

5. Access & Movement

5.1 Cambridge Transport Network

Road

Cambridge is positioned in the northwest corner of a triangle of strategic routes comprising the A14, A11 and M11 which provide important links to London, Birmingham, the east coast ports and the north via the M11, A10, A11 and A14.

Arterial routes connect the strategic road network into the city to an outer ring road (A1134) which acts as a strategic orbital route for the city.

The East Road-Gonville Place-Lensfield Road route offers a convenient link across the outer ring road to form what is referred to locally as the inner ring road, although it does not have any formal designation as such.

Equally, Hills Road also provides an important link across the outer ring road to the city centre, via its connection to the informal inner ring at the Catholic Church junction. Whilst providing important access to the city centre these cross links also attract through traffic movements. As such the flows on these routes are high. Recent Automatic Number Plate Recognition (ANPR) survey data suggests that East Road-Gonville Place-Lensfield Road acts as a well used through route.

Other roads such as Mill Road and Coldhams Lane also provide opportunities to bypass sections of the outer ring road which results in nonessential vehicle movements taking place on local roads.

Rail

Cambridge has two railway stations. The main station is located in Station Road to the south of the city centre, off Hills Road. The station provides rail connections for major centres including London, Birmingham, Ipswich, Norwich, Stansted Airport and King's Lynn. The busiest and most frequent services connect Cambridge with London (King's Cross) and London (Liverpool Street).

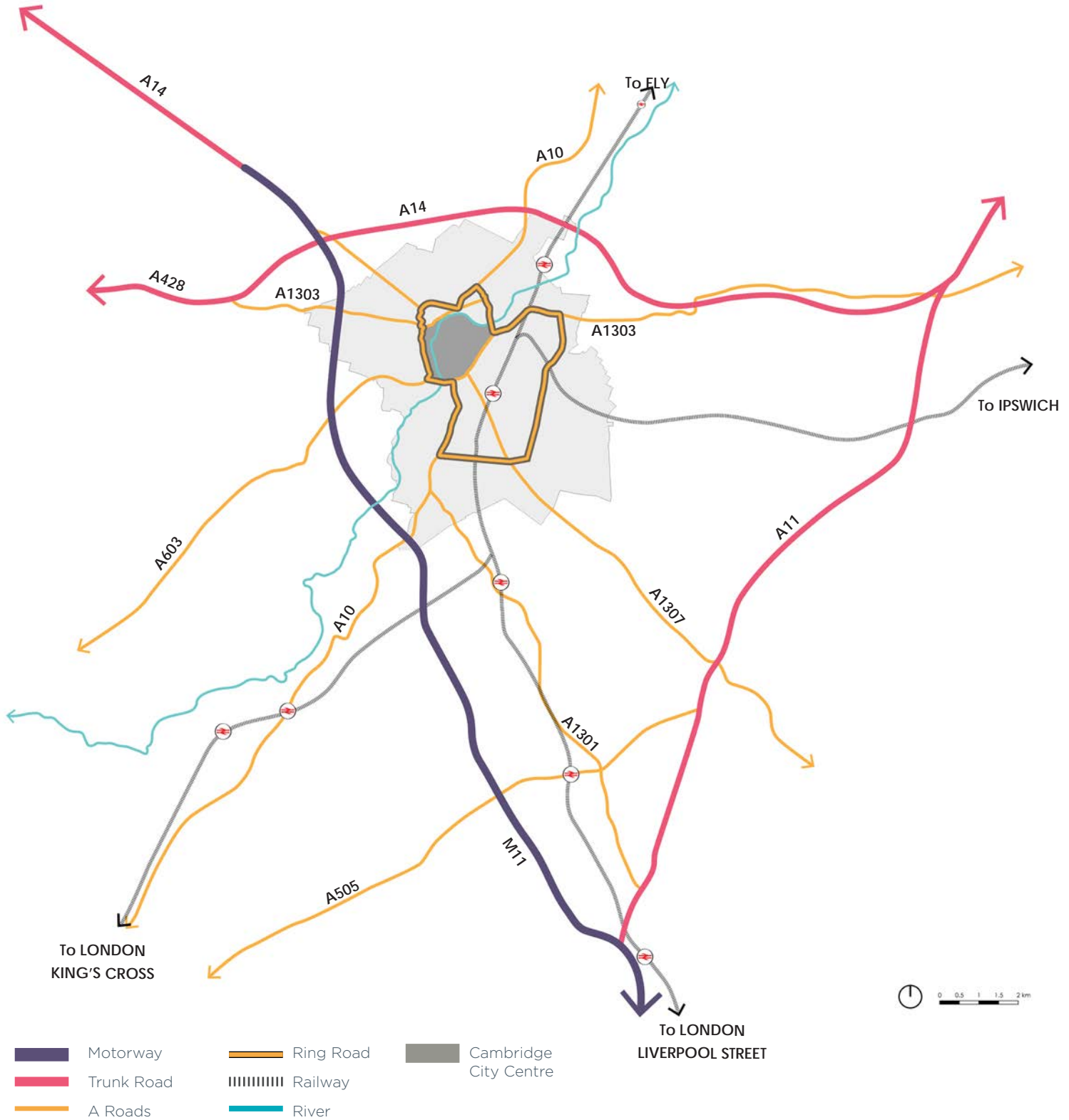
Cambridge North station is located on the northern fringe of the city. It provides access to many of the services that operate from the main station, removing the need for many rail users to travel into the heart of the city to access rail services.

Both stations are served by Busway services, whilst many other bus services in the city provide connections to the main station.



Image 50: Station Square & Railway Station

Figure 27: Strategic Network



Key Access Routes

The River Cam restricts access to the City Centre from the west and north and, as a result, motorised access is limited to three key routes; Magdalene Street, Victoria Avenue and Silver Street (for part of the day only due to a motor vehicle access restriction). From the east and south the city centre is more accessible to motorised traffic via Newmarket Road/Maid's Causeway, Parkside, Regent Street and Trumpington Street. Station Road/Hills Road offers the most direct route for all modes linking the main railway station with the city centre.

From the west, access for pedestrians and cyclists is also available via Garret Hostel Lane. From the north the footbridges across the river to Jesus Green and Midsummer Common connect to numerous well used pedestrian and cycle access routes. Parker's Piece also provides various well used pedestrian and cycle access routes from the east. Burleigh Street also acts as a key pedestrian and cycle access route for the east side although cycling is prohibited during the middle hours of the day. In the south of the study area Tennis Court Road is also a key gateway for pedestrian and cyclist access.



Image 51: Magdalene Street - A Key Access Route

The Eastern Gateway and Mitcham's Corner opportunity areas are key points of access for the city centre, whilst the Hills Road/Station Road and Mill Road opportunity areas act as both a gateway and access route for the central area.

Based on 2017 ANPR surveys, over 42,000 motor vehicle and cycle trips are made into the city centre on a typical weekday.

Figure 28: Weekday inbound Core Area Trips by Mode Wednesday 14th June 2017
Source: GCP ANPR Survey 2017

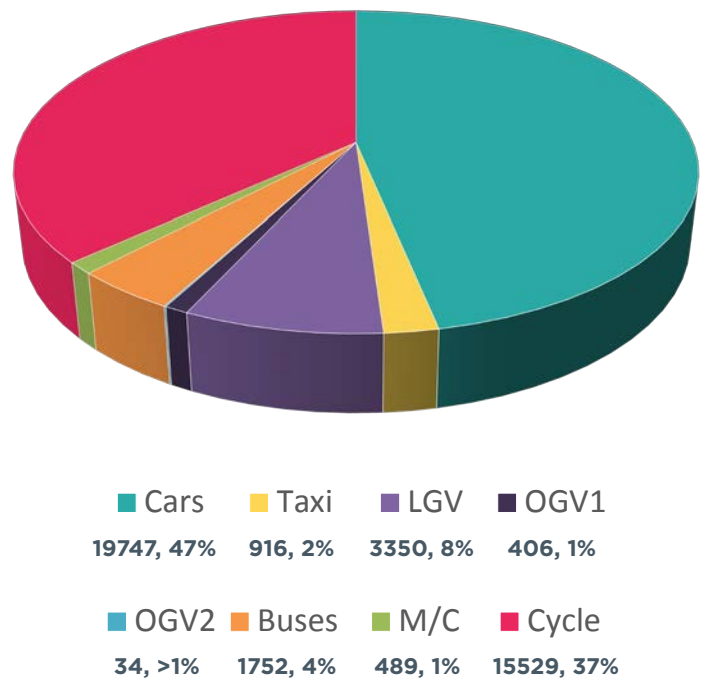


Figure 29: City Centre Access & Arrival Points



- | | | | | | |
|--|--|--|------------------------------------|--|---------------------|
| | Multi-Modal Entry Points | | Bus Station/
Interchange | | Car & Cycle Park |
| | Pedestrians & Cyclists
Entry Points | | Tourist Coach Drop Off/
Pick Up | | Taxi Rank |
| | Car Park | | Railway Station | | Study Area Boundary |

5.2 Pedestrian Network

Context

The city centre's compact nature and favourable topography, with many key attractors within a 10 minute walking time from arrival points, enables pedestrians to access a large proportion of the city on foot. However, the nature of the streets and paths within the historic core makes it more difficult to navigate.

City Centre pedestrians represent a wide demography with wide ranging reasons for using the City Centre. Residents, workers, students and retail, leisure and culture visitors change the role and function of key areas with their pattern of use varying widely throughout the day and year.

The 2001 and 2011 census data suggests that the walking mode share is significant but static, with nearly a quarter of Cambridge residents who work in the city walking to work.

In addition, the number, location and extent of green spaces, particularly on the eastern side of the City Centre, provide numerous key walking routes allowing many pedestrians to incorporate a part of their journey through open, traffic free green space.

Table 1 shows pedestrian flows on the key river crossing access/egress points.

**Table 1: River Cam Screen-Line Count 2018
Weekday 7am-7pm**

Location	Pedestrians
Victoria Avenue	1511
Magdalene Street	9435
Silver Street	2546
Pye Footbridge	1017
Fort St. George Bridge	1394
Jesus Lock Bridge	2505
Garret Hostel Lane Bridge	3440
Mill Lane Weir	2359
Coe Fen	872

Source: Cambridgeshire County Council



Image 52: Jesus Lock Footbridge



Image 53: Parker's Piece

Network Analysis

The pedestrian walking network comprises of a mix of public multi-modal routes, pedestrian priority routes with some segregation from motorised traffic, public rights of way and private pedestrian routes through private land with restricted access.

Many of the pedestrian priority routes, where walking is segregated from motorised traffic but often coexists with cycling, are located in the historic core streets. These streets are typically narrow with many retaining their medieval character.

Pedestrians are permitted through various college grounds to the west of the city centre but access is restricted to certain times (see table below). The colleges most frequently visited by tourists operate restricted public access times with charges for entry, limiting free access to students and faculty members.

The Grand Arcade, Lion Yard and Grafton Centre shopping provide permissive pedestrian routes but these are only open during the day and early evening, limiting permeability at night.



