Planning & Transport

MILTON KEYNES COUNCIL

Central Milton Keynes Transport & Parking Statement of Intent

Appendices

www.milton-keynes.gov.uk/transport

January 2016

The Council decision on 17th January 2016 relating to the Central Milton Keynes Transport and Parking Strategy:

"That the draft Central Milton Keynes Transport and Parking Strategy be published as a Statement of Intent rather than as a Strategy and taken forward as a positive and helpful discussion document between the three political parties, key stakeholders and expert witnesses deemed necessary, so that the very positive content within it is not lost."

MILTON KEYNES COUNCIL

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Network-Wide Overview

Current Provision & Use

A.1 Car is the dominant mode within Milton Keynes. The 2011 census shows that commuting by car accounts for 75% of all person trips into CMK, and that there are around 19,600 car vehicle trips into CMK each morning[1]. There are around 25,000 car parking spaces in CMK overall, but parking utilisation is at or approaching capacity in certain locations.

A.2 The mode share for non-car modes is correspondingly lower, which reflects the relative greater attractiveness of car for most journeys. This is shown in Table 3-1.

Table 3-1 Mode Shares to Milton Keynes and CMK

Mode	To All Milton Keynes	To Central Milton Keynes
Car	80%	75%
Bus	6%	9%
Rail	2%	4%
Walk	7%	8%
Cycle	3%	2%
Other	2%	2%
Total	**100%**	**100%**

A.3 Bus is the dominant public transport mode for local trips, accounting for 9% of trips to CMK. Rail usage is significant (six million trips per annum in 2013), and forecast to grow significantly in the future. However, rail primarily caters for out-commuters (to

[1] Car occupancy is 1.1 people per car, based on the 2011 census, so 19,600 car vehicle trips equates to around 21,600 person trips.

London) and business trips. This increase in rail trips overall will mean that Milton Keynes Central station will become an increasingly important gateway to CMK.

A.4 Cycle mode share is low (2%), and especially so given the extent of the Redway network, which provides largely segregated routes into the centre. Walking accounts for 8% of trips to work.

A.5 Currently 59% of workers in CMK commute from within the borough, whereas the remainder commute primarily from the surrounding local authority areas. The car mode share for in-commuters is significantly higher than for residents of MK, at around 84%. The opportunities for encouraging non-car journey to work (and other trips to CMK) will be greater for trips from within Milton Keynes than for trips from further afield. In addition, around 5% of workers work from home regularly, and increasing this proportion could mitigate the transport impact of future employment growth.

Current Issues

A.6 There are a number of current issues related to each mode (car, public transport, walking and cycling) that are described later in this section.

Future Challenges

A.7 The central challenge facing CMK is that the planned level of future growth cannot be accommodated under a ‘business as usual’ scenario. In particular, the scale of additional parking required to accommodate growth (between 10,000 and 12,000 additional spaces, assuming current mode share and occupancy) cannot be provided without significant consequences alongside the delivery of development aspirations within CMK.

A.8 The Transport and Parking Strategy must support and respond to the wider growth and development aspirations for CMK; this means accommodating growth while also helping shape the pattern of that growth, and the demand for movement associated with it.

A.9 The scale of challenge is significant, and will necessitate a significant improvement in the attractiveness of non-car alternatives. The extent to which improving public transport and walking / cycling can address this challenge, given the current dominance of the car and the desire to retain the high-levels of car based accessibility that underpins the attractiveness of CMK, is limited.

A.10 As an illustration, an increase in 50% in usage across all non-car modes would only result in a 12.5% reduction in car mode share[2]. This would be significant in itself, but when set against a forecast of 40% growth, can only be part of an overall strategy.

A.11 The strategy must therefore also consider the role better management of the current network and more innovative solutions can play in making the network more efficient, effective and attractive to users. Technology will have a key enabling role in this.

Demographic Issues

A.12 The current population of Milton Keynes has a younger demographic profile than the UK as a whole – it has a higher proportion of under 16s (22.4% compared to 18.9% nationally), and of working age people (65.9% of the population is aged between 16-65, compared with 64.1% nationally)[3].

A.13 However, over the coming years the population will age (the average age will go from 37 now to 40 by 2026), and population growth in the 65-79 years and the over 80 years groups is forecast to grow by 78.3% and 96.3% respectively by 2026.

A.14 Ensuring that older people are able to access a full range of activities and services will mean that transport accessibility will become increasingly important in considering the development of future transport infrastructure and services.

Walking and cycling

Current Provision

Cycling

A.15 Milton Keynes has a large network of Redways, offering fully segregated space for cyclists and walkers. The current length of the network is over 290km[4] and extends from Stony Stratford in the north-west to Bletchley in the south.

A.16 In Central Milton Keynes, the Redways largely terminate at the Portway/A5/Childs Way/Brickhill St boundaries with the exceptions of the following north-south routes:

- Parallel to the west side of Grafton Gate connecting Winterhill to Rooksley;
- Parallel to the east side of Saxon Gate connecting Fishermead to Conniburrow; and;

[2] Current non-car mode share (person trips) account for 25% of all trips. A 50% increase in mode share for non-car modes would take this to 37.5% of trips. The implication for car person tips is that car mode share would fall from 75% to 62.5% - a reduction of 12.5% points.

[3] http://www.milton-keynes.gov.uk/social-care-and-health/health-and-wellbeing-board/strategic-needs-assessment/population-people/1-population-and-growth

[4] Milton Keynes Cycling Strategy (2012)

- Parallel to the east side of Marlborough Street connecting Springfield to Downs Barn via Campbell Park.

