

REPORT N^o 70012012-001

MILTON ROAD & HISTON ROAD CORRIDORS

DRAFT STAGE 1 REPORT



PUBLIC

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MILTON ROAD & HISTON ROAD CORRIDORS

STAGE 1 REPORT

Cambridgeshire County Council

**DRAFT
Public**

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WSP | Parsons Brinckerhoff

WSP House
70 Chancery Lane
London
WC2A 1AF

Tel: +44 (020) 7514 5000
Fax: +44 (020) 7514 5111
www.wspgroup.com
www.pbworld.com

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Checked by	Adrian Hames	Adrian Hames		
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PRODUCTION TEAM

WSP|PB

Technical Director	Adrian Hames
Associate Director	Darren Pacey
Principal Engineer	Lee Kirby
Senior Engineer	Jonathan Delouche

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1 PROJECT BACKGROUND

1.1 PROJECT BACKGROUND

1.1.1 WSP|Parsons Brinckerhoff has been commissioned by Cambridgeshire County Council (CCC) to undertake a study establishing options to deliver the most effective corridor-based public transport scheme (complemented by comprehensive cycling and walking routes) for the Milton Road and Histon Road corridors. The commission includes the following core tasks:

1. Policy Review;
2. Study of existing conditions including problem identification;
3. Scheme optioneering;
4. Corridor Modelling; and
5. Outline business case including non-technical summary

1.1.2 Milton Road & is one of the key radials into Cambridge and is identified as an increasingly important public transport corridor as part of the Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) and Long Term Transport Strategy (LTTS). Histon Road is also a key radial route into Cambridge which is constrained in its width, which contributes to congestion and makes the consideration of small scale improvements difficult.

1.1.3 Both Milton Road & Histon Road experience significant congestion at peak times which impacts on bus journey times making journeys unreliable, unattractive and longer than necessary, as well as affecting the convenience and comfort of cycling trips along the corridor.

1.1.4 By creating more capacity for sustainable trips along both corridors, the projects will provide the potential to mitigate the impact of further transport demand arising from developments within the Greater Cambridge area, thereby supporting the transport viability of development proposals.

1.1.5 Great Cambridgeshire City Deal has successfully secured a first tranche of Government's City Deal funding to unlock major growth and economic potential in the greater Cambridge area.

1.1.6 This work is part of a wider package of major public transport improvements across the city and out into South Cambridgeshire, based on a corridor approach, as set out in the Authority's adopted Transport Strategy for Cambridge and South Cambridgeshire (TSCSC).

1.2 PROJECT OBJECTIVES

1.2.1 Both projects have the following key objectives:

- To provide comprehensive priority for buses in both directions along Milton Road and where possible, on Histon Road;
- To make provision for cyclists along Milton Road and Histon Road which is segregated from buses and general traffic wherever possible;
- To improve provision of cyclists and pedestrians in line with the public realm proposals at Mitcham's Corner whilst maintaining traffic flow through the junction;
- To generate options capable of maintaining traffic levels at today's levels in Cambridge;

- To consider the potential for enhancing the environment, streetscape and air quality in these corridors; and
- To assess the impacts on existing residents and highway capacity for each option.

1.3 PURPOSE OF THE REPORT

1.3.1 The scope of the Draft Stage 1 Report is to present the initial evidence base for development of the subsequent deliverables (particularly the options reporting and outline business case) and to undertake a gap analysis of any additional information required.

1.3.2 This report is intended to be a live document with updates made as information becomes available up until the production of the draft options report.

1.3.3 The Draft Stage 1 Report scope includes the following:

- Initial Policy Review - from the national policy level through to the local policy level;
- Review of Existing Conditions – a short review of the accident and traffic information made available, the current public transport provision, cycling and walking provision and the general highway network;
- Analysis of Other Available Information – include a review of C2 utilities searches, bus journey time information, trafficmaster and accident data; and
- Gap Analysis – a review of the current information available and additional information likely to be required to complete the study (aside from any modelling to be undertaken).

2 POLICY REVIEW

2.1 CAMBRIDGESHIRE LOCAL TRANSPORT PLAN 2011-2031

OVERVIEW

- 2.1.1 The Cambridgeshire Local Transport Plan 3 (LTP3) is a planning document that outlines the current transport accessibility in Cambridgeshire and sets out the Council vision for the future of transportation in the County. This is the third LTP for Cambridgeshire and covers the period 2011-2031.
- 2.1.2 Under the Transport Act 2000, each local transport authority must develop transport policies to encourage a safe, integrated, economic and efficient network. The LTP3 is divided into three main parts:
- **Policies and Strategy** - where the document sets out the objectives, problems and challenges observed and presents the strategy to overcome them;
 - **Long Term Transport Strategy** - provides a summary of potential transport infrastructure and enhancements to the transport network which are needed across the county; and
 - **Transport Delivery Plan** – this section is the business plan which details the anticipated programmes and funding to deliver the policies and strategies set out in the LTP3.

VISION

- 2.1.3 Cambridgeshire County Council vision is committed to the LTP3 vision of:

“Creating communities where people want to live and work: now and in the future”

AIMS AND OBJECTIVES

- 2.1.4 The priorities for Cambridgeshire County Council are:

- Supporting and protecting people when they need it most;
- Helping people to live independent and healthy lives in their communities; and
- Developing our local economy for the benefit of all.

- 2.1.5 The five objectives of Cambridgeshire County Council LTP3 contribute towards these priorities. These five LTP3 objectives are summarised below:

- Enabling people to thrive achieve their potential and improve quality of life;
- Supporting and protecting vulnerable people;
- Managing and delivering the growth and development of sustainable communities;
- Promoting improved skills levels and economic prosperity across the county, helping people into jobs and encouraging enterprise; and
- Meeting the challenges of climate change and enhancing the natural environment.

- 2.1.6 Figure 1 from the LTP3 summarises how these objectives will be met. Numerous indicators have been developed to monitor the progress of the Plan, for example, the number of people killed or seriously injured, number of bus passenger journeys originating within Cambridgeshire, etc.

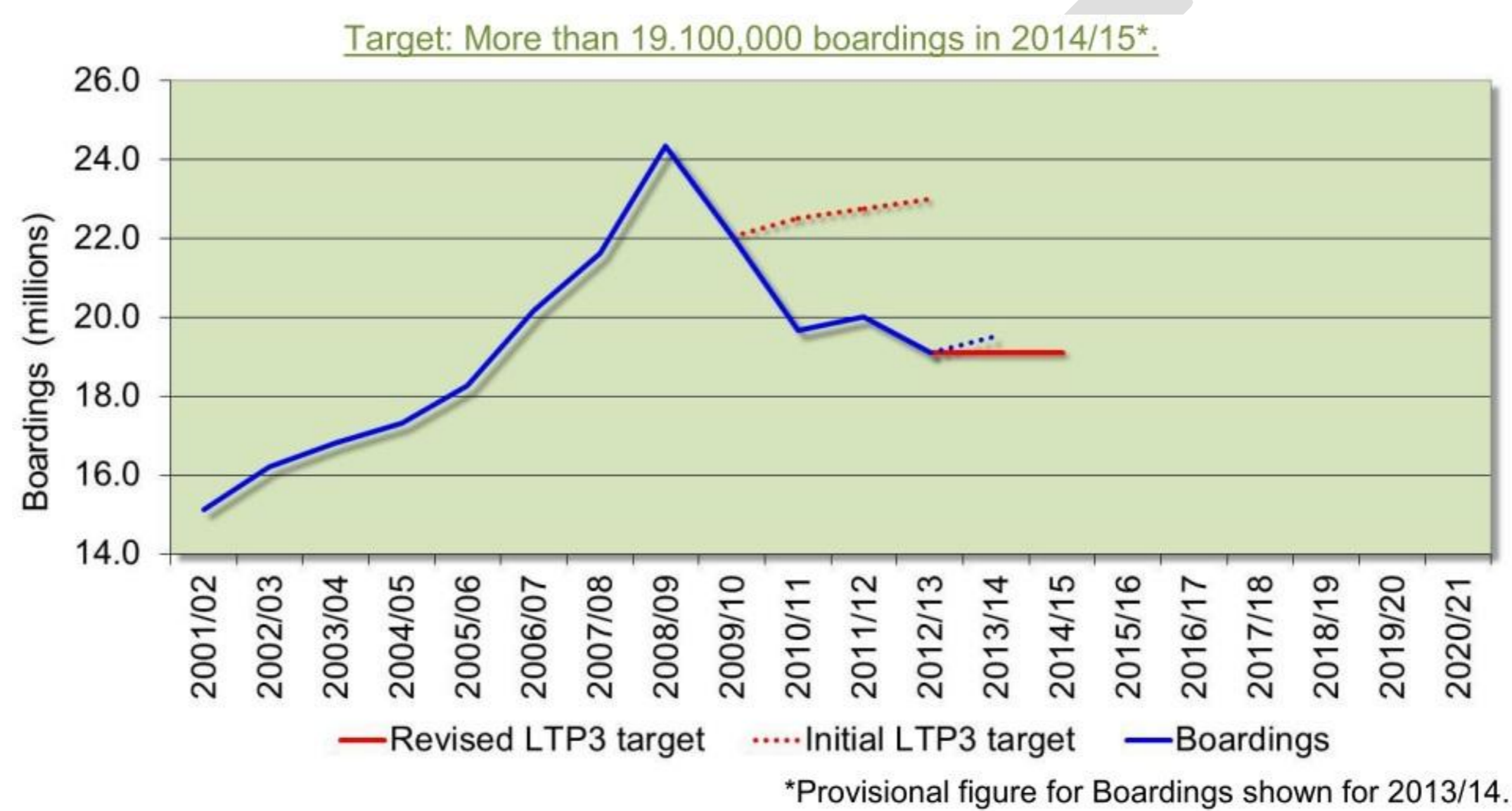
THE STRATEGY

- 2.1.7 The LTP3 strategies are divided into four key geographic areas including Cambridge and South Cambridgeshire, East Cambridgeshire, Fenland and Huntingdonshire.

MONITORING, TRENDS AND TARGETS

LTP3 states that bus patronage in Cambridgeshire grew strongly throughout most of the previous LTPs. However, a drop of public transport usage has been observed in recent years as shown in Figure 1. This is potentially due to the challenging financial climate which has led to cuts in bus services.

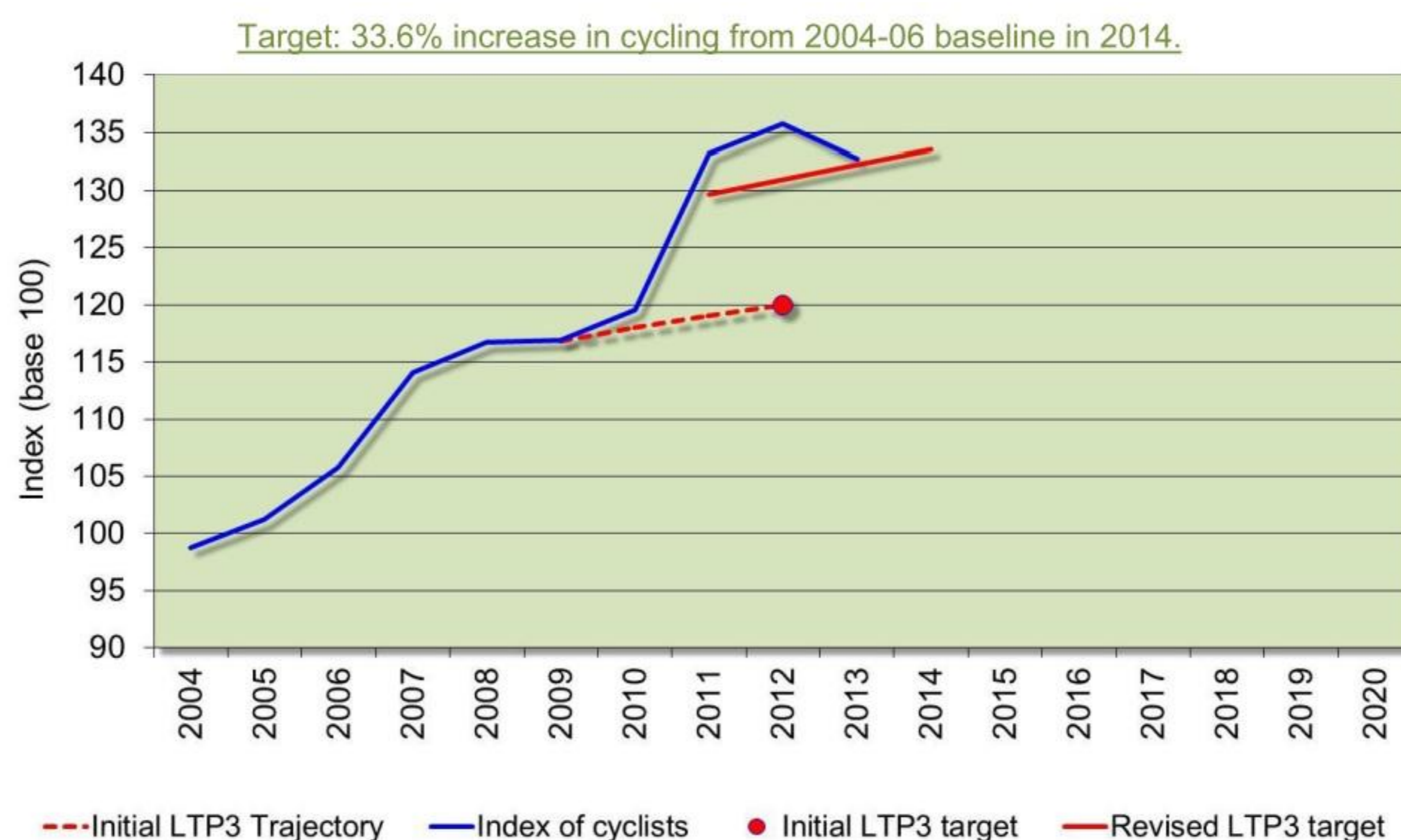
Figure 1 Indicator LTP05: Bus Trips Originating in Cambridgeshire



Source: Cambridgeshire County Council

- 2.1.8 The LTP3 confirms the Council's intention to consolidate levels of public transport usage through further investment in services and infrastructures.
- 2.1.9 Furthermore, the assessment of indicators for waiting time and percentage of buses running on time indicate that recent services were below expectations, potentially due to significant road works taking place in Cambridge City Centre. The intentions of the Council are to tackle public transport waiting time and increase service reliability.
- 2.1.10 Major investments in demand management and bus priority measures are proposed on major corridors in Cambridge City, in the Huntingdon and St Ives area and new developments such as Alcombury Weald and Wyton Airfield.
- 2.1.11 Figure 2 shows cycling trips increasing since 2004 / 2005 in Cambridgeshire. Cambridgeshire County Council is committed to encourage further cycling and will continue to provide adequate cycle infrastructures on its network.

Figure 2 Indicator LTP07: Index of Cycle Trips in Cambridgeshire



Source: Cambridgeshire County Council

2.1.12 Investment in cycle infrastructure will enable a joined-up cycle network. The main risk for future cycling uptake would be a higher than predicted traffic growth that could discourage cyclists.

2.1.13 The LTP3 confirms that the key risk to achieving an increase in public transport services would most likely be insufficient funding levels from central government. Other risks would be inflationary increases beyond expectations in the cost of infrastructure and also in the costs of running the scheme or higher traffic growth which would impact on traveling time. These risks could be reduced by funds realised through private developers and other funding sources. .

ISSUES AND CHALLENGES

2.1.14 The LTP3 sets out the following challenges for transport.

CHALLENGE 1: IMPROVING THE RELIABILITY OF JOURNEY TIMES BY MANAGING DEMAND FOR ROAD SPACE, WHERE APPROPRIATE AND MAXIMISING CAPACITY AND EFFICIENCY OF THE EXISTING NETWORK VISION.

2.1.15 Cambridgeshire County Council wants to improve its current network to manage all modes of transport more efficiently. In order to overcome current the barriers to movement, CCC proposed the following in the LTP3:

- Introduce further measures to manage demand;
- Use Intelligent Transport Systems (ITS) to actively manage traffic and make more efficient use of existing assets ;
- Develop and keep under review the Long Term Transport Strategy, district based transport strategies and the action plans contained within them;
- Encourage more freight onto rail and the use of appropriate routes for road freight; and
- Keep our network safe and operational through the timely maintenance of our transport network.

CHALLENGE 2: REDUCING THE LENGTH OF THE COMMUTE AND THE NEED TO TRAVEL BY PRIVATE CAR

- 2.1.16 The LTP3 supports the vision of providing people with the opportunity to live nearer to their place of work. As a result, CCC aims to ensure that the network will provide people with additional transport choices. CCC proposes to:
- Work with local planning authorities to bring about new developments in the most sustainable and accessible locations;
 - Encourage and promote the adoption of travel plans;
 - Support the development and adoption of local guidance and policies that promote travel planning, such as the upcoming Travel Plan Guidance for planning applicants / developers being developed by the Travel for Work Partnership;
 - Encourage employers to introduce Travel for Work Partnerships in offices; and
 - Promote journey planning tools such as Walkit and Camshare.

CHALLENGE 3: MAKING SUSTAINABLE MODES OF TRANSPORT A VIABLE AND ATTRACTIVE ALTERNATIVE TO THE PRIVATE CAR

- 2.1.17 The vision of CCC is that people have choice between their modes of travel including walking, cycling and public transport. In order to achieve this, CCC aims to:
- Work with planning authorities to co-locate housing and services/facilities to reduce the need to travel long distances;
 - Negotiate with developers to ensure the provision of sustainable and environmentally friendly infrastructure as part of new developments;
 - Promote sustainable networks for walking and cycling;
 - Make provisions for cyclists on road and off road, including cycle parking;
 - Promote cycle training for school children and adults;
 - Improve availability and type of information on sustainable travel modes;
 - Improve the integration of all modes of transport and provide good connectivity between walking, cycling, bus and rail services;
 - Provide the right infrastructure on key transport corridors to encourage commercial operators to provide high quality services;
 - Continue to support community transport schemes;
 - Implement the Long Term Transport Strategy, Transport Strategy for Cambridge and South Cambridgeshire, our current Market Town Transport Strategies (and the future district based strategies) which promote sustainable travel;
 - Investigate measures to manage demand for cars where congestion is a particular problem;
 - Promote the health and lifestyle benefits of choosing sustainable modes of travel;
 - Support car clubs and car sharing schemes; and
 - Support and expand our travel planning programmes working with businesses, developers, schools and individuals to promote sustainable travel.

CHALLENGE 4: FUTURE-PROOFING OUR MAINTENANCE STRATEGY AND NEW TRANSPORT INFRASTRUCTURE TO COPE WITH THE EFFECTS OF CLIMATE CHANGE

CHALLENGE 5: ENSURING PEOPLE – ESPECIALLY THOSE AT RISK OF SOCIAL EXCLUSION – CAN ACCESS THE SERVICES THEY NEED WITHIN REASONABLE TIME, COST AND EFFORT

CHALLENGE 6: ADDRESSING THE MAIN CAUSES OF ROAD ACCIDENTS IN CAMBRIDGESHIRE

2.1.18

The LTP3 states the intention of CCC to provide a safe environment for travel and to minimise the number of road accidents in Cambridgeshire. Significant progress has been made in reducing accidents within the County in the recent past. CCC is committed to continue its projects and programs to reduce further accidents occurrence and severity whilst undertaking the following:

- Improving road user behaviour through education, training and publicity programmes;
- Encouraging businesses and employers to implement appropriate policies and procedures for managing the safety of their employees, whilst travelling for work;
- Working in partnership with the police and other strategic agencies via the Cambridgeshire and Peterborough Road Safety Partnership (CPRSP);
- Developing programmes to reduce the number of young drivers, and riders, killed or injured on the County's roads;
- Developing programmes to reduce child road accident casualties;
- Ensuring schools have convincing, up to date, Travel Plans and measures to deliver safer & sustainable travel modes;
- Continuing to work with the Police regarding safety camera enforcement at sites where this is an appropriate solution to address road traffic casualty problems; and
- Targeting remedial measures at those accident cluster sites that will give the highest casualty reduction.

