



University of Kent, Canterbury Campus

Transport Strategy: Disposal Sites





University of Kent, Canterbury Campus

Transport Strategy: Disposal Sites

Type of document (version) Public

Project no. 70080896

Our Ref. No. -

Date: August 2021

WSP

2 London Square

Cross Lanes

Guildford, Surrey

GU1 1UN

Phone: +44 148 352 8400

WSP.com



Quality control

Issue/revision	First issue	Revision 1	Revision 2
Remarks	DRAFT	Draft for Stakeholders	Final Issue
Date	19/07/2021	22/07/21	05/08/21
Prepared by	Will Forster / Sarah Thomas	Will Forster / Sarah Thomas	Will Forster / Sarah Thomas
Signature			
Checked by	Justin Sherlock	Justin Sherlock	Justin Sherlock
Signature			
Authorised by	Alex Andrews	Alex Andrews	Alex Andrews
Signature			
Project number	70080896	70080896	70080896
Report number	1	1	1
File reference	\\uk.wspgroup.com\central data\Projects\70080xxx\70080896 - University of Kent\03 WIP\TP Transport Planning\Reports		

Contents

Executive summary

1	Introduction	1
1.1	Background	1
1.2	Site location	1
2	Site Context and Existing Conditions	3
2.1	Introduction	3
2.2	Site location	3
2.3	Policy context	4
	Local planning context	4
	University Masterplan	5
2.4	Existing transport conditions	6
	Pedestrians	6
	Cyclists	11
	Public Transport	15
	Bus Services	15
	Rail services	17
	Highway Network	19
3	Emerging Proposals	21
3.1	Introduction	21
3.2	Scheme Development	21
	Stakeholder Engagement	23
3.3	Development Proposals	23
	Sites BCD	24
	Site E	24
	Site F	24



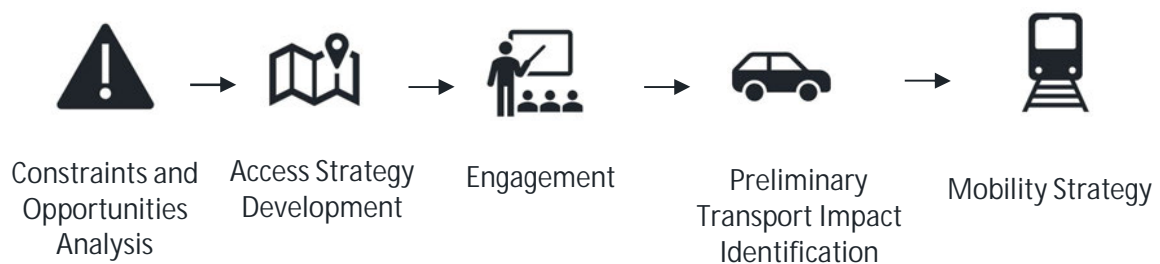
3.4	Emerging Masterplan	24
4	Transport Strategy	26
<hr/>		
4.1	Introduction	26
4.2	Access Strategy	26
	Vehicular Access	26
	Pedestrians and Cyclists	32
4.3	Public Transport Strategy	32
4.4	Walking, Cycling and Micro-mobility Strategy	35
4.5	Parking Strategy	36
4.6	Servicing and Waste Strategy	36
4.7	Future Trends Strategy	36
5	Provisional Trip Generation and Impact Assessment	39
<hr/>		
5.1	Introduction	39
5.2	Development Quantum	39
5.3	Residential Trip Generation	39
5.4	Other Land Use Trip Generation	42
	Local Centre	42
	Primary school	42
	Relocated sports pitches	42
	Public open space	42
5.5	Anticipated trip distribution	42
5.6	Highway Impacts and Local Plan Modelling	46
5.7	Next Steps	47
6	Summary and Conclusion	48
<hr/>		

Executive summary

WSP has been appointed by the University of Kent (UoK) to provide transport and environmental advice for the development of proposals at various sites in and around their Canterbury Campus.

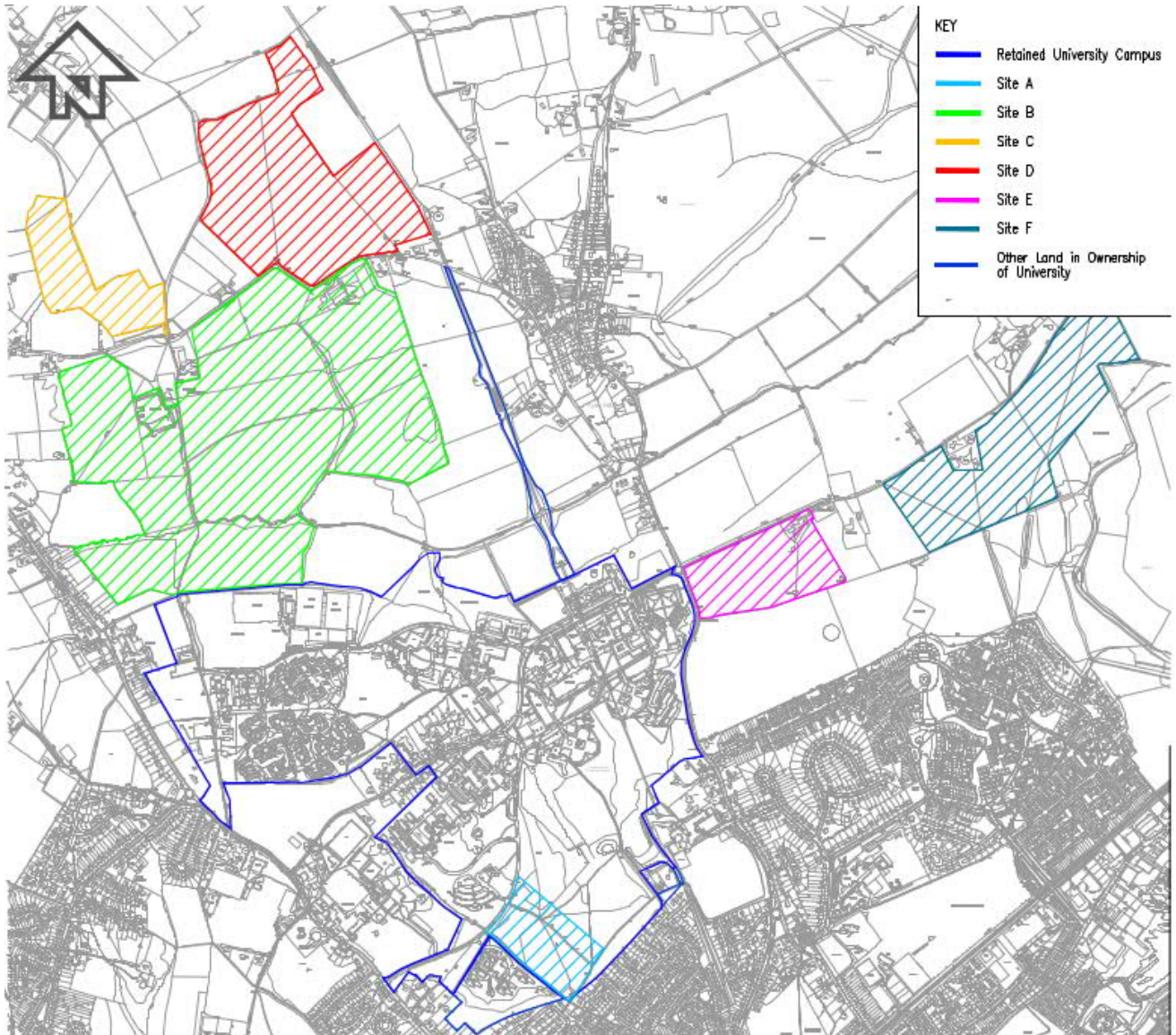
This Transport Strategy has been prepared to document the process undertaken to develop the Transport Strategy and present the findings of the Strategy to inform the Canterbury City Council Local Plan process.

Six sites were originally identified by the University for consideration and a five-stage process was adopted to develop this Transport Strategy:



The site locations relative to the University Campus are shown in **Figure 1**.

Figure 1: Surplus Land Site Location



Reproduced from the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationery Office. Licence no. 100048755. Crown copyright reserved.

Site A is no longer being promoted for development of alternative non-University related uses at this time. Instead, and as set out within the corresponding Local Plan Options Representation (prepared by Avison Young) Site A is now being promoted for retention within the wider UoK Campus Boundary within the emerging Local Plan for continued University-related uses. As such, Site A is not focussed on within this current Transport Strategy.

Of the remaining sites the Constraints and Opportunities analysis identified at an early stage that the sites with the greatest potential for built development were sites BCD (as a combined development opportunity) that lie to the north of the University Campus. Constraints to access, visual impact and the presence of a Scheduled Ancient Monument

(SAM) limited the potential uses on Sites E and F located to the east of the University Campus.

Sites BCD benefit from close proximity to the University Campus and as such are able to access the high frequency bus services available as well as amenities and facilities on and beyond the University.

Vehicular access to Sites BCD is currently provided from Tyler Hill Road, a rural single carriageway road that connects Blean and the A290 in the west with Tyler Hill and Canterbury Hill in the east.

Tyler Hill Road is subject to national speed limit (60mph), varies in width between approximately 4m and 6m, is subject to a 7.5t weight restriction and in places features limited forward visibility. In its current form Tyler Hill Road is not considered suitable to accommodate a significant increase in volumes of traffic. Due to the limited frontage available from Sites BCD onto Tyler Hill Road, constrained highway boundary extents and multiple land ownerships fronting the highway, the University has limited potential within its own land ownership to improve the existing Tyler Hill Road.

The access strategy responded to these constraints by proposing a new north-south route through the University Campus with an access onto A290 Whitstable Road. To discourage increased usage of Tyler Hill Road it was recommended that the existing road was downgraded where it passed through University owned land and the highway incorporated into the masterplan where design measures could be included to manage through traffic and limit access from the development out onto the retained sections of road. Further benefits would be the ability to re-prioritise Tyler Hill Road as a sustainable transport link and improve crossing conditions for the Crab and Winkle Way (a regionally significant cycle route).

A range of alignments were considered for the new access road to minimise impacts on the existing University Campus and other constraints such as the ancient woodland, watercourse and relevant heritage constraints located both on and off site. Acknowledging that the access strategy relies upon creating a new route through the ancient woodland the overall footprint of the road would be minimised and where it crosses the watercourse a bridge used rather than a culvert.

The access strategy will facilitate delivery of the existing University Masterplan and help to unlock the parking strategy which seeks to locate parking on the periphery of the University Campus enabling traffic volumes in the centre of the Campus to be reduced.

Pedestrian and cycle access to Sites BCD would be achieved via the new access road but also via the Crab and Winkle Way (National Cycle Route 1) that runs through Site B and through improvements to the network of Public Rights of Way in the local area.

A range of supporting strategies have been developed to ensure delivery of sustainable development can be achieved on Sites BCD. These include an outline public transport strategy that seeks to provide a transport hub at the centre of the development offering



access to a range of modes of transport. Supported by a Mobility as a Service (MaaS) and Micro-mobility offer this will ensure that active travel and public transport can be prioritised above the private car.

A provisional trip generation for the proposed development has been developed to understand potential traffic volumes and consideration given to the findings of the Jacobs Local Plan modelling work when considering off-site highway impacts.

The provision of a new access road between Whitstable Road and Tyler Hill Road will alter the highway network in this part of Canterbury and further strategic modelling may be required to understand this in more detail.

Throughout the process of development of the Transport Strategy engagement has been undertaken with Canterbury City Council and Kent County Council Highways.

The Transport Strategy developed is considered to be deliverable and would enable this site to come forwards in due course subject to further masterplanning design development, and appropriate assessment.

Contact name Justin Sherlock

Contact details | 

1 Introduction

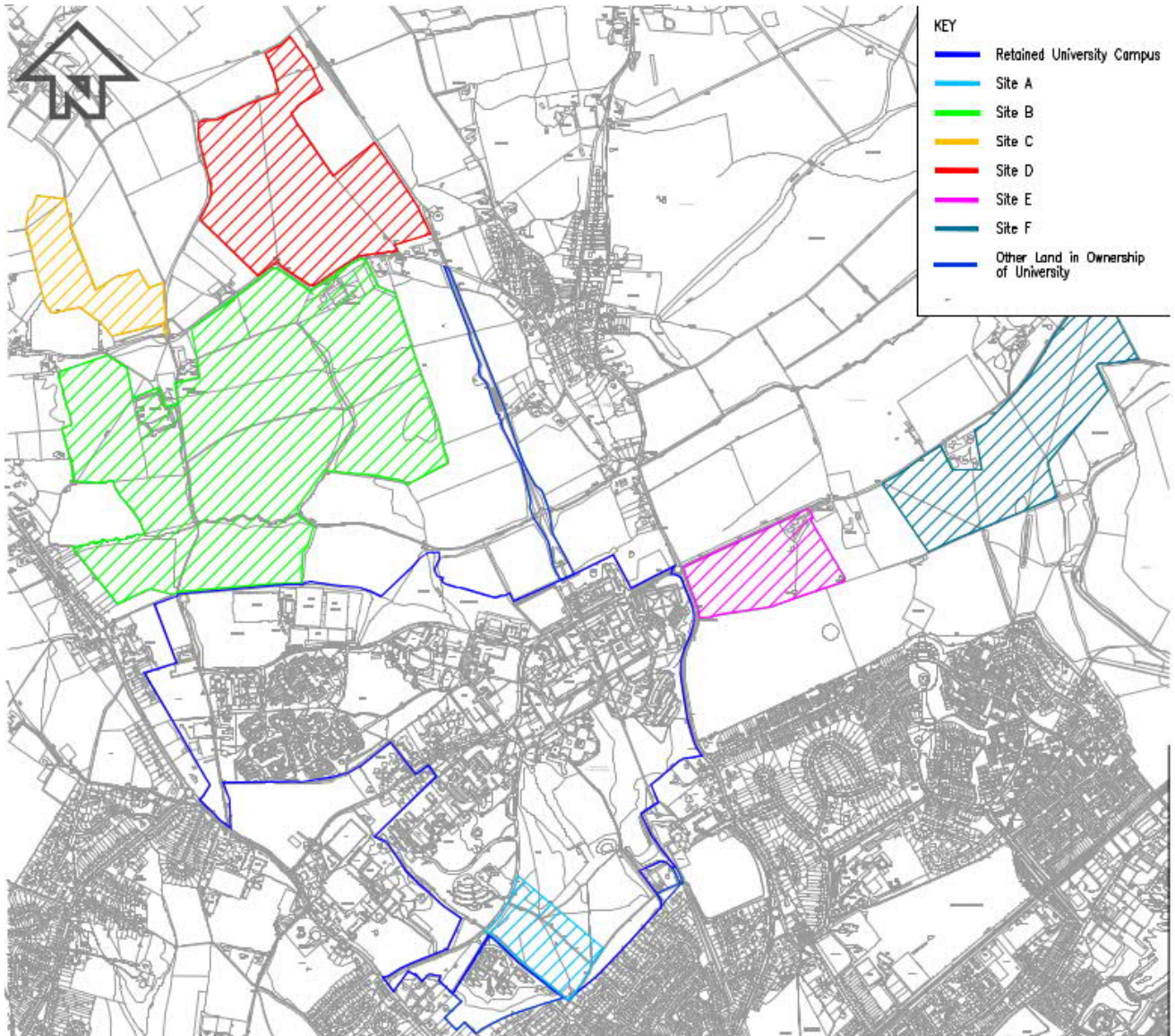
1.1 Background

- 1.1.1. WSP has been commissioned by the University of Kent (UoK) to provide transport and environmental advice for the development of proposals at various sites in and around their Canterbury Campus.
- 1.1.2. This Transport Strategy has been prepared to document the process undertaken to develop the Transport Strategy and present the findings of the Strategy to inform the Canterbury City Council Local Plan process.
- 1.1.3. Following this introduction, the remainder of this Transport Strategy is set out as follows:
 - Section 2 considers the existing site and transport conditions
 - Section 3 provides an overview of the emerging development proposals including the stakeholder engagement undertaken to inform development of the proposals
 - Section 4 provides the transport strategy for the surplus land
 - Section 5 considers the all-mode trip generation of the development proposals and the anticipated likely transport impacts
 - Section 6 provides a summary and conclusion

1.2 Site location

- 1.2.1. The UoK Canterbury Campus is located to the north of the centre of Canterbury on the urban fringe of the City. Covering an area of approximately 105 hectares the University Campus features a mixture of academic buildings and student accommodation buildings alongside associated sports and recreational facilities.
- 1.2.2. Surrounding the University Campus UoK own several additional land holdings which are currently let to tenant farmers for predominantly arable farming. **Figure 1** identifies the University Campus and surrounding land that is the subject of this Transport Strategy.

Figure 1: Surplus Land Site Location



Reproduced from the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationery Office. Licence no. 100048755. Crown copyright reserved.

- 1.2.3. Site A is no longer being promoted for development of alternative non-University related uses at this time. Instead, and as set out within the corresponding Local Plan Options Representation (prepared by Avison Young) Site A is now being promoted for retention within the wider UoK Campus Boundary within the emerging Local Plan for continued University-related uses. As such, Site A is not focussed on within the remainder of this current Transport Strategy.

2 Site Context and Existing Conditions

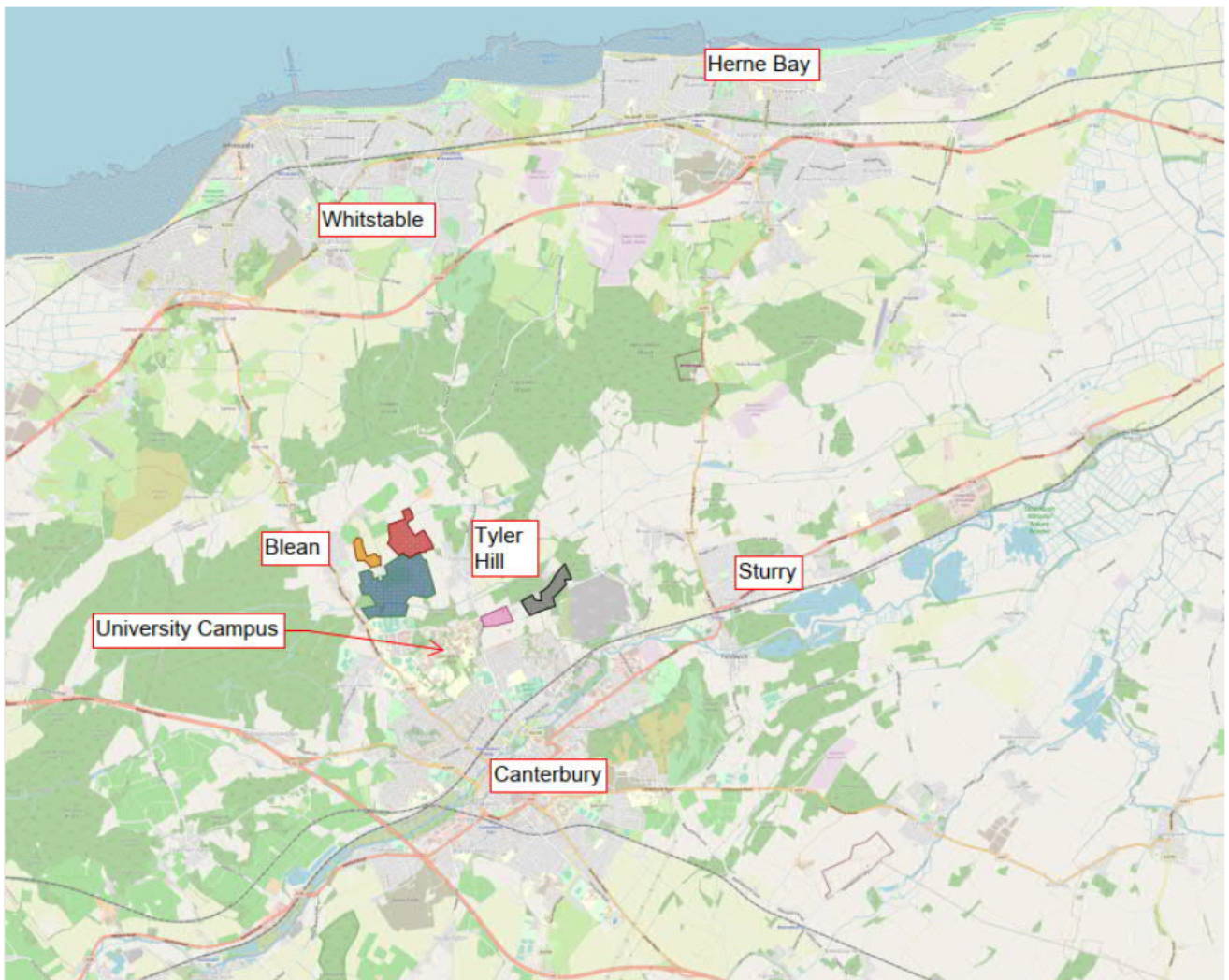
2.1 Introduction

2.1.1. This section outlines the existing transport conditions in the vicinity of the disposal sites, assessing the walking, cycling, public transport and local highway network facilities and accessibility.

