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Transport Assessment

Great Western Yard

Vectos

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TRANSPORT ASSESSMENT

Eutopia Homes

Great Western Yard, Gloucester

July 2022

Transport Assessment
VN212156

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1 Introduction

1.1 Vectos has been instructed by Eutopia Homes to provide transport and mobility advice in relation to a proposed residential development on land to the south of Great Western Road in Gloucester. The site is located approximately 500 metres to the north-east of the City Centre and is a suggested allocation (Ref: SA05) in the emerging Gloucester City Plan. The site was allocated for 200 dwellings in the submitted Gloucester City Plan with an uplift to 300 dwellings proposed in the Inspector's Main Modifications as a result of the Local Plan Examination.

1.2 The site has been subject to assessment as part of the Local Plan process in terms of highways and transport, and the Council agreed at the Local Plan Examination that the capacity of the site for development purposes is approximately 300 dwellings.

1.3 This Transport Assessment has been prepared in support of the development proposals at the site which comprise a residential development of 315 dwellings with associated landscaping, parking, open space and ancillary works including demolition of existing buildings.

Pre-application Scoping

1.4 A formal pre-application scoping exercise took place between Vectos and the Local Highway Authority Gloucestershire County Council (GCC) beginning in March 2022. A Scoping Note was submitted by Vectos to GCC Highways and a response was provided, a copy of which is provided at **Appendix A** to this report. This was followed up by a phone call between Vectos and the GCC Highways Officer.

1.5 The pre-application comments from GCC Highways noted that the principle of the proposed development is supported by them, given the central location and reasonable proposals in terms of access and movement.

Scope of Assessment

1.6 This Transport Assessment references guidance in local and national planning policy, which adopts a presumption in favour of plan-led sustainable development which provides benefits in terms of climate, health and the economy.

1.7 The key objectives of this Transport Assessment are to:

- Identify opportunities for non-car-based travel and socially inclusive transport links in line with current best practice and local and national policy;
- Determine suitable accessibility, including transport, measures to maximise the development's accessibility, and connectivity, and to manage the characteristics associated with delivering this site in the context of planning policy;
- Establish the quantum of traffic demand generated by the proposed development; and
- Demonstrate that the development proposals will not adversely change the characteristics of the local highway network.

1.8 The remainder of the Transport Assessment is structured as follows:

- **Section 2: Local Context** – sets out the current position of the proposed development and includes an accessibility audit which reviews the accessibility by all viable modes of transport, and describing the current position in terms of road safety;
- **Section 3: Policy Context** – describes the local and national planning policy and guidance pertinent to the proposed development;
- **Section 4: Proposed Development** – sets out the development proposals including access arrangements;
- **Section 5: Trip Forecast and Highway Effects** – sets out the development trip forecasts, detailing the methodology adopted and presenting traffic forecasts for the proposed development with a consideration of effects upon local junctions;
- **Section 6: Summary and Conclusions** – summarises the findings and provides the report conclusions.

2 Local Context

Site Location

2.1 The site is located approximately 500 metres to the north-east of the city centre and is a brownfield site that has historically accommodated railway sidings. The site location in relation to the wider area is shown in **Plan 1.**

2.2 **Plan 2** shows the location of the site in a more local context. It can be seen that the site lies to the west of Horton Road and to the south of Great Western Road. It has existing access points onto both roads. The sidings site is in the ownership of Network Rail.

2.3 A small part of the site is currently used by Network Rail as a depot with associated temporary and prefabricated single storey structures, and part of the site comprises rail tracks and rail ballast. There are also some commercial operations to the northern part of the site accessed from Great Western Road including a vehicle repair garage and a builders merchant.

2.4 To the south of the sidings site lies the Birmingham to South Wales mainline. To the west of the site lies a 3 and 4 storey office development served by an access road off Great Western Road. Gloucestershire Royal Hospital lies to the north of Great Western Road immediately opposite the site.

2.5 The site is particularly well located for access to the City Centre and the amenities and transport links therein.

Local Facilities and Indicative Active Travel Catchments

2.6 Contemporary local and national transport policy states that new developments should be focused on locations which are, or can be made, sustainable. Providing travel choice is policy compliant and essential in today's modern and dynamic society. This focus maximises social inclusion, minimises the number of single car occupancy private car trips, limits the need to travel, helps reduce congestion and helps to improve air quality and health.

2.7 One of the primary factors when considering the suitability of a new development is its proximity, accessibility, and connectivity in relation to key local facilities by non-car modes. Within this context, the development should give priority first to pedestrian and cycle movements both within the scheme and with neighbouring areas.

2.8 The highly sustainable nature of the Great Western Yard site location has already been established through the Local Plan site allocation process given that it benefits from proximity to a wide range of local facilities providing the potential to make it a very well-connected development.

2.9 A WYG report entitled 'Accessibility – How Far Do People Walk and Cycle' uses National Travel Survey (NTS) data for the UK as whole, excluding London, and provides an 85th percentile walk distance for:

- All journey purposes – 1,950 metres;
- Commuting – 2,400 metres;
- Shopping – 1,600 metres;
- Education – 3,200 metres or 4,800 metres; and
- Personal Business – 1,600 metres.

2.10 In terms of time, this equates, for instance, to approximately 30 minutes for commuting. **Table 2.1** provides a sample list of local facilities and services located within the local area along with their distances from the centre of the site.

Local Amenity	Distance from Centre of Site
Childcare and Education	
St Peter's Catholic School	650m
Widden Primary School	650m
Kingsholme C of E	1,300m
Al Ashraf Primary School	950m
St James C of E	1,100m
Hatherley Infant School	1,600m
Tredworth Junior	1,800m
Health and Social Care	
Gloucestershire Royal Hospital	200m
Chapel House Care Centre	380m
Aspen Medical Practice	500m
Great Western Court Nursing Home	650m
Kingsholm Surgery	950m
Bartongate Surgery	1,100m
Sport and Leisure	
Gloucester Irish Club	150m
Armscroft Park	700m
Sherbourne Cinema	950m
Spartans RFC Sports and Social Club	1,100m
GL1 Leisure Centre	1,100m
Museum of Gloucester	1,200m
Kingsholm Stadium	1,300m
Gloucester Docks	1,600m

Places of Worship	
St Peter's Catholic Church	750m
Jama Al-Karim Mosque	1,100m
Gloucester Cathedral	1,200m
Shops and Eateries	
Costcutter Convenience Store (Hospital)	450m
Londis (London Road)	650m
Tesco Express	650m
Costa Express & Subway (London Road)	650m
Asda Supercentre	800m
Morrisons	950m
Costa Coffee	950m
Eastgate Shopping Centre	1,200m

Table 2.1: Walk Distance to Local Services and Amenities

2.11 **Plan 3** illustrates a 1km and 2km catchment from the site. These walk catchments show that the proposed development site is within a walking distance of a wide range of facilities and amenities in the surrounding area.

2.12 **Table 2.1** and **Plan 3** highlight that the proposed development is very well connected and accessible by foot to a wide range of local amenities within the surrounding area and Gloucester City Centre is within a reasonable walk catchment of around 500m. This is consistent with the planning authority's judgement that this is a sustainable location, warranting its inclusion as an allocation within the emerging Local Plan.

2.13 It should be noted that the proposals will include an area of open space within the site, which will provide an opportunity for some leisure / recreation activities to occur within the site, further reducing the need to travel.

2.14 Accessibility is not exclusively a function of distance; it being also related to the quality of the local environment and peer culture. For example, with reference to cycle journeys, the tendency for people to choose this mode is related to quality of route, barriers, whether the bike is electrically assisted, attitude to health, the journey purpose, the facilities at either end and personal matters. A half hour journey by bike at a comfortable pace, on typical streets without cycle priority, will typically encompass a distance of approximately 8 km.

2.15 **Plan 4** presents a 5km and 10km typical cycle catchment. It can be seen from **Plan 4** that the 5km cycle catchment encompasses all of Gloucester City Centre and therefore there is excellent opportunity for trips to key local destinations to be made by cycle.

Active Travel Links for Local Living

2.16 The pedestrian facilities in the vicinity of the proposed development include formal footways and crossing points.

2.17 There is continuous footway provision along Great Western Road linking the site to the City Centre and surrounding areas. A Zebra crossing is located around 200m to the west of the site to facilitate crossing of Great Western Road. There are several possible routes for pedestrians between the site and the City Centre, with the most obvious ones highlighted in **Figure 2.1**.

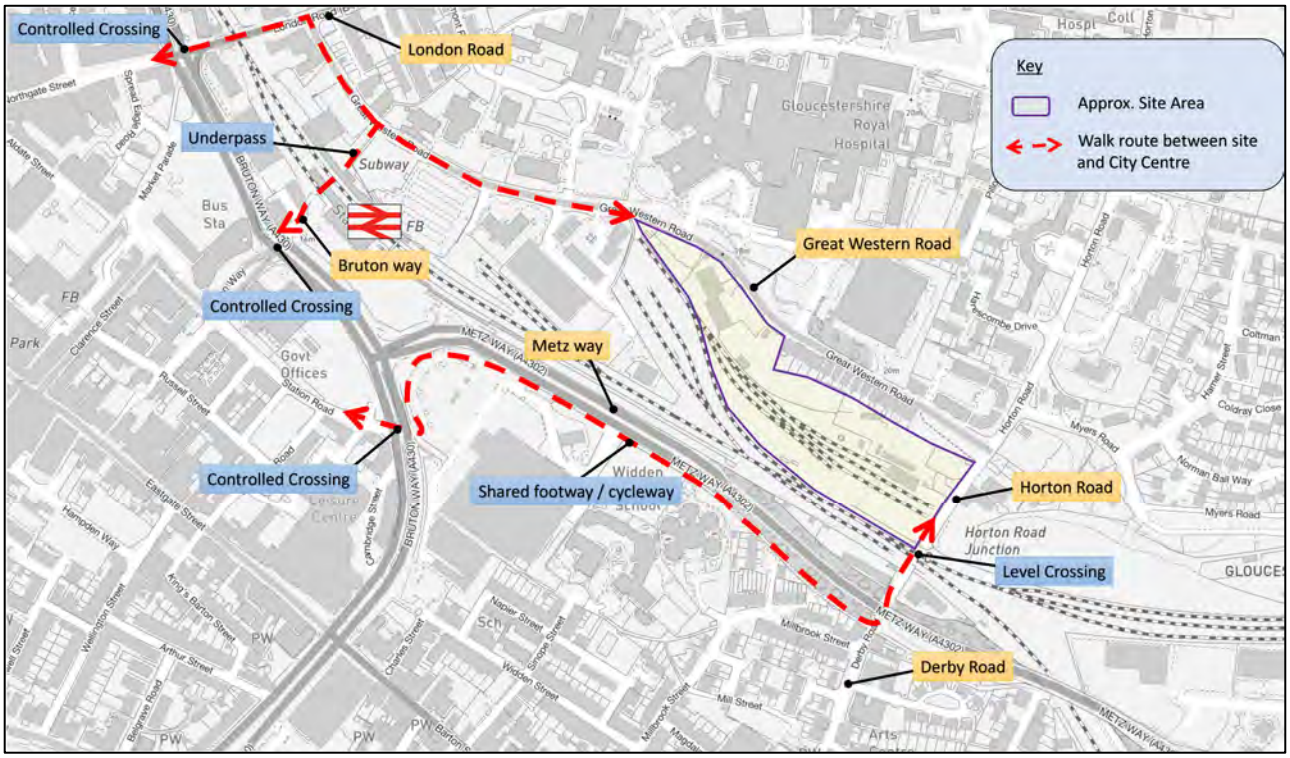


Figure 2.1: Pedestrian and Cycle Routes between the Site and the City Centre

2.18 As shown in **Figure 2.1**, heading north-west from the site, there is the option to use the underpass beneath the rail line which emerges onto Bruton Way or to travel via London Road. For both routes, there are controlled crossing facilities to help pedestrians cross the A430 south of the rail line.

2.19 The route between the southern part of the site and the City Centre passes along Horton Road, Derby Road and then a shared footway / cycleway facility that runs parallel to Metz Way. This also emerges at a controlled crossing point of the A430. This route has a level crossing facility to enable pedestrians and cyclists to cross the rail line. It is considered that this route would be attractive as a route to the City Centre for those travelling to and from the southern parts of the site close to Horton Road.

2.20 **Figure 2.2**. shows an extract from the Gloucester Cycle Map.

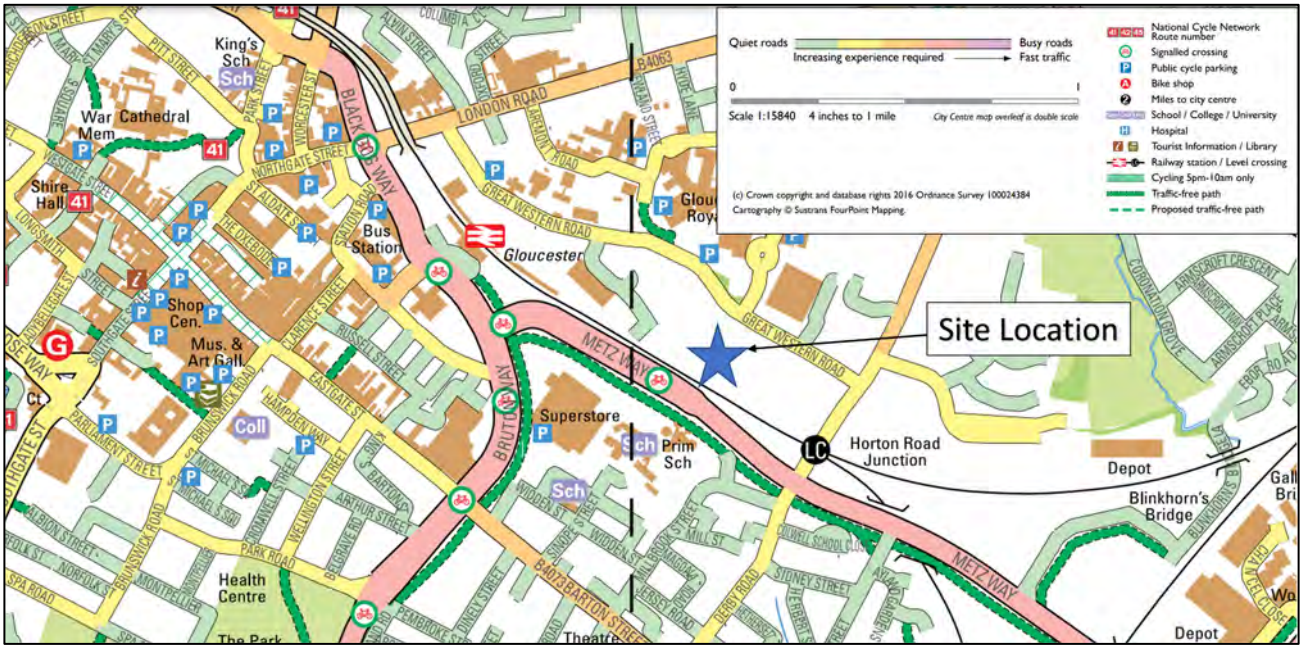


Figure 2.2: Extract from Gloucester Cycle Map

2.21 It can be seen from **Figure 2.2** that Great Western Road is designated as a quieter road which would be suitable for relatively inexperienced cyclists. The shared traffic-free path that runs parallel to Metz Way is also clearly shown, and with the controlled crossing of the A430 and the network of quieter streets to the west, this makes for a convenient cycle route between the site and the City Centre that will likely be an attractive option for future residents at the site.

2.22 There are stretches of cycle lane provision along London Road helping to connect Great Western Road with the City Centre for cyclists. National Cycle Route 41 is located to the west of the site providing a mix of on-road and traffic free sections linking Gloucester with Bristol and Cheltenham. National Cycle Route 45 is also located to the west of the site, providing additional links to Worcester to the north.

2.23 The site is therefore well located to ensure that future residents at the development will be able to make everyday journeys by active travel modes and not be reliant upon car travel. The development will be supported by a Travel Plan that will help to promote travel by sustainable modes.

Shared Travel Links

2.24 CIHT guidance indicates that for commuting purposes bus stops should be within a 400-metre walk of residential development. However, where there are high frequency bus services, it is generally acceptable for longer walk distances to be made. There are bus stops on Great Western Road approximately 200m to the west of the site, just to the west of Pullman Court, and also within the Hospital grounds within 100m of the site. Services available include the No. 6 and the No. 99, providing links from the city centre to residential suburbs in the north and wider destinations such as Cheltenham. The No. 6 provides an hourly service on Monday through Saturday with the No.99 providing a roughly half hourly service in each direction. **Table 2.1** provides a summary of these bus services.

Bus Service	Operator	Route	Frequency
6	Stagecoach	Gloucester – Longlevens	1 per hour between 09:14-14:14 Monday to Saturday
99	Pulhams	Gloucester – Cheltenham	Every 30 mins 06:30-19:44 Monday to Friday
15	Cheltenham Community Transport	Gloucester Chester Road – Gloucestershire Royal Hospital – Worcester Street	1 per day in each direction Monday to Friday

Table 2.1: Bus Service Summary

2.25 The Hospital bus stand provides a shelter, seating and timetable information.

2.26 Gloucester Bus Station (also known as Gloucester Transport Hub) is also within a realistic walking distance from the site, around 800m away on Station Road. The Bus Station is equipped with waiting facilities, accessible toilets and a Stagecoach travel shop. There are 12 bus stands and numerous services operate from the Bus Station providing opportunities for connections to local, regional and national destinations including Stroud, Forest Green, Tewkesbury, Sandhurst and Cirencester. The site is therefore well located for access to bus travel.

2.27 The site is particularly well located for access to Gloucester Rail Station which is just a 600m walk away and accessible to pedestrians and cyclists via Great Western Road. Trains to a wide range of destinations are available from the station, with services being operated by Transport for Wales, Cross Country and Great Western Railway. Connections are available to London Paddington, Cheltenham Spa, Frome, Nottingham, Bristol, Cardiff and Worcester.

2.28 Sheltered cycle storage is provided at the Station with space for 32 cycles. The site is therefore well located to present residents and visitors to the site with opportunities for travel by rail.

Local Highway Network

Great Western Road

2.29 Great Western Road connects London Road and Horton Road, running in a broadly east-west alignment at the edge of Gloucester City Centre. It is subject to a 30mph speed limit and provides access to residential properties, industrial premises and the Gloucestershire Royal Hospital. It is around 7.5m in width and accommodates some on-street parking bays along certain stretches.

2.30 It is within the Gloucester Hospital Zone H Parking Permit Zone, restricting parking within designated on-street bays to residents only, between the hours of 08:00 and 19:00. Designated on-street parking subject to the Zone H restrictions extends along the frontage of the row of terraced houses on the southern side of Great Western Road, with double yellow lines on the northern side.

2.31 To the west of the row of terraced houses, on-street parking is pay-and-display between the hours of 08:00-19:00, with a maximum stay of four hours.

2.32 Access to Gloucestershire Royal Hospital is provided from the northern side of Great Western Road including access to the 'Tower Car Park' multi-storey car park which is open 24 hours a day and provides around 1,000 spaces.

2.33 Footways with street lighting are present on both sides of Great Western Road.

Existing Site Access Arrangements

2.34 There are three existing vehicle access points to the site. Two are on Great Western Road and one is on Horton Road. The westernmost access is a priority arrangement that currently serves as the access for a timberyard on the site so is likely to be in regular use. The access is around 4.5m in width.

2.35 Around 60m south-east of this access is another access point to the site, which also appears to be in regular use in conjunction with the industrial uses on the site. It is a simple priority arrangement junction, around 5.5m in width, and is diagonally opposite the Hospital 'Tower Entrance' access point on the northern side of the road.

2.36 The vehicle access on Horton Road is a dropped kerb crossover arrangement and is around 70m north of the level crossing. Although it does not appear to be in regular use, it has previously accommodated regular large vehicle movements. It should be noted that this access is to be closed off as part of the proposed development scheme.

Horton Road / Derby Road

2.37 Great Western Road forms an all-movements priority junction arrangement with Horton Road at its eastern end. Horton Road extends north from the level crossing and becomes Derby Road to the south of the level crossing. It is subject to a 30mph speed limit providing a link towards residential areas to the south, and to the north it links to London Road from which connections to the strategic road network are available via the A38 and M5 (Junction 11A).

2.38 The level crossing on Horton Road is around 130m to the south of the junction with Great Western Road. When in operation, the level crossing barriers are down for several minutes at a time and road users on Horton Road must wait behind the barriers. This can cause some temporary delay to road users southbound on Horton Road and northbound on Derby Road and some road users are likely to use alternative routes to avoid this.

B4063 London Road

2.39 Great Western Road forms an all-movements priority junction arrangement with London Road at its western end. A ghost island right turn facility is provided on London Road to accommodate traffic turning right from London Road into Great Western Road. London Road is an arterial route connecting the City Centre with areas to the north-east and it links to the A38 to the north-east of the city. It is subject to a 30mph speed limit.

Local Car Parking Opportunities and Restrictions

2.40 Great Western Road lies within the Gloucester Hospital Zone H Parking Permit Zone, restricting parking within designated on-street bays to residents only, between the hours of 08:00 and 19:00. Designated on-street parking subject to the Zone H restrictions extends along the frontage of the row of terraced houses on the southern side of Great Western Road, with double yellow lines on the northern side.

2.41 To the west of the row of terraced houses, on-street parking is pay-and-display between the hours of 08:00-19:00, with a maximum stay of four hours.

2.42 A surface public car park is located further west on Great Western Road providing 56 spaces and open 24 hours a day.

2.43 The 'Tower Car Park' multi-storey car park located within the Hospital site opposite the site. This car park provides 1,005 car parking spaces and is open 24 hours a day however the car park is for hospital users with 601 spaces for NHS staff (who must only park on levels 2,3 or 4) and 405 spaces for patients and visitors who are allowed to park on any level.

Highway Safety Review

2.44 A review of the road accident data has been undertaken with reference to the CrashMap online database for the most recent five-year period for which data is available (2017 – 2021). The accident plot for Great Western Road and Horton Road in the vicinity of the site is shown in **Figure 2.3**.

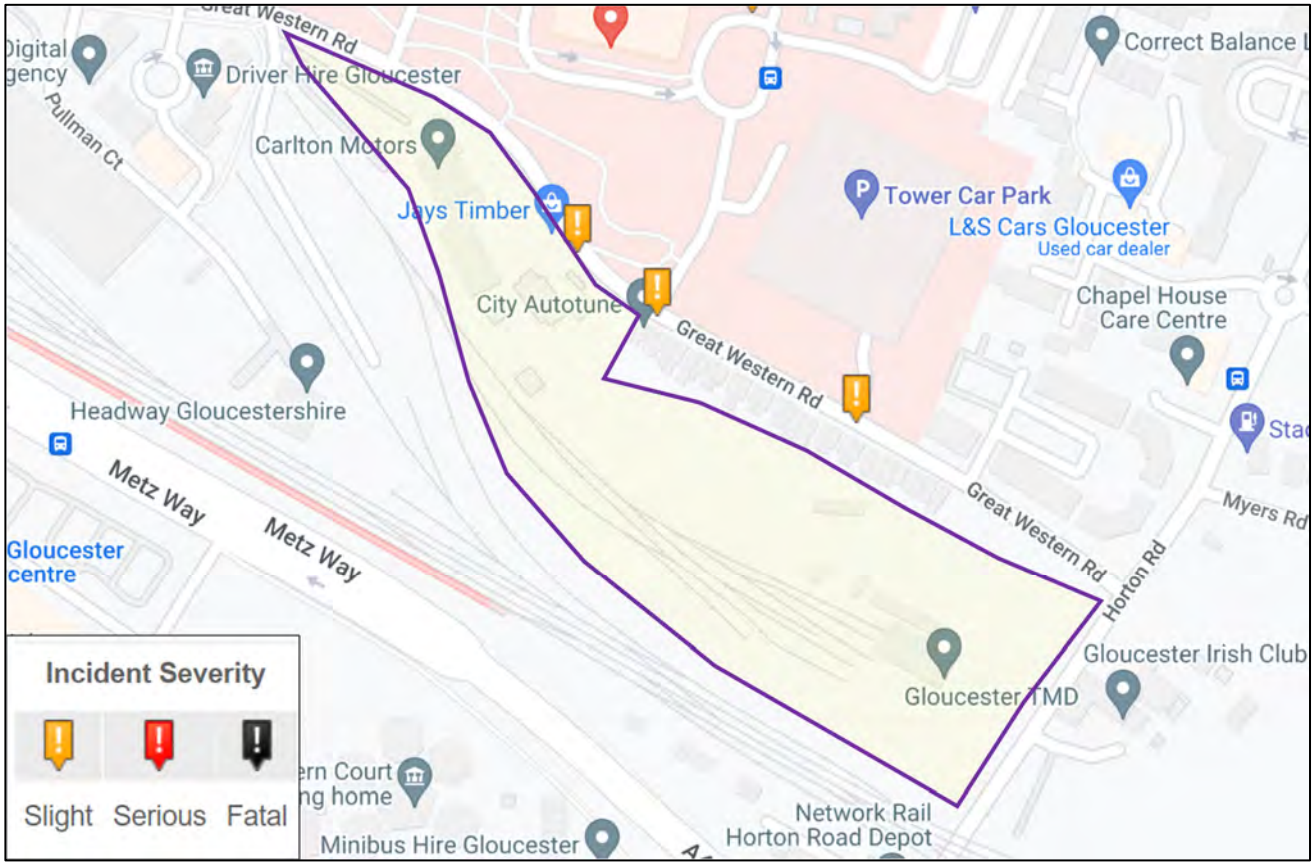


Figure 2.3: Accident Plot Great Western Road and Horton Road

2.45 It can be seen from **Figure 2.3** that there have been three accidents recorded on Great Western Road during the five year period, and none on Horton Road. The three accidents on Great Western Road all resulted in slight injury. The accident that occurred at the junction with Hospital access road involved a cyclist. The one to the west of this involved a pedestrian and the one that occurred at the Hospital car park exit involved a motorcycle.

2.46 At the Great Western Road junction with London Road, the accident record shows that two accidents have occurred in the five-year study period. One of these resulted in slight injury and one in fatal injury. The fatal injury accident was the result of a collision between a moped and a car on a Friday evening in January 2020 and was the result of careless driving.

2.47 The accident record for the local road network does not show any highway safety problems that would need to be addressed in conjunction with the proposed development.

Summary

2.48 The site lies to the west of Horton Road and to the south of Great Western Road. It has existing access points onto both roads. The site is particularly well located for access to the City Centre and the amenities and transport links therein. The highly sustainable nature of the Great Western Yard site location has already been established through the Local Plan site allocation process given that it benefits from proximity to a wide range of local facilities providing the potential to make it a very well-connected development.

2.49 The proposed development site is within walking distance of a wide range of facilities and amenities in the surrounding area, and connected by an existing network of footways. These amenities include schools, shops, health facilities, sports facilities and eateries. Furthermore, there is existing cycle infrastructure in the area to help facilitate cycle trips and Great Western Road is designated as a quieter road which would be suitable for relatively inexperienced cyclists. The proposed development will benefit from these active travel links to help make a sustainable development.

2.50 Access to public transport is also very good as there are bus stops on Great Western Road approximately 200m to the west of the site, just to the west of Pullman Court, and also within the Hospital grounds within 100m of the site. There is also Gloucester Bus Station (also known as Gloucester Transport Hub) within a realistic walking distance from the site, which provides access to a wide range of bus services. The site is particularly well located for access to Gloucester Rail Station which is just a 600m walk away.

2.51 The local highway network has been reviewed including the highway safety record and it has been concluded that there are no highway safety problems that would need to be addressed in conjunction with the proposed development.

3 Transport Policy and Guidance Review

National Planning Policy Framework (NPPF)

3.1 The National Planning Policy Framework (NPPF) was updated on 20th July 2021 and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous version of the NPPF first published in 2012. At the heart of the Framework is a presumption in favour of sustainable development.

3.2 As part of promoting sustainable transport, paragraph 110 of the NPPF states that in assessing applications for development, it should be ensured that:

- *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location.*
- *safe and suitable access to the site can be achieved for all users;*
- *the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code 46; and*
- *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree".*

3.3 Paragraph 111 goes on to state that, "*development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe*".

3.4 It is considered that the proposed development site accords with the aims of the NPPF as it is well located for access by sustainable transport modes, which helps to maximise the use of public transport, cycling and walking for accessing the site.

Local Plan

3.5 The adopted Local Plan is the Joint Core Strategy (2017) and Gloucester Local Plan (1983) – saved policies. The Second Stage Deposit City of Gloucester Local Plan is a draft plan that was published and approved by the council for development management decision making in 2002.

Gloucester, Cheltenham and Tewkesbury Joint Core Strategy (2011 - 2031)

3.6 The Joint Core Strategy is an essential part of the Local Plan which sets out Gloucester's strategic approach to managing development and growth until 2031. The policy sets out how regeneration of key urban sites including the railway corridor will be delivered, to provide new jobs and housing within central areas of the city to meet the needs of its naturally growing population and to encourage inward investment.

3.7 The Joint Core Strategy's vision for Gloucester is to work to encourage sustainable economic growth for the city's expanding population by driving forward its regeneration programme, strengthening the city (particularly in its centre) making the most of its infrastructure.

3.8 In terms of transport, the JCS is clear in prioritising sustainable transport over motorised vehicles and in emphasising the need for new development to cater for active travel as a priority (policy SD4: 'Design Requirements' and policy INF1: 'Transport Network').

3.9 The proposed development has been designed in accordance with these principles, presenting a highly sustainable development.

Gloucester City Plan

3.10 Together with the Joint Core Strategy, the Gloucester City Plan (GCP) will continue Gloucester's regeneration journey by providing the development framework to guide the City's future growth up to 2031. It covers a time frame of 15 years between 2011 and 2031. The City Council has already written and consulted on several parts of the GCP.

3.11 Following examination hearing sessions during May/June 2021, the Inspector's 'post hearing letter' was received in August 2021, setting out her initial findings. This concludes the GCP is legally compliant, has met the duty to cooperate, but unsound. However, it can be made sound with 'Main Modifications'. At the time of writing, a consultation is underway regarding the proposed Main Modifications and policy map changes only. It is not an opportunity to raise matters that either were, or could have been, part of the earlier representations or hearings on the submitted plan. Comments are to focus on whether the proposed Main Modifications comply with legal requirements and are considered sound. These modifications have been put forward without prejudice to the Inspector's final conclusions on the Gloucester City Plan.

3.12 The proposed development site is included as an allocated site in the Gloucester City Plan as site SA05: Land at Great Western Road Sidings. The site was allocated for 200 dwellings in the submitted Gloucester City Plan with an uplift to 300 dwellings proposed in the Inspector's Main Modifications as a result of the Local Plan examination.

3.13 Policy G1: 'Sustainable transport' states that "New development shall provide car parking and cycle provision in accordance with the latest version of Gloucestershire Manual for Streets and any subsequent amendments."

3.14 Policy G4 concerns walking and states that "The City Council will support development proposals that protect and enhances convenient, safe and pleasant walking environments within the city and, where appropriate, to areas outside of the City Council's administrative boundary."

Gloucestershire's Local Transport Plan (2020-2041)

3.15 The Gloucestershire Local Transport Plan (LTP) sets the strategic transport vision for the county to 2041. The plan sets out the overarching and mode policies that support the spatial Connecting Places Strategies (CPS) and the Transport Scenarios, looking to 2041. It sets out the long term policy structure for local transport delivery including a set of scheme priorities.

3.16 The document notes that some of the changes induced by the Covid-19 pandemic will change society permanently and that it is "likely that more flexible working arrangements with an increase in home working will remain, as employees and employers find that jobs can be performed perfectly adequately from home, using digital tools. It is of utmost importance to influence the travel behaviour that corresponds with these changes in our society while people are re-assessing their personal travel choices."

3.17 The LTP also identifies the increasing popularity of car-sharing and car clubs noting that "an increase in shared mobility will support Gloucestershire to reduce congestion on its road network and meet its environmental targets".

3.18 Several policies within the LTP have relevance to the proposed development including:

Policy LTP PD 0.4 'Integration with Land Use Planning and New Development'

- GCC will support new compact, high density mixed use development of new sites already served by public transport over other more remote and inherently less sustainable locations.
- Developers are required to provide digital connectivity infrastructure suitable for future proofing to promote agile working in order to reduce the need to travel.
- Developers are required to provide an electric vehicle charge point network or alternative that complies with MfGS and Technical Specifications.
- Developers are required to identify, protect and exploit opportunities for sustainable transport measures ahead of measures to address highway capacity deficit.
- Ensure developers promote existing public transport infrastructure and realistic opportunities for travel choice are consistently and comprehensively promoted to residents, employers and visitors. Promote Mobility as a Service (MaaS), such as electric vehicle car clubs or car sharing, in order to encourage sustainable car use within new housing and employment developments and in association with businesses within Gloucestershire.

Policy LTP PD 0.6 Thinktravel - Influencing Travel Behaviour Change

- Within Travel Plans, support the promotion of walking & cycling for journeys under 2km and 5km respectively.

Policy LTP PD 2.1 – Gloucestershire's Cycle Network

- Ensure developers assess the needs of all pedestrians and cyclists within their development design and any improvements associated with the development, schools and supported with cycle parking/storage.