CHALLENGE 7: PROTECTING AND ENHANCING THE NATURAL ENVIRONMENT BY MINIMISING THE ENVIRONMENTAL IMPACT OF TRANSPORT

2.1.19

CCC aims to minimise transport impact by reducing emissions and prioritise friendly modes of transport by undertaking the following:

- Manage the highways network and consider and address the environmental impacts of schemes at the planning, design and implementation stage (e.g. noise, heritage, biodiversity and landscape) to protect and enhance the natural environment;
- Utilise new technologies as they become available to minimise the environmental impacts of transport e.g. new materials and construction methods;
- Respond to the proposals of other infrastructure providers to highlight environmental impacts;
- Work in partnership with the City and District Councils to monitor air quality at key locations across the county and develop and implement effective Air Quality Action Plans;
- Develop, specific elements of the Joint Air Quality Action Plan for Cambridge, South Cambridgeshire and Huntingdonshire Districts, and implement those elements shown to be most effective and lowest cost;
- Promote emission reduction at the Regional Freight Quality Partnership;
- To reduce overall vehicle mileage through a combination of measures to manage demand, infrastructure improvement and enhanced public transport provision;

- Manage and reduce vehicle emissions;
- Reduce the need to travel and encourage sustainable alternatives to the private car;
- Encourage and promote the use of greener vehicles and fuels;
- Contribute to Green Infrastructure; and
- Reduce transport-related noise pollution.

CHALLENGE 8: INFLUENCING NATIONAL AND LOCAL DECISIONS ON LAND-USE AND TRANSPORT PLANNING THAT IMPACT ON ROUTES THROUGH CAMBRIDGESHIRE

- 2.1.20 The LTP3 provides an overview of major schemes for the County, in particular those to be delivered in the forthcoming period to 2020. In summary these major schemes include:
- A14 Cambridge to Huntingdon improvement scheme (delivery by the Highways Agency);
 - A428 Black Cat to Caxton Gibbet improvement (delivery by Highways Agency);
 - A47 / A141 Guyhirn junction improvement (delivery by Highways Agency);
 - Cambridge (North) Station (delivery by Network Rail);
 - Cambridge (North) Station busway access;
 - A142 Ely Southern Bypass;
 - Whittlesey Access Phase 1: A605 Kings Dyke level crossing;
 - A10 Foxton level crossing;
 - Soham Station;
 - Chisholm Trail cycle route, Cambridge;
 - Elements of the Greater Cambridge city deal programme; and
 - Potential for additional schemes to be delivered from Growth Deal funding (see below).

- 2.1.21 LTP3 makes mention to the City Deal between Cambridgeshire County Council, South Cambridgeshire District Council, Cambridge City Council and local partners in Cambridge. The deal will generate funding for transport infrastructures. Further details can be found in the Transport Strategy for Cambridge and South Cambridgeshire.

2.2 TRANSPORT STRATEGY FOR CAMBRIDGE AND SOUTH CAMBRIDGESHIRE

OVERVIEW

- 2.2.1 It is recognised that Cambridge and South Cambridgeshire have one of the most dynamic and forward looking economies in the United Kingdom. The City and South Cambridgeshire will continue growing, fuelled by the economy and additional jobs, additional housing are required in the near future. It is forecasted that the City area will attract some 44,000 additional jobs and that 35,000 new dwellings will be built between 2013 and 2031.
- 2.2.2 The integrated transport network will support this growth and allow for additional demand. The strategy will focus on improving upon and providing a high quality passenger bus and rail network, complemented with a comprehensive pedestrian and cycle network.

VISION

- 2.2.3 The transport vision for Cambridge and the surrounding areas is that more people will use sustainable modes of transport, reducing car usage, protecting the environment and supporting forthcoming anticipated growth. The purpose of the Transport Strategy is to:
- Provide a detailed policy framework and programme of schemes for the area, addressing current problems and consistent with the policies of the Third Cambridgeshire Local Transport Plan 2011-26 (LTP3); and
 - Support the Cambridge and South Cambridgeshire Local Plans, and take account of committed and predicted levels of growth, detailing the transport infrastructure and services necessary to deliver this growth.

- 2.2.4 The Strategy covers the whole area of the City of Cambridge and the District of South Cambridgeshire.

THE STRATEGY APPROACH

- 2.2.5 The Transport Strategy document, in its Strategy Approach Section, sets out a series of transport policies. Those relevant to this scheme are summarised below.

POLICY TSCSC 1: THE STRATEGY APPROACH

“The transport network will support economic growth, mitigate the transport impacts of the growth agenda and help protect the area’s distinctive character and environment.

To achieve this, sustainable transport capacity will be provided in and around the city between key employment areas, and to where people live and access services. The sustainable transport network will strengthen the economic hubs and the high tech clusters in and around the city by making movement between them straightforward and convenient.

The backbone of the strategy will be a high quality passenger transport network of bus, guided bus and rail services, fed and complemented by comprehensive pedestrian and cycle networks. Highways capacity enhancements will ensure that traffic can move efficiently in appropriate locations without interfering with passenger transport corridors.”

POLICY TSCSC 2: CATERING FOR TRAVEL DEMAND IN CAMBRIDGE

“For more travel demand to be accommodated on the constrained transport network of Cambridge:

- *More people will walk, cycle and use passenger transport services for journeys into, out of and within the city.*
- *More people will car share.*
- *Pedestrians, cyclists and buses will be prioritised for trips across the city. General vehicular traffic will not be prohibited and accessibility will be maintained, but a car journey may be longer and more time consuming than at present for many trips.*
- *General traffic levels will remain at current levels.”*

POLICY TSCSC 3: CATERING FOR TRAVEL DEMAND IN SOUTH CAMBRIDGESHIRE

“For additional travel demand to be accommodated on the constrained transport network of South Cambridgeshire and into Cambridge and surrounding towns:

- *Passenger transport services on main radial corridors will be used for part or all of more trips to Cambridge and to other key destinations.*
- *More people will walk and cycle to access these services.*
- *More people will car share.*
- *More locally led transport solutions will provide passenger transport options in more remote areas that cannot viably be served by conventional bus services.”*

POLICY TSCSC 8: IMPROVING BUS SERVICES

The County Council will work with partners and passenger transport operators to develop an improved and integrated network of High Quality Passenger Transport.

The County Council will use existing channels, such as the Quality Bus Partnership to raise standards and monitor service provision.

POLICY TSCSC 12: ENCOURAGING CYCLING AND WALKING

“The capacity, quality and safety of walking and cycling networks will be increased to enhance and promote healthy and active travel. The highest possible standard of cycling and walking infrastructure appropriate to a location will be pursued in line with this strategy and the emerging cycle strategy.

All new development must provide safe and convenient pedestrian and cycle environments including adequate and convenient cycle parking and ensure effective and direct integration with the wider network.

Where development opportunities arise, land should be released to improve the existing cycle network, for example the elimination of pinch points. New links should also be provided to expand the network as set out in the DfT LTN 1/12, LTN 2/08 and Manual for Streets.

Where feasible, pedestrian and cycle facilities will be provided alongside HQPT and new road infrastructure (citing the Busway facilities as a standard example).

Through the planning system future cycle routes should be safeguarded, where appropriate/feasible.

Cycle routes should be maintained, where possible, to offer year round and all-weather availability.”

POLICY TSCSC 15: MANAGING TRAVEL DEMAND

“Appropriate measures and interventions will be introduced to manage the demand for general vehicular travel, and reducing through traffic in Cambridge in line with the strategy approach.

Further work is proposed to determine the specific priorities which will be consulted on over time with such measures expected to include;

- *Reallocation of road space to be used by passenger transport, pedestrians and cyclists*
- *Access restrictions for general vehicular traffic*
- *Parking restrictions”*

POLICY TSCSC 16: ROAD SAFETY

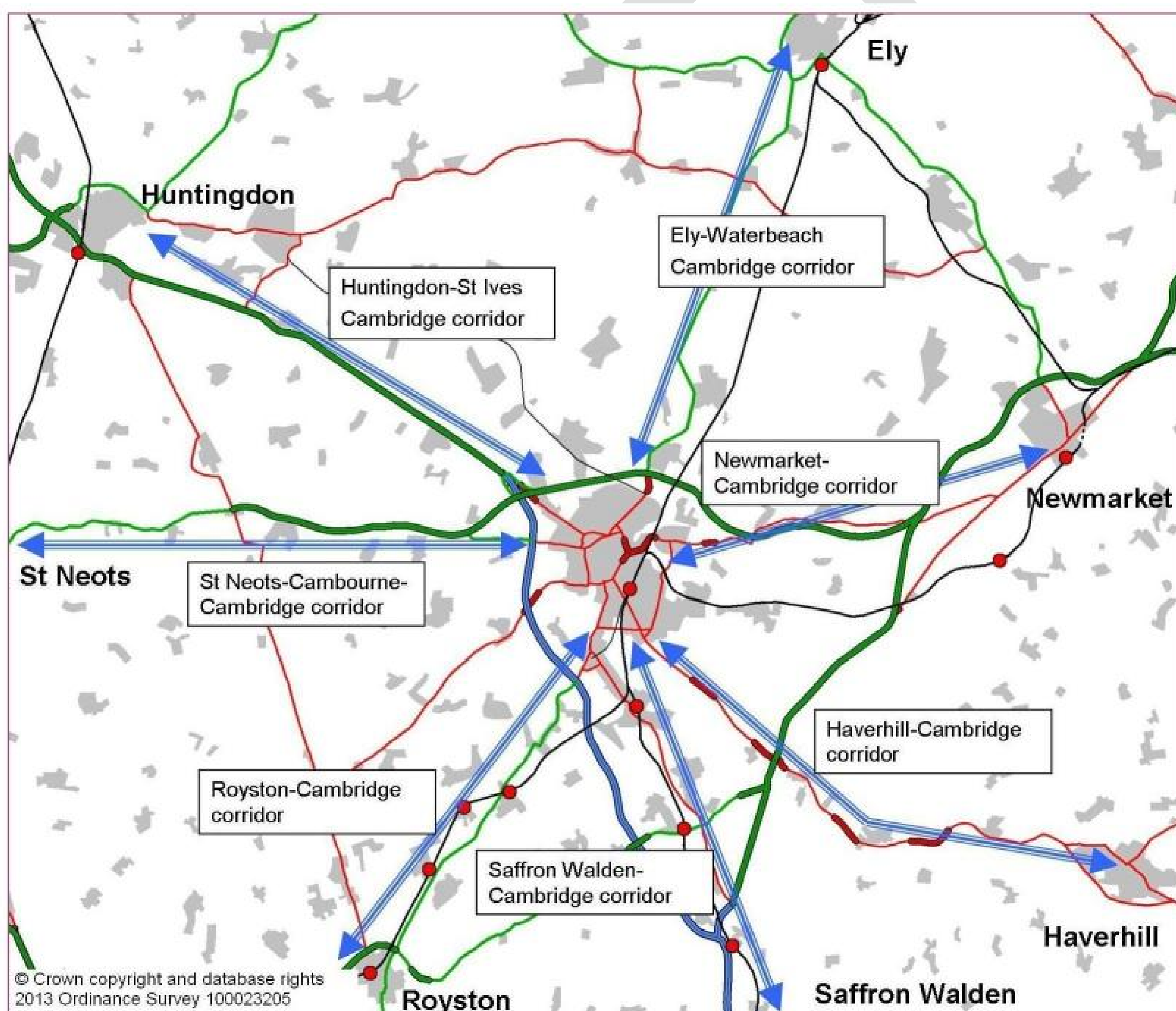
“The safety of users of all modes of travel is a top priority, both on the existing network and through all new developments and schemes. The County Council will:

- Implement road safety initiatives to reduce road traffic accidents
- Work towards road safety targets held locally and nationally
- Prioritise pedestrian and cycle safety
- Work to increase cycling without increasing accidents”

HIGH LEVEL PROGRAMME

2.2.6 The Transport Strategy focuses on Cambridge area and seven main corridors between the City and the neighbouring areas; this is shown on Figure 3 below.

Figure 3 Transport Corridor Programme Area



Source: Transport Strategy for Cambridge and South Cambridgeshire

2.2.7 The programme confirms that the bus priority improvements along Milton Road and Histon Road are anticipated in the medium to long term improvements.

2.2.8 Further interventions are forecasted on the Ely and Waterbeach to Cambridge corridors.

SCHEME DETAILS

PROJECT NAME: MILTON ROAD CAMBRIDGE, BUS PRIORITY

- 2.2.9 The Milton Road scheme is referenced as “CD5c”, in the City Deal Tranche 1 programme and is described as a:
- “High quality on-line bus priority measures between the Milton Interchange and Mitcham’s Corner, Cambridge.”*
- 2.2.10 The aim of the scheme is to reduce bus journeys and improve services between the Milton Interchange and Mitcham’s Corner. The corridor experience significant general traffic and the Scheme will aim to reduce the impact of congestion on bus services. The desired outputs are:
- *“On-line bus priority measures between the Milton Interchange and Mitcham’s Corner*
 - *Buses can compete with the private car on journey times“*
- 2.2.11 The Milton Road bus improvements will form part of the whole Ely and Waterbeach to Cambridge corridor along the A10. Milton Road would form part of longer segregated bus route.
- 2.2.12 The following key risk has been identified for this scheme:
- “(...) new journeys created by the development at Waterbeach will be predominantly car-based as public transport is not able to compete with the private car in terms of journey time or reliability. This will lead to increased congestion on the A10 (N) corridor, with the Milton Interchange particularly exacerbated.”*

PROJECT NAME: HISTON ROAD CAMBRIDGE, BUS PRIORITY

- 2.2.13 The Histon Road scheme is also referenced as “CD5c”, and is described as a:
- “High quality on-line bus priority measures between the Histon Interchange and the junction of Histon Road, Huntingdon Road and Victoria Road, Cambridge.”*
- 2.2.14 The main objective of the scheme is to ensure that bus journeys are unaffected by congestion between the Histon Interchange and the junction of Histon Road, Huntingdon Road and Victoria Road. Similar outputs are expected on this corridor:
- *“On-line bus priority measures where possible between the Histon Interchange and the junction of Histon Road, Huntingdon Road and Victoria Road*
 - *Buses can compete with the private car on journey times”*
- Histon Road bus corridor will also be part of wider improvements along the Ely and Waterbeach to Cambridge. A similar risk associated to traffic growth, and congestion, affecting bus reliability, has been identified for the scheme.

2.3 THE GREATER CAMBRIDGE CITY DEAL

- 2.3.1 The City Deal was signed in 2014 by Central Government, Council leaders, businesses and the University of Cambridge. The Deal ensures that funding will be made available for the transport infrastructure needed to support forthcoming growth.

- 2.3.2 The City Deal aims to secure hundreds of millions of pounds of additional funding for investment in transport infrastructure to support high quality economic and housing growth over the coming decades. £100m of Government funding will be made available in the five years from April 2015. If certain conditions are met, a further £200m may be secured from April 2020 onwards and up to a final £200m from April 2025 onwards.
- 2.3.3 The Greater Cambridge City Deal Partnership includes Cambridgeshire County Council, Cambridge City Council and South Cambridgeshire District Council as well as the Local Enterprise Partnership and Cambridge University. The partners are working closely together to bring forward projects that improve the economic success of the area.
- 2.3.4 City Deal transport priorities have been determined for the first tranche of funding of £100 million, which will be spent on a list of schemes in the Greater Cambridge area. These projects includes, in the first five years (with estimated costs in £m):
- Milton Road bus priority (23);
 - Madingley Road bus priority (34.6);
 - Histon Road bus priority (4.3);
 - A428 to M11 segregated bus route/A428 corridor Park & Ride (24.5);
 - City centre capacity improvements/cross-city cycle improvements (22.6);
 - A1307 corridor to include bus priority/A1307 additional Park & Ride (39); and
 - Chisolm Trail cycle links/Chisolm Trail bridge (8.4).
- 2.3.5 The City Deal Executive Board also agreed that £24m would be put towards programme management and scheme development for this and the next round of funding.
- 2.3.6 This significant new investment for transport infrastructure will be used to make it easier to get to work, and to move between the business and research centres. More sustainable transport methods will be prioritised by increasing road space for pedestrians, cyclists and public transport users and enabling more people to use public transport for at least some of their journey.
- 2.3.7 Further public engagement and consultation on the details of each transport scheme will be carried out as they come forward and will be available at the new website for the City Deal project: <http://www.greatercambridgecitydeal.co.uk/>.
- 2.3.8 Councillor Lewis Herbert, Chair of the Greater Cambridge City Deal Executive Board and Leader of Cambridge City Council, said: “£100m in Government funding doesn’t come around very often, along with the City Deal potential for £400m more, if we deliver phase one by 2020. It was that further stated that in the press release that:
- “The City Deal Board decisions yesterday ensure that funding will be targeted at many of the Cambridge roads suffering the worst congestion. Better main routes, more reliable bus services, better Park and Rides and more cycling will ensure people can get to their Cambridge destinations at peak travel times.
 - “The package of schemes agreed yesterday will join up key north, south and west routes to a planned scheme to tackle chronic peak traffic problems in the city centre. We have a great city, and the City Deal is central to keeping it that way and ensuring we can all benefit from future prosperity and additional local housing development. ”Reducing congestion, improving transport links and helping more people cycle, walk and take public transport is vital to keep Greater Cambridge moving and attract more business and jobs.”
 - “The package of schemes agreed yesterday will join up key north, south and west routes to a planned scheme to tackle chronic peak traffic problems in the city centre. We have a great city, and the City Deal is central to keeping it that way and ensuring we can all benefit from

future prosperity and additional local housing development. "Reducing congestion, improving transport links and helping more people cycle, walk and take public transport is vital to keep Greater Cambridge moving and attract more business and jobs."

2.4 COMMITTED DEVELOPMENTS

NORTHWEST CAMBRIDGE DEVELOPMENT

2.4.1 The committed development will take place over 150 hectare site and is located between the M11, Madingley Road and Huntingdon Road.

2.4.2 Northwest Cambridge development has been granted outline planning consent for the following land uses:

- 1500 homes for University and College key workers;
- 1500 homes for sale;
- accommodation for 2000 post-graduate students;
- 100,000 square metres of research facilities, and
- Supporting community facilities, such as a primary school, community centre, supermarkets, nursery, etc.

DARWIN GREEN DEVELOPMENT

2.4.3 Darwin Green development has been granted planning consent for a mixed use development on land between Huntingdon Road and Histon Road on the northwest edge of the city. The site is commonly known as the National Institute of Agricultural Botany (NIAB) site. The site occupies an area of approximately 48 hectares.

2.4.4 The proposed development will includes:

- 1,593 homes, including 40% affordable;
- Primary school with Children's Centre;
- Up to six small units for mixed retail / service use;
- A centrally located park with open space for both informal use and outdoor sport facilities;
- Allotments;
- Vehicular access from Huntingdon Road and Histon Road; and
- A balancing pond.

2.4.5 A new access will be proposed through a signal controlled junction on Histon Road just south of Kings Hedges Road junction.

2.4.6 A proposed enhanced cycle and pedestrian route will be provided through the site to enhance connectivity between Histon Road and Huntingdon Road.

ORCHARD PARK

2.4.7 Orchard Park is a development located to the north of Kings Edges Road and south of the A14.

2.4.8 Several phases of the development have been already completed. Once fully constructed the development will provide:

- 900 new homes - including a high percentage of affordable housing;
- employment opportunities, and
- a primary school and new community facilities.

CAMBRIDGE SCIENCE PARK RAILWAY STATION

2.4.9 A new railway station is proposed by Cambridgeshire County Council in the north of Cambridge.

2.4.10 The station will be located close to the east of Cambridge Business Park.

2.4.11 The new proposed station will provide:

- Two mainline platforms for stopping rail services;
- One bay platform for terminating and starting rail services;
- Station building with accessible, cycle-friendly footbridge to the platforms;
- Covered platform waiting areas with modern communications and security equipment;
- Public transport interchange with Busway and on-road buses, passenger information and high-quality bus shelters;
- 450 space car park including disabled and short stay;
- Extensive cycle parking;
- Busway extension from Milton Road and vehicle access via Cowley Road; and
- Dedicated taxi and drop off area.

3 MILTON ROAD – EXISTING CONDITIONS

3.1 INTRODUCTION

- 3.1.1 Milton Road (A1309 / A1134) is one of Cambridge's main distributor roads, and connects to the A14 and the A10 at the Milton Interchange. It provides an essential link to the north of the City Centre, linking it to the Cambridge Science Park, the Cambridge Business Park, Chesterton and Arbury. Milton Road is also a natural extension of the A10 which runs in a north to south direction. The A10 / Milton Road corridor also provides an essential link to the north of Cambridge, linking to Ely, and smaller settlements such as Little Thetford, Stretham, Cottenham, Landbeach, Waterbeach and Milton.
- 3.1.2 The Milton Road / A10 corridor runs parallel to the national rail network, which provides rail services which can be access from rail stations at Ely, Waterbeach and Cambridge. A new station is to be built in North Cambridge, which is likely to be completed in 2018.
- 3.1.3 The following sections of this report focus on the existing Milton Road corridor between Cambridge Science Park junction to Victoria Road / Chesterton Road junctions. Whilst being a key link for Cambridge network, Milton Road also provides direct access to properties and shops, with private drives and multiple side road junctions.