2.2 Site location

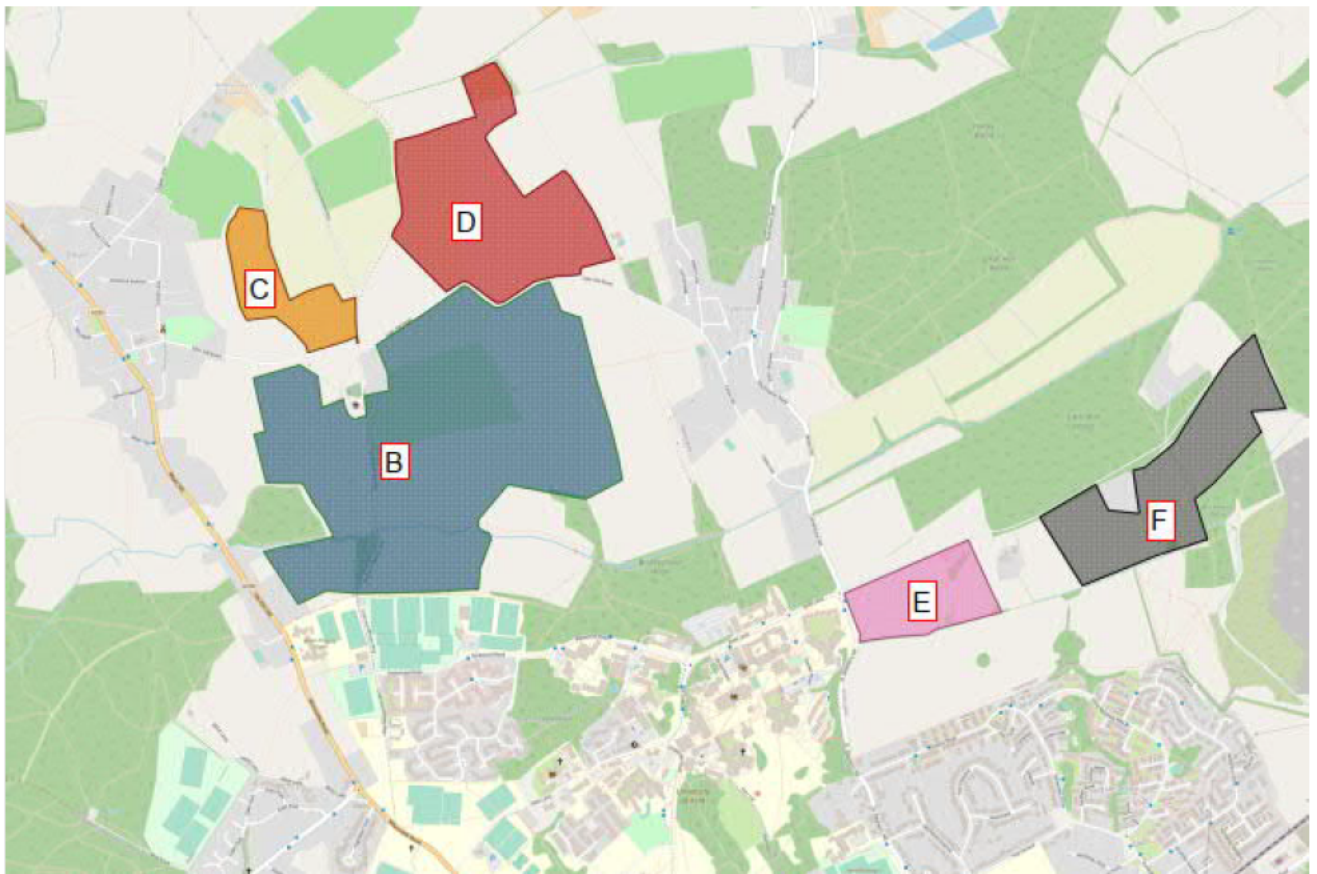
2.2.1. The UoK Canterbury Campus is located to the north of the centre of Canterbury on the urban fringe of the City. Covering an area of approximately 105 hectares the University Campus features a mixture of academic and student accommodation buildings alongside associated sports and recreational facilities. **Figure 2** shows the site location in the context of East Kent.

Figure 2: Site Location



- 2.2.2. The focus of this Strategy is land that the University has identified as being surplus to requirement. This land can be split into five main land parcels. Sites BCD lie to the north of the University Campus and are currently accessed from Tyler Hill Road, an unclassified rural road that runs approximately east west between Blean and the A290 Whitstable Road in the west to the village of Tyler Hill in the east. Frontage to this road from Sites BCD is limited with third party land between the site boundary and adopted highway.
- 2.2.3. Site E is located to the east of the University Campus and is bound by St Stephen's Hill in the west. Site E is currently accessed via a private road that bounds the site to the north.
- 2.2.4. Site F is located to the east of Site E and is accessible by a private road that runs east west from the junction of St Stephen's Hill and Giles Lane in the west. **Figure 3** identifies the location of each of the sites considered within this Strategy.

Figure 3: UoK Disposal Sites



2.3 Policy context

Local planning context

- 2.3.1. The Canterbury Campus is located within the Canterbury City Council administrative area and within the County of Kent. Planning policy in Canterbury is guided by the Canterbury

District Local Plan (adopted 2017) and the Kent Minerals and Waste Local Plan (adopted 2016).

- 2.3.2. Policy EMP7 within the Canterbury District Local Plan establishes the policy designation of the University Campus, the geographic extents of which are marked in red in **Figure 1**. The policy supports development of education buildings, student and business accommodation, sports facilities and other facilities directly related to the University's core business.
- 2.3.3. It requires a masterplan to be developed for the Campus site which should seek to maintain the character of the University, respecting its setting.
- 2.3.4. Any significant development proposals at the University should be subject to updating of the University's Transport Impact Assessment and Travel Plan.
- 2.3.5. CCC is in the process of preparing a new Local Plan for the District. Preparation of this document is still at an early stage (with the Local Plan 'Options' Consultation Process currently ongoing). As preparation of this document progresses, these emerging planning policies will also gain significant weight and prominence from a planning perspective.

University Masterplan

- 2.3.6. A Framework Masterplan for the Canterbury Campus was published in 2019 to guide the future development of the University's physical estate within Canterbury. The Framework Masterplan was designed to bring benefits not only to the University but also the wider City and region.
- 2.3.7. As a framework for the development the Masterplan does not set out defined proposals but instead acts as a guiding document to shape the University over the short (up to 2021) and medium term (2021-2031).
- 2.3.8. The Framework masterplan is supported by a Movement and Transport Strategy which prioritises sustainable travel and contains a suite of walking, cycling and public transport improvements aimed at reducing the historic dominance of the car within the Campus.
- 2.3.9. To support the ambition of placing sustainable travel at the top of the movement hierarchy the following key schemes are proposed:
 - new and improved east-west and north-south walking and cycling routes and crossing points within the Campus and wider Estate
 - implementation of infrastructure, wayfinding and signage that increases the visual prominence of non-car modes within the Campus
 - creation of a closer visual relationship between the bus turnaround and the Campus Heart, delivering high quality modal interchanges
 - supporting wider connectivity improvements for walking and cycling beyond the Campus, for example routes to Canterbury West Rail Station and Sturry Road Park and Ride

- a new link to Whitstable Road to deliver improved permeability of the Campus for bus services, and
- a commitment to harness opportunities provided by technology as it develops and expands, for example electric vehicles, electric bicycles and in the long term, autonomous transit opportunities

2.3.10. Any proposals brought forwards on the University Campus therefore need to accord with this vision and support delivery of the key sustainable transport schemes.

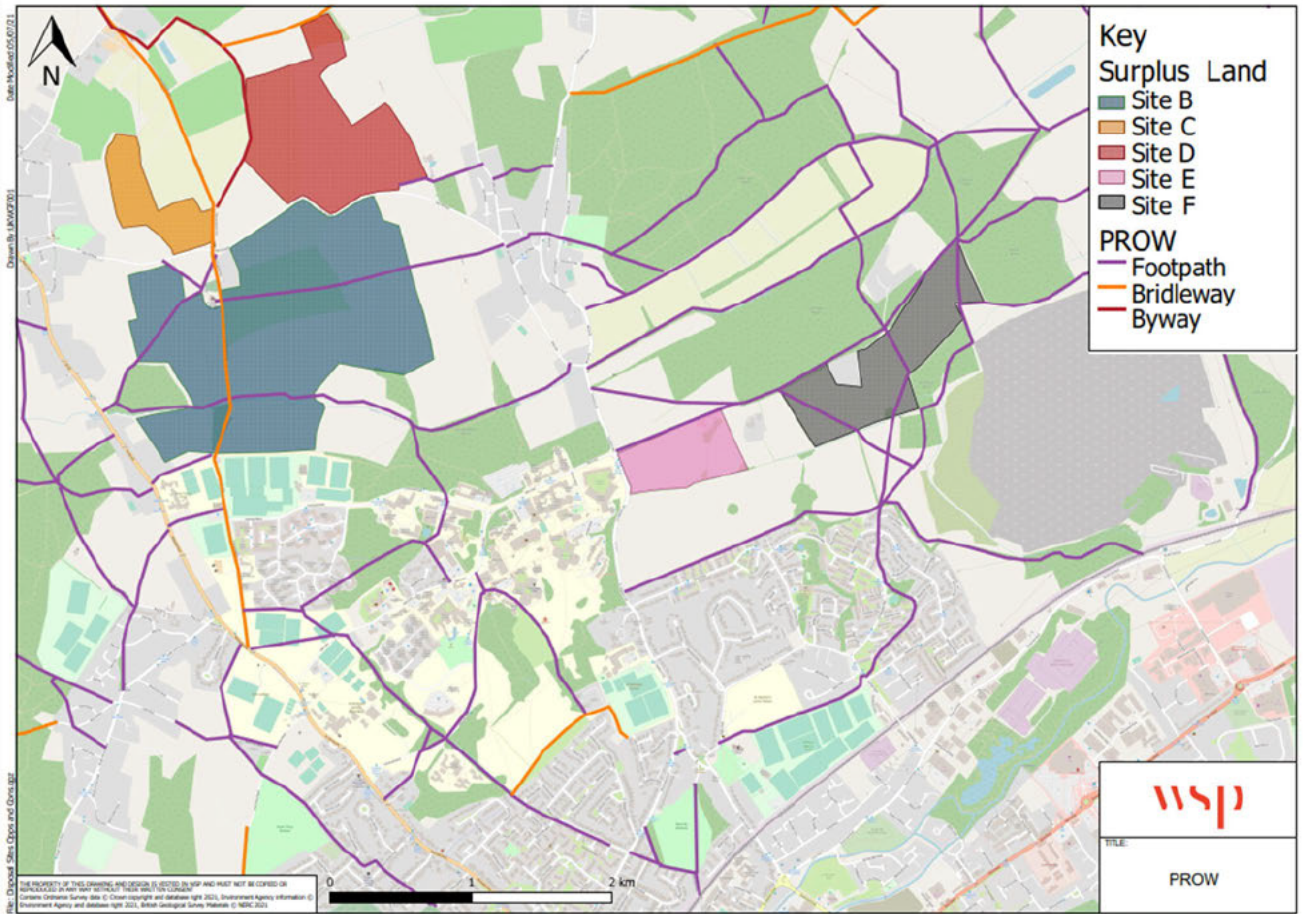
2.4 Existing transport conditions

2.4.1. There are a range of existing transport facilities present within and surrounding the University Campus ranging from a network of footpaths and public rights of way, cycleways to several bus stops and services that service the University and wider area.

Pedestrians

2.4.2. The area benefits from a combination of pedestrian footways bounding highway routes in the local area and a series of public rights of way that provide connections across the surrounding rural hinterland. **Figure 4** shows the existing footpaths and public rights of way that provide pedestrian access to the University Campus and surplus land.

Figure 4 – Pedestrian Infrastructure



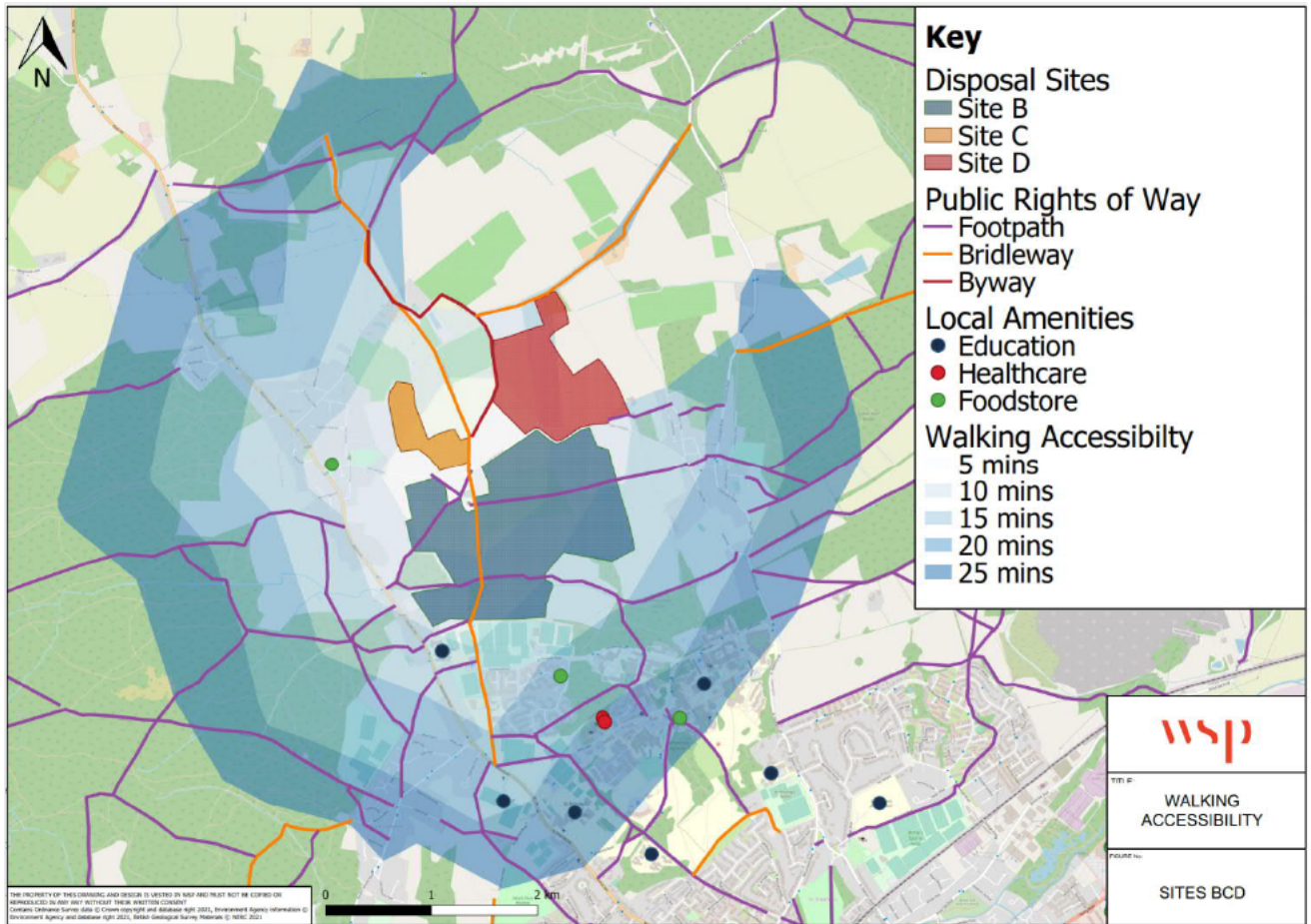
- 2.4.3. Several footways, bridleways and byways provide pedestrian access to the University campus and the surrounding surplus land. The main footways are provided along the neighbouring Whitstable Road in the west and St Stephen’s Hill in the east. The University Campus is then accessed via either University Road or Giles Lane. Both Giles Lane and University Road feature footways along their length albeit in some locations these are only provided along one side of the carriageway. Continuous pedestrian routes are therefore provided east west through the University Campus to connect Whitstable Road in the west with St Stephen’s Hill in the east.
- 2.4.4. CB24A (The Crab and Winkle Way) provides a strategic walking connection between Canterbury and Whitstable (a distance of approximately 7.2km). The route commences on Whitstable Road in the west of the University Campus and heads north directly through the Campus on a combination of dedicated off road shared use pedestrian/footway and shared surface (used by both vehicles and active mode users). To the north of the University Campus the route continues across open farmland as a shared footway/cycleway that forms Site B before reaching Tyler Hill Road. The route from Whitstable Road to Tyler Hill Road is a designated bridleway. The route then crosses Tyler Hill Road at an uncontrolled crossing point before continuing north along the boundary of Site C and is designated as a byway.

North of Site C the route continues towards Whitstable on a combination of bridleway and footpaths.

- 2.4.5. A series of public footpaths run east west across Site B including CB12 which follows the alignment of the watercourse and connects Blean in the west with Tyler Hill in the east. CB12 also connects with footpath CB13 which connects into the University Campus and Giles Lane. Footpath CB14 runs east west between Tyler Hill Road and Tyler Hill.
- 2.4.6. Site C is bound by byway CB27 in the east along with footpath CB16 both of which form part of the Crab and Winkle Way. Site C is also bound to the north by footpath CB18A which connects with Blean in the west.
- 2.4.7. Site D is bound in the west by byway CB27 and in the north by bridleway CB24.
- 2.4.8. Site E is bound to the north by a private road that forms part of footpath CB44. CB44 connects with Giles Lane and St Stephen's Hill in the west and further footpaths for onward connection with Broad Oak and Sturry in the east.
- 2.4.9. Site F is bound by footpath CB44 in the north but is also crossed by footpaths CB47 and CB37 which provide connections to the south towards Canterbury.
- 2.4.10. On the University Campus itself footpaths CB13 and CB33 provide pedestrian access alongside the footways adjacent to the carriageways. Footpaths CB31A and CC5 provide a north to south access for pedestrians to access the University from the area of St Stephens.
- 2.4.11. **Figure 5** provides existing walking isochrones from the centre of Sites BCD. **Figure 5** shows that the areas of Blean, Tyler Hill and the University Campus are all accessible within a two kilometre (25 minute) walk of the centre of these sites. Two kilometres is considered to be the maximum distance that pedestrians are willing to walk to access day to day facilities such as schools and workplaces¹. A range of amenities and facilities can be accessed within these existing settlements including schools, convenience retail and healthcare.

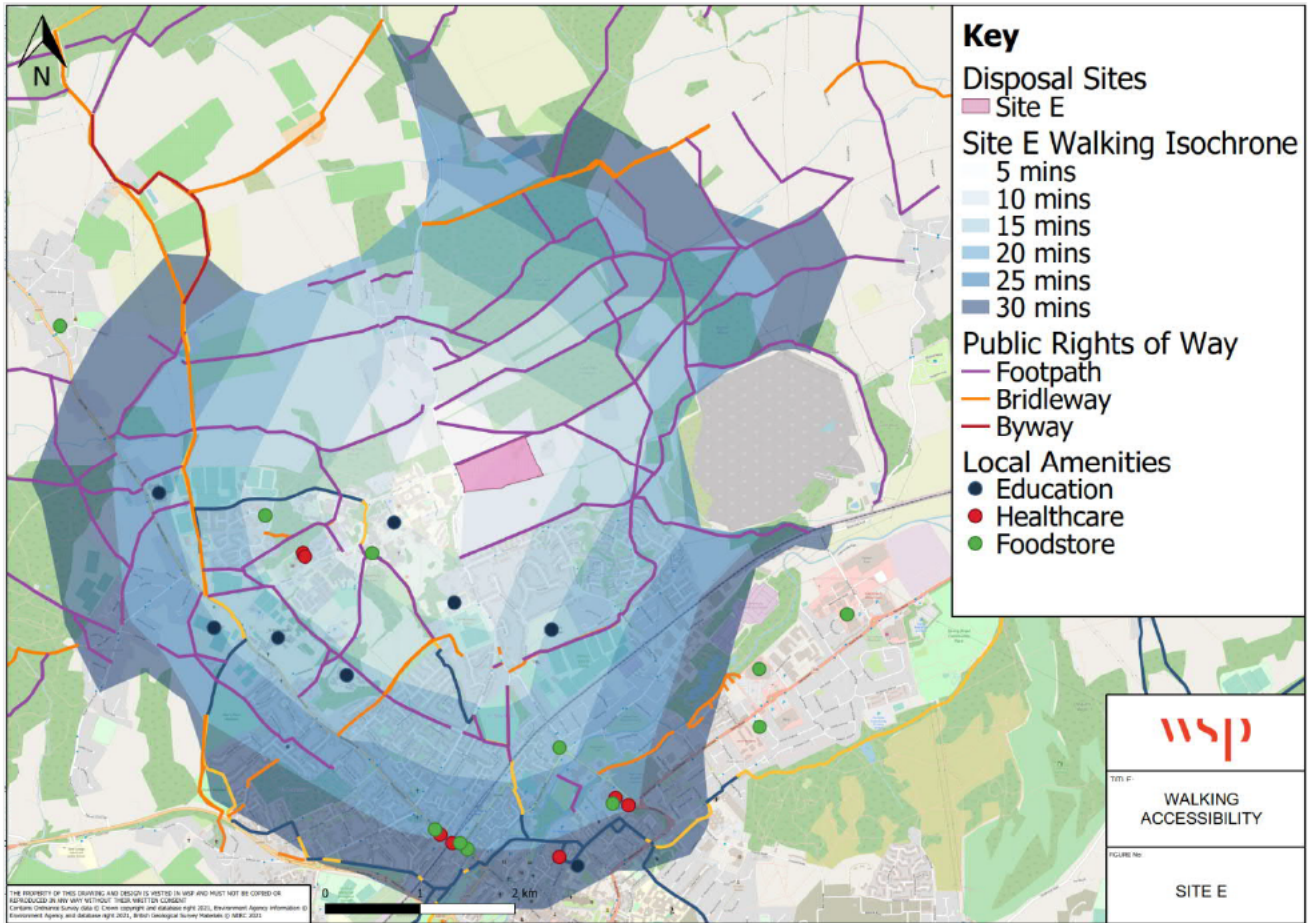
¹ Chartered Institute of Highways and Transportation (CIHT), Providing for Journeys on Foot (2000) Table 3.2