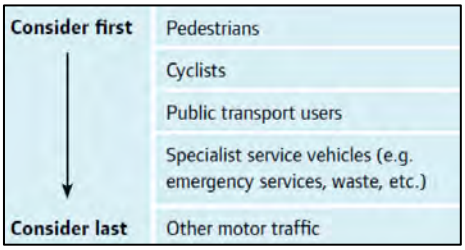
Policy LTP PD 2.3 Active Travel: Safety, Awareness and Confidence

- Ensure developers identify, protect and exploit opportunities for cycling through applying design principles including 'invisible infrastructure' whereby the spatial grain and layout invites slow speeds and direct route priority for active travel over other modes.

Manual for Gloucestershire Streets (July 2020) and Addendum (Oct 2021)

3.19 The Manual for Gloucestershire Streets (MfGS) provides guidance to developers, their consultants and design engineers, Local Planning Authorities, Parish and Town Councils, and the public on how new development within Gloucestershire can contribute towards the provision of a safe and sustainable transport network within the County.

3.20 It states that the Council supports innovative and attractive development within Gloucestershire and follows the road user hierarchy set out in the Manual for Streets and reproduced below.



3.21 The document sets out typical street types that are recommended in new development. It states that the default design standard for all new residential developments should be 'Pedestrian Prioritised Streets' which are:

"Streets where pedestrians feel that they can move freely anywhere and where drivers feel they are a guest. Pedestrian Prioritised Streets should not have vehicle movements exceeding 100 vehicles per hour."

3.22 An Addendum to the MfGS was published in October 2021 'to provide clarity on changes to national guidance and policy which supersedes elements of Manual for Gloucestershire Streets July 2020'. One of the areas addressed in the Addendum is parking, with the table below showing the revised minimum parking standards.

Table 3.1: Recommended Minimum Car Parking Standards

Number of Bedrooms	Minimum External Car Parking Provision
1-2 bedroom units	1 car parking space
3-4 bedroom units	2 car parking spaces
5 bedroom units	3 car parking spaces
6+ bedroom units	Subject to discussion with Highway Authority

3.23 The Addendum notes that departure from these provisions is still permitted based on the "Car Free Development / Reduced Parking Levels" paragraph in MfGS. This states that

"For both residential and commercial developments in town and city centres the applicant may choose not to provide car parking spaces at all or to provide a reduced parking provision. Consideration must be given to the opportunity to access the site sustainably, the availability and capacity of public car parks, existing parking restrictions, the number of linked trips and the implementation of an approved Travel Plan or welcome pack. Provision for servicing and deliveries must always be made within the site, unless there is a strong fall-back position which would remove this requirement. Where some spaces are provided it must be made clear who the intended users are to be."

3.24 Additionally, MfGS states that:

"In areas where housing density is greater and there is a wider range of transport choices car free development will be encouraged. However residents should still be given the ability to travel by car should they choose and where there is sufficient critical mass in terms of development or existing population to support a scheme the provision of a car club can provide a valuable service."

3.25 The MfGS also sets out the requirements for electric vehicle charging provision within new developments, stating that:

"Gloucestershire County Council strongly requires all properties to be equipped with Ultra Low Emission Vehicles (ULEV) charging points including provision where communal parking is provided. All new dwellings which provide car parking should be fitted with electric vehicle charging infrastructure to BS EN 62196 Mode 3 or 4 charging and BS EN 61851."

3.26 In relation to cycle parking, the MfGS states that this must be sheltered, secure and easily accessible. The Addendum states that the cycle parking standards to be applied are those within Local Transport Note (LTN) 1/20 which provides guidance to local authorities on delivering high quality, cycle infrastructure. Table 11-1 within LTN 1/20 provides the cycle parking standards, which for residential development is a minimum of 1 long-stay space per bedroom. There is no requirement for short-stay provision.

3.27 The proposed development has been designed paying cognisance to the MfGS guidance.

Summary

3.28 The national and local transport planning context of the proposed development has been reviewed. The proposed development meets the transport policy goals set out in the NPPF, being a sustainable development in terms of transport as it is located in an accessible area with good access to everyday facilities and amenities without the need to travel by car.

3.29 The proposed development site is included as an allocated site in the Gloucester City Plan as site SA05: Land at Great Western Road Sidings with a capacity of around 300 dwellings. The site has therefore already been found to be suitable for this type of development through the Council's own evidence base process.

3.30 The proposed development is considered to be consistent with local policies specific to transport and new development including those within the Gloucester City Plan and Gloucestershire's Local Transport Plan. The proposed scheme has been designed paying cognisance to the design guidance set out within the MfGS and MfGS Addendum documents.

4 Development Proposals

Proposals

4.1 The planning application seeks permission for a residential development of 315 dwellings with associated landscaping, parking, open space and ancillary works including demolition of existing buildings, at land to the south of Great Western Road in Gloucester. A copy of the proposed site layout plan is provided at **Appendix B** to this report.

4.2 The development will be delivered in two phases – a northern phase comprising of three apartment blocks (Blocks A, B and C), and a southern phase comprising of townhouses and an apartment block (Block D).

Northern Phase

4.3 The northern phase of the development will comprise of three apartment blocks (Blocks A, B and C) providing a total of 202 apartments, with the following mix:

Table 4.1: Proposed Northern Phase Apartment Mix

	Block A	Block B	Block C	Total
Studio / 1-bed	23	47	18	**88**
2-bed	15	75	12	**102**
3-bed	5	3	4	**12**
Total	**43**	**125**	**34**	**202**

Northern Phase – Access and Parking

4.4 It is proposed that there will be two points of vehicle access onto Great Western Road serving the northern phase, providing access to car parking to serve Blocks A and B. Block C will be a car-free block. The car parking area to the north of Block, A at the northern edge of the site, will have an access in the form of a simple priority access approximately 25m diagonally opposite the Gloucestershire Royal Hospital main entrance.

4.5 The proposed layout of this access is shown in **Drawing VN212156-D102 Rev A** and this shows that visibility splays of 2.4 x 43m can be provided at the access, in accordance with design requirements for 30mph roads, and that vehicles can pass at the access. It is anticipated that this car park will provide for car parking only and will not accommodate servicing activity. 15 spaces are to be provided in the car park.

4.6 Long stay cycle parking for Block A will be provided within a secure store at the front of the building, with six cycle stands also provided outside the store for short-stay cycle parking.

4.7 Access to the car park between Block A and Block B will be via a priority access arrangement between Blocks A and B approximately in the location of an existing access point to the site. The proposed layout of this access is shown in **Drawing VN212156-D102 Rev A** and this shows that visibility splays of 2.4 x 43m can be provided at the access, in accordance with design requirements for 30mph roads, and that vehicles can pass at the access.

4.8 The access will serve the car park between Block A and Block B which will provide 18 spaces, and will also provide access to the servicing route that extends along the rear of Block B to Block C. This will facilitate refuse collections and other servicing and maintenance access to Block C.

4.9 Long stay cycle parking for Block B will be provided within two separate secure cycle stores at the rear of the building, with six cycle stands also provided at the front of the building for short-stay cycle parking.

4.10 Block C is to be car-free, with long-stay cycle parking provided within a secure, covered store close to the front of the building, with five cycle stands provided adjacent to the main entrance to accommodate short-stay cycle parking.

Northern Phase – Servicing

4.11 Refuse collection for the northern phase will occur from the Block B access which will provide access to a service road running alongside the rear of Block B. This will allow for refuse collection from each block. Swept path analysis showing a refuse vehicle accessing this route and turning to exit in forward gear is provided in **Drawing VN212156-TR104 Rev A**.

Southern Phase

4.12 The southern phase of development will comprise 87 townhouses and an apartment block (Block D) with 26 apartments. **Table 4.2** provides further detail on the composition of the dwellings.

Table 4.2: Proposed Southern Phase Dwelling Mix

	Block D	Townhouses	Total
Studio / 1-bed	11	-	**11**
2-bed	16	43	**59**
3-bed	-	44	**44**
Total	**26**	**87**	**113**

Southern Phase – Access and Parking

4.13 Access to the southern phase is to be via a priority junction arrangement in approximately the same position as an existing vehicle access to the site, diagonally opposite the Gloucestershire Royal Hospital 'Tower Entrance'. The proposed layout of this access junction is shown in **Drawing VN212156-D103 Rev A**. It can be seen from this drawing that suitable visibility splays of 2.4 x 43m can be provided at the proposed access and the access will be able to accommodate two-way vehicle movements.

4.14 A small area of existing on-street parking on the southern side of Great Western Road, to the east of the existing access, will need to be removed to accommodate the proposed access in this location. There is potential to re-provide this on the western side of the proposed access. Access to the existing driveway parking associated with no. 95-97 Great Western Road can be maintained under the proposed arrangement.

4.15 The southern phase access will lead into the site providing a cul-de-sac arrangement. The main internal road will be 5.5m in width with small sections of on-street car parking in designated bays along both sides of the road.

4.16 Footways will be provided within the site and three street arrangements will extend north from the main internal road, providing access to three rows of townhouses. Turning space is to be provided at the end of each of these streets to accommodate refuse vehicle access.

4.17 Given the nature of the internal road as a lightly trafficked residential street, the internal highway will be suitable to accommodate cyclists and no segregated cycle lane provision is therefore necessary. This is consistent with the MfGS guidance on pedestrian prioritised streets.

4.18 The majority of the town houses will be provided with driveway space for one car to park. There will also be some on-street car parking along the main internal road which could accommodate any additional visitor parking demand and provide parking for those townhouses without a dedicated space. It is expected that the on-street car parking provision will be controlled via a new Controlled Parking Zone (CPZ) that would apply to the development only, and which would prevent use of the site for parking by non-residents.

4.19 Car parking for the proposed apartment block (Block D) will be provided via a row of car parking comprising 14 spaces.

4.20 Long-stay cycle parking for Block D will be provided via a covered cycle store close to the main entrance, with short stay provision in the form of five Sheffield stands also provided adjacent to the building.

4.21 Cycle parking for the townhouses will be provided for within the curtilage of each dwelling.

Southern Phase – Servicing

4.22 Servicing of the southern phase will occur within the site using the proposed internal roads, with space provided for a refuse vehicle to turn within the site as shown in **Drawing VN212156-TR103 Rev B**.

Pedestrian connections

4.23 There will several points of access to the site for pedestrians from Great Western Road and access will also be provided for pedestrians from Horton Road.

Proposed Car Club Spaces

4.24 It is proposed to provide six spaces within the Southern Phase of the development site (but available to all residents) dedicated for car club vehicles. Research by como uk has shown that each car club vehicle in the UK replaces 20 private cars. On this basis, the six spaces proposed as part of the development could replace the need for 120 private cars, helping to reduce the demand for car parking within the area.

Car Parking Justification

4.25 The proposed car parking provision for the residential dwellings within the site is supported by the guidance set out in the MfGS, which is detailed in Section 3 of this report. This guidance is clear in its support for development that is car-free, or provides reduced parking provision, in areas where this is appropriate such as city centre locations.

4.26 Reference to local car ownership data further highlights the appropriateness of providing limited car parking for development in this location. Census 2011 data for the Gloucester 002 Mid Layer Super Output Area shows that 30% of households within this area didn't own a car or van at the time of the 2011 Census, and 44% owned one car only.

4.27 When the car ownership Census data is considered by accommodation type, it is revealed that flats are associated with a lower rate of car ownership, with 48% of these types of households in this area not owning a car or van. The Census data and analysis is provided at **Appendix C** to this report.

4.28 The location of the development has been shown to be highly accessible by non-car modes and is close to Gloucester City Centre, therefore it is appropriate to provide reduced car parking provision for this development. Local car ownership data has also been considered and this shows that households in this area have low rates of car ownership, particularly flats which comprise the majority of the proposed households at the development. The proposed car parking provision is therefore appropriate for this location and is policy compliant.

Summary

4.29 The planning application seeks permission for a residential development of 315 dwellings with associated landscaping, parking, open space and ancillary works including demolition of existing buildings, at land to the south of Great Western Road in Gloucester.

4.30 The development will be delivered in two phases – a northern phase comprising of three apartment blocks (Blocks A, B and C), and a southern phase comprising of townhouses and an apartment block (Block D).

4.31 The proposed access arrangements to serve the development have been detailed and it has been shown that these are in accordance with design standards and will provide for safe and efficient movement for all road users. Servicing activity will be accommodated within the site.

4.32 Cycle parking will be provided for the apartments within secure cycle stores conveniently located for ease of access. The town houses will provide for cycle parking within the curtilage of each plot. Given the nature of the internal road as a lightly trafficked residential street, the internal highway will be suitable to accommodate cyclists and no segregated cycle lane provision is therefore necessary.

4.33 Car parking within the development will be limited, and this has been shown to be appropriate given the highly accessible location of the site and following a review of local car ownership characteristics. Low car parking provision for developments in highly accessible locations is also supported by local guidance contained in the Manual for Gloucestershire Streets.

4.34 Car club spaces will be provided within the site and it is expected that this location will be attractive to a car club operator and the availability of car rental on the site will help to facilitate residents in non-car ownership lifestyles.

5 Trip Forecasts and Highway Effects

Overview

5.1 The proposed development site is located within a highly accessible area with excellent access to everyday amenities and facilities within a local catchment, as has been detailed within this report. This will maximise the ease of local living for residents at the proposed development, both minimising the need to travel in the first instance, and minimising the need for residents to travel by car, given that there are so many alternative modes readily available. The low car parking provision proposed within the development will also help to minimise vehicle demand on the highway network.

5.2 This section of the report considers the likely overall trip demand generated by the proposals, focusing upon the weekday morning and evening traditional peak hours (08:00-09:00 and 17:00-18:00), when demand for travel on the transport networks is generally at its peak. This will allow a judgement to be made regarding the impact of the development proposals upon the surrounding highway network.

5.3 This section provides an overview of the methodology and results, with the full detail of the forecasting exercise provided at **Appendix D**.

Trip Forecasting

Total Person Trips

5.4 Calculating the number of total person trips generated by the proposed development is integral in understanding its potential demand. As such, the industry standard TRICS database of surveyed sites has been interrogated for the following land uses:

- 03 – Residential / A – Houses Privately Owned; and
- 03 – Residential / C – Flats Privately Owned.

5.5 The resultant total person trip rates and generation for the morning and evening peak hours are presented in **Table 5.1.** The full TRICS outputs are provided at **Appendix E** and include details of the selection parameters.

Table 5.1: Average Total Person Trip Rates and Forecast Trips

	Time	Trip Rate (per dwelling)			Trips		
		Arr	Dep	Two-way	Arr	Dep	Two-way
Houses	08:00 - 09:00	0.249	0.544	0.793	22	47	69
	17:00 - 18:00	0.565	0.259	0.824	49	23	72
Apartments	08:00 - 09:00	0.105	0.398	0.503	25	94	118
	17:00 - 18:00	0.383	0.254	0.637	90	60	150
Total	08:00 - 09:00				**46**	**141**	**187**
	17:00 - 18:00				**139**	**82**	**221**

5.6 As shown in **Table 5.1**, a total of 187 two-way person trips are forecast to be generated by the proposed development during the typical morning peak hour, with 221 two-way person trips generated in the typical evening peak hour.

Journey Purpose

5.7 In order to ascertain the mode split of these trips and in turn the number of vehicle trips generated by the proposed development, consideration has been given to the journey purpose of trips from residential areas using the DfT's National Travel Survey (NTS). The NTS consists of face-to-face interviews and a seven-day self-completed written travel diary with database number 0502 providing a review of the trip start time by trip purpose for England.

5.8 Provided in **Table 5.2** is a summary of journeys by purpose based on information contained within the NTS. Three distinct trip types have been adopted for this assessment comprising commuting, education and recreation/ leisure.

Table 5.2: Trips by Journey Purpose

Time	Commuting	Education	Recreation/Leisure
08:00 - 09:00	37%	51%	12%
17:00 - 18:00	56%	5%	39%

5.9 Using the trip type proportions presented in **Table 5.2**, the total person trips have been broken down by the journey purpose. A summary of the resultant total person trips by journey purpose is provided in **Table 5.3**.

Table 5.3: Person Trips by Journey Purpose

	Time	Commuting		Education		Recreation/Leisure	
		Arrive	Depart	Arrive	Depart	Arrive	Depart
Houses	**08:00 - 09:00**	8	18	11	24	3	6
	17:00 - 18:00	28	13	2	1	19	9
Apartments	**08:00 - 09:00**	9	34	12	46	3	11
	17:00 - 18:00	49	32	4	3	34	23
Total	**08:00 - 09:00**	**17**	**52**	**24**	**72**	**6**	**17**
	17:00 - 18:00	**78**	**46**	**7**	**4**	**54**	**32**

5.10 As shown in **Table 5.3** a total of 69 two-way person trips are expected to be for commuting purposes within the morning peak hour, along with 96 two-way person trips for education purposes and 23 two-way person trips for recreation / leisure purposes.

5.11 During the evening peak hour, it is shown that 124 two-way person trips are expected for commuting purposes, with 11 two-way person trips expected for education purposes and 86 two-way person trips for recreation / leisure purposes.

Vehicle Trip Forecasts

5.12 The following paragraphs outline how the person trips for the proposed development have been assigned a mode split to consider the vehicle trip generation of the proposals. Each of the identified trip types detailed above have their own distinct travel characteristics and this is reflected in the narrative and information presented below.

5.13 It is important to note that in deriving the vehicle trip generation, the car parking supply proposed for the apartments within the development has been taken into account. Forecast vehicle trips associated with the apartments have been factored down to reflect the limited availability of on-site car parking for future residents.

Commuting Trips

5.14 For commuting trips, the mode split exercise considered how people travelled to work making reference to data within the 2011 Census. The exercise considered how people travelled to work from the area specific to the site in Gloucester. This covers Mid Layer Super Output Area (MSOA) 'E02004637: Gloucester 002', as shown in **Figure 5.1**.

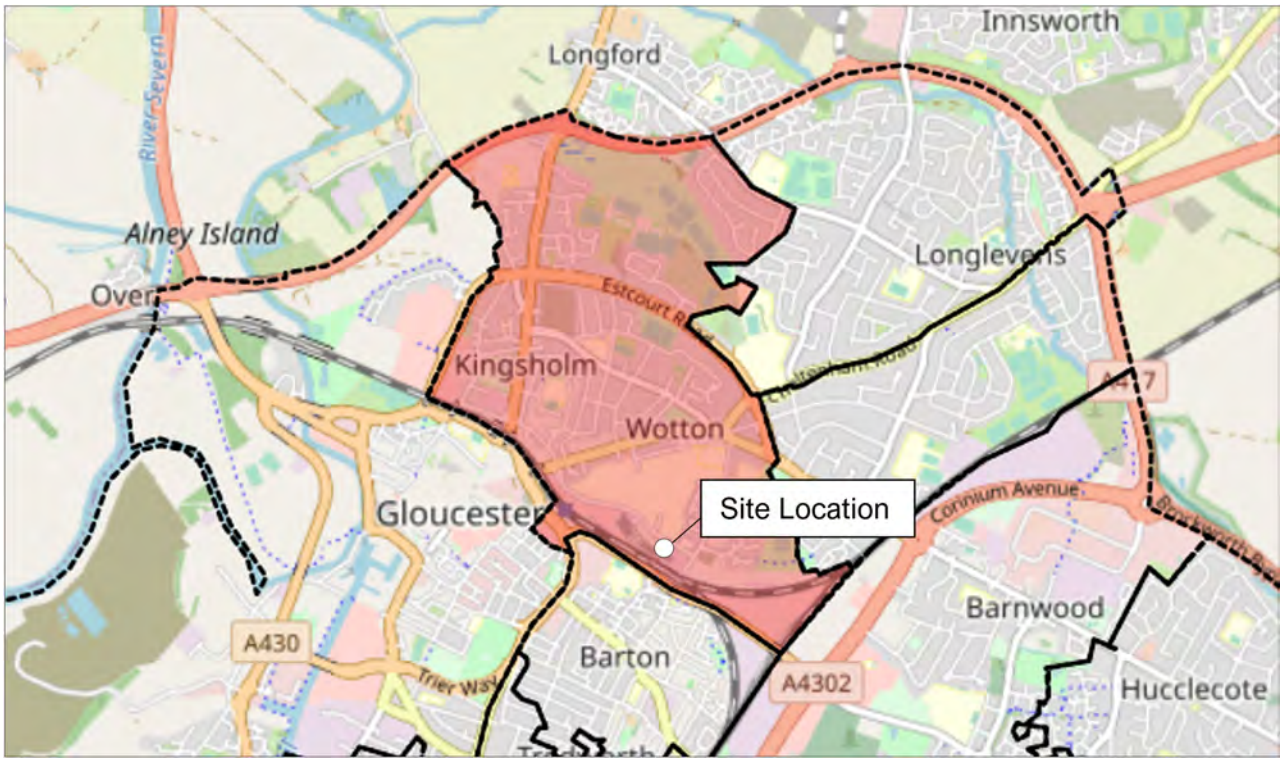


Figure 5.1: E02004637: 'Gloucester 002' (Source: Office of National Statistics)

5.15 The journey to work data for driver mode has been considered in relation to those areas within a 90-minute drive of the site as this is considered a realistic maximum distance for commuting by car. The resulting mode share for driving is 47% and **Table 5.4** shows the forecast peak hour commuting trips by car.

Table 5.4: Forecast Car Commuting Trips

	Town Houses		Apartments	
Time	Arr	Dep	Arr	Dep
08:00 - 09:00	4	8	1	3
17:00 - 18:00	13	6	5	3

5.16 **Table 5.4** shows that the forecast number of car commuting trips in the peak hours is 16 in the morning peak and 27 in the evening peak.

Education Trips

5.17 For education trips, the mode split of trips was considered using the NTS database 0614 which provides an education mode split by journey distance for students aged 5–10 and students aged 11–16. A review of the schools near the site indicated that there are 6 primary schools within 1 mile of the site and 11 primary schools and 11 high schools outside 1 mile of the site. Therefore, this exercise considered two mode profiles, as follows:

- Mode split for 5 – 10 year olds within 1 mile; and
- Mode split for 5 – 16 year olds outside 1 mile but within 5 miles.

5.18 **Table 5.5** shows the forecast peak hour education trips by car for schools within 1 mile, and **Table 5.6** shows the car trips for schools outside 1 mile..

Table 5.5: Forecast Car Education Trips within 1 mile

	Town Houses		Apartments	
Time	Arr	Dep	Arr	Dep
08:00 - 09:00	0	1	0	0
17:00 - 18:00	0	0	0	0

Table 5.6: Forecast Car Education Trips outside 1 mile

	Town Houses		Apartments	
Time	Arr	Dep	Arr	Dep
08:00 - 09:00	5	11	5	20
17:00 - 18:00	1	0	2	1

5.19 **Table 5.5** shows that the forecast number of car education related trips for schools within 1 mile in the peak hours is low, with one in the morning peak hour and none in the evening peak hour. This is reasonable given the high number of schools within walking distance of the site.

5.20 **Table 5.6** shows that for schools beyond 1 mile, the expected number of car trips is higher, with 51 in the morning peak hour and 4 in the evening peak hour.

Recreation / Leisure Trips

5.21 The NTS data demonstrates that in the AM peak 26% of journeys are undertaken for the purposes of leisure / recreation (i.e. walking the dog, visiting friends, day to day shopping such as for a pint of milk, other shopping, personal business, holiday, day trips etc). This number increases to 59% in the PM peak period. The location of the site within proximity to the City Centre and associated shops and attractions, will ensure a high number of these types of trips will be local to the site.

5.22 For the purpose of assessment, a judgement has been made that 70% of leisure/recreation trips are local trips which remain within the local area and 30% are external trips which travel to destinations further afield. This assessment focuses on the 30% of trips which leave the site to access leisure / recreation opportunities further afield.

5.23 As there is no NTS database which provides mode splits for leisure / recreation trips we have applied the same mode split used to distribute commuting trips as summarised earlier. **Table 5.6** shows the forecast peak hour leisure / recreation trips by car.

Table 5.7: Forecast Car Leisure / Recreation Trips

	Town Houses		Apartments	
Time	**Arr**	**Dep**	**Arr**	**Dep**
08:00 - 09:00	1	3	0	1
17:00 - 18:00	9	4	3	2

5.24 **Table 5.7** shows that the forecast number of car leisure / recreation related trips in the peak hours is 5 in the morning peak hour and 18 in the evening peak hour.

Total Development Peak Hour Vehicle Trips

5.25 Combining the commuting, education and leisure / recreation trips detailed above, the total forecast peak hour vehicle trips generated by the development is shown in **Table 5.8**.

Table 5.8: Total Development Forecast Vehicle Peak Hour Trips

	Time	Commuting		Education		Recreation/Leisure		Total	
		Arrive	**Depart**	**Arrive**	**Depart**	**Arrive**	**Depart**	**Arrive**	**Depart**
Houses	**08:00 - 09:00**	4	8	5	11	0	1	9	21
	17:00 - 18:00	13	6	1	0	3	1	17	8
Apartments	**08:00 - 09:00**	1	3	1	5	0	0	2	9
	17:00 - 18:00	5	3	0	0	1	1	6	4
Total	**08:00 - 09:00**	5	12	**7**	**16**	**0**	**1**	12	29
	17:00 - 18:00	18	9	**2**	**1**	**4**	**2**	23	12

5.26 It can be seen from **Table 5.8** that the development is expected to generate 41 two-way vehicle trips in the morning peak hour and 35 in the evening peak hour.

Trip Distribution

5.27 A vehicle trip distribution exercise has been undertaken considering separately each of the three journey purposes described above. Full details are provided at **Appendix D.**

5.28 For commuting trips this has been based upon the census journey to work data described previously. The resulting distribution is shown in **Figure 5.1**.

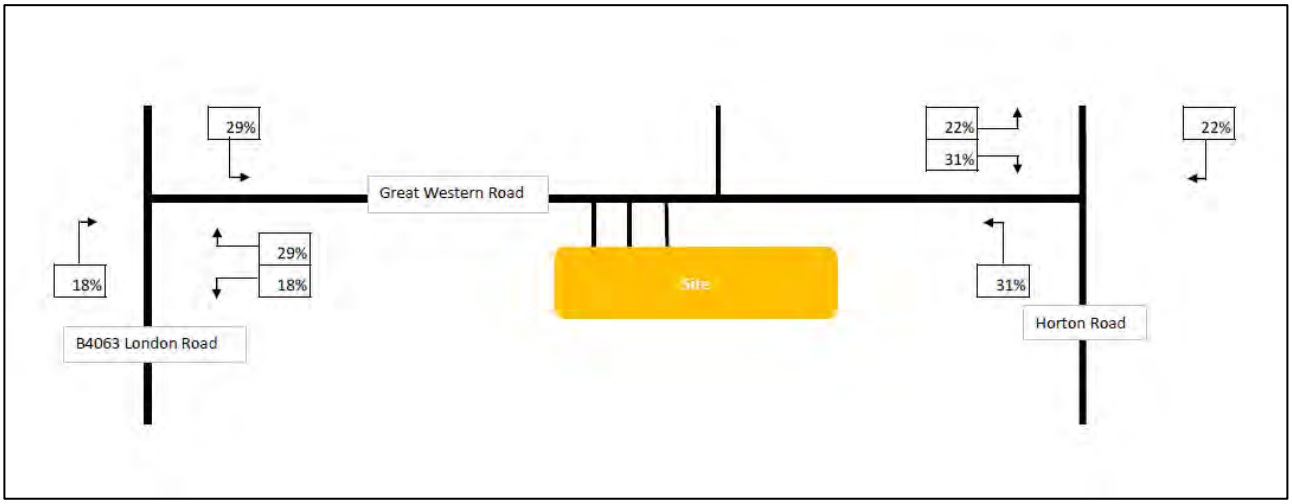


Figure 5.1: Commuting Trip Distribution

5.29 For the education trips, the distribution was determined based upon the location of schools outside of 1 mile from the site. The resulting distribution is shown in **Figure 5.2**.

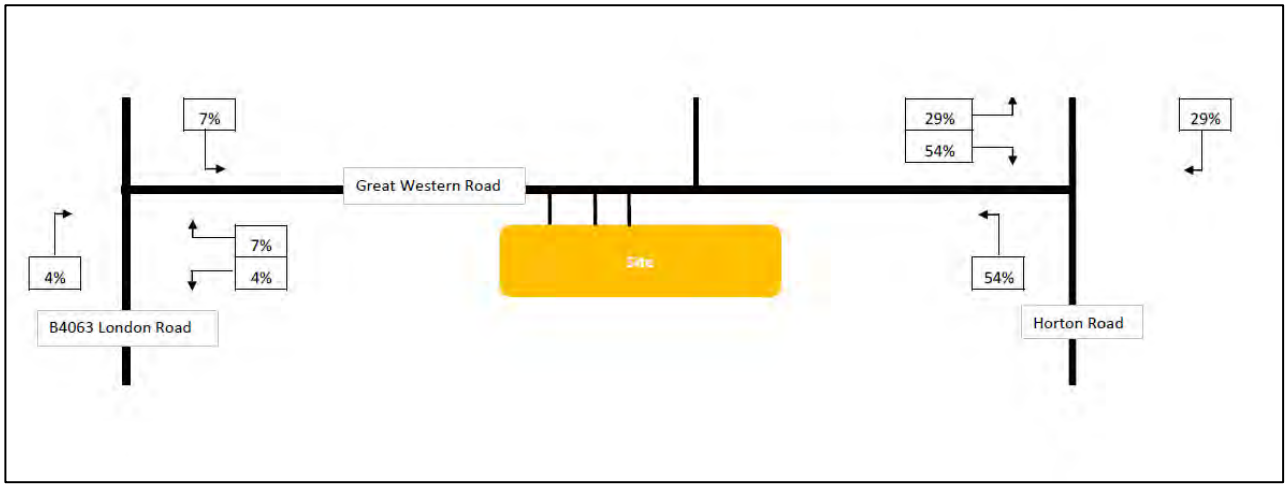


Figure 5.2: Education Trip Distribution

5.30 For leisure / recreation trips, the forecast distribution is based upon a judgement of where leisure destinations are located within the wider area, and the resulting distribution is shown in **Figure 5.3**.

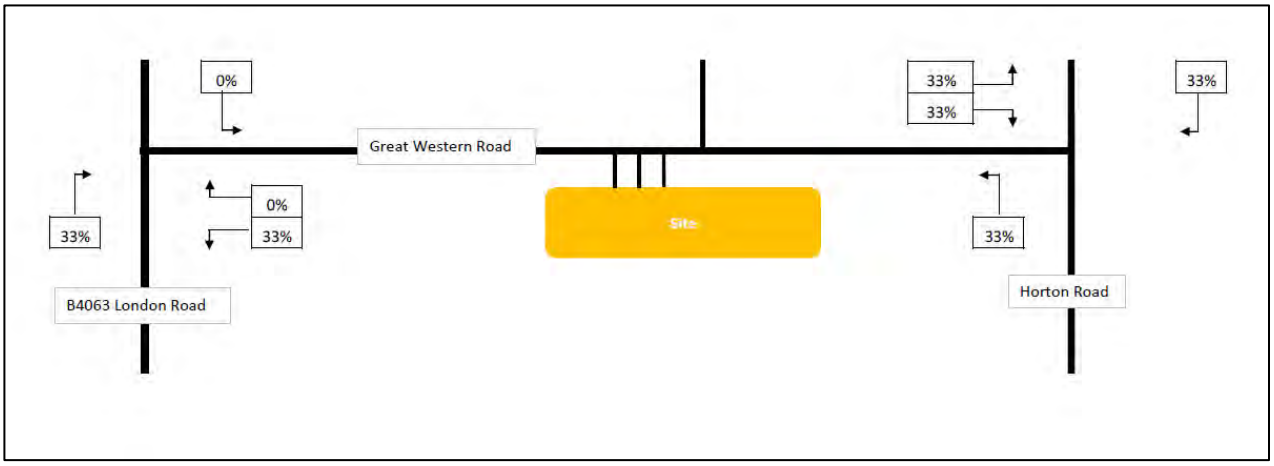


Figure 5.3: Leisure / Recreation Trip Distribution

5.31 Based upon these trip distributions, the peak hour trip assignment is shown in **Figure 5.4** and **Figure 5.5** for the AM and PM peak respectively.