Image 54: Entrance to St. John's College

Table 2: College Public Accessibility Time

Source: University of Cambridge

College	Time	Cost
Sidney Sussex College	open all day	free
Jesus College	9am - 6pm	free
Peterhouse College	9am - 5pm	free
Downing College	9am - 5pm	free
Emmanuel College Gardens	9am - 5pm	free
Trinity College	9:15am - 12 noon and 2pm - 5:30pm visits during exam time by prior arrangement only	free
Queen's College	Mar-Sep: 10am-4.30pm Sep-Nov: Mon-Fri 2-4pm, Sat-Sun 10am-4.30pm Nov-Mar 2-4pm The President's Lodge, the Old Library, the War Memorial Library, Cripps Dining Hall, staircases and the Fellow's Garden are not open to visitors	open to Cambridge residents charges visitors
Corpus Christi College	Jan-Apr 2-4pm, Jul-Sep 10.30am-4.30pm & Oct-Dec 2-4pm	charges
St John's College	Mar-Oct 10am-5pm and Nov-Feb 10am-3.30pm	charges
Clare College	Opening times vary When open, the Fellows' and Scholars' Gardens, Chapel & Hall can be visited Mon - Sun 10:45am - 4:15pm During term time, visits to the gardens are by special arrangement only	charges
Christ's College	Monday - Friday 9am - 4pm	free
King's College	Mon 9.45am- 3.30pm and Tues-Fri 9.30am-3.30pm Sat 9.30am-3.15pm and Sun 1.15-2.30pm Out of term: Mon 9.45am-4.30pm; Tues-Sun 9.30am-4.30pm	charges

Activity

Cambridge Business Improvement District (BID) footfall analysis (2018) has identified five primary pedestrian locations within the city centre, which are monitored throughout the year. The percentages below indicate the average share of the footfall between these locations over that last year.

Table 3: Popular Locations

Popular Tourist Locations	Popular Local Locations
Sidney Street 38.2% Bridge Street 15.4% King's Parade 12.7%	Fitzroy Street 22% Regent Street 11.6%

Throughout the year, hourly footfall generally follows a bell-shaped curve, peaking between 13:00-15:00.

Daily numbers tend to be similar across Monday-Thursday (c80-100,000 depending on month); exhibit a slight increase on Friday/Sunday (c90-110,000) although this is not consistent, and Sunday is often similar to Monday-Thursday levels and higher on Saturday (120-150,000, depending on month)

Monthly data demonstrates the impact of the University timetable on the city's footfall as months with a drop in numbers coincide with out of term times of year.

During the University summer recess, footfall remains high due to an increase in tourist numbers and summer language schools.

Tourism

The primary attractions for tourists to Cambridge are the University, Colleges and the medieval historic core streets which draw visitors from across the globe. The city centre also attracts large numbers of retail and leisure visitors from the surrounding region.

King's Parade, with its close proximity to King's College Chapel and other architecturally significant college buildings is one of the busiest tourist streets. Riverside destinations such as Quayside by Bridge Street and the Mill Pond adjacent to Silver Street are also very popular locations for tourists where there are opportunities to explore the river and colleges by punt which has become a quintessential activity for Cambridge visitors.

The Cambridge BID Lean Six Sigma report 2017 identifies punt guides at Bridge Street, Silver Street, the Grand Arcade, Station Road, Kings Parade and Regent Street, with related high levels of tourist footfall in these locations.

Silver Street, Bridge Street and Garrett Hostel Lane have become key access routes into the historic core streets, in part due to the tourist drop-off point in Queen's Road. The limited pedestrian space available along the river and on the river bridges in particular often results in pedestrians and cyclists competing for the space, at times creating a hostile environment that undermines the quality of the visitor experience.



Image 55: Pedestrian & Cycle Congestion on Garret Hostel Bridge



Image 56: Narrow Footway in Silver Street

Assessment

Convenience & Comfort

Many footways in the city centre are constrained and narrow resulting in few streets which are comfortable for pedestrians to access, move around or rest without undesirable interaction with other pedestrians or other transport modes. This is particularly true of the historic core streets which are the focus for tourist activity.

The high demand for movement within the historic core creates a challenging and uninviting space for ambulant disabled people, wheelchair users, visually impaired, people with young children / luggage, and visitors unfamiliar with the city centre.

Footfall numbers for Fitzroy Street are at their peak during weekends but the current restriction on cycling does not apply on Sundays. Along with other streets in the historic core, the relationship between pedestrian footfall and the levels of cycling needs further consideration given the increases expected from planned growth.

Conditions for pedestrians are very poor along key access routes like East Road and Hills Road where public space is heavily engineered in favour of motor vehicle movements at the expense of walking and cycling needs.



Image 57: King's Parade



Image 58: Hills Road

Wayfinding

Despite recent investments in pedestrian signing infrastructure, poor signage and wayfinding continues to contribute to visitors' disorientation on many routes with clusters of pedestrians at key tourist locations causing obstruction to others passing through.



Image 59: Tourists at the Corpus Christi Clock, Trumpington Street



Image 60: Wayfinding Street Map

Safety

Many of the historic core streets are now subject to motor vehicle access restrictions to facilitate pedestrian and cycle access. However, during busy periods inadequate space exists in some streets for the comfortable and safe coexistence of walking and cycling. This problem is compounded by tourist activity during university term times in particular.

In some locations, inactive frontages limit footfall due to lack of natural surveillance, leading to some spaces becoming intimidating to those passing through, particularly after dark.

Public engagement has highlighted that the lack of night-time activity has led many parts of the city centre feeling intimidating at night. Historically, the city centre has had a poor street lighting and although improvements have been made through the County Council's street lighting PFI contract, some areas still feel intimidating during the hours of darkness.

Public engagement has also identified that many pedestrians are deterred from walking through open green spaces after dark due to the lack of sufficient lighting. This may have a negative effect on the evening economy and indirectly promote motor vehicle access to the city centre in the evenings.

Key Issues to Address

- Interaction between pedestrians and cyclists in key pedestrian areas and streets
- Achieving greater pedestrian priority in more city centre streets
- Wayfinding infrastructure at key arrival points to encourage tourist activity across a wider area
- Quality of the environment during the evening/ hours of darkness
- Standard of street lighting
- Pedestrian safety and convenience at key gateway junctions and routes



Image 61: Trinity Street - Pedestrians & Cyclists



Image 62: Christ's Pieces - Wayfinding Map

5.3 Cycle Network

Context

The city's relatively compact scale and flat terrain has contributed to Cambridge becoming the busiest cycling city in the UK.

33% of all residents cycling three times a week and almost half the population cycling at least once a week. Additionally, 29% of trips in and around the city are made by people on cycles with more than a million trips recorded by the Parker's Piece cycle counter each year. Cycle use continues to grow as evident from cycle mode share increasing by 12% between 2004 and 2014 (GCP, 2017).

Based on 2017 ANPR video surveys, nearly 16,000 cycling trips are made into the city centre on a typical weekday. Table 3 shows cycle flows at some of the key river crossing access/egress points.

**Table 4: River Cam Screen-Line Count 2018
Weekday 7am-7pm**

Location	Cycles
Victoria Avenue	2659
Magdalene Street	6291
Silver Street	3892
Pye Footbridge	1127
Fort St. George Bridge	2109
Jesus Lock Bridge	2054
Garret Hostel Lane Bridge	3294
Mill Lane Weir	518
Coe Fen	1951

Source: Cambridgeshire County Council

Network Analysis

Permeability

Whilst cyclists are permitted to use most city centre streets, there are a few where cycling is restricted. In Fitzroy Street and Burleigh Street cycling is prohibited during peak shopping times when footfall is high although the restriction does not apply on Sundays which is the second busiest shopping day. Cycling is also prohibited in Petty Cury and St Mary's Passage, which are predominately pedestrian environments, and across Christ's Pieces which link the historic core and Grafton shopping areas.

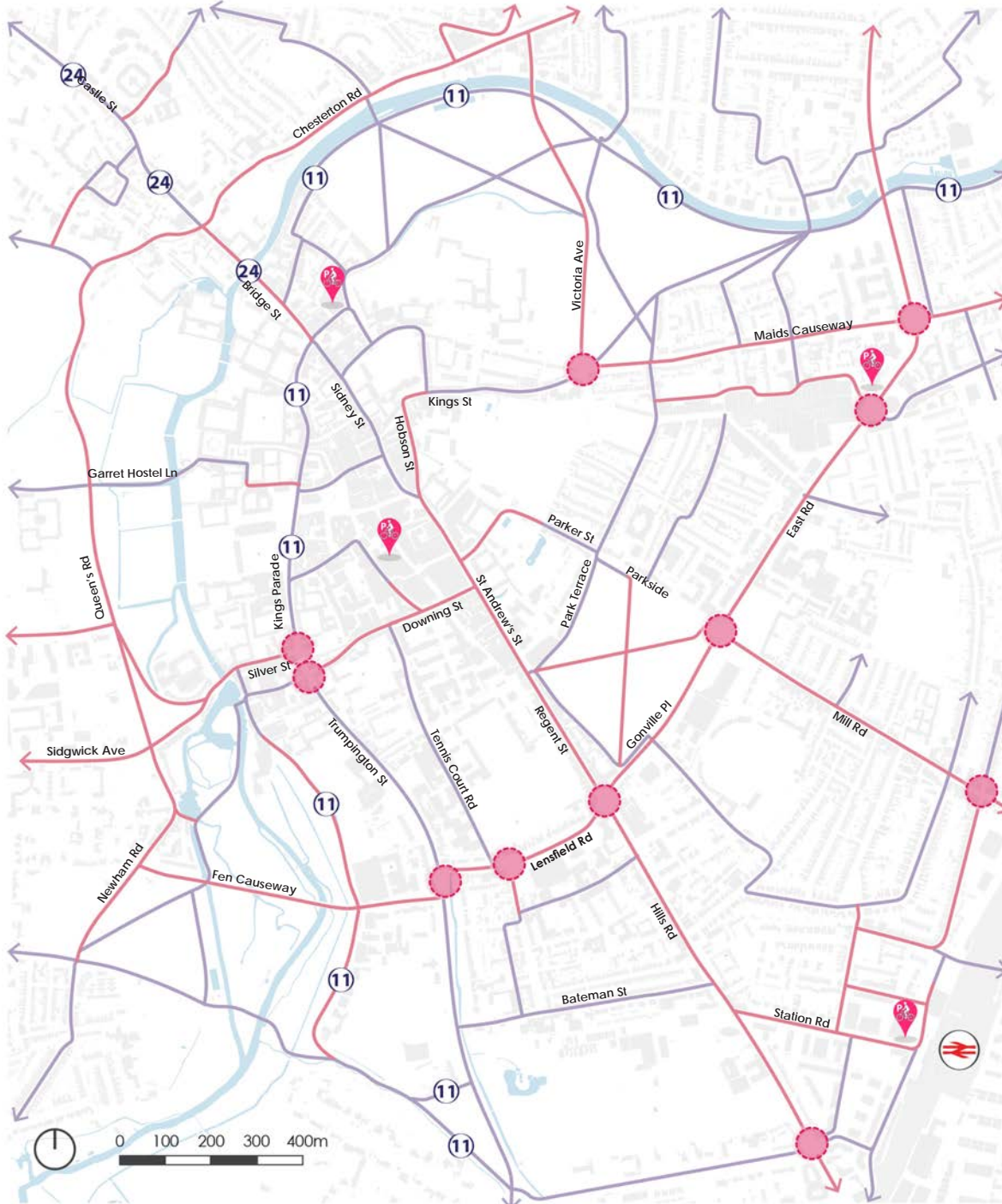
The city centre's open spaces, in particular Jesus Green and Midsummer Common, provide key off-road cycle routes into and across the northern part of the city centre. These routes link to other routes across Parker's Piece via residential streets and are popular routes for avoiding congested arterial and orbital routes.

Probably the most restrictive aspect for cyclists are the one-way streets in the historic core area. The St. John's Street-Trinity Street-Market Street-Sidney Street one-way system restricts cycling permeability although many cyclists choose to ignore the one-way restriction and ride in both directions. In 1992 cycling was prohibited in these streets during the busiest shopping hours to address concerns over the impact of cycling on pedestrian safety, convenience and comfort but this proved difficult to enforce and the restriction was rescinded several years ago. More recently, some one-way streets have been opened up to two-way cycling through changes in signing regulations; Bene't Street and Corn Exchange Street are good examples.