Figure 5 – Sites BCD Pedestrian Isochrones



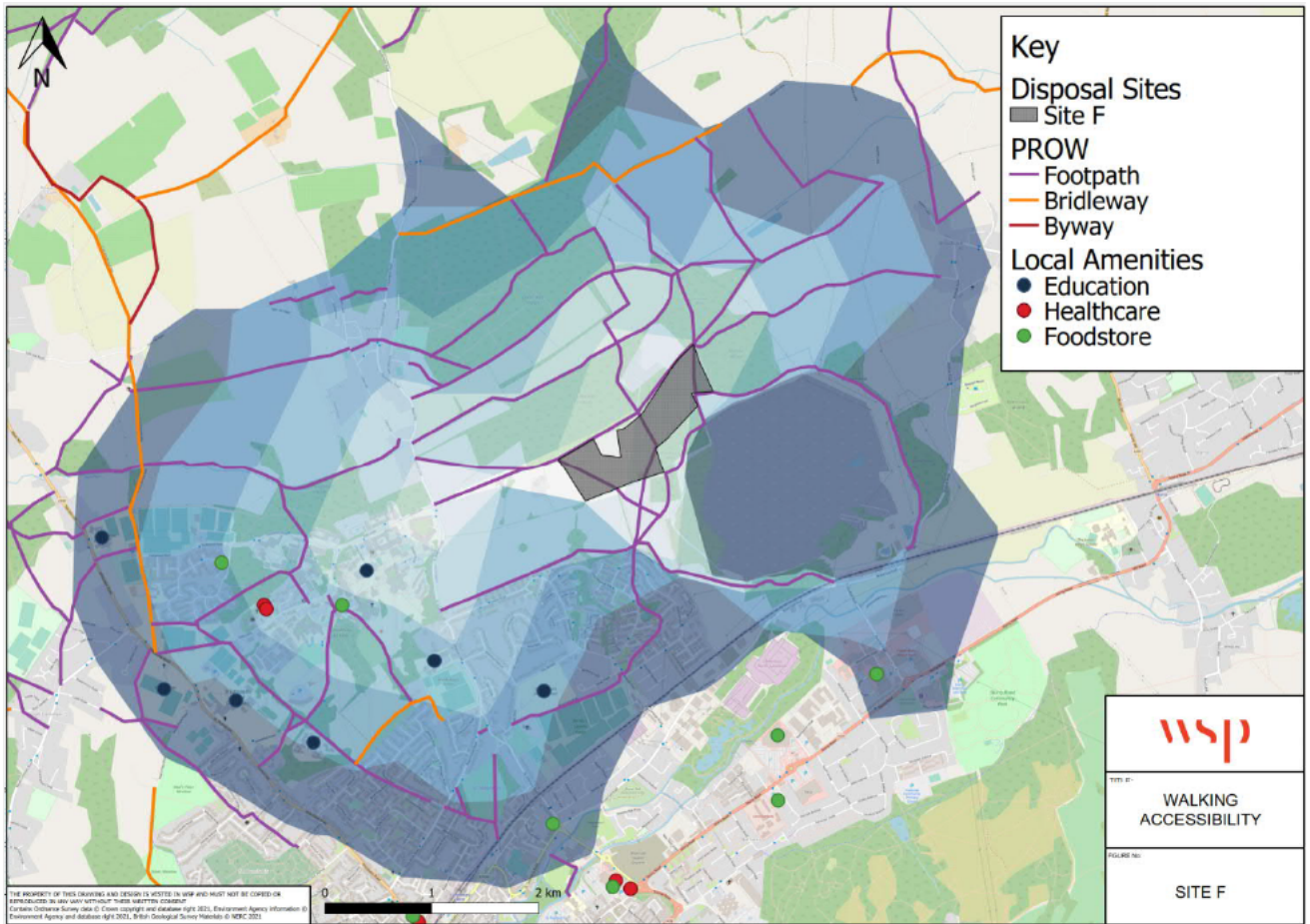
2.4.12. **Figure 6** provides existing walking isochrones from the centre of Site E. Figure 6 shows that Tyler Hill, the University Campus and much of northern Canterbury is accessible within a two-kilometre distance (equivalent to a 25 minute walk). Within these areas a range of amenities and facilities are available.

Figure 6 – Site E Pedestrian Isochrones



2.4.13. **Figure 7** provides existing walking isochrones from the centre of Site F. **Figure 6** shows that Tyler Hill, the University Campus and much of northern and eastern Canterbury is accessible within a two-kilometre distance (equivalent to a 25 minute walk). Within these areas a range of amenities and facilities are available.

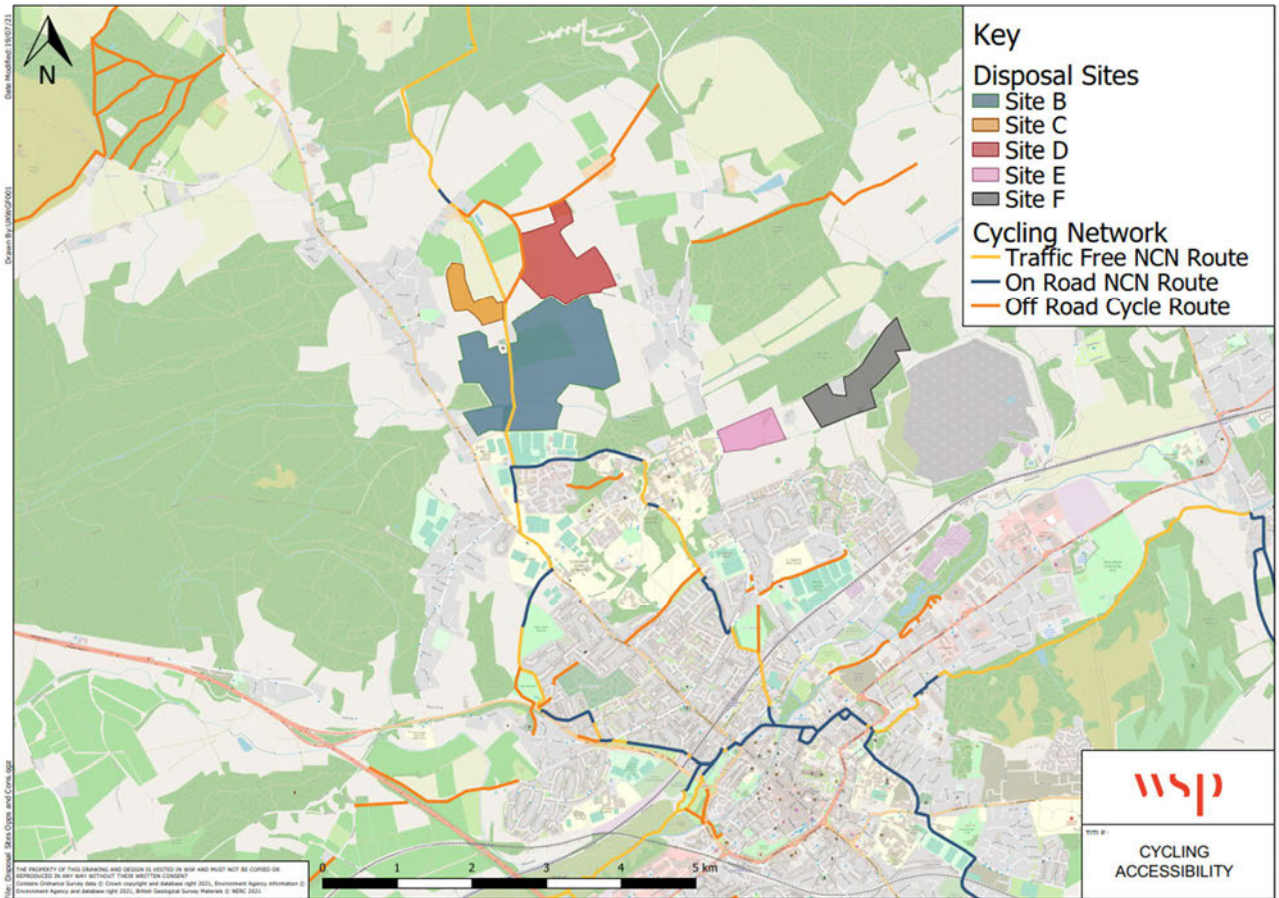
Figure 7 – Site F Pedestrian Isochrones



Cyclists

- 2.4.14. There are several cycle paths that currently provide access to the University Campus and surplus land. The National Cycle Network (NCN) route 1, also known as the Crab and Winkle Way runs from north to south, part on carriageway and part traffic free through the University Campus and Site B and bounds Site C in the east. Locally the route runs between Canterbury in the south and Whitstable in the north. In addition to the NCN route, there are several off-road cycle routes that run through the University Campus east to west. **Figure 8** shows the cycle routes in the context of sites B,C,D, E and F.

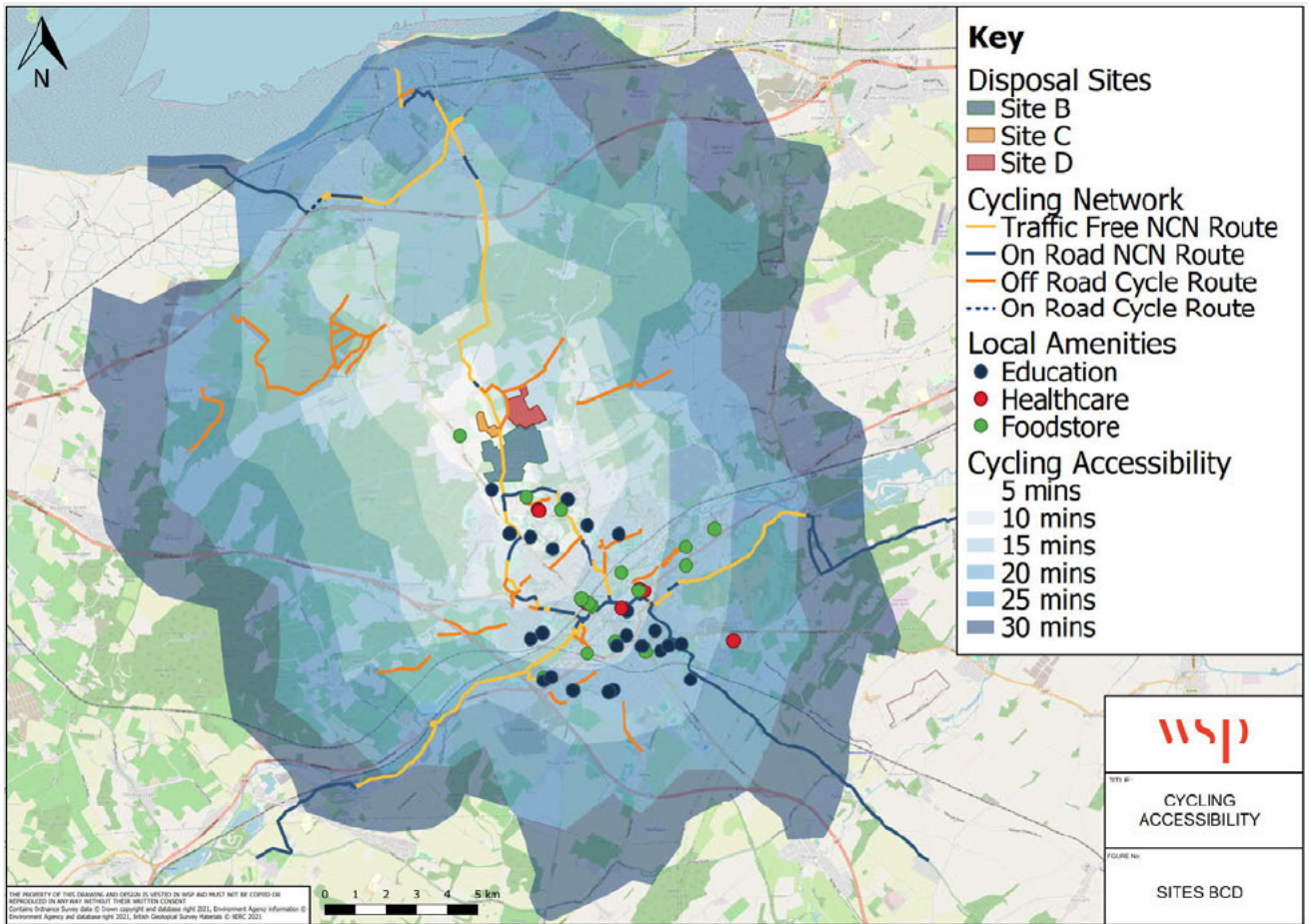
Figure 8 - Cycling Accessibility and Routes



2.4.15. **Figure 9** provides existing cycling isochrones from the centre of Sites BCD. **Figure 9** shows that the whole of Canterbury and areas to the north including Whitstable are all accessible within a five mile (30 minute) cycle of the centre of these sites. Five miles is considered to be the maximum distance that people could realistically swap car-based travel for cycling². A range of amenities and facilities can be accessed within these existing settlements including schools, convenience retail and healthcare.

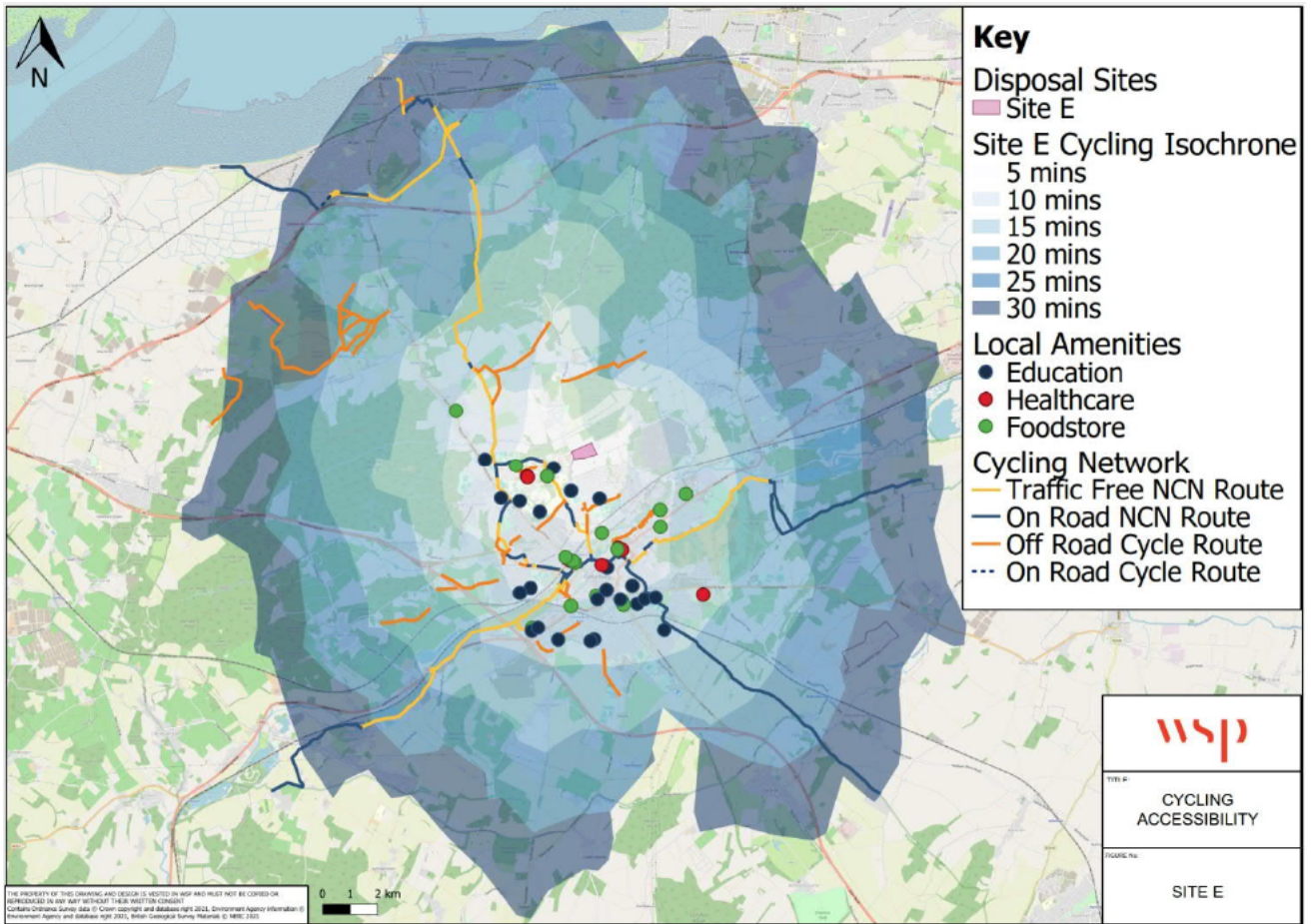
² Department for Transport's Local Transport Note 1/20: Cycle Infrastructure Design (2020) Paragraph 2.2.2

Figure 9 – Sites BCD Cycling Isochrone



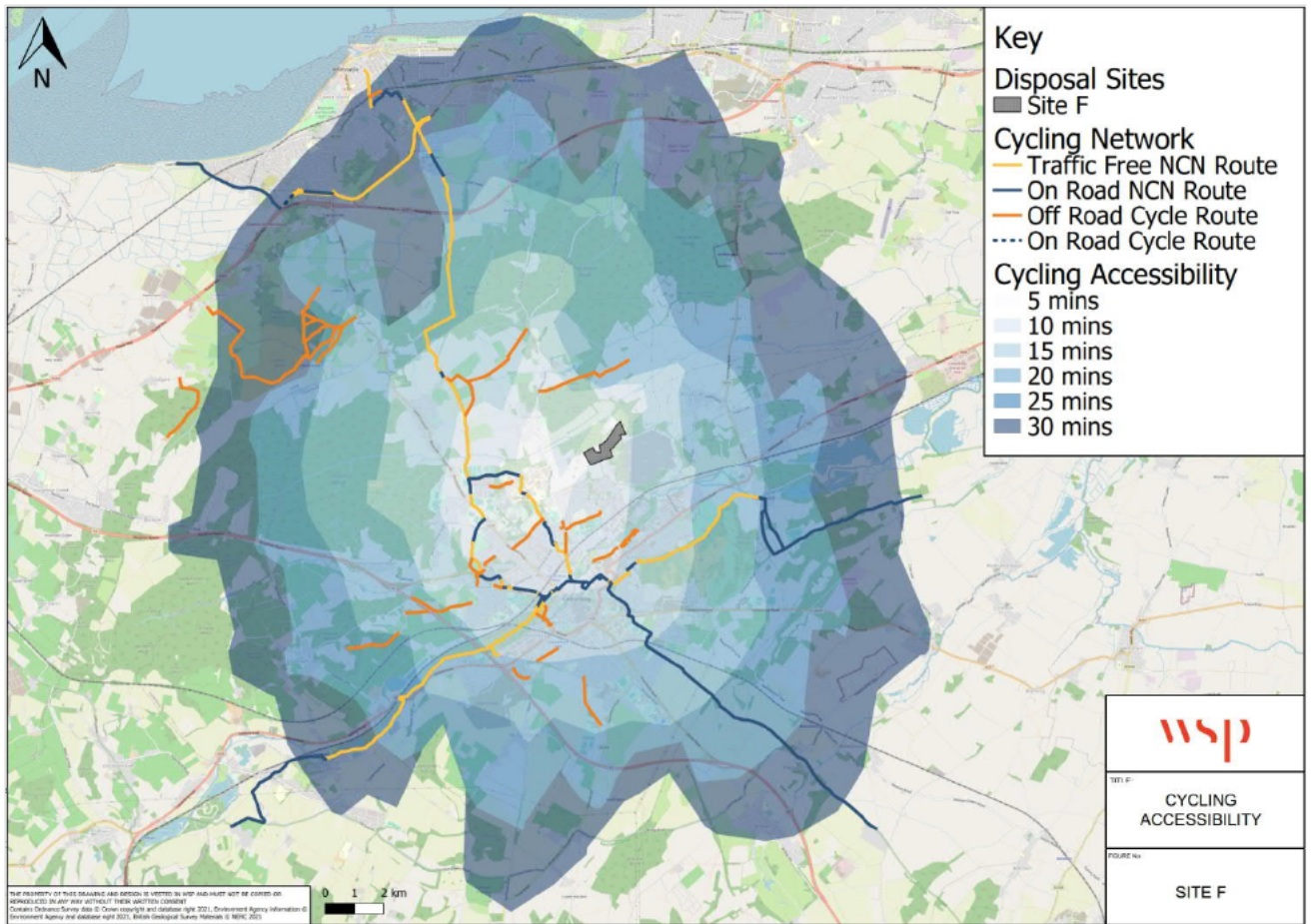
2.4.16. **Figure 10** provides existing cycling isochrones from the centre of Site E. **Figure 10** shows that the whole of Canterbury and areas to the north including Whitstable are all accessible within a five mile (30 minute) cycle of the centre of the site. A range of amenities and facilities can be accessed within these existing settlements including schools, convenience retail and healthcare.

Figure 10 – Site E Cycling Isochrone



2.4.17. **Figure 11** provides existing cycling isochrones from the centre of Site F. **Figure 11** shows that the whole of Canterbury and areas to the north including Whitstable are all accessible within a five mile (30 minute) cycle of the centre of the site. A range of amenities and facilities can be accessed within these existing settlements including schools, convenience retail and healthcare.