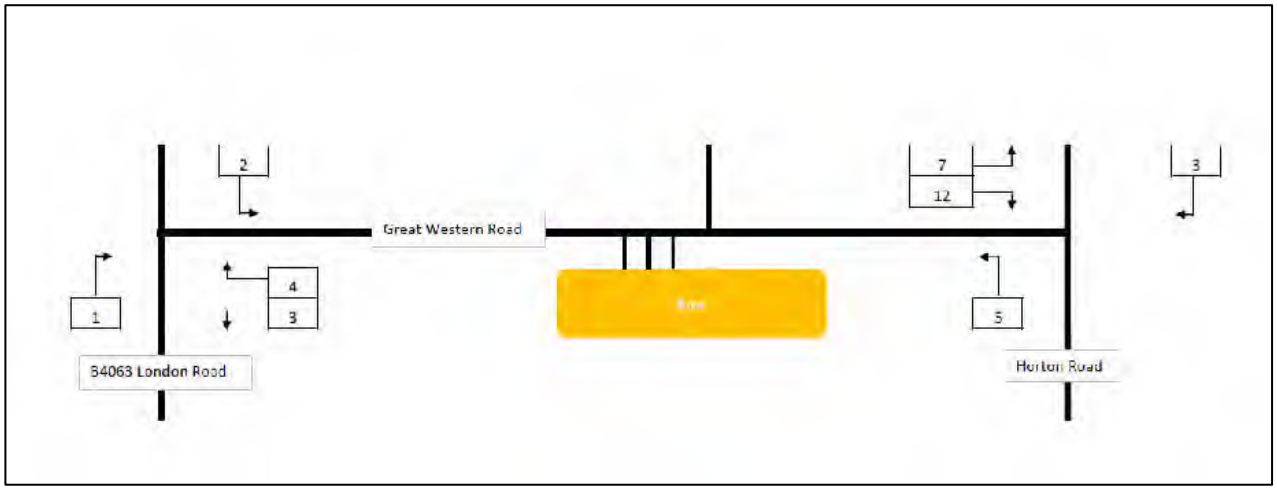


Figure 5.4: Forecast Development Trips Assignment AM Peak

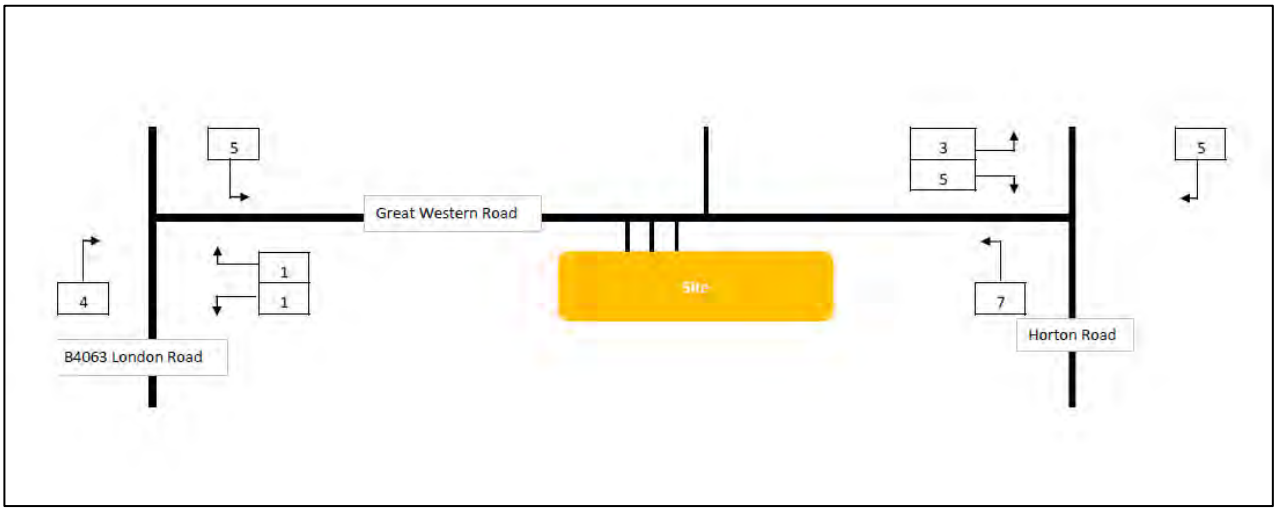


Figure 5.5: Forecast Development Trips Assignment PM Peak

Highway Effects

5.32 It can be seen from **Figure 5.4** and **Figure 5.5** that the development is expected to generate low numbers of additional vehicle trips at the junctions at either end of Great Western Road i.e. the London Road junction and the Horton Road junction. At the London Road junction, the trips amount to in the order of 10 trips in the morning and evening peak hours, or on average one trip per 6 minutes at this junction.

5.33 At the Great Western Road / Horton Road junction, the additional movements are forecast to be in the order of 27 trips in the morning peak hour and 20 in the evening peak hour. On average this would be an additional trip every 2-3 minutes at this junction.

5.34 These additional forecast vehicle trips at these junctions are negligible in the context of the existing flows on this network and would not be likely to lead to any noticeable effect upon the operation of the junctions.

5.35 Forecast development flows on Horton Road are also negligible being in the order of 10-20 trips in each peak hour, which would not be expected to have any notable effect upon queues that form when the level crossing is down.

5.36 It should also be noted that the existing industrial / commercial uses on the site currently will generate vehicle trips throughout the day and these trips will be removed from the network in this area following the delivery of the proposed development. This trip forecasting exercise has not considered the effect of removing these trips from the network, which would result in a net trip generation lower than that presented. In practice then, the effects of the proposed development traffic would be even less than described in this report.

Summary

5.37 A trip forecasting exercise has been undertaken to forecast the likely number of development related vehicle trips generated at peak periods. This has been based upon a TRICS total person trip rate with consideration then given to journey purpose in line with National Travel Survey data. The apartment vehicle trips have also been constrained according to the restricted car parking provision for the apartments within the development.

5.38 The development is expected to generate 41 two-way vehicle trips in the morning peak hour and 35 in the evening peak hour. These trips have been assigned to the surrounding highway network based upon a distribution exercise and the predicted number of development trips at the Great Western Road junction with London Road and Horton Road during the peak hours has been shown to be negligible.

5.39 It should also be noted that the existing industrial / commercial uses on the site currently will generate vehicle trips throughout the day and these trips will be removed from the network in this area following the delivery of the proposed development. This trip forecasting exercise has not considered the effect of removing these trips from the network, which would result in a net trip generation lower than that presented. In practice then, the effects of the proposed development traffic would be even less than described in this report.

6 Summary and Conclusion

Summary

6.1 Vectos has been instructed by Eutopia Homes to provide transport and mobility advice in relation to a proposed residential development on land to the south of Great Western Road in Gloucester. The site is located approximately 500 metres to the north-east of the City Centre and is a suggested allocation (Ref: SA05) in the emerging Gloucester City Plan. The site was allocated for 200 dwellings in the submitted Gloucester City Plan with an uplift to 300 dwellings proposed in the Inspector's Main Modifications as a result of the Local Plan Examination.

6.2 The site has been subject to assessment as part of the Local Plan process in terms of highways and transport, and the Council agreed at the Local Plan Examination that the capacity of the site for development purposes is approximately 300 dwellings.

6.3 This Transport Assessment has been prepared in support of the development proposals at the site which comprise a residential development of 315 dwellings with associated landscaping, parking, open space and ancillary works including demolition of existing buildings.

6.4 The site lies to the west of Horton Road and to the south of Great Western Road. It has existing access points onto both roads. The site is particularly well located for access to the City Centre and the amenities and transport links therein. The highly sustainable nature of the Great Western Yard site location has already been established through the Local Plan site allocation process given that it benefits from proximity to a wide range of local facilities providing the potential to make it a very well-connected development.

6.5 The proposed development site is within walking distance of a wide range of facilities and amenities in the surrounding area, and connected by an existing network of footways. These amenities include schools, shops, health facilities, sports facilities and eateries. Furthermore, there is existing cycle infrastructure in the area to help facilitate cycle trips and Great Western Road is designated as a quieter road which would be suitable for relatively inexperienced cyclists. The proposed development will benefit from these active travel links to help make a sustainable development.

6.6 Access to public transport is also very good as there are bus stops on Great Western Road approximately 200m to the west of the site, just to the west of Pullman Court, and also within the Hospital grounds within 100m of the site. There is also Gloucester Bus Station (also known as Gloucester Transport Hub) within a realistic walking distance from the site, which provides access to a wide range of bus services. The site is particularly well located for access to Gloucester Rail Station which is just a 600m walk away.

6.7 The local highway network has been reviewed including the highway safety record and has been concluded that there are no highway safety problems that would need to be addressed in conjunction with the proposed development.

6.8 The national and local transport planning context of the proposed development has been reviewed. The proposed development meets the transport policy goals set out in the NPPF, being a sustainable development in terms of transport as it is located in an accessible area with good access to everyday facilities and amenities without the need to travel by car.

6.9 The proposed development site is included as an allocated site in the Gloucester City Plan as site SA05: Land at Great Western Road Sidings with a capacity of around 300 dwellings. The site has therefore already been found to be suitable for this type of development through the Council's own evidence base process.

6.10 The proposed development is considered to be consistent with local policies specific to transport and new development including those within the Gloucester City Plan and Gloucestershire's Local Transport Plan. The proposed scheme has been designed paying cognisance to the design guidance set out within the MfGS and MfGS Addendum documents.

6.11 The planning application seeks permission for a residential development of 315 dwellings with associated landscaping, parking, open space and ancillary works including demolition of existing buildings, at land to the south of Great Western Road in Gloucester.

6.12 The development will be delivered in two phases – a northern phase comprising of three apartment blocks (Blocks A, B and C), and a southern phase comprising of townhouses and an apartment block (Block D).

6.13 The proposed access arrangements to serve the development have been detailed and it has been shown that these are in accordance with design standards and will provide for safe and efficient movement for all road users. Servicing activity will be accommodated within the site.

6.14 Cycle parking will be provided for the apartments within secure cycle stores conveniently located for ease of access. The town houses will provide for cycle parking within the curtilage of each plot. Given the nature of the internal road as a lightly trafficked residential street, the internal highway will be suitable to accommodate cyclists and no segregated cycle lane provision is therefore necessary.

6.15 Car parking within the development will be limited, and this has been shown to be appropriate given the highly accessible location of the site and following a review of local car ownership characteristics. Low car parking provision for developments in highly accessible locations is also supported by local guidance contained in the Manual for Gloucestershire Streets.

6.16 Car club spaces will be provided within the site and it is expected that this location will be attractive to a car club operator and the availability of car rental on the site will help to facilitate residents in non-car ownership lifestyles.

6.17 A trip forecasting exercise has been undertaken to forecast the likely number of development related vehicle trips generated at peak periods. This has been based upon a TRICS total person trip rate with consideration then given to journey purpose in line with National Travel Survey data. The apartment vehicle trips have also been constrained according to the restricted car parking provision for the apartments within the development.

6.18 The development is expected to generate 41 two-way vehicle trips in the morning peak hour and 35 in the evening peak hour. These trips have been assigned to the surrounding highway network based upon a distribution exercise and the predicted number of development trips at the Great Western Road junction with London Road and Horton Road during the peak hours has been shown to be negligible.

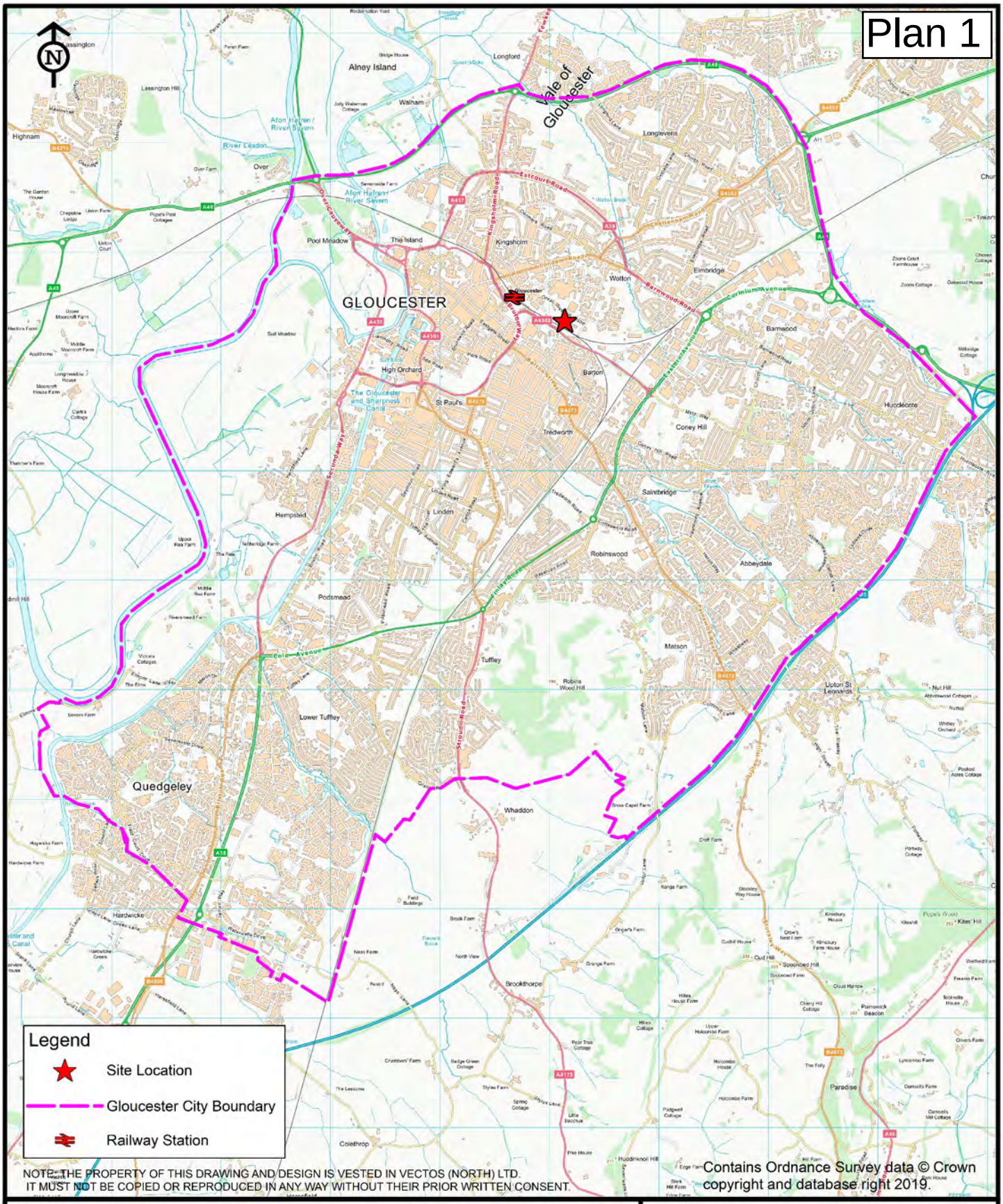
6.19 It should also be noted that the existing industrial / commercial uses on the site currently generate vehicle trips throughout the day and these trips will be removed from the network in this area following the delivery of the proposed development. This trip forecasting exercise has not considered the effect of removing these trips from the network, which would result in a net trip generation lower than that presented. In practice then, the effects of the proposed development traffic would be even less than described in this report.

Conclusion

6.20 It is concluded that the proposed development is in accordance with national and local transport policies and is acceptable in highways and transport terms.

Plans

Plan 1



CLIENT:
Eutopia Homes

PROJECT TITLE:
Great Western Yard, Gloucester

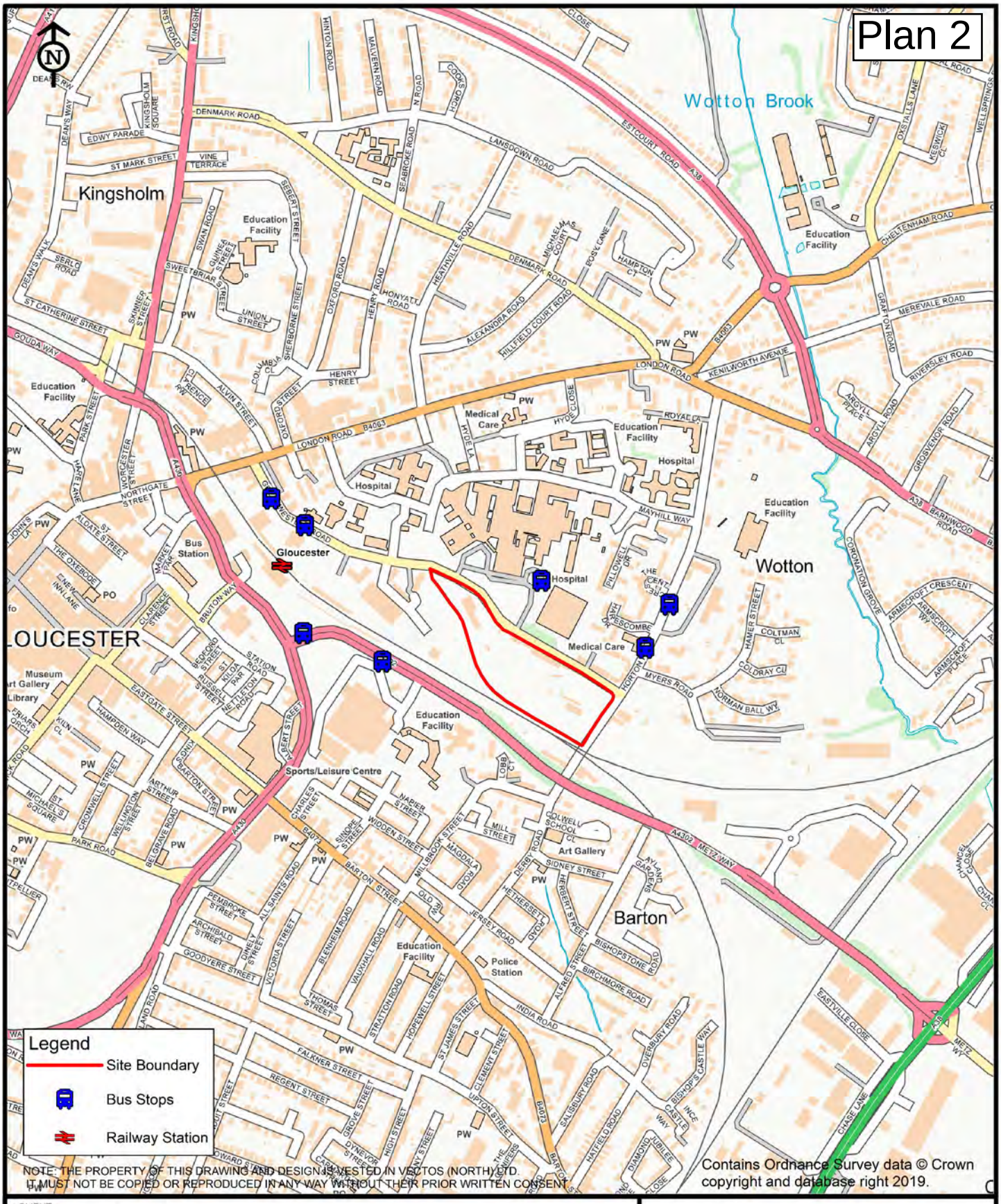
DRAWING TITLE:
Site Location - Wider Context

vectos.

[redacted]

DRAWN:	CHECKED:	DATE	SCALE:	DRAWING NO:	REVISION:
TA	TR	Jan 2022	1:48,000 at A4	VN212156-G100	-

Plan 2



CLIENT:
Eutopia Homes

PROJECT TITLE:
Great Western Yard, Gloucester

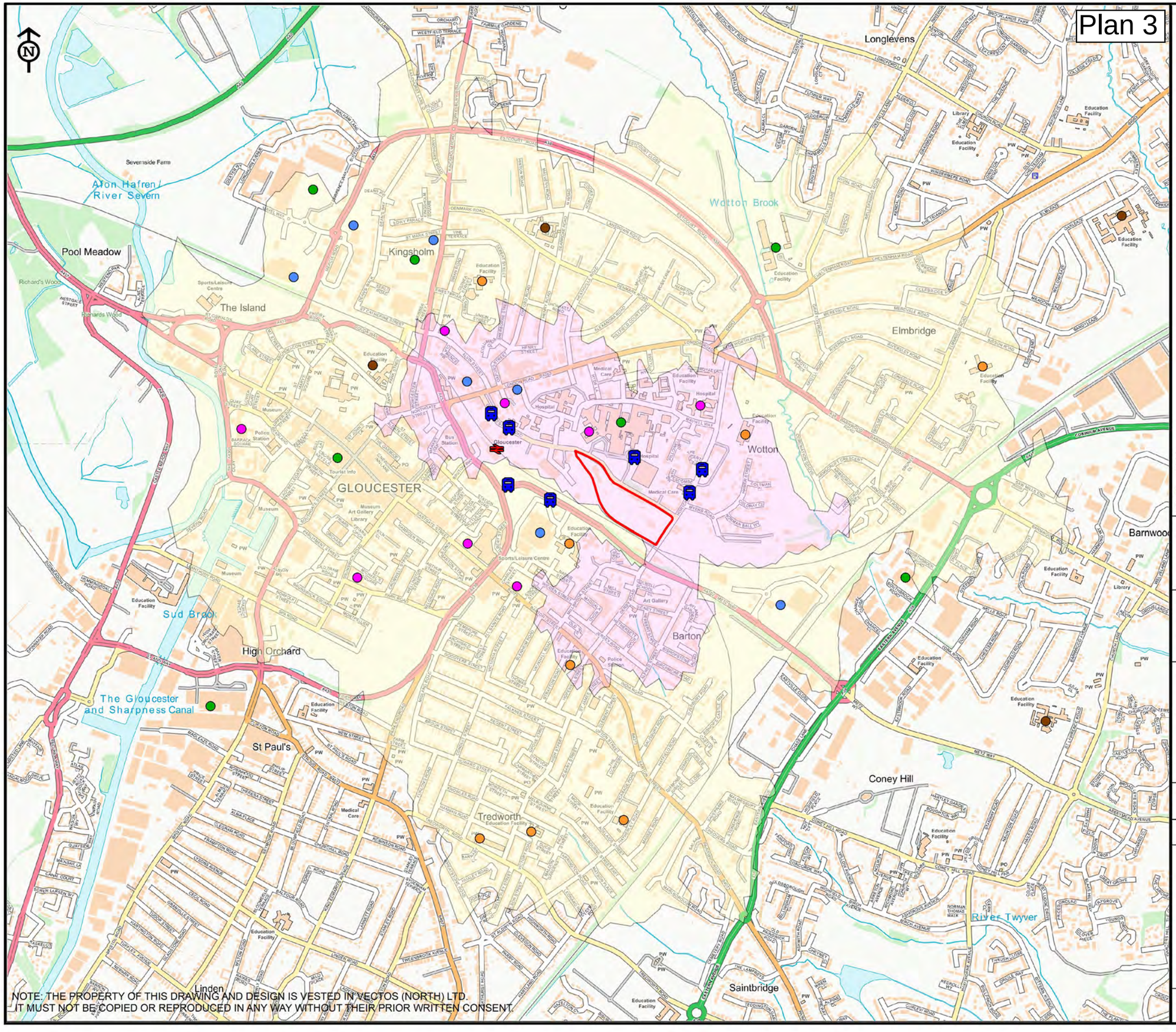
DRAWING TITLE:
Site Location - Local Context

vectos.

[redacted]

DRAWN:	CHECKED:	DATE:	SCALE:	DRAWING NO:	REVISION:
TA	TR	Jan 2022	1:10,000 at A4	VN212156-G101	-

Plan 3



Legend

- Site Boundary
- Bus Stops
- Railway Station
- Employment Site
- Healthcare Provision
- Primary School
- Secondary School
- Supermarket

Walking Catchment

- 0 - 1km
- 1 - 2km

This is not a construction drawing and is intended for illustrative purposes only.

CLIENT:
Eutopia Homes

PROJECT TITLE:
Great Western Yard, Gloucester

DRAWING TITLE:
1km and 2km Catchments from Site

SCALE: N.T.S

DRAWN:	CHECKED:	DATE:
TA	TR	Jan 2022

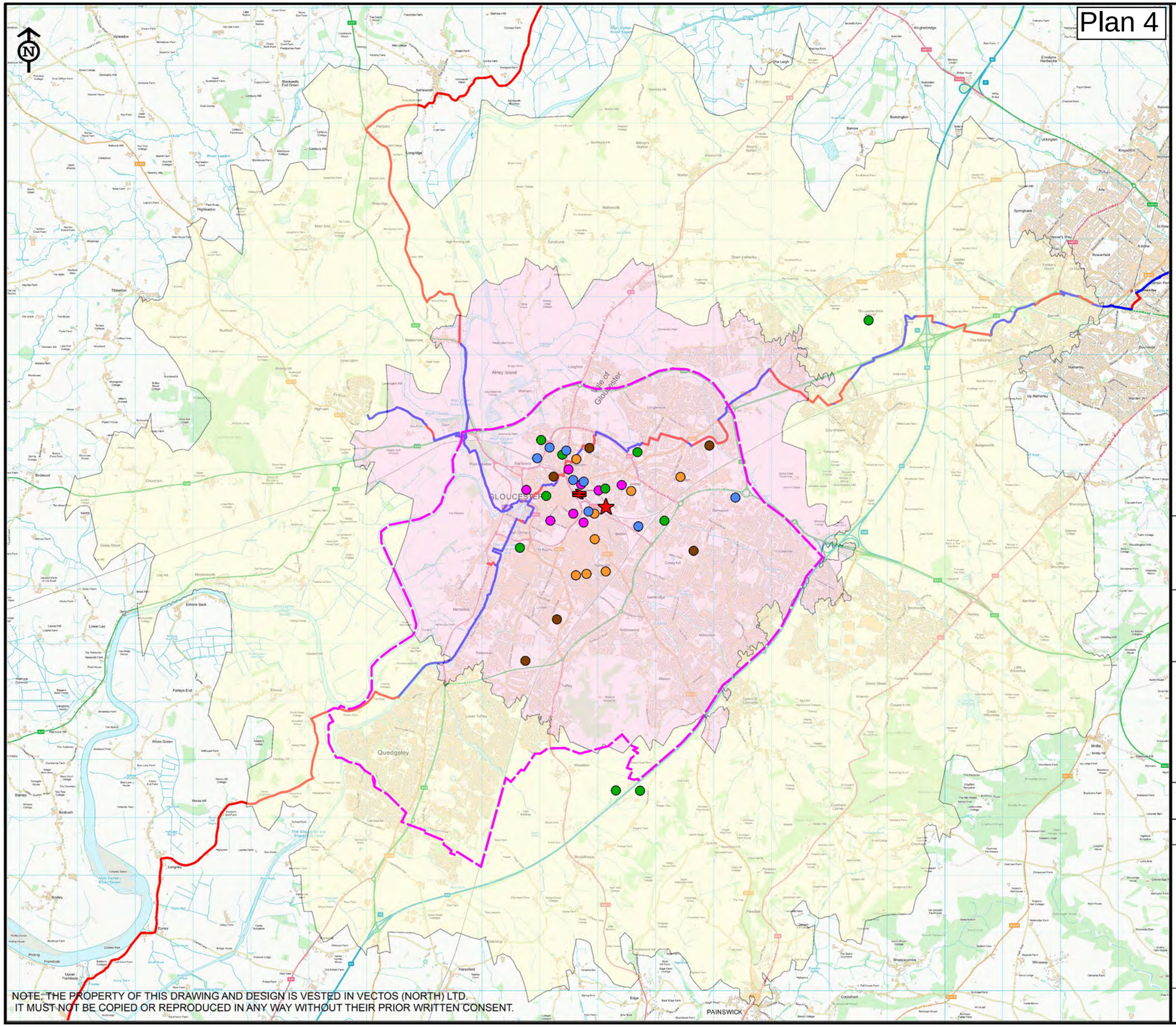
vectos.

[redacted]

DRAWING NO: VN212156-G102

REVISION:

Plan 4



Legend

- Site Location
- Railway Station
- Gloucester City Boundary
- Employment Site
- Healthcare Provision
- Primary School
- Secondary School
- Supermarket

Cycling Catchment

- 0 - 5km
- 5 - 10km

Cycle Routes

- On-Road Cycle Route
- Off-Road Cycle Route

This is not a construction drawing and is intended for illustrative purposes only.

CLIENT:
Eutopia Homes

PROJECT TITLE:
Great Western Yard, Gloucester

DRAWING TITLE:
5km and 10km Catchments from Site

SCALE: N.T.S

DRAWN:	CHECKED:	DATE:
TA	TR	Jan 2022

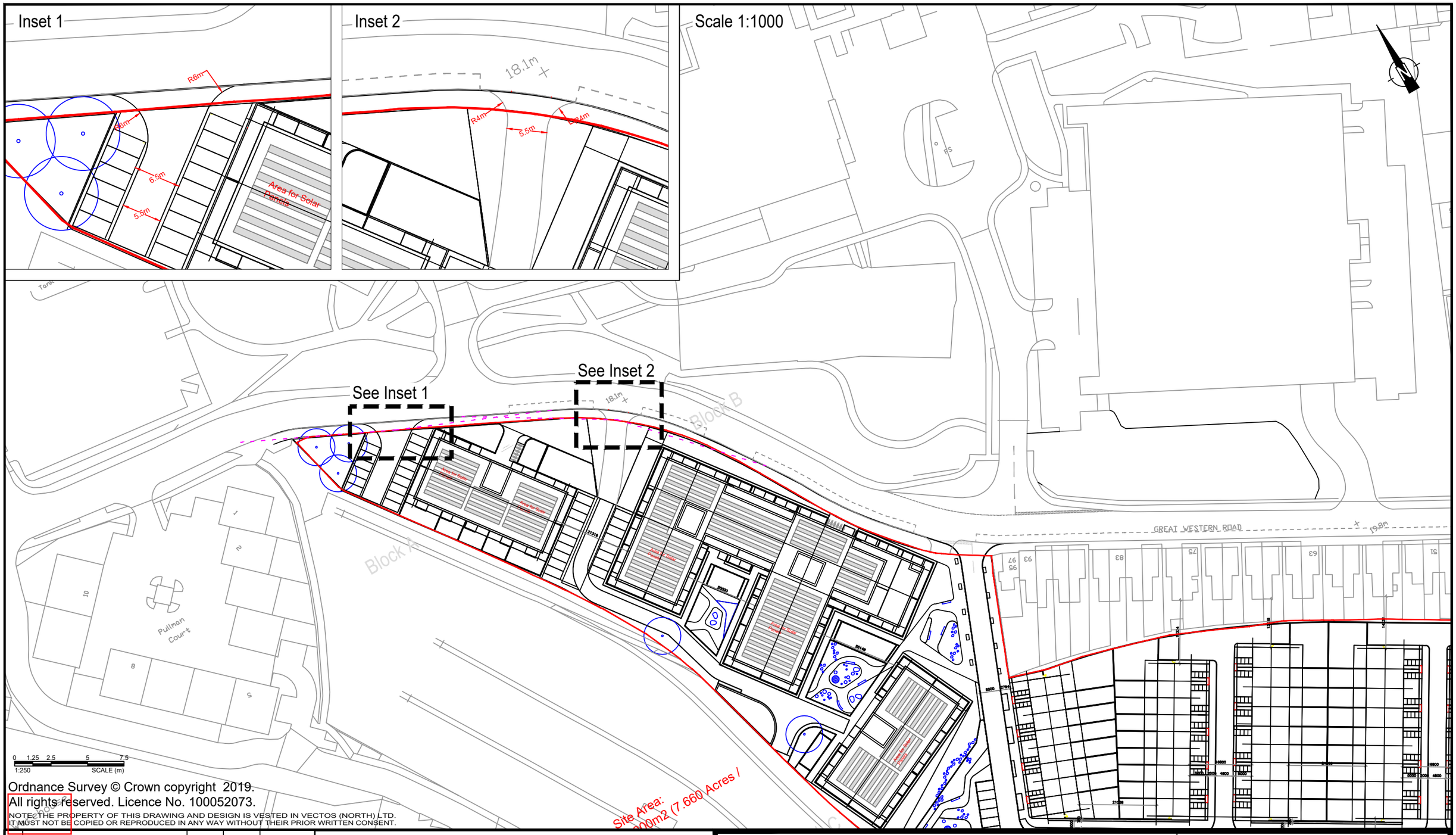
vectos.

