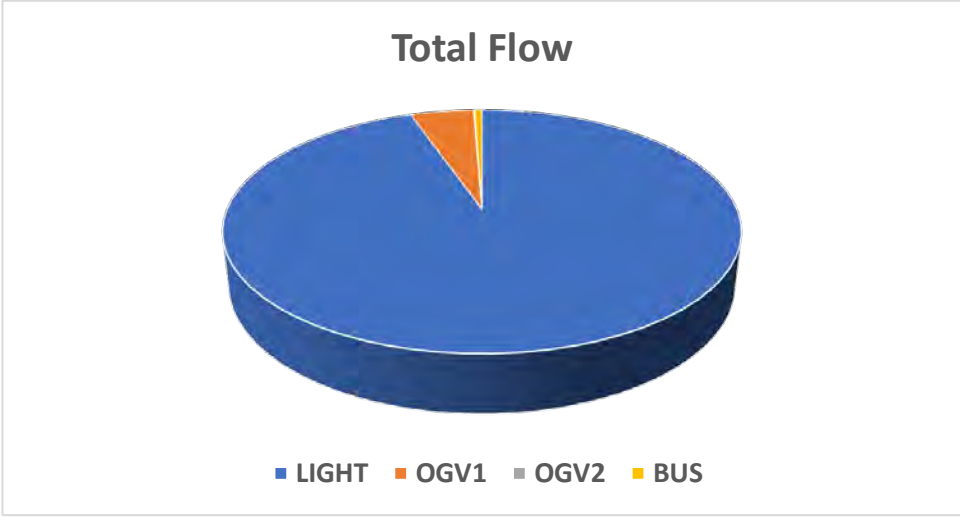
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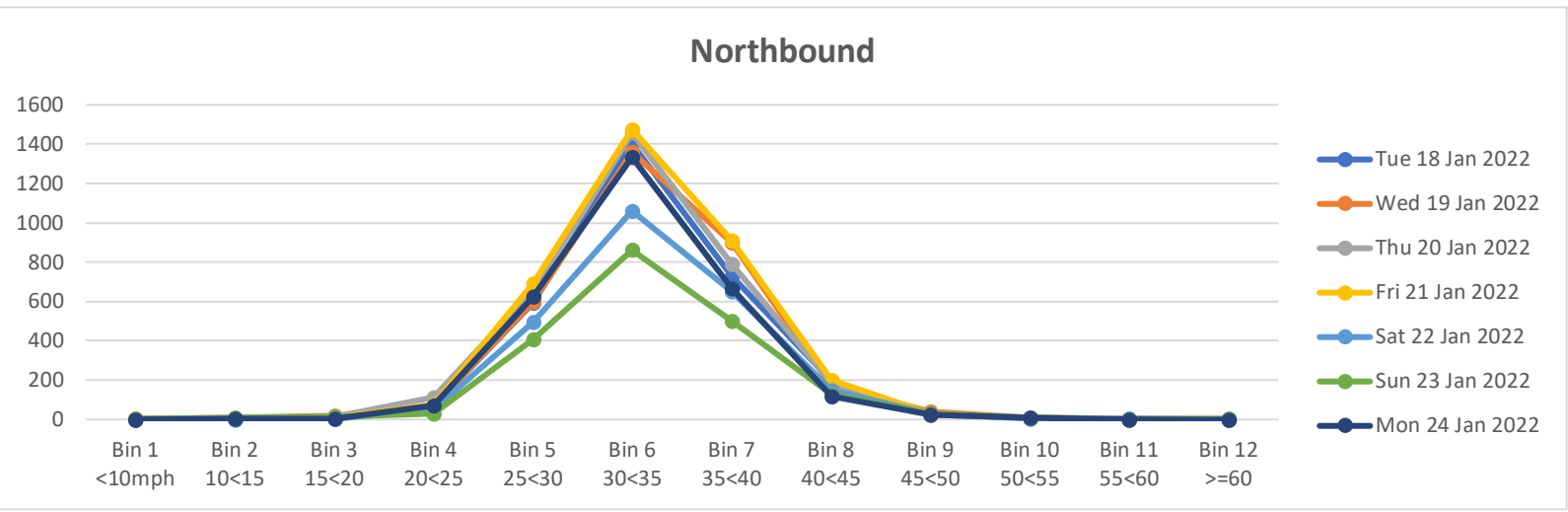


Matson ATC 1, B4073 Painswick Road

Direction: Northbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1<10mph	Bin 210<15	Bin 315<20	Bin 420<25	Bin 525<30	Bin 630<35	Bin 735<40	Bin 840<45	Bin 945<50	Bin 1050<55	Bin 1155<60	Bin 12>=60
Tue 18 Jan 2022	3025	38.4	33.3	4.9	2	2	4	65	592	1402	727	195	24	7	4	1
Wed 19 Jan 2022	3168	38.6	33.4	5.0	2	7	17	66	600	1359	898	168	38	10	3	0
Thu 20 Jan 2022	3256	38.3	33.1	5.1	0	2	13	113	655	1457	792	183	26	8	4	3
Fri 21 Jan 2022	3423	38.5	33.3	5.0	3	5	10	78	692	1476	911	203	29	11	4	1
Sat 22 Jan 2022	2449	38.4	33.4	4.8	0	1	4	50	498	1061	653	147	27	6	2	0
Sun 23 Jan 2022	1988	38.9	33.4	5.3	2	8	12	30	409	861	500	129	27	7	0	3
Mon 24 Jan 2022	2852	37.7	32.9	4.7	0	2	5	70	624	1334	667	118	22	9	0	1
5 Day Ave.	3145	38.3	33.2	4.9	1	4	10	78	633	1406	799	173	28	9	3	1
7 Day Ave.	2880	38.4	33.3	5.0	1	4	9	67	581	1279	735	163	28	8	2	1

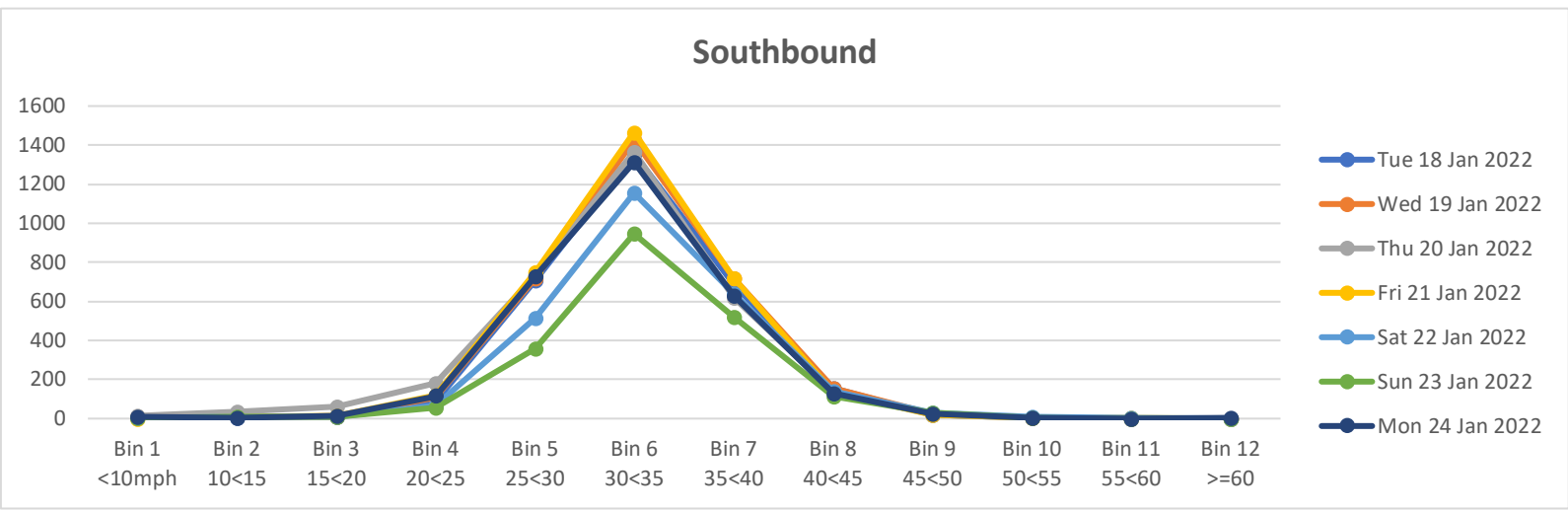
360 TSL Ltd



Direction: Southbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1<10mph	Bin 210<15	Bin 315<20	Bin 420<25	Bin 525<30	Bin 630<35	Bin 735<40	Bin 840<45	Bin 945<50	Bin 1050<55	Bin 1155<60	Bin 12>=60
Tue 18 Jan 2022	3036	37.7	32.7	4.9	4	5	11	88	708	1355	686	157	19	3	0	0
Wed 19 Jan 2022	3172	37.9	32.7	5.0	7	9	8	107	716	1425	716	153	25	5	0	1
Thu 20 Jan 2022	3169	37.6	31.7	5.7	14	33	62	182	736	1366	617	139	17	3	0	0
Fri 21 Jan 2022	3240	37.6	32.5	4.9	1	11	13	119	747	1466	720	134	21	5	3	0
Sat 22 Jan 2022	2575	38.5	33.2	5.2	6	7	7	65	515	1155	640	139	29	7	4	1
Sun 23 Jan 2022	2048	38.6	33.3	5.1	2	9	9	56	358	946	518	114	29	6	1	0
Mon 24 Jan 2022	2973	37.7	32.4	5.1	7	5	15	116	729	1313	628	130	23	5	0	2
5 Day Ave.	3118	37.7	32.4	5.1	7	13	22	122	727	1385	673	143	21	4	1	1
7 Day Ave.	2888	37.9	32.6	5.1	6	11	18	105	644	1289	646	138	23	5	1	1

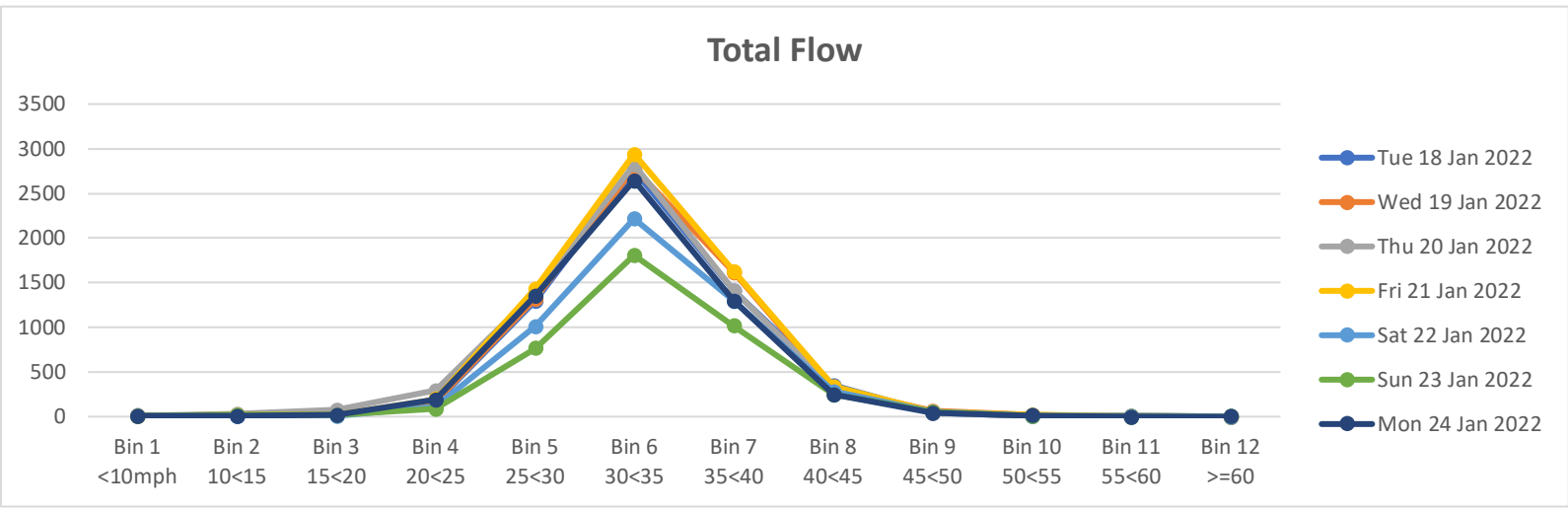
360 TSL Ltd



Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1<10mph	Bin 210<15	Bin 315<20	Bin 420<25	Bin 525<30	Bin 630<35	Bin 735<40	Bin 840<45	Bin 945<50	Bin 1050<55	Bin 1155<60	Bin 12>=60
Tue 18 Jan 2022	6061	38.0	33.0	4.9	6	7	15	153	1300	2757	1413	352	43	10	4	1
Wed 19 Jan 2022	6340	38.3	33.0	5.0	9	16	25	173	1316	2784	1614	321	63	15	3	1
Thu 20 Jan 2022	6425	38.0	32.4	5.4	14	35	75	295	1391	2823	1409	322	43	11	4	3
Fri 21 Jan 2022	6663	38.1	32.9	5.0	4	16	23	197	1439	2942	1631	337	50	16	7	1
Sat 22 Jan 2022	5024	38.5	33.3	5.0	6	8	11	115	1013	2216	1293	286	56	13	6	1
Sun 23 Jan 2022	4036	38.7	33.3	5.2	4	17	21	86	767	1807	1018	243	56	13	1	3
Mon 24 Jan 2022	5825	37.7	32.6	4.9	7	7	20	186	1353	2647	1295	248	45	14	0	3
5 Day Ave.	6263	38.0	32.8	5.1	8	16	32	201	1360	2791	1472	316	49	13	4	2
7 Day Ave.	5768	38.2	32.9	5.1	7	15	27	172	1226	2568	1382	301	51	13	4	2

360 TSL Ltd



Matson ATC 1, B4073 Painswick Road

Direction: Northbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
Tue 18 Jan 2022	339	38.0	32.9	5.0	1	0	0	9	79	154	69	24	2	1	0	0
Wed 19 Jan 2022	325	38.2	32.7	5.3	0	2	6	8	68	139	83	16	3	0	0	0
Thu 20 Jan 2022	322	38.3	33.2	4.9	0	0	0	9	72	132	86	19	3	1	0	0
Fri 21 Jan 2022	364	37.8	33.0	4.7	0	0	1	11	81	154	96	19	2	0	0	0
Sat 22 Jan 2022	389	38.4	33.5	4.7	0	0	0	9	71	173	109	22	4	1	0	0
Sun 23 Jan 2022	359	38.1	32.7	5.2	1	3	2	9	78	155	90	19	2	0	0	0
Mon 24 Jan 2022	311	37.1	32.4	4.5	0	0	0	11	77	144	65	13	0	1	0	0
5 Day Ave.	332	37.9	32.8	4.9	0	0	1	10	75	145	80	18	2	1	0	0
7 Day Ave.	344	38.0	32.9	4.9	0	1	1	9	75	150	85	19	2	1	0	0

360 TSL Ltd

Direction: Southbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
Tue 18 Jan 2022	292	36.8	32.3	4.3	0	0	2	5	76	143	53	13	0	0	0	0
Wed 19 Jan 2022	301	38.2	33.0	5.0	1	1	1	11	53	136	78	20	0	0	0	0
Thu 20 Jan 2022	337	38.1	32.6	5.3	1	3	3	6	80	141	81	22	0	0	0	0
Fri 21 Jan 2022	338	37.0	32.0	4.8	0	2	1	12	91	160	51	21	0	0	0	0
Sat 22 Jan 2022	414	38.0	32.8	5.0	1	3	1	9	90	182	106	20	1	1	0	0
Sun 23 Jan 2022	340	37.7	32.5	5.0	1	3	3	8	64	170	78	12	0	1	0	0
Mon 24 Jan 2022	313	36.0	31.7	4.2	0	0	0	15	90	142	63	3	0	0	0	0
5 Day Ave.	316	37.2	32.3	4.7	0	1	1	10	78	144	65	16	0	0	0	0
7 Day Ave.	334	37.4	32.4	4.8	1	2	2	9	78	153	73	16	0	0	0	0

360 TSL Ltd

Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
Tue 18 Jan 2022	631	37.5	32.6	4.7	1	0	2	14	155	297	122	37	2	1	0	0
Wed 19 Jan 2022	626	38.2	32.9	5.1	1	3	7	19	121	275	161	36	3	0	0	0
Thu 20 Jan 2022	659	38.2	32.9	5.1	1	3	3	15	152	273	167	41	3	1	0	0
Fri 21 Jan 2022	702	37.5	32.5	4.8	0	2	2	23	172	314	147	40	2	0	0	0
Sat 22 Jan 2022	803	38.2	33.2	4.9	1	3	1	18	161	355	215	42	5	2	0	0
Sun 23 Jan 2022	699	37.9	32.6	5.1	2	6	5	17	142	325	168	31	2	1	0	0
Mon 24 Jan 2022	624	36.6	32.1	4.4	0	0	0	26	167	286	128	16	0	1	0	0
5 Day Ave.	648	37.6	32.6	4.8	1	2	3	19	153	289	145	34	2	1	0	0
7 Day Ave.	678	37.7	32.7	4.9	1	2	3	19	153	304	158	35	2	1	0	0

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
Tue 18 Jan 2022	461	37.3	32.8	4.3	1	0	0	11	87	237	104	21	0	0	0	0
Wed 19 Jan 2022	512	38.1	32.9	5.0	0	2	2	16	113	214	135	25	4	1	0	0
Thu 20 Jan 2022	542	38.2	33.5	4.5	0	1	0	15	73	283	136	27	6	1	0	0
Fri 21 Jan 2022	657	38.2	32.9	5.1	1	1	1	21	150	275	169	30	7	1	0	1
Sat 22 Jan 2022	425	38.4	33.2	5.0	0	1	2	6	89	193	108	20	3	1	2	0
Sun 23 Jan 2022	394	38.6	33.6	4.8	0	0	1	3	76	183	102	19	7	3	0	0
Mon 24 Jan 2022	475	36.3	32.0	4.1	0	0	2	13	129	229	92	10	0	0	0	0
5 Day Ave.	529	37.6	32.8	4.6	0	1	1	15	110	248	127	23	3	1	0	0
7 Day Ave.	495	37.9	33.0	4.7	0	1	1	12	102	231	121	22	4	1	0	0

360 TSL Ltd

Direction: Southbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
Tue 18 Jan 2022	464	37.2	32.3	4.6	0	1	0	16	123	203	98	22	1	0	0	0
Wed 19 Jan 2022	447	37.1	32.4	4.5	1	1	0	12	111	208	97	16	1	0	0	0
Thu 20 Jan 2022	433	37.6	32.8	4.6	0	1	4	7	94	199	107	20	1	0	0	0
Fri 21 Jan 2022	513	36.6	31.6	4.9	1	3	3	27	143	223	101	11	1	0	0	0
Sat 22 Jan 2022	418	38.5	33.4	5.0	2	0	2	7	70	202	103	27	4	1	0	0
Sun 23 Jan 2022	389	37.6	32.8	4.7	0	0	0	13	85	185	82	21	2	1	0	0
Mon 24 Jan 2022	447	36.1	31.7	4.2	0	0	0	18	135	203	80	11	0	0	0	0
5 Day Ave.	461	36.9	32.2	4.6	0	1	1	16	121	207	97	16	1	0	0	0
7 Day Ave.	444	37.2	32.4	4.6	1	1	1	14	109	203	95	18	1	0	0	0

360 TSL Ltd

Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
Tue 18 Jan 2022	925	37.2	32.6	4.5	1	1	0	27	210	440	202	43	1	0	0	0
Wed 19 Jan 2022	959	37.6	32.7	4.8	1	3	2	28	224	422	232	41	5	1	0	0
Thu 20 Jan 2022	975	37.9	33.2	4.6	0	2	4	22	167	482	243	47	7	1	0	0
Fri 21 Jan 2022	1170	37.6	32.3	5.1	2	4	4	48	293	498	270	41	8	1	0	1
Sat 22 Jan 2022	843	38.4	33.3	5.0	2	1	4	13	159	395	211	47	7	2	2	0
Sun 23 Jan 2022	783	38.1	33.2	4.8	0	0	1	16	161	368	184	40	9	4	0	0
Mon 24 Jan 2022	922	36.2	31.9	4.2	0	0	2	31	264	432	172	21	0	0	0	0
5 Day Ave.	990	37.3	32.5	4.6	1	2	2	31	232	455	224	39	4	1	0	0
7 Day Ave.	940	37.6	32.7	4.7	1	2	2	26	211	434	216	40	5	1	0	0

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	8	8	0	0	0
01:00	2	2	0	0	0
02:00	3	3	0	0	0
03:00	0	0	0	0	0
04:00	0	0	0	0	0
05:00	22	21	1	0	0
06:00	85	81	2	1	1
07:00	168	157	11	0	0
08:00	292	281	11	0	0
09:00	177	165	12	0	0
10:00	152	140	12	0	0
11:00	187	173	13	0	1
12:00	129	117	12	0	0
13:00	188	176	12	0	0
14:00	197	183	12	0	2
15:00	264	245	16	0	3
16:00	349	323	25	0	1
17:00	344	325	19	0	0
18:00	182	177	5	0	0
19:00	97	93	4	0	0
20:00	70	67	3	0	0
21:00	54	53	1	0	0
22:00	41	40	0	0	1
23:00	14	14	0	0	0
Total					
12H(7-19)	2629	2462	160	0	7
16H(6-22)	2935	2756	170	1	8
18H(6-24)	2990	2810	170	1	9
24H(0-24)	3025	2844	171	1	9
AM Peak	08:00 292	08:00 281	11:00 13	06:00 1	06:00 1
PM Peak	16:00 349	17:00 325	16:00 25	12:00 0	15:00 3

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	7	7	0	0	0
01:00	2	2	0	0	0
02:00	5	5	0	0	0
03:00	2	2	0	0	0
04:00	3	3	0	0	0
05:00	19	19	0	0	0
06:00	82	76	4	0	2
07:00	252	237	14	0	1
08:00	362	349	9	0	4
09:00	190	177	11	0	2
10:00	137	123	10	0	4
11:00	155	147	6	0	2
12:00	175	163	9	0	3
13:00	155	145	7	0	3
14:00	223	207	13	0	3
15:00	241	227	12	0	2
16:00	268	249	14	0	5
17:00	270	259	8	0	3
18:00	195	186	8	0	1
19:00	115	113	2	0	0
20:00	83	80	2	0	1
21:00	46	46	0	0	0
22:00	39	37	1	0	1
23:00	10	10	0	0	0
Total					
12H(7-19)	2623	2469	121	0	33
16H(6-22)	2949	2784	129	0	36
18H(6-24)	2998	2831	130	0	37
24H(0-24)	3036	2869	130	0	37
AM Peak	08:00 362	08:00 349	07:00 14	00:00 0	08:00 4
PM Peak	17:00 270	17:00 259	16:00 14	12:00 0	16:00 5

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	15	15	0	0	0
01:00	4	4	0	0	0
02:00	8	8	0	0	0
03:00	2	2	0	0	0
04:00	3	3	0	0	0
05:00	41	40	1	0	0
06:00	167	157	6	1	3
07:00	420	394	25	0	1
08:00	654	630	20	0	4
09:00	367	342	23	0	2
10:00	289	263	22	0	4
11:00	342	320	19	0	3
12:00	304	280	21	0	3
13:00	343	321	19	0	3
14:00	420	390	25	0	5
15:00	505	472	28	0	5
16:00	617	572	39	0	6
17:00	614	584	27	0	3
18:00	377	363	13	0	1
19:00	212	206	6	0	0
20:00	153	147	5	0	1
21:00	100	99	1	0	0
22:00	80	77	1	0	2
23:00	24	24	0	0	0
Total					
12H(7-19)	5252	4931	281	0	40
16H(6-22)	5884	5540	299	1	44
18H(6-24)	5988	5641	300	1	46
24H(0-24)	6061	5713	301	1	46
AM Peak	08:00 654	08:00 630	07:00 25	06:00 1	08:00 4
PM Peak	16:00 617	17:00 584	16:00 39	12:00 0	16:00 6

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	8	8	0	0	0
01:00	5	5	0	0	0
02:00	2	2	0	0	0
03:00	0	0	0	0	0
04:00	4	4	0	0	0
05:00	19	17	2	0	0
06:00	84	77	6	0	1
07:00	163	154	9	0	0
08:00	290	277	13	0	0
09:00	198	183	12	0	3
10:00	176	162	11	1	2
11:00	149	135	13	0	1
12:00	164	154	10	0	0
13:00	151	138	11	0	2
14:00	236	215	18	1	2
15:00	276	254	20	0	2
16:00	360	339	21	0	0
17:00	376	354	22	0	0
18:00	186	175	11	0	0
19:00	112	109	3	0	0
20:00	81	77	4	0	0
21:00	57	56	1	0	0
22:00	50	49	1	0	0
23:00	21	20	1	0	0
Total					
12H(7-19)	2725	2540	171	2	12
16H(6-22)	3059	2859	185	2	13
18H(6-24)	3130	2928	187	2	13
24H(0-24)	3168	2964	189	2	13
AM Peak	08:00 290	08:00 277	08:00 13	10:00 1	09:00 3
PM Peak	17:00 376	17:00 354	17:00 22	14:00 1	13:00 2

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	4	4	0	0	0
01:00	5	5	0	0	0
02:00	4	4	0	0	0
03:00	1	1	0	0	0
04:00	7	7	0	0	0
05:00	20	19	0	0	1
06:00	83	79	3	0	1
07:00	285	264	16	0	5
08:00	397	380	16	0	1
09:00	210	194	13	0	3
10:00	155	140	11	0	4
11:00	146	139	6	0	1
12:00	177	160	13	0	4
13:00	185	169	10	1	5
14:00	205	184	19	0	2
15:00	242	226	13	0	3
16:00	259	244	14	0	1
17:00	275	263	10	0	2
18:00	187	183	3	0	1
19:00	142	138	4	0	0
20:00	81	79	2	0	0
21:00	62	62	0	0	0
22:00	32	32	0	0	0
23:00	8	8	0	0	0
Total					
12H(7-19)	2723	2546	144	1	32
16H(6-22)	3091	2904	153	1	33
18H(6-24)	3131	2944	153	1	33
24H(0-24)	3172	2984	153	1	34
AM Peak	08:00 397	08:00 380	07:00 16	00:00 0	07:00 5
PM Peak	17:00 275	17:00 263	14:00 19	13:00 1	13:00 5

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	12	12	0	0	0
01:00	10	10	0	0	0
02:00	6	6	0	0	0
03:00	1	1	0	0	0
04:00	11	11	0	0	0
05:00	39	36	2	0	1
06:00	167	156	9	0	2
07:00	448	418	25	0	5
08:00	687	657	29	0	1
09:00	408	377	25	0	6
10:00	331	302	22	1	6
11:00	295	274	19	0	2
12:00	341	314	23	0	4
13:00	336	307	21	1	7
14:00	441	399	37	1	4
15:00	518	480	33	0	5
16:00	619	583	35	0	1
17:00	651	617	32	0	2
18:00	373	358	14	0	1
19:00	254	247	7	0	0
20:00	162	156	6	0	0
21:00	119	118	1	0	0
22:00	82	81	1	0	0
23:00	29	28	1	0	0
Total					
12H(7-19)	5448	5086	315	3	44
16H(6-22)	6150	5763	338	3	46
18H(6-24)	6261	5872	340	3	46
24H(0-24)	6340	5948	342	3	47
AM Peak	08:00 687	08:00 657	08:00 29	10:00 1	09:00 6
PM Peak	17:00 651	17:00 617	14:00 37	13:00 1	13:00 7

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	5	5	0	0	0
01:00	1	1	0	0	0
02:00	2	2	0	0	0
03:00	1	0	1	0	0
04:00	4	4	0	0	0
05:00	14	13	1	0	0
06:00	77	70	5	0	2
07:00	185	173	12	0	0
08:00	317	308	7	0	2
09:00	196	185	11	0	0
10:00	170	153	13	1	3
11:00	152	136	16	0	0
12:00	161	151	10	0	0
13:00	197	181	15	0	1
14:00	215	199	14	0	2
15:00	327	307	18	0	2
16:00	394	364	30	0	0
17:00	362	347	15	0	0
18:00	158	148	9	1	0
19:00	109	106	3	0	0
20:00	83	80	2	1	0
21:00	59	59	0	0	0
22:00	45	45	0	0	0
23:00	22	22	0	0	0
Total					
12H(7-19)	2834	2652	170	2	10
16H(6-22)	3162	2967	180	3	12
18H(6-24)	3229	3034	180	3	12
24H(0-24)	3256	3059	182	3	12
AM Peak	08:00 317	08:00 308	11:00 16	10:00 1	10:00 3
PM Peak	16:00 394	16:00 364	16:00 30	18:00 1	14:00 2

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	11	11	0	0	0
01:00	2	2	0	0	0
02:00	2	1	1	0	0
03:00	4	4	0	0	0
04:00	9	7	2	0	0
05:00	17	16	0	0	1
06:00	74	67	4	0	3
07:00	247	233	11	1	2
08:00	397	381	13	1	2
09:00	203	188	13	0	2
10:00	161	145	14	0	2
11:00	176	162	12	0	2
12:00	183	175	6	0	2
13:00	184	169	11	0	4
14:00	197	186	10	0	1
15:00	236	229	5	0	2
16:00	259	245	13	0	1
17:00	279	267	11	0	1
18:00	213	208	4	0	1
19:00	112	109	2	0	1
20:00	75	73	1	0	1
21:00	60	57	1	0	2
22:00	44	43	1	0	0
23:00	24	23	1	0	0
Total					
12H(7-19)	2735	2588	123	2	22
16H(6-22)	3056	2894	131	2	29
18H(6-24)	3124	2960	133	2	29
24H(0-24)	3169	3001	136	2	30
AM Peak	08:00 397	08:00 381	10:00 14	07:00 1	06:00 3
PM Peak	17:00 279	17:00 267	16:00 13	12:00 0	13:00 4

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	16	16	0	0	0
01:00	3	3	0	0	0
02:00	4	3	1	0	0
03:00	5	4	1	0	0
04:00	13	11	2	0	0
05:00	31	29	1	0	1
06:00	151	137	9	0	5
07:00	432	406	23	1	2
08:00	714	689	20	1	4
09:00	399	373	24	0	2
10:00	331	298	27	1	5
11:00	328	298	28	0	2
12:00	344	326	16	0	2
13:00	381	350	26	0	5
14:00	412	385	24	0	3
15:00	563	536	23	0	4
16:00	653	609	43	0	1
17:00	641	614	26	0	1
18:00	371	356	13	1	1
19:00	221	215	5	0	1
20:00	158	153	3	1	1
21:00	119	116	1	0	2
22:00	89	88	1	0	0
23:00	46	45	1	0	0
Total					
12H(7-19)	5569	5240	293	4	32
16H(6-22)	6218	5861	311	5	41
18H(6-24)	6353	5994	313	5	41
24H(0-24)	6425	6060	318	5	42
AM Peak	08:00 714	08:00 689	11:00 28	07:00 1	06:00 5
PM Peak	16:00 653	17:00 614	16:00 43	18:00 1	13:00 5

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	7	6	1	0	0
01:00	3	3	0	0	0
02:00	2	1	1	0	0
03:00	2	2	0	0	0
04:00	5	5	0	0	0
05:00	18	16	2	0	0
06:00	86	80	6	0	0
07:00	165	156	9	0	0
08:00	317	302	14	0	1
09:00	174	162	12	0	0
10:00	172	159	12	0	1
11:00	192	177	14	0	1
12:00	188	175	12	1	0
13:00	251	230	21	0	0
14:00	258	238	18	0	2
15:00	399	369	28	0	2
16:00	341	319	21	1	0
17:00	327	303	24	0	0
18:00	214	205	8	1	0
19:00	107	105	2	0	0
20:00	66	63	2	1	0
21:00	52	50	2	0	0
22:00	56	53	2	0	1
23:00	21	21	0	0	0
Total					
12H(7-19)	2998	2795	193	3	7
16H(6-22)	3309	3093	205	4	7
18H(6-24)	3386	3167	207	4	8
24H(0-24)	3423	3200	211	4	8
AM Peak	08:00 317	08:00 302	08:00 14	00:00 0	08:00 1
PM Peak	15:00 399	15:00 369	15:00 28	12:00 1	14:00 2

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	6	5	1	0	0
01:00	6	6	0	0	0
02:00	3	3	0	0	0
03:00	6	6	0	0	0
04:00	6	6	0	0	0
05:00	26	24	2	0	0
06:00	81	75	5	0	1
07:00	241	227	13	0	1
08:00	354	342	11	0	1
09:00	192	183	7	1	1
10:00	170	160	8	0	2
11:00	168	163	4	0	1
12:00	217	209	7	0	1
13:00	199	187	9	2	1
14:00	240	227	12	0	1
15:00	273	261	12	0	0
16:00	289	271	16	0	2
17:00	251	245	5	0	1
18:00	185	181	3	0	1
19:00	105	102	2	0	1
20:00	77	73	3	0	1
21:00	66	64	1	0	1
22:00	53	52	1	0	0
23:00	26	25	1	0	0
Total					
12H(7-19)	2779	2656	107	3	13
16H(6-22)	3108	2970	118	3	17
18H(6-24)	3187	3047	120	3	17
24H(0-24)	3240	3097	123	3	17
AM Peak	08:00 354	08:00 342	07:00 13	09:00 1	10:00 2
PM Peak	16:00 289	16:00 271	16:00 16	13:00 2	16:00 2

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	13	11	2	0	0
01:00	9	9	0	0	0
02:00	5	4	1	0	0
03:00	8	8	0	0	0
04:00	11	11	0	0	0
05:00	44	40	4	0	0
06:00	167	155	11	0	1
07:00	406	383	22	0	1
08:00	671	644	25	0	2
09:00	366	345	19	1	1
10:00	342	319	20	0	3
11:00	360	340	18	0	2
12:00	405	384	19	1	1
13:00	450	417	30	2	1
14:00	498	465	30	0	3
15:00	672	630	40	0	2
16:00	630	590	37	1	2
17:00	578	548	29	0	1
18:00	399	386	11	1	1
19:00	212	207	4	0	1
20:00	143	136	5	1	1
21:00	118	114	3	0	1
22:00	109	105	3	0	1
23:00	47	46	1	0	0
Total					
12H(7-19)	5777	5451	300	6	20
16H(6-22)	6417	6063	323	7	24
18H(6-24)	6573	6214	327	7	25
24H(0-24)	6663	6297	334	7	25
AM Peak	08:00 671	08:00 644	08:00 25	09:00 1	10:00 3
PM Peak	15:00 672	15:00 630	15:00 40	13:00 2	14:00 3

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	15	15	0	0	0
01:00	8	7	1	0	0
02:00	6	5	1	0	0
03:00	4	3	1	0	0
04:00	1	1	0	0	0
05:00	11	10	1	0	0
06:00	16	15	0	0	1
07:00	56	51	5	0	0
08:00	110	103	7	0	0
09:00	160	149	11	0	0
10:00	193	181	11	1	0
11:00	196	186	10	0	0
12:00	244	233	11	0	0
13:00	232	222	10	0	0
14:00	204	197	6	0	1
15:00	221	214	7	0	0
16:00	234	226	8	0	0
17:00	172	169	3	0	0
18:00	111	110	1	0	0
19:00	58	56	2	0	0
20:00	64	63	1	0	0
21:00	43	42	1	0	0
22:00	53	52	0	0	1
23:00	37	36	1	0	0
Total					
12H(7-19)	2133	2041	90	1	1
16H(6-22)	2314	2217	94	1	2
18H(6-24)	2404	2305	95	1	3
24H(0-24)	2449	2346	99	1	3
AM Peak	11:00 196	11:00 186	09:00 11	10:00 1	06:00 1
PM Peak	12:00 244	12:00 233	12:00 11	12:00 0	14:00 1

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	7	7	0	0	0
01:00	6	6	0	0	0
02:00	7	7	0	0	0
03:00	4	4	0	0	0
04:00	8	8	0	0	0
05:00	12	12	0	0	0
06:00	31	28	3	0	0
07:00	65	62	1	2	0
08:00	140	132	6	0	2
09:00	201	191	9	0	1
10:00	202	193	9	0	0
11:00	212	203	7	0	2
12:00	239	228	8	1	2
13:00	245	229	12	0	4
14:00	226	222	3	0	1
15:00	192	186	5	0	1
16:00	202	197	4	0	1
17:00	159	157	1	0	1
18:00	135	131	4	0	0
19:00	97	95	2	0	0
20:00	45	44	1	0	0
21:00	53	50	1	0	2
22:00	46	45	0	0	1
23:00	41	40	1	0	0
Total					
12H(7-19)	2218	2131	69	3	15
16H(6-22)	2444	2348	76	3	17
18H(6-24)	2531	2433	77	3	18
24H(0-24)	2575	2477	77	3	18
AM Peak	11:00 212	11:00 203	09:00 9	07:00 2	08:00 2
PM Peak	13:00 245	13:00 229	13:00 12	12:00 1	13:00 4

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	22	22	0	0	0
01:00	14	13	1	0	0
02:00	13	12	1	0	0
03:00	8	7	1	0	0
04:00	9	9	0	0	0
05:00	23	22	1	0	0
06:00	47	43	3	0	1
07:00	121	113	6	2	0
08:00	250	235	13	0	2
09:00	361	340	20	0	1
10:00	395	374	20	1	0
11:00	408	389	17	0	2
12:00	483	461	19	1	2
13:00	477	451	22	0	4
14:00	430	419	9	0	2
15:00	413	400	12	0	1
16:00	436	423	12	0	1
17:00	331	326	4	0	1
18:00	246	241	5	0	0
19:00	155	151	4	0	0
20:00	109	107	2	0	0
21:00	96	92	2	0	2
22:00	99	97	0	0	2
23:00	78	76	2	0	0
Total					
12H(7-19)	4351	4172	159	4	16
16H(6-22)	4758	4565	170	4	19
18H(6-24)	4935	4738	172	4	21
24H(0-24)	5024	4823	176	4	21
AM Peak	11:00 408	11:00 389	09:00 20	07:00 2	08:00 2
PM Peak	12:00 483	12:00 461	13:00 22	12:00 1	13:00 4

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	14	13	1	0	0
01:00	11	11	0	0	0
02:00	7	7	0	0	0
03:00	8	8	0	0	0
04:00	4	4	0	0	0
05:00	7	7	0	0	0
06:00	17	15	1	0	1
07:00	21	20	1	0	0
08:00	43	42	1	0	0
09:00	93	88	5	0	0
10:00	186	177	9	0	0
11:00	173	164	9	0	0
12:00	202	196	6	0	0
13:00	219	211	8	0	0
14:00	195	187	7	0	1
15:00	199	197	2	0	0
16:00	161	158	3	0	0
17:00	125	123	2	0	0
18:00	75	74	1	0	0
19:00	84	83	1	0	0
20:00	67	64	3	0	0
21:00	42	41	1	0	0
22:00	29	28	0	0	1
23:00	6	6	0	0	0
Total					
12H(7-19)	1692	1637	54	0	1
16H(6-22)	1902	1840	60	0	2
18H(6-24)	1937	1874	60	0	3
24H(0-24)	1988	1924	61	0	3
AM Peak	10:00 186	10:00 177	10:00 9	00:00 0	06:00 1
PM Peak	13:00 219	13:00 211	13:00 8	12:00 0	14:00 1

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	11	11	0	0	0
01:00	12	12	0	0	0
02:00	6	6	0	0	0
03:00	8	8	0	0	0
04:00	5	5	0	0	0
05:00	8	8	0	0	0
06:00	18	17	1	0	0
07:00	43	42	1	0	0
08:00	62	60	2	0	0
09:00	136	131	4	0	1
10:00	153	145	7	0	1
11:00	187	184	3	0	0
12:00	231	228	2	0	1
13:00	228	221	7	0	0
14:00	196	188	6	2	0
15:00	193	187	5	0	1
16:00	150	146	3	0	1
17:00	122	118	3	1	0
18:00	77	75	2	0	0
19:00	68	68	0	0	0
20:00	69	67	2	0	0
21:00	33	33	0	0	0
22:00	22	22	0	0	0
23:00	10	9	1	0	0
Total					
12H(7-19)	1778	1725	45	3	5
16H(6-22)	1966	1910	48	3	5
18H(6-24)	1998	1941	49	3	5
24H(0-24)	2048	1991	49	3	5
AM Peak	11:00 187	11:00 184	10:00 7	00:00 0	09:00 1
PM Peak	12:00 231	12:00 228	13:00 7	14:00 2	12:00 1

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	25	24	1	0	0
01:00	23	23	0	0	0
02:00	13	13	0	0	0
03:00	16	16	0	0	0
04:00	9	9	0	0	0
05:00	15	15	0	0	0
06:00	35	32	2	0	1
07:00	64	62	2	0	0
08:00	105	102	3	0	0
09:00	229	219	9	0	1
10:00	339	322	16	0	1
11:00	360	348	12	0	0
12:00	433	424	8	0	1
13:00	447	432	15	0	0
14:00	391	375	13	2	1
15:00	392	384	7	0	1
16:00	311	304	6	0	1
17:00	247	241	5	1	0
18:00	152	149	3	0	0
19:00	152	151	1	0	0
20:00	136	131	5	0	0
21:00	75	74	1	0	0
22:00	51	50	0	0	1
23:00	16	15	1	0	0
Total					
12H(7-19)	3470	3362	99	3	6
16H(6-22)	3868	3750	108	3	7
18H(6-24)	3935	3815	109	3	8
24H(0-24)	4036	3915	110	3	8
AM Peak	11:00 360	11:00 348	10:00 16	00:00 0	06:00 1
PM Peak	13:00 447	13:00 432	13:00 15	14:00 2	12:00 1

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	7	7	0	0	0
01:00	4	4	0	0	0
02:00	1	1	0	0	0
03:00	3	2	1	0	0
04:00	7	7	0	0	0
05:00	25	23	2	0	0
06:00	87	80	6	0	1
07:00	154	142	12	0	0
08:00	252	233	18	1	0
09:00	169	159	10	0	0
10:00	153	138	12	1	2
11:00	158	141	16	0	1
12:00	154	139	15	0	0
13:00	182	170	11	0	1
14:00	200	188	11	0	1
15:00	275	258	14	0	3
16:00	322	299	22	1	0
17:00	295	279	16	0	0
18:00	150	142	8	0	0
19:00	105	101	4	0	0
20:00	60	58	2	0	0
21:00	46	43	2	0	1
22:00	30	28	0	0	2
23:00	13	13	0	0	0
Total					
12H(7-19)	2464	2288	165	3	8
16H(6-22)	2762	2570	179	3	10
18H(6-24)	2805	2611	179	3	12
24H(0-24)	2852	2655	182	3	12
AM Peak	08:00	08:00	08:00	08:00	10:00
	252	233	18	1	2
PM Peak	16:00	16:00	16:00	16:00	15:00
	322	299	22	1	3

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	3	3	0	0	0
01:00	2	2	0	0	0
02:00	5	5	0	0	0
03:00	2	2	0	0	0
04:00	7	7	0	0	0
05:00	22	21	1	0	0
06:00	79	73	6	0	0
07:00	250	234	13	0	3
08:00	348	324	19	2	3
09:00	161	150	10	0	1
10:00	135	125	8	0	2
11:00	178	167	9	0	2
12:00	165	155	9	0	1
13:00	187	179	7	0	1
14:00	200	189	9	0	2
15:00	247	234	13	0	0
16:00	256	242	12	0	2
17:00	273	261	11	0	1
18:00	163	155	5	2	1
19:00	118	114	3	0	1
20:00	84	80	2	0	2
21:00	50	47	1	0	2
22:00	28	26	1	0	1
23:00	10	10	0	0	0
Total					
12H(7-19)	2563	2415	125	4	19
16H(6-22)	2894	2729	137	4	24
18H(6-24)	2932	2765	138	4	25
24H(0-24)	2973	2805	139	4	25
AM Peak	08:00	08:00	08:00	08:00	07:00
	348	324	19	2	3
PM Peak	17:00	17:00	15:00	18:00	14:00
	273	261	13	2	2

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	10	10	0	0	0
01:00	6	6	0	0	0
02:00	6	6	0	0	0
03:00	5	4	1	0	0
04:00	14	14	0	0	0
05:00	47	44	3	0	0
06:00	166	153	12	0	1
07:00	404	376	25	0	3
08:00	600	557	37	3	3
09:00	330	309	20	0	1
10:00	288	263	20	1	4
11:00	336	308	25	0	3
12:00	319	294	24	0	1
13:00	369	349	18	0	2
14:00	400	377	20	0	3
15:00	522	492	27	0	3
16:00	578	541	34	1	2
17:00	568	540	27	0	1
18:00	313	297	13	2	1
19:00	223	215	7	0	1
20:00	144	138	4	0	2
21:00	96	90	3	0	3
22:00	58	54	1	0	3
23:00	23	23	0	0	0
Total					
12H(7-19)	5027	4703	290	7	27
16H(6-22)	5656	5299	316	7	34
18H(6-24)	5737	5376	317	7	37
24H(0-24)	5825	5460	321	7	37
AM Peak	08:00	08:00	08:00	08:00	10:00
	600	557	37	3	4
PM Peak	16:00	16:00	16:00	18:00	14:00
	578	541	34	2	3

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	8	38.0	32.5	5.3	0	0	0	0	3	3	1	1	0	0	0	0
01:00	2	51.0	40.0	10.6	0	0	0	0	0	1	0	0	1	0	0	0
02:00	3	42.7	37.5	5.0	0	0	0	0	0	1	1	1	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	22	37.8	30.7	6.8	0	1	1	1	5	9	4	1	0	0	0	0
06:00	85	43.5	35.2	8.0	0	0	0	3	17	30	20	6	2	5	1	1
07:00	168	37.9	33.2	4.6	0	0	1	4	31	79	42	11	0	0	0	0
08:00	292	37.6	33.0	4.4	0	0	0	3	66	142	60	20	1	0	0	0
09:00	177	37.9	33.5	4.3	0	0	1	2	29	86	48	11	0	0	0	0
10:00	152	37.9	32.9	4.9	0	0	0	2	44	63	27	16	0	0	0	0
11:00	187	38.2	32.9	5.1	1	0	0	7	35	91	42	8	2	1	0	0
12:00	129	37.8	33.1	4.5	0	0	0	4	26	57	36	5	1	0	0	0
13:00	188	39.0	33.8	5.0	0	0	1	6	31	72	66	9	2	1	0	0
14:00	197	37.8	33.0	4.7	0	0	0	8	39	88	49	13	0	0	0	0
15:00	264	36.9	32.7	4.0	1	0	0	3	48	149	55	8	0	0	0	0
16:00	349	36.8	32.7	4.0	0	0	0	6	76	179	76	12	0	0	0	0
17:00	344	38.7	33.7	4.8	0	1	0	8	54	159	90	28	4	0	0	0
18:00	182	38.7	33.5	5.0	0	0	0	3	40	79	43	12	5	0	0	0
19:00	97	38.4	33.5	4.7	0	0	0	0	22	45	19	10	1	0	0	0
20:00	70	41.7	35.1	6.3	0	0	0	1	12	27	16	9	4	0	1	0
21:00	54	40.3	34.6	5.5	0	0	0	1	6	26	14	6	0	0	1	0
22:00	41	39.8	34.0	5.6	0	0	0	3	6	14	12	6	0	0	0	0
23:00	14	46.3	38.2	7.8	0	0	0	0	2	2	6	2	1	0	1	0
Total																
2H(10-12)	339	38.0	32.9	5.0	1	0	0	9	79	154	69	24	2	1	0	0
2H(14-16)	461	37.3	32.8	4.3	1	0	0	11	87	237	104	21	0	0	0	0
12H(7-19)	2629	37.9	33.1	4.6	2	1	3	56	519	1244	634	153	15	2	0	0
24H(0-24)	3025	38.4	33.3	4.9	2	2	4	65	592	1402	727	195	24	7	4	1
AM Peak	08:00 292	01:00 51.0	01:00 40.0	01:00 10.6	11:00 1	05:00 1	05:00 1	11:00 7	08:00 66	08:00 142	08:00 60	08:00 20	06:00 2	06:00 5	06:00 1	06:00 1
PM Peak	16:00 349	23:00 46.3	23:00 38.2	23:00 7.8	15:00 1	17:00 1	13:00 1	14:00 8	16:00 76	16:00 179	17:00 90	17:00 28	18:00 5	13:00 1	20:00 1	12:00 0

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	7	43.9	38.9	4.8	0	0	0	0	0	1	4	1	1	0	0	0
01:00	2	37.5	37.5	0.0	0	0	0	0	0	0	2	0	0	0	0	0
02:00	5	40.8	38.5	2.2	0	0	0	0	0	0	4	1	0	0	0	0
03:00	2	38.7	35.0	3.5	0	0	0	0	0	1	1	0	0	0	0	0
04:00	3	37.2	34.2	2.9	0	0	0	0	0	2	1	0	0	0	0	0
05:00	19	38.7	33.8	4.7	0	0	0	0	4	8	5	2	0	0	0	0
06:00	82	41.3	34.4	6.6	2	0	0	2	9	31	24	12	2	0	0	0
07:00	252	39.2	33.9	5.1	0	0	3	7	37	97	90	14	3	1	0	0
08:00	362	37.1	32.4	4.5	1	0	0	10	89	172	76	12	2	0	0	0
09:00	190	37.7	32.9	4.7	0	0	2	7	28	103	39	9	2	0	0	0
10:00	137	37.1	32.5	4.4	0	0	1	2	32	70	24	8	0	0	0	0
11:00	155	36.5	32.0	4.3	0	0	1	3	44	73	29	5	0	0	0	0
12:00	175	36.8	32.2	4.5	0	2	0	4	42	84	40	3	0	0	0	0
13:00	155	37.4	32.6	4.6	0	1	0	2	41	65	39	7	0	0	0	0
14:00	223	37.4	32.5	4.6	0	1	0	5	56	102	47	11	1	0	0	0
15:00	241	37.0	32.2	4.6	0	0	0	11	67	101	51	11	0	0	0	0
16:00	268	36.5	31.6	4.8	1	0	1	8	89	123	30	15	1	0	0	0
17:00	270	37.4	32.3	4.9	0	1	0	9	77	114	51	17	1	0	0	0
18:00	195	37.4	32.5	4.7	0	0	3	5	45	84	51	7	0	0	0	0
19:00	115	38.3	33.5	4.6	0	0	0	5	15	54	34	6	1	0	0	0
20:00	83	38.2	33.2	4.8	0	0	0	3	15	40	18	6	1	0	0	0
21:00	46	41.2	34.2	6.7	0	0	0	3	10	12	14	4	2	1	0	0
22:00	39	41.6	35.1	6.3	0	0	0	1	7	13	10	6	1	1	0	0
23:00	10	40.3	33.5	6.6	0	0	0	1	1	5	2	0	1	0	0	0
Total																
2H(10-12)	292	36.8	32.3	4.3	0	0	2	5	76	143	53	13	0	0	0	0
2H(14-16)	464	37.2	32.3	4.6	0	1	0	16	123	203	98	22	1	0	0	0

12H(7-19) 24H(0-24)	2623	37.3	32.5	4.7	2	5	11	73	647	1188	567	119	10	1	0	0
	3036	37.7	32.7	4.9	4	5	11	88	708	1355	686	157	19	3	0	0
AM Peak	08:00 362	00:00 43.9	00:00 38.9	06:00 6.6	06:00 2	00:00 0	07:00 3	08:00 10	08:00 89	08:00 172	07:00 90	07:00 14	07:00 3	07:00 1	00:00 0	00:00 0
PM Peak	17:00 270	22:00 41.6	22:00 35.1	21:00 6.7	16:00 1	12:00 2	18:00 3	15:00 11	16:00 89	16:00 123	15:00 51	17:00 17	21:00 2	21:00 1	12:00 0	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	15	41.6	35.5	5.9	0	0	0	0	3	4	5	2	1	0	0	0
01:00	4	45.3	38.8	6.3	0	0	0	0	0	1	2	0	1	0	0	0
02:00	8	41.4	38.1	3.2	0	0	0	0	0	1	5	2	0	0	0	0
03:00	2	38.7	35.0	3.5	0	0	0	0	0	1	1	0	0	0	0	0
04:00	3	37.2	34.2	2.9	0	0	0	0	0	2	1	0	0	0	0	0
05:00	41	38.4	32.1	6.1	0	1	1	1	9	17	9	3	0	0	0	0
06:00	167	42.4	34.8	7.3	2	0	0	5	26	61	44	18	4	5	1	1
07:00	420	38.7	33.6	4.9	0	0	4	11	68	176	132	25	3	1	0	0
08:00	654	37.3	32.7	4.5	1	0	0	13	155	314	136	32	3	0	0	0
09:00	367	37.8	33.2	4.5	0	0	3	9	57	189	87	20	2	0	0	0
10:00	289	37.5	32.7	4.6	0	0	1	4	76	133	51	24	0	0	0	0
11:00	342	37.4	32.5	4.8	1	0	1	10	79	164	71	13	2	1	0	0
12:00	304	37.2	32.5	4.5	0	2	0	8	68	141	76	8	1	0	0	0
13:00	343	38.3	33.3	4.9	0	1	1	8	72	137	105	16	2	1	0	0
14:00	420	37.6	32.8	4.7	0	1	0	13	95	190	96	24	1	0	0	0
15:00	505	36.9	32.5	4.3	1	0	0	14	115	250	106	19	0	0	0	0
16:00	617	36.7	32.2	4.4	1	0	1	14	165	302	106	27	1	0	0	0
17:00	614	38.2	33.1	4.9	0	2	0	17	131	273	141	45	5	0	0	0
18:00	377	38.0	33.0	4.9	0	0	3	8	85	163	94	19	5	0	0	0
19:00	212	38.4	33.5	4.7	0	0	0	5	37	99	53	16	2	0	0	0
20:00	153	39.9	34.1	5.6	0	0	0	4	27	67	34	15	5	0	1	0
21:00	100	40.7	34.5	6.0	0	0	0	4	16	38	28	10	2	1	1	0
22:00	80	40.6	34.5	5.9	0	0	0	4	13	27	22	12	1	1	0	0
23:00	24	44.1	36.3	7.6	0	0	0	1	3	7	8	2	2	0	1	0
Total																
2H(10-12)	631	37.5	32.6	4.7	1	0	2	14	155	297	122	37	2	1	0	0
2H(14-16)	925	37.2	32.6	4.5	1	1	0	27	210	440	202	43	1	0	0	0
12H(7-19)	5252	37.6	32.8	4.7	4	6	14	129	1166	2432	1201	272	25	3	0	0
24H(0-24)	6061	38.0	33.0	4.9	6	7	15	153	1300	2757	1413	352	43	10	4	1
AM Peak	08:00 654	01:00 45.3	01:00 38.8	06:00 7.3	06:00 2	05:00 1	07:00 4	08:00 13	08:00 155	08:00 314	08:00 136	08:00 32	06:00 4	06:00 5	06:00 1	06:00 1
PM Peak	16:00 617	23:00 44.1	23:00 36.3	23:00 7.6	15:00 1	12:00 2	18:00 3	17:00 17	16:00 165	16:00 302	17:00 141	17:00 45	17:00 5	13:00 1	20:00 1	12:00 0

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	8	45.4	38.8	6.4	0	0	0	0	0	2	4	1	0	1	0	0
01:00	5	38.3	35.5	2.7	0	0	0	0	0	2	3	0	0	0	0	0
02:00	2	38.7	35.0	3.5	0	0	0	0	0	1	1	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	4	38.8	36.3	2.5	0	0	0	0	0	1	3	0	0	0	0	0
05:00	19	36.9	30.7	6.1	0	0	1	1	8	4	4	1	0	0	0	0
06:00	84	42.7	35.0	7.4	0	0	1	1	21	26	16	8	9	1	1	0
07:00	163	38.6	32.8	5.6	1	0	2	3	36	72	39	8	0	1	1	0
08:00	290	37.8	33.3	4.3	0	0	0	3	54	145	71	13	4	0	0	0
09:00	198	37.3	32.9	4.3	0	0	1	4	39	97	50	6	1	0	0	0
10:00	176	38.3	32.4	5.7	0	2	6	3	35	76	45	7	2	0	0	0
11:00	149	38.0	33.0	4.8	0	0	0	5	33	63	38	9	1	0	0	0
12:00	164	38.7	32.8	5.7	0	3	1	3	39	62	47	6	2	1	0	0
13:00	151	38.1	33.1	4.8	0	0	1	5	28	66	46	3	1	1	0	0
14:00	236	37.3	32.5	4.6	0	0	1	11	53	100	64	7	0	0	0	0
15:00	276	38.8	33.3	5.3	0	2	1	5	60	114	71	18	4	1	0	0
16:00	360	37.6	32.9	4.5	1	0	1	5	78	166	91	18	0	0	0	0
17:00	376	38.7	34.2	4.4	0	0	1	6	43	172	128	22	4	0	0	0
18:00	186	39.5	34.4	4.9	0	0	0	4	31	62	73	12	4	0	0	0
19:00	112	40.1	34.8	5.1	0	0	0	2	14	42	45	6	0	3	0	0
20:00	81	40.9	34.2	6.4	0	0	0	4	18	23	24	8	3	0	1	0
21:00	57	40.8	35.3	5.3	0	0	0	1	5	26	13	10	2	0	0	0
22:00	50	38.6	34.4	4.0	0	0	0	0	4	28	14	3	1	0	0	0
23:00	21	41.5	36.1	5.3	0	0	0	0	1	9	8	2	0	1	0	0
Total																
2H(10-12)	325	38.2	32.7	5.3	0	2	6	8	68	139	83	16	3	0	0	0
2H(14-16)	512	38.1	32.9	5.0	0	2	2	16	113	214	135	25	4	1	0	0
12H(7-19)	2725	38.2	33.2	4.9	2	7	15	57	529	1195	763	129	23	4	1	0
24H(0-24)	3168	38.6	33.4	5.0	2	7	17	66	600	1359	898	168	38	10	3	0
AM Peak	08:00 290	00:00 45.4	00:00 38.8	06:00 7.4	07:00 1	10:00 2	10:00 6	11:00 5	08:00 54	08:00 145	08:00 71	08:00 13	06:00 9	00:00 1	06:00 1	00:00 0
PM Peak	17:00 376	23:00 41.5	23:00 36.1	20:00 6.4	16:00 1	12:00 3	12:00 1	14:00 11	16:00 78	17:00 172	17:00 128	17:00 22	15:00 4	19:00 3	20:00 1	12:00 0

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	4	36.7	32.5	4.1	0	0	0	0	1	2	1	0	0	0	0	0
01:00	5	42.3	39.5	2.7	0	0	0	0	0	0	3	2	0	0	0	0
02:00	4	36.3	33.8	2.5	0	0	0	0	0	3	1	0	0	0	0	0
03:00	1	-	27.5	-	0	0	0	0	1	0	0	0	0	0	0	0
04:00	7	42.5	34.6	7.6	0	0	0	0	2	3	0	1	1	0	0	0
05:00	20	43.2	36.0	6.9	0	0	0	0	5	4	5	5	0	1	0	0
06:00	83	41.2	35.9	5.2	1	0	0	0	4	26	42	7	3	0	0	0
07:00	285	37.9	32.7	5.0	0	0	0	11	70	124	62	13	4	1	0	0
08:00	397	36.2	31.7	4.4	1	0	1	16	114	185	73	7	0	0	0	0
09:00	210	35.7	31.3	4.2	0	0	0	14	59	103	30	4	0	0	0	0
10:00	155	37.7	32.4	5.2	0	1	1	10	31	66	38	8	0	0	0	0
11:00	146	38.6	33.7	4.7	1	0	0	1	22	70	40	12	0	0	0	0
12:00	177	37.7	31.9	5.6	0	4	2	9	38	73	45	6	0	0	0	0
13:00	185	38.2	33.0	5.1	1	0	0	3	43	84	41	9	4	0	0	0
14:00	205	37.9	32.9	4.9	1	1	0	3	43	95	51	10	1	0	0	0
15:00	242	36.3	31.9	4.2	0	0	0	9	68	113	46	6	0	0	0	0
16:00	259	38.2	32.2	5.8	1	3	4	4	66	112	54	13	1	0	0	1
17:00	275	37.4	32.6	4.6	0	0	0	10	63	128	60	12	2	0	0	0
18:00	187	39.0	33.2	5.6	1	0	0	10	35	75	51	11	3	1	0	0
19:00	142	38.3	33.5	4.6	0	0	0	2	23	77	29	8	2	1	0	0
20:00	81	38.9	33.7	5.0	0	0	0	3	11	41	16	9	1	0	0	0
21:00	62	39.5	34.0	5.4	0	0	0	1	12	27	15	5	1	1	0	0
22:00	32	41.5	36.3	5.1	0	0	0	0	2	13	10	5	2	0	0	0
23:00	8	37.3	31.3	5.8	0	0	0	1	3	1	3	0	0	0	0	0
Total																
2H(10-12)	301	38.2	33.0	5.0	1	1	1	11	53	136	78	20	0	0	0	0
2H(14-16)	447	37.1	32.4	4.5	1	1	0	12	111	208	97	16	1	0	0	0

12H(7-19) 24H(0-24)	2723	37.5	32.4	4.9	6	9	8	100	652	1228	591	111	15	2	0	1
	3172	37.9	32.7	5.0	7	9	8	107	716	1425	716	153	25	5	0	1
AM Peak	08:00	05:00	01:00	04:00	06:00	10:00	08:00	08:00	08:00	08:00	08:00	07:00	07:00	05:00	00:00	00:00
	397	43.2	39.5	7.6	1	1	1	16	114	185	73	13	4	1	0	0
PM Peak	17:00	22:00	22:00	23:00	13:00	12:00	16:00	17:00	15:00	17:00	17:00	16:00	13:00	18:00	12:00	16:00
	275	41.5	36.3	5.8	1	4	4	10	68	128	60	13	4	1	0	1

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	12	43.2	36.7	6.3	0	0	0	0	1	4	5	1	0	1	0	0
01:00	10	41.0	37.5	3.3	0	0	0	0	0	2	6	2	0	0	0	0
02:00	6	36.8	34.2	2.6	0	0	0	0	0	4	2	0	0	0	0	0
03:00	1	-	27.5	-	0	0	0	0	1	0	0	0	0	0	0	0
04:00	11	41.5	35.2	6.1	0	0	0	0	2	4	3	1	1	0	0	0
05:00	39	40.6	33.4	7.0	0	0	1	1	13	8	9	6	0	1	0	0
06:00	167	42.1	35.4	6.4	1	0	1	1	25	52	58	15	12	1	1	0
07:00	448	38.1	32.8	5.2	1	0	2	14	106	196	101	21	4	2	1	0
08:00	687	37.0	32.4	4.4	1	0	1	19	168	330	144	20	4	0	0	0
09:00	408	36.6	32.1	4.3	0	0	1	18	98	200	80	10	1	0	0	0
10:00	331	38.0	32.4	5.4	0	3	7	13	66	142	83	15	2	0	0	0
11:00	295	38.3	33.4	4.7	1	0	0	6	55	133	78	21	1	0	0	0
12:00	341	38.2	32.3	5.7	0	7	3	12	77	135	92	12	2	1	0	0
13:00	336	38.2	33.0	5.0	1	0	1	8	71	150	87	12	5	1	0	0
14:00	441	37.6	32.7	4.7	1	1	1	14	96	195	115	17	1	0	0	0
15:00	518	37.7	32.6	4.9	0	2	1	14	128	227	117	24	4	1	0	0
16:00	619	37.9	32.6	5.1	2	3	5	9	144	278	145	31	1	0	0	1
17:00	651	38.2	33.5	4.5	0	0	1	16	106	300	188	34	6	0	0	0
18:00	373	39.3	33.8	5.3	1	0	0	14	66	137	124	23	7	1	0	0
19:00	254	39.1	34.1	4.9	0	0	0	4	37	119	74	14	2	4	0	0
20:00	162	39.9	34.0	5.7	0	0	0	7	29	64	40	17	4	0	1	0
21:00	119	40.1	34.6	5.3	0	0	0	2	17	53	28	15	3	1	0	0
22:00	82	39.8	35.1	4.5	0	0	0	0	6	41	24	8	3	0	0	0
23:00	29	40.7	34.7	5.8	0	0	0	1	4	10	11	2	0	1	0	0
Total																
2H(10-12)	626	38.2	32.9	5.1	1	3	7	19	121	275	161	36	3	0	0	0
2H(14-16)	959	37.6	32.7	4.8	1	3	2	28	224	422	232	41	5	1	0	0
12H(7-19)	5448	37.9	32.8	4.9	8	16	23	157	1181	2423	1354	240	38	6	1	1
24H(0-24)	6340	38.3	33.0	5.0	9	16	25	173	1316	2784	1614	321	63	15	3	1
AM Peak	08:00 687	00:00 43.2	01:00 37.5	05:00 7.0	06:00 1	10:00 3	10:00 7	08:00 19	08:00 168	08:00 330	08:00 144	07:00 21	06:00 12	07:00 2	06:00 1	00:00 0
PM Peak	17:00 651	23:00 40.7	22:00 35.1	23:00 5.8	16:00 2	12:00 7	16:00 5	17:00 16	16:00 144	17:00 300	17:00 188	17:00 34	18:00 7	19:00 4	20:00 1	16:00 1

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	5	36.2	32.5	3.5	0	0	0	0	1	3	1	0	0	0	0	0
01:00	1	-	37.5	-	0	0	0	0	0	0	1	0	0	0	0	0
02:00	2	59.8	52.5	7.1	0	0	0	0	0	0	0	0	1	0	1	0
03:00	1	-	42.5	-	0	0	0	0	0	0	0	1	0	0	0	0
04:00	4	38.0	35.0	2.9	0	0	0	0	0	2	2	0	0	0	0	0
05:00	14	36.9	31.4	5.3	0	0	0	2	3	5	4	0	0	0	0	0
06:00	77	43.7	35.3	8.1	0	0	1	2	16	23	19	10	1	2	2	1
07:00	185	38.1	33.4	4.5	0	1	0	3	25	99	46	9	2	0	0	0
08:00	317	36.7	32.5	4.1	0	0	0	6	78	153	71	9	0	0	0	0
09:00	196	39.1	33.3	5.6	0	0	5	8	31	79	54	17	2	0	0	0
10:00	170	37.7	32.9	4.7	0	0	0	4	43	70	44	7	2	0	0	0
11:00	152	38.9	33.6	5.1	0	0	0	5	29	62	42	12	1	1	0	0
12:00	161	38.0	33.7	4.1	0	0	0	2	24	77	48	10	0	0	0	0
13:00	197	39.3	34.3	4.9	0	0	0	1	36	78	63	14	4	1	0	0
14:00	215	39.0	33.6	5.2	0	1	0	10	29	100	55	15	5	0	0	0
15:00	327	37.5	33.4	4.0	0	0	0	5	44	183	81	12	1	1	0	0
16:00	394	38.6	33.6	4.9	0	0	0	13	63	182	108	22	4	1	1	0
17:00	362	36.1	31.0	4.9	0	0	5	29	116	141	60	11	0	0	0	0
18:00	158	32.8	28.9	3.7	0	0	1	20	76	56	5	0	0	0	0	0
19:00	109	39.2	34.2	4.8	0	0	0	1	15	55	25	11	1	1	0	0
20:00	83	39.6	34.2	5.3	0	0	0	1	15	36	20	9	1	1	0	0
21:00	59	41.0	35.2	5.7	0	0	0	0	6	27	19	6	0	0	0	1
22:00	45	42.1	34.8	7.1	0	0	1	1	5	19	13	4	1	0	0	1
23:00	22	40.5	36.8	3.6	0	0	0	0	0	7	11	4	0	0	0	0
Total																
2H(10-12)	322	38.3	33.2	4.9	0	0	0	9	72	132	86	19	3	1	0	0
2H(14-16)	542	38.2	33.5	4.5	0	1	0	15	73	283	136	27	6	1	0	0
12H(7-19)	2834	37.8	32.8	4.8	0	2	11	106	594	1280	677	138	21	4	1	0
24H(0-24)	3256	38.3	33.1	5.1	0	2	13	113	655	1457	792	183	26	8	4	3
AM Peak	08:00 317	02:00 59.8	02:00 52.5	06:00 8.1	00:00 0	07:00 1	09:00 5	09:00 8	08:00 78	08:00 153	08:00 71	09:00 17	07:00 2	06:00 2	06:00 2	06:00 1
PM Peak	16:00 394	22:00 42.1	23:00 36.8	22:00 7.1	12:00 0	14:00 1	17:00 5	17:00 29	17:00 116	15:00 183	16:00 108	16:00 22	14:00 5	13:00 1	16:00 1	21:00 1

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	11	39.6	34.8	4.7	0	0	0	0	2	3	5	1	0	0	0	0
01:00	2	39.8	32.5	7.1	0	0	0	0	1	0	1	0	0	0	0	0
02:00	2	38.7	35.0	3.5	0	0	0	0	0	1	1	0	0	0	0	0
03:00	4	41.2	36.3	4.8	0	0	0	0	0	2	1	1	0	0	0	0
04:00	9	38.8	32.5	6.1	0	0	0	1	2	3	2	1	0	0	0	0
05:00	17	41.8	35.4	6.1	0	0	0	1	3	2	7	4	0	0	0	0
06:00	74	40.5	35.0	5.3	1	0	0	1	6	25	32	9	0	0	0	0
07:00	247	37.5	33.1	4.3	0	0	0	8	45	109	78	7	0	0	0	0
08:00	397	35.7	31.8	3.8	0	1	0	7	105	223	54	7	0	0	0	0
09:00	203	37.0	32.7	4.2	0	0	0	3	45	106	39	9	1	0	0	0
10:00	161	38.4	32.6	5.6	0	3	2	2	37	67	37	13	0	0	0	0
11:00	176	37.7	32.6	5.0	1	0	1	4	43	74	44	9	0	0	0	0
12:00	183	36.8	32.1	4.6	1	0	1	8	35	98	37	2	1	0	0	0
13:00	184	38.5	33.0	5.3	0	1	0	5	45	77	38	16	1	1	0	0
14:00	197	37.9	33.3	4.5	0	0	1	2	39	92	50	12	1	0	0	0
15:00	236	37.3	32.4	4.7	0	1	3	5	55	107	57	8	0	0	0	0
16:00	259	37.5	32.4	5.0	0	1	3	5	64	125	47	10	3	1	0	0
17:00	279	35.3	27.2	7.8	8	14	26	47	78	71	23	11	1	0	0	0
18:00	213	30.0	24.2	5.6	3	12	24	73	75	24	2	0	0	0	0	0
19:00	112	38.7	33.5	5.0	0	0	0	1	25	54	17	13	2	0	0	0
20:00	75	37.3	32.8	4.3	0	0	0	2	11	48	10	2	2	0	0	0
21:00	60	38.9	32.3	6.4	0	0	1	7	9	27	12	1	2	1	0	0
22:00	44	39.6	34.5	4.9	0	0	0	0	7	18	15	2	2	0	0	0
23:00	24	39.4	34.4	4.8	0	0	0	0	4	10	8	1	1	0	0	0
Total																
2H(10-12)	337	38.1	32.6	5.3	1	3	3	6	80	141	81	22	0	0	0	0
2H(14-16)	433	37.6	32.8	4.6	0	1	4	7	94	199	107	20	1	0	0	0

12H(7-19) 24H(0-24)	2735	37.3	31.3	5.7	13	33	61	169	666	1173	506	104	8	2	0	0
	3169	37.6	31.7	5.7	14	33	62	182	736	1366	617	139	17	3	0	0
AM Peak	08:00 397	05:00 41.8	03:00 36.3	01:00 7.1	06:00 1	10:00 3	10:00 2	07:00 8	08:00 105	08:00 223	07:00 78	10:00 13	09:00 1	00:00 0	00:00 0	00:00 0
PM Peak	17:00 279	22:00 39.6	22:00 34.5	17:00 7.8	17:00 8	17:00 14	17:00 26	18:00 73	17:00 78	16:00 125	15:00 57	13:00 16	16:00 3	13:00 1	12:00 0	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	16	38.6	34.1	4.4	0	0	0	0	3	6	6	1	0	0	0	0
01:00	3	40.2	34.2	5.8	0	0	0	0	1	0	2	0	0	0	0	0
02:00	4	55.2	43.8	11.1	0	0	0	0	0	1	1	0	1	0	1	0
03:00	5	42.7	37.5	5.0	0	0	0	0	0	2	1	2	0	0	0	0
04:00	13	38.8	33.3	5.3	0	0	0	1	2	5	4	1	0	0	0	0
05:00	31	39.9	33.6	6.0	0	0	0	3	6	7	11	4	0	0	0	0
06:00	151	42.3	35.2	6.9	1	0	1	3	22	48	51	19	1	2	2	1
07:00	432	37.8	33.3	4.3	0	1	0	11	70	208	124	16	2	0	0	0
08:00	714	36.2	32.1	3.9	0	1	0	13	183	376	125	16	0	0	0	0
09:00	399	38.1	33.0	4.9	0	0	5	11	76	185	93	26	3	0	0	0
10:00	331	38.1	32.8	5.1	0	3	2	6	80	137	81	20	2	0	0	0
11:00	328	38.3	33.1	5.0	1	0	1	9	72	136	86	21	1	1	0	0
12:00	344	37.5	32.9	4.5	1	0	1	10	59	175	85	12	1	0	0	0
13:00	381	39.0	33.6	5.1	0	1	0	6	81	155	101	30	5	2	0	0
14:00	412	38.5	33.4	4.9	0	1	1	12	68	192	105	27	6	0	0	0
15:00	563	37.5	33.0	4.3	0	1	3	10	99	290	138	20	1	1	0	0
16:00	653	38.2	33.1	4.9	0	1	3	18	127	307	155	32	7	2	1	0
17:00	641	36.2	29.3	6.6	8	14	31	76	194	212	83	22	1	0	0	0
18:00	371	31.8	26.2	5.4	3	12	25	93	151	80	7	0	0	0	0	0
19:00	221	38.9	33.8	4.9	0	0	0	2	40	109	42	24	3	1	0	0
20:00	158	38.6	33.5	4.9	0	0	0	3	26	84	30	11	3	1	0	0
21:00	119	40.1	33.7	6.2	0	0	1	7	15	54	31	7	2	1	0	1
22:00	89	41.0	34.7	6.1	0	0	1	1	12	37	28	6	3	0	0	1
23:00	46	40.1	35.5	4.4	0	0	0	0	4	17	19	5	1	0	0	0
Total																
2H(10-12)	659	38.2	32.9	5.1	1	3	3	15	152	273	167	41	3	1	0	0
2H(14-16)	975	37.9	33.2	4.6	0	2	4	22	167	482	243	47	7	1	0	0
12H(7-19)	5569	37.6	32.1	5.4	13	35	72	275	1260	2453	1183	242	29	6	1	0
24H(0-24)	6425	38.0	32.4	5.4	14	35	75	295	1391	2823	1409	322	43	11	4	3
AM Peak	08:00 714	02:00 55.2	02:00 43.8	02:00 11.1	06:00 1	10:00 3	09:00 5	08:00 13	08:00 183	08:00 376	08:00 125	09:00 26	09:00 3	06:00 2	06:00 2	06:00 1
PM Peak	16:00 653	22:00 41.0	23:00 35.5	17:00 6.6	17:00 8	17:00 14	17:00 31	18:00 93	17:00 194	16:00 307	16:00 155	16:00 32	16:00 7	13:00 2	16:00 1	21:00 1

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	7	43.1	36.8	6.1	0	0	0	0	0	4	1	1	1	0	0	0
01:00	3	51.5	42.5	8.7	0	0	0	0	0	0	2	0	0	1	0	0
02:00	2	37.5	37.5	0.0	0	0	0	0	0	0	2	0	0	0	0	0
03:00	2	49.8	42.5	7.1	0	0	0	0	0	0	1	0	1	0	0	0
04:00	5	43.3	40.5	2.7	0	0	0	0	0	0	2	3	0	0	0	0
05:00	18	38.6	31.9	6.4	0	0	1	1	3	9	3	0	1	0	0	0
06:00	86	42.0	34.8	7.0	0	1	0	4	17	22	22	16	2	2	0	0
07:00	165	37.0	33.0	3.9	0	0	0	1	31	90	36	7	0	0	0	0
08:00	317	37.6	32.8	4.7	0	1	1	5	76	149	63	20	2	0	0	0
09:00	174	38.0	33.2	4.7	0	0	1	5	32	79	47	9	1	0	0	0
10:00	172	37.8	32.8	4.8	0	0	0	9	37	67	51	8	0	0	0	0
11:00	192	37.9	33.1	4.7	0	0	1	2	44	87	45	11	2	0	0	0
12:00	188	37.8	32.6	5.0	1	0	2	4	41	84	49	5	2	0	0	0
13:00	251	38.9	33.6	5.1	0	0	0	7	44	117	61	16	3	3	0	0
14:00	258	38.2	32.9	5.1	0	1	1	9	57	105	68	14	3	0	0	0
15:00	399	38.3	32.9	5.1	1	0	0	12	93	170	101	16	4	1	0	1
16:00	341	37.2	33.0	4.1	0	0	0	6	70	165	87	13	0	0	0	0
17:00	327	38.9	34.0	4.7	1	0	0	2	52	143	102	24	2	1	0	0
18:00	214	39.1	33.9	5.0	0	1	2	2	31	94	67	15	1	0	1	0
19:00	107	40.1	34.1	5.8	0	0	0	3	23	38	29	10	2	2	0	0
20:00	66	42.1	34.5	7.3	0	1	0	1	15	19	20	7	0	1	2	0
21:00	52	40.1	33.8	6.1	0	0	0	2	13	15	17	4	0	0	1	0
22:00	56	39.2	33.8	5.2	0	0	0	3	11	15	24	2	1	0	0	0
23:00	21	42.0	35.6	6.2	0	0	1	0	2	4	11	2	1	0	0	0
Total																
2H(10-12)	364	37.8	33.0	4.7	0	0	1	11	81	154	96	19	2	0	0	0
2H(14-16)	657	38.2	32.9	5.1	1	1	1	21	150	275	169	30	7	1	0	1
12H(7-19)	2998	38.1	33.2	4.8	3	3	8	64	608	1350	777	158	20	5	1	1
24H(0-24)	3423	38.5	33.3	5.0	3	5	10	78	692	1476	911	203	29	11	4	1
AM Peak	08:00 317	01:00 51.5	01:00 42.5	01:00 8.7	00:00 0	06:00 1	05:00 1	10:00 9	08:00 76	08:00 149	08:00 63	08:00 20	06:00 2	06:00 2	00:00 0	00:00 0
PM Peak	15:00 399	20:00 42.1	23:00 35.6	20:00 7.3	12:00 1	14:00 1	12:00 2	15:00 12	15:00 93	15:00 170	17:00 102	17:00 24	15:00 4	13:00 3	20:00 2	15:00 1

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	6	35.6	31.7	3.8	0	0	0	0	2	3	1	0	0	0	0	0
01:00	6	37.5	37.5	0.0	0	0	0	0	0	0	6	0	0	0	0	0
02:00	3	37.2	34.2	2.9	0	0	0	0	0	2	1	0	0	0	0	0
03:00	6	33.4	29.2	4.1	0	0	0	1	2	3	0	0	0	0	0	0
04:00	6	43.6	36.7	6.6	0	0	0	0	1	2	0	3	0	0	0	0
05:00	26	40.9	35.2	5.5	0	0	0	0	6	5	11	3	1	0	0	0
06:00	81	42.0	35.6	6.2	0	1	0	1	10	22	34	9	3	0	1	0
07:00	241	38.0	33.1	4.7	0	0	0	5	51	113	58	11	2	0	1	0
08:00	354	36.6	32.3	4.2	0	3	1	9	67	194	76	4	0	0	0	0
09:00	192	37.6	32.6	4.8	0	0	0	10	41	88	44	7	1	1	0	0
10:00	170	35.9	31.1	4.6	0	1	1	8	54	81	19	6	0	0	0	0
11:00	168	38.0	32.9	4.9	0	1	0	4	37	79	32	15	0	0	0	0
12:00	217	36.8	32.0	4.7	0	1	1	10	54	100	44	7	0	0	0	0
13:00	199	37.4	32.7	4.5	0	0	0	7	43	93	47	8	1	0	0	0
14:00	240	36.6	32.0	4.5	0	0	0	13	63	107	50	7	0	0	0	0
15:00	273	36.6	31.2	5.2	1	3	3	14	80	116	51	4	1	0	0	0
16:00	289	36.6	31.9	4.6	0	1	1	11	81	133	50	12	0	0	0	0
17:00	251	37.0	32.2	4.6	0	0	2	10	60	118	53	6	2	0	0	0
18:00	185	38.9	33.3	5.4	0	0	3	7	28	89	41	14	1	2	0	0
19:00	105	38.3	33.5	4.7	0	0	1	1	21	42	36	2	2	0	0	0
20:00	77	39.7	33.1	6.4	0	0	0	6	19	25	20	3	2	2	0	0
21:00	66	39.9	34.4	5.3	0	0	0	0	14	25	18	6	3	0	0	0
22:00	53	39.9	34.8	5.0	0	0	0	1	8	17	21	5	1	0	0	0
23:00	26	42.3	34.8	7.2	0	0	0	1	5	9	7	2	1	0	1	0
Total																
2H(10-12)	338	37.0	32.0	4.8	0	2	1	12	91	160	51	21	0	0	0	0
2H(14-16)	513	36.6	31.6	4.9	1	3	3	27	143	223	101	11	1	0	0	0

12H(7-19) 24H(0-24)	2779	37.1	32.2	4.7	1	10	12	108	659	1311	565	101	8	3	1	0
	3240	37.6	32.5	4.9	1	11	13	119	747	1466	720	134	21	5	3	0
AM Peak	08:00 354	04:00 43.6	01:00 37.5	04:00 6.6	00:00 0	08:00 3	08:00 1	09:00 10	08:00 67	08:00 194	08:00 76	11:00 15	06:00 3	09:00 1	06:00 1	00:00 0
PM Peak	16:00 289	23:00 42.3	23:00 34.8	23:00 7.2	15:00 1	15:00 3	15:00 3	15:00 14	16:00 81	16:00 133	17:00 53	18:00 14	21:00 3	18:00 2	23:00 1	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	13	40.2	34.4	5.6	0	0	0	0	2	7	2	1	1	0	0	0
01:00	9	44.3	39.2	5.0	0	0	0	0	0	0	8	0	0	1	0	0
02:00	5	38.3	35.5	2.7	0	0	0	0	0	2	3	0	0	0	0	0
03:00	8	40.3	32.5	7.6	0	0	0	1	2	3	1	0	1	0	0	0
04:00	11	44.0	38.4	5.4	0	0	0	0	1	2	2	6	0	0	0	0
05:00	44	40.1	33.9	6.0	0	0	1	1	9	14	14	3	2	0	0	0
06:00	167	42.0	35.2	6.6	0	2	0	5	27	44	56	25	5	2	1	0
07:00	406	37.6	33.1	4.4	0	0	0	6	82	203	94	18	2	0	1	0
08:00	671	37.1	32.5	4.5	0	4	2	14	143	343	139	24	2	0	0	0
09:00	366	37.8	32.9	4.7	0	0	1	15	73	167	91	16	2	1	0	0
10:00	342	36.9	32.0	4.7	0	1	1	17	91	148	70	14	0	0	0	0
11:00	360	37.9	33.0	4.8	0	1	1	6	81	166	77	26	2	0	0	0
12:00	405	37.3	32.3	4.8	1	1	3	14	95	184	93	12	2	0	0	0
13:00	450	38.2	33.2	4.8	0	0	0	14	87	210	108	24	4	3	0	0
14:00	498	37.5	32.5	4.8	0	1	1	22	120	212	118	21	3	0	0	0
15:00	672	37.6	32.2	5.2	2	3	3	26	173	286	152	20	5	1	0	1
16:00	630	37.0	32.5	4.4	0	1	1	17	151	298	137	25	0	0	0	0
17:00	578	38.1	33.2	4.7	1	0	2	12	112	261	155	30	4	1	0	0
18:00	399	39.0	33.6	5.2	0	1	5	9	59	183	108	29	2	2	1	0
19:00	212	39.3	33.8	5.3	0	0	1	4	44	80	65	12	4	2	0	0
20:00	143	40.8	33.8	6.8	0	1	0	7	34	44	40	10	2	3	2	0
21:00	118	40.0	34.1	5.7	0	0	0	2	27	40	35	10	3	0	1	0
22:00	109	39.5	34.2	5.1	0	0	0	4	19	32	45	7	2	0	0	0
23:00	47	42.1	35.2	6.7	0	0	1	1	7	13	18	4	2	0	1	0
Total																
2H(10-12)	702	37.5	32.5	4.8	0	2	2	23	172	314	147	40	2	0	0	0
2H(14-16)	1170	37.6	32.3	5.1	2	4	4	48	293	498	270	41	8	1	0	1
12H(7-19)	5777	37.7	32.7	4.8	4	13	20	172	1267	2661	1342	259	28	8	2	1
24H(0-24)	6663	38.1	32.9	5.0	4	16	23	197	1439	2942	1631	337	50	16	7	1
AM Peak	08:00 671	01:00 44.3	01:00 39.2	03:00 7.6	00:00 0	08:00 4	08:00 2	10:00 17	08:00 143	08:00 343	08:00 139	11:00 26	06:00 5	06:00 2	06:00 1	00:00 0
PM Peak	15:00 672	23:00 42.1	23:00 35.2	20:00 6.8	15:00 2	15:00 3	18:00 5	15:00 26	15:00 173	16:00 298	17:00 155	17:00 30	15:00 5	13:00 3	20:00 2	15:00 1

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	15	46.2	36.8	9.0	0	0	1	0	1	5	3	3	0	2	0	0
01:00	8	42.7	34.4	8.0	0	0	0	2	0	1	3	2	0	0	0	0
02:00	6	37.1	32.5	4.5	0	0	0	0	2	2	2	0	0	0	0	0
03:00	4	41.7	37.5	4.1	0	0	0	0	0	1	2	1	0	0	0	0
04:00	1	-	37.5	-	0	0	0	0	0	0	1	0	0	0	0	0
05:00	11	37.3	33.0	4.2	0	0	0	0	3	4	4	0	0	0	0	0
06:00	16	39.2	32.8	6.2	0	0	0	1	6	2	5	2	0	0	0	0
07:00	56	40.2	34.2	5.8	0	0	0	2	9	24	14	4	2	1	0	0
08:00	110	38.7	34.0	4.5	0	0	0	1	18	48	33	9	1	0	0	0
09:00	160	37.5	32.9	4.4	0	0	0	4	36	70	42	8	0	0	0	0
10:00	193	37.5	33.0	4.3	0	0	0	5	37	92	51	7	1	0	0	0
11:00	196	39.2	34.0	5.0	0	0	0	4	34	81	58	15	3	1	0	0
12:00	244	37.2	32.4	4.7	0	0	1	10	59	111	53	8	2	0	0	0
13:00	232	38.1	33.4	4.5	0	0	0	3	49	101	65	11	3	0	0	0
14:00	204	39.1	33.8	5.2	0	0	1	3	31	103	50	11	2	1	2	0
15:00	221	37.6	32.7	4.7	0	1	1	3	58	90	58	9	1	0	0	0
16:00	234	38.1	33.2	4.7	0	0	0	6	46	109	56	14	3	0	0	0
17:00	172	38.1	33.2	4.7	0	0	0	3	40	72	46	10	0	1	0	0
18:00	111	39.0	34.3	4.6	0	0	0	1	16	50	32	11	1	0	0	0
19:00	58	38.6	33.8	4.6	0	0	0	0	10	30	13	3	2	0	0	0
20:00	64	40.4	34.8	5.4	0	0	0	0	14	20	19	9	2	0	0	0
21:00	43	40.8	34.5	6.1	0	0	0	1	11	10	15	3	3	0	0	0
22:00	53	38.7	33.5	4.9	0	0	0	1	12	20	16	3	1	0	0	0
23:00	37	39.0	34.4	4.5	0	0	0	0	6	15	12	4	0	0	0	0
Total																
2H(10-12)	389	38.4	33.5	4.7	0	0	0	9	71	173	109	22	4	1	0	0
2H(14-16)	425	38.4	33.2	5.0	0	1	2	6	89	193	108	20	3	1	2	0
12H(7-19)	2133	38.2	33.3	4.7	0	1	3	45	433	951	558	117	19	4	2	0
24H(0-24)	2449	38.4	33.4	4.8	0	1	4	50	498	1061	653	147	27	6	2	0
AM Peak	11:00 196	00:00 46.2	03:00 37.5	00:00 9.0	00:00 0	00:00 0	00:00 1	10:00 5	10:00 37	10:00 92	11:00 58	11:00 15	11:00 3	00:00 2	00:00 0	00:00 0
PM Peak	12:00 244	21:00 40.8	20:00 34.8	21:00 6.1	12:00 0	15:00 1	12:00 1	12:00 10	12:00 59	12:00 111	13:00 65	16:00 14	13:00 3	14:00 1	14:00 2	12:00 0

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	7	39.4	35.4	3.9	0	0	0	0	1	1	5	0	0	0	0	0
01:00	6	35.6	31.7	3.8	0	0	0	0	2	3	1	0	0	0	0	0
02:00	7	38.8	33.2	5.3	0	0	0	0	2	3	1	1	0	0	0	0
03:00	4	36.3	33.8	2.5	0	0	0	0	0	3	1	0	0	0	0	0
04:00	8	46.2	36.9	9.0	0	0	0	1	0	3	1	2	0	1	0	0
05:00	12	42.1	34.6	7.2	0	0	0	1	2	4	2	2	1	0	0	0
06:00	31	45.3	37.0	7.9	1	0	0	0	4	4	10	9	3	0	0	0
07:00	65	41.9	35.1	6.5	1	0	0	1	8	21	24	6	3	1	0	0
08:00	140	38.2	33.5	4.5	0	0	0	6	17	70	37	10	0	0	0	0
09:00	201	38.0	33.0	4.8	0	0	0	6	43	92	49	7	3	1	0	0
10:00	202	37.6	32.5	5.0	0	2	0	4	55	84	44	13	0	0	0	0
11:00	212	38.4	33.1	5.1	1	1	1	5	35	98	62	7	1	1	0	0
12:00	239	37.1	31.9	5.0	1	2	3	7	53	120	47	5	1	0	0	0
13:00	245	36.8	31.7	4.9	0	1	1	14	74	92	56	6	1	0	0	0
14:00	226	38.7	33.2	5.3	2	0	1	5	35	113	52	16	1	1	0	0
15:00	192	38.4	33.5	4.7	0	0	1	2	35	89	51	11	3	0	0	0
16:00	202	37.8	32.6	5.0	0	1	0	7	43	99	42	7	2	0	1	0
17:00	159	37.8	33.4	4.3	0	0	0	3	24	85	39	5	3	0	0	0
18:00	135	40.3	34.3	5.9	0	0	0	0	32	50	36	12	3	1	0	1
19:00	97	39.4	34.2	5.0	0	0	0	1	15	44	28	7	1	0	1	0
20:00	45	38.7	34.5	4.0	0	0	0	0	6	18	18	3	0	0	0	0
21:00	53	38.9	33.3	5.4	0	0	0	2	12	22	12	3	2	0	0	0
22:00	46	43.1	35.3	7.5	0	0	0	0	12	13	13	4	1	1	2	0
23:00	41	37.7	33.7	3.8	0	0	0	0	5	24	9	3	0	0	0	0
Total																
2H(10-12)	414	38.0	32.8	5.0	1	3	1	9	90	182	106	20	1	1	0	0
2H(14-16)	418	38.5	33.4	5.0	2	0	2	7	70	202	103	27	4	1	0	0

12H(7-19) 24H(0-24)	2218	38.2	32.9	5.1	5	7	7	60	454	1013	539	105	21	5	1	1
	2575	38.5	33.2	5.2	6	7	7	65	515	1155	640	139	29	7	4	1
AM Peak	11:00	04:00	06:00	04:00	06:00	10:00	11:00	08:00	10:00	11:00	11:00	10:00	06:00	04:00	00:00	00:00
	212	46.2	37.0	9.0	1	2	1	6	55	98	62	13	3	1	0	0
PM Peak	13:00	22:00	22:00	22:00	14:00	12:00	12:00	13:00	13:00	12:00	13:00	14:00	15:00	14:00	22:00	18:00
	245	43.1	35.3	7.5	2	2	3	14	74	120	56	16	3	1	2	1

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	22	44.3	36.4	7.7	0	0	1	0	2	6	8	3	0	2	0	0
01:00	14	39.9	33.2	6.5	0	0	0	2	2	4	4	2	0	0	0	0
02:00	13	37.8	32.9	4.8	0	0	0	0	4	5	3	1	0	0	0	0
03:00	8	39.5	35.6	3.7	0	0	0	0	0	4	3	1	0	0	0	0
04:00	9	45.7	36.9	8.5	0	0	0	1	0	3	2	2	0	1	0	0
05:00	23	39.9	33.8	5.9	0	0	0	1	5	8	6	2	1	0	0	0
06:00	47	43.5	35.6	7.6	1	0	0	1	10	6	15	11	3	0	0	0
07:00	121	41.1	34.7	6.2	1	0	0	3	17	45	38	10	5	2	0	0
08:00	250	38.4	33.7	4.5	0	0	0	7	35	118	70	19	1	0	0	0
09:00	361	37.8	33.0	4.6	0	0	0	10	79	162	91	15	3	1	0	0
10:00	395	37.6	32.8	4.7	0	2	0	9	92	176	95	20	1	0	0	0
11:00	408	38.8	33.5	5.0	1	1	1	9	69	179	120	22	4	2	0	0
12:00	483	37.1	32.1	4.8	1	2	4	17	112	231	100	13	3	0	0	0
13:00	477	37.5	32.5	4.8	0	1	1	17	123	193	121	17	4	0	0	0
14:00	430	38.9	33.5	5.2	2	0	2	8	66	216	102	27	3	2	2	0
15:00	413	38.0	33.1	4.7	0	1	2	5	93	179	109	20	4	0	0	0
16:00	436	38.0	33.0	4.8	0	1	0	13	89	208	98	21	5	0	1	0
17:00	331	38.0	33.3	4.5	0	0	0	6	64	157	85	15	3	1	0	0
18:00	246	39.8	34.3	5.3	0	0	0	1	48	100	68	23	4	1	0	1
19:00	155	39.1	34.0	4.9	0	0	0	1	25	74	41	10	3	0	1	0
20:00	109	39.7	34.7	4.9	0	0	0	0	20	38	37	12	2	0	0	0
21:00	96	39.7	33.8	5.7	0	0	0	3	23	32	27	6	5	0	0	0
22:00	99	40.9	34.4	6.3	0	0	0	1	24	33	29	7	2	1	2	0
23:00	78	38.3	34.0	4.1	0	0	0	0	11	39	21	7	0	0	0	0
Total																
2H(10-12)	803	38.2	33.2	4.9	1	3	1	18	161	355	215	42	5	2	0	0
2H(14-16)	843	38.4	33.3	5.0	2	1	4	13	159	395	211	47	7	2	2	0
12H(7-19)	4351	38.2	33.1	4.9	5	8	10	105	887	1964	1097	222	40	9	3	1
24H(0-24)	5024	38.5	33.3	5.0	6	8	11	115	1013	2216	1293	286	56	13	6	1
AM Peak	11:00	04:00	04:00	04:00	06:00	10:00	00:00	09:00	10:00	11:00	11:00	11:00	07:00	00:00	00:00	00:00
	408	45.7	36.9	8.5	1	2	1	10	92	179	120	22	5	2	0	0
PM Peak	12:00	22:00	20:00	22:00	14:00	12:00	12:00	12:00	13:00	12:00	13:00	14:00	16:00	14:00	14:00	18:00
	483	40.9	34.7	6.3	2	2	4	17	123	231	121	27	5	2	2	1

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	14	38.2	32.5	5.5	0	0	0	1	4	4	4	1	0	0	0	0
01:00	11	36.9	34.3	2.5	0	0	0	0	0	7	4	0	0	0	0	0
02:00	7	41.2	35.4	5.7	0	0	0	0	1	3	1	2	0	0	0	0
03:00	8	58.4	44.4	13.5	0	0	0	0	0	2	3	0	1	0	0	2
04:00	4	39.0	31.3	7.5	0	0	0	1	1	0	2	0	0	0	0	0
05:00	7	40.2	33.2	6.7	0	0	0	0	3	2	0	2	0	0	0	0
06:00	17	49.0	38.8	9.8	0	0	0	0	4	2	4	3	3	0	0	1
07:00	21	38.0	31.8	6.0	0	0	1	1	6	6	6	1	0	0	0	0
08:00	43	41.1	33.1	7.8	1	1	1	0	6	20	8	3	3	0	0	0
09:00	93	40.2	33.4	6.5	0	2	2	0	18	37	23	9	0	2	0	0
10:00	186	37.9	31.9	5.7	1	3	2	9	40	82	40	8	1	0	0	0
11:00	173	38.1	33.6	4.4	0	0	0	0	38	73	50	11	1	0	0	0
12:00	202	37.7	32.9	4.6	0	0	1	2	49	91	46	12	1	0	0	0
13:00	219	37.0	32.4	4.4	0	0	4	4	47	109	49	6	0	0	0	0
14:00	195	38.8	33.6	5.1	0	0	0	3	39	92	45	9	5	2	0	0
15:00	199	38.4	33.7	4.6	0	0	1	0	37	91	57	10	2	1	0	0
16:00	161	39.3	33.7	5.3	0	0	0	5	34	61	41	18	1	1	0	0
17:00	125	38.8	34.1	4.6	0	0	0	0	21	59	32	11	2	0	0	0
18:00	75	39.4	34.4	4.8	0	0	0	0	14	29	24	6	2	0	0	0
19:00	84	37.5	32.3	5.0	0	1	0	2	21	39	17	3	1	0	0	0
20:00	67	39.9	34.4	5.3	0	0	0	1	12	24	23	5	1	1	0	0
21:00	42	41.2	35.7	5.3	0	0	0	0	5	16	12	7	2	0	0	0
22:00	29	39.3	32.5	6.5	0	1	0	1	7	10	8	1	1	0	0	0
23:00	6	39.4	33.3	5.8	0	0	0	0	2	2	1	1	0	0	0	0
Total																
2H(10-12)	359	38.1	32.7	5.2	1	3	2	9	78	155	90	19	2	0	0	0
2H(14-16)	394	38.6	33.6	4.8	0	0	1	3	76	183	102	19	7	3	0	0
12H(7-19)	1692	38.5	33.2	5.1	2	6	12	24	349	750	421	104	18	6	0	0
24H(0-24)	1988	38.9	33.4	5.3	2	8	12	30	409	861	500	129	27	7	0	3
AM Peak	10:00 186	03:00 58.4	03:00 44.4	03:00 13.5	08:00 1	10:00 3	09:00 2	10:00 9	10:00 40	10:00 82	11:00 50	11:00 11	06:00 3	09:00 2	00:00 0	03:00 2
PM Peak	13:00 219	21:00 41.2	21:00 35.7	22:00 6.5	12:00 0	19:00 1	13:00 4	16:00 5	12:00 49	13:00 109	15:00 57	16:00 18	14:00 5	14:00 2	12:00 0	12:00 0

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	11	39.1	34.3	4.6	0	0	0	0	1	7	1	2	0	0	0	0
01:00	12	38.8	34.2	4.4	0	0	0	0	2	5	4	1	0	0	0	0
02:00	6	47.7	41.7	5.8	0	0	0	0	0	0	3	2	0	1	0	0
03:00	8	39.8	35.0	4.6	0	0	0	0	1	3	3	1	0	0	0	0
04:00	5	37.3	34.5	2.7	0	0	0	0	0	3	2	0	0	0	0	0
05:00	8	39.8	32.5	7.1	0	0	0	1	2	3	0	2	0	0	0	0
06:00	18	47.2	36.7	10.2	0	1	0	0	3	4	4	2	3	0	1	0
07:00	43	40.7	34.1	6.3	0	1	0	0	9	13	15	4	0	1	0	0
08:00	62	40.1	34.8	5.1	0	1	0	0	7	21	26	7	0	0	0	0
09:00	136	38.6	33.9	4.6	0	1	0	0	20	65	41	7	2	0	0	0
10:00	153	38.9	32.8	5.8	1	3	2	3	20	77	38	8	0	1	0	0
11:00	187	36.6	32.3	4.2	0	0	1	5	44	93	40	4	0	0	0	0
12:00	231	37.5	32.9	4.4	1	1	0	2	38	130	50	7	2	0	0	0
13:00	228	36.6	31.5	4.8	0	1	4	12	55	111	41	2	2	0	0	0
14:00	196	37.1	32.2	4.7	0	0	0	10	52	87	35	12	0	0	0	0
15:00	193	38.1	33.4	4.5	0	0	0	3	33	98	47	9	2	1	0	0
16:00	150	39.1	33.9	5.0	0	0	1	2	24	67	43	8	5	0	0	0
17:00	122	39.4	33.8	5.4	0	0	1	7	16	48	38	10	2	0	0	0
18:00	77	38.0	32.7	5.1	0	0	0	7	12	34	19	5	0	0	0	0
19:00	68	40.1	35.0	4.9	0	0	0	0	9	28	21	9	0	1	0	0
20:00	69	39.7	34.6	4.9	0	0	0	1	9	27	27	3	1	1	0	0
21:00	33	42.8	36.0	6.6	0	0	0	3	0	12	11	3	4	0	0	0
22:00	22	44.8	39.3	5.2	0	0	0	0	0	5	8	5	4	0	0	0
23:00	10	43.7	36.5	7.0	0	0	0	0	1	5	1	1	2	0	0	0
Total																
2H(10-12)	340	37.7	32.5	5.0	1	3	3	8	64	170	78	12	0	1	0	0
2H(14-16)	389	37.6	32.8	4.7	0	0	0	13	85	185	82	21	2	1	0	0