3.2 PEDESTRIAN NETWORK

CAMBRIDGE SCIENCE PARK TO KINGS HEDGES / GREEN END ROAD

- 3.2.1 Milton Road / Cambridge Science Park / Cowley Road is a signal controlled junction. Staggered at grade Toucan crossings are provided for pedestrians to cross the junction. Because many pedestrians use the Jane Coston Bridge at the end of Cowley Road and walk in the direction to the Science Park, these Toucan crossings at the junction are very well used.
- 3.2.2 On the east side, a segregated footway cycleway is provided between Cowley Road junction and Cowley Park junction (Cambridge Business Park access road). A controlled Toucan crossing is provided across Cowley Park.
- 3.2.3 To the south of Cowley Park, the pavement has a shared footway / cycleway which links to an underpass below a disused railway bridge, currently being converted to allow the guided busway to access the future Cambridge (North) Railway Station. This shared footway / cycleway becomes narrower to the south of the underpass towards Kings Hedges Road / Green End Road.
- 3.2.4 A Toucan crossing is provided approximately 90m north of the junction. The "Milton Road" bus stop is provided here with a shelter and sitting facilities. The pavement is at its narrowest point near the bus stop.
- 3.2.5 On the west side, a wide shared footway / cycleway is provided up to the Kings Hedges Road / Green End Road junction. The shared footway / cycleway cross the guided busway at a Toucan crossing. Several uncontrolled crossings, with dropped kerbs and tactile paving are provided across the entrances to the large car dealer business and Lovell Road.
- 3.2.6 The Milton Road / Kings Hedges Road / Green End Road junction is provided with segregated signal controlled Toucan crossings on each arm.

KINGS HEDGES / GREEN END ROAD TO ARBURY ROAD

- 3.2.7 To the south of Kings Hedges Road and Green End Road, wide footways are provided on both sides of the road. A wide grassed buffer with trees is provided between the road kerblines and the footways.
- 3.2.8 Several side roads have pedestrian facilities including Ramsden Square, Kendal Way and Woodhead Drive.
- 3.2.9 A Toucan crossing is provided just north of the junction with Kendal Way. An uncontrolled crossing is provided south of Woodhead Drive, in the shape of dropped kerbs and tactile pavings provided with a refuge island and road markings.
- 3.2.10 The pavement on the northwest side provided from Woodhead Drive is a segregated footway / cycleway until it reaches the junction with Arbury Road.
- 3.2.11 Several side road junctions, such as Downham's Lane, are provided with road humps with a change of surfacing to highlight the footway / cycleway.
- 3.2.12 The Arbury Road / Union Lane junction is a signal controlled junction with controlled pedestrian crossings on all arms.

ARBURY ROAD / UNION LANE TO ELIZABETH WAY ROUNDABOUT

- 3.2.13 This section of the Milton Road is fronted on the northwest side with small retail units, fast food units and a convenience store. As a result, there are a large number of pedestrian movements in this area. A bus stop is also located near the convenience store.
- 3.2.14 A wide footway is provided alongside the shop frontage, on the northwest side of the road. A footway is also located on the southeast side of the road, which fronts a number of residential properties.
- 3.2.15 There are no additional dedicated crossings between the Arbury Road and Elizabeth Way junctions.
- 3.2.16 Milton Road / Elizabeth Way / Highworth Avenue is a large four arm roundabout junction. A cycle / pedestrian uncontrolled crossing is located across the Highworth Avenue arm, and is provided with dropped kerbs, a refuge island and associated road markings to provide an entrance to the 20mph zone in this area. There are no other similar pedestrian crossings provided at the junction.

ELIZABETH WAY ROUNDABOUT TO GILBERT ROAD

- 3.2.17 In this section, Milton Road is provided with reasonably wide footways, however vehicles parked on the pavement significantly reduce the width available to pedestrian and cyclist.
- 3.2.18 Several trees are also planted within the pavement that further reduces the pavement width.
- 3.2.19 Similar to other side road junctions along Milton Road, Hurts Park Avenue and Ascham Road are provided with road humps with a change of surface materials to highlight the shared footway / cycleway. George Street is provided with dropped kerbs, tactile paving and a pedestrian refuge island. George Street is one-way towards Milton Road, however cyclists are allowed to ride in the opposite direction.
- 3.2.20 There is an existing controlled toucan crossing northeast of Ascham Road.

- 3.2.21 Gilbert Road is a three arm signal controlled junction which provides phased pedestrian and cycle crossings on all arms.

GILBERT ROAD TO VICTORIA ROAD / CHESTERTON ROAD (MITCHAM'S CORNER)

- 3.2.22 Footways are also provided on both sides of the roads. Small retail shops are once again situated along the corridor towards Victoria Road / Chesterton Road junction on the south east side.
- 3.2.23 On-street parking is also provided on the footway on the northwest side nearer to Gilbert Road junction.
- 3.2.24 A large grassed traffic island is located towards the Milton Road / Chesterton Road / Victoria Road (or Mitcham's Corner) gyratory (or one-way) system, as the road lanes of traffic divide. Two zebra crossings are provided at this location which lands on the large traffic island.
- 3.2.25 Three footways are provided, two on the sides of the road edge of the gyratory system and one footway on the traffic island which links through the junction heading south towards Victoria Avenue.
- 3.2.26 Mitcham's Corner gyratory is a large area with a number of junctions. It has a central area occupied by residential properties to the east, a central landscaped area, and some retails (including a bank) on its western side.
- 3.2.27 ~~South of the gyratory system, a large landscaped area is provided, which is a mix of grass and trees, and is used as a public space.~~

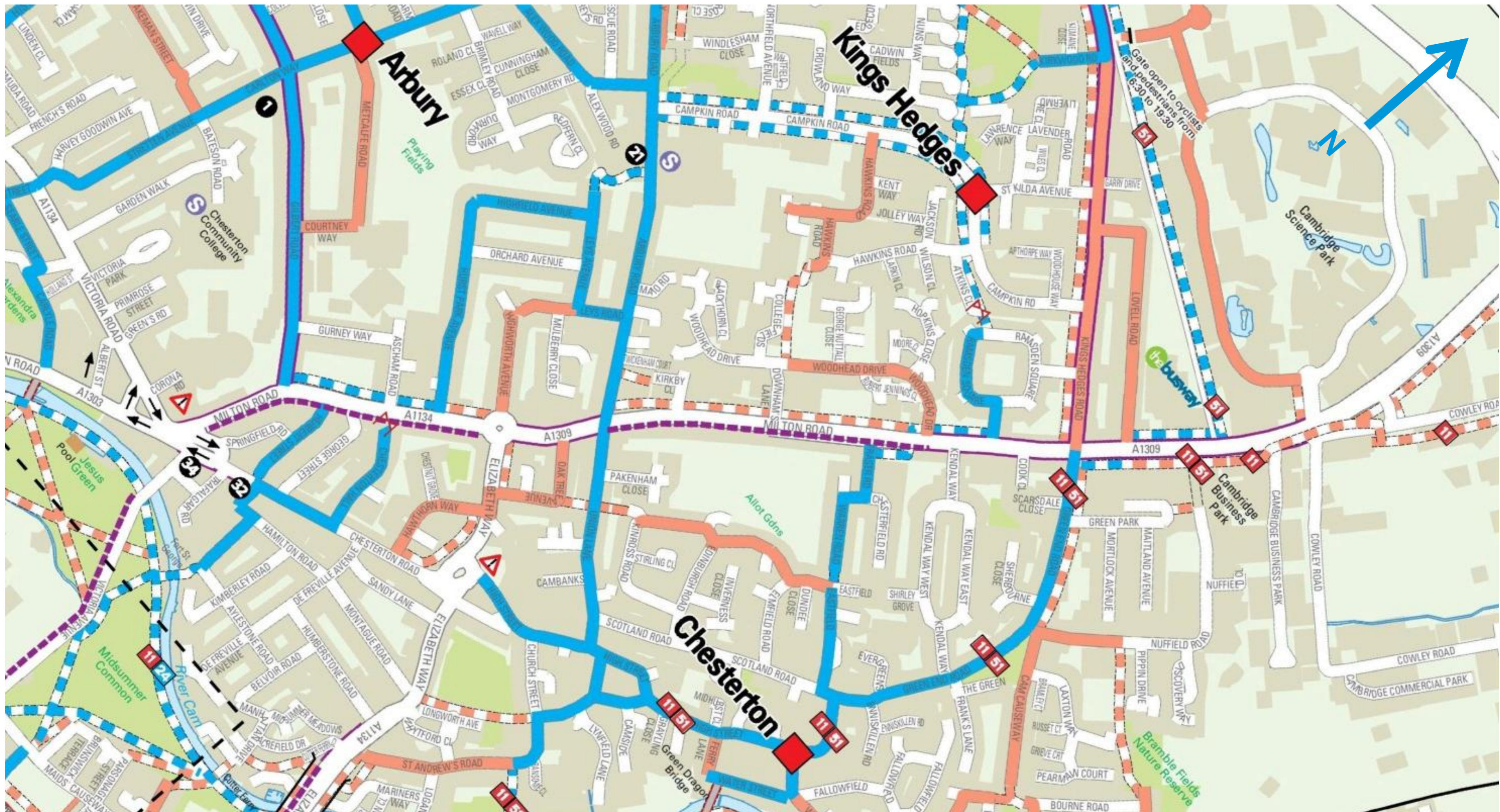
3.3 CYCLE NETWORK

Milton Road is also a major link on the Cambridge Cycle Network.

Figure 4 shows that the road is provided with several key cycle facilities. Some of the facilities already have been described in the above paragraphs such as side road crossings.

- 3.3.1 National Route No 11 (NCR 11) and (NCR 51) share a section of the south east footway / cycleway between Kings Hedges Road / Green End Road junction. NCR 11 runs towards Milton Village, whilst NCR 51 uses the path alongside the guided busway.
- 3.3.2 On road cycle lanes are provided from the Cambridge Science Park junction and through the Kings Hedges Road / Green End Road junction. Cycles advanced stopped lines (ASL) are provided northbound on Milton Road.
- 3.3.3 In the northbound direction, the cycle lane starts after Woodhead Drive junction. On the southbound direction the cycle lane stops 80m south of Woodhead Drive junction where a bus lane starts.
- 3.3.4 The bus lane continues until reaching Arbury Road signal controlled junction. From observation, due to the width of the bus lane, cyclists do not generally overtake buses.

Figure 4 Milton Road Cycle Network



Source: Cambridgeshire County Council

- 3.3.5 In the opposite direction (northbound) a segregated footway / cycleway is provided from the Arbury Road junction through to Woodhead Road. The provision of any side road junction treatments is as stated previously.
- 3.3.6 An ASL is provided at the Arbury Junction in the southbound direction.
- 3.3.7 Advisory cycle lanes are provided in both directions between Arbury Road junction and the Elizabeth Way roundabout. However, at the Arbury junction approach, in the northbound direction, the cycle lane stops where a vehicular left turn lane is provided.
- 3.3.8 As noted earlier, there are no cycling facilities provided at the Elizabeth Way roundabout other than the crossing facilities at the Highworth Avenue arm.
- 3.3.9 A bus lane runs southbound towards the Mitcham's Corner gyratory. The bus lane stops before the Gilbert Road junction and starts shortly thereafter. No ASL facilities or cycle lanes approaching the junction are provided there.
- 3.3.10 A footway / cycleway is provided on the northwest pavement between the Gilbert Road junction and the Elizabeth Way roundabout.
- 3.3.11 A northbound cycle lane is provided from Mitcham's Corner to Gilbert Road, although the cycle lane ends 50m prior to Gilbert Road junction with no ASL at that junction.
- 3.3.12 On the approach to Mitcham's Corner gyratory, the bus lane stops, and an advisory cycle lane continues until the give-way line at the gyratory. There are no cycle lanes on the gyratory at this location, and no ASL facilities when reaching the traffic signal junction with Chesterton Road.
- 3.3.13 There is however, one cycle lane, located on Chesterton Road, which is part of Mitcham's Corner gyratory, between the left turn traffic lane and the two straight ahead lanes. The cycle lane leads to an ASL at the junction with Victoria Avenue.

- 3.3.14 Another cycle lane continues on the left side of Chesterton Road in the west bound direction.
- 3.3.15 There are no cycle facilities approaching Victoria Road junction.
- 3.3.16 An advisory cycle lane starts towards Milton Road, on Victoria Road at the corner of the Portland Arms Public House.

3.4 PUBLIC TRANSPORT NETWORK

3.4.1 Numerous bus services use the Milton Road corridor. These services can be boarded at different bus stops located along Milton Road. The following bus services use the Milton Road corridor in all or part:

- Busway A - Busway A links St Ives to Cambridge City Centre, Cambridge Railway Station Addenbrooke's Hospital and Trumpington Park and Ride along the guided busway and Milton Road. Bus service A does not currently stop along Milton Road;
- Busway C - Bus service C links St Ives to Cambridge and Cambridge Railway Station with this service stopping at Union Lane;
- Park and Ride 99 – this services links Milton Park and Ride to the Science Park, Cambridge City Centre, Cambridge Railway Station, Addenbrooke's Hospital and Babraham P&R;
- Route 9 – this route services Ely to Cambridge;
- Citi 1 – Arbury to Cherry Hinton, via Cambridge City Centre and Cambridge Railway Station (only uses the Milton Road corridor south of Gilbert Road); and
- Citi 2 – Cambridge Science Park via Chesterton to Cambridge City Centre and out to Romsey and Addenbrooke's Hospital (only uses the Milton Road corridor north of the Golden Hind).

3.4.2 The current bus services and their frequency with corridor peak service numbers are shown in Table 3-1. The bus stop locations are shown in Figure 5.

Table 3-1 Milton Road - Bus Service Frequencies

BUS SERVICE	PEAK FREQUENCY (ONE DIRECTION)
Busway A	7 services per hour
Busway C	1 service per hour
99 Park & Ride	6 services per hour
206 (school)	1 service per day (excluded from peak)
Route 9	2 services per hour
Citi 2 (part corridor north of Golden Hind)	5 services per hour
Citi 1 (part corridor south of Gilbert Road)	4 services per hour
Total No Services (using corridor in part / full)	27

Figure 5 Milton Road – Bus Stops



Source: Cambridgeshire County Council

- 3.4.3 Bus lane facilities, are provided at several locations which have been described earlier, with some including cycling facilities. These are located on the southbound direction towards the City centre, one between Woodhead Drive to Arbury Road junction and the second bus lane facility is located between Elizabeth Road roundabout and Mitcham's Corner. This bus lane ends before and restarts after Gilbert Road junction.
- 3.4.4 Northbound bus lanes can be found near the guided bus way junction, on the northern section of the corridor.
- 3.4.5 The following summarises the characteristics of the bus stop locations, the bus services available and existing facilities.

SCIENCE PARK BUS STOPS

- 3.4.6 There are three bus stop locations associated to the Science Park. One situated on the Science Park access road, and two along Milton Road either side of the Science Park junction.
- 3.4.7 Bus service No 2, 9 and Park and Ride services can be boarded there.
- 3.4.8 Bus shelter, sitting facilities and real time information are provided at the stops along Milton Road. There is a bus lay-by on the northbound direction.

MILTON ROAD BUS STOP

- 3.4.9 Milton Road bus stop is located on the southbound direction just 80m north of Kings Hedges Road and Green End Road junction. The bus stop is marked on the road and is part of the left turn lane.
- 3.4.10 Bus service No 2 and 9 can be boarded there.
- 3.4.11 The bus stop is provided with a shelter, seating area and real time information.

KENDAL WAY

- 3.4.12 The Kendal Way bus stops are located just north of Kendal Way. They are signed and marked and provided with a sign post with real time information. There is no shelter or sitting facilities.
- 3.4.13 Bus service No 9 stops there as well as the Park and Ride after 18:00 in the evenings.

FRASER ROAD

- 3.4.14 Fraser Road bus stops are located south of Fraser Road junction.
- 3.4.15 Bus service No 9 and the Park and Ride stops here after 18:00.
- 3.4.16 The northbound bus stop is marked with a sign post and ground marking. The southbound stop is located within the bus lane. It is provided with a shelter, seating facilities and sign post.

DOWNHAM'S LANE

- 3.4.17 Downhams Lane northbound bus stop is located just south of the junction, whilst the southbound bus stop is located opposite Milton Arms Public House.
- 3.4.18 Bus service No 9 and the Park and Ride stops here after 18:00.

- 3.4.19 The northbound bus stop is provided with sign post with real time information and ground marking. The southbound bus stop is located within the bus lane and is also provided with real time information.

UNION LANE

- 3.4.20 The Union Lane bus stops are located south of the Arbury Road / Union Lane signal controlled junction. They are located adjacent to and opposite the local retail shops.
- 3.4.21 Bus service No 9, Busway C and the Park and Ride (after 18:00) stop here.
- 3.4.22 The southbound bus stop is provided with road marking, a sign post a shelter and seating facilities. The northbound bus stop is located within the left turn lane, it is marked with a sign post and ground marking.

ASCHAM ROAD

- 3.4.23 Ascham Road northbound bus stop is located to the north of the junction, whilst the southbound direction bus stop is locate to the south of the same junction.
- 3.4.24 Bus service No 9 can be boarded there.
- 3.4.25 The north bound direction is provided with a bus lay-by and is sign posted. The southbound direction is provided with a sign post, real time information, a shelter and seating facilities. The bus stop is located within a bus lane.

MILTON ROAD JUNIOR SCHOOL

- 3.4.26 Milton Road Junior School bus stops are located between Mitcham's Corner and Gilbert Road, adjacent and opposite the local retail shops.
- 3.4.27 Bus No 1 and 9 can be boarded there.
- 3.4.28 The bus stops are provided with lay-bys, real time information, seating facilities and shelters. Further to its lay-by, the southbound direction stop is located within a bus lane.

3.5 HIGHWAY NETWORK

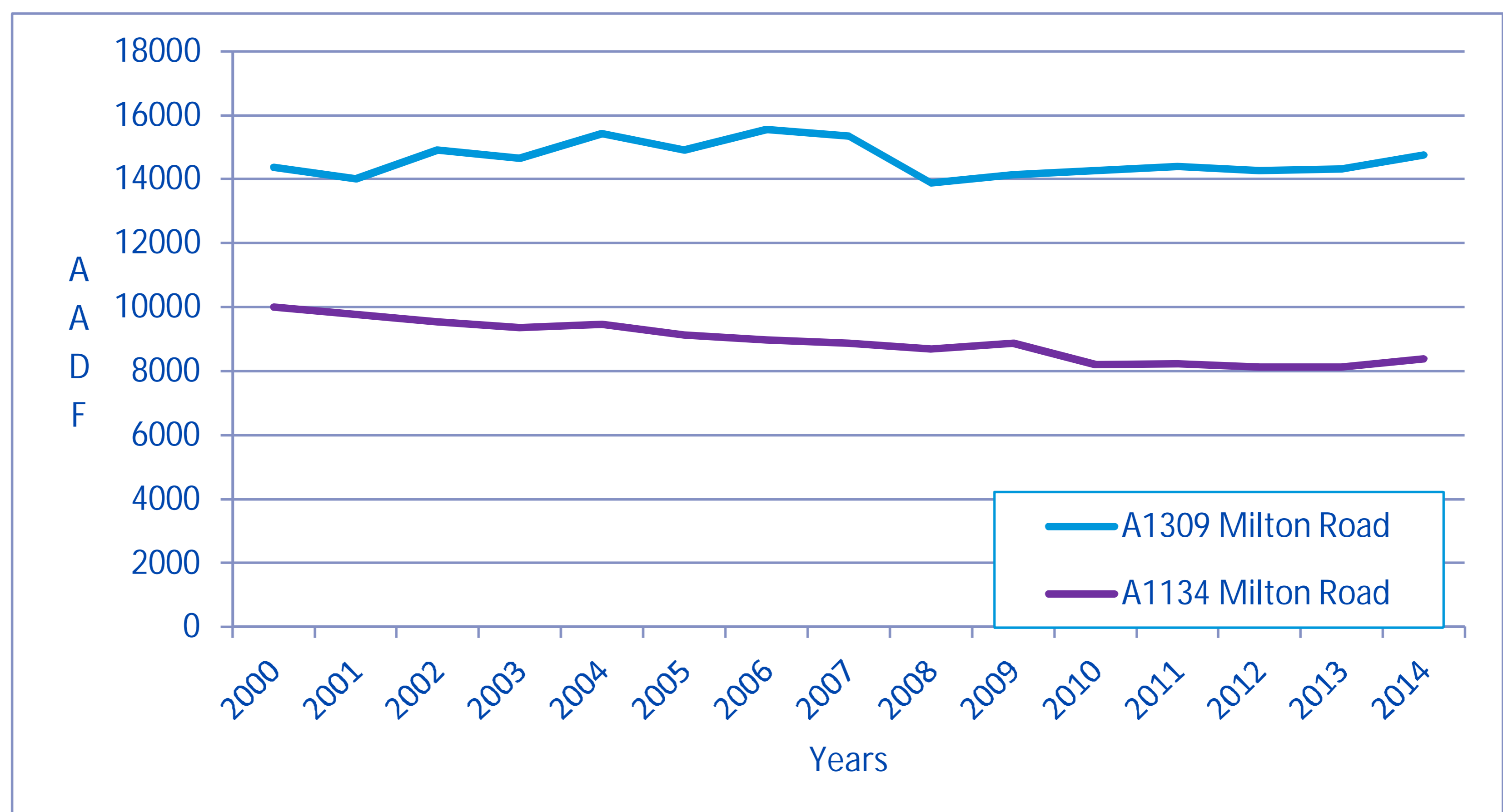
- 3.5.1 The A1309 Milton Road is of significant importance to the Cambridge City highway network. Having referred to the Department for Transport website, the road carries 14,747 Annual Average Daily flows (AADF), between Arbury Road and Green End Road junctions, in 2014.