Other major features of the cycling network that connect to the Redways in and around CMK include:

- a short north-south CMK Redway from Childs Way to Portway, going along Saxon Street;
- two National Cycle Network (NCN) routes, with NCN6 going through Bletchley, Campbell Park and then Wolverton before intersecting with NCN51, which goes through CMK, to the rail station; and
- the Millennium Circular route, which loops around Milton Keynes for 12 miles.

A.17 There are seven cycle parking locations within Central Milton Keynes, of which Milton Keynes Central Railway Station has two large sheltered areas, covered by CCTV, which provides the largest CMK cycle parking facility. Lower levels of formal cycle parking (between 7 and 25 stands each) are located at the corner of Midsummer Boulevard and Witan Gate, Midsummer Place, Milton Keynes Library, the north side of Midsummer Boulevard near the Shopping Centre, MK Theatre and Xscape.

Walking

A.18 Walking in CMK is broadly through the underpass network and surface-level pedestrian crossing points where pedestrians have to give way to traffic. The centre is reasonably compact, with a relatively short distance of just 1.3 km from the CMK rail station to the shopping centre and 900m to the Hub, the Restaurant Quarter. There is a slight incline, rising from the south to the north of CMK.

Current Issues - Cycling

A.19 The Redway network connects between the suburbs of Milton Keynes and CMK.

A.20 Milton Keynes has over 290 km of multi-use Redway paths and 60km of leisure routes. The unique design of the Redways provides individuals with safer cycling opportunities away from the grid roads. Nevertheless, the Redway network is currently underutilised as routes are perceived by some to be indirect and unsafe, as well as having low levels of lighting, maintenance issues and poor wayfinding. The cycle underpasses are shared by both cyclists and pedestrians, with Route 51 being the only dedicated cycle route that passes through CMK. There have been safety issues raised where Redways cross busy roads at-grade.

A.21 Through the CMK Cycling Strategy, the Council has taken steps in developing and extending the existing Redway network with more direct routes, many of which are parallel to the grid road network. Priority routes will be rebranded as ‘Express Routes’, to help convey their suitability for making quick journeys along safe and

direct routes. The Cycling Strategy further outlines enhanced maintenance and lighting schemes, as well as including additional cycling infrastructure.

A.22 A key issue for CMK is that the Redways stop at the edge of CMK, and the only Redway link through the centre is north-south along Saxon Gate. This is shown in Figure 3.1. The lack of an east-west route has been identified as an issue within CMK.

A.23 Many cyclists within CMK use the segregated pavements, where pavement widths are generally wide enough to accommodate pedestrians and cyclists. The alternative routes are unattractive as the Boulevards are heavily trafficked, while on the access roads, cyclists have to contend with vehicle movements in and out of parking bays.

A.24 Despite the issues identified with the cycle network to and within CMK, the scale and quality of provision exceeds that of many other towns. The inherent attractiveness of driving therefore has a large part to play in explaining the low cycle mode share to CMK.