Figure 11 – Site F Cycling Isochrone



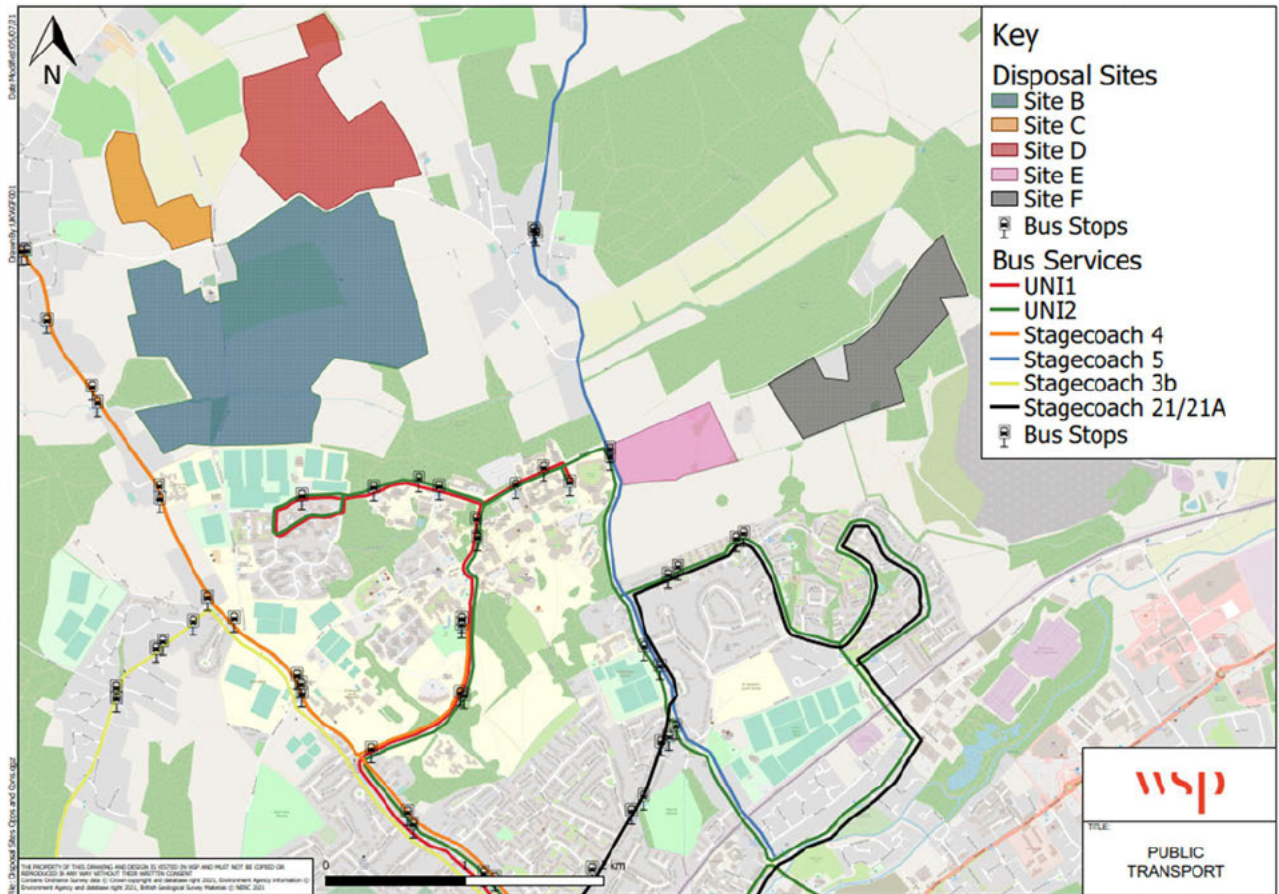
Public Transport

2.4.18. The University Campus and surrounding land benefits from access to a range of public transport services that primarily connect the University with wider Canterbury and destinations further afield. At the time of preparation of this study Covid-19 travel restrictions meant that some bus services were not operating. However, for the purposes of this Strategy pre-covid timetable information has been used to inform the assessment of accessibility on the basis that services will return in the near future.

Bus Services

2.4.19. **Figure 12** illustrates the bus stops and bus routes that are accessible from the bus stops in the vicinity of the University Campus and surrounding area.

Figure 12 – Local Bus Stops and Routes



- 2.4.20. **Figure 12** demonstrates that the University is served directly by three bus services whilst further services are accessible from both Whitstable Road in the west and St Stephen’s Hill in the east.
- 2.4.21. **Table 1** provides a summary of the bus services accessible from the University Campus, Whitstable Road and St Stephen’s Hill that could be utilised by users of Sites BCD, E and F.

Table 1 - Bus Services in the Vicinity of the Sites

Bus Service	Route	First Bus	Last Bus	Frequency		
				Mon - Fri	Sat	Sun
3 / 333 / 3x	Canterbury - Sittingbourne	07:40	21:00	Hourly	Hourly	Hourly
4	Canterbury - University of Kent - Whitstable - Tankerton - Greenhill	07:58	17:20	30 minutes	30 minutes	N/A
5	Canterbury - Tyler Hill - Chestfield - Whitstable - Seasalter	07:22	17:02	Hourly	Hourly	N/A
21/21A	City Centre - St. Dunstan's - Hales Place - City Centre	06:28	22:45	15 minutes	15 minutes	Hourly
UNI1	University of Kent - Canterbury City Centre	08:27	17:38	30 minutes	30 minutes	N/A
UNI2	Canterbury - Westgate Towers, University of Kent	09:00	18:04	30 minutes	30 minutes	N/A

2.4.22. **Table 1** demonstrates that a range of services are available in the area surrounding the sites that operate on a range of frequencies up to every 15 minutes. Key destinations served include Canterbury City Centre, Canterbury West Railway Station, Sittingbourne, Whitstable and Herne Bay.

Rail services

2.4.23. Canterbury West Railway Station is located approximately 1.7 km from the closest access point to the University and 2.7 km from the heart of the University Campus. To Sites BCD the station is 3.7 km and to Sites E and F the station is 2.4km. **Tables 2-4** provide details of the rail services from Canterbury West Station from Monday to Friday and Saturday and Sunday Respectively. All timings are from Canterbury West Station.

Table 2 - Rail Services (Monday – Friday)

Service	First Train	Last Train	Frequency	Journey Time
Ramsgate – Canterbury West - London Victoria	07:03	21:03	Hourly	122 minutes
Margate – Canterbury West – London St Pancras	05:18	22:26	Hourly	95 minutes
Canterbury to Ashford International	07:03	21:03	Hourly	22 minutes

Table 3 - Rail Services (Saturday)

Service	First Train	Last Train	Frequency	Journey Time
Ramsgate – Canterbury West - London Victoria	06:05	22:05	Hourly	122 minutes
Margate – Canterbury West – London St Pancras	05:26	22:26	Hourly	95 minutes
Canterbury to Ashford International	06:05	22:05	Hourly	22 minutes

Table 4 - Rail Services (Sunday)

Service	First Train	Last Train	Frequency	Journey Time
Ramsgate – Canterbury West - London Victoria	07:30	22:03	Hourly	123 minutes
Margate – Canterbury West – London St Pancras	05:26	22:26	Hourly	54 minutes
Canterbury to Ashford International	06:05	22:05	Hourly	22 minutes

2.4.24. **Tables 2-4** demonstrate that Canterbury West Station provides train services to a range of locations including London Victoria, London St Pancras, and Ashford International.

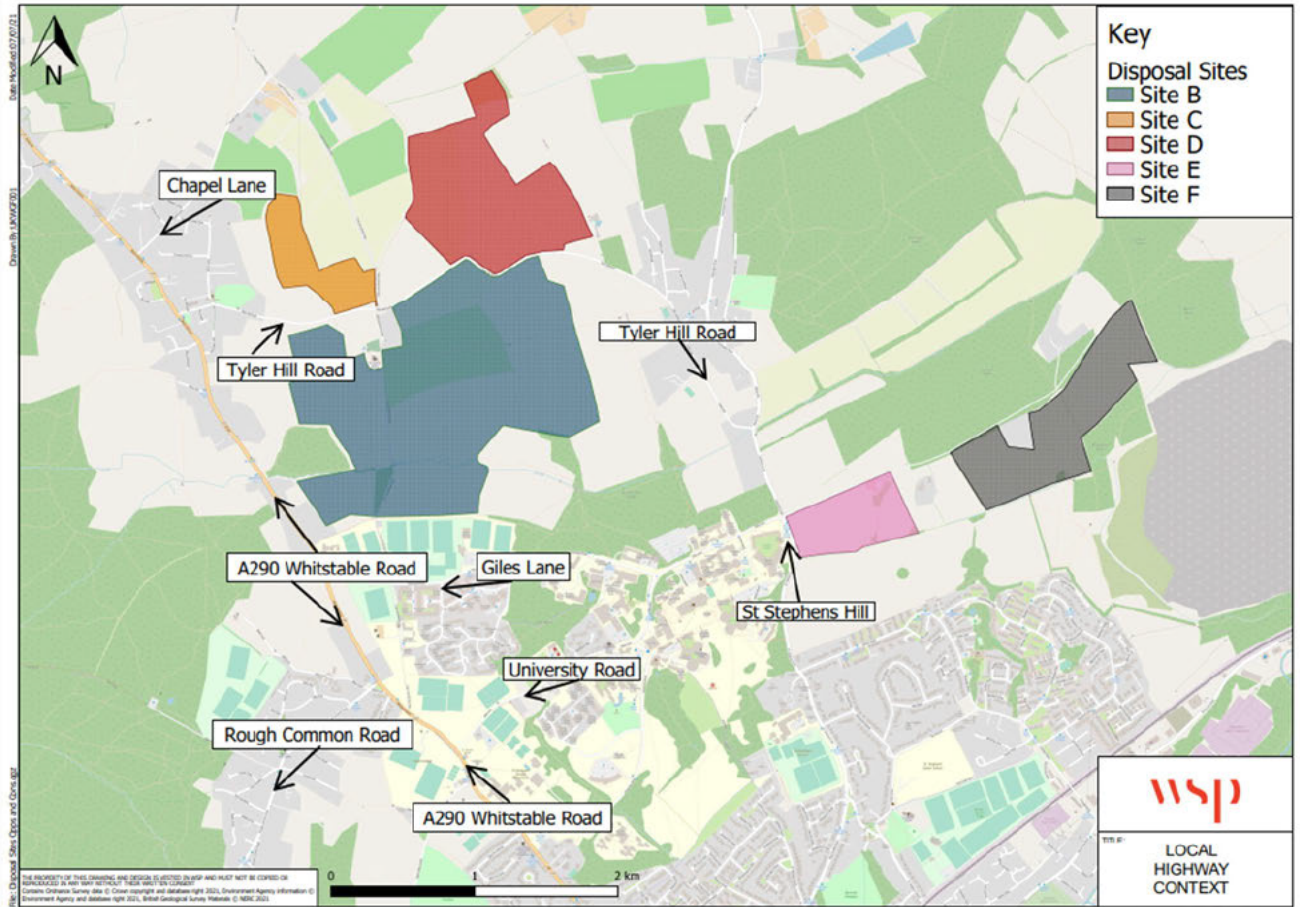
2.4.25. The analysis presented above demonstrates that the railway station is accessible by either bus or by cycling from the disposal sites. Space for 134 cycles is provided at Canterbury West Station³.

Highway Network

- 2.4.26. The local highway network in the vicinity of the disposal sites is characterised by a series of north south radial routes that converge on Canterbury City Centre in the south and connect with the settlements of Herne Bay and Whitstable in the north. In the west the A290 Whitstable Road provides a connection between the City Centre Ring Road, the University, Blean and north towards the A299 and Whitstable. This road also connects in the vicinity of the University with Rough Common Road which provides a connection to the A2 in the west.
- 2.4.27. In the east St Stephen's Hill connects the City Centre and areas to the east of Canterbury along the A28 corridor with the University and north towards the A299 and Herne Bay.
- 2.4.28. The University Campus itself is accessible from either Whitstable Road or St Stephen's Hill. Giles Lane provides a continuous east-west connection through the University Campus between Whitstable Road and St Stephen's Hill. However, its width is constrained within part of the University resulting in an informal priority working system. University Road provides a connection between Whitstable Road in the west and Giles Lane in the centre of the University Campus. The road forms a priority junction with Giles Lane. Within the centre of the University Campus both Giles Lane and University Road are subject to a 20mph speed limit.
- 2.4.29. Park Wood Road is a private internal university road that connects Giles Lane with areas in the north of the University.
- 2.4.30. Tyler Hill Road provides an east-west connection between the villages of Blean and Tyler Hill and runs between Sites BCD. The road is a rural country lane which whilst subject to national speed limit (60mph speed limit) features constrained geometry which limits the speed of vehicles.
- 2.4.31. Sites E and F are accessed via a private road that runs east-west and forms a mini-roundabout junction with Giles Lane and St Stephen's Hill.
- 2.4.32. **Figure 13** provides an overview of the highway network in the vicinity of the sites.

³ Source: National Rail Website

Figure 13 – Local Highway Network



3 Emerging Proposals

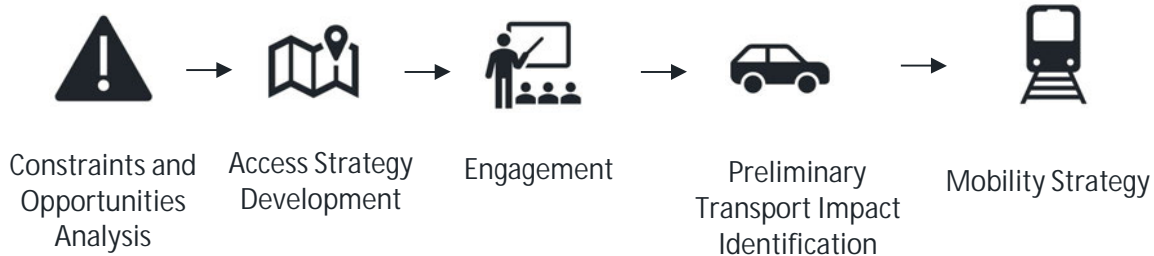
3.1 Introduction

- 3.1.1. This section outlines the emerging proposals for the surplus land along with the process of engagement that has taken place to inform the development of the masterplan.

3.2 Scheme Development

- 3.2.1. The UoK appointed a multi-disciplinary team to develop proposals for the surplus land consisting of:
- Avison Young – Town Planning and Commercial Advice (Land and Disposal Strategy)
 - PRP – Masterplanning, Urban Design and Landscape Architecture
 - WSP – Transport Planning, Engineering and Environmental input including Air Quality, Noise, Ecology, Minerals, Flood Risk and Drainage, Agricultural Assessment, Land Contamination, Arboriculture, Built Heritage and Archaeology and Nutrients
- 3.2.2. The team commenced work by undertaking a detailed constraints and opportunities analysis of the University Campus and surrounding surplus land. This constraints and opportunities analysis enabled the team to familiarise themselves with the background and history to the University Masterplan and inform the potential for development of each site. It was evident from this initial work that the main focus of built development would need to be focused on land to the north of the University Campus.
- 3.2.3. Site E was discounted for built development because a large proportion of the site contains a Scheduled Ancient Monument (SAM) whilst Site F is in an exposed location above Canterbury City Centre and is only accessible via a private road. Opportunities for these two sites was therefore limited to potential bio-diversity enhancement, green infrastructure, open space and supporting facilities for the University Campus.
- 3.2.4. A series of stakeholder workshops were then held with officers from Canterbury City Council (CCC) (Local Planning Authority) and Kent County Council (KCC) (Local Highway Authority) to better understand wider context and shape development of the proposals.
- 3.2.5. The stakeholder workshops, constraints and opportunities analysis and suite of environmental surveys were then used to inform the development of the masterplan proposals.
- 3.2.6. From a transport perspective a five-stage process was followed to develop the accompanying Transport Strategy to the masterplan as illustrated in **Figure 14**.

Figure 14: Transport Strategy Development Process



Constraints and Opportunities Analysis Findings

3.2.7. The constraints and opportunities analysis identified the following key transport design principles:

Constraints

- Access to the surplus land was constrained by the rural location and nature of the highway network adjoining the sites. A significant volume of development on land to the north of the University could result in inappropriate increases in traffic on Tyler Hill Road and the junctions with Whitstable Road (A290) in the west and Canterbury Hill in the east
- Limited frontage access to the public highway identified through land title searches and highway boundary records revealed limited potential for improvement of the highway network on Tyler Hill Road to facilitate access
- The highway network immediately surrounding the sites featured constrained geometry which would require third party land in order to improve
- Access to Site C from the public highway is only achievable from a single point limiting land use opportunities on this site without seeking additional land.

Opportunities

- The public transport, walking and cycling networks serving the University Campus provide an opportunity through extension and incorporation within the development sites to integrate with the surrounding area and ensure that sustainable development could be achieved
- The Crab and Winkle Way (National Cycle Route 1) provides a unique opportunity to facilitate a high-quality active mode connection to the University and City Centre in the south and north towards Whitstable and the Coast
- The neighbouring settlement of Blean and the University Campus provides a range of amenities and facilities that could be accessed by residents/employees of the development sites
- The ability to create an access road through other University owned land

- The access strategy, if integrated with the University's aspirations could help to facilitate the University Masterplan.

Stakeholder Engagement

- 3.2.8. Throughout the masterplan development process the transport team engaged with both Officers from CCC and KCC as well as the Head of Traffic Management and Travel at the University. Key findings from this engagement process can be summarised as follows:
- The development proposals should seek to safeguard the mobility strategy outlined within the University Masterplan. In particular the University Masterplan proposed a series of car parks around the periphery of the Campus to facilitate a reduction in traffic volumes in the centre
 - The use of Park Wood Road as an access to development to the north of the University Campus was not viewed as attractive to the University and could result in negative impacts on the amenity of the Campus
 - Initial modelling undertaken for the Local Plan Process⁴ had identified a series of interventions to manage traffic demand resulting from the growth aspirations of the Local Plan. These would potentially impact the development proposals
 - Access to the public highway from the sites to the north of the University was constrained and if access onto Tyler Hill Road was not managed could result in unacceptable impacts on surrounding roads and villages
 - There would be a need for a careful balance to deter development traffic from using Tyler Hill Road whilst not fully stopping up the existing route which is used as a key east west link between the A290 and east of Canterbury
 - If measures to control traffic flows on Tyler Hill Road resulted in a significant reduction in existing traffic volumes on Tyler Hill Road this may have undesirable effects on Giles Lane which runs through the University Campus and is the next east-west corridor south between the A290 and east of Canterbury
 - A belt of ancient woodland is located in Site B. Removal of this ancient woodland to facilitate access would require careful consideration from both a policy and design perspective. This matter is dealt with separately by way of a note prepared by Avison Young and WSP.

3.3 Development Proposals

- 3.3.1. On the basis of the scheme development process followed, the development proposals that have been identified and this Transport Strategy supports are as follows:

⁴ Jacobs Kent Countywide Model Stage 3 Canterbury Local Plan Forecasting Report 14th May 2021

Sites BCD

- 3.3.2. A residential led mixed-use development is proposed to the north of the University Campus on Sites BCD. Initial masterplanning optioneering indicated potential for approximately 2000 homes supported by a local centre (incorporating transport hub) and primary school to serve the new population.
- 3.3.3. Access to the site would focus movement towards a north-south axis with movement to/from Tyler Hill Road managed through incorporation of the road within the site where it bounds the site.
- 3.3.4. A new access road for all users (pedestrians, cyclists and vehicles) would be delivered through the University Campus and access onto the public highway on Whitstable Road (A290). Previous work undertaken for the University Masterplan identified the potential for a traffic signal junction on Whitstable Road to facilitate access in this location.
- 3.3.5. Limited vehicular access to Site C would lend the site to provision of open space to contribute towards the overall provision across Sites BCD albeit acknowledging that should alternative access opportunities arise (for instance in the form of third party land) then there may be opportunity to deliver further residential development.

Site E

- 3.3.6. The provision of a new access road through the University Campus and delivery of the parking areas outlined within the University Masterplan would impact upon the provision of playing fields. Site E could potentially provide space for green infrastructure, open space or playing fields subject to a suitable design acknowledging the SAM located on the site.