On the southern section of the road, which is part of the A1134 Cambridge Inner Road, the road carried 8,372 AADF in 2014. The following

3.5.2 Figure 6 provides information on observed traffic volume along the corridor.

DRAFT

Figure 6 Observed Traffic Volume on A1309 (North of Elizabeth Way) & A1134 (South of Elizabeth Way)



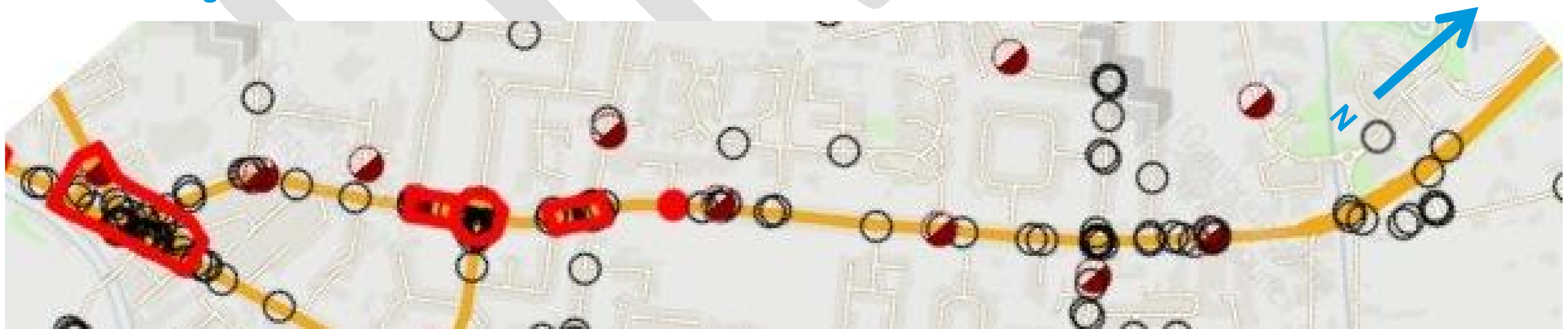
- 3.5.3 Although 2014 observed a slight increase of traffic compared to the previous years, the data confirmed that the traffic trends along the road have stabilised since 2000.
- 3.5.4 Milton Road is restricted to 30mph along the corridor within this study.
- 3.5.5 Milton Road links the Milton A10 / A14 Interchange to the Mitchams Corner gyratory, just north of Cambridge City Centre. Milton Road corridor is also the natural extension of the A10 that connects Ely and Kings Lynn.
- 3.5.6 To the north of the Cambridge Science Park junction, Milton Road is dual carriageway (with a central reserve) that provides two lanes of traffic two to three lanes of traffic. To the south of Cambridge Science Park, Milton Road becomes one lane of traffic southbound and mostly one lane northbound.
- 3.5.7 The Cambridge Science Park Access / Cowley Road / Milton Road junction has four arms and is a signal controlled junction. Cowley Road only allows left turn out movements into Milton Road south. The left turn movement from Milton Road north into Cowley Road is banned. There are two dedicated lanes of traffic for right turners into Cambridge Science Park. The layout of the Cambridge Science Park access also provides two lanes of traffic towards Milton Road north and one ahead and right lane.
- 3.5.8 The Cowley Park / Milton Road junction is a three arm signal controlled junction with dedicated left and right turn lanes.
- 3.5.9 The guided busway junction will soon become a four arm signal controlled junction. Only specific bus vehicles can use the guided busway and normal traffic can only pass through the junction via Milton Road.
- 3.5.10 The Green End Road / Kings Hedges Road / Milton Road junction is a four arm signal controlled junction. Each arm becomes two lanes of approach with dedicated right turn movements.

- 3.5.11 The Arbury Road / Union Lane / Milton Road junction is also a 4-arm signal controlled junction. Milton Road south arm provides a dedicated left turn lane.
- 3.5.12 The Elizabeth Road / Highworth Avenue / Milton Road junction is a large 4-arm roundabout.
- 3.5.13 Gilbert Road / Milton Road is a three arm signal controlled junction. The Milton Road approach arms provide dedicated movements lanes (right turn lane for Milton Road north and left turn lane for Milton Road south).
- 3.5.14 Mitcham's Corner gyratory is a complex junction which connects five roads:
- A1134 Victoria Road;
 - Victoria Avenue;
 - Chesterton Road;
 - Springfield Road; and
 - A1134 Milton Road
- 3.5.15 Furthermore, Mitcham's Corner is a large one-way gyratory system, where vehicles circulate in a clockwise direction. Victoria Road, Springfield Road and Milton Road are priority controlled junctions, whilst Victoria Avenue and Chesterton Road junctions are signal controlled.
- 3.5.16 The junction layout basically forms a figure of eight with a one-way link, Victoria Road to Chesterton Road, provided in the middle of the junction.

3.6 ROAD TRAFFIC ACCIDENT DATA

- 3.6.1 Road traffic accidents data has been obtained from Cambridgeshire County Council (CCC). The data covers the corridor between 2010 and 2014. The data is available separately if needed.
- 3.6.2 In addition to this, the CCC website provides an interactive map which also details accidents by location and severity. The map also shows several accidents clusters along the corridors. The map is reproduced in Figure 7.

Figure 7 Road Traffic Accident Data



- 3.6.3 As shown on this map the accident clusters are Mitcham's Corner gyratory, Elizabeth Way roundabout and subsequent Hurst Park Ave junction.
- 3.6.4 During the data period, 100 slight severity injury accidents occurred along Milton Road. Six slight severity accidents occurred at the A10 / A14 Milton Interchange which is outside of the study area.

- 3.6.5 They were 13 accidents classified as serious injury accidents. One fatal accident was recorded at the Milton Road / Birch Close junction. Four serious severity accidents occurred at the A10 / A14 interchange junction, which is outside this study area.
- 3.6.6 Five accidents occurred along Milton Road and involved buses which included four slight severity accidents and one serious severity accident.
- 3.6.7 Ten accidents have involved pedestrians, two serious severity and eight slight severity accidents.
- 3.6.8 Sixty-four accidents which occurred in the past five years involved a cyclist. Out of these, six were classed as serious severity accidents and one as fatal severity accident.

FATAL SEVERITY ACCIDENTS

- 3.6.9 As noted, the fatal accident occurred at the junction Milton Road / Birch Close, where a rider was crossing Birch Close, along the off road cycleway, and was hit by a vehicle on the side road. The cyclist was projected into the path of other vehicles on Milton Road.

SERIOUS SEVERITY ACCIDENTS

- 3.6.10 A serious accident occurred near the Gilbert Road / Milton Road junction where a pedestrian, impaired by alcohol, stepped out into Milton Road carriageway into the path of a vehicle.
- 3.6.11 An accident involving two cars occurred at the Gilbert Road / Milton Road, one car appeared to have not indicated their movements properly whilst undertaking another movement which confused the other vehicle.
- 3.6.12 An accident occurred at the Hurst Park Avenue Junction Milton Road Cambridge, where a cyclist was hit by a vehicle whilst crossing the side road.
- 3.6.13 A pedestrian was seriously injured on Milton Road opposite Milton Arms Public House, when they ran across the path of a vehicle. The vehicle could not stop in time and hit the pedestrian.
- 3.6.14 A bus braked at the Milton Road junction with Gilbert Road, when a vehicle right turned in front of the bus. Within the bus several elderly passengers were injured.
- 3.6.15 An accident occurred at the Woodhead Drive junction with Milton Road when a moped was turning right and crossed paths with a cyclist.
- 3.6.16 Milton Road opposite Vindis Garage, a vehicle turned right into Vindis Garage, the driver's sight was obstructed by a large HGV and they did not see the oncoming cyclist.
- 3.6.17 A serious severity accident occurred near the A1134 Milton Road junction with Gilbert Road, when a car wanted to turn into a car park and hit a cyclist knocking the rider off the bike.
- 3.6.18 A vehicle turned right from the main carriageway into the path of a cyclist on Milton Road near St Laurence Church.

CONCLUSIONS

- 3.6.19 The numbers of accidents occurring along the Milton Road are linked to the importance of the road and the existing volume of traffic flows. The road is an important multi modal traffic link, carrying a large number of pedestrian and cycle traffic.

- 3.6.20 This road accident analysis has demonstrated that a significant number of accidents have occurred involving cyclists in particular. It will therefore be paramount for the Milton Road corridor improvements to attempt to resolve as far as possible the potential conflicts between cyclists and vehicles.
- 3.6.21 Many accidents occurred near junctions as expected. The causes for these accidents were mainly down to driver error.

3.7 TRAFFIC MASTER ANALYSIS

- 3.7.1 In order to provide information on vehicle speeds along Milton Road a detailed analysis has been undertaken of the Trafficmaster Data that has been provided by CCC. Traffic Master Data was obtained for Milton Road for a period of one year between September 2013 and August 2014, and is enclosed in Appendix A. The information was provided in a number of different categories and these are described as follows:
- All Weekdays
 - All Weekends;
 - All August Weekdays;
 - All November Weekdays; and
 - All School Weekdays.
- 3.7.2 Due to the volume of information that was provided it was decided to focus the analysis on the data provided for the 'All Weekdays' and 'All Weekends' scenarios as these are seen as the time periods where the highest volume of vehicles will occur and therefore when traffic congestion is most likely to occur influencing vehicle speeds on the local highway network.
- 3.7.3 The speed of vehicles in miles per hour for the 'All Weekdays' and 'All Weekends' scenarios for the links along Milton Road were analysed in detail for both the AM peak hour (08:00 – 09:00) and the PM peak hour (17:00 – 18:00) for both scenarios.
- 3.7.4 Table 4.1 below summarises the data that was obtained for Milton Road by link and by direction for the weekday AM and PM peak hours within the study area. This information is also shown graphically in Figures 8 and 9 below.

Table 3-2 Traffic Master Data – Milton Road Weekday AM and PM Peak Hours

Reference	Link Length	Speed in Miles per Hour			
		08:00 – 09:00		17:00 – 18:00	
		Inbound	Outbound	Inbound	Outbound
4000000027977937	60.33	8.68	20.01	13.81	19.09
4000000027902801	126.61	15.17	6.04	20.97	8.17
4000000027937647	98.41	5.39	19.09	6.96	19.2
4000000027977958	53.25	18.51	22.86	22.52	23.57
4000000027937648	90.03	22.54	18.56	24.31	16.82
4000000027937646	114.87	17.95	19.09	20.37	15.38
4000000027937645	93.68	23.43	11.95	24.9	10.39
4000000027937643	110.01	14.68	7.77	17.95	8.65
4000000027937644	94.39	16.35	4.62	19.24	6.00
4000000027902916	159.13	3.67	20.49	5.57	21.14
4000000027937926	68.30	5.56	20.19	13.32	20.97
5000005106589297	50.51	6.38	19.87	16.79	19.87
4000000027937927	103.8	8.80	20.11	21.55	20.38
4000000027902917	219.63	11.88	16.97	23.02	18.75
4000000027902918	121.69	16.28	12.2	25.92	17.4
4000000028322162	11.03	20.29	9.67	17.89	23.26
4000000027978211	58.23	19.50	9.37	24.39	14.37
4000000027937928	85.59	15.36	8.81	22.29	14.31
4000000027937987	70.71	18.91	5.69	24.73	8.65
4000000027937983	89.22	18.08	3.99	24.37	4.14
4000000027937984	85.99	7.49	16.42	7.28	11.71
4000000028269897	178.75	14.27	20.05	10.18	14.47
4000000028296007	27.51	18.28	22.76	12.59	14.27
4000000028296006	100.81	18.30	19.95	14.12	8.14

Source: Cambridgeshire County Council (June 2015)

Figure 8 Average Link Speeds on All Weekdays 08:00 – 09:00

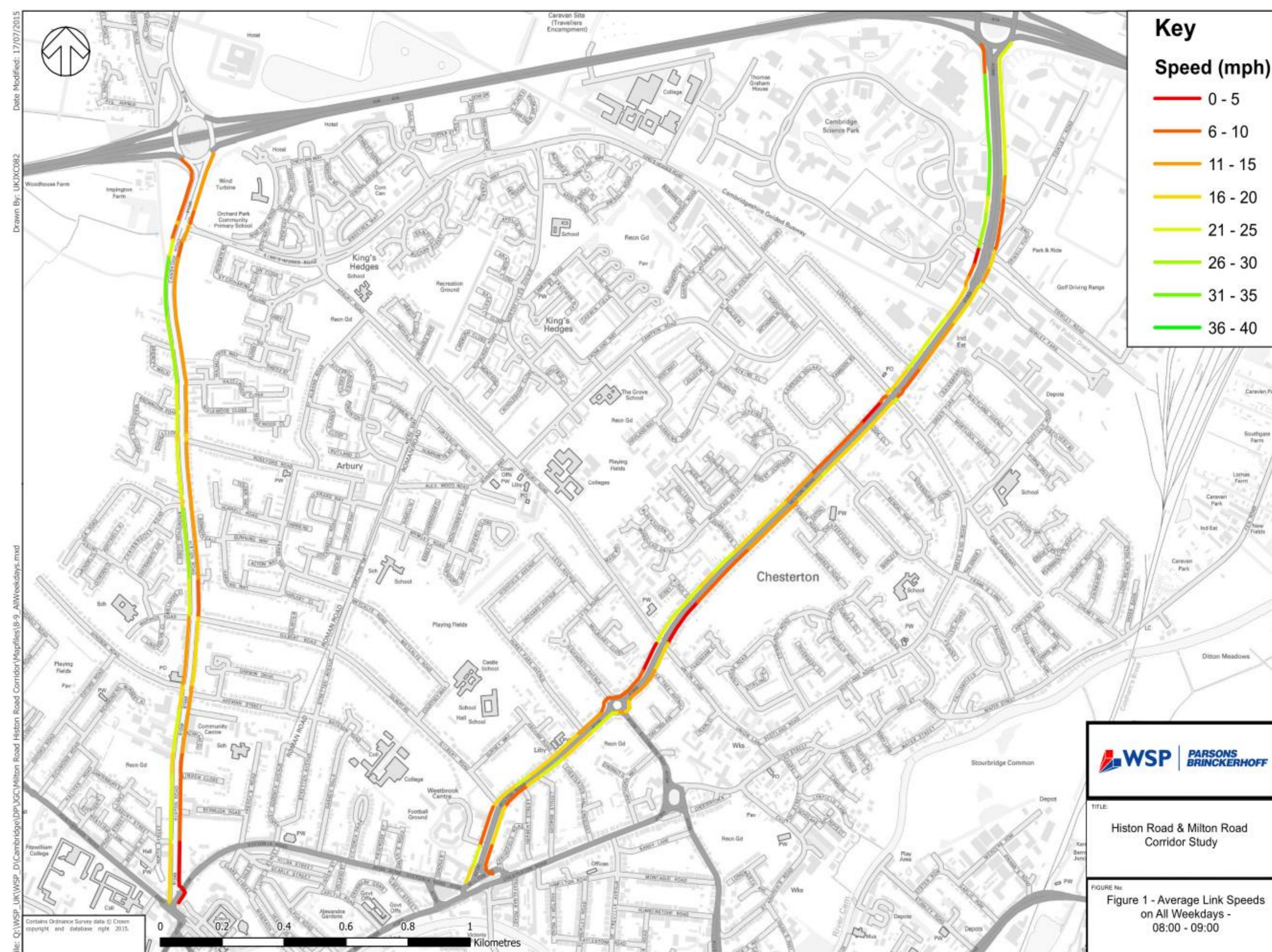


Figure 9 Average Link Speeds on All Weekdays 17:00 – 18:00



3.7.5 Table 4.2 below summarises the data that was obtained for Milton Road by link and by direction for the weekend AM and PM peak hours within the study area. This information is also shown graphically in Figures 10 and 11.

Table 3-3 Traffic Master Data – Milton Road Weekend AM and PM Peak Hours

Reference	Link Length	Speed in Miles per Hour			
		08:00 – 09:00		17:00 – 18:00	
		Inbound	Outbound	Inbound	Outbound
4000000027977937	60.33	20.35	25.20	18.37	23.22
4000000027902801	126.61	22.06	15.88	16.68	10.28
4000000027937647	98.41	12.42	23.96	8.73	20.27
4000000027977958	53.25	28.09	28.39	25.09	23.74
4000000027937648	90.03	29.11	28.66	26.91	24.69
4000000027937646	114.87	27.92	27.87	23.27	24.46
4000000027937645	93.68	27.31	23.15	25.47	19.13
4000000027937643	110.01	20.32	18.66	20.71	13.02
4000000027937644	94.39	22.30	9.280	21.47	5.52
4000000027902916	159.13	10.93	25.86	7.51	22.72
4000000027937926	68.30	28.42	26.24	24.66	24.23
5000005106589297	50.51	28.90	27.36	26.26	23.59
4000000027937927	103.8	29.38	27.89	26.14	23.22
4000000027902917	219.63	29.80	29.51	29.49	26.67
4000000027902918	121.69	30.00	30.11	27.5	27.89
4000000028322162	11.03	29.58	30.31	22.75	28.78
4000000027978211	58.23	29.83	28.21	27.33	26.52
4000000027937928	85.59	28.51	27.77	27.23	24.68
4000000027937987	70.71	28.36	26.08	24.97	17.38
4000000027937983	89.22	27.16	6.81	26.15	6.43
4000000027937984	85.99	12.03	22.25	9.48	22.13
4000000028269897	178.75	23.93	27.41	23.95	26.26
4000000028296007	27.51	25.59	27.45	26.29	27.00
4000000028296006	100.81	25.19	28.89	26.83	28.13

Source: Cambridgeshire County Council (June 2015)

Figure 10 Average Link Speeds on All Weekends 08:00 – 09:00



Figure 11 Average Link Speeds on All Weekends 17:00 – 18:00



3.7.6 From the results obtained it can be seen that there are sections along Milton Road where the speed of vehicles is low indicating that there are problems with traffic congestion on the local highway network at these locations. There are certain links that demonstrate low speeds of vehicles in all of the scenarios and time periods that were analysed, and these are summarised as follows:

- Northbound link approaching Gilbert Road;
- Southbound link approaching Gilbert Road;
- Southbound link approaching Mitcham's Corner;
- Northbound link approaching Highworth Avenue
- Northbound link approaching Arbury Road;
- Southbound link approaching Union Lane
- Northbound link approaching Cowley Road; and
- Southbound link approaching Cowley Road

3.8 CONCLUSION

3.8.1 From the results obtained it can be seen that there are sections along Milton Road where the speed of vehicles is low indicating that there are problems with traffic congestion on the local highway network at these locations.

3.9 BUS SPEED DATA ANALYSIS

3.9.1 Bus Speed Data has been obtained for Milton Road for a period of one year between September 2013 and August 2014 from CCC, and is enclosed in Appendix A. The information was provided in a number of different categories and these are described as follows:

- All Weekdays
- All Weekends;
- All August Weekdays;
- All November Weekdays; and
- All School Weekdays

3.9.2 Due to the volume of information that was provided it was decided to focus the analysis on the data provided for the 'All Weekdays' and 'All Weekends' scenarios as these are seen as the time periods where the highest volume of vehicles will occur and therefore when traffic congestion is most likely to occur influencing vehicle speeds on the local highway network.

3.9.3 The speed of buses in miles per hour for the 'All Weekdays' and 'All Weekends' scenarios between bus stops along Milton Road and Histon Road were analysed in detail for both the AM peak hour (08:00 – 09:00) and the PM peak hour (17:00 – 18:00) for both scenarios.

3.9.4 Table 4.3 below summarises the data that was obtained for Milton Road between bus stops by direction for the weekday AM and PM peak hours within the study area, it is also shown in a graphical format in Figures 12 and 13.