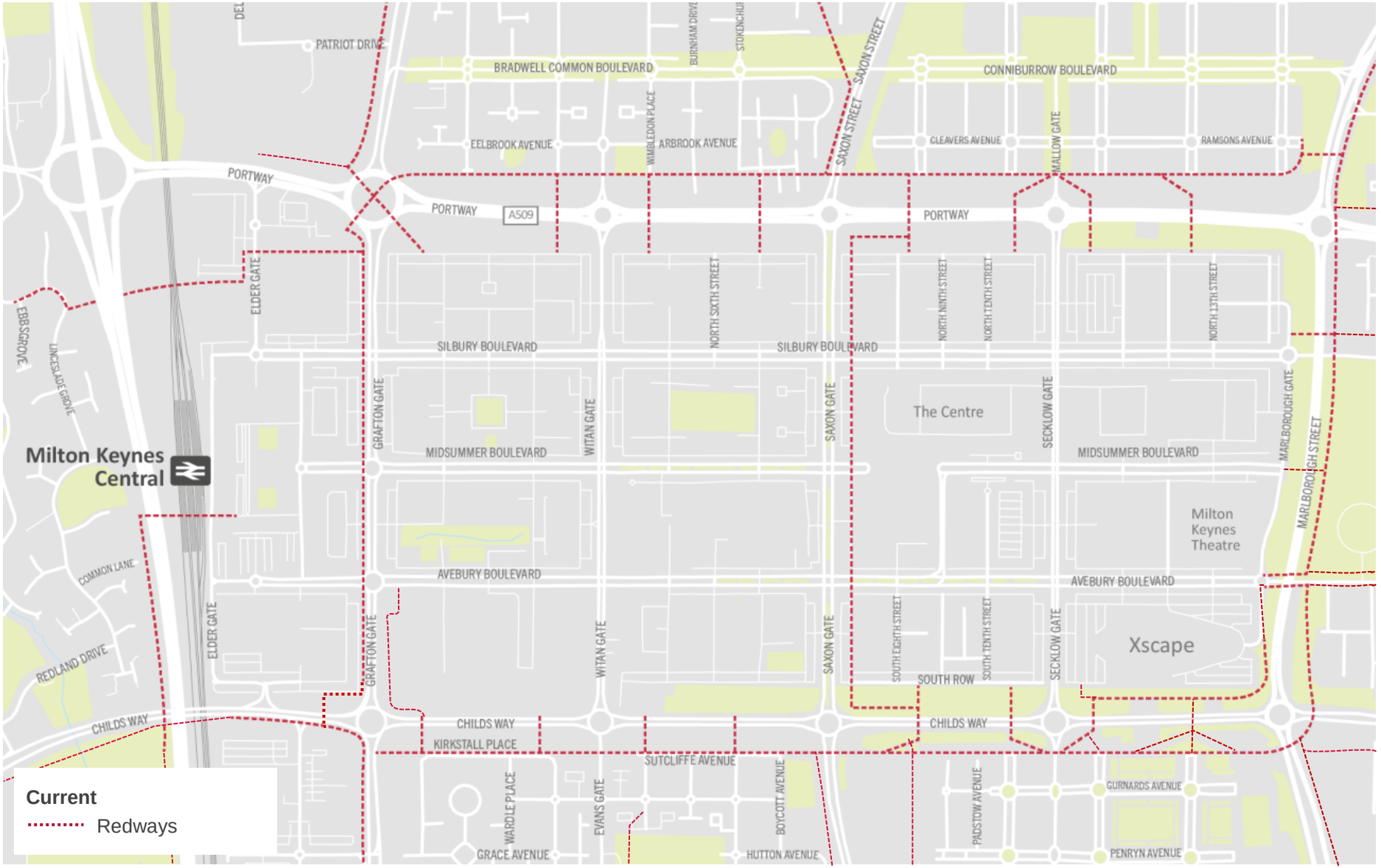
Current Issues – Walking

A.25 Although there are relatively short distances from the rail station to offices, the restaurant quarter and shopping area, it is not necessarily clear that this is the case on arrival at the station and in walking around CMK. Milton Keynes Council has recently implemented wayfinding improvements (with a further Phase planned) to address this issue.

A.26 The network of wide, well-lit underpass offers benefits from segregation, providing a safe means for pedestrians to cross the Boulevards and Gates, encouraging walking and cycling around CMK..

A.27 The walking network and some key destinations are marked with signage, but this can be inconsistent. This is reinforced by the varied level changes and inconsistent interaction with the road network.

Figure 3.1: Redway Routes in CMK



Future Challenges – Walking & Cycling

A.28 To facilitate increased use of non-car trips, there are a number of future challenges to address:

- Encouraging more walking trips within CMK, in particular to discourage shorter distance car trips, requires both a cultural shift towards active travel and an attractive walking network. Education and awareness will be key, alongside adequate signage and lighting.
- The extensive cycling network could be better utilised to encourage cycle commuting on a far wider scale. This poses funding challenges for maintaining and enhancing routes, such as through wayfinding and providing adequate facilities at destinations (e.g. secure cycling parking, lockers, and showers at workplaces).
- The scale of growth and new development requires encouraging an ambitious level of walking and cycling trips for whole or part journeys. In particular, embedding sustainable transport for residents of new homes planned not only nearby CMK, but for Campbell Park, Broughton Gate and Brooklands (Eastern Expansion Area), and Stony Stratford, Two Mile Ash and Crownhill (Western Expansion Area).

Public Transport

Current Provision

Bus Network and Services

A.29 The Milton Keynes bus network comprises mostly radial routes, with north, south, east and west routes from residential areas within the Milton Keynes borough boundary, through Central Milton Keynes (usually along Midsummer Boulevard) and on to another residential area on the opposite side of the centre. Rural and longer distance services arriving in Milton Keynes use bus stops on Midsummer Boulevard as their terminus points.

A.30 Park and Ride services are operated from the Coachway site at the M1, junction 14, by Arriva MK. The Arriva MK 300 route links the Coachway to Central Milton Keynes, with stops on Midsummer Boulevard and at Central Milton Keynes Rail Station. The Coachway also provides car parking for passengers wishing to use longer distance coach services from Milton Keynes. The Park and Ride site has a capacity of 350 spaces and is around 10 minutes from the city centre.

A.31 All bus services serve CMK, and this means that most passengers wanting to make non-CMK trips are required to interchange. The majority of interchange between bus services currently takes place at the rail station or between stops on Midsummer Boulevard East.

Bus Operations in Central Milton Keynes

A.32 Midsummer Boulevard is one of the busiest corridors in Milton Keynes, with over 100 buses per hour during the day. The corridor has the rail station at its western end and the retail and theatre district at the eastern end. Figure 3.2 shows the bus routing through CMK and shows the distribution of bus stops along routes in Central Milton Keynes. There are two main clusters of stops that act as points of interchange. These are outside the Railway station and on Lower Tenth Street / Midsummer Boulevard East, serving the retail core.

Current Issues

A.33 The bus network offers good coverage, and there have been improvements in service levels on some higher demand 'core' routes. This has resulted in an increase in bus usage of almost 6% in the last full year (2013), with overall bus demand of 10 million passengers per annum.

A.34 A key issue is that buses are not seen as an attractive or viable alternative to the car for those trips where users have a choice of mode, and this explains the low public transport mode share to CMK. The factors that make bus relatively unattractive as an alternative (to potential car users), also impact on the quality and reliability of provision for those that currently use the bus.

A.35 The key issues include:

- While there are a few higher capacity and more direct bus routes (e.g. north-south corridor from Wolverton to Bletchley via CMK) the need to service a dispersed pattern of housing in a number of corridors makes journeys more circuitous, longer and less attractive as a result.
- Within CMK, all buses are required to 'dog-leg' between Saxon Gate and Lower 9th Street, adding journey time to passengers and additional cost to operators.
- There is limited bus priority given to buses within CMK, and this adds to journey time unreliability which affects passengers and the ability of bus operators to keep to timetable. Passenger satisfaction surveys suggest concerns with reliability, whilst bus operators report that the time to travel through CMK (from Milton Keynes Central Station to Marlborough Street) is very variable.
- There is conflict between buses and private cars and taxis at the Rail station, where buses notionally have priority but other vehicles pick up / drop off, making it hard for buses to access / depart from the stop.
- The quality and comfort of bus journeys is compromised by the speed humps along Midsummer Boulevard, and by the age of some of the vehicles in the bus fleet.