Image 63: Midsummer Common Cycle Route

Figure 31: Cycling Network & Arrival Points



- 11** National Cycle Route 11
- 24** Regional Cycle Route 24
- Key Locations Requiring Improvement
- 📍 Main Cycle Parking
- Main Cycle Routes
 - - Higher Priority for Improvement
 - - Lower Priority For Improvement
- Study Area Boundary

Many traffic signal controlled junctions that provide access to the central area are considered to represent a hostile environment for many cyclists. Some improvements have been made such as the introduction of early start green signals for cyclists at the Castle Street/Northampton Street and Catholic Church (Hills Road/Lensfield Road) junctions.

Whilst Cambridge enjoys the highest level of cycling in the UK, it also has a significant cycle safety problem; based on the County Council identified accident cluster sites in and adjacent to the city centre, around 80% of recorded injury accidents involve a cyclist. Concerns over road safety are often quoted as the reason why some people in Cambridge are unwilling to consider cycling as a means of transport.



Image 64: Two Way Cycling Permitted in Bene't Street

Cycle Parking

Within the city centre designated cycle parking is provided in many streets and is well used particularly by students and local residents. Secure cycle parking facilities are located within the Grand Arcade, Grafton and Park Street car parks and at Cambridge station.

The Grand Arcade cycle park offers indoor parking facilities for over 400 cycles, including valet parking. It closes every night at 11.30pm. A cycle shop run is based inside which offers daily and long-term valet cycle parking.

Park Street cycle park offers basement level indoor parking facilities for over 200 cycles.

The Grafton Centre has parking for 50 cycles, with further on street parking on Fitzroy St and Burleigh

St. Bike parking at Anglia Ruskin's Compass House provides public outdoor multi-rack facilities close to the Grafton Centre.

At the railway station the cycle park provides indoor parking facilities for 3,000 cycles. Minimal on street parking is available in the area.

Often the demand for on-street cycle parking far exceeds the number of designated spaces provided and leads to the indiscriminate parking of cycles which further restricts pavement space in many streets where space is already at a premium. This is a particular problem in the historic core streets where shoppers, students and workers compete for available space.



Image 65: Station Square Secure Cycle Parking

Cycle Hire

Currently there are two types of bicycle hire available within the city centre; private bicycle hire via local businesses and University colleges and, more recently, the introduction of dockless bicycle hire schemes. Dockless bicycle hire is a service in which bicycles can be located, hired and unlocked using a smartphone app and do not require a docking station.

While dockless bicycles offer the potential to make cycling more accessible and attractive, without careful management they could result in additional street clutter and associated negative impacts on pedestrians in pressurised areas within the city centre. The County and City Councils has endorsed a code of conduct to influence the operation of dockless hire schemes.

Assessment

Permeability & Quality

The city centre network provides a reasonable degree of permeability although to the western side accessibility is very limited due to the lack of public routes and the limitations of River Cam crossing points. One-way streets tend to undermine permeability although this is being addressed over time.

Many primary cycling routes within the city centre share street space with buses, taxis and delivery vehicles. Within the historic core, some streets have been pedestrianised to some extent in response to the narrow streetscape and high footfall; most of these streets are also popular cycling routes. Many important cycling routes run across green open spaces which are well used by cyclists and pedestrians, offering segregation from motorised traffic.

Cycling infrastructure in the city centre is of a varying standard with a mix of on and off-road facilities, only some of which achieves any level of segregation from traffic and pedestrians. On many routes there is often a lack of continuity with cyclists experiencing a wide range of cycling facility of varying standard in a typical trip through the city centre. Some dedicated cycle paths and routes end immediately priority to or at key junctions where cyclists are required to re-join traffic dominated streets. Whilst Cambridge enjoys a reputation for being cycle friendly, in many streets the quality of infrastructure still fails to meet many cyclists' expectations.

Safety & Comfort

Stakeholder feedback highlights concerns at key green space entrances and junction gateways to the city centre including Bridge Street, Silver Street and Garret Hostel Lane bridges. The domination of traffic at key junction gateways and on main roads such as East Road, where car movements tend to take priority over pedestrian and cyclist needs, is also a common concern.

Road safety concerns remain a barrier to encouraging cycling. The generally narrow streets within the city centre offer limited opportunities to provide segregated infrastructure and interaction between cyclists and pedestrians in some streets undermines the safety and comfort of both parties during the busiest hours of the day. This is particularly problematic in King's Parade, Market Square and around Magdalene Bridge where footways are narrow, and pedestrian and cyclist volumes are high.



Image 66: Poorly Maintained Cycle Lane ending at Junction in St. Andrew's Street

Cycle Parking

The clustering of activities in the historic core has resulted in existing on-street cycle parking reaching over capacity in primary locations. As a result, significant volumes of cycles are parked indiscriminately against walls, fences, trees and street furniture often impacting on pedestrian movement and the quality of the public realm.

Unmanaged cycle parking can lead to spaces being occupied for long periods which is problematic at busy locations where a turnover of spaces is highly desirable; outside the Sainsbury store in Sidney Street is a good example. A regime where spaces near to key locations is limited to short stay (say for shoppers) with longer stays (say for staff/workers) being provided in more secure off-street cycle parks may be a more appropriate way of managing future demand.

Theft of bicycles is a continuing issue; Police crime figures average between 60 and 70 bikes reported stolen per month (Police Crime Maps). In the historic core secure parking is available within the multi-storey car parks but many cyclists are attracted to the convenience of on-street parking which is often closer to their destination.

Key Issues to Address

- Interaction between pedestrians and cyclists in key pedestrian areas and streets
- Achieving more segregation of cycling from motorised traffic
- Impact of cycle parking on the public realm
- Provision of additional and secure parking capacity
- Impact of one-way streets/access restrictions on network permeability
- Cycling safety and convenience at key gateway junctions



Image 67: Safety Concerns at Trumpington Street Mini-Roundabout



Image 68: Indiscriminate Cycling Parking along Trinity St.



Image 69: Sidney Street Cycle Parking

5.4 Public Transport Network

Context

Whilst buses are an important mode of transport to access the city centre, the mode share for buses in the city as a whole is relatively low compared with other similar cities and patronage levels have been in decline. Various bus/taxi gates have been introduced in the city centre to remove through traffic movements to facilitate more efficient access for buses and taxis.

The Stagecoach Citi bus network operates on a commercial basis as does many of the services connecting the city with towns and villages further afield but some of the rural services that connect to Cambridge are contracted by the County Council.

Buses and taxis (hackney carriages and private hire cars) are exempt from most of the access restrictions in the city centre and are able to use the majority of the city centre streets although access to the Trinity Street/Market Street/Sidney Street pedestrianised area is prohibited during the middle of the day (10am-4pm, Mon-Sat).

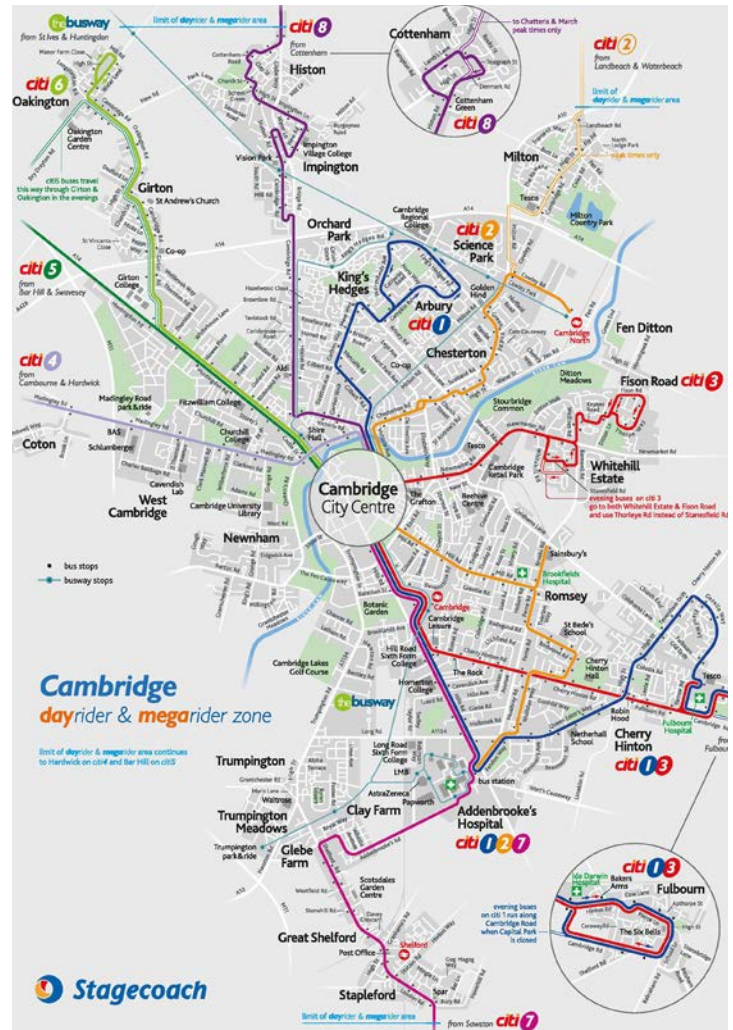
The City Council Taxicard scheme offers concession rates to those with valid proof of entitled benefits. Local licensed private hire cars are available for pre-booking only and operate via a meter or advance quote. Smartphone app-based taxi services have also taken off in recent years with customers able to request a ride with fares automatically calculated and charged to the persons' account.

Based on 2017 ANPR surveys, over 1,700 bus trips and nearly 1,000 taxi trips are made into the city centre on a typical weekday.

Rail Based arrivals/Departures

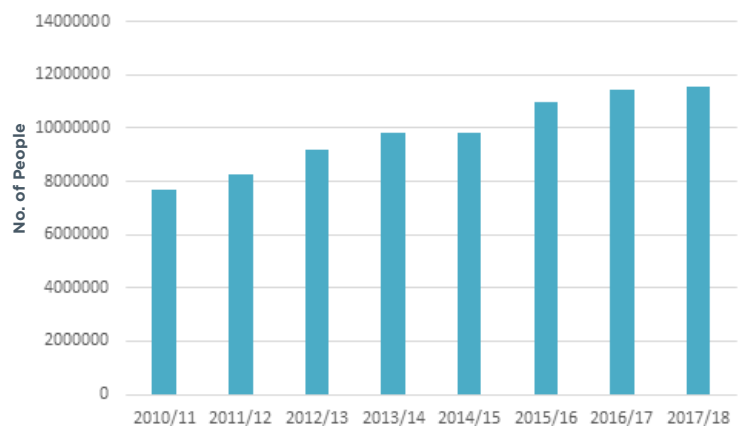
The city's main railway station is approximately a 20-30 minute walk from the historic core, making it just beyond comfortable for those less able to walk or with disabilities, small children or luggage. Therefore, many rail passengers then access the city centre either by bus or taxi. Based on exit and entry movements, rail use at the station has grown steadily over the last few years.

Figure 32: Cambridge City Bus Route Map



Source: Stagecoach 2018

Figure 33: Cambridge Rail Station: Annual Entry/Exit Figures



Source: Office of Rail & Road

Bus/Coach Based Arrivals/Departures

Drummer Street bus station and the bus stops on Emmanuel Street, Drummer Street and St. Andrew's Street serve as a city centre bus hub through which the majority of scheduled local bus services pass. The bus hub is well connected to the railway station by several local bus services.

The Grafton Centre, in the east of the city centre, has a small bus interchange served by Park & Ride and some local services.