Table 3-4 Bus Speed Data – Milton Road Weekday AM and PM Peak Hours

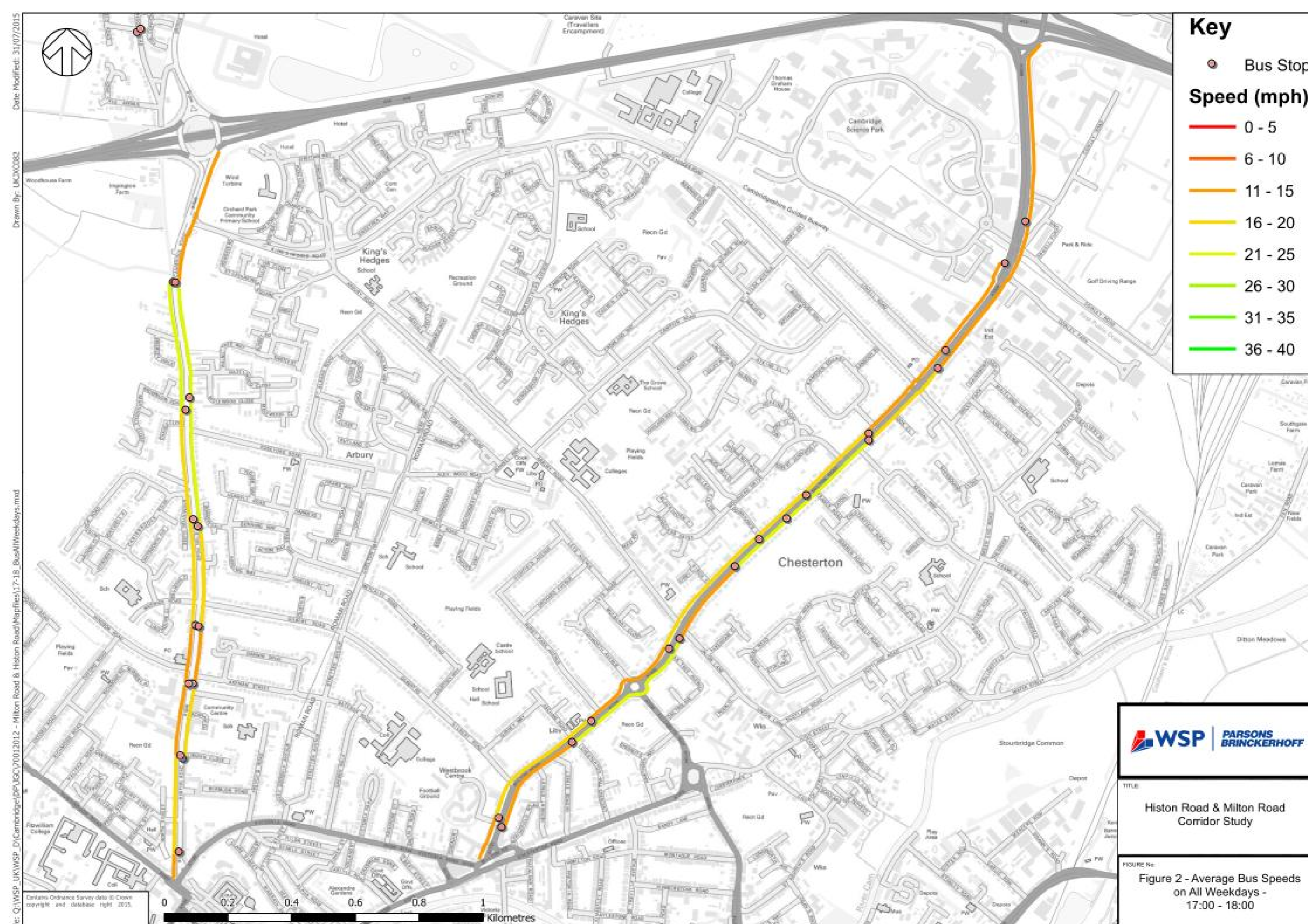
Bus Stop	Length	Speed in Miles per Hour				
		Inbound		Length	Outbound	
		08:00 – 09:00	17:00 – 18:00		08:00 – 09:00	17:00 – 18:00
Science Park	574.69	8.11	12.17	690.64	11.64	11.92
Lovell Road	545.93	19.54	14.27	NA	NA	NA
Kendal Way	318.99	16.97	18.20	271.57	14.10	18.68
Fraser Road	360.18	21.48	24.63	207.17	16.00	17.37
Downham's Lane	219.79	18.59	22.30	452.28	20.45	19.09
Union Lane	283.00	11.69	13.70	343.97	13.92	13.38
Ascham Road	495.17	21.30	21.67	436.61	14.36	16.90
Westbrook Centre	360.90	12.17	12.66	143.06	16.17	13.53

Source: Cambridgeshire County Council (August 2015)

Figure 12 Average Bus Speeds on All Weekdays 08:00 – 09:00



Figure 13 Average Bus Speeds on All Weekdays 17:00 – 18:00



3.9.5

From the results obtained it can be seen that there are sections along Milton Road where the speed of buses is low indicating that there are problems with traffic congestion on the local highway network at these locations. There are certain sections between bus stops along Milton Road that demonstrate low speeds of buses for the weekday AM and PM peak hours, and these are summarised as follows:

- Northbound section approaching Gilbert Road;
- Southbound section approaching Gilbert Road;
- Northbound section approaching Highworth Avenue;
- Southbound section approaching Union Lane;
- Northbound section approaching King's Hedges Road;
- Northbound section approaching Cowley Road; and
- Southbound section approaching Cowley Road

3.9.6

Table 4.4 below summarises the data that was obtained for Milton Road between bus stops by direction for the weekend AM and PM peak hours within the study area, it is also shown in a graphical format in Figures 14 and 15.

Table 3-5 Bus Speed Data – Milton Road Weekend AM and PM Peak Hours

Bus Stop	Length	Speed in Miles per Hour				
		Inbound		Length	Outbound	
		08:00 – 09:00	17:00 – 18:00		08:00 – 09:00	17:00 – 18:00
Science Park	574.69	22.68	21.19	690.64	16.43	16.57
Lovell Road	545.93	21.12	22.49	NA	NA	NA
Kendal Way	318.99	20.23	19.16	271.57	24.17	21.72
Fraser Road	360.18	25.29	26.18	207.17	24.25	19.12
Downham's Lane	219.79	23.00	24.61	452.28	22.06	19.54
Union Lane	283.00	17.90	16.09	343.97	21.21	16.05
Ascham Road	495.17	26.18	21.93	436.61	22.07	19.49
Westbrook Centre	360.90	16.25	13.90	143.06	18.32	15.59

Source: Cambridgeshire County Council (August 2015)

Figure 14 Average Bus Speeds on All Weekends 08:00 – 09:00

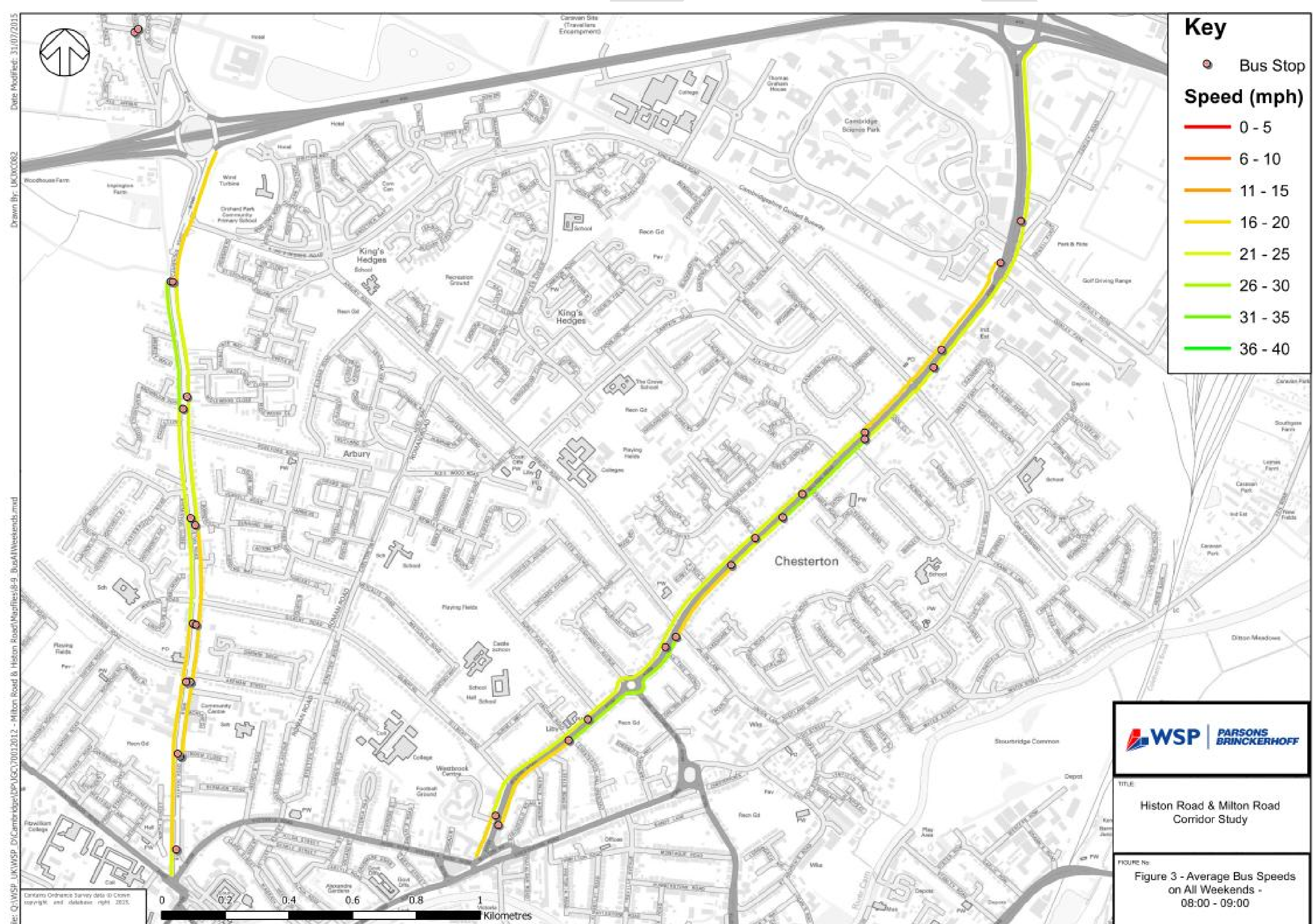
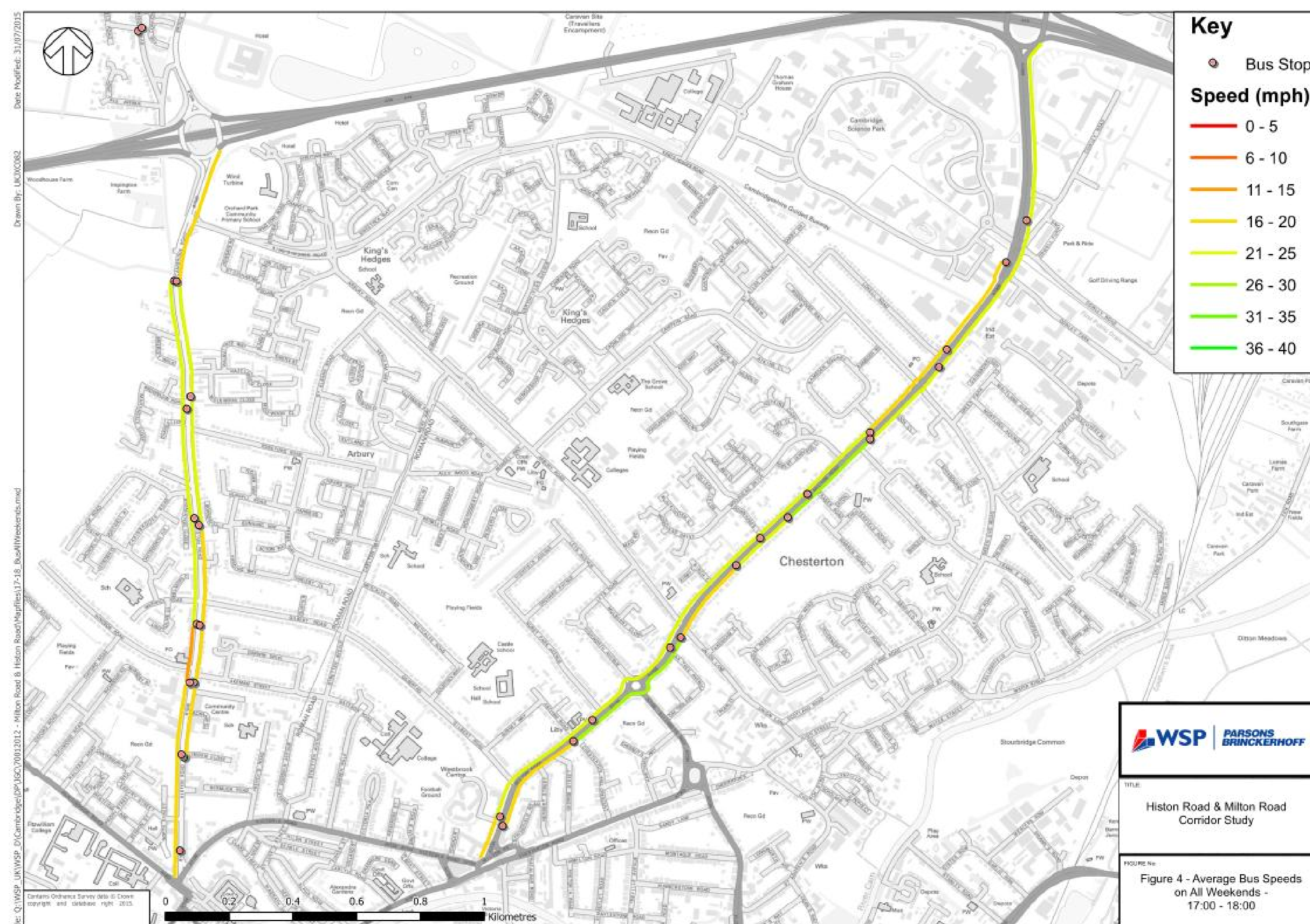


Figure 15 Average Bus Speeds on All Weekends 17:00 – 18:00



3.9.7

From the results obtained it can be seen that there are sections along Milton Road where the speed of buses is low indicating that there are problems with traffic congestion on the local highway network at these locations. There are certain sections between bus stops along Milton Road that demonstrate low speeds of buses for the weekend AM and PM peak hours, and these are summarised as follows:

- Southbound section approaching Gilbert Road;
- Southbound section approaching Mitcham's Corner;
- Southbound section approaching Union Lane;
- Northbound section approaching King's Hedges Road; and
- Northbound section approaching Cowley Road

3.10 CONCLUSION

3.10.1

From the results obtained it can be seen that there are sections along Milton Road where the speed of buses is low indicating that there are problems with traffic congestion on the local highway network at these locations.

4 HISTON ROAD - EXISTING CONDITIONS

4.1 INTRODUCTION

- 4.1.1 The B1049 Histon Road corridor is also of key importance to the City of Cambridge highway network. The road connects to key local settlements to the north of the City such as Histon, Impington and, slightly further to the north, Cottenham. Within the city the road has important connections with other roads including Orchard Park, Arbury, Kings Hedges and Castle related traffic.
- 4.1.2 Histon Road provides a link to the strategic road network at the A14 Histon Interchange. Along with Milton Road, Histon Road is a main distributor road to the north of Cambridge City.
- 4.1.3 Significant developments have recently been built nearby including Kings Hedges, which have potentially increased the pressure in multi modal travel demand. Cambridge City's growth and additional developments being brought forward, such as the Darwin Green Development project, will increase the importance of Histon Road as a transport corridor.
- 4.1.4 The following sections focus on the Histon Road corridor between Kings Hedges Road to A1134 Victoria Road / A1307 Huntingdon Road junction.
- 4.1.5 Whilst being a key link for Cambridge network, Histon Road also provides direct access to properties, businesses and residential properties with multiple accesses.

4.2 PEDESTRIAN NETWORK

KINGS HEDGES ROAD TO HAZELWOOD CLOSE

- 4.2.1 Histon Road / Kings Hedges Road is a three arm signal controlled junction. The junction is provided with staggered Toucan crossings across Kings Edges arm and Histon Road northern arm.
- 4.2.2 A footway is provided on the east side of Histon Road; with a small grassed buffer being provided between the kerb line and footway. On the west side there is a shared footway / cycleway. There is also a buffer marked with difference of surfacing. However the footway width reduces past the farm access.
- 4.2.3 Soon after, the buffer disappears on the east side. The western footway continues through Blackhall Road, being slightly diverted away from the bell mouth.
- 4.2.4 Up to Hazelwood Close, hedges and vegetation surround the corridor, this combined with a higher vehicle speed confers a non-urban character to Histon Road.
- 4.2.5 Although vegetation continues, residential dwellings front Histon Road thereafter Hazelwood Road, which give a more urban character to Histon Road.

HAZELWOOD CLOSE TO GILBERT ROAD / WARWICK ROAD

- 4.2.6 Hazelwood Close / Histon Road junction is a simple priority controlled junction, with Hazelwood Close traffic giving way to Histon Road traffic. Dropped kerbs are provided at the junction bell mouth, but no tactile paving.

- 4.2.7 There are several other priority controlled junctions along Histon Road, with similar layout and provided with dropped kerbs at the bell mouth. These junctions include Brownlow Road, Roseford Road, Chancellors Walk and Carisbrooke Road.
- 4.2.8 Several dwellings front Histon Road, mostly between Chancellors Walk and Carisbrooke Road. Otherwise on the rest of this section, dwellings do not directly front the road, but are accessed via sides' roads.
- 4.2.9 Pavements are provided on both sides, which are generally wide and are separated by vegetation buffers on some section of the road.
- 4.2.10 There is a Toucan crossing located across Histon Road, between Hazelwood Close and Brownload Road.

GILBERT ROAD / WARWICK ROAD TO WINDSOR ROAD / AKEMAN STREET

- 4.2.11 Histon Road / Gilbert Road / Warwick Road is a signal controlled 4-arm junction. The junction is provided with pedestrian crossings points, with dedicated signal phases, across all arms of the junction. Each crossing is provided with dropped kerbs and tactile paving.
- 4.2.12 Along this part of the corridors, dwellings directly front Histon Road. There are also some shops and retails outlets and a convenience store located to the north of Windsor Road.
- 4.2.13 A Toucan crossing is provided approximately 40m north of Windsor Road junction.
- 4.2.14 Along this section of Histon Road footways are generally wide and provided on both side of the road.

WINDSOR ROAD / AKEMAN STREET TO VICTORIA ROAD AND HUNTINGDON ROAD

- 4.2.15 Histon Road / Windsor Road / Akeman Street is a staggered priority controlled junction. Dropped kerbs are provided across the side roads.
- 4.2.16 To the south of the junction, on the west of Histon Road is located a petrol filling station. Dropped kerbs are provided at the pfs accesses. Just to the south of the pfs, a priority controlled junction provides access to discounted food supermarkets. There as well, only dropped kerbs are provided.
- 4.2.17 On the other side of Histon Road, a quick fit car garage is located opposite the pfs and the supermarkets access road.
- 4.2.18 There is also, further south, on Histon West side, two car dealers and garages.
- 4.2.19 A pedestrian controlled crossing is located 30m north of Linden Close.
- 4.2.20 Towards Victoria Road, dwellings directly front the house, but are not provided with drives. There are several on-street parking spaces.
- 4.2.21 The footways width, on either side, are becoming narrower on this section. Junction radii are tighter than in northern section of the corridor.
- 4.2.22 Histon Road / Victoria Road junction is a 3-arm staggered junction. Histon Road east footway links to Victoria Road west footway; a pedestrian signal is provided across Victoria Road northern arm.
- 4.2.23 Histon Road west footway links directly to Huntingdon Road northeast footway.

4.2.24 Vicotria Road / Huntingdon Road is a 3-arm signalised junction (also staggered with Mount Pleasant).

4.2.25 Staggered pedestrian crossings, with refuge islands, are provided on Huntingdon Road west arm and Victoria Road arm.

4.3 CYCLE NETWORK

4.3.1 Histon Road is also an important cycle link on the Cambridge network. Figure 16 below shows that the road is provided with several keys cycle facilities.

Figure 16 Histon Road Cycle Map



4.3.2 Histon Road is a signed primary on road route within Cambridge network.

4.3.3 Off road cycleways are provided on both sides, from Kings Hedges Road, which carry cycle traffic pass Histon Interchange towards Impington and Histon villages.

4.3.4 As shown on the above map Histon Road is currently provided with existing cycle lane, on both sides of the road, between Kings Hedges Road junction and Warwick Road / Gilbert Road junction.