12H(7-19) 24H(0-24)	1778	38.0	32.9	4.9	2	8	9	51	330	844	433	83	15	3	0	0
	2048	38.6	33.3	5.1	2	9	9	56	358	946	518	114	29	6	1	0
AM Peak	11:00 187	02:00 47.7	02:00 41.7	06:00 10.2	10:00 1	10:00 3	10:00 2	11:00 5	11:00 44	11:00 93	09:00 41	10:00 8	06:00 3	02:00 1	06:00 1	00:00 0
PM Peak	12:00 231	22:00 44.8	22:00 39.3	23:00 7.0	12:00 1	12:00 1	13:00 4	13:00 12	13:00 55	12:00 130	12:00 50	14:00 12	16:00 5	15:00 1	12:00 0	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	25	38.6	33.3	5.1	0	0	0	1	5	11	5	3	0	0	0	0
01:00	23	37.9	34.2	3.6	0	0	0	0	2	12	8	1	0	0	0	0
02:00	13	44.9	38.3	6.4	0	0	0	0	1	3	4	4	0	1	0	0
03:00	16	51.0	39.7	10.9	0	0	0	0	1	5	6	1	1	0	0	2
04:00	9	38.5	33.1	5.3	0	0	0	1	1	3	4	0	0	0	0	0
05:00	15	39.7	32.8	6.7	0	0	0	1	5	5	0	4	0	0	0	0
06:00	35	48.0	37.7	9.9	0	1	0	0	7	6	8	5	6	0	1	1
07:00	64	39.9	33.4	6.3	0	1	1	1	15	19	21	5	0	1	0	0
08:00	105	40.7	34.1	6.4	1	2	1	0	13	41	34	10	3	0	0	0
09:00	229	39.3	33.7	5.4	0	3	2	0	38	102	64	16	2	2	0	0
10:00	339	38.3	32.3	5.8	2	6	4	12	60	159	78	16	1	1	0	0
11:00	360	37.4	32.9	4.3	0	0	1	5	82	166	90	15	1	0	0	0
12:00	433	37.6	32.9	4.5	1	1	1	4	87	221	96	19	3	0	0	0
13:00	447	36.8	31.9	4.7	0	1	8	16	102	220	90	8	2	0	0	0
14:00	391	38.0	32.9	4.9	0	0	0	13	91	179	80	21	5	2	0	0
15:00	392	38.3	33.6	4.5	0	0	1	3	70	189	104	19	4	2	0	0
16:00	311	39.2	33.8	5.2	0	0	1	7	58	128	84	26	6	1	0	0
17:00	247	39.1	33.9	5.0	0	0	1	7	37	107	70	21	4	0	0	0
18:00	152	38.7	33.5	5.0	0	0	0	7	26	63	43	11	2	0	0	0
19:00	152	38.8	33.5	5.1	0	1	0	2	30	67	38	12	1	1	0	0
20:00	136	39.8	34.5	5.1	0	0	0	2	21	51	50	8	2	2	0	0
21:00	75	41.9	35.8	5.8	0	0	0	3	5	28	23	10	6	0	0	0
22:00	51	42.6	35.4	6.9	0	1	0	1	7	15	16	6	5	0	0	0
23:00	16	42.1	35.3	6.6	0	0	0	0	3	7	2	2	2	0	0	0
Total																
2H(10-12)	699	37.9	32.6	5.1	2	6	5	17	142	325	168	31	2	1	0	0
2H(14-16)	783	38.1	33.2	4.8	0	0	1	16	161	368	184	40	9	4	0	0
12H(7-19)	3470	38.3	33.1	5.0	4	14	21	75	679	1594	854	187	33	9	0	0
24H(0-24)	4036	38.7	33.3	5.2	4	17	21	86	767	1807	1018	243	56	13	1	3
AM Peak	11:00 360	03:00 51.0	03:00 39.7	03:00 10.9	10:00 2	10:00 6	10:00 4	10:00 12	11:00 82	11:00 166	11:00 90	09:00 16	06:00 6	09:00 2	06:00 1	03:00 2
PM Peak	13:00 447	22:00 42.6	21:00 35.8	22:00 6.9	12:00 1	12:00 1	13:00 8	13:00 16	13:00 102	12:00 221	15:00 104	16:00 26	16:00 6	14:00 2	12:00 0	12:00 0

360 TSL Ltd

Matson ATC 1, B4073 Painswick Road

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	7	40.4	36.8	3.5	0	0	0	0	0	2	4	1	0	0	0	0
01:00	4	36.2	31.3	4.8	0	0	0	0	2	1	1	0	0	0	0	0
02:00	1	-	32.5	-	0	0	0	0	0	1	0	0	0	0	0	0
03:00	3	37.2	34.2	2.9	0	0	0	0	0	2	1	0	0	0	0	0
04:00	7	43.2	35.4	7.6	0	0	0	0	2	2	1	1	1	0	0	0
05:00	25	42.8	33.5	9.0	0	0	1	2	7	7	2	3	1	2	0	0
06:00	87	43.5	35.4	7.8	0	0	1	4	16	27	18	9	7	5	0	0
07:00	154	38.2	33.5	4.6	0	0	1	0	31	70	43	6	3	0	0	0
08:00	252	36.4	32.4	3.9	0	0	0	5	56	135	50	6	0	0	0	0
09:00	169	36.7	32.9	3.7	0	0	0	2	31	92	41	3	0	0	0	0
10:00	153	37.2	32.3	4.7	0	0	0	5	43	70	26	8	0	1	0	0
11:00	158	37.1	32.6	4.3	0	0	0	6	34	74	39	5	0	0	0	0
12:00	154	36.9	32.8	3.9	0	0	0	1	33	82	31	7	0	0	0	0
13:00	182	37.2	32.6	4.5	0	0	0	8	41	80	47	6	0	0	0	0
14:00	200	36.3	32.3	3.9	0	0	0	4	49	106	35	6	0	0	0	0
15:00	275	36.2	31.8	4.3	0	0	2	9	80	123	57	4	0	0	0	0
16:00	322	37.1	32.8	4.1	0	0	0	8	60	173	69	10	2	0	0	0
17:00	295	38.0	32.9	4.9	0	1	0	5	68	132	78	7	3	0	0	1
18:00	150	39.6	34.2	5.2	0	1	0	3	23	56	54	10	2	1	0	0
19:00	105	39.2	33.9	5.1	0	0	0	4	17	44	27	12	1	0	0	0
20:00	60	37.2	32.5	4.5	0	0	0	1	19	21	17	2	0	0	0	0
21:00	46	39.0	34.7	4.2	0	0	0	0	5	21	15	5	0	0	0	0
22:00	30	40.6	34.2	6.2	0	0	0	2	6	8	9	4	1	0	0	0
23:00	13	42.8	35.6	6.9	0	0	0	1	1	5	2	3	1	0	0	0
Total																
2H(10-12)	311	37.1	32.4	4.5	0	0	0	11	77	144	65	13	0	1	0	0
2H(14-16)	475	36.3	32.0	4.1	0	0	2	13	129	229	92	10	0	0	0	0
12H(7-19)	2464	37.2	32.7	4.4	0	2	3	56	549	1193	570	78	10	2	0	1
24H(0-24)	2852	37.7	32.9	4.7	0	2	5	70	624	1334	667	118	22	9	0	1
AM Peak	08:00 252	06:00 43.5	00:00 36.8	05:00 9.0	00:00 0	00:00 0	05:00 1	11:00 6	08:00 56	08:00 135	08:00 50	06:00 9	06:00 7	06:00 5	00:00 0	00:00 0
PM Peak	16:00 322	23:00 42.8	23:00 35.6	23:00 6.9	12:00 0	17:00 1	15:00 2	15:00 9	15:00 80	16:00 173	17:00 78	19:00 12	17:00 3	18:00 1	12:00 0	17:00 1

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 ≥60
00:00	3	37.2	34.2	2.9	0	0	0	0	0	2	1	0	0	0	0	0
01:00	2	38.7	35.0	3.5	0	0	0	0	0	1	1	0	0	0	0	0
02:00	5	44.7	32.5	11.7	0	1	0	0	0	1	2	1	0	0	0	0
03:00	2	74.9	43.8	30.1	0	0	0	1	0	0	0	0	0	0	0	1
04:00	7	44.2	37.5	6.5	0	0	0	0	1	1	3	1	1	0	0	0
05:00	22	45.5	38.9	6.4	0	0	0	0	2	4	6	7	2	1	0	0
06:00	79	43.6	36.9	6.5	1	0	0	0	8	18	28	18	5	1	0	0
07:00	250	38.1	32.8	5.2	0	0	2	13	49	114	53	15	4	0	0	0
08:00	348	36.7	31.1	5.4	4	1	7	17	92	162	58	6	0	1	0	0
09:00	161	37.5	32.6	4.7	0	1	1	1	42	68	41	7	0	0	0	0
10:00	135	36.6	32.1	4.4	0	0	0	5	39	56	32	3	0	0	0	0
11:00	178	35.5	31.4	4.0	0	0	0	10	51	86	31	0	0	0	0	0
12:00	165	36.7	32.2	4.3	0	0	0	6	43	76	35	5	0	0	0	0
13:00	187	36.6	32.4	4.1	0	0	0	4	47	92	38	6	0	0	0	0
14:00	200	36.7	32.2	4.3	0	0	0	7	52	92	43	6	0	0	0	0
15:00	247	35.6	31.3	4.2	0	0	0	11	83	111	37	5	0	0	0	0
16:00	256	37.7	32.2	5.3	1	1	4	9	58	118	51	12	2	0	0	0
17:00	273	36.9	32.1	4.6	0	0	1	16	63	124	62	6	1	0	0	0
18:00	163	38.4	32.7	5.6	1	1	0	7	38	63	42	9	2	0	0	0
19:00	118	36.5	32.3	4.1	0	0	0	4	27	60	24	3	0	0	0	0
20:00	84	39.2	33.5	5.5	0	0	0	2	20	35	17	6	4	0	0	0
21:00	50	40.5	34.7	5.6	0	0	0	1	10	16	13	9	1	0	0	0
22:00	28	44.4	35.4	8.6	0	0	0	2	4	9	8	3	0	1	0	1
23:00	10	46.3	39.0	7.1	0	0	0	0	0	4	2	2	1	1	0	0
Total																
2H(10-12)	313	36.0	31.7	4.2	0	0	0	15	90	142	63	3	0	0	0	0
2H(14-16)	447	36.1	31.7	4.2	0	0	0	18	135	203	80	11	0	0	0	0

12H(7-19) 24H(0-24)	2563	37.0	32.0	4.8	6	4	15	106	657	1162	523	80	9	1	0	0
	2973	37.7	32.4	5.1	7	5	15	116	729	1313	628	130	23	5	0	2
AM Peak	08:00 348	03:00 74.9	03:00 43.8	03:00 30.1	08:00 4	02:00 1	08:00 7	08:00 17	08:00 92	08:00 162	08:00 58	06:00 18	06:00 5	05:00 1	00:00 0	03:00 1
PM Peak	17:00 273	23:00 46.3	23:00 39.0	22:00 8.6	16:00 1	16:00 1	16:00 4	17:00 16	15:00 83	17:00 124	17:00 62	16:00 12	20:00 4	22:00 1	12:00 0	22:00 1

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
00:00	10	39.5	36.0	3.4	0	0	0	0	0	4	5	1	0	0	0	0
01:00	6	37.1	32.5	4.5	0	0	0	0	2	2	2	0	0	0	0	0
02:00	6	43.4	32.5	10.5	0	1	0	0	0	2	2	1	0	0	0	0
03:00	5	54.6	38.0	16.0	0	0	0	1	0	2	1	0	0	0	0	1
04:00	14	43.5	36.4	6.8	0	0	0	0	3	3	4	2	2	0	0	0
05:00	47	44.6	36.0	8.3	0	0	1	2	9	11	8	10	3	3	0	0
06:00	166	43.6	36.1	7.2	1	0	1	4	24	45	46	27	12	6	0	0
07:00	404	38.2	33.0	5.0	0	0	3	13	80	184	96	21	7	0	0	0
08:00	600	36.7	31.7	4.9	4	1	7	22	148	297	108	12	0	1	0	0
09:00	330	37.1	32.7	4.2	0	1	1	3	73	160	82	10	0	0	0	0
10:00	288	36.9	32.2	4.6	0	0	0	10	82	126	58	11	0	1	0	0
11:00	336	36.3	31.9	4.2	0	0	0	16	85	160	70	5	0	0	0	0
12:00	319	36.8	32.5	4.1	0	0	0	7	76	158	66	12	0	0	0	0
13:00	369	36.9	32.5	4.3	0	0	0	12	88	172	85	12	0	0	0	0
14:00	400	36.5	32.2	4.1	0	0	0	11	101	198	78	12	0	0	0	0
15:00	522	36.0	31.6	4.2	0	0	2	20	163	234	94	9	0	0	0	0
16:00	578	37.4	32.5	4.7	1	1	4	17	118	291	120	22	4	0	0	0
17:00	568	37.5	32.5	4.7	0	1	1	21	131	256	140	13	4	0	0	1
18:00	313	39.0	33.4	5.5	1	2	0	10	61	119	96	19	4	1	0	0
19:00	223	37.9	33.0	4.7	0	0	0	8	44	104	51	15	1	0	0	0
20:00	144	38.4	33.1	5.1	0	0	0	3	39	56	34	8	4	0	0	0
21:00	96	39.8	34.7	5.0	0	0	0	1	15	37	28	14	1	0	0	0
22:00	58	42.5	34.8	7.4	0	0	0	4	10	17	17	7	1	1	0	1
23:00	23	44.4	37.1	7.1	0	0	0	1	1	9	4	5	2	1	0	0
Total																
2H(10-12)	624	36.6	32.1	4.4	0	0	0	26	167	286	128	16	0	1	0	0
2H(14-16)	922	36.2	31.9	4.2	0	0	2	31	264	432	172	21	0	0	0	0
12H(7-19)	5027	37.1	32.3	4.6	6	6	18	162	1206	2355	1093	158	19	3	0	1
24H(0-24)	5825	37.7	32.6	4.9	7	7	20	186	1353	2647	1295	248	45	14	0	3
AM Peak	08:00 600	03:00 54.6	03:00 38.0	03:00 16.0	08:00 4	02:00 1	08:00 7	08:00 22	08:00 148	08:00 297	08:00 108	06:00 27	06:00 12	06:00 6	00:00 0	03:00 1
PM Peak	16:00 578	23:00 44.4	23:00 37.1	22:00 7.4	16:00 1	18:00 2	16:00 4	17:00 21	15:00 163	16:00 291	17:00 140	16:00 22	16:00 4	18:00 1	12:00 0	17:00 1

360 TSL Ltd

Matson ATC 2, Winnycroft Lane



Direction: Northbound

Hour Beginning	Tue 18/01/2022	Wed 19/01/2022	Thu 20/01/2022	Fri 21/01/2022	Sat 22/01/2022	Sun 23/01/2022	Mon 24/01/2022	5-Day Ave.	7-Day Ave.
00:00	2	2	0	3	2	4	1	2	2
01:00	1	2	4	0	5	4	0	1	2
02:00	1	0	0	2	2	1	1	1	1
03:00	1	1	0	1	0	0	0	1	0
04:00	1	0	1	1	2	2	1	1	1
05:00	3	3	4	4	4	3	3	3	3
06:00	26	21	26	19	9	7	29	24	20
07:00	71	91	82	76	21	16	73	79	61
08:00	199	204	212	202	35	29	178	199	151
09:00	112	117	97	108	54	54	100	107	92
10:00	55	80	71	59	87	73	60	65	69
11:00	71	71	65	73	89	81	55	67	72
12:00	52	59	62	76	136	113	56	61	79
13:00	65	66	79	101	116	113	63	75	86
14:00	113	109	106	148	135	91	107	117	116
15:00	184	186	198	232	91	90	174	195	165
16:00	229	221	227	211	79	84	206	219	180
17:00	186	193	205	162	75	49	180	185	150
18:00	69	85	76	80	45	46	74	77	68
19:00	37	47	40	41	20	31	36	40	36
20:00	38	40	35	37	26	27	38	38	34
21:00	25	22	24	27	18	13	13	22	20
22:00	23	13	15	16	20	9	19	17	16
23:00	10	5	7	15	8	4	6	9	8
Total									
12H(7-19)	1406	1482	1480	1528	963	839	1326	1444	1289
16H(5-21)	1533	1612	1605	1652	1036	917	1442	1569	1399
18H(6-24)	1565	1630	1627	1683	1064	930	1467	1594	1424
24H(0-24)	1574	1638	1636	1694	1079	944	1473	1603	1434
AM Peak	08:00	08:00	08:00	08:00	11:00	11:00	08:00	08:00	08:00
	199	204	212	202	89	81	178	199	151
PM Peak	16:00	16:00	16:00	15:00	12:00	12:00	16:00	16:00	16:00
	229	221	227	232	136	113	206	219	180

360 TSL Ltd

Direction: Southbound

Hour Beginning	Tue 18/01/2022	Wed 19/01/2022	Thu 20/01/2022	Fri 21/01/2022	Sat 22/01/2022	Sun 23/01/2022	Mon 24/01/2022	5-Day Ave.	7-Day Ave.
00:00	2	2	2	1	3	1	1	2	2
01:00	1	2	1	1	2	4	1	1	2
02:00	1	1	1	2	3	2	0	1	1
03:00	2	0	1	3	1	1	2	2	1
04:00	3	4	8	4	5	0	5	5	4
05:00	22	26	22	28	11	14	27	25	21
06:00	51	48	47	36	11	10	51	47	36
07:00	137	152	150	150	22	19	142	146	110
08:00	254	264	278	258	47	28	235	258	195
09:00	107	112	105	103	64	68	88	103	97
10:00	56	64	79	72	104	78	51	64	72
11:00	53	71	68	80	105	95	67	68	77
12:00	69	72	73	104	107	82	60	76	81
13:00	91	82	87	93	113	101	100	91	95
14:00	100	102	112	130	88	94	86	106	102
15:00	148	170	174	199	81	74	148	168	142
16:00	153	154	142	171	79	76	142	152	131
17:00	142	142	153	109	72	45	113	132	111
18:00	70	71	85	66	45	53	64	71	65
19:00	48	48	36	43	21	30	38	43	38
20:00	27	27	29	20	16	26	32	27	25
21:00	20	23	29	18	23	13	16	21	20
22:00	12	19	16	16	14	4	11	15	13
23:00	2	5	9	6	11	1	5	5	6
Total									
12H(7-19)	1380	1456	1506	1535	957	813	1296	1435	1278
16H(5-21)	1516	1602	1647	1652	1028	891	1433	1572	1397
18H(6-24)	1540	1626	1672	1674	1053	897	1449	1592	1416
24H(0-24)	1571	1661	1707	1713	1078	919	1485	1627	1448
AM Peak	08:00	08:00	08:00	08:00	11:00	11:00	08:00	08:00	08:00
	254	264	278	258	105	95	235	258	195
PM Peak	16:00	15:00	15:00	15:00	13:00	13:00	15:00	15:00	15:00
	153	170	174	199	113	101	148	168	142

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Tue 18/01/2022	Wed 19/01/2022	Thu 20/01/2022	Fri 21/01/2022	Sat 22/01/2022	Sun 23/01/2022	Mon 24/01/2022	5-Day Ave.	7-Day Ave.
00:00	4	4	2	4	5	5	2	3	4
01:00	2	4	5	1	7	8	1	3	4
02:00	2	1	1	4	5	3	1	2	2
03:00	3	1	1	4	1	1	2	2	2
04:00	4	4	9	5	7	2	6	6	5
05:00	25	29	26	32	15	17	30	28	25
06:00	77	69	73	55	20	17	80	71	56
07:00	208	243	232	226	43	35	215	225	172
08:00	453	468	480	460	82	57	413	457	346
09:00	219	229	202	211	148	122	198	210	188
10:00	111	144	150	131	191	151	111	129	141
11:00	124	142	133	153	194	176	122	135	149
12:00	121	131	135	180	243	195	116	137	160
13:00	156	148	166	194	229	214	163	165	181
14:00	213	211	218	278	223	185	193	223	217
15:00	332	356	372	431	172	164	322	363	307
16:00	382	375	369	382	158	160	348	371	311
17:00	328	335	358	271	147	94	293	317	261
18:00	139	156	161	146	90	99	138	148	133
19:00	85	95	76	84	41	61	74	83	74
20:00	65	67	64	57	42	53	70	65	60
21:00	45	45	53	45	41	26	29	43	41
22:00	35	32	31	32	34	13	30	32	30
23:00	12	10	16	21	19	5	11	14	13
Total									
12H(7-19)	2786	2938	2986	3063	1920	1652	2622	2879	2567
16H(5-21)	3058	3214	3252	3304	2064	1809	2875	3141	2797
18H(6-24)	3105	3256	3299	3357	2117	1827	2916	3187	2840
24H(0-24)	3145	3299	3343	3407	2157	1863	2958	3230	2882
AM Peak	08:00	08:00	08:00	08:00	11:00	11:00	08:00	08:00	08:00
	453	468	490	460	194	176	413	457	346
PM Peak	16:00	16:00	15:00	15:00	12:00	13:00	16:00	16:00	16:00
	382	375	372	431	243	214	348	371	311

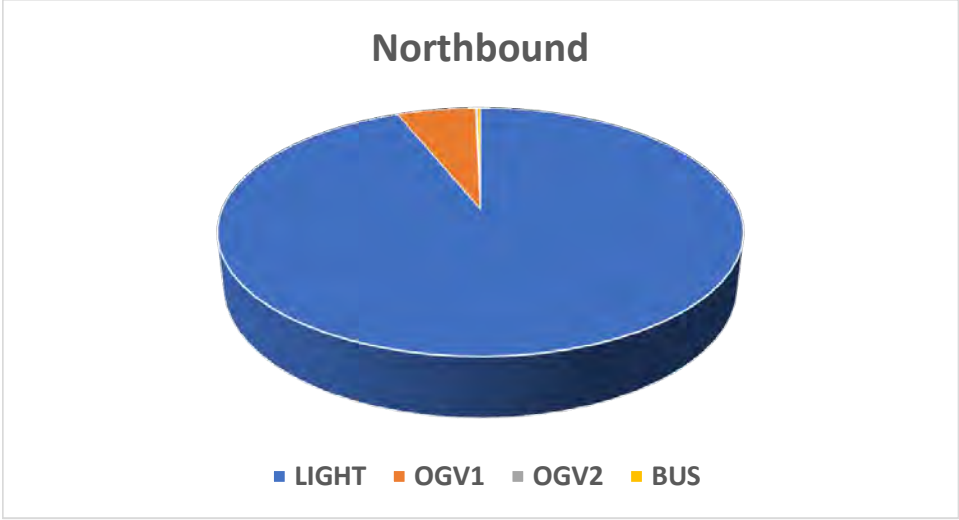
360 TSL Ltd

Matson ATC 2, Winnycroft Lane

Direction: Northbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	1574	1483	86	1	4
Wed 19 Jan 2022	1638	1521	111	2	4
Thu 20 Jan 2022	1636	1536	96	0	4
Fri 21 Jan 2022	1694	1590	95	6	3
Sat 22 Jan 2022	1079	1021	52	2	4
Sun 23 Jan 2022	944	901	41	0	2
Mon 24 Jan 2022	1473	1370	99	1	3
5 Day Ave.	1603	1500	97	2	4
7 Day Ave.	1434	1346	83	2	3

	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	100.0%	94.2%	5.5%	0.1%	0.3%
Wed 19 Jan 2022	100.0%	92.9%	6.8%	0.1%	0.2%
Thu 20 Jan 2022	100.0%	93.9%	5.9%	0.0%	0.2%
Fri 21 Jan 2022	100.0%	93.9%	5.6%	0.4%	0.2%
Sat 22 Jan 2022	100.0%	94.6%	4.8%	0.2%	0.4%
Sun 23 Jan 2022	100.0%	95.4%	4.3%	0.0%	0.2%
Mon 24 Jan 2022	100.0%	93.0%	6.7%	0.1%	0.2%
5 Day Ave.	100.0%	93.6%	6.1%	0.1%	0.2%
7 Day Ave.	100.0%	93.9%	5.8%	0.1%	0.2%

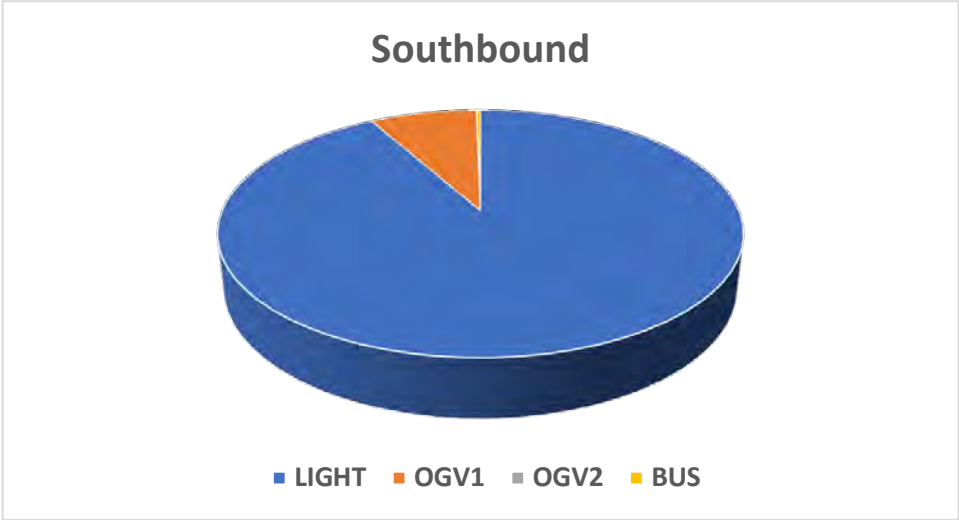
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Direction: Southbound					
	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	1571	1437	130	0	4
Wed 19 Jan 2022	1661	1501	154	1	5
Thu 20 Jan 2022	1707	1563	139	0	5
Fri 21 Jan 2022	1713	1574	134	2	3
Sat 22 Jan 2022	1078	1009	66	0	3
Sun 23 Jan 2022	919	868	47	1	3
Mon 24 Jan 2022	1485	1356	126	0	3
5 Day Ave.	1627	1486	137	1	4
7 Day Ave.	1448	1330	114	1	4

	Total Volume	LIGHT	OGV1	OGV2	BUS
Tue 18 Jan 2022	100.0%	91.5%	8.3%	0.0%	0.3%
Wed 19 Jan 2022	100.0%	90.4%	9.3%	0.1%	0.3%
Thu 20 Jan 2022	100.0%	91.6%	8.1%	0.0%	0.3%
Fri 21 Jan 2022	100.0%	91.9%	7.8%	0.1%	0.2%
Sat 22 Jan 2022	100.0%	93.6%	6.1%	0.0%	0.3%
Sun 23 Jan 2022	100.0%	94.5%	5.1%	0.1%	0.3%
Mon 24 Jan 2022	100.0%	91.3%	8.5%	0.0%	0.2%
5 Day Ave.	100.0%	91.3%	8.4%	0.0%	0.2%
7 Day Ave.	100.0%	91.8%	7.9%	0.0%	0.3%

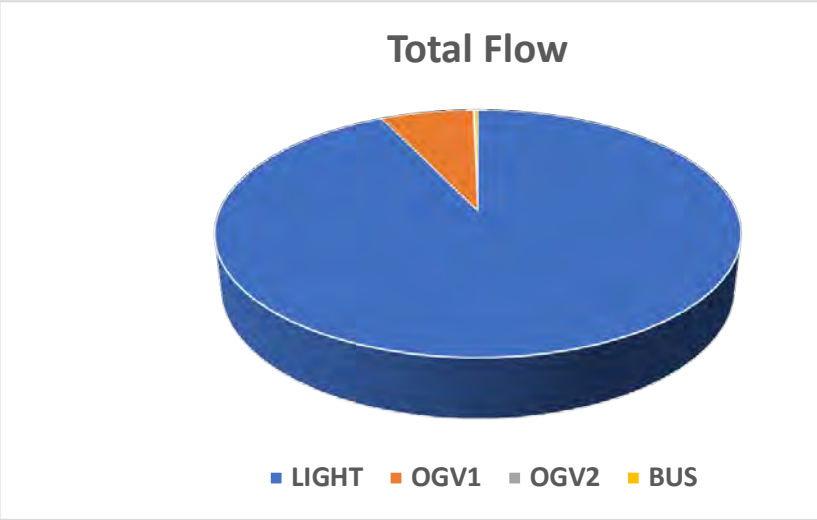
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Direction: Total Flow				
	Total Volume	LIGHT	OGV1	OGV2
Tue 18 Jan 2022	3145	2920	216	1
Wed 19 Jan 2022	3299	3022	265	3
Thu 20 Jan 2022	3343	3099	235	0
Fri 21 Jan 2022	3407	3164	229	8
Sat 22 Jan 2022	2157	2030	118	2
Sun 23 Jan 2022	1863	1769	88	1
Mon 24 Jan 2022	2958	2726	225	1
5 Day Ave.	3230	2986	234	3
7 Day Ave.	2882	2676	197	2

	Total Volume	LIGHT	OGV1	OGV2
Tue 18 Jan 2022	100.0%	92.8%	6.9%	0.0%
Wed 19 Jan 2022	100.0%	91.6%	8.0%	0.1%
Thu 20 Jan 2022	100.0%	92.7%	7.0%	0.0%
Fri 21 Jan 2022	100.0%	92.9%	6.7%	0.2%
Sat 22 Jan 2022	100.0%	94.1%	5.5%	0.1%
Sun 23 Jan 2022	100.0%	95.0%	4.7%	0.1%
Mon 24 Jan 2022	100.0%	92.2%	7.6%	0.0%
5 Day Ave.	100.0%	92.4%	7.2%	0.1%
7 Day Ave.	100.0%	92.9%	6.8%	0.1%

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BUS
8
9
9
6
7
5
6
8
7

BUS
0.3%
0.3%
0.3%
0.2%
0.3%
0.3%
0.2%
0.2%
0.2%
0.2%

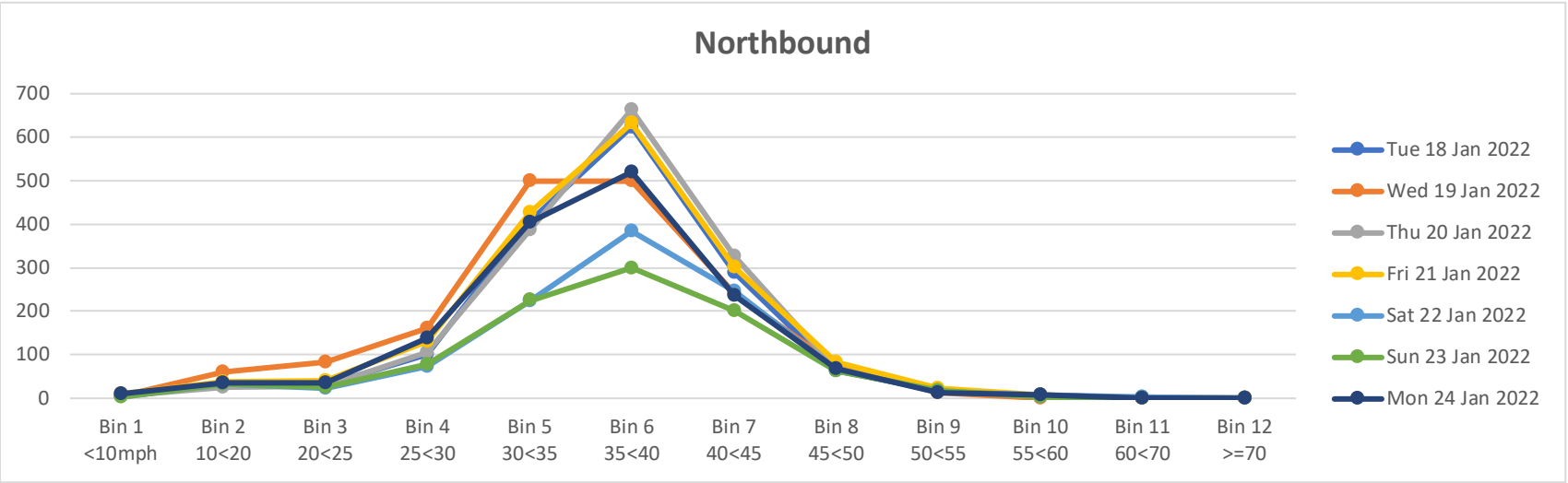
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Matson ATC 2, Winnycroft Lane

Direction: Northbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 18 Jan 2022	1574	43.1	36.3	6.5	5	31	30	100	408	624	289	62	17	6	1	1
Wed 19 Jan 2022	1638	42.3	34.7	7.3	6	60	82	160	499	499	242	75	13	1	0	1
Thu 20 Jan 2022	1636	43.3	36.6	6.4	6	26	29	105	388	663	327	67	19	3	2	1
Fri 21 Jan 2022	1694	43.4	36.1	7.0	10	38	40	130	427	632	302	84	22	8	1	0
Sat 22 Jan 2022	1079	44.4	36.8	7.4	4	34	23	73	224	384	247	66	15	7	2	0
Sun 23 Jan 2022	944	44.0	36.3	7.4	2	33	25	78	225	300	200	62	17	2	0	0
Mon 24 Jan 2022	1473	42.9	35.6	7.0	10	36	36	139	405	520	237	68	14	7	1	0
5 Day Ave.	1603	43.0	35.9	6.9	7	38	43	127	425	588	279	71	17	5	1	1
7 Day Ave.	1434	43.3	36.1	7.0	6	37	38	112	368	517	263	69	17	5	1	0

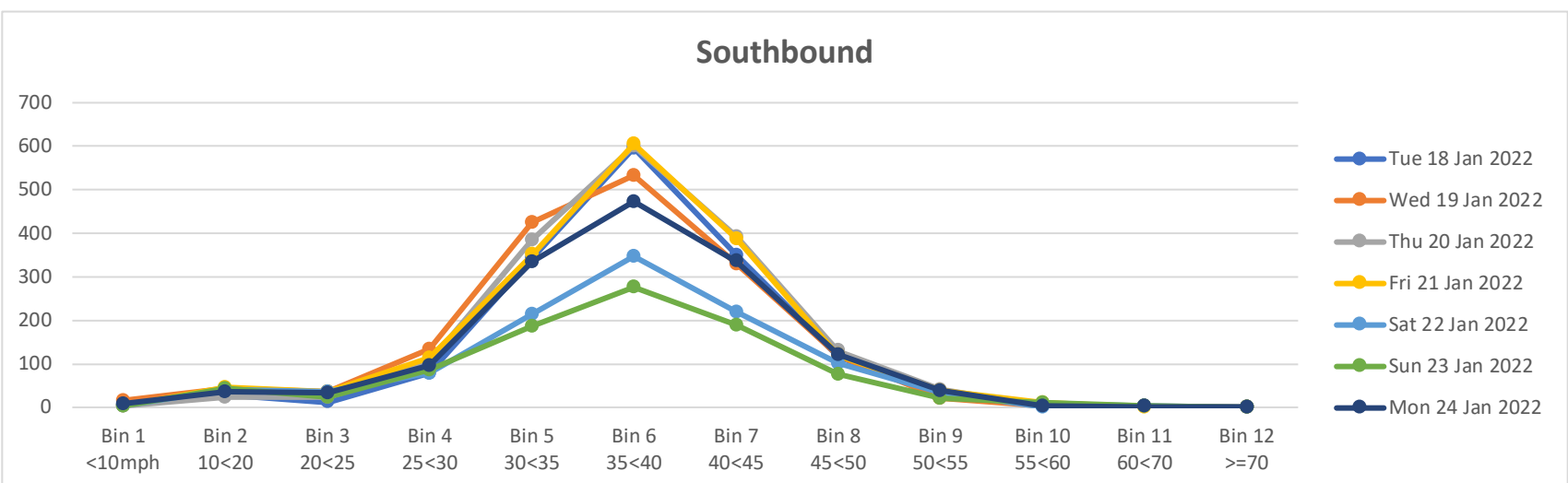
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Direction: Southbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 18 Jan 2022	1571	44.5	37.6	6.7	6	28	12	79	343	596	350	117	28	9	3	0
Wed 19 Jan 2022	1661	43.9	36.2	7.4	15	43	35	134	426	533	329	119	21	4	2	0
Thu 20 Jan 2022	1707	44.4	37.5	6.6	3	23	24	105	384	600	392	130	41	3	2	0
Fri 21 Jan 2022	1713	44.7	37.1	7.3	4	46	36	113	351	605	388	120	38	11	1	0
Sat 22 Jan 2022	1078	45.1	36.8	8.0	3	40	37	79	215	347	220	101	33	1	2	0
Sun 23 Jan 2022	919	45.4	36.5	8.6	4	44	23	87	186	276	189	75	21	10	4	0
Mon 24 Jan 2022	1485	44.9	37.1	7.5	8	36	33	97	335	473	336	122	38	4	2	1
5 Day Ave.	1627	44.5	37.1	7.1	7	35	28	106	368	561	359	122	33	6	2	0
7 Day Ave.	1448	44.7	37.0	7.4	6	37	29	99	320	490	315	112	31	6	2	0

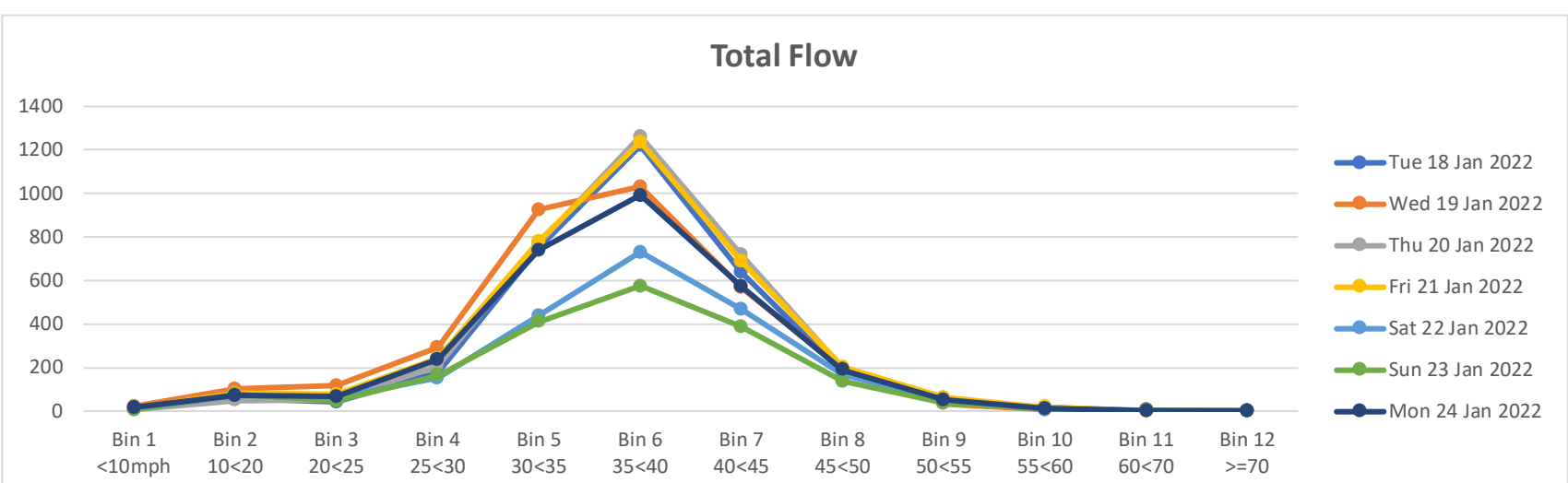
360 TSL Ltd



Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 18 Jan 2022	3145	43.8	37.0	6.7	11	59	42	179	751	1220	639	179	45	15	4	1
Wed 19 Jan 2022	3299	43.1	35.5	7.4	21	103	117	294	925	1032	571	194	34	5	2	1
Thu 20 Jan 2022	3343	43.8	37.1	6.5	9	49	53	210	772	1263	719	197	60	6	4	1
Fri 21 Jan 2022	3407	44.0	36.6	7.1	14	84	76	243	778	1237	690	204	60	19	2	0
Sat 22 Jan 2022	2157	44.8	36.8	7.7	7	74	60	152	439	731	467	167	48	8	4	0
Sun 23 Jan 2022	1863	44.7	36.4	8.0	6	77	48	165	411	576	389	137	38	12	4	0
Mon 24 Jan 2022	2958	44.0	36.4	7.3	18	72	69	236	740	993	573	190	52	11	3	1
5 Day Ave.	3230	43.8	36.5	7.0	15	73	71	232	793	1149	638	193	50	11	3	1
7 Day Ave.	2882	44.0	36.5	7.3	12	74	66	211	688	1007	578	181	48	11	3	1

360 TSL Ltd



Matson ATC 2, Winnycroft Lane

Direction: Northbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 18 Jan 2022	126	42.5	34.7	7.5	1	6	3	14	34	39	24	5	0	0	0	0
Wed 19 Jan 2022	151	43.1	35.9	7.0	0	2	11	17	26	53	32	9	1	0	0	0
Thu 20 Jan 2022	136	43.7	37.8	5.7	0	0	4	8	19	64	29	10	2	0	0	0
Fri 21 Jan 2022	132	43.2	36.4	6.5	0	3	4	8	35	45	27	10	0	0	0	0
Sat 22 Jan 2022	176	43.2	33.7	9.2	3	16	12	12	35	57	33	6	2	0	0	0
Sun 23 Jan 2022	154	43.8	36.0	7.5	0	7	3	15	37	45	35	10	2	0	0	0
Mon 24 Jan 2022	115	43.1	36.3	6.6	0	4	6	4	16	54	29	2	0	0	0	0
5 Day Ave.	132	43.1	36.2	6.7	0	3	6	10	26	51	28	7	1	0	0	0
7 Day Ave.	141	43.2	35.8	7.1	1	5	6	11	29	51	30	7	1	0	0	0

360 TSL Ltd

Direction: Southbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 18 Jan 2022	109	44.4	35.3	8.8	0	8	5	13	20	28	24	10	0	1	0	0
Wed 19 Jan 2022	135	43.7	36.8	6.6	0	3	1	9	40	43	26	10	3	0	0	0
Thu 20 Jan 2022	147	43.8	36.3	7.2	0	5	2	12	42	44	27	12	3	0	0	0
Fri 21 Jan 2022	152	44.2	35.7	8.1	1	8	4	16	28	50	32	11	2	0	0	0
Sat 22 Jan 2022	209	43.7	34.3	9.1	2	16	14	23	39	55	44	14	2	0	0	0
Sun 23 Jan 2022	173	43.2	33.2	9.7	2	22	6	24	26	54	29	6	4	0	0	0
Mon 24 Jan 2022	118	43.4	36.0	7.2	0	3	3	13	36	26	27	8	2	0	0	0
5 Day Ave.	132	43.9	36.0	7.6	0	5	3	13	33	38	27	10	2	0	0	0
7 Day Ave.	149	43.8	35.4	8.1	1	9	5	16	33	43	30	10	2	0	0	0

360 TSL Ltd

Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 18 Jan 2022	235	43.4	35.0	8.1	1	14	8	27	54	67	48	15	0	1	0	0
Wed 19 Jan 2022	286	43.4	36.3	6.8	0	5	12	26	66	96	58	19	4	0	0	0
Thu 20 Jan 2022	283	43.8	37.0	6.5	0	5	6	20	61	108	56	22	5	0	0	0
Fri 21 Jan 2022	284	43.7	36.0	7.4	1	11	8	24	63	95	59	21	2	0	0	0
Sat 22 Jan 2022	385	43.5	34.0	9.1	5	32	26	35	74	112	77	20	4	0	0	0
Sun 23 Jan 2022	327	43.7	34.5	8.8	2	29	9	39	63	99	64	16	6	0	0	0
Mon 24 Jan 2022	233	43.3	36.2	6.9	0	7	9	17	52	80	56	10	2	0	0	0
5 Day Ave.	264	43.5	36.1	7.2	0	8	9	23	59	89	55	17	3	0	0	0
7 Day Ave.	290	43.5	35.6	7.7	1	15	11	27	62	94	60	18	3	0	0	0

360 TSL Ltd

Matson ATC 2, Winnycroft Lane

Direction: Northbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 18 Jan 2022	297	42.6	36.6	5.7	0	6	2	12	83	124	55	12	3	0	0	0
Wed 19 Jan 2022	295	43.3	35.8	7.2	0	15	5	15	86	99	52	22	1	0	0	0
Thu 20 Jan 2022	304	42.7	36.6	5.9	0	6	2	16	90	107	69	12	2	0	0	0
Fri 21 Jan 2022	380	40.9	32.9	7.7	5	19	26	57	107	119	35	10	1	1	0	0
Sat 22 Jan 2022	226	43.5	36.8	6.4	0	5	2	18	46	95	44	12	3	1	0	0
Sun 23 Jan 2022	181	43.9	36.0	7.7	0	10	4	12	44	59	38	11	3	0	0	0
Mon 24 Jan 2022	281	41.3	33.5	7.5	1	17	15	34	83	90	29	11	1	0	0	0
5 Day Ave.	311	42.1	35.1	6.8	1	13	10	27	90	108	48	13	2	0	0	0
7 Day Ave.	281	42.6	35.5	6.9	1	11	8	23	77	99	46	13	2	0	0	0

360 TSL Ltd

Direction: Southbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 18 Jan 2022	248	44.3	38.1	6.0	0	2	1	9	53	106	53	19	2	1	2	0
Wed 19 Jan 2022	272	43.2	37.3	5.7	0	0	4	19	63	107	60	15	3	0	1	0
Thu 20 Jan 2022	286	44.4	38.0	6.1	0	3	3	7	79	85	81	21	6	1	0	0
Fri 21 Jan 2022	329	42.8	34.5	8.0	1	16	20	40	83	93	52	19	5	0	0	0
Sat 22 Jan 2022	169	45.1	37.4	7.4	0	3	7	9	37	54	39	14	5	0	1	0
Sun 23 Jan 2022	168	45.1	36.9	8.0	0	5	7	8	43	56	29	13	3	3	1	0
Mon 24 Jan 2022	234	42.3	34.4	7.7	1	10	13	25	66	78	30	6	4	0	1	0
5 Day Ave.	274	43.4	36.5	6.7	0	6	8	20	69	94	55	16	4	0	1	0
7 Day Ave.	244	43.9	36.7	7.0	0	6	8	17	61	83	49	15	4	1	1	0

360 TSL Ltd

Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 18 Jan 2022	545	43.4	37.3	5.9	0	8	3	21	136	230	108	31	5	1	2	0
Wed 19 Jan 2022	567	43.4	36.5	6.6	0	15	9	34	149	206	112	37	4	0	1	0
Thu 20 Jan 2022	590	43.5	37.3	6.0	0	9	5	23	169	192	150	33	8	1	0	0
Fri 21 Jan 2022	709	41.8	33.6	7.9	6	35	46	97	190	212	87	29	6	1	0	0
Sat 22 Jan 2022	395	44.2	37.1	6.8	0	8	9	27	83	149	83	26	8	1	1	0
Sun 23 Jan 2022	349	44.5	36.4	7.8	0	15	11	20	87	115	67	24	6	3	1	0
Mon 24 Jan 2022	515	41.8	33.9	7.6	2	27	28	59	149	168	59	17	5	0	1	0
5 Day Ave.	585	42.8	35.7	6.8	2	19	18	47	159	202	103	29	6	1	1	0
7 Day Ave.	524	43.2	36.0	6.9	1	17	16	40	138	182	95	28	6	1	1	0

360 TSL Ltd

Matson ATC 2, Winnycroft Lane

Direction: Northbound						Direction: Southbound						Direction: Total Flow					
Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	2	2	0	0	0	00:00	2	2	0	0	0	00:00	4	4	0	0	0
01:00	1	1	0	0	0	01:00	1	1	0	0	0	01:00	2	2	0	0	0
02:00	1	1	0	0	0	02:00	1	1	0	0	0	02:00	2	2	0	0	0
03:00	1	1	0	0	0	03:00	2	2	0	0	0	03:00	3	3	0	0	0
04:00	1	1	0	0	0	04:00	3	3	0	0	0	04:00	4	4	0	0	0
05:00	3	3	0	0	0	05:00	22	20	1	0	1	05:00	25	23	1	0	1
06:00	26	24	1	0	1	06:00	51	47	4	0	0	06:00	77	71	5	0	1
07:00	71	67	4	0	0	07:00	137	125	12	0	0	07:00	208	192	16	0	0
08:00	199	192	7	0	0	08:00	254	237	17	0	0	08:00	453	429	24	0	0
09:00	112	107	4	1	0	09:00	107	96	11	0	0	09:00	219	203	15	1	0
10:00	55	52	3	0	0	10:00	56	49	7	0	0	10:00	111	101	10	0	0
11:00	71	68	3	0	0	11:00	53	49	3	0	1	11:00	124	117	6	0	1
12:00	52	48	4	0	0	12:00	69	63	6	0	0	12:00	121	111	10	0	0
13:00	65	61	4	0	0	13:00	91	83	7	0	1	13:00	156	144	11	0	1
14:00	113	102	9	0	2	14:00	100	92	8	0	0	14:00	213	194	17	0	2
15:00	184	171	13	0	0	15:00	148	133	15	0	0	15:00	332	304	28	0	0
16:00	229	212	17	0	0	16:00	153	136	17	0	0	16:00	382	348	34	0	0
17:00	186	176	10	0	0	17:00	142	133	9	0	0	17:00	328	309	19	0	0
18:00	69	64	5	0	0	18:00	70	63	7	0	0	18:00	139	127	12	0	0
19:00	37	36	1	0	0	19:00	48	44	4	0	0	19:00	85	80	5	0	0
20:00	38	37	1	0	0	20:00	27	26	1	0	0	20:00	65	63	2	0	0
21:00	25	25	0	0	0	21:00	20	18	1	0	1	21:00	45	43	1	0	1
22:00	23	22	0	0	1	22:00	12	12	0	0	0	22:00	35	34	0	0	1
23:00	10	10	0	0	0	23:00	2	2	0	0	0	23:00	12	12	0	0	0
Total						Total						Total					
12H(7-19)	1406	1320	83	1	2	12H(7-19)	1380	1259	119	0	2	12H(7-19)	2786	2579	202	1	4
16H(6-22)	1532	1442	86	1	3	16H(6-22)	1526	1394	129	0	3	16H(6-22)	3058	2836	215	1	6
18H(6-24)	1565	1474	86	1	4	18H(6-24)	1540	1408	129	0	3	18H(6-24)	3105	2882	215	1	7
24H(0-24)	1574	1483	86	1	4	24H(0-24)	1571	1437	130	0	4	24H(0-24)	3145	2920	216	1	8
AM Peak	08:00	08:00	08:00	09:00	06:00	AM Peak	08:00	08:00	08:00	00:00	05:00	AM Peak	08:00	08:00	08:00	09:00	05:00
	199	192	7	1	1		254	237	17	0	1		453	429	24	1	1
PM Peak	16:00	16:00	16:00	12:00	14:00	PM Peak	16:00	16:00	16:00	12:00	13:00	PM Peak	16:00	16:00	16:00	12:00	14:00
	229	212	17	0	2		153	136	17	0	1		382	348	34	0	2

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Matson ATC 2, Winnycroft Lane

Direction: Northbound						Direction: Southbound						Direction: Total Flow					
Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	2	2	0	0	0	00:00	2	2	0	0	0	00:00	4	4	0	0	0
01:00	2	1	1	0	0	01:00	2	2	0	0	0	01:00	4	3	1	0	0
02:00	0	0	0	0	0	02:00	1	1	0	0	0	02:00	1	1	0	0	0
03:00	1	1	0	0	0	03:00	0	0	0	0	0	03:00	1	1	0	0	0
04:00	0	0	0	0	0	04:00	4	3	1	0	0	04:00	4	3	1	0	0
05:00	3	3	0	0	0	05:00	26	23	2	0	1	05:00	29	26	2	0	1
06:00	21	18	2	0	1	06:00	48	45	3	0	0	06:00	69	63	5	0	1
07:00	91	82	8	1	0	07:00	152	137	15	0	0	07:00	243	219	23	1	0
08:00	204	195	9	0	0	08:00	264	245	19	0	0	08:00	468	440	28	0	0
09:00	117	108	8	0	1	09:00	112	103	8	0	1	09:00	229	211	16	0	2
10:00	80	72	7	1	0	10:00	64	54	10	0	0	10:00	144	126	17	1	0
11:00	71	63	8	0	0	11:00	71	66	5	0	0	11:00	142	129	13	0	0
12:00	59	54	5	0	0	12:00	72	67	5	0	0	12:00	131	121	10	0	0
13:00	66	59	7	0	0	13:00	82	72	9	0	1	13:00	148	131	16	0	1
14:00	109	103	5	0	1	14:00	102	91	11	0	0	14:00	211	194	16	0	1
15:00	186	168	17	0	1	15:00	170	150	20	0	0	15:00	356	318	37	0	1
16:00	221	205	16	0	0	16:00	154	131	21	1	1	16:00	375	336	37	1	1
17:00	193	180	13	0	0	17:00	142	129	13	0	0	17:00	335	309	26	0	0
18:00	85	82	3	0	0	18:00	71	67	4	0	0	18:00	156	149	7	0	0
19:00	47	46	1	0	0	19:00	48	45	3	0	0	19:00	95	91	4	0	0
20:00	40	39	1	0	0	20:00	27	26	1	0	0	20:00	67	65	2	0	0
21:00	22	22	0	0	0	21:00	23	19	3	0	1	21:00	45	41	3	0	1
22:00	13	13	0	0	0	22:00	19	18	1	0	0	22:00	32	31	1	0	0
23:00	5	5	0	0	0	23:00	5	5	0	0	0	23:00	10	10	0	0	0
Total						Total						Total					
12H(7-19)	1482	1371	106	2	3	12H(7-19)	1456	1312	140	1	3	12H(7-19)	2938	2683	246	3	6
16H(6-22)	1612	1496	110	2	4	16H(6-22)	1602	1447	150	1	4	16H(6-22)	3214	2943	260	3	8
18H(6-24)	1630	1514	110	2	4	18H(6-24)	1626	1470	151	1	4	18H(6-24)	3256	2984	261	3	8
24H(0-24)	1638	1521	111	2	4	24H(0-24)	1661	1501	154	1	5	24H(0-24)	3299	3022	265	3	9
AM Peak	08:00	08:00	08:00	07:00	06:00	AM Peak	08:00	08:00	08:00	00:00	05:00	AM Peak	08:00	08:00	08:00	07:00	09:00
	204	195	9	1	1		264	245	19	0	1		468	440	28	1	2
PM Peak	16:00	16:00	15:00	12:00	14:00	PM Peak	15:00	15:00	16:00	16:00	13:00	PM Peak	16:00	16:00	15:00	16:00	13:00
	221	205	17	0	1		170	150	21	1	1		375	336	37	1	1

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Matson ATC 2, Winnycroft Lane

Direction: Northbound						Direction: Southbound						Direction: Total Flow					
Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	0	0	0	0	0	00:00	2	2	0	0	0	00:00	2	2	0	0	0
01:00	4	4	0	0	0	01:00	1	1	0	0	0	01:00	5	5	0	0	0
02:00	0	0	0	0	0	02:00	1	1	0	0	0	02:00	1	1	0	0	0
03:00	0	0	0	0	0	03:00	1	1	0	0	0	03:00	1	1	0	0	0
04:00	1	1	0	0	0	04:00	8	7	1	0	0	04:00	9	8	1	0	0
05:00	4	4	0	0	0	05:00	22	19	2	0	1	05:00	26	23	2	0	1
06:00	26	25	1	0	0	06:00	47	44	3	0	0	06:00	73	69	4	0	0
07:00	82	77	5	0	0	07:00	150	141	9	0	0	07:00	232	218	14	0	0
08:00	212	204	6	0	2	08:00	278	263	15	0	0	08:00	490	467	21	0	2
09:00	97	92	4	0	1	09:00	105	96	9	0	0	09:00	202	188	13	0	1
10:00	71	66	5	0	0	10:00	79	71	8	0	0	10:00	150	137	13	0	0
11:00	65	58	7	0	0	11:00	68	63	5	0	0	11:00	133	121	12	0	0
12:00	62	56	6	0	0	12:00	73	69	4	0	0	12:00	135	125	10	0	0
13:00	79	73	6	0	0	13:00	87	77	9	0	1	13:00	166	150	15	0	1
14:00	106	98	7	0	1	14:00	112	99	13	0	0	14:00	218	197	20	0	1
15:00	198	189	9	0	0	15:00	174	157	16	0	1	15:00	372	346	25	0	1
16:00	227	209	18	0	0	16:00	142	127	14	0	1	16:00	369	336	32	0	1
17:00	205	191	14	0	0	17:00	153	135	18	0	0	17:00	358	326	32	0	0
18:00	76	72	4	0	0	18:00	85	80	5	0	0	18:00	161	152	9	0	0
19:00	40	40	0	0	0	19:00	36	34	2	0	0	19:00	76	74	2	0	0
20:00	35	33	2	0	0	20:00	29	28	1	0	0	20:00	64	61	3	0	0
21:00	24	23	1	0	0	21:00	29	26	2	0	1	21:00	53	49	3	0	1
22:00	15	14	1	0	0	22:00	16	14	2	0	0	22:00	31	28	3	0	0
23:00	7	7	0	0	0	23:00	9	8	1	0	0	23:00	16	15	1	0	0
Total						Total						Total					
12H(7-19)	1480	1385	91	0	4	12H(7-19)	1506	1378	125	0	3	12H(7-19)	2986	2763	216	0	7
16H(6-22)	1605	1506	95	0	4	16H(6-22)	1647	1510	133	0	4	16H(6-22)	3252	3016	228	0	8
18H(6-24)	1627	1527	96	0	4	18H(6-24)	1672	1532	136	0	4	18H(6-24)	3299	3059	232	0	8
24H(0-24)	1636	1536	96	0	4	24H(0-24)	1707	1563	139	0	5	24H(0-24)	3343	3099	235	0	9
AM Peak	08:00	08:00	11:00	00:00	08:00	AM Peak	08:00	08:00	08:00	00:00	05:00	AM Peak	08:00	08:00	08:00	00:00	08:00
	212	204	7	0	2		278	263	15	0	1		490	467	21	0	2
PM Peak	16:00	16:00	16:00	12:00	14:00	PM Peak	15:00	15:00	17:00	12:00	13:00	PM Peak	15:00	15:00	16:00	12:00	13:00
	227	209	18	0	1		174	157	18	0	1		372	346	32	0	1

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Matson ATC 2, Winnycroft Lane

Direction: Northbound						Direction: Southbound						Direction: Total Flow					
Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	3	2	1	0	0	00:00	1	1	0	0	0	00:00	4	3	1	0	0
01:00	0	0	0	0	0	01:00	1	0	1	0	0	01:00	1	0	1	0	0
02:00	2	2	0	0	0	02:00	2	2	0	0	0	02:00	4	4	0	0	0
03:00	1	1	0	0	0	03:00	3	3	0	0	0	03:00	4	4	0	0	0
04:00	1	1	0	0	0	04:00	4	3	1	0	0	04:00	5	4	1	0	0
05:00	4	4	0	0	0	05:00	28	27	1	0	0	05:00	32	31	1	0	0
06:00	19	17	1	0	1	06:00	36	33	3	0	0	06:00	55	50	4	0	1
07:00	76	72	4	0	0	07:00	150	136	14	0	0	07:00	226	208	18	0	0
08:00	202	194	7	1	0	08:00	258	245	13	0	0	08:00	460	439	20	1	0
09:00	108	101	6	1	0	09:00	103	93	10	0	0	09:00	211	194	16	1	0
10:00	59	57	1	1	0	10:00	72	67	4	1	0	10:00	131	124	5	2	0
11:00	73	67	5	1	0	11:00	80	75	4	0	1	11:00	153	142	9	1	1
12:00	76	71	5	0	0	12:00	104	94	9	1	0	12:00	180	165	14	1	0
13:00	101	97	4	0	0	13:00	93	83	9	0	1	13:00	194	180	13	0	1
14:00	148	138	9	0	1	14:00	130	121	9	0	0	14:00	278	259	18	0	1
15:00	232	215	17	0	0	15:00	199	175	24	0	0	15:00	431	390	41	0	0
16:00	211	196	15	0	0	16:00	171	153	17	0	1	16:00	382	349	32	0	1
17:00	162	148	13	1	0	17:00	109	102	7	0	0	17:00	271	250	20	1	0
18:00	80	79	1	0	0	18:00	66	63	3	0	0	18:00	146	142	4	0	0
19:00	41	37	3	1	0	19:00	43	40	3	0	0	19:00	84	77	6	1	0
20:00	37	36	1	0	0	20:00	20	20	0	0	0	20:00	57	56	1	0	0
21:00	27	26	1	0	0	21:00	18	17	1	0	0	21:00	45	43	2	0	0
22:00	16	14	1	0	1	22:00	16	16	0	0	0	22:00	32	30	1	0	1
23:00	15	15	0	0	0	23:00	6	5	1	0	0	23:00	21	20	1	0	0
Total						Total						Total					
12H(7-19)	1528	1435	87	5	1	12H(7-19)	1535	1407	123	2	3	12H(7-19)	3063	2842	210	7	4
16H(6-22)	1652	1551	93	6	2	16H(6-22)	1652	1517	130	2	3	16H(6-22)	3304	3068	223	8	5
18H(6-24)	1683	1580	94	6	3	18H(6-24)	1674	1538	131	2	3	18H(6-24)	3357	3118	225	8	6
24H(0-24)	1694	1590	95	6	3	24H(0-24)	1713	1574	134	2	3	24H(0-24)	3407	3164	229	8	6
AM Peak	08:00	08:00	08:00	08:00	06:00	AM Peak	08:00	08:00	07:00	10:00	11:00	AM Peak	08:00	08:00	08:00	10:00	06:00
	202	194	7	1	1		258	245	14	1	1		460	439	20	2	1
PM Peak	15:00	15:00	15:00	17:00	14:00	PM Peak	15:00	15:00	15:00	12:00	13:00	PM Peak	15:00	15:00	15:00	12:00	13:00
	232	215	17	1	1		199	175	24	1	1		431	390	41	1	1

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Matson ATC 2, Winnycroft Lane

Direction: Northbound						Direction: Southbound						Direction: Total Flow					
Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	2	2	0	0	0	00:00	3	3	0	0	0	00:00	5	5	0	0	0
01:00	5	5	0	0	0	01:00	2	2	0	0	0	01:00	7	7	0	0	0
02:00	2	2	0	0	0	02:00	3	3	0	0	0	02:00	5	5	0	0	0
03:00	0	0	0	0	0	03:00	1	1	0	0	0	03:00	1	1	0	0	0
04:00	2	2	0	0	0	04:00	5	4	1	0	0	04:00	7	6	1	0	0
05:00	4	4	0	0	0	05:00	11	10	0	0	1	05:00	15	14	0	0	1
06:00	9	8	0	0	1	06:00	11	9	2	0	0	06:00	20	17	2	0	1
07:00	21	18	2	1	0	07:00	22	21	1	0	0	07:00	43	39	3	1	0
08:00	35	33	2	0	0	08:00	47	42	5	0	0	08:00	82	75	7	0	0
09:00	54	53	1	0	0	09:00	94	87	7	0	0	09:00	148	140	8	0	0
10:00	87	82	4	1	0	10:00	104	95	9	0	0	10:00	191	177	13	1	0
11:00	89	84	5	0	0	11:00	105	100	5	0	0	11:00	194	184	10	0	0
12:00	136	132	4	0	0	12:00	107	102	5	0	0	12:00	243	234	9	0	0
13:00	116	110	5	0	1	13:00	113	106	6	0	1	13:00	229	216	11	0	2
14:00	135	121	13	0	1	14:00	88	83	5	0	0	14:00	223	204	18	0	1
15:00	91	86	5	0	0	15:00	81	76	5	0	0	15:00	172	162	10	0	0
16:00	79	76	3	0	0	16:00	79	74	5	0	0	16:00	158	150	8	0	0
17:00	75	74	1	0	0	17:00	72	69	3	0	0	17:00	147	143	4	0	0
18:00	45	42	3	0	0	18:00	45	43	2	0	0	18:00	90	85	5	0	0
19:00	20	19	1	0	0	19:00	21	20	1	0	0	19:00	41	39	2	0	0
20:00	26	25	1	0	0	20:00	16	15	1	0	0	20:00	42	40	2	0	0
21:00	18	17	1	0	0	21:00	23	20	2	0	1	21:00	41	37	3	0	1
22:00	20	18	1	0	1	22:00	14	13	1	0	0	22:00	34	31	2	0	1
23:00	8	8	0	0	0	23:00	11	11	0	0	0	23:00	19	19	0	0	0
Total						Total						Total					
12H(7-19)	963	911	48	2	2	12H(7-19)	957	898	58	0	1	12H(7-19)	1920	1809	106	2	3
16H(6-22)	1036	980	51	2	3	16H(6-22)	1028	962	64	0	2	16H(6-22)	2064	1942	115	2	5
18H(6-24)	1064	1006	52	2	4	18H(6-24)	1053	986	65	0	2	18H(6-24)	2117	1992	117	2	6
24H(0-24)	1079	1021	52	2	4	24H(0-24)	1078	1009	66	0	3	24H(0-24)	2157	2030	118	2	7
AM Peak	11:00	11:00	11:00	07:00	06:00	AM Peak	11:00	11:00	10:00	00:00	05:00	AM Peak	11:00	11:00	10:00	07:00	05:00
	89	84	5	1	1		105	100	9	0	1		194	184	13	1	1
PM Peak	12:00	12:00	14:00	12:00	13:00	PM Peak	13:00	13:00	13:00	12:00	13:00	PM Peak	12:00	12:00	14:00	12:00	13:00
	136	132	13	0	1		113	106	6	0	1		243	234	18	0	2

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Matson ATC 2, Winnycroft Lane

Direction: Northbound						Direction: Southbound						Direction: Total Flow					
Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	4	4	0	0	0	00:00	1	1	0	0	0	00:00	5	5	0	0	0
01:00	4	3	1	0	0	01:00	4	3	1	0	0	01:00	8	6	2	0	0
02:00	1	1	0	0	0	02:00	2	2	0	0	0	02:00	3	3	0	0	0
03:00	0	0	0	0	0	03:00	1	1	0	0	0	03:00	1	1	0	0	0
04:00	2	2	0	0	0	04:00	0	0	0	0	0	04:00	2	2	0	0	0
05:00	3	3	0	0	0	05:00	14	13	0	0	1	05:00	17	16	0	0	1
06:00	7	6	1	0	0	06:00	10	10	0	0	0	06:00	17	16	1	0	0
07:00	16	16	0	0	0	07:00	19	18	1	0	0	07:00	35	34	1	0	0
08:00	29	24	5	0	0	08:00	28	27	1	0	0	08:00	57	51	6	0	0
09:00	54	53	1	0	0	09:00	68	63	5	0	0	09:00	122	116	6	0	0
10:00	73	68	5	0	0	10:00	78	72	6	0	0	10:00	151	140	11	0	0
11:00	81	78	3	0	0	11:00	95	93	2	0	0	11:00	176	171	5	0	0
12:00	113	108	5	0	0	12:00	82	78	4	0	0	12:00	195	186	9	0	0
13:00	113	108	5	0	0	13:00	101	95	5	0	1	13:00	214	203	10	0	1
14:00	91	87	3	0	1	14:00	94	91	3	0	0	14:00	185	178	6	0	1
15:00	90	88	2	0	0	15:00	74	68	5	1	0	15:00	164	156	7	1	0
16:00	84	80	3	0	1	16:00	76	71	5	0	0	16:00	160	151	8	0	1
17:00	49	48	1	0	0	17:00	45	42	3	0	0	17:00	94	90	4	0	0
18:00	46	45	1	0	0	18:00	53	50	3	0	0	18:00	99	95	4	0	0
19:00	31	30	1	0	0	19:00	30	29	1	0	0	19:00	61	59	2	0	0
20:00	27	24	3	0	0	20:00	26	25	1	0	0	20:00	53	49	4	0	0
21:00	13	12	1	0	0	21:00	13	11	1	0	1	21:00	26	23	2	0	1
22:00	9	9	0	0	0	22:00	4	4	0	0	0	22:00	13	13	0	0	0
23:00	4	4	0	0	0	23:00	1	1	0	0	0	23:00	5	5	0	0	0
Total						Total						Total					
12H(7-19)	839	803	34	0	2	12H(7-19)	813	768	43	1	1	12H(7-19)	1652	1571	77	1	3
16H(6-22)	917	875	40	0	2	16H(6-22)	892	843	46	1	2	16H(6-22)	1809	1718	86	1	4
18H(6-24)	930	888	40	0	2	18H(6-24)	897	848	46	1	2	18H(6-24)	1827	1736	86	1	4
24H(0-24)	944	901	41	0	2	24H(0-24)	919	868	47	1	3	24H(0-24)	1863	1769	88	1	5
AM Peak	11:00	11:00	08:00	00:00	00:00	AM Peak	11:00	11:00	10:00	00:00	05:00	AM Peak	11:00	11:00	10:00	00:00	05:00
	81	78	5	0	0		95	93	6	0	1		176	171	11	0	1
PM Peak	12:00	12:00	12:00	12:00	14:00	PM Peak	13:00	13:00	13:00	15:00	13:00	PM Peak	13:00	13:00	13:00	15:00	13:00
	113	108	5	0	1		101	95	5	1	1		214	203	10	1	1

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Matson ATC 2, Winnycroft Lane

Direction: Northbound						Direction: Southbound						Direction: Total Flow					
Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS	Hour Beginning	Total Volume	LIGHT	OGV1	OGV2	BUS
00:00	1	1	0	0	0	00:00	1	1	0	0	0	00:00	2	2	0	0	0
01:00	0	0	0	0	0	01:00	1	1	0	0	0	01:00	1	1	0	0	0
02:00	1	1	0	0	0	02:00	0	0	0	0	0	02:00	1	1	0	0	0
03:00	0	0	0	0	0	03:00	2	1	1	0	0	03:00	2	1	1	0	0
04:00	1	1	0	0	0	04:00	5	4	1	0	0	04:00	6	5	1	0	0
05:00	3	3	0	0	0	05:00	27	25	1	0	1	05:00	30	28	1	0	1
06:00	29	27	1	0	1	06:00	51	45	6	0	0	06:00	80	72	7	0	1
07:00	73	68	5	0	0	07:00	142	127	15	0	0	07:00	215	195	20	0	0
08:00	178	164	14	0	0	08:00	235	219	16	0	0	08:00	413	383	30	0	0
09:00	100	90	10	0	0	09:00	88	79	9	0	0	09:00	188	169	19	0	0
10:00	60	54	6	0	0	10:00	51	44	7	0	0	10:00	111	98	13	0	0
11:00	55	50	5	0	0	11:00	67	62	5	0	0	11:00	122	112	10	0	0
12:00	56	50	6	0	0	12:00	60	55	5	0	0	12:00	116	105	11	0	0
13:00	63	58	5	0	0	13:00	100	92	7	0	1	13:00	163	150	12	0	1
14:00	107	101	5	0	1	14:00	86	80	6	0	0	14:00	193	181	11	0	1
15:00	174	162	12	0	0	15:00	148	137	11	0	0	15:00	322	299	23	0	0
16:00	206	190	16	0	0	16:00	142	126	16	0	0	16:00	348	316	32	0	0
17:00	180	171	8	1	0	17:00	113	107	6	0	0	17:00	293	278	14	1	0
18:00	74	72	2	0	0	18:00	64	58	6	0	0	18:00	138	130	8	0	0
19:00	36	35	1	0	0	19:00	38	35	3	0	0	19:00	74	70	4	0	0
20:00	38	37	1	0	0	20:00	32	28	4	0	0	20:00	70	65	5	0	0
21:00	13	12	1	0	0	21:00	16	15	0	0	1	21:00	29	27	1	0	1
22:00	19	17	1	0	1	22:00	11	11	0	0	0	22:00	30	28	1	0	1
23:00	6	6	0	0	0	23:00	5	4	1	0	0	23:00	11	10	1	0	0
Total						Total						Total					
12H(7-19)	1326	1230	94	1	1	12H(7-19)	1296	1186	109	0	1	12H(7-19)	2622	2416	203	1	2
16H(6-22)	1442	1341	98	1	2	16H(6-22)	1433	1309	122	0	2	16H(6-22)	2875	2650	220	1	4
18H(6-24)	1467	1364	99	1	3	18H(6-24)	1449	1324	123	0	2	18H(6-24)	2916	2688	222	1	5
24H(0-24)	1473	1370	99	1	3	24H(0-24)	1485	1356	126	0	3	24H(0-24)	2958	2726	225	1	6
AM Peak	08:00	08:00	08:00	00:00	06:00	AM Peak	08:00	08:00	08:00	00:00	05:00	AM Peak	08:00	08:00	08:00	00:00	05:00
	178	164	14	0	1		235	219	16	0	1		413	383	30	0	1
PM Peak	16:00	16:00	16:00	17:00	14:00	PM Peak	15:00	15:00	16:00	12:00	13:00	PM Peak	16:00	16:00	16:00	17:00	13:00
	206	190	16	1	1		148	137	16	0	1		348	316	32	1	1

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Matson ATC 2, Winnycroft Lane

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	2	42.5	42.5	0.0	0	0	0	0	0	0	2	0	0	0	0	0
01:00	1	-	42.5	-	0	0	0	0	0	0	1	0	0	0	0	0
02:00	1	-	27.5	-	0	0	0	1	0	0	0	0	0	0	0	0
03:00	1	-	32.5	-	0	0	0	0	1	0	0	0	0	0	0	0
04:00	1	-	32.5	-	0	0	0	0	1	0	0	0	0	0	0	0
05:00	3	37.5	37.5	0.0	0	0	0	0	0	3	0	0	0	0	0	0
06:00	26	46.8	40.4	6.2	0	0	0	1	2	11	8	2	1	1	0	0
07:00	71	44.1	39.0	5.0	0	0	0	0	16	28	18	8	1	0	0	0
08:00	199	41.6	37.3	4.1	0	0	1	6	40	112	34	5	1	0	0	0
09:00	112	42.4	36.6	5.6	0	1	0	8	32	47	19	1	4	0	0	0
10:00	55	43.7	36.6	6.8	0	3	0	2	10	25	12	3	0	0	0	0
11:00	71	41.2	33.2	7.6	1	3	3	12	24	14	12	2	0	0	0	0
12:00	52	43.1	37.4	5.6	0	1	1	3	5	25	17	0	0	0	0	0
13:00	65	45.7	38.3	7.1	0	2	2	0	12	21	19	8	1	0	0	0
14:00	113	42.6	36.4	6.0	0	2	2	8	29	43	23	6	0	0	0	0
15:00	184	42.6	36.8	5.6	0	4	0	4	54	81	32	6	3	0	0	0
16:00	229	42.3	33.8	8.2	4	10	11	27	70	66	32	5	2	1	1	0
17:00	186	41.3	35.8	5.3	0	0	5	15	59	77	22	7	0	1	0	0
18:00	69	45.0	37.3	7.4	0	2	1	3	18	24	14	4	1	2	0	0
19:00	37	42.9	36.5	6.2	0	1	0	1	13	13	7	1	1	0	0	0
20:00	38	44.0	38.7	5.1	0	0	0	0	9	16	10	1	2	0	0	0
21:00	25	38.1	30.6	7.3	0	1	4	7	8	2	2	1	0	0	0	0
22:00	23	48.3	37.7	10.3	0	1	0	1	5	11	3	1	0	0	0	1
23:00	10	48.7	40.5	7.9	0	0	0	1	0	5	2	1	0	1	0	0
Total																
2H(10-12)	126	42.5	34.7	7.5	1	6	3	14	34	39	24	5	0	0	0	0
2H(14-16)	297	42.6	36.6	5.7	0	6	2	12	83	124	55	12	3	0	0	0
12H(7-19)	1406	42.9	36.2	6.4	5	28	26	88	369	563	254	55	13	4	1	0
24H(0-24)	1574	43.1	36.3	6.5	5	31	30	100	408	624	289	62	17	6	1	1
AM Peak	08:00 199	06:00 46.8	00:00 42.5	11:00 7.6	11:00 1	10:00 3	11:00 3	11:00 12	08:00 40	08:00 112	08:00 34	07:00 8	09:00 4	06:00 1	00:00 0	00:00 0
PM Peak	16:00 229	23:00 48.7	23:00 40.5	22:00 10.3	16:00 4	16:00 10	16:00 11	16:00 27	16:00 70	15:00 81	15:00 32	13:00 8	15:00 3	18:00 2	16:00 1	22:00 1

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Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	2	38.7	35.0	3.5	0	0	0	0	1	1	0	0	0	0	0	0
01:00	1	-	47.5	-	0	0	0	0	0	0	0	1	0	0	0	0
02:00	1	-	42.5	-	0	0	0	0	0	0	1	0	0	0	0	0
03:00	2	42.5	42.5	0.0	0	0	0	0	0	0	2	0	0	0	0	0
04:00	3	37.2	34.2	2.9	0	0	0	0	2	1	0	0	0	0	0	0
05:00	22	42.9	36.8	5.8	0	0	1	1	6	7	6	1	0	0	0	0
06:00	51	46.1	39.4	6.4	0	1	0	1	7	19	16	4	3	0	0	0
07:00	137	45.6	39.4	6.0	0	1	0	3	21	59	28	20	4	1	0	0
08:00	254	43.1	38.4	4.5	0	0	0	2	56	106	76	10	4	0	0	0
09:00	107	44.7	37.4	7.1	0	4	1	4	23	39	26	8	1	1	0	0
10:00	56	45.9	36.5	9.0	0	4	1	6	9	16	11	8	0	1	0	0
11:00	53	42.7	33.9	8.5	0	4	4	7	11	12	13	2	0	0	0	0
12:00	69	43.6	37.5	5.9	0	1	0	4	15	27	17	4	1	0	0	0
13:00	91	45.4	37.5	7.6	1	3	0	6	15	33	22	9	2	0	0	0
14:00	100	43.9	37.2	6.4	0	2	0	5	26	39	20	7	0	0	1	0
15:00	148	44.5	38.7	5.7	0	0	1	4	27	67	33	12	2	1	1	0
16:00	153	43.1	34.8	8.0	5	5	2	11	40	59	24	7	0	0	0	0
17:00	142	44.9	38.2	6.5	0	0	0	8	37	54	26	10	3	3	1	0
18:00	70	44.1	37.8	6.1	0	0	1	3	21	23	12	8	2	0	0	0
19:00	48	45.0	37.1	7.5	0	1	0	7	10	14	10	3	3	0	0	0
20:00	27	44.4	37.1	7.1	0	0	0	2	11	7	4	1	1	1	0	0
21:00	20	46.4	35.3	10.8	0	2	1	3	1	9	1	1	1	1	0	0
22:00	12	45.7	37.9	7.5	0	0	0	2	2	4	2	1	1	0	0	0
23:00	2	32.5	32.5	0.0	0	0	0	0	2	0	0	0	0	0	0	0
Total																
2H(10-12)	109	44.4	35.3	8.8	0	8	5	13	20	28	24	10	0	1	0	0
2H(14-16)	248	44.3	38.1	6.0	0	2	1	9	53	106	53	19	2	1	2	0
12H(7-19)	1380	44.5	37.6	6.7	6	24	10	63	301	534	308	105	19	7	3	0
24H(0-24)	1571	44.5	37.6	6.7	6	28	12	79	343	596	350	117	28	9	3	0
AM Peak	08:00 254	06:00 46.1	01:00 47.5	10:00 9.0	00:00 0	09:00 4	11:00 4	11:00 7	08:00 56	08:00 106	08:00 76	07:00 20	07:00 4	07:00 1	00:00 0	00:00 0
PM Peak	16:00 153	21:00 46.4	15:00 38.7	21:00 10.8	16:00 5	16:00 5	16:00 2	16:00 11	16:00 40	15:00 67	15:00 33	15:00 12	17:00 3	17:00 3	14:00 1	12:00 0

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Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	4	43.7	38.8	4.8	0	0	0	0	1	1	2	0	0	0	0	0
01:00	2	48.7	45.0	3.5	0	0	0	0	0	0	1	1	0	0	0	0
02:00	2	46.0	35.0	10.6	0	0	0	1	0	0	1	0	0	0	0	0
03:00	3	45.2	39.2	5.8	0	0	0	0	1	0	2	0	0	0	0	0
04:00	4	36.3	33.8	2.5	0	0	0	0	3	1	0	0	0	0	0	0
05:00	25	42.6	36.9	5.5	0	0	1	1	6	10	6	1	0	0	0	0
06:00	77	46.3	39.7	6.3	0	1	0	2	9	30	24	6	4	1	0	0
07:00	208	45.1	39.3	5.6	0	1	0	3	37	87	46	28	5	1	0	0
08:00	453	42.5	37.9	4.4	0	0	1	8	96	218	110	15	5	0	0	0
09:00	219	43.6	37.0	6.4	0	5	1	12	55	86	45	9	5	1	0	0
10:00	111	44.9	36.6	8.0	0	7	1	8	19	41	23	11	0	1	0	0
11:00	124	41.8	33.5	8.0	1	7	7	19	35	26	25	4	0	0	0	0
12:00	121	43.4	37.5	5.7	0	2	1	7	20	52	34	4	1	0	0	0
13:00	156	45.5	37.8	7.4	1	5	2	6	27	54	41	17	3	0	0	0
14:00	213	43.2	36.8	6.2	0	4	2	13	55	82	43	13	0	0	1	0
15:00	332	43.5	37.6	5.7	0	4	1	8	81	148	65	18	5	1	1	0
16:00	382	42.6	34.2	8.1	9	15	13	38	110	125	56	12	2	1	1	0
17:00	328	43.0	36.8	6.0	0	0	5	23	96	131	48	17	3	4	1	0
18:00	139	44.6	37.5	6.8	0	2	2	6	39	47	26	12	3	2	0	0
19:00	85	44.1	36.9	7.0	0	2	0	8	23	27	17	4	4	0	0	0
20:00	65	44.3	38.0	6.0	0	0	0	2	20	23	14	2	3	1	0	0
21:00	45	42.2	32.7	9.2	0	3	5	10	9	11	3	2	1	1	0	0
22:00	35	47.4	37.8	9.3	0	1	0	3	7	15	5	2	1	0	0	1
23:00	12	47.2	39.2	7.8	0	0	0	1	2	5	2	1	0	1	0	0
Total																
2H(10-12)	235	43.4	35.0	8.1	1	14	8	27	54	67	48	15	0	1	0	0
2H(14-16)	545	43.4	37.3	5.9	0	8	3	21	136	230	108	31	5	1	2	0
12H(7-19)	2786	43.7	36.9	6.6	11	52	36	151	670	1097	562	160	32	11	4	0
24H(0-24)	3145	43.8	37.0	6.7	11	59	42	179	751	1220	639	179	45	15	4	1
AM Peak	08:00 453	01:00 48.7	01:00 45.0	02:00 10.6	11:00 1	10:00 7	11:00 7	11:00 19	08:00 96	08:00 218	08:00 110	07:00 28	07:00 5	06:00 1	00:00 0	00:00 0
PM Peak	16:00 382	22:00 47.4	23:00 39.2	22:00 9.3	16:00 9	16:00 15	16:00 13	16:00 38	16:00 110	15:00 148	15:00 65	15:00 18	15:00 5	17:00 4	14:00 1	22:00 1

Matson ATC 2, Winnycroft Lane

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	2	48.7	45.0	3.5	0	0	0	0	0	0	1	1	0	0	0	0
01:00	2	38.7	35.0	3.5	0	0	0	0	1	1	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	1	-	32.5	-	0	0	0	0	1	0	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	3	48.7	40.8	7.6	0	0	0	0	1	0	1	1	0	0	0	0
06:00	21	47.7	38.7	8.6	0	0	0	3	8	0	3	5	2	0	0	0
07:00	91	42.9	37.1	5.7	0	0	0	7	29	30	17	6	2	0	0	0
08:00	204	39.4	34.3	4.9	0	2	1	24	95	63	14	4	1	0	0	0
09:00	117	37.6	27.5	9.8	4	25	17	21	17	24	7	2	0	0	0	0
10:00	80	44.2	36.5	7.4	0	1	8	5	11	30	17	7	1	0	0	0
11:00	71	41.9	35.1	6.5	0	1	3	12	15	23	15	2	0	0	0	0
12:00	59	42.8	36.3	6.3	0	2	1	2	14	28	8	4	0	0	0	0
13:00	66	42.8	35.8	6.8	0	1	3	8	16	19	15	4	0	0	0	0
14:00	109	44.5	38.2	6.1	0	2	0	3	25	38	28	12	1	0	0	0
15:00	186	42.1	34.4	7.5	0	13	5	12	61	61	24	10	0	0	0	0
16:00	221	38.5	31.4	6.9	2	6	34	33	84	45	15	0	2	0	0	0
17:00	193	40.6	35.0	5.4	0	1	8	16	71	66	26	5	0	0	0	0
18:00	85	43.2	35.9	7.0	0	1	0	11	28	27	14	3	0	0	0	1
19:00	47	44.3	38.1	6.0	0	1	1	0	8	19	16	1	1	0	0	0
20:00	40	46.1	37.9	7.9	0	2	0	2	7	14	9	4	2	0	0	0
21:00	22	48.1	41.1	6.8	0	0	0	0	4	7	5	4	1	1	0	0
22:00	13	43.5	33.3	9.9	0	2	1	0	3	3	4	0	0	0	0	0
23:00	5	45.3	38.5	6.5	0	0	0	1	0	1	3	0	0	0	0	0
Total																
2H(10-12)	151	43.1	35.9	7.0	0	2	11	17	26	53	32	9	1	0	0	0
2H(14-16)	295	43.3	35.8	7.2	0	15	5	15	86	99	52	22	1	0	0	0
12H(7-19)	1482	41.8	34.3	7.2	6	55	80	154	466	454	200	59	7	0	0	1
24H(0-24)	1638	42.3	34.7	7.3	6	60	82	160	499	499	242	75	13	1	0	1
AM Peak	08:00 204	05:00 48.7	00:00 45.0	09:00 9.8	09:00 4	09:00 25	09:00 17	08:00 24	08:00 95	08:00 63	07:00 17	10:00 7	06:00 2	00:00 0	00:00 0	00:00 0
PM Peak	16:00 221	21:00 48.1	21:00 41.1	22:00 9.9	16:00 2	15:00 13	16:00 34	16:00 33	16:00 84	17:00 66	14:00 28	14:00 12	16:00 2	21:00 1	12:00 0	18:00 1

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	2	32.5	32.5	0.0	0	0	0	0	2	0	0	0	0	0	0	0
01:00	2	44.8	37.5	7.1	0	0	0	0	1	0	1	0	0	0	0	0
02:00	1	-	42.5	-	0	0	0	0	0	0	1	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	4	36.2	31.3	4.8	0	0	0	2	1	1	0	0	0	0	0	0
05:00	26	45.9	39.8	5.9	0	0	0	1	5	7	7	6	0	0	0	0
06:00	48	46.8	38.5	8.0	1	1	0	3	5	15	16	6	1	0	0	0
07:00	152	45.4	38.1	7.0	1	1	1	11	29	54	36	14	3	1	1	0
08:00	264	42.0	36.4	5.4	0	0	1	18	94	97	37	13	2	2	0	0
09:00	112	38.3	27.2	10.7	11	19	11	19	23	17	10	2	0	0	0	0
10:00	64	43.1	36.7	6.1	0	0	0	7	21	20	9	5	2	0	0	0
11:00	71	44.2	36.8	7.1	0	3	1	2	19	23	17	5	1	0	0	0
12:00	72	44.5	36.3	8.0	0	3	5	3	17	18	18	8	0	0	0	0
13:00	82	43.9	35.5	8.1	2	3	1	7	19	29	14	7	0	0	0	0
14:00	102	44.6	38.9	5.5	0	0	1	3	14	45	31	6	1	0	1	0
15:00	170	42.3	36.4	5.6	0	0	3	16	49	62	29	9	2	0	0	0
16:00	154	41.5	33.6	7.6	0	10	7	17	56	35	22	6	1	0	0	0
17:00	142	43.9	37.7	6.0	0	1	1	6	34	62	23	9	6	0	0	0
18:00	71	45.7	38.7	6.8	0	1	0	6	13	17	22	11	1	0	0	0
19:00	48	44.1	38.5	5.4	0	0	0	3	9	16	15	5	0	0	0	0
20:00	27	45.7	37.9	7.6	0	0	0	4	6	8	5	2	1	1	0	0
21:00	23	44.8	36.1	8.4	0	1	1	3	5	4	6	3	0	0	0	0
22:00	19	45.2	37.5	7.5	0	0	1	3	3	2	8	2	0	0	0	0
23:00	5	44.2	35.5	8.4	0	0	1	0	1	1	2	0	0	0	0	0
Total																
2H(10-12)	135	43.7	36.8	6.6	0	3	1	9	40	43	26	10	3	0	0	0
2H(14-16)	272	43.2	37.3	5.7	0	0	4	19	63	107	60	15	3	0	1	0
12H(7-19)	1456	43.7	36.0	7.5	14	41	32	115	388	479	268	95	19	3	2	0
24H(0-24)	1661	43.9	36.2	7.4	15	43	35	134	426	533	329	119	21	4	2	0
AM Peak	08:00 264	06:00 46.8	02:00 42.5	09:00 10.7	09:00 11	09:00 19	09:00 11	09:00 19	08:00 94	08:00 97	08:00 37	07:00 14	07:00 3	08:00 2	07:00 1	00:00 0
PM Peak	15:00 170	18:00 45.7	14:00 38.9	21:00 8.4	13:00 2	16:00 10	16:00 7	16:00 17	16:00 56	15:00 62	14:00 31	18:00 11	17:00 6	20:00 1	14:00 1	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	4	46.5	38.8	7.5	0	0	0	0	2	0	1	1	0	0	0	0
01:00	4	41.2	36.3	4.8	0	0	0	0	2	1	1	0	0	0	0	0
02:00	1	-	42.5	-	0	0	0	0	0	0	1	0	0	0	0	0
03:00	1	-	32.5	-	0	0	0	0	1	0	0	0	0	0	0	0
04:00	4	36.2	31.3	4.8	0	0	0	2	1	1	0	0	0	0	0	0
05:00	29	46.0	39.9	5.9	0	0	0	1	6	7	8	7	0	0	0	0
06:00	69	47.0	38.6	8.1	1	1	0	6	13	15	19	11	3	0	0	0
07:00	243	44.5	37.7	6.6	1	1	1	18	58	84	53	20	5	1	1	0
08:00	468	41.0	35.5	5.3	0	2	2	42	189	160	51	17	3	2	0	0
09:00	229	37.9	27.3	10.2	15	44	28	40	40	41	17	4	0	0	0	0
10:00	144	43.7	36.6	6.9	0	1	8	12	32	50	26	12	3	0	0	0
11:00	142	43.1	36.0	6.8	0	4	4	14	34	46	32	7	1	0	0	0
12:00	131	43.8	36.3	7.2	0	5	6	5	31	46	26	12	0	0	0	0
13:00	148	43.4	35.6	7.5	2	4	4	15	35	48	29	11	0	0	0	0
14:00	211	44.5	38.5	5.8	0	2	1	6	39	83	59	18	2	0	1	0
15:00	356	42.3	35.4	6.7	0	13	8	28	110	123	53	19	2	0	0	0
16:00	375	39.8	32.3	7.3	2	16	41	50	140	80	37	6	3	0	0	0
17:00	335	42.2	36.2	5.8	0	2	9	22	105	128	49	14	6	0	0	0
18:00	156	44.5	37.2	7.0	0	2	0	17	41	44	36	14	1	0	0	1
19:00	95	44.2	38.3	5.6	0	1	1	3	17	35	31	6	1	0	0	0
20:00	67	45.9	37.9	7.7	0	2	0	6	13	22	14	6	3	1	0	0
21:00	45	46.8	38.6	8.0	0	1	1	3	9	11	11	7	1	1	0	0
22:00	32	44.7	35.8	8.6	0	2	2	3	6	5	12	2	0	0	0	0
23:00	10	44.5	37.0	7.2	0	0	1	1	1	2	5	0	0	0	0	0
Total																
2H(10-12)	286	43.4	36.3	6.8	0	5	12	26	66	96	58	19	4	0	0	0
2H(14-16)	567	43.4	36.5	6.6	0	15	9	34	149	206	112	37	4	0	1	0
12H(7-19)	2938	42.8	35.1	7.4	20	96	112	269	854	933	468	154	26	3	2	1
24H(0-24)	3299	43.1	35.5	7.4	21	103	117	294	925	1032	571	194	34	5	2	1
AM Peak	08:00 468	06:00 47.0	02:00 42.5	09:00 10.2	09:00 15	09:00 44	09:00 28	08:00 42	08:00 189	08:00 160	07:00 53	07:00 20	07:00 5	08:00 2	07:00 1	00:00 0
PM Peak	16:00 375	21:00 46.8	21:00 38.6	22:00 8.6	13:00 2	16:00 16	16:00 41	16:00 50	16:00 140	17:00 128	14:00 59	15:00 19	17:00 6	20:00 1	14:00 1	18:00 1

Matson ATC 2, Winnycroft Lane

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
01:00	4	53.7	48.8	4.8	0	0	0	0	0	0	1	1	2	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	1	-	37.5	-	0	0	0	0	0	1	0	0	0	0	0	0
05:00	4	58.0	40.6	16.8	0	0	0	1	1	1	0	0	0	0	1	0
06:00	26	48.9	42.3	6.4	0	0	0	1	1	6	13	1	3	1	0	0
07:00	82	42.4	38.1	4.1	0	0	0	3	9	50	15	5	0	0	0	0
08:00	212	42.3	37.8	4.3	0	0	0	5	45	104	48	9	1	0	0	0
09:00	97	42.1	37.6	4.3	0	0	0	4	20	46	24	3	0	0	0	0
10:00	71	42.6	37.2	5.2	0	0	2	4	12	35	14	4	0	0	0	0
11:00	65	44.8	38.4	6.1	0	0	2	4	7	29	15	6	2	0	0	0
12:00	62	43.0	36.9	5.8	0	0	1	4	17	25	12	1	1	1	0	0
13:00	79	44.3	37.1	7.0	0	2	2	4	16	33	16	3	2	1	0	0
14:00	106	44.9	38.2	6.5	0	3	0	4	18	38	33	8	2	0	0	0
15:00	198	41.2	35.7	5.3	0	3	2	12	72	69	36	4	0	0	0	0
16:00	227	40.4	32.2	7.9	5	15	12	30	75	65	22	3	0	0	0	0
17:00	205	41.1	35.6	5.3	0	2	3	20	60	86	30	3	1	0	0	0
18:00	76	43.2	37.9	5.1	0	1	0	3	11	37	20	4	0	0	0	0
19:00	40	47.4	40.4	6.7	0	0	0	0	7	16	9	5	2	0	1	0
20:00	35	43.9	37.9	5.7	0	0	0	3	8	10	12	1	1	0	0	0
21:00	24	46.5	38.3	7.9	0	0	2	0	6	7	4	3	2	0	0	0
22:00	15	48.6	33.0	15.0	1	0	3	3	3	2	1	1	0	0	0	1
23:00	7	46.4	41.8	4.5	0	0	0	0	0	3	2	2	0	0	0	0
Total																
2H(10-12)	136	43.7	37.8	5.7	0	0	4	8	19	64	29	10	2	0	0	0
2H(14-16)	304	42.7	36.6	5.9	0	6	2	16	90	107	69	12	2	0	0	0
12H(7-19)	1480	42.6	36.3	6.1	5	26	24	97	362	617	285	53	9	2	0	0
24H(0-24)	1636	43.3	36.6	6.4	6	26	29	105	388	663	327	67	19	3	2	1
AM Peak	08:00 212	05:00 58.0	01:00 48.8	05:00 16.8	00:00 0	00:00 0	10:00 2	08:00 5	08:00 45	08:00 104	08:00 48	08:00 9	06:00 3	06:00 1	05:00 1	00:00 0
PM Peak	16:00 227	22:00 48.6	23:00 41.8	22:00 15.0	16:00 5	16:00 15	16:00 12	16:00 30	16:00 75	17:00 86	15:00 36	14:00 8	13:00 2	12:00 1	19:00 1	22:00 1

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	2	49.8	42.5	7.1	0	0	0	0	0	1	0	1	0	0	0	0
01:00	1	-	47.5	-	0	0	0	0	0	0	0	1	0	0	0	0
02:00	1	-	42.5	-	0	0	0	0	0	0	1	0	0	0	0	0
03:00	1	-	52.5	-	0	0	0	0	0	0	0	0	1	0	0	0
04:00	8	45.2	35.6	9.2	0	0	1	2	1	0	3	1	0	0	0	0
05:00	22	48.1	42.3	5.7	0	0	1	0	0	3	13	4	1	0	0	0
06:00	47	47.6	40.6	6.7	0	1	0	1	4	16	12	11	2	0	0	0
07:00	150	44.1	37.6	6.3	0	3	0	8	37	48	43	7	4	0	0	0
08:00	278	43.0	37.9	4.9	0	1	0	8	60	133	57	14	5	0	0	0
09:00	105	42.7	37.4	5.1	0	0	0	6	29	39	24	6	1	0	0	0
10:00	79	43.4	36.4	6.8	0	2	1	5	26	24	14	5	2	0	0	0
11:00	68	44.3	36.3	7.7	0	3	1	7	16	20	13	7	1	0	0	0
12:00	73	44.2	37.0	7.0	0	2	0	8	13	28	16	3	3	0	0	0
13:00	87	44.5	37.1	7.1	1	1	0	10	16	31	19	7	2	0	0	0
14:00	112	45.6	38.9	6.5	0	2	0	2	25	33	35	11	3	1	0	0
15:00	174	43.5	37.4	5.8	0	1	3	5	54	52	46	10	3	0	0	0
16:00	142	43.9	34.7	8.8	2	7	12	8	38	38	24	9	4	0	0	0
17:00	153	44.3	38.3	5.8	0	0	0	12	25	70	26	15	4	1	0	0
18:00	85	43.5	37.3	6.0	0	0	0	10	20	28	19	6	2	0	0	0
19:00	36	46.2	40.8	5.2	0	0	0	0	3	15	11	6	0	1	0	0
20:00	29	46.1	37.8	8.0	0	0	1	4	7	5	6	4	2	0	0	0
21:00	29	41.8	33.9	7.7	0	0	4	6	7	4	6	2	0	0	0	0
22:00	16	52.5	40.9	11.2	0	0	0	2	2	6	3	0	1	0	2	0
23:00	9	40.7	36.4	4.2	0	0	0	1	1	6	1	0	0	0	0	0
Total																
2H(10-12)	147	43.8	36.3	7.2	0	5	2	12	42	44	27	12	3	0	0	0
2H(14-16)	286	44.4	38.0	6.1	0	3	3	7	79	85	81	21	6	1	0	0
12H(7-19)	1506	44.0	37.3	6.4	3	22	17	89	359	544	336	100	34	2	0	0
24H(0-24)	1707	44.4	37.5	6.6	3	23	24	105	384	600	392	130	41	3	2	0
AM Peak	08:00 278	00:00 49.8	03:00 52.5	04:00 9.2	00:00 0	07:00 3	04:00 1	07:00 8	08:00 60	08:00 133	08:00 57	08:00 14	08:00 5	00:00 0	00:00 0	00:00 0
PM Peak	15:00 174	22:00 52.5	22:00 40.9	22:00 11.2	16:00 2	16:00 7	16:00 12	17:00 12	15:00 54	17:00 70	15:00 46	17:00 15	16:00 4	14:00 1	22:00 2	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	2	49.8	42.5	7.1	0	0	0	0	0	1	0	1	0	0	0	0
01:00	5	52.8	48.5	4.2	0	0	0	0	0	0	1	2	2	0	0	0
02:00	1	-	42.5	-	0	0	0	0	0	0	1	0	0	0	0	0
03:00	1	-	52.5	-	0	0	0	0	0	0	0	0	1	0	0	0
04:00	9	44.8	35.8	8.7	0	0	1	2	1	1	3	1	0	0	0	0
05:00	26	50.1	42.0	7.8	0	0	1	1	1	4	13	4	1	0	1	0
06:00	73	48.1	41.2	6.6	0	1	0	2	5	22	25	12	5	1	0	0
07:00	232	43.6	37.8	5.6	0	3	0	11	46	98	58	12	4	0	0	0
08:00	490	42.7	37.8	4.7	0	1	0	13	105	237	105	23	6	0	0	0
09:00	202	42.4	37.5	4.8	0	0	0	10	49	85	48	9	1	0	0	0
10:00	150	43.1	36.8	6.1	0	2	3	9	38	59	28	9	2	0	0	0
11:00	133	44.6	37.3	7.0	0	3	3	11	23	49	28	13	3	0	0	0
12:00	135	43.7	37.0	6.4	0	2	1	12	30	53	28	4	4	1	0	0
13:00	166	44.4	37.1	7.0	1	3	2	14	32	64	35	10	4	1	0	0
14:00	218	45.3	38.6	6.5	0	5	0	6	43	71	68	19	5	1	0	0
15:00	372	42.3	36.5	5.6	0	4	5	17	126	121	82	14	3	0	0	0
16:00	369	41.8	33.2	8.3	7	22	24	38	113	103	46	12	4	0	0	0
17:00	358	42.6	36.7	5.7	0	2	3	32	85	156	56	18	5	1	0	0
18:00	161	43.4	37.6	5.6	0	1	0	13	31	65	39	10	2	0	0	0
19:00	76	46.9	40.6	6.0	0	0	0	0	10	31	20	11	2	1	1	0
20:00	64	44.9	37.9	6.8	0	0	1	7	15	15	18	5	3	0	0	0
21:00	53	44.2	35.9	8.0	0	0	6	6	13	11	10	5	2	0	0	0
22:00	31	51.2	37.1	13.6	1	0	3	5	5	8	4	1	1	0	2	1
23:00	16	43.9	38.8	5.0	0	0	0	1	1	9	3	2	0	0	0	0
Total																
2H(10-12)	283	43.8	37.0	6.5	0	5	6	20	61	108	56	22	5	0	0	0
2H(14-16)	590	43.5	37.3	6.0	0	9	5	23	169	192	150	33	8	1	0	0
12H(7-19)	2986	43.3	36.8	6.3	8	48	41	186	721	1161	621	153	43	4	0	0
24H(0-24)	3343	43.8	37.1	6.5	9	49	53	210	772	1263	719	197	60	6	4	1
AM Peak	08:00 490	01:00 52.8	03:00 52.5	04:00 8.7	00:00 0	07:00 3	10:00 3	08:00 13	08:00 105	08:00 237	08:00 105	08:00 23	08:00 6	06:00 1	05:00 1	00:00 0
PM Peak	15:00 372	22:00 51.2	19:00 40.6	22:00 13.6	16:00 7	16:00 22	16:00 24	16:00 38	15:00 126	17:00 156	15:00 82	14:00 19	14:00 5	12:00 1	22:00 2	22:00 1