Long distance buses (National Express and Stagecoach X5 service which links Oxford and Cambridge) arrive/depart the central area via stops along Parkside.

Queen's Road acts as the main tourist coach drop-off/pick up point for the city centre with alternative but less popular points available on Chesterton Road and Trumpington Road. The Queens Road site provides a 10 minute limited waiting time for drop off and pick up.



Image 70: Drummer Street Bus Station



Image 71: Parkside Long Distance Bus Stops

Taxis Based Arrivals/Departures

There are three main hackney carriage ranks in the city centre; Drummer Street, St Andrew's Street and Parkside. A rank is also provided in Station Square adjacent to the railway station. City centre taxi customers generally take cabs from the St. Andrew's Street rank with the Drummer Street rank more often used as a feeder rank to help manage over-ranking in St. Andrew's Street.

During the evening when demand for taxi services is often high, given the lack of late night bus services, additional rank space is available on Sidney Street, Bridge Street, Corn Exchange Street and Market Square.



Image 72: Station Square Taxi Rank

Network Analysis: Bus/Coach

The Drummer Street bus hub, which comprises of the bus station and various adjacent bus stops in Drummer Street, Emmanuel Street and St. Andrew's Street, remains the main focus for bus based access to/from the city centre with the majority of bus routes either passing through or terminating in the city centre. The Grafton bus interchange adjacent to East Road has four bus stops and serves the east side of the city centre.

At present low frequency services run during the evening, with the last service leaving the city centre at midnight.

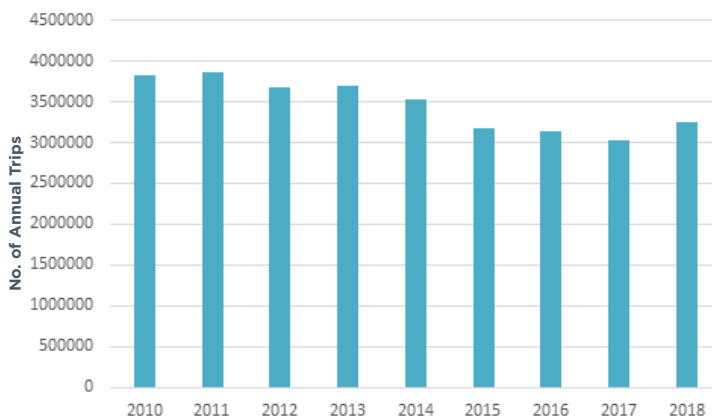
The Citi bus network of services are provided by Stagecoach. Other services which connect to towns and villages across the county are operated by both Stagecoach and Whippet. Stagecoach and Whippet both run services on the Cambridgeshire Busway all of which provide access to the city centre.

Park and Ride buses provide a frequent service to the city centre from five sites on the edge of the city. These services are operated by Stagecoach under a partnership agreement. The sites offer around 5300 car parking spaces. The bus services are well used although patronage dropped following the introduction of a charge for on-site car parking in 2014. This charge was lifted in April 2018 and patronage is on the rise again. Park and cycle has grown in popularity at the sites and around 650 cycle parking spaces are currently available.

Cambridge University has contracted with Whippet to operate the well used Universal Bus which provides day time links between its various campuses and other college sites, running between Eddington in the north to the Cambridge Biomedical Campus in the south passing to the west of the historic core area.

For services that terminate in the city centre, layover bays are provided in Park Terrace and Victoria Avenue to allow buses to wait whilst out of service. Although reasonable close to the Drummer Street area bus hub, neither location is compatible with the surrounding public realm.

Figure 34: Park & Ride Patronage



Source: Cambridgeshire County Council



Image 73: Park & Ride Bus Service



Image 74: Park Terrace Bus Layover Bay

Figure 35: Public Transport Network, Bus Interchanges & Taxi Ranks



Assessment: Bus/Coach

Interchange Facilities

Stakeholder discussions suggest that existing bus journey services are often unreliable and perceived as expensive, which has contributed towards reduced patronage levels.

A review of the available bus information suggests that the bus network is comprehensive and far reaching but services are fragmented, resulting in a need to change buses to reach some key locations. Congestion in the heart of the city, particularly during peak periods, is in part a consequence of the number of bus services passing through the city centre.

The Drummer Street area bus hub does not generally sit comfortably within the constrained streetscape. Competition for road space between buses and other motor vehicles that pass through the area to access the historic core streets leads to congestion causing additional delays and undermines the safe and convenient passage of the many cyclists that also pass through the area.

As well as acting as a bus hub, the area is also a busy through-fare for many pedestrians and cyclists and the available public space provides inadequate capacity during peak periods. During peak periods passengers waiting to board buses conflict with pedestrians passing through the area leading to congested footway space. Consequently, the environment for both user groups is sub-optimal.

Despite improvements undertaken in the area in 2007/08 as part of the Grand Arcade development to provide better access to bus stops and to reduce delays, the area is currently working at or beyond capacity during peak periods with little scope for accommodating any additional bus services.

Access/egress for the Grafton bus interchange problematic given the congestion that exists on East Road for lengthy periods of the day which contributes to bus delays. A draft SPD for the Grafton area envisages removing the bus station to facilitate further development with replacement bus stops to be provided on East Road itself although this will be subject to a further assessment of the impact on traffic using East Road and adjacent roads.

The long distance bus stops located in Parkside are on a busy vehicular access route at the northern edge of Parker's Piece. Although only a short walk to the historic core, the stops are not located on key pedestrian movement corridors and wayfinding infrastructure is very limited.

The green setting of the main coach drop-off/pick-up point on Queen's Road, adjacent to Queen's Green, provides a picturesque setting for arrival. Whilst the facility is intended to provide for drop off and pick up, many coaches dwell for far longer than the prescribed 10 minute period and enforcement appears ineffectual. Combined with the large number of coaches using the site during the ever extending tourist season, this leads to both traffic and pedestrian congestion with footways often blocked by large groups of tourists waiting for coaches whose drivers are trying to find space to pick up.

The location of the drop-off point on the west side of the City Centre tends to concentrate tourist activity in the historic core streets on that side of the city centre.

Wayfinding

Wayfinding infrastructure at both city centre bus stations is generally poor with very little information available about to access the wider attractors within the central area.

The bus interchange at Cambridge station is within easy walking distance of the station but wayfinding information for visitors is limited, leading to confusion over its location. From observation, visitors to the area tend to head to the taxi rank directly opposite the station to continue their onward journeys.



Image 75: Bus Stops Concentrated in Emmanuel Street

Impact of Bus Movements

The presence of a large number of predominantly double decker buses within the historic core, where streets and spaces are narrow and confined, creates an intimidating environment for other road users and degrades the quality of the public realm.

Whilst most city centre streets are available as bus routes, the narrowness of many creates a difficult environment for buses to negotiate which compromises journey times and impacts significantly on the local environment and air quality. At some junctions turning buses often overhang the footways which increases the risk of conflict with pedestrians; Round Church Street, Hobson Street and King Street exemplify these issues.



Image 76: Hobson Street Bus Route

Network Analysis: Rail

Whilst the city is well served by rail services, the location of the main railway station outside of the city centre creates a feeling of disconnection.

Assessment: Rail

Notwithstanding the recent public realm improvements and smart wayfinding totem in the area surrounding the railway station, the sense of arrival and wayfinding would benefit from improvement, particularly better visual connection between the adjacent bus interchange and the station.

There is a clear expectation of more frequent rail services throughout the day and week in the future to serve increasing demand as the City grows, with better multi-modal smart ticketing and bus services to connect the station with the city centre.

Whilst the opening of the Cambridge North station and a proposed station in the south, adjacent to the Cambridge Biomedical Campus will help manage the expected growth in rail trips to/from Cambridge, the main station will continue to be a key arrival point for central Cambridge and the city centre, in particular.

Network Analysis: Taxis

The Station Square and St. Andrew's Street ranks are very well used by the customers, whereas the Drummer Street rank tends to operate more as a feeder rank for St. Andrew's Street when trade is light and over-ranking can occur in St. Andrew's Street. Previous proposals to remove the St. Andrew's Street rank and concentrate taxi access at the Drummer Street rank to improve bus routes and reliability have been resisted by hackney carriage operators in the past.

Assessment: Taxis

Taxis have the same degree of access to city centre streets as buses but for some users of the city centre taxis are considered as just another car based form of transport generating significant traffic flows within city centre streets. However, for those with mobility problems, where the bus does not currently offer a realistic option, access by taxi can be an attractive alternative.

Hackney carriages are required by their licence to trade off designated ranks whereas private hire cars should not ply for hire on-street, providing primarily for pre-booked journeys. Therefore, the degree of access provided to the city centre could be termed more of a 'need' for hackney carriages whereas for the private hire car sector more of a 'want'.

During quiet periods when demand for taxis is light, the rank in St. Andrew's Street is usually fully ranked, occupying valuable space to provide for a limited number of trips. If an alternative approach could be developed this would allow the space to be repurposed for other uses/needs. Whilst the hailing of hackney carriages could help address the issue of taxi operations being focussed in one location, it does not appear to be an established practice for taxi customers or drivers in Cambridge.

UK evidence suggests that smartphone app-based taxi services have had an impact on traffic behaviour and at times result in additional congestion and associated negative impacts on-street. Whilst taxis currently play an important transport role in Cambridge, particularly for the elderly and disabled people, in some locations taxis can impact negatively on other road users especially pedestrians and cyclists and contribute to poor air quality.



Image 77: St. Andrew's Street Taxi Rank

Key Issues to Address

- Consider the degree to which buses and taxis penetrate the city centre and the routes they are permitted to use
- How and where to provide adequate city centre bus interchange to cater for growth
- What is the future for the existing Drummer Street area bus hub?
- Where and how to manage bus layover and terminating services
- How best to manage city centre access for hackney carriages and private hire cars

5.5 Deliveries & Servicing

Context

The city centre is home to a wide range of educational establishments, businesses, shops and private housing all of which require access for servicing purposes. Apart from the Trinity Street/Market Street/Sidney Street pedestrianised area, where access for servicing is restricted (10am-4pm, Mon-Sat), all other streets in the city centre are accessible at all times for deliveries and servicing.

Some city centre streets are subject to peak hour loading/unloading bans which preclude parking for deliveries and servicing.

Based on 2017 ANPR surveys, over 3,500 light goods and around 440 heavy goods vehicles enter the city centre area on a typical weekday. Less than 1% of the heavy goods vehicles are articulated.

Network Analysis

The 3 main shopping centres (Grand Arcade, Lion Yard and Grafton Centre) have dedicated servicing facilities that allow deliveries and servicing to be managed off street. However, the norm for most shops and businesses in the city centre is for deliveries and servicing to be made from the street.

A series of vehicular access restrictions has resulted in a limited number of routes being available to service the area. For example, the historic heart of the city centre around the Trinity Street-Market Street-Sidney Street area can only be serviced via Jesus Lane with egress by the same route.

The city centre area is currently accessed by all sizes of delivery vehicles, although the number of heavy commercial vehicles is relatively low with most deliveries being made by light goods vehicles. Whilst weight limit restrictions on Maid's Causeway and Silver Street limit access for heavy commercial vehicles, the city centre is generally accessible by all sizes of delivery and service vehicle.

Some city businesses have now adopted cycle based deliveries to avoid the parking and access pressures associated with conventional goods vehicle based deliveries although it is recognised that this approach has its limitations at present.