4.3.5 Advanced stops lane (ASL) facilities are provided over each arms of Histon Road / Warwick Road / Gilbert Road.

4.3.6 There are no particular facilities south of Warwick Road / Gilbert Road junction, as the road is more constrained in width.

4.3.7 Cycle lanes and ASLs are provided at the junction with Victoria Avenue, also as Victoria Avenue / Huntingdon Road junction.

4.4 PUBLIC TRANSPORT NETWORK

4.4.1 Numerous bus services use the Histon Road corridor and these services can be boarded at different bus stops along Histon Road. The following bus services use the Histon Road corridor in all or part:

- Busway B - Busway B links Huntingdon and St Ives to Cambridge City Centre Drummer Street;
- Citi 8 – Cottenham and Histon to Addenbrooke's Hospital, Cambridge City centre. Bus X8 also follows the same route but is a much lower frequency service.

4.4.2 There are neither existing bus lanes nor bus priority facilities provided along Histon Road. The current bus services and their frequency with corridor peak service numbers are shown in Table 4-1.

Table 4-1 Bus Service Frequencies – Histon Road Corridor

BUS SERVICE	PEAK FREQUENCY (ONE DIRECTION)
Busway B	7 services per hour
Citi 8	4 services per hour
Total No Services (using corridor in part / full)	11

Figure 17 Histon Road – Bus Stops



Source: Cambridgeshire County Council

4.4.3 There are no bus lane facilities provided along Histon Road. The following list summarises the bus stop locations, bus services available and existing facilities.

BLACKHALL ROAD BUS STOP

4.4.4 Blackhall Road bus stops are located just south of Kings Hedges Road. The stops are marked with flag posts.

4.4.5 No road markings are provided there, and the buses are required to stop within the mandatory cycle lanes.

4.4.6 Bus services No 8 and X8 use this stop. The bus stops are both provided with real time information systems.

BROWNLOW ROAD BUS STOP

4.4.7 The bus stops are located either side of the Brownlow Road / Histon Road junction.

4.4.8 The southbound bus stop is provided with a bus lay-by and road marking. This stop is also provided with a bus flag, real time information, a shelter and seating facilities. The cycle lane becomes advisory at the bus stops.

4.4.9 On the opposite direction the bus stop is simply provided with a stop flag. The cycle lane is mandatory here.

4.4.10 Bus services No 8 and X8 can be boarded here.

CARISBROOKE ROAD BUS STOP

4.4.11 Carisbrooke bus stops are located approximately 100m south of the Carisbrooke Road junction.

4.4.12 The southern bus stop is provided with bus shelter, seating facility and real time information. The northern bound direction is simply provided with a bus flag. There are no road markings provided there and buses need to stop within mandatory cycle lanes.

4.4.13 Bus services No 8 and X8 can be boarded here.

GILBERT ROAD BUS STOP

4.4.14 The bus stops are located approximately 70m south of Gilbert Road.

4.4.15 They are both provided with a flag post. The southbound direction bus stop is also provided with bus stop cage markings.

4.4.16 Bus services No 8 and X8 can be boarded here.

AKEMAN STREET BUS STOP

4.4.17 The bus stops are located approximately 25m south of the Akeman Street junction.

4.4.18 The southbound direction bus stop is provided with a shelter, real time information and seating facilities.

4.4.19 Bus services No 8, X8 and busway D can be boarded there.

LINDEN CLOSE BUS STOP

4.4.20 The bus stops are located at the Linden Close junction.

4.4.21 They are provided with flag posts. The southbound stop provides real time information.

4.4.22 Bus services No 8 and X8 can be boarded there.

HISTON ROAD CORNER BUS STOP

4.4.23 Histon Road Corner bus stop is located adjacent to a public house called The Grapes. The stop is in the northbound direction. The opposite direction bus stop is located on Victoria Ave, at approximately 70m northeast from the Victoria Ave / Histon Road junction

4.4.24 It is provided with a flag post and real time information.

4.4.25 Bus services No 8 and X8 can be boarded there.

4.5 HIGHWAY NETWORK

4.5.1 Histon Road is a major arterial road linking important local settlements such as Cottenham, Histon and Impington, the A14 trunk road at Histon Interchange to Cambridge northwest.

- 4.5.2 This corridor study assesses Histon Road between Kings Hedges Road and Victoria Road. Kings Hedges / Histon Road is a large signal controlled junction. At this location Histon Road provides two ahead lanes of traffic on both directions in addition to dedicated turning lanes into Kings Hedges Road. The junction is located some 280m south of Histon Interchange with the A14.
- 4.5.3 Soon after the junction Histon Road reduces to a single carriageway road with one lane in both directions.
- 4.5.4 Histon Road is restricted to 40mph within this section down to the junction with Blackhall Road where the 30mph speeds limit area begins.
- 4.5.5 There are several side roads that link to Histon Road at simple priority controlled junctions.
- 4.5.6 Warwick Road / Gilbert Road / Histon Road is a four arm signal controlled junction. Additional right turn lane facilities are provided on the Histon Road arms of the junction.
- 4.5.7 Many retails and shops are located, between Windsor Road and Linden Close, two supermarkets, a petrol filling station, some garages, bus stops as well as 5 priority controlled junctions. This local economic activity provides a vibrant and busy area, which generates significant motorised and non-motorised traffic.
- 4.5.8 Histon Road / Victoria Road is a three arm signal controlled junction. The Histon Road approach arm provides two right turn lanes of traffic and a short left lane. Yellow box road markings are located on Victoria Road to allow the traffic from Histon Road to enter Victoria Road. In the other direction, traffic turning right from Victoria Road needs to give way to traffic coming from Huntingdon Road.
- 4.5.9 The Victoria Road / Huntingdon Road / Castle Street / Mount Pleasant junction is comprised of four arms with a staggered signalised junction located just 60m south of the Histon Road / Victoria Road junction. The Victoria Road approach arm provides one left turn lane and one right turn lane. The Huntingdon Road approach arm provides one left turn lane and one ahead lane. The Castle Street approach arm to the junction houses a right turn facility.

4.6 ROAD TRAFFIC ACCIDENT DATA

- 4.6.1 Road traffic accidents data have been obtained from Cambridgeshire County Council (CCC). The data covers Histon Road corridor between 2010 and 2014. The data is available separately if needed.
- 4.6.2 In addition to this CCC website provide an interactive map which also details accidents by location and severity. The map also shows several accidents clusters along the corridors. The map is reproduced below in

Figure 18 Road Traffic Accident Data



Source: Cambridgeshire County Council

- 4.6.3 Key accident clusters include Histon Road between Hazelwood Close junction down to Carisbrooke Road and between Gilbert Road / Warwick Road junction to Linden Close junction. In addition, the Histon Road / Victoria Road Junction and Victoria Road / Huntingdon Road / Mount Pleasant / Castle Street junction area are also significant accident clusters.
- 4.6.4 During the past five year analysis period they were 71 injury severity accidents. Out of these 71 accidents one was classified as fatal severity accident, eight as serious severity accidents and 62 were classed as slight severity accidents.
- 4.6.5 Pedestrians have been involved in nine of the injury accidents with two being serious and seven being slight severity accidents.
- 4.6.6 A total of 34 accidents have involved cyclists, with one fatality, three serious severity accidents and 30 slight severity accidents.

FATAL SEVERITY ACCIDENT

- 4.6.7 An fatal accident occurred along Histon Road outside property No 118, where a disabled rider was lying near his bicycle onto the carriageway. A taxi collided with the bike and rider.

SERIOUS SEVERITY ACCIDENTS

- 4.6.8 A young pedestrian was crossing line of stationary vehicles and was hit by a vehicle moving on the second line of traffic. This serious severity accident occurred on Victoria Road at the junction with Histon Road.
- 4.6.9 An impaired by alcohol driver lost control on a Saturday night at 3am, the vehicle left the road and hit a bollard and a pedestrian on the footway. The accident occurred on Histon Road at the junction with Racham Close.
- 4.6.10 A motorbike lost control of his vehicle at the junction Victoria Road / Huntingdon Road whilst avoiding cyclist who allegedly jumped a red light.
- 4.6.11 A serious accident occurred between two vehicles on the A14 Histon Interchange. However, this junction is outside the study area.
- 4.6.12 A serious severity accident involving a cyclist occurred along Histon Road 50m south of Carisbrooke Road junction. The cyclist was hit by a car, moving in the same direction. The driver was impaired by alcohol.
- 4.6.13 A serious severity accident occurred at the Histon Road junction with Winsor Road, when a car turned right and entered the path of a motorbike.
- 4.6.14 A driver passed too close to a cyclist and knocked him off his bike on Histon Road opposite No 19, near Public House The Grapes. This was a hit and run accident.
- 4.6.15 A similar accident occurred on Histon road 250m south of Kings Hedges Road, where a car passed too close to a cyclist knocking them off.

CONCLUSIONS

- 4.6.16 The number of accidents occurring on Histon Road corridors relates to the existing traffic flows carried by the road. Several accidents clusters have been identified and there is the opportunity to provide facilities to reduce accident risks.

4.7 TRAFFICMASTER DATA

- 4.7.1 In order to provide information on vehicle speeds along Histon Road a detailed analysis has been undertaken of the Trafficmaster Data that has been provided by CCC. Traffic Master Data was obtained for Histon Road for a period of one year between September 2013 and August 2014, and is enclosed in Appendix A. The information was provided in a number of different categories and these are described as follows:

- All Weekdays
- All Weekends;
- All August Weekdays;
- All November Weekdays; and
- All School Weekdays

- 4.7.2 Due to the volume of information that was provided it was decided to focus the analysis on the data provided for the 'All Weekdays' and 'All Weekends' scenarios as these are seen as the time periods where the highest volume of vehicles will occur and therefore when traffic congestion is most likely to occur influencing vehicle speeds on the local highway network.

- 4.7.3 The speed of vehicles in miles per hour for the 'All Weekdays' and 'All Weekends' scenarios for the links along Histon Road were analysed in detail for both the AM peak hour (08:00 – 09:00) and the PM peak hour (17:00 – 18:00) for both scenarios.

- 4.7.4 Table 5.1 summarises the data that was obtained for Histon Road by link and by direction for the weekday AM and PM peak hours within the study area. This information is also shown graphically in Figures 8 and 9 as shown in Section 5 above.

Table 4-2 Traffic Master Data – Histon Road Weekday AM and PM Peak Hours

Reference	Link Length	Speed in Miles per Hour			
		08:00 – 09:00		17:00 – 18:00	
		Inbound	Outbound	Inbound	Outbound
4000000027937554	132.21	3.95	17.96	13.78	15.65
4000000027937577	89.02	5.77	21.58	18.50	16.08
4000000027902769	114.02	7.08	20.54	16.25	13.28
4000000027937578	64.26	8.78	19.40	16.95	15.07
4000000027937579	65.63	10.55	20.46	19.36	12.42
4000000028007228	35.51	11.23	21.32	19.65	11.99
4000000027977891	35.38	12.69	20.32	13.95	10.08
4000000027937576	52.62	13.24	17.52	16.07	10.26
4000000028007227	19.24	14.20	15.89	18.00	10.80
4000000027883665	213.16	15.16	11.59	16.16	8.29
4000000027902809	122.10	7.74	24.54	9.92	21.61
4000000027902810	221.19	10.40	25.89	25.39	21.03
4000000028007268	20.10	12.76	18.55	16.72	21.23
4000000027902811	182.65	14.00	21.72	21.66	20.07
4000000028007269	16.00	15.01	19.62	21.28	16.56
4000000027977988	68.03	14.15	22.65	21.28	20.99
4000000027937687	90.06	14.20	21.74	21.06	19.93
4000000027937686	112.24	13.16	27.53	26.18	26.04
4000000028281629	86.84	13.29	28.35	27.67	26.98
4000000027883667	182.63	11.52	30.03	29.89	25.91
4000000027937688	56.49	8.99	22.53	32.58	11.73

Source: Cambridgeshire County Council (June 2015)

4.7.6

Table 2.4 below summarises the data that was obtained for Histon Road by link and by direction for the weekend AM and PM peak hours within the study area. This information is shown graphically in Figures 10 and 11, as shown in Section 5 above.

Table 4-3 Traffic Master Data – Histon Road Weekend AM and PM Peak Hours

Reference	Link Length	Speed in Miles per Hour			
		08:00 – 09:00		17:00 – 18:00	
		Inbound	Outbound	Inbound	Outbound
4000000027937554	132.21	21.25	24.12	15.22	21.55
4000000027937577	89.02	27.92	22.55	22.47	23.23
4000000027902769	114.02	27.34	24.51	23.8	21.8
4000000027937578	64.26	27.58	24.58	22.56	23.57
4000000027937579	65.63	27.92	24.20	24.77	23.88
4000000028007228	35.51	26.91	21.88	23.72	22.21
4000000027977891	35.38	26.43	24.55	19.42	20.35
4000000027937576	52.62	27.09	23.76	18.45	21.79
4000000028007227	19.24	27.10	24.36	20.28	23.02
4000000027883665	213.16	26.05	17.37	20.70	14.29
4000000027902809	122.1	14.00	26.28	12.39	25.37
4000000027902810	221.19	27.36	27.62	27.46	26.84
4000000028007268	20.10	27.10	27.81	26.68	27.30
4000000027902811	182.65	27.00	27.80	26.70	25.90
4000000028007269	16.00	21.54	21.62	26.80	17.33
4000000027977988	68.03	26.43	26.67	27.61	22.96
4000000027937687	90.06	27.20	28.39	25.98	25.41
4000000027937686	112.24	30.48	31.63	30.49	30.41
4000000028281629	86.84	33.10	33.47	32.48	33.03
4000000027883667	182.63	34.47	33.34	34.17	33.51
4000000027937688	56.49	34.55	30.66	34.86	20.23

Source: Cambridgeshire County Council (June 2015)

4.7.8

From the results obtained it can be seen that there are sections along Histon Road where the speed of vehicles is low indicating that there are problems with traffic congestion on the local highway network at these locations. There are certain links that demonstrate low speeds of vehicles in all of the scenarios and time periods that were analysed, and these are summarised as follows:

- Southbound approach to Victoria Avenue;
- Southbound approach to Gilbert Road;
- Southbound approach to King's Hedges Road;
- Northbound approach to Warwick Road; and
- Northbound approach to A14

4.8

CONCLUSION

4.8.1

From the results obtained it can be seen that there are sections along Histon Road where the speed of vehicles is low indicating that there are problems with traffic congestion on the local highway network at these locations.

4.9 BUS SPEED DATA

4.9.1 Bus Speed Data has been obtained for Histon Road for a period of one year between September 2013 and August 2014 from CCC, and is enclosed in Appendix A. The information was provided in a number of different categories and these are described as follows:

- All Weekdays
- All Weekends;
- All August Weekdays;
- All November Weekdays; and
- All School Weekdays

4.9.2 Due to the volume of information that was provided it was decided to focus the analysis on the data provided for the 'All Weekdays' and 'All Weekends' scenarios as these are seen as the time periods where the highest volume of vehicles will occur and therefore when traffic congestion is most likely to occur influencing vehicle speeds on the local highway network.

4.9.3 The speed of buses in miles per hour for the 'All Weekdays' and 'All Weekends' scenarios between bus stops along Milton Road and Histon Road were analysed in detail for both the AM peak hour (08:00 – 09:00) and the PM peak hour (17:00 – 18:00) for both scenarios.

4.9.4 Table 2.3 below summarises the data that was obtained for Histon Road between bus stops by direction for the weekday AM and PM peak hours within the study area. This information is shown graphically in Figures X and X, as shown in Section 5 above.

Table 2.3 Bus Stop Data – Histon Road Weekday AM and PM Peak Hours

Bus Stop	Length	Speed in Miles per Hour				
		Inbound		Length	Outbound	
		08:00 – 09:00	17:00 – 18:00		08:00 – 09:00	17:00 – 18:00
Blackhall Road	375.09	12.70	14.56	410.19	24.97	22.46
Brownlow Road	398.15	15.51	21.86	344.90	22.21	18.47
Carisbrooke Road	319.17	16.22	22.02	331.65	22.27	18.40
Gilbert Road	187.68	12.49	16.50	175.62	17.22	12.18
Akeman Street	228.27	11.84	13.98	222.58	17.42	12.93
Linden Close	291.69	12.27	16.45	309.09	16.82	15.74
Histon Road Corner	NA	NA	NA	75.76	17.87	10.53

Source: Cambridgeshire County Council (August 2015)

4.9.5 From the results obtained it can be seen that there are sections along Histon Road where the speed of buses is low indicating that there are problems with traffic congestion on the local highway network at these locations. There are certain sections between bus stops along Histon Road that demonstrate low speeds of buses for the weekday AM and PM peak hours, and these are summarised as follows:

- Southbound section approaching Linden Close;
- Northbound section approaching Windsor Road;
- Southbound section approaching Akeman Street;
- Northbound section approaching Warwick Road;
- Southbound section approaching Gilbert Road;
- Southbound section approaching Howgate Road; and

- Southbound section approaching King's Hedges Road

4.9.6 Table 2.4 below summarises the data that was obtained for Histon Road between bus stops by direction for the weekend AM and PM peak hours within the study area, it is also shown in a graphical format in Figures X and X and shown in Section 5 above.

Table 2.4 Bus Stop Data – Histon Road Weekend AM and PM Peak Hours

Bus Stop	Length	Speed in Miles per Hour				
		Inbound		Length	Outbound	
		08:00 – 09:00	17:00 – 18:00		08:00 – 09:00	17:00 – 18:00
Blackhall Road	375.09	18.87	17.98	410.19	25.04	24.05
Brownlow Road	398.15	22.76	23.13	344.90	20.99	20.14
Carisbrooke Road	319.17	21.93	23.48	331.65	20.49	20.07
Gilbert Road	187.68	17.25	17.87	175.62	16.87	13.52
Akeman Street	228.27	17.25	16.41	222.58	16.32	15.99
Linden Close	291.69	17.00	17.25	309.09	18.42	17.31
Histon Road Corner	NA	NA	NA	75.76	23.45	19.13

Source: Cambridgeshire County Council (August 2015)

4.9.7 From the results obtained it can be seen that there are sections along Histon Road where the speed of buses is low indicating that there are problems with traffic congestion on the local highway network at these locations. There are certain links that demonstrate low speeds of buses in all of the scenarios and time periods that were analysed, and these are summarised as follows:

- Northbound section approaching Lingholme Close;
- Southbound section approaching Howgate Road; and
- Southbound section approaching King's Hedges Road

4.10 CONCLUSION

4.10.1 From the results obtained it can be seen that there are sections along Histon Road where the speed of buses is low indicating that there are problems with traffic congestion on the local highway network at these locations.

5 UTILITIES

5.1 INTRODUCTION

5.1.1 A detailed analysis was undertaken of a wide variety of data in relation to the utilities along both Milton Road and Histon Road. This information was provided by Greenhatch Group Limited from the various utilities companies as part of a C2 search. The existing networks serving both roads are owned and operated by:

- Gas – National Grid Gas (NGG);
- Potable Water – Cambridge Water;
- Telecommunications / Data – BT Open Reach, Virgin Media, Vodafone, TeliaSonera and Verizon; and

→ Electricity – UK Power Networks (UKPN).

5.1.2 The following sections of the report provide a detailed summary of the data provided on utilities for both Milton Road and Histon Road, and is described in sections and at key junctions along both roads as per the initial options proposals being put forward which are not part of this report.

5.1.3 The various drawings supplied are not included as an appendix due to their size and are available separately if needed.

5.2 MILTON ROAD UTILITIES

GAS

5.2.1 From a review of NGG's asset records, gas infrastructure is present along Milton Road and is described in detail as follows:

Junction 1 – Mitcham's Corner Gyratory

- North side of the gyratory 90 mm diameter PE LP main and 12" diameter CI LP main;
- West side of the gyratory 90 mm diameter PE LP main and 63 mm diameter PE LP main;
- South side of the gyratory 180 mm diameter PE LP main, 90 mm diameter PE LP main, 63 mm diameter PE LP main and 400 mm diameter PE LP main; and
- A 400 mm diameter PE LP main link between the north and south side of Chesterton Road to Victoria Avenue.

Section 1

- East side of the carriageway 63 mm diameter PE LP main;
- West side of the carriageway 12" diameter CI LP main; and
- A 63mm diameter PE LP main link between the east and west sides of the carriageway.

Junction 2 – Gilbert Road signalised T-junction

- East side of the carriageway 63 mm diameter PE LP main; and
- West side of the carriageway 12" diameter CI LP main.

Section 2

- North side of the carriageway 12" diameter CI LP main;
- South side of the carriageway 63 mm diameter PE LP main;
- South side of the carriageway 125 mm diameter PE LP main; and
- A 125 mm diameter PE LP main link between the north and south sides of the carriageway.