- All buses within CMK serve the same route, which picks up the key demand hubs at the station, employment area, retail core and cultural area along Midsummer Boulevard. The consequence is that buses do not serve other potential movements within CMK particularly well, which might include retail centres close to the train station and events at Campbell Park.

  The Council regularly meets with Bus Operators to discuss issues such as these and will continue to look for public transport solutions while also identifying future challenges.

Future Challenges

A.36 Buses are, and will remain, an important part of the transport mix within Milton Keynes. However, there are several key challenges in the near term:

A.37 The impact of growth in MK generally, and CMK in particular, could exacerbate a number of the current issues outlined above. In particular, traffic growth will result in slower bus journeys and greater journey time unreliability, in the absence of ameliorative measures.

A.38 A potential benefit of growth is that a higher population in MK and workforce within CMK will increase the demand that buses can potentially serve. Measures to improve the attractiveness of bus can therefore serve to expand the bus market and enhance the commercial viability of routes.

A.39 The desire to pedestrianise Midsummer Boulevard East (west of Secklow Gate) would require the relocation of the cluster of stops serving the retail core and the re-routing of buses from this area. We have looked at specific options for this under ‘Public Transport Interchange’ in the next chapter.

A.40 A broader challenge is to consider the future role that busses could perform as part of a more integrated, dynamic and responsive transport system in which busses may no longer be the pre-dominant ‘non-car’ vehicular mode, but one of potentially several. This has potentially wide ranging implications for bus network configuration, vehicles, pricing and ticketing etc. Potential options are discussed in Chapter 4.

Figure 3.2: Central Milton Keynes Bus Routing Through CMK

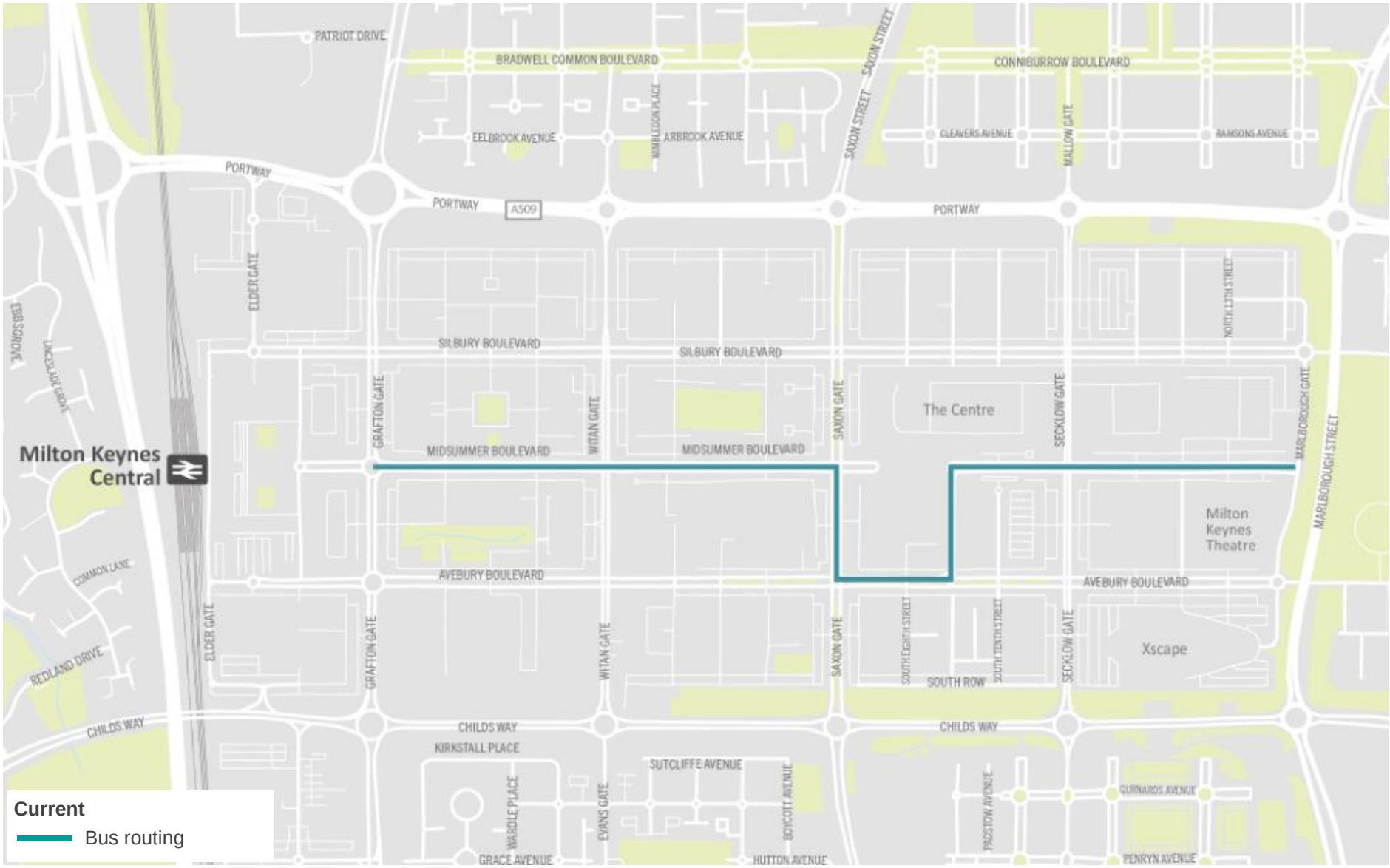


Figure 3.3: Central Milton Keynes Bus Stop Locations

Parking

Current Conditions

A.42 Car is the dominant mode, accounting for 75% of commuting trips (person trips) into CMK, with 19,600 car vehicle trips going to CMK each morning.