360 TSL Ltd

Matson ATC 2, Winnycroft Lane

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	3	56.1	44.2	11.5	0	0	0	0	0	2	0	0	0	1	0	0
01:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
02:00	2	54.8	47.5	7.1	0	0	0	0	0	0	1	0	1	0	0	0
03:00	1	-	47.5	-	0	0	0	0	0	0	0	1	0	0	0	0
04:00	1	-	27.5	-	0	0	0	1	0	0	0	0	0	0	0	0
05:00	4	46.2	41.3	4.8	0	0	0	0	0	2	1	1	0	0	0	0
06:00	19	47.8	41.4	6.1	0	0	0	1	1	6	5	5	1	0	0	0
07:00	76	43.8	38.2	5.4	0	1	0	1	15	35	17	6	1	0	0	0
08:00	202	41.4	36.7	4.6	0	0	1	4	68	97	23	6	2	1	0	0
09:00	108	41.1	32.8	8.1	2	7	3	21	26	35	11	2	1	0	0	0
10:00	59	42.8	34.8	7.7	0	3	4	5	13	21	9	4	0	0	0	0
11:00	73	43.0	37.6	5.1	0	0	0	3	22	24	18	6	0	0	0	0
12:00	76	42.7	37.6	4.9	0	0	2	1	17	33	21	1	1	0	0	0
13:00	101	43.1	38.1	4.8	0	0	1	2	22	40	30	6	0	0	0	0
14:00	148	40.1	30.5	9.3	4	15	20	27	29	34	13	5	1	0	0	0
15:00	232	40.7	34.4	6.0	1	4	6	30	78	85	22	5	0	1	0	0
16:00	211	43.2	37.3	5.7	0	1	1	9	57	96	28	13	4	2	0	0
17:00	162	43.4	37.1	6.0	0	1	2	17	35	51	47	7	2	0	0	0
18:00	80	44.8	37.2	7.4	1	2	0	3	17	34	18	3	1	0	1	0
19:00	41	48.7	37.8	10.5	2	2	0	0	8	9	12	5	3	0	0	0
20:00	37	48.5	40.0	8.2	0	1	0	1	6	11	12	1	3	2	0	0
21:00	27	44.4	37.9	6.3	0	0	0	3	7	6	7	4	0	0	0	0
22:00	16	44.3	36.4	7.6	0	1	0	0	5	6	2	2	0	0	0	0
23:00	15	48.9	41.2	7.4	0	0	0	1	1	5	5	1	1	1	0	0
Total																
2H(10-12)	132	43.2	36.4	6.5	0	3	4	8	35	45	27	10	0	0	0	0
2H(14-16)	380	40.9	32.9	7.7	5	19	26	57	107	119	35	10	1	1	0	0
12H(7-19)	1528	42.8	35.8	6.7	8	34	40	123	399	585	257	64	13	4	1	0
24H(0-24)	1694	43.4	36.1	7.0	10	38	40	130	427	632	302	84	22	8	1	0
AM Peak	08:00 202	00:00 56.1	02:00 47.5	00:00 11.5	09:00 2	09:00 7	10:00 4	09:00 21	08:00 68	08:00 97	08:00 23	07:00 6	08:00 2	00:00 1	00:00 0	00:00 0
PM Peak	15:00 232	23:00 48.9	23:00 41.2	19:00 10.5	14:00 4	14:00 15	14:00 20	15:00 30	15:00 78	16:00 96	17:00 47	16:00 13	16:00 4	16:00 2	18:00 1	12:00 0

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	1	-	15.0	-	0	1	0	0	0	0	0	0	0	0	0	0
01:00	1	-	37.5	-	0	0	0	0	0	1	0	0	0	0	0	0
02:00	2	27.5	27.5	0.0	0	0	0	2	0	0	0	0	0	0	0	0
03:00	3	37.1	29.2	7.6	0	0	1	1	0	1	0	0	0	0	0	0
04:00	4	42.8	36.3	6.3	0	0	0	1	0	2	1	0	0	0	0	0
05:00	28	48.2	39.2	8.7	0	1	1	0	8	2	9	5	2	0	0	0
06:00	36	42.1	37.5	4.5	0	0	0	1	9	17	7	2	0	0	0	0
07:00	150	45.3	38.4	6.7	0	2	2	10	19	59	42	11	2	3	0	0
08:00	258	43.6	37.8	5.5	1	1	2	12	44	120	57	19	2	0	0	0
09:00	103	44.0	35.1	8.6	1	9	1	6	22	39	16	9	0	0	0	0
10:00	72	43.2	34.3	8.6	1	5	3	8	13	25	13	4	0	0	0	0
11:00	80	44.8	37.0	7.6	0	3	1	8	15	25	19	7	2	0	0	0
12:00	104	42.9	36.9	5.8	0	1	1	6	31	36	20	9	0	0	0	0
13:00	93	46.2	37.6	8.4	0	3	2	5	24	27	21	4	4	2	1	0
14:00	130	42.9	33.6	9.0	0	11	12	14	29	39	12	10	3	0	0	0
15:00	199	42.6	35.1	7.2	1	5	8	26	54	54	40	9	2	0	0	0
16:00	171	44.7	39.2	5.3	0	0	1	3	24	79	48	6	9	1	0	0
17:00	109	43.9	37.8	5.9	0	1	1	3	29	38	26	9	2	0	0	0
18:00	66	47.1	40.2	6.7	0	1	0	2	8	19	26	5	4	1	0	0
19:00	43	46.9	40.5	6.2	0	0	0	1	9	8	16	6	3	0	0	0
20:00	20	49.8	39.8	9.7	0	0	0	3	5	3	4	1	2	2	0	0
21:00	18	46.0	35.8	9.8	0	2	0	1	3	7	4	0	0	1	0	0
22:00	16	47.4	41.3	5.9	0	0	0	0	3	3	6	3	1	0	0	0
23:00	6	51.7	41.7	9.7	0	0	0	0	2	1	1	1	0	1	0	0
Total																
2H(10-12)	152	44.2	35.7	8.1	1	8	4	16	28	50	32	11	2	0	0	0
2H(14-16)	329	42.8	34.5	8.0	1	16	20	40	83	93	52	19	5	0	0	0
12H(7-19)	1535	44.4	37.0	7.2	4	42	34	103	312	560	340	102	30	7	1	0
24H(0-24)	1713	44.7	37.1	7.3	4	46	36	113	351	605	388	120	38	11	1	0
AM Peak	08:00 258	05:00 48.2	05:00 39.2	05:00 8.7	08:00 1	09:00 9	10:00 3	08:00 12	08:00 44	08:00 120	08:00 57	08:00 19	05:00 2	07:00 3	00:00 0	00:00 0
PM Peak	15:00 199	23:00 51.7	23:00 41.7	21:00 9.8	15:00 1	14:00 11	14:00 12	15:00 26	15:00 54	16:00 79	16:00 48	14:00 10	16:00 9	13:00 2	13:00 1	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	4	54.9	36.9	17.4	0	1	0	0	0	2	0	0	0	1	0	0
01:00	1	-	37.5	-	0	0	0	0	0	1	0	0	0	0	0	0
02:00	4	50.2	37.5	12.2	0	0	0	2	0	0	1	0	1	0	0	0
03:00	4	45.2	33.8	11.1	0	0	1	1	0	1	0	1	0	0	0	0
04:00	5	41.5	34.5	6.7	0	0	0	2	0	2	1	0	0	0	0	0
05:00	32	48.0	39.5	8.2	0	1	1	0	8	4	10	6	2	0	0	0
06:00	55	44.5	38.9	5.4	0	0	0	2	10	23	12	7	1	0	0	0
07:00	226	44.8	38.4	6.3	0	3	2	11	34	94	59	17	3	3	0	0
08:00	460	42.7	37.3	5.2	1	1	3	16	112	217	80	25	4	1	0	0
09:00	211	42.6	33.9	8.4	3	16	4	27	48	74	27	11	1	0	0	0
10:00	131	43.0	34.6	8.2	1	8	7	13	26	46	22	8	0	0	0	0
11:00	153	44.0	37.3	6.5	0	3	1	11	37	49	37	13	2	0	0	0
12:00	180	42.8	37.2	5.4	0	1	3	7	48	69	41	10	1	0	0	0
13:00	194	44.8	37.9	6.7	0	3	3	7	46	67	51	10	4	2	1	0
14:00	278	41.5	31.9	9.3	4	26	32	41	58	73	25	15	4	0	0	0
15:00	431	41.6	34.7	6.6	2	9	14	56	132	139	62	14	2	1	0	0
16:00	382	44.0	38.1	5.6	0	1	2	12	81	175	76	19	13	3	0	0
17:00	271	43.6	37.4	6.0	0	2	3	20	64	89	73	16	4	0	0	0
18:00	146	46.0	38.5	7.2	1	3	0	5	25	53	44	8	5	1	1	0
19:00	84	48.1	39.2	8.6	2	2	0	1	17	17	28	11	6	0	0	0
20:00	57	48.9	39.9	8.6	0	1	0	4	11	14	16	2	5	4	0	0
21:00	45	45.2	37.1	7.9	0	2	0	4	10	13	11	4	0	1	0	0
22:00	32	46.2	38.8	7.1	0	1	0	0	8	9	8	5	1	0	0	0
23:00	21	49.5	41.3	7.9	0	0	0	1	3	6	6	2	1	2	0	0
Total																
2H(10-12)	284	43.7	36.0	7.4	1	11	8	24	63	95	59	21	2	0	0	0
2H(14-16)	709	41.8	33.6	7.9	6	35	46	97	190	212	87	29	6	1	0	0
12H(7-19)	3063	43.6	36.4	7.0	12	76	74	226	711	1145	597	166	43	11	2	0
24H(0-24)	3407	44.0	36.6	7.1	14	84	76	243	778	1237	690	204	60	19	2	0
AM Peak	08:00 460	00:00 54.9	05:00 39.5	00:00 17.4	09:00 3	09:00 16	10:00 7	09:00 27	08:00 112	08:00 217	08:00 80	08:00 25	08:00 4	07:00 3	00:00 0	00:00 0
PM Peak	15:00 431	23:00 49.5	23:00 41.3	14:00 9.3	14:00 4	14:00 26	14:00 32	15:00 56	15:00 132	16:00 175	16:00 76	16:00 19	16:00 13	20:00 4	13:00 1	12:00 0

360 TSL Ltd

Matson ATC 2, Winnycroft Lane

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	2	37.5	37.5	0.0	0	0	0	0	0	2	0	0	0	0	0	0
01:00	5	49.6	39.5	9.7	0	0	0	0	3	0	0	1	1	0	0	0
02:00	2	27.5	27.5	0.0	0	0	0	2	0	0	0	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	2	51.0	40.0	10.6	0	0	0	0	1	0	0	1	0	0	0	0
05:00	4	41.7	37.5	4.1	0	0	0	0	1	2	1	0	0	0	0	0
06:00	9	45.3	37.5	7.5	0	0	0	2	1	3	1	2	0	0	0	0
07:00	21	45.9	39.4	6.2	0	0	0	2	2	8	4	5	0	0	0	0
08:00	35	40.1	33.6	6.3	0	1	3	3	12	12	4	0	0	0	0	0
09:00	54	41.5	35.2	6.0	0	1	1	6	18	17	9	2	0	0	0	0
10:00	87	41.0	29.8	10.8	3	16	11	9	14	17	13	4	0	0	0	0
11:00	89	42.7	37.5	5.0	0	0	1	3	21	40	20	2	2	0	0	0
12:00	136	44.5	38.1	6.1	0	0	4	6	24	51	43	5	1	1	1	0
13:00	116	45.5	39.8	5.4	0	1	0	0	13	49	40	10	2	0	1	0
14:00	135	44.3	37.5	6.5	0	4	0	9	18	65	28	8	2	1	0	0
15:00	91	42.2	35.9	6.1	0	1	2	9	28	30	16	4	1	0	0	0
16:00	79	43.0	34.9	7.8	1	4	1	9	19	27	13	5	0	0	0	0
17:00	75	44.3	37.4	6.6	0	0	0	9	20	22	15	6	2	1	0	0
18:00	45	46.2	37.7	8.2	0	2	0	2	10	16	10	2	1	2	0	0
19:00	20	41.8	37.3	4.4	0	0	0	1	5	8	6	0	0	0	0	0
20:00	26	44.1	36.0	7.8	0	2	0	1	7	7	8	1	0	0	0	0
21:00	18	48.0	39.6	8.1	0	1	0	0	3	3	8	2	1	0	0	0
22:00	20	49.9	40.4	9.2	0	1	0	0	4	4	5	4	1	1	0	0
23:00	8	52.9	46.3	6.4	0	0	0	0	0	1	3	2	1	1	0	0
Total																
2H(10-12)	176	43.2	33.7	9.2	3	16	12	12	35	57	33	6	2	0	0	0
2H(14-16)	226	43.5	36.8	6.4	0	5	2	18	46	95	44	12	3	1	0	0
12H(7-19)	963	44.2	36.6	7.3	4	30	23	67	199	354	215	53	11	5	2	0
24H(0-24)	1079	44.4	36.8	7.4	4	34	23	73	224	384	247	66	15	7	2	0
AM Peak	11:00 89	04:00 51.0	04:00 40.0	10:00 10.8	10:00 3	10:00 16	10:00 11	10:00 9	11:00 21	11:00 40	11:00 20	07:00 5	11:00 2	00:00 0	00:00 0	00:00 0
PM Peak	12:00 136	23:00 52.9	23:00 46.3	22:00 9.2	16:00 1	14:00 4	12:00 4	14:00 9	15:00 28	14:00 65	12:00 43	13:00 10	13:00 2	18:00 2	12:00 1	12:00 0

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	3	42.7	37.5	5.0	0	0	0	0	1	1	1	0	0	0	0	0
01:00	2	42.7	26.3	15.9	0	1	0	0	0	1	0	0	0	0	0	0
02:00	3	42.1	34.2	7.6	0	0	0	1	1	0	1	0	0	0	0	0
03:00	1	-	32.5	-	0	0	0	0	1	0	0	0	0	0	0	0
04:00	5	61.5	48.0	13.0	0	0	0	0	1	1	0	0	2	0	1	0
05:00	11	44.4	33.0	11.0	0	2	0	2	2	1	3	1	0	0	0	0
06:00	11	48.4	37.3	10.8	0	1	0	1	2	3	2	0	2	0	0	0
07:00	22	44.9	38.4	6.3	0	0	1	1	3	8	6	3	0	0	0	0
08:00	47	42.1	33.0	8.8	0	3	6	7	12	9	6	3	1	0	0	0
09:00	94	45.1	36.2	8.6	1	4	3	10	16	32	17	6	5	0	0	0
10:00	104	42.1	31.7	10.1	2	13	12	13	20	20	18	5	1	0	0	0
11:00	105	44.3	37.0	7.1	0	3	2	10	19	35	26	9	1	0	0	0
12:00	107	44.6	37.5	6.8	0	4	0	3	24	41	23	10	2	0	0	0
13:00	113	44.3	37.4	6.7	0	3	2	4	23	46	23	10	2	0	0	0
14:00	88	45.1	37.8	7.1	0	3	1	4	15	32	23	8	2	0	0	0
15:00	81	45.1	37.0	7.8	0	0	6	5	22	22	16	6	3	0	1	0
16:00	79	44.7	36.8	7.7	0	3	2	7	17	22	17	11	0	0	0	0
17:00	72	45.1	39.2	5.7	0	0	0	2	13	32	12	10	3	0	0	0
18:00	45	46.8	38.9	7.6	0	0	1	4	9	11	12	4	3	1	0	0
19:00	21	46.9	39.6	7.0	0	0	0	1	4	9	1	4	2	0	0	0
20:00	16	45.8	38.4	7.1	0	0	0	2	4	3	3	4	0	0	0	0
21:00	23	48.0	40.5	7.2	0	0	0	2	3	6	5	5	2	0	0	0
22:00	14	48.2	41.4	6.6	0	0	0	0	2	5	3	2	2	0	0	0
23:00	11	42.2	36.6	5.4	0	0	1	0	1	7	2	0	0	0	0	0
Total																
2H(10-12)	209	43.7	34.3	9.1	2	16	14	23	39	55	44	14	2	0	0	0
2H(14-16)	169	45.1	37.4	7.4	0	3	7	9	37	54	39	14	5	0	1	0
12H(7-19)	957	44.8	36.6	7.9	3	36	36	70	193	310	199	85	23	1	1	0
24H(0-24)	1078	45.1	36.8	8.0	3	40	37	79	215	347	220	101	33	1	2	0
AM Peak	11:00 105	04:00 61.5	04:00 48.0	01:00 15.9	10:00 2	10:00 13	10:00 12	10:00 13	10:00 20	11:00 35	11:00 26	11:00 9	09:00 5	00:00 0	04:00 1	00:00 0
PM Peak	13:00 113	22:00 48.2	22:00 41.4	15:00 7.8	12:00 0	12:00 4	15:00 6	16:00 7	12:00 24	13:00 46	12:00 23	16:00 11	15:00 3	18:00 1	15:00 1	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	5	41.2	37.5	3.5	0	0	0	0	1	3	1	0	0	0	0	0
01:00	7	48.3	35.7	12.1	0	1	0	0	3	1	0	1	1	0	0	0
02:00	5	38.3	31.5	6.5	0	0	0	3	1	0	1	0	0	0	0	0
03:00	1	-	32.5	-	0	0	0	0	1	0	0	0	0	0	0	0
04:00	7	58.3	45.7	12.1	0	0	0	0	2	1	0	1	2	0	1	0
05:00	15	44.2	34.2	9.7	0	2	0	2	3	3	4	1	0	0	0	0
06:00	20	46.9	37.4	9.2	0	1	0	3	3	6	3	2	2	0	0	0
07:00	43	45.3	38.9	6.2	0	0	1	3	5	16	10	8	0	0	0	0
08:00	82	41.3	33.2	7.8	0	4	9	10	24	21	10	3	1	0	0	0
09:00	148	43.9	35.8	7.8	1	5	4	16	34	49	26	8	5	0	0	0
10:00	191	41.6	30.8	10.4	5	29	23	22	34	37	31	9	1	0	0	0
11:00	194	43.6	37.2	6.2	0	3	3	13	40	75	46	11	3	0	0	0
12:00	243	44.5	37.9	6.4	0	4	4	9	48	92	66	15	3	1	1	0
13:00	229	45.1	38.6	6.2	0	4	2	4	36	95	63	20	4	0	1	0
14:00	223	44.6	37.6	6.7	0	7	1	13	33	97	51	16	4	1	0	0
15:00	172	43.6	36.4	6.9	0	1	8	14	50	52	32	10	4	0	1	0
16:00	158	43.9	35.8	7.8	1	7	3	16	36	49	30	16	0	0	0	0
17:00	147	44.7	38.3	6.2	0	0	0	11	33	54	27	16	5	1	0	0
18:00	90	46.5	38.3	7.9	0	2	1	6	19	27	22	6	4	3	0	0
19:00	41	44.6	38.5	5.9	0	0	0	2	9	17	7	4	2	0	0	0
20:00	42	44.7	36.9	7.6	0	2	0	3	11	10	11	5	0	0	0	0
21:00	41	47.9	40.1	7.5	0	1	0	2	6	9	13	7	3	0	0	0
22:00	34	49.2	40.8	8.1	0	1	0	0	6	9	8	6	3	1	0	0
23:00	19	48.4	40.7	7.5	0	0	1	0	1	8	5	2	1	1	0	0
Total																
2H(10-12)	385	43.5	34.0	9.1	5	32	26	35	74	112	77	20	4	0	0	0
2H(14-16)	395	44.2	37.1	6.8	0	8	9	27	83	149	83	26	8	1	1	0
12H(7-19)	1920	44.5	36.6	7.6	7	66	59	137	392	664	414	138	34	6	3	0
24H(0-24)	2157	44.8	36.8	7.7	7	74	60	152	439	731	467	167	48	8	4	0
AM Peak	11:00 194	04:00 58.3	04:00 45.7	01:00 12.1	10:00 5	10:00 29	10:00 23	10:00 22	11:00 40	11:00 75	11:00 46	11:00 11	09:00 5	00:00 0	04:00 1	00:00 0
PM Peak	12:00 243	22:00 49.2	22:00 40.8	22:00 8.1	16:00 1	14:00 7	15:00 8	16:00 16	15:00 50	14:00 97	12:00 66	13:00 20	17:00 5	18:00 3	12:00 1	12:00 0

Matson ATC 2, Winnycroft Lane

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	4	46.7	40.0	6.5	0	0	0	0	1	1	1	1	0	0	0	0
01:00	4	49.8	42.5	7.1	0	0	0	0	1	0	1	2	0	0	0	0
02:00	1	-	42.5	-	0	0	0	0	0	0	1	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	2	44.8	37.5	7.1	0	0	0	0	1	0	1	0	0	0	0	0
05:00	3	45.2	39.2	5.8	0	0	0	0	1	0	2	0	0	0	0	0
06:00	7	44.7	38.9	5.6	0	0	0	0	2	2	2	1	0	0	0	0
07:00	16	47.6	39.5	7.8	0	1	0	0	1	5	6	3	0	0	0	0
08:00	29	43.9	35.0	8.6	0	3	0	1	9	9	4	3	0	0	0	0
09:00	54	46.2	38.1	7.8	0	3	1	1	6	20	16	6	1	0	0	0
10:00	73	44.1	37.9	6.0	0	1	0	3	17	28	17	5	2	0	0	0
11:00	81	42.9	34.3	8.3	0	6	3	12	20	17	18	5	0	0	0	0
12:00	113	43.1	36.7	6.2	0	3	0	5	34	42	20	8	1	0	0	0
13:00	113	43.6	36.0	7.4	0	5	0	11	31	38	20	3	5	0	0	0
14:00	91	44.3	37.1	7.0	0	2	2	5	26	25	22	6	3	0	0	0
15:00	90	43.3	34.8	8.1	0	8	2	7	18	34	16	5	0	0	0	0
16:00	84	38.8	31.9	6.6	1	0	10	23	22	19	8	1	0	0	0	0
17:00	49	43.8	36.3	7.3	0	0	4	3	15	14	7	4	2	0	0	0
18:00	46	46.9	38.3	8.3	1	1	0	1	8	17	12	3	2	1	0	0
19:00	31	44.1	37.2	6.7	0	0	3	1	3	15	7	1	1	0	0	0
20:00	27	45.0	39.0	5.9	0	0	0	2	5	7	9	4	0	0	0	0
21:00	13	46.3	38.7	7.4	0	0	0	1	3	4	4	0	0	1	0	0
22:00	9	45.8	38.6	7.0	0	0	0	2	0	2	4	1	0	0	0	0
23:00	4	43.7	38.8	4.8	0	0	0	0	1	1	2	0	0	0	0	0
Total																
2H(10-12)	154	43.8	36.0	7.5	0	7	3	15	37	45	35	10	2	0	0	0
2H(14-16)	181	43.9	36.0	7.7	0	10	4	12	44	59	38	11	3	0	0	0
12H(7-19)	839	43.8	36.0	7.5	2	33	22	72	207	268	166	52	16	1	0	0
24H(0-24)	944	44.0	36.3	7.4	2	33	25	78	225	300	200	62	17	2	0	0
AM Peak	11:00 81	01:00 49.8	01:00 42.5	08:00 8.6	00:00 0	11:00 6	11:00 3	11:00 12	11:00 20	10:00 28	11:00 18	09:00 6	10:00 2	00:00 0	00:00 0	00:00 0
PM Peak	12:00 113	18:00 46.9	20:00 39.0	18:00 8.3	16:00 1	15:00 8	16:00 10	16:00 23	12:00 34	12:00 42	14:00 22	12:00 8	13:00 5	18:00 1	12:00 0	12:00 0

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	1	-	47.5	-	0	0	0	0	0	0	0	1	0	0	0	0
01:00	4	45.1	36.3	8.5	0	0	0	1	1	1	0	1	0	0	0	0
02:00	2	62.2	47.5	14.1	0	0	0	0	0	1	0	0	0	1	0	0
03:00	1	-	37.5	-	0	0	0	0	0	1	0	0	0	0	0	0
04:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
05:00	14	46.9	34.9	11.6	1	1	0	2	1	2	6	1	0	0	0	0
06:00	10	47.2	33.5	13.2	0	2	2	0	0	1	3	2	0	0	0	0
07:00	19	44.9	39.3	5.3	0	0	0	0	4	7	6	1	1	0	0	0
08:00	28	43.8	36.9	6.7	0	1	0	3	4	10	9	1	0	0	0	0
09:00	68	47.3	36.7	10.3	1	7	1	3	10	15	19	10	2	0	0	0
10:00	78	45.4	36.3	8.7	1	5	0	6	12	33	12	5	4	0	0	0
11:00	95	40.7	30.6	9.8	1	17	6	18	14	21	17	1	0	0	0	0
12:00	82	44.6	37.4	7.0	0	2	0	5	20	32	14	5	3	1	0	0
13:00	101	45.3	37.4	7.6	0	3	0	12	23	22	24	16	1	0	0	0
14:00	94	45.7	38.1	7.4	0	0	3	4	26	31	17	7	3	2	1	0
15:00	74	44.1	35.4	8.5	0	5	4	4	17	25	12	6	0	1	0	0
16:00	76	43.4	34.3	8.7	0	1	4	18	25	16	6	2	0	2	2	0
17:00	45	44.6	37.8	6.5	0	0	0	5	10	15	10	2	3	0	0	0
18:00	53	45.6	38.7	6.6	0	0	1	3	9	22	8	8	1	1	0	0
19:00	30	45.2	38.8	6.1	0	0	1	1	4	12	8	3	1	0	0	0
20:00	26	49.6	41.6	7.6	0	0	0	2	1	7	11	2	2	0	1	0
21:00	13	50.7	42.1	8.3	0	0	0	0	3	2	5	1	0	2	0	0
22:00	4	41.0	32.5	8.2	0	0	1	0	2	0	1	0	0	0	0	0
23:00	1	-	42.5	-	0	0	0	0	0	0	1	0	0	0	0	0
Total																
2H(10-12)	173	43.2	33.2	9.7	2	22	6	24	26	54	29	6	4	0	0	0
2H(14-16)	168	45.1	36.9	8.0	0	5	7	8	43	56	29	13	3	3	1	0
12H(7-19)	813	44.9	36.2	8.5	3	41	19	81	174	249	154	64	18	7	3	0
24H(0-24)	919	45.4	36.5	8.6	4	44	23	87	186	276	189	75	21	10	4	0
AM Peak	11:00 95	02:00 62.2	00:00 47.5	02:00 14.1	05:00 1	11:00 17	11:00 6	11:00 18	11:00 14	10:00 33	09:00 19	09:00 10	10:00 4	02:00 1	00:00 0	00:00 0
PM Peak	13:00 101	21:00 50.7	23:00 42.5	16:00 8.7	12:00 0	15:00 5	15:00 4	16:00 18	14:00 26	12:00 32	13:00 24	13:00 16	12:00 3	14:00 2	16:00 2	12:00 0

360 TSL Ltd

Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	5	48.3	41.5	6.5	0	0	0	0	1	1	1	2	0	0	0	0
01:00	8	47.7	39.4	8.0	0	0	0	1	2	1	1	3	0	0	0	0
02:00	3	56.6	45.8	10.4	0	0	0	0	0	1	1	0	0	1	0	0
03:00	1	-	37.5	-	0	0	0	0	0	1	0	0	0	0	0	0
04:00	2	44.8	37.5	7.1	0	0	0	0	1	0	1	0	0	0	0	0
05:00	17	46.8	35.6	10.8	1	1	0	2	2	2	8	1	0	0	0	0
06:00	17	47.0	35.7	10.9	0	2	2	0	2	3	5	3	0	0	0	0
07:00	35	46.1	39.4	6.5	0	1	0	0	5	12	12	4	1	0	0	0
08:00	57	43.9	35.9	7.7	0	4	0	4	13	19	13	4	0	0	0	0
09:00	122	46.9	37.3	9.2	1	10	2	4	16	35	35	16	3	0	0	0
10:00	151	44.9	37.1	7.6	1	6	0	9	29	61	29	10	6	0	0	0
11:00	176	41.9	32.3	9.3	1	23	9	30	34	38	35	6	0	0	0	0
12:00	195	43.7	37.0	6.5	0	5	0	10	54	74	34	13	4	1	0	0
13:00	214	44.4	36.7	7.5	0	8	0	23	54	60	44	19	6	0	0	0
14:00	185	45.0	37.6	7.2	0	2	5	9	52	56	39	13	6	2	1	0
15:00	164	43.6	35.1	8.3	0	13	6	11	35	59	28	11	0	1	0	0
16:00	160	41.1	33.1	7.8	1	1	14	41	47	35	14	3	0	2	2	0
17:00	94	44.2	37.0	6.9	0	0	4	8	25	29	17	6	5	0	0	0
18:00	99	46.2	38.5	7.4	1	1	1	4	17	39	20	11	3	2	0	0
19:00	61	44.7	38.0	6.4	0	0	4	2	7	27	15	4	2	0	0	0
20:00	53	47.4	40.3	6.9	0	0	0	4	6	14	20	6	2	0	1	0
21:00	26	48.6	40.4	7.9	0	0	0	1	6	6	9	1	0	3	0	0
22:00	13	44.6	36.7	7.6	0	0	1	2	2	2	5	1	0	0	0	0
23:00	5	44.1	39.5	4.5	0	0	0	0	1	1	3	0	0	0	0	0
Total																
2H(10-12)	327	43.7	34.5	8.8	2	29	9	39	63	99	64	16	6	0	0	0
2H(14-16)	349	44.5	36.4	7.8	0	15	11	20	87	115	67	24	6	3	1	0
12H(7-19)	1652	44.4	36.1	8.0	5	74	41	153	381	517	320	116	34	8	3	0
24H(0-24)	1863	44.7	36.4	8.0	6	77	48	165	411	576	389	137	38	12	4	0
AM Peak	11:00 176	02:00 56.6	02:00 45.8	06:00 10.9	05:00 1	11:00 23	11:00 9	11:00 30	11:00 34	10:00 61	09:00 35	09:00 16	10:00 6	02:00 1	00:00 0	00:00 0
PM Peak	13:00 214	21:00 48.6	21:00 40.4	15:00 8.3	16:00 1	15:00 13	16:00 14	16:00 41	12:00 54	12:00 74	13:00 44	13:00 19	13:00 6	21:00 3	16:00 2	12:00 0

Matson ATC 2, Winnycroft Lane

Direction: Northbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	1	-	37.5	-	0	0	0	0	0	1	0	0	0	0	0	0
01:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
02:00	1	-	32.5	-	0	0	0	0	1	0	0	0	0	0	0	0
03:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
04:00	1	-	52.5	-	0	0	0	0	0	0	0	0	1	0	0	0
05:00	3	37.5	37.5	0.0	0	0	0	0	0	3	0	0	0	0	0	0
06:00	29	45.9	38.7	6.9	0	0	0	2	8	8	5	4	2	0	0	0
07:00	73	43.7	37.7	5.8	0	0	0	3	24	24	13	8	0	1	0	0
08:00	178	41.6	37.0	4.4	0	0	0	5	56	75	36	5	1	0	0	0
09:00	100	41.8	36.4	5.2	0	1	0	9	24	46	16	4	0	0	0	0
10:00	60	42.8	36.5	6.1	0	2	1	2	13	26	15	1	0	0	0	0
11:00	55	43.5	36.1	7.1	0	2	5	2	3	28	14	1	0	0	0	0
12:00	56	42.7	36.8	5.7	0	1	0	2	16	25	7	5	0	0	0	0
13:00	63	43.6	35.8	7.6	0	2	3	6	18	15	13	5	1	0	0	0
14:00	107	41.3	32.0	9.0	0	14	7	17	24	27	12	6	0	0	0	0
15:00	174	41.0	34.4	6.3	1	3	8	17	59	63	17	5	1	0	0	0
16:00	206	40.5	32.5	7.7	6	9	4	39	66	62	15	4	1	0	0	0
17:00	180	40.8	34.2	6.4	2	0	8	29	59	53	25	2	2	0	0	0
18:00	74	45.2	37.8	7.1	1	2	0	1	14	27	24	3	2	0	0	0
19:00	36	43.6	37.9	5.5	0	0	0	1	11	13	7	3	1	0	0	0
20:00	38	48.1	41.1	6.8	0	0	0	1	5	13	9	7	1	2	0	0
21:00	13	52.9	43.8	8.7	0	0	0	0	1	3	6	1	0	1	1	0
22:00	19	50.1	40.4	9.3	0	0	0	2	3	7	2	2	0	3	0	0
23:00	6	51.8	42.5	8.9	0	0	0	1	0	1	1	2	1	0	0	0
Total																
2H(10-12)	115	43.1	36.3	6.6	0	4	6	4	16	54	29	2	0	0	0	0
2H(14-16)	281	41.3	33.5	7.5	1	17	15	34	83	90	29	11	1	0	0	0
12H(7-19)	1326	42.2	35.1	6.9	10	36	36	132	376	471	207	49	8	1	0	0
24H(0-24)	1473	42.9	35.6	7.0	10	36	36	139	405	520	237	68	14	7	1	0
AM Peak	08:00 178	06:00 45.9	04:00 52.5	11:00 7.1	00:00 0	10:00 2	11:00 5	09:00 9	08:00 56	08:00 75	08:00 36	07:00 8	06:00 2	07:00 1	00:00 0	00:00 0
PM Peak	16:00 206	21:00 52.9	21:00 43.8	22:00 9.3	16:00 6	14:00 14	15:00 8	16:00 39	16:00 66	15:00 63	17:00 25	20:00 7	17:00 2	22:00 3	21:00 1	12:00 0

360 TSL Ltd

Direction: Southbound

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	1	-	75.0	-	0	0	0	0	0	0	0	0	0	0	0	1
01:00	1	-	15.0	-	0	1	0	0	0	0	0	0	0	0	0	0
02:00	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
03:00	2	42.5	42.5	0.0	0	0	0	0	0	0	2	0	0	0	0	0
04:00	5	47.9	37.5	10.0	0	0	0	1	2	0	1	0	1	0	0	0
05:00	27	48.4	38.3	9.7	0	1	1	3	5	4	7	3	2	1	0	0
06:00	51	47.5	40.8	6.5	0	1	0	1	7	7	25	8	2	0	0	0
07:00	142	45.3	39.1	6.0	0	2	0	4	23	51	42	17	3	0	0	0
08:00	235	44.0	38.1	5.7	1	0	0	10	56	83	62	19	4	0	0	0
09:00	88	45.0	36.9	7.8	2	2	1	5	15	33	22	7	1	0	0	0
10:00	51	43.2	35.8	7.1	0	1	3	6	11	14	13	3	0	0	0	0
11:00	67	43.7	36.2	7.3	0	2	0	7	25	12	14	5	2	0	0	0
12:00	60	41.9	36.9	4.8	0	0	2	3	8	36	9	2	0	0	0	0
13:00	100	44.0	36.4	7.4	0	5	2	6	21	34	26	5	1	0	0	0
14:00	86	41.0	34.0	6.8	0	2	5	13	28	26	7	4	1	0	0	0
15:00	148	43.0	34.6	8.2	1	8	8	12	38	52	23	2	3	0	1	0
16:00	142	42.9	33.8	8.8	3	9	9	9	39	47	17	7	1	1	0	0
17:00	113	44.8	37.2	7.4	1	2	1	6	32	37	19	10	5	0	0	0
18:00	64	46.4	39.6	6.5	0	0	1	6	6	16	25	7	3	0	0	0
19:00	38	47.5	40.9	6.4	0	0	0	1	7	9	9	10	2	0	0	0
20:00	32	50.3	41.3	8.7	0	0	0	3	7	4	6	7	3	2	0	0
21:00	16	51.9	42.7	9.0	0	0	0	1	2	3	4	4	1	0	1	0
22:00	11	48.5	40.7	7.5	0	0	0	0	3	3	2	1	2	0	0	0
23:00	5	50.3	43.5	6.5	0	0	0	0	0	2	1	1	1	0	0	0
Total																
2H(10-12)	118	43.4	36.0	7.2	0	3	3	13	36	26	27	8	2	0	0	0
2H(14-16)	234	42.3	34.4	7.7	1	10	13	25	66	78	30	6	4	0	1	0
12H(7-19)	1296	44.1	36.6	7.3	8	33	32	87	302	441	279	88	24	1	1	0
24H(0-24)	1485	44.9	37.1	7.5	8	36	33	97	335	473	336	122	38	4	2	1
AM Peak	08:00 235	05:00 48.4	00:00 75.0	04:00 10.0	09:00 2	07:00 2	10:00 3	08:00 10	08:00 56	08:00 83	08:00 62	08:00 19	08:00 4	05:00 1	00:00 0	00:00 1
PM Peak	15:00 148	21:00 51.9	23:00 43.5	21:00 9.0	16:00 3	16:00 9	16:00 9	14:00 13	16:00 39	15:00 52	13:00 26	17:00 10	17:00 5	20:00 2	15:00 1	12:00 0

360 TSL Ltd

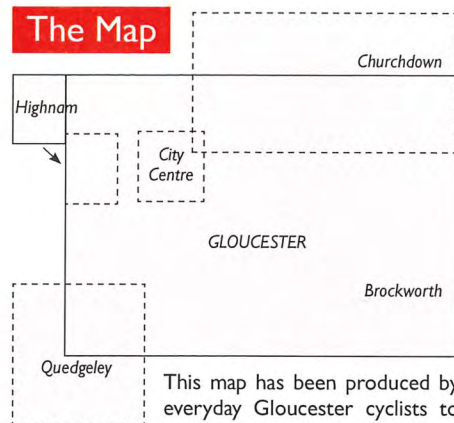
Direction: Total Flow

Hour Beginning	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
00:00	2	83.7	56.3	26.5	0	0	0	0	0	1	0	0	0	0	0	1
01:00	1	-	15.0	-	0	1	0	0	0	0	0	0	0	0	0	0
02:00	1	-	32.5	-	0	0	0	0	1	0	0	0	0	0	0	0
03:00	2	42.5	42.5	0.0	0	0	0	0	0	0	2	0	0	0	0	0
04:00	6	51.2	40.0	10.8	0	0	0	1	2	0	1	0	2	0	0	0
05:00	30	47.8	38.3	9.2	0	1	1	3	5	7	7	3	2	1	0	0
06:00	80	46.9	40.0	6.7	0	1	0	3	15	15	30	12	4	0	0	0
07:00	215	44.8	38.6	5.9	0	2	0	7	47	75	55	25	3	1	0	0
08:00	413	43.0	37.7	5.2	1	0	0	15	112	158	98	24	5	0	0	0
09:00	188	43.4	36.6	6.5	2	3	1	14	39	79	38	11	1	0	0	0
10:00	111	43.0	36.2	6.6	0	3	4	8	24	40	28	4	0	0	0	0
11:00	122	43.6	36.1	7.2	0	4	5	9	28	40	28	6	2	0	0	0
12:00	116	42.3	36.9	5.2	0	1	2	5	24	61	16	7	0	0	0	0
13:00	163	43.8	36.1	7.4	0	7	5	12	39	49	39	10	2	0	0	0
14:00	193	41.3	32.9	8.1	0	16	12	30	52	53	19	10	1	0	0	0
15:00	322	42.0	34.5	7.2	2	11	16	29	97	115	40	7	4	0	1	0
16:00	348	41.5	33.0	8.2	9	18	13	48	105	109	32	11	2	1	0	0
17:00	293	42.5	35.4	6.9	3	2	9	35	91	90	44	12	7	0	0	0
18:00	138	45.8	38.7	6.9	1	2	1	7	20	43	49	10	5	0	0	0
19:00	74	45.8	39.5	6.1	0	0	0	2	18	22	16	13	3	0	0	0
20:00	70	49.1	41.1	7.7	0	0	0	4	12	17	15	14	4	4	0	0
21:00	29	52.2	43.2	8.7	0	0	0	1	3	6	10	5	1	1	2	0
22:00	30	49.4	40.5	8.6	0	0	0	2	6	10	4	3	2	3	0	0
23:00	11	50.8	43.0	7.6	0	0	0	1	0	3	2	3	2	0	0	0
Total																
2H(10-12)	233	43.3	36.2	6.9	0	7	9	17	52	80	56	10	2	0	0	0
2H(14-16)	515	41.8	33.9	7.6	2	27	28	59	149	168	59	17	5	0	1	0
12H(7-19)	2622	43.2	35.8	7.1	18	69	68	219	678	912	486	137	32	2	1	0
24H(0-24)	2958	44.0	36.4	7.3	18	72	69	236	740	993	573	190	52	11	3	1
AM Peak	08:00	00:00	00:00	00:00	09:00	11:00	11:00	08:00	08:00	08:00	08:00	07:00	08:00	05:00	00:00	00:00
	413	83.7	56.3	26.5	2	4	5	15	112	158	98	25	5	1	0	1
PM Peak	16:00	21:00	21:00	21:00	16:00	16:00	15:00	16:00	16:00	15:00	18:00	20:00	17:00	20:00	21:00	12:00
	348	52.2	43.2	8.7	9	18	16	48	105	115	49	14	7	4	2	0



Appendix A.4

The Map



This map has been produced by everyday Gloucester cyclists to help you choose routes that suit your needs and ability. Select the green routes if you are a beginner or have not cycled for a while. Soon you should be able to use the yellow roads. Progress to the orange then the red roads with their heavier traffic as your cycling skills increase.

Cycling is a healthy and cheap mode of transport. Often it is quicker than the car or bus and usually you can park directly outside your destination or very close. Typical urban cycle journey times are shown in the table below, for example a two mile trip at a moderate speed takes twelve minutes.

Speed	1	2	3	4
Leisurely	8	16	24	32
Moderate	6	12	18	24
Brisk	5	10	15	20

Contacts

Cycle shops in Gloucester

Striking Bikes	01452 522100
1a Morelands Trad. Est., Bristol Road GL1 5RZ	
Mitchell's	01452 411888
260-264 Barton Street GL1 4JJ	
Discount Cycle Warehouse	01452 381699
1 Kingsholm Road GL1 3AX	
Halfords	01452 310055
210 Eastern Avenue GL4 4LP	
Eastgate Cycles	01452 300366
76 Eastgate GL1 1QN	
Slam 69	07941 784430
Hurricane Road GL3 4FF	
Gloucestershire Bike Project	01452 690979
16 Commercial Road GL1 2EA	

Reporting potholes, broken glass, etc.

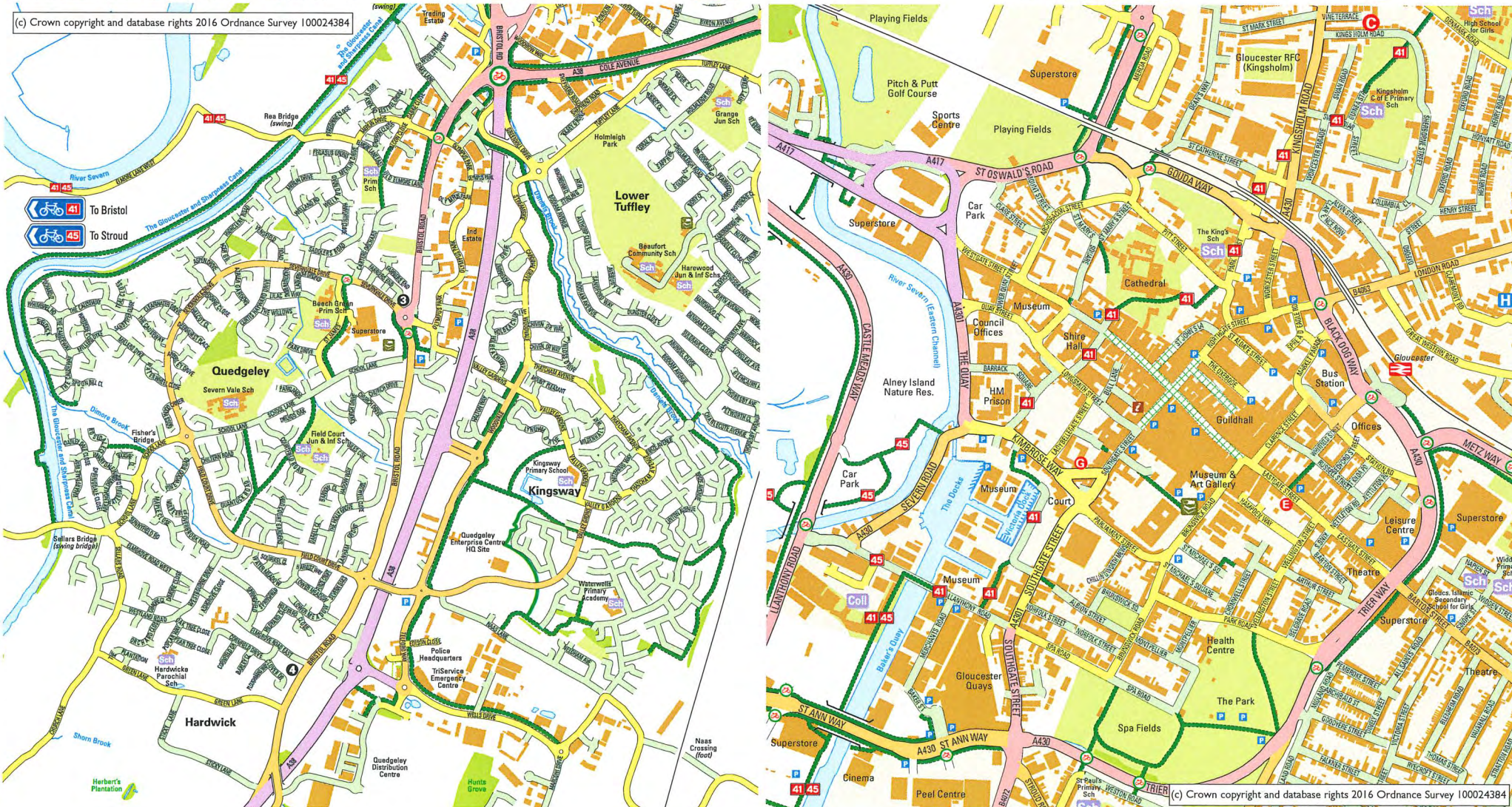
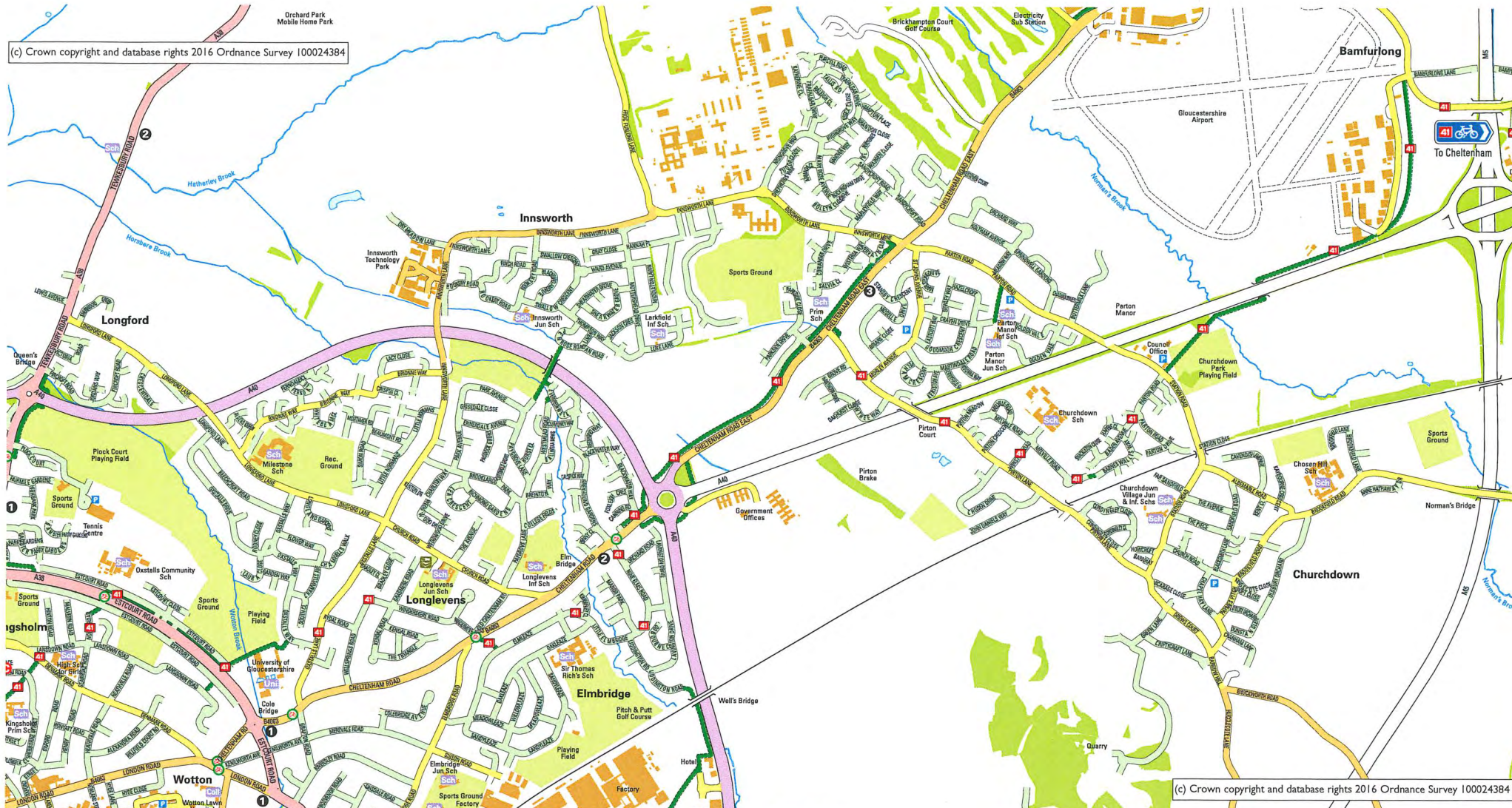
Gloucestershire Highways	08000 514514
highways@gloucestershire.gov.uk	
Gloucester City Council	01452 396396
enviro@gloucester.gov.uk	
(overgrown vegetation within city)	

Cycle training

Gloucestershire County Council	01452 425532
www.gloucestershire.gov.uk	
Life Cycle UK, Bristol	0117 353 4580
www.lifecycleuk.org.uk	

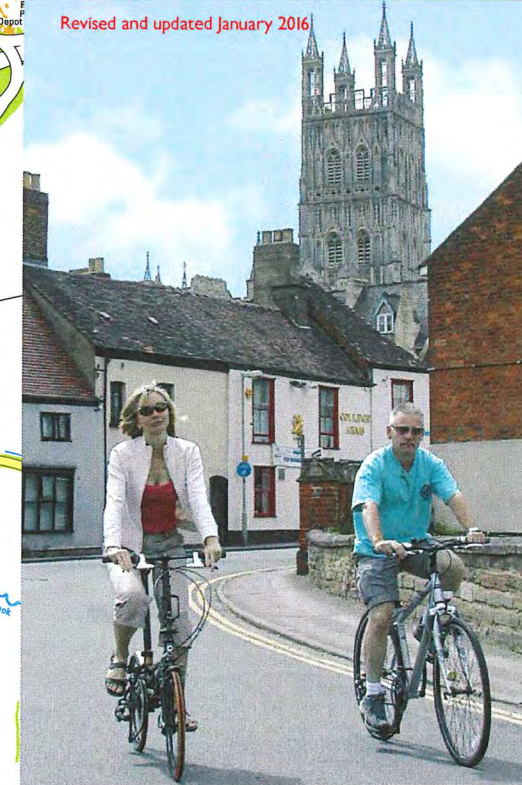
Gloucester City Cycling Club

The club organises rides for various abilities every Sunday, rides or events on most Tuesday evenings and Wednesday evening time trials in the summer
www.gloscc.co.uk 01452 423078



Gloucester Cycle Map

Revised and updated January 2016



Includes Kingsway, Highnam, Churchdown and Brockworth

Cycling brings enormous health benefits:

- Increased cardiovascular fitness – regular cyclists enjoy better fitness than non-cyclists 10 years their junior!
- Increased muscle strength and flexibility combined with an improvement in joint mobility.
- Decreased stress levels – people who cycle into work are more alert and more productive; they have fewer sick days too.
- Improved posture, coordination and bone strength.
- Decreased body fat levels – cycling for 20 minutes at 10mph burns 90 calories.

thinktravel

New sense of direction.
www.thinktravel.info

Gloucestershire
COUNTY COUNCIL

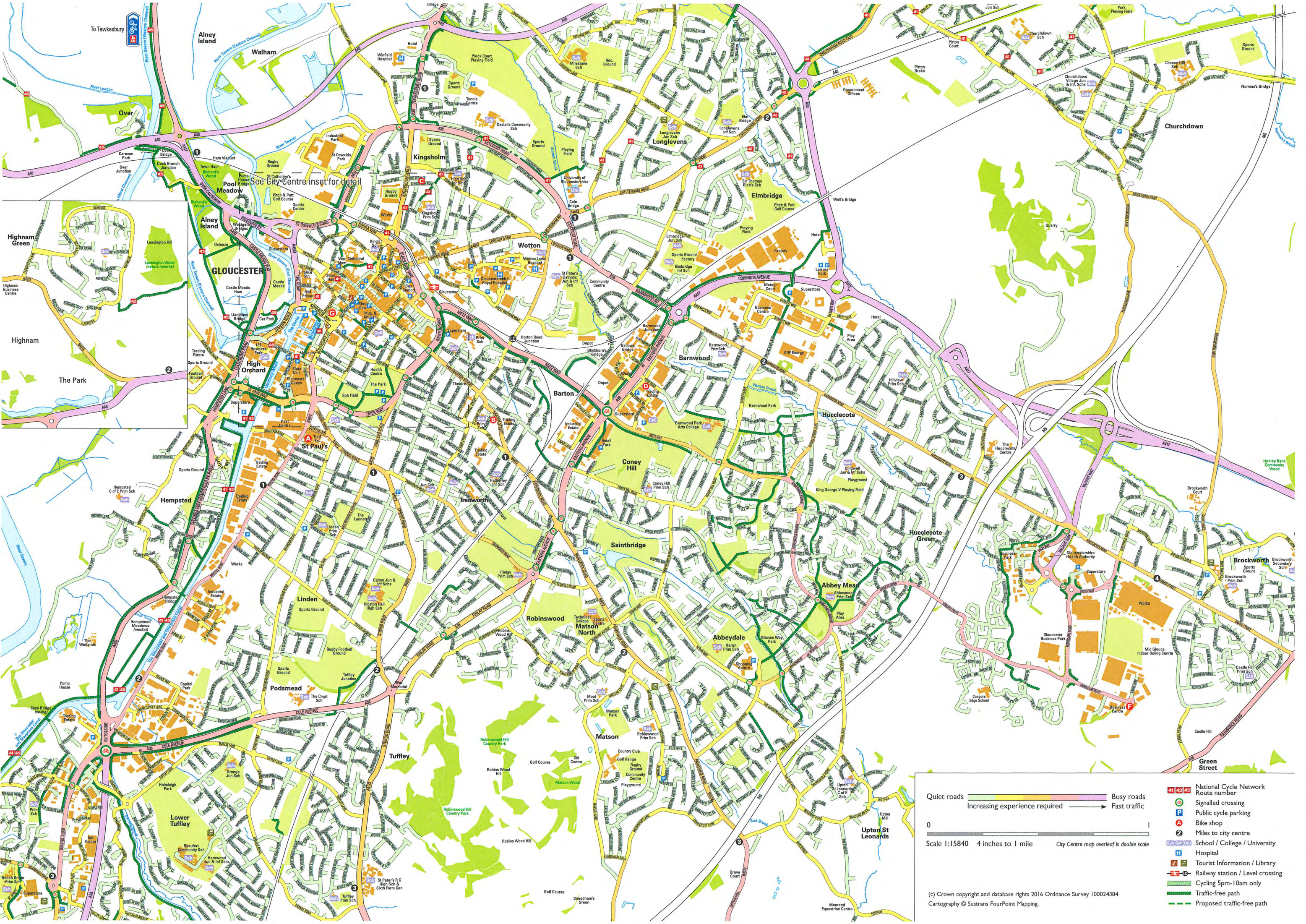
www.gloucestershire.gov.uk



www.gloscc.co.uk

© The Bicycle Action Group of Gloucester 2010

This reprinted and updated edition was produced with the support of Thinktravel, Gloucestershire County Council and Gloucester City Cycling Club.



Quiet roads Busy roads
Increasing experience required Fast traffic

0
Scale 1:15840 4 inches to 1 mile City Centre map overlay is double scale

- 41 42 45 National Cycle Network Route number
- Signalised crossing
- Public cycle parking
- Bike shop
- Miles to city centre
- Sch Coll Univ School / College / University
- H Hospital
- Tourist Information / Library
- Railway station / Level crossing
- Cycling 5pm-10am only
- Traffic-free path
- Proposed traffic-free path



Appendix B.1

PEGASUS GROUP
RESIDENTS TRAVEL INFORMATION PACK

Rea Lane

June 2021 | P19-1187_TPL

OUR SERVICES



DESIGN



ENVIRONMENT



PLANNING



ECONOMICS



HERITAGE

CONTENTS

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CYCLING	6
BUS	8
TRAIN	10
GETTING TO WORK	12
CAR SHARING	14
DELIVERIES AND SHOPPING	16
CONTACTS AND LINKS	18

This Residents Travel Information Pack has been prepared to allow you to easily access sustainable travel options in your area. This pack is provided to help encourage the use of sustainable travel, such as walking, cycling and public transport use to and from your new home.

The main goal is to achieve a reduction in number of car trips that are made to and from the site. This will provide a range of benefits to your community including a safer, cleaner environment, reduced congestion, improved health and personal financial savings.

This Travel Information Pack will assist you in making plans to travel by alternative means than by car. This is best achieved by planning your trips in advance. Often the best way to change habitual behaviour is to simply try an alternative which we encourage you to do at a convenient time, using the information within this pack.

Money can be saved on fuel and car maintenance costs by making fewer trips. A lower annual mileage also reduces your private vehicle insurance premium.

Walking briskly can help you build stamina, burn excess calories and make your heart healthier.

Cycling is one of the easiest ways to fit exercise into your daily routine as a form of transport.

Travelling by bus or train:

- Is less stressful.
- Can save you money.
- Reduces parking demand.
- Is more active if walking/cycling to stops and stations.

By increasing walking, cycling and public transport use you can help tackle some of the most challenging issues we face as a society such as improving air quality, combating climate change, improving health and wellbeing, addressing inequalities and tackling congestion on our roads.

During and following the COVID-19 pandemic, it is important to understand the guidelines in place within your local area and adhere to social distancing guidelines when walking, cycling and using public transport. The full guidance for your local area can be found at: **www.nhs.uk/conditions/coronavirus-covid-19** and within the NHS COVID-19 app.

Enclosed within this Travel Information Leaflet is a Local Accessibility Plan highlighting walking, cycling and public transport links surrounding your new home. Take a look to see your new active, sustainable travel opportunities.

Gloucestershire County Council also provide information on walking, cycling and public transport links for Gloucestershire, as well as providing information on Bikeability and cycle training. Further information can be found at **www.thinktravel.info**

WALKING

Walking is a great alternative to many forms of motorised transport, it can be built into your daily routine to boost your health, fitness and wellbeing. It is recommended that the average adult should do 30 minutes of exercise, five times per week. Walking to work, school or the shops is an easy way to achieve this target. The NHS One You website is also full of ideas on how to fit being active into your lifestyle (www.nhs.uk/oneyou).

A 30 minute walk will get you into Gloucester, providing access to the Quays, Alney Island and the Gloucester to Sharpness canal paths. Why not avoid traffic and parking to access the designer outlet shops, quality dining and recreational opportunities.

There are several benefits associated with walking; some of these might encourage you to access local facilities and amenities in Hempsted and the surrounding area on foot:

- Guaranteed arrival time.
- Zero parking problems.
- Great for your health and makes time for you to relax and unwind.
- Reduces congestion.
- Benefit to the environment.
- Its free.

Walking is also a great way of getting out of the house, spending time with the family and is free. Why not check out walks near to your new home at www.ramblers.org.uk or join a local walking group at www.gloucestershireramblers.org.uk/groups.

www.komoot.com is also good for planning journeys on foot! Further useful links can be found on page 19.

Walking is considered to be part of your daily physical activity. Being more physically active can help prevent and manage over 20 chronic conditions.

The UK Department for Transport (DfT) consider that 20 minutes of exercise per day cuts the risk of developing depression by 31% and increases productivity.

Places you might walk to:	
St Swithun's Church	3 minutes
Hempsted CofE Primary School	4 minutes
Convenience Store and Post Office	5 minutes
Recreational Fields	12 minutes

A woman wearing a light blue long-sleeved cycling jersey, dark blue cycling tights, orange socks, and white cycling shoes is riding a black road bike on a cobblestone street. She is wearing an orange helmet with white accents and is looking towards the camera. The background features a brick building with white-framed windows and a white door. The word "CYCLING" is overlaid in large white capital letters on a semi-transparent dark blue rectangular background.

CYCLING

Do you want to get to the shops in a quicker, healthier way whilst avoiding traffic and potential parking fees? Based on an average cycle speed of 10 miles per hour, 5 miles can be cycled in just 30 minutes. Cycling to your local shops is good for the community and can help you to support your local economy. Your nearest cycle shop is Eastgate Cycles, located at Eastgate Street, Gloucester, GL1 1QN. The shop is just a 12 minute ride from your home!

Rea Lane is located within the vicinity of National Cycle Route 41, which is located 800 metres from the site on the A430 Secunda Way.

Local Cycle Routes can be found at:

www.sustrans.org.uk

Fancy cycling with others in your free time or commuting to work? Try a free online database search for journey matches:

www.letsride.co.uk/buddies

Cycling provides easy access into Gloucester for accessing employment and recreational activities. Check out the Local Accessibility Plan which provides cycle routes and locations of cycle parking within the City.

Check of the Gloucestershire County Council social media streams for information on upcoming walking and cycling events. Other useful links for cycling include: **britishcycling.org.uk**, **lovetoride.net**, and the **Strava app**.

www.komoot.com is also good for planning journeys by cycle! Further useful links can be found on page 19.

e-Scooters

Why not try out the electric scooters being trialled within Gloucester? Further information can be found at **www.zwings.co.uk**

Benefits of Cycling

Cycling is a great way to introduce some exercise into your daily routine. It can also help reduce stress. Not only can it improve your health and fitness, help the environment and beat congestion, but it can also save you money.

Places you might cycle to:	
Sainsbury's at St Ann Way	5 minutes
Gloucester Quay	7 minutes
Eastgate Cycles	12 minutes
Riverside Sports and Leisure Club	12 minutes
Gloucester Railway Station	15 minutes



Rea Lane benefits from two bus services within the vicinity of the site which provide access to destinations across Gloucestershire.

The no. 8 service runs from Hunts Grove – Brockworth every 20/30 minutes Monday to Saturday and the no. 11 service runs 3 services a day from Gloucester to Quedgeley Monday to Friday.

Your Nearest Stops

Your nearest bus stops are the Court Gardens stops located within 400 metres of the centre of the site and accessible via the bridlway located to the south east of the site. The no. 11 service can be accessed from these stops.

To access the no. 8 service you should go to The Forge bus stops on Secunda Way, approximately 950 metres from the centre of the site, again using the bridlway from the south eastern corner of the site for your fastest route.

The no. 8 service has an approximate journey time of 7 minutes to Gloucester Quays and 16 minutes to Gloucester Railway Station.

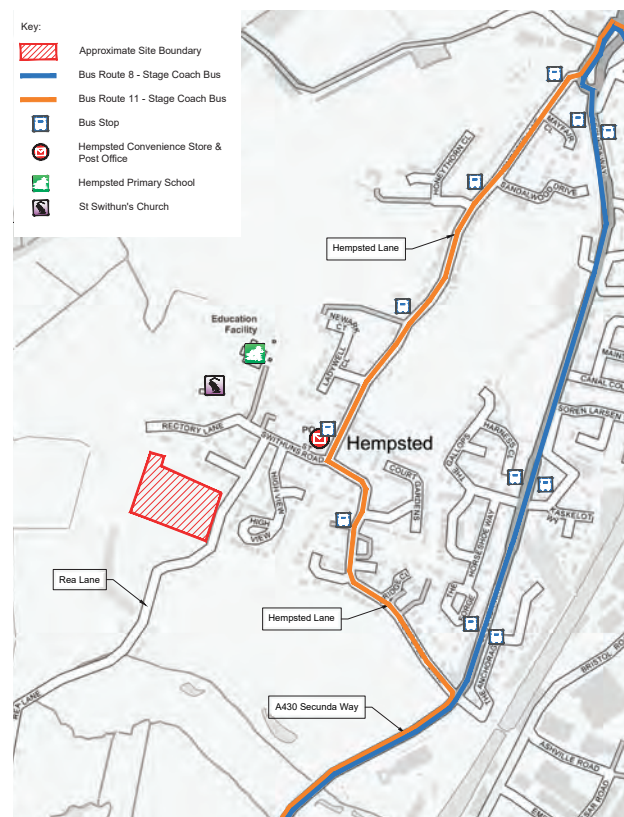
Real Time Passenger Information

Obtain live bus times and journey planning facilities on your mobile phone via nextbuses.mobi or through applications such as Traveline South West and TravelWest Bus Checker.

For further travel information on routes and timetables, please go to:

Stagecoach www.faresaver.co.uk/tickets.php

Traveline South West www.travelinesw.com





TRAIN

Travelling by rail provides a fast, efficient and frequent option, whether travelling for business or pleasure. Your nearest railway station is Gloucester Railway Station. The station offers a number of high frequency services across the region. Cheltenham, Bristol and Birmingham can be reached in under an hour and London Paddington has a journey time of 1 hour and 46 minutes.

Gloucester Railway Station provides 200 car parking spaces and 32 bicycle parking spaces under CCTV surveillance provided at the station.

Cycling can make public transport journeys door-to-door, matching the convenience of the car.

Alternatively, you can car share to the station saving money on parking. See our information on car sharing on page 15.

The no. 8 bus service routes to Clarence Street which is approximately a four minute walk from the station.

Taxis are available at the station and local taxi firms include:

Andy Cars of Gloucester
Gloucester Taxi Company
Gloucester Taxis.com

For your journey destination **www.traintaxi.co.uk** can be used to find out the phone numbers of taxis serving most stations in England.

You can save yourself some money by taking the bus, cycling or walking to/from the station or by car sharing with someone you know.

For further travel information on routes and timetables, please go to:

Great Western Railway
www.gwr.com

Traveline South West
www.travelinesw.info

A top-down photograph showing several people's hands and feet gathered around a laptop and a tablet. The hands are pointing at the screen of the tablet, which is placed in front of the laptop. The people are wearing various casual clothing like jeans, sweaters, and sandals. The text "GETTING TO WORK" is overlaid in large, white, bold, sans-serif capital letters across the center of the image.

GETTING TO WORK

Rea Lane is ideally located for those working in Gloucester, Cheltenham, Bristol and surrounding areas which are all accessible using sustainable transport modes.

- Gloucester Town Centre can be accessed via a short cycle or via the no. 8 and 11 bus services. The no. 8 service runs every 20 minutes.
- Gloucester Railway Station can be accessed using the no. 8 bus service, with an approximate journey time of 16 minutes. From Gloucester Railway Station.
- Cheltenham can be accessed via a 10 minute train journey with the first train leaving at 04:37 and the last train at 00:36.
- Bristol can be accessed via a 50 minute train journey with the first train leaving at 06:04 and the last train at 23:17.

For more information on the bus and rail times and routes please refer to pages 9 and 11.

You could also walk, cycle or lift-share to work. For more information please refer to pages 5, 7 and 15.



CAR SHARING

Even if you need to get somewhere that isn't accessible by public transport, you can still travel sustainably by Car Sharing. Car sharing (or lift sharing) is another way of reducing the costs of travelling. As well as saving you money by sharing travel costs, you will also reduce your carbon footprint and reduce the effect on the environment. It's also a great way to meet new people and make new friends.

The public car share database covering the Gloucestershire, which is free to use, is found at the link below:

www.liftshare.com/uk/community/gloucestershire

Why not try it out, to search for other people travelling on similar routes to you. Your personal details will not be displayed to other users (Just your first name and a picture if you choose to display one).

www.liftshare.com/uk/other/trust-safety

The above website provides a list of precautionary measures that can be applied when lift sharing, as well as measures in place during COVID-19.

www.enrouteparking.com also provides a car sharing opportunity. En Route can be used to find colleagues who uses part of the same route you take to work each day. In fact, you may even know a few.

The above websites provide a list of precautionary measures that can be applied when lift sharing, as well as measures in place during COVID-19.

Gloucestershire County Council also provide information on car sharing at the **www.thinktravel.info** website, which includes an interactive travel planner.



A photograph of a person's hand pushing a shopping cart in a grocery store aisle. The background is blurred, showing shelves stocked with various products. The text "DELIVERIES AND SHOPPING" is overlaid in large, white, bold, sans-serif capital letters. The image is framed by a white border.

DELIVERIES AND SHOPPING

Sainsburys, Lidl and Aldi superstores are available within Gloucester that are accessible via the bus services available in Hempsted, or by cycle.

Your home is within the delivery areas of a range of grocery stores that offer home delivery services, so why not. Take the stress and drive time out of your weekly shop and do it online. For more information log onto:

www.sainsburys.com

www.groceries.morrisons.com

www.tesco.com

www.asda.com

www.aldi.co.uk

www.ocado.com

Choosing home delivery gives you control of when your shop is delivered and reduces the need to travel.



CONTACTS AND LINKS

Redcliffe Homes

www.redcliffehomes.co.uk

Walking

www.ramblers.org.uk

www.gloucestershireramblers.org.uk/groups
canalrivertrust.org.uk/enjoy-the-waterways/canal-and-river-network/gloucester-and-sharpness-canal

www.soglos.com/sport-outdoor/43997/11-of-the-most-beautiful-walks-in-Gloucestershire

www.komoot.com

Cycling

www.sustrans.org.uk

www.sustrans.org.uk/ncn/map/route/route-41

www.letsride.co.uk

www.letsride.co.uk/social

www.letsride.co.uk/breeze

(informal woman only rides led by qualified ride leaders)

www.lovetoride.net/gloucestershire

www.komoot.com

Buses

www.faresaver.co.uk/tickets.php

www.travelinesw.com

Trains

www.traintaxi.co.uk

www.gwr.com

www.travelinesw.com

Taxis

Andy Cars of Gloucester

Gloucester Taxi Company

Gloucester Taxis.com

Lift Share

www.liftshare.com/uk/community/gloucestershire

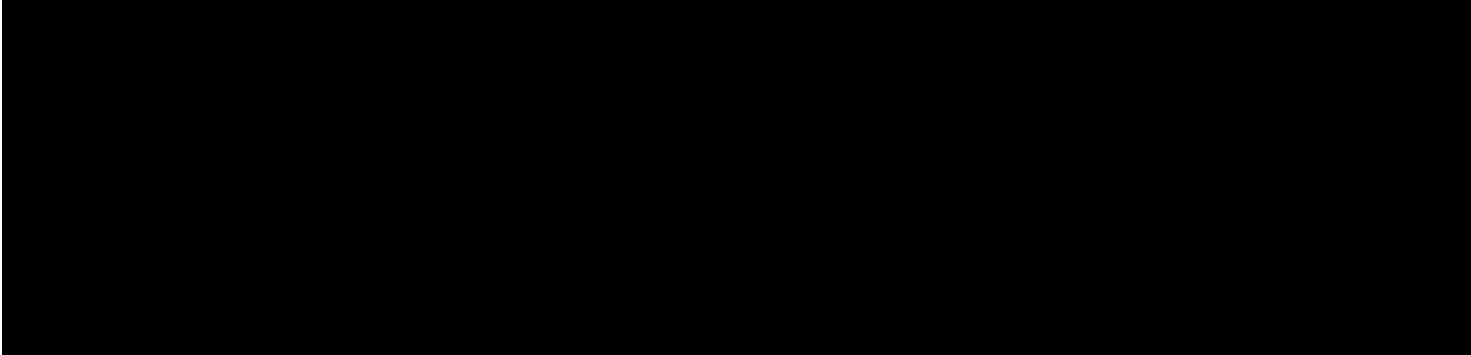
www.liftshare.com/uk/other/trust-safety

www.enrouteparking.com

Gloucester County Council ThinkTravel

www.thinktravel.info

OUR OFFICES



PEGASUSGROUP.CO.UK

Pegasus Group is a trading name of Pegasus Planning Group Limited (07277000) registered in England and Wales
Registered Office: Pegasus House, Querns Business Centre, Whitworth Road, Cirencester, Gloucestershire, GL7 1RT


Pegasus Group


@pegasusgroup


DESIGN


ENVIRONMENT


PLANNING


ECONOMICS


HERITAGE



Appendix C.1

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL

Category : A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	3 days
	KC KENT	4 days
	SC SURREY	1 days
03	SOUTH WEST	
	DC DORSET	1 days
	DV DEVON	3 days
	SM SOMERSET	1 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
	NF NORFOLK	4 days
	SF SUFFOLK	3 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	2 days
	ST STAFFORDSHIRE	1 days
	WK WARWICKSHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	5 days
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
	MS MERSEYSIDE	1 days
09	NORTH	
	DH DURHAM	2 days
	TW TYNE & WEAR	1 days
10	WALES	
	PS POWYS	1 days
	VG VALE OF GLAMORGAN	1 days
11	SCOTLAND	
	AG ANGUS	1 days
	FA FALKIRK	2 days
	HI HIGHLAND	1 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: 7 to 432 (units:)
 Range Selected by User: 6 to 1817 (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: 23/02/12 to 23/02/22

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	12 days
Tuesday	10 days
Wednesday	12 days
Thursday	8 days
Friday	6 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	48 days
Directional ATC Count	0 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 undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	24
Edge of Town	24

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	46
No Sub Category	2

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.

Secondary Filtering selection:

Use Class:

C3	48 days
----	---------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	2 days
5,001 to 10,000	10 days
10,001 to 15,000	14 days
15,001 to 20,000	10 days
20,001 to 25,000	7 days
25,001 to 50,000	4 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	5 days
25,001 to 50,000	3 days
50,001 to 75,000	8 days
75,001 to 100,000	11 days
100,001 to 125,000	3 days
125,001 to 250,000	12 days
250,001 to 500,000	6 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	17 days
1.1 to 1.5	30 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:

No	48 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	48 days
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This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

1	AG-03-A-01 KEPTIE ROAD ARBROATH	BUNGALOWS/DET.		ANGUS
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 7 <i>Survey date: TUESDAY 22/05/12</i>			
2	CA-03-A-05 EASTFIELD ROAD PETERBOROUGH	DETACHED HOUSES		CAMBRIDGESHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 28 <i>Survey date: MONDAY 17/10/16</i>			
3	CH-03-A-08 WHITCHURCH ROAD CHESTER BOUGHTON HEATH	DETACHED		CHESHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 11 <i>Survey date: TUESDAY 22/05/12</i>			
4	CH-03-A-09 GREYSTOKE ROAD MACCLESFIELD HURDSFIELD	TERRACED HOUSES		CHESHIRE
	Edge of Town Residential Zone Total No of Dwellings: 24 <i>Survey date: MONDAY 24/11/14</i>			
5	DC-03-A-08 HURSTDENE ROAD BOURNEMOUTH CASTLE LANE WEST	BUNGALOWS		DORSET
	Edge of Town Residential Zone Total No of Dwellings: 28 <i>Survey date: MONDAY 24/03/14</i>			
6	DH-03-A-01 GREENFIELDS ROAD BISHOP AUCKLAND	SEMI DETACHED		DURHAM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 50 <i>Survey date: TUESDAY 28/03/17</i>			
7	DH-03-A-03 PILGRIMS WAY DURHAM	SEMI -DETACHED & TERRACED		DURHAM
	Edge of Town Residential Zone Total No of Dwellings: 57 <i>Survey date: FRIDAY 19/10/18</i>			
				<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

8	DS-03-A-02 RADBOURNE LANE DERBY	MIXED HOUSES	DERBYSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 371 Survey date: TUESDAY 10/07/18		Survey Type: MANUAL
9	DV-03-A-01 BRONSHILL ROAD TORQUAY	TERRACED HOUSES	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 37 Survey date: WEDNESDAY 30/09/15		Survey Type: MANUAL
10	DV-03-A-02 MILLHEAD ROAD HONITON	HOUSES & BUNGALOWS	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 116 Survey date: FRIDAY 25/09/15		Survey Type: MANUAL
11	DV-03-A-03 LOWER BRAND LANE HONITON	TERRACED & SEMI DETACHED	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 70 Survey date: MONDAY 28/09/15		Survey Type: MANUAL
12	ES-03-A-03 SHEPHAM LANE POLEGATE	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 212 Survey date: MONDAY 11/07/16		Survey Type: MANUAL
13	ES-03-A-04 NEW LYDD ROAD CAMBER	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 134 Survey date: FRIDAY 15/07/16		Survey Type: MANUAL
14	ES-03-A-05 RATTLE ROAD NEAR EASTBOURNE STONE CROSS	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 99 Survey date: WEDNESDAY 05/06/19		Survey Type: MANUAL
15	FA-03-A-01 MANDELA AVENUE FALKIRK	SEMI -DETACHED/TERRACED	FALKIRK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 37 Survey date: THURSDAY 30/05/13		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

16	FA-03-A-02	MIXED HOUSES	FALKIRK
	ROSEBANK AVENUE & SPRINGFIELD DRIVE		
	FALKIRK		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	161	
	Survey date: WEDNESDAY	29/05/13	Survey Type: MANUAL
17	HI-03-A-14	SEMI-DETACHED & TERRACED	HIGHLAND
	KING BRUDE ROAD		
	INVERNESS		
	SCORGUIE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	40	
	Survey date: WEDNESDAY	23/03/16	Survey Type: MANUAL
18	KC-03-A-03	MIXED HOUSES & FLATS	KENT
	HYTHE ROAD		
	ASHFORD		
	WILLESBOROUGH		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	51	
	Survey date: THURSDAY	14/07/16	Survey Type: MANUAL
19	KC-03-A-04	SEMI-DETACHED & TERRACED	KENT
	KILN BARN ROAD		
	AYLESFORD		
	DITTON		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	110	
	Survey date: FRIDAY	22/09/17	Survey Type: MANUAL
20	KC-03-A-06	MIXED HOUSES & FLATS	KENT
	MARGATE ROAD		
	HERNE BAY		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	363	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
21	KC-03-A-07	MIXED HOUSES	KENT
	RECULVER ROAD		
	HERNE BAY		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	288	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
22	LN-03-A-03	SEMI DETACHED	LINCOLNSHIRE
	ROOKERY LANE		
	LINCOLN		
	BOULTHAM		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	22	
	Survey date: TUESDAY	18/09/12	Survey Type: MANUAL
23	MS-03-A-03	DETACHED	MERSEYSIDE
	BEMPTON ROAD		
	LIVERPOOL		
	OTTERSPOOL		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	15	
	Survey date: FRIDAY	21/06/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

24	NE-03-A-02 HANOVER WALK SCUNTHORPE	SEMI DETACHED & DETACHED		NORTH EAST LINCOLNSHIRE
	Edge of Town No Sub Category Total No of Dwellings:		432	
	Survey date: MONDAY		12/05/14	Survey Type: MANUAL
25	NF-03-A-01 YARMOUTH ROAD CAISTER-ON-SEA	SEMI DET. & BUNGALOWS		NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		27	
	Survey date: TUESDAY		16/10/12	Survey Type: MANUAL
26	NF-03-A-02 DEREHAM ROAD NORWICH	HOUSES & FLATS		NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		98	
	Survey date: MONDAY		22/10/12	Survey Type: MANUAL
27	NF-03-A-03 HALING WAY THETFORD	DETACHED HOUSES		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		10	
	Survey date: WEDNESDAY		16/09/15	Survey Type: MANUAL
28	NF-03-A-25 WOODFARM LANE GORLESTON-ON-SEA	MIXED HOUSES & FLATS		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		55	
	Survey date: TUESDAY		21/09/21	Survey Type: MANUAL
29	NY-03-A-08 NICHOLAS STREET YORK	TERRACED HOUSES		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		21	
	Survey date: MONDAY		16/09/13	Survey Type: MANUAL
30	NY-03-A-09 GRAMMAR SCHOOL LANE NORTHALLERTON	MIXED HOUSING		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		52	
	Survey date: MONDAY		16/09/13	Survey Type: MANUAL
31	NY-03-A-10 BOROUGHBRIDGE ROAD RIPON	HOUSES AND FLATS		NORTH YORKSHIRE
	Edge of Town No Sub Category Total No of Dwellings:		71	
	Survey date: TUESDAY		17/09/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

32	NY-03-A-11 HORSEFAIR BOROUGHBRIDGE	PRIVATE HOUSING		NORTH YORKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:		23	
	Survey date: WEDNESDAY		18/09/13	Survey Type: MANUAL
33	NY-03-A-13 CATTERICK ROAD CATTERICK GARRISON OLD HOSPITAL COMPOUND Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	TERRACED HOUSES	10	NORTH YORKSHIRE
	Survey date: WEDNESDAY		10/05/17	Survey Type: MANUAL
34	PS-03-A-02 GUNROG ROAD WELSHPOOL	DETACHED/SEMI -DETACHED		POWYS
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		28	
	Survey date: MONDAY		11/05/15	Survey Type: MANUAL
35	SC-03-A-04 HIGH ROAD BYFLEET	DETACHED & TERRACED		SURREY
	Edge of Town Residential Zone Total No of Dwellings:		71	
	Survey date: THURSDAY		23/01/14	Survey Type: MANUAL
36	SF-03-A-04 NORMANSTON DRIVE LOWESTOFT	DETACHED & BUNGALOWS		SUFFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		7	
	Survey date: TUESDAY		23/10/12	Survey Type: MANUAL
37	SF-03-A-05 VALE LANE BURY ST EDMUNDS	DETACHED HOUSES		SUFFOLK
	Edge of Town Residential Zone Total No of Dwellings:		18	
	Survey date: WEDNESDAY		09/09/15	Survey Type: MANUAL
38	SF-03-A-10 LOVETOFTS DRIVE IPSWICH WHITEHOUSE Edge of Town Residential Zone Total No of Dwellings:	TERRACED & SEMI -DETACHED	149	SUFFOLK
	Survey date: TUESDAY		22/06/21	Survey Type: MANUAL
39	SH-03-A-05 SANDCROFT TELFORD SUTTON HILL Edge of Town Residential Zone Total No of Dwellings:	SEMI -DETACHED/TERRACED	54	SHROPSHIRE
	Survey date: THURSDAY		24/10/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

40	SH-03-A-06 ELLESMERE ROAD SHREWSBURY	BUNGALOWS	SHROPSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	16	
	Survey date: THURSDAY	22/05/14	Survey Type: MANUAL
41	SM-03-A-01 WEMBDON ROAD BRIDGWATER NORTHFIELD	DETACHED & SEMI	SOMERSET
	Edge of Town Residential Zone Total No of Dwellings:	33	
	Survey date: THURSDAY	24/09/15	Survey Type: MANUAL
42	ST-03-A-07 BEACONSIDE STAFFORD MARSTON GATE	DETACHED & SEMI-DETACHED	STAFFORDSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	248	
	Survey date: WEDNESDAY	22/11/17	Survey Type: MANUAL
43	SY-03-A-01 A19 BENTLEY ROAD DONCASTER BENTLEY RISE	SEMI DETACHED HOUSES	SOUTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	54	
	Survey date: WEDNESDAY	18/09/13	Survey Type: MANUAL
44	TW-03-A-02 WEST PARK ROAD GATESHEAD	SEMI-DETACHED	TYNE & WEAR
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	16	
	Survey date: MONDAY	07/10/13	Survey Type: MANUAL
45	VG-03-A-01 ARTHUR STREET BARRY	SEMI-DETACHED & TERRACED	VALE OF GLAMORGAN
	Edge of Town Residential Zone Total No of Dwellings:	12	
	Survey date: MONDAY	08/05/17	Survey Type: MANUAL
46	WK-03-A-02 NARBERTH WAY COVENTRY POTTERS GREEN	BUNGALOWS	WARWICKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	17	
	Survey date: THURSDAY	17/10/13	Survey Type: MANUAL
47	WK-03-A-04 DALEHOUSE LANE KENILWORTH	DETACHED HOUSES	WARWICKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	49	
	Survey date: FRIDAY	27/09/19	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

48	WL-03-A-02 HEADLANDS GROVE SWINDON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 27 <i>Survey date: THURSDAY 22/09/16</i>	SEMI DETACHED <i>Survey Type: MANUAL</i>	WILTSHIRE
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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.

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE

Ranking Type: TOTALS Time Range: 08:00-09:00
15th Percentile = No. 41 SF-03-A-10 Tot: 0.678
85th Percentile = No. 8 NY-03-A-11 Tot: 1.478

Median Values

Arrivals: 0.215
Departures: 0.793
Totals: 1.009

Mean Values

Arrivals: 0.284
Departures: 0.825
Totals: 1.108

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
1	WK-03-A-02	BUNGALOWS	COVENTRY	WARWICKSHIRE	17	Thu	17/10/13	1.706	1.765	3.471	2.06
2	MS-03-A-03	DETACHED	LIVERPOOL	MERSEYSIDE	15	Fri	21/06/13	0.667	1.267	1.934	3.00
3	VG-03-A-01	SEMI-DETACHED	BARRY	VALE OF GLAMORGAN	12	Mon	08/05/17	0.583	1.333	1.916	2.33
4	KC-03-A-04	SEMI-DETACHED	AYLESFORD	KENT	110	Fri	22/09/17	0.382	1.500	1.882	1.77
5	SF-03-A-04	DETACHED & BUN	LOWESTOFT	SUFFOLK	7	Tue	23/10/12	0.714	1.143	1.857	4.43
6	CA-03-A-05	DETACHED HOUSE	PETERBOROUGH	CAMBRIDGESHIRE	28	Mon	17/10/16	0.321	1.464	1.785	3.50
7	KC-03-A-07	MIXED HOUSES	HERNE BAY	KENT	288	Wed	27/09/17	0.451	1.073	1.524	3.09
8	NY-03-A-11	PRIVATE HOUSIN	BOROUGHBRIDGE	NORTH YORKSHIRE	23	Wed	18/09/13	0.130	1.348	1.478	6.26
9	NF-03-A-25	MIXED HOUSES &	GORLESTON-ON-SEA	NORFOLK	55	Tue	21/09/21	0.491	0.982	1.473	2.31
10	KC-03-A-03	MIXED HOUSES &	ASHFORD	KENT	51	Thu	14/07/16	0.255	1.196	1.451	2.16
11	HI-03-A-14	SEMI-DETACHED	INVERNESS	HIGHLAND	40	Wed	23/03/16	0.225	1.200	1.425	2.23
12	DV-03-A-03	TERRACED & SEM	HONITON	DEVON	70	Mon	28/09/15	0.243	1.157	1.400	1.66
13	CH-03-A-08	DETACHED	CHESTER	CHESHIRE	11	Tue	22/05/12	0.182	1.182	1.364	4.73
14	FA-03-A-01	SEMI-DETACHED/	FALKIRK	FALKIRK	37	Thu	30/05/13	0.324	1.000	1.324	1.41
15	WL-03-A-02	SEMI DETACHED	SWINDON	WILTSHIRE	27	Thu	22/09/16	0.407	0.852	1.259	4.52
16	NY-03-A-10	HOUSES AND FLA	RIPON	NORTH YORKSHIRE	71	Tue	17/09/13	0.254	0.986	1.240	0.83
17	DV-03-A-01	TERRACED HOUSE	TORQUAY	DEVON	37	Wed	30/09/15	0.189	1.000	1.189	2.78
18	CH-03-A-09	TERRACED HOUSE	MACCLESFIELD	CHESHIRE	24	Mon	24/11/14	0.333	0.833	1.166	1.33
19	DH-03-A-03	SEMI-DETACHED	DURHAM	DURHAM	57	Fri	19/10/18	0.404	0.737	1.141	3.33
20	ES-03-A-03	MIXED HOUSES &	POLEGATE	EAST SUSSEX	212	Mon	11/07/16	0.184	0.910	1.094	1.68
21	ES-03-A-05	MIXED HOUSES &	NEAR EASTBOURNE	EAST SUSSEX	99	Wed	05/06/19	0.182	0.909	1.091	1.99
22	NY-03-A-09	MIXED HOUSING	NORTHALLERTON	NORTH YORKSHIRE	52	Mon	16/09/13	0.327	0.750	1.077	2.60
23	TW-03-A-02	SEMI-DETACHED	GATESHEAD	TYNE & WEAR	16	Mon	07/10/13	0.438	0.625	1.063	2.38
24	SY-03-A-01	SEMI DETACHED	DONCASTER	SOUTH YORKSHIRE	54	Wed	18/09/13	0.074	0.944	1.018	1.13
25	PS-03-A-02	DETACHED/SEMI-	WELSHPOOL	POWYS	28	Mon	11/05/15	0.357	0.643	1.000	2.32
26	WK-03-A-04	DETACHED HOUSE	KENILWORTH	WARWICKSHIRE	49	Fri	27/09/19	0.184	0.816	1.000	2.80
27	ST-03-A-07	DETACHED & SEM	STAFFORD	STAFFORDSHIRE	248	Wed	22/11/17	0.145	0.839	0.984	3.55
28	SM-03-A-01	DETACHED & SEM	BRIDGWATER	SOMERSET	33	Thu	24/09/15	0.212	0.727	0.939	3.97
29	KC-03-A-06	MIXED HOUSES &	HERNE BAY	KENT	363	Wed	27/09/17	0.129	0.782	0.911	2.17
30	NY-03-A-13	TERRACED HOUSE	CATTERICK GARRISON	NORTH YORKSHIRE	10	Wed	10/05/17	0.200	0.700	0.900	1.90
31	SC-03-A-04	DETACHED & TER	BYFLEET	SURREY	71	Thu	23/01/14	0.268	0.606	0.874	2.49
32	AG-03-A-01	BUNGALOWS/DET.	ARBROATH	ANGUS	7	Tue	22/05/12	0.286	0.571	0.857	2.71
33	NF-03-A-01	SEMI DET. & BU	CAISTER-ON-SEA	NORFOLK	27	Tue	16/10/12	0.296	0.556	0.852	2.37
34	DC-03-A-08	BUNGALOWS	BOURNEMOUTH	DORSET	28	Mon	24/03/14	0.357	0.464	0.821	4.68
35	NY-03-A-08	TERRACED HOUSE	YORK	NORTH YORKSHIRE	21	Mon	16/09/13	0.048	0.762	0.810	1.14
36	NF-03-A-02	HOUSES & FLATS	NORWICH	NORFOLK	98	Mon	22/10/12	0.173	0.633	0.806	2.24
37	SH-03-A-05	SEMI-DETACHED/	TELFORD	SHROPSHIRE	54	Thu	24/10/13	0.222	0.574	0.796	1.17
38	FA-03-A-02	MIXED HOUSES	FALKIRK	FALKIRK	161	Wed	29/05/13	0.186	0.602	0.788	1.66
39	LN-03-A-03	SEMI DETACHED	LINCOLN	LINCOLNSHIRE	22	Tue	18/09/12	0.091	0.682	0.773	1.09
40	DS-03-A-02	MIXED HOUSES	DERBY	DERBYSHIRE	371	Tue	10/07/18	0.105	0.636	0.741	2.92
41	SF-03-A-10	TERRACED & SEM	IPSWICH	SUFFOLK	149	Tue	22/06/21	0.148	0.530	0.678	2.21
42	DV-03-A-02	HOUSES & BUNGA	HONITON	DEVON	116	Fri	25/09/15	0.129	0.534	0.663	2.25

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
43	SF-03-A-05	DETACHED HOUSE	BURY ST EDMUNDS	SUFFOLK	18	Wed	09/09/15	0.167	0.444	0.611	4.17
44	NE-03-A-02	SEMI DETACHED	SCUNTHORPE	NORTH EAST LINCOLNS	432	Mon	12/05/14	0.079	0.507	0.586	1.00
45	ES-03-A-04	MIXED HOUSES &	CAMBER	EAST SUSSEX	134	Fri	15/07/16	0.082	0.328	0.410	1.91
46	DH-03-A-01	SEMI DETACHED	BISHOP AUCKLAND	DURHAM	50	Tue	28/03/17	0.080	0.260	0.340	1.74
47	NF-03-A-03	DETACHED HOUSE	THETFORD	NORFOLK	10	Wed	16/09/15	0.200	0.100	0.300	3.70
48	SH-03-A-06	BUNGALOWS	SHREWSBURY	SHROPSHIRE	16	Thu	22/05/14	0.000	0.125	0.125	2.00

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	3 days
	KC KENT	4 days
	SC SURREY	1 days
03	SOUTH WEST	
	DC DORSET	1 days
	DV DEVON	3 days
	SM SOMERSET	1 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
	NF NORFOLK	4 days
	SF SUFFOLK	3 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	2 days
	ST STAFFORDSHIRE	1 days
	WK WARWICKSHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	5 days
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
	MS MERSEYSIDE	1 days
09	NORTH	
	DH DURHAM	2 days
	TW TYNE & WEAR	1 days
10	WALES	
	PS POWYS	1 days
	VG VALE OF GLAMORGAN	1 days
11	SCOTLAND	
	AG ANGUS	1 days
	FA FALKIRK	2 days
	HI HIGHLAND	1 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: 7 to 432 (units:)
 Range Selected by User: 6 to 1817 (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: 23/02/12 to 23/02/22

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	12 days
Tuesday	10 days
Wednesday	12 days
Thursday	8 days
Friday	6 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	48 days
Directional ATC Count	0 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 undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	24
Edge of Town	24

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	46
No Sub Category	2

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.

Secondary Filtering selection:

Use Class:

C3	48 days
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This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	2 days
5,001 to 10,000	10 days
10,001 to 15,000	14 days
15,001 to 20,000	10 days
20,001 to 25,000	7 days
25,001 to 50,000	4 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	5 days
25,001 to 50,000	3 days
50,001 to 75,000	8 days
75,001 to 100,000	11 days
100,001 to 125,000	3 days
125,001 to 250,000	12 days
250,001 to 500,000	6 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	17 days
1.1 to 1.5	30 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:

No	48 days
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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	48 days
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This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

1	AG-03-A-01 KEPTIE ROAD ARBROATH	BUNGALOWS/DET.		ANGUS
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		7	
	Survey date: TUESDAY		22/05/12	Survey Type: MANUAL
2	CA-03-A-05 EASTFIELD ROAD PETERBOROUGH	DETACHED HOUSES		CAMBRIDGESHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		28	
	Survey date: MONDAY		17/10/16	Survey Type: MANUAL
3	CH-03-A-08 WHITCHURCH ROAD CHESTER	DETACHED		CHESHIRE
	BOUGHTON HEATH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		11	
	Survey date: TUESDAY		22/05/12	Survey Type: MANUAL
4	CH-03-A-09 GREYSTOKE ROAD MACCLESFIELD HURDSFIELD	TERRACED HOUSES		CHESHIRE
	Edge of Town Residential Zone Total No of Dwellings:		24	
	Survey date: MONDAY		24/11/14	Survey Type: MANUAL
5	DC-03-A-08 HURSTDENE ROAD BOURNEMOUTH CASTLE LANE WEST	BUNGALOWS		DORSET
	Edge of Town Residential Zone Total No of Dwellings:		28	
	Survey date: MONDAY		24/03/14	Survey Type: MANUAL
6	DH-03-A-01 GREENFIELDS ROAD BISHOP AUCKLAND	SEMI DETACHED		DURHAM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		50	
	Survey date: TUESDAY		28/03/17	Survey Type: MANUAL
7	DH-03-A-03 PILGRIMS WAY DURHAM	SEMI -DETACHED & TERRACED		DURHAM
	Edge of Town Residential Zone Total No of Dwellings:		57	
	Survey date: FRIDAY		19/10/18	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	DS-03-A-02 RADBOURNE LANE DERBY	MIXED HOUSES	DERBYSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 371 Survey date: TUESDAY 10/07/18		Survey Type: MANUAL
9	DV-03-A-01 BRONSHILL ROAD TORQUAY	TERRACED HOUSES	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 37 Survey date: WEDNESDAY 30/09/15		Survey Type: MANUAL
10	DV-03-A-02 MILLHEAD ROAD HONITON	HOUSES & BUNGALOWS	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 116 Survey date: FRIDAY 25/09/15		Survey Type: MANUAL
11	DV-03-A-03 LOWER BRAND LANE HONITON	TERRACED & SEMI DETACHED	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 70 Survey date: MONDAY 28/09/15		Survey Type: MANUAL
12	ES-03-A-03 SHEPHAM LANE POLEGATE	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 212 Survey date: MONDAY 11/07/16		Survey Type: MANUAL
13	ES-03-A-04 NEW LYDD ROAD CAMBER	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 134 Survey date: FRIDAY 15/07/16		Survey Type: MANUAL
14	ES-03-A-05 RATTLE ROAD NEAR EASTBOURNE STONE CROSS	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 99 Survey date: WEDNESDAY 05/06/19		Survey Type: MANUAL
15	FA-03-A-01 MANDELA AVENUE FALKIRK	SEMI -DETACHED/TERRACED	FALKIRK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 37 Survey date: THURSDAY 30/05/13		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

16	FA-03-A-02	MIXED HOUSES	FALKIRK
	ROSEBANK AVENUE & SPRINGFIELD DRIVE		
	FALKIRK		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	161	
	Survey date: WEDNESDAY	29/05/13	Survey Type: MANUAL
17	HI-03-A-14	SEMI-DETACHED & TERRACED	HIGHLAND
	KING BRUDE ROAD		
	INVERNESS		
	SCORGUIE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	40	
	Survey date: WEDNESDAY	23/03/16	Survey Type: MANUAL
18	KC-03-A-03	MIXED HOUSES & FLATS	KENT
	HYTHE ROAD		
	ASHFORD		
	WILLESBOROUGH		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	51	
	Survey date: THURSDAY	14/07/16	Survey Type: MANUAL
19	KC-03-A-04	SEMI-DETACHED & TERRACED	KENT
	KILN BARN ROAD		
	AYLESFORD		
	DITTON		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	110	
	Survey date: FRIDAY	22/09/17	Survey Type: MANUAL
20	KC-03-A-06	MIXED HOUSES & FLATS	KENT
	MARGATE ROAD		
	HERNE BAY		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	363	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
21	KC-03-A-07	MIXED HOUSES	KENT
	RECULVER ROAD		
	HERNE BAY		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	288	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
22	LN-03-A-03	SEMI DETACHED	LINCOLNSHIRE
	ROOKERY LANE		
	LINCOLN		
	BOULTHAM		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	22	
	Survey date: TUESDAY	18/09/12	Survey Type: MANUAL
23	MS-03-A-03	DETACHED	MERSEYSIDE
	BEMPTON ROAD		
	LIVERPOOL		
	OTTERSPOOL		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	15	
	Survey date: FRIDAY	21/06/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

24	NE-03-A-02 HANOVER WALK SCUNTHORPE	SEMI DETACHED & DETACHED		NORTH EAST LINCOLNSHIRE
	Edge of Town No Sub Category Total No of Dwellings:		432	
	Survey date: MONDAY		12/05/14	Survey Type: MANUAL
25	NF-03-A-01 YARMOUTH ROAD CAISTER-ON-SEA	SEMI DET. & BUNGALOWS		NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		27	
	Survey date: TUESDAY		16/10/12	Survey Type: MANUAL
26	NF-03-A-02 DEREHAM ROAD NORWICH	HOUSES & FLATS		NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		98	
	Survey date: MONDAY		22/10/12	Survey Type: MANUAL
27	NF-03-A-03 HALING WAY THETFORD	DETACHED HOUSES		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		10	
	Survey date: WEDNESDAY		16/09/15	Survey Type: MANUAL
28	NF-03-A-25 WOODFARM LANE GORLESTON-ON-SEA	MIXED HOUSES & FLATS		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		55	
	Survey date: TUESDAY		21/09/21	Survey Type: MANUAL
29	NY-03-A-08 NICHOLAS STREET YORK	TERRACED HOUSES		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		21	
	Survey date: MONDAY		16/09/13	Survey Type: MANUAL
30	NY-03-A-09 GRAMMAR SCHOOL LANE NORTHALLERTON	MIXED HOUSING		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		52	
	Survey date: MONDAY		16/09/13	Survey Type: MANUAL
31	NY-03-A-10 BOROUGHBRIDGE ROAD RIPON	HOUSES AND FLATS		NORTH YORKSHIRE
	Edge of Town No Sub Category Total No of Dwellings:		71	
	Survey date: TUESDAY		17/09/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

32	NY-03-A-11 HORSEFAIR BOROUGHBRIDGE	PRIVATE HOUSING		NORTH YORKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:		23	
	Survey date: WEDNESDAY		18/09/13	Survey Type: MANUAL
33	NY-03-A-13 CATTERICK ROAD CATTERICK GARRISON OLD HOSPITAL COMPOUND Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	TERRACED HOUSES	10	NORTH YORKSHIRE
	Survey date: WEDNESDAY		10/05/17	Survey Type: MANUAL
34	PS-03-A-02 GUNROG ROAD WELSHPOOL	DETACHED/SEMI -DETACHED		POWYS
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		28	
	Survey date: MONDAY		11/05/15	Survey Type: MANUAL
35	SC-03-A-04 HIGH ROAD BYFLEET	DETACHED & TERRACED		SURREY
	Edge of Town Residential Zone Total No of Dwellings:		71	
	Survey date: THURSDAY		23/01/14	Survey Type: MANUAL
36	SF-03-A-04 NORMANSTON DRIVE LOWESTOFT	DETACHED & BUNGALOWS		SUFFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		7	
	Survey date: TUESDAY		23/10/12	Survey Type: MANUAL
37	SF-03-A-05 VALE LANE BURY ST EDMUNDS	DETACHED HOUSES		SUFFOLK
	Edge of Town Residential Zone Total No of Dwellings:		18	
	Survey date: WEDNESDAY		09/09/15	Survey Type: MANUAL
38	SF-03-A-10 LOVETOFTS DRIVE IPSWICH WHITEHOUSE Edge of Town Residential Zone Total No of Dwellings:	TERRACED & SEMI -DETACHED	149	SUFFOLK
	Survey date: TUESDAY		22/06/21	Survey Type: MANUAL
39	SH-03-A-05 SANDCROFT TELFORD SUTTON HILL Edge of Town Residential Zone Total No of Dwellings:	SEMI -DETACHED/TERRACED	54	SHROPSHIRE
	Survey date: THURSDAY		24/10/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

40	SH-03-A-06 ELLESMERE ROAD SHREWSBURY	BUNGALOWS		SHROPSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	16		
	Survey date: THURSDAY	22/05/14	Survey Type: MANUAL	
41	SM-03-A-01 WEMBDON ROAD BRIDGWATER NORTHFIELD	DETACHED & SEMI		SOMERSET
	Edge of Town Residential Zone Total No of Dwellings:	33		
	Survey date: THURSDAY	24/09/15	Survey Type: MANUAL	
42	ST-03-A-07 BEACONSIDE STAFFORD MARSTON GATE	DETACHED & SEMI-DETACHED		STAFFORDSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	248		
	Survey date: WEDNESDAY	22/11/17	Survey Type: MANUAL	
43	SY-03-A-01 A19 BENTLEY ROAD DONCASTER BENTLEY RISE	SEMI DETACHED HOUSES		SOUTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	54		
	Survey date: WEDNESDAY	18/09/13	Survey Type: MANUAL	
44	TW-03-A-02 WEST PARK ROAD GATESHEAD	SEMI-DETACHED		TYNE & WEAR
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	16		
	Survey date: MONDAY	07/10/13	Survey Type: MANUAL	
45	VG-03-A-01 ARTHUR STREET BARRY	SEMI-DETACHED & TERRACED		VALE OF GLAMORGAN
	Edge of Town Residential Zone Total No of Dwellings:	12		
	Survey date: MONDAY	08/05/17	Survey Type: MANUAL	
46	WK-03-A-02 NARBERTH WAY COVENTRY POTTERS GREEN	BUNGALOWS		WARWICKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	17		
	Survey date: THURSDAY	17/10/13	Survey Type: MANUAL	
47	WK-03-A-04 DALEHOUSE LANE KENILWORTH	DETACHED HOUSES		WARWICKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	49		
	Survey date: FRIDAY	27/09/19	Survey Type: MANUAL	

LIST OF SITES relevant to selection parameters (Cont.)