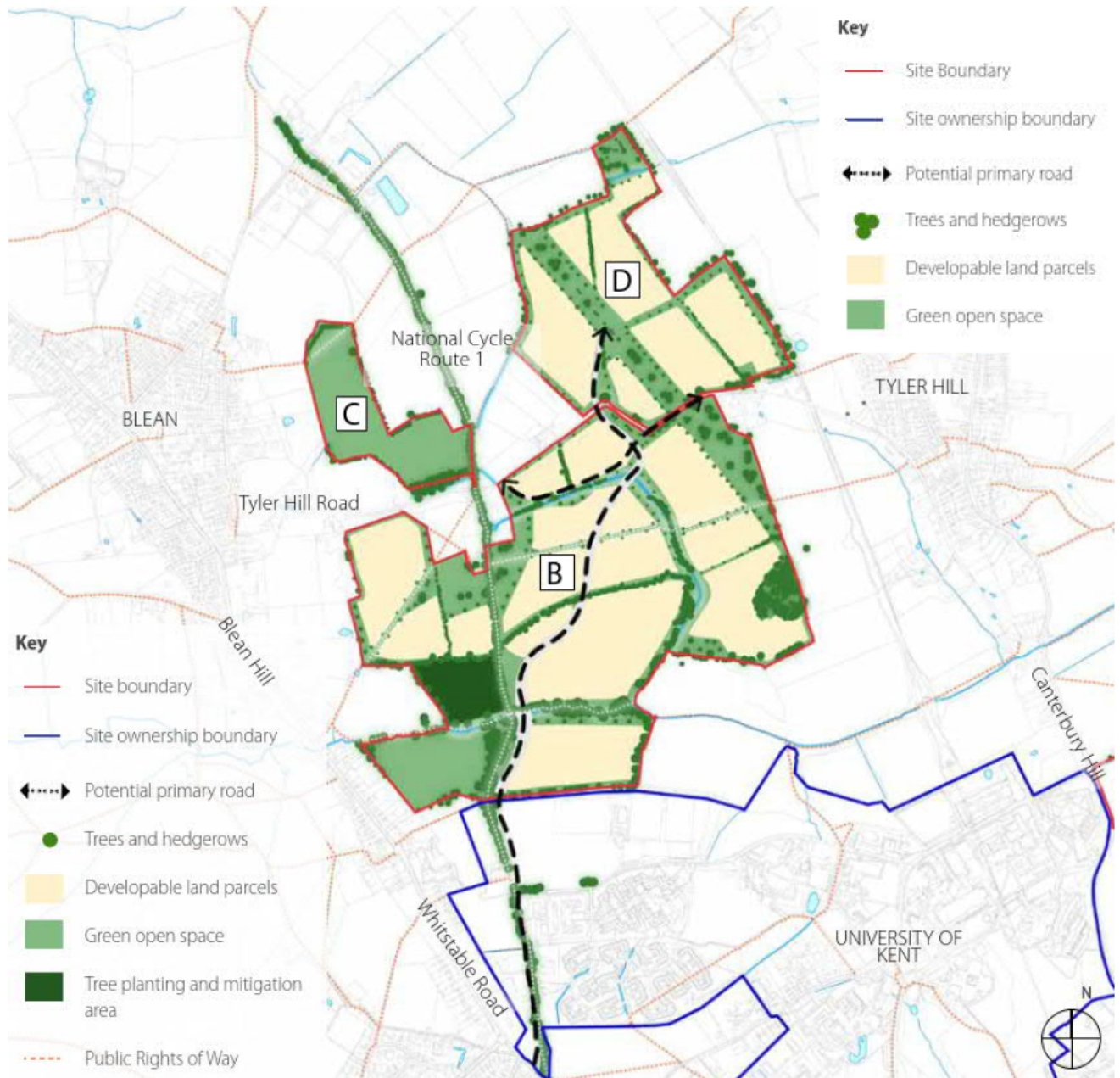
Site F

- 3.3.7. Access to site F is via a single-track private road and as such land uses on this site are likely to be limited to those aligned with the low traffic volume nature of the access arrangements. This site has therefore been identified at this stage for potential ecological enhancement land.

3.4 Emerging Masterplan

- 3.4.1. **Figure 15** outlines one of the current emerging masterplans for Sites BCD.

Figure 15: Emerging Masterplan Option (Source: PRP)



3.4.2. Six key masterplanning principles have been identified for the development. The key masterplanning principles that relate to transport are as follows:

- A vibrant mix of uses – provision of a mix of uses on site including a local centre and primary school to reduce the need for external trip making. Provision of a mixed-use development will provide opportunities for people to live, work and play on site.
- A well-connected neighbourhood – provision of a transport hub on site to offer a range of transport options that prioritise sustainable modes of transport and maximise use of the sustainable links available in the local area.

4 Transport Strategy

4.1 Introduction

- 4.1.1. The Transport Strategy consists of a series of sub-strategies that are combined to form a holistic strategy that aims to meet the vision and objectives of the site. The elements that make up the Transport Strategy are shown in **Figure 16**.

Figure 16 – Transport Strategy Elements



4.2 Access Strategy

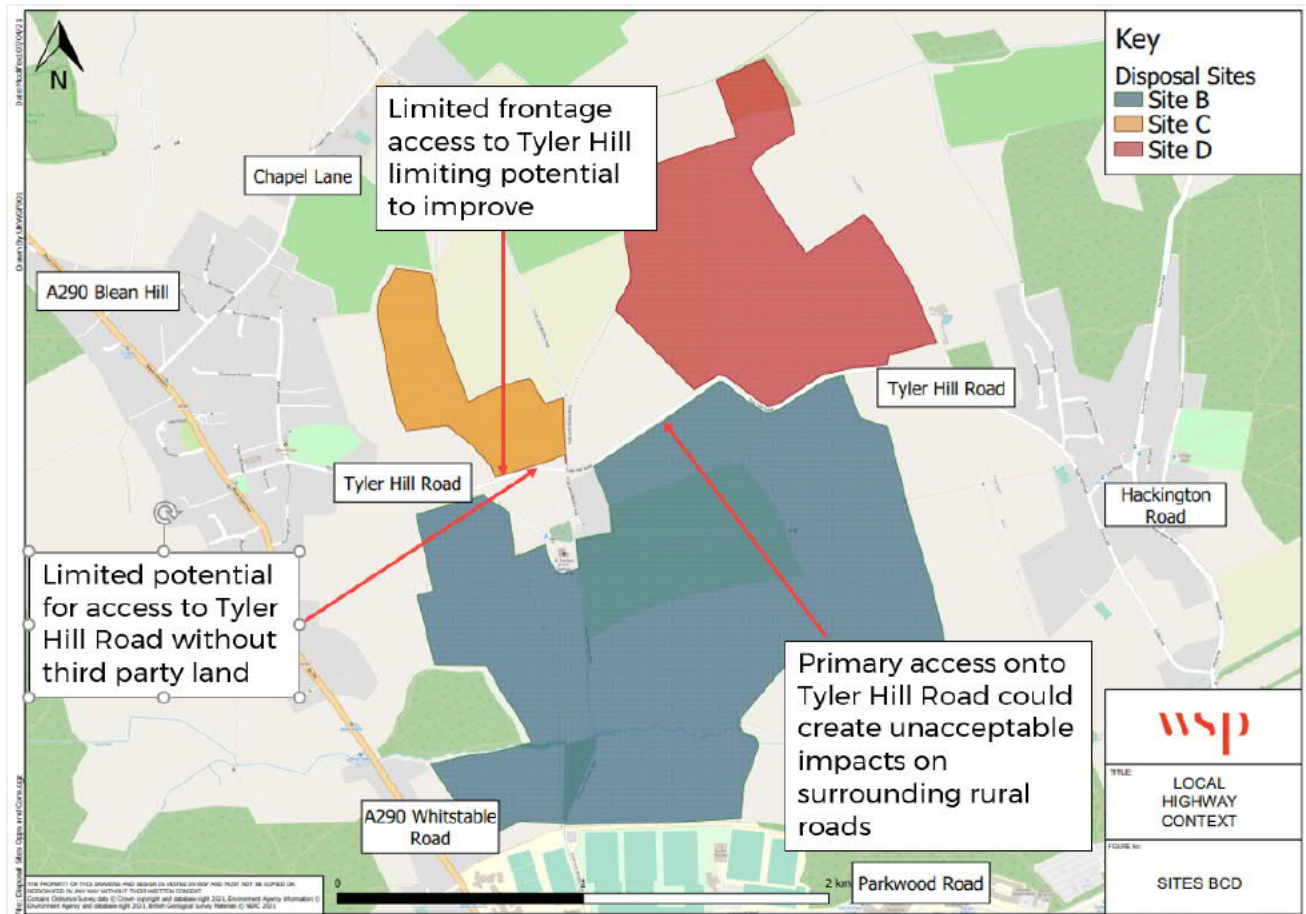
Vehicular Access

- 4.2.1. When considering vehicular access to Sites BCD our starting point was to investigate where the current sites connect with the public highway. The only existing point of connection to the public highway is Tyler Hill Road. Tyler Hill Road is a single carriageway road that connects the A290 Whitstable Road in the west with the village of Tyler Hill and Hackington Road in the east. In the vicinity of Sites BCD Tyler Hill Road is subject to national speed limit (60mph), varies in width between approximately 4m and 6m, is subject to a 7.5t weight restriction and in places features limited forward visibility (Figures 17-18).

<p>Figure 17 – View west along Tyler Hill Road adjacent to Hothe Lodge</p>	<p>Figure 18 – View east along Tyler Hill Road adjacent to Hothe Lodge</p>
	
<p>Figure 19 – View east along Tyler Hill Road from Blean Village</p>	<p>Figure 20 – View east along Tyler Hill Road from Hothe Court Farm</p>
	

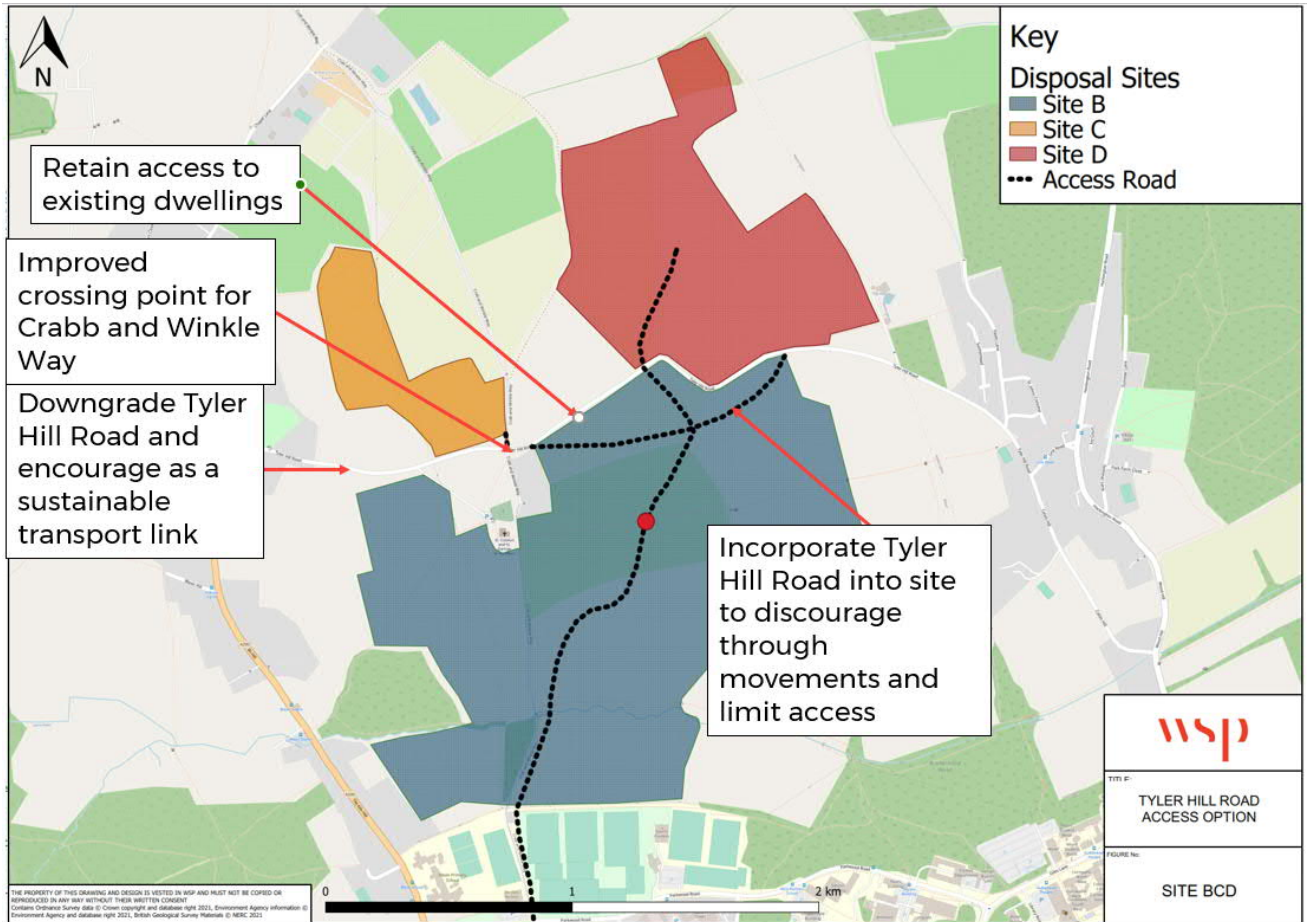
4.2.2. In its current form Tyler Hill Road is not currently considered suitable to accommodate a significant increase in volumes of traffic. Due to the University’s limited frontage onto Tyler Hill Road, constrained highway boundary extents and multiple land ownerships fronting the highway, the University has limited potential within its own land ownership to improve the existing Tyler Hill Road (**Figure 21**).

Figure 21 – Access Constraints



- 4.2.3. Consideration has been given to whether access could be achieved through third party land acquisition. However, the multiple land ownerships restrict the ability to achieve this at this early stage (although opportunities may arise in due course). In addition, significantly increasing traffic volumes on this road could result in unacceptable impacts on the neighbouring village of Tyler Hill and upon the two junctions at either end (A290 and Hackington Road) which have been highlighted by KCC as a concern.
- 4.2.4. On the basis of the above, the access strategy for unlocking Sites BCD recommended developing a new north-south route through the University Campus achieving access onto Whitstable Road. To discourage increased usage of Tyler Hill Road it was recommended that the existing road was downgraded where it passed through University owned land and the highway incorporated into the masterplan where design measures could be incorporated to manage through traffic and limit access from the development out onto the retained sections of road. Further benefits would be the ability to re-prioritise Tyler Hill Road as a sustainable transport link and improve crossing conditions for the Crab and Winkle Way (**Figure 22**).

Figure 22 – Access Strategy



- 4.2.5. A range of alignments have been considered for the new access road (**Figure 23**) to minimise impacts on the existing University Campus and other constraints such as the ancient woodland and watercourse. Acknowledging that the access strategy relies upon creating a new route through the ancient woodland the overall footprint of the road would be minimised and where it crosses the watercourse a bridge used rather than a culvert.
- 4.2.6. A review of the ancient woodland was undertaken by WSP’s Arboriculture and Ecology Teams. Whilst their review did not identify any trees that would indicate the woodland was ancient (defined as an area of woodland which has been continuously treed from before 1600AD) several trees were noted to have veteran characteristics, and these were located throughout the band of woodland. The alignment of the road was therefore guided towards the narrowest part of the woodland, located close to where the Crab and Winkle Way passes through. This alignment is shown as Option 3 on **Figure 23**.

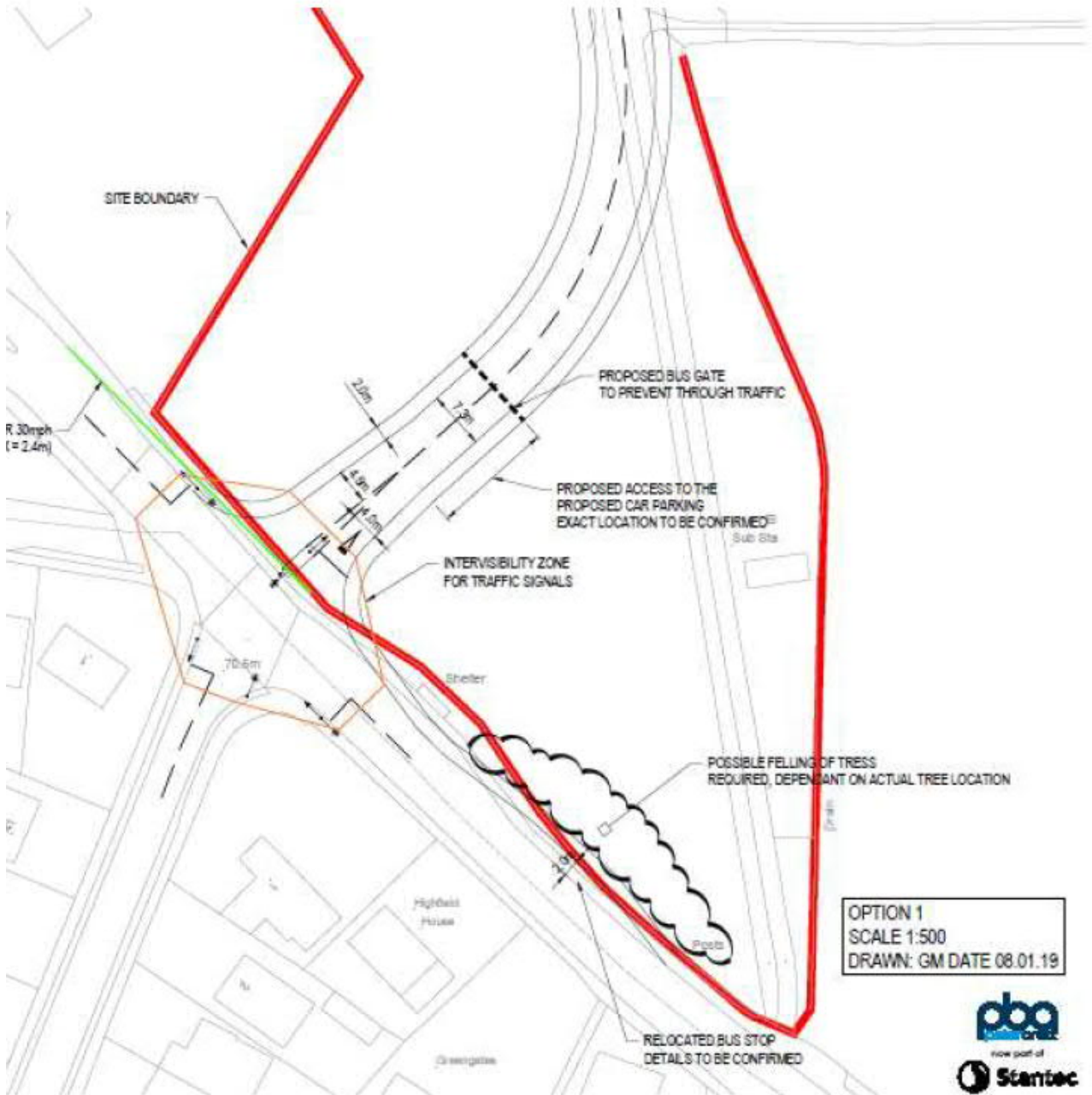
Figure 23 – Access Road Alignment Options



- 4.2.7. The road itself would be designed in accordance with the principles established within the Department for Transport’s (DfT) ‘Manual for Streets’ and likely feature a 30mph design speed. For the purposes of the initial feasibility design work a highway corridor of 15m was assumed to ensure sufficient space to accommodate the carriageway and pedestrian and cycle infrastructure in accordance with DfT Local Transport Note 1/20 ‘Cycle Infrastructure Design’.
- 4.2.8. The highway corridor has been designed as a separate movement corridor to the existing internal University infrastructure and the Crab and Winkle Way. Where the alignment either shares the same corridor or crosses the Crab and Winkle Way careful consideration will be made to preserve the priority of this strategic pedestrian and cycle corridor, integrating with it where appropriate.
- 4.2.9. The access road would also have the benefit of facilitating the ambitions of the University Masterplan to deliver a new access onto Whitstable Road and allow access to the new parking areas proposed within the masterplan.

4.2.10. The access road junction with Whitstable Road would take the form of a traffic signal junction. Proposals for a traffic signal junction were previously developed by Stantec (formerly PBA) as part of the University Masterplan. The proposals for the Whitstable Road junction as previously developed are shown in **Figure 24**.

Figure 24 – Whitstable Road Junction (Source: PBA Access and Movement Study)



4.2.11. Construction of a new highway corridor across the University will have an impact on existing facilities on the Campus and this would need to be fully considered within a Construction Traffic Management Plan.

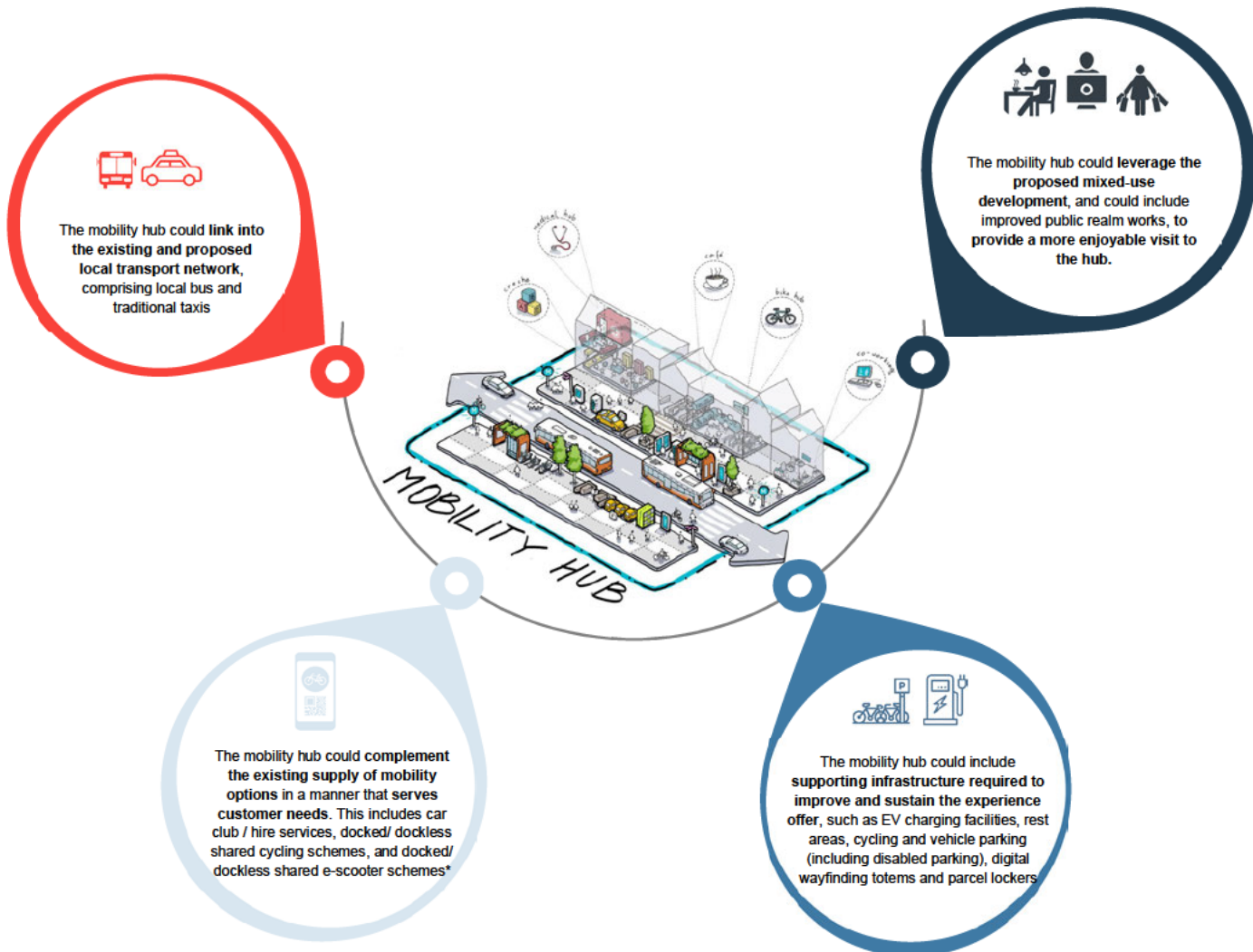
Pedestrians and Cyclists

- 4.2.12. Pedestrians and cyclists would be afforded a high level of priority within the proposed masterplan to ensure that active travel can be a genuine alternative for shorter distance trips than the private car. To deliver this the following access infrastructure is proposed:
- Provision of footways and cycleways on the key movement corridors into and out of the site
 - Integration of the on-site provision with the Crab and Winkle Way and surrounding infrastructure
 - Improvements to Public Rights of Way in the local area to enhance connectivity with local destinations.