Junction 3 – Highworth Avenue / Elizabeth Way priority roundabout

- North side of the carriageway west of roundabout 12" diameter CI LP main;
- South side of the carriageway west of roundabout 125 mm diameter PE LP main;
- North side of roundabout 12" diameter DI LP main;
- South side of roundabout 6" diameter SI LP main;
- East side of roundabout 6" diameter SI LP main;
- West side of roundabout 12" diameter DI LP main;
- A 180 mm diameter PE LP main link between the east and north sides of the roundabout; and

- North side of the carriageway east of roundabout 12" diameter DI LP main.

Section 3

- North side of the carriageway 12" diameter DI LP main and 12" diameter CI LP main; and
- South side of the carriageway 63 mm diameter PE LP main.

Junction 4 – Arbury Road / Union Lane Signalised Crossroads

- North side of the carriageway 12" diameter CI LP main and 9" diameter CI LP main;
- South side of the carriageway 180 mm diameter PE LP main, and 8" diameter PE MP main;
- A 12" CI LP main link between the east and west sides of the carriageway; and
- Across the carriageway from Arbury Road to Union Lane 250 mm PE MP main.

Section 4

- North side of the carriageway 9" diameter CI LP main and 250 mm PE MP main;
- South side of the carriageway 8" diameter PE MP main.

Junction 5 – Woodhead Drive and Kendal Way priority T-junction

- North side of the carriageway 250 mm PE MP main;
- South side of the carriageway 8" PE MP main; and
- A 125 mm diameter PE LP main link between the north and south sides of the carriageway to Kendall way.

Section 5

- North side of the carriageway 250 mm PE MP main and 9" diameter CI LP main;
- South side of the carriageway 8" PE MP main; and
- A 63 mm diameter PE LP main link between the north and south side of the carriageway to Cook Close.

Junction 6 – Kings Hedges Road / Green End Road signalised crossroads

- North side of the carriageway west of roundabout 9" diameter CI LP main;
- South side of the carriageway west of roundabout 8" PE MP main;
- North, south and west sides of roundabout 250 mm diameter PE LP main;
- South and east sides of roundabout 8" PE MP main;
- North side of the carriageway east of roundabout 250 mm diameter PE LP main; and
- South side of the carriageway east of roundabout 125 mm diameter PE LP main and 8" diameter PE MP main.

Section 6

- North side of the carriageway 250 mm diameter PE LP main and 180 mm diameter PE LP main; and
- South side of the carriageway 125 mm diameter PE LP main and 8" PE MP main.

Junction 7 – Existing and new busway signalled crossroads

- North side of the carriageway 250 mm diameter PE LP main, 8" diameter CI LP main, 250 mm diameter PE LP main, 300 mm diameter DI LP main, 8" diameter PE MP main, and 250 mm PE MP main.

Junction 8 – Science Park signalised junctions

- West side of the carriageway 300 mm diameter DI LP main, 250 mm diameter PE MP main, 355 mm diameter PE LP main and 200 mm diameter DI LP main;
- East side of the carriageway 250 mm diameter PE MP main and 250 mm diameter PE MP main;
- A 250 mm diameter PE MP main link between the east and west side of the carriageway; and
- A 350 mm diameter PE LP main link between the west and south side of the carriageway to Cowley Park.

POTABLE WATER

5.2.2

The local potable water network operator for this area is Cambridge Water. From a review of Cambridge Water's asset records water infrastructure is present along Milton Road and is described in detail as follows:

Junciton1 – Mitcham's Corner Gyratory

- North side of the gyratory 8" diameter CI trunk main;
- South side of the gyratory 4" diameter CI distribution main;
- North side of Chesterton Road 4" diameter and 6" diameter CI distribution main;
- South side of Chesterton Road 12" diameter CI trunk main;
- A 12" diameter CI trunk main linking the 12" diameter CI trunk main to Victoria Avenue, and 3" diameter CI distribution main linking the 6" diameter CI distribution main to Victoria Avenue;
- A 3" diameter CI distribution main linking the 6" diameter CI distribution main to Springfield Road;
- Two fire hydrants and two washout hydrants on the 8" diameter CI trunk main, along with one fire hydrant on the 4" diameter CI distribution main, and one fire hydrant on the 6" diameter CI distribution main; and
- A number of valves surrounding the gyratory and on Chesterton Road.

Section 1

- East side of the carriageway 8" diameter CI trunk main and 3" diameter CI distribution main;
- A 4" diameter uPVC private main link from the 8" diameter CI trunk main to Westbrook Drive;
- Three fire hydrants on the 3" diameter CI distribution main; and
- A sluice valve on the 4" diameter uPVC private main.

Junction 2 – Gilbert Road signalised junction

- East side of the carriageway 8" diameter CI trunk main and 3" diameter CI distribution main; and
- Two 6" diameter CI distribution mains to Gilbert Road linking the 8" diameter CI trunk road to Gilbert Road.

Section 2

- East side of the carriageway 8" diameter CI trunk main and 3" diameter CI distribution main;
- Two fire hydrants on the 3" diameter CI distribution main;
- A number of valves on the 8" diameter CI trunk main and 3" diameter CI distribution main at various locations; and
- Two 3" diameter CI distribution mains linking the 8" diameter CI trunk main to Ascham Road and a 3" diameter CI distribution main to Chesterton Hall Crescent.

Junction 3 – Highworth Avenue / Elizabeth Way priority roundabout

- East side of the carriageway 8" diameter CI trunk main and 3" CI distribution main;
- Two fire hydrants on the 3" diameter CI distribution main;
- A 6" diameter CI distribution main linking the 3" diameter CI distribution main to Hurst Park Avenue; and
- A 6" diameter CI distribution main linking the 8" diameter CI trunk main to Elizabeth Way and a 3" CI distribution main linking the 3" diameter CI distribution main to Highworth Avenue.

Section 3

- East side of the carriageway 8" diameter CI trunk main and 3" CI distribution main;
- Two fire hydrants on the 3" diameter CI distribution main; and
- A 6" diameter CI distribution main linking the 8" diameter CI trunk main to Oak Tree Avenue.

Junction 4 – Arbury Road / Union Lane signalised crossroads

- East side of the carriageway 8" diameter CI trunk main and 3" CI distribution main;
- Two fire hydrants on the 3" diameter CI distribution main;
- A number of valves on the 8" diameter CI trunk main and 3" diameter CI distribution main at various locations; and
- A 200 mm diameter mPVC distribution main and a 3" diameter CI distribution main linking the 3" diameter CI distribution main to Arbury road, and two 6" diameter CI trunk main linking the 8" diameter CI trunk main to Union Lane.

Section 4

- East side of the carriageway 8" diameter CI trunk main and 3" CI distribution main;
- Seven fire hydrants on the 3" diameter CI distribution main;
- A number of sluice valves on the 8" diameter CI trunk main and 3" diameter CI distribution main at various locations;
- A 8" diameter uPVC distribution main linking the 3" diameter CI distribution main to Birch Close;
- A 3" diameter uPVC distribution main linking the 8" diameter CI trunk main and 3" CI distribution main to John Clarke Court;
- A 3" diameter uPVC distribution main linking the 3" diameter CI distribution main to Downham's Lane; and
- A 90 mm HPPE distribution main linking the 8" diameter CI trunk main and 3" diameter CI distribution main to Middleton Close.

Junction 5 – Woodhead Drive and Kendal Way priority T-junctions

- East side of the carriageway 8" diameter CI trunk main and 3" diameter CI distribution main;
- A 6" diameter uPVC distribution main linking the 3" diameter CI distribution main to Woodhead Drive;
- Two fire hydrants on the 3" diameter CI distribution main; and
- A number of valves on the 8" diameter CI trunk main and 3" diameter CI distribution main at various locations.

Section 5

- East side of the carriageway 8" diameter CI trunk main and 3" diameter CI distribution main;
- A 3" diameter distribution main linking the 3" diameter CI distribution main to Ramsden Square; and
- A fire hydrant on the 3" diameter CI distribution main.

Junction 6 – Kings Hedges Road / Green End Road signalised crossroads

- East side of the carriageway 8" diameter CI trunk main and 3" diameter CI distribution main;
- An 8" diameter and a 3" diameter CI distribution main linking the 3" diameter CI distribution main to King's Hedges Road, and the 8" diameter CI distribution main to Green End Road;
- A number of valves on the 8" diameter CI trunk main and 3" diameter CI distribution main at various locations; and
- Two fire hydrants on the 3" diameter CI distribution main.

Section 6

- East side of the carriageway 8" diameter CI trunk main, a 6" diameter CI distribution main and a 3" CI distribution main;
- A 3" diameter CI distribution main linking the 3" diameter CI distribution main to Lovell Road;
- West side of the carriageway 7" diameter CI trunk main linking to the east side of the carriageway 8" diameter CI trunk main;
- A number of sluice valves on the 7" diameter and the 8" diameter CI trunk main at various locations;
- A 4" diameter uPVC distribution main linking the 6" diameter CI distribution main to Trinity Hall Farm Industrial Estate; and
- A fire hydrant on the 3" diameter CI distribution main.

Junction 7 – Existing and new busway signalised crossroads

- East side of the carriageway 3" diameter CI distribution main and a 6" diameter CI distribution main;
- West side of the carriageway 7" diameter CI trunk main;
- A 4" diameter uPVC distribution main linking the 7" diameter CI trunk main to Cambridge Science Park;
- A number of sluice valves on the 7" diameter CI trunk main and 3" diameter CI distribution main at various locations; and
- Two fire hydrants on the 3" diameter CI distribution main, and two washout hydrants, one on the 7" diameter CI trunk main, and one on the 3" diameter CI distribution main.

Junction 8 – Science Park signalised junctions

- East side of the carriageway 6" diameter CI distribution main;

- West side of the carriageway 7" diameter CI trunk main;
- A 4" diameter and a 6" diameter uPVC linking the 6" diameter CI distribution main to Cowley Road;
- A 4" diameter uPVC linking the 6" diameter CI distribution main to Cowley Park;
- A number of sluice valves on the 7" diameter CI trunk main and 6" diameter CI distribution main at various locations; and
- Two fire hydrants on the 6" diameter CI distribution main.

TELECOMMUNICATIONS / DATA

5.2.3

Information has been obtained from the telecommunication providers along Milton Road which are BT OpenReach, Virgin Media and Vodafone, TeliaSonera and Verizon. The infrastructure owned by each and present along Milton Road is described in detail as follows:

BT OpenReach

Junction 1 – Mitcham's Corner Gyrotory

- North, east, south and west sides of the gyrotory ductile trench;
- Fifteen joint boxes, one manhole and two poles surrounding the gyrotory;
- North and south sides of Chesterton Road ductile trench;
- A number of ductile trenches providing links at various locations; and
- Seven joint boxes, four manholes, three poles, two Y-codes and two cabinets on the north and south sides of Chesterton Road.

Section 1

- East and west side of the carriageway ductile trench; and
- Two ductile trenches linking the east and west sides of the carriageway; and
- Five joint boxes, one manhole and two poles on the east side of the carriageway, along with six joint boxes, one Y-code and one pole.

Junction 2 – Gilbert Road signalised T-junction

- East side of the carriageway ductile trench;
- A ductile trench linking the east side of the carriageway to Gilbert Road; and
- Four joint boxes, two manholes and one pole on the east side of the carriageway;

Section 2

- South side of the carriageway ductile trench;
- A ductile trench linking the east side of the carriageway to Hurst Park Avenue; and
- Five joint boxes, four manholes and five poles, as well as a cabinet on the south side of the carriageway

Junction 3 – Highworth Avenue / Elizabeth Way priority roundabout

- South side of the carriageway ductile trench;
- Two ductile trenches linking the east side of the carriageway to Highworth Avenue and Elizabeth Way; and
- Four joint boxes, two manholes and two poles, as well as two cabinets on the south side of the carriageway

Section 3

- South side of the carriageway ductile trench;
- A ductile trench linking the south side of the carriageway to Ellis House; and
- Four joint boxes, two manholes and two poles.

Junction 4 – Arbury Road / Union Lane signalised crossroads

- South side of the carriageway ductile trench;
- A ductile trench linking the south side of the carriageway to Union Lane and Arbury Road; and
- Three joint boxes, three manholes and one pole.

Section 4

- North and south side of the carriageway ductile trenches;
- Seven ductile trenches linking the north side of the carriageway to various locations; and
- Six joint boxes, four manholes, four poles and a cabinet on the south side of the carriageway, along with one joint box, thirteen manholes, five poles and a cabinet on the north side of the carriageway.

Junction 5 – Woodhead Drive and Kendal Way priority T-junctions

- North and south side of the carriageway ductile trenches;
- Three ductile trenches linking the north and south sides of the carriageway to various locations; and
- Three joint boxes on the south side of the carriageway, along with three manholes and two poles on the north side of the carriageway.

Section 5

- North and south side of the carriageway ductile trenches;
- A ductile trench linking the south side of the carriageway to Cook Close; and
- One joint box and two manholes and two cabinets on the south side of the carriageway, along with two manholes and one pole on the north side of the carriageway.

Junction 6 – Kings Hedges Road / Green End Road signalised crossroads

- North and south side of the carriageway ductile trenches;
- Four ductile trenches linking the north and south sides of the carriageway to Kings Hedges Road and Green End Road;
- Four joint boxes, three manholes and one pole on the south side of the carriageway, along with five manholes and one pole on the north side of the carriageway; and
- One joint box and two manholes and two cabinets on the south side of the carriageway, along with two manholes and one pole on the north side of the carriageway.

Section 6

- North and south side of the carriageway ductile trenches;
- Three ductile trenches linking the south and north sides of the carriageway to various locations; and
- One joint box, six manholes and one pole on the south side of the carriageway, along with three joint boxes and nine manholes on the north side of the carriageway.

Junction 7 – Existing and new busway signalised crossroads

- North and south side of the carriageway ductile trenches; and

- One joint box and three manholes on the north side of the carriageway, along with one joint box and one manhole on the south side of the carriageway.

Junction 8 – Science Park signalised junctions

- North and south side of the carriageway ductile trenches; and
- Three joint boxes, four manholes and one cabinet on the north side of the carriageway, along with five joint boxes, four manholes and two cabinets on the south side of the carriageway.

Virgin Media

Junction 1 – Mitcham’s Corner Gyrotory

- North, east, south and west sides of the gyrotory ductile trench;
- Eight chambers and two cabinets surrounding the gyrotory;
- North and south sides of Chesterton Road ductile trench;
- A number of ductile trenches providing links at various locations;
- Three chambers and one cabinet on the south side of Chesterton Road, along with five chambers on the north side of Chesterton Road.

Section 1

- East and west side of the carriageway ductile trench; and
- One chamber and one cabinet on the west side of the carriageway, and one chamber on the east side of the carriageway

Junction 2 – Gilbert Road signalised T-junction

- East and west side of the carriageway ductile trench; and
- One chamber on the west and east sides of the carriageway

Section 2

- East and west side of the carriageway ductile trench; and
- Four chambers on the west and east sides of the carriageway, along with one cabinet on the west side of the carriageway and two cabinets on the east side of the carriageway

Junction 3 – Highworth Avenue / Elizabeth Way priority roundabout

- East and west side of the carriageway ductile trench;
- Ductile trench around the roundabout junction of Milton Road / Highworth Avenue / Elizabeth Way; and
- One chamber on the west and east sides of the carriageway.

Section 3

- East and west side of the carriageway ductile trench; and
- Three chambers and one cabinet on the east side of the carriageway.

Junction 4 – Arbury Road / Union Lane signalised crossroads

- East and west side of the carriageway ductile trench; and
- Two chambers and one cabinet on the east side of the carriageway, and two chambers on the west side of the carriageway.

Section 4

- North and south side of the carriageway ductile trench; and

- Four chambers and two cabinets on the south side of the carriageway, and eight chambers and 1 cabinet on the north side of the carriageway.

Junction 5 – Woodhead Drive and Kendal Way priority T-junctions

- North and south side of the carriageway ductile trench;
- A ductile trench linking the north and south sides of the carriageway; and
- Two chambers on the north and south sides of the carriageway.

Section 5

- North and south side of the carriageway ductile trench;
- Two ductile trenches linking the north and south sides of the carriageway; and
- Three chambers and one cabinet on the south side of the carriageway, along with one cabinet and one chamber on the north side of the carriageway.

Junction 6 – Kings Hedges Road / Green End Road signalised crossroads

- North and south side of the carriageway ductile trench;
- Ductile trench on the east, south and west sides of the roundabout junction of Milton Road / Green End Road; and
- One chamber on the south side of the carriageway.

Section 6

- North and south side of the carriageway ductile trench;
- A ductile trench linking the north and south sides of the carriageway, along with a ductile trench linking to Trinity Hall Farm Industrial Estate; and
- Four chambers on the north side of the carriageway and 1 chamber on the south side of the carriageway.

Junction 7 – Existing and new busway signalised crossroads

- North side of the carriageway ductile trench; and
- Two chambers on the north side of the carriageway.

Junction 8 – Science Park signalised junctions

- East and west side of the carriageway ductile trench;
- Five ductile trenches linking the east and west sides of the carriageway; and
- Ten chambers and two cabinets on the east side of the carriageway, along with twelve chambers and two cabinets on the west side of the carriageway.

Vodafone

Junction 1 – Mitcham's Corner Gyrotory

- West side of the carriageway ductile trench;
- East side of the gyrotory ductile trench; and
- South side of Chesterton Road ductile trench.

Section 1

- West side of the carriageway ductile trench; and
- A ductile trench linking the west side of the carriageway to the Westbrook Centre

Junction 2 – Gilbert Road signalised T-junction

- West side of the carriageway ductile trench.

Section 2

- North side of the carriageway ductile trench.

Junction 3 – Highworth Avenue / Elizabeth Way priority roundabout

- North side of the carriageway and roundabout junction of Milton Road / Highworth Avenue and Elizabeth Way ductile trench.

Section 3

- North side of the carriageway ductile trench.

Junction 4 – Arbury Road / Union Lane signalised crossroads

- North side of the carriageway ductile trench.

Section 4

- North side of the carriageway ductile trench; and
- Two ductile trenches linking the north side of the carriageway to Downham's Lane.

Junction 5 – Woodhead Drive and Kendal Way priority T-junctions

- North side of the carriageway ductile trench.

Section 5

- North side of the carriageway ductile trench.

Junction 6 – Kings Hedges Road / Green End Road signalised crossroads

- North side of the carriageway ductile trench; and
- A ductile trench linking the north side of the carriageway to King's Hedges Road.

Section 6

- North side of the carriageway ductile trench.

Junction 7 – Existing and new busway signalised crossroads

- North side of the carriageway ductile trench.

Junction 8 – Science Park signalised junctions

- West side of the carriageway ductile trench; and
- A ductile trench linking the west side of the carriageway to Cowley Road.

TeliaSonera**Junction 1 – Mitcham's Corner Gyrotory**

- No infrastructure present.

Section 1

- No infrastructure present.

Junction 2 – Gilbert Road signalised T-junction

- No infrastructure present.

Section 2

- No infrastructure present.

Junction 3 – Highworth Avenue / Elizabeth Way priority roundabout

→ No infrastructure present.

Section 3

→ No infrastructure present.

Junction 4 – Arbury Road / Union Lane signalised crossroads

→ No infrastructure present.

Section 4

→ No infrastructure present.

Junction 5 – Woodhead Drive and Kendal Way priority T-junctions

→ No infrastructure present.

Section 5

→ No infrastructure present.

Junction 6 – Kings Hedges Road / Green End Road signalised crossroads

→ No infrastructure present.

Section 6

→ No infrastructure present.

Junction 7 – Existing and new busway signalised crossroads

→ No infrastructure present.

Junction 8 – Science Park signalised junctions

→ No infrastructure present.

Verizon**Junction 1 – Mitcham's Corner Gyratory**

→ West side of the carriageway VZB lateral ductile and a VZB access chamber.

Section 1

→ West side of the carriageway VZB lateral ductile and a VZB access chamber.

Junction 2 – Gilbert Road signalised T-junction

→ West side of the carriageway VZB lateral ductile and a VZB access chamber.

Section 2

→ West side of the carriageway VZB lateral ductile and a VZB access chamber.

Junction 3 – Highworth Avenue / Elizabeth Way priority roundabout

→ West side of the carriageway VZB lateral ductile and a VZB access chamber.

Section 3

→ West side of the carriageway VZB lateral ductile.

Junction 4 – Arbury Road / Union Lane signalised crossroads

→ West side of the carriageway VZB lateral ductile and a VZB access chamber.

Section 4

→ West side of the carriageway VZB lateral ductile and a VZB access chambers.

Junction 5 – Woodhead Drive and Kendal Way priority T-junctions

- West side of the carriageway VZB lateral ductile and a VZB access chambers.

Section 5

- West side of the carriageway VZB lateral ductile and a VZB access chambers.