48	WL-03-A-02 HEADLANDS GROVE SWINDON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 27 <i>Survey date: THURSDAY 22/09/16</i>	SEMI DETACHED <i>Survey Type: MANUAL</i>	WILTSHIRE
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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.

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE

Ranking Type: TOTALS Time Range: 17:00-18:00
15th Percentile = No. 41 NE-03-A-02 Tot: 0.609
85th Percentile = No. 8 KC-03-A-07 Tot: 1.271

Median Values

Arrivals: 0.672
Departures: 0.218
Totals: 0.890

Mean Values

Arrivals: 0.603
Departures: 0.296
Totals: 0.899

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
1	AG-03-A-01	BUNGALOWS/DET.	ARBROATH	ANGUS	7	Tue	22/05/12	1.429	0.571	2.000	2.71
2	VG-03-A-01	SEMI-DETACHED	BARRY	VALE OF GLAMORGAN	12	Mon	08/05/17	0.750	1.083	1.833	2.33
3	KC-03-A-03	MIXED HOUSES &	ASHFORD	KENT	51	Thu	14/07/16	0.941	0.745	1.686	2.16
4	CH-03-A-09	TERRACED HOUSE	MACCLESFIELD	CHESHIRE	24	Mon	24/11/14	0.958	0.625	1.583	1.33
5	NY-03-A-11	PRIVATE HOUSIN	BOROUGHBRIDGE	NORTH YORKSHIRE	23	Wed	18/09/13	1.304	0.261	1.565	6.26
6	WL-03-A-02	SEMI DETACHED	SWINDON	WILTSHIRE	27	Thu	22/09/16	0.815	0.519	1.334	4.52
7	CA-03-A-05	DETACHED HOUSE	PETERBOROUGH	CAMBRIDGESHIRE	28	Mon	17/10/16	0.714	0.571	1.285	3.50
8	KC-03-A-07	MIXED HOUSES	HERNE BAY	KENT	288	Wed	27/09/17	0.972	0.299	1.271	3.09
9	KC-03-A-06	MIXED HOUSES &	HERNE BAY	KENT	363	Wed	27/09/17	0.788	0.350	1.138	2.17
10	NY-03-A-09	MIXED HOUSING	NORTHALLERTON	NORTH YORKSHIRE	52	Mon	16/09/13	0.827	0.269	1.096	2.60
11	CH-03-A-08	DETACHED	CHESTER	CHESHIRE	11	Tue	22/05/12	0.818	0.273	1.091	4.73
12	NF-03-A-25	MIXED HOUSES &	GORLESTON-ON-SEA	NORFOLK	55	Tue	21/09/21	0.673	0.418	1.091	2.31
13	ES-03-A-03	MIXED HOUSES &	POLEGATE	EAST SUSSEX	212	Mon	11/07/16	0.689	0.363	1.052	1.68
14	NF-03-A-01	SEMI DET. & BU	CAISTER-ON-SEA	NORFOLK	27	Tue	16/10/12	0.778	0.259	1.037	2.37
15	ES-03-A-05	MIXED HOUSES &	NEAR EASTBOURNE	EAST SUSSEX	99	Wed	05/06/19	0.788	0.242	1.030	1.99
16	HI-03-A-14	SEMI-DETACHED	INVERNESS	HIGHLAND	40	Wed	23/03/16	0.650	0.325	0.975	2.23
17	SM-03-A-01	DETACHED & SEM	BRIDGWATER	SOMERSET	33	Thu	24/09/15	0.667	0.303	0.970	3.97
18	DV-03-A-02	HOUSES & BUNGA	HONITON	DEVON	116	Fri	25/09/15	0.603	0.362	0.965	2.25
19	WK-03-A-04	DETACHED HOUSE	KENILWORTH	WARWICKSHIRE	49	Fri	27/09/19	0.449	0.510	0.959	2.80
20	DV-03-A-03	TERRACED & SEM	HONITON	DEVON	70	Mon	28/09/15	0.757	0.186	0.943	1.66
21	NY-03-A-10	HOUSES AND FLA	RIPON	NORTH YORKSHIRE	71	Tue	17/09/13	0.803	0.113	0.916	0.83
22	FA-03-A-02	MIXED HOUSES	FALKIRK	FALKIRK	161	Wed	29/05/13	0.528	0.385	0.913	1.66
23	NY-03-A-13	TERRACED HOUSE	CATTERICK GARRISON	NORTH YORKSHIRE	10	Wed	10/05/17	0.300	0.600	0.900	1.90
24	ST-03-A-07	DETACHED & SEM	STAFFORD	STAFFORDSHIRE	248	Wed	22/11/17	0.677	0.214	0.891	3.55
25	SF-03-A-05	DETACHED HOUSE	BURY ST EDMUNDS	SUFFOLK	18	Wed	09/09/15	0.667	0.222	0.889	4.17
26	TW-03-A-02	SEMI-DETACHED	GATESHEAD	TYNE & WEAR	16	Mon	07/10/13	0.625	0.250	0.875	2.38
27	KC-03-A-04	SEMI-DETACHED	AYLESFORD	KENT	110	Fri	22/09/17	0.700	0.127	0.827	1.77
28	ES-03-A-04	MIXED HOUSES &	CAMBER	EAST SUSSEX	134	Fri	15/07/16	0.478	0.276	0.754	1.91
29	SF-03-A-10	TERRACED & SEM	IPSWICH	SUFFOLK	149	Tue	22/06/21	0.490	0.262	0.752	2.21
30	MS-03-A-03	DETACHED	LIVERPOOL	MERSEYSIDE	15	Fri	21/06/13	0.467	0.267	0.734	3.00
31	SF-03-A-04	DETACHED & BUN	LOWESTOFT	SUFFOLK	7	Tue	23/10/12	0.571	0.143	0.714	4.43
32	DH-03-A-03	SEMI-DETACHED	DURHAM	DURHAM	57	Fri	19/10/18	0.404	0.298	0.702	3.33
33	NF-03-A-02	HOUSES & FLATS	NORWICH	NORFOLK	98	Mon	22/10/12	0.480	0.204	0.684	2.24
34	DV-03-A-01	TERRACED HOUSE	TORQUAY	DEVON	37	Wed	30/09/15	0.405	0.270	0.675	2.78
35	DS-03-A-02	MIXED HOUSES	DERBY	DERBYSHIRE	371	Tue	10/07/18	0.558	0.116	0.674	2.92
36	NY-03-A-08	TERRACED HOUSE	YORK	NORTH YORKSHIRE	21	Mon	16/09/13	0.524	0.143	0.667	1.14
37	FA-03-A-01	SEMI-DETACHED/	FALKIRK	FALKIRK	37	Thu	30/05/13	0.459	0.189	0.648	1.41
38	LN-03-A-03	SEMI DETACHED	LINCOLN	LINCOLNSHIRE	22	Tue	18/09/12	0.455	0.182	0.637	1.09
39	SH-03-A-05	SEMI-DETACHED/	TELFORD	SHROPSHIRE	54	Thu	24/10/13	0.370	0.259	0.629	1.17
40	SC-03-A-04	DETACHED & TER	BYFLEET	SURREY	71	Thu	23/01/14	0.465	0.155	0.620	2.49
41	NE-03-A-02	SEMI DETACHED	SCUNTHORPE	NORTH EAST LINCOLNS	432	Mon	12/05/14	0.368	0.241	0.609	1.00
42	DH-03-A-01	SEMI DETACHED	BISHOP AUCKLAND	DURHAM	50	Tue	28/03/17	0.440	0.120	0.560	1.74

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
43	SY-03-A-01	SEMI DETACHED	DONCASTER	SOUTH YORKSHIRE	54	Wed	18/09/13	0.426	0.111	0.537	1.13
44	NF-03-A-03	DETACHED HOUSE	THETFORD	NORFOLK	10	Wed	16/09/15	0.500	0.000	0.500	3.70
45	DC-03-A-08	BUNGALOWS	BOURNEMOUTH	DORSET	28	Mon	24/03/14	0.214	0.179	0.393	4.68
46	PS-03-A-02	DETACHED/SEMI-	WELSHPOOL	POWYS	28	Mon	11/05/15	0.179	0.107	0.286	2.32
47	SH-03-A-06	BUNGALOWS	SHREWSBURY	SHROPSHIRE	16	Thu	22/05/14	0.000	0.250	0.250	2.00
48	WK-03-A-02	BUNGALOWS	COVENTRY	WARWICKSHIRE	17	Thu	17/10/13	0.000	0.000	0.000	2.06

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	3 days
	KC KENT	4 days
	SC SURREY	1 days
03	SOUTH WEST	
	DC DORSET	1 days
	DV DEVON	3 days
	SM SOMERSET	1 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
	NF NORFOLK	4 days
	SF SUFFOLK	3 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	2 days
	ST STAFFORDSHIRE	1 days
	WK WARWICKSHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	5 days
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
	MS MERSEYSIDE	1 days
09	NORTH	
	DH DURHAM	2 days
	TW TYNE & WEAR	1 days
10	WALES	
	PS POWYS	1 days
	VG VALE OF GLAMORGAN	1 days
11	SCOTLAND	
	AG ANGUS	1 days
	FA FALKIRK	2 days
	HI HIGHLAND	1 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: 7 to 432 (units:)
 Range Selected by User: 6 to 1817 (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: 23/02/12 to 23/02/22

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	12 days
Tuesday	10 days
Wednesday	12 days
Thursday	8 days
Friday	6 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	48 days
Directional ATC Count	0 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 undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	24
Edge of Town	24

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	46
No Sub Category	2

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.

Secondary Filtering selection:

Use Class:

C3	48 days
----	---------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	2 days
5,001 to 10,000	10 days
10,001 to 15,000	14 days
15,001 to 20,000	10 days
20,001 to 25,000	7 days
25,001 to 50,000	4 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	5 days
25,001 to 50,000	3 days
50,001 to 75,000	8 days
75,001 to 100,000	11 days
100,001 to 125,000	3 days
125,001 to 250,000	12 days
250,001 to 500,000	6 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	17 days
1.1 to 1.5	30 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:

No	48 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	48 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
-----------------------	-----	--

LIST OF SITES relevant to selection parameters

1	AG-03-A-01 KEPTIE ROAD ARBROATH	BUNGALOWS/DET.		ANGUS
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		7	
	Survey date: TUESDAY		22/05/12	Survey Type: MANUAL
2	CA-03-A-05 EASTFIELD ROAD PETERBOROUGH	DETACHED HOUSES		CAMBRIDGESHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		28	
	Survey date: MONDAY		17/10/16	Survey Type: MANUAL
3	CH-03-A-08 WHITCHURCH ROAD CHESTER	DETACHED		CHESHIRE
	BOUGHTON HEATH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		11	
	Survey date: TUESDAY		22/05/12	Survey Type: MANUAL
4	CH-03-A-09 GREYSTOKE ROAD MACCLESFIELD HURDSFIELD	TERRACED HOUSES		CHESHIRE
	Edge of Town Residential Zone Total No of Dwellings:		24	
	Survey date: MONDAY		24/11/14	Survey Type: MANUAL
5	DC-03-A-08 HURSTDENE ROAD BOURNEMOUTH CASTLE LANE WEST	BUNGALOWS		DORSET
	Edge of Town Residential Zone Total No of Dwellings:		28	
	Survey date: MONDAY		24/03/14	Survey Type: MANUAL
6	DH-03-A-01 GREENFIELDS ROAD BISHOP AUCKLAND	SEMI DETACHED		DURHAM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		50	
	Survey date: TUESDAY		28/03/17	Survey Type: MANUAL
7	DH-03-A-03 PILGRIMS WAY DURHAM	SEMI -DETACHED & TERRACED		DURHAM
	Edge of Town Residential Zone Total No of Dwellings:		57	
	Survey date: FRIDAY		19/10/18	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	DS-03-A-02 RADBOURNE LANE DERBY	MIXED HOUSES	DERBYSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	371	
	Survey date: TUESDAY	10/07/18	Survey Type: MANUAL
9	DV-03-A-01 BRONSHILL ROAD TORQUAY	TERRACED HOUSES	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	37	
	Survey date: WEDNESDAY	30/09/15	Survey Type: MANUAL
10	DV-03-A-02 MILLHEAD ROAD HONITON	HOUSES & BUNGALOWS	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	116	
	Survey date: FRIDAY	25/09/15	Survey Type: MANUAL
11	DV-03-A-03 LOWER BRAND LANE HONITON	TERRACED & SEMI DETACHED	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	70	
	Survey date: MONDAY	28/09/15	Survey Type: MANUAL
12	ES-03-A-03 SHEPHAM LANE POLEGATE	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings:	212	
	Survey date: MONDAY	11/07/16	Survey Type: MANUAL
13	ES-03-A-04 NEW LYDD ROAD CAMBER	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings:	134	
	Survey date: FRIDAY	15/07/16	Survey Type: MANUAL
14	ES-03-A-05 RATTLE ROAD NEAR EASTBOURNE STONE CROSS	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings:	99	
	Survey date: WEDNESDAY	05/06/19	Survey Type: MANUAL
15	FA-03-A-01 MANDELA AVENUE FALKIRK	SEMI -DETACHED/TERRACED	FALKIRK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	37	
	Survey date: THURSDAY	30/05/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

16	FA-03-A-02	MIXED HOUSES	FALKIRK
	ROSEBANK AVENUE & SPRINGFIELD DRIVE		
	FALKIRK		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	161	
	Survey date: WEDNESDAY	29/05/13	Survey Type: MANUAL
17	HI-03-A-14	SEMI-DETACHED & TERRACED	HIGHLAND
	KING BRUDE ROAD		
	INVERNESS		
	SCORGUIE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	40	
	Survey date: WEDNESDAY	23/03/16	Survey Type: MANUAL
18	KC-03-A-03	MIXED HOUSES & FLATS	KENT
	HYTHE ROAD		
	ASHFORD		
	WILLESBOROUGH		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	51	
	Survey date: THURSDAY	14/07/16	Survey Type: MANUAL
19	KC-03-A-04	SEMI-DETACHED & TERRACED	KENT
	KILN BARN ROAD		
	AYLESFORD		
	DITTON		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	110	
	Survey date: FRIDAY	22/09/17	Survey Type: MANUAL
20	KC-03-A-06	MIXED HOUSES & FLATS	KENT
	MARGATE ROAD		
	HERNE BAY		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	363	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
21	KC-03-A-07	MIXED HOUSES	KENT
	RECULVER ROAD		
	HERNE BAY		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	288	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
22	LN-03-A-03	SEMI DETACHED	LINCOLNSHIRE
	ROOKERY LANE		
	LINCOLN		
	BOULTHAM		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	22	
	Survey date: TUESDAY	18/09/12	Survey Type: MANUAL
23	MS-03-A-03	DETACHED	MERSEYSIDE
	BEMPTON ROAD		
	LIVERPOOL		
	OTTERSPOOL		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	15	
	Survey date: FRIDAY	21/06/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

24	NE-03-A-02 HANOVER WALK SCUNTHORPE	SEMI DETACHED & DETACHED		NORTH EAST LINCOLNSHIRE
	Edge of Town No Sub Category Total No of Dwellings:		432	
	Survey date: MONDAY		12/05/14	Survey Type: MANUAL
25	NF-03-A-01 YARMOUTH ROAD CAISTER-ON-SEA	SEMI DET. & BUNGALOWS		NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		27	
	Survey date: TUESDAY		16/10/12	Survey Type: MANUAL
26	NF-03-A-02 DEREHAM ROAD NORWICH	HOUSES & FLATS		NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		98	
	Survey date: MONDAY		22/10/12	Survey Type: MANUAL
27	NF-03-A-03 HALING WAY THETFORD	DETACHED HOUSES		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		10	
	Survey date: WEDNESDAY		16/09/15	Survey Type: MANUAL
28	NF-03-A-25 WOODFARM LANE GORLESTON-ON-SEA	MIXED HOUSES & FLATS		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		55	
	Survey date: TUESDAY		21/09/21	Survey Type: MANUAL
29	NY-03-A-08 NICHOLAS STREET YORK	TERRACED HOUSES		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		21	
	Survey date: MONDAY		16/09/13	Survey Type: MANUAL
30	NY-03-A-09 GRAMMAR SCHOOL LANE NORTHALLERTON	MIXED HOUSING		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		52	
	Survey date: MONDAY		16/09/13	Survey Type: MANUAL
31	NY-03-A-10 BOROUGHBRIDGE ROAD RIPON	HOUSES AND FLATS		NORTH YORKSHIRE
	Edge of Town No Sub Category Total No of Dwellings:		71	
	Survey date: TUESDAY		17/09/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

32	NY-03-A-11	PRIVATE HOUSING	NORTH YORKSHIRE
	HORSEFAIR		
	BOROUGHBRIDGE		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	23	
	Survey date: WEDNESDAY	18/09/13	Survey Type: MANUAL
33	NY-03-A-13	TERRACED HOUSES	NORTH YORKSHIRE
	CATTERICK ROAD		
	CATTERICK GARRISON		
	OLD HOSPITAL COMPOUND		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	10	
	Survey date: WEDNESDAY	10/05/17	Survey Type: MANUAL
34	PS-03-A-02	DETACHED/SEMI-DETACHED	POWYS
	GUNROG ROAD		
	WELSHPOOL		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	28	
	Survey date: MONDAY	11/05/15	Survey Type: MANUAL
35	SC-03-A-04	DETACHED & TERRACED	SURREY
	HIGH ROAD		
	BYFLEET		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	71	
	Survey date: THURSDAY	23/01/14	Survey Type: MANUAL
36	SF-03-A-04	DETACHED & BUNGALOWS	SUFFOLK
	NORMANSTON DRIVE		
	LOWESTOFT		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	7	
	Survey date: TUESDAY	23/10/12	Survey Type: MANUAL
37	SF-03-A-05	DETACHED HOUSES	SUFFOLK
	VALE LANE		
	BURY ST EDMUNDS		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	18	
	Survey date: WEDNESDAY	09/09/15	Survey Type: MANUAL
38	SF-03-A-10	TERRACED & SEMI-DETACHED	SUFFOLK
	LOVETOFTS DRIVE		
	IPSWICH		
	WHITEHOUSE		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	149	
	Survey date: TUESDAY	22/06/21	Survey Type: MANUAL
39	SH-03-A-05	SEMI-DETACHED/TERRACED	SHROPSHIRE
	SANDCROFT		
	TELFORD		
	SUTTON HILL		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	54	
	Survey date: THURSDAY	24/10/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

40	SH-03-A-06 ELLESMERE ROAD SHREWSBURY	BUNGALOWS	SHROPSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	16	
	Survey date: THURSDAY	22/05/14	Survey Type: MANUAL
41	SM-03-A-01 WEMBDON ROAD BRIDGWATER NORTHFIELD	DETACHED & SEMI	SOMERSET
	Edge of Town Residential Zone Total No of Dwellings:	33	
	Survey date: THURSDAY	24/09/15	Survey Type: MANUAL
42	ST-03-A-07 BEACONSIDE STAFFORD MARSTON GATE	DETACHED & SEMI-DETACHED	STAFFORDSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	248	
	Survey date: WEDNESDAY	22/11/17	Survey Type: MANUAL
43	SY-03-A-01 A19 BENTLEY ROAD DONCASTER BENTLEY RISE	SEMI DETACHED HOUSES	SOUTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	54	
	Survey date: WEDNESDAY	18/09/13	Survey Type: MANUAL
44	TW-03-A-02 WEST PARK ROAD GATESHEAD	SEMI-DETACHED	TYNE & WEAR
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	16	
	Survey date: MONDAY	07/10/13	Survey Type: MANUAL
45	VG-03-A-01 ARTHUR STREET BARRY	SEMI-DETACHED & TERRACED	VALE OF GLAMORGAN
	Edge of Town Residential Zone Total No of Dwellings:	12	
	Survey date: MONDAY	08/05/17	Survey Type: MANUAL
46	WK-03-A-02 NARBERTH WAY COVENTRY POTTERS GREEN	BUNGALOWS	WARWICKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	17	
	Survey date: THURSDAY	17/10/13	Survey Type: MANUAL
47	WK-03-A-04 DALEHOUSE LANE KENILWORTH	DETACHED HOUSES	WARWICKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	49	
	Survey date: FRIDAY	27/09/19	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

48	WL-03-A-02 HEADLANDS GROVE SWINDON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 27 <i>Survey date: THURSDAY 22/09/16</i>	SEMI DETACHED <i>Survey Type: MANUAL</i>	WILTSHIRE
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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.

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE

Ranking Type: TOTALS Time Range: 07:00-22:00
Under 6 Surveys Included, 15th/85th Percentile Not Highlighted
47 of selected days excluded due to incomplete data for time range

Median Values		Mean Values	
Arrivals:	5.571	Arrivals:	5.571
Departures:	6.571	Departures:	6.571
Totals:	12.142	Totals:	12.142

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
1	AG-03-A-01	BUNGALOWS/DET.	ARBROATH	ANGUS	7	Tue	22/05/12	5.571	6.571	12.142	2.71

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.



Appendix C.2

Table NTS0502
 Trip start time by trip purpose (Monday to Friday only): England, 2015/20191

Start time	Percentage									Unweighted sample size (trips '000s)
	Commuting	Business	Education	Escort education	Shopping	Other work, other escort and personal business	Visiting friends / entertainment / sport	Holiday / Day trip / Other	All purposes	
0000 - 0059	49	3	1	0	3	11	27	5	100	1
0100 - 0159	51	4	0	0	1	8	32	4	100	0
0200 - 0259	63	3	0	0	2	7	13	10	100	0
0300 - 0359	62	7	2	0	2	9	8	10	100	1
0400 - 0459	71	8	0	0	1	8	3	9	100	2
0500 - 0559	75	6	0	0	1	6	3	7	100	7
0600 - 0659	66	7	1	0	2	9	4	10	100	20
0700 - 0759	48	6	14	5	3	14	4	6	100	56
0800 - 0859	20	3	29	23	4	14	3	4	100	118
0900 - 0959	11	5	3	7	22	26	15	12	100	58
1000 - 1059	5	4	2	0	34	24	17	14	100	60
1100 - 1159	5	4	2	2	35	23	18	11	100	61
1200 - 1259	7	4	2	2	30	25	20	9	100	58
1300 - 1359	10	5	2	1	28	24	19	10	100	54
1400 - 1459	10	4	4	11	25	20	17	10	100	61
1500 - 1559	7	2	26	21	12	14	12	6	100	112
1600 - 1659	22	4	7	4	15	20	18	10	100	75
1700 - 1759	32	3	3	2	12	20	20	8	100	76
1800 - 1859	21	3	1	1	15	18	31	11	100	55
1900 - 1959	11	2	1	0	16	18	41	11	100	37
2000 - 2059	13	3	1	0	14	15	43	11	100	23
2100 - 2159	14	3	1	0	9	15	49	9	100	16
2200 - 2259	22	3	0	0	5	11	50	9	100	11
2300 - 2359	24	2	1	0	3	11	52	6	100	6
All day	18	4	9	8	17	19	18	9	100	985

1 Five survey years combined.

The figures in this table are National Statistics

The results presented in this table are weighted. The base (unweighted sample size) is shown in the table for information. Weights are applied to adjust for non-response to ensure the characteristics of the achieved sample Data for 2002-2015 have been revised, see publication for details.

[Notes & definitions](#)

Source: National Travel Survey
 Last updated: 22 September 2021
 Next update: Summer 2022



Appendix C.3

Trip Purpose Calculations

NTS - Trip Purpose

NTS0502

Model Category	AM %	AM trips	PM %	PM trips
Commuting and Business	23%	65	35%	85
Total Education	52%	146	5%	12
Primary	67%	98	0%	0
Secondary	33%	48	100%	12
Retail	4%	11	12%	29
Personal Business	14%	39	20%	48
Visiting	3%	8	20%	48
Other	4%	11	8%	19
Total	100%	281	100%	241

190	Total People					
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM	0.13	1.348	1.478	25	256	281
PM	0.972	0.299	1.271	185	57	241

Purpose Category	AM %	AM ARR	AM DEP	AM TOTAL	PM %	PM ARR	PM DEP	PM TOTAL
Commuting and Business	23%	6	59	65	35%	65	20	85
Education	52%	13	133	146	5%	9	3	12
Retail	4%	1	10	11	12%	22	7	29
Personal Business	14%	3	36	39	20%	37	11	48
Visiting	3%	1	8	8	20%	37	11	48
Other	4%	1	10	11	8%	15	5	19
Total	100%	25	256	281	100%	185	57	241



Appendix C.4

QS701EW - Method of travel to work

ONS Crown Copyright Reserved [from Nomis on 13 May 2022]

population	All usual residents aged 16 to 74
units	Persons
area type	2011 super output areas - middle layer
area name	E02004646 : Gloucester 011
rural urban	Total

Method of Travel to Work	2011
All categories: Method of travel to work	6,192
Work mainly at or from home	111
Underground, metro, light rail	2
Train	20
Bus, minibus or coach	435
Taxi	10
Motorcycle, scooter or mop	67
Driving a car or van	2,511
Passenger in a car or van	289
Bicycle	176
On foot	282
Other method of travel to work	18
Not in employment	2,271

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.



Appendix C.5

Department for Transport statistics
National Travel Survey

Table NTS0613
Trips to and from school¹ by main mode: England, from 1995/97

Main mode	Percentage																
	1995/97	1998/00	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Aged 5-16 years:																	
Walk ²	47	49	45	47	48	49	49	49	46	47	45	46	43	44	45	43	46
Bicycle	1	1	2	2	2	2	2	1	2	2	2	2	2	1	2	2	2
Car / van	30	29	33	31	31	31	29	30	31	30	32	32	35	33	34	36	34
Private bus	4	5	5	5	4	5	4	6	7	5	5	5	4	5	3	4	3
Local bus	15	14	13	12	13	11	14	13	13	13	15	13	13	15	13	13	12
Surface rail	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Other transport ³	2	2	2	2	1	1	1	2	1	1	2	1	2	2	2	1	1
All modes	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Average trip length (miles) ¹	2.0	2.1	2.4	2.3	2.3	2.2	2.3	2.2	2.5	2.3	2.4	2.4	2.6	2.6	2.4	2.4	2.3
% travelling to school alone ⁴	24	24	25	24	25	25	25	23	21	21	21	23	21	22	22	21	23
Unweighted sample size: individuals	3,166	2,950	2,237	2,751	2,744	2,701	2,563	2,557	2,478	2,633	2,525	2,286	2,320	2,350	2,518	2,287	2,372
trips	19,434	18,554	13,059	17,243	17,744	17,191	15,987	16,045	15,023	16,501	15,441	13,185	14,619	14,270	16,114	14,248	15,388
Aged 5-10 years:																	
Walk ²	53	56	51	53	51	53	54	54	51	53	52	51	48	49	49	47	51
Bicycle	-	-	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2
Car / van	40	37	41	40	41	39	39	38	41	40	40	41	44	43	44	46	41
Private bus	2	3	3	3	3	3	2	3	3	2	2	2	1	2	2	2	2
Local bus	3	3	2	3	3	3	3	3	4	3	4	3	4	4	3	4	3
Surface rail	0	-	0	0	0	-	-	0	0	-	-	-	-	-	0	-	-
Other transport ³	2	1	1	1	1	1	1	1	-	1	-	1	1	1	1	1	2
All modes	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Average trip length (miles) ¹	1.2	1.4	1.5	1.4	1.6	1.4	1.4	1.5	1.6	1.5	1.4	1.6	1.7	1.5	1.6	1.7	1.5
% travelling to school alone ⁴	7	9	9	6	7	5	4	4	5	5	4	6	4	3	3	4	6
Unweighted sample size: individuals	1,671	1,505	1,142	1,353	1,353	1,306	1,269	1,241	1,173	1,272	1,239	1,117	1,177	1,234	1,249	1,204	1,292
trips	10,259	9,187	6,549	8,343	8,572	8,146	7,953	7,515	7,124	7,895	7,373	6,609	7,540	7,397	7,939	7,481	8,459
Aged 11-16 years:																	
Walk ²	41	43	39	42	44	45	43	44	41	40	38	40	38	39	40	39	39
Bicycle	2	3	3	2	3	2	4	2	3	3	2	3	2	1	3	2	3
Car / van	21	21	25	24	22	22	20	22	22	21	24	22	26	22	23	25	26
Private bus	6	6	6	8	6	8	6	8	10	8	7	8	6	7	5	6	4
Local bus	27	24	23	21	22	20	24	21	22	23	25	24	22	25	23	22	23
Surface rail	1	1	2	1	1	1	2	1	1	2	2	1	1	2	3	3	3
Other transport ³	2	3	2	2	2	2	2	2	1	2	3	2	3	3	3	2	1
All modes	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Average trip length (miles) ¹	2.9	2.8	3.3	3.2	2.9	2.9	3.2	2.9	3.4	3.0	3.3	3.2	3.4	3.6	3.3	3.1	3.2
% travelling to school alone ⁴	42	38	41	40	42	45	44	40	36	36	36	40	38	41	43	40	44
Unweighted sample size: individuals	1,495	1,445	1,095	1,398	1,391	1,395	1,294	1,316	1,305	1,361	1,286	1,169	1,143	1,116	1,269	1,083	1,080
trips	9,175	9,367	6,510	8,900	9,172	9,045	8,034	8,530	7,899	8,606	8,068	6,576	7,079	6,873	8,175	6,767	6,929

1 Education trips of under 50 miles only.

2 There is an apparent under-recording of short walks in 2002 and 2003; and short trips in 2007 and 2008 compared to other years.

Walk includes all travel on foot. It is also used when respondents ride in non-motorised wheelchairs, prams or pushchairs, as well as when they ride on toy bicycles, roller-skates, skateboards, non-motorised scooters, or when they jog. For example, c) their parents on a visit to the shops on toy bicycles/tricycles (where the parents are walking) are coded as having walked there.

3 All other modes of transport.

4 Based on main stage of trip.

The figures in this table are National Statistics.

The results presented in this table are weighted. The base (unweighted sample size) is shown in the table for information.

The survey results are subject to sampling error.

2020 Disclaimer: Due to changes in the methodology of data collection, changes in travel behaviour and a reduction of data collected during 2020, as a result of the coronavirus (COVID-19) pandemic, care should be taken when interpreting this data: years, due to the small sample sizes. Please see the background documentation for further details of these changes.

Email: national.travelsurvey@dtf.gov.uk

[Notes & definitions](#)



Appendix C.6

No. of Education Trips

Information contained within the 'Gloucestershire County Council Primary and Secondary Schools - School Places Strategy 2021 - 2026' document identifies a pupil yield for new housing of 41 primary school age children and 20 secondary school age children per 100 dwellings. The percentage splits have been calculated on this basis.

Pupil Yields per 100 dwellings		
	Yield	% Split
Primary	41	67%
Secondary	20	33%
Total	61	100%

Model Category	AM %	AM trips	PM %	PM trips
Education	100%	146	100%	12
Primary	67%	98	0%	0
Secondary	33%	48	100%	12

Mode *	Education and Escort		Primary		Secondary	
	Primary	Secondary	AM	PM	AM	PM
Walk	46%	39%	45	0	19	5
Car Driver	23.50%	13.50%	23	0	6	2
Car Passenger/ Car Share	23.50%	13.50%	23	0	6	2
Bus	5%	29%	5	0	14	4
Cycle	1%	3%	1	0	1	0
Other	1%	2%	1	0	1	0
Total	100%	100%	98	0	48	12

* From NTS Table NTS0613

Whilst commuter trips and other trip purposes may involve rail as part of a journey, it is considered that education trips will not involve rail in this area. Rail therefore, has been exluded from the percentage split.

Purpose Category	AM %	AM ARR	AM DEP	AM TOTAL	PM %	PM ARR	PM DEP	PM TOTAL
Education	52%	13	133	146	5%	9	3	12

	Trips							
	AM %	AM Arrivals	AM Departures	AM Total	PM %	PM Arrivals	PM Departures	PM Total
Primary Pupils	67%	9	90	98	0%	-	-	-
Secondary Pupils	33%	4	44	48	100%	9	3	12

Car Driver Arrivals and Departures	Car Driver			
	Primary		Secondary	
	Arrivals	Departures	Arrivals	Departures
AM	2	21	1	6
PM	-	-	1	0



Appendix C.7

Table NTS0409a
Average number of trips (trip rates) by purpose and main mode: England, from 2002

Select year		All purposes												
Trips per person per year														
	Walk ^{1,4}	Bicycle	Car / van driver	Car / van passenger	Motorcycle	Other private transport ²	Bus in London	Other local bus	Non-local bus	London Underground	Surface rail	Taxi / minicab	Other public transport ³	
2002	264	18	438	240	4	8	17	46	1	11	13	12	2	
2003	269	16	427	233	4	8	17	47	1	9	14	12	3	
2004	273	17	421	228	4	8	18	45	1	9	17	11	2	
2005	272	15	434	234	4	8	19	43	1	9	16	11	3	
2006	275	17	432	227	3	7	18	46	1	10	17	10	3	
2007	240	15	409	219	3	8	20	44	1	10	18	10	2	
2008	242	17	410	226	4	9	21	44	1	11	18	10	2	
2009	250	16	393	218	3	9	22	45	1	10	17	10	2	
2010	234	15	402	212	3	7	25	42	1	9	19	9	2	
2011	242	16	392	209	4	6	21	42	1	9	17	10	2	
2012	233	17	396	213	4	7	19	41	1	9	20	10	2	
2013	223	14	380	210	3	7	21	42	1	9	20	10	3	
2014	220	18	384	206	3	6	19	40	1	10	21	10	2	
2015	219	17	381	204	3	7	20	41	1	9	20	10	3	
2016	243	15	389	202	3	6	16	35	1	10	21	11	3	
2017	255	17	390	204	3	6	17	37	1	10	21	9	4	
2018	262	17	395	207	2	7	15	33	-	11	22	10	3	
2019	250	16	380	200	2	7	18	32	-	12	21	11	3	
	27.1%	1.8%	41.2%	21.7%	0.2%	0.8%		3.4%			2.3%	1.2%	0.3%	

All modes	All modes Excluding London Underground and Bus in London
1,074	
1,060	
1,054	
1,070	
1,067	
998	
1,014	
997	
982	
972	
971	
943	
942	
934	
954	
975	
986	
953	922



Appendix C.8

Mode*	%
Walk	27%
Car Driver	41%
Car Passenger	22%
Bus	3%
Rail	2%
Cycle	2%
Motorcycle	0%
Other	2%

*From NTS table NTS0409a

Purpose Category	AM %	AM trips	PM %	PM trips
Commuting and Business	23%	65	35%	85
Education	52%	146	5%	12
Retail	4%	11	12%	29
Personal Business	14%	39	20%	48
Visiting friends	3%	8	20%	48
Other	4%	11	8%	19
Total	100%	281	100%	241

Trip Type	AM %	Two way Trips	PM%	Two way Trips
Commuting	23%	65	35%	85
Education	52%	146	5%	12
Retail	4%	11	12%	29
Personal Business	14%	39	20%	48
Visiting friends	3%	8	20%	48
Other (Hols and trips)	4%	11	8%	19
Total	100%	281	100%	241

Two-Way trips

Retail

Mode	AM	PM
Walk	3	8
Car Driver	5	12
Car Passenger	2	6
Bus	0	1
Cycle	0	1
Motorcycle	0	0
Rail	0	1
Other	0	1
Total	11	29

Personal Business

Mode	AM	PM
Walk	11	13
Car Driver	16	20
Car Passenger	9	11
Bus	1	1
Cycle	1	1
Motorcycle	0	0
Rail	1	1
Other	1	1
Total	39	48

Visiting friends

Mode	AM	PM
Walk	2	13
Car Driver	3	20
Car Passenger	2	11
Bus	0	1
Cycle	0	1
Motorcycle	0	0
Rail	0	1
Other	0	1
Total	8	48

Other (Holidays and Day Trips)

Mode	AM	PM
Walk	3	5
Car Driver	5	8
Car Passenger	2	4
Bus	0	1
Cycle	0	0
Motorcycle	0	0
Rail	0	0
Other	0	0
Total	11	19

Arrivals and Departures

Purpose Category	AM %	AM ARR	AM DEP	AM TOTAL	PM %	PM ARR	PM DEP	PM TOTAL
Retail	4%	1	10	11	12%	22	7	29
Personal Business	14%	3	36	39	20%	37	11	48
Visiting	3%	1	8	8	20%	37	11	48
Other	4%	1	10	11	8%	15	5	19

Car Driver

Purpose Category	AM ARR	AM DEP	AM TOTAL	PM ARR	PM DEP	PM TOTAL
Retail	0	4	5	9	3	12
Personal Business	1	15	16	15	5	20
Visiting	0	3	3	15	5	20
Other	0	4	5	6	2	8



Appendix C.9

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

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Population : All usual residents aged 16 and over in employment the week before the census

Units : Persons

Date : 2011

usual residence : E02004646 : Gloucester 011 (2011 super output area - middle layer)

place of work : 2011 super output area - middle layer	All categories: Method of travel to work (2001 specification)		Work mainly at or from home		Underground, metro, light rail or tram		Train		Bus, minibuss or coach		Taxi	
		%		%		%		%		%		%
E02004639 : Gloucester 004	584	21%	0	0%	0	0%	2	40%	162	43%	2	
E02004642 : Gloucester 007	343	13%	0	0%	0	0%	0	0%	15	4%	1	
E02004637 : Gloucester 002	305	11%	0	0%	0	0%	0	0%	74	19%	1	
E02004674 : Tewkesbury 009	183	7%	0	0%	0	0%	0	0%	14	4%	0	
E02004644 : Gloucester 009	152	6%	0	0%	0	0%	0	0%	13	3%	0	
E02004646 : Gloucester 011	142	5%	0	0%	0	0%	0	0%	8	2%	0	
E02004640 : Gloucester 005	115	4%	0	0%	0	0%	0	0%	27	7%	0	
E02004650 : Gloucester 015	105	4%	0	0%	0	0%	0	0%	7	2%	0	
E02004672 : Tewkesbury 007	84	3%	0	0%	0	0%	0	0%	7	2%	0	
E02004655 : Stroud 005	72	3%	0	0%	0	0%	1	20%	3	1%	0	
E02004608 : Cheltenham 009	71	3%	0	0%	0	0%	0	0%	9	2%	0	
E02004673 : Tewkesbury 008	66	2%	0	0%	0	0%	1	20%	8	2%	0	
E02004645 : Gloucester 010	61	2%	0	0%	0	0%	0	0%	2	1%	0	
E02004666 : Tewkesbury 001	58	2%	0	0%	0	0%	1	20%	0	0%	0	
E02004643 : Gloucester 008	52	2%	0	0%	0	0%	0	0%	4	1%	0	
E02004651 : Stroud 001	48	2%	0	0%	0	0%	0	0%	5	1%	0	
E02004649 : Gloucester 014	43	2%	0	0%	0	0%	0	0%	3	1%	0	
E02004609 : Cheltenham 010	39	1%	0	0%	0	0%	0	0%	4	1%	0	
E02004618 : Cotswold 004	34	1%	0	0%	0	0%	0	0%	2	1%	0	
E02004648 : Gloucester 013	32	1%	0	0%	0	0%	0	0%	3	1%	0	
E02004653 : Stroud 003	32	1%	0	0%	0	0%	0	0%	1	0%	0	
E02004638 : Gloucester 003	30	1%	0	0%	0	0%	0	0%	5	1%	0	
E02004671 : Tewkesbury 006	29	1%	0	0%	0	0%	0	0%	2	1%	0	
E02004656 : Stroud 006	25	1%	0	0%	0	0%	0	0%	2	1%	0	
E02004600 : Cheltenham 001	21	1%	0	0%	0	0%	0	0%	0	0%	0	
Totals	2726	100%	0	0%	0	0%	5	100%	380	100%	4	

%	Motorcycle, scooter or moped	%	Driving a car or van	%	Passenger in a car or van	%	Bicycle	%	On foot	%	Other method of travel to work	%	
50%	11	21%	271	16%	53	26%	32	20%	49	21%	2	40%	
25%	8	15%	235	14%	20	10%	37	23%	25	11%	2	40%	
25%	3	6%	169	10%	20	10%	16	10%	22	9%	0	0%	
0%	4	8%	131	8%	19	9%	14	9%	1	0%	0	0%	
0%	3	6%	101	6%	15	7%	14	9%	6	3%	0	0%	
0%	0	0%	51	3%	5	2%	3	2%	75	32%	0	0%	
0%	0	0%	60	4%	5	2%	15	9%	8	3%	0	0%	
0%	1	2%	83	5%	11	5%	2	1%	1	0%	0	0%	
0%	3	6%	63	4%	5	2%	3	2%	3	1%	0	0%	
0%	3	6%	60	4%	3	1%	1	1%	1	0%	0	0%	
0%	5	10%	50	3%	6	3%	0	0%	1	0%	0	0%	
0%	0	0%	49	3%	3	1%	4	2%	1	0%	0	0%	
0%	0	0%	30	2%	6	3%	3	2%	20	9%	0	0%	
0%	0	0%	54	3%	2	1%	1	1%	0	0%	0	0%	
0%	0	0%	28	2%	9	4%	1	1%	10	4%	0	0%	
0%	3	6%	30	2%	3	1%	3	2%	3	1%	1	20%	
0%	1	2%	33	2%	3	1%	3	2%	0	0%	0	0%	
0%	0	0%	33	2%	1	0%	1	1%	0	0%	0	0%	
0%	1	2%	26	2%	4	2%	0	0%	1	0%	0	0%	
0%	0	0%	21	1%	3	1%	5	3%	0	0%	0	0%	
0%	1	2%	26	2%	2	1%	2	1%	0	0%	0	0%	
0%	0	0%	20	1%	2	1%	2	1%	1	0%	0	0%	
0%	1	2%	20	1%	2	1%	0	0%	4	2%	0	0%	
0%	2	4%	19	1%	0	0%	0	0%	2	1%	0	0%	
0%	2	4%	18	1%	1	0%	0	0%	0	0%	0	0%	
100%	52	100%	1681	100%	203	100%	162	100%	234	100%	5	100%	



Appendix C.10

Key Place of Work MSOA	Driving a Car or Van	%	Locality	Direction from Site	Route	Ref
E02004639 : Gloucester 004	271	16.1%	Gloucester	NW	Winnycroft Lane N	3
E02004642 : Gloucester 007	235	14.0%	Gloucester	N	Winnycroft Lane N	1
E02004637 : Gloucester 002	169	10.1%	Gloucester	NW	Winnycroft Lane N	3
E02004674 : Tewkesbury 009	131	7.8%	Tewkesbury	NE	Winnycroft Lane N	1
E02004644 : Gloucester 009	101	6.0%	Gloucester	NW	Matson Lane	
E02004646 : Gloucester 011	51	3.0%	Gloucester	N	Matson Lane	
E02004640 : Gloucester 005	60	3.6%	Gloucester	NE	Winnycroft Lane N	3
E02004650 : Gloucester 015	83	4.9%	Gloucester	W	Winnycroft Lane S	
E02004672 : Tewkesbury 007	63	3.7%	Tewkesbury	NE	Winnycroft Lane N	3
E02004655 : Stroud 005	60	3.6%	Stroud	S	Winnycroft Lane S	
E02004608 : Cheltenham 009	50	3.0%	Cheltenham	NE	Winnycroft Lane N	1
E02004673 : Tewkesbury 008	49	2.9%	Tewkesbury	NE	Winnycroft Lane N	3
E02004645 : Gloucester 010	30	1.8%	Gloucester	N	Winnycroft Lane N	4
E02004666 : Tewkesbury 001	54	3.2%	Tewkesbury	NE	Winnycroft Lane N	3
E02004643 : Gloucester 008	28	1.7%	Gloucester	NW	Winnycroft Lane N	3
E02004651 : Stroud 001	30	1.8%	Stroud	W	Winnycroft Lane S	
E02004649 : Gloucester 014	33	2.0%	Gloucester	W	Winnycroft Lane S	
E02004609 : Cheltenham 010	33	2.0%	Cheltenham	NE	Winnycroft Lane N	3
E02004618 : Cotswold 004	26	1.5%	Cotswold	E	Winnycroft Lane N	1
E02004648 : Gloucester 013	21	1.2%	Gloucester	W	Winnycroft Lane S	
E02004653 : Stroud 003	26	1.5%	Stroud	SW	Winnycroft Lane S	
E02004638 : Gloucester 003	20	1.2%	Gloucester	N	Winnycroft Lane N	3
E02004671 : Tewkesbury 006	20	1.2%	Tewkesbury	NW	Winnycroft Lane N	3
E02004656 : Stroud 006	19	1.1%	Stroud	S	Winnycroft Lane S	
E02004600 : Cheltenham 001	18	1.1%	Cheltenham	NE	Winnycroft Lane N	3

100.0%

Vehicles using Winnycroft Lane N

Ref	Route	%
1	B4073N, Wheatway	26.3%
2	B4073S	
3	B4073N, N at Heron Way Signalised Junction	46.7%
4	B4073N, E at Heron Way Signalised Junction	1.8%

74.8%

Winnycroft Lane N	74.8%
Winnycroft Lane S	16.2%
Matson Lane	9.0%

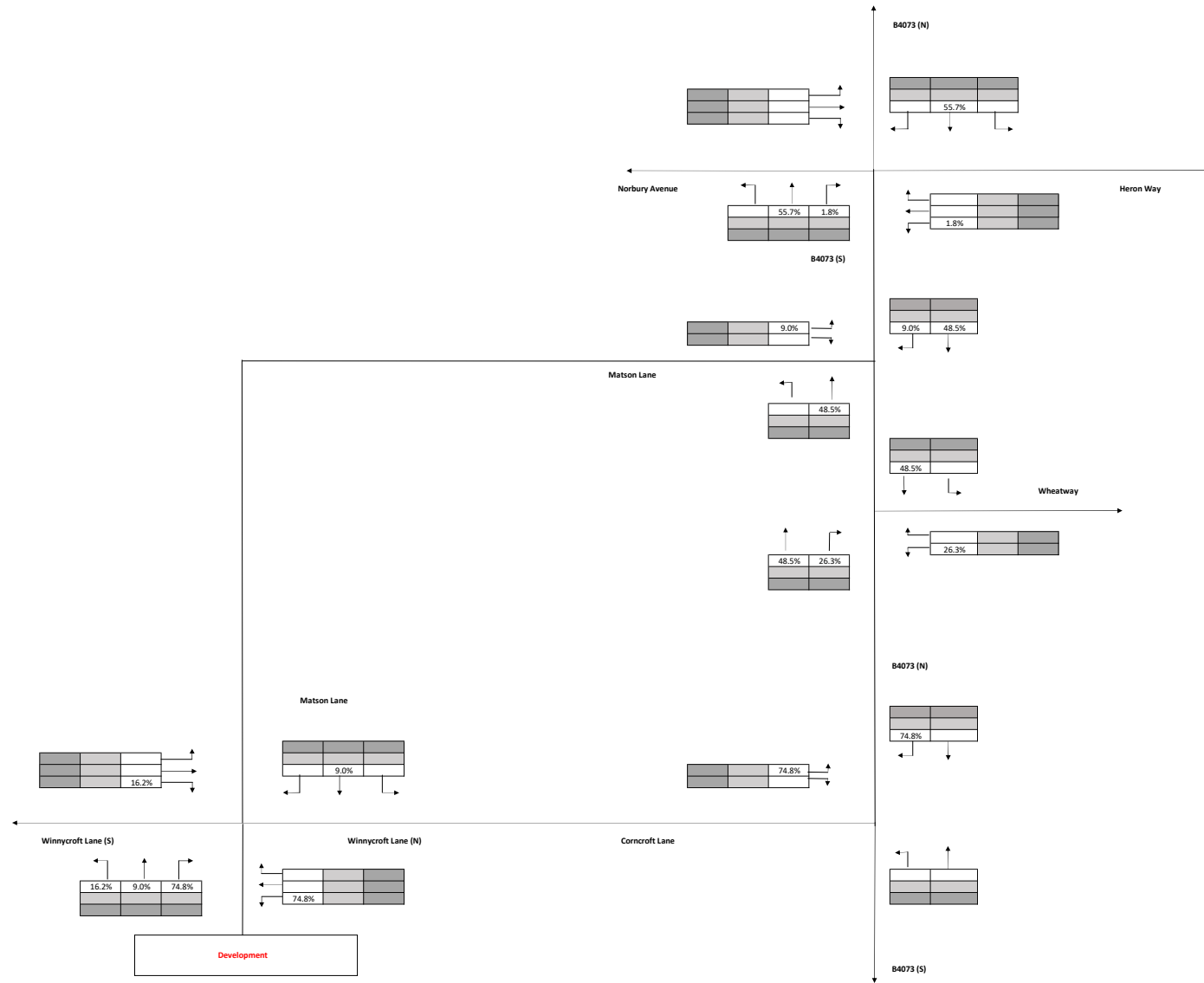
100.0%

* Alternative route available via Winnycroft Lane S or Sneedhams Road. Traffic has been assigned via Matson Lane for robust assessment



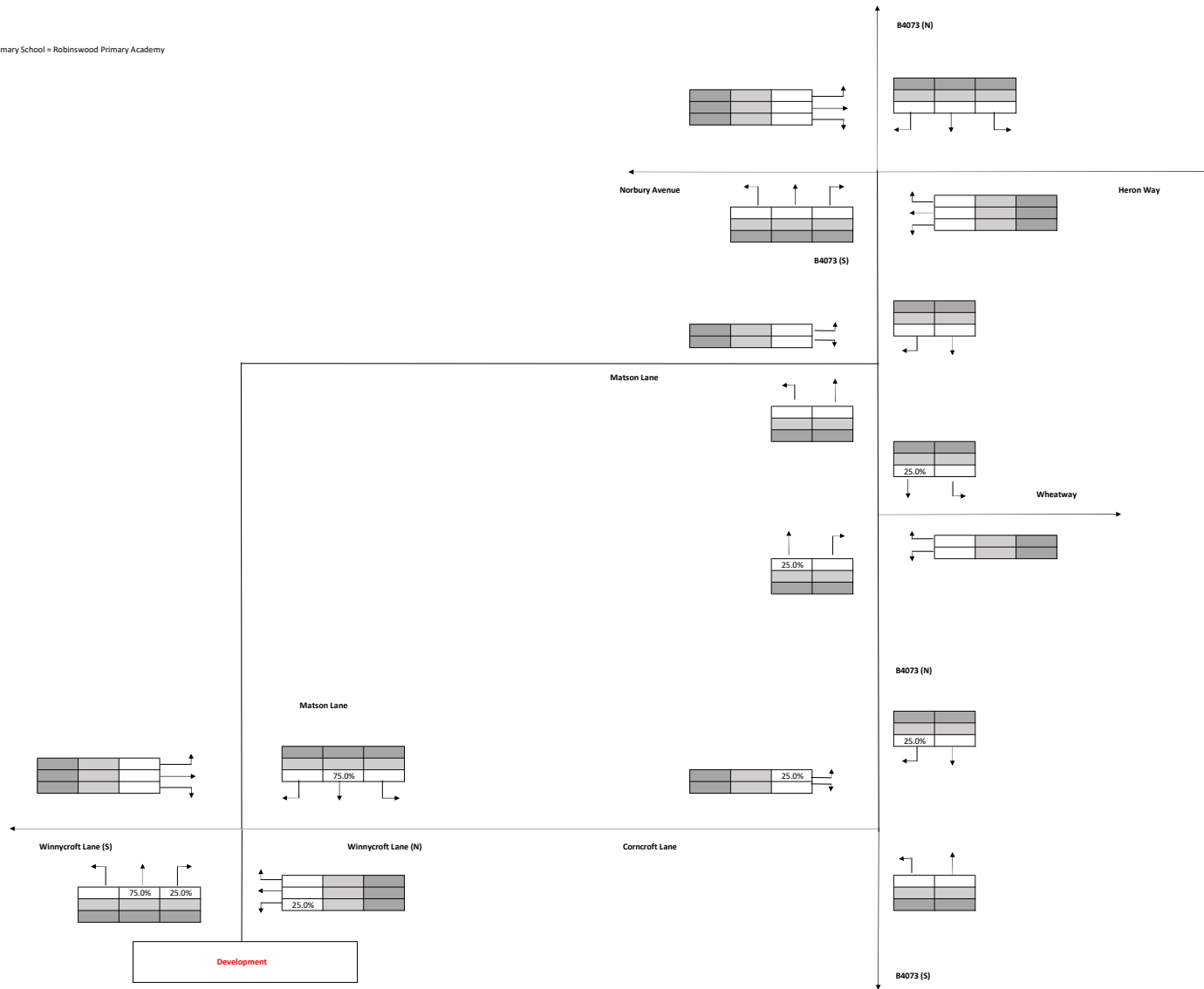
Appendix C.11

COMMUTER TRIP DISTRIBUTION



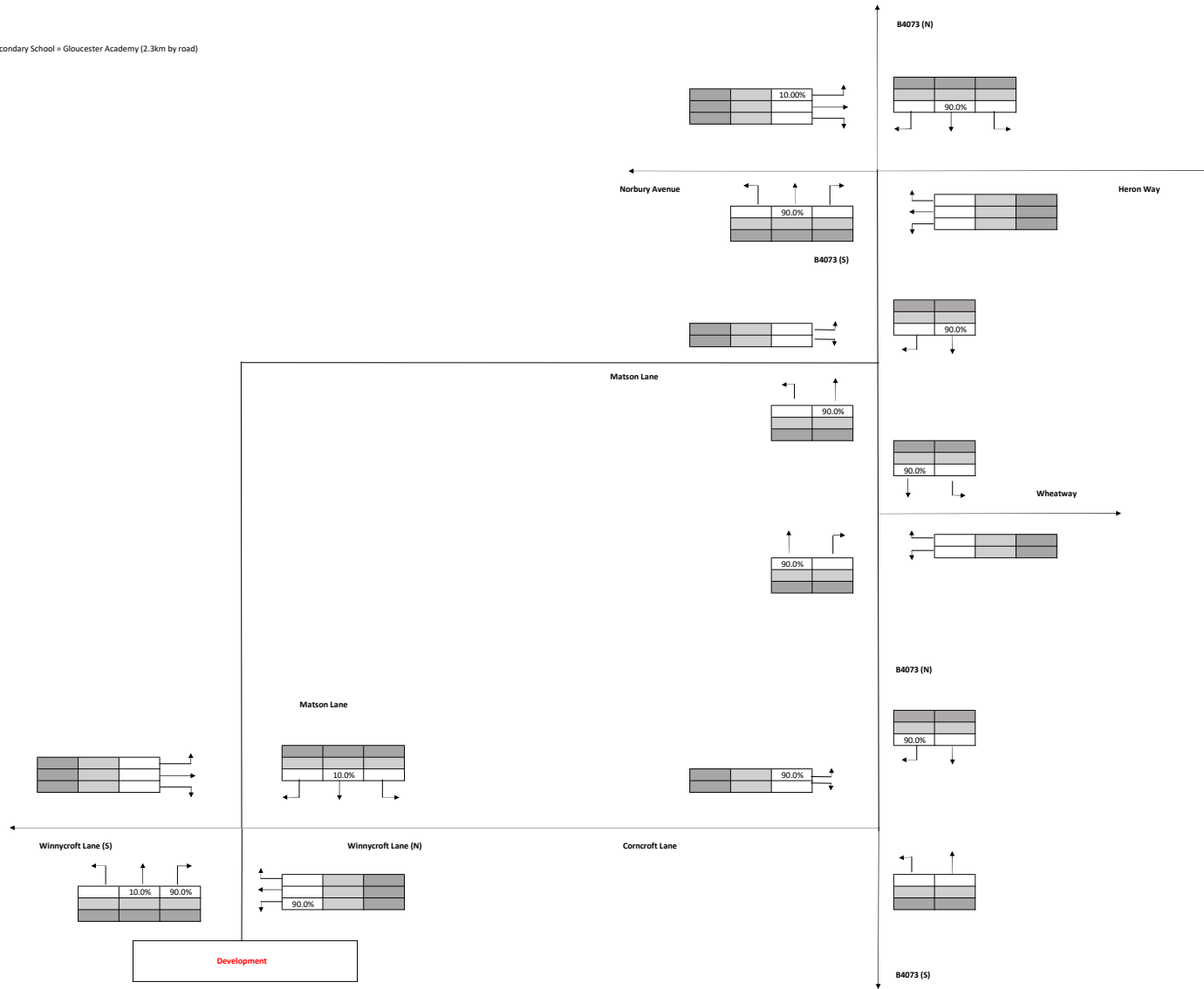
PRIMARY SCHOOL TRIP DISTRIBUTION

*Closest Primary School = Robinswood Primary Academy



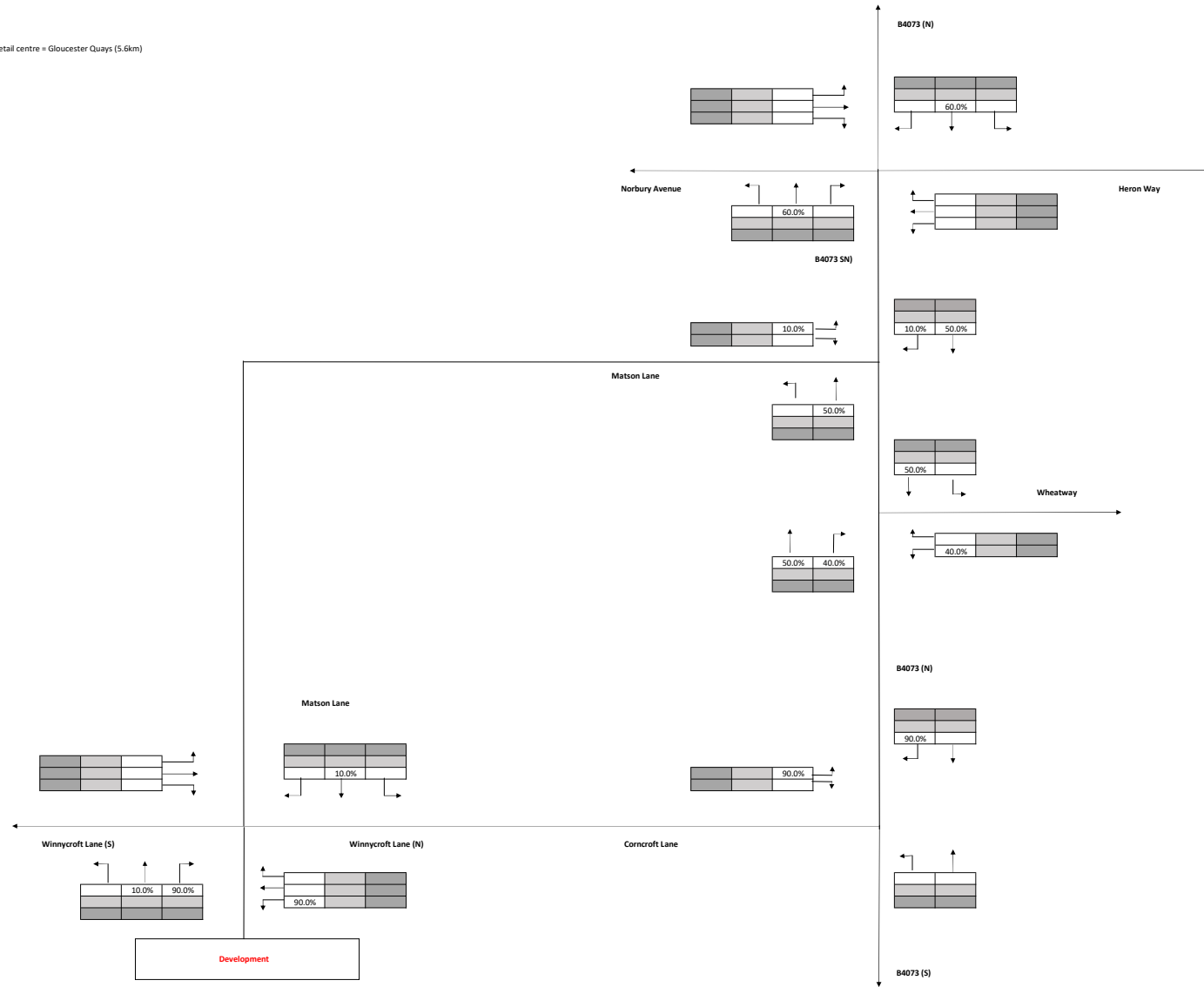
SECONDARY SCHOOL TRIP DISTRIBUTION

*Closest Secondary School = Gloucester Academy (2.3km by road)



RETAIL TRIP DISTRIBUTION

*Nearest retail centre = Gloucester Quays (5.6km)

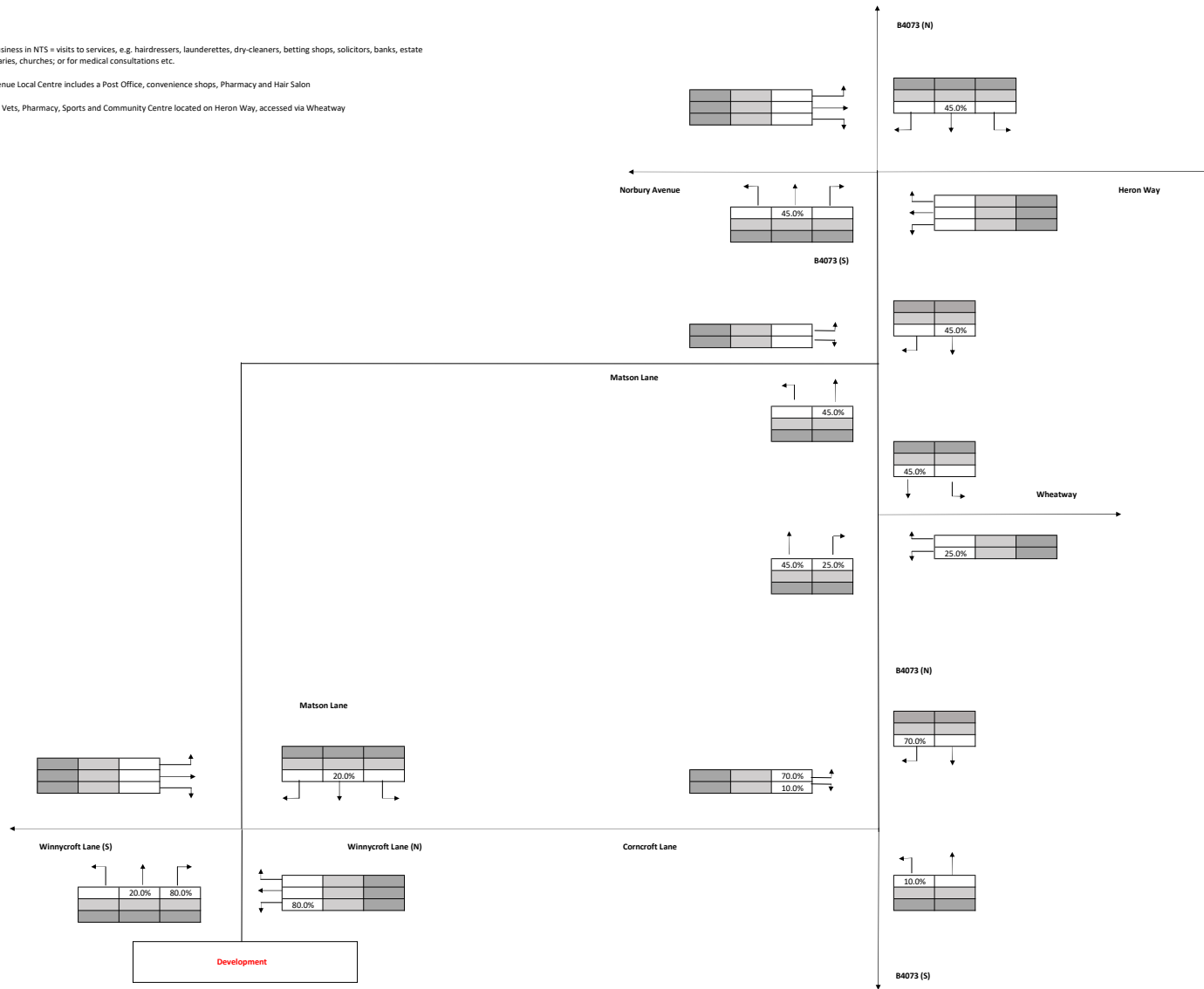


PERSONAL BUSINESS TRIP DISTRIBUTION

Personal business in NTS = visits to services, e.g. hairdressers, launderettes, dry-cleaners, betting shops, solicitors, banks, estate agents, libraries, churches; or for medical consultations etc.

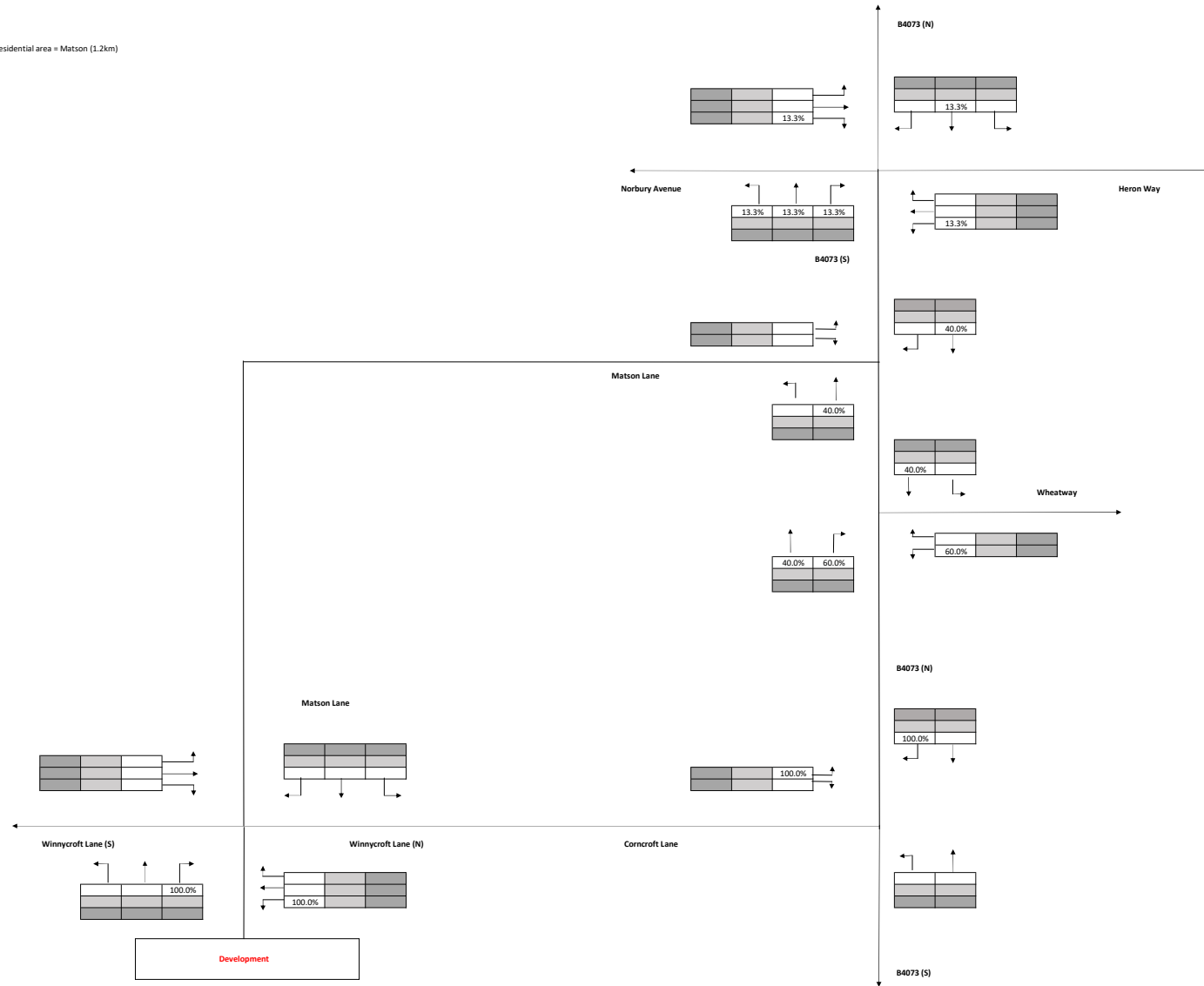
Matson Avenue Local Centre includes a Post Office, convenience shops, Pharmacy and Hair Salon

Takeaways, Vets, Pharmacy, Sports and Community Centre located on Heron Way, accessed via Wheatway



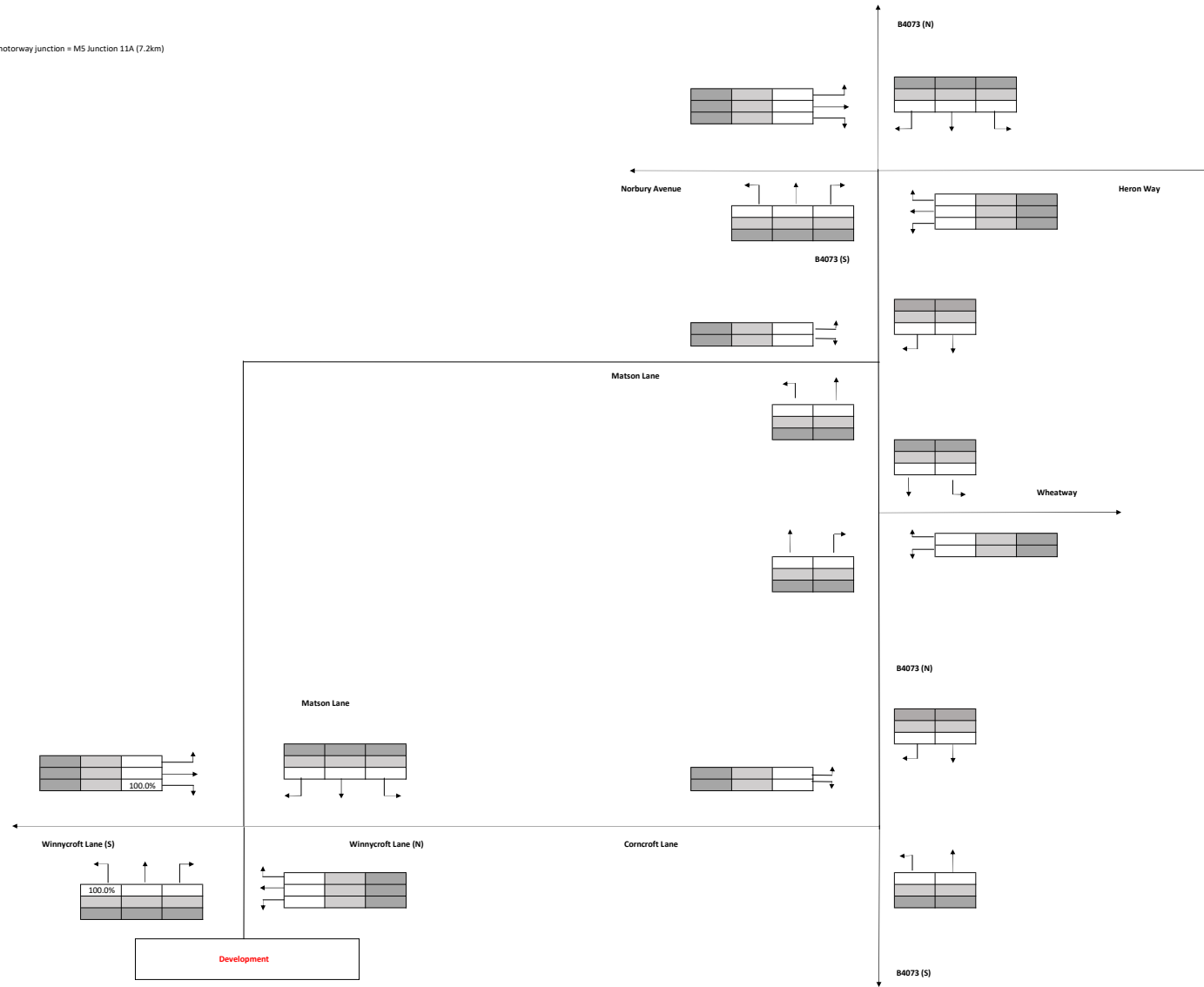
VISITING TRIP DISTRIBUTION

*Nearest residential area = Matson (1.2km)



OTHER TRIP DISTRIBUTION

*Nearest motorway junction = M5 Junction 11A (7.2km)





Appendix C.12

PEGASUS GROUP	Appendix C.12	TITLE	2022 Base Traffic Flows PM Peak (17:00-18:00)				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix



[illegible]

AM		
Level	Area	Local Growth Figure
E02004646	Gloucester 011	1.067225765

Level	Area	Local Growth Figure
E02004646	Gloucester 011	1.067225765

Level	Area	Local Growth Figure
E02004646	Gloucester 011	1.067789296

Level	Area	Local Growth Figure
E02004646	Gloucester 011	1.067789296

NTM Traffic Growth Calculations

1: Select NTM Dataset:

NTM Dataset Description	From	To
RTP 2018 Scenario 1 - Reference	2015	2050
NTM AF 15 Dataset	2010	2040

2: Select Areas to make up the geographic region:

☒ Gloucester 011 (E02004646)

3: Select area type:

☒ Urban
☐ Rural
☐ All

4: Select road type:

☐ Motorway
☐ Trunk
☐ Principal
☐ Minor
☐ All

5: Select which area it serves:

☒ Region
☐ England

Calculate the adjusted local growth figure

Results

Level	Area	Local Growth Figure
E02004646	Gloucester 011	1.0672

NTM Traffic Growth Calculations

1: Select NTM Dataset:

NTM Dataset Description	From	To
RTF 2018 Scenario 1 - Reference	2015	2050
NTM AF15 Dataset	2010	2040

2: Select Areas to make up the geographic region:

☒ Gloucester 011 (E02004646)

3: Select area type:

☐ Urban
☐ Rural
☐ All

4: Select road type:

☐ Motorway
☐ Trunk
☐ Principal
☐ Minor
☐ All

5: Select which area it serves:

☐ Region
☐ England

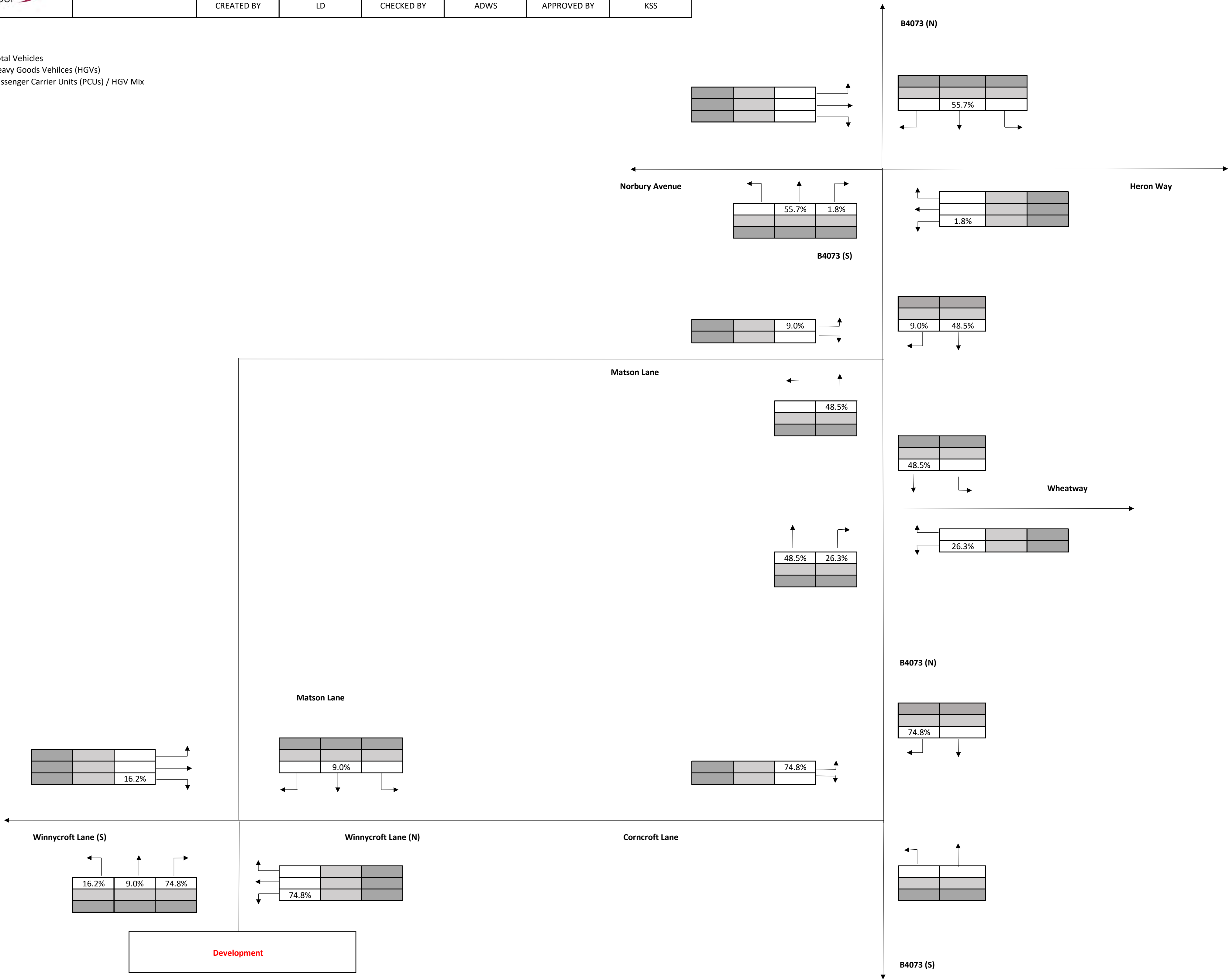
Calculate the adjusted local growth figure

Results

Level	Area	Local Growth Figure
E02004646	Gloucester 011	1.0679

<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Commuter Distribution				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

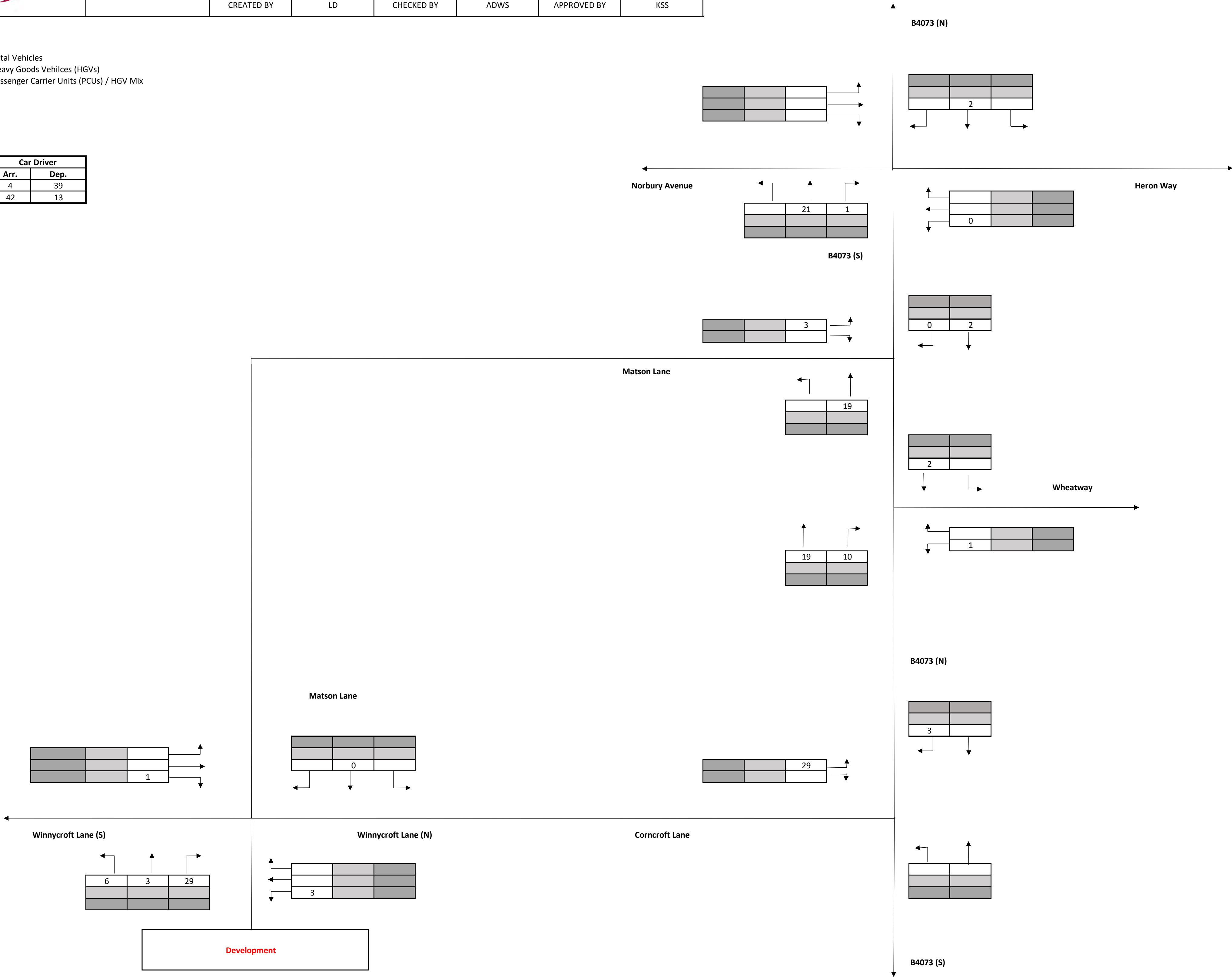
Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix



PEGASUS GROUP	Appendix C.12	TITLE	Commuter Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

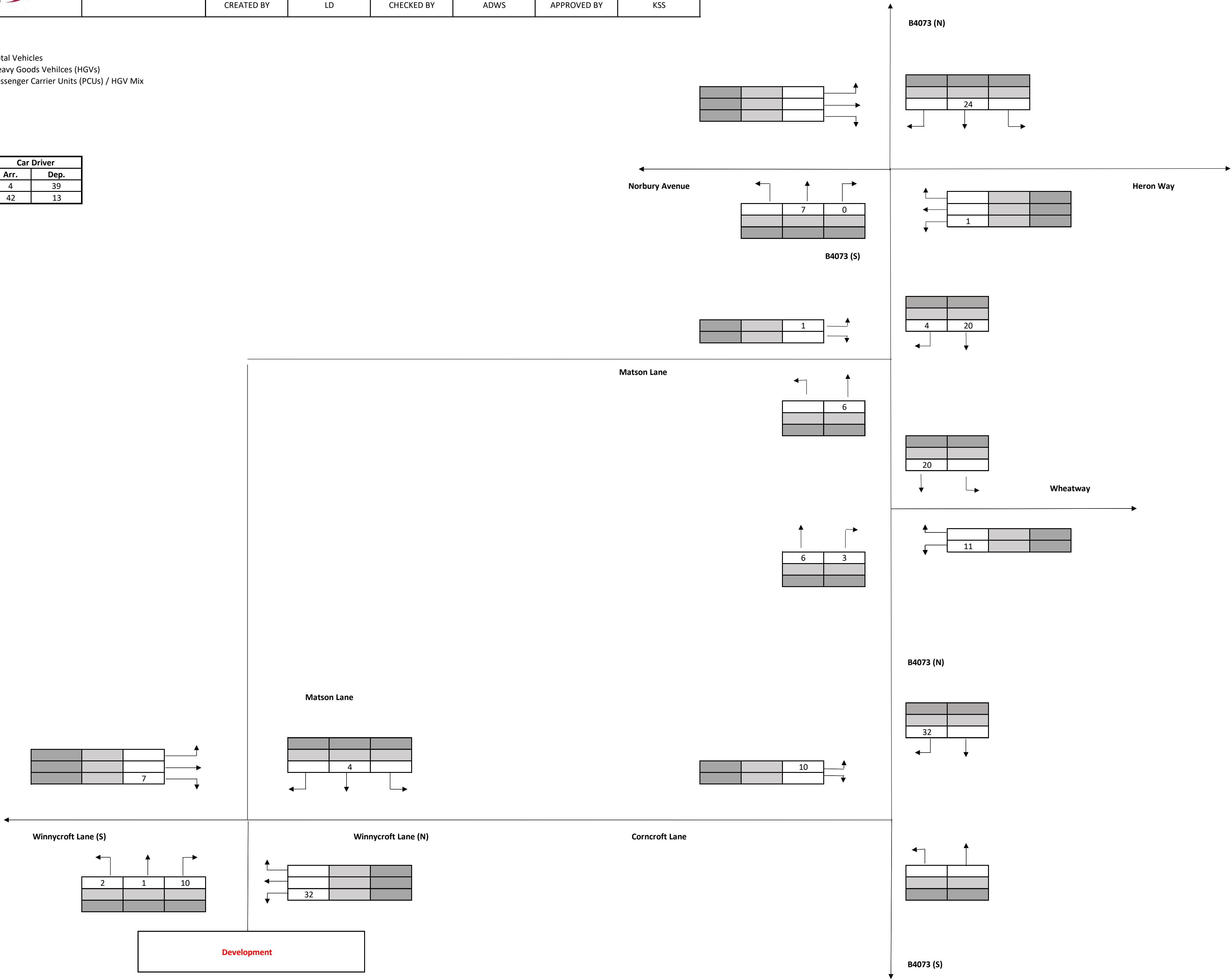
Trip Numbers	Car Driver	
	Arr.	Dep.
AM	4	39
PM	42	13



PEGASUS GROUP	Appendix C.12	TITLE	Commuter Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

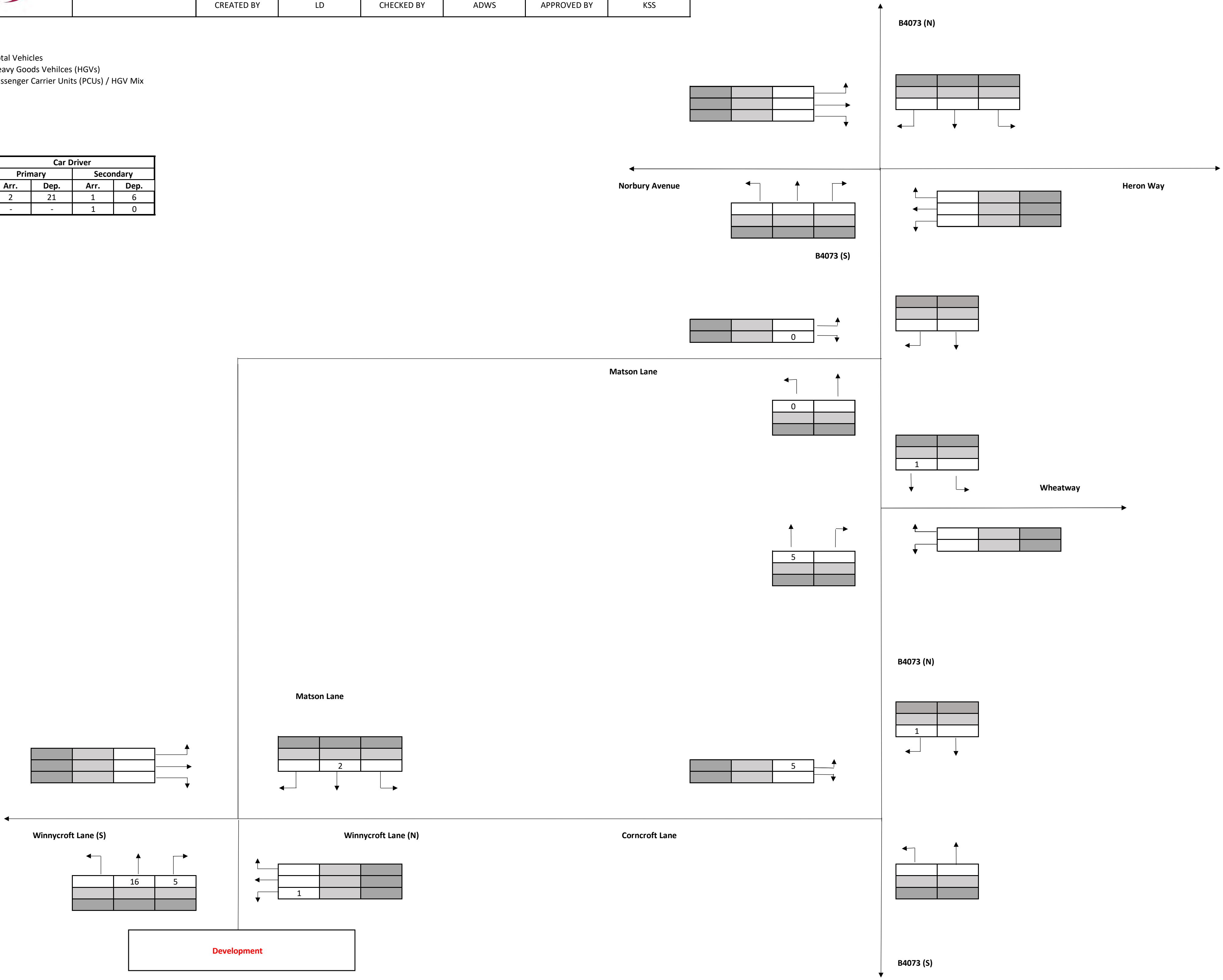
Trip Numbers	Car Driver	
	Arr.	Dep.
AM	4	39
PM	42	13



PEGASUS GROUP	Appendix C.12	TITLE	Primary School Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

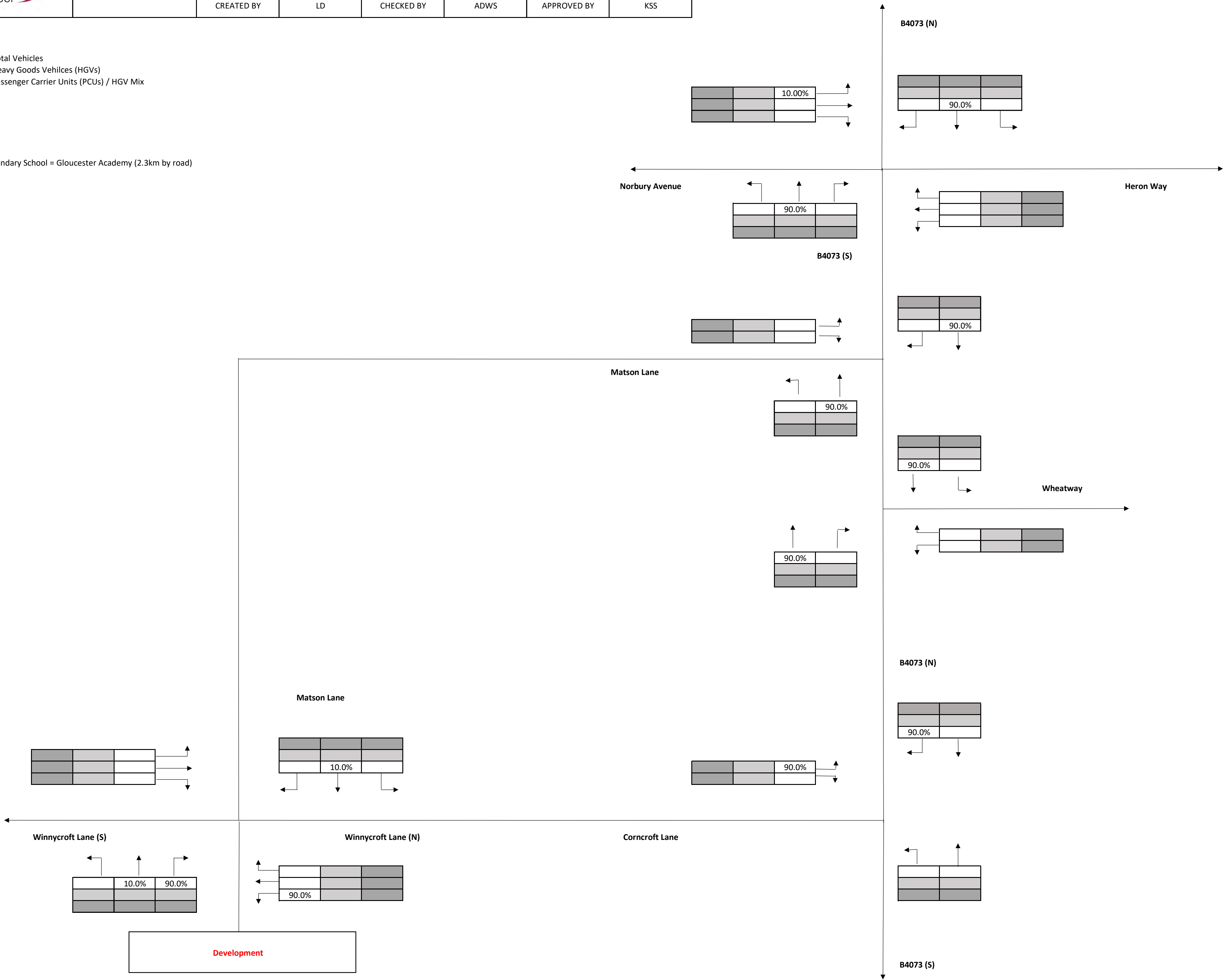
Trip Numbers	Car Driver			
	Primary		Secondary	
	Arr.	Dep.	Arr.	Dep.
AM	2	21	1	6
PM	-	-	1	0



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Secondary School Distribution				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehilces (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

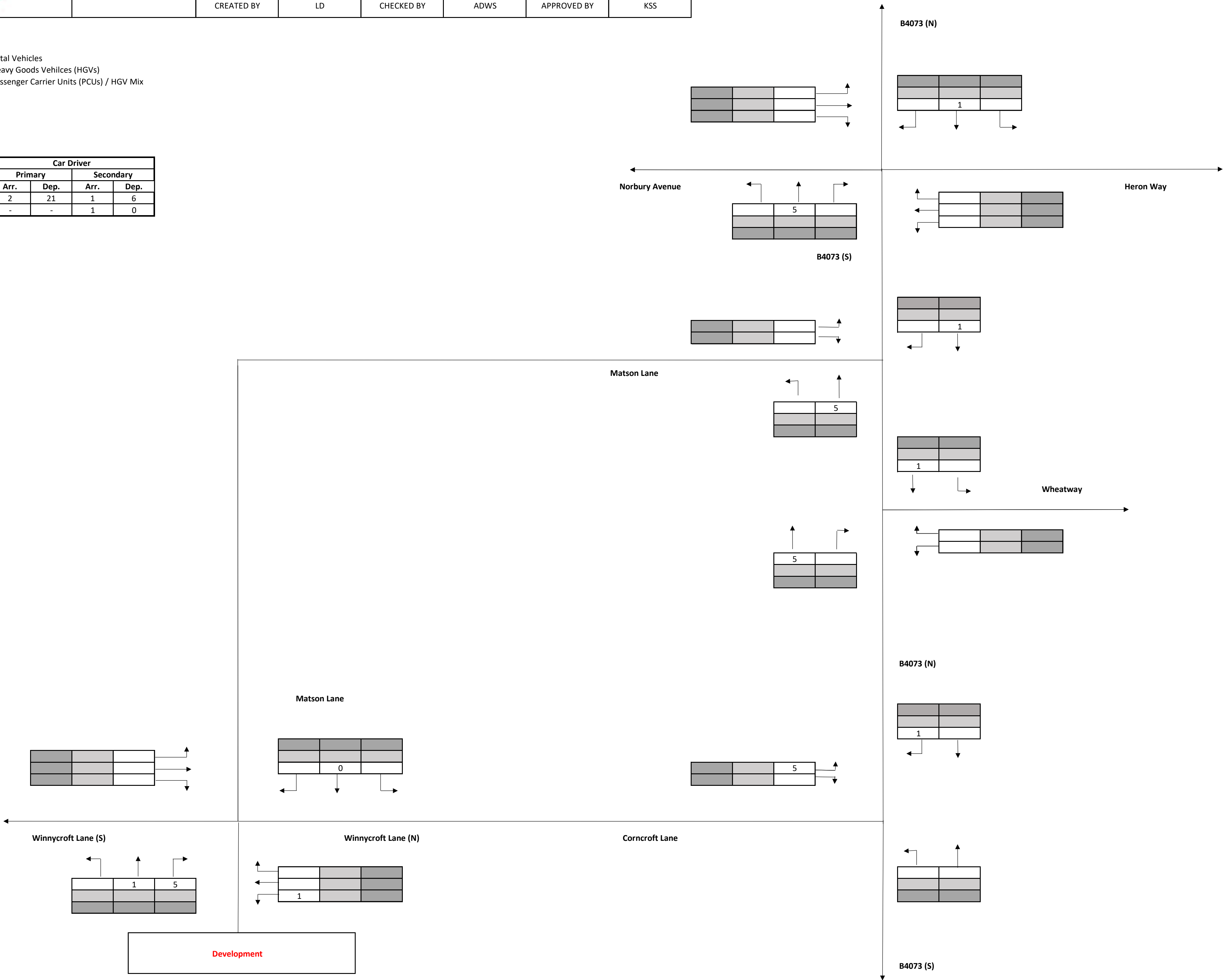
*Closest Secondary School = Gloucester Academy (2.3km by road)



PEGASUS GROUP	Appendix C.12	TITLE	Secondary School Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicules (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

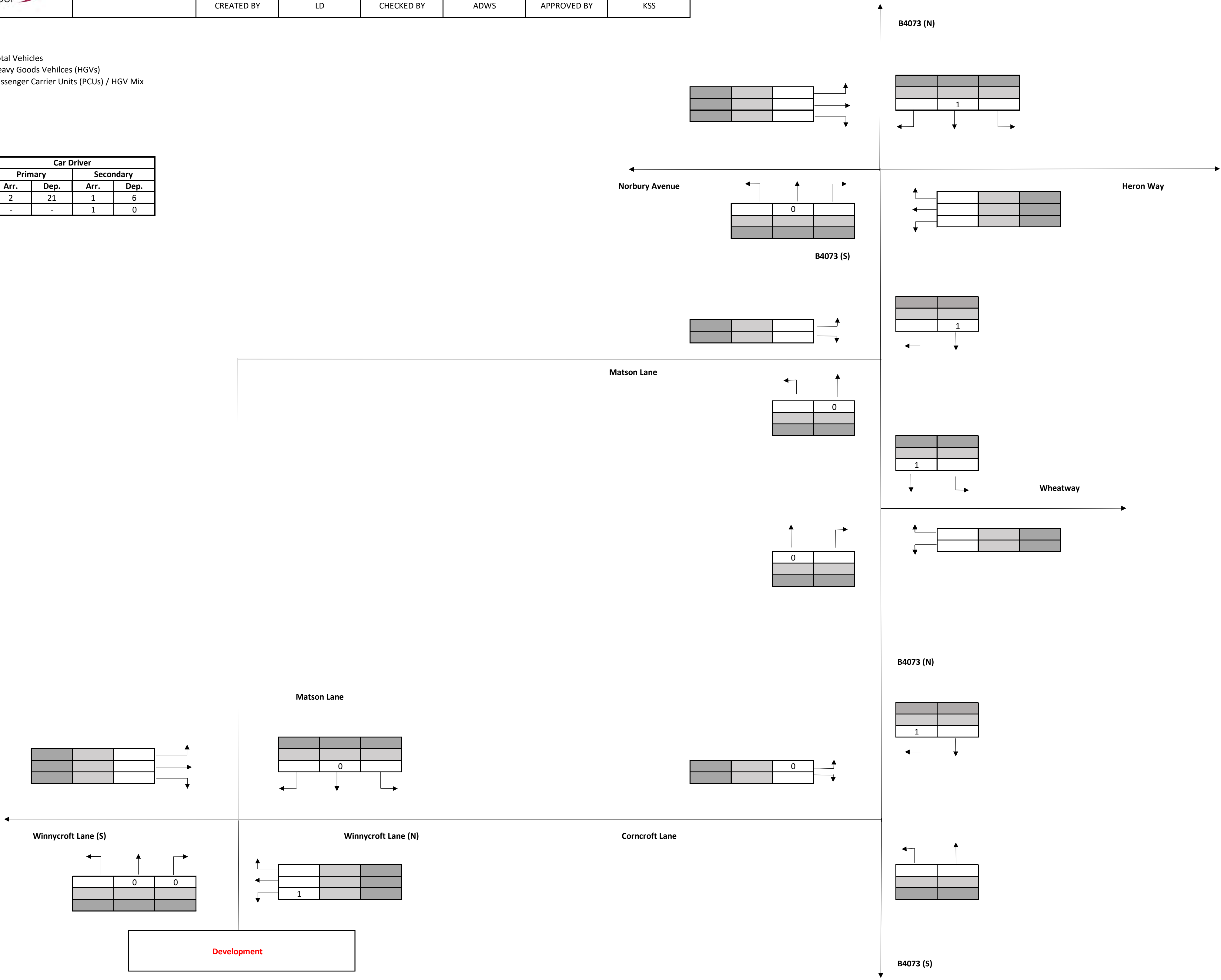
Trip Numbers	Car Driver			
	Primary		Secondary	
	Arr.	Dep.	Arr.	Dep.
AM	2	21	1	6
PM	-	-	1	0



PEGASUS GROUP	Appendix C.12	TITLE	Secondary School Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

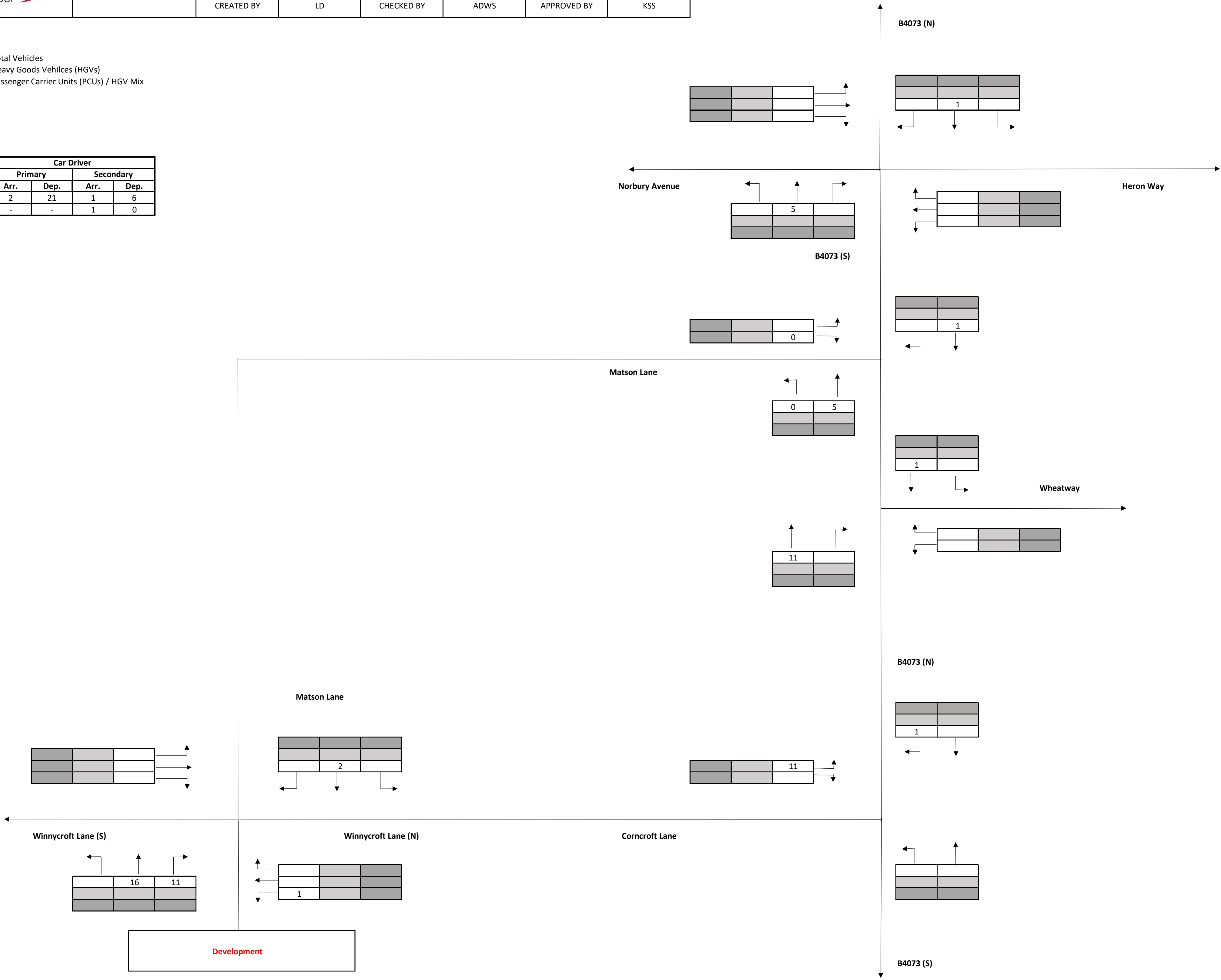
Car Driver Arrivals and	Car Driver			
	Primary		Secondary	
	Arr.	Dep.	Arr.	Dep.
AM	2	21	1	6
PM	-	-	1	0



PEGASUS GROUP	Appendix C.12	TITLE	Overall School Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

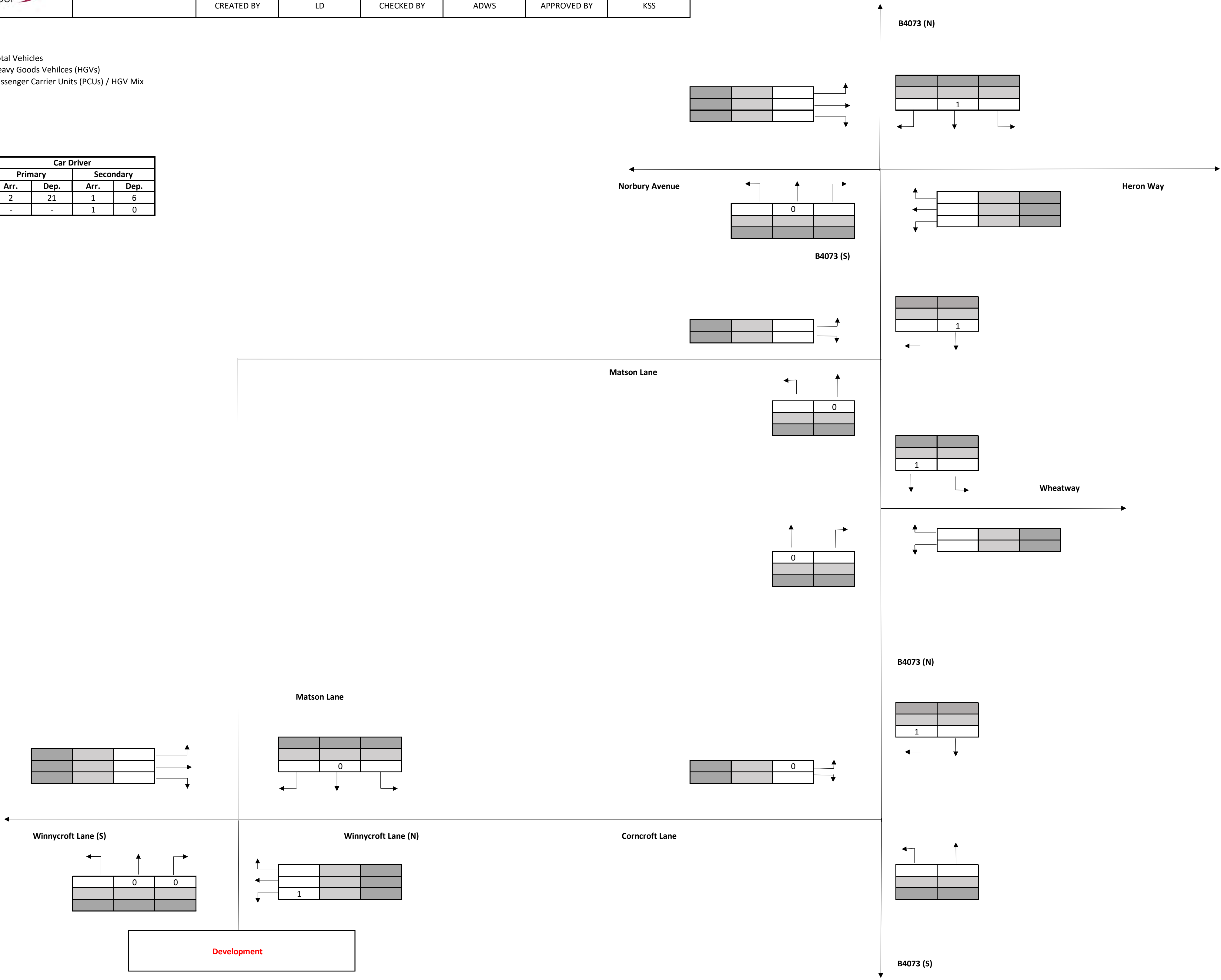
Car Driver Arrivals and	Car Driver			
	Primary		Secondary	
	Arr.	Dep.	Arr.	Dep.
AM	2	21	1	6
PM	-	-	1	0




<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Overall School Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

Car Driver Arrivals and	Car Driver			
	Primary		Secondary	
	Arr.	Dep.	Arr.	Dep.
AM	2	21	1	6
PM	-	-	1	0



	Appendix C.12	TITLE	Retail Distribution				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

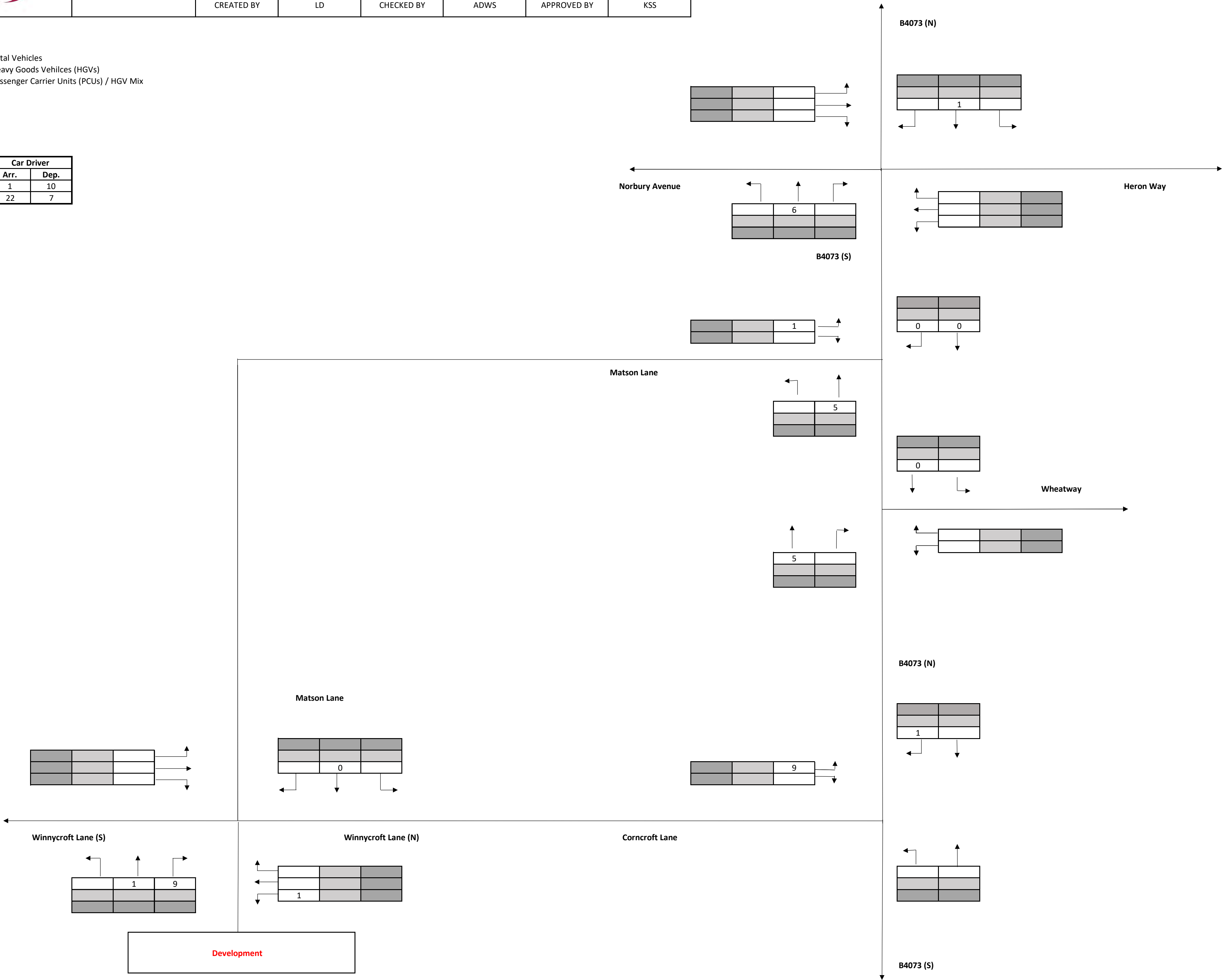
Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

*Nearest retail centre = Gloucester Quays (5.6km)

<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Retail Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

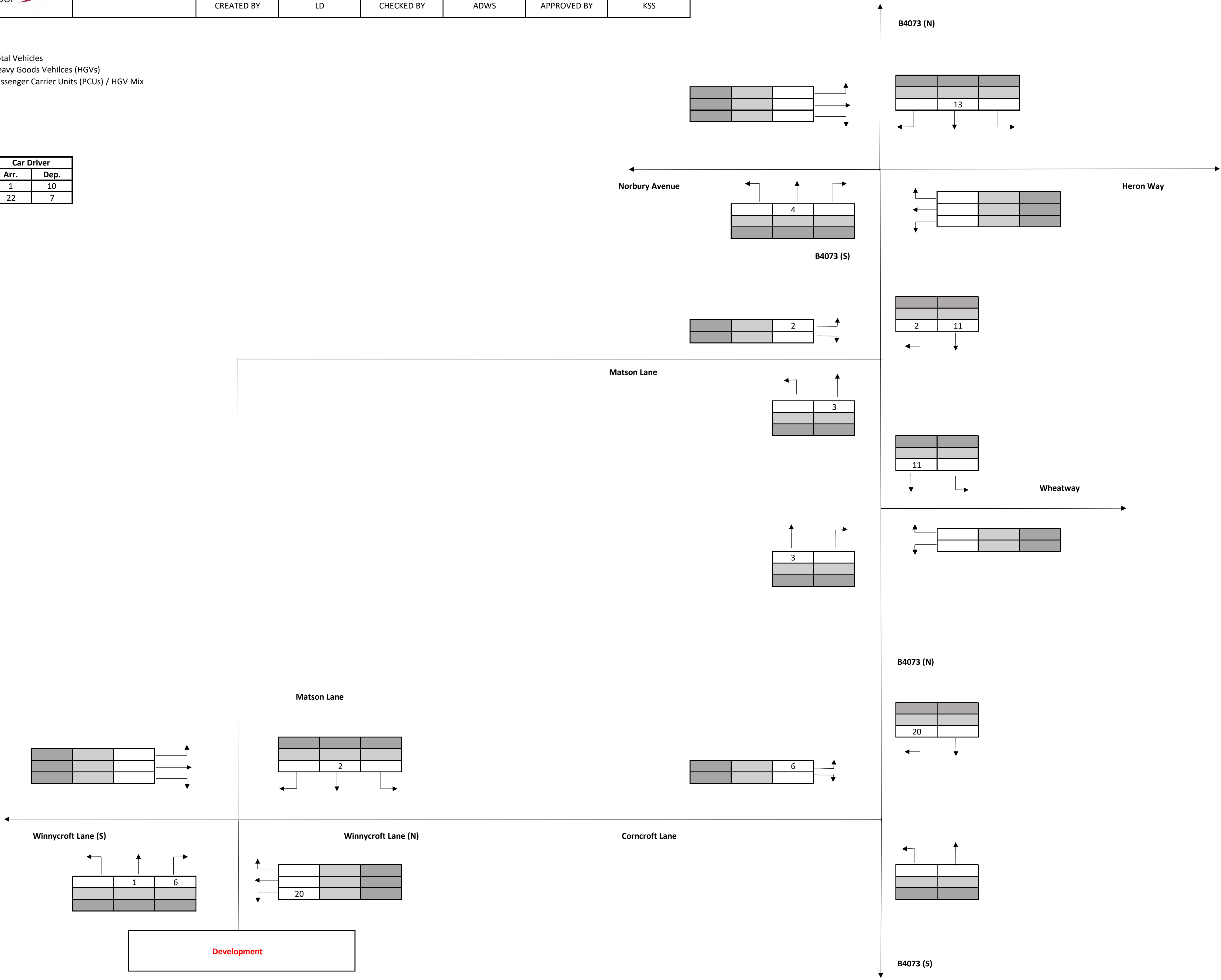
Trip Numbers	Car Driver	
	Arr.	Dep.
AM	1	10
PM	22	7



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Retail Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

Trip Numbers	Car Driver	
	Arr.	Dep.
AM	1	10
PM	22	7



PEGASUS GROUP	Appendix C.12	TITLE	Personal Business Distribution				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicules (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

Personal business in NTS = visits to services, e.g. hairdressers, laundrettes, dry-cleaners, betting shops, solicitors, banks, estate agents, libraries, churches; or for medical consultations etc.