4.3 Public Transport Strategy

- 4.3.1. A key principle of the transport strategy is the delivery of a transport hub on the development site to focus and provide access to a range of transport options, with the overarching aim of reducing reliance on the private car (**Figure 25**). A mobility hub can be understood as a 'place' or interchange providing different and connected transport modes supplemented with enhanced facilities to both attract and benefit the traveller. They are usually focussed around mass public transport (e.g. bus stops or rail station) and last mile mobility solutions (e.g. cycles). The transport hub would be located adjacent to the local centre and be complimentary to the uses within the local centre itself. Whilst the principle of a mobility hub (transport hub) is still evolving the key transport components of the facility would include:
- Bus stop including access to real time passenger information
 - Cycle parking to facilitate modal interchange including bike pump and repair facilities
 - A focal point for ride sharing and hailing services (such as Uber)
 - Car club spaces
 - Micro-mobility (bike and scooter hire docking stations)
 - Rapid electric vehicle charging
- 4.3.2. Complimentary facilities may include:
- Micro-consolidation facilities such as parcel lockers (e.g. Amazon lockers)
 - Retail
 - Digital services (real time public transport information, community news etc)
- 4.3.3. The deployment of mobility hubs has already started across the UK with proposals emerging in Manchester (Ancoates and New Islington) and incorporation within the new garden settlement at Otterpool near Folkestone in Kent.

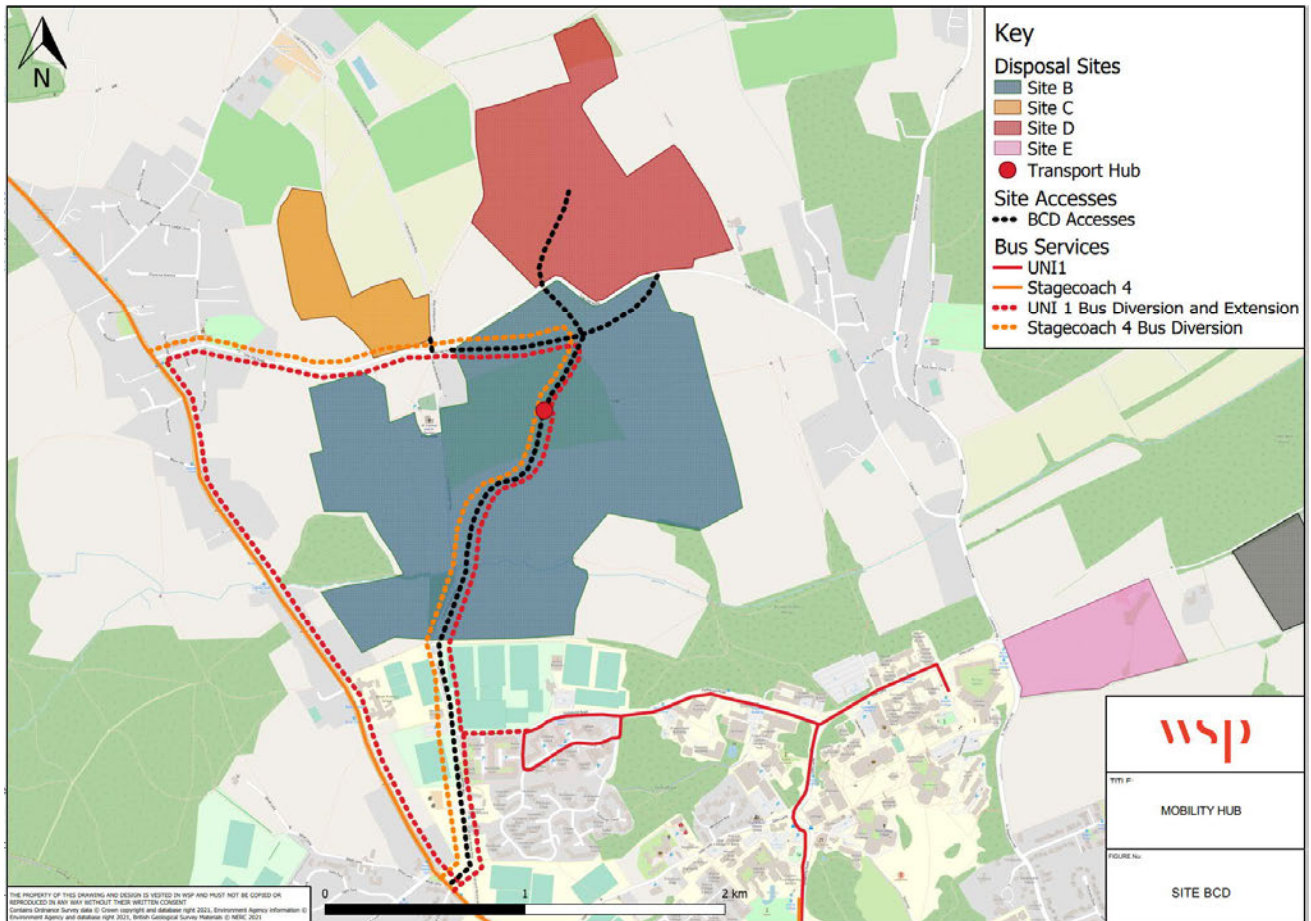
Figure 25 – Illustration of Transport Hub



4.3.4. Alongside the emergence of mobility hubs technology has facilitated the development of personalised journey planning platforms. When combined across modes these are known as Mobility as a Service (MaaS). KCC are currently developing a MaaS platform for deployment across Dartford and Gravesham with a focus on the Ebbsfleet Garden Community. This app-based platform enables access to a wide range of mobility services (traditional bus, rail and taxi services) as well as emerging technologies such as car clubs and e-scooter and cycle hire. By providing access to information about all the services in one place people can make informed decisions about the most appropriate mode or multiple modes for their entire journey. Deployment of this platform could be done on a regional basis (as per the KCC example) or on a development specific basis (Enterprise Car Club for instance have developed their own platform which is being deployed in parts of Scotland). The use of a MaaS is considered a key element of future developments alongside the provision of the Transport Hub to offer a range of services to residents and visitors of the site.

4.3.5. The Sites benefit from the high levels of public transport that access the University Campus. The public transport strategy will seek to build on the existing network of bus routes by extension of existing services to serve the on-site public transport hub located on the site. **Figure 26** indicates how existing bus routes could be extended to serve the development's on-site transport hub.

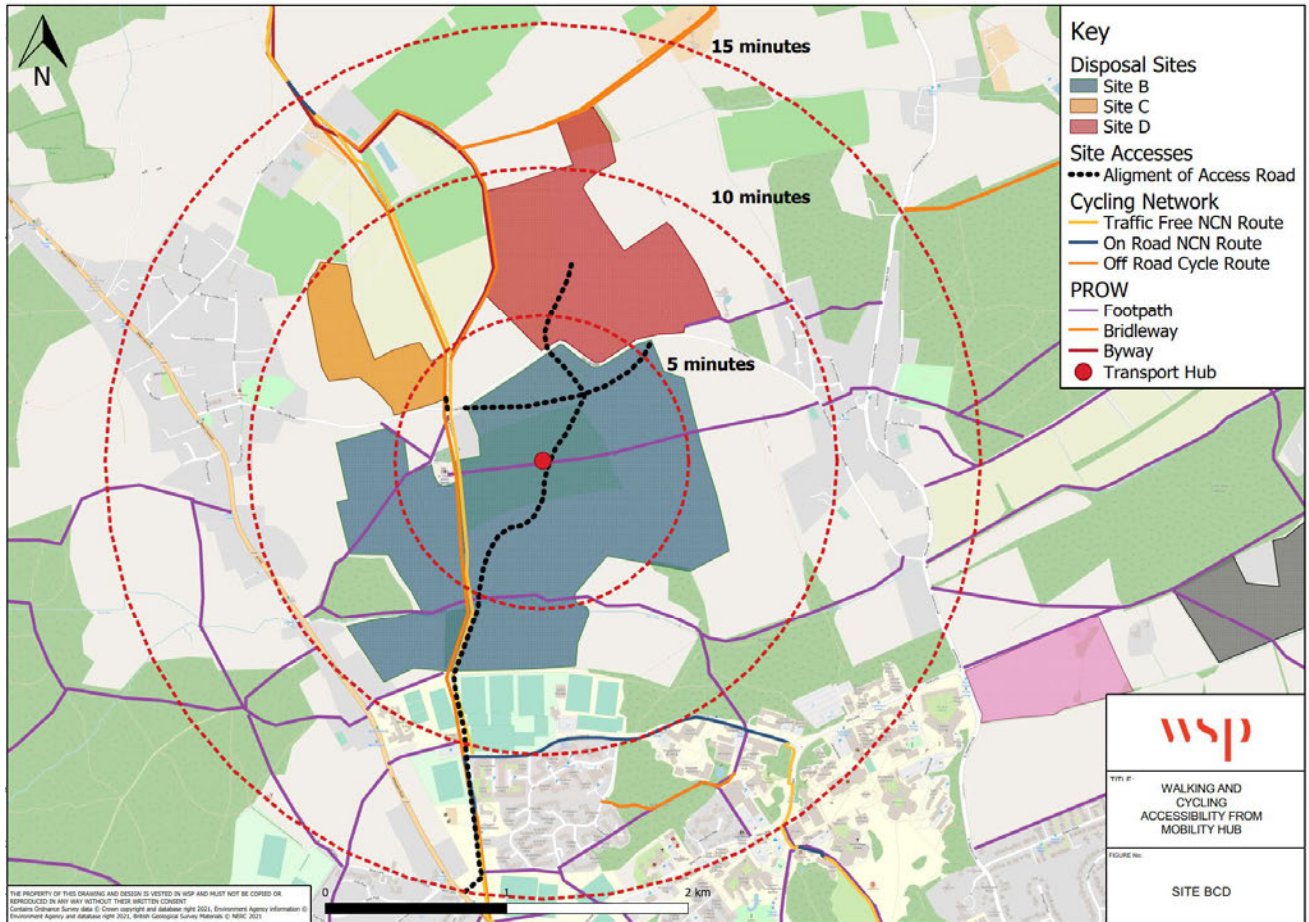
Figure 26: Public Transport Strategy



4.3.6. The strategy currently assumes an extension to Uni1 to serve the on-site transport hub. This would provide a daytime frequency of every 30 minutes. This would be further enhanced with the diversion of Route 4 southbound through the site to increase connectivity to the City Centre. However, further discussions would be held with the University and Stagecoach as local bus operator to ensure integration of the site with the public transport network.

4.3.7. **Figure 27** provides indicative walking times from the transport hub to all parts of the development site. These walking times would be further reduced through development of the site infrastructure and final siting of the public transport hub.

Figure 27: Public Transport Hub Walking Distances



4.4 Walking, Cycling and Micro-mobility Strategy

- 4.4.1. The emergence of new forms of personal mobility (e-scooters, e-bikes, cargo bikes, electric skateboards, shared bicycles and scooters) are collectively referred to as Micro-mobility. Whilst some of these modes may be personal (owned by the user) there is a growing trend towards shared usage (Santander cycle hire in London for instance). Through the MaaS platform mentioned previously residents and visitors of the site would have access to a range of mobility services to facilitate travel to and from the development.
- 4.4.2. The development site benefits from access to the Crab and Winkle Way which facilitates active mode connections to the University, City Centre and Whitstable to the north. To deliver a sustainable development, improvements to existing connections across the City would be investigated and enhancements made where necessary.

4.5 Parking Strategy

- 4.5.1. The vision for the Proposed Development is to provide a sustainable new residential community. The site will prioritise pedestrian and cycle movements over that of vehicles, and to achieve this, it is envisaged that the development will be an early adopter of innovative transport and servicing solutions based around the “Future Mobility” agenda, namely mechanisation and shared and autonomous transport solutions.
- 4.5.2. Whilst walking, cycling and public transport will be the primary modes of transport adopted for travel to and from the site, there will still be a role for personal vehicle travel. It is anticipated that a proportion of this demand can be catered for through shared mobility services such as car clubs and taxis. However, there will still be, particularly in the early years of the development a demand for private vehicle ownership and use which will drive a demand for parking.
- 4.5.3. The final level of parking to be provided will be determined at a later stage of design. However, reference will be made to KCCs vehicle parking standards with due regard given to demand for electric vehicle parking.
- 4.5.4. A key consideration will also be cycle parking and ensuring this is sufficient for the needs and vision of the development. Sufficient space will be provided to accommodate parking on plot with space for adaptive cycles and trailers. Visitor parking will also be conveniently located to facilitate access to the site by cycle.

4.6 Servicing and Waste Strategy

- 4.6.1. The Covid Pandemic has resulted in an acceleration of online shopping trends. It is anticipated that this form of shopping will continue to grow as traditional retail responds to this growing demand. However, one detractor of the growth in online shopping has been the increase in delivery vehicles to accommodate demand.
- 4.6.2. Micro-consolidation offers the ability to reduce the number of deliveries and total mileage driven by couriers. The transport hub would be able to accommodate facilities such as parcel lockers offering a consolidated location for delivery of certain items that could then be picked up by residents at their own convenience and by active mode.
- 4.6.3. The waste strategy for the site will be developed in conjunction with CCC in due course but will need to have due regard to the Environment Bill which is currently being considered by national government and will standardise and mandate certain recycling requirements for households.

4.7 Future Trends Strategy

- 4.7.1. Technology is playing an increasing role in our day to day lives and this is having a transformative effect. The Covid-19 Pandemic has brought this further into focus and opportunities to accelerate the process of change have emerged.

4.7.2. Research undertaken by WSPs Future Ready team anticipates the following changes emerging:

- Initially, the continued evolution of new mobility business models will increase the breadth of mobility services available and offer a viable alternative to personal vehicle ownership. These mobility business models capitalise on the ability to match customers and trips in real-time, to offer customers a more personalised form of mobility. Examples include:
 - **Ride Sharing** – Schemes/digital platforms that match drivers and passengers who share similar destinations. These operate at both individual and corporation levels. E.g. Faxe, Liftshare;
 - **Ride Sourcing** – Real-time, dynamic allocation of customers to drivers based on origin and destination and payment services using pre-approved accounts. Usually rides are in private hire vehicles however increasing offering of micro-transit vehicles to use operating model. E.g. Uber, ArrivaClick, ViaVan;
 - **Car Sharing** – On-demand short-term car rentals with the vehicle owned and managed by a fleet operator or private individual. E.g. Zipcar.
 - **Micro mobility** – On demand services are increasingly being introduced initially in the form of bikes but now with e-scooters
- Emergence of MaaS schemes, which unlock the use and adoption of both shared and public transport through seamless and personalised information, reservation, booking and payments integration. e.g. Whim.
- Lastly, the adoption of increasingly automated, connected and autonomous vehicles which enable travellers to migrate to shared assets; they also provide door-to-door transport whilst providing access on a personal or shared basis. These advances are expected to be commercially deployed at scale within private hire and city taxi fleets from 2025.

4.7.3. In addition, the recent Covid-19 Pandemic has seen the emergence of new policies promoting a shift towards walking and cycling as the primary modes of transport. The recent Emergency Active Travel Fund grant has seen urban areas closed to vehicular traffic and the re-prioritisation of walking and cycling which should in the longer term increase the use of these modes.

4.7.4. The continued growth and evolution of these new forms of mobility is very dependent on future external levers, such as the regulatory environment, the affordability and acceptability of technology, and the customers' willingness to share. However, wider automotive sector trends already indicate how transport offerings are influencing customer behaviours:

- Driving licencing amongst young people has been falling since a peak of 48% (17-20 year olds) and 75% (21-29year olds) in 1993, to 29% and 63% respectively in 2014; with

research suggesting that changing behaviours are more than just a postponement of driving⁵

- The uptake of car clubs within urban areas has created an opportunity for car free living without compromising on the ability to have access to a car for leisure and recreational purposes. Most car club providers now offer a partially electrified fleet with E-Car Club being a fully electric car club
- Traditional car manufacturers, concerned about losing customer ownership, are actively planning and investing in integrated mobility services. Volvo has recently launched 'Care' a monthly car subscription service⁶ with no long-term commitments
- Rates of urbanisation are increasing and city residents are being pressed to reassess the benefits of personal vehicle ownership as the breadth of mobility services available increases⁷
- Increasing prevalence of telecommuting which has been an area of focus during the recent Covid-19 Pandemic.

4.7.5. The transport strategy outlined in this section has reflected upon the most recent trends and innovations across the transport industry and will be developed and refined as the proposals are developed.

5

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/673176/young-peoples-travel-whats-changed.pdf

⁶ <https://www.volvocars.com/uk/care-by-volvo/>

⁷ <https://www.bbc.co.uk/news/uk-44482291>

5 Provisional Trip Generation and Impact Assessment

5.1 Introduction

5.1.1. This section outlines the currently assumed development quantum to then provide a provisional trip generation and distribution. Consideration is then given to likely transport impacts based upon the multi-modal trip generation and informed by initial modelling undertaken by Jacobs to inform the Local Plan Process.

5.2 Development Quantum

5.2.1. For the purposes of this Transport Strategy the development proposals that have been considered are as follows:

- 2,000 dwellings with a mixture of housing and tenure type
- Local Centre to serve the needs of the new community including a transport hub
- Primary School to accommodate the students living on site
- Public open space to accommodate the needs of the development

5.2.2. The proposed mix of uses, to include both primary school provision and a local centre, will encourage internalisation of trips.

5.3 Residential Trip Generation

5.3.1. The residential trip generation has been calculated on the basis of 2,000 dwellings.

5.3.2. The TRICS trip generation database has been interrogated to identify trip rates for the residential land use. The category 'Private Houses' was selected to reflect the likely mix of dwellings proposed on the Site. The 'Private Houses' trip rate was applied as this allows for up to 25% of the dwellings to be affordable and up to 25% of the dwellings to be apartments (source: TRICS Land use definitions). Multi-modal trip rates were selected to allow for the person trip generation to be calculated.

5.3.3. The TRICS search was then further refined to sites within England excluding Central London, and sites with more than 99 residential units. A total of 23 site surveys were identified through this method. A review of the 23 sites was then undertaken to determine whether any of the site characteristics could affect the trip making behaviour and therefore undermine the person trip rate approach proposed. Three sites were removed from the trip rate calculation.

5.3.4. The AM and PM peak person trip rates (per dwelling) extracted from TRICS are shown in **Table 5** along with the resultant person trip generation. The TRICS output is contained in Appendix A.

Table 5 - Provisional Residential Person Trip Rates and Trip Generation

	AM Peak (08:00 - 09:00)			PM Peak (17:00 - 18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Residential Person Trip Rate (per dwelling)	0.187	0.738	0.925	0.601	0.242	0.843
Residential Person Trip Generation (2000 dwellings)	374	1476	1850	1202	484	1686

- 5.3.5. The anticipated multi-modal trip generation has then been split down by mode with reference to the TRICS database and Census Travel to Work data. Mode share data was extracted from the TRICS database for the 20 sites. The mode share data represents the split of total two-way trips throughout the survey duration. The 2011 Census dataset 'Location of usual residence and place of work by method of travel to work' data at the MSOA level (WU02EW) was extracted from Nomis to provide the journey to work data by mode for the output area covering the development site (Canterbury 012). The TRICS mode share and 2011 census journey to work mode share is provided in **Table 6**.
- 5.3.6. To reflect the sustainable aspirations of the development site a target mode share has then been calculated based on the 2011 census mode share. This target applies a 10% point reduction in car driver trips generated by the residential land use at the Proposed Development when compared to the Census Travel to Work Data. This 10% point reduction has then been re-distributed between bus (4%), walking (3%) and cycling (3%). It is considered that this would be achievable with the aspirations of the development site and a robust Travel Plan. The target mode share is also provided in **Table 6**.