[redacted]

DRAWING NO: VN212156-G103

REVISION:

Drawings



REV.	DETAILS	DRAWN	CHECKED	DATE
A	Site layout udpated	WD	TR	11.07.22

Notes:
1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

2.4m x 43m Visibility Splays based on 30mph

Great Western Yard, Gloucester

Eutopia Homes

Proposed Access Arrangement (Blocks A & B)

vectos.
4th Floor Oxford Place, 61 Oxford Street, Manchester, M1 6EQ
[redacted]

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
WD	TR	05.07.22	1:500 at A3 - Unless Shown	VN212156-D102	A

Inset 1

Proposed on street parking added

Existing on street parking removed

R6m

R6m

6m

Scale 1:1000

See Inset 1

GREAT WESTERN ROAD

HORTON ROAD

Depot

Club

Gasworks Cottages

Block C

.660 Acres /

Area for Solar Panels

Area for Solar Panels

Horton Road Junction

0 1.25 2.5 5 7.5
1:250 SCALE (m)

REV.	DETAILS	DRAWN	CHECKED	DATE
A	Site layout udpated	WD	TR	11.07.22

Notes:
1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

2.4m x 43m Visibility Splays based on 30mph

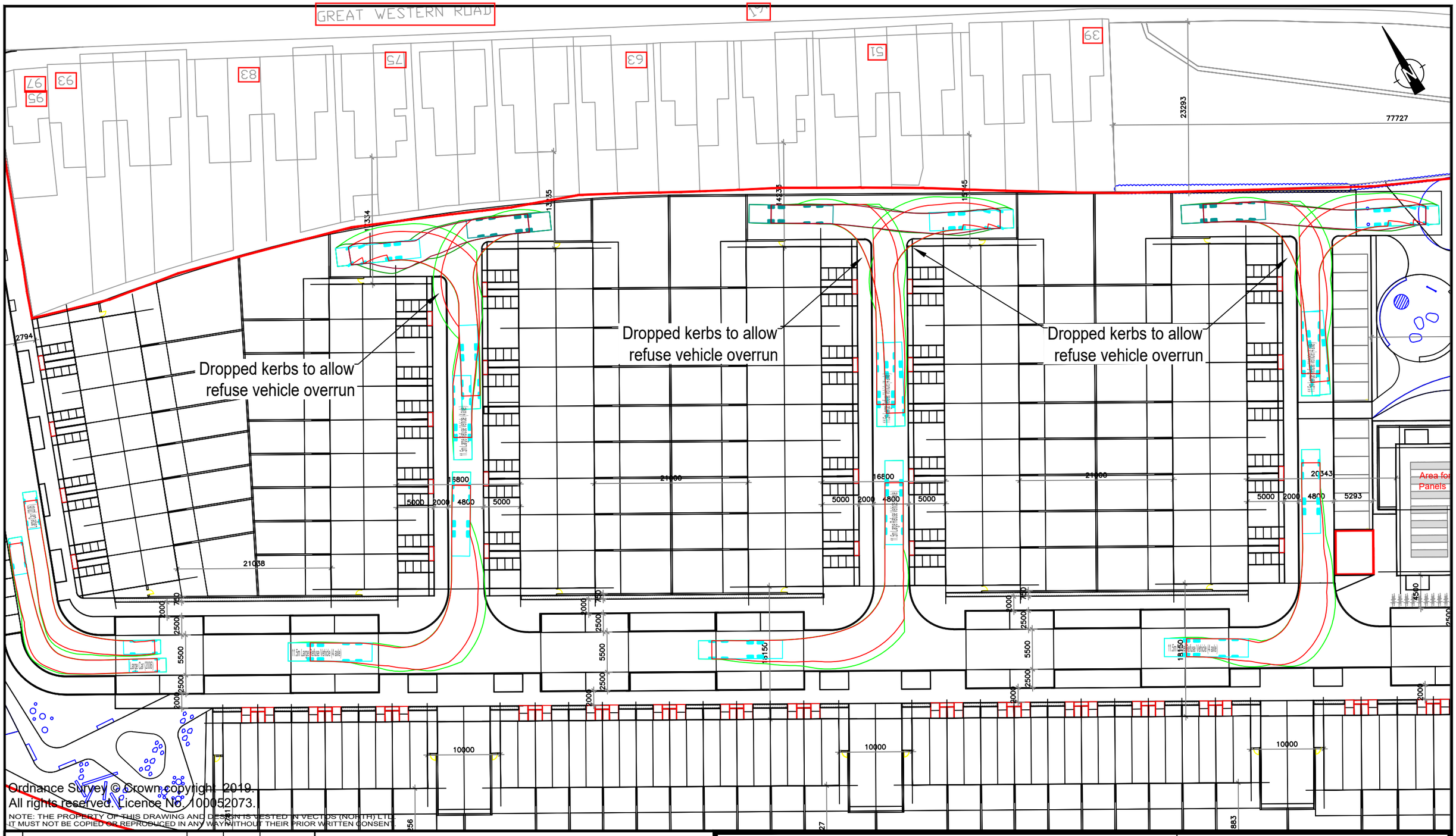
Great Western Yard, Gloucester

Eutopia Homes

Proposed Access Arrangement (Southern Phase)

vectos.
4th Floor Oxford Place, 61 Oxford Street, Manchester, M1 6EQ
[redacted] [redacted]

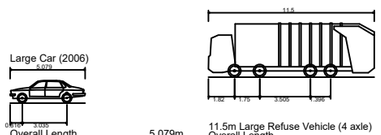
DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
WD	TR	05.07.22	1:250 at A3 - Unless Shown	VN212156-D103	A



REV.	DETAILS	DRAWN	CHECKED	DATE
A	Site layout updated	WD	TR	05.07.22
B	Site layout udpated	WD	TR	11.07.22

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.



Overall Length	5.079m	Overall Length	11.500m
Overall Width	1.872m	Overall Width	2.500m
Overall Body Height	1.525m	Overall Body Height	3.751m
Min Body Ground Clearance	0.310m	Min Body Ground Clearance	0.304m
Max Track Width	1.831m	Track Width	2.500m
Lock to lock time	4.00s	Lock to lock time	6.00s
Kerb to Kerb Turning Radius	5.900m	Wall to Wall Turning Radius	11.330m

Great Western Yard, Gloucester

Eutopia Homes

Swept Path Analysis - Refuse Vehicle & Large Car

vectos.
4th Floor Oxford Place, 61 Oxford Street, Manchester, M1 6EQ
[redacted] [redacted]

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
WD	TR	24.06.22	1:500 at A3	VN212156 - TR103	B

Area for Solar Panels

Area for Solar Panels

Area for Solar Panels

Area for Solar Panels

Block D

21315

20000

26149

See Inset 1

Inset 1

Flush surface to allow refuse vehicle overrun

5500

2794

21038

97
95
93
83

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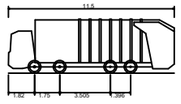
REV.	DETAILS	DRAWN	CHECKED	DATE
A	Site layout updated	WD	TR	11.07.22

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.



11.5m Large Refuse Vehicle (4 axle)	
Overall Length	11.500m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	11.330m

Great Western Yard, Gloucester

Eutopia Homes

Swept Path Analysis - Refuse Vehicle & Large Car

vectos.

4th Floor Oxford Place, 61 Oxford Street, Manchester, M1 6EQ

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
WD	TR	05.07.22	1:500 at A3	VN212156 - TR104	A

Appendices

Appendix A

Scoping Correspondence

vectos.

22/03/2022

Great Western Yard, Gloucester

Pre-Application Note 01 – Transport and Mobility

VN212156 Great Western Yard, Gloucester - Pre-App Note_01a

Introduction

1. Vectos are advising Eutopia Homes in relation to proposals for the redevelopment of the site at Great Western Yard in Gloucester to deliver a residential-led scheme. The site is located approximately 500 metres to the north-west of the city centre and is a suggested allocation (Ref: SA05) in the emerging Gloucester City Plan. The site was allocated for 200 dwellings in the submitted Gloucester City Plan with an uplift to 300 dwellings proposed in the Inspector's Main Modifications as a result of the Local Plan examination.

2. The site lies to the west of Horton Road and to the south of Great Western Road, with existing access points onto both roads. The sidings site is in the ownership of Network Rail. A small part of the site is currently used by Network Rail as a depot with associated temporary and prefabricated single storey structures, and part of the site comprises rail tracks and rail ballast. There are also some commercial operations to the northern part of the site accessed from Great Western Road including a vehicle repair garage and a builders merchant.

3. To the south of the sidings site lies the Birmingham to South Wales mainline. To the west of the sidings lies a 3 and 4 storey office development served by an access road off Great Western Road. Gloucestershire Royal Hospital lies to the north of Great Western Road immediately opposite the site.

4. The development proposals consist of 330 residential dwellings, comprising apartments and townhouses, with the main vehicular site access proposed from Great Western Road approximately in the location of an existing access into the site. A copy of the proposed site plan is provided at Appendix A. The application will ultimately be supported by a Transport Assessment and a Travel Plan, which will be prepared by Vectos.

5. This Note has been prepared to initially assist in the pre-application process with the Local Planning Authority, Gloucester City Council. Discussions were coordinated with the City Council in February 2022 with initial feedback suggesting that the design and appearance of the scheme is well considered and entirely appropriate for the site. It has also been noted by the City Council that the site is in a sustainable location and a reduced level of parking would be acceptable given the sustainable travel options that already exist.

6. Further pre-application discussions are now sought with Gloucestershire County Council as the Local Highway Authority, in advance of the preparation of a formal Transport Assessment and Travel Plan to support the planning application in due course.

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Manchester
M1 6EQ

[redacted]

vectos.co.uk

Initial Baseline Assessments

Active Travel and Shared Travel Modes

7. The site location affords excellent accessibility by non-car modes. The existing pedestrian infrastructure around the site is of a good standard, with wide footways on Great Western Road and crossing facilities to enable people to cross including a zebra crossing around 60m to the west of the edge of the site. A pedestrian link to the city centre is provided on Great Western Road via a subway under the railway (PRoW Ref: 116). In addition, Horton Road provides connected footways leading to a shared foot/cycle path which runs adjacent to Metz Way, providing an alternative route to and from the city centre.

8. There are stretches of cycle lane provision along London Road helping to connect Great Western Road with the city centre for cyclists. National Cycle Route 41 is located to the west of the site providing a mix of on-road and traffic free sections linking Gloucester with Bristol and Cheltenham. National Cycle Route 45 is also located to the west of the site, providing additional links to Worcester to the north.

9. There are bus stops on Great Western Road approximately 500-600m to the west of the site and also within the Hospital grounds within 100m of the site. Services available include the No. 6 and the No. 99, providing links from the city centre to residential suburbs in the north and wider destinations such as Cheltenham. The No. 6 provides an hourly service on Monday through Saturday with the No.99 providing a roughly half hourly service in each direction.

10. The Gloucester City Plan Transport Assessment Report 2019 prepared in support of the Gloucester City Plan included a sustainability assessment of the site (Site SA05 in the Plan). This is included as Appendix B to this Note and shows that the site is in a highly sustainable location, for example being just a 15-minute walk from the City Centre, a 10-minute walk to retail provision and a 5-minute walk to other employment areas. The development will be designed to capitalise upon the excellent accessibility credentials of the site.

11. A Travel Plan will be prepared to support the planning application and this will identify a range of measures that can be implemented at the site in order to meet various sustainable transport targets and objectives, along with a programme for monitoring the Travel Plan's progress. The document would be an accompaniment to the overall access strategy for the site, which will focus upon accessibility by non-car modes.

Surrounding Highway Network

12. Great Western Road is subject to a 30mph speed limit and is within the Gloucester Hospital Zone H Parking Permit Zone, restricting parking within designated on-street bays to residents only, between the hours of 08:00 and 19:00. Designated on-street parking subject to the Zone H restrictions extends along the frontage of the row of terraced houses on the southern side of Great Western Road, with double yellow lines on the northern side.

13. To the west of the row of terraced houses, on-street parking is pay-and-display between the hours of 08:00-19:00, with a maximum stay of four hours.

14. Access to Gloucestershire Royal Hospital is provided from the northern side of Great Western Road including access to the 'Tower Car Park' multi-storey car park which is open 24 hours a day and provides around 1,000 spaces.

15. A review of accident data for the most recently available 5-year period has been conducted with a summary presented in **Figure 1**.

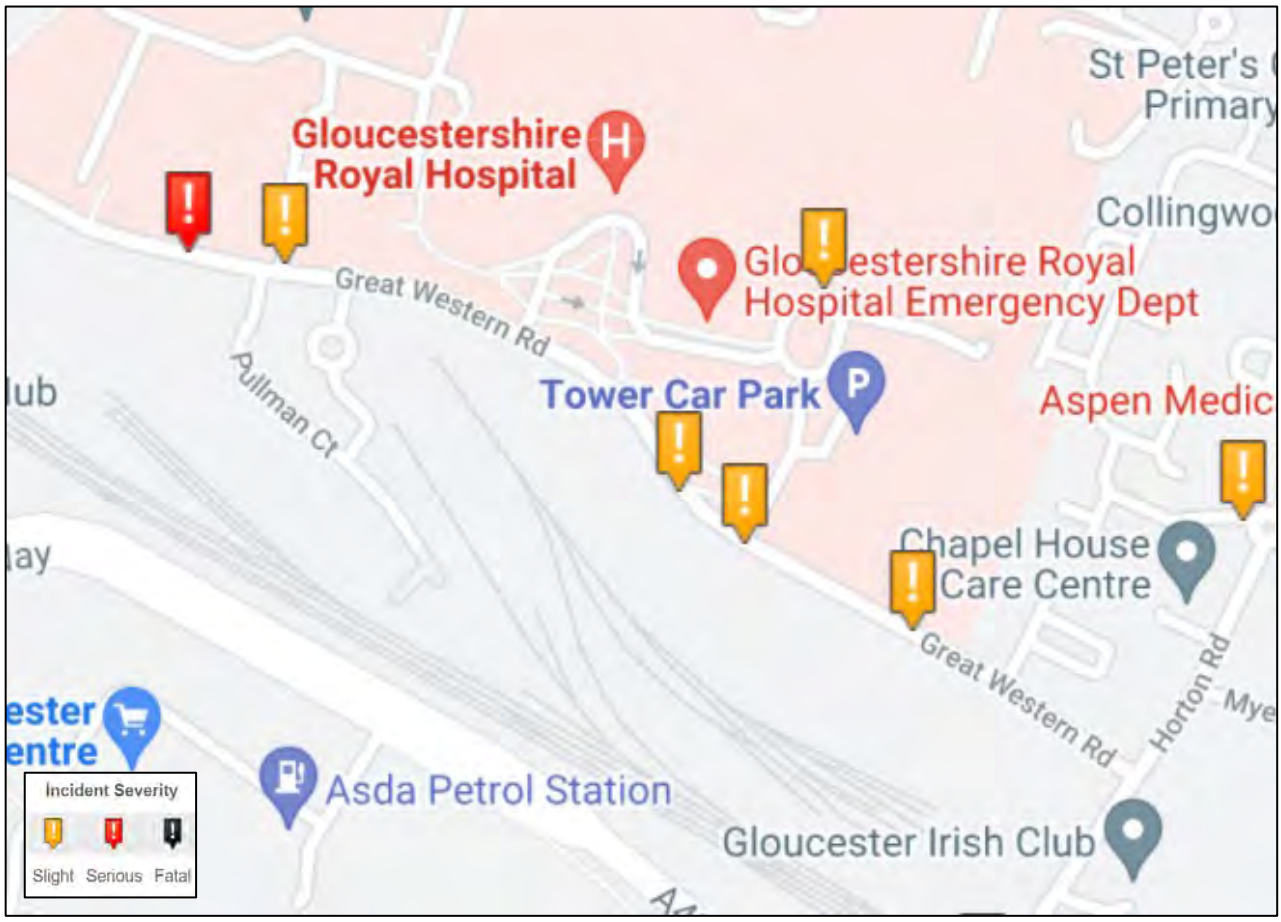


Figure 1: Accident Summary Data

16. The data highlights that there have only been 5 recorded accidents on Great Western Road in the vicinity of the site. The majority of these were recorded as being slight with only 1 serious accident identified. There have been no recorded accidents at the Great Western Road/Horton Road junction and only one accident at the level crossing on Horton Road. The Transport Assessment will provide a more detailed review of the accident record.

Development Proposals

17. The development proposals comprise 330 residential dwellings with the following mix of accommodation:

- 87 x townhouses (2 and 3-bed)
- 243 x apartments (1 and 2-bed)

18. Access to the site will be from Great Western Road, with the main vehicular site access for the town houses and a proportion of apartments provided in the approximate location of an existing access into the site to the west of the existing row of terraced houses. The access will take the form of a simple priority junction, sufficient for the development demands, and will still be offset from the hospital access on the opposite side of Great Western Road.

19. The main vehicular site access will provide a carriageway width of 6m with 2m footways on either side and appropriate visibility splays of 2.4m x 43m. Some amendments to the existing traffic regulation orders (TROs) on the southern side of Great Western Road will be required to facilitate the proposed access arrangement, but the aim is to ensure that there would be no overall loss of existing parking provision. For clarity, access to the existing off-street parking area associated with the end terrace will be retained.

20. There will be separate accesses to two of the apartment blocks further west on Great Western Road which will be simple priority access arrangements leading to areas of limited car parking for the apartments. Visibility splays of 2.4m x 43m will also be provided at these access points. The car park between Block B and A will lead to a servicing route at the rear of Block B to allow servicing for all three blocks to be undertaken within the site.

21. Pedestrian and cycle access will be facilitated at the vehicle access points and additional connections for pedestrians and cyclists will be provided onto Horton Road. The existing vehicle access to the site from Horton Road will be closed off, but provision for emergency vehicle access may still be retained from Horton Road.

22. The internal streets will be designed in accordance with the principles of 'Pedestrian Prioritised Streets' as defined in the Manual for Gloucestershire Streets (MfGS) 2019 i.e. they will be streets where pedestrians feel that they can move freely anywhere and where drivers feel they are a guest.

23. The MfGS provides guideline car parking standards for new development and for residential developments the guidelines are set as recommended minimum provision. For new residential development in Gloucester, the recommended standards are set out below.

	Number of Bedrooms Proposed				
	1	2	3	4	5
Number of Spaces	1	1	2	3	3

Table 1: Recommended Residential Car Parking Standards

24. MfGS goes on to acknowledge that in town and city centres, applicants may choose to provide a reduced parking provision which can be acceptable providing consideration is given to the opportunity to access the site sustainably, the availability and capacity of public car parks, existing parking restrictions, the number of linked trips and the implementation of an approved Travel Plan or welcome pack.

25. Car parking for the houses will be provided on site through a mix of on-street and driveway spaces with some communal car parking areas also provided for the apartments. Car parking will be provided at a ratio of around 0.5 spaces per dwelling across the site, which is appropriate for this central location with excellent access to public transport within a short walk of the city centre and is in accordance with the principles of MfGS noted above. There is potential for car club spaces to be provided within the site, as indicated in the proposed masterplan drawing, and this would help to support the low parking strategy. A full justification for the proposed parking will be provided within the Transport Assessment.

Transport Assessment Methodology

26. It is noted that the site is referred to in the Gloucester City Plan – Transport Assessment Report (Oct 2019) which provides an assessment of the proposed site allocations to support the City Plan. The Site was included as Site SA05 'Great Western Road Sidings', and a development quantum of 200 dwellings was assumed for the purposes of the traffic assessment, which comprised a SATURN model supplemented by local junction models. As previously noted, the Council subsequently agreed at the Local Plan Examination that the capacity of the site could be increased to approximately 300 dwellings.

27. It is noted that the site was assessed as generating around 90-100 two-way vehicle trips in each of the weekday morning and evening peak hours. It is noted that the Gloucester City Plan – Transport Assessment Report did not identify the need for any mitigation measures at any junctions in the vicinity of the site on the basis of that assessment.

28. It is proposed that the Transport Assessment in support of the planning application will provide a person trip forecast based upon TRICS trip rates, with a mode split applied according to local census journey to work data and National Travel Survey data (as appropriate). Given the proposed low level of car parking for the development, it is expected that the vehicle trip forecasts for the scheme will be constrained, and broadly within the parameters assessed for the site in the City Plan modelling referred to above. Furthermore, there are existing uses on site (vehicle repair garage and builders merchant) that currently generate trips and the site therefore has existing trip generating uses against which the proposed development trips can be offset.

29. The assignment of development trips in the peak hours will be considered with respect to local junctions on the highway network, and analysis of the number of development trips that may route via the level crossing on Horton Road will be provided.

Summary of Proposed Structure of Transport Assessment

30. The Transport Assessment will be structured along the following lines:

- Policy Review considering the relevant local and national transport planning policies against which the development will be assessed.
- Local Context review including assessment of the accessibility of the site by active travel modes and public transport, along with a review of the local highway network including any available traffic data and accident records.
- Proposed Development description including detail of the proposed access arrangements and sustainable access strategy. Swept path assessments for refuse vehicle access within the site will be provided. Cycle and car parking provision for the scheme will be detailed.
- Trip Forecasting exercise and an assignment of development trips on the surrounding network and a consideration of the effect of development trips upon the local network, including reference to the Gloucester City Plan modelling exercise.
- Summary and Conclusion.

Appendix A

Vectos
Oxford Place
61 Oxford Street
Manchester
M1 6EQ

[redacted]

vectos.co.uk

General Notes

Key Plan

Notes

REV	NOTES	DATE	BY	AUTH

DARLING ASSOCIATES
ARCHITECTS

[redacted]

DRAWING STATUS
Preliminary

TITLE
Proposed Masterplan Layout

PROJECT
Great Western Yard

SCALE AT A0	SCALE AT A3	
1:500	N.T.S.	
JOB NO.	DRAWING	REV
19050	03-0-01	–

Appendix B

Vectos
Oxford Place
61 Oxford Street
Manchester
M1 6EQ

[redacted]

vectos.co.uk

Great Western Road Sidings

SA05

20 minutes
40 minutes
60 minutes

20 minutes from Gloucester city centre by public transport during peak periods

5 minutes
10 minutes
15 minutes
20 minutes
25 minutes
30 minutes

5 minutes **5 minutes** to healthcare provision

10 minutes **5 minutes** to a primary school

15 minutes **5 minutes** to Gloucester city centre

5 minutes **5 minutes** to other local centres of employment

10 minutes **5 minutes** to local retail provision

Indicative Site Access

City Plan Allocations

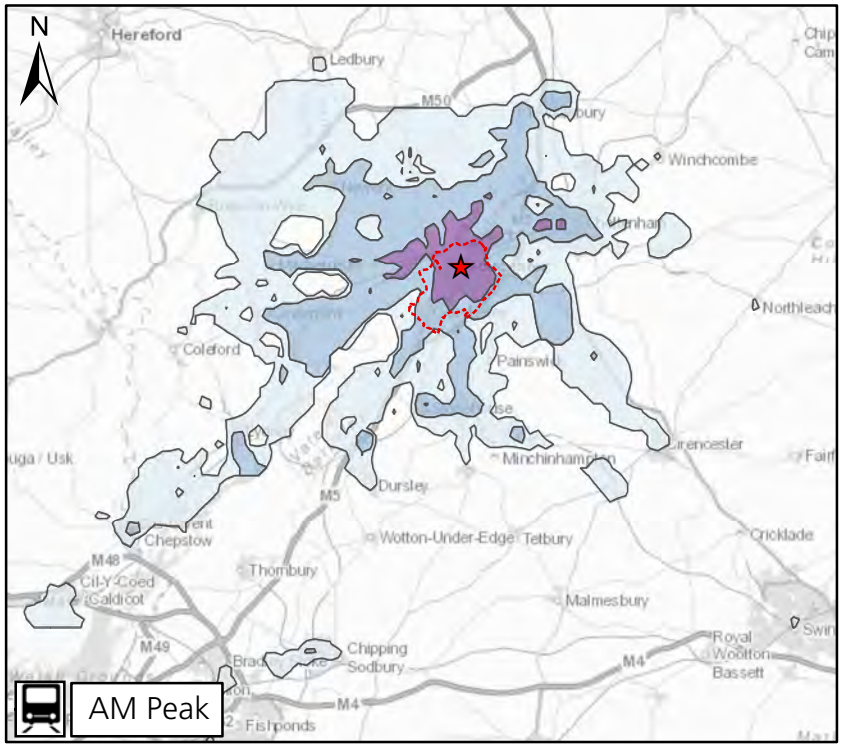
Local retail provision

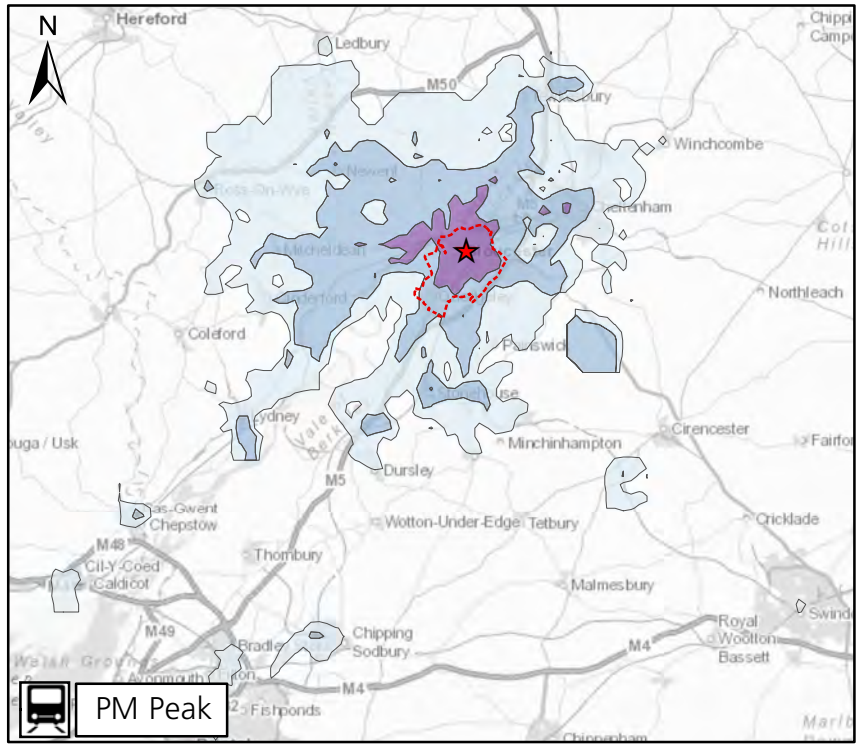
Employment sites

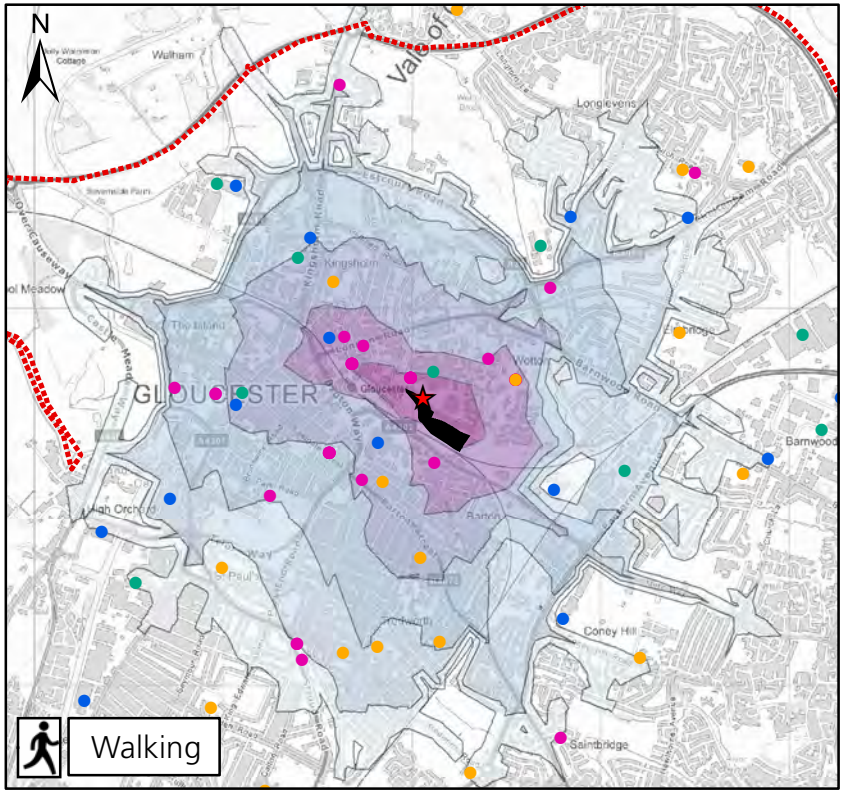
Primary School

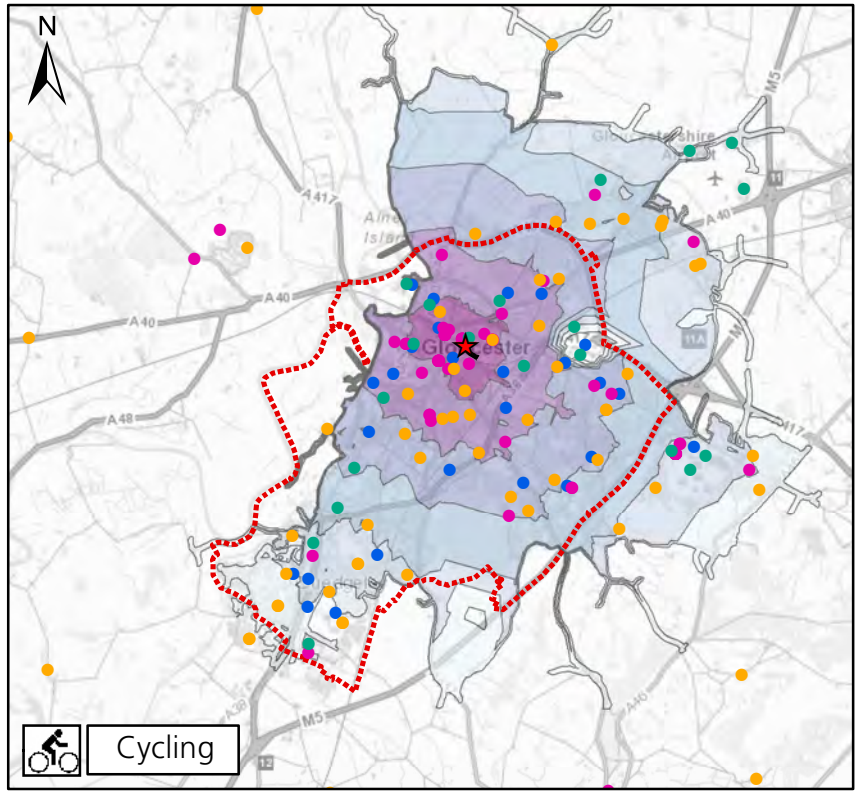
Healthcare provision

Gloucester City Boundary









Tom Reader

From: LOVEDAY, Christian [redacted]
Sent: 11 May 2022 10:22
To: Tom Reader
Cc: Paul Whitaker
Subject: RE: G/2022/050019/PRE GLOSTER FW: Highways Pre-application - Great Western Yard, Gloucester

Hi Tom,

Please see below;

Highways Development Management
Economy Environment and Infrastructure
Shire Hall
Westgate Street
Gloucester
GL1 2TG

Ask for: Christian Loveday

TOWN AND COUNTRY PLANNING ACT 1990
(DEVELOPMENT MANAGEMENT PROCEDURE) (ENGLAND) ORDER 2015
ARTICLE 18 CONSULTATION WITH HIGHWAY AUTHORITY

PROPOSAL: residential development of 330 units comprising of 87 x townhouses and 243 x apartments
LOCATION: Great Western Road/ Horton Road, Gloucester

Description of proposal
Pre app comments for a residential development of 330 units comprising of 87 x townhouses and 243 x apartments

Existing site conditions/site context
At present the site looks to be unused brown field site. Which comprises of part railway sidings, ancillary railway buildings, green space and some small industrial uses.

Pedestrian and cycle movement
No exact internal drawings have been submitted showing carriageway widths or any cycle infrastructure.

Current proposals show a central spine with smaller internal roads coming off the spine.

Carriageway design should be in line with MfS and MfGS, however it is noted that these are internal residential roads (non-spine) and where possible highway widths should inform driver speeds, while still allow for on street parking bays, suitable forward visibility and turning of larger vehicles.

A high quality of pedestrian and cycle infrastructure should be provided within the site. This can take the form of material and design. Permeability through the site looks suitable, the railway to the south provides a barrier for permeability.

A small stretch of access should be provided between the rear of the existing terrace houses and the units fronting the spine road, this is to connect up to the existing paths provided along the rear of the existing terraces.

Cycle infrastructure within the development will also need to be provided in line with LTN 1/20.

Level surfaces are permitted and welcomed, however there should be some form of separation between pedestrian and vehicular areas. This can be achieved via subtle placement of a range of street furniture. The over arching design of the level surface should be to make a drive feel like they are in a pedestrian area to ensure speeds are kept low.

Transport impact of development
No details have been received.

Obviously the developments impact on the surrounding highway network will need to be ascertained.

Trip generation data bases will need to be explored to comparable sites or trip generation information from some of the surrounding sites can be used.

All surrounding committed developments will need to be incorporated into traffic flow information.

Base line flows can be pre pandemic and factored up using tempro growth factors.

Surrounding junctions will need to be tested to ensure that they are able to cope with traffic generated by the development, particular;
the junction of great western and Horton Road.
The junction of Great Western road and London Road.

Access
One point of access is already constructed and operational. The proposed spines access Great Western Road looks to broadly align with this access. The visibility looks suitable, however splays will be needed at full application stage. As will swept paths and detailed access design/cross sections.

An access is proposed from the development on to Horton Road. Visibility to the north looks suitable, however to the south vehicles maybe obscured by the rail bridge, further details will be needed. Along with will swept paths and detailed access design/cross sections.

Speed surveys for Horton road will be required as well to ascertain the level of visibility required.

Both of the proposed accesses should be considered as gateways to the development, the radii's and design of access should be reviewed to ascertain if there are any alterations which can be made to reduce or alter the current arrangements to further inform drivers that they are entering a residential zone.

Obviously swept paths will still need to be taken into account with the worst case scenario vehicle being able to entre and exit the development in a forward gear in both directions with out contact with curbs or body over hang over the footway.

Further detail will also be required in terms of movement along the spine as it could become an attractive rat run for non development based traffic.

Public Realm
The development should look to provide on street facilities to improve pedestrian and cycle permeability. A walking and cycling audit of the surrounding area should be undertaken to highlight any barriers to sustainable travel and provide suitable mitigation for the barriers.

As mentioned above the developments impact on the surrounding highway network should be considered and suitable mitigation proposed.

As the spine connects to two sections of public highway GCC expect that it will be offered for adoption and constructed to an adoptable standard. The surrounding roads are within H CPZ so the spine will either need to be incorporated within the existing CPZ or an ancillary CPZ be created to cover the development.

Cycle parking
Cycle parking will be required to be shown with secure convenient and weather proof cycle parking provided for all types of residential units. Cycle parking should be in line with MfGS standards.

Cycle parking for the apartments will need to be located close to cores and accesses so that parking, retrieving and using cycles is an attractive option.

The development is located 500m from the city centre, it is expected that cycles will be used for local trips. As such the quantum and design of cycle parking within the development should be a very high standard.

Car Parking

Off street car parking should be provided in line with MfGS minimum standards. Visitor parking can be provided in off street locations but should be located as to not obstruct the flow of traffic, cycle infrastructure or the path of larger vehicles.

Disable bays should be provided within immediate proximity to accesses to buildings and on surfaces will minimal gradients.