Matson Avenue Local Centre includes a Post Office, convenience shops, Pharmacy and Hair Salon

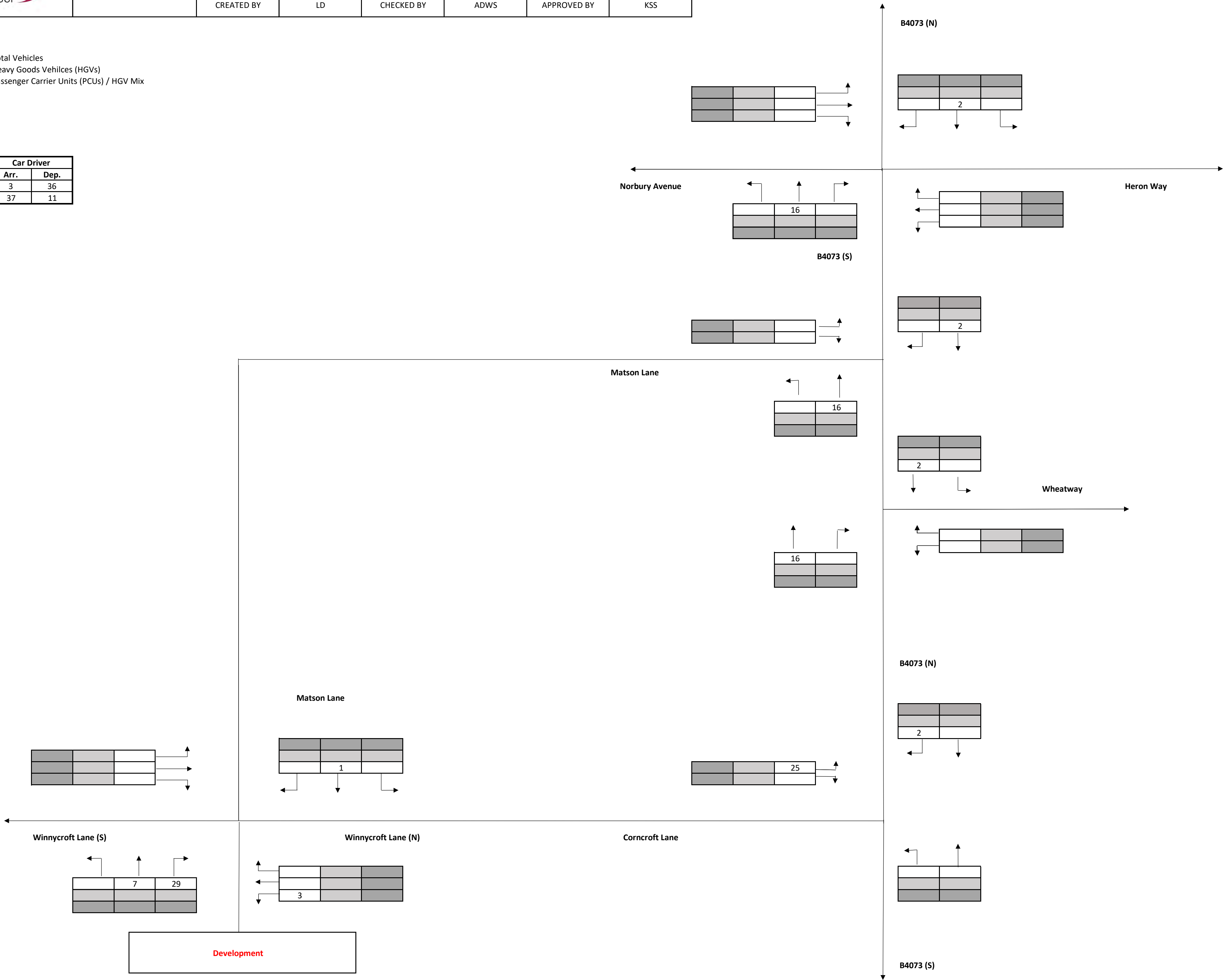
Takeaways, Vets, Pharmacy, Sports and Community Centre located on Heron Way, accessed via Wheatway



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Personal Business Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

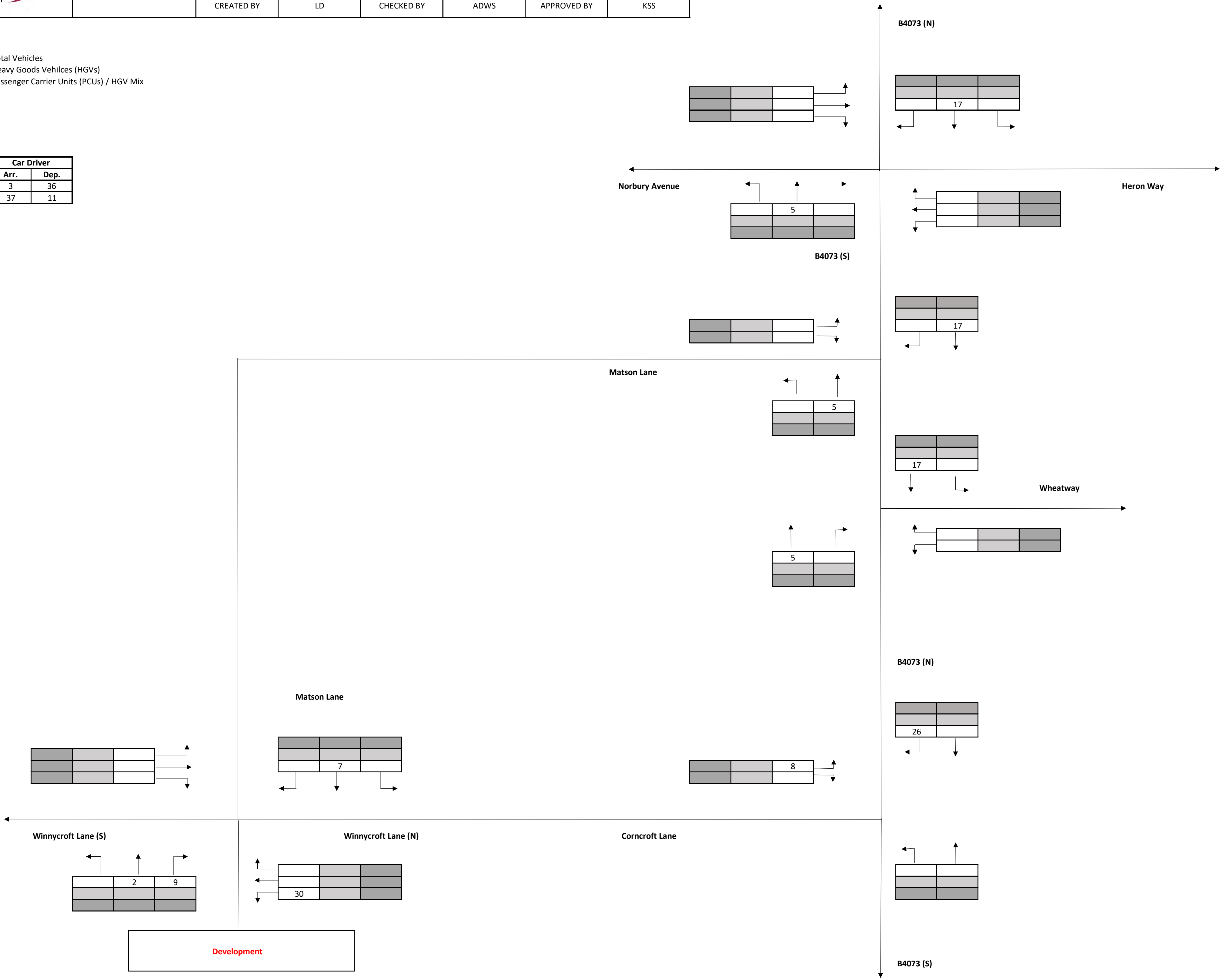
Trip Numbers	Car Driver	
	Arr.	Dep.
AM	3	36
PM	37	11



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Personal Business Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

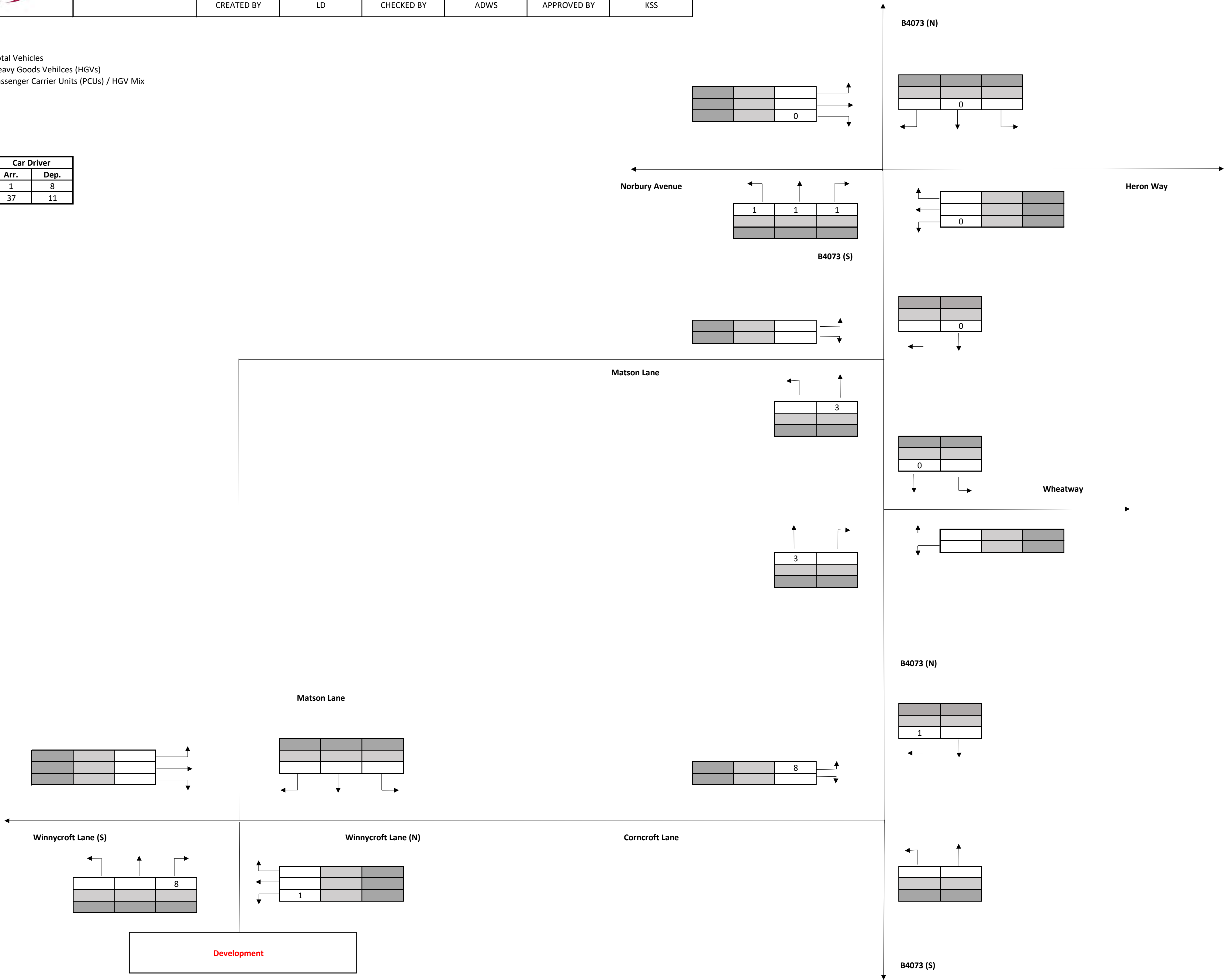
Trip Numbers	Car Driver	
	Arr.	Dep.
AM	3	36
PM	37	11



PEGASUS GROUP	Appendix C.12	TITLE	Visiting Trips - AM Peak					
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS	

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

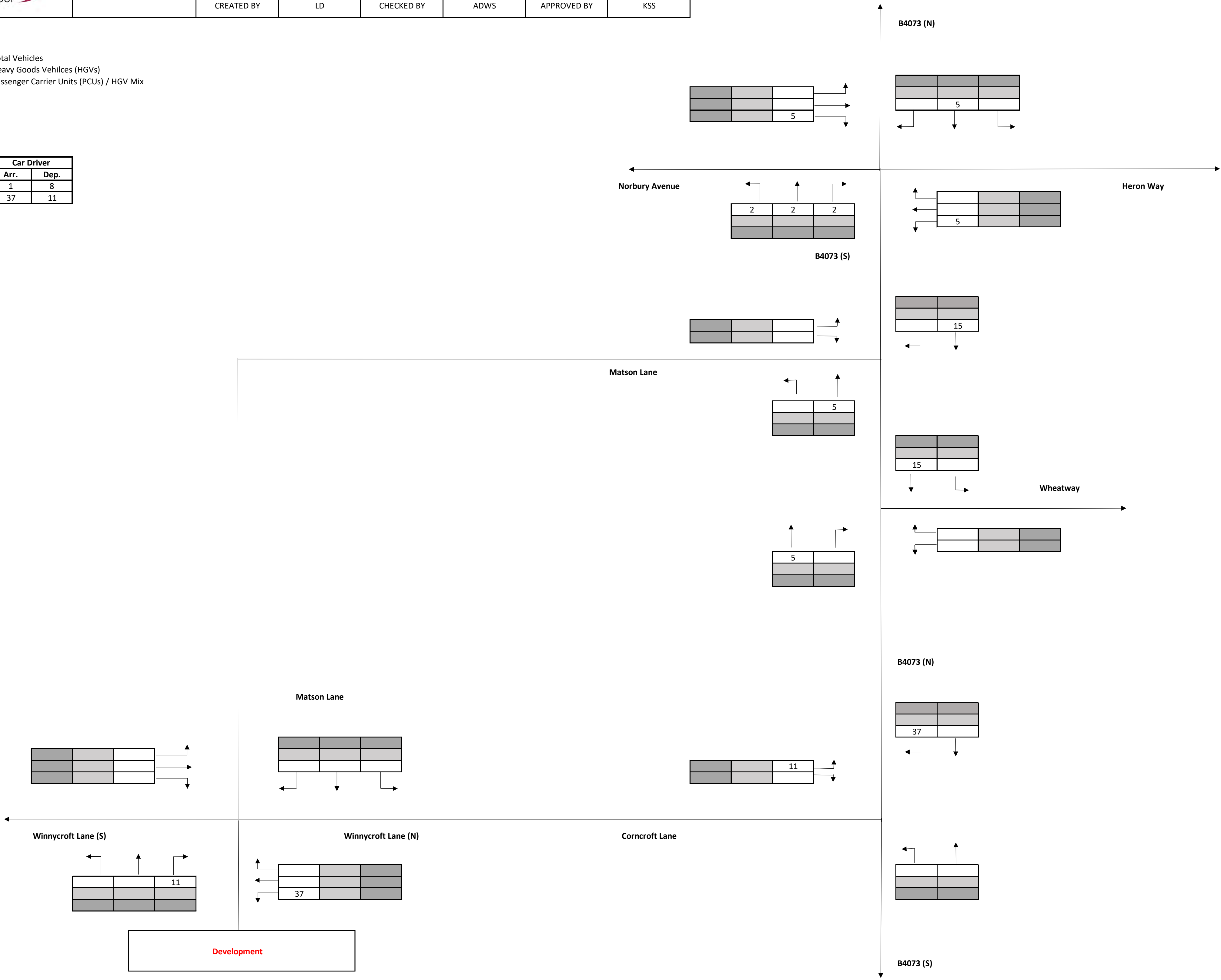
Trip Numbers	Car Driver	
	Arr.	Dep.
AM	1	8
PM	37	11



PEGASUS GROUP	Appendix C.12	TITLE	Visiting Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

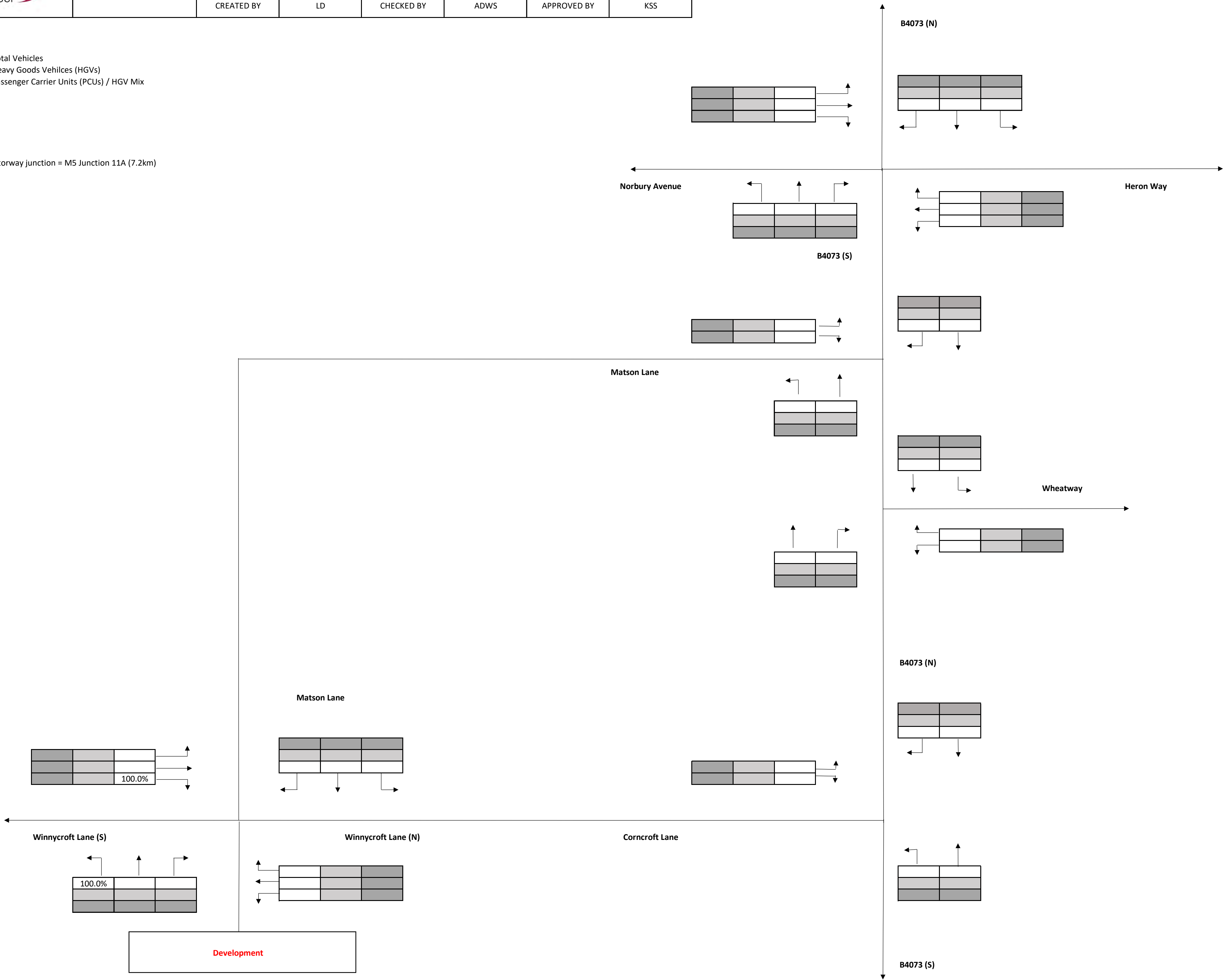
Trip Numbers	Car Driver	
	Arr.	Dep.
AM	1	8
PM	37	11



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Other Distribution				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

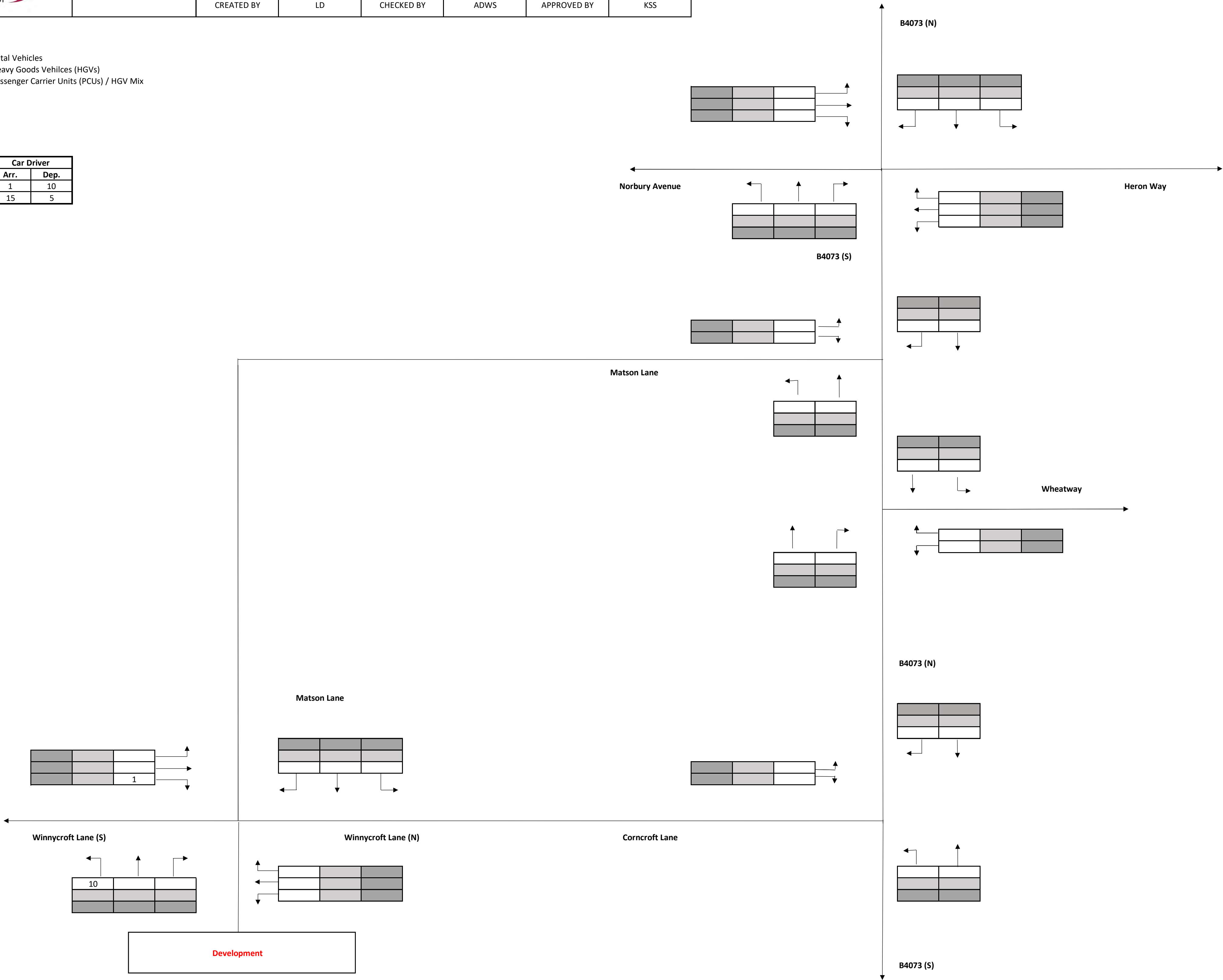
*Nearest motorway junction = M5 Junction 11A (7.2km)



PEGASUS GROUP	Appendix C.12	TITLE	Other Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

Trip Numbers	Car Driver	
	Arr.	Dep.
AM	1	10
PM	15	5



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Other Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

Trip Numbers	Car Driver	
	Arr.	Dep.
AM	1	10
PM	15	5



PEGASUS GROUP	Appendix C.12	TITLE	Development Total Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	Development Total Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	2027 Future Year - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	2027 Future Year - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

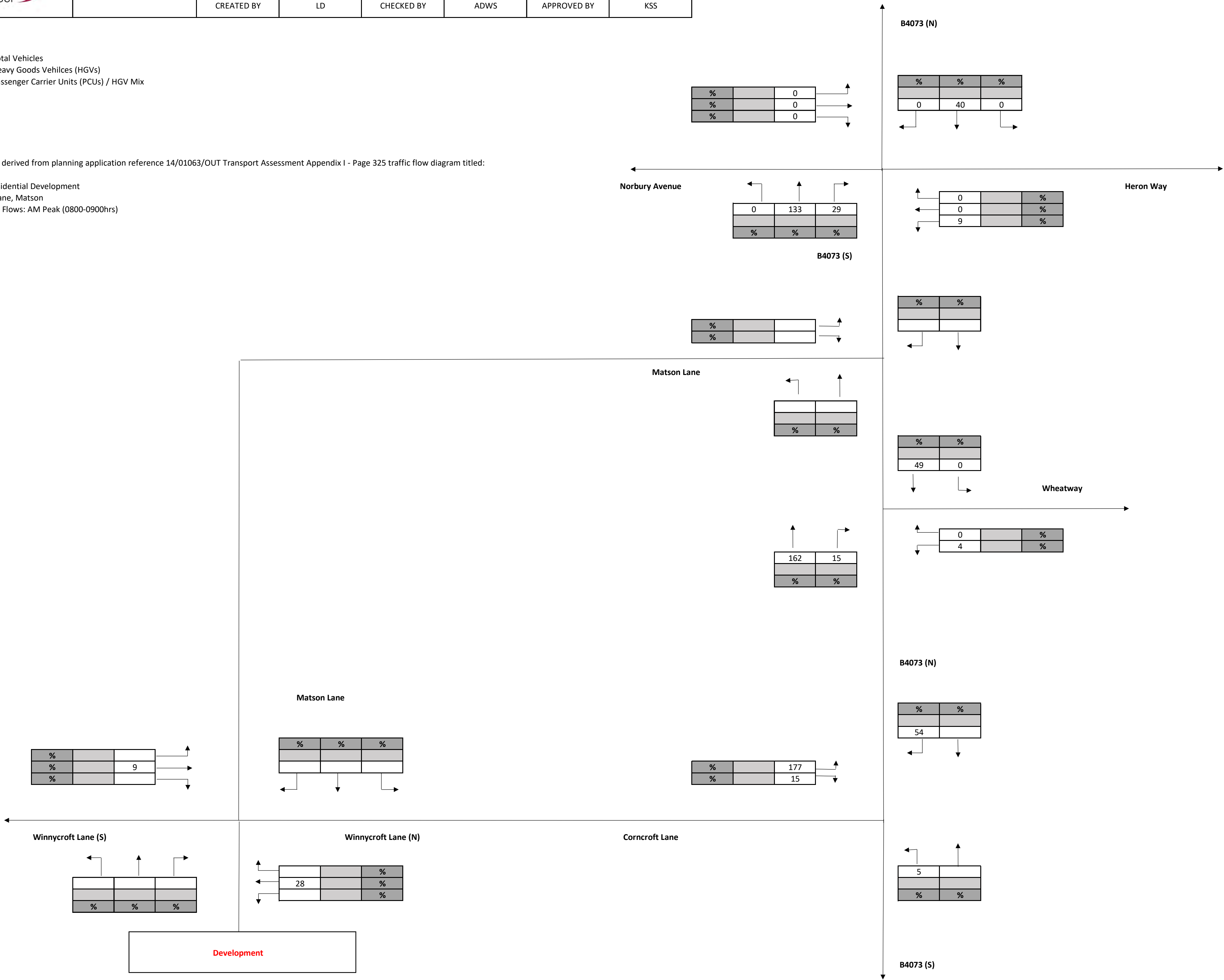


PEGASUS GROUP	Appendix C.12	TITLE	Committed Development Trips - Barratt Homes Site - AM Peak					
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS	

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

Trip numbers derived from planning application reference 14/01063/OUT Transport Assessment Appendix I - Page 325 traffic flow diagram titled:

Proposed Residential Development
Winnycroft Lane, Matson
Development Flows: AM Peak (0800-0900hrs)



PEGASUS GROUP	Appendix C.12	TITLE	Committed Development Trips - Barratt Homes Site - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

Trip numbers derived from planning application reference 14/01063/OUT Transport Assessment Appendix I - Page 326 traffic flow diagram titled:

Proposed Residential Development
Winnycroft Lane, Matson
Development Flows: PM Peak (1700-1800hrs)

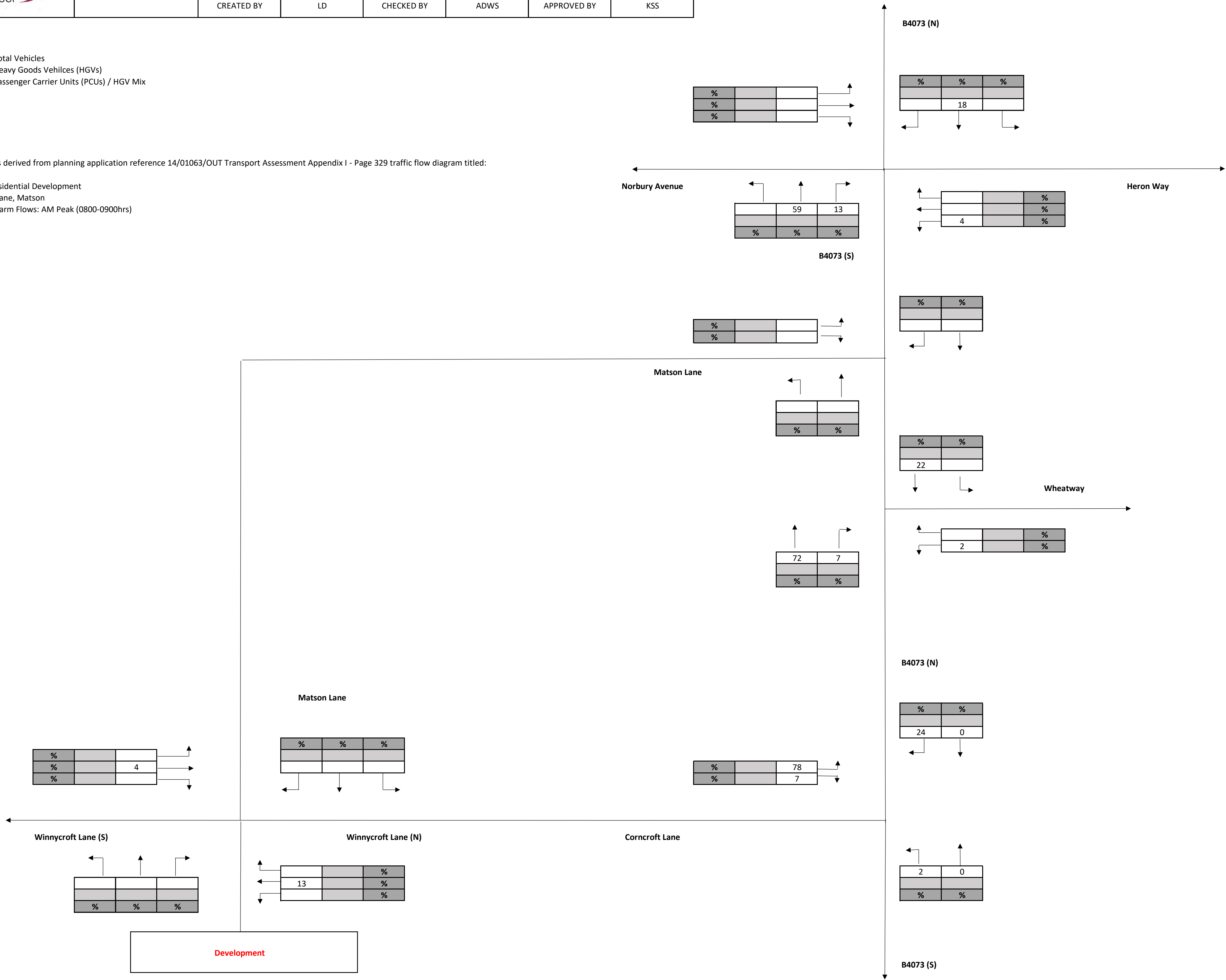


PEGASUS GROUP	Appendix C.12	TITLE	Committed Development Trips - Linden Homes Site - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

Trip numbers derived from planning application reference 14/01063/OUT Transport Assessment Appendix I - Page 329 traffic flow diagram titled:

Proposed Residential Development
Winnycroft Lane, Matson
Winnycroft Farm Flows: AM Peak (0800-0900hrs)

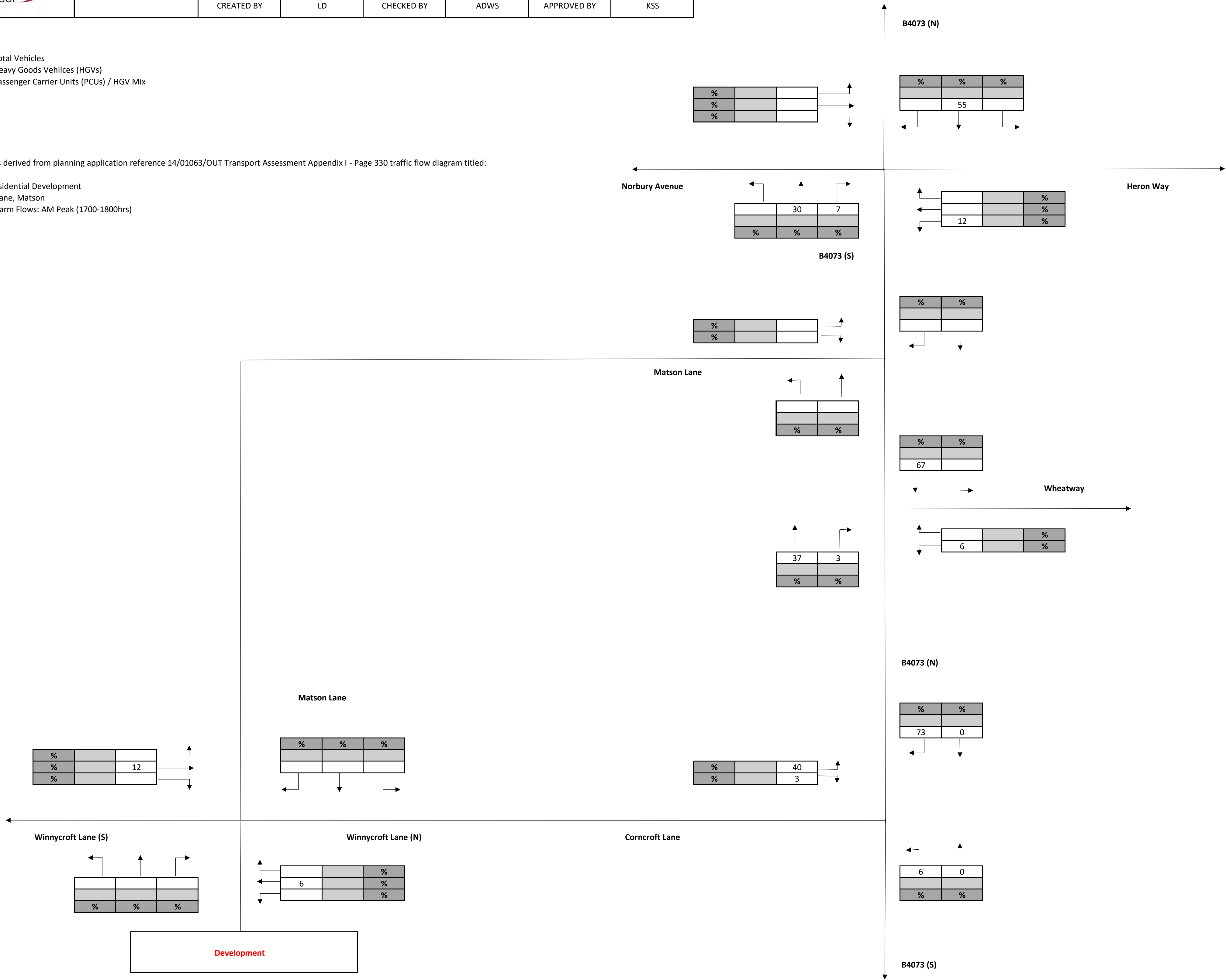


PEGASUS GROUP	Appendix C.12	TITLE	Committed Development Trips - Linden Homes Site - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehilces (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

Trip numbers derived from planning application reference 14/01063/OUT Transport Assessment Appendix I - Page 330 traffic flow diagram titled:

Proposed Residential Development
Winnycroft Lane, Matson
Winnycroft Farm Flows: AM Peak (1700-1800hrs)



PEGASUS GROUP	Appendix C.12	TITLE	Total Committed Development Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix



PEGASUS GROUP	Appendix C.12	TITLE	Total Committed Development Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix



PEGASUS GROUP	Appendix C.12	TITLE	2027 + Committed Developmet Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehilces (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	2027 + Committed Development + Proposed Development Trips - AM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehilces (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix



<div>PEGASUS GROUP</div>	Appendix C.12	TITLE	2027 + Committed Development + Proposed Development Trips - PM Peak				
		CREATED BY	LD	CHECKED BY	ADWS	APPROVED BY	KSS

Key	
0	Total Vehicles
0	Heavy Goods Vehicles (HGVs)
0.0%	Passenger Carrier Units (PCUs) / HGV Mix

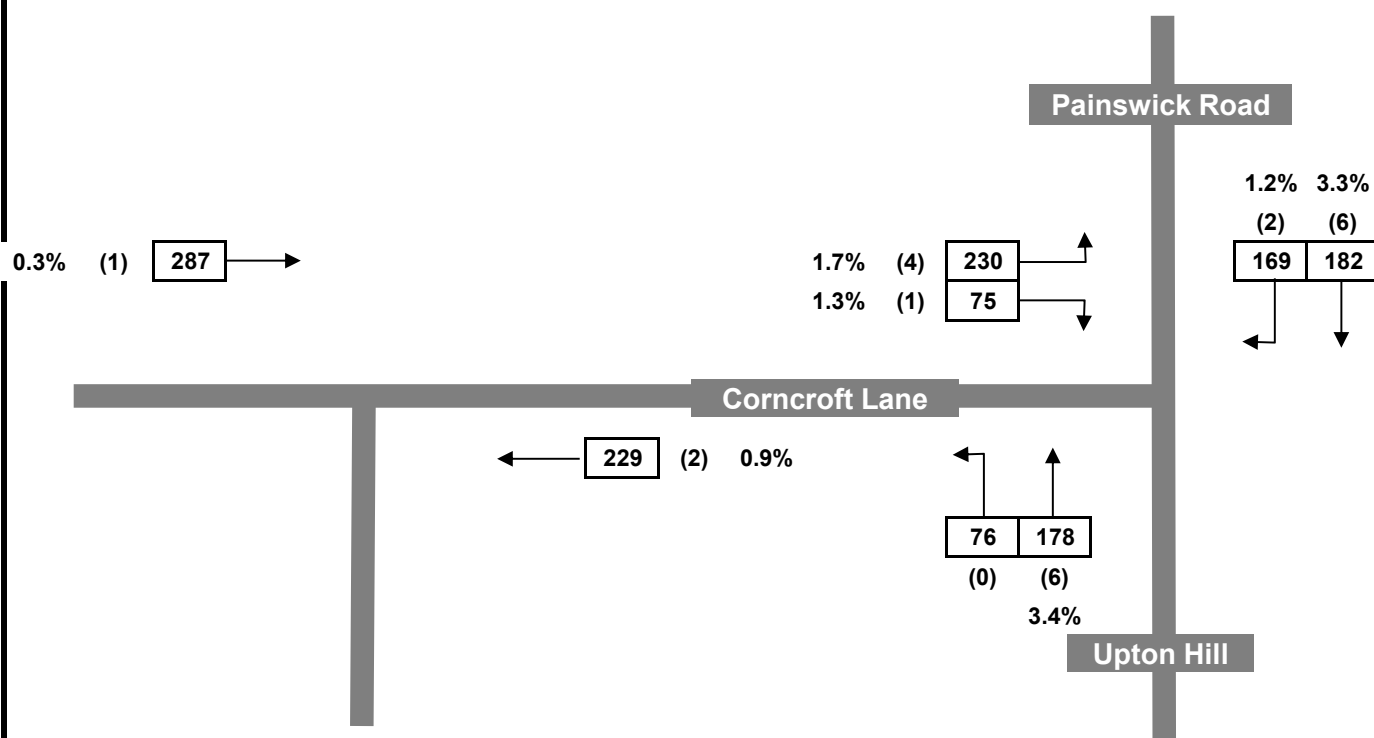
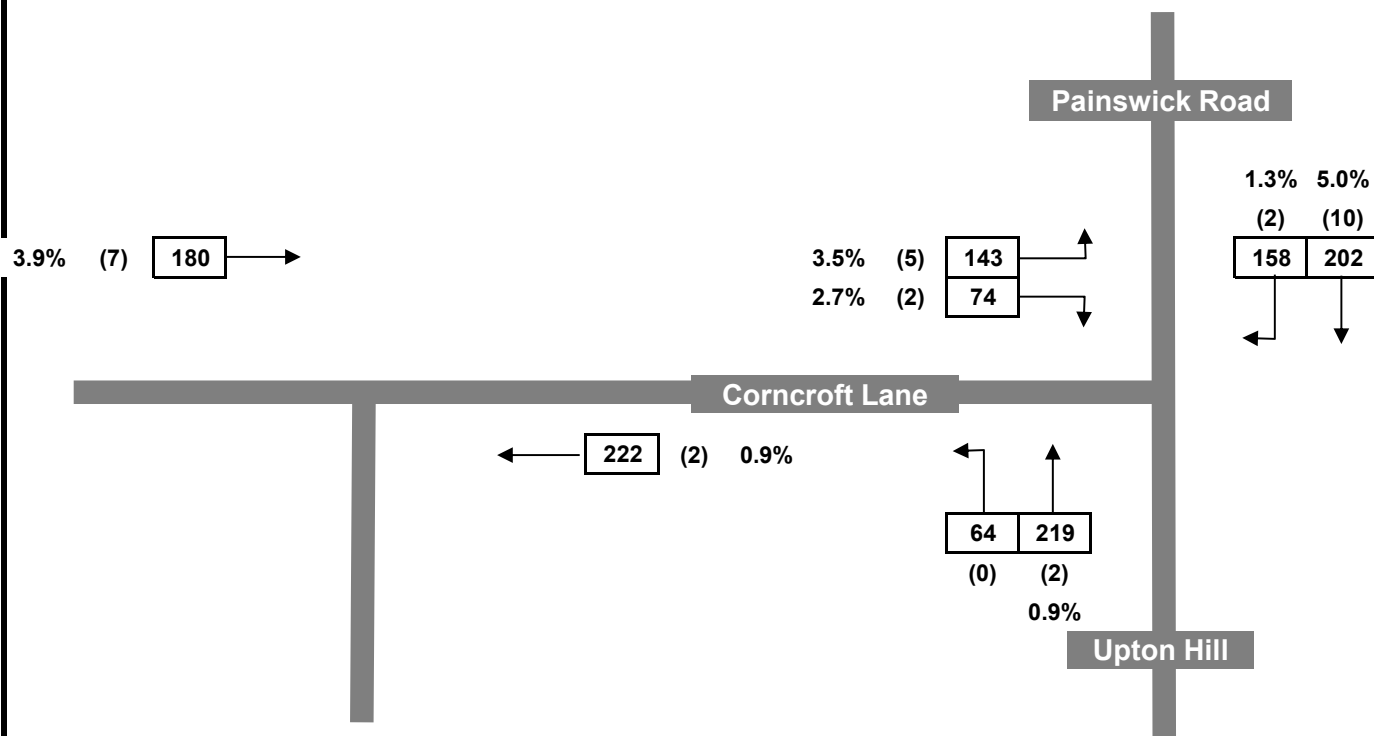




Appendix C.13

APPENDIX C

Traffic Flow Diagrams



Key:

- 5 Total Vehicles
- (7) HGVs
- 1.5% Percentage of HGVs



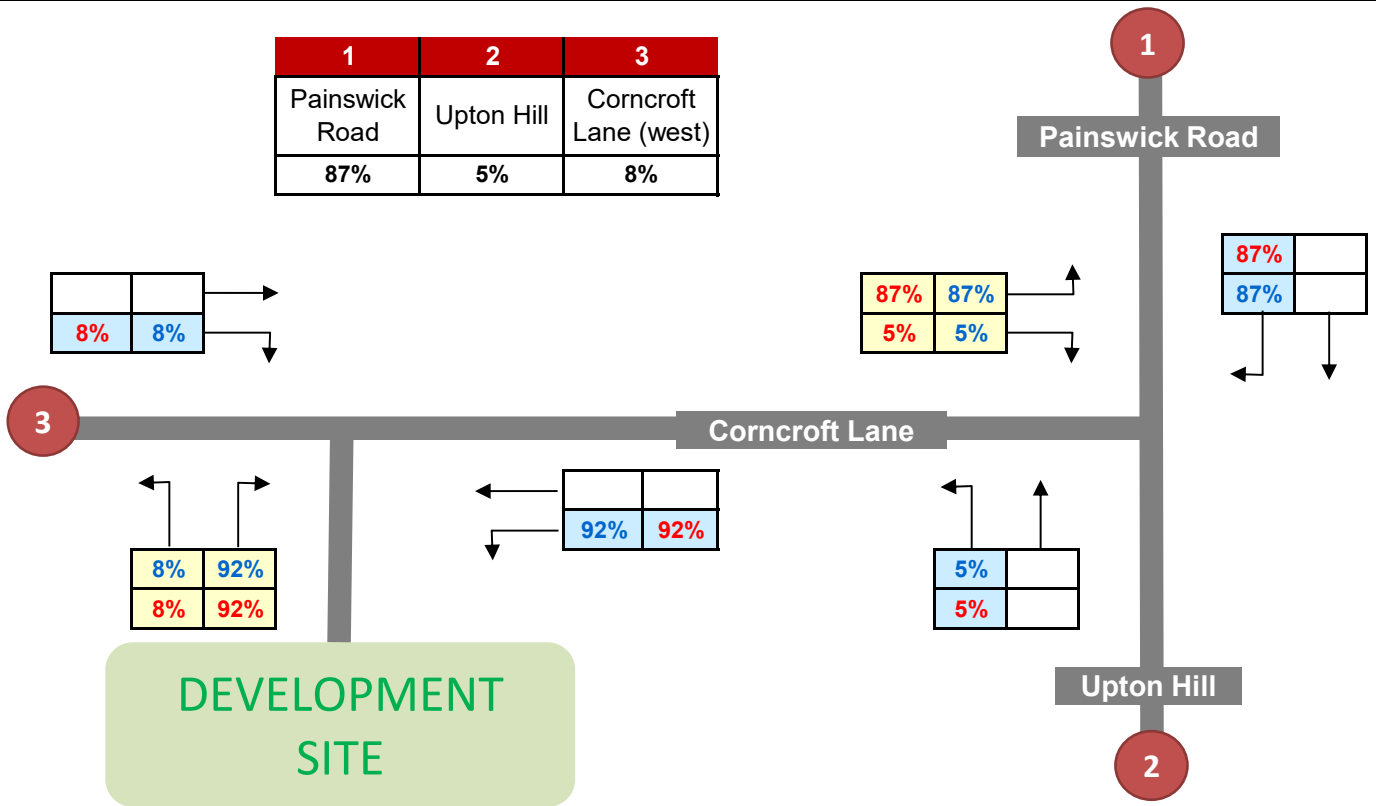
Title:

2013 SURVEYED TRAFFIC FLOWS

Figure No:

Appendix C-1

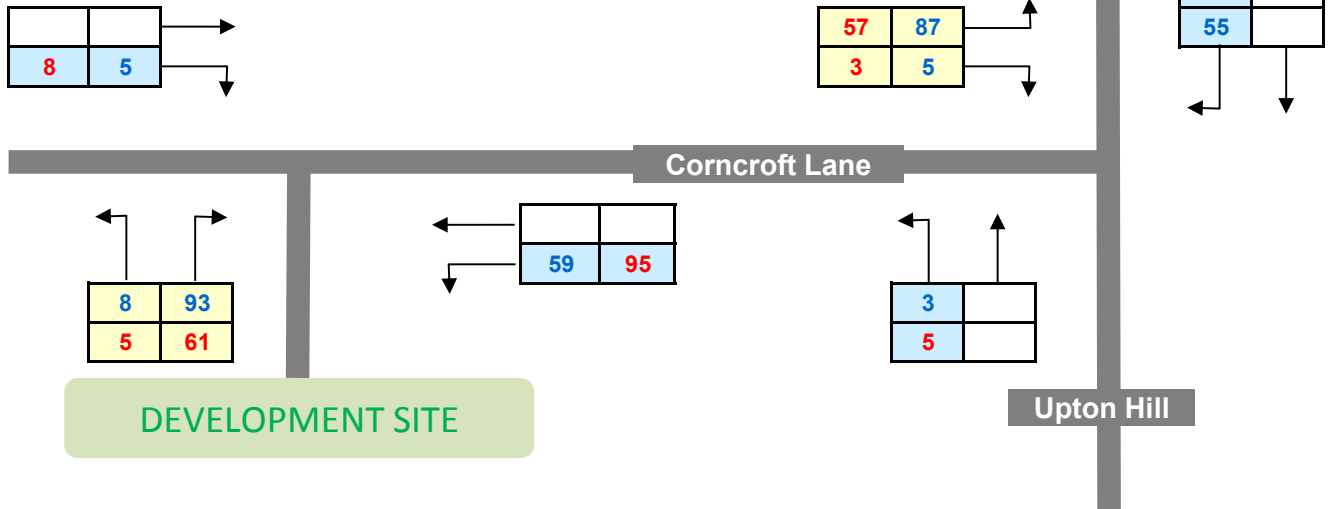
1	2	3
Painswick Road	Upton Hill	Corncroft Lane (west)
87%	5%	8%



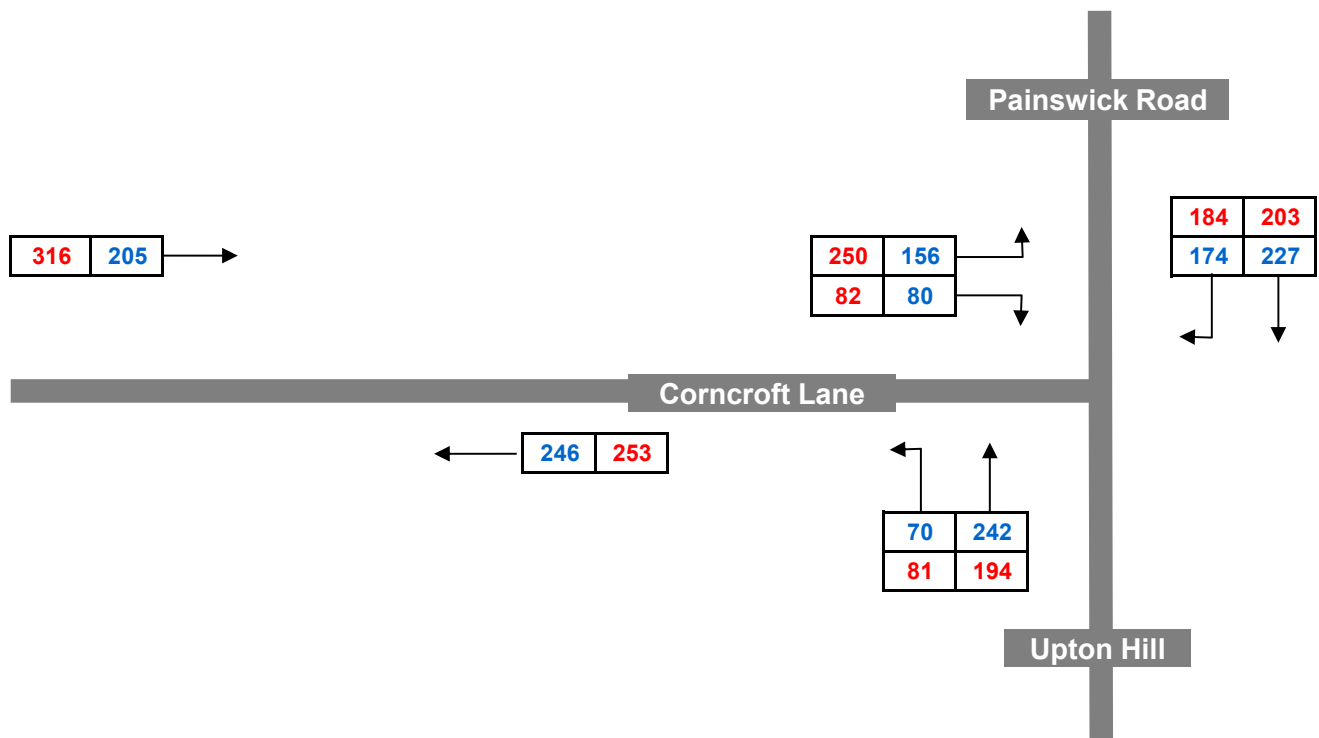
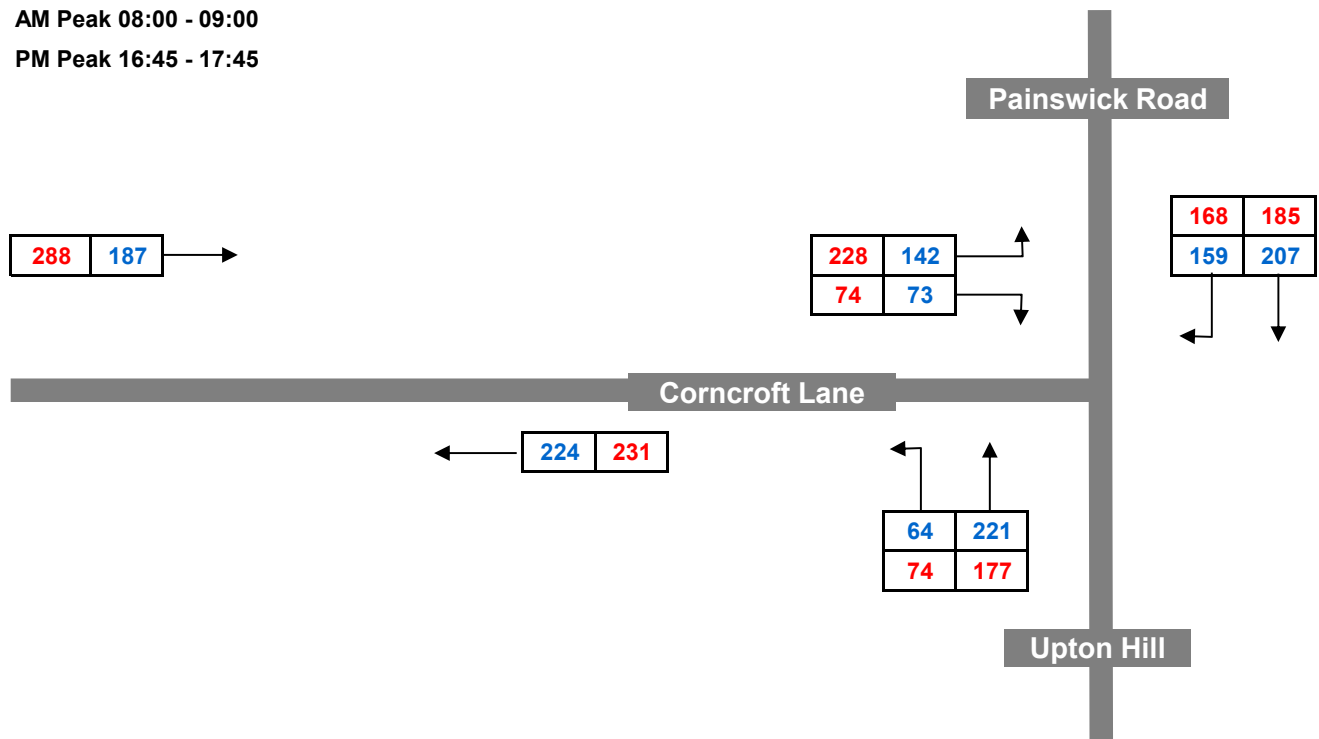
Key:

5	PCUs AM Peak
7	PCUs PM Peak

	AM	PM
Arr	64	103
Dep	101	66



AM Peak 08:00 - 09:00
PM Peak 16:45 - 17:45



Key:

5	PCUs AM Peak
7	PCUs PM Peak
1.096	Growth Factor 2013 > 2018 AM Peak
1.097	Growth Factor 2013 > 2018 PM Peak



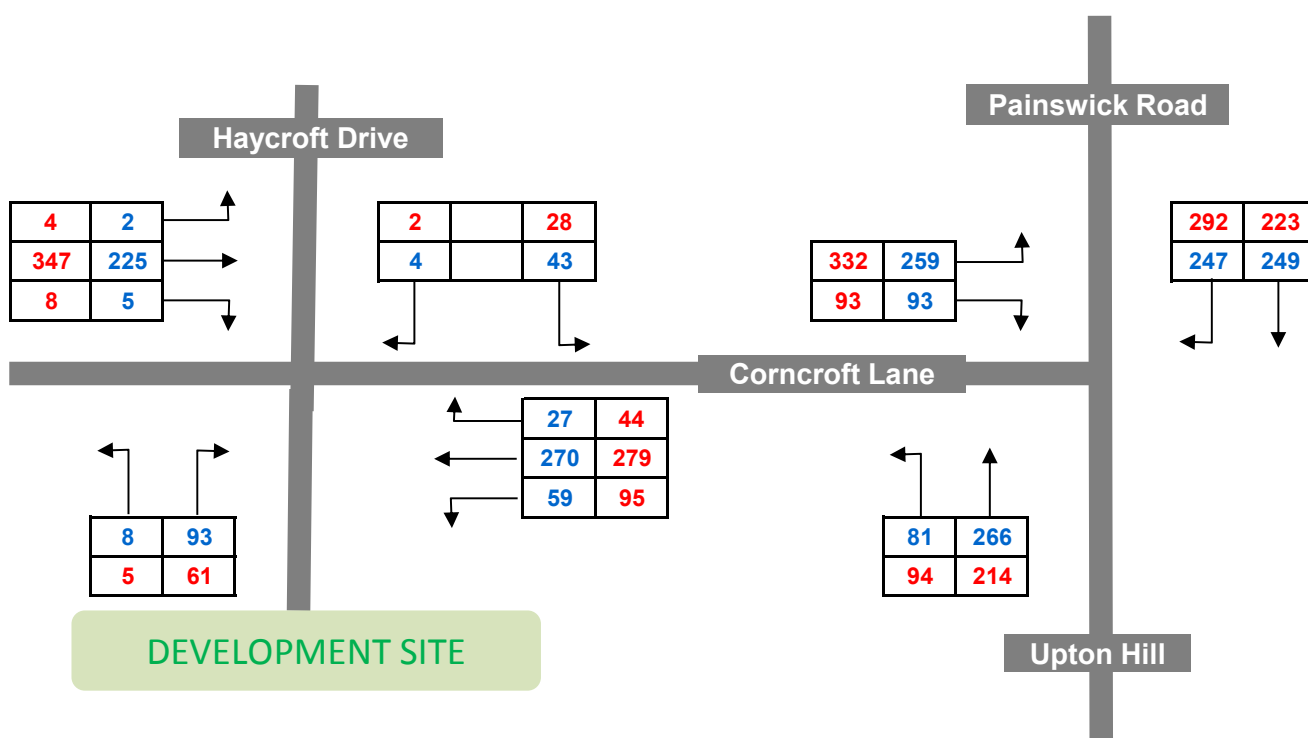
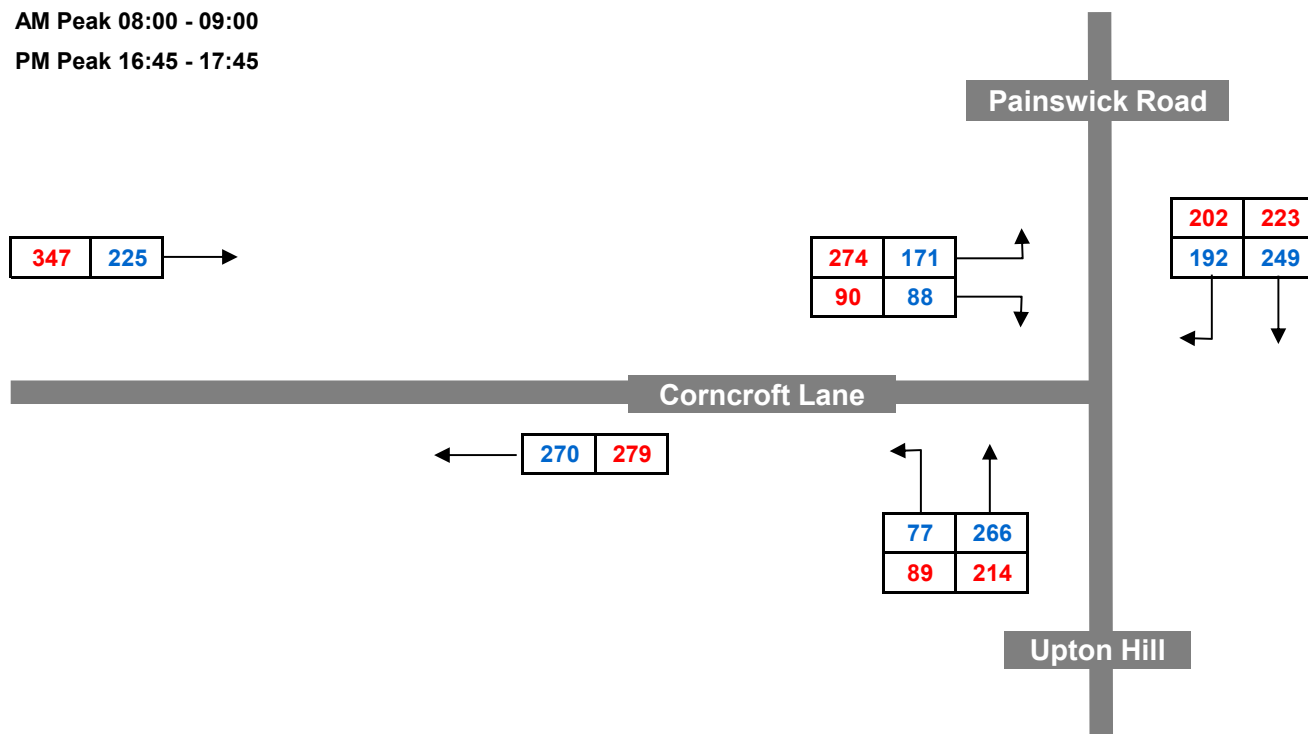
Title:

2018 TRAFFIC FLOWS

Figure No:

Appendix C-3

AM Peak 08:00 - 09:00
PM Peak 16:45 - 17:45



Key:

5	PCUs AM Peak
7	PCUs PM Peak
1.206	Growth Factor 2013 > 2023 AM Peak
1.206	Growth Factor 2013 > 2023 PM Peak

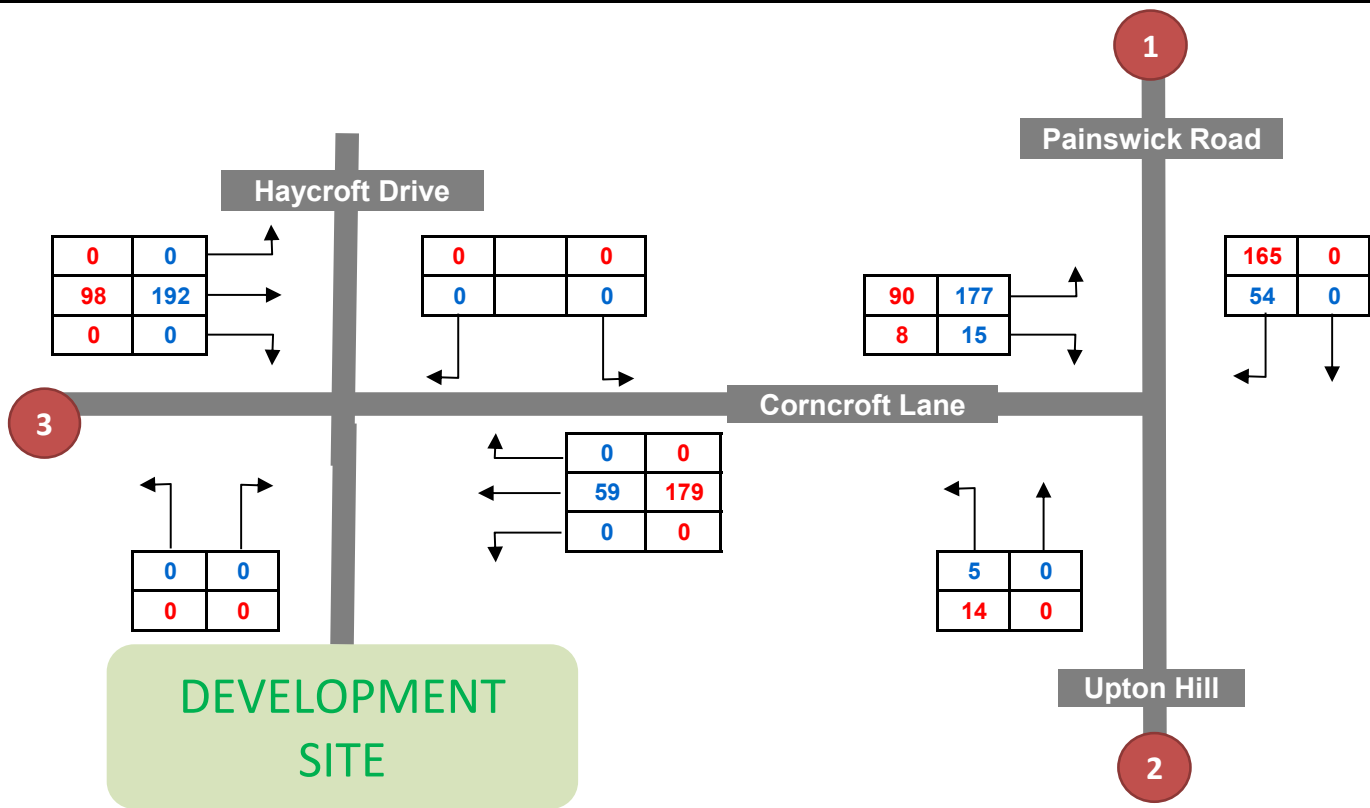


Title:

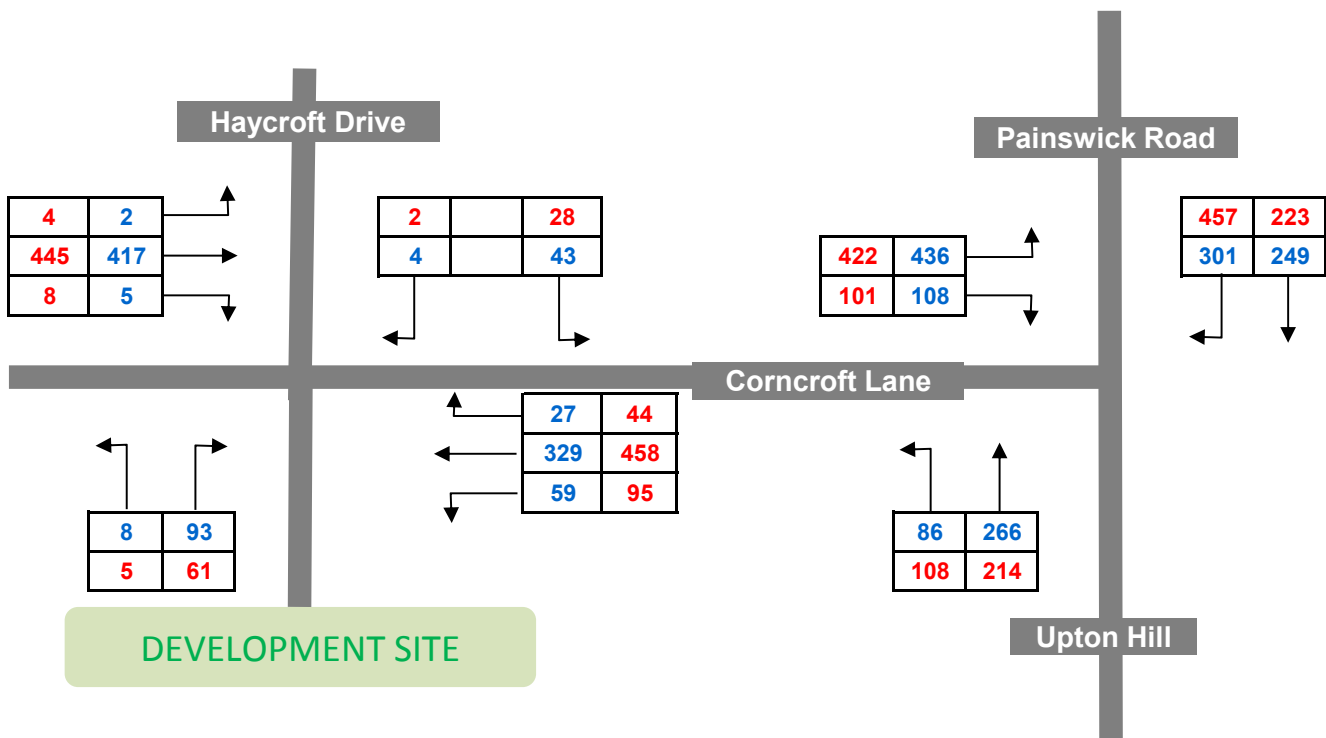
**2023 FUTURE YEAR
TRAFFIC FORECAST**

Figure No:

Appendix C-4

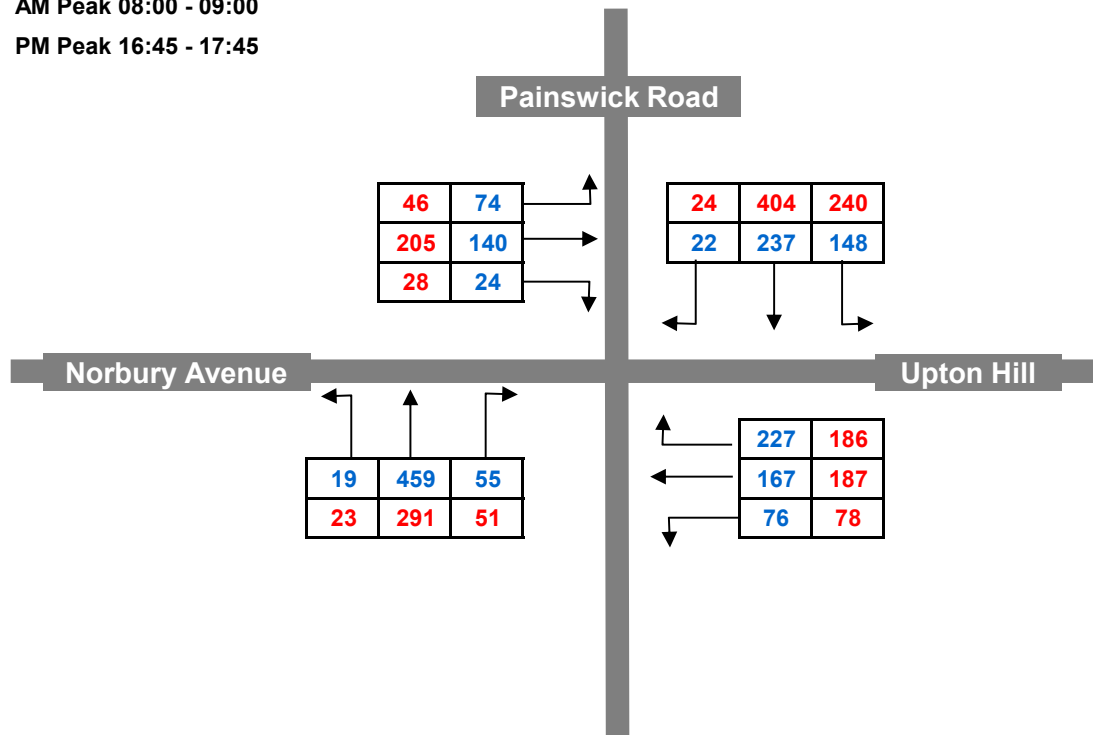


BARWOOD SITE DEVELOPMENT TRIPS ASSIGNMENT

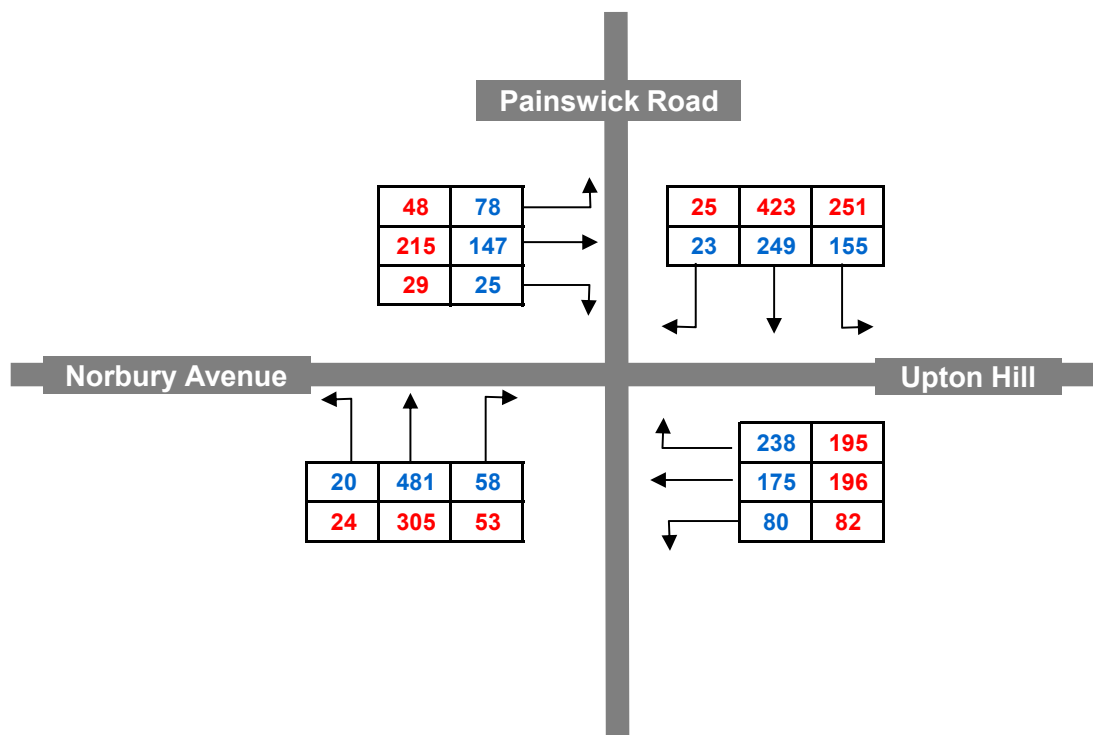


2023 WITH PROPOSED AND BARWOOD SITE DEVELOPMENT TRAFFIC FLOWS

AM Peak 08:00 - 09:00
PM Peak 16:45 - 17:45



2014 BASE (From Barwood TA Addendum)



2018 BASE (From Barwood TA Addendum)

Key:

5	PCUs AM Peak
7	PCUs PM Peak
1.049	Growth Factor 2014 > 2018 AM Peak
1.047	Growth Factor 2014 > 2018 PM Peak



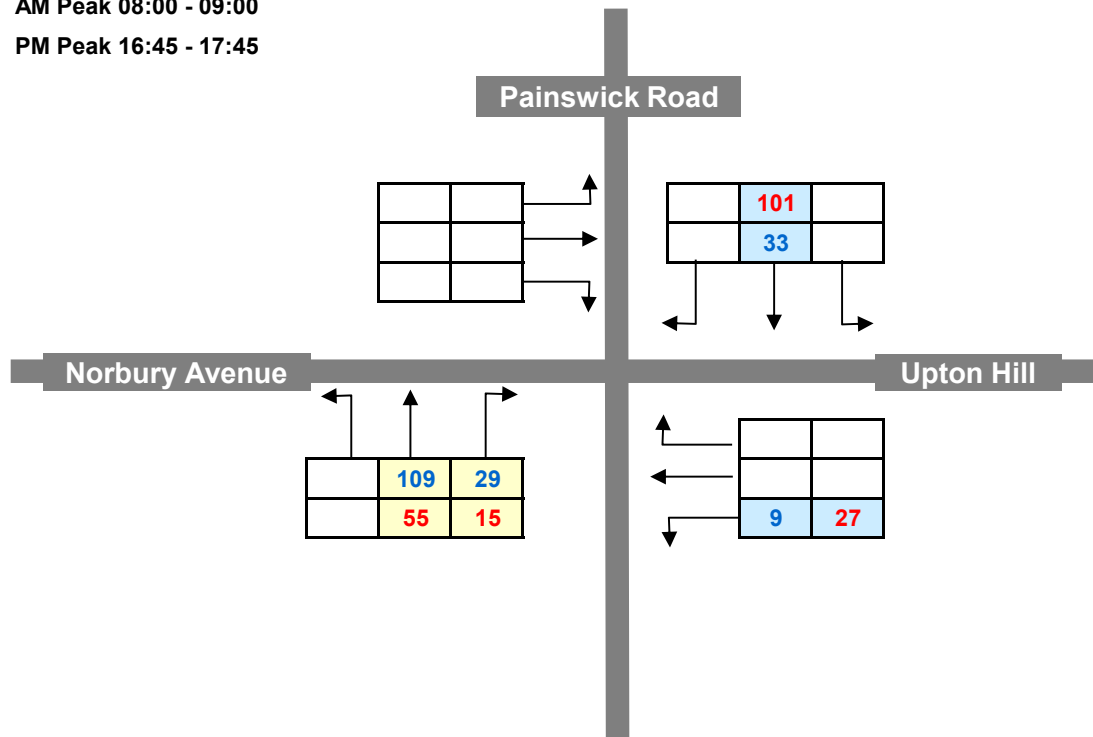
Title:

Painswick Road / Heron Way / Norbury Avenue

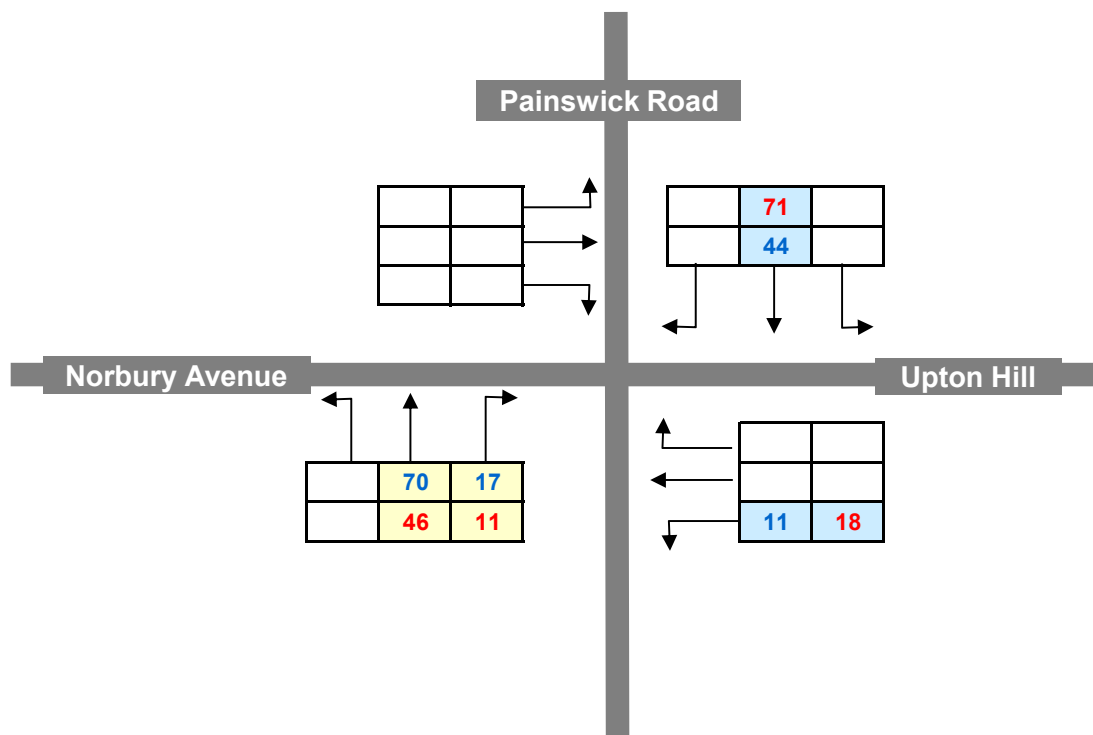
Figure No:

Appendix C-6

AM Peak 08:00 - 09:00
PM Peak 16:45 - 17:45



BARWOOD TRIP ASSIGNMENT



WINNEYCROFT FARM TRIP ASSIGNMENT

Key:

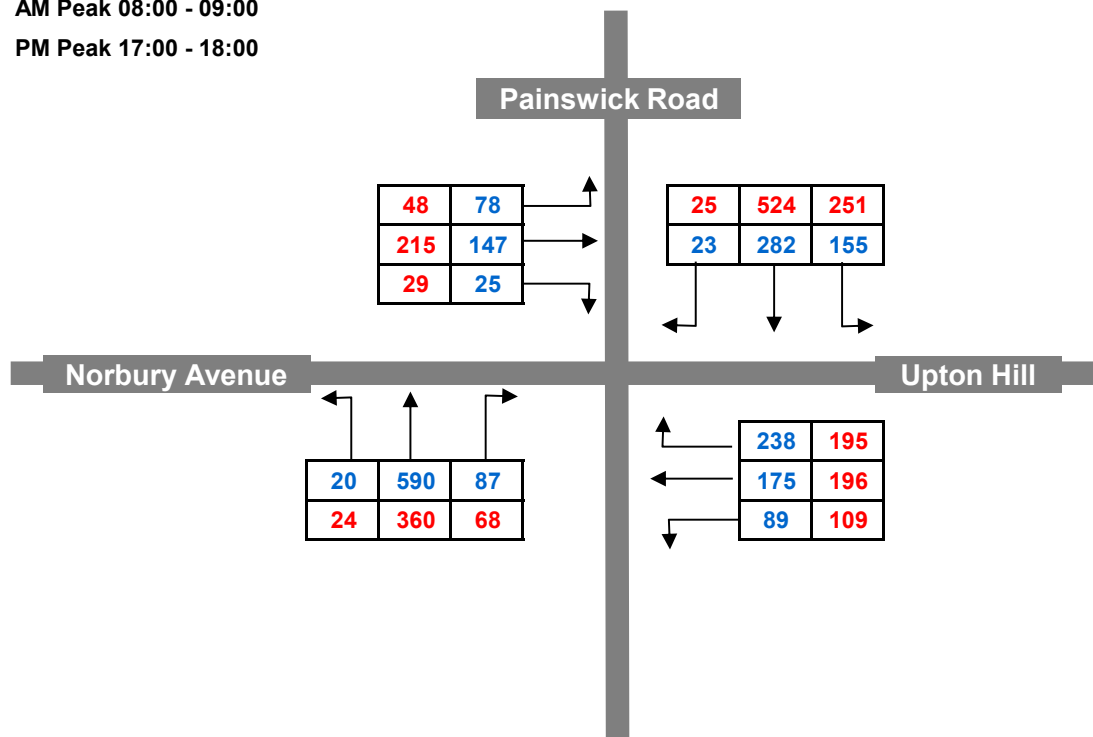
5	PCUs AM Peak
7	PCUs PM Peak



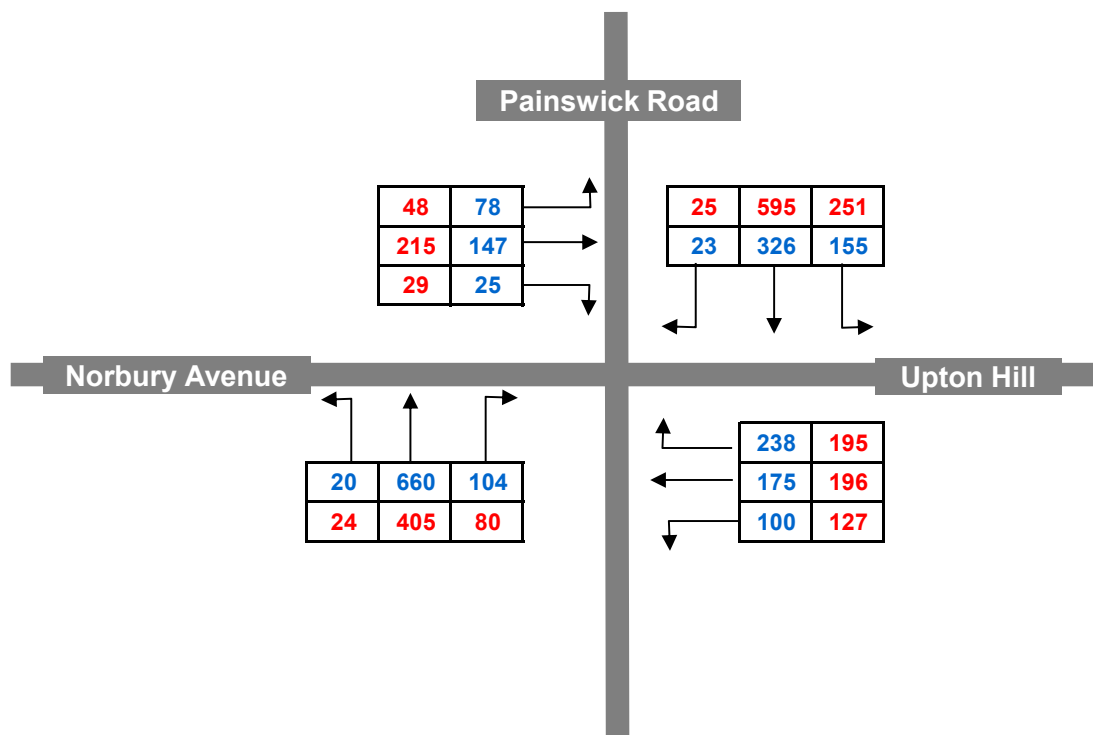
Title:
**Painswick Road / Heron
Way / Norbury Avenue
Development Trips**

Figure No:
Appendix C-7

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



2018 BASE TRAFFIC WITH BARWOOD FLOWS



2018 BASE WITH BARWOOD AND PROPOSED DEVELOPMENT FLOWS

Key:

5	PCUs AM Peak
7	PCUs PM Peak



Title:

Painswick Road / Heron Way / Norbury Avenue

Figure No:

Appendix C-8



**PROPOSED RESIDENTIAL DEVELOPMENT,
LAND OFF WINNYCROFT LANE, MATSON
GLOUCESTER**

TRANSPORT ASSESSMENT

NOVEMBER 2014

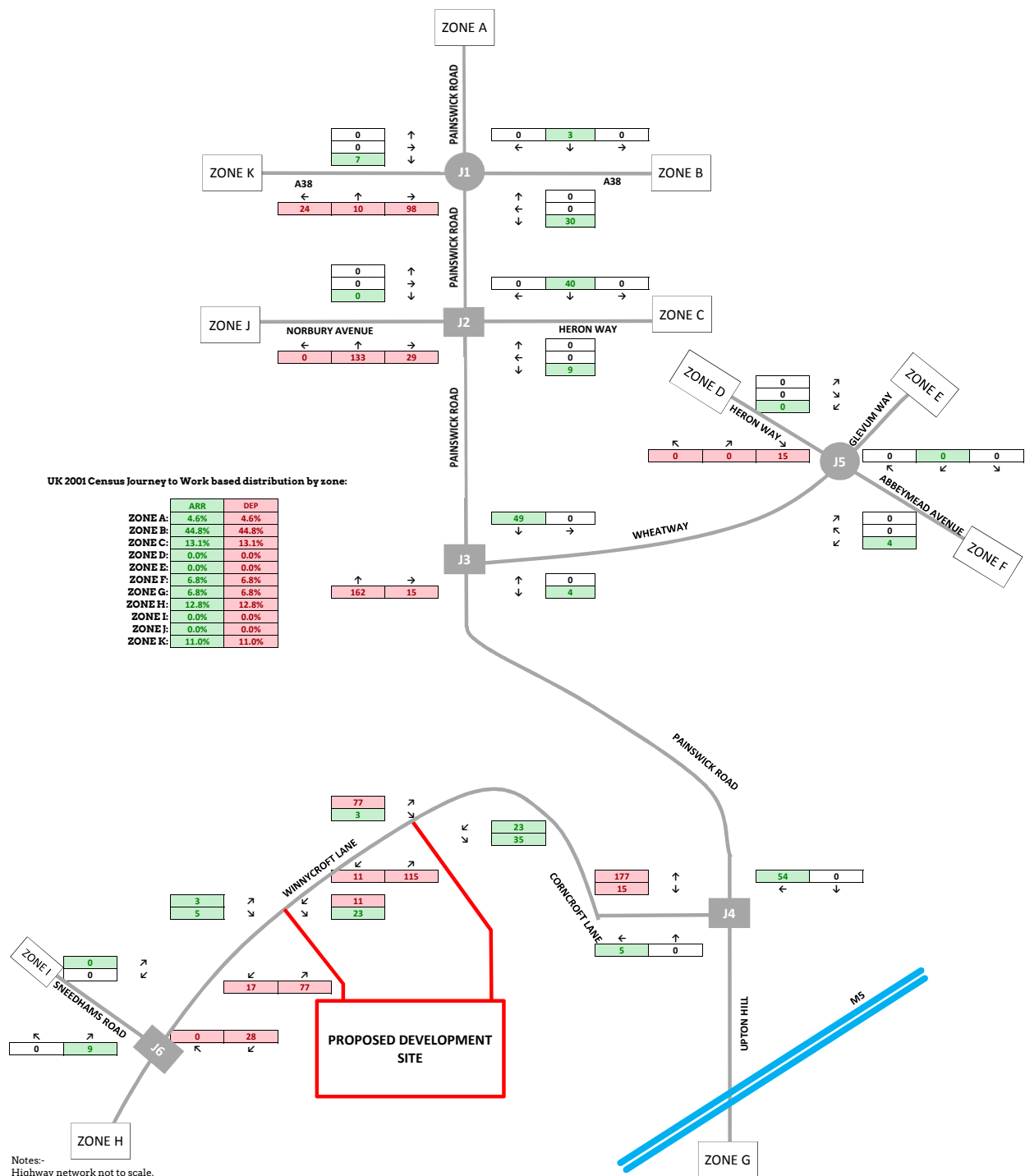
REPORT REF: 21099/08-14/3631 REV A





**PROPOSED RESIDENTIAL DEVELOPMENT
WINNYCROFT LANE, MATSON**

Development Flows: AM Peak (0800-0900hrs)

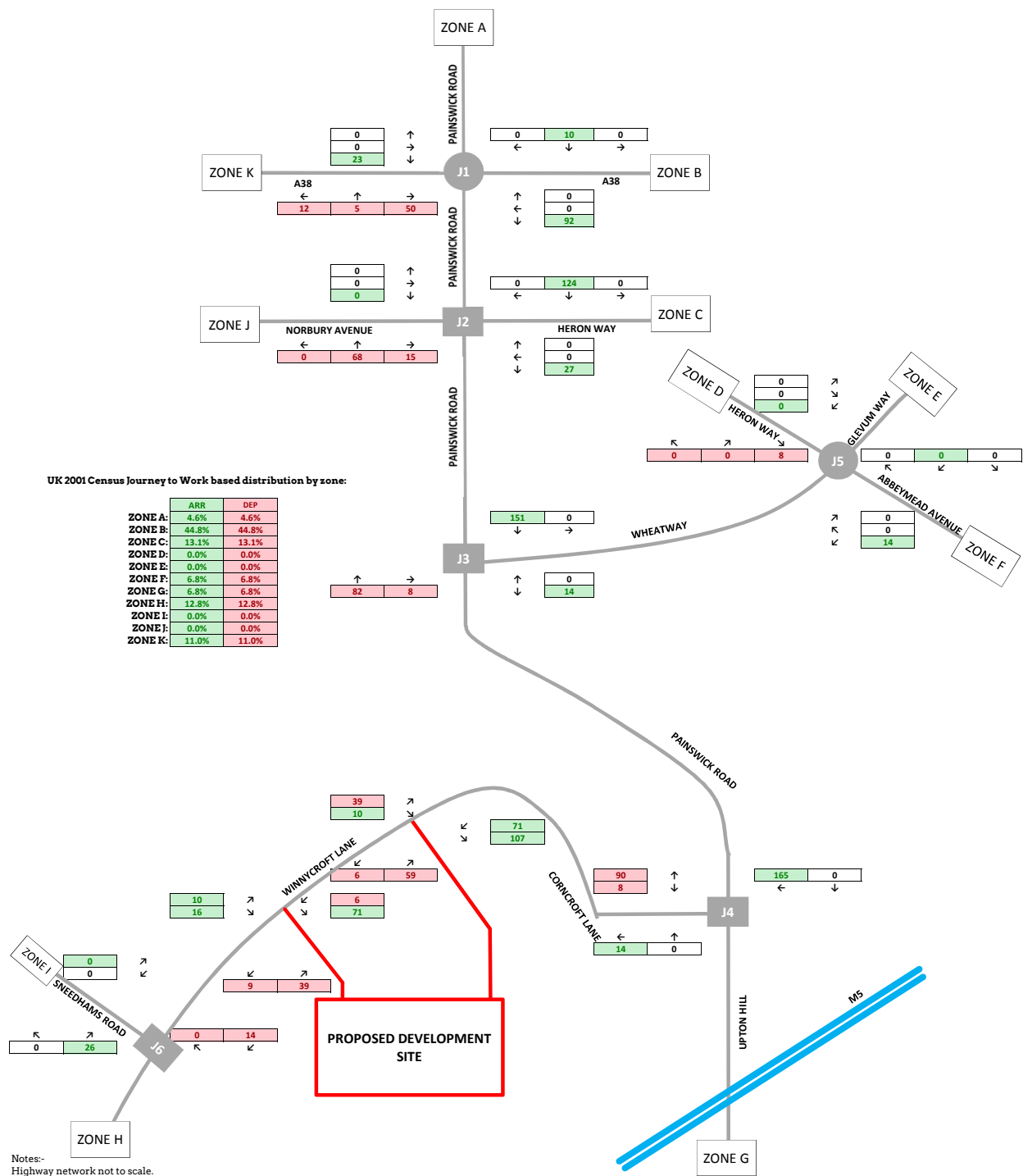


Notes:-
Highway network not to scale.
Only junctions included in the TA study area for assessment are illustrated on the network.
A generic 0800-0900 AM peak hour is indicated, however, to ensure a robust assessment of all junctions in the TA the observed actual peak hour flows at each junction are shown on this plan.
Fully classified turning count traffic surveys were undertaken by RDS Ltd on Thurs 5th June 2014.
The ahead flows at the site access junction are based on ATC data (week-day average) recorded in the same week as the turning count surveys.
All flows in passenger car units (PCUs)



**PROPOSED RESIDENTIAL DEVELOPMENT
WINNYCROFT LANE, MATSON**

Development Flows: PM Peak (1700-1800hrs)

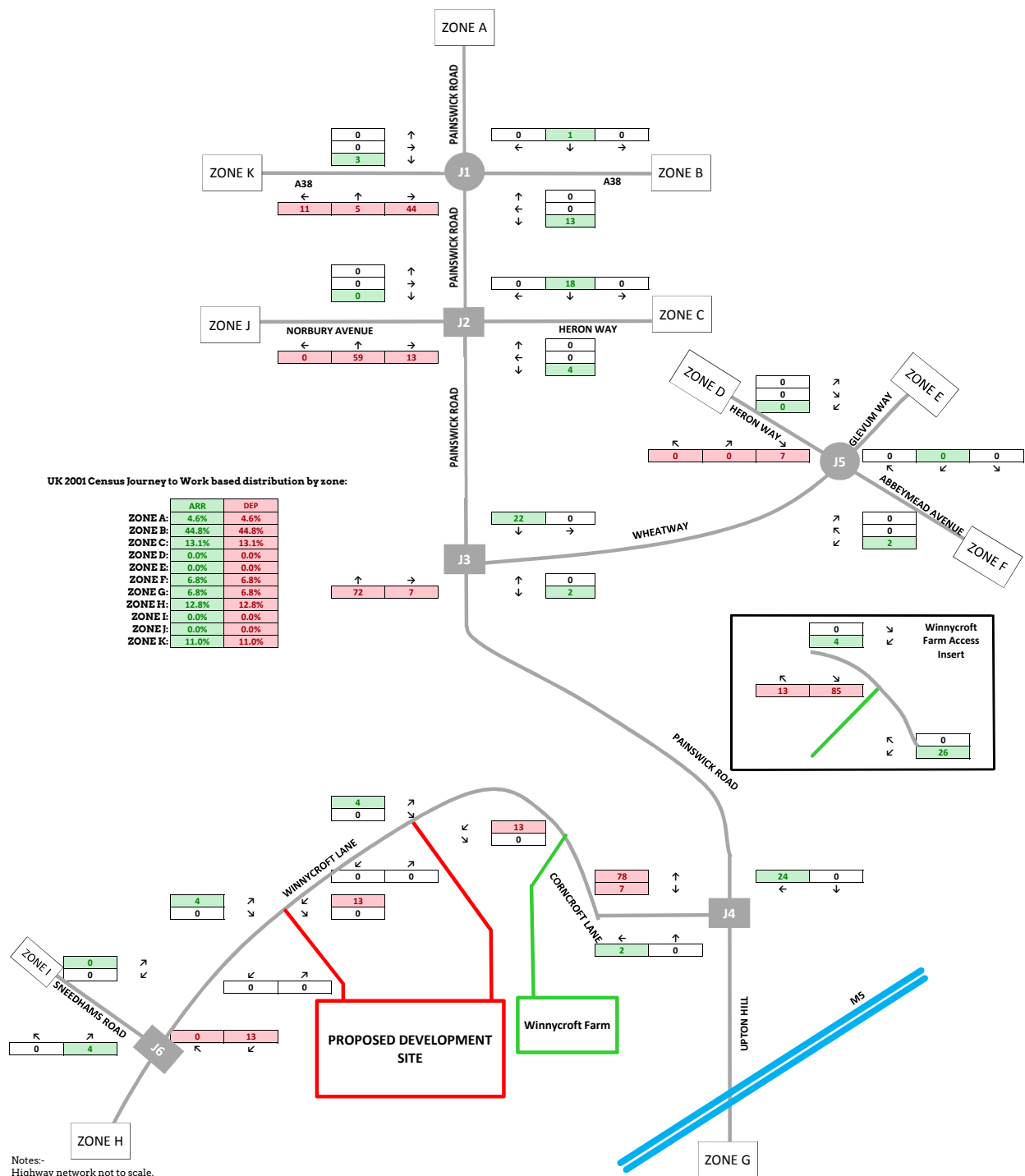


Notes:-
Highway network not to scale.
Only junctions included in the TA study area for assessment are illustrated on the network.
A generic 1700-1800 AM peak hour is indicated, however, to ensure a robust assessment of all junctions in the TA the observed actual peak hour flows at each junction are shown on this plan.
Fully classified turning count traffic surveys were undertaken by RDS Ltd on Thurs 5th June 2014.
The ahead flows at the site access junction are based on ATC data (week-day average) recorded in the same week as the turning count surveys.
All flows in passenger car units (PCUs)



PROPOSED RESIDENTIAL DEVELOPMENT
WINNYCROFT LANE, MATSON

Winnycroft Farm Flows: AM Peak (0800-0900hrs)

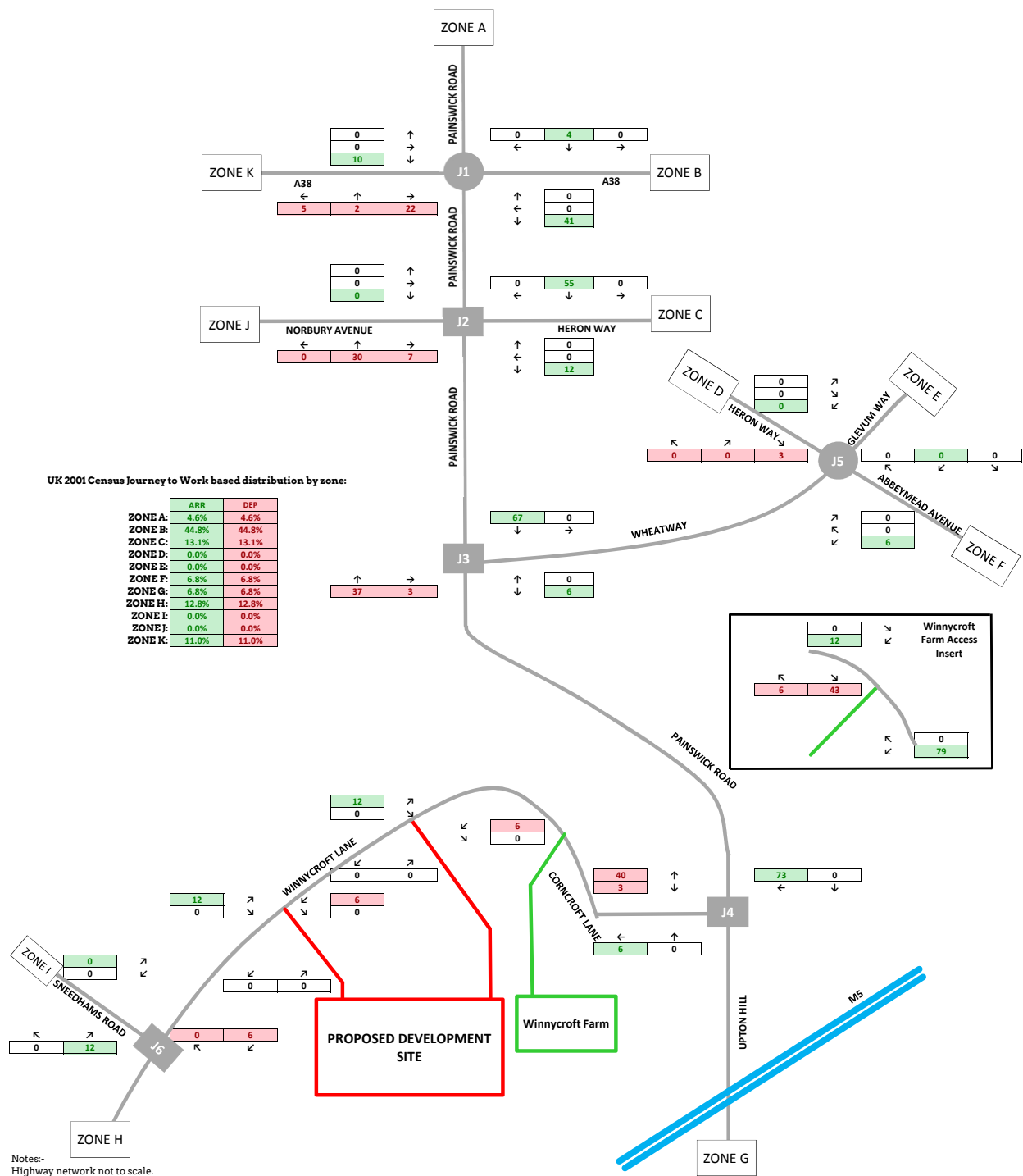


Notes:-
Highway network not to scale.
Only junctions included in the TA study area for assessment are illustrated on the network.
A generic 0800-0900 AM peak hour is indicated, however, to ensure a robust assessment of all junctions in the TA the observed actual peak hour flows at each junction are shown on this plan.
Fully classified turning count traffic surveys were undertaken by RDS Ltd on Thurs 5th June 2014.
The ahead flows at the site access junction are based on ATC data (week-day average) recorded in the same week as the turning count surveys.
All flows in passenger car units (PCUs)



PROPOSED RESIDENTIAL DEVELOPMENT
WINNYCROFT LANE, MATSON

Winnycroft Farm Flows: PM Peak (1700-1800hrs)



Notes:-
Highway network not to scale.
Only junctions included in the TA study area for assessment are illustrated on the network.
A generic 0800-0900 AM peak hour is indicated, however, to ensure a robust assessment of all junctions in the TA the observed actual peak hour flows at each junction are shown on this plan.
Fully classified turning count traffic surveys were undertaken by RDS Ltd on Thurs 5th June 2014.
The ahead flows at the site access junction are based on ATC data (week-day average) recorded in the same week as the turning count surveys.
All flows in passenger car units (PCUs)



Appendix C.14

Junctions 10											
PICADY 10 - Priority Intersection Module											
Version: 10.0.2.1574											
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Filename: J1_Access_Matson Lane_Wincroft Lane v.1.j10

Path: X:\Bristol Projects\Bristol - Live Projects\P20\P20-1401-1500\P20-1432 - BROMFORD DEVELOPMENTS LTD - LAND AT SNOW CAPEL, MATSON\Transport\7. Junction Modelling\b. PICADY

Report generation date: 25/03/2022 15:06:55

»2027 + CD + DEV, AM

»2027 + CD + DEV, PM

Summary of junction performance

	AM						PM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
2027 + CD + DEV												
Stream B-ACD	D1	0.0	8.79	0.03	A	127 % [Stream D-ABC]	D2	0.6	12.78	0.38	B	66 % [Stream B-ACD]
Stream A-BCD		0.0	0.00	0.00	A			0.0	0.00	0.00	A	
Stream D-ABC		0.2	9.70	0.14	A			0.1	8.57	0.06	A	
Stream C-ABD		0.1	4.84	0.04	A			0.0	5.16	0.01	A	

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 average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

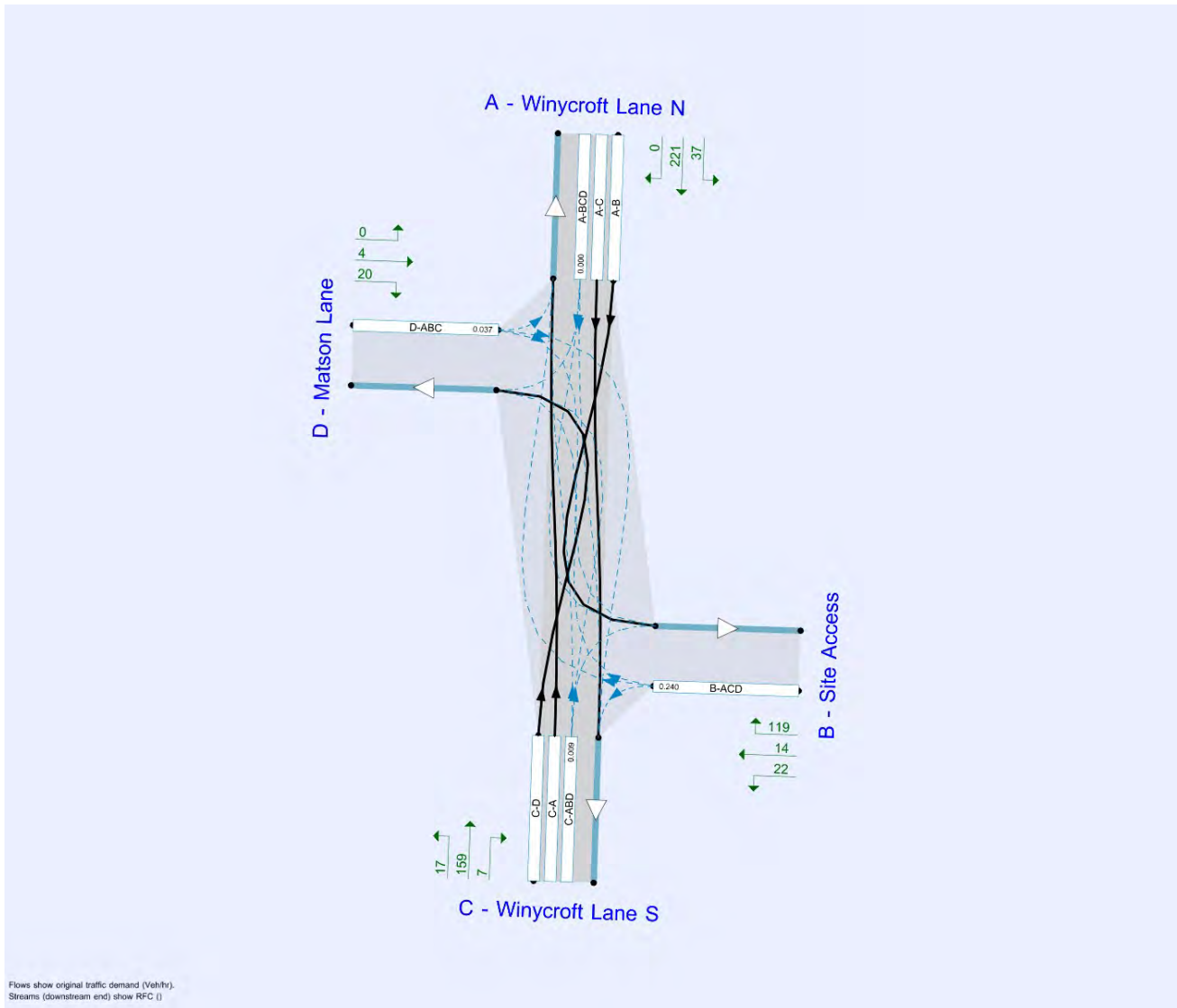
File summary

File Description

Title	
Location	
Site number	
Date	03/02/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PEGASUSGROUP\pg.transport
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average 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 Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75					✓	Delay	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	2027 + CD + DEV	AM	ONE HOUR	08:00	09:30	15	✓
D2	2027 + CD + DEV	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2027 + CD + DEV, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - Winycroft Lane N - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Major arm width	C - Winycroft Lane S - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	Two-way	Two-way	Two-way		1.16	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	127	Stream D-ABC	1.16	A

Arms

Arms

Arm	Name	Description	Arm type
A	Winycroft Lane N		Major
B	Site Access		Minor
C	Winycroft Lane S		Major
D	Matson Lane		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Winycroft Lane N	5.50			186.0	✓	0.00
C - Winycroft Lane S	5.50			174.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access	One lane	2.75	36	130
D - Matson Lane	One lane	2.75	35	223

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
A-D	682	-	-	-	0.270	0.270	0.270	-	0.270	-	-
B-AD	539	0.100	0.254	-	-	-	0.160	0.362	0.160	0.100	0.254
B-C	688	0.108	0.272	-	-	-	-	-	-	0.108	0.272
C-B	675	0.267	0.267	-	-	-	-	-	-	0.267	0.267
D-A	745	-	-	-	0.295	0.117	0.295	-	0.117	-	-
D-BC	584	0.173	0.173	0.392	0.275	0.109	0.275	-	0.109	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

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	2027 + CD + DEV	AM	ONE HOUR	08:00	09:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - Wyncroft Lane N		ONE HOUR	✓	284	100.000
B - Site Access		ONE HOUR	✓	13	100.000
C - Wyncroft Lane S		ONE HOUR	✓	328	100.000
D - Matson Lane		ONE HOUR	✓	57	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
From		A - Wyncroft Lane N	B - Site Access	C - Wyncroft Lane S	D - Matson Lane
	A - Wyncroft Lane N	0	85	199	0
	B - Site Access	8	0	2	3
	C - Wyncroft Lane S	306	16	0	6
	D - Matson Lane	0	28	29	0

Proportions

	To				
From		A - Wyncroft Lane N	B - Site Access	C - Wyncroft Lane S	D - Matson Lane
	A - Wyncroft Lane N	0.00	0.30	0.70	0.00
	B - Site Access	0.62	0.00	0.15	0.23
	C - Wyncroft Lane S	0.93	0.05	0.00	0.02
	D - Matson Lane	0.00	0.49	0.51	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Wyncroft Lane N	B - Site Access	C - Wyncroft Lane S	D - Matson Lane
	A - Wyncroft Lane N	0	0	0	0
	B - Site Access	0	0	0	0
	C - Wyncroft Lane S	0	0	0	0
	D - Matson Lane	0	0	0	0

Average PCU Per Veh

	To				
From		A - Wyncroft Lane N	B - Site Access	C - Wyncroft Lane S	D - Matson Lane
	A - Wyncroft Lane N	1.000	1.000	1.000	1.000
	B - Site Access	1.000	1.000	1.000	1.000
	C - Wyncroft Lane S	1.000	1.000	1.000	1.000
	D - Matson Lane	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Wyncroft Lane N	08:00-08:15	214	214
	08:15-08:30	255	255
	08:30-08:45	313	313
	08:45-09:00	313	313
	09:00-09:15	255	255
	09:15-09:30	214	214
B - Site Access	08:00-08:15	10	10
	08:15-08:30	12	12
	08:30-08:45	14	14
	08:45-09:00	14	14
	09:00-09:15	12	12
	09:15-09:30	10	10
C - Wyncroft Lane S	08:00-08:15	247	247
	08:15-08:30	295	295
	08:30-08:45	361	361
	08:45-09:00	361	361
	09:00-09:15	295	295
	09:15-09:30	247	247
D - Matson Lane	08:00-08:15	43	43
	08:15-08:30	51	51
	08:30-08:45	63	63
	08:45-09:00	63	63
	09:00-09:15	51	51
	09:15-09:30	43	43

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.03	8.79	0.0	A	12	18
A-BCD	0.00	0.00	0.0	A	0	0
A-B					78	117
A-C					183	274
D-ABC	0.14	9.70	0.2	A	52	78
C-ABD	0.04	4.84	0.1	A	24	35
C-D					5	8
C-A					272	408

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	10	2	467	0.021	10	0.0	0.0	7.878	A
A-BCD	0	0	616	0.000	0	0.0	0.0	0.000	A
A-B	64	16			64				
A-C	150	37			150				
D-ABC	43	11	481	0.089	43	0.0	0.1	8.196	A
C-ABD	17	4	762	0.023	17	0.0	0.0	4.834	A
C-D	4	1			4				
C-A	225	56			225				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	12	3	449	0.026	12	0.0	0.0	8.238	A
A-BCD	0	0	603	0.000	0	0.0	0.0	0.000	A
A-B	76	19			76				
A-C	179	45			179				
D-ABC	51	13	461	0.111	51	0.1	0.1	8.772	A
C-ABD	22	6	781	0.029	22	0.0	0.0	4.746	A
C-D	5	1			5				
C-A	267	67			267				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	14	4	424	0.034	14	0.0	0.0	8.791	A
A-BCD	0	0	586	0.000	0	0.0	0.0	0.000	A
A-B	94	23			94				
A-C	219	55			219				
D-ABC	63	16	434	0.145	63	0.1	0.2	9.691	A
C-ABD	31	8	808	0.038	31	0.0	0.1	4.629	A
C-D	6	2			6				
C-A	324	81			324				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	14	4	424	0.034	14	0.0	0.0	8.792	A
A-BCD	0	0	586	0.000	0	0.0	0.0	0.000	A
A-B	94	23			94				
A-C	219	55			219				
D-ABC	63	16	434	0.145	63	0.2	0.2	9.699	A
C-ABD	31	8	808	0.038	31	0.1	0.1	4.630	A
C-D	6	2			6				
C-A	324	81			324				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	12	3	449	0.026	12	0.0	0.0	8.242	A
A-BCD	0	0	603	0.000	0	0.0	0.0	0.000	A
A-B	76	19			76				
A-C	179	45			179				
D-ABC	51	13	461	0.111	51	0.2	0.1	8.785	A
C-ABD	23	6	781	0.029	23	0.1	0.0	4.747	A
C-D	5	1			5				
C-A	267	67			267				

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	10	2	466	0.021	10	0.0	0.0	7.883	A
A-BCD	0	0	616	0.000	0	0.0	0.0	0.000	A
A-B	64	16			64				
A-C	150	37			150				
D-ABC	43	11	481	0.089	43	0.1	0.1	8.214	A
C-ABD	17	4	762	0.023	17	0.0	0.0	4.838	A
C-D	4	1			4				
C-A	225	56			225				

2027 + CD + DEV, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	A - Winycroft Lane N - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Major arm width	C - Winycroft Lane S - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	Two-way	Two-way	Two-way		3.60	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	66	Stream B-ACD	3.60	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	2027 + CD + DEV	PM	ONE HOUR	17:00	18:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - Winycroft Lane N		ONE HOUR	✓	258	100.000
B - Site Access		ONE HOUR	✓	155	100.000
C - Winycroft Lane S		ONE HOUR	✓	183	100.000
D - Matson Lane		ONE HOUR	✓	24	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		A - Winycroft Lane N	B - Site Access	C - Winycroft Lane S	D - Matson Lane
From	A - Winycroft Lane N	0	37	221	0
	B - Site Access	119	0	22	14
	C - Winycroft Lane S	159	7	0	17
	D - Matson Lane	0	4	20	0

Proportions

	To				
		A - Winycroft Lane N	B - Site Access	C - Winycroft Lane S	D - Matson Lane
From	A - Winycroft Lane N	0.00	0.14	0.86	0.00
	B - Site Access	0.77	0.00	0.14	0.09
	C - Winycroft Lane S	0.87	0.04	0.00	0.09
	D - Matson Lane	0.00	0.17	0.83	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Winycroft Lane N	B - Site Access	C - Winycroft Lane S	D - Matson Lane
From	A - Winycroft Lane N	0	0	0	0
	B - Site Access	0	0	0	0
	C - Winycroft Lane S	0	0	0	0
	D - Matson Lane	0	0	0	0

Average PCU Per Veh

	To				
		A - Winycroft Lane N	B - Site Access	C - Winycroft Lane S	D - Matson Lane
From	A - Winycroft Lane N	1.000	1.000	1.000	1.000
	B - Site Access	1.000	1.000	1.000	1.000
	C - Winycroft Lane S	1.000	1.000	1.000	1.000
	D - Matson Lane	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - Winycroft Lane N	17:00-17:15	194	194
	17:15-17:30	232	232
	17:30-17:45	284	284
	17:45-18:00	284	284
	18:00-18:15	232	232
	18:15-18:30	194	194
B - Site Access	17:00-17:15	117	117
	17:15-17:30	139	139
	17:30-17:45	171	171
	17:45-18:00	171	171
	18:00-18:15	139	139
	18:15-18:30	117	117
C - Winycroft Lane S	17:00-17:15	138	138
	17:15-17:30	165	165
	17:30-17:45	201	201
	17:45-18:00	201	201
	18:00-18:15	165	165
	18:15-18:30	138	138
D - Matson Lane	17:00-17:15	18	18
	17:15-17:30	22	22
	17:30-17:45	26	26
	17:45-18:00	26	26
	18:00-18:15	22	22
	18:15-18:30	18	18

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.38	12.78	0.6	B	142	213
A-BCD	0.00	0.00	0.0	A	0	0
A-B					34	51
A-C					203	304
D-ABC	0.06	8.57	0.1	A	22	33
C-ABD	0.01	5.16	0.0	A	8	13
C-D					15	23
C-A					144	216

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	117	29	485	0.240	115	0.0	0.3	9.701	A
A-BCD	0	0	619	0.000	0	0.0	0.0	0.000	A
A-B	28	7			28				
A-C	166	42			166				
D-ABC	18	5	490	0.037	18	0.0	0.0	7.617	A
C-ABD	6	2	705	0.009	6	0.0	0.0	5.153	A
C-D	13	3			13				
C-A	119	30			119				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	139	35	472	0.296	139	0.3	0.4	10.812	B
A-BCD	0	0	606	0.000	0	0.0	0.0	0.000	A
A-B	33	8			33				
A-C	199	50			199				
D-ABC	22	5	472	0.046	22	0.0	0.0	7.992	A
C-ABD	8	2	712	0.011	8	0.0	0.0	5.115	A
C-D	15	4			15				
C-A	141	35			141				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	171	43	452	0.377	170	0.4	0.6	12.715	B
A-BCD	0	0	589	0.000	0	0.0	0.0	0.000	A
A-B	41	10			41				
A-C	243	61			243				
D-ABC	26	7	447	0.059	26	0.0	0.1	8.562	A
C-ABD	11	3	722	0.015	11	0.0	0.0	5.060	A
C-D	18	5			18				
C-A	172	43			172				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	171	43	452	0.377	171	0.6	0.6	12.778	B
A-BCD	0	0	589	0.000	0	0.0	0.0	0.000	A
A-B	41	10			41				
A-C	243	61			243				
D-ABC	26	7	447	0.059	26	0.1	0.1	8.567	A
C-ABD	11	3	722	0.015	11	0.0	0.0	5.063	A
C-D	18	5			18				
C-A	172	43			172				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	139	35	471	0.296	140	0.6	0.4	10.886	B
A-BCD	0	0	606	0.000	0	0.0	0.0	0.000	A
A-B	33	8			33				
A-C	199	50			199				
D-ABC	22	5	472	0.046	22	0.1	0.0	8.000	A
C-ABD	8	2	712	0.011	8	0.0	0.0	5.117	A
C-D	15	4			15				
C-A	141	35			141				

18:15 - 18:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	117	29	485	0.240	117	0.4	0.3	9.787	A
A-BCD	0	0	619	0.000	0	0.0	0.0	0.000	A
A-B	28	7			28				
A-C	166	42			166				
D-ABC	18	5	490	0.037	18	0.0	0.0	7.630	A
C-ABD	6	2	705	0.009	7	0.0	0.0	5.155	A
C-D	13	3			13				
C-A	119	30			119				





Appendix C.15

Junctions 10											
PICADY 10 - Priority Intersection Module											
Version: 10.0.2.1574											
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Filename: J2_Painswick Road_Corncroft Lane_Upton Hill v.1.j10

Path: X:\Bristol Projects\Bristol - Live Projects\P20\P20-1401-1500\P20-1432 - BROMFORD DEVELOPMENTS LTD - LAND AT SNOW CAPEL, MATSON\Transport\7. Junction Modelling\b. PICADY

Report generation date: 25/03/2022 15:31:14

- »2022 BASE, AM
- »2022 BASE, PM
- »2027 GROWTH, AM
- »2027 GROWTH, PM
- »2027 + CD, AM
- »2027 + CD, PM
- »2027 + CD + DEV, AM
- »2027 + CD + DEV, PM

Summary of junction performance

	AM						PM					
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	2022 BASE											
Stream B-C	D1	0.3	6.67	0.24	A	102 % [Stream B-A]	D2	0.3	6.43	0.21	A	127 % [Stream B-A]
Stream B-A		0.2	10.25	0.18	B			0.1	9.69	0.12	A	
Stream C-AB		0.3	6.88	0.24	A			0.3	7.05	0.24	A	
	2027 GROWTH											
Stream B-C	D3	0.3	6.91	0.26	A	89 % [Stream B-A]	D4	0.3	6.63	0.23	A	113 % [Stream B-A]
Stream B-A		0.2	10.72	0.20	B			0.1	10.05	0.13	B	
Stream C-AB		0.3	7.09	0.26	A			0.3	7.29	0.26	A	
	2027 + CD											
Stream B-C	D5	2.1	16.64	0.68	C	16 % [Stream B-A]	D6	0.8	9.71	0.45	A	27 % [Stream C-AB]
Stream B-A		0.5	17.10	0.34	C			0.3	15.10	0.21	C	
Stream C-AB		0.6	8.56	0.38	A			1.9	15.49	0.66	C	
	2027 + CD + DEV											
Stream B-C	D7	4.1	28.39	0.82	D	3 % [Stream B-A]	D8	1.1	11.13	0.52	B	2 % [Stream C-AB]
Stream B-A		0.8	26.22	0.44	D			0.3	19.35	0.26	C	
Stream C-AB		0.7	8.74	0.40	A			5.5	31.90	0.85	D	

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 average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

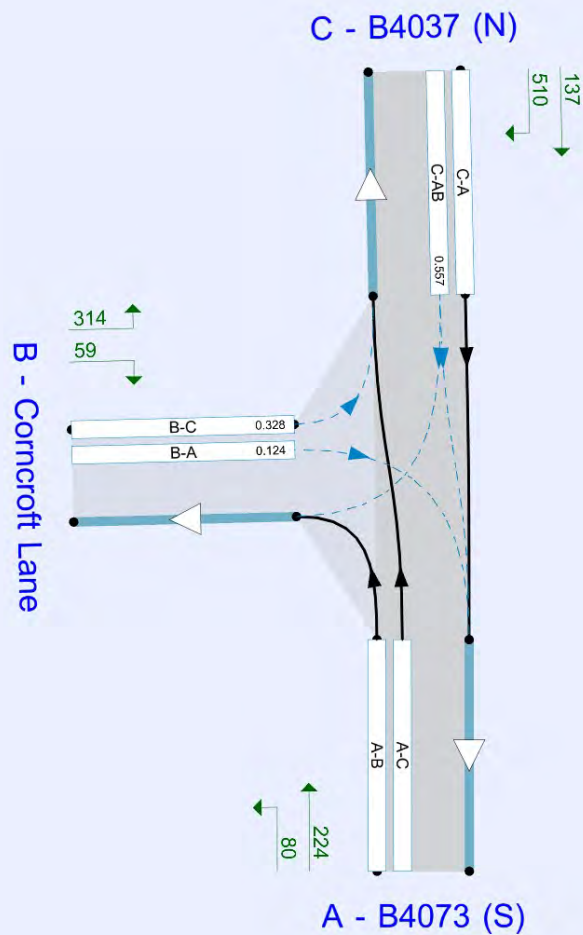
File summary

File Description

Title	
Location	
Site number	
Date	08/02/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PEGASUSGROUP\pg.transport
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



Flows show original traffic demand (Veh/hr).
Streams (downstream end) show RFC (l)

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75					✓	Delay	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	2022 BASE	AM	ONE HOUR	00:00	01:30	15	✓
D2	2022 BASE	PM	ONE HOUR	00:00	01:30	15	✓
D3	2027 GROWTH	AM	ONE HOUR	00:00	01:30	15	✓
D4	2027 GROWTH	PM	ONE HOUR	00:00	01:30	15	✓
D5	2027 + CD	AM	ONE HOUR	00:00	01:30	15	✓
D6	2027 + CD	PM	ONE HOUR	00:00	01:30	15	✓
D7	2027 + CD + DEV	AM	ONE HOUR	00:00	01:30	15	✓
D8	2027 + CD + DEV	PM	ONE HOUR	00:00	01:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022 BASE, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Corncroft Lane - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Corncroft Lane / B4073 Painswick Road / Upton Hill	T-Junction	Two-way	Two-way	Two-way		3.42	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	102	Stream B-A	3.42	A

Arms

Arms

Arm	Name	Description	Arm type
A	B4073 (S)		Major
B	Corncroft Lane		Minor
C	B4037 (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - B4037 (N)	7.40		✓	3.65	132.0	✓	5.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Corncroft Lane	One lane plus flare	10.00	7.00	5.00	4.00	4.00	✓	2.00	120	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	573	0.098	0.248	0.156	0.354
B-C	799	0.115	0.291	-	-
C-B	753	0.274	0.274	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

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	2022 BASE	AM	ONE HOUR	00:00	01:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - B4073 (S)		ONE HOUR	✓	214	100.000
B - Corncroft Lane		ONE HOUR	✓	224	100.000
C - B4037 (N)		ONE HOUR	✓	370	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	From			
	A - B4073 (S)	0	71	143
	B - Corncroft Lane	70	0	154
	C - B4037 (N)	220	150	0

Proportions

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	From			
	A - B4073 (S)	0.00	0.33	0.67
	B - Corncroft Lane	0.31	0.00	0.69
	C - B4037 (N)	0.59	0.41	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	From			
	A - B4073 (S)	0	0	1
	B - Corncroft Lane	0	0	0
	C - B4037 (N)	1	0	0

Average PCU Per Veh

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	From			
	A - B4073 (S)	1.000	1.000	1.007
	B - Corncroft Lane	1.000	1.000	1.000
	C - B4037 (N)	1.009	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - B4073 (S)	00:00-00:15	161	162
	00:15-00:30	192	193
	00:30-00:45	236	237
	00:45-01:00	236	237
	01:00-01:15	192	193
	01:15-01:30	161	162
B - Corncroft Lane	00:00-00:15	169	169
	00:15-00:30	201	201
	00:30-00:45	247	247
	00:45-01:00	247	247
	01:00-01:15	201	201
	01:15-01:30	169	169
C - B4037 (N)	00:00-00:15	279	280
	00:15-00:30	333	334
	00:30-00:45	407	410
	00:45-01:00	407	410
	01:00-01:15	333	334
	01:15-01:30	279	280

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.24	6.67	0.3	A	141	212
B-A	0.18	10.25	0.2	B	64	96
C-AB	0.24	6.88	0.3	A	138	206
C-A					202	303
A-B					65	98
A-C					131	197

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	116	29	740	0.157	115	0.0	0.2	5.759	A
B-A	53	13	475	0.111	52	0.0	0.1	8.507	A
C-AB	113	28	709	0.159	112	0.0	0.2	6.027	A
C-A	166	41			166				
A-B	53	13			53				
A-C	108	27			108				

00:15 - 00:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	138	35	727	0.190	138	0.2	0.2	6.112	A
B-A	63	16	455	0.138	63	0.1	0.2	9.165	A
C-AB	135	34	700	0.193	135	0.2	0.2	6.365	A
C-A	198	49			198				
A-B	64	16			64				
A-C	129	32			129				

00:30 - 00:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	170	42	709	0.239	169	0.2	0.3	6.663	A
B-A	77	19	428	0.180	77	0.2	0.2	10.232	B
C-AB	165	41	688	0.240	165	0.2	0.3	6.872	A
C-A	242	61			242				
A-B	78	20			78				
A-C	157	39			157				

00:45 - 01:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	170	42	709	0.239	170	0.3	0.3	6.673	A
B-A	77	19	428	0.180	77	0.2	0.2	10.246	B
C-AB	165	41	688	0.240	165	0.3	0.3	6.880	A
C-A	242	61			242				
A-B	78	20			78				
A-C	157	39			157				

01:00 - 01:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	138	35	727	0.190	139	0.3	0.2	6.126	A
B-A	63	16	455	0.138	63	0.2	0.2	9.185	A
C-AB	135	34	700	0.193	135	0.3	0.2	6.376	A
C-A	198	49			198				
A-B	64	16			64				
A-C	129	32			129				

01:15 - 01:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	116	29	739	0.157	116	0.2	0.2	5.780	A
B-A	53	13	475	0.111	53	0.2	0.1	8.535	A
C-AB	113	28	709	0.159	113	0.2	0.2	6.045	A
C-A	166	41			166				
A-B	53	13			53				
A-C	108	27			108				

2022 BASE, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Corncroft Lane - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Corncroft Lane / B4073 Painswick Road / Upton Hill	T-Junction	Two-way	Two-way	Two-way		3.24	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	127	Stream B-A	3.24	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	2022 BASE	PM	ONE HOUR	00:00	01:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - B4073 (S)		ONE HOUR	✓	266	100.000
B - Corncroft Lane		ONE HOUR	✓	184	100.000
C - B4037 (N)		ONE HOUR	✓	275	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0	56	210
	B - Corncroft Lane	45	0	139
	C - B4037 (N)	128	147	0

Proportions

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0.00	0.21	0.79
	B - Corncroft Lane	0.24	0.00	0.76
	C - B4037 (N)	0.47	0.53	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	0	0	1
	B - Corncroft Lane	0	0	0
	C - B4037 (N)	2	0	0

Average PCU Per Veh

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	1.000	1.000	1.010
	B - Corncroft Lane	1.000	1.000	1.000
	C - B4037 (N)	1.023	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - B4073 (S)	00:00-00:15	200	202
	00:15-00:30	239	241
	00:30-00:45	293	295
	00:45-01:00	293	295
	01:00-01:15	239	241
	01:15-01:30	200	202
B - Corncroft Lane	00:00-00:15	139	139
	00:15-00:30	165	165
	00:30-00:45	203	203
	00:45-01:00	203	203
	01:00-01:15	165	165
	01:15-01:30	139	139
C - B4037 (N)	00:00-00:15	207	209
	00:15-00:30	247	250
	00:30-00:45	303	306
	00:45-01:00	303	306
	01:00-01:15	247	250
	01:15-01:30	207	209

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.21	6.43	0.3	A	128	191
B-A	0.12	9.69	0.1	A	41	62
C-AB	0.24	7.05	0.3	A	135	202
C-A					117	176
A-B					51	77
A-C					193	289

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	105	26	745	0.140	104	0.0	0.2	5.609	A
B-A	34	8	466	0.073	34	0.0	0.1	8.310	A
C-AB	111	28	698	0.159	110	0.0	0.2	6.116	A
C-A	96	24			96				
A-B	42	11			42				
A-C	158	40			158				

00:15 - 00:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	125	31	732	0.171	125	0.2	0.2	5.930	A
B-A	40	10	447	0.090	40	0.1	0.1	8.843	A
C-AB	132	33	687	0.192	132	0.2	0.2	6.484	A
C-A	115	29			115				
A-B	50	13			50				
A-C	189	47			189				

00:30 - 00:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	153	38	713	0.215	153	0.2	0.3	6.424	A
B-A	50	12	421	0.118	49	0.1	0.1	9.685	A
C-AB	162	40	672	0.241	162	0.2	0.3	7.044	A
C-A	141	35			141				
A-B	62	15			62				
A-C	231	58			231				

00:45 - 01:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	153	38	713	0.215	153	0.3	0.3	6.430	A
B-A	50	12	421	0.118	50	0.1	0.1	9.693	A
C-AB	162	40	672	0.241	162	0.3	0.3	7.052	A
C-A	141	35			141				
A-B	62	15			62				
A-C	231	58			231				

01:00 - 01:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	125	31	732	0.171	125	0.3	0.2	5.939	A
B-A	40	10	447	0.090	41	0.1	0.1	8.856	A
C-AB	132	33	687	0.192	132	0.3	0.2	6.494	A
C-A	115	29			115				
A-B	50	13			50				
A-C	189	47			189				

01:15 - 01:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	105	26	745	0.140	105	0.2	0.2	5.627	A
B-A	34	8	466	0.073	34	0.1	0.1	8.332	A
C-AB	111	28	698	0.159	111	0.2	0.2	6.135	A
C-A	96	24			96				
A-B	42	11			42				
A-C	158	40			158				

2027 GROWTH, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Corncroft Lane - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Corncroft Lane / B4073 Painswick Road / Upton Hill	T-Junction	Two-way	Two-way	Two-way		3.55	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	89	Stream B-A	3.55	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	2027 GROWTH	AM	ONE HOUR	00:00	01:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - B4073 (S)		ONE HOUR	✓	229	100.000
B - Corncroft Lane		ONE HOUR	✓	239	100.000
C - B4037 (N)		ONE HOUR	✓	395	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0	76	153
	B - Corncroft Lane	75	0	164
	C - B4037 (N)	235	160	0

Proportions

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0.00	0.33	0.67
	B - Corncroft Lane	0.31	0.00	0.69
	C - B4037 (N)	0.59	0.41	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	0	0	1
	B - Corncroft Lane	0	0	0
	C - B4037 (N)	1	0	0

Average PCU Per Veh

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	1.000	1.000	1.007
	B - Corncroft Lane	1.000	1.000	1.000
	C - B4037 (N)	1.009	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - B4073 (S)	00:00-00:15	172	173
	00:15-00:30	206	207
	00:30-00:45	252	253
	00:45-01:00	252	253
	01:00-01:15	206	207
	01:15-01:30	172	173
B - Corncroft Lane	00:00-00:15	180	180
	00:15-00:30	215	215
	00:30-00:45	263	263
	00:45-01:00	263	263
	01:00-01:15	215	215
	01:15-01:30	180	180
C - B4037 (N)	00:00-00:15	297	299
	00:15-00:30	355	357
	00:30-00:45	435	437
	00:45-01:00	435	437
	01:00-01:15	355	357
	01:15-01:30	297	299

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.26	6.91	0.3	A	150	226
B-A	0.20	10.72	0.2	B	69	103
C-AB	0.26	7.09	0.3	A	147	220
C-A					216	323
A-B					70	105
A-C					140	211

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	123	31	735	0.168	123	0.0	0.2	5.871	A
B-A	56	14	468	0.121	56	0.0	0.1	8.716	A
C-AB	120	30	706	0.171	120	0.0	0.2	6.134	A
C-A	177	44			177				
A-B	57	14			57				
A-C	115	29			115				

00:15 - 00:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	147	37	721	0.204	147	0.2	0.3	6.271	A
B-A	67	17	448	0.151	67	0.1	0.2	9.462	A
C-AB	144	36	696	0.207	144	0.2	0.3	6.507	A
C-A	211	53			211				
A-B	68	17			68				
A-C	138	34			138				

00:30 - 00:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	181	45	702	0.257	180	0.3	0.3	6.900	A
B-A	83	21	419	0.197	82	0.2	0.2	10.697	B
C-AB	176	44	684	0.258	176	0.3	0.3	7.081	A
C-A	259	65			259				
A-B	84	21			84				
A-C	168	42			168				

00:45 - 01:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	181	45	701	0.257	181	0.3	0.3	6.911	A
B-A	83	21	418	0.197	83	0.2	0.2	10.717	B
C-AB	176	44	684	0.258	176	0.3	0.3	7.090	A
C-A	259	65			259				
A-B	84	21			84				
A-C	168	42			168				

01:00 - 01:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	147	37	721	0.205	148	0.3	0.3	6.286	A
B-A	67	17	447	0.151	68	0.2	0.2	9.485	A
C-AB	144	36	696	0.207	144	0.3	0.3	6.521	A
C-A	211	53			211				
A-B	68	17			68				
A-C	138	34			138				

01:15 - 01:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	123	31	735	0.168	124	0.3	0.2	5.897	A
B-A	56	14	468	0.121	57	0.2	0.1	8.751	A
C-AB	120	30	706	0.171	121	0.3	0.2	6.156	A
C-A	177	44			177				
A-B	57	14			57				
A-C	115	29			115				

2027 GROWTH, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Corncroft Lane - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Corncroft Lane / B4073 Painswick Road / Upton Hill	T-Junction	Two-way	Two-way	Two-way		3.35	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	113	Stream B-A	3.35	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	2027 GROWTH	PM	ONE HOUR	00:00	01:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - B4073 (S)		ONE HOUR	✓	284	100.000
B - Corncroft Lane		ONE HOUR	✓	196	100.000
C - B4037 (N)		ONE HOUR	✓	294	100.000

Origin-Destination Data

Demand (Veh/hr)

	To		
		A - B4073 (S)	B - Corncroft Lane
From	A - B4073 (S)	0	60
	B - Corncroft Lane	48	0
	C - B4037 (N)	137	157
			0

Proportions

	To		
		A - B4073 (S)	B - Corncroft Lane
From	A - B4073 (S)	0.00	0.21
	B - Corncroft Lane	0.24	0.00
	C - B4037 (N)	0.47	0.53
			0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	0	0	1
	B - Corncroft Lane	0	0	0
	C - B4037 (N)	2	0	0

Average PCU Per Veh

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	1.000	1.000	1.010
	B - Corncroft Lane	1.000	1.000	1.000
	C - B4037 (N)	1.023	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - B4073 (S)	00:00-00:15	214	215
	00:15-00:30	255	257
	00:30-00:45	313	315
	00:45-01:00	313	315
	01:00-01:15	255	257
	01:15-01:30	214	215
B - Corncroft Lane	00:00-00:15	148	148
	00:15-00:30	176	176
	00:30-00:45	216	216
	00:45-01:00	216	216
	01:00-01:15	176	176
	01:15-01:30	148	148
C - B4037 (N)	00:00-00:15	221	224
	00:15-00:30	264	267
	00:30-00:45	324	327
	00:45-01:00	324	327
	01:00-01:15	264	267
	01:15-01:30	221	224

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.23	6.63	0.3	A	136	204
B-A	0.13	10.05	0.1	B	44	66
C-AB	0.26	7.29	0.3	A	144	216
C-A					126	189
A-B					55	83
A-C					206	308

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	111	28	741	0.150	111	0.0	0.2	5.710	A
B-A	36	9	460	0.079	36	0.0	0.1	8.476	A
C-AB	118	30	694	0.170	117	0.0	0.2	6.234	A
C-A	103	26			103				
A-B	45	11			45				
A-C	169	42			169				

00:15 - 00:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	133	33	726	0.183	133	0.2	0.2	6.067	A
B-A	43	11	439	0.098	43	0.1	0.1	9.080	A
C-AB	141	35	683	0.207	141	0.2	0.3	6.642	A
C-A	123	31			123				
A-B	54	13			54				
A-C	201	50			201				

00:30 - 00:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	163	41	706	0.231	163	0.2	0.3	6.625	A
B-A	53	13	411	0.129	53	0.1	0.1	10.037	B
C-AB	173	43	667	0.259	173	0.3	0.3	7.278	A
C-A	151	38			151				
A-B	66	17			66				
A-C	247	62			247				

00:45 - 01:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	163	41	706	0.231	163	0.3	0.3	6.631	A
B-A	53	13	411	0.129	53	0.1	0.1	10.048	B
C-AB	173	43	667	0.259	173	0.3	0.3	7.287	A
C-A	151	38			151				
A-B	66	17			66				
A-C	247	62			247				

01:00 - 01:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	133	33	726	0.183	133	0.3	0.2	6.079	A
B-A	43	11	439	0.098	43	0.1	0.1	9.096	A
C-AB	141	35	683	0.207	141	0.3	0.3	6.656	A
C-A	123	31			123				
A-B	54	13			54				
A-C	201	50			201				

01:15 - 01:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	111	28	740	0.151	112	0.2	0.2	5.729	A
B-A	36	9	460	0.079	36	0.1	0.1	8.505	A
C-AB	118	30	694	0.170	118	0.3	0.2	6.256	A
C-A	103	26			103				
A-B	45	11			45				
A-C	169	42			169				

2027 + CD, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Corncroft Lane - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Corncroft Lane / B4073 Painswick Road / Upton Hill	T-Junction	Two-way	Two-way	Two-way		8.67	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	16	Stream B-A	8.67	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
D5	2027 + CD	AM	ONE HOUR	00:00	01:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - B4073 (S)		ONE HOUR	✓	236	100.000
B - Corncroft Lane		ONE HOUR	✓	516	100.000
C - B4037 (N)		ONE HOUR	✓	473	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0	83	153
	B - Corncroft Lane	97	0	419
	C - B4037 (N)	235	238	0

Proportions

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0.00	0.35	0.65
	B - Corncroft Lane	0.19	0.00	0.81
	C - B4037 (N)	0.50	0.50	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	0	0	1
	B - Corncroft Lane	0	0	0
	C - B4037 (N)	1	0	0

Average PCU Per Veh

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	1.000	1.000	1.014
	B - Corncroft Lane	1.000	1.000	1.000
	C - B4037 (N)	1.014	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - B4073 (S)	00:00-00:15	178	179
	00:15-00:30	212	214
	00:30-00:45	260	262
	00:45-01:00	260	262
	01:00-01:15	212	214
	01:15-01:30	178	179
B - Corncroft Lane	00:00-00:15	388	388
	00:15-00:30	464	464
	00:30-00:45	568	568
	00:45-01:00	568	568
	01:00-01:15	464	464
	01:15-01:30	388	388
C - B4037 (N)	00:00-00:15	356	359
	00:15-00:30	425	428
	00:30-00:45	521	524
	00:45-01:00	521	524
	01:00-01:15	425	428
	01:15-01:30	356	359

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.68	16.64	2.1	C	384	577
B-A	0.34	17.10	0.5	C	89	134
C-AB	0.38	8.56	0.6	A	219	328
C-A					215	323
A-B					76	114
A-C					140	211

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	315	79	724	0.435	312	0.0	0.8	8.678	A
B-A	73	18	423	0.173	72	0.0	0.2	10.230	B
C-AB	179	45	704	0.255	178	0.0	0.3	6.825	A
C-A	177	44			177				
A-B	62	16			62				
A-C	115	29			115				

00:15 - 00:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	377	94	706	0.533	375	0.8	1.1	10.824	B
B-A	87	22	386	0.226	87	0.2	0.3	12.026	B
C-AB	214	54	695	0.308	214	0.3	0.4	7.474	A
C-A	211	53			211				
A-B	75	19			75				
A-C	138	34			138				

00:30 - 00:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	461	115	678	0.681	458	1.1	2.0	16.103	C
B-A	107	27	319	0.334	106	0.3	0.5	16.806	C
C-AB	263	66	683	0.385	262	0.4	0.6	8.532	A
C-A	258	64			258				
A-B	91	23			91				
A-C	168	42			168				

00:45 - 01:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	461	115	677	0.682	461	2.0	2.1	16.637	C
B-A	107	27	317	0.337	107	0.5	0.5	17.098	C
C-AB	263	66	683	0.385	263	0.6	0.6	8.560	A
C-A	258	64			258				
A-B	91	23			91				
A-C	168	42			168				

01:00 - 01:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	377	94	706	0.534	380	2.1	1.2	11.186	B
B-A	87	22	384	0.227	88	0.5	0.3	12.194	B
C-AB	214	54	695	0.308	215	0.6	0.5	7.507	A
C-A	211	53			211				
A-B	75	19			75				
A-C	138	34			138				

01:15 - 01:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	315	79	724	0.436	317	1.2	0.8	8.886	A
B-A	73	18	422	0.173	73	0.3	0.2	10.336	B
C-AB	179	45	704	0.255	180	0.5	0.3	6.871	A
C-A	177	44			177				
A-B	62	16			62				
A-C	115	29			115				

2027 + CD, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Corncroft Lane - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Corncroft Lane / B4073 Painswick Road / Upton Hill	T-Junction	Two-way	Two-way	Two-way		8.31	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	27	Stream C-AB	8.31	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	2027 + CD	PM	ONE HOUR	00:00	01:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - B4073 (S)		ONE HOUR	✓	304	100.000
B - Corncroft Lane		ONE HOUR	✓	337	100.000
C - B4037 (N)		ONE HOUR	✓	532	100.000

Origin-Destination Data

Demand (Veh/hr)

	To		
		A - B4073 (S)	B - Corncroft Lane
From			C - B4037 (N)
	A - B4073 (S)	0	80
	B - Corncroft Lane	59	0
	C - B4037 (N)	137	395

Proportions

	To		
		A - B4073 (S)	B - Corncroft Lane
From			C - B4037 (N)
	A - B4073 (S)	0.00	0.26
	B - Corncroft Lane	0.18	0.00
	C - B4037 (N)	0.26	0.74

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	0	0	1
	B - Corncroft Lane	0	0	0
	C - B4037 (N)	2	0	0

Average PCU Per Veh

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	1.000	1.000	1.010
	B - Corncroft Lane	1.000	1.000	1.000
	C - B4037 (N)	1.023	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - B4073 (S)	00:00-00:15	229	231
	00:15-00:30	273	275
	00:30-00:45	335	337
	00:45-01:00	335	337
	01:00-01:15	273	275
	01:15-01:30	229	231
B - Corncroft Lane	00:00-00:15	254	254
	00:15-00:30	303	303
	00:30-00:45	371	371
	00:45-01:00	371	371
	01:00-01:15	303	303
	01:15-01:30	254	254
C - B4037 (N)	00:00-00:15	401	403
	00:15-00:30	478	481
	00:30-00:45	586	589
	00:45-01:00	586	589
	01:00-01:15	478	481
	01:15-01:30	401	403

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.45	9.71	0.8	A	255	383
B-A	0.21	15.10	0.3	C	54	81
C-AB	0.66	15.49	1.9	C	368	551
C-A					121	181
A-B					73	110
A-C					206	308

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	209	52	722	0.290	208	0.0	0.4	6.986	A
B-A	44	11	390	0.114	44	0.0	0.1	10.402	B
C-AB	298	75	691	0.431	295	0.0	0.7	9.017	A
C-A	102	26			102				
A-B	60	15			60				
A-C	169	42			169				

00:15 - 00:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	250	62	704	0.355	249	0.4	0.5	7.911	A
B-A	53	13	354	0.150	53	0.1	0.2	11.932	B
C-AB	358	89	682	0.524	356	0.7	1.1	10.991	B
C-A	121	30			121				
A-B	72	18			72				
A-C	201	50			201				

00:30 - 00:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	306	77	677	0.452	305	0.5	0.8	9.645	A
B-A	65	16	304	0.213	65	0.2	0.3	14.964	B
C-AB	447	112	679	0.658	444	1.1	1.9	15.108	C
C-A	139	35			139				
A-B	88	22			88				
A-C	247	62			247				

00:45 - 01:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	306	77	677	0.452	306	0.8	0.8	9.709	A
B-A	65	16	303	0.214	65	0.3	0.3	15.104	C
C-AB	447	112	679	0.658	447	1.9	1.9	15.489	C
C-A	139	35			139				
A-B	88	22			88				
A-C	247	62			247				

01:00 - 01:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	250	62	703	0.355	251	0.8	0.6	7.974	A
B-A	53	13	353	0.150	53	0.3	0.2	12.043	B
C-AB	358	89	683	0.524	361	1.9	1.1	11.300	B
C-A	121	30			121				
A-B	72	18			72				
A-C	201	50			201				

01:15 - 01:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	209	52	721	0.290	210	0.6	0.4	7.052	A
B-A	44	11	388	0.115	45	0.2	0.1	10.491	B
C-AB	298	75	691	0.431	299	1.1	0.8	9.219	A
C-A	102	26			102				
A-B	60	15			60				
A-C	169	42			169				

2027 + CD + DEV, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Corncroft Lane - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Corncroft Lane / B4073 Painswick Road / Upton Hill	T-Junction	Two-way	Two-way	Two-way		14.33	B

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	3	Stream B-A	14.33	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
D7	2027 + CD + DEV	AM	ONE HOUR	00:00	01:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - B4073 (S)		ONE HOUR	✓	236	100.000
B - Corncroft Lane		ONE HOUR	✓	598	100.000
C - B4037 (N)		ONE HOUR	✓	481	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0	83	153
	B - Corncroft Lane	97	0	501
	C - B4037 (N)	235	246	0

Proportions

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0.00	0.35	0.65
	B - Corncroft Lane	0.16	0.00	0.84
	C - B4037 (N)	0.49	0.51	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	0	0	1
	B - Corncroft Lane	0	0	0
	C - B4037 (N)	1	0	0

Average PCU Per Veh

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	1.000	1.000	1.014
	B - Corncroft Lane	1.000	1.000	1.000
	C - B4037 (N)	1.014	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - B4073 (S)	00:00-00:15	178	179
	00:15-00:30	212	214
	00:30-00:45	260	262
	00:45-01:00	260	262
	01:00-01:15	212	214
	01:15-01:30	178	179
B - Corncroft Lane	00:00-00:15	450	450
	00:15-00:30	538	538
	00:30-00:45	658	658
	00:45-01:00	658	658
	01:00-01:15	538	538
	01:15-01:30	450	450
C - B4037 (N)	00:00-00:15	362	365
	00:15-00:30	432	435
	00:30-00:45	530	533
	00:45-01:00	530	533
	01:00-01:15	432	435
	01:15-01:30	362	365

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.82	28.39	4.1	D	460	690
B-A	0.44	26.22	0.8	D	89	134
C-AB	0.40	8.74	0.7	A	226	339
C-A					215	323
A-B					76	114
A-C					140	211

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	377	94	725	0.520	373	0.0	1.1	10.099	B
B-A	73	18	407	0.179	72	0.0	0.2	10.720	B
C-AB	185	46	704	0.263	184	0.0	0.4	6.901	A
C-A	177	44			177				
A-B	62	16			62				
A-C	115	29			115				

00:15 - 00:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	450	113	707	0.637	448	1.1	1.7	13.765	B
B-A	87	22	355	0.246	87	0.2	0.3	13.390	B
C-AB	221	55	695	0.318	221	0.4	0.5	7.586	A
C-A	211	53			211				
A-B	75	19			75				
A-C	138	34			138				

00:30 - 00:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	552	138	676	0.816	543	1.7	3.9	25.477	D
B-A	107	27	252	0.424	105	0.3	0.7	24.289	C
C-AB	272	68	684	0.398	271	0.5	0.7	8.708	A
C-A	258	64			258				
A-B	91	23			91				
A-C	168	42			168				

00:45 - 01:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	552	138	675	0.818	551	3.9	4.1	28.386	D
B-A	107	27	243	0.439	107	0.7	0.8	26.225	D
C-AB	272	68	684	0.398	272	0.7	0.7	8.739	A
C-A	258	64			258				
A-B	91	23			91				
A-C	168	42			168				

01:00 - 01:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	450	113	705	0.639	460	4.1	1.8	15.145	C
B-A	87	22	349	0.250	89	0.8	0.3	13.938	B
C-AB	221	55	695	0.318	222	0.7	0.5	7.625	A
C-A	211	53			211				
A-B	75	19			75				
A-C	138	34			138				

01:15 - 01:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	377	94	725	0.521	380	1.8	1.1	10.534	B
B-A	73	18	405	0.180	73	0.3	0.2	10.889	B
C-AB	185	46	704	0.263	186	0.5	0.4	6.949	A
C-A	177	44			177				
A-B	62	16			62				
A-C	115	29			115				

2027 + CD + DEV, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Corncroft Lane - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Corncroft Lane / B4073 Painswick Road / Upton Hill	T-Junction	Two-way	Two-way	Two-way		16.37	C

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	2	Stream C-AB	16.37	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
D8	2027 + CD + DEV	PM	ONE HOUR	00:00	01:30	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	Average Demand (Veh/hr)	Scaling Factor (%)
A - B4073 (S)		ONE HOUR	✓	304	100.000
B - Corncroft Lane		ONE HOUR	✓	373	100.000
C - B4037 (N)		ONE HOUR	✓	647	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0	80	224
	B - Corncroft Lane	59	0	314
	C - B4037 (N)	137	510	0

Proportions

	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
From	A - B4073 (S)	0.00	0.26	0.74
	B - Corncroft Lane	0.16	0.00	0.84
	C - B4037 (N)	0.21	0.79	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	0	0	1
	B - Corncroft Lane	0	0	0
	C - B4037 (N)	2	0	0

Average PCU Per Veh

From	To			
		A - B4073 (S)	B - Corncroft Lane	C - B4037 (N)
	A - B4073 (S)	1.000	1.000	1.010
	B - Corncroft Lane	1.000	1.000	1.000
	C - B4037 (N)	1.023	1.000	1.000

Detailed Demand Data

Demand for each time segment

Arm	Time Segment	Demand (Veh/hr)	Demand in PCU (PCU/hr)
A - B4073 (S)	00:00-00:15	229	231
	00:15-00:30	273	275
	00:30-00:45	335	337
	00:45-01:00	335	337
	01:00-01:15	273	275
	01:15-01:30	229	231
B - Corncroft Lane	00:00-00:15	281	281
	00:15-00:30	335	335
	00:30-00:45	411	411
	00:45-01:00	411	411
	01:00-01:15	335	335
	01:15-01:30	281	281
C - B4037 (N)	00:00-00:15	487	489
	00:15-00:30	582	584
	00:30-00:45	712	716
	00:45-01:00	712	716
	01:00-01:15	582	584
	01:15-01:30	487	489

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.52	11.13	1.1	B	288	432
B-A	0.26	19.35	0.3	C	54	81
C-AB	0.85	31.90	5.5	D	492	738
C-A					102	153
A-B					73	110
A-C					206	308

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	236	59	721	0.328	234	0.0	0.5	7.381	A
B-A	44	11	358	0.124	44	0.0	0.1	11.454	B
C-AB	387	97	695	0.557	382	0.0	1.2	11.325	B
C-A	100	25			100				
A-B	60	15			60				
A-C	169	42			169				

00:15 - 00:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	282	71	701	0.402	282	0.5	0.7	8.558	A
B-A	53	13	315	0.168	53	0.1	0.2	13.706	B
C-AB	470	118	695	0.677	467	1.2	2.0	15.583	C
C-A	111	28			111				
A-B	72	18			72				
A-C	201	50			201				

00:30 - 00:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	346	86	670	0.516	344	0.7	1.0	10.995	B
B-A	65	16	255	0.255	64	0.2	0.3	18.863	C
C-AB	618	155	727	0.851	607	2.0	5.0	27.743	D
C-A	94	23			94				
A-B	88	22			88				
A-C	247	62			247				

00:45 - 01:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	346	86	669	0.517	346	1.0	1.1	11.134	B
B-A	65	16	251	0.259	65	0.3	0.3	19.349	C
C-AB	618	155	728	0.850	616	5.0	5.5	31.899	D
C-A	94	23			94				
A-B	88	22			88				
A-C	247	62			247				

01:00 - 01:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	282	71	700	0.403	284	1.1	0.7	8.674	A
B-A	53	13	310	0.171	54	0.3	0.2	14.083	B
C-AB	470	118	696	0.676	483	5.5	2.3	17.946	C
C-A	111	28			111				
A-B	72	18			72				
A-C	201	50			201				

01:15 - 01:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	236	59	720	0.328	237	0.7	0.5	7.467	A
B-A	44	11	355	0.125	45	0.2	0.1	11.626	B
C-AB	387	97	696	0.556	391	2.3	1.3	11.972	B
C-A	100	25			100				
A-B	60	15			60				
A-C	169	42			169				



Appendix C.16

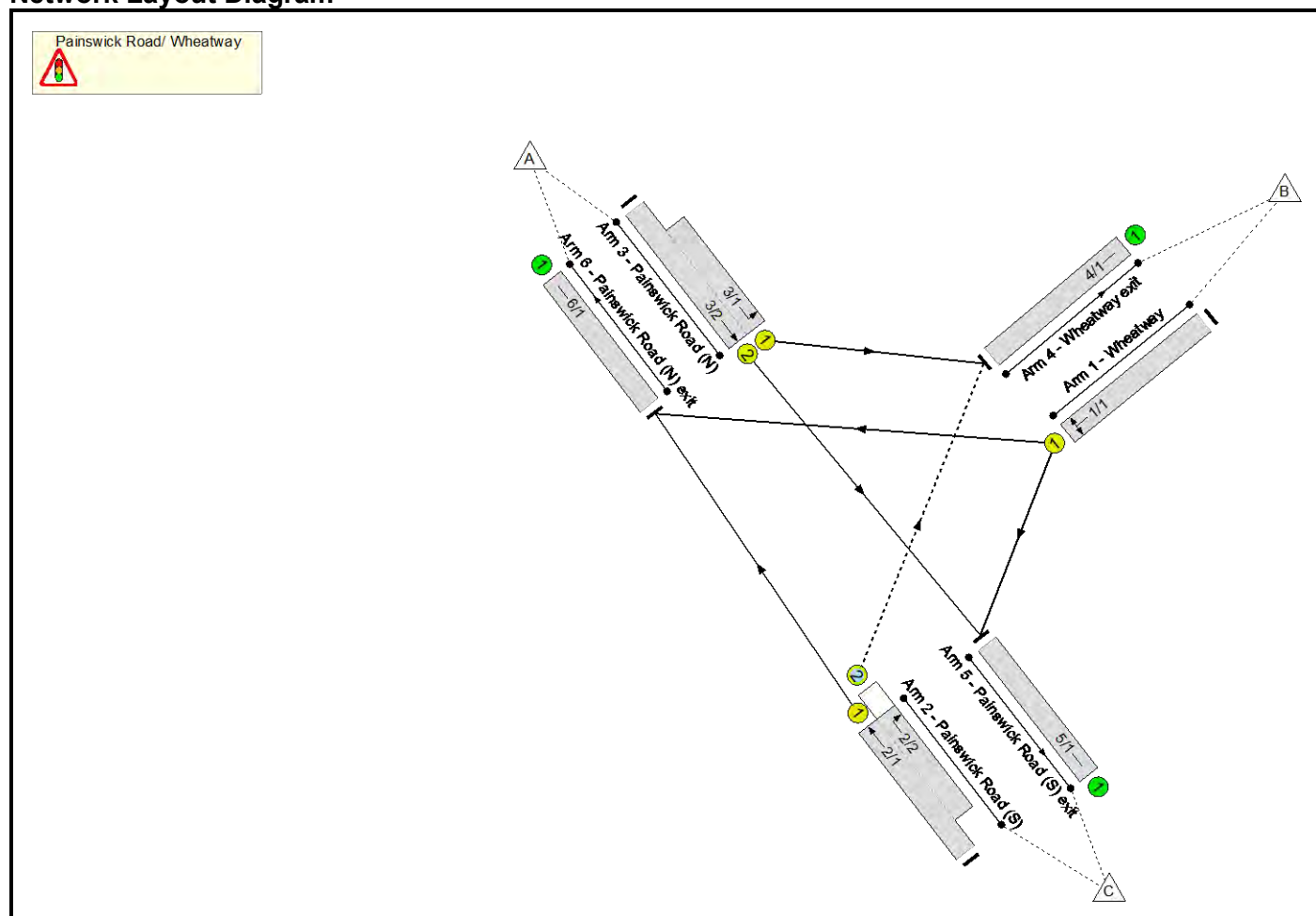
Full Input Data And Results

Full Input Data And Results

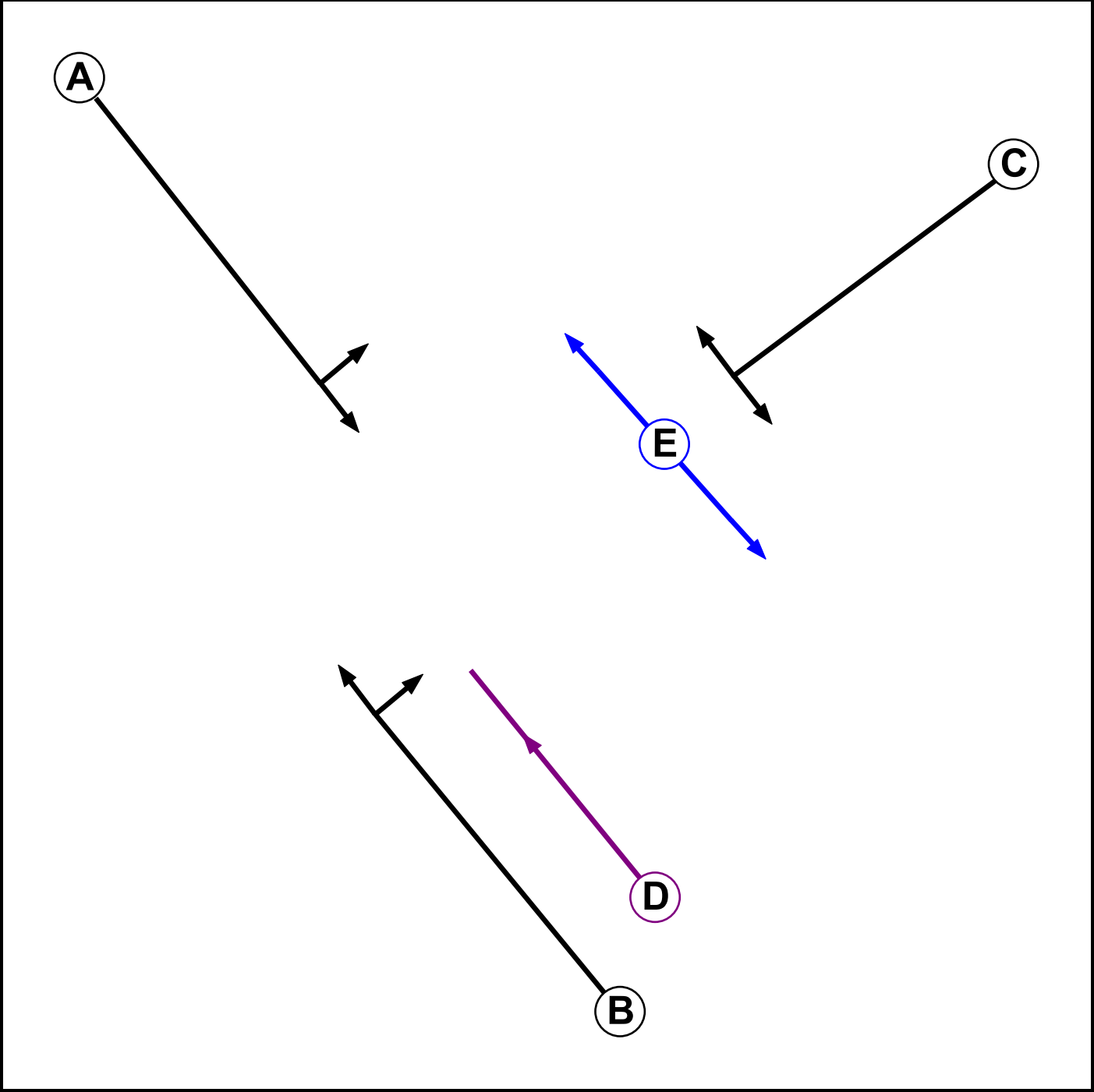
User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	B4073_Wheatway_PG v.1
Author:	
Company:	
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		6	6
D	Ind. Arrow		4	4
E	Pedestrian		7	7

Full Input Data And Results

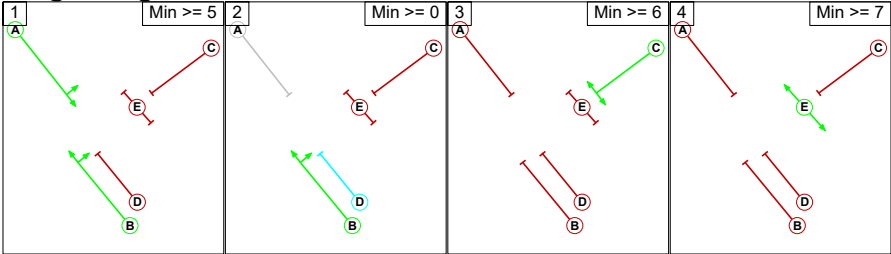
Phase Intergreens Matrix

Terminating Phase	Starting Phase					
		A	B	C	D	E
	A		-	7	6	6
	B	-		8	-	8
	C	7	6		6	7
	D	6	-	6		8
	E	6	8	7	8	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	B
3	C
4	E

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

From Stage	To Stage				
		1	2	3	4
	1		0	8	8
	2	2		8	8
	3	7	6		7
	4	8	8	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Painswick Road/ Wheatway											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
2/2 (Painswick Road (S))	4/1 (Right)	1439	0	3/2	1.09	All	2.00	-	0.50	2	2.00
				3/1	1.09	All					

Full Input Data And Results

Lane Input Data

Junction: Painswick Road/ Wheatway												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Wheatway)	U	C	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 5 Left	15.10
											Arm 6 Right	20.90
2/1 (Painswick Road (S))	U	B	2	3	60.0	Geom	-	2.80	0.00	Y	Arm 6 Ahead	Inf
2/2 (Painswick Road (S))	O	B	2	3	10.4	Geom	-	2.80	0.00	N	Arm 4 Right	16.20
3/1 (Painswick Road (N))	U	A	2	3	8.7	Geom	-	2.50	0.00	Y	Arm 4 Left	20.20
3/2 (Painswick Road (N))	U	A	2	3	60.0	Geom	-	2.50	0.00	N	Arm 5 Ahead	Inf
4/1 (Wheatway exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Painswick Road (S) exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Painswick Road (N) exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 BASE AM'	08:00	09:00	01:00	
2: '2022 BASE PM'	17:00	18:00	01:00	
3: '2027 GROWTH AM'	08:00	09:00	01:00	
4: '2027 GROWTH PM'	17:00	18:00	01:00	
5: '2027 + CD AM'	08:00	09:00	01:00	
6: '2027 + CD PM'	17:00	18:00	01:00	
7: '2027 + CD + DEV AM'	08:00	09:00	01:00	
8: '2027 + CD + DEV PM'	17:00	18:00	01:00	

Scenario 1: '2022 BASE AM' (FG1: '2022 BASE AM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	141	214	355
	B	167	0	162	329
	C	181	119	0	300
	Tot.	348	260	376	984

Traffic Lane Flows

Lane	Scenario 1: 2022 BASE AM
Junction: Painswick Road/ Wheatway	
1/1	329
2/1 (with short)	300(In) 181(Out)
2/2 (short)	119
3/1 (short)	141
3/2 (with short)	355(In) 214(Out)
4/1	260
5/1	376
6/1	348

Lane Saturation Flows

Junction: Painswick Road/ Wheatway								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Wheatway)	3.40	0.00	Y	Arm 5 Left	15.10	49.2 %	1801	1801
				Arm 6 Right	20.90	50.8 %		
2/1 (Painswick Road (S))	2.80	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1895	1895
2/2 (Painswick Road (S))	2.80	0.00	N	Arm 4 Right	16.20	100.0 %	1863	1863
3/1 (Painswick Road (N))	2.50	0.00	Y	Arm 4 Left	20.20	100.0 %	1736	1736
3/2 (Painswick Road (N))	2.50	0.00	N	Arm 5 Ahead	Inf	100.0 %	2005	2005
4/1 (Wheatway exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Painswick Road (S) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Painswick Road (N) exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2022 BASE PM' (FG2: '2022 BASE PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination				
		A	B	C	Tot.
	A	0	141	214	355
	B	187	0	118	305
	C	200	152	0	352
	Tot.	387	293	332	1012

Traffic Lane Flows

Lane	Scenario 2: 2022 BASE PM
Junction: Painswick Road/ Wheatway	
1/1	305
2/1 (with short)	352(In) 200(Out)
2/2 (short)	152
3/1 (short)	141
3/2 (with short)	355(In) 214(Out)
4/1	293
5/1	332
6/1	387

Lane Saturation Flows

Junction: Painswick Road/ Wheatway								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Wheatway)	3.40	0.00	Y	Arm 5 Left	15.10	38.7 %	1806	1806
				Arm 6 Right	20.90	61.3 %		
2/1 (Painswick Road (S))	2.80	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1895	1895
2/2 (Painswick Road (S))	2.80	0.00	N	Arm 4 Right	16.20	100.0 %	1863	1863
3/1 (Painswick Road (N))	2.50	0.00	Y	Arm 4 Left	20.20	100.0 %	1736	1736
3/2 (Painswick Road (N))	2.50	0.00	N	Arm 5 Ahead	Inf	100.0 %	2005	2005
4/1 (Wheatway exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Painswick Road (S) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Painswick Road (N) exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2027 GROWTH AM' (FG3: '2027 GROWTH AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination				
		A	B	C	Tot.
	A	0	150	228	378
	B	178	0	173	351
	C	193	127	0	320
	Tot.	371	277	401	1049

Traffic Lane Flows

Lane	Scenario 3: 2027 GROWTH AM
Junction: Painswick Road/ Wheatway	
1/1	351
2/1 (with short)	320(In) 193(Out)
2/2 (short)	127
3/1 (short)	150
3/2 (with short)	378(In) 228(Out)
4/1	277
5/1	401
6/1	371

Lane Saturation Flows

Junction: Painswick Road/ Wheatway								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Wheatway)	3.40	0.00	Y	Arm 5 Left	15.10	49.3 %	1801	1801
				Arm 6 Right	20.90	50.7 %		
2/1 (Painswick Road (S))	2.80	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1895	1895
2/2 (Painswick Road (S))	2.80	0.00	N	Arm 4 Right	16.20	100.0 %	1863	1863
3/1 (Painswick Road (N))	2.50	0.00	Y	Arm 4 Left	20.20	100.0 %	1736	1736
3/2 (Painswick Road (N))	2.50	0.00	N	Arm 5 Ahead	Inf	100.0 %	2005	2005
4/1 (Wheatway exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Painswick Road (S) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Painswick Road (N) exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2027 GROWTH PM' (FG4: '2027 GROWTH PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination				
		A	B	C	Tot.
	A	0	151	229	380
	B	200	0	126	326
	C	214	162	0	376
	Tot.	414	313	355	1082

Traffic Lane Flows

Lane	Scenario 4: 2027 GROWTH PM
Junction: Painswick Road/ Wheatway	
1/1	326
2/1 (with short)	376(In) 214(Out)
2/2 (short)	162
3/1 (short)	151
3/2 (with short)	380(In) 229(Out)
4/1	313
5/1	355
6/1	414

Lane Saturation Flows

Junction: Painswick Road/ Wheatway								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Wheatway)	3.40	0.00	Y	Arm 5 Left	15.10	38.7 %	1806	1806
				Arm 6 Right	20.90	61.3 %		
2/1 (Painswick Road (S))	2.80	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1895	1895
2/2 (Painswick Road (S))	2.80	0.00	N	Arm 4 Right	16.20	100.0 %	1863	1863
3/1 (Painswick Road (N))	2.50	0.00	Y	Arm 4 Left	20.20	100.0 %	1736	1736
3/2 (Painswick Road (N))	2.50	0.00	N	Arm 5 Ahead	Inf	100.0 %	2005	2005
4/1 (Wheatway exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Painswick Road (S) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Painswick Road (N) exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2027 +CD AM' (FG5: '2027 + CD AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination				
		A	B	C	Tot.
	A	0	150	299	449
	B	178	0	178	356
	C	428	149	0	577
	Tot.	606	299	477	1382

Traffic Lane Flows

Lane	Scenario 5: 2027 +CD AM
Junction: Painswick Road/ Wheatway	
1/1	356
2/1 (with short)	577(In) 428(Out)
2/2 (short)	149
3/1 (short)	150
3/2 (with short)	449(In) 299(Out)
4/1	299
5/1	477
6/1	606

Lane Saturation Flows

Junction: Painswick Road/ Wheatway								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Wheatway)	3.40	0.00	Y	Arm 5 Left	15.10	50.0 %	1801	1801
				Arm 6 Right	20.90	50.0 %		
2/1 (Painswick Road (S))	2.80	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1895	1895
2/2 (Painswick Road (S))	2.80	0.00	N	Arm 4 Right	16.20	100.0 %	1863	1863
3/1 (Painswick Road (N))	2.50	0.00	Y	Arm 4 Left	20.20	100.0 %	1736	1736
3/2 (Painswick Road (N))	2.50	0.00	N	Arm 5 Ahead	Inf	100.0 %	2005	2005
4/1 (Wheatway exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Painswick Road (S) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Painswick Road (N) exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2027 + CD PM' (FG6: '2027 + CD PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination				
		A	B	C	Tot.
	A	0	151	447	598
	B	200	0	146	346
	C	333	173	0	506
	Tot.	533	324	593	1450

Traffic Lane Flows

Lane	Scenario 6: 2027 + CD PM
Junction: Painswick Road/ Wheatway	
1/1	346
2/1 (with short)	506(In) 333(Out)
2/2 (short)	173
3/1 (short)	151
3/2 (with short)	598(In) 447(Out)
4/1	324
5/1	593
6/1	533

Lane Saturation Flows

Junction: Painswick Road/ Wheatway								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Wheatway)	3.40	0.00	Y	Arm 5 Left	15.10	42.2 %	1804	1804
				Arm 6 Right	20.90	57.8 %		
2/1 (Painswick Road (S))	2.80	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1895	1895
2/2 (Painswick Road (S))	2.80	0.00	N	Arm 4 Right	16.20	100.0 %	1863	1863
3/1 (Painswick Road (N))	2.50	0.00	Y	Arm 4 Left	20.20	100.0 %	1736	1736
3/2 (Painswick Road (N))	2.50	0.00	N	Arm 5 Ahead	Inf	100.0 %	2005	2005
4/1 (Wheatway exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Painswick Road (S) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Painswick Road (N) exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 7: '2027 + CD + DEV AM' (FG7: '2027 + CD + DEV AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination				
		A	B	C	Tot.
	A	0	151	305	456
	B	178	0	179	357
	C	482	159	0	641
	Tot.	660	310	484	1454

Traffic Lane Flows

Lane	Scenario 7: 2027 + CD + DEV AM
Junction: Painswick Road/ Wheatway	
1/1	357
2/1 (with short)	641(In) 482(Out)
2/2 (short)	159
3/1 (short)	151
3/2 (with short)	456(In) 305(Out)
4/1	310
5/1	484
6/1	660

Lane Saturation Flows

Junction: Painswick Road/ Wheatway								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Wheatway)	3.40	0.00	Y	Arm 5 Left	15.10	50.1 %	1801	1801
				Arm 6 Right	20.90	49.9 %		
2/1 (Painswick Road (S))	2.80	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1895	1895
2/2 (Painswick Road (S))	2.80	0.00	N	Arm 4 Right	16.20	100.0 %	1863	1863
3/1 (Painswick Road (N))	2.50	0.00	Y	Arm 4 Left	20.20	100.0 %	1736	1736
3/2 (Painswick Road (N))	2.50	0.00	N	Arm 5 Ahead	Inf	100.0 %	2005	2005
4/1 (Wheatway exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Painswick Road (S) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Painswick Road (N) exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2027 + CD + DEV PM' (FG8: '2027 + CD + DEV PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination				
		A	B	C	Tot.
	A	0	151	511	662
	B	200	0	157	357
	C	352	177	0	529
	Tot.	552	328	668	1548

Traffic Lane Flows

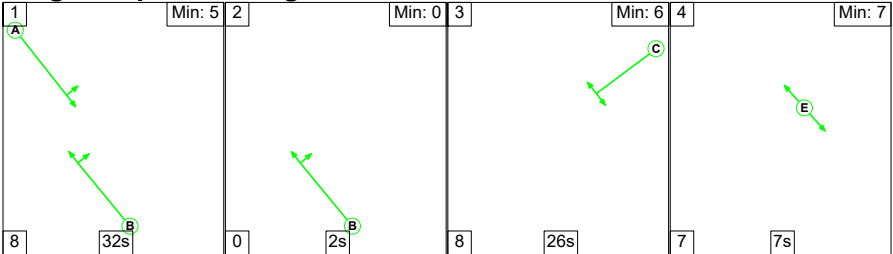
Lane	Scenario 8: 2027 + CD + DEV PM
Junction: Painswick Road/ Wheatway	
1/1	357
2/1 (with short)	529(In) 352(Out)
2/2 (short)	177
3/1 (short)	151
3/2 (with short)	662(In) 511(Out)
4/1	328
5/1	668
6/1	552

Lane Saturation Flows

Junction: Painswick Road/ Wheatway								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Wheatway)	3.40	0.00	Y	Arm 5 Left	15.10	44.0 %	1804	1804
				Arm 6 Right	20.90	56.0 %		
2/1 (Painswick Road (S))	2.80	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1895	1895
2/2 (Painswick Road (S))	2.80	0.00	N	Arm 4 Right	16.20	100.0 %	1863	1863
3/1 (Painswick Road (N))	2.50	0.00	Y	Arm 4 Left	20.20	100.0 %	1736	1736
3/2 (Painswick Road (N))	2.50	0.00	N	Arm 5 Ahead	Inf	100.0 %	2005	2005
4/1 (Wheatway exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Painswick Road (S) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Painswick Road (N) exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2022 BASE AM' (FG1: '2022 BASE AM', Plan 1: 'Network Control Plan 1')

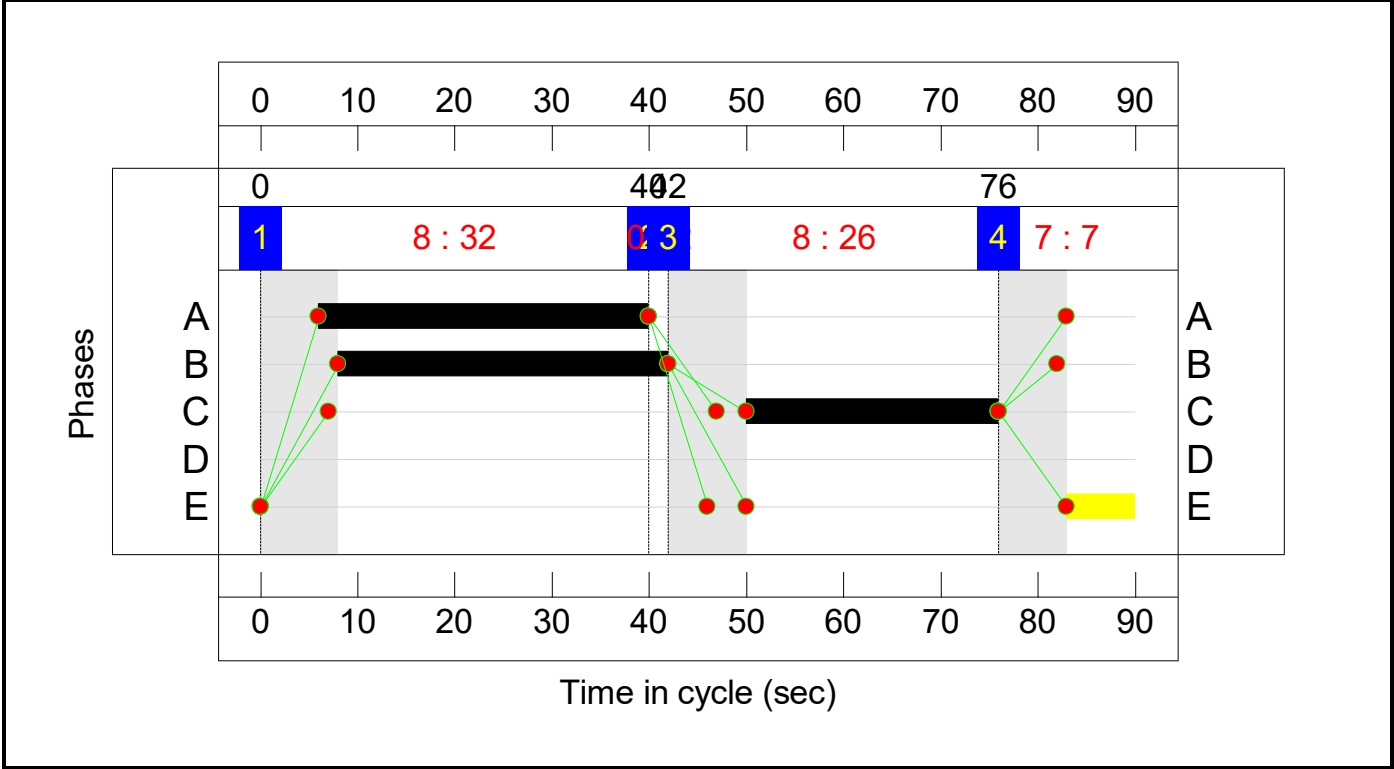
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	32	2	26	7
Change Point	0	40	42	76


Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

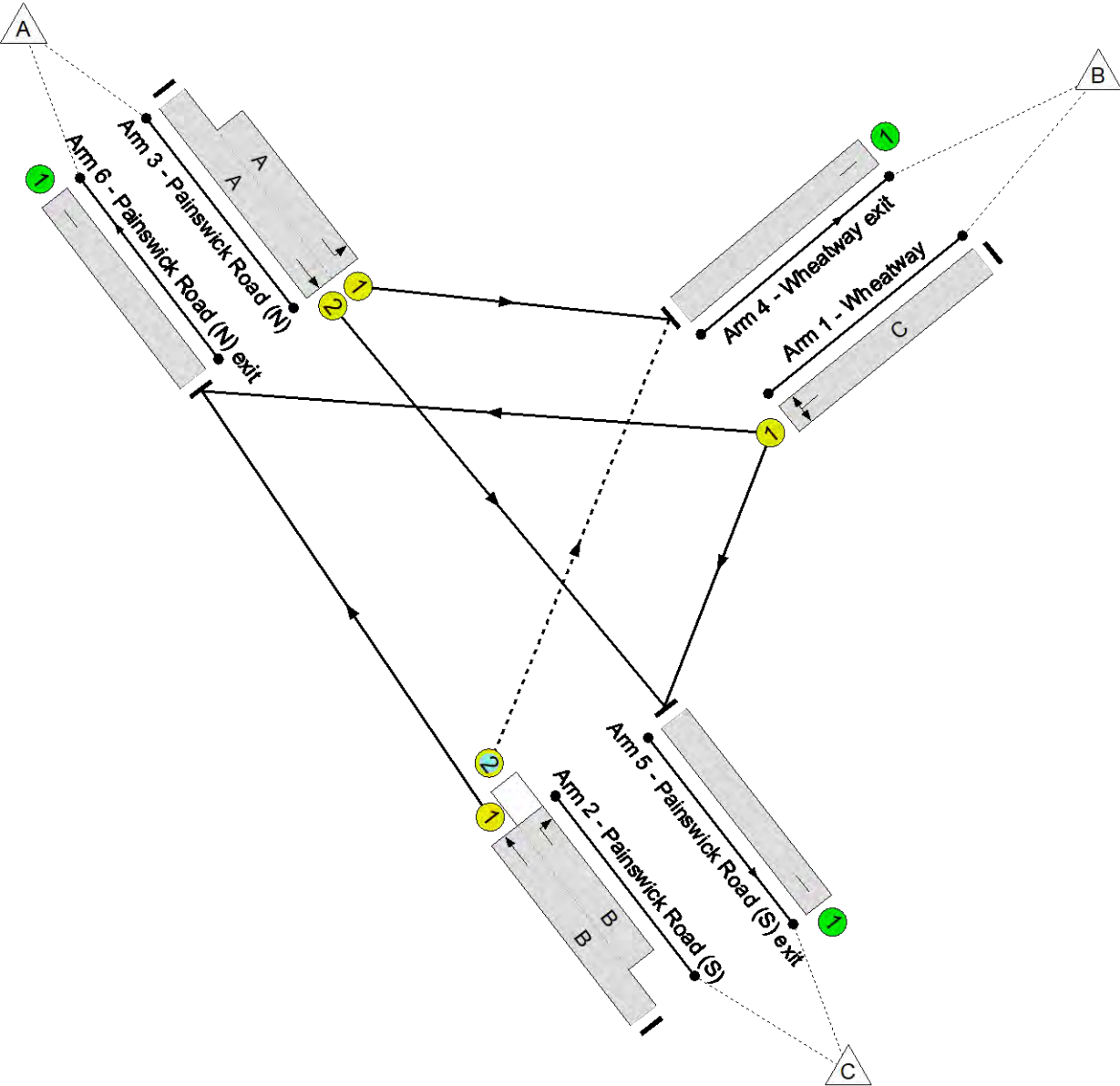
Full Input Data And Results



Painswick Road/ Wheatway

PRC: 47.8 %

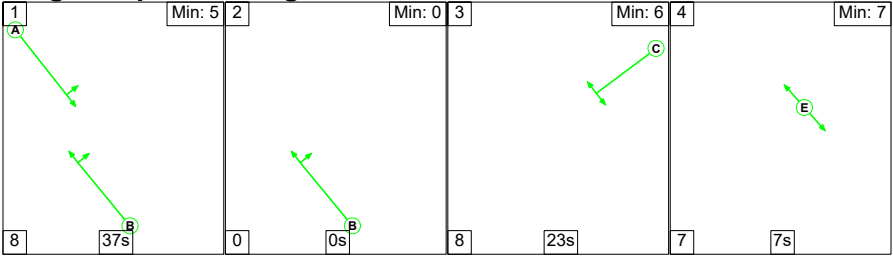
Total Traffic Delay: 7.2 pcuHr



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	60.9%
Painswick Road/ Wheatway	-	-	N/A	-	-		-	-	-	-	-	-	60.9%
1/1	Wheatway Left Right	U	N/A	N/A	C		1	26	-	329	1801	540	60.9%
2/1+2/2	Painswick Road (S) Right Ahead	U+O	N/A	N/A	B		1	34	-	300	1895:1863	614+404	29.5 : 29.5%
3/2+3/1	Painswick Road (N) Left Ahead	U	N/A	N/A	A		1	34	-	355	2005:1736	606+400	35.3 : 35.3%
4/1	Wheatway exit	U	N/A	N/A	-		-	-	-	260	Inf	Inf	0.0%
5/1	Painswick Road (S) exit	U	N/A	N/A	-		-	-	-	376	Inf	Inf	0.0%
6/1	Painswick Road (N) exit	U	N/A	N/A	-		-	-	-	348	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	116	0	3	5.8	1.3	0.1	7.2	-	-	-	-
Painswick Road/ Wheatway	-	-	116	0	3	5.8	1.3	0.1	7.2	-	-	-	-
1/1	329	329	-	-	-	2.5	0.8	-	3.2	35.4	7.0	0.8	7.8
2/1+2/2	300	300	116	0	3	1.5	0.2	0.1	1.9	22.7	3.0	0.2	3.2
3/2+3/1	355	355	-	-	-	1.8	0.3	-	2.1	21.4	3.6	0.3	3.9
4/1	260	260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	376	376	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	348	348	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 47.8 Total Delay for Signalled Lanes (pcuHr): 7.24 Cycle Time (s): 90 PRC Over All Lanes (%): 47.8 Total Delay Over All Lanes(pcuHr): 7.24													