A.43 There are approximately 25,000 parking spaces in CMK. Of these approximately 21,000 are public parking and a further 4,000 private spaces. By comparison, neighbouring towns of Northampton and Luton have approximately 4,000 public town centre spaces and Peterborough (considered to be a demographically comparative town) has 7,000 public spaces and 3,500 private (employee parking) spaces[5]. These comparisons reflect the fact that Milton Keynes is very different from similar sized towns, whereby good road accessibility and parking availability underpin its attractiveness as a retail and employment destination. However, they also emphasise the scale of challenge in accommodating future growth in a more sustainable manner.

A.44 Parking charges in Milton Keynes are also lower than those levied in neighbouring and comparable cities, and this is one reason why driving is a more attractive option than more sustainable forms of transport. However, the current availability of parking, without attractive sustainable alternatives, is important for Milton Keynes' economy.

A.45 MK owned parking comprises a mix of Standard Pay and Display (around half the spaces), with Premium Spaces (around 20% of spaces) and Multi-Storey (a further 15%) largely focused around the retail core. There are around 1,000 free spaces.

Current Issues

Parking Utilisation

A.46 While there are more parking spaces than parking demand across CMK overall, the pattern of demand and usage results in parking being at or approaching capacity at certain locations and at certain times. The main areas where parking capacity is an issue is:

- Weekdays, in particular around the employment area in the Western half of CMK.
- Weekends at and around the retail core, with particular issues in the peak season around Christmas.

A.47 Parking utilisation surveys are regularly undertaken and these show the areas where demand is at or approaching capacity. The numbers vary between surveys, but the broad pattern described above is evident, as depicted in Figure 3.4 and Figure 3.5 (these show weekday and Saturday utilisation levels respectively). Red / orange

[5] LTP3 - Milton Keynes Key Challenges - Evidence Base, July 2010

indicated Grid Blocks that are between 90% and 100% occupied, while green indicates occupancy levels of less than 60% (darker green cells are less than 30% occupied). There are large differences between the utilisation rates for different types of parking. In particular, on week days standard parking (which accounts for over 10,000 spaces) is almost full, as is long-stay parking (about 400 spaces concentrated around the railway station).

A.48 In the week, occupancy rates are at or near capacity towards the rail station, with more capacity available west of Saxon Gate. At weekends, the reverse pattern is evident where Blocks D and E are at / approaching capacity and there is significant space available west of Saxon Gate.

A.49 While there is notionally spare parking capacity at all times taking CMK as a whole, and road and walking connections exist, the pattern of utilisation suggests that people are reluctant to park in locations where capacity exists if this is remote from their end location. This reflects both the actual distances between parts of the employment area and retail core, and the perception of connectivity within CMK. The perception issue arises because connections are not always obvious or easy to navigate within CMK to enable people to go between where parking is available and their final destination.

A.50 The high levels of parking utilisation across the employment area affect commuters and also the ability of business visitors to find appropriate parking provision. Where there are no spaces close to the final destination, the ability to find alternative parking is constrained both by the high general level of utilisation and the issues around signage / information and general complexity of parking types described below.

Figure 3.4: Parking Occupancy – Week Day (June)

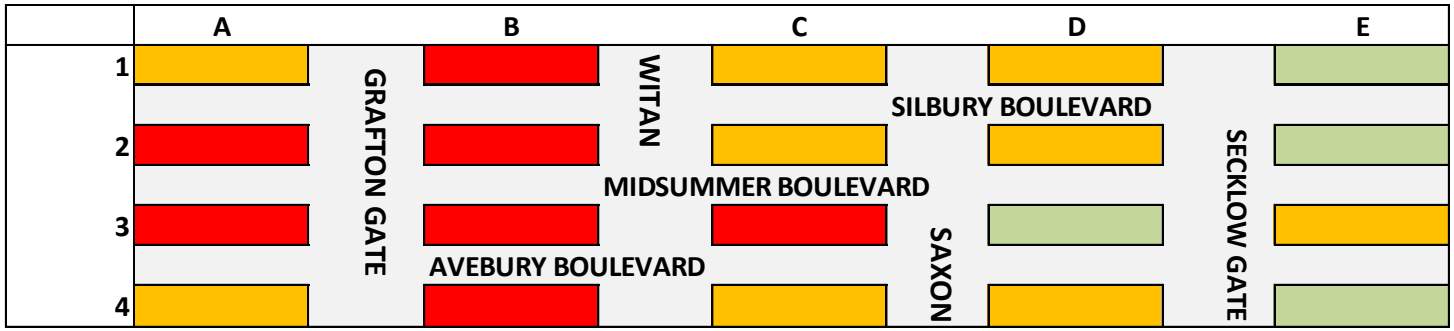
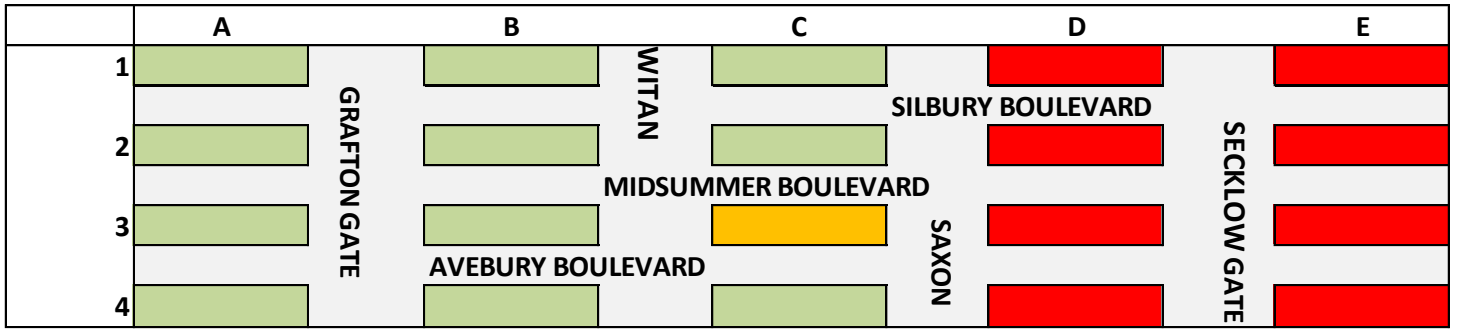