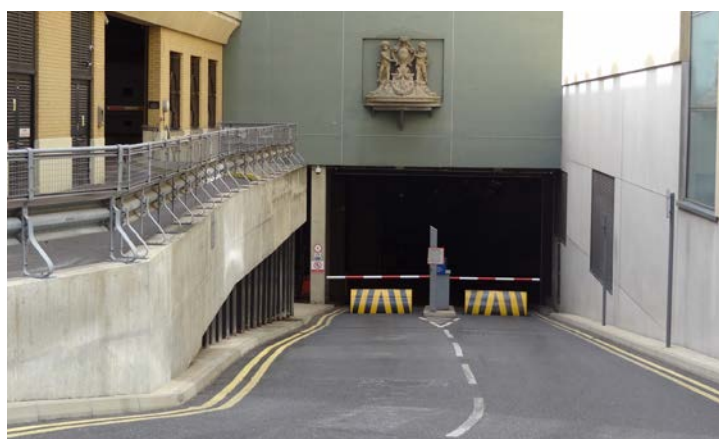


Image 78: Entrance to Grand Arcade Servicing Facility



Image 79: Sidney Street On-Street Delivery

Figure 36: Servicing Routes/ Areas & Weight Restrictions



- Bus/ Taxi Gate
- - - 7.5T Weight Limit Except for Access
- Study Area Boundary
- Servicing Route & Access Point A
- Servicing Route & Access Point B
- Servicing Route & Access Point C
- Servicing Route & Access Point D
- Servicing Route & Access Point E

Assessment

As with bus movements, the presence of goods vehicles in the typically narrow city centre streets impacts on the quality of the public realm and contributes to delays, poor air quality and congestion, given the reliance on on-street parking to access premises. Consequently, there is tension between servicing activities and pedestrian, cycle and bus access, particularly during peak hours.

Deliveries and servicing are the life blood of the city centre but there is currently no strategy in place to mitigate the impact of service vehicles or to optimise their operations.

Adjacent local shopping areas such as Mill Road, share a similar problem. Although many routes are subject to peak period loading restrictions, there is currently no strategy in place to optimise servicing and deliveries, helping to support businesses and mitigate the impacts of delivery and service vehicles.

For many smaller sized businesses, cycle based delivery methods offer potential to reduce access by goods vehicles, particularly in streets where space for loading and unloading is at a premium.



Image 80: Mill Road



Image 81: Cycle Delivery Source: With the Permission of Zedify

Key Issues to Address

- Consider how to optimise essential vehicular access for servicing and deliveries
- Consider how to incentivise more sustainable forms of servicing
- Explore the future role of cycle based deliveries

5.6 Private Motor Vehicles

Context

Starting in the 1980's, various vehicular restrictions have been introduced in streets across the city centre which restrict access for certain vehicle categories and uses. Various bus/taxi gates were introduced between 1996 and 2008 as part of the Core Traffic Scheme to remove through traffic movements and general traffic flows in the city centre have reduced as a result. The County Council's Traffic Monitoring Report 2018 shows the number of motor vehicles observed crossing the River Cam in 2018 was 11% less than ten years ago.

Based on 2017 ANPR surveys, around 20,000 private cars enter the city centre area on a typical weekday.

Car Based Arrivals

The five city centre multi-storey car parks (Grand Arcade, Park Street, Grafton East and West and Queen Anne), all of which sit along bus and access routes, act as main arrival points for many of the car based trips to the city centre.

Private parking accommodates most of the other car based trips into the city centre as only limited on-street pay and display car parking is available in the city centre which is restricted to short stays only.

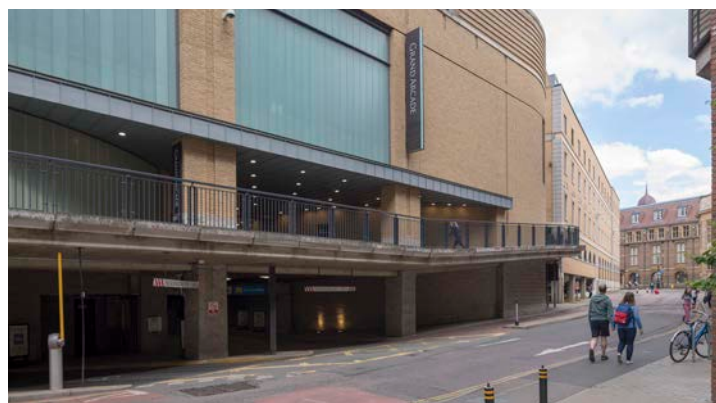


Image 82: Approach to Grand Arcade Car Park

Figure 37: Main Car Arrival Points & Access Routes



Access Restrictions

Many streets are subject to individual access restrictions which restrict or prohibit certain vehicle uses and categories some of which are enforced by ANPR cameras (bus gates) whilst others rely on physical enforcement by the police. Given the current pressure on policing resources little attention is given to the enforcement of many of the access restrictions. Many of the access restrictions are tailored to individual streets and there is no consistency across the board making signage confusing for drivers and enforcement more complicated.

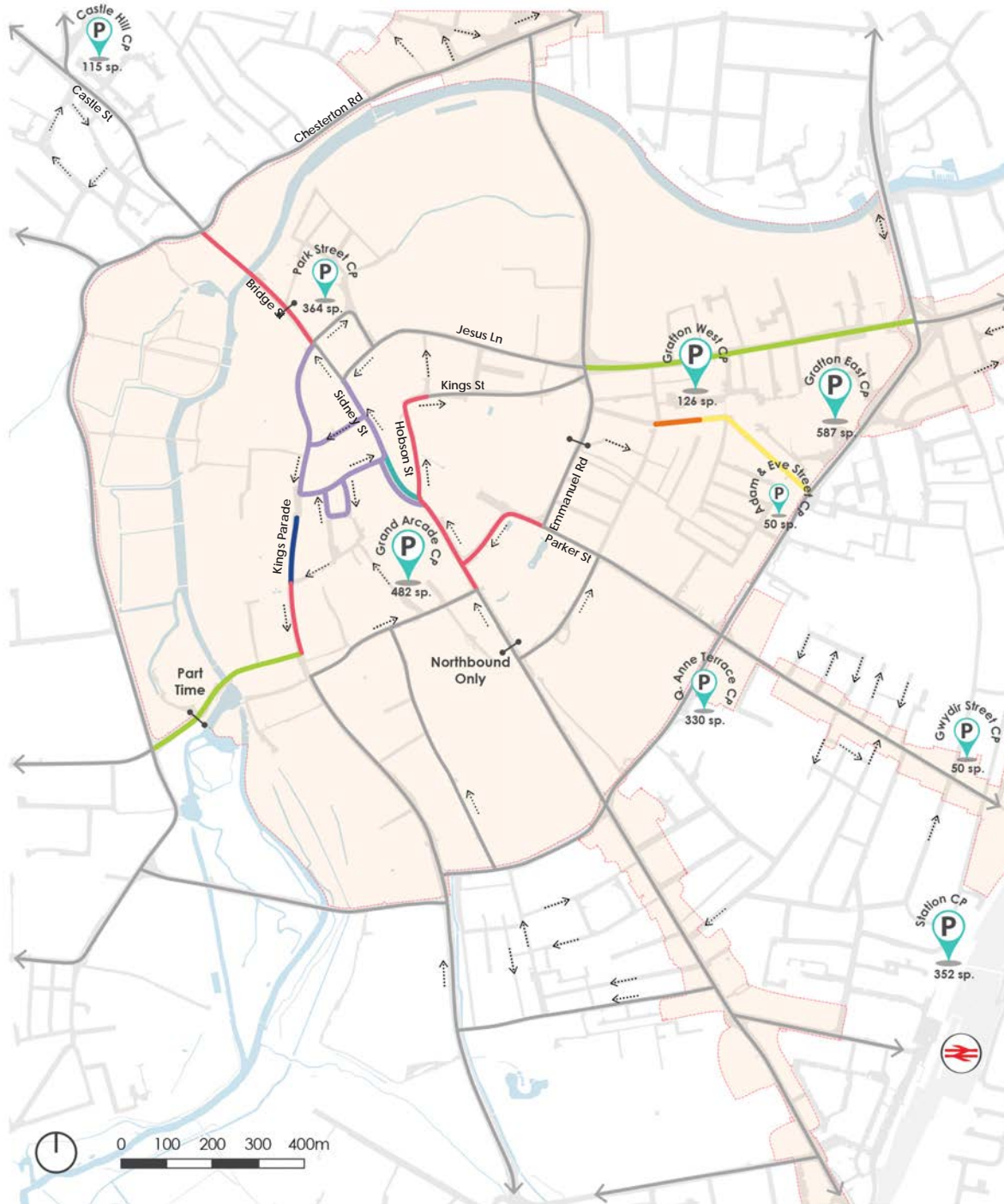


Image 83: Bridge Street Bus Gate



Image 84: Trumpington Street Access Restriction Signage

Figure 38: Traffic Management Access Restrictions



- | | | |
|---|---|--|
| <ul style="list-style-type: none"> — No Access except Taxis, Buses, Blue Badge, Loading & Local Access — Local Access Only 8:30am - 6:30pm Permit Holders Only 10am - 4pm Monday - Saturday — No Access Except for Taxis & Loading (4pm - 10am Mon. - Sat. & Sundays) | <ul style="list-style-type: none"> — No Access Except for Taxis, Loading, Blue Badge & Local Access — Loading Only — No Access | <ul style="list-style-type: none"> — 7.5T Weight Restriction ⊙ Bus/ Taxi Gate ⋯→ One Way P Car Parking Study Area Boundary |
|---|---|--|

Car Parking

Grand Arcade, Grafton East, Grafton West, Queen Anne and Park Street multi-storey car parks provide the bulk of off-street public parking for the city centre. The Grand Arcade and Park Street sites are centrally located whilst the other sites are located closer to the eastern boundary of the city centre. In total, the sites provide just over 3000 spaces.

The current charging policy aims to discourage long stays to achieve turnover of spaces and to disincentivise visits during the morning peak. A small ground car park offering ??? public spaces is located in Adam & Eve Street, close to the Grafton shopping centre.

The car parks are well used and well sign posted with variable message signs on local roads indicating the availability of spaces.

There is limited on-street pay and display parking available within the city centre all of which is subject to short stays with high charges to encourage off-rather than on-street parking. Within residential streets the vast majority of on-street parking is designated for local residents' permit holders with permits also available for visitors.

Blue Badge

Designated blue badge parking is provided in several city centre streets with the more centrally located sites in King's Parade, Hobson Street and Peas Hill (check) being the most popular sites. Spaces are also provided in Fair Street to facilitate access to the Grafton shopping area. Demand often exceeds supply resulting in many blue badge holders relying on an exemption that allows them to park on waiting restrictions (yellow lines) for up to 3 hours which can exacerbate congestion and interfere with pedestrian and cycle movements. Blue badge holders are also exemption from any time limits that apply to designated on-street parking bays and are able to park in residents' permit bays.

Many properties within the city centre have parking for staff and/or visitors, notably many college and University sites although the number of spaces has probably reduced over time as some sites have been redeveloped. Access to private off-street parking is exempt from many of the existing motor vehicle access restrictions in the city centre.

Assessment

The availability of connecting links across the outer ring road attracts high traffic volumes on such routes as East Road and Hills Road which encourages car based access to the area within the outer ring road, including the city centre. The presence of high levels of conveniently located public and private parking also acts as an attractor for car based access to the city centre. Consequently, the city centre is still considered a convenient destination for many car based trips.

Despite a reduction in overall traffic levels in the city centre over recent years, as a result of various access restrictions, many streets are still subject to relatively high levels of traffic where pedestrian and cycling activity continues to increase.

The existing traffic access restrictions within the city centre are currently compromised in terms of enforcement and comprehension and consequently are often ignored by motorists, resulting in unwanted vehicular movements accessing the historic core and surrounding streets.