Electric vehicle charging should be provided in line with the specification made in the 2021 revision of the MfGS.

Given the size of the development and the surrounding area, a number of car club bays and cars should be provided.

Should there be any future deviation from the MfGS minimum car parking provision, a robust justification will be required highlighting a full package of mitigation and methodology behind the proposed off street car parking quantum.

Servicing, deliveries and refuse collection
Swept paths for service vehicles will need to be provided. Its noted that the top of the residential internal roads there dose not look to be much facility for turning larger vehicles, this will need to be addressed and amended at full application stage as the residential roads are long and safety could be compromised by large vehicles reversing these lengths onto the adopted highway.

The Spine should be designed as such that a waiting HGV/Refuse vehicle on street does not block the flow of traffic within the development or back on to the highway. A number of formal or informal service areas should be proposed, particularly where communal bins will be serviced from.

Demolition and construction management.
A construction management plan will need to be provided at full application stage

Summary/recommendation
The principle of the proposed development is supported given the central location and reasonable proposals in terms of access and movement.

As stated above there is a significant amount of work to be done to move this application from pre app to a full application which can be supported.

Should an out line application be submitted an equally high level of detail will be required to comment on the lay out and access arrangement. With out this high level of detail a recommendation for approval can not be supported.

From: Tom Reader [redacted]
Sent: 11 May 2022 09:02
To: LOVEDAY, Christian
Cc: Paul Whitaker
Subject: RE: G/2022/050019/PRE GLOSTER FW: Highways Pre-application - Great Western Yard, Gloucester

vectos.

Appendix B

Proposed Site Layout Plan

Block A

Block B

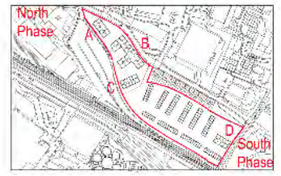
Block C

Block D

Site Area:
31000m2 (7.659 Acres / 3.1ha)

General Notes

Key Plan



Notes

N

Planning Application Boundary

SCALE BAR IN mm

REV	NOTES	DATE	BY	AUTH

DARLING ASSOCIATES ARCHITECTS

[redacted]

DRAWING STATUS
Planning

TITLE
Proposed Site Plan

PROJECT
Great Western Yard

SCALE AT A0	SCALE AT A3
1:500	N.T.S.

JOB NO	DRAWING	REV
19050	03-3-00	P1

Appendix C

Census Car Ownership Data

KS404EW - Car or van availability

population	All households; All cars or vans
units	Households
area type	2011 super output areas - middle layer
area name	E02004637 : Gloucester 002
rural urban	Total

Cars	2011	
All categories: Car or van availa	3,965	
No cars or vans in household	1,200	30%
1 car or van in household	1,753	44%
2 cars or vans in household	785	20%
3 cars or vans in household	171	4%
4 or more cars or vans in house	56	1%

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.

LC4415EW - Accommodation type by car or van availability by number of usual residents aged 17 or over in household

population	All households
units	Persons
date	2011
area type	2011 super output areas - middle layer
area name	E02004637 : Gloucester 002
no of usual residents in house	All categories: Number of usual residents aged 17 or over in household

Cars or Vans	All categories: Accommodation type	Whole house or bungalow	Flat, maisonette, apartment, caravan or other mobile or temporary structure	Whole house or bungalow	Flat, maisonette, apartment, caravan or other mobile or temporary structure
All categories: Car or van avail	3,965	2,353	1,612		
No cars or vans in household	1,200	433	767	18%	48%
1 car or van in household	1,753	1,021	732	43%	45%
2 or more cars or vans in hous	1,012	899	113	38%	7%

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 D

Trip Forecasting Methodology Detail

Total Person Trip Forecasts

	Houses (Privately Owned)			Apartments (Privately Owned)			Total		
	Total Person Trips			Trips			Total Trips		
	Arrivals	Departures	Total	Arrivals	Departures	Totals	Arrivals	Departures	Totals
00:00-01:00	0	0	0	0	0	0	0	0	0
01:00-02:00	0	0	0	0	0	0	0	0	0
02:00-03:00	0	0	0	0	0	0	0	0	0
03:00-04:00	0	0	0	0	0	0	0	0	0
04:00-05:00	0	0	0	0	0	0	0	0	0
05:00-06:00	0	0	0	0	0	0	0	0	0
06:00-07:00	0	0	0	0	0	0	0	0	0
07:00-08:00	10	27	37	28	79	107	38	107	144
08:00-09:00	22	47	69	24	91	115	46	138	184
09:00-10:00	17	16	33	39	37	77	56	54	110
10:00-11:00	18	18	36	32	37	70	50	55	106
11:00-12:00	15	25	41	52	41	93	68	66	134
12:00-13:00	20	24	45	53	65	118	74	89	163
13:00-14:00	21	20	41	47	38	86	68	58	127
14:00-15:00	23	26	49	33	45	78	56	72	128
15:00-16:00	30	17	47	41	26	67	71	43	114
16:00-17:00	33	24	58	66	44	110	99	69	168
17:00-18:00	49	23	72	87	58	145	136	80	217
18:00-19:00	27	21	48	80	48	128	107	69	176
19:00-20:00	0	0	0	0	0	0	0	0	0
20:00-21:00	0	0	0	0	0	0	0	0	0
21:00-22:00	0	0	0	0	0	0	0	0	0
22:00-23:00	0	0	0	0	0	0	0	0	0
23:00-24:00	0	0	0	0	0	0	0	0	0
Daily Trip Rates:	285	290	575	583	611	1194	869	901	1770

NTS Journey Purpose

	Percentage		
	Commuting	Education	Recreation / Leisure
00:00-01:00	63%	1%	36%
01:00-02:00	63%	1%	37%
02:00-03:00	74%	0%	26%
03:00-04:00	78%	2%	19%
04:00-05:00	87%	0%	13%
05:00-06:00	88%	1%	12%
06:00-07:00	81%	2%	17%
07:00-08:00	67%	20%	13%
08:00-09:00	37%	51%	12%
09:00-10:00	42%	10%	48%
10:00-11:00	34%	2%	64%
11:00-12:00	32%	3%	64%
12:00-13:00	36%	4%	60%
13:00-14:00	39%	3%	58%
14:00-15:00	33%	15%	52%
15:00-16:00	23%	47%	30%
16:00-17:00	46%	11%	42%
17:00-18:00	56%	5%	39%
18:00-19:00	42%	2%	56%
19:00-20:00	31%	1%	68%
20:00-21:00	31%	1%	68%
21:00-22:00	32%	1%	67%
22:00-23:00	36%	1%	63%
23:00-24:00	38%	1%	61%
Daily	40%	17%	43%

Forecast Person Trips by Purpose - Houses

	Houses					
	Commuting		Education		Recreation / Leisure	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
00:00-01:00	0	0	0	0	0	0
01:00-02:00	0	0	0	0	0	0
02:00-03:00	0	0	0	0	0	0
03:00-04:00	0	0	0	0	0	0
04:00-05:00	0	0	0	0	0	0
05:00-06:00	0	0	0	0	0	0
06:00-07:00	0	0	0	0	0	0
07:00-08:00	7	18	2	5	1	4
08:00-09:00	8	18	11	24	3	6
09:00-10:00	7	7	2	2	8	8
10:00-11:00	6	6	0	0	12	12
11:00-12:00	5	8	0	1	10	16
12:00-13:00	7	9	1	1	12	15
13:00-14:00	8	8	1	1	12	12
14:00-15:00	8	9	3	4	12	14
15:00-16:00	7	4	14	8	9	5
16:00-17:00	15	11	4	3	14	10
17:00-18:00	28	13	2	1	19	9
18:00-19:00	11	9	1	0	15	12
19:00-20:00	0	0	0	0	0	0
20:00-21:00	0	0	0	0	0	0
21:00-22:00	0	0	0	0	0	0
22:00-23:00	0	0	0	0	0	0
23:00-24:00	0	0	0	0	0	0
Daily	114	116	49	49	123	125

Forecast Person Trips by Purpose - Apartments

	Apartments					
	Commuting		Education		Recreation / Leisure	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
00:00-01:00	0	0	0	0	0	0
01:00-02:00	0	0	0	0	0	0
02:00-03:00	0	0	0	0	0	0
03:00-04:00	0	0	0	0	0	0
04:00-05:00	0	0	0	0	0	0
05:00-06:00	0	0	0	0	0	0
06:00-07:00	0	0	0	0	0	0
07:00-08:00	18	53	6	16	4	10
08:00-09:00	9	34	12	46	3	11
09:00-10:00	16	16	4	4	19	18
10:00-11:00	11	13	1	1	21	24
11:00-12:00	17	13	2	1	34	26
12:00-13:00	19	23	2	3	32	39
13:00-14:00	18	15	1	1	27	22
14:00-15:00	11	15	5	7	17	24
15:00-16:00	9	6	19	12	12	8
16:00-17:00	30	20	7	5	28	19
17:00-18:00	49	32	4	3	34	23
18:00-19:00	34	20	2	1	45	27
19:00-20:00	0	0	0	0	0	0
20:00-21:00	0	0	0	0	0	0
21:00-22:00	0	0	0	0	0	0
22:00-23:00	0	0	0	0	0	0
23:00-24:00	0	0	0	0	0	0
Daily	233	244	99	104	251	263

Forecast Person Trips by Purpose - Total

	Total					
	Commuting		Education		Recreation / Leisure	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
00:00-01:00	0	0	0	0	0	0
01:00-02:00	0	0	0	0	0	0
02:00-03:00	0	0	0	0	0	0
03:00-04:00	0	0	0	0	0	0
04:00-05:00	0	0	0	0	0	0
05:00-06:00	0	0	0	0	0	0
06:00-07:00	0	0	0	0	0	0
07:00-08:00	25	72	8	21	5	14
08:00-09:00	17	51	23	70	5	17
09:00-10:00	23	23	6	5	27	26
10:00-11:00	17	19	1	1	32	35
11:00-12:00	22	21	2	2	43	42
12:00-13:00	27	32	3	4	44	54
13:00-14:00	27	23	2	2	40	34
14:00-15:00	18	24	8	11	29	37
15:00-16:00	16	10	33	20	21	13
16:00-17:00	46	32	11	8	42	29
17:00-18:00	76	45	7	4	53	31
18:00-19:00	45	29	2	1	60	39
19:00-20:00	0	0	0	0	0	0
20:00-21:00	0	0	0	0	0	0
21:00-22:00	0	0	0	0	0	0
22:00-23:00	0	0	0	0	0	0
23:00-24:00	0	0	0	0	0	0
Daily	348	360	148	153	374	387

Mode Share Data

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
usual residence	E02004637 : Gloucester 002 (2011 super output area - middle layer)

place of work : 2011 census merged local authority district	All categories: Method of travel to work (2001 specification)	Work mainly at or from home	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Taxi	Motorcycle, scooter or moped	Driving a car or van	Passenger in a car or van	Bicycle	On foot	Other method of travel to work
Gloucester SMOAs												
E02004636 : Gloucester 001	53	0	0	0	2	0	0	25	1	5	19	1
E02004637 : Gloucester 002	545	0	0	0	13	1	0	121	13	26	371	0
E02004638 : Gloucester 003	53	0	0	0	5	0	0	24	0	10	14	0
E02004639 : Gloucester 004	655	0	0	1	21	0	3	225	29	59	316	1
E02004640 : Gloucester 005	106	0	0	0	3	0	2	29	9	15	48	0
E02004641 : Gloucester 006	27	0	0	0	2	0	0	21	1	2	1	0
E02004642 : Gloucester 007	313	0	0	1	42	0	1	177	9	48	34	1
E02004643 : Gloucester 008	14	0	0	0	1	0	0	7	0	2	4	0
E02004644 : Gloucester 009	112	0	0	0	13	0	2	71	7	11	8	0
E02004645 : Gloucester 010	13	0	0	0	3	0	0	8	0	2	0	0
E02004646 : Gloucester 011	14	0	0	0	2	0	0	9	0	1	2	0
E02004647 : Gloucester 012	30	0	0	0	8	0	0	12	0	1	9	0
E02004648 : Gloucester 013	29	0	0	0	0	0	1	22	0	1	5	0
E02004649 : Gloucester 014	37	0	0	1	5	0	0	23	3	1	3	1
E02004650 : Gloucester 015	92	0	0	0	12	0	1	68	4	3	4	0
Total	**2,093**	**0**	**0**	**3**	**132**	**1**	**10**	**842**	**76**	**187**	**838**	**4**
Percentage	**100%**	**0%**	**0%**	**0%**	**6%**	**0%**	**0%**	**40%**	**4%**	**9%**	**40%**	**0%**
Outside Gloucester 001 - 015 (Within Approx. 90 Min Drive Time)												
Herefordshire, County of	17	0	0	0	2	0	0	12	2	1	0	0
North Warwickshire	0	0	0	0	0	0	0	0	0	0	0	0
Stratford-on-Avon	1	0	0	0	0	0	0	1	0	0	0	0
Warwick	4	0	0	0	0	0	0	4	0	0	0	0
Worcester	9	0	0	0	0	0	0	8	0	0	1	0
Oxford	3	0	0	0	0	0	0	3	0	0	0	0
Bath and North East Somerset	9	0	0	3	0	0	0	3	2	1	0	0
Bristol, City of	28	0	0	8	0	0	0	18	1	1	0	0
Swindon	17	0	0	3	0	0	0	11	2	0	1	0
Cheltenham	391	0	0	1	81	2	2	263	19	6	17	0
Stroud	228	0	1	13	12	0	2	158	24	5	13	0
Cardiff	7	0	0	5	1	0	0	1	0	0	0	0
Newport	4	0	0	2	0	0	0	2	0	0	0	0
Total	**718**	**0**	**1**	**35**	**96**	**2**	**4**	**484**	**50**	**14**	**32**	**0**
Percentage	**100%**	**0%**	**0%**	**5%**	**13%**	**0%**	**1%**	**67%**	**7%**	**2%**	**4%**	**0%**
Average Mode Share (All Locations Expected to Accommodate Trips)												
Total	**2,811**	**0**	**1**	**38**	**228**	**3**	**14**	**1,326**	**126**	**201**	**870**	**4**
Percentage	**100%**	**0%**	**0%**	**1%**	**8%**	**0%**	**0%**	**47%**	**4%**	**7%**	**31%**	**0%**

Commuting Vehicle Trips (1)

	Houses	
	Commuting	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	3	9
08:00-09:00	4	8
09:00-10:00	3	3
10:00-11:00	3	3
11:00-12:00	2	4
12:00-13:00	3	4
13:00-14:00	4	4
14:00-15:00	4	4
15:00-16:00	3	2
16:00-17:00	7	5
17:00-18:00	13	6
18:00-19:00	5	4
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	54	55

	Apartments	
	Commuting	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	9	25
08:00-09:00	4	16
09:00-10:00	8	7
10:00-11:00	5	6
11:00-12:00	8	6
12:00-13:00	9	11
13:00-14:00	9	7
14:00-15:00	5	7
15:00-16:00	4	3
16:00-17:00	14	10
17:00-18:00	23	15
18:00-19:00	16	10
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	110	115

Commuting Vehicle Trips (2)

	Apartments (inc parking ratio factor)	
	Commuting	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	2	5
08:00-09:00	1	3
09:00-10:00	2	2
10:00-11:00	1	1
11:00-12:00	2	1
12:00-13:00	2	2
13:00-14:00	2	1
14:00-15:00	1	1
15:00-16:00	1	1
16:00-17:00	3	2
17:00-18:00	5	3
18:00-19:00	3	2
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	23	24

	Total	
	Commuting	
	Arrivals	Departures
00:00-01:0	0	0
01:00-02:0	0	0
02:00-03:0	0	0
03:00-04:0	0	0
04:00-05:0	0	0
05:00-06:0	0	0
06:00-07:0	0	0
07:00-08:0	5	14
08:00-09:0	5	12
09:00-10:0	5	5
10:00-11:0	4	4
11:00-12:0	4	5
12:00-13:0	5	6
13:00-14:0	6	5
14:00-15:0	5	6
15:00-16:0	4	2
16:00-17:0	10	7
17:00-18:0	18	9
18:00-19:0	9	6
19:00-20:0	0	0
20:00-21:0	0	0
21:00-22:0	0	0
22:00-23:0	0	0
23:00-24:0	0	0
Daily	77	79

21% Apartment parking ratio

School Distance Assessment

All Schools Within 1 Mile	Distance (miles)	Count	% Weight	% Collective Weight
Primary				
St Peters Catholic School	0.4	1	4%	
Widden Primary School	0.7	1	4%	
Kingsholme C of E	0.8	1	4%	
Al Ashraf Primary School	0.8	1	4%	
St James C of E	0.8	1	4%	
Hatherley Infant School	1.0	1	4%	
Secondary				
None	-	-	-	
All				
				21%

All Schools Outside 1 Mile	Distance (miles)	Count	% Weight	% Collective Weight
Primary				
Tedworth Junior	1.1	1	4%	
Elmbridge Primary	1.2	1	4%	
St Pauls Primary	1.5	1	4%	
Longleaves Junior	1.7	1	4%	
Coney Hill Community	1.9	1	4%	
Lindon Primary	1.9	1	4%	
Moat Primary	2.1	1	4%	
Carlton Primary	2.1	1	4%	
Abbeymead Primary	2.3	1	4%	
Heron Primary	2.3	1	4%	
Hil Vview Primary	2.5	1	4%	
Secondary				
Denmark Road High School	1.1	1	4%	
Gloucester Academy	1.7	1	4%	
Sir Thomas Rich's School	1.8	1	4%	
Barnswood Park School	2.0	1	4%	
Ribston Hall High School	2.0	1	4%	
The Crypt School	3.0	1	4%	
St Peters High School	3.2	1	4%	
Churchdown School Academy	3.4	1	4%	
Beaufort Cooperative Academy	4.1	1	4%	
Chosen Hill School	4.5	1	4%	
Homleigh Park High School	4.5	1	4%	**79%**

Total	-	28	100%	**100%**

National Travel Survey

Table NTS0614

Trips to school[1] by main mode, trip length and age: England, 2002 onwards

Select year:	2019

Percentage

Main mode	Aged 5-10 years: Under 1 mile	1 to under 2 miles	2 to under 5 miles	5 miles and over	All lengths	Aged 11-16 years: Under 1 mile	1 to under 2 miles	2 to under 5 miles	5 miles and over	All lengths
Walk	*80*	*19*	*1*	*0*	*46*	*95*	*53*	*6*	*0*	*39*
Bicycle	*1*	*4*	*1*	*0*	*1*	*2*	*6*	*3*	*0*	*3*
Car / van	*18*	*71*	*87*	*73*	*47*	*3*	*28*	*37*	*36*	*26*
Bus[2]	*1*	*5*	*9*	*18*	*5*	*1*	*11*	*50*	*54*	*29*
Other transport[3]	*-*	*1*	*1*	*9*	*1*	*0*	*1*	*5*	*11*	*4*
All modes	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
Unweighted sample size: trips	3,801	1,770	1,237	582	7,390	1,649	1,455	1,809	1,409	6,322

5-10 Years Old		
Mode	Number	%
Walk	80	80%
Bicycle	1	1%
Car / van	18	18%
Bus[2]	1	1%
Other transport[3]	-	0%
All modes	100	100%

11-16 Years Old		
Mode	Number	%
Walk	79	20%
Bicycle	14	4%
Car / van	223	56%
Bus[2]	76	19%
Other transport[3]	8	2%
All modes	400	100%

Education Vehicle Trips (1)

Within 1 Mile

	Houses	
	Education	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	0	0
08:00-09:00	0	1
09:00-10:00	0	0
10:00-11:00	0	0
11:00-12:00	0	0
12:00-13:00	0	0
13:00-14:00	0	0
14:00-15:00	0	0
15:00-16:00	1	0
16:00-17:00	0	0
17:00-18:00	0	0
18:00-19:00	0	0
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	2	2

	Apartments	
	Education	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	0	1
08:00-09:00	0	2
09:00-10:00	0	0
10:00-11:00	0	0
11:00-12:00	0	0
12:00-13:00	0	0
13:00-14:00	0	0
14:00-15:00	0	0
15:00-16:00	1	0
16:00-17:00	0	0
17:00-18:00	0	0
18:00-19:00	0	0
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	4	4

	Apartments (inc parking ratio factor)	
	Education	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	0	0
08:00-09:00	0	0
09:00-10:00	0	0
10:00-11:00	0	0
11:00-12:00	0	0
12:00-13:00	0	0
13:00-14:00	0	0
14:00-15:00	0	0
15:00-16:00	0	0
16:00-17:00	0	0
17:00-18:00	0	0
18:00-19:00	0	0
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	1	1

	Total	
	Education	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	0	0
08:00-09:00	1	1
09:00-10:00	0	0
10:00-11:00	0	0
11:00-12:00	0	0
12:00-13:00	0	0
13:00-14:00	0	0
14:00-15:00	0	0
15:00-16:00	1	0
16:00-17:00	0	0
17:00-18:00	0	0
18:00-19:00	0	0
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	3	3

21% Apartment parking ratio

Education Vehicle Trips (2)

Outside 1 Mile

	Houses	
	Education	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	1	2
08:00-09:00	5	11
09:00-10:00	1	1
10:00-11:00	0	0
11:00-12:00	0	0
12:00-13:00	0	0
13:00-14:00	0	0
14:00-15:00	2	2
15:00-16:00	6	4
16:00-17:00	2	1
17:00-18:00	1	0
18:00-19:00	0	0
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	21	22

	Apartments	
	Education	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	2	7
08:00-09:00	5	20
09:00-10:00	2	2
10:00-11:00	0	0
11:00-12:00	1	1
12:00-13:00	1	1
13:00-14:00	1	1
14:00-15:00	2	3
15:00-16:00	8	5
16:00-17:00	3	2
17:00-18:00	2	1
18:00-19:00	1	0
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	43	45

	Apartments (inc parking ratio factor)	
	Education	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	1	1
08:00-09:00	1	4
09:00-10:00	0	0
10:00-11:00	0	0
11:00-12:00	0	0
12:00-13:00	0	0
13:00-14:00	0	0
14:00-15:00	0	1
15:00-16:00	2	1
16:00-17:00	1	0
17:00-18:00	0	0
18:00-19:00	0	0
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	9	10

	Total	
	Education	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	1	4
08:00-09:00	6	15
09:00-10:00	1	1
10:00-11:00	0	0
11:00-12:00	0	0
12:00-13:00	1	1
13:00-14:00	0	0
14:00-15:00	2	2
15:00-16:00	8	5
16:00-17:00	2	2
17:00-18:00	1	1
18:00-19:00	0	0
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	30	31

Total

	Total	
	Education	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	1	4
08:00-09:00	6	16
09:00-10:00	1	1
10:00-11:00	0	0
11:00-12:00	0	0
12:00-13:00	1	1
13:00-14:00	0	0
14:00-15:00	2	3
15:00-16:00	9	5
16:00-17:00	2	2
17:00-18:00	2	1
18:00-19:00	0	0
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	33	34

Leisure Vehicle Trips

	Houses	
	Leisure / Recreation	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	1	2
08:00-09:00	1	3
09:00-10:00	4	4
10:00-11:00	5	5
11:00-12:00	5	8
12:00-13:00	6	7
13:00-14:00	6	5
14:00-15:00	6	6
15:00-16:00	4	2
16:00-17:00	7	5
17:00-18:00	9	4
18:00-19:00	7	6
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	58	59

	Apartments	
	Leisure / Recreation	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	2	5
08:00-09:00	1	5
09:00-10:00	9	8
10:00-11:00	10	11
11:00-12:00	16	12
12:00-13:00	15	18
13:00-14:00	13	10
14:00-15:00	8	11
15:00-16:00	6	4
16:00-17:00	13	9
17:00-18:00	16	11
18:00-19:00	21	13
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	118	124

	Apartments (inc parking ratio factor)	
	Leisure / Recreation	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	0	1
08:00-09:00	0	1
09:00-10:00	2	2
10:00-11:00	2	2
11:00-12:00	3	3
12:00-13:00	3	4
13:00-14:00	3	2
14:00-15:00	2	2
15:00-16:00	1	1
16:00-17:00	3	2
17:00-18:00	3	2
18:00-19:00	4	3
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	25	26

	Total	
	Leisure / Recreation	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	1	3
08:00-09:00	2	4
09:00-10:00	6	5
10:00-11:00	7	8
11:00-12:00	8	10
12:00-13:00	9	11
13:00-14:00	9	8
14:00-15:00	7	9
15:00-16:00	5	3
16:00-17:00	9	7
17:00-18:00	12	6
18:00-19:00	11	8
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	83	85

Assuming 30% are non-local trips

	Houses	
	Total	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	0	1
08:00-09:00	0	1
09:00-10:00	1	1
10:00-11:00	2	2
11:00-12:00	1	2
12:00-13:00	2	2
13:00-14:00	2	2
14:00-15:00	2	2
15:00-16:00	1	1
16:00-17:00	2	1
17:00-18:00	3	1
18:00-19:00	2	2
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	17	18

	Apartments	
	Total	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	1	1
08:00-09:00	0	2
09:00-10:00	3	3
10:00-11:00	3	3
11:00-12:00	5	4
12:00-13:00	5	6
13:00-14:00	4	3
14:00-15:00	2	3
15:00-16:00	2	1
16:00-17:00	4	3
17:00-18:00	5	3
18:00-19:00	6	4
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	36	37

	Apartments (inc parking ratio factor)	
	Leisure / Recreation	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	0	0
08:00-09:00	0	0
09:00-10:00	1	1
10:00-11:00	1	1
11:00-12:00	1	1
12:00-13:00	1	1
13:00-14:00	1	1
14:00-15:00	1	1
15:00-16:00	0	0
16:00-17:00	1	1
17:00-18:00	1	1
18:00-19:00	1	1
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	7	8

	Total	
	Total	
	Arrivals	**Departures**
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	0	1
08:00-09:00	0	1
09:00-10:00	2	2
10:00-11:00	2	2
11:00-12:00	2	3
12:00-13:00	3	3
13:00-14:00	3	2
14:00-15:00	2	3
15:00-16:00	2	1
16:00-17:00	3	2
17:00-18:00	4	2
18:00-19:00	3	2
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	25	25

Total Vehicle Trips

	Houses	
	Total	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	4	12
08:00-09:00	9	21
09:00-10:00	5	5
10:00-11:00	5	5
11:00-12:00	4	6
12:00-13:00	6	7
13:00-14:00	6	6
14:00-15:00	7	8
15:00-16:00	11	6
16:00-17:00	11	8
17:00-18:00	17	8
18:00-19:00	8	6
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	94	96

	Apartments	
	Total	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	12	34
08:00-09:00	10	39
09:00-10:00	12	12
10:00-11:00	8	10
11:00-12:00	13	10
12:00-13:00	15	18
13:00-14:00	13	11
14:00-15:00	10	14
15:00-16:00	15	10
16:00-17:00	22	15
17:00-18:00	30	20
18:00-19:00	23	14
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	193	202

	Apartments (inc parking ratio factor)	
	Total	
	Arrivals	Departures
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	2	7
08:00-09:00	2	8
09:00-10:00	3	2
10:00-11:00	2	2
11:00-12:00	3	2
12:00-13:00	3	4
13:00-14:00	3	2
14:00-15:00	2	3
15:00-16:00	3	2
16:00-17:00	5	3
17:00-18:00	6	4
18:00-19:00	5	3
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	40	42

	Total	
	Total	
	Arrivals	**Departures**
00:00-01:00	0	0
01:00-02:00	0	0
02:00-03:00	0	0
03:00-04:00	0	0
04:00-05:00	0	0
05:00-06:00	0	0
06:00-07:00	0	0
07:00-08:00	7	19
08:00-09:00	12	29
09:00-10:00	8	8
10:00-11:00	6	7
11:00-12:00	7	9
12:00-13:00	9	10
13:00-14:00	9	8
14:00-15:00	9	11
15:00-16:00	15	8
16:00-17:00	16	11
17:00-18:00	23	12
18:00-19:00	12	9
19:00-20:00	0	0
20:00-21:00	0	0
21:00-22:00	0	0
22:00-23:00	0	0
23:00-24:00	0	0
Daily	135	138

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
usual residence	E02004637 : Gloucester 002 (2011 super output area - middle layer)

place of work : 2011 census merged local authority district	Distribution Percentage				All categories: Method of travel to work (2001 specification)	Work mainly at or from home	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Taxi	Motorcycle, scooter or moped	Driving a car or van	Passenger in a car or van	Bicycle	On foot	Other method of travel to work
Gloucester SMOAs																
E02004636 : Gloucester 001	2%	Longlevens	East	Great Western Rd / Horton Rd	53	0	0	0	2	0	0	25	1	5	19	1
E02004637 : Gloucester 002	9%	Kingsholme	West	Great Western Rd / B4063 London Rd	545	0	0	0	13	1	0	121	13	26	371	0
E02004638 : Gloucester 003	2%	Elmbridge	East	Great Western Rd / Horton Rd	53	0	0	0	5	0	0	24	0	10	14	0
E02004639 : Gloucester 004	17%	Gloucester	West	Great Western Rd / B4063 London Rd	655	0	0	1	21	0	3	225	29	59	316	1
E02004640 : Gloucester 005	2%	Barton	East	Great Western Rd / Horton Rd	106	0	0	0	3	0	2	29	9	15	48	0
E02004641 : Gloucester 006	2%	Hucclecote	East	Great Western Rd / Horton Rd	27	0	0	0	2	0	0	21	1	2	1	0
E02004642 : Gloucester 007	13%	Coney Hill	East	Great Western Rd / Horton Rd	313	0	0	1	42	0	1	177	9	48	34	1
E02004643 : Gloucester 008	1%	Tredworth	East	Great Western Rd / Horton Rd	14	0	0	0	1	0	0	7	0	2	4	0
E02004644 : Gloucester 009	5%	Tuffley	East	Great Western Rd / Horton Rd	112	0	0	0	13	0	2	71	7	11	8	0
E02004645 : Gloucester 010	1%	Abbeydale	West	Great Western Rd / B4063 London Rd	13	0	0	0	3	0	0	8	0	2	0	0
E02004646 : Gloucester 011	1%	Maston	East	Great Western Rd / Horton Rd	14	0	0	0	2	0	0	9	0	1	2	0
E02004647 : Gloucester 012	1%	Grange	East	Great Western Rd / Horton Rd	30	0	0	0	8	0	0	12	0	1	9	0
E02004648 : Gloucester 013	2%	Grange	East	Great Western Rd / Horton Rd	29	0	0	0	0	0	1	22	0	1	5	0
E02004649 : Gloucester 014	2%	Quedgeley	East	Great Western Rd / Horton Rd	37	0	0	1	5	0	0	23	3	1	3	1
E02004650 : Gloucester 015	5%	Kingsway	East	Great Western Rd / Horton Rd	92	0	0	0	12	0	1	68	4	3	4	0
Total	63%				2,093	0	0	3	132	1	10	842	76	187	838	4
Percentage					100%	0%	0%	0%	6%	0%	0%	40%	4%	9%	40%	0%
Outside Gloucester 001 - 015 (Within Approx. 90 Min Drive Time)																
Herefordshire, County of	1%		West	Great Western Rd / B4063 London Rd	17	0	0	0	2	0	0	12	2	1	0	0
North Warwickshire	0%		East	Great Western Rd / Horton Rd	0	0	0	0	0	0	0	0	0	0	0	0
Stratford-on-Avon	0%		East	Great Western Rd / Horton Rd	1	0	0	0	0	0	0	1	0	0	0	0
Warwick	0%		East	Great Western Rd / Horton Rd	4	0	0	0	0	0	0	4	0	0	0	0
Worcester	1%		East	Great Western Rd / Horton Rd	9	0	0	0	0	0	0	8	0	0	1	0
Oxford	0%		East	Great Western Rd / Horton Rd	3	0	0	0	0	0	0	3	0	0	0	0
Bath and North East Somerset	0%		East	Great Western Rd / Horton Rd	9	0	0	3	0	0	0	3	2	1	0	0
Bristol, City of	1%		East	Great Western Rd / Horton Rd	28	0	0	8	0	0	0	18	1	1	0	0
Swindon	1%		East	Great Western Rd / Horton Rd	17	0	0	3	0	0	0	11	2	0	1	0
Cheltenham	20%		West	Great Western Rd / B4063 London Rd	391	0	0	1	81	2	2	263	19	6	17	0
Stroud	12%		East	Great Western Rd / Horton Rd	228	0	1	13	12	0	2	158	24	5	13	0
Cardiff	0%		East	Great Western Rd / Horton Rd	7	0	0	5	1	0	0	1	0	0	0	0
Newport	0%		East	Great Western Rd / Horton Rd	4	0	0	2	0	0	0	2	0	0	0	0
Total	37%				**718**	**0**	**1**	**35**	**96**	**2**	**4**	**484**	**50**	**14**	**32**	**0**
Percentage					**100%**	**0%**	**0%**	**5%**	**13%**	**0%**	**1%**	**67%**	**7%**	**2%**	**4%**	**0%**
Average Mode Share (All Locations Expected to Accommodate Trips)																
Total	**100%**				**2,811**	**0**	**1**	**38**	**228**	**3**	**14**	**1,326**	**126**	**201**	**870**	**4**
Percentage					**100%**	**0%**	**0%**	**1%**	**8%**	**0%**	**0%**	**47%**	**4%**	**7%**	**31%**	**0%**

East	
Great Western Rd / Horton Rd	53%
B4063 London Rd / Horton Rd (Sig)	22%
B4073 Barton St / Derby Rd / Hopewell St	31%
A38 Estcourt Rd / B4063 London Rd	9%
A38 Eastern Ave / B4073 Painswick Rd	28%
A38 Estcourt Rd / Cheltenham Rd	3%
Wall's Roundabout (A38)	2%
A417 Zoons Court Roundabout	2%

West	
Great Western Rd / B4063 London Rd	47%
B4063 / Alvin St (Sig)	9%
A430 Black Dog Way / B4063 London Rd / Northgate St (Sig)	18%
A430 Kingsholm Rd / Alvin St	9%
A430 Burtton Way / A4302 Metz Way	1%
A38 Eastern Ave / A4302 Metz Way (Sig)	1%
A417 St Oswalds Rd / A430 Priory Rd (Sig)	1%
A417 / A430	1%
London Rd / Cheltenahm Rd	20%
A38 Escourt Road / B4063 Cheltenham Rd	20%
B4063 Cheltenham Rd / A40	20%

Appendix E

TRICS Report

Calculation Reference: AUDIT-715001-220317-0309

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	HC	HAMPSHIRE	1 days
	HF	HERTFORDSHIRE	1 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
08	NORTH WEST		
	MS	MERSEYSIDE	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: 6 to 175 (units:)
Range Selected by User: 6 to 184 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 23/06/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	1 days
Thursday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	4 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 undertaking using machines.