Table 6: Mode Share Targets

Mode	Data Source		
	TRICS Database	2011 Census	Target
Rail (incl. Underground)	0.6%	5.4%	5.4%
Bus	2.7%	8.0%	12.0%
Taxi	Not specified	0.8%	0.8%
Motorcycle	Not specified	0.5%	0.5%
Car	32.4% (single occupant) 55.6% (multi vehicle occupants)	58.3% (Car Driver) 4.9% (Car Passenger)	48.3% (Car Driver) 4.9% (Car Passenger)
Bicycle and Micro-mobility	1.3%	4.2%	7.2%
On Foot	7.4%	17.8%	20.8%
Other	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%

5.3.7. The anticipated resultant residential trip generation based on the target mode share is provided in **Table 7**.

Table 7: Provisional Trip Generation by Mode (using Target Mode Shares) (2000 dwellings)

Mode	AM Peak (08:00 - 09:00)			PM Peak (17:00 - 18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Rail (incl. Underground)	20	80	100	65	26	91
Bus	45	178	223	145	58	203
Taxi	3	12	15	10	4	14
Motorcycle	2	7	9	6	2	8
Car Driver	181	713	894	581	234	815
Car Passenger	18	72	90	59	24	83
Bicycle and Micro-mobility	27	106	133	87	35	122
On Foot	78	307	385	250	101	351
Other	0	0	0	0	0	0
Total	374	1476	1850	1202	484	1686

- 5.3.8. **Table 7** identifies that the Proposed Development could result in 894 two-way car driver trips during the AM peak hour and 815 two-way car driver trips during the PM peak hour. This trip generation is considered to represent a worst case as it does not take account of the potential for internalisation of trips or the number of trips that could be destined for/arriving from the University Campus itself as a major employer in the City. Further analysis would be undertaken in due course to refine the trip generation.

5.4 Other Land Use Trip Generation

Local Centre

- 5.4.1. The local centre is proposed to serve the needs of the Proposed Development and as such will not have an external trip generation. The only trips associated with this land use will be servicing trips which would be detailed as part of a future planning application.

Primary school

- 5.4.2. The primary school is proposed to serve the needs of the Proposed Development and pupils attending the school will not have an external trip generation. The only trips associated with this land use will be staff and servicing trips which would be detailed as part of a future planning application.

Relocated sports pitches

- 5.4.3. As discussed, any sports pitches affected by the proposed access strategy would be relocated from the main University Campus to Site E to allow for the access proposals to be accommodated.
- 5.4.4. The relocation of the sports facility will result in a transfer of trips from the existing location to the new location. The quantum of trips is expected to be low, and would be detailed as part of any future planning application.

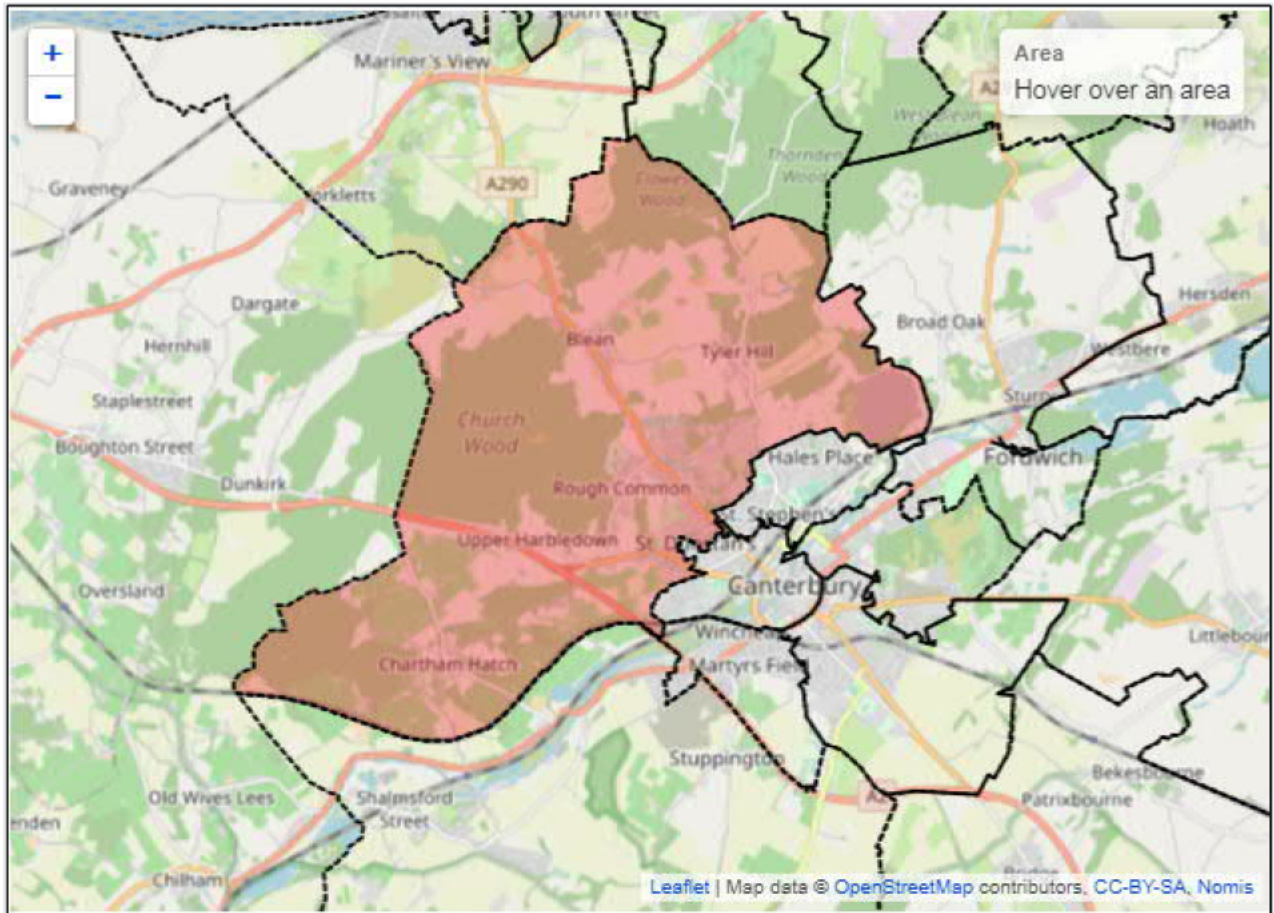
Public open space

- 5.4.5. Public open space will be provided to accommodate the needs of the development, and this will not have an external trip generation.

5.5 Anticipated trip distribution

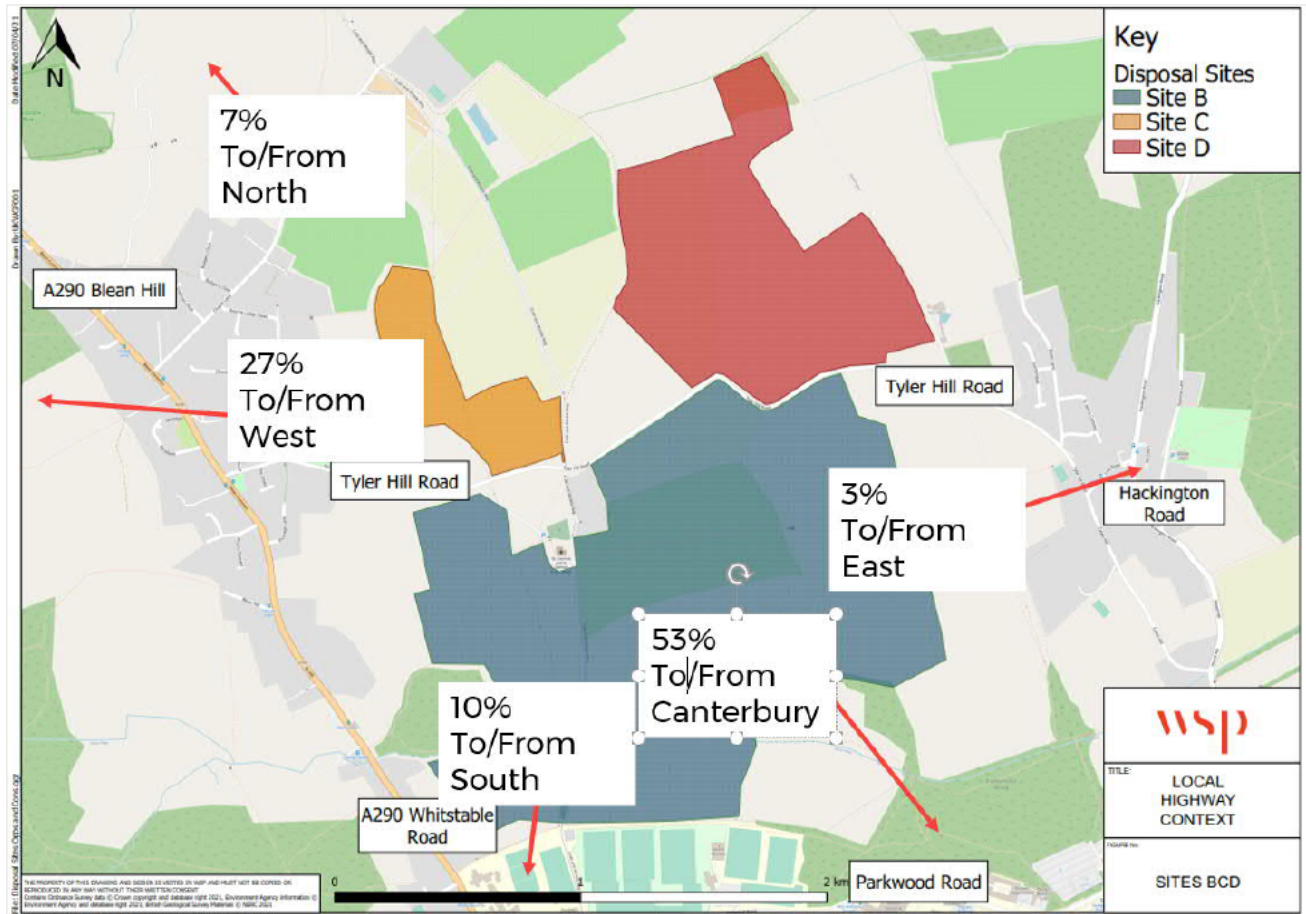
- 5.5.1. A two-stage trip distribution has been adopted to calculate the anticipated trip distribution for the residential trips. Firstly, 2011 Census, 'Location of usual residence and place of work by method of travel to work' data at the MSOA level (WU02EW) was extracted from the Nomis database to provide the proportion of trips to each MSOA across the Country from the MSOA used to derive the mode share for the Site (Canterbury 012), as shown in **Figure 28**.

Figure 28 - MSOA Canterbury 012 Source: Nomis



- 5.5.2. Data for the mode car driver was used to ensure that trip patterns replicated the mode used in the traffic flow section of this strategy. An online journey planner was then used to find the quickest route to the destination MSOA from the Site in order to assign the trips to the network.
- 5.5.3. The analysis identified that 63% of trips remained within Canterbury, with other key destinations including Ashford, Dover and Swale.
- 5.5.4. From the 2011 census, the vehicle routing from the proposed development can be calculated. It is anticipated that the residential development will have the following broad distribution of trips, as detailed in **Figure 29**.

Figure 29: Trip Distribution



5.5.5. At this stage the precise volume of traffic that would access onto Tyler Hill Road and the volume of traffic that uses Tyler Hill Road but would divert to use the new access road is not known. Therefore, to present a robust assessment it has been assumed that all of the residential development traffic would access the local highway network via the access onto Whitstable Road. The trip distribution shown in **Figure 29** indicates that 66% of traffic would turn left out of the development access, and 34% turn right. The same distribution has been considered for arrivals. A summary of turning movements resulting from the Proposed Residential Development is provided in **Table 8**.

Table 8: Whitstable Road / Proposed Development Access – Traffic Flows

Movement		AM Peak (08:00 – 09:00)	PM Peak (17:00 – 18:00)
From	To		
Whitstable Road N	Proposed Development	61	198
Whitstable Road S	Proposed Development	119	383
Proposed Development	Whitstable Road N	243	80
Proposed Development	Whitstable Road S	471	154

5.5.6. **Table 8** illustrates that the Proposed Residential Development is anticipated to result in 894 two-way trips during the AM peak hour and 815 two-way trips during the PM peak hour. The majority of traffic will route via Whitstable Road S.

5.5.7. Comment was raised during the stakeholder engagement about potential demand for retail trips to/from the east of Canterbury as a result of the development proposals. The reason for this comment relates to the potential for additional demand through the University Campus resulting from the Proposed Development. A review of National Travel Survey data (Table 0502)⁸ identifies that during the AM and PM network peak hours shopping and Other work, escort or personal business trips account for 18% and 32% of trips starting in those hours respectively. On the basis that these trips start/end in the development site and 50% will be destined for East Canterbury **Table 9** shows the number of trips that could be destined for/arriving from East Canterbury.

Table 9: Retail Trips To/From East Canterbury

Movement		AM Peak (08:00 – 09:00)	PM Peak (17:00 – 18:00)
From	To		
Proposed Development	East Canterbury	64	37
East Canterbury	Proposed Development	16	93
Total	-	80	130

⁸ <https://www.gov.uk/government/statistical-data-sets/nts04-purpose-of-trips>

5.6 Highway Impacts and Local Plan Modelling

- 5.6.1. In May 2021, Jacobs published the findings of their Local Canterbury Transport Model to inform spatial assessments for early decision making on the Canterbury Local Plan Review (LPR). Five LPR option testing scenarios were developed as part of the work, two of which are relevant to this Transport Strategy. In Options 4 and 5, a Western Bypass scheme has been coded. This Western Bypass runs between Whitstable Road and the A2050, to the east of Rough Common Road. The Western Bypass is anticipated to accommodate traffic flows peripheral to the city centre, providing an alternative option to Rough Common Road.
- 5.6.2. If the Western Bypass was implemented, the distribution of traffic from the development access would change. **Figure 29** indicates that 27% of traffic will travel to destinations to the west. These trips were previously assumed to turn right out of the development access and along Rough Common Road, but with the Western Bypass in place, this traffic would turn left out of the development access and along the Bypass. For traffic arriving at the development access, vehicles which would previously have travelled from the west via Rough Common Road, turning left into the development access, would instead travel along the Western Bypass, turning right into the development access.
- 5.6.3. The Jacobs report indicates that Option 4 would result in an increase in traffic in both peaks on the following links: Whitstable Road (north of the Western Bypass) and Giles Lane, and a decrease in traffic on the following links: Rough Common Road, University Road, Whitstable Road (south of the Western Bypass).
- 5.6.4. Option 5 also includes the introduction of a blocker on University Road, stopping through traffic. The Jacobs report indicates that Option 5 would result in an increase in traffic in both peaks on the following links: Whitstable Road (north of the Western Bypass) and Tyler Hill Road, and a decrease in traffic on the following links: Rough Common Road, University Road, Whitstable Road (south of the Western Bypass).
- 5.6.5. The Jacobs report indicates that southbound journey times along Whitstable Road (between Rough Common Road and Pound Lane) increase in Options 4 and 5 during the AM peak (by circa 25 seconds), but reduce during the PM peak (by between circa 10 and 25 seconds) compared to the forecast baseline scenario.
- 5.6.6. Whilst Options 4 and 5 include the development proposals outlined in this Transport Strategy the methodology adopted to apply the development to the modelled network (at an MSOA level) will result in only a high level understanding of the potential impacts of the Proposed development in the context of the Local Plan.
- 5.6.7. Based upon the modelling results presented to date it is evident that future traffic flows will have the potential to increase through the University Campus unless mitigation measures are implemented. However, the modelling indicates in Option 5 that the introduction of mitigation measures on Giles Lane will result in increases in traffic on Tyler Hill Road, the next east-west link north from Giles Lane. The proposed access strategy seeks to manage

traffic flows on Tyler Hill Road but has not yet been incorporated into the modelling undertaken by Jacobs. A run of the model incorporating the access strategy would help to better understand impacts and how these could be mitigated.

- 5.6.8. In terms of impacts resulting from the development proposals these would be subject to further modelling and analysis in due course. However, the initial strategic modelling undertaken by Jacobs does include for the level of development anticipated from this site and at a strategic level provides an initial indication of impacts in combination with the wider local plan growth.

5.7 Next Steps

- 5.7.1. The provisional trip generation exercise that has been presented will need to be refined as part of any development proposals that come forwards on the site.
- 5.7.2. At present, the trip generation has been calculated based on the 'predict and provide' methodology. This approach uses historical traffic and socio-economic trends to determine the future need for infrastructure. In February 2021, 'The Decide and Provide Approach' Guidance Note was released by TRICS. This method takes account of how the trip rate could be influenced by the design of the new settlement, and takes into account the significant changes that have occurred in terms of mobility and the digital age, which has impacted the way individuals live and work. The 'decide and provide' methodology should be utilised as part of any future assessment.
- 5.7.3. The person trip rates extracted from TRICS and the subsequent trip generation should be disaggregated by journey purpose and mode. This approach will enable detailed consideration of internalisation as well as providing an opportunity for different mode shares to be applied to each journey purpose.
- 5.7.4. Further modelling will be required to better understand the impact of the Proposed Development on the surrounding transport network and ensure compatibility with emerging proposals as part of the Local Plan process.

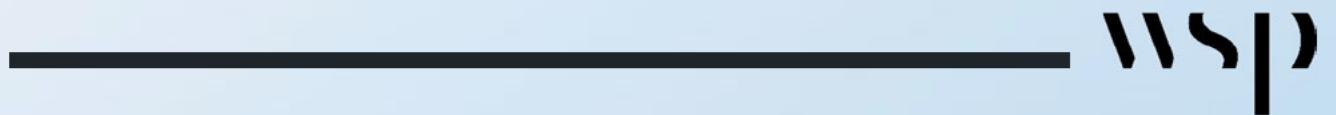
6 Summary and Conclusion

- 6.1.1. WSP has been commissioned by the University of Kent (UoK) to provide transport and environmental advice for the development of proposals at various sites in and around their Canterbury Campus.
- 6.1.2. This Transport Strategy has been prepared to document the process undertaken to develop the Transport Strategy and present the findings of the Strategy to inform the Canterbury City Council Local Plan process.
- 6.1.3. Initially a constraints and opportunities analysis was undertaken to identify the potential for development on five sites surrounding the University's Campus.
- 6.1.4. The constraints and opportunities analysis identified at an early stage that the sites with the greatest potential for built development were sites BCD that lie to the north of the University Campus. Constraints to access, visual impact and the presence of a Scheduled Ancient Monument (SAM) limited the potential uses on Sites E and F located to the east of the University Campus.
- 6.1.5. Sites BCD benefit from close proximity to the University Campus and as such are able to access the high frequency bus services available as well as amenities and facilities on and beyond the University.
- 6.1.6. Vehicular access to Sites BCD is currently provided from Tyler Hill Road, a rural single carriageway road that connects Blean and the A290 in the west with Tyler Hill and Canterbury Hill in the east. Tyler Hill Road is subject to national speed limit (60mph), varies in width between approximately 4m and 6m, is subject to a 7.5t weight restriction and in places features limited forward visibility. In its current form Tyler Hill Road is not considered suitable to accommodate a significant increase in volumes of traffic. Due to the limited frontage available from Sites BCD onto Tyler Hill Road, constrained highway boundary extents and multiple land ownerships fronting the highway, the University has limited potential within its own land ownership to improve the existing Tyler Hill Road.
- 6.1.7. The proposed access strategy sought to respond to the limited connectivity available via Tyler Hill Road through provision of a new north-south route through the University Campus with an access onto A290 Whitstable Road.
- 6.1.8. A range of alignments were considered for the new access road to minimise impacts on the existing University Campus and other constraints such as the ancient woodland and watercourse contained within Site B. Acknowledging that the access strategy relies upon creating a new route through the ancient woodland the overall footprint of the road would be minimised and where it crosses the watercourse a bridge used rather than a culvert.
- 6.1.9. The access strategy will facilitate delivery of the existing University Masterplan and help to unlock the parking strategy which seeks to locate parking on the periphery of the University Campus enabling traffic volumes in the centre of the Campus to be reduced.

- 6.1.10. Pedestrian and cycle access to Sites BCD would be achieved via the new access road but also via the Crab and Winkle Way (National Cycle Route 1) that runs through Site B and through improvements to the network of Public Rights of Way in the local area.
- 6.1.11. A range of supporting strategies have been developed to ensure delivery of sustainable development can be achieved on Sites BCD. These include an outline public transport strategy that seeks to provide a transport hub at the centre of the development offering access to a range of modes of transport. Supported by a Mobility as a Service (MaaS) and Micro-mobility offer this will ensure that active travel and public transport can be prioritised above the private car.
- 6.1.12. A provisional trip generation for the proposed development has been developed to understand potential traffic volumes and consideration given to the findings of the Jacobs Local Plan modelling work when considering off-site highway impacts.
- 6.1.13. The provision of a new access road between Whitstable Road and Tyler Hill Road will alter the highway network in this part of Canterbury and further strategic modelling may be required to understand this in more detail.
- 6.1.14. The Transport Strategy demonstrates that the development proposals are deliverable and with appropriate design development and a package of mitigation measures can deliver a sustainable development.