The presence of relatively high traffic levels undermines the quality of streets and public spaces as well as impacting on road safety and air quality. The competition for space in the city centre continues to grow and stakeholder feedback suggests that more of the finite public space available needs to be given over to walking and cycling as a priority with, by association, less space for general traffic, particularly in the narrow streets of the historic core.

At times parking supply at the multi-storey car parks fails to meet demand and queuing on the approach routes can occur which then blocks the movement of other traffic which, in turn, impacts on bus reliability, the safety of pedestrians and cyclists and the ability to service premises in the area. It also impacts on cars exiting the car parks which further exacerbates the queuing problem. The Grand Arcade car park is most prone to queuing although it also happens, to a lesser degree, at the other car parks.

Key Issues to Address

- **How to achieve further reductions in traffic levels across all the city centre streets**
- **Reducing capacity for car parking (both off and on-street) within the city centre**
- **Explore a consistent approach to motor vehicle access controls and exemptions**
- **Delivering reliable enforcement mechanisms to underpin motor vehicle access controls**
- **How best to provide and manage access to the multi-storey car parks**
- **How to reduce reliance on car based access for blue badge holders and others with limited mobility**

Summary & Conclusions

Place & Movement

Cambridge is a very walkable city, with most attractors within a 10 minute walk. However, the city is difficult to navigate, particularly for vulnerable pedestrians including visually impaired and wheelchair users.

Despite earlier work to reduce traffic levels in the city centre, the constrained historic urban form of the city centre means that movement space is at a premium with competition between all users and modes. The volume and size of motorised vehicles in the city centre is out of keeping and scale with the buildings and street widths. As a result, this has created an uncomfortable and unwelcoming environment for pedestrian and cycling activity. In many streets servicing needs and deliveries are facilitated by on-street parking which creates tension between place and movement functions.

Wayfinding is particularly poor, with limited on-street and up-to-date online information.

Traffic Domination

Stakeholder feedback shows concerns that traffic continues to dominate many city centre streets, undermining the comfort and ease of movement for walking and cycling. Many junctions on the outer ring road and informal inner ring road which act as key gateways for the city centre have poor safety records and are perceived by many users as unsafe and unattractive, particularly for pedestrians and cyclists. Stakeholder comment highlights the concern that too many of these junctions and the roads that feed them are designed to give dominance to vehicle movements.

The opportunity areas that are located on the fringes of the city centre also experience similar issues and again stakeholder feedback has highlighted problems associated with the domination of motorised traffic.



Image 85: Mitcham's Corner

Public Transport

Despite its popularity as a destination, the experience for many city centre visitors upon arrival is poor. The railway station is located away from the city centre making it feel disconnected. Similarly, the primary coach arrival point in Queen's Road and the long distance bus service bus stops in Parkside both feel remote with a lack of visual markers to guide visitors to city centre destinations and attractions. Local bus services are accessed in streets where limited space leads to conflict between dwelling bus passengers and others moving through the areas; conditions in Emmanuel Street clearly demonstrate this.



Image 86: Emmanuel Street



Image 87: Trumpington Street

Cycling

Cycling is a very popular mode of travel to / from and within the city centre. However, the historic street layout, one-way systems and lack of alternative routes results in pressure points and tensions where cyclists come into contact with buses, pedestrians and tourists contributing to an often uneasy environment for all.

Cycle parking demand exceeds the available supply within the city centre, resulting in cycles being locked to and left against walls, railings and other street furniture, often impacting on pedestrian movement and the streetscape.

Tourism

Tourists visit Cambridge in great numbers throughout the year and although welcomed, there is currently insufficient active management and space available to improve tourists' experience, enjoyment and safety whilst moving in and around the city.

The Way Forward

The proposals emerging from concurrent studies into demand management, to achieve an overall reduction of traffic by 10-15% (based on 2011 levels), and air quality management, combined with work on transforming bus services, creates an opportunity for the SPD to put forward a future vision for movement to, from and within the city centre based on a revised street hierarchy that prioritises walking and cycling, supports sustainable access and which restricts motor vehicle access to essential needs and, where necessary, by clean vehicles.

6. Summary Findings

Summary Introduction

The analysis of Cambridge city centre's streets and spaces, combined with the engagement of its residents, has highlighted the tensions present within Cambridge today.

Cambridge is a city which celebrates its history whilst developing world leading ideas and innovations.

The organic growth of the city has resulted in significant interest and character within the city, but it also has presented challenges and constraints, notably in terms of how to accommodate increase demand and modern needs such as housing, employment, tourism, modern transport modes and infrastructure within a constrained street pattern and protected landscapes.

As the city continues to rapidly grow and user demand increases, change is anticipated to the city's streets and spaces. Recent growth has led to tension between individual uses which do not always sit in harmony. Cars, buses, cyclists and pedestrians, often share the same space. But the ways in which these uses currently coexist are often chaotic and do not always support the character and function of the city's streets and spaces.

It is evident from stakeholder engagement, that people want to see issues created by movement pressures addressed and the positive qualities and character of the city retained and enhanced. By analysing the city through its individual uses it becomes easier to question where specific tensions lie and how they could be mitigated through a process of change. The ambition already exists with local policy and the 2018 Local Plan setting the way for Cambridge.

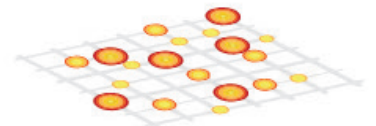
This chapter brings together the analysis from the previous chapters into two high level movement and place framework summaries which demonstrate the existing movement, place and functions within Cambridge City centres streets and spaces.

Figure 39: Elements of Baseline Analysis

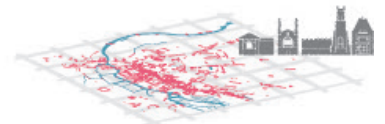
Policy Guidance & Previous Studies



Stakeholders Engagement



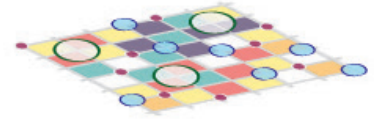
Historic Context, Heritage & Conservation



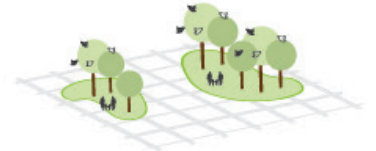
Urban Structure



Land Use & Destinations



Open Spaces



Street Function & Use



Pedestrian & Cycle Network



Public Transport Network



Delivery, Servicing & Private Motor Servicing



6.1 Strengths, Weaknesses & Opportunities

In this section the results of the analysis and engagement activities have produced this summary of strengths, weaknesses and opportunities.

	Strengths	Weaknesses	Opportunities
Policy Guidance	<ul style="list-style-type: none"> • Bold ambition of the Cambridge Local Plan 2018 	<ul style="list-style-type: none"> • Policy lacks continuity between documents 	<ul style="list-style-type: none"> • SPD to form a cohesive city centre strategy
History & Heritage	<ul style="list-style-type: none"> • Strong heritage value and identity • World leading city for education and learning • A city with a unique rural hinterland • The city connection and relationship to the river 	<ul style="list-style-type: none"> • Historic evolution has contained the city • East of the city centre lacks key destinations and strong identity 	<ul style="list-style-type: none"> • Create new gateway destinations • Enhance the character of city's centre eastern half • Support diversity through local businesses and centres
Users, Use & Growth	<ul style="list-style-type: none"> • Demand for the city centre • Annual growth in visitors • Growing educated population • Existing mix of town centre uses and facilities 	<ul style="list-style-type: none"> • Limited evening economy offer • Tourist hotspot locations causing blockages • Tourist coach stop location 	<ul style="list-style-type: none"> • Grow leisure/evening economy • Further development of the tourism strategy to better manage movement and ensure investment in local economy • Plan for future trends and technological advances
Open Spaces	<ul style="list-style-type: none"> • Large urban green spaces • Use of existing public space • Growing public recognition of public space and associated benefits. 	<ul style="list-style-type: none"> • Lack of spatial diversity, lack of civic urban spaces 	<ul style="list-style-type: none"> • Provide flexible space for markets, events, outdoor eating and drinking • Seek opportunities for increase of hard public spaces
Street Scene	<ul style="list-style-type: none"> • High quality streetscape character found within the historic core 	<ul style="list-style-type: none"> • Inconsistency of materials • Lack of dwelling space, street trees and plants • Street clutter • Vehicle dominated • Poor wayfinding and legibility • Insufficient enforcement & maintenance 	<ul style="list-style-type: none"> • Enhance streetscape quality, including greening, public realm materials, permeability & space to dwell • Removal of street clutter and use of innovations to reduce unnecessary street furniture • Further roll out existing wayfinding strategy • Improve enforcement and maintenance
Roads & Access	<ul style="list-style-type: none"> • Good strategic connections to neighbouring key cities and places by rail and road 	<ul style="list-style-type: none"> • Strategic and local routes combined causing congestion and user conflict • Congested existing cross river connections • Lack of consistency in access restrictions • Weak east/ west connections 	<ul style="list-style-type: none"> • Separate local and strategic movement where possible • Reduce car dependency, encouraging use of public transport and active travel shifting shorter journeys from car to cycling and walking

Strengths

Weaknesses

Opportunities

Pedestrians & Cyclists

- City centre is compact, with arrival locations and key destination in walking and cycling distance
- High number of pleasant green walking routes available

- Narrow footways combined with street clutter, delivery vehicles and enforcement issues reduce pedestrian enjoyment of the city
- Lack of cycle parking
- Unsafe feeling at night along some streets & spaces

- Help Cambridge establish a pedestrian and cycle friendly streets and spaces benchmark
- Improve enforcement
- Increase cycle parking
- Improve natural surveillance, lighting and CCTV where possible in streets and spaces

Public Transport

- City centre well serviced by bus routes and infrastructure
- Service well used to and from the city centre

- Almost all routes (local and strategic) travel through the city centre
- Some routes are disjointed requiring passengers to change buses
- Large double-decker vehicles out of scale with the streetscape

- Other City Access workstreams will consider bus arrangements in the city in collaboration with relevant transport authorities.

Private Vehicles

- Local road network is comprehensive and accessible for private vehicles
- Good infrastructure and parking facilities

- Prioritised across much of the local road network at the expense of sustainable modes
- High private vehicle use
- Key junction designs led by motor vehicle needs
- Some parking impacts other modes and reduces enjoyment of the city
- Over provision of central car parking encouraging private vehicle use and taking up valuable space

- Local roads, streets and spaces have people and placemaking at heart
- City centre traffic management strategy
- Ensure junctions are prioritising pedestrians and cyclists
- Further development of the parking strategy, including economic appraisal of sites
- Expansion of controlled parking zones, where possible

Deliveries & Servicing

- Delivery and service yards are provided for large retail spaces

- Lack of management results in modal conflicts during peak hours
- Lack of on-street loading provision
- Large vehicles out of scale with the streetscape

- Develop a city centre delivery and servicing strategy

6.2 Existing Character, Place & Movement

Existing Movement & Place Functions

The unique nature of Cambridge's historic street layout alongside the city's modern transport needs currently results in a conflict for space between movement and place.

Movement Functions

As this baseline has demonstrated, the existing roads, streets and junctions perform a wide range of movement functions. Some carry high volumes of vehicle traffic and people, whereas others have largely local movement functions. Many of the roads, streets and junctions also support specialised transport networks, for example:

- The bus network
- The cycle network
- Freight and deliveries networks
- Coach routes.

Regardless of their mode of travel, people share similar objectives in terms of direct, safe, quick journeys with minimum disruption. But they compete for the same space, and can conflict with each other, particularly where the roads are narrow or crowded and at junctions. This is reflected in the comments and feedback from stakeholder and public engagement.