Selected Locations:

Edge of Town Centre	4

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	1
Built-Up Zone	3

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	4 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

Population within 1 mile:

10,001 to 15,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

50,001 to 75,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	2 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	3 days
1.1 to 1.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	2 days
No	2 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	4 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 HC-03-C-01 BLOCKS OF FLATS HAMPSHIRE
CROSS STREET
PORTSMOUTH

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 90
Survey date: TUESDAY *05/06/18* *Survey Type: MANUAL*

2 HF-03-C-03 BLOCK OF FLATS HERTFORDSHIRE
SHENLEY ROAD
BOREHAMWOOD

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 91
Survey date: THURSDAY *14/11/19* *Survey Type: MANUAL*

3 MS-03-C-04 BLOCK OF FLATS MERSEYSIDE
HOY DRIVE
NEWTON-LE-WILLOWS
EARLESTOWN
Edge of Town Centre
Residential Zone
Total No of Dwellings: 24
Survey date: MONDAY *12/04/21* *Survey Type: MANUAL*

4 NF-03-C-01 BLOCKS OF FLATS NORFOLK
PAGE STAIR LANE
KING'S LYNN

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 51
Survey date: THURSDAY *11/12/14* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
BD-03-C-01	15/05/18	Ratio of parking per apartment not representative.
BD-03-C-02	15/05/18	Ratio of parking per apartment not representative.
BD-03-C-03	15/05/18	Ratio of parking per apartment not representative.
CB-03-C-01	12/06/14	Ratio of parking per apartment not representative.
CO-03-C-01	26/03/18	Ratio of parking per apartment not representative.
EX-03-C-01	22/10/13	Ratio of parking per apartment not representative.
EX-03-C-02	22/10/13	Ratio of parking per apartment not representative.
SA-03-C-01	16/09/14	Ratio of parking per apartment not representative.
SF-03-C-01	18/12/14	Ratio of parking per apartment not representative.
SF-03-C-05	23/06/21	Ratio of parking per apartment not representative.
SR-03-C-01	18/06/14	Ratio of parking per apartment not representative.
SR-03-C-02	18/06/14	Ratio of parking per apartment not representative.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.15

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.059	4	64	0.141	4	64	0.200
08:00 - 09:00	4	64	0.051	4	64	0.184	4	64	0.235
09:00 - 10:00	4	64	0.094	4	64	0.086	4	64	0.180
10:00 - 11:00	4	64	0.074	4	64	0.094	4	64	0.168
11:00 - 12:00	4	64	0.121	4	64	0.109	4	64	0.230
12:00 - 13:00	4	64	0.109	4	64	0.133	4	64	0.242
13:00 - 14:00	4	64	0.082	4	64	0.086	4	64	0.168
14:00 - 15:00	4	64	0.078	4	64	0.082	4	64	0.160
15:00 - 16:00	4	64	0.078	4	64	0.055	4	64	0.133
16:00 - 17:00	4	64	0.117	4	64	0.074	4	64	0.191
17:00 - 18:00	4	64	0.164	4	64	0.102	4	64	0.266
18:00 - 19:00	4	64	0.160	4	64	0.109	4	64	0.269
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.187			1.255			2.442

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	6 - 175 (units:)
Survey date date range:	01/01/13 - 23/06/21
Number of weekdays (Monday-Friday):	16
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.000	4	64	0.000	4	64	0.000
08:00 - 09:00	4	64	0.000	4	64	0.000	4	64	0.000
09:00 - 10:00	4	64	0.004	4	64	0.004	4	64	0.008
10:00 - 11:00	4	64	0.000	4	64	0.000	4	64	0.000
11:00 - 12:00	4	64	0.004	4	64	0.004	4	64	0.008
12:00 - 13:00	4	64	0.016	4	64	0.016	4	64	0.032
13:00 - 14:00	4	64	0.000	4	64	0.000	4	64	0.000
14:00 - 15:00	4	64	0.000	4	64	0.000	4	64	0.000
15:00 - 16:00	4	64	0.000	4	64	0.000	4	64	0.000
16:00 - 17:00	4	64	0.008	4	64	0.008	4	64	0.016
17:00 - 18:00	4	64	0.000	4	64	0.000	4	64	0.000
18:00 - 19:00	4	64	0.004	4	64	0.004	4	64	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.036			0.036			0.072

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.012	4	64	0.012	4	64	0.024
08:00 - 09:00	4	64	0.000	4	64	0.000	4	64	0.000
09:00 - 10:00	4	64	0.004	4	64	0.004	4	64	0.008
10:00 - 11:00	4	64	0.000	4	64	0.000	4	64	0.000
11:00 - 12:00	4	64	0.004	4	64	0.004	4	64	0.008
12:00 - 13:00	4	64	0.004	4	64	0.004	4	64	0.008
13:00 - 14:00	4	64	0.004	4	64	0.004	4	64	0.008
14:00 - 15:00	4	64	0.004	4	64	0.004	4	64	0.008
15:00 - 16:00	4	64	0.000	4	64	0.000	4	64	0.000
16:00 - 17:00	4	64	0.000	4	64	0.000	4	64	0.000
17:00 - 18:00	4	64	0.000	4	64	0.000	4	64	0.000
18:00 - 19:00	4	64	0.000	4	64	0.000	4	64	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.032			0.032			0.064

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.004	4	64	0.008	4	64	0.012
08:00 - 09:00	4	64	0.000	4	64	0.004	4	64	0.004
09:00 - 10:00	4	64	0.004	4	64	0.000	4	64	0.004
10:00 - 11:00	4	64	0.000	4	64	0.004	4	64	0.004
11:00 - 12:00	4	64	0.008	4	64	0.000	4	64	0.008
12:00 - 13:00	4	64	0.000	4	64	0.004	4	64	0.004
13:00 - 14:00	4	64	0.004	4	64	0.000	4	64	0.004
14:00 - 15:00	4	64	0.004	4	64	0.004	4	64	0.008
15:00 - 16:00	4	64	0.008	4	64	0.004	4	64	0.012
16:00 - 17:00	4	64	0.000	4	64	0.004	4	64	0.004
17:00 - 18:00	4	64	0.008	4	64	0.004	4	64	0.012
18:00 - 19:00	4	64	0.004	4	64	0.000	4	64	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.044			0.036			0.080

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.023	4	64	0.082	4	64	0.105
08:00 - 09:00	4	64	0.023	4	64	0.059	4	64	0.082
09:00 - 10:00	4	64	0.035	4	64	0.035	4	64	0.070
10:00 - 11:00	4	64	0.043	4	64	0.035	4	64	0.078
11:00 - 12:00	4	64	0.043	4	64	0.043	4	64	0.086
12:00 - 13:00	4	64	0.074	4	64	0.063	4	64	0.136
13:00 - 14:00	4	64	0.070	4	64	0.043	4	64	0.113
14:00 - 15:00	4	64	0.055	4	64	0.066	4	64	0.121
15:00 - 16:00	4	64	0.051	4	64	0.035	4	64	0.086
16:00 - 17:00	4	64	0.078	4	64	0.105	4	64	0.183
17:00 - 18:00	4	64	0.094	4	64	0.117	4	64	0.211
18:00 - 19:00	4	64	0.078	4	64	0.059	4	64	0.137
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.667			0.741			1.408

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.004	4	64	0.070	4	64	0.074
08:00 - 09:00	4	64	0.023	4	64	0.082	4	64	0.105
09:00 - 10:00	4	64	0.004	4	64	0.027	4	64	0.031
10:00 - 11:00	4	64	0.008	4	64	0.004	4	64	0.012
11:00 - 12:00	4	64	0.012	4	64	0.004	4	64	0.016
12:00 - 13:00	4	64	0.008	4	64	0.023	4	64	0.031
13:00 - 14:00	4	64	0.004	4	64	0.023	4	64	0.027
14:00 - 15:00	4	64	0.004	4	64	0.004	4	64	0.008
15:00 - 16:00	4	64	0.020	4	64	0.008	4	64	0.028
16:00 - 17:00	4	64	0.043	4	64	0.000	4	64	0.043
17:00 - 18:00	4	64	0.066	4	64	0.004	4	64	0.070
18:00 - 19:00	4	64	0.047	4	64	0.012	4	64	0.059
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.243			0.261			0.504

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.15

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.121	4	64	0.348	4	64	0.469
08:00 - 09:00	4	64	0.105	4	64	0.398	4	64	0.503
09:00 - 10:00	4	64	0.172	4	64	0.164	4	64	0.336
10:00 - 11:00	4	64	0.141	4	64	0.164	4	64	0.305
11:00 - 12:00	4	64	0.230	4	64	0.180	4	64	0.410
12:00 - 13:00	4	64	0.234	4	64	0.285	4	64	0.519
13:00 - 14:00	4	64	0.207	4	64	0.168	4	64	0.375
14:00 - 15:00	4	64	0.145	4	64	0.199	4	64	0.344
15:00 - 16:00	4	64	0.180	4	64	0.113	4	64	0.293
16:00 - 17:00	4	64	0.289	4	64	0.195	4	64	0.484
17:00 - 18:00	4	64	0.383	4	64	0.254	4	64	0.637
18:00 - 19:00	4	64	0.352	4	64	0.211	4	64	0.563
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.559			2.679			5.238

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.027	4	64	0.121	4	64	0.148
08:00 - 09:00	4	64	0.043	4	64	0.172	4	64	0.215
09:00 - 10:00	4	64	0.070	4	64	0.066	4	64	0.136
10:00 - 11:00	4	64	0.066	4	64	0.074	4	64	0.140
11:00 - 12:00	4	64	0.094	4	64	0.086	4	64	0.180
12:00 - 13:00	4	64	0.074	4	64	0.094	4	64	0.168
13:00 - 14:00	4	64	0.059	4	64	0.059	4	64	0.118
14:00 - 15:00	4	64	0.059	4	64	0.070	4	64	0.129
15:00 - 16:00	4	64	0.066	4	64	0.047	4	64	0.113
16:00 - 17:00	4	64	0.102	4	64	0.043	4	64	0.145
17:00 - 18:00	4	64	0.152	4	64	0.098	4	64	0.250
18:00 - 19:00	4	64	0.152	4	64	0.098	4	64	0.250
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.964			1.028			1.992

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL LGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.016	4	64	0.008	4	64	0.024
08:00 - 09:00	4	64	0.008	4	64	0.012	4	64	0.020
09:00 - 10:00	4	64	0.016	4	64	0.012	4	64	0.028
10:00 - 11:00	4	64	0.008	4	64	0.020	4	64	0.028
11:00 - 12:00	4	64	0.020	4	64	0.016	4	64	0.036
12:00 - 13:00	4	64	0.016	4	64	0.020	4	64	0.036
13:00 - 14:00	4	64	0.016	4	64	0.020	4	64	0.036
14:00 - 15:00	4	64	0.016	4	64	0.008	4	64	0.024
15:00 - 16:00	4	64	0.012	4	64	0.008	4	64	0.020
16:00 - 17:00	4	64	0.008	4	64	0.023	4	64	0.031
17:00 - 18:00	4	64	0.008	4	64	0.004	4	64	0.012
18:00 - 19:00	4	64	0.004	4	64	0.008	4	64	0.012
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.148			0.159			0.307

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL MOTOR CYCLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	64	0.004	4	64	0.000	4	64	0.004
08:00 - 09:00	4	64	0.000	4	64	0.000	4	64	0.000
09:00 - 10:00	4	64	0.000	4	64	0.000	4	64	0.000
10:00 - 11:00	4	64	0.000	4	64	0.000	4	64	0.000
11:00 - 12:00	4	64	0.000	4	64	0.000	4	64	0.000
12:00 - 13:00	4	64	0.000	4	64	0.000	4	64	0.000
13:00 - 14:00	4	64	0.004	4	64	0.004	4	64	0.008
14:00 - 15:00	4	64	0.000	4	64	0.000	4	64	0.000
15:00 - 16:00	4	64	0.000	4	64	0.000	4	64	0.000
16:00 - 17:00	4	64	0.000	4	64	0.000	4	64	0.000
17:00 - 18:00	4	64	0.004	4	64	0.000	4	64	0.004
18:00 - 19:00	4	64	0.000	4	64	0.000	4	64	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.012			0.004			0.016

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Calculation Reference: AUDIT-715001-220317-0342

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	LC	LANCASHIRE	1 days
10	WALES		
	PS	POWYS	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: 16 to 180 (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: 01/01/13 to 23/09/21

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	2 days
Tuesday	1 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 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 undertaking using machines.

Selected Locations:

Edge of Town Centre	5

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	4
No Sub Category	1

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	5 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

Population within 1 mile:

5,001 to 10,000	2 days
10,001 to 15,000	1 days
25,001 to 50,000	2 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	2 days
250,001 to 500,000	3 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	3 days
1.1 to 1.5	2 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	5 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	5 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 LC-03-A-30 SEMI-DETACHED LANCASHIRE
WATSON ROAD
BLACKPOOL

Edge of Town Centre
Residential Zone
Total No of Dwellings: 24
Survey date: FRIDAY *14/06/13* *Survey Type: MANUAL*

2 NY-03-A-12 TOWN HOUSES NORTH YORKSHIRE
RACECOURSE LANE
NORTHALLERTON

Edge of Town Centre
Residential Zone
Total No of Dwellings: 47
Survey date: TUESDAY *27/09/16* *Survey Type: MANUAL*

3 PS-03-A-01 MIXED HOUSES POWYS
BRYN GLAS
WELSHPOOL

Edge of Town Centre
Residential Zone
Total No of Dwellings: 16
Survey date: MONDAY *11/05/15* *Survey Type: MANUAL*

4 ST-03-A-06 SEMI-DET. & TERRACED STAFFORDSHIRE
STANFORD ROAD
WOLVERHAMPTON
BLAKENHALL
Edge of Town Centre
No Sub Category
Total No of Dwellings: 17
Survey date: FRIDAY *09/05/14* *Survey Type: MANUAL*

5 WM-03-A-05 TERRACED & DETACHED WEST MIDLANDS
COUNDON ROAD
COVENTRY

Edge of Town Centre
Residential Zone
Total No of Dwellings: 89
Survey date: MONDAY *21/11/16* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
CB-03-A-05	21/06/16	Car parking to dwelling ratio no representative.
LN-03-A-04	29/06/15	Car parking to dwelling ratio no representative.
NE-03-A-03	20/05/14	Car parking to dwelling ratio no representative.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.78

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.083	5	39	0.197	5	39	0.280
08:00 - 09:00	5	39	0.135	5	39	0.275	5	39	0.410
09:00 - 10:00	5	39	0.140	5	39	0.114	5	39	0.254
10:00 - 11:00	5	39	0.114	5	39	0.119	5	39	0.233
11:00 - 12:00	5	39	0.104	5	39	0.130	5	39	0.234
12:00 - 13:00	5	39	0.124	5	39	0.187	5	39	0.311
13:00 - 14:00	5	39	0.145	5	39	0.109	5	39	0.254
14:00 - 15:00	5	39	0.155	5	39	0.212	5	39	0.367
15:00 - 16:00	5	39	0.161	5	39	0.098	5	39	0.259
16:00 - 17:00	5	39	0.207	5	39	0.135	5	39	0.342
17:00 - 18:00	5	39	0.290	5	39	0.135	5	39	0.425
18:00 - 19:00	5	39	0.207	5	39	0.145	5	39	0.352
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.865			1.856			3.721

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	16 - 180 (units:)
Survey date date range:	01/01/13 - 23/09/21
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.000	5	39	0.005	5	39	0.005
08:00 - 09:00	5	39	0.010	5	39	0.010	5	39	0.020
09:00 - 10:00	5	39	0.010	5	39	0.005	5	39	0.015
10:00 - 11:00	5	39	0.010	5	39	0.010	5	39	0.020
11:00 - 12:00	5	39	0.000	5	39	0.005	5	39	0.005
12:00 - 13:00	5	39	0.005	5	39	0.005	5	39	0.010
13:00 - 14:00	5	39	0.010	5	39	0.000	5	39	0.010
14:00 - 15:00	5	39	0.005	5	39	0.010	5	39	0.015
15:00 - 16:00	5	39	0.005	5	39	0.010	5	39	0.015
16:00 - 17:00	5	39	0.000	5	39	0.005	5	39	0.005
17:00 - 18:00	5	39	0.010	5	39	0.005	5	39	0.015
18:00 - 19:00	5	39	0.010	5	39	0.016	5	39	0.026
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.075			0.086			0.161

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.005	5	39	0.005	5	39	0.010
08:00 - 09:00	5	39	0.016	5	39	0.016	5	39	0.032
09:00 - 10:00	5	39	0.016	5	39	0.010	5	39	0.026
10:00 - 11:00	5	39	0.000	5	39	0.005	5	39	0.005
11:00 - 12:00	5	39	0.005	5	39	0.000	5	39	0.005
12:00 - 13:00	5	39	0.000	5	39	0.000	5	39	0.000
13:00 - 14:00	5	39	0.010	5	39	0.005	5	39	0.015
14:00 - 15:00	5	39	0.005	5	39	0.005	5	39	0.010
15:00 - 16:00	5	39	0.000	5	39	0.010	5	39	0.010
16:00 - 17:00	5	39	0.000	5	39	0.000	5	39	0.000
17:00 - 18:00	5	39	0.005	5	39	0.005	5	39	0.010
18:00 - 19:00	5	39	0.000	5	39	0.000	5	39	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.062			0.061			0.123

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.000	5	39	0.000	5	39	0.000
08:00 - 09:00	5	39	0.000	5	39	0.000	5	39	0.000
09:00 - 10:00	5	39	0.000	5	39	0.000	5	39	0.000
10:00 - 11:00	5	39	0.000	5	39	0.000	5	39	0.000
11:00 - 12:00	5	39	0.000	5	39	0.000	5	39	0.000
12:00 - 13:00	5	39	0.000	5	39	0.000	5	39	0.000
13:00 - 14:00	5	39	0.000	5	39	0.000	5	39	0.000
14:00 - 15:00	5	39	0.000	5	39	0.000	5	39	0.000
15:00 - 16:00	5	39	0.000	5	39	0.000	5	39	0.000
16:00 - 17:00	5	39	0.005	5	39	0.005	5	39	0.010
17:00 - 18:00	5	39	0.000	5	39	0.000	5	39	0.000
18:00 - 19:00	5	39	0.000	5	39	0.000	5	39	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.005			0.005			0.010

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.000	5	39	0.005	5	39	0.005
08:00 - 09:00	5	39	0.005	5	39	0.010	5	39	0.015
09:00 - 10:00	5	39	0.000	5	39	0.000	5	39	0.000
10:00 - 11:00	5	39	0.005	5	39	0.000	5	39	0.005
11:00 - 12:00	5	39	0.000	5	39	0.000	5	39	0.000
12:00 - 13:00	5	39	0.005	5	39	0.000	5	39	0.005
13:00 - 14:00	5	39	0.000	5	39	0.000	5	39	0.000
14:00 - 15:00	5	39	0.000	5	39	0.000	5	39	0.000
15:00 - 16:00	5	39	0.000	5	39	0.000	5	39	0.000
16:00 - 17:00	5	39	0.000	5	39	0.005	5	39	0.005
17:00 - 18:00	5	39	0.016	5	39	0.005	5	39	0.021
18:00 - 19:00	5	39	0.005	5	39	0.005	5	39	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.036			0.030			0.066

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.088	5	39	0.223	5	39	0.311
08:00 - 09:00	5	39	0.197	5	39	0.425	5	39	0.622
09:00 - 10:00	5	39	0.176	5	39	0.140	5	39	0.316
10:00 - 11:00	5	39	0.145	5	39	0.145	5	39	0.290
11:00 - 12:00	5	39	0.109	5	39	0.187	5	39	0.296
12:00 - 13:00	5	39	0.171	5	39	0.218	5	39	0.389
13:00 - 14:00	5	39	0.171	5	39	0.119	5	39	0.290
14:00 - 15:00	5	39	0.212	5	39	0.259	5	39	0.471
15:00 - 16:00	5	39	0.264	5	39	0.114	5	39	0.378
16:00 - 17:00	5	39	0.306	5	39	0.202	5	39	0.508
17:00 - 18:00	5	39	0.394	5	39	0.166	5	39	0.560
18:00 - 19:00	5	39	0.238	5	39	0.197	5	39	0.435
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.471			2.395			4.866

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.026	5	39	0.073	5	39	0.099
08:00 - 09:00	5	39	0.047	5	39	0.083	5	39	0.130
09:00 - 10:00	5	39	0.016	5	39	0.031	5	39	0.047
10:00 - 11:00	5	39	0.021	5	39	0.057	5	39	0.078
11:00 - 12:00	5	39	0.067	5	39	0.073	5	39	0.140
12:00 - 13:00	5	39	0.041	5	39	0.052	5	39	0.093
13:00 - 14:00	5	39	0.052	5	39	0.098	5	39	0.150
14:00 - 15:00	5	39	0.047	5	39	0.031	5	39	0.078
15:00 - 16:00	5	39	0.073	5	39	0.083	5	39	0.156
16:00 - 17:00	5	39	0.067	5	39	0.062	5	39	0.129
17:00 - 18:00	5	39	0.124	5	39	0.083	5	39	0.207
18:00 - 19:00	5	39	0.057	5	39	0.041	5	39	0.098
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.638			0.767			1.405

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.000	5	39	0.016	5	39	0.016
08:00 - 09:00	5	39	0.000	5	39	0.026	5	39	0.026
09:00 - 10:00	5	39	0.000	5	39	0.016	5	39	0.016
10:00 - 11:00	5	39	0.036	5	39	0.005	5	39	0.041
11:00 - 12:00	5	39	0.000	5	39	0.031	5	39	0.031
12:00 - 13:00	5	39	0.016	5	39	0.010	5	39	0.026
13:00 - 14:00	5	39	0.021	5	39	0.010	5	39	0.031
14:00 - 15:00	5	39	0.005	5	39	0.010	5	39	0.015
15:00 - 16:00	5	39	0.010	5	39	0.000	5	39	0.010
16:00 - 17:00	5	39	0.010	5	39	0.010	5	39	0.020
17:00 - 18:00	5	39	0.031	5	39	0.005	5	39	0.036
18:00 - 19:00	5	39	0.005	5	39	0.000	5	39	0.005
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.134			0.139			0.273

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.78

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.114	5	39	0.316	5	39	0.430
08:00 - 09:00	5	39	0.249	5	39	0.544	5	39	0.793
09:00 - 10:00	5	39	0.192	5	39	0.187	5	39	0.379
10:00 - 11:00	5	39	0.207	5	39	0.207	5	39	0.414
11:00 - 12:00	5	39	0.176	5	39	0.290	5	39	0.466
12:00 - 13:00	5	39	0.233	5	39	0.280	5	39	0.513
13:00 - 14:00	5	39	0.244	5	39	0.228	5	39	0.472
14:00 - 15:00	5	39	0.264	5	39	0.301	5	39	0.565
15:00 - 16:00	5	39	0.347	5	39	0.197	5	39	0.544
16:00 - 17:00	5	39	0.383	5	39	0.280	5	39	0.663
17:00 - 18:00	5	39	0.565	5	39	0.259	5	39	0.824
18:00 - 19:00	5	39	0.306	5	39	0.244	5	39	0.550
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.280			3.333			6.613

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.073	5	39	0.171	5	39	0.244
08:00 - 09:00	5	39	0.078	5	39	0.228	5	39	0.306
09:00 - 10:00	5	39	0.083	5	39	0.078	5	39	0.161
10:00 - 11:00	5	39	0.098	5	39	0.093	5	39	0.191
11:00 - 12:00	5	39	0.088	5	39	0.109	5	39	0.197
12:00 - 13:00	5	39	0.119	5	39	0.161	5	39	0.280
13:00 - 14:00	5	39	0.109	5	39	0.093	5	39	0.202
14:00 - 15:00	5	39	0.124	5	39	0.171	5	39	0.295
15:00 - 16:00	5	39	0.145	5	39	0.067	5	39	0.212
16:00 - 17:00	5	39	0.192	5	39	0.124	5	39	0.316
17:00 - 18:00	5	39	0.264	5	39	0.114	5	39	0.378
18:00 - 19:00	5	39	0.171	5	39	0.114	5	39	0.285
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.544			1.523			3.067

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL LGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	39	0.005	5	39	0.016	5	39	0.021
08:00 - 09:00	5	39	0.031	5	39	0.021	5	39	0.052
09:00 - 10:00	5	39	0.031	5	39	0.021	5	39	0.052
10:00 - 11:00	5	39	0.005	5	39	0.010	5	39	0.015
11:00 - 12:00	5	39	0.010	5	39	0.016	5	39	0.026
12:00 - 13:00	5	39	0.000	5	39	0.021	5	39	0.021
13:00 - 14:00	5	39	0.016	5	39	0.010	5	39	0.026
14:00 - 15:00	5	39	0.021	5	39	0.026	5	39	0.047
15:00 - 16:00	5	39	0.010	5	39	0.010	5	39	0.020
16:00 - 17:00	5	39	0.010	5	39	0.000	5	39	0.010
17:00 - 18:00	5	39	0.010	5	39	0.010	5	39	0.020
18:00 - 19:00	5	39	0.026	5	39	0.016	5	39	0.042
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.175			0.177			0.352

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Travel Plan

Great Western Yard

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FRAMEWORK TRAVEL PLAN

Eutopia Homes

Great Western Yard, Gloucester

July 2022

Travel Plan
VN212156

Report control

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Contents

Plans

Appendices

1 Introduction

1.1 Vectos has been instructed by Eutopia Homes to provide transport and mobility advice in relation to a proposed residential development on land to the south of Great Western Road in Gloucester.

1.2 The site is located approximately 500 metres to the north-east of the city centre and is a brownfield site that has historically accommodated railway sidings. The site location in relation to the wider area is shown in **Figure 1.1**.

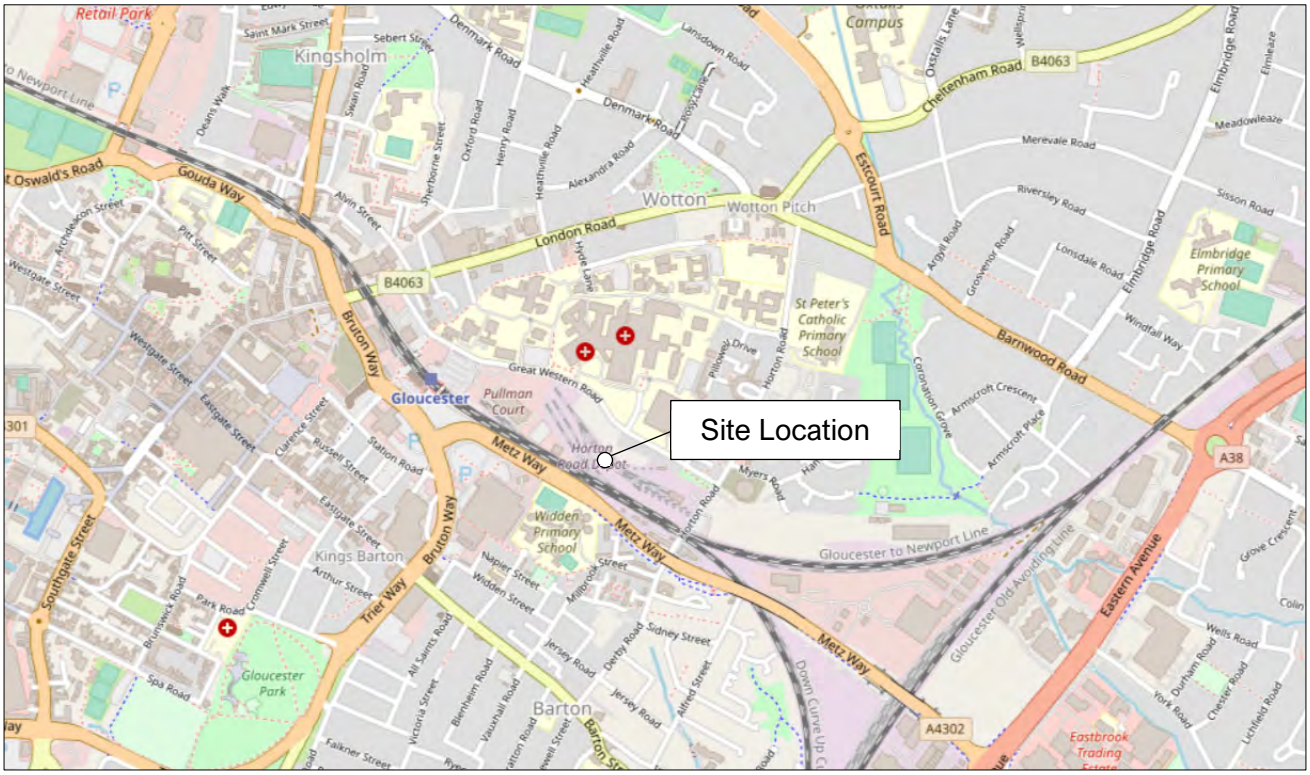

Figure 1.1: Site Location – Wider Context (Source: Open Street Map)

1.3 As shown in **Figure 1.1**, the site is particularly well located for access to the City Centre and the amenities and transport links therein.

1.4 It can be seen that the site lies to the west of Horton Road and to the south of Great Western Road. It has existing access points onto both roads. A small part of the site is currently used by Network Rail as a depot with associated temporary and prefabricated single storey structures, and part of the site comprises rail tracks and rail ballast. There are also some commercial operations to the northern part of the site accessed from Great Western Road including a vehicle repair garage and a builders merchant.

1.5 The planning application seeks permission for a residential development of 87 dwellings and 228 apartments. A copy of the proposed site layout plan is provided at **Appendix A** to this report.

1.6 The proposal provides car parking across the development at a ratio of 0.47 spaces per dwelling. This has been noted in regard to formulating appropriate measures and travel survey strategy.

1.7 A Transport Assessment, providing further details of the proposed development, has been prepared to accompany the planning application and should be read in conjunction with this Framework Travel Plan.

Purpose of the Travel Plan

1.8 A Travel Plan is effectively a combination of information, proposals and incentives designed to promote and encourage travel by sustainable modes. It can be thought of as a pyramid. The plan is built from the bottom up, with decisions and actions at each level creating the conditions that provide the foundation for success at the next level up. A diagrammatical explanation is provided in **Figure 1.2**.

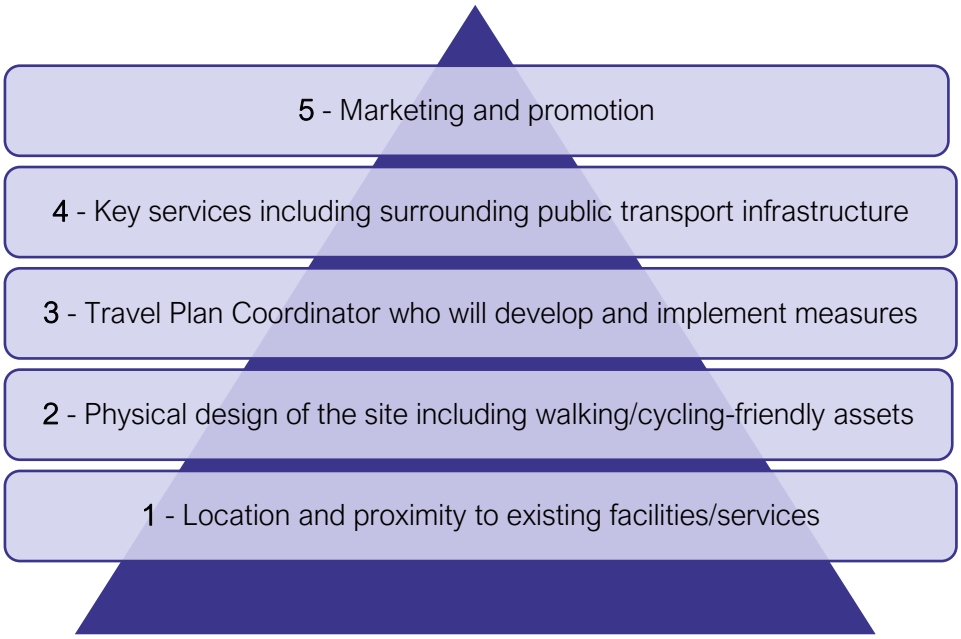

Figure 1.2: Travel Plan Pyramid

1.9 This Travel Plan sets out an implementation, marketing, and monitoring strategy along with a variety of potential measures which will combine to assist in the meeting of pre-agreed travel targets. It provides a strategy to reduce the potential traffic impacts on the local environment, improve the management of transport to and from the site and promote sustainable travel modes where possible. Specifically, it will include measures focussed on:

- Reducing the need for travel;
- Reducing single-occupancy car travel; and
- Encouraging the use of more sustainable travel choices, such as walking, cycling, public transport and car sharing.