Appendix A

TRICS Data



Calculation Reference: AUDIT-100321-210702-0722

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
	HF HERTFORDSHIRE	1 days
	KC KENT	4 days
	SC SURREY	2 days
	WS WEST SUSSEX	4 days
03	SOUTH WEST	
	DV DEVON	1 days
04	EAST ANGLIA	
	NF NORFOLK	3 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
06	WEST MIDLANDS	
	ST STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
09	NORTH	
	DH DURHAM	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: 99 to 1817 (units:)
 Range Selected by User: 99 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 08/10/20

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	5 days
Tuesday	4 days
Wednesday	4 days
Thursday	5 days
Friday	2 days

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

Selected survey types:

Manual count	20 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	14
Neighbourhood Centre (PPS6 Local 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:

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 20 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:

1,001 to 5,000	4 days
5,001 to 10,000	5 days
10,001 to 15,000	7 days
15,001 to 20,000	2 days
20,001 to 25,000	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	3 days
25,001 to 50,000	2 days
50,001 to 75,000	3 days
75,001 to 100,000	4 days
125,001 to 250,000	8 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	6 days
1.1 to 1.5	11 days
1.6 to 2.0	3 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	10 days
No	10 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	20 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	DH-03-A-02	MIXED HOUSES	DURHAM
	LEAZES LANE BISHOP AUCKLAND ST HELEN AUCKLAND Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings: 125 <i>Survey date: MONDAY 27/03/17</i>		<i>Survey Type: MANUAL</i>
2	DS-03-A-02	MIXED HOUSES	DERBYSHIRE
	RADBOURNE LANE DERBY Edge of Town Residential Zone Total No of Dwellings: 371 <i>Survey date: TUESDAY 10/07/18</i>		<i>Survey Type: MANUAL</i>
3	DV-03-A-02	HOUSES & BUNGALOWS	DEVON
	MILLHEAD ROAD HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 116 <i>Survey date: FRIDAY 25/09/15</i>		<i>Survey Type: MANUAL</i>
4	ES-03-A-05	MIXED HOUSES & FLATS	EAST SUSSEX
	RATTLE ROAD NEAR EASTBOURNE STONE CROSS Edge of Town Residential Zone Total No of Dwellings: 99 <i>Survey date: WEDNESDAY 05/06/19</i>		<i>Survey Type: MANUAL</i>
5	HF-03-A-03	MIXED HOUSES	HERTFORDSHIRE
	HARE STREET ROAD BUNTINGFORD Edge of Town Residential Zone Total No of Dwellings: 160 <i>Survey date: MONDAY 08/07/19</i>		<i>Survey Type: MANUAL</i>
6	KC-03-A-04	SEMI-DETACHED & TERRACED	KENT
	KILN BARN ROAD AYLESFORD DITTON Edge of Town Residential Zone Total No of Dwellings: 110 <i>Survey date: FRIDAY 22/09/17</i>		<i>Survey Type: MANUAL</i>
7	KC-03-A-06	MIXED HOUSES & FLATS	KENT
	MARGATE ROAD HERNE BAY Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 363 <i>Survey date: WEDNESDAY 27/09/17</i>		<i>Survey Type: MANUAL</i>
8	KC-03-A-07	MIXED HOUSES	KENT
	RECVLVER ROAD HERNE BAY Edge of Town Residential Zone Total No of Dwellings: 288 <i>Survey date: WEDNESDAY 27/09/17</i>		<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

9	KC-03-A-08 MAIDSTONE ROAD CHARING	MIXED HOUSES	KENT
	Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 159 <i>Survey date: TUESDAY 22/05/18</i>		
10	NE-03-A-02 HANOVER WALK SCUNTHORPE	SEMI DETACHED & DETACHED	NORTH EAST LINCOLNSHIRE
	Edge of Town No Sub Category Total No of Dwellings: 432 <i>Survey date: MONDAY 12/05/14</i>		
11	NF-03-A-06 BEAUFORT WAY GREAT YARMOUTH BRADWELL	MIXED HOUSES	NORFOLK
	Edge of Town Residential Zone Total No of Dwellings: 275 <i>Survey date: MONDAY 23/09/19</i>		
12	NF-03-A-08 SIR ALFRED MUNNINGS RD NEAR NORWICH COSTESSEY	MIXED HOUSES & FLATS	NORFOLK
	Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 1817 <i>Survey date: THURSDAY 19/09/19</i>		
13	NF-03-A-09 ROUND HOUSE WAY NORWICH CRINGLEFORD	MIXED HOUSES & FLATS	NORFOLK
	Edge of Town Residential Zone Total No of Dwellings: 984 <i>Survey date: TUESDAY 24/09/19</i>		
14	SC-03-A-05 REIGATE ROAD HORLEY	MIXED HOUSES	SURREY
	Edge of Town Residential Zone Total No of Dwellings: 207 <i>Survey date: MONDAY 01/04/19</i>		
15	SC-03-A-06 AMLETS LANE CRANLEIGH	MIXED HOUSES & FLATS	SURREY
	Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 116 <i>Survey date: THURSDAY 08/10/20</i>		
16	ST-03-A-07 BEACONSIDE STAFFORD MARSTON GATE	DETACHED & SEMI-DETACHED	STAFFORDSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 248 <i>Survey date: WEDNESDAY 22/11/17</i>		

LIST OF SITES relevant to selection parameters (Cont.)

17	WS-03-A-04 HILLS FARM LANE HORSHAM BROADBRIDGE HEATH Edge of Town Residential Zone Total No of Dwellings:	MIXED HOUSES 151 <i>Survey date: THURSDAY</i>	WEST SUSSEX <i>Survey Type: MANUAL</i>
18	WS-03-A-08 ROUNDSTONE LANE ANGMERING Edge of Town Residential Zone Total No of Dwellings:	MIXED HOUSES 180 <i>Survey date: THURSDAY</i>	WEST SUSSEX <i>Survey Type: MANUAL</i>
19	WS-03-A-09 LITTLEHAMPTON ROAD WORTHING WEST DURRINGTON Edge of Town Residential Zone Total No of Dwellings:	MIXED HOUSES & FLATS 197 <i>Survey date: THURSDAY</i>	WEST SUSSEX <i>Survey Type: MANUAL</i>
20	WS-03-A-11 ELLIS ROAD WEST HORSHAM S BROADBRIDGE HEATH Edge of Town Residential Zone Total No of Dwellings:	MIXED HOUSES 918 <i>Survey date: TUESDAY</i>	WEST SUSSEX <i>Survey Type: MANUAL</i>

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 SITES

Site Ref	Reason for Deselection
ES-03-A-03	Site location not comparable to proposed site
ES-03-A-04	Site location not comparable to proposed site

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.065	20	366	0.307	20	366	0.372
08:00 - 09:00	20	366	0.119	20	366	0.357	20	366	0.476
09:00 - 10:00	20	366	0.131	20	366	0.156	20	366	0.287
10:00 - 11:00	20	366	0.108	20	366	0.132	20	366	0.240
11:00 - 12:00	20	366	0.110	20	366	0.112	20	366	0.222
12:00 - 13:00	20	366	0.132	20	366	0.129	20	366	0.261
13:00 - 14:00	20	366	0.137	20	366	0.128	20	366	0.265
14:00 - 15:00	20	366	0.150	20	366	0.155	20	366	0.305
15:00 - 16:00	20	366	0.218	20	366	0.154	20	366	0.372
16:00 - 17:00	20	366	0.247	20	366	0.144	20	366	0.391
17:00 - 18:00	20	366	0.333	20	366	0.145	20	366	0.478
18:00 - 19:00	20	366	0.299	20	366	0.157	20	366	0.456
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.049			2.076			4.125

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected: 99 - 1817 (units:)
 Survey date range: 01/01/13 - 08/10/20
 Number of weekdays (Monday-Friday): 20
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 Surveys manually removed from selection: 2

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.002	20	366	0.002	20	366	0.004
08:00 - 09:00	20	366	0.003	20	366	0.003	20	366	0.006
09:00 - 10:00	20	366	0.002	20	366	0.001	20	366	0.003
10:00 - 11:00	20	366	0.001	20	366	0.001	20	366	0.002
11:00 - 12:00	20	366	0.000	20	366	0.001	20	366	0.001
12:00 - 13:00	20	366	0.001	20	366	0.001	20	366	0.002
13:00 - 14:00	20	366	0.001	20	366	0.001	20	366	0.002
14:00 - 15:00	20	366	0.001	20	366	0.001	20	366	0.002
15:00 - 16:00	20	366	0.003	20	366	0.003	20	366	0.006
16:00 - 17:00	20	366	0.002	20	366	0.002	20	366	0.004
17:00 - 18:00	20	366	0.002	20	366	0.002	20	366	0.004
18:00 - 19:00	20	366	0.002	20	366	0.002	20	366	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.020			0.020			0.040

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.001	20	366	0.002	20	366	0.003
08:00 - 09:00	20	366	0.002	20	366	0.002	20	366	0.004
09:00 - 10:00	20	366	0.003	20	366	0.002	20	366	0.005
10:00 - 11:00	20	366	0.002	20	366	0.002	20	366	0.004
11:00 - 12:00	20	366	0.002	20	366	0.002	20	366	0.004
12:00 - 13:00	20	366	0.002	20	366	0.003	20	366	0.005
13:00 - 14:00	20	366	0.002	20	366	0.002	20	366	0.004
14:00 - 15:00	20	366	0.003	20	366	0.002	20	366	0.005
15:00 - 16:00	20	366	0.002	20	366	0.003	20	366	0.005
16:00 - 17:00	20	366	0.002	20	366	0.002	20	366	0.004
17:00 - 18:00	20	366	0.002	20	366	0.001	20	366	0.003
18:00 - 19:00	20	366	0.001	20	366	0.001	20	366	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.024			0.024			0.048

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.001	20	366	0.001	20	366	0.002
08:00 - 09:00	20	366	0.001	20	366	0.001	20	366	0.002
09:00 - 10:00	20	366	0.001	20	366	0.001	20	366	0.002
10:00 - 11:00	20	366	0.001	20	366	0.001	20	366	0.002
11:00 - 12:00	20	366	0.001	20	366	0.001	20	366	0.002
12:00 - 13:00	20	366	0.001	20	366	0.001	20	366	0.002
13:00 - 14:00	20	366	0.001	20	366	0.001	20	366	0.002
14:00 - 15:00	20	366	0.001	20	366	0.001	20	366	0.002
15:00 - 16:00	20	366	0.001	20	366	0.001	20	366	0.002
16:00 - 17:00	20	366	0.001	20	366	0.001	20	366	0.002
17:00 - 18:00	20	366	0.001	20	366	0.001	20	366	0.002
18:00 - 19:00	20	366	0.000	20	366	0.000	20	366	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.011			0.011			0.022

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.003	20	366	0.004	20	366	0.007
08:00 - 09:00	20	366	0.005	20	366	0.011	20	366	0.016
09:00 - 10:00	20	366	0.001	20	366	0.003	20	366	0.004
10:00 - 11:00	20	366	0.002	20	366	0.003	20	366	0.005
11:00 - 12:00	20	366	0.002	20	366	0.003	20	366	0.005
12:00 - 13:00	20	366	0.003	20	366	0.003	20	366	0.006
13:00 - 14:00	20	366	0.002	20	366	0.001	20	366	0.003
14:00 - 15:00	20	366	0.003	20	366	0.002	20	366	0.005
15:00 - 16:00	20	366	0.004	20	366	0.003	20	366	0.007
16:00 - 17:00	20	366	0.008	20	366	0.006	20	366	0.014
17:00 - 18:00	20	366	0.009	20	366	0.005	20	366	0.014
18:00 - 19:00	20	366	0.007	20	366	0.006	20	366	0.013
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.049			0.050			0.099

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.083	20	366	0.487	20	366	0.570
08:00 - 09:00	20	366	0.158	20	366	0.634	20	366	0.792
09:00 - 10:00	20	366	0.180	20	366	0.246	20	366	0.426
10:00 - 11:00	20	366	0.154	20	366	0.202	20	366	0.356
11:00 - 12:00	20	366	0.163	20	366	0.169	20	366	0.332
12:00 - 13:00	20	366	0.195	20	366	0.185	20	366	0.380
13:00 - 14:00	20	366	0.204	20	366	0.187	20	366	0.391
14:00 - 15:00	20	366	0.236	20	366	0.218	20	366	0.454
15:00 - 16:00	20	366	0.394	20	366	0.223	20	366	0.617
16:00 - 17:00	20	366	0.436	20	366	0.221	20	366	0.657
17:00 - 18:00	20	366	0.545	20	366	0.217	20	366	0.762
18:00 - 19:00	20	366	0.470	20	366	0.251	20	366	0.721
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.218			3.240			6.458

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.010	20	366	0.027	20	366	0.037
08:00 - 09:00	20	366	0.022	20	366	0.065	20	366	0.087
09:00 - 10:00	20	366	0.019	20	366	0.022	20	366	0.041
10:00 - 11:00	20	366	0.015	20	366	0.019	20	366	0.034
11:00 - 12:00	20	366	0.015	20	366	0.015	20	366	0.030
12:00 - 13:00	20	366	0.017	20	366	0.010	20	366	0.027
13:00 - 14:00	20	366	0.012	20	366	0.016	20	366	0.028
14:00 - 15:00	20	366	0.019	20	366	0.020	20	366	0.039
15:00 - 16:00	20	366	0.051	20	366	0.022	20	366	0.073
16:00 - 17:00	20	366	0.035	20	366	0.016	20	366	0.051
17:00 - 18:00	20	366	0.027	20	366	0.015	20	366	0.042
18:00 - 19:00	20	366	0.028	20	366	0.025	20	366	0.053
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.270			0.272			0.542

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 BUS/TRAM PASSENGERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.001	20	366	0.019	20	366	0.020
08:00 - 09:00	20	366	0.002	20	366	0.022	20	366	0.024
09:00 - 10:00	20	366	0.004	20	366	0.010	20	366	0.014
10:00 - 11:00	20	366	0.005	20	366	0.007	20	366	0.012
11:00 - 12:00	20	366	0.004	20	366	0.008	20	366	0.012
12:00 - 13:00	20	366	0.006	20	366	0.006	20	366	0.012
13:00 - 14:00	20	366	0.006	20	366	0.005	20	366	0.011
14:00 - 15:00	20	366	0.009	20	366	0.004	20	366	0.013
15:00 - 16:00	20	366	0.017	20	366	0.008	20	366	0.025
16:00 - 17:00	20	366	0.018	20	366	0.005	20	366	0.023
17:00 - 18:00	20	366	0.014	20	366	0.004	20	366	0.018
18:00 - 19:00	20	366	0.013	20	366	0.004	20	366	0.017
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.099			0.102			0.201

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 RAIL PASSENGERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.001	20	366	0.004	20	366	0.005
08:00 - 09:00	20	366	0.000	20	366	0.006	20	366	0.006
09:00 - 10:00	20	366	0.001	20	366	0.004	20	366	0.005
10:00 - 11:00	20	366	0.001	20	366	0.001	20	366	0.002
11:00 - 12:00	20	366	0.001	20	366	0.001	20	366	0.002
12:00 - 13:00	20	366	0.002	20	366	0.002	20	366	0.004
13:00 - 14:00	20	366	0.001	20	366	0.000	20	366	0.001
14:00 - 15:00	20	366	0.001	20	366	0.000	20	366	0.001
15:00 - 16:00	20	366	0.002	20	366	0.000	20	366	0.002
16:00 - 17:00	20	366	0.002	20	366	0.000	20	366	0.002
17:00 - 18:00	20	366	0.005	20	366	0.001	20	366	0.006
18:00 - 19:00	20	366	0.005	20	366	0.001	20	366	0.006
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.022			0.020			0.042

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 COACH PASSENGERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.000	20	366	0.000	20	366	0.000
08:00 - 09:00	20	366	0.000	20	366	0.000	20	366	0.000
09:00 - 10:00	20	366	0.000	20	366	0.000	20	366	0.000
10:00 - 11:00	20	366	0.000	20	366	0.000	20	366	0.000
11:00 - 12:00	20	366	0.000	20	366	0.000	20	366	0.000
12:00 - 13:00	20	366	0.000	20	366	0.000	20	366	0.000
13:00 - 14:00	20	366	0.000	20	366	0.000	20	366	0.000
14:00 - 15:00	20	366	0.000	20	366	0.000	20	366	0.000
15:00 - 16:00	20	366	0.000	20	366	0.000	20	366	0.000
16:00 - 17:00	20	366	0.000	20	366	0.000	20	366	0.000
17:00 - 18:00	20	366	0.000	20	366	0.000	20	366	0.000
18:00 - 19:00	20	366	0.000	20	366	0.000	20	366	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.002	20	366	0.023	20	366	0.025
08:00 - 09:00	20	366	0.002	20	366	0.028	20	366	0.030
09:00 - 10:00	20	366	0.005	20	366	0.014	20	366	0.019
10:00 - 11:00	20	366	0.006	20	366	0.008	20	366	0.014
11:00 - 12:00	20	366	0.006	20	366	0.008	20	366	0.014
12:00 - 13:00	20	366	0.008	20	366	0.007	20	366	0.015
13:00 - 14:00	20	366	0.007	20	366	0.005	20	366	0.012
14:00 - 15:00	20	366	0.010	20	366	0.005	20	366	0.015
15:00 - 16:00	20	366	0.019	20	366	0.008	20	366	0.027
16:00 - 17:00	20	366	0.021	20	366	0.006	20	366	0.027
17:00 - 18:00	20	366	0.020	20	366	0.005	20	366	0.025
18:00 - 19:00	20	366	0.018	20	366	0.005	20	366	0.023
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.124			0.122			0.246

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.098	20	366	0.540	20	366	0.638
08:00 - 09:00	20	366	0.187	20	366	0.738	20	366	0.925
09:00 - 10:00	20	366	0.204	20	366	0.285	20	366	0.489
10:00 - 11:00	20	366	0.178	20	366	0.231	20	366	0.409
11:00 - 12:00	20	366	0.185	20	366	0.195	20	366	0.380
12:00 - 13:00	20	366	0.223	20	366	0.205	20	366	0.428
13:00 - 14:00	20	366	0.224	20	366	0.209	20	366	0.433
14:00 - 15:00	20	366	0.267	20	366	0.244	20	366	0.511
15:00 - 16:00	20	366	0.468	20	366	0.257	20	366	0.725
16:00 - 17:00	20	366	0.500	20	366	0.249	20	366	0.749
17:00 - 18:00	20	366	0.601	20	366	0.242	20	366	0.843
18:00 - 19:00	20	366	0.523	20	366	0.286	20	366	0.809
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.658			3.681			7.339

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 CARS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.047	20	366	0.265	20	366	0.312
08:00 - 09:00	20	366	0.097	20	366	0.308	20	366	0.405
09:00 - 10:00	20	366	0.103	20	366	0.131	20	366	0.234
10:00 - 11:00	20	366	0.083	20	366	0.105	20	366	0.188
11:00 - 12:00	20	366	0.088	20	366	0.088	20	366	0.176
12:00 - 13:00	20	366	0.107	20	366	0.105	20	366	0.212
13:00 - 14:00	20	366	0.109	20	366	0.100	20	366	0.209
14:00 - 15:00	20	366	0.120	20	366	0.125	20	366	0.245
15:00 - 16:00	20	366	0.182	20	366	0.119	20	366	0.301
16:00 - 17:00	20	366	0.207	20	366	0.115	20	366	0.322
17:00 - 18:00	20	366	0.290	20	366	0.120	20	366	0.410
18:00 - 19:00	20	366	0.264	20	366	0.133	20	366	0.397
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.697			1.714			3.411

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 LGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.012	20	366	0.024	20	366	0.036
08:00 - 09:00	20	366	0.013	20	366	0.019	20	366	0.032
09:00 - 10:00	20	366	0.016	20	366	0.014	20	366	0.030
10:00 - 11:00	20	366	0.014	20	366	0.015	20	366	0.029
11:00 - 12:00	20	366	0.013	20	366	0.014	20	366	0.027
12:00 - 13:00	20	366	0.013	20	366	0.011	20	366	0.024
13:00 - 14:00	20	366	0.017	20	366	0.016	20	366	0.033
14:00 - 15:00	20	366	0.014	20	366	0.013	20	366	0.027
15:00 - 16:00	20	366	0.015	20	366	0.016	20	366	0.031
16:00 - 17:00	20	366	0.018	20	366	0.014	20	366	0.032
17:00 - 18:00	20	366	0.023	20	366	0.011	20	366	0.034
18:00 - 19:00	20	366	0.015	20	366	0.010	20	366	0.025
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.183			0.177			0.360

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 MOTOR CYCLES
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	20	366	0.001	20	366	0.003	20	366	0.004
08:00 - 09:00	20	366	0.000	20	366	0.003	20	366	0.003
09:00 - 10:00	20	366	0.000	20	366	0.000	20	366	0.000
10:00 - 11:00	20	366	0.001	20	366	0.000	20	366	0.001
11:00 - 12:00	20	366	0.001	20	366	0.001	20	366	0.002
12:00 - 13:00	20	366	0.001	20	366	0.001	20	366	0.002
13:00 - 14:00	20	366	0.001	20	366	0.001	20	366	0.002
14:00 - 15:00	20	366	0.002	20	366	0.002	20	366	0.004
15:00 - 16:00	20	366	0.001	20	366	0.001	20	366	0.002
16:00 - 17:00	20	366	0.002	20	366	0.002	20	366	0.004
17:00 - 18:00	20	366	0.002	20	366	0.001	20	366	0.003
18:00 - 19:00	20	366	0.003	20	366	0.001	20	366	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.015			0.016			0.031

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.*



2 London Square
Cross Lanes
Guildford, Surrey
GU1 1UN

wsp.com

WSP UK Limited makes no warranties or guarantees, actual or implied, in relation to this report, or the ultimate commercial, technical, economic, or financial effect on the project to which it relates, and bears no responsibility or liability related to its use other than as set out in the contract under which it was supplied.