Place Functions

The existing roads, streets and junctions also perform a wide variety of functions which are specific to place. These include providing opportunities to dwell and enjoy the architectural heritage and are as important as movement. These functions have an impact on the economy as well as on quality of life, with placemaking an increasingly important element of successful cities.

The roads, streets and junctions are also the foreground to a specific built environment and the most successful streets are those that respect and refer to it. However, these roads, streets and spaces are impacted by the need for movement or are obstructed due to poor accessibility and / or wayfinding.

At present, the main routes and city access points into the centre primarily prioritise motorised vehicles. Pedestrian and cyclists are squeezed into the remaining space with little or no space left over to create places to linger, enjoy and appreciate the world class buildings and heritage. Consequently, the streets and spaces have become an uncomfortable environment for all its users.

There are numerous cases of conflict between movement and place within the study area and the following exemplify these:

- Garrett Hostel Lane: pedestrians accessing the city via this route and wanting to linger on the bridge to enjoy the view often find themselves in conflict with cyclists using this narrow route. Conversely, students cycling between their colleges and the West Cambridge site are held up by visitors enjoying the views.
- King's Parade: Pedestrians enjoying the beauty of King's College are in conflict with cycles, private cars, taxis and delivery vehicles. In addition, all motorised vehicles have to turn round in the confined space whilst pedestrians and cycles pass in close proximity, reducing enjoyment of the area.
- Emmanuel Street: buses, pedestrians, cycles and general traffic all compete for space in this confined area again reducing the experience of those using the retail and leisure establishments.

Existing Public Spaces Character & Use Functions

Existing Public Space Character

Public space within Cambridge's city centre is varied in character, ranging from the urban such as Market Square and King's Parade to, in some instances, almost rural ones such as Coe Fen and Midsummer Common. This assortment and unique blend of characters defines Cambridge's sense of place, and is rightly cherished by the people of Cambridge.

This variation can be seen in the existing green spaces, alternating from the manicured gardens and courtyards that surround college buildings, to the semi-rural meadowlands that wrap around the city centre following the path of the River Cam. Views to and from the river, across these green spaces, create a setting to the historical buildings and formal gardens within the city's historic core.

In contrast to the large areas of green space within Cambridge, usable hard space is in short supply, with King's Parade and the Market Square sharing the burden as the city's main public hard spaces. As such these important spaces are intensively used and tensions between uses are observed.

Existing Place Function

Due to their size and layout many of Cambridge's green spaces are able to accommodate larger seasonal events and activities, such as Midsummer Fair on Midsummer Common or the Big Weekend on Parker's Piece. However, the city centre lacks flexible paved public space that can accommodate a range of activities.

Good urban spaces should tie the surrounding buildings to one another, offer a variation in use and activity and be great places for people to visit. To a certain degree Cambridge's public spaces fulfil this complex role, with many playing host to regular large scale events and ceremonial processions, a daily market, sporting and leisure activities. Yet in some cases, there is tension between the use of an area as a space and its use for movement, for example cyclists traveling rapidly across Parker's Piece. As such, Cambridge's city spaces are continually called upon to perform beyond their capacity. This, combined with the lack of paved, flexible public open space means that there is a cost to many of the tranquil green spaces which are working hard to accommodate seasonal uses and activities.



Image 88: Character & Use, Punting on The River Cam

6.3 Taking the Baseline Forward

The Need for a Different Approach

Significant steps have been made in recent years to support the development and management of spaces and movement across Cambridge. However, there is recognition that the current policies, approaches, tools and management do not provide adequately for all modes, resulting in clear tensions between users. The consequence of this has had a significant impact the quality of streets and spaces for people.

Stakeholder and community feedback, existing policy, best practice guidance and benchmarking against other cities point towards a need for Cambridge to raise its level of ambition and change its approach to management of streets and spaces to support existing and future needs.

The SPD will lead the way in policy and best practice so that Cambridge remains an internationally renowned city.

Change Means Choice

In summary, there is an exciting opportunity to build on Cambridge's unique, rich history, culture, educational and economic identity, in order to develop a city that reflects its exceptional characteristics and natural landscape. Seizing this opportunity will allow the city to confidently shape and embrace the next stage of the Cambridge story. This will ensure the city continues to put its people first, is inclusive and responds proactively, positively and sustainably to the projected growth in Cambridge over the next 20 years.

The city can approach the future in one of two ways: either it can continue to grow organically and in a piecemeal fashion, accommodating increased volumes of people, motorised vehicles, coaches, taxis, cyclists and pedestrians to access and move around the city centre. Alternatively it can reverse the current street hierarchy by prioritising sustainable modes of transport and focusing on people's enjoyment of this unique city centre.

7. Reference List

Documents which have informed and provided insight into the key themes of this baseline report include:

Cambridge Context

- Cambridge Ahead, Cambridge Cluster Study, 2011
- Cambridge Ahead [online] Available at: <http://www.cambridgeahead.co.uk/our-projects/growth-and-commercial-space/growth-project-detail/#> [Accessed 18 June 2018].
- University of Cambridge, University of Cambridge Strategic Framework, 2016
- Cambridge Ahead, Cambridge Cluster at 50 - The Cambridge Economy retrospect and prospect, 2011 [online] Available at: <http://www.sqw.co.uk/files/8513/8694/8745/26.pdf> [Accessed 18 June 2018].
- Cambridge Ahead, Cambridge Cluster Map, 2018 [online] Available at: http://www.camclustermapping.com/#?&coll=%7B%22company-type%22%3A%22cambridge_based%22%7D [Accessed 18 June 2018].
- Cambridge BID [online] Available at: <http://www.cambridgebid.co.uk/> [Accessed 06 August 2018].
- Cambridge Network [online] Available at: <https://www.cambridgenetwork.co.uk/home/> [Accessed 18 June 2018].
- Cambridgeshire County Council 2015 based population forecast [online] Available at: <https://cambridgeshireinsight.org.uk/population/population-forecasts/?geographyId=3f57b11095784e27969369a52f7854ef&featureId=E05002702> [Accessed 11 June 2019]
- Centre for Cities, 2016, Fast Growth Cities, The Opportunities and Challenges Ahead
- Centre for Cities, 2018. [online] Available at: <http://www.centreforcities.org/city/cambridge/> [Accessed 30 October 2018].
- City Growth Tracker, UK Powerhouse Study, Irwin Mitchell, 2018
- Global Cities of the Future, FDI Intelligence Magazine, 2016
- Greater Cambridge Partnership, 2018, [online] Available at: <https://www.greatercambridge.org.uk/> [Accessed 14 June 2018].
- Grant Thornton (2018). UK Vibrancy Economy Index.: Building a Better Economy. [online] Available at: <https://www.grantthornton.co.uk/en/insights/vibrant-economy-index-building-a-better-economy/> [Accessed 16 October 2018].
- Higher Education Statistics Agency, "2016/17 Students by HE provider, level, mode and domicile" (CSV) [Accessed on 25 October 2018].
- Meet Cambridge (<https://www.meet-cambridge.com/sector/tourism>) [Accessed 07 August 2018].
- National Infrastructure Commission (NIC), 2017. Partnering For Prosperity: a new deal for Cambridge - Milton Keynes - Oxford Arc. [online] Available at: <https://www.nic.org.uk/wp-content/uploads/Partnering-for-Prosperty.pdf> [Accessed 17 August 2018].
- The Cambridge Phenomenon [online] Available at: <http://www.cambridgephenomenon.com/> [Accessed 12 June 2018].
- UK Innovation Corridor [online] Available at: <https://innovationcorridor.uk/> [Accessed 16 October 2018].
- Vision of Cambridge 2065, 2015
- Visit Cambridge <https://www.visitcambridge.org/> [Accessed 06 August 2018].
- Visit Cambridge, Economic Impact of Tourism - Cambridge City, 2013

Historical Context

- Beacon Planning, Cambridge City Council, 2006, Cambridge: Historic Core Conservation Area Appraisal.
- Cambridge Scientific Instrument Company: Records and Papers - Archives Hub, (1873-1971), [online] Available at: <https://archiveshub.jisc.ac.uk/search/archives/24e8ef64-4bfe-357f-b0d0-fd096f0a9ca8> [Accessed 18 June 2018].
- Queen's College. Essex Building History [online] Available at: <https://www.queens.cam.ac.uk/life-at-queens/about-the-college/college-facts/the-buildings/essex-building-history> [Accessed 12 September 2018].
- 'The city of Cambridge: Economic history', in A History of the County of Cambridge and the Isle of Ely: Volume 3, the City and University of Cambridge, ed. J P C Roach (London, 1959), pp. 86-101. British History Online [online] Available at: <http://www.british-history.ac.uk/vch/cambs/vol3/pp86-101> [Accessed 18 June 2018].
- 'The city of Cambridge: Bridges', in A History of the County of Cambridge and the Isle of Ely: Volume 3, the City and University of Cambridge, ed. J P C Roach (London, 1959), p. 114. British History Online [online] Available at: <http://www.british-history.ac.uk/vch/cambs/vol3/p114> [Accessed 24 September 2018].
- Lambert, T. [online] Available at: <http://www.localhistories.org/cambridge.html> [Accessed 18 June 2018].

Planning

- Cambridge City Council, Cambridge Local Plan - Towards 2031, 2018
- Cambridge City Council, Cambridge Planning Obligations Strategy 2014 (Draft Submission Plan)
- Ministry of Housing, Communities & Local Government, Revised National Planning Policy Framework, July 2018
- Cambridge City Council, Open Space and Recreation Strategy 2011
- Transport Strategy for Cambridge and South Cambridgeshire 2013
- Cambridge City Council, Cambridgeshire Local Transport Plan 2011-2026
- Cambridge City Council, Cambridgeshire Green Infrastructure Strategy 2011
- Cambridge City Council, Planning Obligations Strategy SPD 2010
- Cambridge City Council, Grafton Area Masterplan SPD
- Cambridge City Council, Old Press/Mill Lane SPD, 2010
- Cambridge City Council, Mitcham's Corner Development Framework SPD, 2017
- Cambridge City Council, New Museums Site Development Framework SPD, 2016
- Cambridge City Council, Eastern Gate Development Framework SPD, 2011

Spaces & Public Realm

- Cambridge City Council, Project Cambridge, Connecting the Station to the City Centre, 2009
- Cambridge City Council, Historic Core Appraisal, 2015,
- Cambridge City Council, Cambridge Landscape Character Assessment, 2003
- Carmona, Tiesdell, Heath and Oc, Public Places Urban Spaces, 2010.
- Cambridge City Council, Christ's Pieces and New Square Management Plan 2018 - 2028
- Cambridge City Council, Mldsummer Common Management Plan 2014 - 2019

Transport & Movement

- Cambridgeshire Local Transport Plan and Long Term Transport Strategy 2011-2031
- Greater Cambridge Partnership Transport Strategy - Future Transport Requirements, GCP, 2018
- Cambridge City Council, Cambridge Local Plan - Towards 2031, 2018
- Connecting Cambridge [online] Available at: www.connectingcambridgeshire.co.uk [Accessed 06 August 2018].
- Arup, Cambridge City Centre Capacity Study, 2013
- Beacon Planning, Cambridge City Access Study, 2015
- Cambridge Judge Business School, Lean Six Sigma Shopping Centre, 2017
- Transport for London, Healthy Streets for London, 2017 [online] Available at: <http://content.tfl.gov.uk/healthy-streets-for-london.pdf> [Accessed 06 August 2018].
- Transport for London, Pedestrian Comfort Guidance for London, 2010 [online] Available at: <http://content.tfl.gov.uk/pedestrian-comfort-guidance-technical-guide.pdf> [Accessed 01 September 2018].
- Greater London Authority. Mayors Transport Strategy, 2018 [online] Available at: <https://www.london.gov.uk/sites/default/files/mayors-transport-strategy-2018.pdf> [Accessed 06 August 2018].
- Greater Cambridge Partnership, Greater Cambridge - an innovative cycling destination, 2017, [online] Available at: <https://www.greatercambridge.org.uk/news/greater-cambridge-an-innovative-cycling-destination/> [Accessed 01 September 2018].