Scope of the Travel Plan

1.10 The Travel Plan comprises the following sections:

- Accessibility by Sustainable Modes of Travel;

- Development Proposals;
- Sustainable Travel Objectives and Measures;
- Administration, Monitoring and Review; and
- Action Plan.

2 Accessibility by Sustainable Modes of Travel

Local Facilities and Indicative Active Travel Catchments

2.1 Contemporary local and national transport policy states that new developments should be focused on locations which are, or can be made, sustainable. Providing travel choice is policy compliant and essential in today's modern and dynamic society. This focus maximises social inclusion, minimises the number of single car occupancy private car trips, limits the need to travel, helps reduce congestion and helps to improve air quality and health.

2.2 One of the primary factors when considering the suitability of a new development is its proximity, accessibility, and connectivity in relation to key local facilities by non-car modes. Within this context, the development should give priority first to pedestrian and cycle movements both within the scheme and with neighbouring areas.

2.3 The highly sustainable nature of the Great Western Yard site location has already been established through the Local Plan site allocation process given that it benefits from proximity to a wide range of local facilities providing the potential to make it a very well-connected development.

2.4 A WYG report entitled 'Accessibility – How Far Do People Walk and Cycle' uses National Travel Survey (NTS) data for the UK as whole, excluding London, and provides an 85th percentile walk distance for:

- All journey purposes – 1,950 metres;
- Commuting – 2,400 metres;
- Shopping – 1,600 metres;
- Education – 3,200 metres or 4,800 metres; and
- Personal Business – 1,600 metres.

2.5 In terms of time, this equates, for instance, to approximately 30 minutes for commuting. **Table 2.1** provides a sample list of local facilities and services located within the local area along with their distances from the centre of the site.

Local Amenity	Distance from Centre of Site
Childcare and Education	
St Peter's Catholic School	650m
Widden Primary School	650m
Kingsholme C of E	1,300m
Al Ashraf Primary School	950m
St James C of E	1,100m
Hatherley Infant School	1,600m

Tredworth Junior	1,800m
Health and Social Care	
Gloucestershire Royal Hospital	200m
Chapel House Care Centre	380m
Aspen Medical Practice	500m
Great Western Court Nursing Home	650m
Kingsholm Surgery	950m
Bartongate Surgery	1,100m
Sport and Leisure	
Gloucester Irish Club	150m
Armscroft Park	700m
Sherbourne Cinema	950m
Spartans RFC Sports and Social Club	1,100m
GL1 Leisure Centre	1,100m
Museum of Gloucester	1,200m
Kingsholm Stadium	1,300m
Gloucester Docks	1,600m
Places of Worship	
St Peter's Catholic Church	750m
Jama Al-Karim Mosque	1,100m
Gloucester Cathedral	1,200m
Shops and Eateries	
Costcutter Convenience Store (Hospital)	450m
Londis (London Road)	650m
Tesco Express	650m
Costa Express & Subway (London Road)	650m
Asda Supercentre	800m
Morrisons	950m
Costa Coffee	950m
Eastgate Shopping Centre	1,200m

Table 2.1: Walk Distance to Local Services and Amenities

2.6 **Plan 1** illustrates a 1km and 2km catchment from the site. These walk catchments show that the proposed development site is within a walking distance of a wide range of facilities and amenities in the surrounding area.

2.7 **Table 2.1** and **Plan 1** highlight that the proposed development is very well connected and accessible by foot to a wide range of local amenities within the surrounding area and Gloucester City Centre is within a reasonable walk catchment of around 500m. This is consistent with the planning authority's judgement that this is a sustainable location, warranting its inclusion as an allocation within the emerging Local Plan.

2.8 It should be noted that the proposals will include an area of open space within the site, which will provide an opportunity for some leisure activities to occur within the site, further reducing the need to travel.

2.9 It should be noted that accessibility is not exclusively a function of distance; it being also related to the quality of the local environment and peer culture. For example, with reference to cycle journeys, the tendency for people to choose this mode is related to quality of route, barriers, whether the bike is electrically assisted, attitude to health, the journey purpose, the facilities at either end and personal matters. A half hour journey by bike at a comfortable pace, on typical streets without cycle priority, will typically encompass a distance of approximately 8 km.

2.10 **Plan 2** presents a 5km and 10km typical cycle catchment. It can be seen from **Plan 2** that the 5km cycle catchment encompasses all of Gloucester City Centre and therefore there is excellent opportunity for trips to key local destinations to be made by cycle.

Active Travel Links for Local Living

2.11 The pedestrian facilities in the vicinity of the proposed development include formal footways and crossing points.

2.12 There is continuous footway provision along Great Western Road linking the site to the City Centre and surrounding areas. A Zebra crossing is located around 200m to the west of the site to facilitate crossing of Great Western Road. There are several possible routes for pedestrians between the site and the City Centre, with the most obvious ones highlighted in **Figure 2.1**.

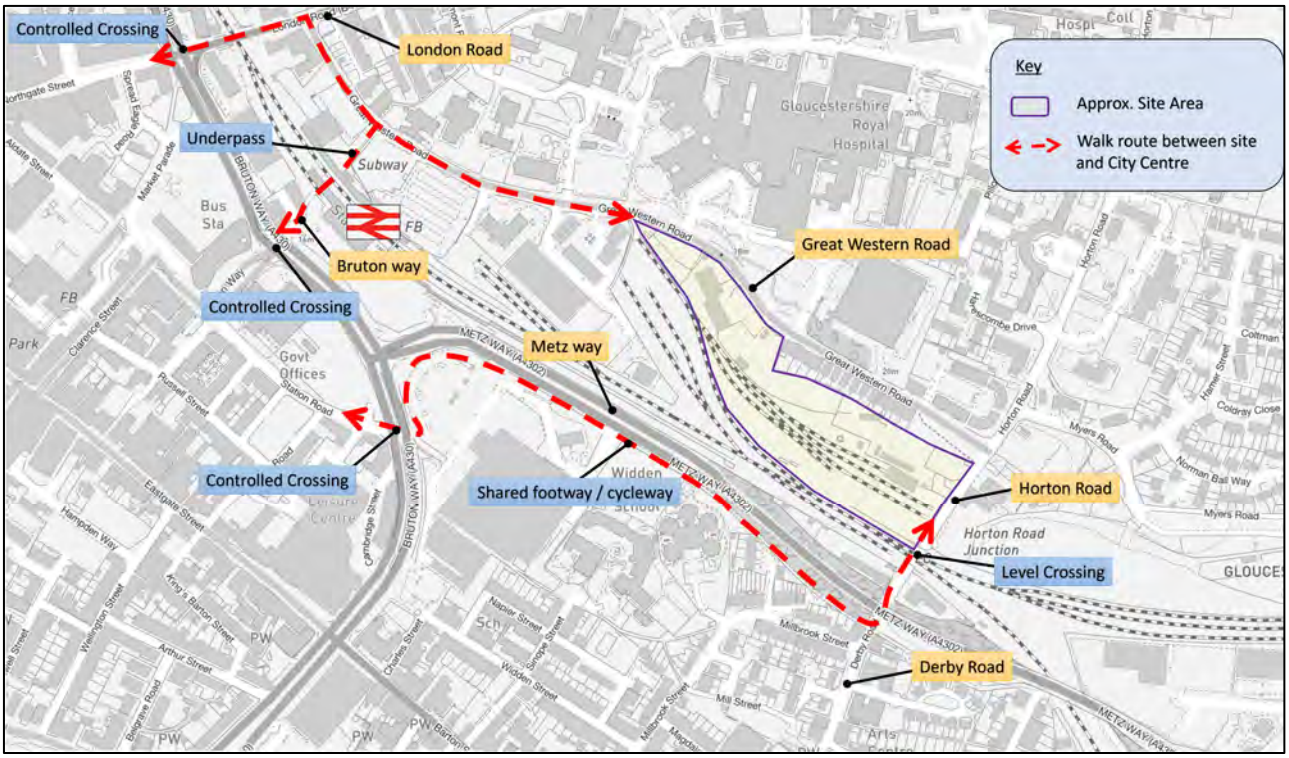

Figure 2.1: Pedestrian and Cycle Routes between the Site and the City Centre

2.13 As shown in **Figure 2.1**, heading north-west from the site, there is the option to use the underpass beneath the rail line which emerges onto Bruton Way or to travel via London Road. For both routes, there are controlled crossing facilities to help pedestrians cross the A430 south of the rail line.

2.14 The route between the southern part of the site and the City Centre passes along Horton Road, Derby Road and then a shared footway / cycleway facility that runs parallel to Metz Way. This also emerges at a controlled crossing point of the A430. This route has a level crossing facility to enable pedestrians and cyclists to cross the rail line. It is considered that this route would be attractive as a route to the City Centre for those travelling to and from the southern parts of the site close to Horton Road.

2.15 **Figure 2.2**. shows an extract from the Gloucester Cycle Map.

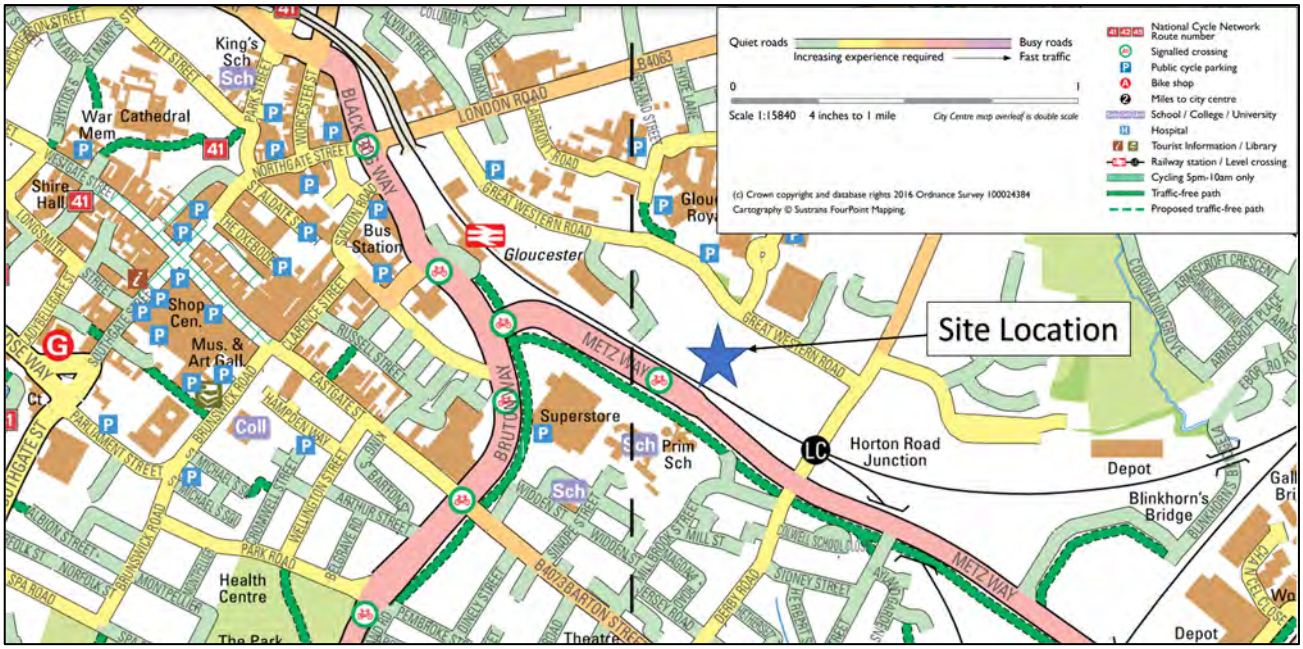

Figure 2.2: Extract from Gloucester Cycle Map

2.16 It can be seen from **Figure 2.2** that Great Western Road is designated as a quieter road which would be suitable for relatively inexperienced cyclists. The shared traffic-free path that runs parallel to Metz Way is also clearly shown, and with the controlled crossing of the A430 and the network of quieter streets to the west, this makes for a convenient cycle route between the site and the City Centre that will likely be an attractive option for future residents at the site.

2.17 There are stretches of cycle lane provision along London Road helping to connect Great Western Road with the City Centre for cyclists. National Cycle Route 41 is located to the west of the site providing a mix of on-road and traffic free sections linking Gloucester with Bristol and Cheltenham. National Cycle Route 45 is also located to the west of the site, providing additional links to Worcester to the north.

Public Transport

2.18 CIHT guidance indicates that for commuting purposes bus stops should be within a 400-metre walk of residential development however where there are high frequency bus services, it is generally acceptable for longer walk distances to be made. There are bus stops on Great Western Road approximately 200m to the west of the site, just to the west of Pullman Court, and also within the Hospital grounds within 100m of the site. Services available include the No. 6 and the No. 99, providing links from the city centre to residential suburbs in the north and wider destinations such as Cheltenham. The No. 6 provides an hourly service on Monday through Saturday with the No.99 providing a roughly half hourly service in each direction. **Table 2.2** provides a summary of these bus services.

Bus Service	Operator	Route	Frequency
6	Stagecoach	Gloucester - Longlevens	1 per hour between 09:14-14:14 Monday to Saturday
99	Pulhams	Gloucester - Cheltenham	Every 30 mins 06:30-19:44 Monday to Friday
15	Cheltenham Community Transport	Gloucester Chester Road - Gloucestershire Royal Hospital - Worcester Street	1 per day in each direction Monday to Friday

Table 2.2: Bus Service Summary

2.19 The Hospital bus stand provides a shelter, seating and timetable information.

2.20 Gloucester Bus Station (also known as Gloucester Transport Hub) is also within a realistic walking distance from the site, around 800m away on Station Road. The Bus Station is equipped with waiting facilities, accessible toilets and a Stagecoach travel shop. There are 12 bus stands and numerous services operate from the Bus Station providing opportunities for connections to local, regional and national destinations including Stroud, Forest Green, Tewkesbury, Sandhurst and Cirencester. The site is therefore well located for access to bus travel.

2.21 The site is particularly well located for access to Gloucester Rail Station which is just a 600m walk away. Trains to a wide range of destinations are available from the station, with services being operated by Transport for Wales, Cross Country and Great Western Railway. Connections are available to London Paddington, Cheltenham Spa, Frome, Nottingham, Bristol, Cardiff and Worcester.

2.22 The site is therefore well located to present residents and visitors to the site with opportunities for travel by rail.

3 Development Proposals

Proposals

3.1 The planning application seeks permission for a residential development of 315 dwellings with associated landscaping, parking, open space and ancillary works including demolition of existing buildings, at land to the south of Great Western Road in Gloucester. A copy of the proposed site layout plan is provided at **Appendix A** to this report.

3.2 The development will be delivered in two phases – a northern phase comprising of three apartment blocks (Blocks A, B and C), and a southern phase comprising of townhouses and an apartment block (Block D).

Northern Phase

3.3 The northern phase of the development will comprise of three apartment blocks (Blocks A, B and C) providing a total of 202 apartments, with the following mix:

Table 3.1: Proposed Northern Phase Apartment Mix

	Block A	Block B	Block C	Total
Studio / 1-bed	23	47	18	**88**
2-bed	15	75	12	**102**
3-bed	5	3	4	**12**
Total	**43**	**125**	**34**	**202**

Northern Phase – Access and Parking

3.4 It is proposed that there will be two points of vehicle access onto Great Western Road serving the northern phase, providing access to car parking to serve Blocks A and B. Block C will be a car-free block. The car parking area for Block A will be located to the north of Block A at the northern edge of the site, with access in the form of a simple priority access approximately 25m diagonally opposite the Gloucestershire Royal Hospital main entrance.

3.5 The proposed layout of this access has been designed in accordance with design requirements for 30mph roads. It is anticipated that this car park will provide for parking for Block A only and will not accommodate servicing activity. 15 spaces are to be provided in the car park, which equates to a car parking provision of 0.35 spaces per dwelling for Block A.

3.6 Long stay cycle parking for Block A will be provided within a secure store at the front of the building, with six cycle stands also provided outside the store for short-stay cycle parking.

3.7 Access to the Block B car park will be via a new priority access arrangement between Blocks A and B. The proposed layout of this access has been designed in accordance with design requirements for 30mph roads.

3.8 The access will serve the car park for Block B which will provide 18 spaces, and will also provide access to the servicing route that extends along the rear of Block B to Block C. This will facilitate refuse collections and other servicing and maintenance access to Block C.

3.9 The 18 car parking spaces for Block B equates to a parking ratio of 0.14 spaces per dwelling.

3.10 Long stay cycle parking for Block B will be provided within two separate secure cycle stores at the rear of the building, with six cycle stands also provided at the front of the building for short-stay cycle parking.

3.11 Block C is to be car-free, with long-stay cycle parking provided within a secure, covered store close to the front of the building, with five cycle stands provided adjacent to the main entrance to accommodate short-stay cycle parking.

Northern Phase – Servicing

3.12 Refuse collection for the northern phase will occur from the Block B access which will provide access to a service road running alongside the rear of Block B. This will allow for refuse collection from each block.

Southern Phase

3.13 The southern phase of development will comprise 87 townhouses and an apartment block (Block D) with 26 apartments. **Table 3.2** provides further detail on the composition of the dwellings.

Table 3.2: Proposed Southern Phase Dwelling Mix

	Block D	Townhouses	Total
Studio / 1-bed	11	-	**11**
2-bed	16	43	**59**
3-bed	-	44	**44**
Total	**26**	**87**	**113**

Southern Phase – Access and Parking

3.14 Access to the southern phase is to be via a priority junction arrangement in approximately the same position as an existing vehicle access to the site, diagonally opposite the Gloucestershire Royal Hospital 'Tower Entrance'.

3.15 A small area of existing on-street parking on the southern side of Great Western Road, to the east of the existing access, will need to be removed to accommodate the proposed access in this location. There is potential to re-provide this on the western side of the proposed access. Access to the existing driveway parking associated with no. 95-97 Great Western Road can be maintained under the proposed arrangement.

3.16 The southern phase access will lead into the site providing a cul-de-sac arrangement. The main internal road will be 5.5m in width with small sections of on-street car parking in designated bays along both sides of the road.

3.17 Footways will be provided within the site and three street arrangements will extend north from the main internal road, providing access to three rows of townhouses. Turning space is to be provided at the end of each of these streets to accommodate refuse vehicle access.

3.18 Given the nature of the internal road as a lightly trafficked residential street, the internal highway will be suitable to accommodate cyclists and no segregated cycle lane provision is therefore necessary.

3.19 The majority of the town houses will be provided with driveway space for one car to park. There will also be some on-street car parking along the main internal road which could accommodate any additional visitor parking demand and provide parking for those townhouses without a dedicated space. It is expected that the on-street car parking provision will be controlled via a new Controlled Parking Zone (CPZ) that would apply to the development only, and which would prevent use of the site for parking by non-residents.

3.20 Car parking for the proposed apartment block (Block D) will be provided via a row of car parking comprising 14 spaces, a ratio of 0.54 spaces per apartment for this block.

3.21 Long-stay cycle parking for Block D will be provided via a covered cycle store close to the main entrance, with short stay provision in the form of five Sheffield stands also provided adjacent to the building.

3.22 Cycle parking for the townhouses will be provided for within the curtilage of each dwelling.

Southern Phase – Servicing

3.23 Servicing of the southern phase will occur within the site using the proposed internal roads, with space provided for a refuse vehicle to turn within the site.

Proposed Car Club Spaces

3.24 It is proposed to provide six spaces within the Southern Phase of the development site (but available to all residents) dedicated for car club vehicles. Research by como uk has shown that each car club vehicle in the UK replaces 20 private cars. On this basis, the six spaces proposed as part of the development could replace the need for 120 private cars, helping to reduce the demand for car parking within the area.

4 Objectives and Measures

Travel Plan Objectives

4.1 The objectives and their related targets need to define the high level aims of a Travel Plan. This Travel Plan will utilise five main objectives as shown in **Figure 4.1**.

Figure 4.1: Travel Plan Objectives

Plan Administration

4.2 Following completion of the development, the developer will retain full management and will appoint a Travel Plan Coordinator. It is expected this individual would be a member of the site maintenance team or a resident of the development. Their contact details will be provided at the earliest convenience. This individual will provide the liaison in implementing the plan between the occupiers and other outside organisations in all matters regarding travel.

Role of the Travel Plan Coordinator

4.3 Various tasks will be undertaken by the Travel Plan Coordinator. As noted, this could be the on-site Travel Plan Coordinator or someone who has oversight of the development and its occupants and who will ensure the Travel Plan remains operational and tailored to the site.

4.4 The appointed Travel Plan Coordinator will carry out an annual review of the Travel Plan including recognition of successful/unsuccessful travel target measures and the following:

i) Check Travel Information Packs have been distributed amongst residents;

ii) Check information provided in the Travel Information Packs regarding pedestrian, cycle and public transport is up-to-date and any timetable information provided is current; and

iii) Action any feedback received from residents.

4.5 Given the proposed development's proximity to public transport, public transport operators will also be liaised with and marketing the Travel Plan to residents and the local authority. Travel advice and guidance to residents in the early stages of occupation will be sought and throughout the development process. The Travel Plan Coordinator will also collect and monitor information as well as presenting it to the Local Authority, ensuring effective long-term management arrangements are constantly in place.

4.6 The Travel Plan Coordinator will support, oversee and implement the requirements of the plan upon first occupation of the development and through the life of the plan. The Travel Plan Coordinator duties will therefore support, oversee and implement the requirements of the Travel Plan upon first occupation of the development and through the life of the plan.

4.7 As noted, the site is located in an area where a range of sustainable travel alternatives can be used. As such, a summarised list of the Travel Plan Coordinator's roles in regard to encouraging sustainable travel amongst residents are provided below:

i) Assess the potential journeys that residents may make and identify what modes of transport are available from the site, promoting sustainable options;

ii) Monitor the impact that resident's journeys may have on the surrounding areas and existing transport infrastructures;

iii) Ensure the travel information made available is always current and up to date;

iv) Organise the travel surveys, analyse these and submit the results to the local authority, together with an assessment of the success of the Travel Plan in encouraging sustainable travel;

v) Provide promptly upon written request for such information as and when the local authority require this; and

vi) Investigate new ideas / emerging modes of transport and future plans.

Travel Information Pack

4.8 An initial Travel Information Pack will be prepared for each dwelling prior to occupation. The Pack will include details on the intentions of the Travel Plan and why the Travel Plan has been produced. The Pack will also include current information on walking and cycling routes in the area and information on current public transport services.

Monitoring Progress of the Travel Plan

4.9 To enable the success of the Travel Plan, the Travel Plan Coordinator will be responsible for on-going monitoring and regular travel surveys to an agreed timetable. Each year, on or about the anniversary of the Travel Plan's adoption, the Travel Plan Coordinator will review the Travel Plan to assess its success and to identify the potential for future refinement. The major element of the review will involve the re-issuing of the travel survey to residents. The outcomes of this exercise will provide information on the progress and success of the measures and identify potential new initiatives.

4.10 Information gathered as part of the continuous monitoring process will be made available to the local authority. This will allow effective measures to be promoted and increased while ineffective measures can be revised and rectified. New initiatives will therefore be contained within the report and submitted to the local authority.

Walking and Cycling Measures

4.11 The site's location will allow active travel to form part of daily life for a variety of journey purposes. Further measures to encourage walking and cycling will include:

- Provision of Welcome Packs to residents within the development site which would include all the relevant walking and cycling information;
- Information regarding local cycle shops;
- Providing information to residents in respect to potential cycle schemes; and
- Provide information to residents in relation to opportunities for cycle training with the local authority.

4.12 'Bike It' is a SUSTRANS initiative aimed at encouraging children to take up cycling and view it as a viable mode of transport, particularly for the journey to and from a variety of destinations including schools. The Travel Plan Coordinator will liaise with the local 'Bike It' Officer to see how this Travel Plan can support sustainable travel at the proposed school and increase the number and type of trips undertaken by children by bike.

4.13 In addition, the Travel Plan Coordinator will organise either individual or group Bikeability training sessions as appropriate for residents, and other members of the local community, expressing an interest in improving their cycling confidence.

4.14 The site's nearest cycle shop will be identified with contact details provided to residents as part of the Welcome Pack to ensure they are aware of where bicycles can be purchased.

4.15 Should residents take up cycling, they will be made aware of BikeRegister through the Welcome Pack. They will be able to sign up to this facility (https://www.bikeregister.com/) to enable their bike to become security marked.

Public Transport Measures

4.16 The use of public transport can be promoted as part of a multi-modal journey. Measures to encourage bus and train usage:

- Up to date information provided on bus and train services, including route information and service frequencies, available to residents; and
- The Travel Plan Coordinator to liaise with the local authority and the public transport operators to ensure that information remains valid;

Car Sharing

4.17 Given the scale of the development, a car sharing scheme could be proposed for residents and administered using a local database via a community website or alternatively there may be opportunities to use an internet-based scheme. The feasibility of this measure will be reviewed once the development is entirely operational.

Taxis

4.18 A list of local taxi companies' contact details will be available within the Welcome Pack.

ThinkTravel Gloucestershire

4.19 Thinktravel is the brand name for Gloucestershire's smarter choices programme, designed to help people consider their travel choices and encourage use of more sustainable modes of transport.

4.20 This encompasses behavioural and operational initiatives to encourage and support a smarter approach to journey decision making, planning and undertaking. The outcomes of this behavioural change are a reduction in the number of single occupancy car trips, a greater awareness of travel choices and promotion of the 4Rs (Reduce, Retime, Reroute, Remode) to journeys to avoid the most congested times and locations on Gloucestershire's transport network.

4.21 The ThinkTravel initiative will be available for new residents at the development to support their sustainable travel choices. Further information is available via the ThinkTravel website:

https://www.thinktravel.info/

5 Administration, Monitoring and Review

The Travel Plan Co-ordinator

5.1 The administration of the Travel Plan will initially be the responsibility of a Travel Plan Coordinator. A dedicated Travel Plan Coordinator will be appointed to provide residents with details of the environmental, social and health benefits to be gained by using sustainable transport modes and will be the first point of contact for residents and other outside organisations in all matters regarding travel. This post will run for the lifetime of the Plan which is typically 5 years.

5.2 The Travel Plan and its core principles are fully supported by Eutopia Homes. The Action Plan for the implementation of the Travel Plan and its suggested initiatives is discussed in subsequent sections of this document.

Baseline and Initial Targets

5.3 The Travel Plan is a strategy which can evolve over time. It is important that the Plan is a flexible document that is responsive to change, although the underlying objectives of the Plan, which are to educate and facilitate travel by sustainable modes, will not change.

5.4 Travel surveys are to be conducted to determine the baseline from which the effectiveness of the Travel Plan will be evaluated. These could be supplemented by a questionnaire survey or travel diary for residents living on the site. It is envisaged that the first questionnaire surveys/travel diaries will be issued to residents as part of the Travel Information Pack upon 50% occupation of the development.

5.5 Within 6 months of first occupation, the returned survey data will be collated and analysed which will then form the baseline upon which to set targets and monitor progress. An example travel survey is provided in **Appendix B**.

5.6 To assist in collecting travel survey data from residents, it could be advertised that each returned completed questionnaire is entered into a prize draw; the winner receiving a prize, which may be vouchers for a local cycle shop or similar. The feasibility of this initiative will be reviewed at that time.

5.7 It is envisaged that targets will be set for the percentage of trips by sustainable modes over a 5 year period. It may be possible to increase the number of walking and cycling trips by a percentage (to be agreed) over a 5 year period to assist with general health and wellbeing.

6 Initial Action Plan

6.1 The Action Plan sets out a timetable to which the Travel Plan should aim to follow. Set out in **Table 6.1** are actions that are high impact, yet achievable in the short term. The table also reflects the long-term aspirations of the Travel Plan process.

Table 6.1: Travel Plan Action Plan

Travel Plan Actions	Start Date	Responsibility
Appoint a Travel Plan Coordinator	Prior to occupation	Eutopia Homes
Collate information to be provided in Travel Information Brochure	To be produced when the development becomes 50% occupied.	Travel Plan Coordinator
Establish Residents Noticeboard / Community Website to include information on sustainable travel	When the development becomes 50% occupied.	Travel Plan Coordinator
Distribution of Travel Information Pack	When the development becomes 50% occupied.	Travel Plan Coordinator
Agree travel survey inclusions	When the development becomes 50% occupied.	Travel Plan Coordinator
Check information regarding pedestrian, cycle and public transport is up-to-date. In particular, check that any timetable information provided is current. Action any feedback received from residents over preceding period.	Ongoing as part of the Travel Plan	Travel Plan Coordinator
Check that details of the sustainable travel events are up to date and they are promoted suitably	May, June, October each year	Travel Plan Coordinator
Raising awareness of the Travel Plan	Ongoing - ensuring there is engagement with residents to maintain a constant distribution of marketing material.	Travel Plan Coordinator
Annual Travel Plan Review	The progress of the Travel Plan will be reviewed and summarised in an Annual Travel Plan Review document. This document may be submitted to the local authority.	Travel Plan Coordinator
Arrange Travel Plan Promotion Days to raise awareness of travel options.	Ongoing - this may include introducing maps of facilities available for sustainable travel.	Travel Plan Coordinator

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Plans

Plan 1

Legend

- Site Boundary
- Bus Stops
- Railway Station
- Employment Site
- Healthcare Provision
- Primary School
- Secondary School
- Supermarket

Walking Catchment

- 0 - 1km
- 1 - 2km

This is not a construction drawing and is intended for illustrative purposes only.

CLIENT:

Eutopia Homes

PROJECT TITLE:

Great Western Yard, Gloucester

DRAWING TITLE:

1km and 2km Catchments from Site

SCALE: N.T.S

DRAWN:	CHECKED:	DATE:
TA	TR	Jan 2022

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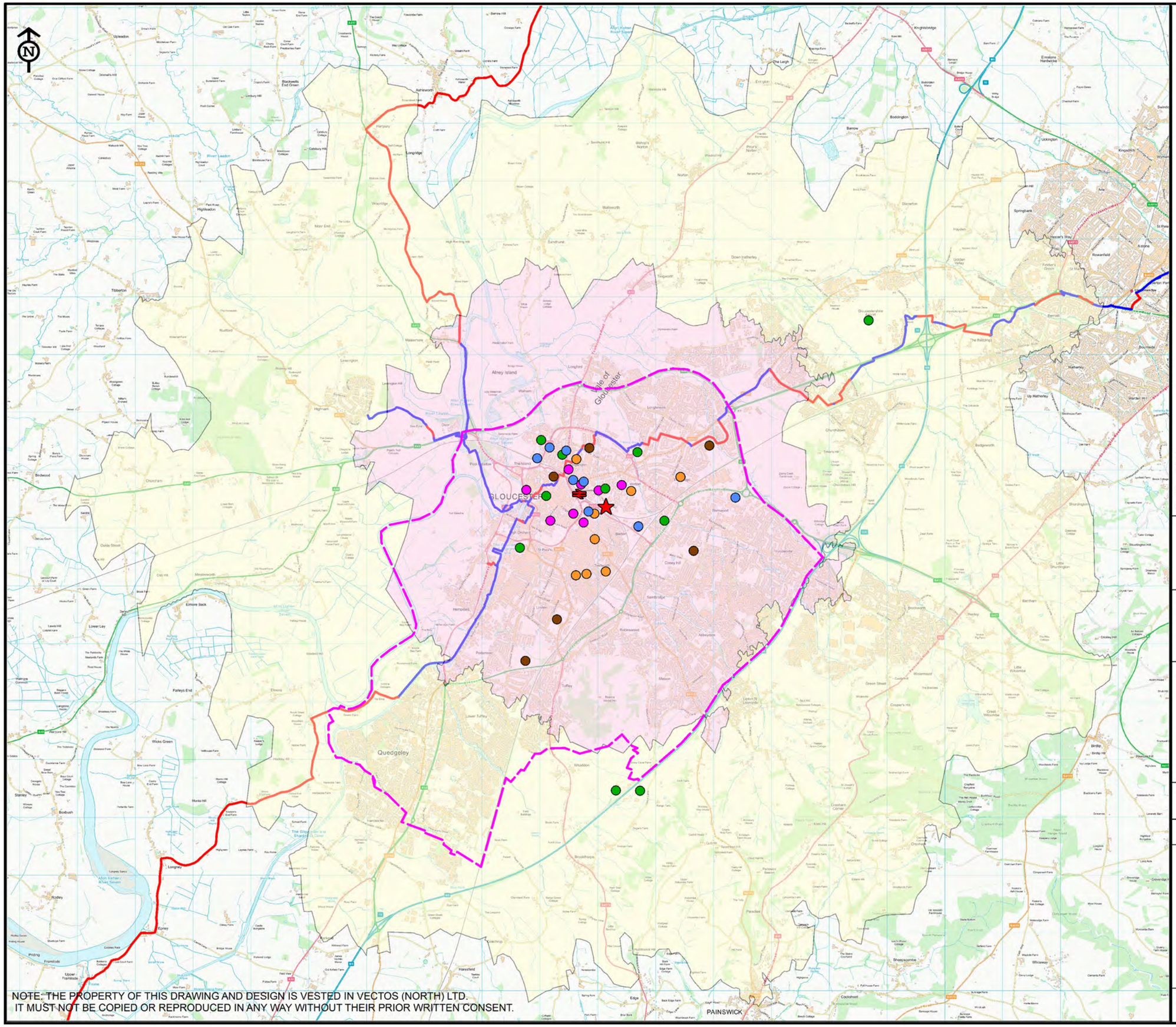
[redacted]

DRAWING NO: VN212156-G102

REVISION:



Plan 2

Legend

- Site Location
- Railway Station
- Gloucester City Boundary
- Employment Site
- Healthcare Provision
- Primary School
- Secondary School
- Supermarket

Cycling Catchment

- 0 - 5km
- 5 - 10km

Cycle Routes

- On-Road Cycle Route
- Off-Road Cycle Route

This is not a construction drawing and is intended for illustrative purposes only.