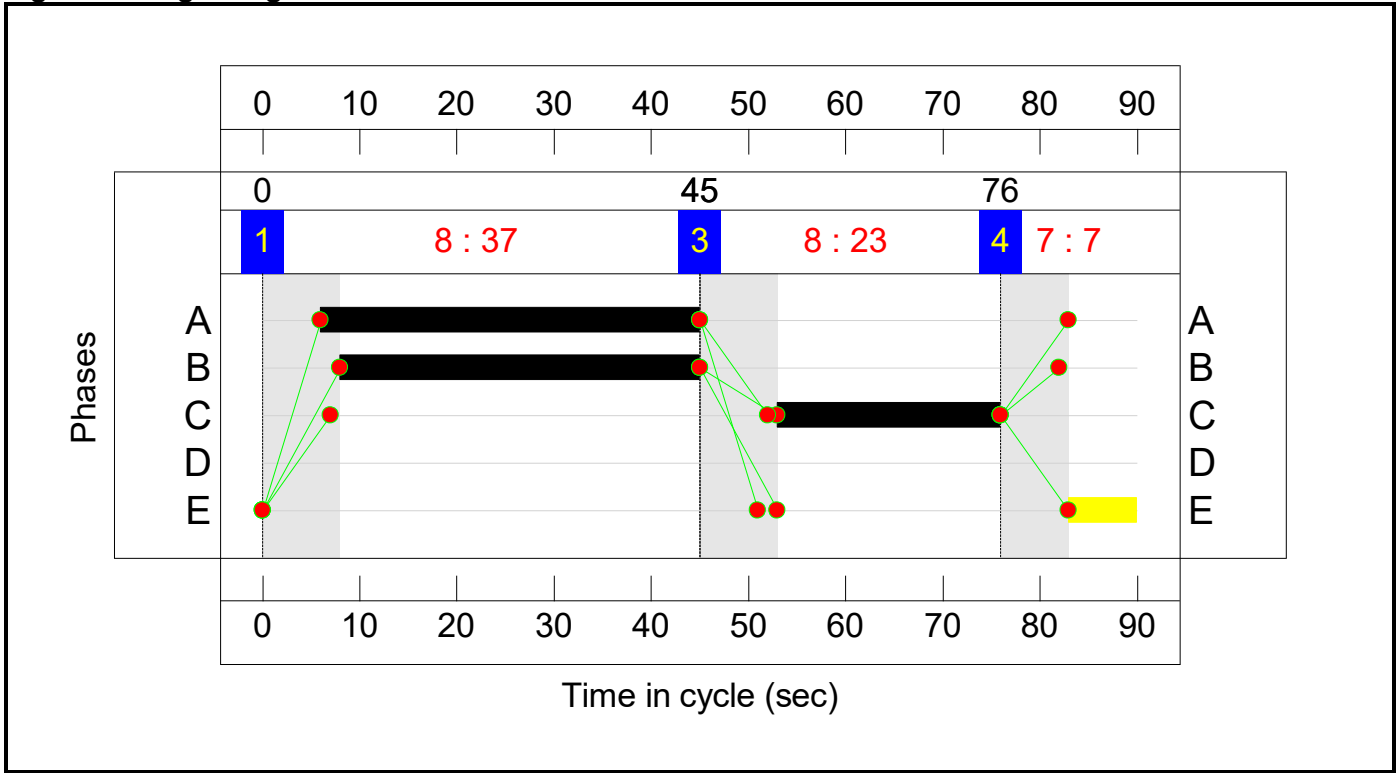
Stage Sequence Diagram




Stage Timings

Stage	1	2	3	4
Duration	37	0	23	7
Change Point	0	45	45	76

Signal Timings Diagram



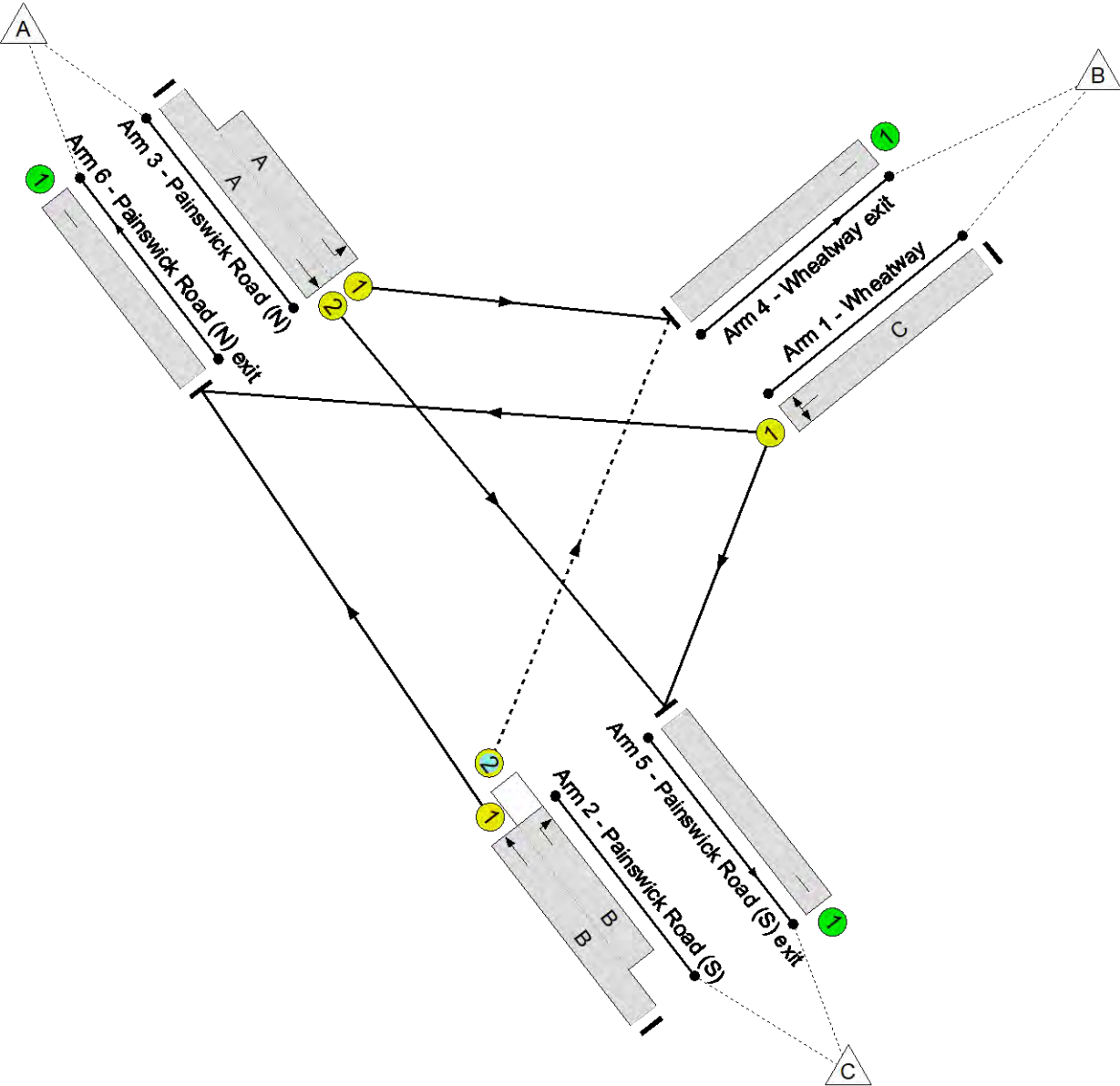
Full Input Data And Results



Painswick Road/ Wheatway

PRC: 42.1 %

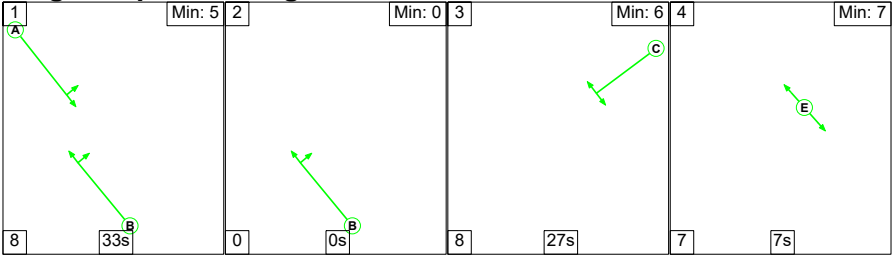
Total Traffic Delay: 7.1 pcuHr



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	63.3%
Painswick Road/ Wheatway	-	-	N/A	-	-		-	-	-	-	-	-	63.3%
1/1	Wheatway Left Right	U	N/A	N/A	C		1	23	-	305	1806	482	63.3%
2/1+2/2	Painswick Road (S) Right Ahead	U+O	N/A	N/A	B		1	37	-	352	1895:1863	638+454	31.3 : 33.5%
3/2+3/1	Painswick Road (N) Left Ahead	U	N/A	N/A	A		1	39	-	355	2005:1736	670+441	32.0 : 32.0%
4/1	Wheatway exit	U	N/A	N/A	-		-	-	-	293	Inf	Inf	0.0%
5/1	Painswick Road (S) exit	U	N/A	N/A	-		-	-	-	332	Inf	Inf	0.0%
6/1	Painswick Road (N) exit	U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	152	0	0	5.6	1.3	0.1	7.1	-	-	-	-
Painswick Road/ Wheatway	-	-	152	0	0	5.6	1.3	0.1	7.1	-	-	-	-
1/1	305	305	-	-	-	2.5	0.9	-	3.3	39.2	6.7	0.9	7.5
2/1+2/2	352	352	152	0	0	1.6	0.2	0.1	2.0	20.8	3.2	0.2	3.5
3/2+3/1	355	355	-	-	-	1.5	0.2	-	1.8	17.8	3.3	0.2	3.5
4/1	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	332	332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 42.1 Total Delay for Signalled Lanes (pcuHr): 7.11 Cycle Time (s): 90 PRC Over All Lanes (%): 42.1 Total Delay Over All Lanes(pcuHr): 7.11													

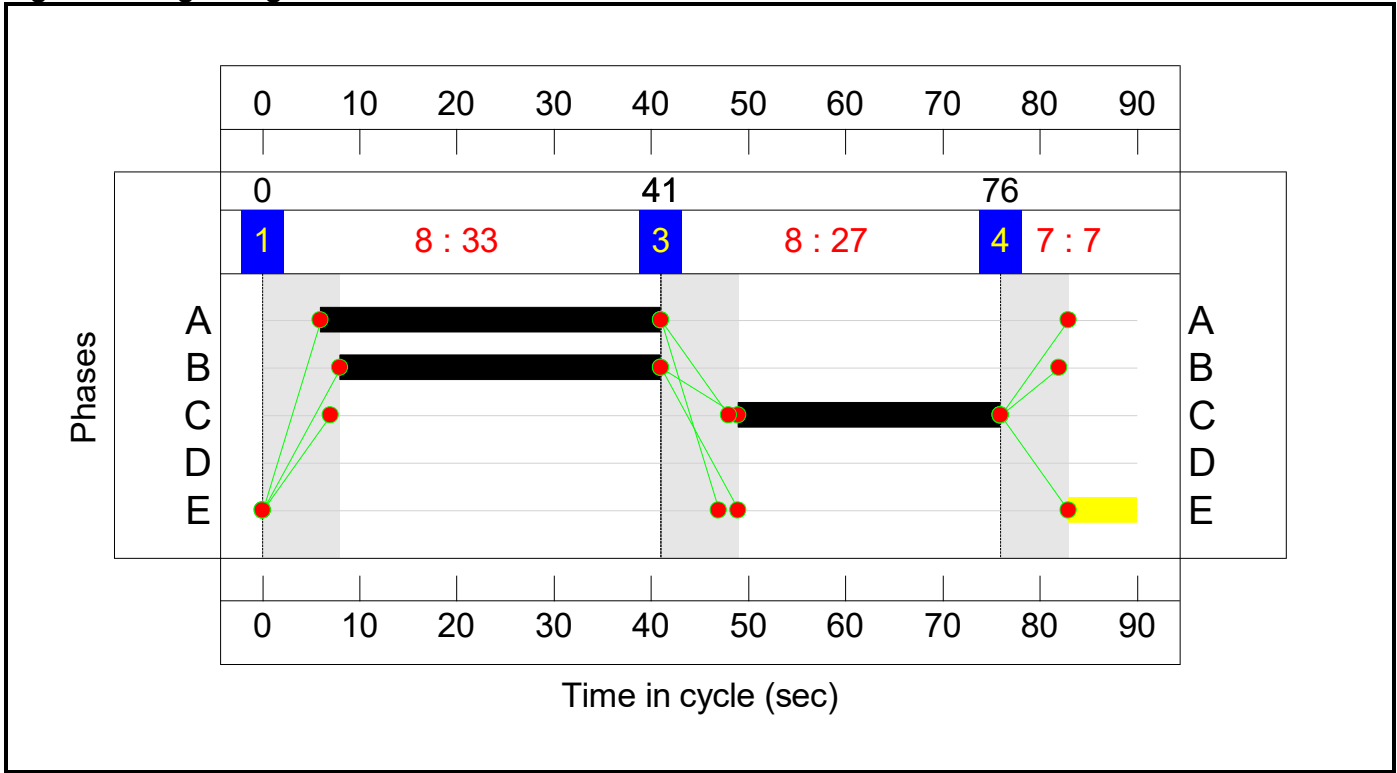
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	33	0	27	7
Change Point	0	41	41	76


Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

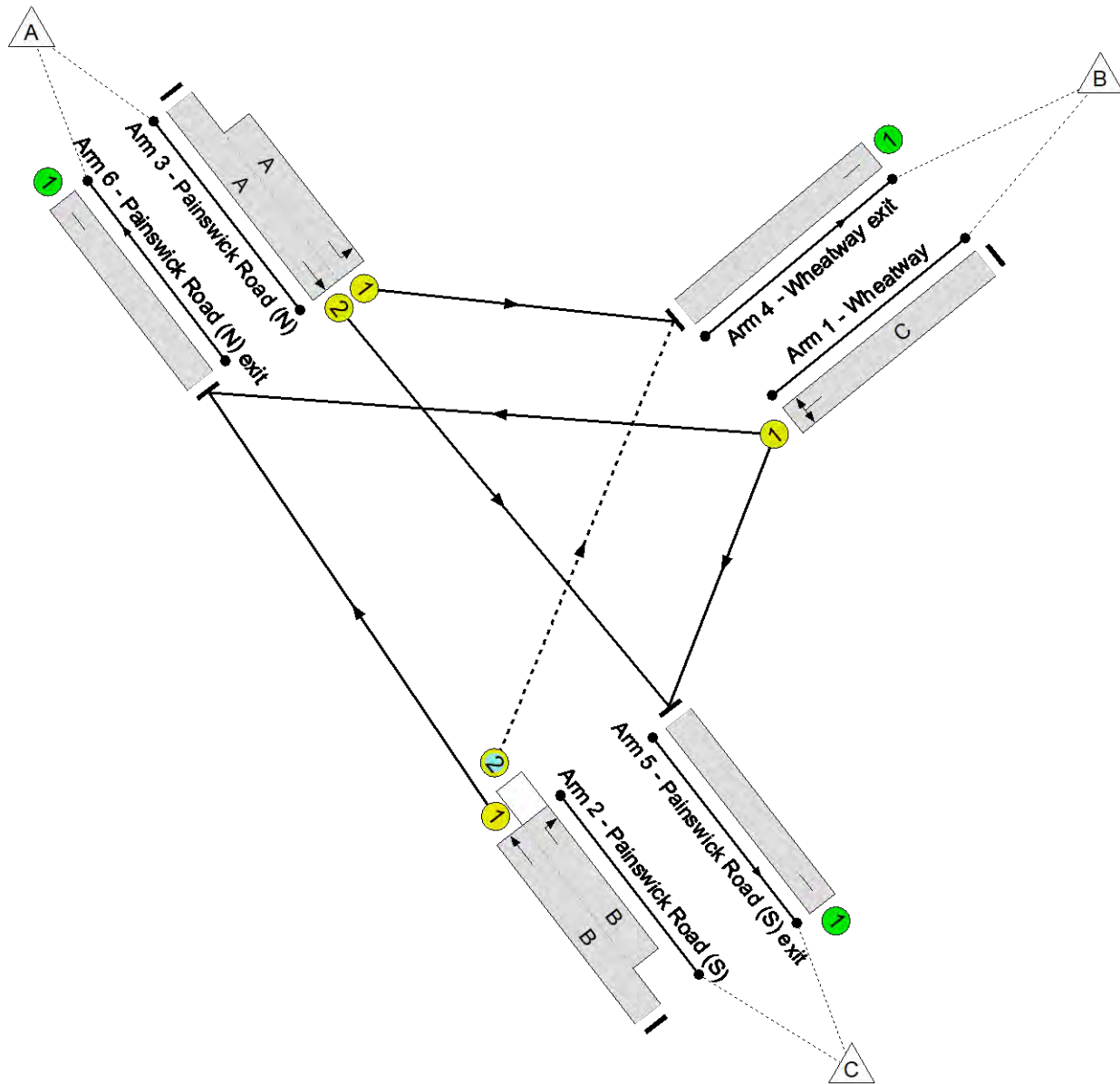
Full Input Data And Results



Painswick Road/ Wheatway

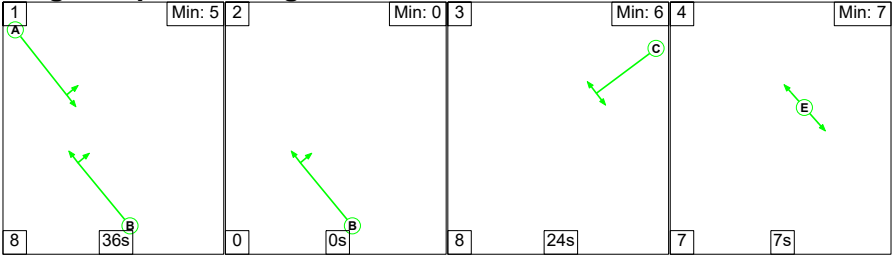
PRC: 43.7 %

Total Traffic Delay: 7.7 pcuHr



Item	Lane	Lane	Controller	Position In	Full Phase	Arrow	Num	Total Green	Arrow	Demand	Sat Flow	Capacity	Deg Sat
------	------	------	------------	-------------	------------	-------	-----	-------------	-------	--------	----------	----------	---------

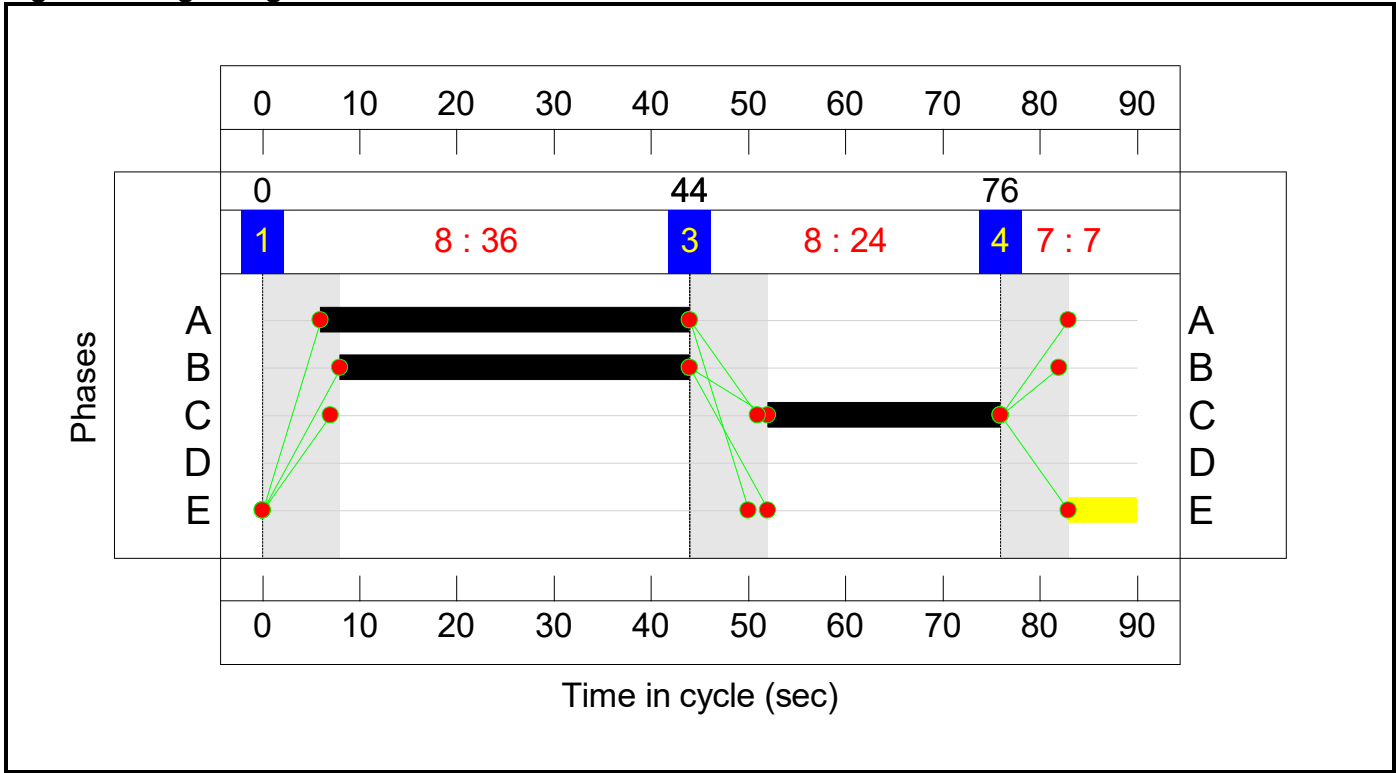
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	36	0	24	7
Change Point	0	44	44	76


Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

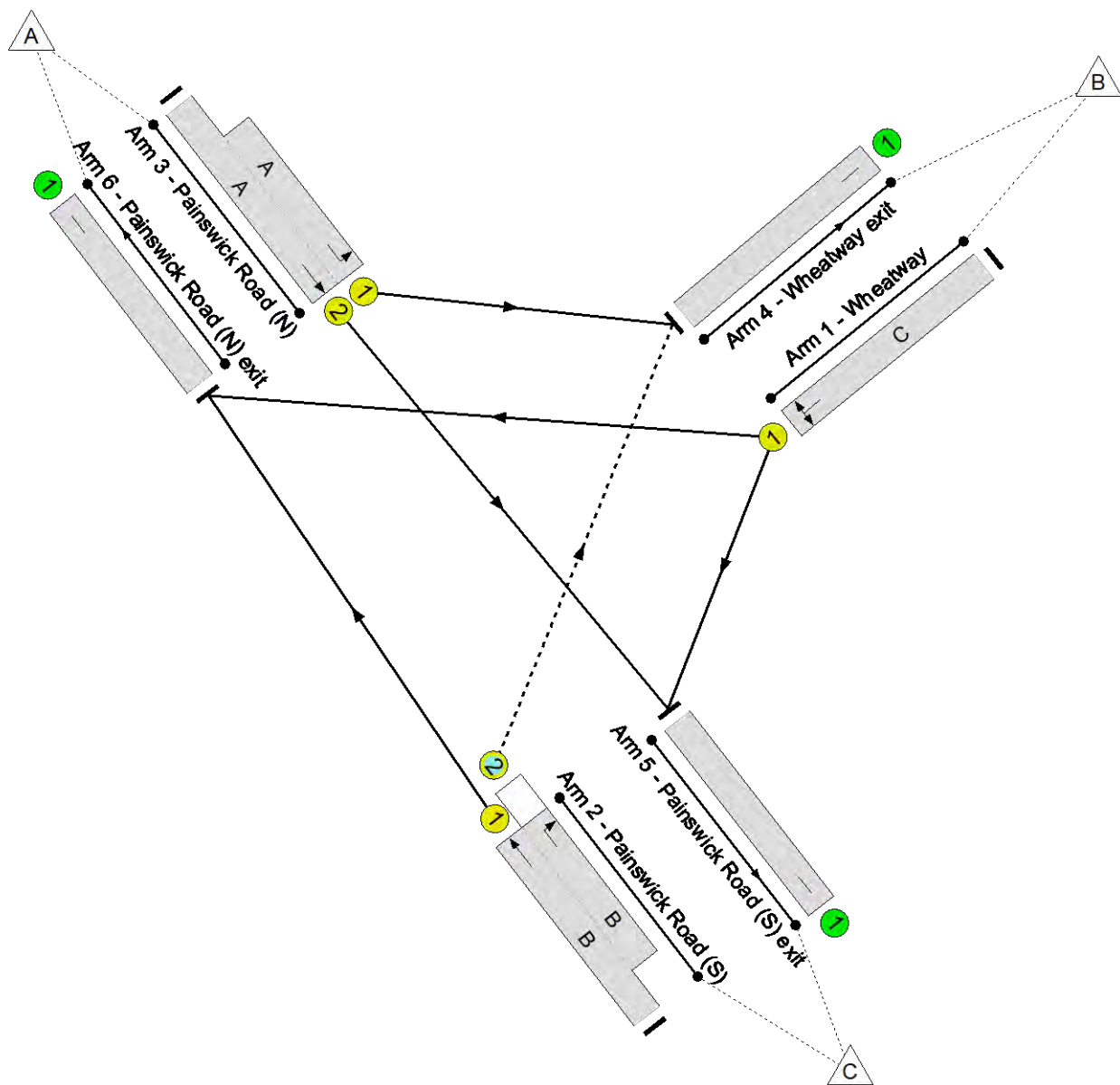
Full Input Data And Results



Painswick Road/ Wheatway

PRC: 38.5 %

Total Traffic Delay: 7.8 pcuHr

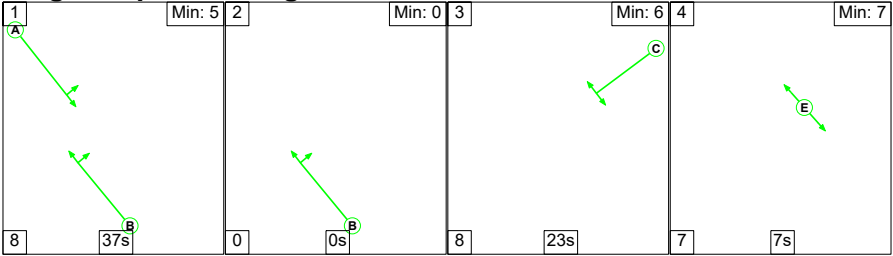


Full Input Data And Results

Network Results

[illegible]

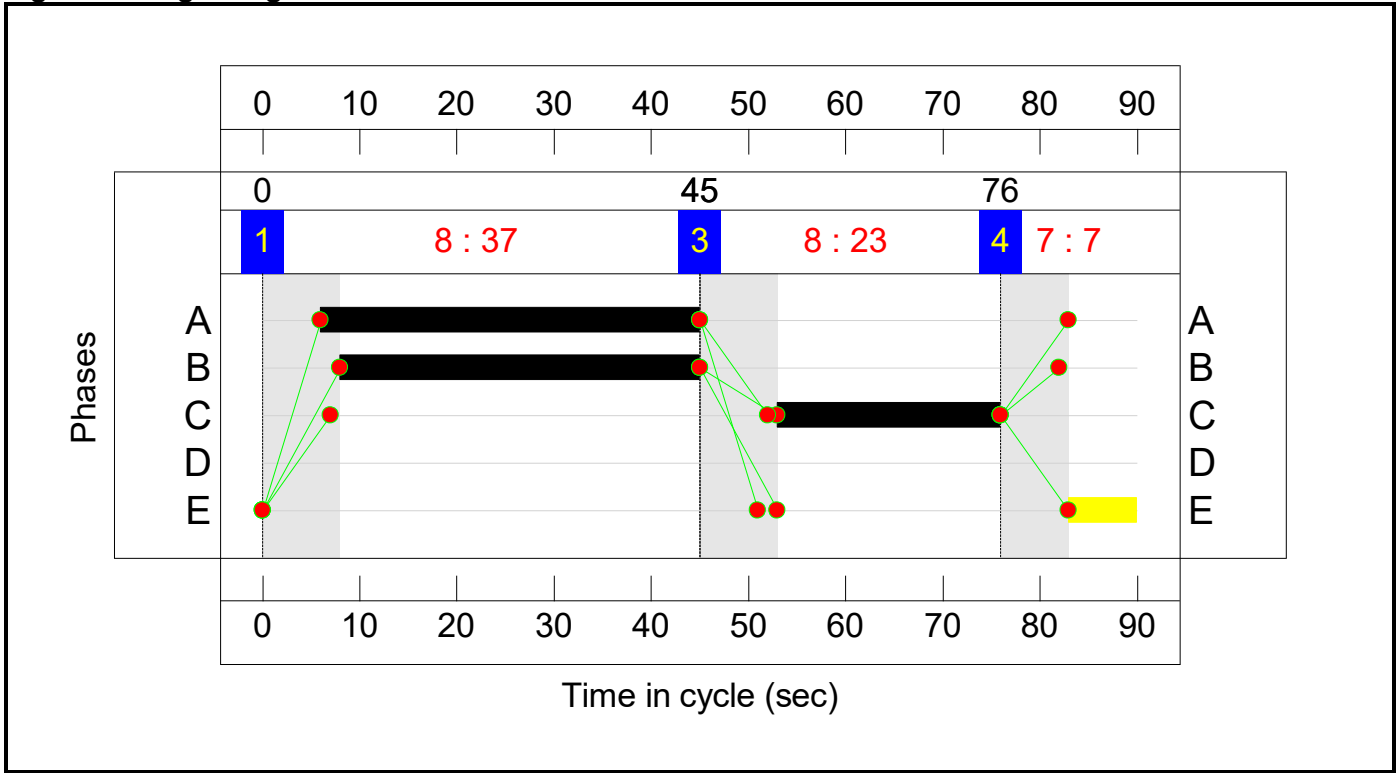
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	37	0	23	7
Change Point	0	45	45	76


Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

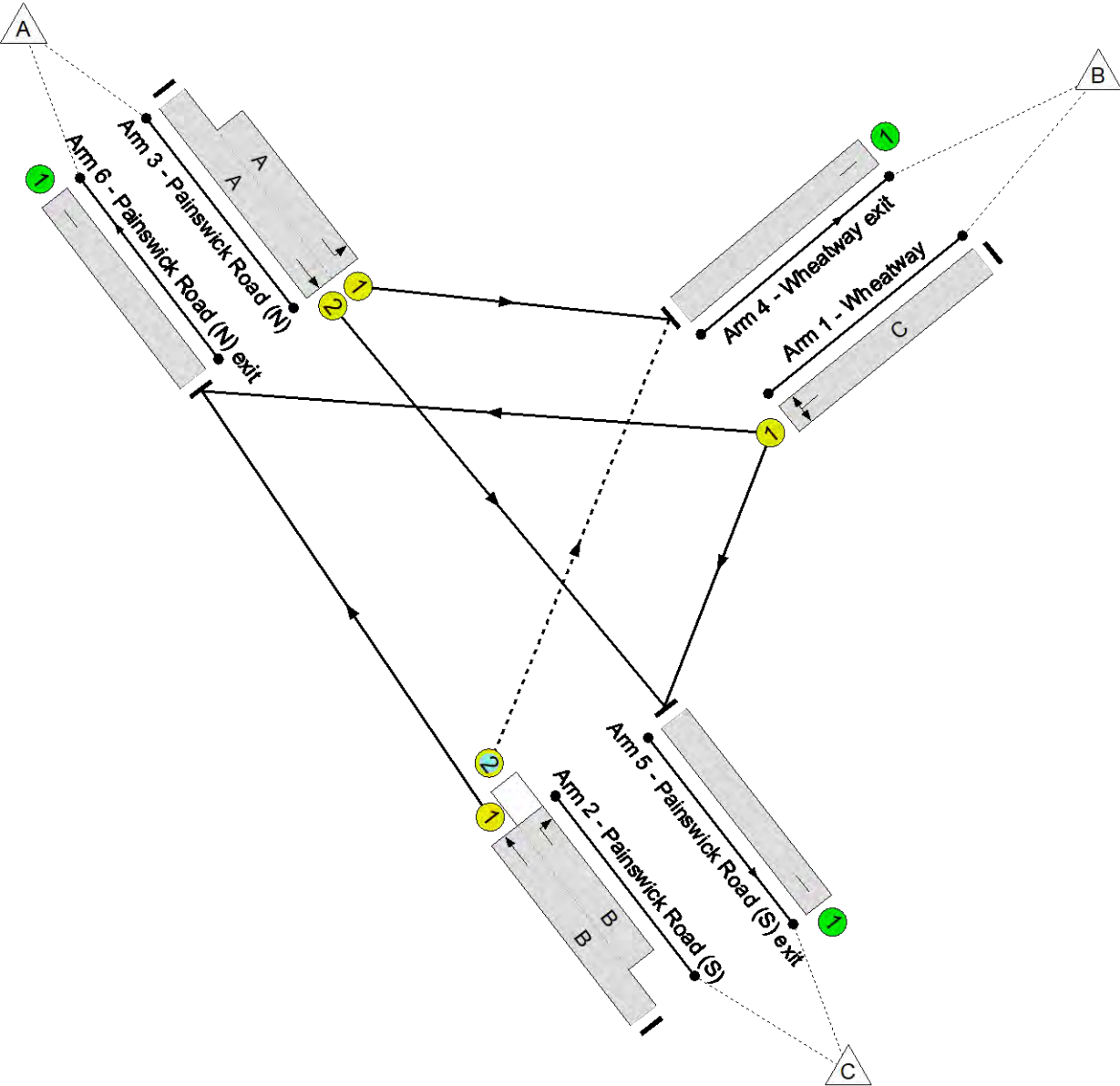
Full Input Data And Results



Painswick Road/ Wheatway

PRC: 21.4 %

Total Traffic Delay: 10.8 pcuHr



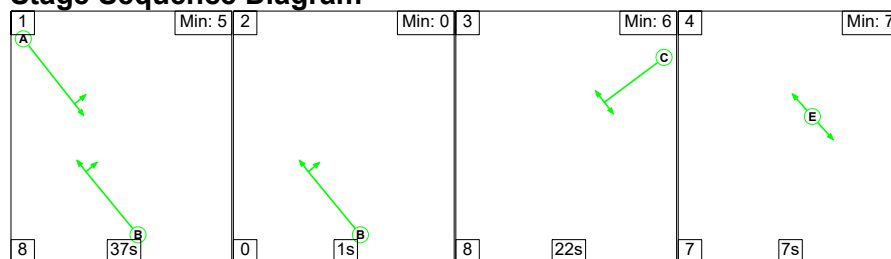
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	74.1%
Painswick Road/ Wheatway	-	-	N/A	-	-		-	-	-	-	-	-	74.1%
1/1	Wheatway Left Right	U	N/A	N/A	C		1	23	-	356	1801	480	74.1%
2/1+2/2	Painswick Road (S) Right Ahead	U+O	N/A	N/A	B		1	37	-	577	1895:1863	706+246	60.6 : 60.6%
3/2+3/1	Painswick Road (N) Left Ahead	U	N/A	N/A	A		1	39	-	449	2005:1736	706+354	42.3 : 42.3%
4/1	Wheatway exit	U	N/A	N/A	-		-	-	-	299	Inf	Inf	0.0%
5/1	Painswick Road (S) exit	U	N/A	N/A	-		-	-	-	477	Inf	Inf	0.0%
6/1	Painswick Road (N) exit	U	N/A	N/A	-		-	-	-	606	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	149	0	0	8.0	2.5	0.2	10.8	-	-	-	-
Painswick Road/ Wheatway	-	-	149	0	0	8.0	2.5	0.2	10.8	-	-	-	-
1/1	356	356	-	-	-	3.0	1.4	-	4.4	44.3	8.1	1.4	9.5
2/1+2/2	577	577	149	0	0	3.0	0.8	0.2	4.0	25.1	8.0	0.8	8.7
3/2+3/1	449	449	-	-	-	2.0	0.4	-	2.4	18.9	4.8	0.4	5.2
4/1	299	299	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	477	477	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	606	606	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 21.4 Total Delay for Signalled Lanes (pcuHr): 10.76 Cycle Time (s): 90 PRC Over All Lanes (%): 21.4 Total Delay Over All Lanes(pcuHr): 10.76													

Full Input Data And Results

Scenario 6: '2027 + CD PM' (FG6: '2027 + CD PM', Plan 1: 'Network Control Plan 1')

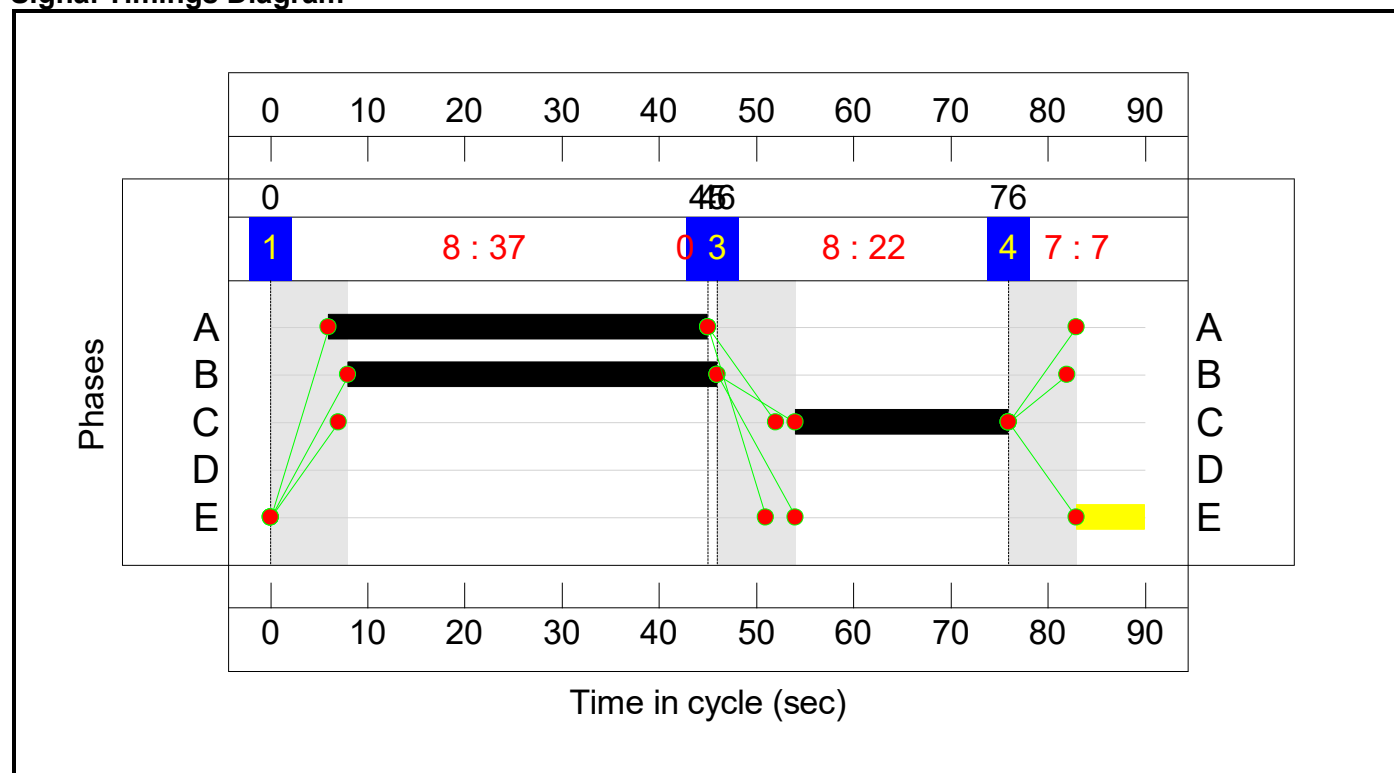
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	37	1	22	7
Change Point	0	45	46	76


Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

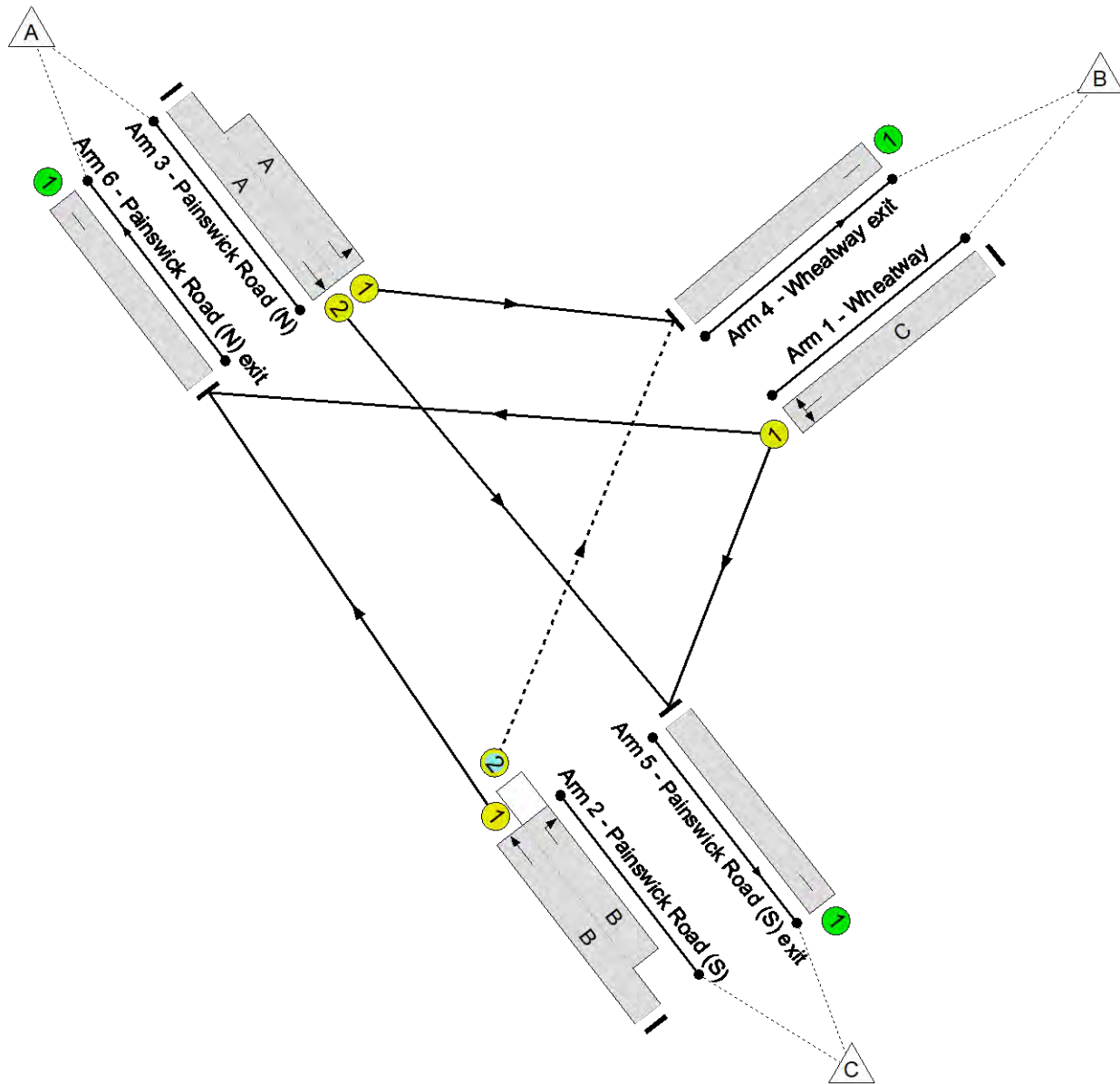
Full Input Data And Results



Painswick Road/ Wheatway

PRC: 19.9 %

Total Traffic Delay: 11.6 pcuHr



Full Input Data And Results

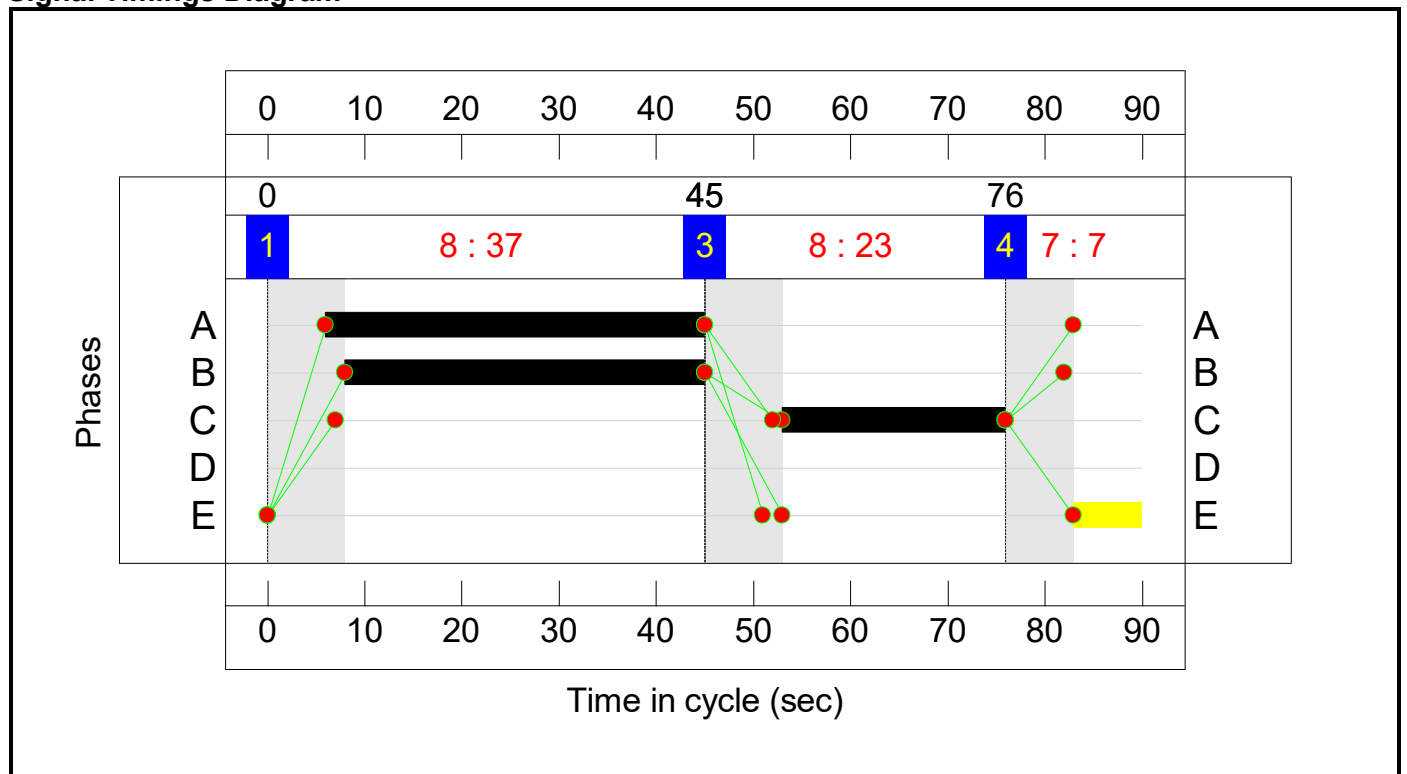
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	75.1%
Painswick Road/ Wheatway	-	-	N/A	-	-		-	-	-	-	-	-	75.1%
1/1	Wheatway Left Right	U	N/A	N/A	C		1	22	-	346	1804	461	75.1%
2/1+2/2	Painswick Road (S) Right Ahead	U+O	N/A	N/A	B		1	38	-	506	1895:1863	687+292	48.4 : 59.2%
3/2+3/1	Painswick Road (N) Left Ahead	U	N/A	N/A	A		1	39	-	598	2005:1736	755+255	59.2 : 59.2%
4/1	Wheatway exit	U	N/A	N/A	-		-	-	-	324	Inf	Inf	0.0%
5/1	Painswick Road (S) exit	U	N/A	N/A	-		-	-	-	593	Inf	Inf	0.0%
6/1	Painswick Road (N) exit	U	N/A	N/A	-		-	-	-	533	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	171	0	2	8.4	2.7	0.5	11.6	-	-	-	-
Painswick Road/ Wheatway	-	-	171	0	2	8.4	2.7	0.5	11.6	-	-	-	-
1/1	346	346	-	-	-	3.0	1.5	-	4.4	46.1	7.9	1.5	9.3
2/1+2/2	506	506	171	0	2	2.5	0.5	0.5	3.5	25.2	5.6	0.5	6.2
3/2+3/1	598	598	-	-	-	2.9	0.7	-	3.6	21.6	7.9	0.7	8.7
4/1	324	324	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	593	593	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	533	533	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 19.9 Total Delay for Signalled Lanes (pcuHr): 11.56 Cycle Time (s): 90 PRC Over All Lanes (%): 19.9 Total Delay Over All Lanes(pcuHr): 11.56													

Stage Sequence Diagram




Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

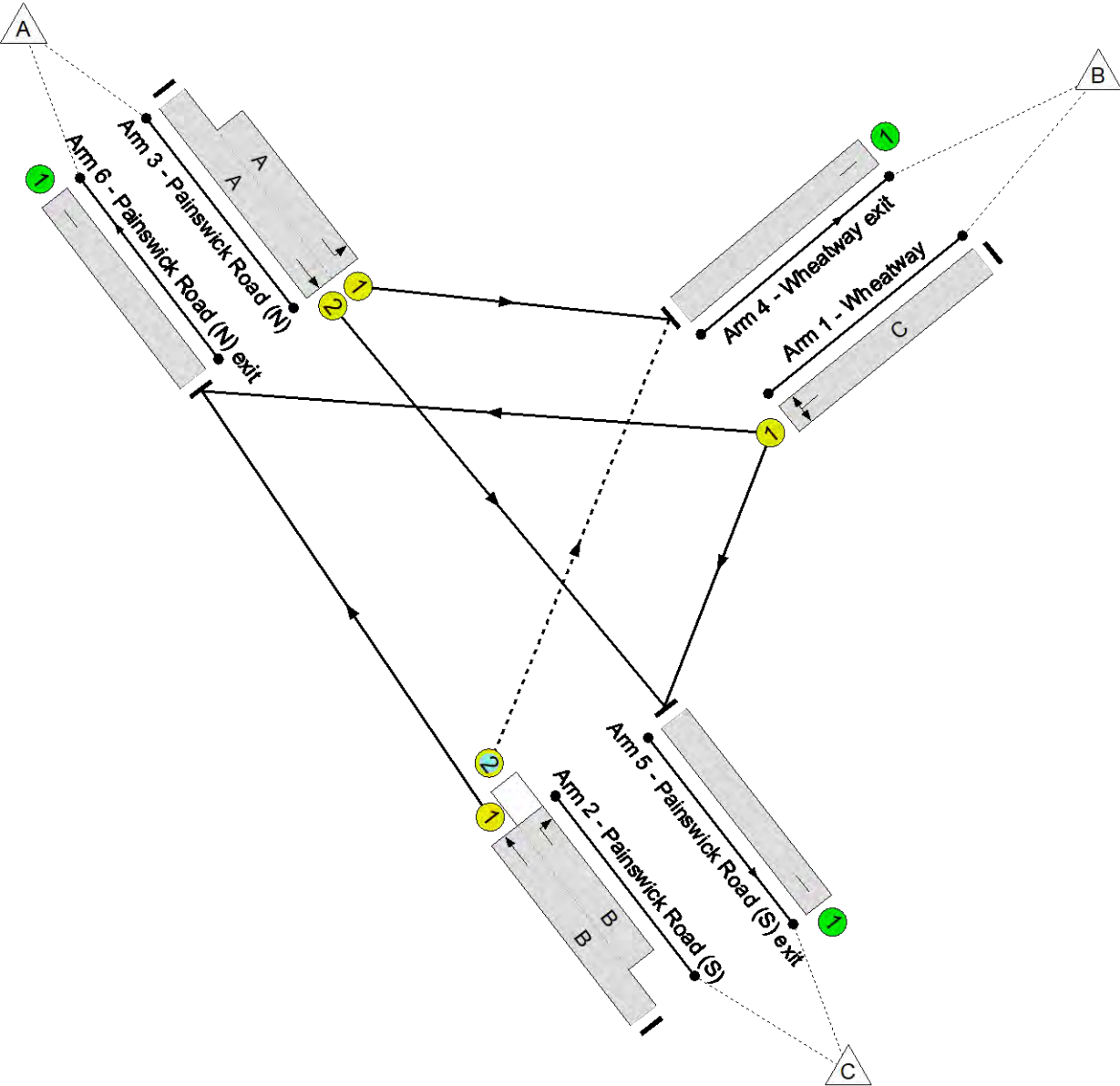
Full Input Data And Results



Painswick Road/ Wheatway

PRC: 21.1 %

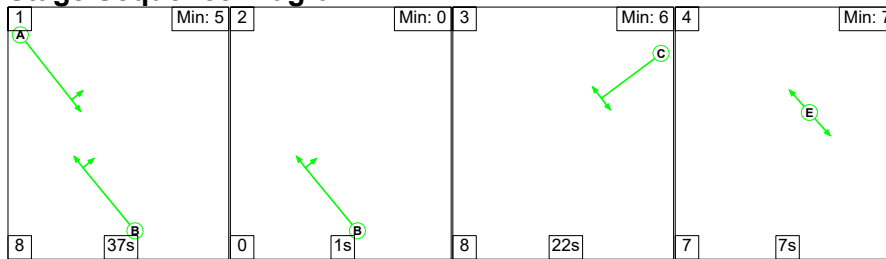
Total Traffic Delay: 11.6 pcuHr



Item	Lane	Lane	Controller	Position In	Full Phase	Arrow	Num	Total Green	Arrow	Demand	Sat Flow	Capacity	Deg Sat
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	Description	Type	Stream	Filtered Route		Phase	Greens	(s)	Green (s)	Flow (pcu)	(pcu/Hr)	(pcu)	(%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	74.3%
Painswick Road/ Wheatway	-	-	N/A	-	-		-	-	-	-	-	-	74.3%
1/1	Wheatway Left Right	U	N/A	N/A	C		1	23	-	357	1801	480	74.3%
2/1+2/2	Painswick Road (S) Right Ahead	U+O	N/A	N/A	B		1	37	-	641	1895:1863	710+234	67.9 : 67.9%
3/2+3/1	Painswick Road (N) Left Ahead	U	N/A	N/A	A		1	39	-	456	2005:1736	708+351	43.1 : 43.1%
4/1	Wheatway exit	U	N/A	N/A	-		-	-	-	310	Inf	Inf	0.0%
5/1	Painswick Road (S) exit	U	N/A	N/A	-		-	-	-	484	Inf	Inf	0.0%
6/1	Painswick Road (N) exit	U	N/A	N/A	-		-	-	-	660	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	159	0	0	8.5	2.8	0.2	11.6	-	-	-	-
Painswick Road/ Wheatway	-	-	159	0	0	8.5	2.8	0.2	11.6	-	-	-	-
1/1	357	357	-	-	-	3.0	1.4	-	4.4	44.5	8.1	1.4	9.5
2/1+2/2	641	641	159	0	0	3.5	1.0	0.2	4.8	26.8	9.2	1.0	10.3
3/2+3/1	456	456	-	-	-	2.0	0.4	-	2.4	19.0	4.9	0.4	5.3
4/1	310	310	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	484	484	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	660	660	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 21.1 Total Delay for Signalled Lanes (pcuHr): 11.59 Cycle Time (s): 90 PRC Over All Lanes (%): 21.1 Total Delay Over All Lanes(pcuHr): 11.59													

Stage Sequence Diagram




Stage	1	2	3	4
Duration	37	1	22	7
Change Point	0	45	46	76

Full Input Data And Results

Network Layout Diagram

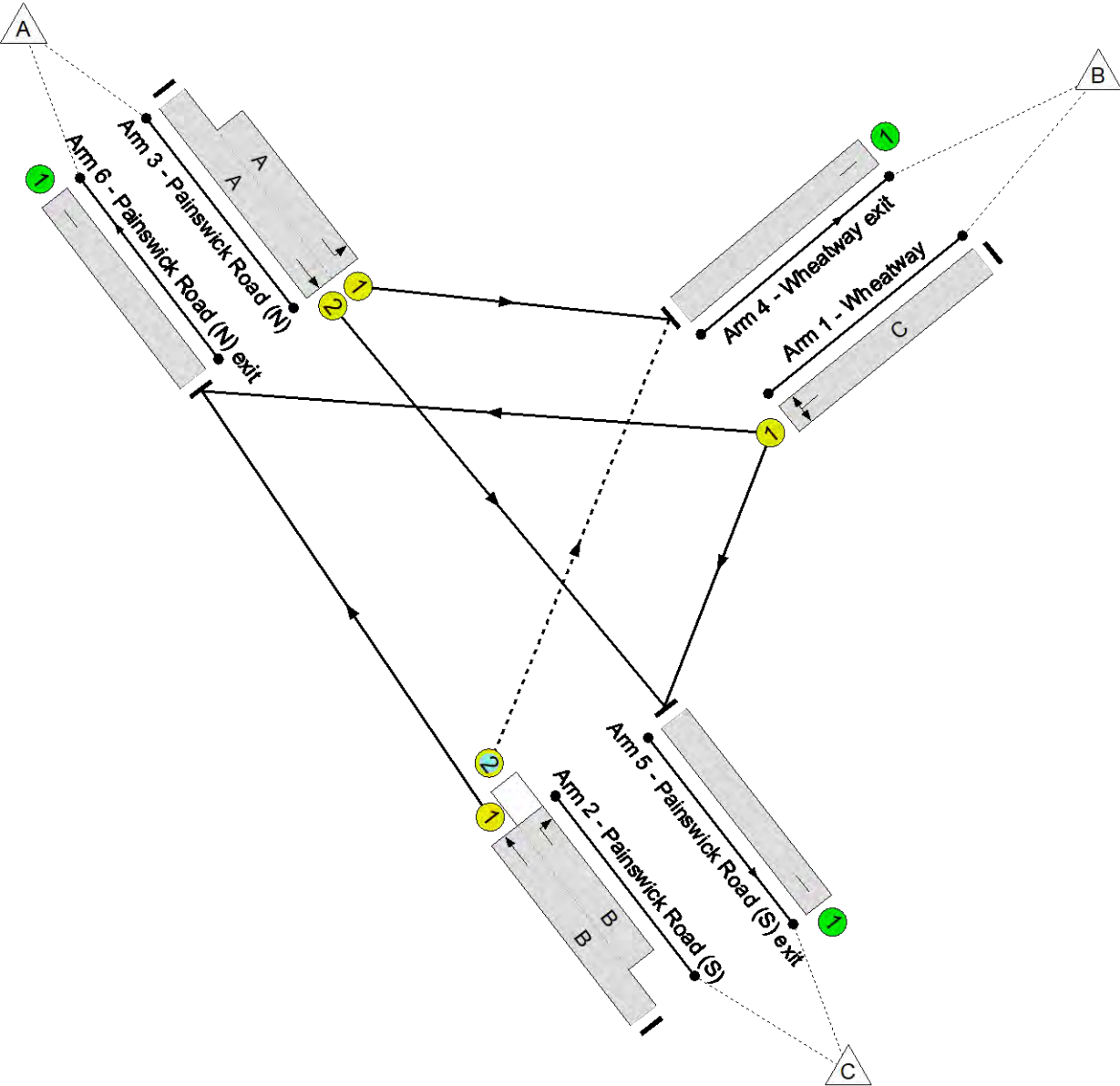
Full Input Data And Results



Painswick Road/ Wheatway

PRC: 16.2 %

Total Traffic Delay: 13.0 pcuHr



Item	Lane	Lane	Controller	Position In	Full Phase	Arrow	Num	Total Green	Arrow	Demand	Sat Flow	Capacity	Deg Sat
------	------	------	------------	-------------	------------	-------	-----	-------------	-------	--------	----------	----------	---------

	Description	Type	Stream	Filtered Route		Phase	Greens	(s)	Green (s)	Flow (pcu)	(pcu/Hr)	(pcu)	(%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	77.4%
Painswick Road/ Wheatway	-	-	N/A	-	-		-	-	-	-	-	-	77.4%
1/1	Wheatway Left Right	U	N/A	N/A	C		1	22	-	357	1804	461	77.4%
2/1+2/2	Painswick Road (S) Right Ahead	U+O	N/A	N/A	B		1	38	-	529	1895:1863	690+249	51.0 : 71.2%
3/2+3/1	Painswick Road (N) Left Ahead	U	N/A	N/A	A		1	39	-	662	2005:1736	769+227	66.4 : 66.4%
4/1	Wheatway exit	U	N/A	N/A	-		-	-	-	328	Inf	Inf	0.0%
5/1	Painswick Road (S) exit	U	N/A	N/A	-		-	-	-	668	Inf	Inf	0.0%
6/1	Painswick Road (N) exit	U	N/A	N/A	-		-	-	-	552	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	175	0	2	9.1	3.3	0.6	13.0	-	-	-	-
Painswick Road/ Wheatway	-	-	175	0	2	9.1	3.3	0.6	13.0	-	-	-	-
1/1	357	357	-	-	-	3.1	1.7	-	4.7	47.9	8.2	1.7	9.9
2/1+2/2	529	529	175	0	2	2.8	0.6	0.6	4.0	27.2	6.1	0.6	6.7
3/2+3/1	662	662	-	-	-	3.3	1.0	-	4.3	23.2	9.6	1.0	10.6
4/1	328	328	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	668	668	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	552	552	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 16.2 Total Delay for Signalled Lanes (pcuHr): 13.02 Cycle Time (s): 90 PRC Over All Lanes (%): 16.2 Total Delay Over All Lanes(pcuHr): 13.02													



Appendix C.17

Attention is also drawn to the relevant sustainable travel contributions (such as new bus stops) and the Travel Plan prepared by M-EC, which would offer network-wide mitigation of the development traffic flows not examined by the above ARCADY assessments.

Junction 2 (B4073 / Heron Way / Norbury Avenue) Overview

Concerns raised by GCC pertain primarily to the fact that three of four arms at the B4073 Painswick Road / Heron Way / Norbury Avenue already operate over-capacity, as shown by the LINSIG 3 modelling results based on the 2014 traffic surveys. It is noted that GCC did not previously consider the development impacts to be significant enough to require physical mitigation measures, but that following further review they are now seeking alteration to junction geometry as part of the mitigation strategy for the junction.

GCC have also identified several minor discrepancies between the M-EC LINSIG models used in the TA, and their own interpretations. The revised M-EC LINSIG models have been prepared based on site observation and OS Base mapping and include several following geometric changes as follows:

- Flare length on Lane 2/1 (Heron Way left-turners) reduced 3 PCUs
- Lane width for Lane 3/1 decreased to 4m (from 5m)
- Turning radius' checked and amended as necessary

Further to the above, GCC have queried the Intergreen times specified, however, these are taken directly from the controller specification supplied to M-EC, and are thus assumed to be accurate. It has also been suggested that the pedestrian phase need only run every other cycle, but given the urban location and close proximity to Gloucester Academy this is not considered appropriate, as pedestrian demand is likely to be high.

Table 4 (below) shows a summary of the revised LINSIG 3 outputs for the 2014 survey flows following the amendments detailed above. The model was initially run with a 90-second cycle to allow like-for-like comparison with the models detailed in the TA. The summary includes Degree of Saturation (DOS), Mean Max. Queues (MMQ, quoted in PCUs) and the overall Practical Reserve Capacity (PRC) of the junction:

Table 4: Junction 2 Assessment – 2014 Surveyed Traffic flows with 90-second cycle

Link	AM Peak		PM Peak	
	DOS	MMQ	DOS	MMQ
1/1: Painswick Road (North) – Ahead, Left Turn, Right Turn	86.6%	12.7	130.1%	99.9
2/1 + 2/2: Heron Way – Ahead, Left Turn, Right Turn	113.0%	41.5	129.9%	66.5
3/1: Painswick Road (South) – Ahead, Left Turn, Right Turn	110.2%	43.7	70.0%	9.3
4/1: Norbury Avenue – Ahead, Left Turn, Right Turn	102.9%	15.7	119.0%	34.0
PRC	-25.5%		-44.5%	

One possibility to increase PRC at the junction (as identified by both GCC and M-EC) is to increase the cycle time to 120 seconds (as opposed to the 90 seconds previously assumed). Table 5 (overleaf) shows a summary of the LINSIG 3 outputs for the 2014 survey flows on this basis, demonstrating a significant improvement to PRC (although the junction continues to operate over-capacity).

Table 5: Junction 2 Assessment – 2014 Surveyed Traffic flows with 120-second cycle

Link	AM Peak		PM Peak	
	DOS	MMQ	DOS	MMQ
1/1: Painswick Road (North) – Ahead, Left Turn, Right Turn	72.6%	13.4	106.7%	50.8
2/1 + 2/2: Heron Way – Ahead, Left Turn, Right Turn	94.8%	18.6	109.0%	38.0
3/1: Painswick Road (South) – Ahead, Left Turn, Right Turn	94.3%	23.3	85.0%	12.7
4/1: Norbury Avenue – Ahead, Left Turn, Right Turn	94.3%	12.7	109.1%	26.6
PRC	-5.3%		-21.2%	

On the basis that the improved cycle time is beneficial to junction operation, all further assessments within this TA Addendum assume a 120-second cycle time.

Table 6 and 7 (below) shows a summary of the LINSIG 3 outputs for the 2018 Future Year flows with and without the proposed development in place. These demonstrate that background traffic growth will slightly worsen junction operation between 2014 and 2018, while the proposed development would further worsen junction operation.

Table 6: Junction 2 Assessment – 2018 Future Year Traffic flows (120-second cycle)

Link	AM Peak		PM Peak	
	DOS	MMQ	DOS	MMQ
1/1: Painswick Road (North) – Ahead, Left Turn, Right Turn	76.1%	14.5	112.0%	67.6
2/1 + 2/2: Heron Way – Ahead, Left Turn, Right Turn	99.4%	23.9	114.3%	49.2
3/1: Painswick Road (South) – Ahead, Left Turn, Right Turn	99.3%	29.3	88.3%	14.0
4/1: Norbury Avenue – Ahead, Left Turn, Right Turn	99.1%	15.6	114.2%	33.4
PRC	-10.5%		-27.0%	

Table 7: Junction 2 Assessment – 2018 Future Year Traffic flows + Dev (120-second cycle)

Link	AM Peak		PM Peak	
	DOS	MMQ	DOS	MMQ
1/1: Painswick Road (North) – Ahead, Left Turn, Right Turn	71.4%	14.5	124.2%	112.6
2/1 + 2/2: Heron Way – Ahead, Left Turn, Right Turn	112.1%	47.3	122.8%	67.4
3/1: Painswick Road (South) – Ahead, Left Turn, Right Turn	110.8%	64.1	113.3%	47.3
4/1: Norbury Avenue – Ahead, Left Turn, Right Turn	113.3%	28.2	121.8%	41.6
PRC	-25.8%		-38.0%	

Mitigation for Junction 2

Following discussions with GCC, the following mitigation is proposed at the junction:

- Introduction of a new signalised crossing on the western arm of the junction, and signalisation of the uncontrolled crossing on the eastern arm of the junction (with corresponding extensions to relevant Intergreen periods);
- Creation of a right-turn lane for the southern (Painswick Road) arm, thus providing two 3.25m wide lanes on this arm;
- Extension of the flare length on the eastern (Heron Way) arm to 8 PCUs
- Provision of new inter-junction right-turn markings
- Provision of MOVA

M-EC Drawing Number 21099_08_020_06 shows the revised layout, and is included in Appendix C. This mitigation scheme is intended to offer some vehicular capacity enhancement, whilst also significantly improving pedestrian facilities at the junction. All physical alterations required can be accommodated within the existing highway boundary.

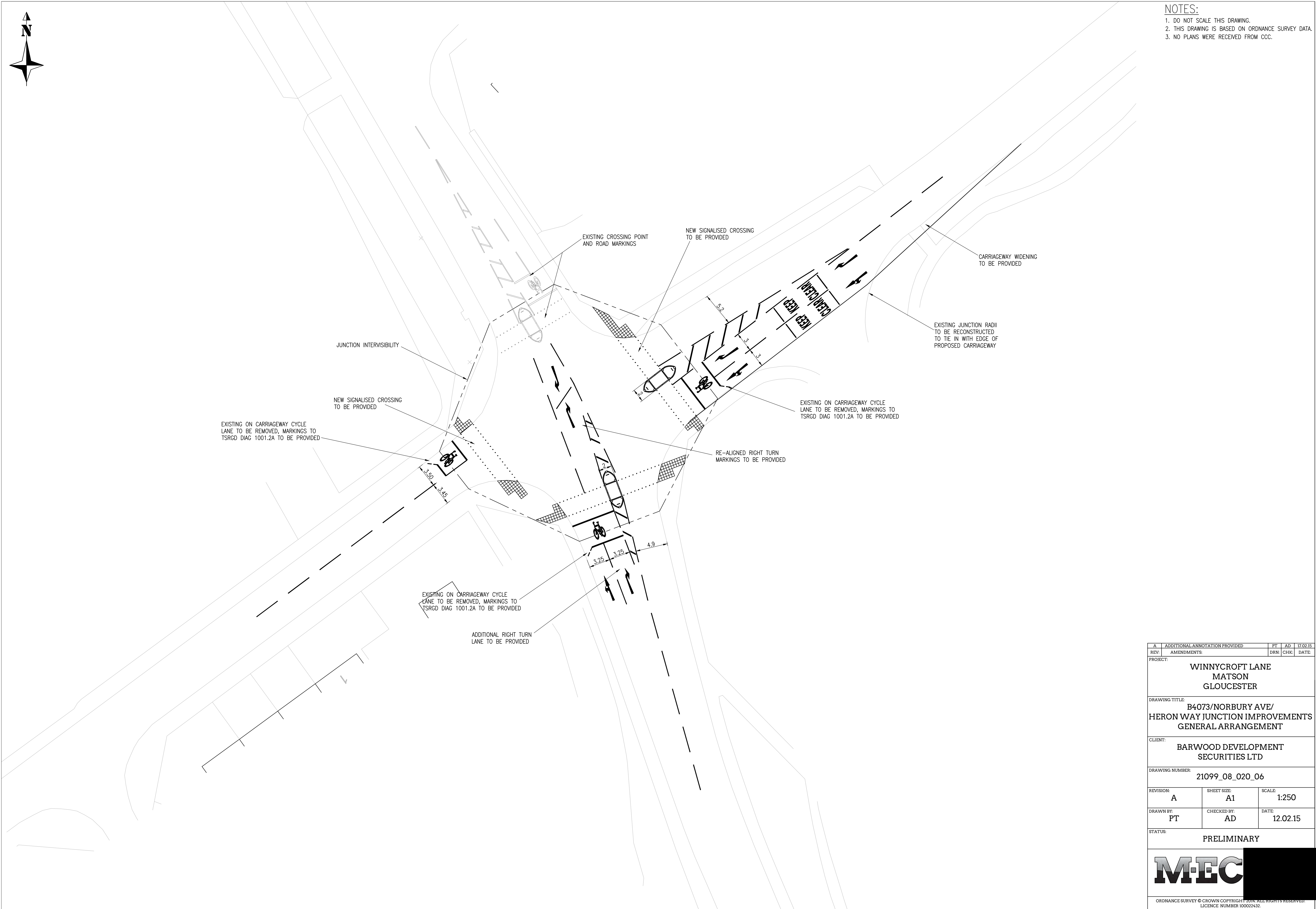
Table 8 (below) shows the LINSIG 3 outputs summary following mitigation. Comparing this with Tables 6 and 7 shows that the mitigation would actually achieve nil-detriment with regard to vehicular impact in the AM peak hour, and would somewhat offset the development impacts in the PM peak hour.

Table 8: Junction 2 Assessment – 2018 Future Year Traffic flows + Dev (120-second cycle) with mitigation


Link	AM Peak		PM Peak	
	DOS	MMQ	DOS	MMQ
1/1: Painswick Road (North) – Ahead, Left Turn, Right Turn	73.3%	14.9	121.2%	104.4
2/1: Heron Way – Ahead, Left Turn	94.6%	13.8	116.4%	36.2
2/2: Heron Way – Right Turn	84.5%	10.1	73.3%	7.5
3/1: Painswick Road (South) – Ahead, Left Turn	97.2%	28.7	58.6%	11.2
3/2: Painswick Road (South) – Right Turn	57.1%	3.3	113.3%	8.5
4/1: Norbury Avenue – Ahead, Left Turn, Right Turn	99.1%	15.6	121.8%	41.6
PRC	-10.1%		-35.3%	

Consideration has been given to the possibility of running the Heron Way and Norbury Avenue phases within the same stage, but M-EC agree with GCC that the potential safety dis-benefits of such operation outweigh any marginal capacity improvements achieved.

Therefore, on the understanding that GCC wish to see improved pedestrian facilities at this junction it is considered that the above mitigation scheme is appropriate, and sufficient to ensure that the proposed development does not cause severe impacts within the local area.



1. DO NOT SCALE THIS DRAWING.
2. THIS DRAWING IS BASED ON ORDNANCE SURVEY DATA.
3. NO PLANS WERE RECEIVED FROM CCC.

REV.	ADDITIONAL ANNOTATION PROVIDED	PT	AD	17.02.15
	AMENDMENTS:	DRN	CHK	DATE
PROJECT:				
<p>WINNYCROFT LANE MATSON GLOUCESTER</p>				
DRAWING TITLE:				
<p>B4073/NORBURY AVE/ HERON ROAD IMPROVEMENTS GENERAL ARRANGEMENT</p>				
CLIENT:				
<p>BARWOOD DEVELOPMENT SECURITIES LTD</p>				
DRAWING NUMBER:				
<p>21099_08_020_06</p>				
REVISION:	SHEET SIZE:	SCALE:		
A	A1	1:250		
DRAWN BY:	CHECKED BY:	DATE:		
PT	AD	12.02.15		
STATUS:				
<p>PRELIMINARY</p>				
				
<p>ORDNANCE SURVEY © CROWN COPYRIGHT 1994. ALL RIGHTS RESERVED. LICENCE NUMBER 100022432.</p>				



Appendix C.18

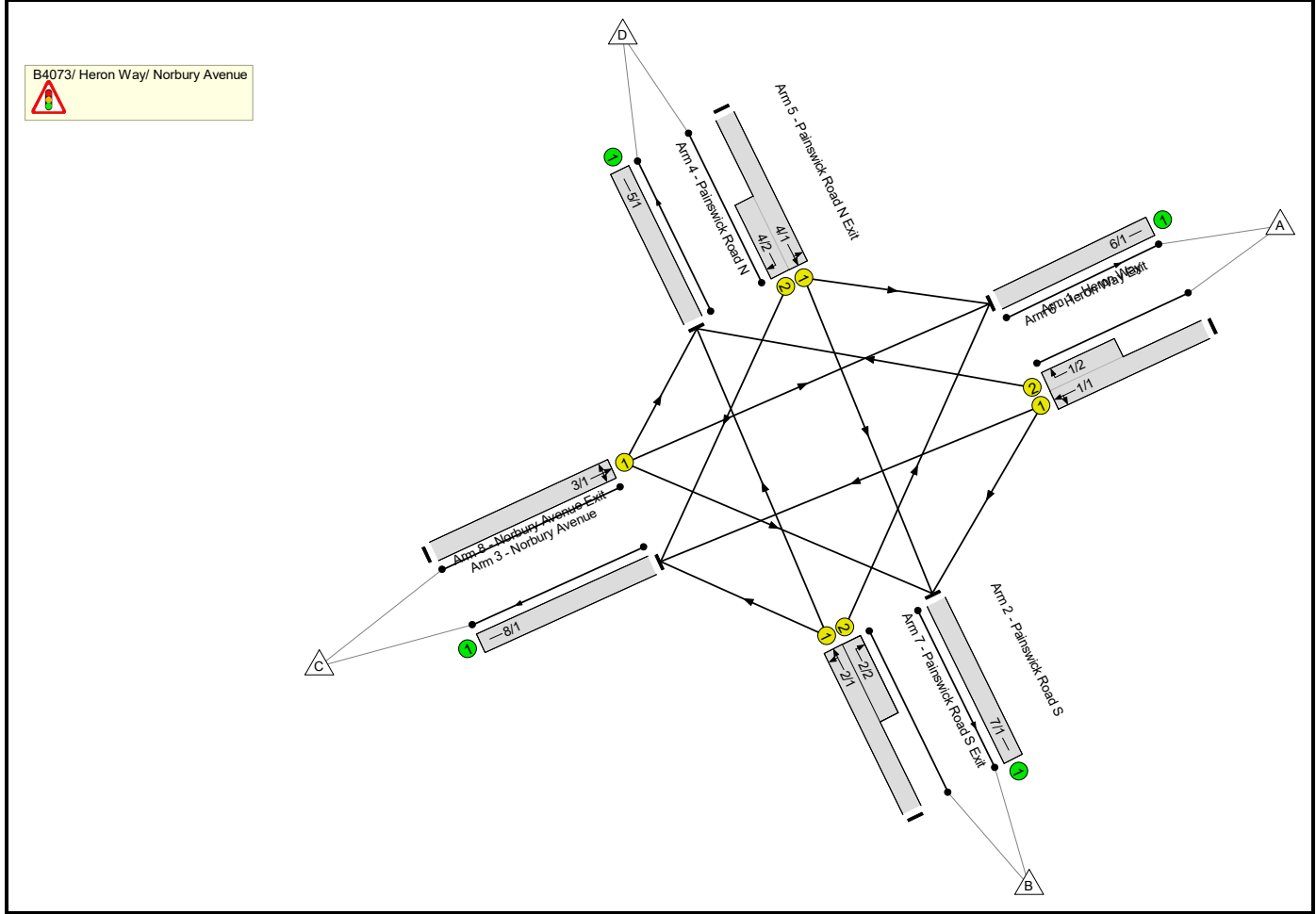
Full Input Data And Results

Full Input Data And Results

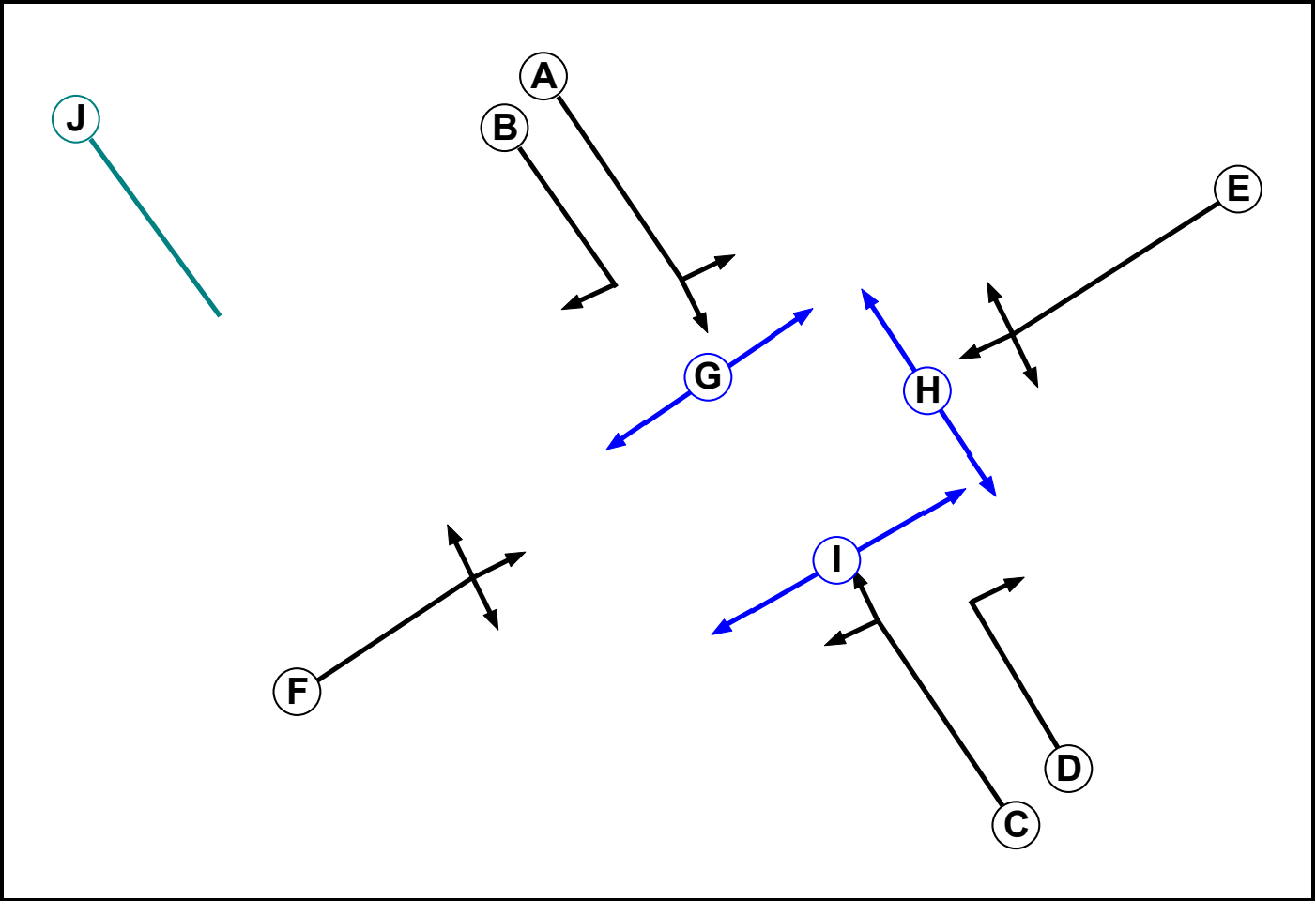
User and Project Details

Project:	P20-1432
Title:	Land at Winnycroft Lane, Snow Capel
Location:	
Additional detail:	
File name:	B4073_Heron Way_Norb Ave Corrected.lsg3x
Author:	
Company:	Pegasus Group
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

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

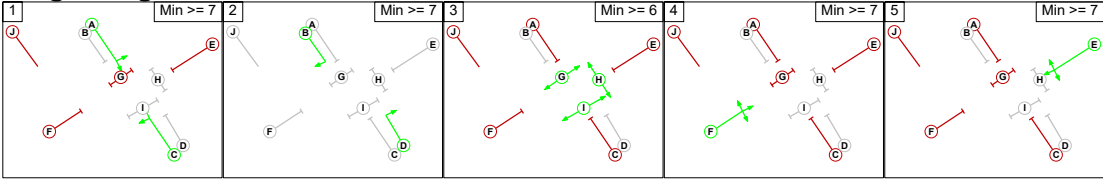
Phase Intergreens Matrix

Terminating Phase	Starting Phase										
		A	B	C	D	E	F	G	H	I	J
	A		-	-	-	6	6	9	-	-	3
	B	-		-	-	-	-	-	-	-	-
	C	-	-		-	6	6	9	-	-	3
	D	-	-	-		-	-	-	-	-	-
	E	6	-	6	-		7	9	-	-	3
	F	6	-	6	-	7		9	-	-	3
	G	12	-	12	-	12	12		-	-	3
	H	-	-	-	-	-	-	-		-	-
	I	-	-	-	-	-	-	-	-		-
	J	2	-	2	-	2	2	2	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

From Stage	To Stage				
	1	2	3	4	5
	1		2	9	6
	2	2		0	2
	3	12	2		12
	4	6	2	9	
5	6	2	9	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: B4073/ Heron Way/ Norbury Avenue
There are no Opposed Lanes in this Junction

Lane Input Data

Junction: B4073/ Heron Way/ Norbury Avenue												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Heron Way)	U	E	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 7 Left	Inf
											Arm 8 Ahead	Inf
1/2 (Heron Way)	U	E	2	3	6.0	Geom	-	3.00	0.00	N	Arm 5 Right	18.00
2/1 (Painswick Road S)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	11.00
2/2 (Painswick Road S)	U	D	2	3	6.4	Geom	-	3.25	0.00	N	Arm 6 Right	8.00
3/1 (Norbury Avenue)	U	F	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	13.00
											Arm 6 Ahead	Inf
											Arm 7 Right	15.00
4/1 (Painswick Road N)	U	A	2	3	60.0	Geom	-	2.00	0.00	Y	Arm 6 Left	11.00
											Arm 7 Ahead	Inf
4/2 (Painswick Road N)	U	B	2	3	6.1	Geom	-	2.75	0.00	N	Arm 8 Right	15.00
5/1 (Painswick Road N Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Heron Way Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Painswick Road S Exit)	U		2	3	60.0	Geom	-	3.25	0.00	Y		
8/1 (Norbury Avenue Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 BASE AM'	08:00	09:00	01:00	
2: '2022 BASE PM'	17:00	18:00	01:00	
3: '2027 GROWTH AM'	08:00	09:00	01:00	
4: '2027 GROWTH PM'	17:00	18:00	01:00	
5: '2027 + CD AM'	08:00	09:00	01:00	
6: '2027 + CD PM'	17:00	18:00	01:00	
7: '2027 + CD + DEV AM'	08:00	09:00	01:00	
8: '2027 + CD + DEV PM'	17:00	18:00	01:00	
9: 'Sense Test'	08:00	09:00	01:00	

Scenario 1: 'All Dev AM' (FG7: '2027 + CD + DEV AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	59	140	154	353
	B	110	0	27	654	791
	C	144	15	0	93	252
	D	159	275	18	0	452
	Tot.	413	349	185	901	1848

Traffic Lane Flows

Lane Saturation Flows

Junction: B4073/ Heron Way/ Norbury Avenue								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Heron Way)	3.00	0.00	Y	Arm 7 Left Arm 8 Ahead	Inf Inf	29.6 % 70.4 %	1915	1915
1/2 (Heron Way)	3.00	0.00	N	Arm 5 Right	18.00	100.0 %	1897	1897
2/1 (Painswick Road S)	3.25	0.00	Y	Arm 5 Ahead Arm 8 Left	Inf 11.00	96.0 % 4.0 %	1930	1930
2/2 (Painswick Road S)	3.25	0.00	N	Arm 6 Right	8.00	100.0 %	1752	1752
3/1 (Norbury Avenue)	3.50	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 7 Right	13.00 Inf 15.00	36.9 % 57.1 % 6.0 %	1874	1874
4/1 (Painswick Road N)	2.00	0.00	Y	Arm 6 Left Arm 7 Ahead	11.00 Inf	36.6 % 63.4 %	1729	1729
4/2 (Painswick Road N)	2.75	0.00	N	Arm 8 Right	15.00	100.0 %	1845	1845
5/1 (Painswick Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Heron Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Painswick Road S Exit)	3.25	0.00	Y				1940	1940
8/1 (Norbury Avenue Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'All Dev PM' (FG8: '2027 + CD + DEV PM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Desired
Desired Flow :

	Destination					
Origin	A	A	B	C	D	Tot.
	A	0	140	169	143	452
	B	76	0	21	380	477
	C	241	35	0	54	330
	D	234	476	30	0	740
	Tot.	551	651	220	577	1999

Traffic Lane Flows

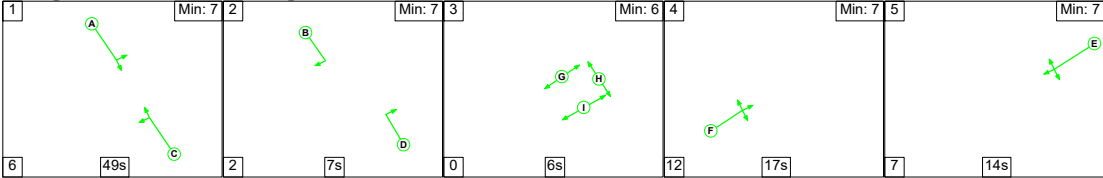
Lane	Scenario 2: All Dev PM
Junction: B4073/ Heron Way/ Norbury Avenue	
1/1 (with short)	452(In) 309(Out)
1/2 (short)	143
2/1 (with short)	477(In) 401(Out)
2/2 (short)	76
3/1	330
4/1 (with short)	740(In) 710(Out)
4/2 (short)	30
5/1	577
6/1	551
7/1	651
8/1	220

Lane Saturation Flows

Junction: B4073/ Heron Way/ Norbury Avenue								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Heron Way)	3.00	0.00	Y	Arm 7 Left	Inf	45.3 %	1915	1915
				Arm 8 Ahead	Inf	54.7 %		
1/2 (Heron Way)	3.00	0.00	N	Arm 5 Right	18.00	100.0 %	1897	1897
2/1 (Painswick Road S)	3.25	0.00	Y	Arm 5 Ahead	Inf	94.8 %	1926	1926
				Arm 8 Left	11.00	5.2 %		
2/2 (Painswick Road S)	3.25	0.00	N	Arm 6 Right	8.00	100.0 %	1752	1752
3/1 (Norbury Avenue)	3.50	0.00	Y	Arm 5 Left	13.00	16.4 %	1909	1909
				Arm 6 Ahead	Inf	73.0 %		
				Arm 7 Right	15.00	10.6 %		
4/1 (Painswick Road N)	2.00	0.00	Y	Arm 6 Left	11.00	33.0 %	1737	1737
				Arm 7 Ahead	Inf	67.0 %		
4/2 (Painswick Road N)	2.75	0.00	N	Arm 8 Right	15.00	100.0 %	1845	1845
5/1 (Painswick Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Heron Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Painswick Road S Exit)	3.25	0.00	Y				1940	1940
8/1 (Norbury Avenue Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'All Dev AM' (FG7: '2027 + CD + DEV AM', Plan 1: 'Network Control Plan 1')

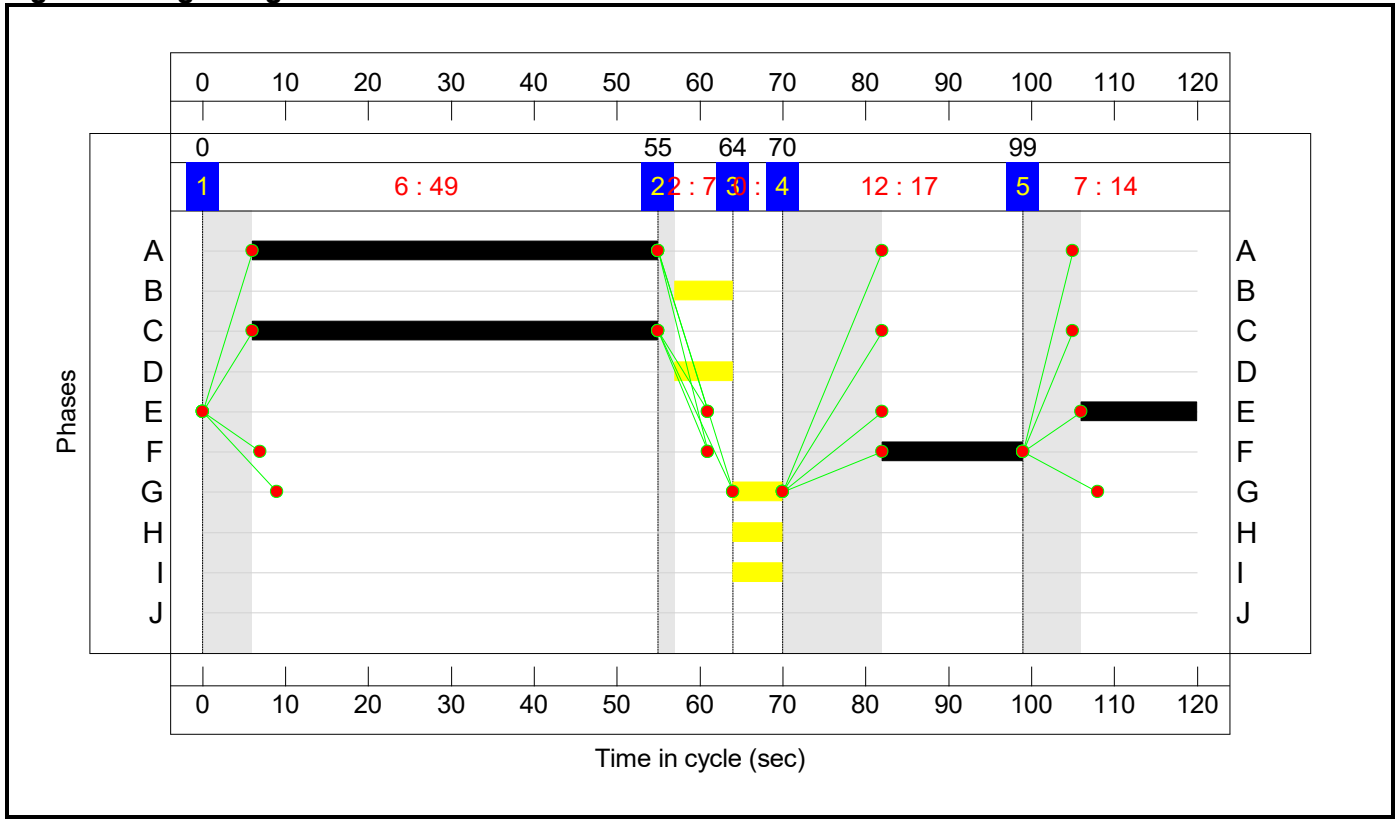
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	49	7	6	17	14
Change Point	0	55	64	70	99

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

B4073/ Heron Way/ Norbury Avenue
 PRC: -5.2 %
 Total Traffic Delay: 35.6 pcuHr

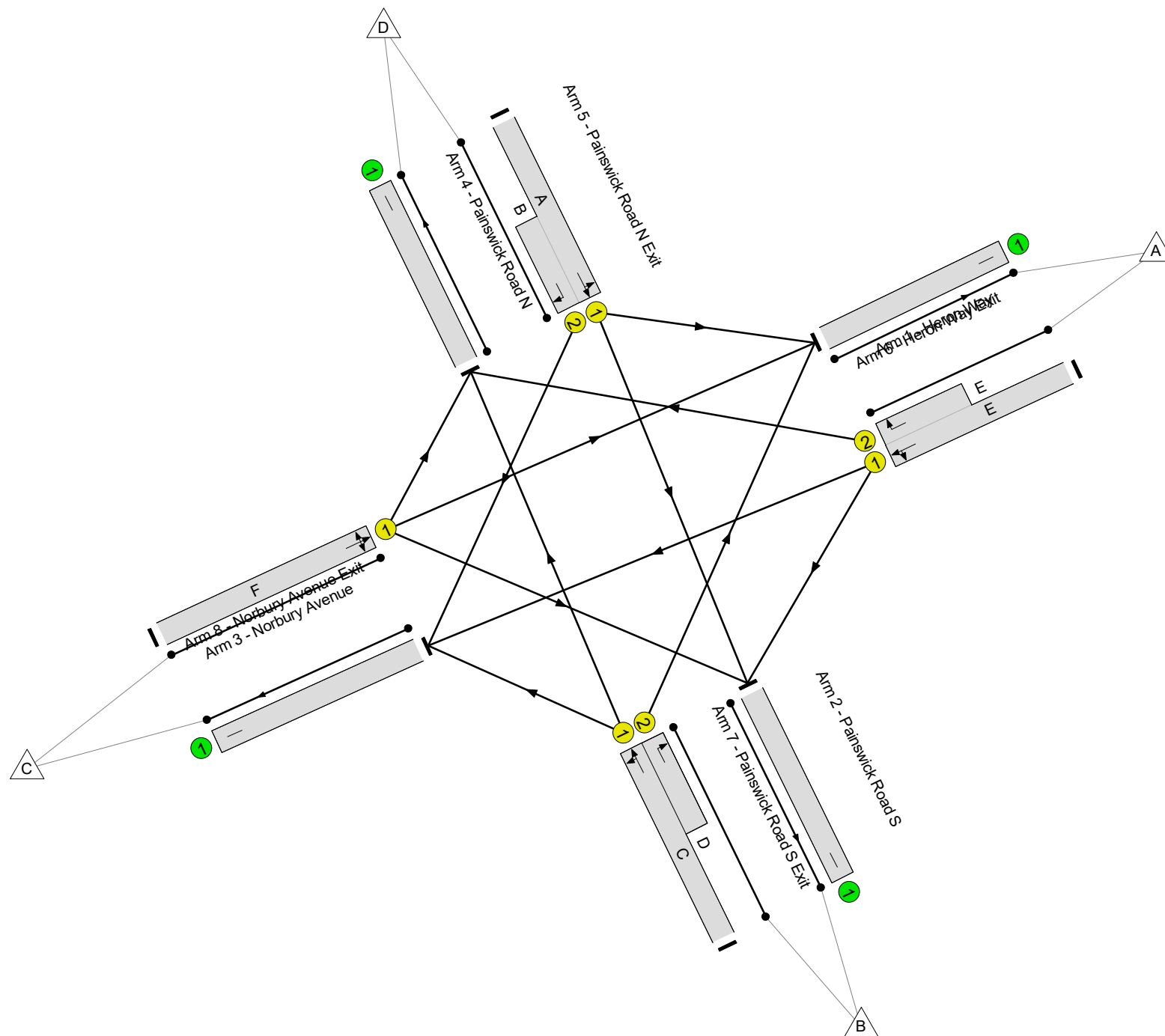
Signal Phases:

- 1: Green
- 2: Yellow
- 3: Red

Signal Arms and Phases:

- Arm A - Painswick Road N Exit: 1, 2, 3
- Arm B - Painswick Road S Exit: 1, 2, 3
- Arm C - Painswick Road S: 1, 2, 3
- Arm D - Painswick Road N: 1, 2, 3
- Arm E - Heron Way Exit: 1, 2, 3
- Arm F - Norbury Avenue Exit: 1, 2, 3

PRC: -5.2 %
Total Traffic Delay: 35.6 pcuHr



Full Input Data And Results

Network Results

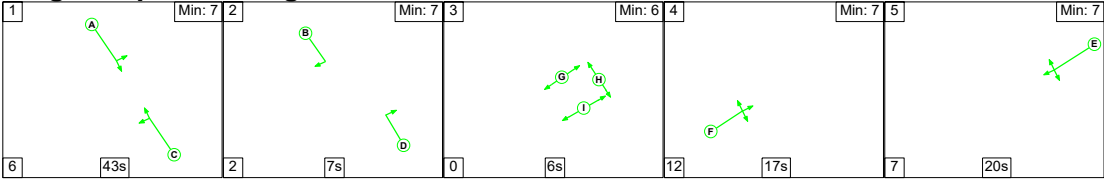
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Land at Winnycroft Lane, Snow Capel	-	-	N/A	-	-		-	-	-	-	-	-	94.6%
B4073/ Heron Way/ Norbury Avenue	-	-	N/A	-	-		-	-	-	-	-	-	94.6%
1/1+1/2	Heron Way Right Left Ahead	U	N/A	N/A	E		1	14	-	353	1915:1897	216+167	92.2 : 92.2%
2/1+2/2	Painswick Road S Ahead Right Left	U	N/A	N/A	C D		1	49:7	-	791	1930:1752	720+117	94.6 : 94.2%
3/1	Norbury Avenue Left Ahead Right	U	N/A	N/A	F		1	17	-	252	1874	281	89.6%
4/1+4/2	Painswick Road N Left Ahead Right	U	N/A	N/A	A B		1	49:7	-	452	1729:1845	709+29	61.2 : 61.2%
5/1	Painswick Road N Exit	U	N/A	N/A	-		-	-	-	901	Inf	Inf	0.0%
6/1	Heron Way Exit	U	N/A	N/A	-		-	-	-	413	Inf	Inf	0.0%
7/1	Painswick Road S Exit	U	N/A	N/A	-		-	-	-	349	1940	1940	18.0%
8/1	Norbury Avenue Exit	U	N/A	N/A	-		-	-	-	185	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Avg. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Land at Winnycroft Lane, Snow Capel	-	-	0	0	0	19.9	15.6	0.0	35.6	-	-	-	-
B4073/ Heron Way/ Norbury Avenue	-	-	0	0	0	19.9	15.6	0.0	35.6	-	-	-	-
1/1+1/2	353	353	-	-	-	5.0	4.5	-	9.5	97.0	6.8	4.5	11.4
2/1+2/2	791	791	-	-	-	7.9	6.7	-	14.6	66.6	24.2	6.7	31.0
3/1	252	252	-	-	-	3.5	3.5	-	7.0	100.0	8.2	3.5	11.7
4/1+4/2	452	452	-	-	-	3.6	0.8	-	4.3	34.5	11.4	0.8	12.2
5/1	901	901	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	413	413	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	349	349	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
8/1	185	185	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -5.2 Total Delay for Signalled Lanes (pcuHr): 35.48 Cycle Time (s): 120 PRC Over All Lanes (%): -5.2 Total Delay Over All Lanes(pcuHr): 35.59													

Full Input Data And Results
Scenario 2: 'All Dev PM' (FG8: '2027 + CD + DEV PM', Plan 1: 'Network Control Plan 1')

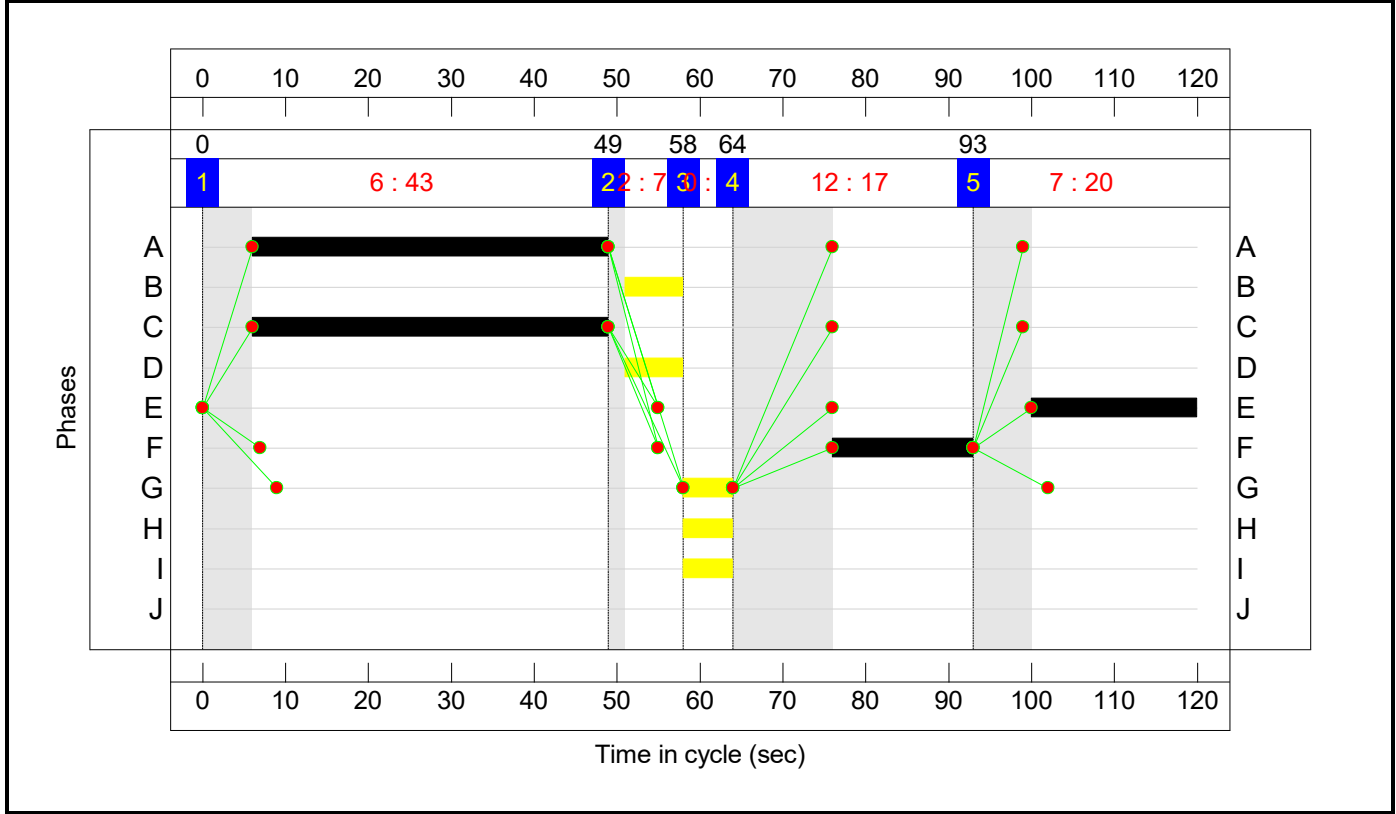
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	43	7	6	17	20
Change Point	0	49	58	64	93


Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

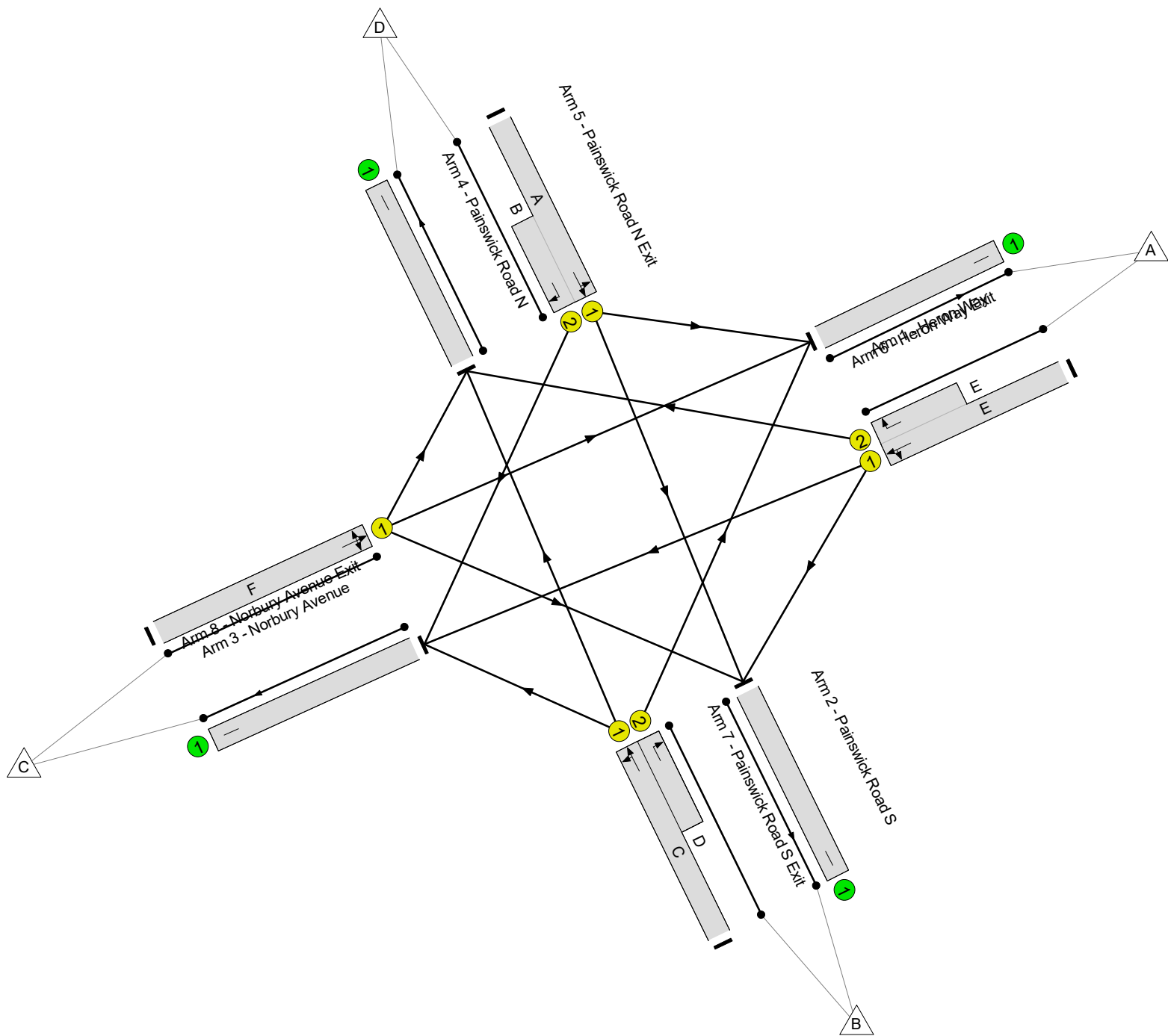
Full Input Data And Results



B4073/ Heron Way/ Norbury Avenue

PRC: -28.0 %

Total Traffic Delay: 125.4 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Land at Winnycroft Lane, Snow Capel	-	-	N/A	-	-		-	-	-	-	-	-	115.2%
B4073/ Heron Way/ Norbury Avenue	-	-	N/A	-	-		-	-	-	-	-	-	115.2%
1/1+1/2	Heron Way Right Left Ahead	U	N/A	N/A	E		1	20	-	452	1915:1897	289+134	107.0 : 107.0%
2/1+2/2	Painswick Road S Ahead Right Left	U	N/A	N/A	C D		1	43:7	-	477	1926:1752	626+117	64.1 : 65.1%
3/1	Norbury Avenue Left Ahead Right	U	N/A	N/A	F		1	17	-	330	1909	286	115.2%
4/1+4/2	Painswick Road N Left Ahead Right	U	N/A	N/A	A B		1	43:7	-	740	1737:1845	627+26	113.2 : 113.2%
5/1	Painswick Road N Exit	U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
6/1	Heron Way Exit	U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%
7/1	Painswick Road S Exit	U	N/A	N/A	-		-	-	-	651	1940	1940	30.0%
8/1	Norbury Avenue Exit	U	N/A	N/A	-		-	-	-	220	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Land at Winnycroft Lane, Snow Capel	-	-	0	0	0	31.7	93.7	0.0	125.4	-	-	-	-
B4073/ Heron Way/ Norbury Avenue	-	-	0	0	0	31.7	93.7	0.0	125.4	-	-	-	-
1/1+1/2	452	422	-	-	-	7.8	20.3	-	28.2	224.4	13.6	20.3	34.0
2/1+2/2	477	477	-	-	-	4.6	0.9	-	5.4	41.1	11.6	0.9	12.5
3/1	330	286	-	-	-	6.5	25.1	-	31.6	345.2	12.5	25.1	37.6
4/1+4/2	740	654	-	-	-	12.8	47.1	-	59.9	291.6	28.5	47.1	75.6
5/1	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	492	492	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	582	582	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
8/1	205	205	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1													
PRC for Signalled Lanes (%): -28.0					Total Delay for Signalled Lanes (pcuHr): 125.20				Cycle Time (s): 120				
PRC Over All Lanes (%): -28.0					Total Delay Over All Lanes(pcuHr): 125.42								



Appendix C.19

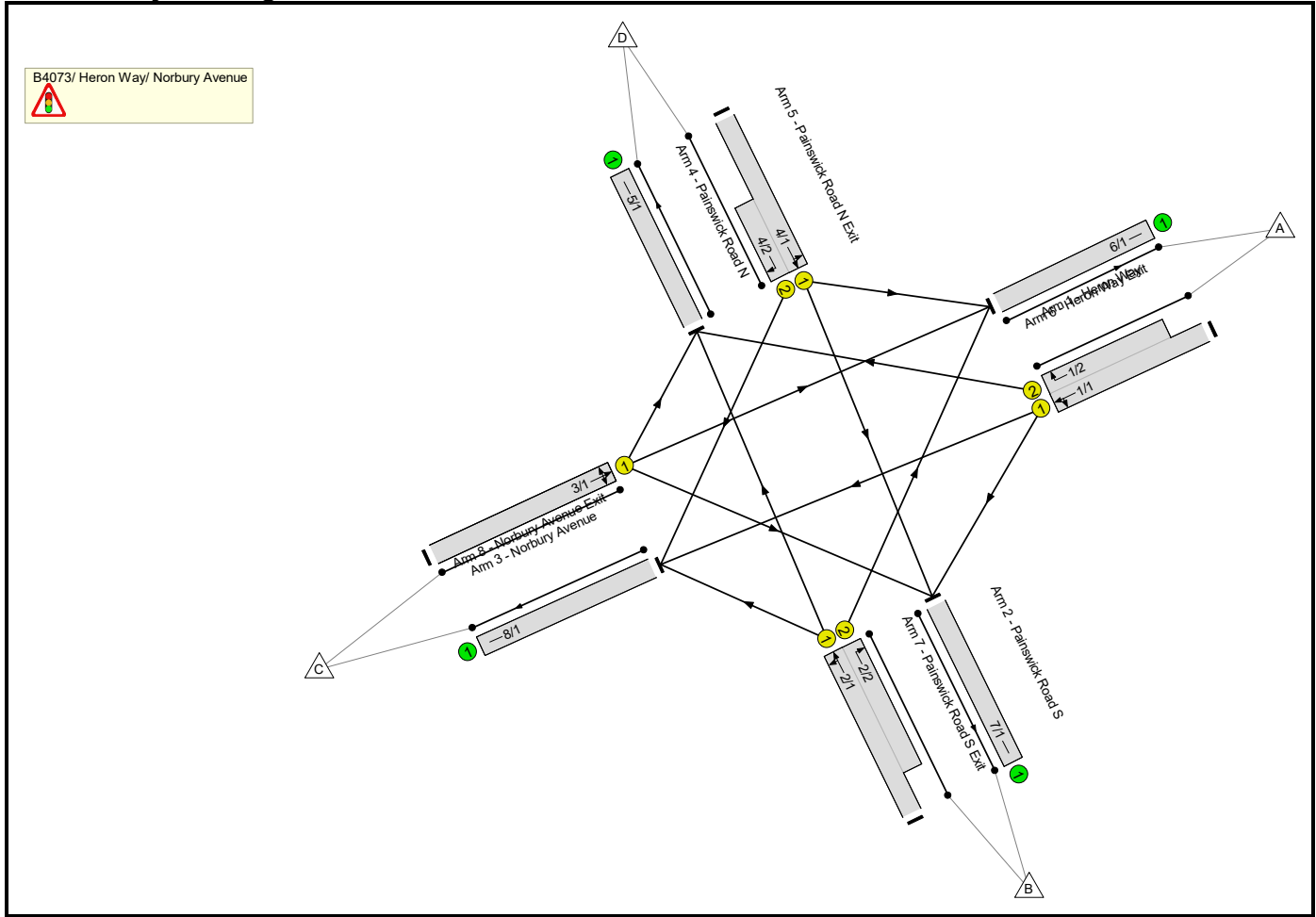
Full Input Data And Results

Full Input Data And Results

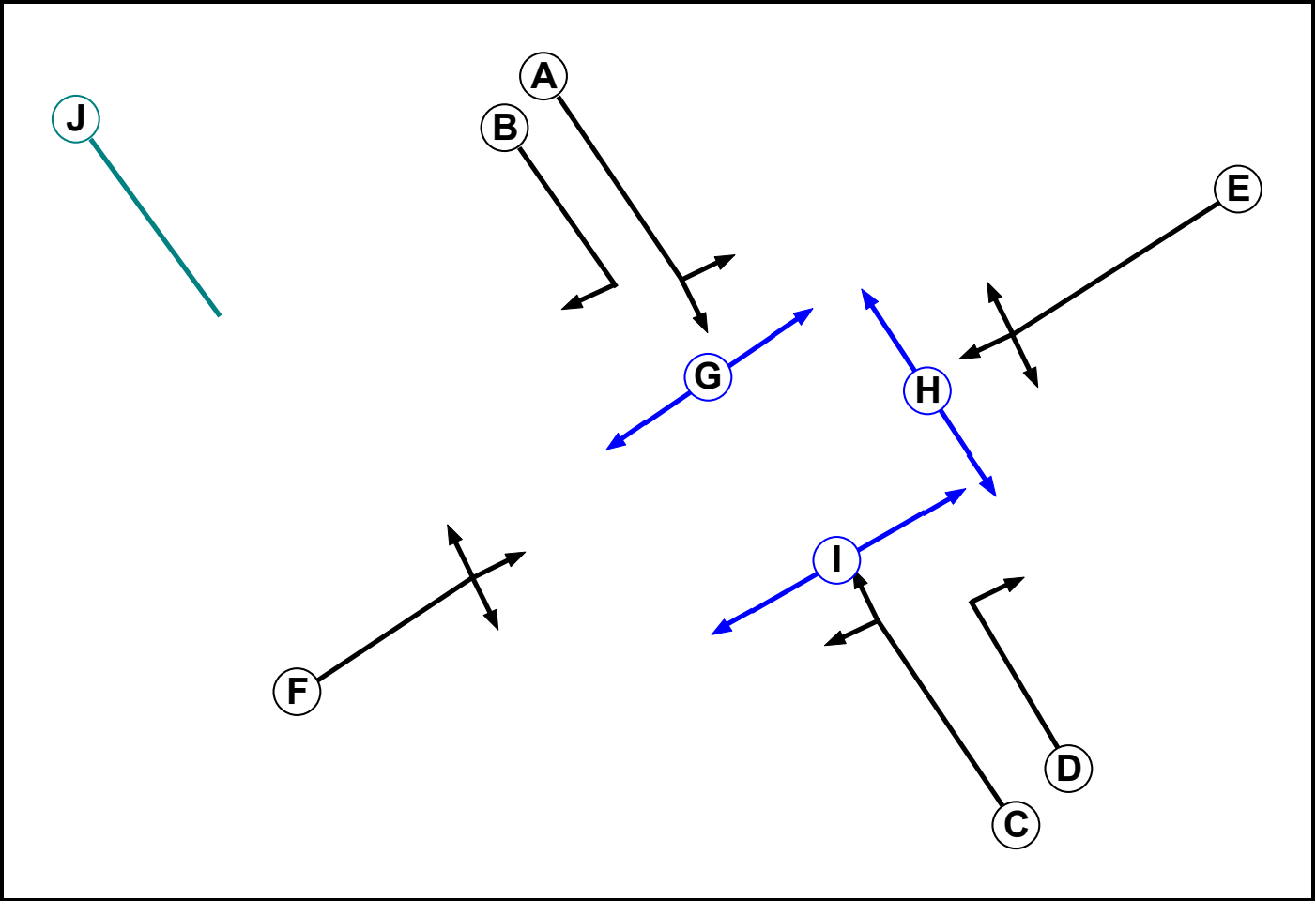
User and Project Details

Project:	P20-1432
Title:	Land at Winnycroft Lane, Snow Capel
Location:	
Additional detail:	
File name:	B4073_Heron Way_Norb Ave Corrected + Mitigation.lsg3x
Author:	
Company:	Pegasus Group
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

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

Full Input Data And Results

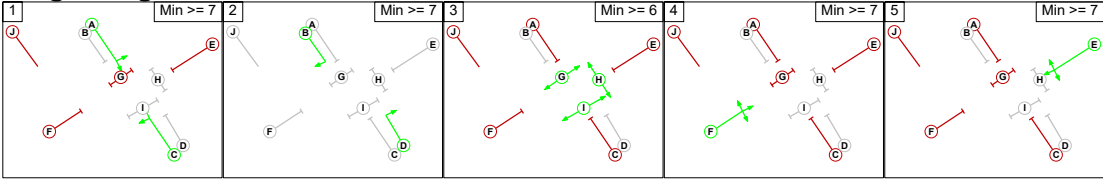
Phase Intergreens Matrix

Terminating Phase	Starting Phase										
		A	B	C	D	E	F	G	H	I	J
	A		-	-	-	6	6	9	-	-	3
	B	-		-	-	-	-	-	-	-	-
	C	-	-		-	6	6	9	-	-	3
	D	-	-	-		-	-	-	-	-	-
	E	6	-	6	-		7	9	-	-	3
	F	6	-	6	-	7		9	-	-	3
	G	13	-	13	-	13	13		-	-	3
	H	-	-	-	-	-	-	-		-	-
	I	-	-	-	-	-	-	-	-		-
	J	2	-	2	-	2	2	2	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

From Stage	To Stage				
	1	2	3	4	5
	1		2	9	6
	2	2		0	2
	3	13	2		13
	4	6	2	9	
5	6	2	9	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: B4073/ Heron Way/ Norbury Avenue
There are no Opposed Lanes in this Junction

Lane Input Data

Junction: B4073/ Heron Way/ Norbury Avenue												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Heron Way)	U	E	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Left	Inf
											Arm 8 Ahead	14.00
1/2 (Heron Way)	U	E	2	3	10.4	Geom	-	3.50	0.00	N	Arm 5 Right	18.00
2/1 (Painswick Road S)	U	C	2	3	10.0	Geom	-	3.25	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	11.00
2/2 (Painswick Road S)	U	D	2	3	10.4	Geom	-	3.25	0.00	N	Arm 6 Right	8.00
3/1 (Norbury Avenue)	U	F	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 5 Left	13.00
											Arm 6 Ahead	Inf
											Arm 7 Right	15.00
4/1 (Painswick Road N)	U	A	2	3	10.0	Geom	-	2.75	0.00	Y	Arm 6 Left	11.00
											Arm 7 Ahead	Inf
4/2 (Painswick Road N)	U	B	2	3	6.1	Geom	-	2.00	0.00	N	Arm 8 Right	15.00
5/1 (Painswick Road N Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Heron Way Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Painswick Road S Exit)	U		2	3	60.0	Geom	-	3.25	0.00	Y		
8/1 (Norbury Avenue Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 BASE AM'	08:00	09:00	01:00	
2: '2022 BASE PM'	17:00	18:00	01:00	
3: '2027 GROWTH AM'	08:00	09:00	01:00	
4: '2027 GROWTH PM'	17:00	18:00	01:00	
5: '2027 + CD AM'	08:00	09:00	01:00	
6: '2027 + CD PM'	17:00	18:00	01:00	
7: '2027 + CD + DEV AM'	08:00	09:00	01:00	
8: '2027 + CD + DEV PM'	17:00	18:00	01:00	
9: 'Sense Test'	08:00	09:00	01:00	

Scenario 1: '2027 + CD + DEV AM' (FG7: '2027 + CD + DEV AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	59	140	154	353
	B	110	0	27	654	791
	C	144	15	0	93	252
	D	159	275	18	0	452
	Tot.	413	349	185	901	1848

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2027 + CD + DEV AM
Junction: B4073/ Heron Way/ Norbury Avenue	
1/1 (with short)	353(In) 199(Out)
1/2 (short)	154
2/1 (with short)	791(In) 681(Out)
2/2 (short)	110
3/1	252
4/1 (with short)	452(In) 434(Out)
4/2 (short)	18
5/1	901
6/1	413
7/1	349
8/1	185

Lane Saturation Flows

Junction: B4073/ Heron Way/ Norbury Avenue								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Heron Way)	3.50	0.00	Y	Arm 7 Left Arm 8 Ahead	Inf 14.00	29.6 % 70.4 %	1827	1827
1/2 (Heron Way)	3.50	0.00	N	Arm 5 Right	18.00	100.0 %	1943	1943
2/1 (Painswick Road S)	3.25	0.00	Y	Arm 5 Ahead Arm 8 Left	Inf 11.00	96.0 % 4.0 %	1930	1930
2/2 (Painswick Road S)	3.25	0.00	N	Arm 6 Right	8.00	100.0 %	1752	1752
3/1 (Norbury Avenue)	3.80	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 7 Right	13.00 Inf 15.00	36.9 % 57.1 % 6.0 %	1903	1903
4/1 (Painswick Road N)	2.75	0.00	Y	Arm 6 Left Arm 7 Ahead	11.00 Inf	36.6 % 63.4 %	1800	1800
4/2 (Painswick Road N)	2.00	0.00	N	Arm 8 Right	15.00	100.0 %	1777	1777
5/1 (Painswick Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Heron Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Painswick Road S Exit)	3.25	0.00	Y				1940	1940
8/1 (Norbury Avenue Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: '2027 + CD + DEV PM' (FG8: '2027 + CD + DEV PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin	A	A	B	C	D	Tot.
	A	0	140	169	143	452
	B	76	0	21	380	477
	C	241	35	0	54	330
	D	234	476	30	0	740
	Tot.	551	651	220	577	1999

Traffic Lane Flows

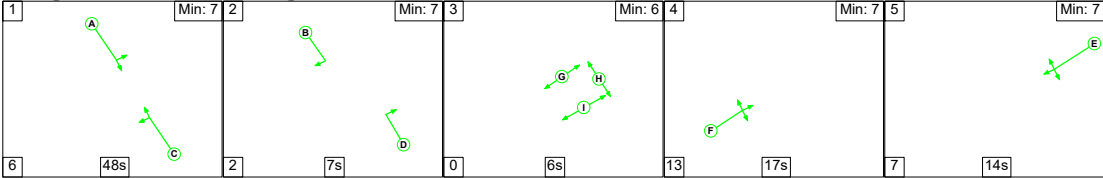
Lane	Scenario 2: 2027 + CD + DEV PM
Junction: B4073/ Heron Way/ Norbury Avenue	
1/1 (with short)	452(In) 309(Out)
1/2 (short)	143
2/1 (with short)	477(In) 401(Out)
2/2 (short)	76
3/1	330
4/1 (with short)	740(In) 710(Out)
4/2 (short)	30
5/1	577
6/1	551
7/1	651
8/1	220

Lane Saturation Flows

Junction: B4073/ Heron Way/ Norbury Avenue								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Heron Way)	3.50	0.00	Y	Arm 7 Left	Inf	45.3 %	1856	1856
				Arm 8 Ahead	14.00	54.7 %		
1/2 (Heron Way)	3.50	0.00	N	Arm 5 Right	18.00	100.0 %	1943	1943
2/1 (Painswick Road S)	3.25	0.00	Y	Arm 5 Ahead	Inf	94.8 %	1926	1926
				Arm 8 Left	11.00	5.2 %		
2/2 (Painswick Road S)	3.25	0.00	N	Arm 6 Right	8.00	100.0 %	1752	1752
3/1 (Norbury Avenue)	3.80	0.00	Y	Arm 5 Left	13.00	16.4 %	1938	1938
				Arm 6 Ahead	Inf	73.0 %		
				Arm 7 Right	15.00	10.6 %		
4/1 (Painswick Road N)	2.75	0.00	Y	Arm 6 Left	11.00	33.0 %	1809	1809
				Arm 7 Ahead	Inf	67.0 %		
4/2 (Painswick Road N)	2.00	0.00	N	Arm 8 Right	15.00	100.0 %	1777	1777
5/1 (Painswick Road N Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Heron Way Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Painswick Road S Exit)	3.25	0.00	Y				1940	1940
8/1 (Norbury Avenue Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2027 + CD + DEV AM' (FG7: '2027 + CD + DEV AM', Plan 1: 'Network Control Plan 1')

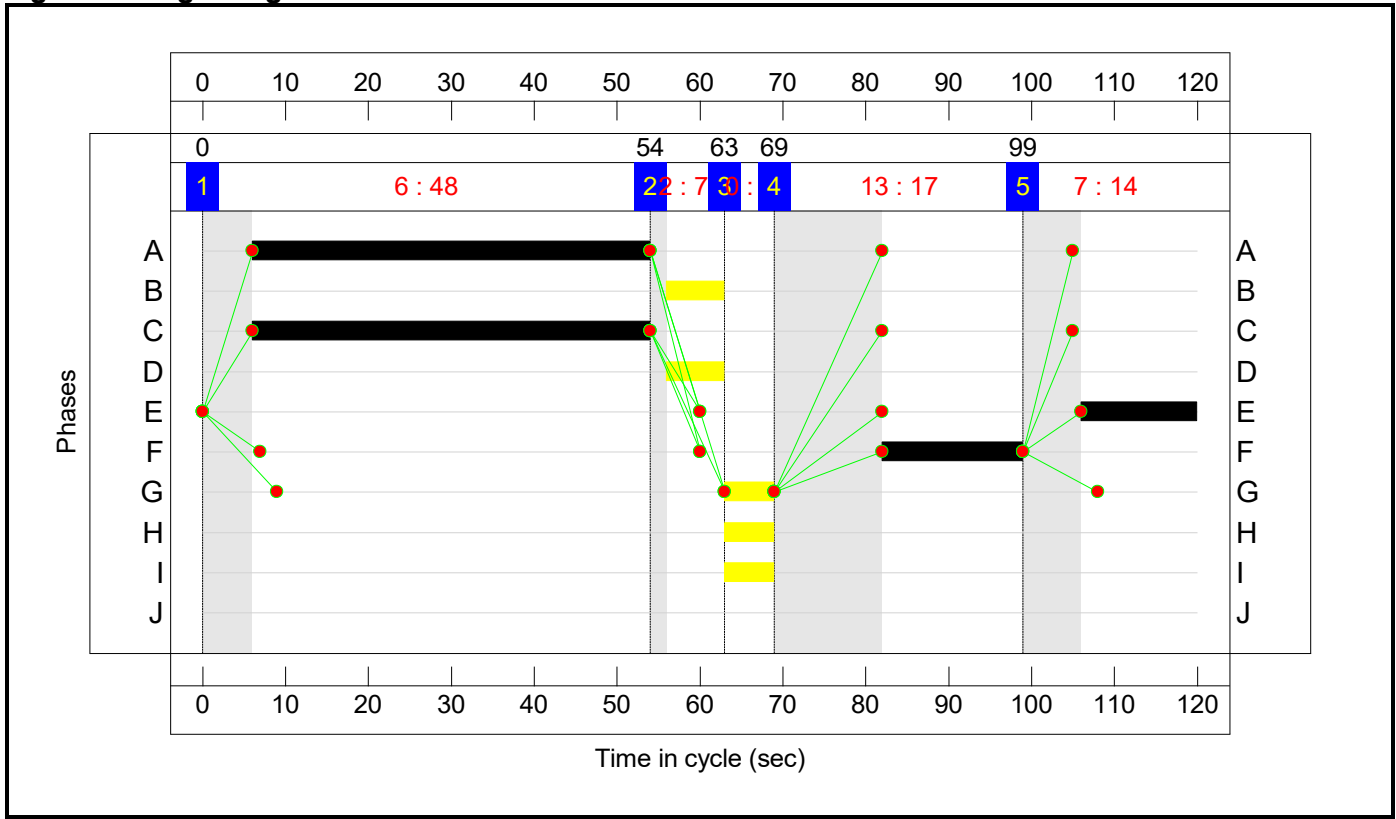
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	48	7	6	17	14
Change Point	0	54	63	69	99


Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

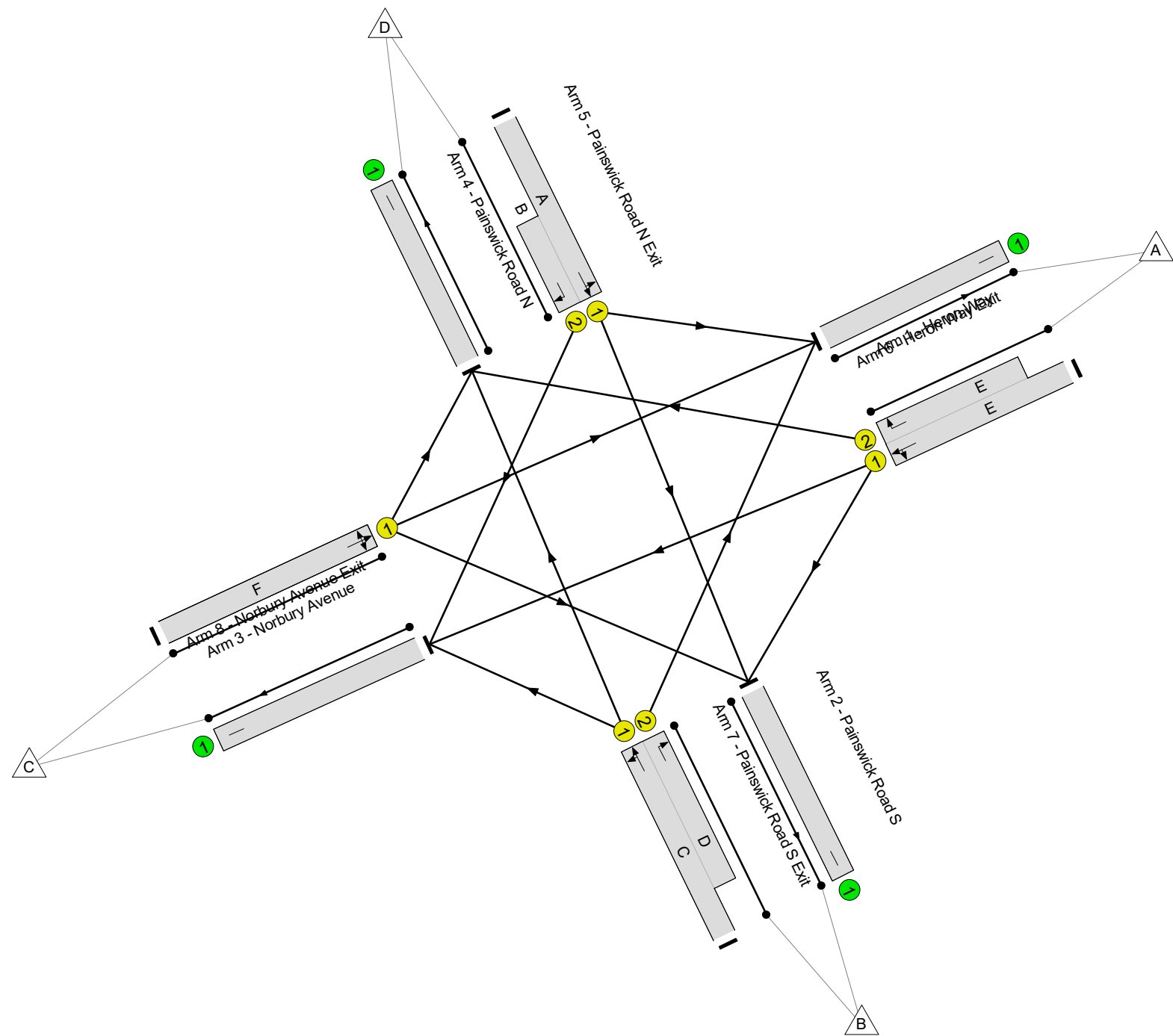
Full Input Data And Results



B4073/ Heron Way/ Norbury Avenue

PRC: -5.6 %

Total Traffic Delay: 34.2 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Land at Winnycroft Lane, Snow Capel	-	-	N/A	-	-		-	-	-	-	-	-	95.0%
B4073/ Heron Way/ Norbury Avenue	-	-	N/A	-	-		-	-	-	-	-	-	95.0%
1/1+1/2	Heron Way Right Left Ahead	U	N/A	N/A	E		1	14	-	353	1827:1943	228+177	87.1 : 87.1%
2/1+2/2	Painswick Road S Ahead Right Left	U	N/A	N/A	C D		1	48:7	-	791	1930:1752	717+117	95.0 : 94.2%
3/1	Norbury Avenue Left Ahead Right	U	N/A	N/A	F		1	17	-	252	1903	285	88.3%
4/1+4/2	Painswick Road N Left Ahead Right	U	N/A	N/A	A B		1	48:7	-	452	1800:1777	714+30	60.8 : 60.8%
5/1	Painswick Road N Exit	U	N/A	N/A	-		-	-	-	901	Inf	Inf	0.0%
6/1	Heron Way Exit	U	N/A	N/A	-		-	-	-	413	Inf	Inf	0.0%
7/1	Painswick Road S Exit	U	N/A	N/A	-		-	-	-	349	1940	1940	18.0%
8/1	Norbury Avenue Exit	U	N/A	N/A	-		-	-	-	185	Inf	Inf	0.0%

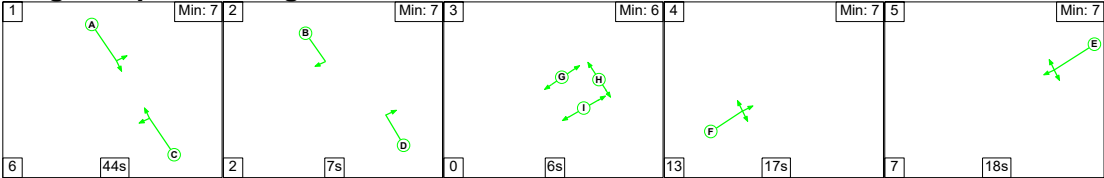
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Land at Winnycroft Lane, Snow Capel	-	-	0	0	0	20.1	14.1	0.0	34.2	-	-	-	-
B4073/ Heron Way/ Norbury Avenue	-	-	0	0	0	20.1	14.1	0.0	34.2	-	-	-	-
1/1+1/2	353	353	-	-	-	5.0	3.0	-	8.0	81.8	6.5	3.0	9.5
2/1+2/2	791	791	-	-	-	8.0	7.0	-	15.0	68.3	23.6	7.0	30.6
3/1	252	252	-	-	-	3.5	3.2	-	6.7	95.2	8.2	3.2	11.4
4/1+4/2	452	452	-	-	-	3.6	0.8	-	4.4	34.9	11.5	0.8	12.3
5/1	901	901	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	413	413	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	349	349	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
8/1	185	185	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -5.6 Total Delay for Signalled Lanes (pcuHr): 34.07 Cycle Time (s): 120 PRC Over All Lanes (%): -5.6 Total Delay Over All Lanes(pcuHr): 34.18													

Full Input Data And Results

Scenario 2: '2027 + CD + DEV PM' (FG8: '2027 + CD + DEV PM', Plan 1: 'Network Control Plan 1')

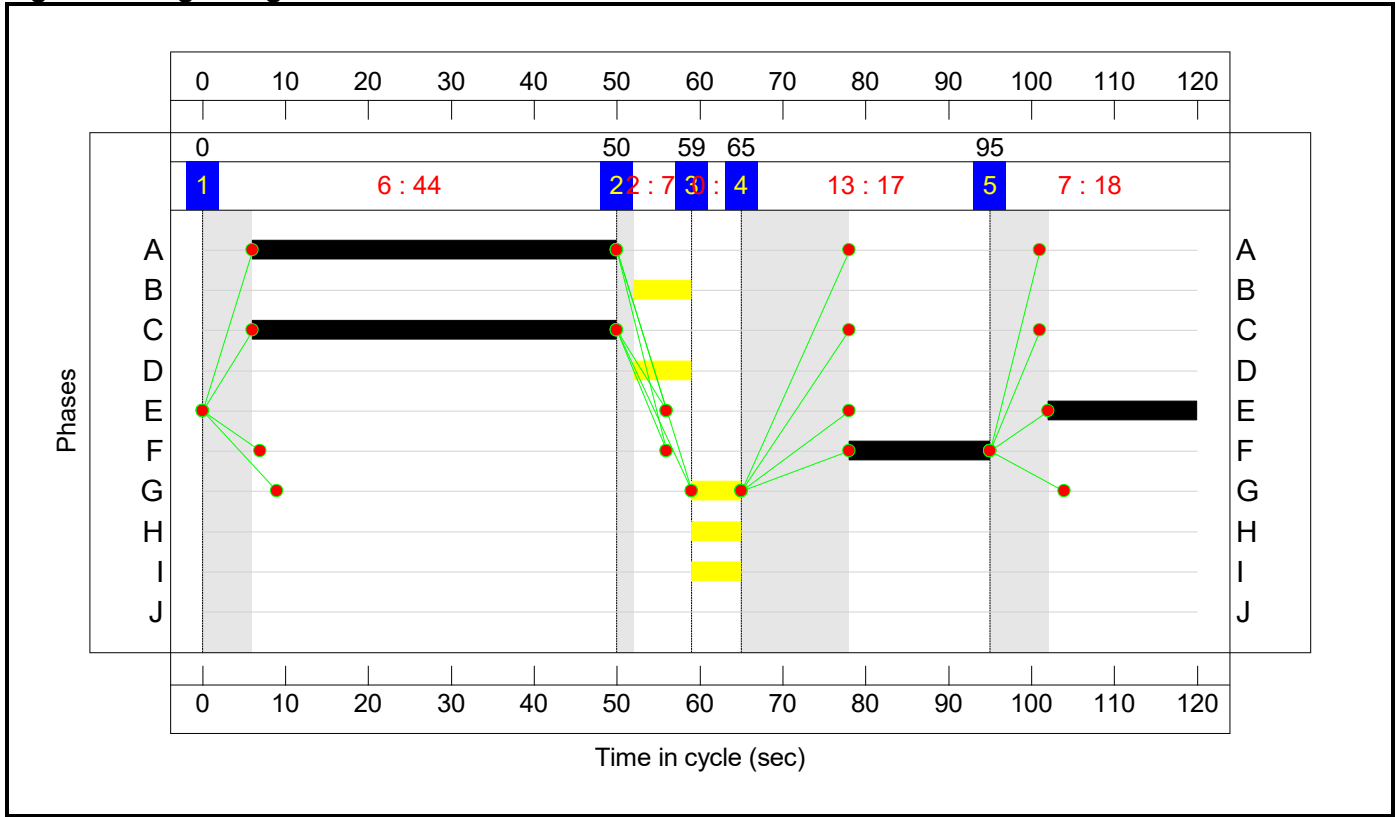
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	44	7	6	17	18
Change Point	0	50	59	65	95


Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

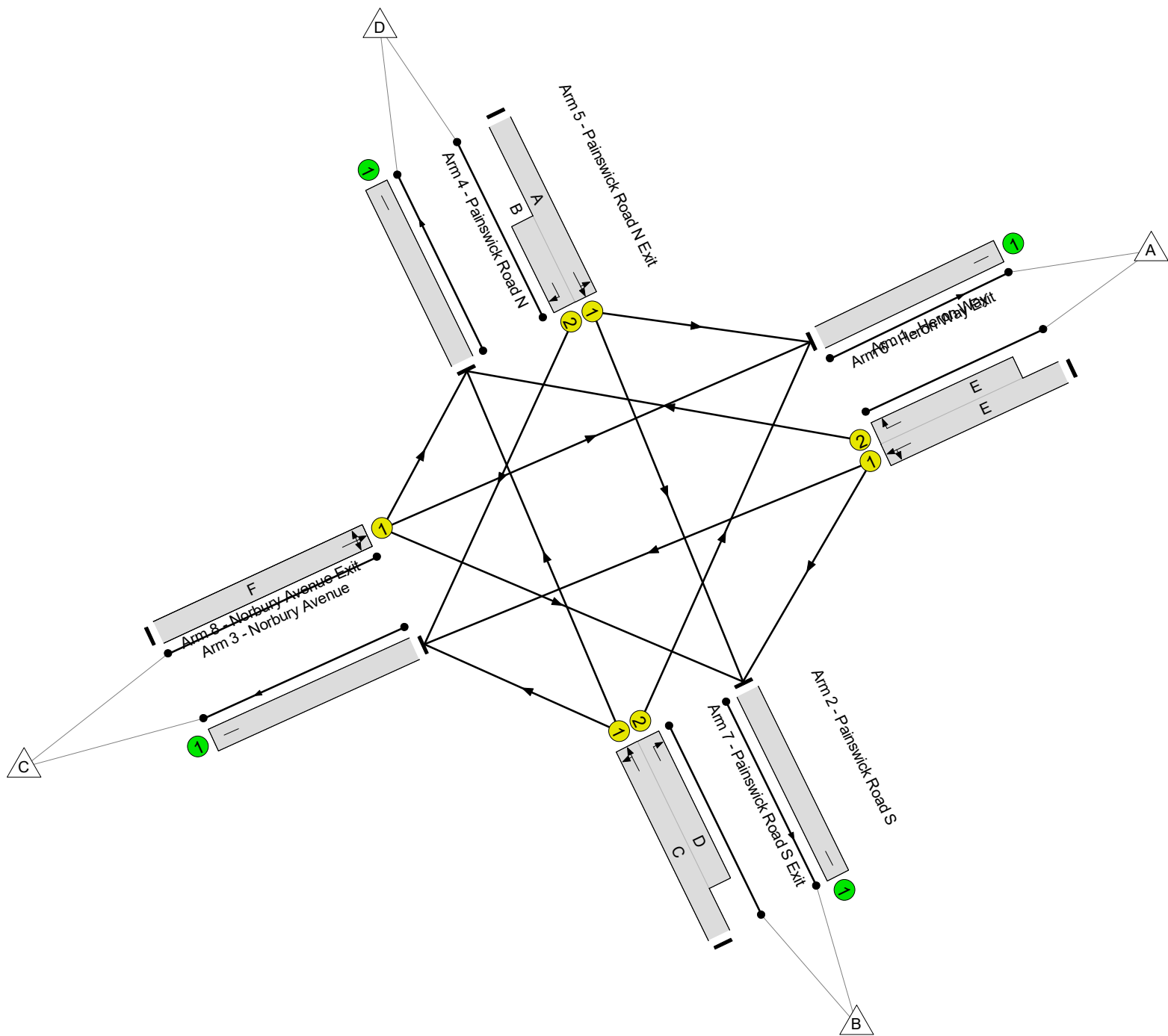
Full Input Data And Results



B4073/ Heron Way/ Norbury Avenue

PRC: -26.1 %

Total Traffic Delay: 102.6 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Land at Winnycroft Lane, Snow Capel	-	-	N/A	-	-		-	-	-	-	-	-	113.5%
B4073/ Heron Way/ Norbury Avenue	-	-	N/A	-	-		-	-	-	-	-	-	113.5%
1/1+1/2	Heron Way Right Left Ahead	U	N/A	N/A	E		1	18	-	452	1856:1943	294+136	105.1 : 105.1%
2/1+2/2	Painswick Road S Ahead Right Left	U	N/A	N/A	C D		1	44:7	-	477	1926:1752	653+117	61.4 : 65.1%
3/1	Norbury Avenue Left Ahead Right	U	N/A	N/A	F		1	17	-	330	1938	291	113.5%
4/1+4/2	Painswick Road N Left Ahead Right	U	N/A	N/A	A B		1	44:7	-	740	1809:1777	659+28	107.8 : 107.8%
5/1	Painswick Road N Exit	U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
6/1	Heron Way Exit	U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%
7/1	Painswick Road S Exit	U	N/A	N/A	-		-	-	-	651	1940	1940	31.2%
8/1	Norbury Avenue Exit	U	N/A	N/A	-		-	-	-	220	Inf	Inf	0.0%

Full Input Data And Results

[illegible]

Town & Country Planning Act 1990 (as amended)
Planning and Compulsory Purchase Act 2004

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Residential Travel Plan.

LAND AT SNOW CAPEL, MATSON, GLOUCESTER, GL4 6HY.

On behalf of Bromford Developments.

Date: May 2022 | Pegasus Ref: P20-1432/TR/03



Document Management.

Version	Date	Author	Checked/ Approved by:	Reason for revision
O1	May 2022	TR	KSS/CMR	-



Contents.

1. Introduction.....	1
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6. Implementation, Dissemination and Monitoring.....	16

Figure Contents.

Figure 3.1 – Site Location Plan

Figure 3.2 – Local Facilities and Amenities, Walking and Cycling Isochrones Plan

Appendices contents.

Appendix A – Common Land Plans

Appendix B – Gloucester County Council Gloucester Cycle Map

Appendix C – Census 2011 Travel to Work Data

1. Introduction

- 1.1. This Residential Travel Plan (RTP) has been prepared by Pegasus Group on behalf of Bromford Developments Limited in relation to a full application for 190 dwellings at land at Snow Capel, Matson, Gloucester.
- 1.2. The site is located to the immediate east of Winnycroft Lane, to the south of Matson. The M5 Motorway follows the site's eastern boundary.
- 1.3. This RTP sets out preliminary targets for travel to and from the development site by all modes of transport. It also sets out initiatives and measures to support these targets.
- 1.4. Measures and initiatives will be provided at the outset to maximise the opportunity to influence new residents travel patterns before they have become established.
- 1.5. The RTP has been developed with consideration to the following documents as appropriate:
 - i. National Planning Policy Framework (NPPF) (2019).
 - ii. National Planning Practice Guidance (NPPG) (2014).
 - iii. Good Practice Guidelines, Delivering Travel Plan through Planning Process, published by DfT (2009).
 - iv. The Essential Guide to Travel Planning, published by DfT (2008).
 - v. A Guide on Travel Plans for Developers (2006);
 - vi. Gloucestershire County Council Travel Plan Guide for Developers (2011); and
 - vii. Gloucestershire Local Transport Plan (2020-2041)
- 1.6. It is the preference of the Applicant that Gloucestershire County Council implements the Travel Plan. A monitoring fee will be provided, and it is anticipated that a contribution will be secured via Section 106.

2. Aims and Objectives

2.1. The primary goals of this RTP are to:

- i. Set out the scope and objectives of the RTP.
- ii. Set out initiatives and measures to promote accessibility by non-car modes by residents.
- iii. Set out modal share targets.
- iv. Set out management requirements including the Travel Plan Co-ordinator (TPC) role; and
- v. Set out requirements for monitoring and reviewing the initiatives and measures proposed through dissemination of information including surveys of resident's travel habits.

2.2. The key objectives are as follows:

- i. Reduce single occupancy car usage for the development site through encouraging more sustainable travel modes.
- ii. Reduce single occupancy car usage for the development site through encouraging more sustainable travel modes.
- iii. Increase residents' awareness of the advantages and potential for travel by more environmentally friendly modes of transport therefore reducing traffic.
- iv. Encourage community interaction through reducing the severance effects created by motor traffic; and
- v. Complement other TP's that operate in the local area with the aim of promoting a more holistic and inclusive approach to sustainable travel.

Benefits

2.3. The potential benefits associated with the implementation of this RTP are as follows:

- i. A reduction in traffic, congestion and collisions.
- ii. Reduced air and noise pollution.
- iii. Improved environment through a reduction in CO2 emissions.
- iv. Reduced time spent travelling.
- v. Potential cost savings for residents; and
- vi. Improved personal and community health and fitness levels.



- 2.4. This RTP contains a number of initiatives and measures to ensure that the targets can be achieved, and the objectives listed above can be met. These targets will be reviewed annually by the designated TPC and the initiatives and measures will be monitored and updated where necessary if targets are not being met. Similarly, the targets may be adjusted if the Travel Plan is working well or particularly badly.

3. Site Audit

Site Location and Context

- 3.1. The site is located approximately 6.1 kilometres southeast of the centre of Gloucester and approximately 1.2 kilometres to the south of the residential suburb of Matson. The location of the site is shown at **Figure 3.1**.
- 3.2. The application site comprises around 7.8 hectares of open land and is bound by land outlined for residential development to the north, the M5 motorway to the east, undeveloped land to the south and Winnycroft Lane to the west.
- 3.3. The site is located approximately 800 metres south of the closest bus stop on Matson Avenue.
- 3.4. It is currently served via two existing field accesses off Winnycroft Lane.

Local Highway Network

Winnycroft Lane

- 3.5. Winnycroft Lane is unlit in the vicinity of the site and the carriageway measures approximately six metres wide. It is subject to a '7.5 tonne except or loading' weight limit, between the carriageway's junction with Sneedhams Road in the north and Upton Lane at Brookthorpe village to the south.
- 3.6. Winnycroft Lane is subject to the National Speed Limit of 60mph in the vicinity of the site, reducing to 30mph approximately 170 metres north of the northern site boundary. Footway provision commences on the western side of Winnycroft Lane at its junction with Sneedhams Road. The footway here measures approximately two metres wide and is lit.
- 3.7. The grass verge between the western site boundary and the Winnycroft Lane carriageway is Common Land, the records for which are included at **Appendix A**. GCC confirms¹ that Common Land is "land, usually in private ownership, that has rights of common over it. It is generally open, unfenced and remote. The Countryside and Public Rights of Way (CROW) Act 2000 gives the public a right of access on foot to certain areas of 'access land' which includes registered common land". Walking along the verge between the site boundary and Winnycroft Lane's boundary is permitted. It is understood that the Common Land along Winnycroft Lane is owned by Gloucester City Council, and maintained by Gloucestershire County Council, as highway authority.
- 3.8. Winnycroft Lane changes name to Corncroft Lane around 820 metres to the northeast of the site and becomes Upton Lane around 210 metres to the south of the site. The road generally serves a number of residential dwellings as well as larger residential areas which are served through its junctions with Sneedhams Road and Birchall Avenue.

¹ [Common land and village greens – Gloucestershire County Council](#)

Matson Lane

- 3.9. Matson Lane is a single track linking Winnycroft Lane in the south with the B4073 Painswick Road in the north. It forms the minor arm of a priority T-junction with Winnycroft Lane near the northwest corner of the site.
- 3.10. The carriageway measures approximately 4.5 metres wide and is subject to the National Speed Limit of 60mph within the vicinity of the site. Approximately 210 metres to the northwest of the Winnycroft Lane junction the carriageway connects with Sneedhams Road at a simple priority junction where the road becomes restricted to 30mph. A footway is provided at this point, located on the eastern side of the carriageway. There is no footway provision along the southernmost section of Matson Lane.

Corncroft Lane

- 3.11. Corncroft Lane forms the minor arm of a simple priority junction with the B4073 Painswick Road 820 metres to the northeast of the site. There are continuous footways on both sides of the carriageway, measuring between one and two metres wide.
- 3.12. The carriageway is lit, measures approximately six metres wide and there is a continuous footway on the northern side measuring approximately 1.5 metres in width. It is subject to a 30mph speed limit and provides direct access to private residential dwellings as well as residential estate roads to the north.

B4073 Painswick Road

- 3.13. The B4073 connects Painswick in the south with Gloucester city centre in the north. The carriageway is lit, subject to a 40mph speed limit and generally measures approximately 7.5 metres wide.
- 3.14. There are continuous footways on both sides of the carriageway, measuring between one and two metres wide. To the north of the Corncroft Lane junction footways are separated from the carriageway by a grass verge.

Wheatway

- 3.15. Wheatway connects the B4073 at a signalised junction in the west with a four-arm roundabout between Heron Way, Abbeymead Avenue and Glevum Way in the east.
- 3.16. The carriageway is approximately 7.5 metres wide and subject to a 30mph speed limit. It serves residential dwellings and estate roads on both sides of the carriageway. Continuous footways and lighting are provided, with the footways measuring approximately 1.5 metres wide on both sides of the carriageway. Verges with a minimum width of 1.5 metres are located between the footway and the carriageway on both sides of Wheatway.

Norbury Avenue / Heron Way / B4073 Signalised Junction

- 3.17. Heron Way meets the B4073 at a signalised junction with Norbury Avenue, located approximately 2.2 kilometres north of the site. Signalised crossings are provided on the Painswick Road northern and southern arms of the junction. Uncontrolled pedestrian facilities with tactile paving and dropped kerbs are provided on all other arms. Pedestrian refuge islands are located on each arm except Norbury Avenue.

- 3.18. Heron Way forms the eastern arm of the B4073 signalised junction, linking with the east of Gloucester and the roundabout junction with Wheatway. The carriageway is lit and measures approximately 7.5 metres wide.

Facilities and Amenities

- 3.19. The Department for Transport (DfT) document Manual for Streets (MfS) published in 2007 states at paragraph 4.4.1 that walking offers the greatest potential to replace short car trips, particularly those under two kilometres.
- 3.20. The July 2020 DfT Local Transport Note 1/20 Cycle Infrastructure states that 'two out of every three personal trips are less than five miles (eight kilometres) in length – an achievable distance to cycle for most people, with many shorter journeys also suitable for walking'.
- 3.21. Statutory walking distances for school children are set out in the 'Home to School Travel and Transport Guidance' document by Department for Education (DfE) (2014). The distance for pupils under the age of 8 years old is 3.2 kilometres (2 miles), and the distance for pupils between 8 and 16 years is 4.8 kilometres (3 miles).
- 3.22. **Figure 3.2** illustrates that the local area offers everyday services including bus stops, a Primary School (Robinswood Primary Academy), a pharmacy, Post Office, local stores and a library.
- 3.23. **Table 3.1** summarises the typical facilities available, the distance from the site and the associated walking and cycling times.

Table 3.1 – Summary of Local Facilities and Amenities

Facility	Location	Distance from the site (kilometres)	Walking Time (minutes) ²	Cycling Time (minutes) ³
Winnycroft bus stop	Matson Avenue	0.8	10	3
Gloucestershire Golf Club	Matson Lane	1.2	15	4
Farm Shop	Gloucestershire Services	1.2	15	4
Redwell Community Centre	Red Well Road	1.2	14	4

² Based on a walking speed of 80m/minute (Providing for Journeys on Foot (2000))

³ Based on a cycling speed of 270m/minute (LTN 1/20)

Facility	Location	Distance from the site (kilometres)	Walking Time (minutes) ²	Cycling Time (minutes) ³
Matson Rugby Football club	Red Well Road	1.2	15	4
Matson Pharmacy	Matson Avenue	1.3	16	5
Jade Gardens Chinese Takeaway	Matson Avenue	1.3	16	5
Janes Bakery	Matson Avenue	1.3	16	5
Premier Matson Mini Market	Matson Avenue	1.3	16	5
Matson Post Office	Matson Avenue	1.3	16	5
The Matson Store (convenience store)	Matson Avenue	1.3	16	5
Robinswood Primary Academy	Matson Avenue	1.6	20	6
Matson Park	Matson Avenue	1.6	20	6

3.24. **Figure 3.2** demonstrates that the facilities and amenities described in **Table 3.1** are all within a two kilometre walking distance from the site. **Figure 3.2** also demonstrates that the Gloucester city centre boundary can be reached within five kilometres cycling distance, indicating that the majority of Gloucester city centre would be accessible within eight kilometres cycle distance.

3.25. **Figure 3.2** also shows that the Gloucester Academy to the north is located within walking distance.

Pedestrian Facilities

3.26. There are no footways adjacent to the site along Winnycroft Lane. However, an existing footway is located on the western side of Winnycroft Lane approximately 250 metres to the north of the proposed site access point at the Sneedhams Road junction. The footway is illuminated and measures approximately two metres wide. This footway links the local area with Matson Avenue and a number of wider facilities and amenities located in Matson. Matson Avenue and Winnycroft Lane are linked via two adopted footpaths.

Public Rights of Way

- 3.27. There are two Public Right of Way (PRoW) routes which cross the site, as shown in **Figure 3.1**.
- 3.28. Footpath EUL23 is around 720 metres long and is aligned southwest to northeast between Winnycroft Lane and the northern site boundary where it continues northwards into the adjacent development site. It is understood that the footpath is proposed to be diverted within that site as part of those proposals.
- 3.29. Footpath EUL24 is around 470 metres long and is aligned broadly east to west between Winnycroft Lane and Footpath EUL23. To the east of the site, the footpath continues over the M5 via a footbridge.

Cycling Facilities

- 3.30. With the exception of two short sections of advisory cycle lanes on Winnycroft Lane, there are no dedicated cycle facilities in the vicinity of the site. However, the majority of the local roads to the north are considered to be generally appropriate for cyclists as they are relatively flat, lit and the speed limits are typically restricted to 30mph. Local facilities and amenities within Matson are within achievable and reasonable cycle distance.
- 3.31. As per the Gloucester Cycle Map (2016) produced by GCC, the majority of the carriageways within the vicinity of the site are identified as quiet roads. The cycle map is included at **Appendix B**.

Public Transport

Local Bus Provision

- 3.32. The closest bus stop to the site is located around 800 metres walking distance to the north of the centre of the site on Matson Avenue.
- 3.33. This bus stop is serviced by Stagecoach route number 1 with buses to Gloucester City Centre every 15–20 minutes throughout the day on weekdays. The first bus departing the stop towards Gloucester on weekdays is at 05:18 and the last bus arriving at the stop from Gloucester is at 23:46. Services on Saturdays run at approximate 15–20 minute intervals, with the first service departing the stop at 06:36 and the last service returning to the stop at 23:46. On Sundays, the bus service runs at approximately 20 minute intervals, with the first bus departing to Gloucester at 07:16 and the final bus returning at 20:41.
- 3.34. The Gloucester Transport Hub (Bus Station) can also be accessed within approximately 120 metres (two minute walk) of the Clarence Street (Stand T) bus stop which serves the route number 1. Gloucester Transport Hub has 12 bus stands and provides access to over 25 routes, including three National Express routes which provide intercity travel.

Rail Provision

- 3.35. The nearest railway station is Gloucester Railway Station, located around 5.2 kilometres to the northwest of the site. This provides regular peak and off-peak services to Nottingham, London Paddington, and Cheltenham Spa (approximately every hour), with additional services to Cardiff Central, Frome and Worcester Foregate Street on a less frequent basis.

- 3.36. This station can be accessed via bus route 1, with the final stop on Clarence Street (Stand T) a 350 metre walk (five minute) from Gloucester Railway Station. There are also 32 sheltered bicycle stands with CCTV coverage at the station.

Conclusion

- 3.37. The site is located within walking and cycling distance of existing services and amenities that are typically required by future residents on a daily basis. It is concluded that the site's position and relative distance to these services will encourage trips by non-car modes and relatively short trips using car journeys.

4. Measures and Initiatives

Travel Plan Period

- 4.1. The Travel Plan Period will be defined as five years following first occupation at the site.

Travel Plan Budget

- 4.2. A Travel Plan budget will be identified by the developer to implement the Travel Plan at the site for the duration of the Travel Plan period.

Travel Plan Coordinator

- 4.3. Bromford Developments Limited will appoint a relevant person to act as TPC for the development and to oversee the implementation of the Travel Plan and to manage the strategy for meeting the objectives.
- 4.4. The TPC will be responsible for the following:
- i. To oversee the implementation of the site travel plan.
 - ii. To provide site specific marketing materials.
 - iii. Promoting the Travel Plan to residents.
 - iv. To produce, explain and distribute residential 'welcome packs'.
 - v. Acting as the liaison between the public transport, local authorities and other relevant groups.
 - vi. To undertake and monitor residential questionnaire travel surveys; and
 - vii. Monitoring the progress of the travel plan and reporting back to Gloucestershire County Council.
- 4.5. At the end of the Travel Plan period, it is anticipated that the TPC will hand over all roles and responsibilities to a Travel Plan Officer at Gloucestershire County Council or to a local community group. They will have a dedicated responsibility for the ongoing implementation and monitoring of the RTP.

Measures and Initiatives

- 4.6. **Table 4.1** details the measures and initiatives that will be implemented by the developer. The measures and initiatives proposed below will be implemented at the outset before the new dwellings are occupied in order to maximise the opportunity to influence new residents travel patterns before they have become established.

Table 4.1 – Measures and Initiatives

Promotional Measures and Initiatives	
1	The provision of a 'Welcome Information Leaflet for residents, which will contain details of how trips to local leisure and employment facilities can be achieved by other means to the private car. It will give information on bus routes and frequency, local cycle routes and the location of local schools and amenities.
2	Promotion of National and Local Travel Awareness Events (e.g. walk to work day in April, and bike to work week in June).
3	The inclusion of sustainable travel information within the sales and marketing office.
4	Promotion of the http://www.easytraveling.org.uk/gcc/ website
5	Internet access to be provided in all homes giving residents easy access to local home delivery services and making it easier for residents to work from home.
Walking & Cycling Measures	
6	The layout of the site will provide for a safe, well-designed network of walking and cycling routes through the site, connecting onto the surrounding network. This will incorporate the existing PRoW routes.
7	The provision of walking and cycling maps (contained within the Welcome Information Leaflet).
8	The promotion of walking and cycling based websites.
9	Covered cycle parking will be provided within the development providing secure storage for bicycles in accordance with parking standards.
10	The TPC will seek to negotiate discounts at local cycle retailers or provide a Residential Travel Voucher to each household towards a bicycle or cycle equipment (described in detail in paragraph 4.8)
11	The TPC will inform residents that private adult cycle training sessions can be booked through one of GCC's Accredited National Standards Instructors.

Public Transport Measures	
12	The provision of up to date public transport information through leaflets and also via public transport websites such as www.traveline.info and available smart-phone applications.
13	The provision of central notice board within the development. This will provide information on and promote sustainable modes of transport. The notice board will be located in prominent locations within the development.
14	The provision of a Residential Travel Voucher for each dwelling for use on public transport and / or cycling initiatives.
Car Based Initiatives	
15	The promotion of car share databases website such as Liftshare within the Welcome Pack and on noticeboards.

Residential Travel Vouchers

- 4.7. Residential Travel Vouchers will be provided by the developer. The intention of the Residential Travel Voucher is to encourage smarter travel choices by providing a direct financial incentive to householders to reduce their car use. Residential travel vouchers may relate to public transport and/or cycling incentives, for example free bus travel on new or existing services, vouchers towards bus or rail season tickets, vouchers for cycle equipment.

Awareness and Marketing

- 4.8. The TPC will ensure that from the outset residents are aware that a Travel Plan is in operation for the site, and they will be informed of the initiatives and measures within this RTP. Sales staff involved in the marketing of the residential properties will also be aware of the RTP so they can explain the benefits to prospective buyers. Information will also be available within the sales office on the opportunities to walk, cycle and use public transport to and from the site.

- 4.9. The following means of publicity may be used going forward:
- i. Newsletters circulated, as appropriate.
 - i. Marketing materials such as posters.
 - ii. Travel Plan notice boards will include the site-specific information leaflet identifying walking and cycling route maps and public transport information. The Travel Plan notice boards will be strategically positioned within the residential development and updated by the TPC, as appropriate; and;
 - iii. Resident Welcome Information Leaflet which will contain information such as bus and rail timetables, walking and cycling route maps, and educational information on the health and environmental benefits of alternative modes to single occupancy car travel to local facilities and amenities.
- 4.10. During the annual surveys that will take place as ongoing monitoring the TPC will promote measures and initiatives.
- 4.11. All the measures and initiatives above will be reviewed as the RTP progresses and as monitoring highlights which measures have been successful against those that have not. At this stage, measures will be subject to change to ensure the RTP continues to achieve its goal and target influential area of travel behaviour change and to ensure that the associated travel plan budget is utilised to its full potential.

5. Travel Plan Targets

- 5.1. Targets are the measurable goals that must be set to assess whether or not the objectives of the plan are being achieved. The key objectives of this RTP are included at **paragraph 2.2.**
- 5.2. Whilst it is the intention of this RTP to encourage residents to travel sustainably for all journeys, it is considered that commuting trips are the key journeys that the RTP will target.
- 5.3. Information contained in the 2011 Census have been used to inform the existing Travel to Work data, to estimate the base proportion of travel for future residents and to form the basis for the travel targets. The 'Gloucester O11' Middle Super Output area (MSOA) has been used as the usual area of residency, this includes the areas of Matson, Robinswood and the site itself. The Census data is included at **Appendix C.**
- 5.4. A survey will be carried out upon occupation of 80 percent of the proposed dwellings and then on the first, third and fifth anniversary of the survey.
- 5.5. The base modal share and interim targets based on travel to work data are summarised at **Table 5.1.**

Table 5.1 Method of Travel to Work

Mode	%	1 Year	3 Year	5 Year	Percentage Point Increase / Decrease
Work Mainly at or from home	7.0%	8.0%	9.0%	10.0%	+3.0%
Train	0.6%	0.7%	0.8%	1.0%	+0.4%
Bus	10.9%	11.4%	12.0%	12.5%	+1.6%
Taxi	0.2%	0.2%	0.2%	0.2%	0%
Motorcycle, scooter or moped	1.7%	1.7%	1.7%	1.7%	0%
Driving a car or van	60.8%	57.5%	54.2%	50.8%	-10%
Passenger in a car or van	7.2%	7.4%	7.7%	8.0%	+0.8%
Bicycle	4.5%	5.0%	5.5%	6.0%	+1.5%
On foot	6.8%	7.7%	8.6%	9.5%	+2.7%

Other	0.4%	0.4%	0.4%	0.4%	0%
Total	100%				

Numbers may be off due to rounding

- 5.6. It can be seen from **Table 5.1** that there is significant potential to reduce the level of single occupancy car travel. It is considered that there is scope to target a reduction of 10% in single occupancy car travel and increase the percentage of commuters travelling by bus, bicycle and foot as well as encourage individuals to work from home.
- 5.7. At this stage it is anticipated that the 10-percentage point reduction will be achieved by the end of the five-year monitoring period carried out by the TPC.
- 5.8. It should be noted that the proposed targets are indicative and should not be seen as definitive at this stage. Baseline surveys will be carried out at an agreed date with travel plan officers at Gloucestershire County Council, which will then allow the TPC to set more accurate targets, but with the key target to reduce single occupancy car travel by 10%.
- 5.9. The TPC will liaise with Travel Plan Officers at GCC to draft appropriate baseline surveys detailing the modes of transport used by residents. The results will be closely analysed to determine site specific targets in agreement with GCC.

6. Implementation, Dissemination and Monitoring

Sales Staff Training

- 6.1. In order to ensure that potential residents of the site are informed about the RTP and its goals from the earliest stage, the RTP will have a significant presence within the sales suite of the development at the point of sale, which should include a display outlining the sustainable travel options for the site.
- 6.2. The sales staff will receive training, funded by the developer, to promote the Travel Plan as an asset and a significant selling point of the development. Information and promotion of the Travel Plan from the outset ensures greater buy-in from future residents who will see it as an opportunity to plan changes in their lifestyle.

Monitoring

- 6.3. It will be important to monitor and review this RTP to understand if the proposed targets and objectives are being met. Monitoring will be carried out using the following initiatives:
 - i. Residents questionnaire surveys will be carried out to obtain details of residents' travel habits at time to be agreed with a highways officer; and
 - ii. Awareness of the Travel Plan would be monitored through a question within the questionnaire.

Residential Travel Surveys

- 6.4. Resident questionnaire travel surveys will be carried out in years one, three and five after 80% occupation. These will confirm travel habits and will also quantify proportions of travel by the various modes of transport (the modal share). A question on what would influence residents to use alternatives to driving alone will also be included.
- 6.5. The surveys will collate information on changes in car travel, increases and/or decreases in walking and cycling, and provide feedback on the level of awareness of the travel plan in addition to providing data relating to journey types, distances and vehicle types.
- 6.6. The TPC will carry out monitoring the surveys. The content of the surveys will be established with the input of Travel Plan Officers at GCC in advance and the results analysed and submitted to GCC on completion. The TPC will be responsible for distributing the questionnaire surveys.

- 6.7. The surveys will include information that can focus the measures and initiatives contained in the RTP, on the residents most likely to change from private car use to more sustainable travel. Useful information may include:
- i. Duration of Travel.
 - ii. Travel Patterns.
 - iii. Where residents work.
 - iv. Any barriers to particular types of travel.
 - v. Residents who are most willing to change their travel habits; and
 - vi. The popularity of the various incentives and measures that residents may consider changing their methods of transport.

Monitoring Report

- 6.8. Monitoring reports will be produced in years one, three and five after the surveys have been carried out to determine whether the proposed objectives and targets have been met. The report structure may follow:
- i. Summary of the measures and targets.
 - ii. Monitoring methods used.
 - iii. Summary and analysis of results; and
 - iv. Future targets/ actions to be taken.

- 6.9. The monitoring reports will be prepared by the TPC and will be issued and agreed with GCC.

Dissemination of Travel Plan Surveys

- 6.10. It is essential to maintain interest in the Travel Plan. Once operational, the scheme will need regular new publicity drives to attract interest from new residents. As a result, residents will be kept informed of the results of the surveys, as it will keep them actively involved and because it will act as a useful promotional material to retain interest in the objectives. Means of publicity are considered in detail in **Chapter 4**.

Back up Measures

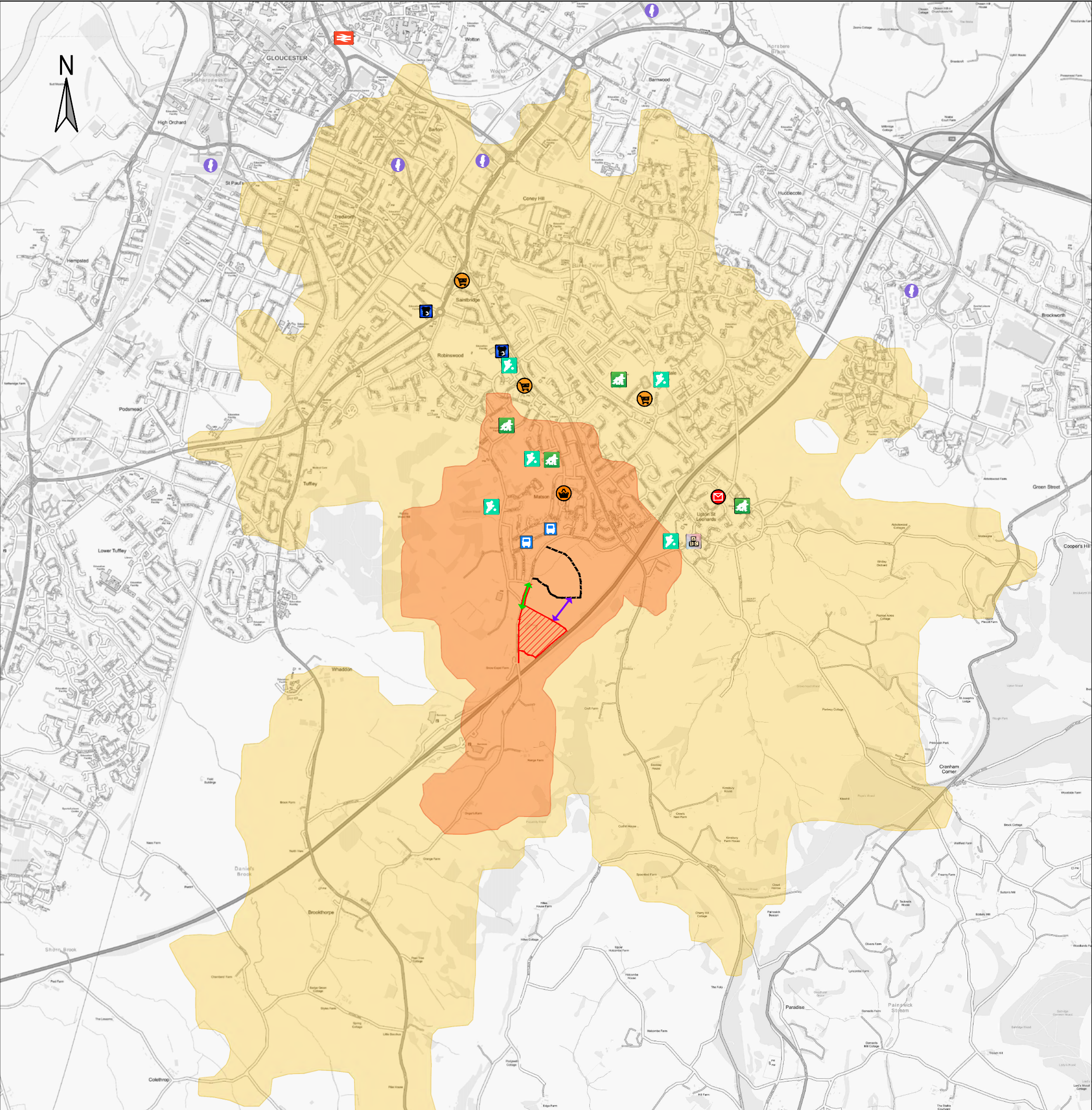
- 6.11. It is considered that the modal share targets are achievable based on the proposed package of measures. However, it may be considered necessary to have back-up measures if the targets are not met. In this instance, intensified Personal Travel Planning (PTP) may be undertaken by the TPC providing tailored advice. This would be offered at first occupation for all residents in their 'Welcome Information Packs'. As well as at first occupation the PTP will be offered to all residents on an annual basis for the duration of the TP monitoring. Residents would be asked if they want to take part in the PTP scheme via doorstep interviews and via a PTP confirmation form.

- 6.12. Future measures and initiatives will not be implemented without agreement from travel plan officers at Gloucestershire County Council.



















Figures

X:\BRISTOL PROJECTS\BRISTOL - LIVE PROJECTS\P20\20-1401-1500\P20-1432 - BROMFORD DEVELOPMENTS LTD - LAND AT SNOW CAPEL MATSONTRANSPORT2.DRAWINGS\SC FIGURES\P20-1432_FIGURE 4.1_FA PLAN.DWG



Key

-  Site Boundary
-  2km Walking Isochrone
-  5km Cycle Isochrone
-  Spine Road Associated with Consented Residential Development
-  Proposed Pedestrian Link on Winnycroft Lane
-  Potential Pedestrian/ Cycle Link
-  Gloucester Railway Station
-  Matson Local Centre
-  Supermarket
-  Nursery
-  Primary School
-  Leisure and Recreation
-  Secondary School
-  Employment
-  Post Office
-  Bus Stop

First Floor, South Wing, Equinox
North Great Park Road,
Almondsbury, Bristol , BS32 4QL

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CLIENT:
BROMFORD DEVELOPMENTS LTD

PROJECT:
LAND AT SNOW CAPEL

TITLE:
LOCAL FACILITIES AND AMENITIES, WALKING
AND CYCLING ISOCHRONES PLAN

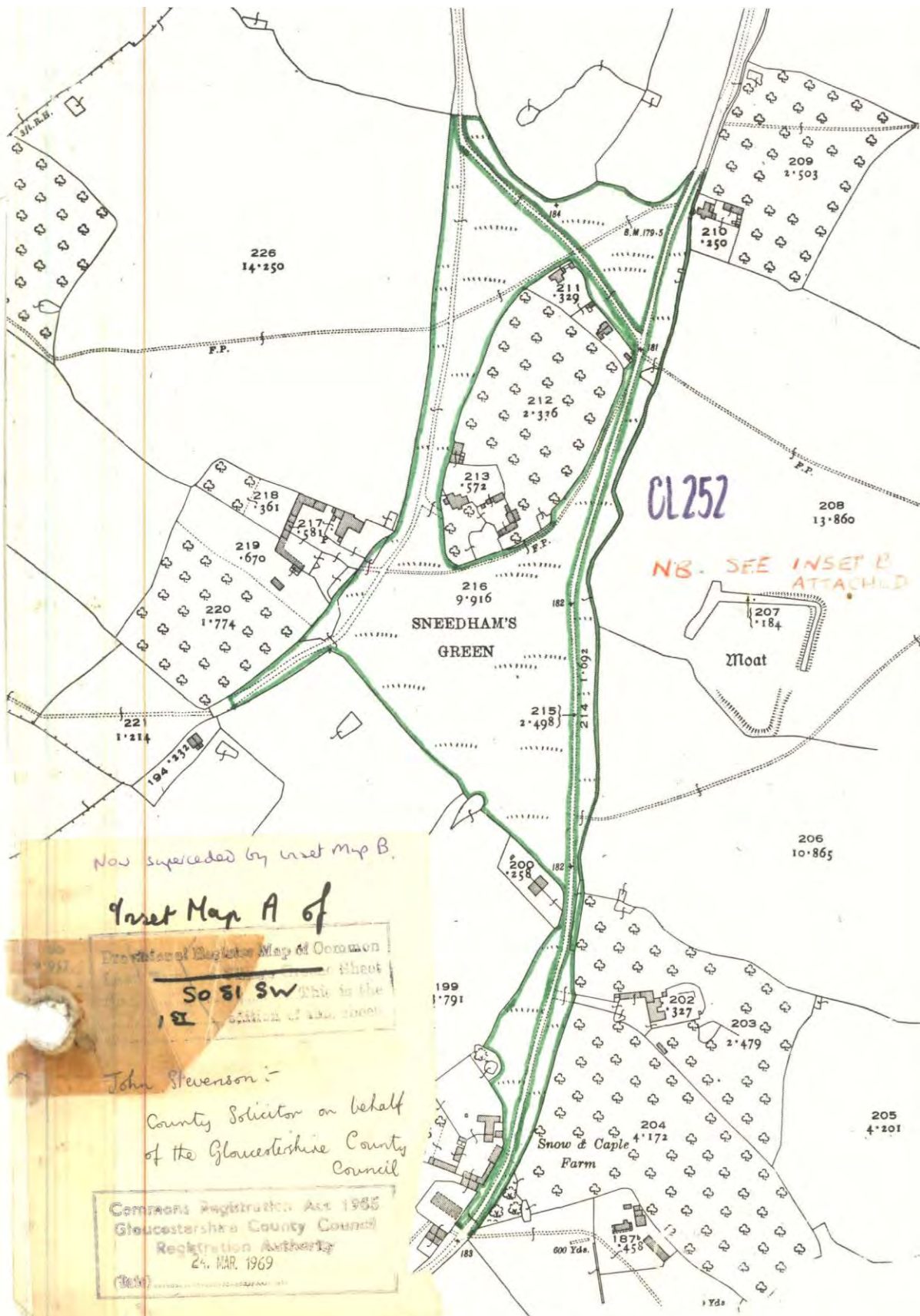
REV	DATE	BY	DESCRIPTION	CHK	APD

CLIENT: BROMFORD DEVELOPMENTS LTD	SCALE @ A3: NTS		CHECKED: KSS	APPROVED: CMR	
	PROJECT: LAND AT SNOW CAPEL		DESIGN-DRAWN: AG	DRAWING-STATUS: FOR INFO	
TITLE: LOCAL FACILITIES AND AMENITIES, WALKING AND CYCLING ISOCHRONES PLAN		PROJECT No: P20-1432	DRAWING No: FIGURE 3.2	REV: -	

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Appendix A



Now superseded by inset map B.

Inset Map A of

Provisional Register Map of Common

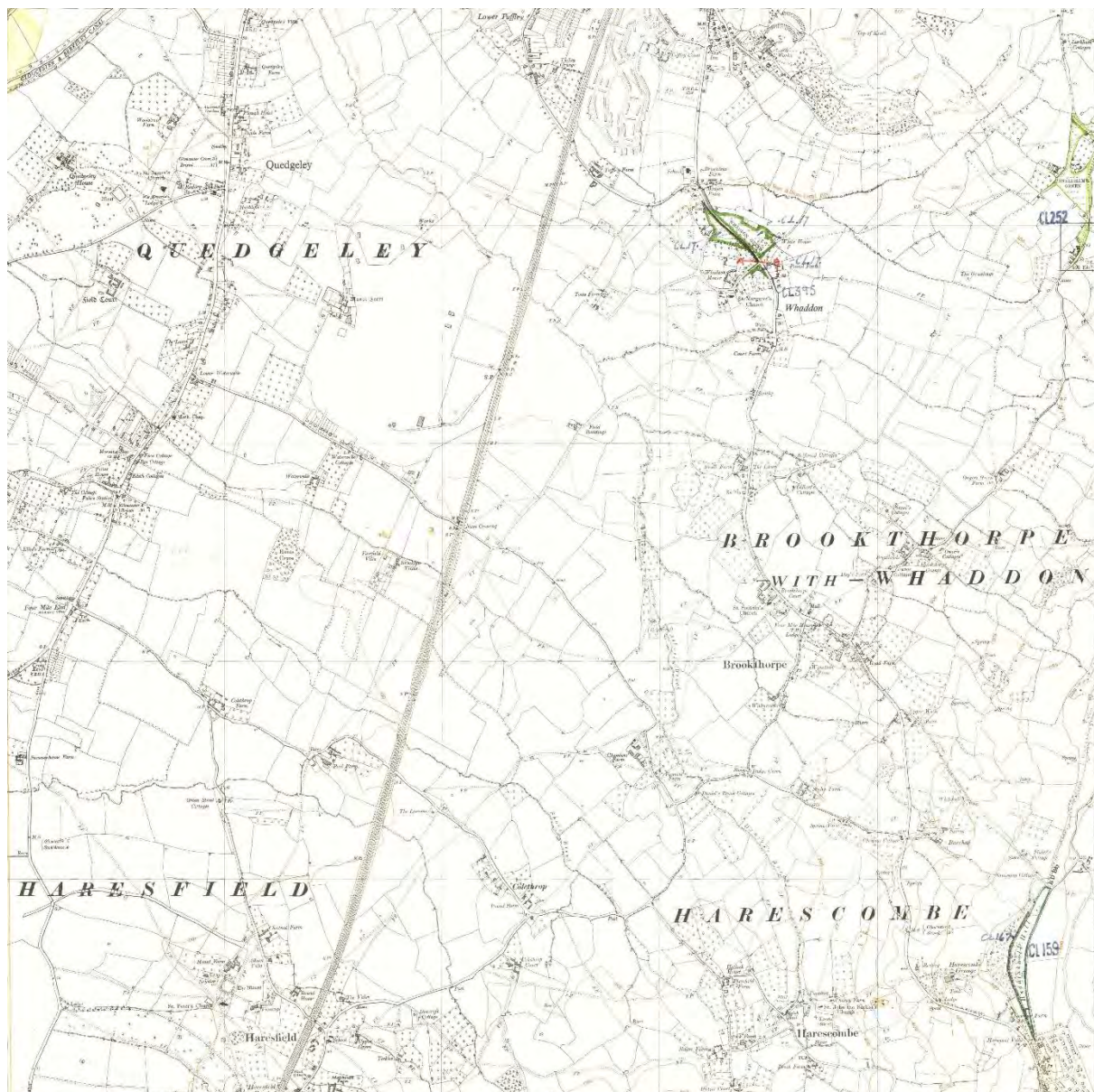
So 81 SW

18

John Stevenson:-

County Solicitor on behalf
of the Gloucestershire County
Council

Commons Registration Act 1965
Gloucestershire County Council
Registration Authority
24. MAR. 1969



Register of COMMON LAND

Register unit No. CL 252
Edition No. 1st.

LAND SECTION—Sheet No. 1

See Overleaf
for Notes

No. and date of entry	Description of the land, reference to the register map, registration particulars, etc.
1 24 MAR. 1969 (See entry No. 2 below)	The piece of land known as Speedhams Green containing 11.512 acres or thereabouts in the parish of Upton St. Leonards, Gloucestershire, as marked with a green verge line inside the boundary on sheets SO 81 SW and SO 81 SE and inset Map A of sheet SO 81 SW of the register map and distinguished by the number of this register unit. Registered pursuant to application number 691 made 5th June, 1968 by the Upton St. Leonards Parish Council, Upton St. Leonards, Gloucestershire. (Registration cancelled)
2. 30th July 1973	The registration at entry No. 1 above, being undisputed, became final on 1st August, 1972. REGISTRATION AMENDMENT SEE ENTRY NO. 3 BELOW
3 17th March 1982	REGISTRATION AMENDMENT the part of the land comprised in this register unit edged ^{red} green on the inset Map B on sheet SO 81 SW of the register map and distinguished by the number of this register unit ceased to be common land on 15/5/89 and is removed from the register pursuant to an application made 19/4/87 by the Dept. of Transport, South West Region, Victoria House, 266 Five Star, Taunton, Somerset.
4 17th March 1982	The piece of land known as part of Speedhams Green in the parish of Upton St. Leonards Gloucestershire and edged ^{green} red on the inset Map B on sheet No. SO 81 SW on the register map and distinguished by the number of this register unit Registered pursuant to application number 1970 made 15/12/81 by the Department of Transport, South West Region, Victoria House, 266 Five Star, Taunton, Somerset under Section 13 of the Act. This said land became common land on 15/5/89 in substitution for the land removed from the register at entry No. 3 above by virtue of compulsory purchase order and became on 15/5/89 subject to the rights of common which were immediately before the said date exercisable over the said removed land.

No. and date of note	Notes	No. and date of note	Notes
1 16 th July, 1975	<p>Daniel Davis, Margery Mary Davis, Roland Davis and Ethel Davis, all of Hillview Cottage, Broadland Green, Upton St. Leonards, Gloucester, in application Number 1956 made 9th July, 1975, claim a right of access for vehicles to and from Hillview Cottage, Broadland Green, Upton St. Leonards, for all purposes in connection with the use of that property as a private residence over the road coloured brown on the plan annexed to CR Form 16 (Revised) on File ^{Application} Number 1956.</p>		

NOTE: This section contains the registration of every right of common registered under the Act as exercisable over the whole or any part of the land described in the land section of this register unit.

Registration authority

GLOUCESTERSHIRE COUNTY COUNCIL.

Register unit No. CL 252.

Edition No. 1st.

See Overleaf
for Notes

Register of COMMON LAND.

RIGHTS SECTION—Sheet No. 1.

1 No. and date of entry	2 No. and date of application	3 Name and address of every applicant for registration, and the capacity in which he applied	4 Particulars of the right of common, and of the land over which it is exercisable	5 Particulars of the land (if any) to which the right is attached
1. 21. 11. 1969 (See entry No. 4 below)	1143. 27th June, 1968.	Colin George Herbert, deceased The Homestead, Speedham Green, Upton St. Leonards, Glos. Owner. Now Mr J. G. Herbert (8 MARCH 2011) See 12th on file	The right to graze 12 ewes and their lambs over the whole of the land comprised in this register unit. (Registration terminated).	"The Homestead", Speedham Green, Upton St. Leonards, Glos, as shown edged red on the supplemental map bearing the number of this registration.
2. -9. OCT. 1969 (See entry No. 5 below)	1147. 27th June, 1968.	Brian Gordon Folland, "Edmunds", Station Road, South Cirencester, Glos. Owner.	The registration at Entry No. 1 of Register Unit CL claimed over the whole of the land comprised in this (Registration terminated)	251 includes the right of common register unit.

*No. and date
of note*

Notes

*No. and date
of note*

Notes

NOTE: This section contains the registration of every right of common registered under the Act as exercisable over the whole or any part of the land described in the land section of this register unit.

Registration authority

Gloucestershire
County Council

Register unit No. CL ~~100~~ 252.

Edition No. 127

Register of Common Land.

See Overleaf
for Notes

RIGHTS SECTION—Sheet No. 2

1 No. and date of entry	2 No. and date of application	3 Name and address of every applicant for registration, and the capacity in which he applied	4 Particulars of the right of common, and of the land over which it is exercisable	5 Particulars of the land (if any) to which the right is attached
3. -S. 100. 100. (See entry No. 4 below)	1929. 2nd Jan: 1970.	Lionel John Hughes, Snow Capel Farm, Sneedham Green, Gloucestershire. Tenant.	The right of grazing for 10 animals over the whole of the land comprised in this register unit. (Registration provisional).	Snow Capel Farm, Sneedham Green, Gloucestershire comprising O.S. Parcel Nos. 208, 207, 206, 199, 196, 198, 190, 191, 192, 193, 71 and 69 on O.S. Sheet Glos. 33/11 of the Parish of Upton St. Leonards, Gloucestershire.
4 30 th July, 1973.		The	registrations at entries Nos. 1 and 3 above, being undisputed, became final on 1 st August, 1972.	
5 30 th July, 1973.		The	registration at entry No. 2 above, being undisputed, became final on 26 th July, 1973.	

*No. and date
of note*

Notes

*No. and date
of note*

Notes

NOTE: This section contains the registration of every person registered under the Act as owner of any of the land described in the land section of this register unit. It does not contain any registration in respect of land of which the freehold is registered under the Land Registration Acts 1925 and 1936, but the absence from this section of a registration in respect of any land described in the land section does not necessarily indicate that the freehold of that land is registered under those Acts.

Register unit No. CL. 252
Edition No. 1st

OWNERSHIP SECTION—Sheet No. 3

No. and date of entry	No. and date of application	Name and Address of person registered as owner	Particulars of the land to which the registration applies
1	692	Upton St. Leonard's Parish Council, COUNCIL	The whole of the land comprised in this register unit.
(See entry No. 2 below)	5th June, 1960.	GloUCESTER-shire. (Registration provisioned)	
2		THE DOCKS GLCS App 692	
3rd July 1973.		The registration at entry No. 1 above, being undisputed, became final on 1st August, 1972.	

No. and date
of note

Notes

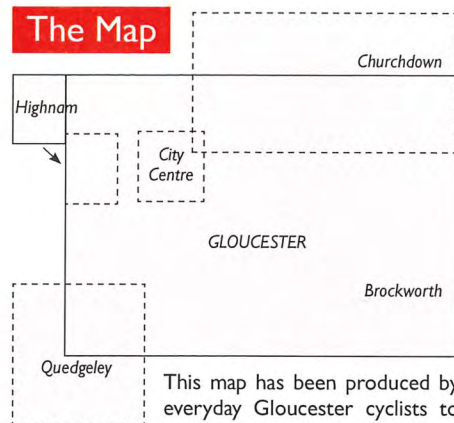
No. and date
of note

Notes



Appendix B

The Map



This map has been produced by everyday Gloucester cyclists to help you choose routes that suit your needs and ability. Select the green routes if you are a beginner or have not cycled for a while. Soon you should be able to use the yellow roads. Progress to the orange then the red roads with their heavier traffic as your cycling skills increase.

Cycling is a healthy and cheap mode of transport. Often it is quicker than the car or bus and usually you can park directly outside your destination or very close. Typical urban cycle journey times are shown in the table below, for example a two mile trip at a moderate speed takes twelve minutes.

Speed	1	2	3	4
Leisurely	8	16	24	32
Moderate	6	12	18	24
Brisk	5	10	15	20

Contacts

Cycle shops in Gloucester

Striking Bikes	01452 522100
1a Morelands Trad. Est., Bristol Road GL1 5RZ	
Mitchell's	01452 411888
260-264 Barton Street GL1 4JJ	
Discount Cycle Warehouse	01452 381699
1 Kingsholm Road GL1 3AX	
Halfords	01452 310055
210 Eastern Avenue GL4 4LP	
Eastgate Cycles	01452 300366
76 Eastgate GL1 1QN	
Slam 69	07941 784430
Hurricane Road GL3 4FF	
Gloucestershire Bike Project	01452 690979
16 Commercial Road GL1 2EA	

Reporting potholes, broken glass, etc.

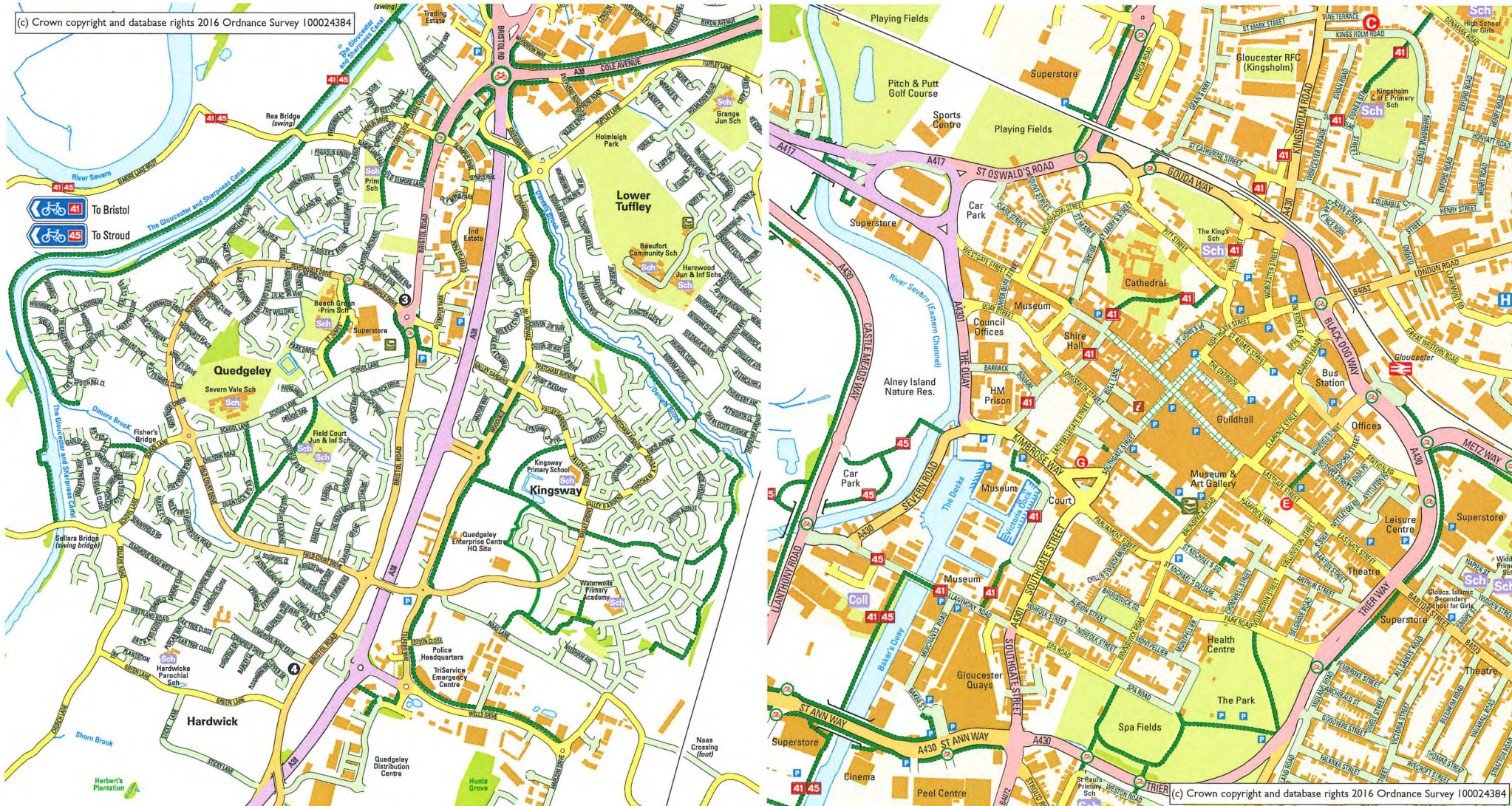
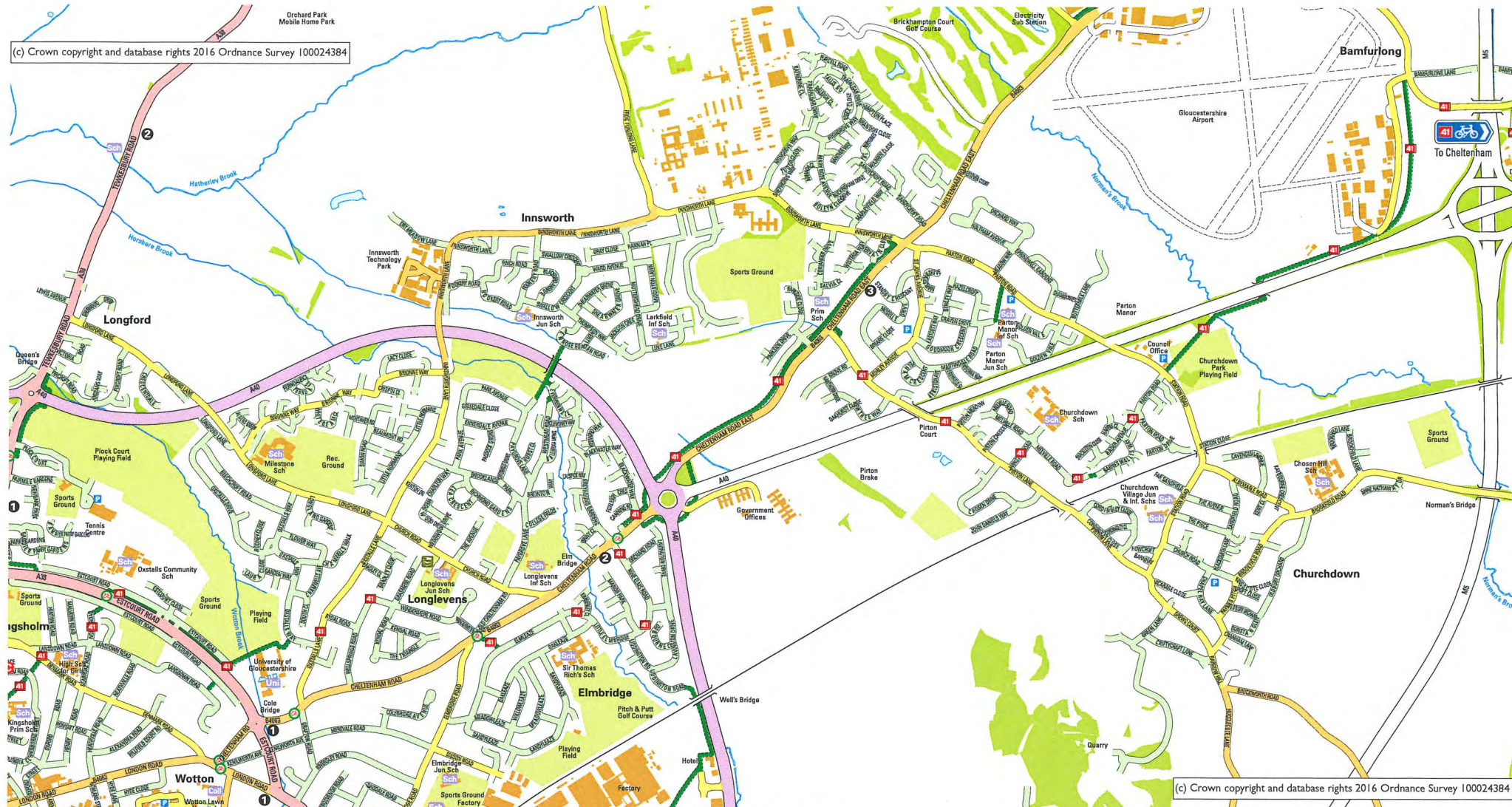
Gloucestershire Highways	08000 514514
highways@gloucestershire.gov.uk	
Gloucester City Council	01452 396396
enviro@gloucester.gov.uk	
(overgrown vegetation within city)	

Cycle training

Gloucestershire County Council	01452 425532
www.gloucestershire.gov.uk	
Life Cycle UK, Bristol	0117 353 4580
www.lifecycleuk.org.uk	

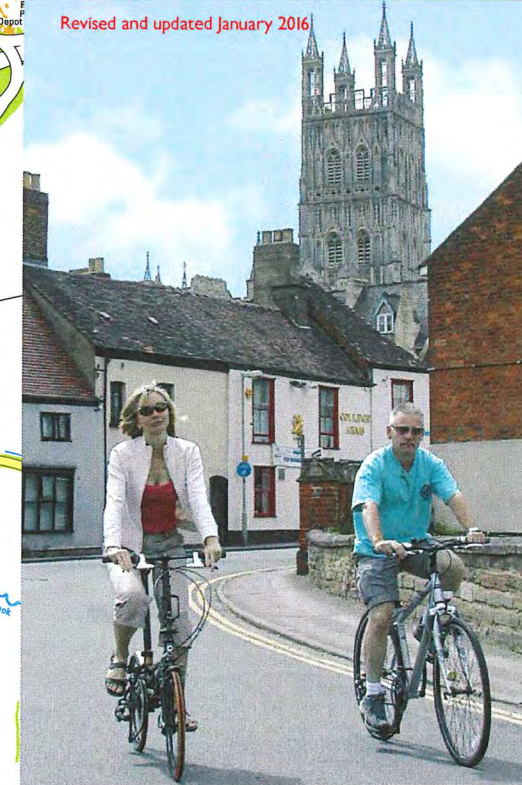
Gloucester City Cycling Club

The club organises rides for various abilities every Sunday, rides or events on most Tuesday evenings and Wednesday evening time trials in the summer
www.gloscc.co.uk 01452 423078



Gloucester Cycle Map

Revised and updated January 2016



Includes Kingsway, Highnam, Churchdown and Brockworth

Cycling brings enormous health benefits:

- Increased cardiovascular fitness – regular cyclists enjoy better fitness than non-cyclists 10 years their junior!
- Increased muscle strength and flexibility combined with an improvement in joint mobility.
- Decreased stress levels – people who cycle into work are more alert and more productive; they have fewer sick days too.
- Improved posture, coordination and bone strength.
- Decreased body fat levels – cycling for 20 minutes at 10mph burns 90 calories.

thinktravel

New sense of direction.
www.thinktravel.info

Gloucestershire
COUNTY COUNCIL

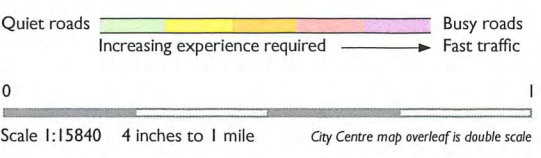
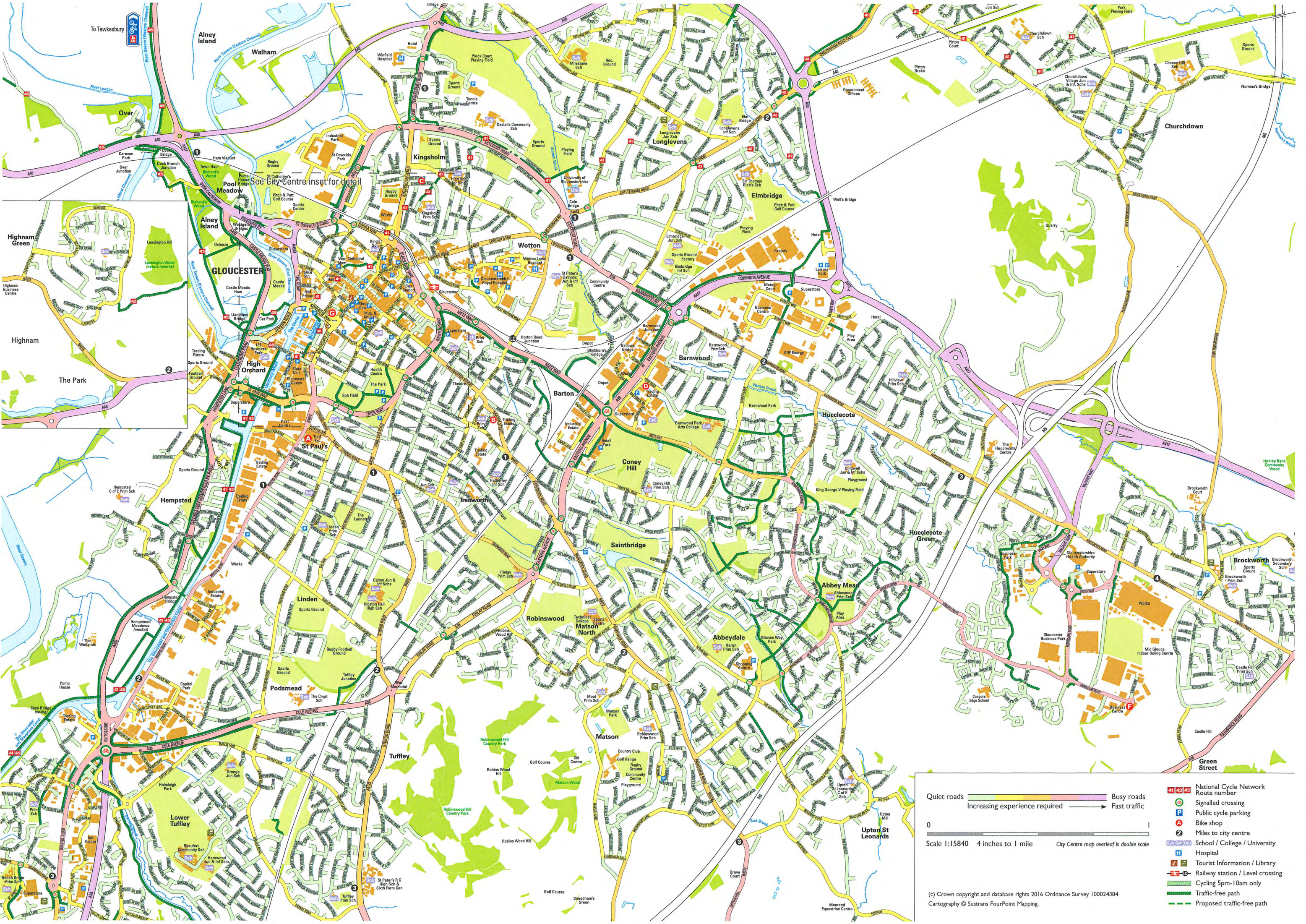
www.gloucestershire.gov.uk



www.gloscc.co.uk

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Cartography © Sustrans FourPoint Mapping.

- 41 42 45 National Cycle Network Route number
- 2 Signalled crossing
- P Public cycle parking
- A Bike shop
- 2 Miles to city centre
- Sch Coll Univ School / College / University
- H Hospital
- Tourist Information / Library
- Railway station / Level crossing
- Cycling 5pm-10am only
- Traffic-free path
- Proposed traffic-free path



Appendix C

QS703EW - Method of Travel to Work (2001 specification)

ONS Crown Copyright Reserved [from Nomis on 6 April 2022]

population	All usual residents aged 16 to 74
units	Persons
area type	2011 super output areas - middle layer
area name	E02004646 : Gloucester 011

Method of Travel to Work	2011	
All categories: Method of travel to work	6,192	
Work mainly at or from home	275	7.0%
Underground, metro, light rail	2	0.1%
Train	19	0.5%
Bus, minibuss or coach	427	10.9%
Taxi	9	0.2%
Motorcycle, scooter or moped	66	1.7%
Driving a car or van	2,385	60.8%
Passenger in a car or van	283	7.2%
Bicycle	175	4.5%
On foot	266	6.8%
Other method of travel to work	14	0.4%
Not in employment	2,271	
	3,921	

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.

Town & Country Planning Act 1990 (as amended)
Planning and Compulsory Purchase Act 2004

Bristol

First Floor, South Wing, Equinox North,
Great Park Road, Almondsbury, Bristol, BS32 4QL

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