Best Practice

- United Nations, The 2030 Agenda Sustainable Development Goals, 2015
- United Nations, The New Urban Agenda, Habitat III, 2016
- UNESCO, Cultural Urban Futures, 2016, [online] Available at: <https://whc.unesco.org/uploads/activities/documents/activity-727-1.pdf> [Accessed 01 September 2018].
- UNESCO, New Life for Historic Cities, 2013
- Fast Company, 2016, 5 Rules For Designing Great Cities, From Denmark's Star Urbanist [online] Available at: <https://www.fastcompany.com/3061586/5-rules-for-designing-great-cities-from-denmarks-star-urbanist> [Accessed 01 September 2018].

8. Appendices

Appendix A: Vehicle Restrictions

Vehicle Size Restrictions

Streets with Restrictions	weight restriction
Maid's Causeway & Newmarket Road	7.5 tonne except for loading
Victoria Road	7.5 tonne 10pm - 6am

Streets Subject to Motor Vehicle Access Controls

Streets with Restrictions	Timings
St. John's Street, Trinity Street, Market Street, Market square, Sidney Street	Local access only 8am-6pm Mon-Sat No access except for permit holders 10am-4pm Mon-Sat
King's Parade	No access except for taxis, blue badge and for loading
Trumpington Street	No entry to section north of Silver Street except for taxis, blue badge, loading and local access
Magdalene Street & Bridge Street (north of Round Church Street)	No access except for buses, taxis, loading and local access
Drummer Street, Emmanuel Street, St. Andrew's Street (north of Downing Street, Hobson Street)	No access except for buses, taxis, loading and local access
Sidney Street (between Hobson Street and Market Street)	No entry at southern end except for taxis, blue badge, loading No entry at northern end
Bridge Street bus gate	No access except for buses & taxis
Emmanuel Road bus gate	
Silver Street bus gate	
St. Andrew's Street bus gate	
Burleigh Street (west of Adam & Eve Street) and Fitzroy Street (east of Eden Street)	No access
Fitzroy Street (west of Eden Street)	Loading only

Appendix B: Engagement Publicity



Introduction

Making Space for People is being developed by Cambridge City Council, Cambridgeshire County Council and the Greater Cambridge Partnership (GCP).

It is part of a wider programme of City Access improvements - improving travel within Cambridge by public transport, cycling and walking, along with tackling congestion and improving air quality and the public realm.

Other projects currently underway include cycle route improvements, looking at establishing a Clean Air Zone and initiatives to tackle traffic congestion.

What is Making Space for People?

The strategy aims to help guide improvements to the city centre, putting people first and identifying opportunities to improve public spaces and the way people move around the city.

Potential areas for change could include:

- Improvements to the way people move around Cambridge city centre on foot and by bicycle.
- Enhancements to walkways, cycleways, roads and open spaces.
- New uses for certain parts of the city centre.

The strategy will be adopted by Cambridge City Council and form a Supplementary Planning Document (SPD). SPDs add further detail to the policies in the Local Plan – the document which will guide future development in the area.



Appendix C: Baseline Engagement Summary

Public Engagement Key Messages

Concerns

- Cyclists and pedestrians feel endangered at many junctions and are reluctant to travel
- High pollution levels
- Not enough cycle parking to cater for demand
- Congestion should be improved, removing the gyratory is commonly suggested
- Not enough seating opportunities
- Pavement quality and levelling
- Tourist behaviour
- Quality of the public realm

Opportunities

- Increase pedestrianisation
- Limit access in the city centre to private vehicles and taxis, unless the vehicle is hybrid or electric.
- Ban car parking in the City Centre
- Widen pavements, where appropriate
- Invest in cycle infrastructure
- One-way system for vehicles
- Improve signage, wayfinding and street furniture
- Clear road markers to distinguish cycle paths and pavement
- Bus routes to be reconsidered
- Improve litter bins to prevent littering
- Design the public realm to encourage evening activity

Stakeholder Key Messages

Concerns

- Cyclists and pedestrians feel endangered at many junctions and are reluctant to travel
- Pollution levels
- Not enough cycle parking to cater for demand
- Bus service is not catering from changing demand and too expensive to incentives
- Not enough seating opportunities
- Street clutter, pavement quality and levelling restricting pedestrian movement
- Tourist coach behaviour and lack of revenue from tourism due to honey potting

Opportunities

- Increase pedestrianisation
- Limit access in the City Centre to private vehicles and taxis, unless the vehicle is hybrid or electric.
- Reduce car parking in the City Centre
- Invest in cycle infrastructure
- Improve signage, wayfinding and street furniture
- Large bus vehicles to be limited to the edge of the City Centre. Small electric shuttle service to circulate within the City Centre.
- Implementation of the last mile for deliveries
- Design the public realm to consider different times of day and seasons
- Improve offer (amenities and services) and sense of place in the eastern side of the City Centre
- Creation of a new public space at Drummer St
- Support for the city's built and environmental assets
- Support for local businesses to build local character and cater for a range of needs

Primary Locations of Interest

The patterns emerging from the engagement response could be seen by their locality. The Engagement HQ map has been a useful tool that has allowed us to quickly take a broader view of where the issues predominantly arise beyond the detailed level of individual responses.

Cambridge's city spaces are clearly cherished by its populous but there remains significant concern regarding their current state and future. This can be seen by the volume of comments raised within the historic core, sitting within a 500m radius of Market Square.

Green spaces were generally seen as one of the city's primary strengths. Thus, stakeholders proposed that these spaces should be enhanced and influence the wider character of the city centres streets and spaces.

Market Square received the highest number of comments. Although regarded as an area of high significance, it was largely felt that the space needs updating and is not achieving its full potential as the primary civic space.

The anomalies to this pattern were Mill Road, Eastern Gate and Micham's Corner which, as all key nodal points, received a high number of comments regarding safety. The other anomaly space is Station Square area which, as a newly delivered space, is currently in the public eye and therefore more likely to receive criticism.

Pressure and place, comments increased within the historic core where streets become more restrictive but movement remains high.

A clear route to the centre - The most prominent is the north/south axial route, from the station to the city centre and north via Magdalene Street. This in particular held a large number of comments and was easily discernible as an area of particular focus which the SPD should address.

Figure 40: Areas Respondents Wanted to See Improved

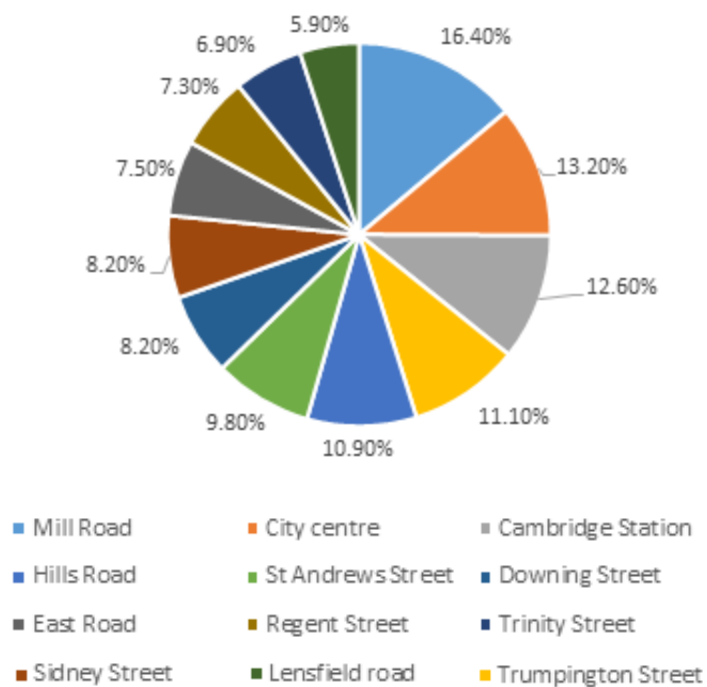
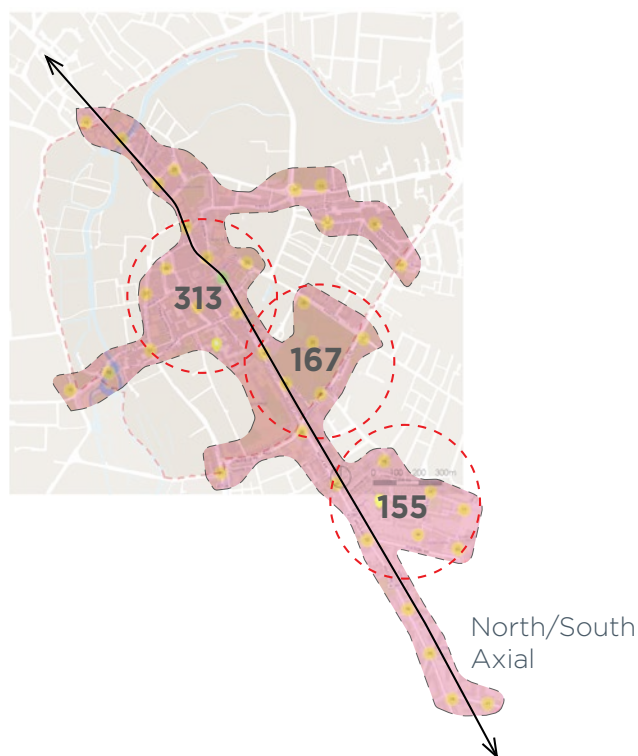


Figure 41: Concentration of Comments from the Online Engagement



An Example City Transect - Online Responses to a Journey through the City



This diagram takes a route through the city and analyses the comments received from our engagement to date. This allows us to

St Andrew's Street

Issues

- 'Unsafe and unpleasant walking/cycling environment'
- 'Emmanuel Street junction unsafe for pedestrians/cyclists: difficult to walk across'
- 'Unsafe pedestrian crossing at Downing Street junction'
- 'Difficulty for cyclists at Downing Street Junction'
- 'Congested pavement south of Downing Street Junction'
- 'Limit motor vehicle movements: re-routing buses and reducing other motor traffic'
- 'A clearer cycle path along Emmanuel Street and Drummer Street.'

Regent Street

Issues

- 'Unsafe connection to Regents Terrace for cyclists and pedestrians'
- 'Difficulty crossing Regent Street for pedestrians.'
- 'Lack of tie in with surroundings - it is "just a road heading into town" '
- 'Wider cycleways'
- 'More cycle friendly infrastructure is require to make cyclists feel safer'
- 'Pavements should be widened'
- 'Car parking should be banned'
- 'Some suggestions for one-way system and car free zone'
- 'Taxi rank should only be for hybrid or electric vehicles'
- 'Pavement should be levelled and potholes addressed'

Hills Road

Issues

- 'Poor cycling environment north of the railway line'
- 'Station Road junction dangerous for northbound cyclists'
- 'Car/cycle conflict at Bateman Street junction'
- 'Brooklands Avenue Junction works poorly for pedestrians and cyclists.'
- 'A missing dropped kerb for people cycling to re-enter the roadway at Brooklands Avenue.'
- 'Car parking should be banned'



BDP.

16 Brewhouse Yard,
Clerkenwell
London EC1V 4LJ,
United Kingdom