Figure 3.5: Parking Occupancy – Saturday (December)



Key for Figs 3.4. & 3.5:

-Red indicated Grid Blocks that are between 90% and 100% occupied

-Green indicates occupancy levels of less than 60% .

-Amber indicates between 60% and 90%.

Parking Related Congestion

A.51 The desire to park as close as possible to the final destination, combined with the high parking utilisation levels, inevitably results in a number of vehicles spending time searching for spaces. This is inconvenient to the driver and also exacerbates the level of traffic and congestion in the central area. There are particular pinch-points at certain places and times, for example people queuing to access the multi-storey car park at the shopping centre even when there are spaces available a block or so away.

Signage and Information

A.52 There is limited signage and information to guide drivers to car parks that have spaces, or to dissuade them from accessing car parks where spaces are limited.

Complexity of Offer

A.53 The combination of parking types and tariff arrangements, combined with relatively poor information to drivers, makes the overall parking regime complex and difficult to understand, in particular for irregular visitors who are not familiar with the system.

Future Challenges

A.54 The impact of future year growth on the highways and parking supply is significant, with morning peak car trips and journeys into CMK forecast to increase by 39%, based on the Milton Keynes highway model[6]. This corresponds very closely with the forecast increase in CMK employment of 40%. The growth in employment and the ambitions to expand the retail and leisure/ entertainment offer of CMK will also result in an increase in car trips to CMK throughout the day and at weekends. There is also an emphasis on encouraging visitors to CMK to stay longer by enhancing the public realm, scale of retail offer and the range of retail, leisure and entertainment facilities in CMK. This will also increase the effective demand for parking as spaces are utilised for longer.

A.55 Under a 'business as usual' scenario (i.e. assuming the same level of parking utilisation) there would need to be an increase in total parking spaces (public and private combined) of about 10,000 spaces from the current c. 25,000 to a future c. 35,000 spaces.

A.56 The level of future requirement would be lower should a higher level of parking utilisation be achieved, as shown in Table 3.2.

[6] Milton Keynes Transport Model, Traffic Forecast Report, Milton Keynes Transport Model, Milton Keynes Council, May 2012. For our analysis we used model outputs to identify the forecast increase in highway trips to / from Central Milton Keynes, based on the Core Strategy Scenario.

Table 3.2: Parking Utilisation and Spaces Scenarios

Utilisation	Total spaces required	Additional spaces
73%	35,000	10,000
80%	32,000	7,000
90%	28,000	3,000

A.57 This suggests a key element of a future strategy should be to look at how to better manage and utilise parking, to reduce the overall increase in supply required to accommodate future growth. There is a direct trade-off between land that would be required to provide additional car parking, and land that could be made available for development.

A.58 Within this context, parking pricing needs to be implemented at a level which enables investment to be made in delivering additional spaces and support the take up (attractiveness) of other modes.