CLIENT:
Eutopia Homes

PROJECT TITLE:
Great Western Yard, Gloucester

DRAWING TITLE:
5km and 10km Catchments from Site

SCALE: N.T.S

DRAWN:	CHECKED:	DATE:
TA	TR	Jan 2022

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[redacted]

DRAWING NO: VN212156-G103

REVISION:

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Appendices

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Appendix A

Proposed Site Layout

Block A

Block B

Block C

Block D

Site Area:
31000m2 (7.660 Acres / 3.1ha)

Planning Application Boundary

SCALE BAR IN mm

General Notes

Key Plan

North Phase

South Phase

Notes

N

REV	NOTES	DATE	BY	AUTH
	Issued for Planning			

DARLING ASSOCIATES ARCHITECTS

[redacted]

DRAWING STATUS
Planning

TITLE
Proposed Site Plan

PROJECT
Great Western Yard

SCALE AT A0	SCALE AT A3
1:500	N.T.S.

JOB NO.	DRAWING NO.	REV.
19050	03-3-00	P1

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Appendix B

Example Travel Survey

Residential Travel Survey

Q1. **To understand where you start your journey from, please provide your home postcode and house number.**
(this will be used confidentially).

_____

Q2. **Do you work...**
[ ] Full Time [ ] Part Time [ ] Shift Patterns

Q3. **What are your normal start/finish times at work?**

Usual start time:_____

Usual finish time:_____

Q4. **What is your main mode of travel to/from work? (the mode you use the most)**

[ ] Car (drive alone)
[ ] Car Share
[ ] Bus
[ ] Train
[ ] Motorbike
[ ] Bicycle
[ ] Walk
[ ] Other (please specify)

_____

Q5. **If you travel by different modes on different days/times of the year please specify**:

_____

Q6. **What alternative mode of transport would you consider using if you couldn't use your current mode?**
[ ] Car (drive alone)
[ ] Car Share
[ ] Bus
[ ] Train
[ ] Motorbike
[ ] Bicycle
[ ] Walk
[ ] Other (please specify)

Q7. **Why don't you currently travel by the alternative mode you selected in Q6?**
[ ] Its too expensive
[ ] Personal safety reasons
[ ] Personal circumstances
[ ] It wouldn't shorten my journey time
[ ] The distance between my home and work
[ ] I need more guidance in travelling this way
[ ] Lack of public transport services
[ ] There are no walking initiatives available
[ ] Work circumstances
[ ] Travelling this way is inconvenient

Q8. **Which of the following changes would encourage you to use travel more sustainably?**
[ ] Help on the cost of public transport tickets
[ ] A personalised journey plan
[ ] Available transport information at work
[ ] More frequent/reliable public transport services
[ ] Promotion of sustainable travel events
[ ] Better storage space for bicycles at home
[ ] More provision of public transport information
[ ] Improved pedestrian/cycle infrastructure
[ ] The promotion of active travel campaigns
[ ] Other (please specific)

_____

Q9. **Please tick the following initiatives that would specifically help you start car sharing.**
[ ] Establishing a car sharing user group for my neighbourhood
[ ] Promoting periodic car sharing promotion days

Q10. **Do you have a disability that may affect your travel arrangements?**
[ ] Yes [ ] No

Q11. **Do you use the 130 bus service? If so, please provide us with information on when you use this service and the locations you use it to get to.**

_____

_____

_____

_____

_____

Q12. **Your views and ideas are important, so please add any other comments about your journey to/from work.**

_____

_____

_____

_____

_____

_____

_____

_____

Thank you for completing the survey!

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Contact

London
Network Building,
97 Tottenham Court Road,
London W1T 4TP.
[redacted]

Bristol
5th Floor, 4 Colston Avenue,
Bristol BS1 4ST
[redacted]

Cardiff
Helmont House, Churchill Way,
Cardiff CF10 2HE
[redacted]

Exeter
6 Victory House,
Dean Clarke Gardens,
Exeter EX2 4AA
[redacted]

Birmingham
Great Charles Street,
Birmingham B3 3JY
[redacted]

Manchester
Oxford Place, 61 Oxford Street,
Manchester M1 6EQ.
[redacted]

Leeds
7 Park Row, Leeds LS1 5HD
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Waste Minimisation

Great Western Yard

IDOM

WASTE MINIMISATION REPORT
GREAT WESTERN YARD
EUTOPIA HOMES (GLOUCESTER) LTD
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Document1

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Rev	Date	Author	Checked	Approved

Report issued from

Choose Office

TABLE OF CONTENTS

SECTION 1 INTRODUCTION

1.1 Eutopia Homes (Gloucester) Ltd is proposing to develop a site at Great Western Yard, Great Western Street, Gloucester for residential use. IDOM Merebrook Ltd (IDOM) has been appointed to prepare a waste minimisation statement to support the planning application.

1.2 This document represents the waste minimisation statement which Eutopia Homes adopts, and will ensure that the requirements of which are followed by the principal contractor(s) selected for the construction project.

1.3 This report has been prepared for Eutopia Homes (Gloucester) Ltd for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Eutopia Homes (Gloucester) and IDOM as to the extent to which the findings may be appropriate for their use.

SECTION 2 BACKGROUND AND SITE DESCRIPTION

2.1 GUIDANCE AND STATUTORY BACKGROUND

2.1.1 Waste is defined in EU Legislation (transposed into UK legislation). Article 1 of Directive 2008/98/EC on waste (Waste Framework Directive) defines waste '*as any substance [not excluded from the scope of the Directive] which the holder discards, intends to discard or is required to discard*'.

2.1.2 When a material fulfils the definition of waste under the Framework definition, then other articles and provisions in the Directive constrain how that material must be dealt with as discussed below.

2.1.3 Substances may cease to be waste when they are subject to certain recovery operations (including recycling) and comply with specific criteria.

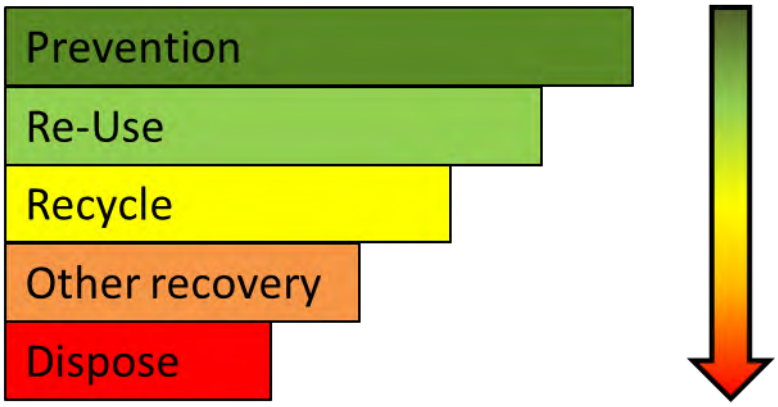
2.1.4 Policy SD3 of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy (2017) on Sustainable Design and Construction states that "…*All developments will be expected to incorporate the principles of waste minimisation and re-use. Planning applications for major development must be accompanied by a waste minimisation statement*."

2.1.5 The Gloucestershire Council Waste Core Strategy 2012-2027(2012) contains Core Policy WCS3 on Waste reduction which requires that "*All development will be expected to incorporate the principles of waste minimisation and re-use. Planning applications for 'major' development must be supported by a statement setting out how any waste arising during the demolition, construction and subsequent occupation of the development will be minimised and managed*"

2.1.6 Gloucester County Council has produced Supplementary Planning Document on Waste Minimisation in Development Projects (2006) (Reference 1) which supplements the above policy in the Waste Core Strategy.

2.1.7 The SPD sets out a requirement for the preparation of Waste Minimisation Statements for major developments within Gloucestershire's district councils. The aim of the statements is to reduce waste generation; reduce the quantity of waste that needs processing and disposal; and ultimately to divert 100% of construction and demolition waste from landfill.

2.1.8 In accordance with the plan, waste from construction sites should be managed in accordance with the waste hierarchy as set out below.



2.1.9 In the above hierarchy, each tier should preferentially be used and only where any particular activity/ use cannot be achieved at the higher tier, should a lower tier be considered.

2.1.10 In accordance with the SPD -waste minimisation entails both "*not producing waste in the first place"* and *"reducing the quantity of waste that requires processing and/or disposal*".

2.1.11 The principles required to be followed under the waste minimisation plan are listed as:

i. To design proposals sustainably;

ii. To reduce the amount of waste generated from development;

iii. To conserve natural resources through re-using waste arising from construction;

iv. To re-use waste materials on-site to reduce transportation;

v. To use recycled materials where possible;

vi. To reduce waste generation during the operational lifetime of the development, and facilitate recycling where waste does arise.

2.2 THE SITE

2.2.1 The site is located to the south of Great Western Road and to the west of Horton Road in the City of Gloucester

2.2.2 It has an approximate area of 3.2 ha.

2.2.3 The site comprises former rail land and includes sidings and a disused depot with associated structures. Other uses are present including open storage, motor repairs, timber sales yard and car parking.

2.2.4 The surface of the site is constructed of a mixture of macadam and concrete hardstanding, unbound stone surfacing and soft ground. There are extensive sidings within the site with some rails on wooden sleepers over ballast.

2.2.5 The principal structure on the site is a single-storey former Engine Shed situated in the central eastern part of the site. It measures approximately 34 m by 14 m in plan and is 3.9 m high to the internal eaves.

2.2.6 The building is of solid brick construction with a pitched roof of corrugated metal supported on a light steel frame structure.

2.2.7 A report on the potential for re-use of this structure has been prepared by Artisan Estate Management Ltd (Reference 2). The report notes that the building is in poor structural condition due to lack of maintenance and severe weathering. Concrete lintels show exposed steel reinforcements.

2.2.8 The report concludes that the building is beyond economic repair and could only be reused following full dismantling and reconstruction.

2.2.9 Further smaller buildings are found on the central eastern part of the site which appear to have been in railway use. These are single-storey brick buildings which have a smaller footprint than the engine shed. There is some fire damage to roofs on one of the buildings. It is necessary for these to be fully removed for the purposes of the development.

2.2.10 To the east of the site, a further small brick gatehouse is present which will be removed. Other structures within the open storage area and timber yard area appear to be temporary and or prefabricated structures of light construction. Asbestos roofs are suspected.

2.2.11 The site has been subject to some site investigation as summarised in a Hydrock Technical Note (Reference 3) which in turn reviewed a number of site investigation documents.

2.2.12 The site is shown on BGS mapping (Reference 4) to be partially located on superficial deposits of the Cheltenham Sand and Gravel. This is expected to be a fine to medium grained quartzose sand with seams of gravel. It is shown as being absent from the eastern part of the site.

2.2.13 The solid geology beneath the site is shown as the undifferentiated Blue Lias and Charmouth Mudstone Formations. The former is a interbedded limestone and mudstone, while the latter consists of a dark grey laminated shale/ mudstone.

2.2.14 Limited site investigations were undertaken which showed the presence of made ground in all locations to depth of up to 2.1 m. Base of made ground was not proven in all locations.

2.2.15 Cheltenham Sand and Gravel was found in all locations where the made ground was penetrated, to maximum proven depth of 4.7 m.

2.2.16 Boreholes proved the solid geology to a maximum depth of 12 m and the description is consistent with deposits of the Charmouth Mudstone Formation

2.2.17 Groundwater was encountered in the superficial deposits at depths of between 1.0 and 2.5 m.

2.2.18 Evidence of contamination by hydrocarbons and the presence of substantial thicknesses of non-aqueous phase liquids was noted. The material encountered appears to be limited to areas of known former interceptors and was characterised as diesel.

2.2.19 Other areas of odorous made ground were noted including hydrogen sulphide and naphthalene.

2.2.20 Chemical testing confirmed the presence of petroleum hydrocarbons and BTEX compounds, these being associated with areas of notable odour and/ free product. Heavy metals were noted to be present associated with visible ash deposits. Asbestos, in the form of macroscopic artefacts and loose fibres, was noted in made ground and on the surface of the site.

2.2.21 Gas monitoring was undertaken which confirmed the presence of elevated carbon dioxide and slightly elevated methane concentrations. Gas flow was found to be negligible.

2.2.22 While additional testing will be necessary to define the scope of remedial action more fully, it is clear that some ground remediation will be necessary.

2.3 THE DEVELOPMENT

2.3.1 The proposed development for the site entails a fully residential use on former brownfield land. 315 residential units are proposed in a combination of four flat blocks and townhouses with gardens.

2.2 The flat blocks will be constructed using concrete frames with brick fascia and the town houses will use timber frames with brick external walls.

2.3 Externals will include parking and circulation areas and soft landscaping comprising a mixture of private gardens and communal green spaces.

2.4 Communal green spaces will include lawns, meadows/ naturalistic planting, and SUDS features expected to be rain gardens. LAP and LEAP areas will be provided.

SECTION 3 PROJECT PLANNING AND DESIGN STAGE

3.1 PLANNING TO ELIMINATE WASTE IN DESIGN

3.1.1 At the conceptual design stage, the developer and designer have considered the capacity for existing structures and infrastructure to retained for reuse.

3.1.2 The structures present on site have been reviewed in the context of the potential for retentions but in all cases are considered to be incompatible with the intended high quality, low to medium-rise housing use provided.

3.1.3 The structures are generally in poor condition, of low energy efficiency standards and unsuitable for conversion or rehabilitation to produce accommodation to meet current standards. They have low architectural merit and their footprints are not consistent with the intended efficient densities.

3.1.4 The largest structure, the Engine Shed, has some minor architectural and historical significance as described in Reference 2, but that study shows that the only practical means of providing a residential use in this structure is by full dismantling and reconstruction. The design and material implications of such an approach are considered to outweigh the small percentage reduction in materials use arising.

3.1.5 A proportion of the site is covered in hardstanding of variable quality. The location of the hardstand and its variable quality means that it will not be suitable for reuse *in situ* and cannot be retained.

3.1.6 The site is unlikely to be served by drainage infrastructure which is either of suitable capacity for the proposed development or of a construction and design which is acceptable under current standards. For this reason, it is not planned to reuse existing drainage. Connection of new drainage to the off-site network will be made at the nearest point from which the infrastructure is suitable for use.

3.2 STANDARD MATERIAL SIZES/ PREFABRICATION

3.2.1 The designs for structures and infrastructure have adopted the use of standardised material sizes for all building components (*e.g. glazing systems, lintels, roof trusses, joists etc).* Standard brick sizes will be used for the cladding systems on flats and for external walls of town houses.

3.2.2 The designs have also incorporated prefabricated bathrooms and utility cupboards.

3.2.3 Off-site fabrication of roof trusses *etc.* will mean that factory-level standards of production can be adopted to minimise timber wastage.

3.2.4 The designer will take into account guidance set out in RIBA Plan of Work *Sustainability Project Strategy.*

3.3 RECYCLED CONTENT/ SUSTAINABLE SOURCING

3.3.1 Use of standardised material sizes increases the potential for the constructor's buyers to source materials with a higher recycled content.

3.3.2 In practice, the recycling content of the principal construction materials will be controlled by the nature of the product and the market availability of recycled content. Table 1 below sets out expected recycled content by material.

Table 1. **Prospective recycled content by material**

MATERIAL	POTENTIAL RECYCLED CONTENT	
Concrete	negligible	
Brick	up to 15%	Pre-consumer recycling content
Glazing systems	typically 10% for uPVC to 80% for aluminium	Post-consumer
Glass	up to 20%	Principally recycled cullet at factory, very low percentage of post-consumer glass
Insulation	up to 80%	Assume glass wool
Plasterboard	c.10%	Post-consumer
Steel	c. 25%	Post-consumer

MATERIAL	POTENTIAL RECYCLED CONTENT	
Roofing	Negligible	
Timber	Negligible	
Mortar	c. 5%	Pre-consumer

3.3.3 In addition to the recycled content of building materials brought to site, there is a significant potential for materials arising from demolition and site preparation to be reused on site. The details of this will depend upon a number of factors which cannot be confirmed at this stage and are subject to further site investigation.

3.3.4 It is envisaged that a significant amount of hard material would arise from building demolition and hardstanding removal. This is considered likely to be suitable for crushing for re-use as a 6F2 material which would be suitable as a piling mat.

3.3.5 Other construction arisings will be considered for re-use as bulk materials where they are suitable. Table 2 sets out indicative amounts and material fates as may be predicted at this time.

Table 2. **Prospective site derived material reuse**

MATERIAL	POTENTIAL FOR REUSE	POTENTIAL FOR RECYCLING
Brick, tiles, concrete from structures	Good potential for on site re-use as piling mat, possibility for re-use as higher grade aggregate for roads/ infrastructure	Possible recycling of brick for re-use. Subject to quality and local market conditions.
Steel (rails *etc)*		100% probability of recycling of site
Bituminous macadam/ black top	Potential for inclusion in new bituminous surfacing- Subject to environmental permitting	May be suitable for inclusion in bituminous surfacing off-site. Subject to environmental permitting.
Wood/ timber	Use of off-cuts for temporary shuttering	Potential for re-use as dimensional timber Energy recovery

MATERIAL	POTENTIAL FOR REUSE	POTENTIAL FOR RECYCLING
Green waste	-	Off-site composting
Asbestos waste	-	Off-site disposal
Contaminated and post-treated contaminated soils		Off-site disposal

3.3.6 The site preparation will entail a ground remediation stage, the scope of which will be determined by additional site investigations. Based on the existing knowledge of ground conditions it is considered that *in situ* remediation techniques may well be available for the treatment of contamination.

3.3.7 These could entail, free product pump-and-treat, *in-situ* bio treatment, treatment using bio-piles, soil washing and or soil stabilisation.

3.3.8 All *in-situ* techniques will minimise the amount of soil which needs to be disposed off-site.

3.3.9 Designers will prioritise the use of site-based remediation methods over any processes which entail soils removal.

SECTION 4 CONSTRUCTION ACTIVITIES

4.1 ESTIMATED WASTE AMOUNTS

4.1.1 The amounts of waste likely to be generated can be broadly estimated from similar projects and will be minimised by the adoption of good housekeeping, stock control, workmanship and management.

4.1.2 Given the construction methods adopted, it is considered that the main structural frames for the apartments will be constructed with a minimum of waste materials. It is however inevitable that a small streams of waste will be produced during the construction due to delivered damaged goods, damages on site, cutting, temporary works *etc.*

4.1.3 Order of magnitude estimates of the amounts of wastes by category have been prepared and are set out in Table 3. These estimates are generation estimates only and do not take into account off-site recycling effectiveness.

Table 3 **Preliminary waste mass estimates**

MATERIAL	REASONS	PRE-START ESTIMATE
Concrete/ mortar	Abortive work Temporary work Washing out	250 T
Bricks	Cutting. Broken bricks	100 T
Timber	Off cuts	50 T
Plasterboard	Off cuts	100 T
Electrical	Damaged and off cuts	1 T
Copper	Off cuts	0.5 T
Plastics	Broken and off cuts	5 T
Steel	Off-cuts	50 T
Packaging waste and miscellaneous waste		100 T

4.1.4 All estimates must be treated as preliminary only and will be subject to review and audit as discussed below.

4.2 AUDITING WASTE

4.2.1 The Principal Contractor as defined under Construction (Design and Management) Regulations 2015 will have the responsibility of auditing the waste generation at the site. As part of the appointment process, the contractor will be required to set out its processes for recording the amounts of waste which are generated and the subsequent actions *e.g.* re-use off-site, reprocessing/ recycling, energy recovery and landfill disposal.

4.2.2 This scope will cover demolition, site preparation / remediation and construction.

4.2.3 If separate contractors fill the role of Principal Contractor at different times, each will follow the scope set out.

4.2.4 The Principal Contractor will be responsible for preparing a bespoke plan based on the principles of this document.

4.2.5 The plan will include any appropriate measures from the Principal Contractor's standing requirements on waste and material management.

4.2.6 The Principal Contractor will nominate a suitable team member (Site Manager or Deputy) as the Waste Coordinator for the scheme.

4.2.7 The Waste Coordinator will review and update a pre-start assessment of the likely waste streams at the commencement of the project using the spreadsheet set out in Appendix 1 or similar document.

4.2.8 The spreadsheet will be revised and amended as phases of work progress to record the amounts of waste generated and the means by which they are re-used/ recycled or disposed.

4.2.9 Waste reporting to the client will form an agenda item on regular project meetings.

4.2.10 All waste and waste-minimisation records produced under the plan will be retained by the Principal Contractor and client for two years.

4.3 WASTE MANAGEMENT AND SEGREGATIONS

4.3.1 Construction will include groundworks, frame construction, façade construction and associated superstructure works, fit-out and landscaping etc.

4.3.2 All works will be under the control of the Principal Contractor and the project will be supported by construction professionals including cost advisors.

4.3.3 The principal means of waste management through all stages of construction is by careful planning of resources to meet the requirements of the project – thus avoiding delivery to site of excess material which could later be discarded and become waste. Efficient resource and cost-planning will be the principal means of achieving this.

4.3.4 Nevertheless, it is inevitable within any project that some amount of surplus materials may brought to site, either due to design or programme reasons, and that some waste will be generated due to off-cuts, abortive work, design changes; unsatisfactory quality or other reasons.

4.3.5 The Principal Contractor will introduce controls to ensure that waste generation is minimised including the following actions:

i. Good and appropriate storage for all materials to protect from damage/ weather *etc.*;

ii. 'Just-in-time' delivery where possible for certain materials;

iii. Coordination of subcontractors to ensure efficient processes; and,

iv. Establishment of waste efficiency targets.

4.3.6 The Principal Contractor will also promote efficient re-use and recycling by the following means:

i. Well-designed waste management facilities to incorporate separation of each stream of material;

ii. Tidy-site policies;

iii. Encouragement of suitable means for using excess materials – e.g. timber off-cuts used for temporary shuttering, suitable aggregate arisings used in place of imported aggregates *etc.*;

iv. Tool-box talks for operatives to promote waste minimisation and recycling; and

v. Suggestion box scheme to invite means of waste reduction.

4.4 RE-USE OF WASTE ON SITE

4.4.1 As set out above, the principal possibilities for the re-use of materials arising would relate to reuse of demolition and infrastructure removal arisings.

4.4.2 The potential for such a possibility is strongly indicated at this time and the contractor will preferentially use any hard materials which meet the relevant geotechnical and chemical specifications and can substitute for a virgin aggregate or other off-site derived materials

4.4.3 Any level changes required at the site for drainage, landscaping, design or other purposes would in the first instance be achieved using existing soils.

4.4.4 If any significant earthworks were undertaken, a Materials Management Plan would be prepared under the CL:AIRE Code of Practice on the Definition of Waste.

4.4.5 Materials moved under and in accordance with the plan would not be waste operation.

4.5 HAZARDOUS WASTE MANAGEMENT

4.5.1 Based on review of preliminary site investigation information it is concluded that a proportion of the contaminated soils beneath the site would be, if they were discarded, classified as hazardous waste under the Hazardous Waste (England and Wales) Regulations 2005.

4.5.2 The status of waste however depends upon the definition of waste set out in paragraph 2.1.1 above and the presence of hazardous properties does not affect the definition of waste. If material is not a waste in accordance with the definition, then it cannot be a hazardous waste.

4.5.3 Thus, any hazardous materials encountered as a ground contaminant will be addressed in accordance with a Remediation Method Statement to be submitted to and agreed by Gloucester City Council. If that material is not capable of treatment

to remain safely on the site in accordance with the Remediation Method Statement, it will be disposed from site under a hazardous waste consignment note for treatment at a permitted site.

4.5.4 It is considered unlikely that the construction processes would generate significant quantities of material which may be classified as hazardous under the statutory definition.

4.5.5 Waste solvents or substances containing solvents (such as paints and adhesives could meet this definition and such materials and their used containers will be maintained as a separate stream and disposed in accordance with all relevant guidance and legislation.

4.5.6 No hazardous material will be mixed with non-hazardous material.

SECTION 5 OPERATIONAL LIFE

5.1 WASTE AND RECYCLING REQUIREMENTS

5.1.1 The waste and recycling requirements of Gloucester City Council are set out in GCC standards see Reference 5.

5.1.2 The developer and designer have reviewed and made provision for relevant bin storage requirements for housing and apartments.

5.1.3 The requirements are for set out in Table 4.

Table 4. **Waste container requirements**

CATEGORY	HOUSES	FLATS/ APARTMENTS
General Waste	240 l wheeled bin	1100 l per 8 flats
Food waste	23 l caddy	140 l communal use
Dry Recycling	55 l box	5 X 360 l per block
Garden Waste	240 l wheeled bin	NA

5.1.4 Bin stores will be of steel frame with FSC Certified hardwood cladding and green roofs.

5.2 PROVISION FOR WASTE AND RECYCLING VEHICLES

5.2.1 The design layout has taken into account the requirements of Reference 5 with respect to access.

5.2.2 Swept path analysis drawings for refuse/ recycling lorries are attached as Appendix 2.

SECTION 6 REFERENCES

1. Supplementary Planning Document – Waste Minimisation in Development Projects Gloucestershire County Council dated September 2006

2. Engine Shed, Rail Yard, Horton Road, Gloucester, GL1 3AN, Development Assessment – An evaluation of potential building re-use. Artisan Estate Management dated 17 May 2022

3. Great Western Road, Gloucester Technical Note Reference 20775-HYD-XX-XX-CO-GE-1000 Hydrock dated 13 August 2021.

4. BGS Geology of Britain Viewer (www.bgs.ac.uk/ geology of Britain/)

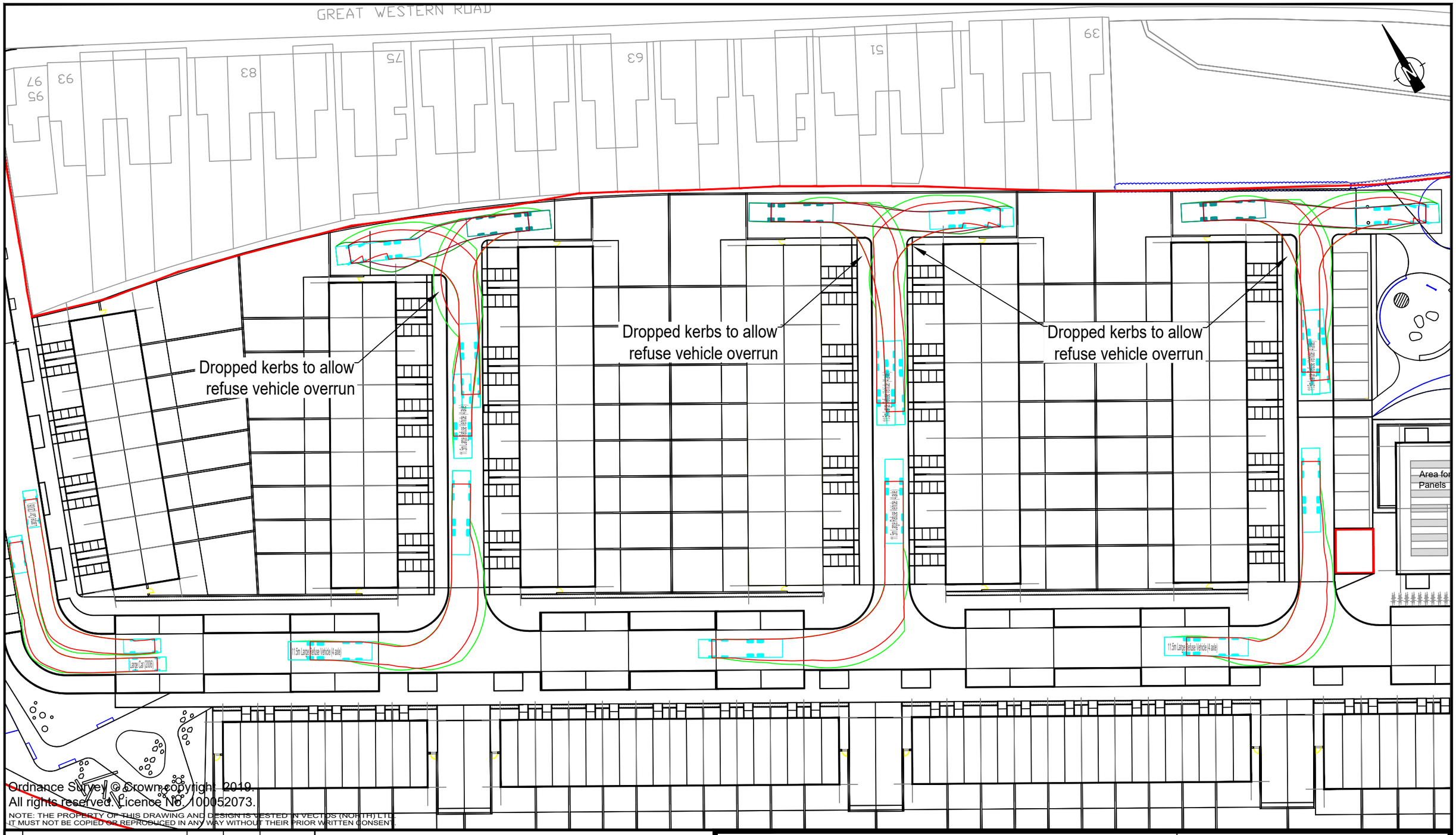
5. Waste and Recycling Storage and Collection Guidance for New Residential Developments in Gloucester City

APPENDIX 1

- Proposed waste audit forms

Great Western Yard		Precommencement forecast					Project performance					Comparison				
		Generated /T	Reused /T	Recycled /T	E Recovery /T	Disposed /T	Generated /T	Reused /T	Recycled /T	E Recovery /T	Disposed /T	Generated %	Reused %	Recycled %	E Recovery %	Disposed %
	Material categories															
	Office waste															
	Canteen waste															
DEMOLITION	Asbestos															
	Tiles/ Ceramic															
	Timber															
	Masonry															
	Concrete															
	Steel															
	Plaster/ plasterboard															
	Plastics															
	Copper															
	Glass															
	Other															
GROUNDWORKS	Concrete															
	Bituminous material															
	Aggregate															
	Topsoil															
	Subsoil/ Cheltenham Sand															
	Contaminated soils - Non haz															
	Contaminated soils - Haz															
	Trees/ shrubs/ green material															
CONSTRUCTION	Concrete PC															
	Concrete - on site mix															
	Blocks/ bricks															
	Steel/ Ferrous metals															
	Timber - treated															
	Tiimber - untreated															
	Plastics															
	Copper															
	Other electrical															
	Other Plumbing															
	Packaging waste															
	Other															

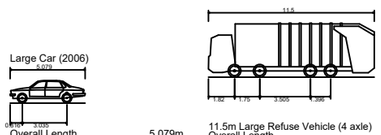
APPENDIX 2 ▪ Swept path drawing for refuse/ recycling lorries



REV.	DETAILS	DRAWN	CHECKED	DATE
A	Site layout updated	WD	TR	05.07.22

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.



Large Car (2006)		11.5m Large Refuse Vehicle (4 axle)	
Overall Length	5.079m	Overall Length	11.500m
Overall Width	1.872m	Overall Width	2.500m
Overall Body Height	1.525m	Overall Body Height	3.751m
Min Body Ground Clearance	0.310m	Min Body Ground Clearance	0.304m
Max Track Width	1.831m	Track Width	2.500m
Lock to lock time	4.00s	Lock to lock time	6.00s
Kerb to Kerb Turning Radius	5.900m	Wall to Wall Turning Radius	11.330m

Great Western Yard, Gloucester

Eutopia Homes

Swept Path Analysis - Refuse Vehicle & Large Car

vectos.

[redacted]

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
WD	TR	24.06.22	1:500 at A3	VN212156 - TR103	A

Area for Solar Panels

34.15

Area for Solar Panels

35.0

Area for Solar Panels

35.0

Area for Solar Panels

See Inset 1

Area for Solar Panels

32.15

Area for Solar Panels

5500

Inset 1

32.15

Landscaping to be confirmed to accommodate tracking

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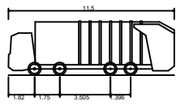
REV.	DETAILS	DRAWN	CHECKED	DATE
A	Site layout updated	WD	TR	05.07.22

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.



11.5m Large Refuse Vehicle (4 axle)	
Overall Length	11.500m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	11.330m

Great Western Yard, Gloucester

Eutopia Homes

Swept Path Analysis - Refuse Vehicle & Large Car

vectos.

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
WD	TR	05.07.22	1:500 at A3	VN212156 - TR104	-

EUTOPIA

HOMES