Junction 6 – Kings Hedges Road / Green End Road signalised crossroads

- West and east sides of the carriageway VZB backbone ductile;
- East side of the carriageway MCI leased ductile;
- A VZB backbone duct linking to the east side of Milton Road Green End Road;
- A MCI leased ductile linking to the east side of Milton Road Green End Road; and
- Five VZB access chambers on the east and west sides of the carriageway.

Section 6

- East side of the carriageway VZB backbone ductile;
- East and west sides of the carriageway MCI leased ductile; and
- One VZB access chamber on the east side of the carriageway and one on the west side of the carriageway.

ELECTRICITY

5.2.4

Information has been obtained from UK Power Networks (UKPN) along Milton Road. The infrastructure owned by each and present along Milton Road is described in detail as follows:

Junction 1 – Mitcham's Corner Gytratory

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 / 400V (LV) cable route;
- West side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route; and
- Primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route surrounding the gytratory, along with mains joints, service cables and terminations.

Section 1

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations; and
- West side of the carriageway secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Junction 2 – Gilbert Road signalised T-junction

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations; and
- West side of the carriageway secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Section 2

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations; and
- West side of the carriageway secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Junction 3 – Highworth Avenue / Elizabeth Way priority roundabout

- North side of the carriageway west of the junction of Highworth Avenue / Elizabeth Way secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, along with main joints, service cables and terminations;
- South side of the carriageway west of the junction of Highworth Avenue / Elizabeth Way primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 / 400V (LV), along with mains joints, service cables and terminations;
- North and west sides of the roundabout secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV), along with main joints, service cables and terminations;
- South and east sides of the roundabout primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV);
- North side of the carriageway east of the junction of Highworth Avenue / Elizabeth Way primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations. The secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route connect to an Electrical Sub-Station; and
- South side of the carriageway east of the junction of Highworth Avenue / Elizabeth Way primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Section 3

- North side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations; and
- South side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Junction 4 – Arbury Road / Union Lane signalised crossroads

- North side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations; and
- South side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Section 4

- North side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations; and
- The primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route on the north side of the carriageway, connect to an Electrical Sub-Station.

Junction 5 – Woodhead Drive and Kendal Way priority T-junctions

- North side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations; and
- South side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Section 5

- North side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations;
- South side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations; and
- The primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route on the north side of the carriageway, connect to an Electrical Sub-Station.

Junction 6 – Kings Hedges Road / Green End Road signalised crossroads

- North side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations; and
- South side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Section 6

- North side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations; and
- South side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Junction 7 – Existing and new busway signalised crossroads

- North side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations; and
- South side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Junction 8 – Science Park signalised junctions

- North side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables over 230 / 440V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route, all with main joints, service cables and terminations; and
- South side of the carriageway primary distribution cables over 11kV and up to 33kV, and secondary distribution cables 230 / 400V (LV) cable route, along with mains joints, service cables and terminations.

Junction 7 – Existing and new busway signalised crossroads

- East side of the carriageway VZB backbone ductile; and
- West side of the carriageway MCI leased ductile.

Junction 8 – Science Park signalised junctions

- East side of the carriageway VZB backbone ductile;
- West side of the carriageway MCI leased ductile; and
- One VZB access chamber on the east side of the carriageway and one on the west side of the carriageway.

5.3 HISTON ROAD UTILITIES

GAS

5.3.1

From a review of NGG's asset records gas infrastructure is present along Histon Road and is described in detail as follows:

Junction 1 – Castle Street / Huntington Road and Victoria Road signalised T-junction

- East side of the carriageway 6" diameter PE LP main;
- West side of the carriageway 6" diameter ST UN LP main;
- West side of Victoria Road 250 mm diameter PE LP main;
- East side of Victoria Road 63 mm diameter PE LP main;
- A 150 mm diameter DI LP main connects 6" diameter PE LP main and 6" diameter ST UN LP main to the 180 mm diameter PE LP main and 250 diameter PE LP main on the west side of Victoria Road; and
- North side of Huntingdon Road 250 mm diameter DI LP main and 12" diameter DU LP main.

Section 1

- East side of the carriageway 6" diameter PE LP main and 180 mm diameter PE LP main;
- West side of the carriageway 6" diameter ST UN LP main;
- A 9mm diameter PE LP main link between the east and west sides of the carriageway to Canterbury Road;
- A 6" diameter DI LP main link between the east and west sides of the carriageway;
- A 63 mm diameter PE LP main link between the east and west sides of the carriageway; and
- A 90 mm diameter PE LP main link between the east and west sides of the carriageway.

Junction 2 – Akeman Street and Windsor Road priority T-junction

- East side of the carriageway 6" diameter PE LP main;
- West side of carriageway 6" diameter ST UN LP main;
- A 4" diameter CI LP main link between the east and west sides of the carriageway to Akeman Street; and
- Across the carriageway from the east and west sides into Akeman Street 125 mm diameter PE LP main and 6" diameter CI UN LP main.

Section 2

- West side of the carriageway 6" diameter ST UN LP main and 6" diameter ST LP main

Junction 3 – Warwick Road / Gilbert Road signalised crossroads

- West side of the carriageway 6" diameter ST LP main; and
- Across the carriageway from the east and west sides into Gilbert Road 6" diameter SI UN LP main along the south side of the junction, and a 6" diameter CI UN LP main along the north side of the junction.

Section 3

- West side of the carriageway 6" diameter ST LP main, 6" diameter PE LP main, and 10" diameter CI UN LP main;
- A 250 mm diameter PE LP link between the east and west sides of the carriageway to Roseford Road;
- A 4" diameter PE LP link from the 10" diameter CU UN LP main to Molewood Close; and
- A 8" diameter SI LP link between the 6" diameter ST LP main and the 10" diameter CI UN LP main.

Junction 4 – NIAB development new road T-junction

- West side of the carriageway 6" diameter PE LP main and 10" diameter CI UN LP main;
- A 6" diameter SI LP link between the 6" diameter ST LP main and the 10" diameter CI UN LP main and to Blackhall Road; and
- A 63 mm PE LP link between the 6" diameter ST LP main and the 10" diameter CI UN LP main.

Junction 5 – Kings Hedges Road signalised T-junction

- West side of Cambridge Road 6" diameter PE LP main, 10" diameter CI LP main, and 9" diameter CI LP main;
- A 9" diameter CI LP main and 250 mm diameter DI LP main links the west side of Cambridge Road to Kings Hedges Road;
- West side of Cambridge Road 250 mm diameter PE MP main;
- A 315 mm diameter PE MP main and 180 mm diameter PE MP main links the west side of Cambridge Road to Kings Hedges Road; and
- West side of Cambridge Road IP main links the west side of Cambridge Road to Kings Hedges Road.

POTABLE WATER

5.3.2

The local potable water network operator for this area is Cambridge Water. From a review of Cambridge Water's asset records water infrastructure is present along Histon Road and is described in detail as follows:

Junction 1 – Castle Street / Huntingdon Road and Victoria Road signalised T-junctions

- East side of the carriageway 6" diameter CI distribution trunk main;
- West side of the carriageway 4" diameter CI distribution trunk main;
- North side of Victoria Avenue 12" diameter CI trunk main, and 8" diameter CI distribution main;
- South side of Victoria Avenue 4" diameter CI trunk main;
- North side of Huntingdon Road 3" diameter and 6" diameter CI distribution trunk mains;
- South side of Huntingdon Road 12" diameter CI trunk main; and

- A number of valves on Histon Road, Victoria Road and Huntingdon Road.

Section 1

- West side of the carriageway 4" diameter and 6" diameter CI distribution mains;
- A 4" diameter uPVC distribution main linking to the 6" diameter CI distribution main to Bermuda Road;
- A 3" diameter CI distribution main linking the 6" diameter CI distribution main to Linden Close;
- A 125 mm diameter HPPE distribution main linking the 6" diameter CI distribution main to Rackham Close;
- A 90 mm diameter mPVC distribution main linking the 4" diameter CI distribution main to Aldi;
- A number of sluice valves on the 4" diameter and 6" diameter CI distribution mains at various locations; and
- Six fire hydrants on the 6" diameter CI distribution main.

Junction 2 – Akeman Street and Windsor Road priority T-junctions

- West side of the carriageway 4" diameter and 6" diameter CI distribution mains;
- Two 4" diameter CI distribution mains linking to 6" diameter CI distribution main to Akeman Street;
- A 4" diameter CI distribution main linking the 4" diameter CI distribution main to Windsor road; and
- Sluice valves on the 4" diameter and 6" diameter CI distribution mains.

Section 2

- West side of the carriageway 4" diameter and 6" diameter CI distribution mains; and
- Two fire hydrants on the 6" diameter CI distribution main, one on the 4" diameter CI trunk main, and one on the 6" diameter CI distribution main.

Junction 3 – Warwick Road / Gilbert Road signalised crossroads

- West side of the carriageway 15" diameter AC trunk main, 4" diameter and 6" diameter CI distribution mains;
- Two 6" diameter CI distribution mains linking the 15" diameter AC trunk main, 4" diameter and 6" diameter CI distribution mains to Gilbert Road;
- A 12" diameter CI distribution main linking the 15" diameter AC trunk road to Warwick Road;
- A number of sluice valves on the 15" diameter AC trunk main, 4" and 6" diameter CI distribution mains at various locations; and
- Four fire hydrants on the 6" diameter CI distribution main.

Section 3

- West side of the carriageway 15" diameter AC trunk main, 4" diameter and 6" diameter CI distribution mains;
- East side of the carriageway 15" diameter AC trunk road linking to the 15" diameter AC trunk main, 4" diameter and 6" diameter CI distribution mains on the west side of the road;
- A 6" diameter CI distribution main linking the 15" diameter AC trunk main, 4" diameter and 6" diameter CI distribution mains to Carisbrooke Road;
- A 3" diameter CI distribution main linking the 4" diameter and 6" diameter CI distribution mains to Cambridge Squash Club;

- A 3" diameter CI distribution main linking the 15" diameter AC trunk main, 4" diameter and 6" diameter CI distribution mains to Roseford Road;
- A 3" diameter uPVC diameter CI distribution main linking the 6" diameter CI distribution main to Chancellors Walk;
- A 4" diameter uPVC distribution main linking the 15" diameter AC trunk main, 4" diameter and 6" diameter CI distribution mains to Molewood Close;
- A 8" diameter uPVC and 3" diameter CI distribution mains linking the 15" diameter AC trunk main, 4" diameter and 6" diameter CI distribution mains to Brownlow Road;
- A number of sluice valves on the 15" diameter AC trunk main, 4" and 6" diameter CI distribution mains at various locations; and
- Four fire hydrants on the 6" diameter CI distribution main.

Junction 4 – NIAB development new road T-junction

- West side of the carriageway 3" diameter, 4" diameter and 6" diameter CI distribution mains;
- East side of the carriageway 15" diameter AC trunk main;
- A 3" diameter uPVC CI distribution main linking the 15" diameter AC trunk road, 3" diameter and 6" diameter CI distribution mains to Hazelwood Close;
- A 4" diameter CI distribution main linking the 3" diameter and 6" diameter CI distribution mains to Blackhall Road; and
- A number of sluice valves on the 15" diameter AC trunk main, and 3" diameter CI distribution mains at various locations.

Junction 5 – Kings Hedges Road signalised T-junction

- West side of the carriageway 6" diameter CI distribution main;
- East side of the carriageway 200 mm diameter DI trunk main, and 355 mm diameter HPPE CI trunk main; and
- A number of sluice valves on the 200 mm diameter DI trunk main, 355 mm diameter HPPE CI trunk main, and 6" diameter CI distribution mains at various locations.

TELECOMMUNICATIONS / DATA

5.3.3

Information has been obtained from the telecommunication providers along Histon Road which are BT OpenReach, Virgin Media and Vodafone, TeliaSonera and Verizon. The infrastructure owned by each and present along Milton Road is described in detail as follows:

BT OpenReach

Junction 1 – Castle Street / Huntingdon Road and Victoria Road

- East and west side of the carriageway ductile trench;
- One joint box on the west side of the carriageway;
- West side of Victoria Avenue ductile trench;
- North and south side of Huntingdon Road ductile trench; and
- Three joint boxes, three manholes and one pole on the north side of Huntingdon Road, along with five joint boxes, one manhole and a cabinet on the south side of Huntingdon Road.

Section 1

- East and west side of the carriageway ductile trench;
- A number of ductile trenches providing links at various locations; and

- Eighteen joint boxes, nine poles and one cabinet on the east side of the carriageway, along with eighteen joint boxes, one manhole, one pole and one Y-code on the west side of the carriageway.

Junction 2 – Akeman Street and Windsor Road priority T-junctions

- East and west side of the carriageway ductile trench;
- Two ductile trenches linking the west side of the carriageway to Windsor Road and Akeman Street; and
- One joint box and one manhole on the east side of the carriageway, along with six joint boxes, one manhole and one cabinet on the west side of the carriageway.

Section 2

- East and west side of the carriageway ductile trench;
- Two ductile trenches providing links at various locations; and
- One joint box and one manhole on the east side of the carriageway, along with three joint boxes and a pole on the west side of the carriageway.

Junction 3 – Warwick Road / Gilbert Road signalised crossroads

- East and west side of the carriageway ductile trench;
- Two ductile trenches linking the east side of the carriageway to Gilbert Road, and the west side of the carriageway to Warwick Road; and
- Three joint boxes on the east side of the carriageway, along with three joint boxes and one pole on the west side of the carriageway.

Section 3

- East and west side of the carriageway ductile trench;
- A number of ductile trenches providing links at various locations; and
- Fifteen joint boxes, one manhole and one cabinet on the east side of the carriageway, along with thirteen joint boxes, one manhole and four poles on the west side of the carriageway.

Junction 4 – NIAB development new road T-junction

- East and west side of the carriageway ductile trench;
- A ductile trench providing a link to the west of the carriageway; and
- Two joint boxes on the east side of the carriageway.

Junction 5 – Kings Hedges Road signalised T-junction

- East and west side of the carriageway ductile trench;
- A ductile trench providing a link to Kings Hedges Road;
- Nine joint boxes and one pole on the east side of the carriageway, along with one joint box and one pole on the west side of the carriageway.

Virgin Media

Junction 1 – Castle Street / Huntingdon Road and Victoria Road

- East and west side of carriageway ductile trench;
- One chamber on the east side of the carriageway;
- East and west side of Victoria Avenue ductile trench;
- North and south side of Huntingdon Road ductile trench; and

- Three chambers on the south side and two chambers on the north side of Huntingdon Road.

Section 1 –

- East and west side of the carriageway ductile trench;
- Six ductile trenches linking the east and west sides of the carriageway; and
- Six chambers and three cabinets on the east side of the carriageway, along with four chambers on the west side of the carriageway.

Junction 2 – Akeman Street and Windsor Road priority T-junctions

- East and west side of the carriageway ductile trench;
- One ductile trench linking the east and west sides of the carriageway; and
- One chamber on the west side of the carriageway.

Section 2

- East and west side of the carriageway ductile trench; and
- One ductile trench linking the east and west sides of the carriageway.

Junction 3 – Warwick Road / Gilbert Road signalised crossroads

- East and west side of the carriageway ductile trench; and
- Two chambers and one cabinet on the east side of the carriageway, along with two chambers on the west side the carriageway.

Section 3

- East and west side of the carriageway ductile trench;
- One ductile trench linking the east and west sides of the carriageway; and
- Seven chambers and three cabinets on the east side of the carriageway, along with four chambers and one cabinet on the east side of the carriageway.

Junction 4 – NIAB development new road T-junction

- East and west side of the carriageway ductile trench;
- Two ductile trench linking the east and west sides of the carriageway; and
- Three chambers on the east side of the carriageway, along with two chambers and one cabinet on the west side the carriageway.

Junction 5 – Kings Hedges Road signalised T-junction

- East and west side of the carriageway ductile trench; and
- Four chambers along the east side of the carriageway and two chambers along the west side of the carriageway.

Vodafone

Junction 1 – Castle Street / Huntingdon Road and Victoria Road

- No infrastructure present.

Section 1

- No infrastructure present.

Junction 2 – Akeman Street and Windsor Road priority T-junctions

- No infrastructure present.

Section 2

→ No infrastructure present.

Junction 3 – Warwick Road / Gilbert Road signalised crossroads

→ No infrastructure present.

Section 3

→ No infrastructure present;

→ Junction 4 – NIAB development new road T-junction; and

→ No infrastructure present.

Junction 5 – Kings Hedges Road signalised T-junction

→ No infrastructure present.

TeliaSonera

Junction 1 – Castle Street / Huntingdon Road and Victoria Road

→ No infrastructure present.

Section 1 –

→ No infrastructure present.

Junction 2 – Akeman Street and Windsor Road priority T-junctions

→ No infrastructure present.

Section 2 –

→ No infrastructure present.

Junction 3 – Warwick Road / Gilbert Road signalised crossroads

→ No infrastructure present.

Section 3 –

→ No infrastructure present.

Junction 4 – NIAB development new road T-junction

→ No infrastructure present.

Junction 5 – Kings Hedges Road signalised T-junction

→ No infrastructure present.

Verizon

Junction 1 – Castle Street / Huntingdon Road and Victoria Road

→ No infrastructure present.

Section 1 –

→ No infrastructure present.

Junction 2 – Akeman Street and Windsor Road priority T-junctions

→ No infrastructure present.

Section 2 –

→ No infrastructure present.

Junction 3 – Warwick Road / Gilbert Road signalised crossroads

→ No infrastructure present.

Section 3 –

→ No infrastructure present.

Junction 4 – NIAB development new road T-junction

→ No infrastructure present.

Junction 5 – Kings Hedges Road signalised T-junction

→ No infrastructure present.

ELECTRICITY

5.3.4

Information has been obtained from UK Power Networks (UKPN) along Milton Road. The infrastructure owned by each and present along Milton Road is described in detail as follows:

Junction 1 – Castle Street / Huntingdon Road and Victoria Road

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route surrounding the gyratory, along with mains joints, service cables and terminations; and
- West side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 /400V (LV) cable route, along with mains joints, service cables and terminations.

Section 1

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route surrounding the gyratory, along with mains joints, service cables and terminations; and
- West side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 /400V (LV) cable route, along with mains joints, service cables and terminations.

Junction 2 – Akeman Street and Windsor Road priority T-junctions

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route surrounding the gyratory, along with mains joints, service cables and terminations; and
- West side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 /400V (LV) cable route, along with mains joints, service cables and terminations, connect to an Electrical Sub-Station.

Section 2

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route surrounding the gyratory, along with mains joints, service cables and terminations, connect to an Electrical Sub-Station; and
- West side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 /400V (LV) cable route, along with mains joints, service cables and terminations.

Junction 3 – Warwick Road / Gilbert Road signalised crossroads

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route surrounding the gyratory, along with mains joints, service cables and terminations; and
- West side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 /400V (LV) cable route, along with mains joints, service cables and terminations.

Section 3

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route surrounding the gyratory, along with mains joints, service cables and terminations; and
- West side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 /400V (LV) cable route, along with mains joints, service cables and terminations, connect to an Electrical Sub-Station.

Junction 4 – NIAB development new road T-junction

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route surrounding the gyratory, along with mains joints, service cables and terminations; and
- West side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 /400V (LV) cable route, along with mains joints, service cables and terminations.

Junction 5 – Kings Hedges Road signalised T-junction

- East side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables over 230 / 400V and up to 11kV (HV) cable route, and 230 / 400V (LV) cable route surrounding the gyratory, along with mains joints, service cables and terminations; and
- West side of the carriageway primary distribution cables over 11kV and up to 33kV, secondary distribution cables 230 /400V (LV) cable route, along with mains joints, service cables and terminations.

6 OTHER SURVEYS & GAP ANALYSIS

6.1.1 OTHER SURVEYS

6.1.2 Other surveys undertaken have included full topographical surveys of the Milton Road and Histon Road Corridors. Highway boundary information has been provided by Cambridgeshire County Council as has all OS mapping required.

6.1.3 Traffic surveys are being undertaken by Cambridgeshire County Council including manual traffic counts and ANPR surveys.

6.1.4 GAP ANALYSIS

6.1.5 The following additional information is seen as being required or useful (as noted) for the completion of the draft options report:

- **REQUIRED** - Any available travel plans produced by the key employment sites and schools along the corridors;
- **USEFUL** – Any relevant information (including surveys) arising from other corridor studies and the Cambridge Access Study;
- **REQUIRED** – Any transport assessments available (Future Proposed / Committed Developments), particularly for the North Western Fringe Development and other developments with approved planning applications;
- **REQUIRED** – Any available information on relevant developments currently in the pre-planning application stages; and
- **REQUIRED** – Any relevant communications information relevant to the area and potential options work (including project communications plan).