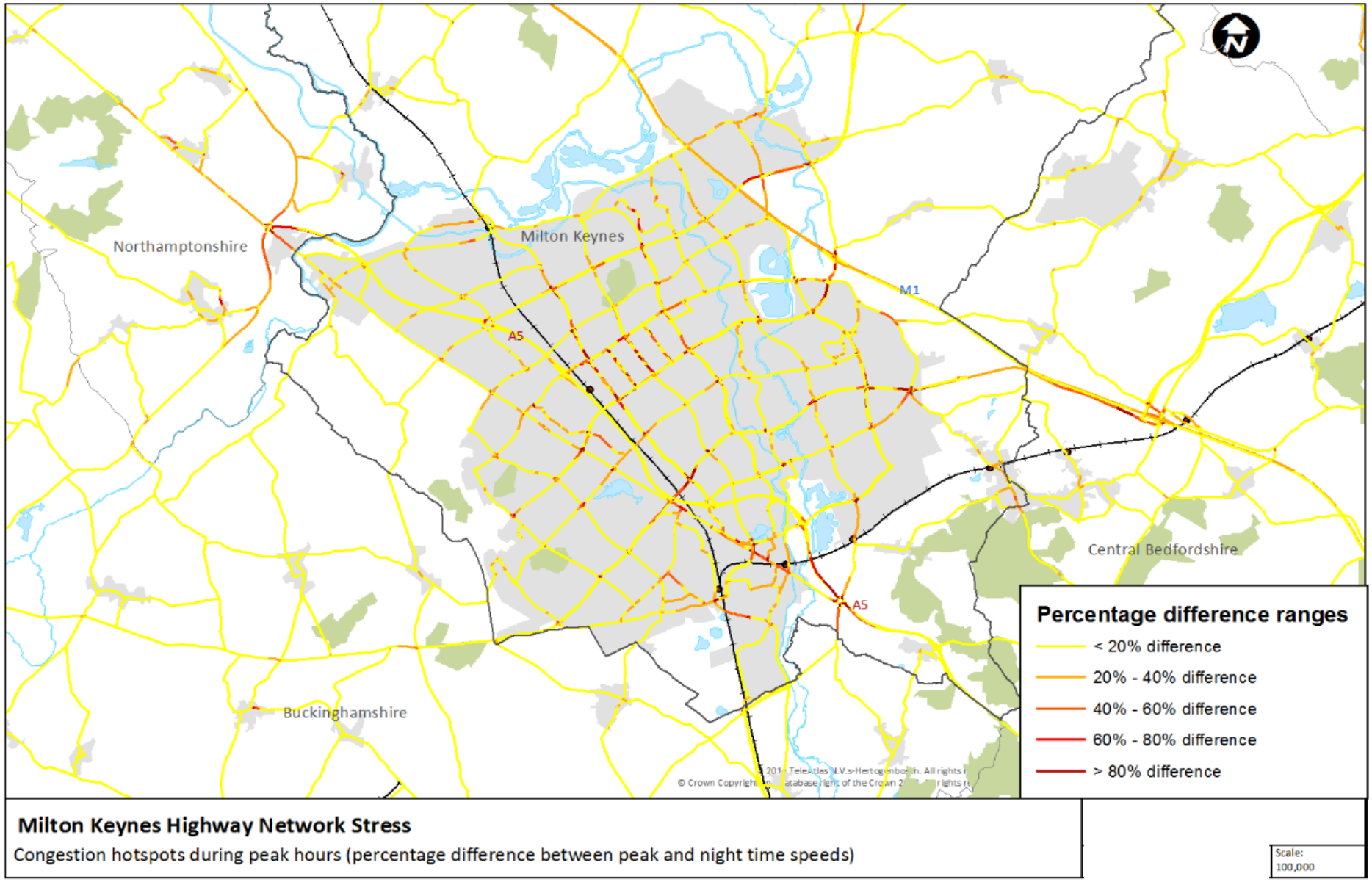
A.59 Other options to reduce the level of additional future parking supply required are also identified in Chapter 4 (in the main strategy document), including making non-car modes more attractive, and travel demand management measures. The inclusion of measures to encourage behaviour change is critical to the overall success of the highways and parking elements of the strategy. These are also highlighted in Chapter 4.

Highway Network

Current Conditions

A.60 In general, levels of congestion on the road network into CMK are not severe compared to other comparable sized towns. The main points of congestion and delay (shown in red in Figure 3.6) are in and around the central (CMK) area grid network, along the M1 and around the edges of the Milton Keynes built up area between the strategic and wider road network and the urban roads. The roads within the urban area, outside of the CMK grid are generally characterised by lower levels of delay, though there are delays at some key junctions / roundabouts.

Figure 3.6: Highway Network Stress (MK Area)



Current Issues

A.61 The challenge for the CMK Transport & Parking Strategy is how to better support overall traffic movements, including integration of parking management, to facilitate smooth traffic flow.

Future Challenges

A.62 The forecast increase in demand (39% by 2026) will increase the number of junctions where volume over capacity (an indicator of delay) exceeds a standard threshold level of 85%. The main areas of forecast worsening are:

- The A5 corridor, linked to the Eastern Expansion area.
- Within Central Milton Keynes.

A.63 There is clearly a direct linkage between the transport and parking strategy elements, and the amount future traffic growth that can be expected.

A.64 The role of network management (covering both highways and parking) will have a key role in encouraging better and more efficient use of the network, covering the strategic network (e.g. M1), key routes into CMK and traffic within the central area.

B Strategy Measures

B.1 An overview of the proposed strategy measures are summarised, by theme, in the figure 4.1 below. A central challenge of the strategy is how to accommodate future growth while mitigating the impact that 'business as usual' growth would have on parking supply in CMK.

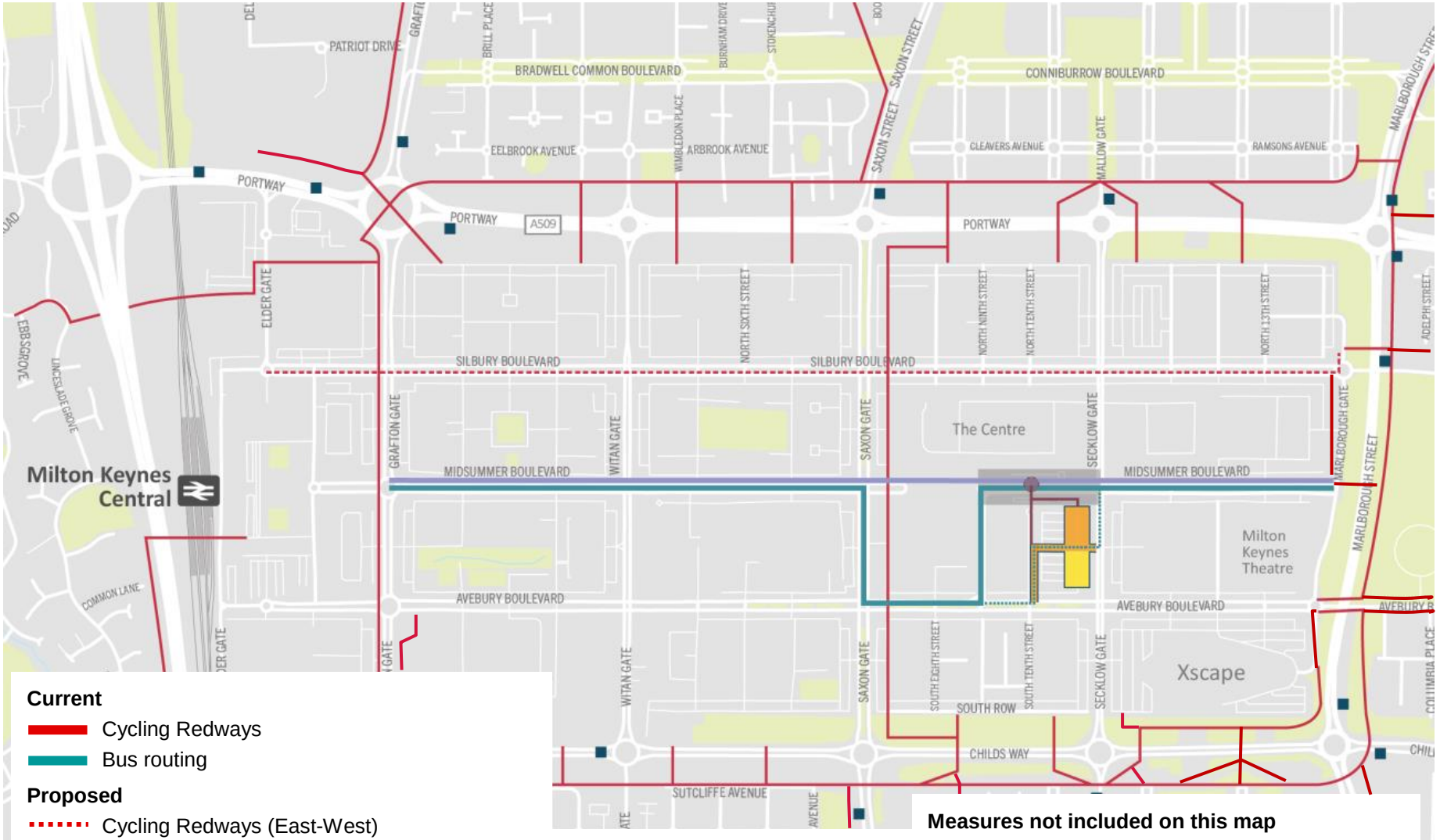
Walking and Cycling Measures

B.2 Milton Keynes benefits from a segregated network of cycling and walking paths yet mode share for active travel remains no better than the national average. Whilst the car commuter culture dominates, there are number of interventions to address the walking and cycling network and normalise active travel within CMK.

B.3 The Milton Keynes Local Transport Plan (LTP) provides a useful foundation for proposals geared towards encouraging active travel; however this strategy needs to develop the options into tailored proposals for CMK. The focus should be on maintaining the existing infrastructure and encouraging increased take-up of active travel.

Current Wayfinding signs, Midsummer Blvd / Saxon Gate

Figure 4.1: Strategy Measures



Wayfinding

B.4 CMK's walking and cycling network has a range of signage for popular destinations. The current wayfinding system is often confusing and is inconveniently located throughout the city centre. To enhance CMK's wayfinding and signage, the Council is currently improving the signage throughout central Milton Keynes. Through the CMK Wayfinding Programme, accurate, appealing and easy to read signage will be located at strategic locations within central Milton Keynes. A central focus of the programme is to improve signage from key public transport access points.

B.5 High quality signage and wayfinding will make it easier to take up walking and cycling either as the main mode or for the last stage of the journey. This has potential knock-on effects on use of the proposed public transport interchange and changing at-destination parking requirements, as well as local retail and leisure facilities more generally.

B.6 Currently a thorough review of wayfinding and signage within CMK to address current information and permeability issues is taking place. The option is to integrate the wayfinding and public realm elements that cut across the plans for CMK and, in particular, the proposed public realm transformation of Midsummer Boulevard East alongside the wider transport and parking strategy.

Maintaining the pedestrian network

B.7 The extensive nature of the underpass network inevitably provides the Council with maintenance challenges, meaning improvements have to be targeted according to need. Taking a route section or area-based approach to maintenance and lighting of the network will see improvements delivered as part of an ongoing enhancement programme.

Developing the Cycle network

B.8 Whilst maintenance and improving awareness are core components of the walking and cycling in CMK, there is scope to expand the Redway network in Central Milton Keynes and to new developments and regeneration areas. In addition, a new public transport interchange provides an opportunity for enhanced access to a more integrated public transport network, with more targeted cycle parking at bus stops, interchanges and facilities for carrying cycles.

B.9 A key issue for CMK is that the official Redways stop at the edge of CMK. The exceptions to this are the Redway link that runs north-south along pathways parallel

to both Saxon Gate & Grafton Gate. The existing north-south Redway route is shown in the figure 4.2 below.

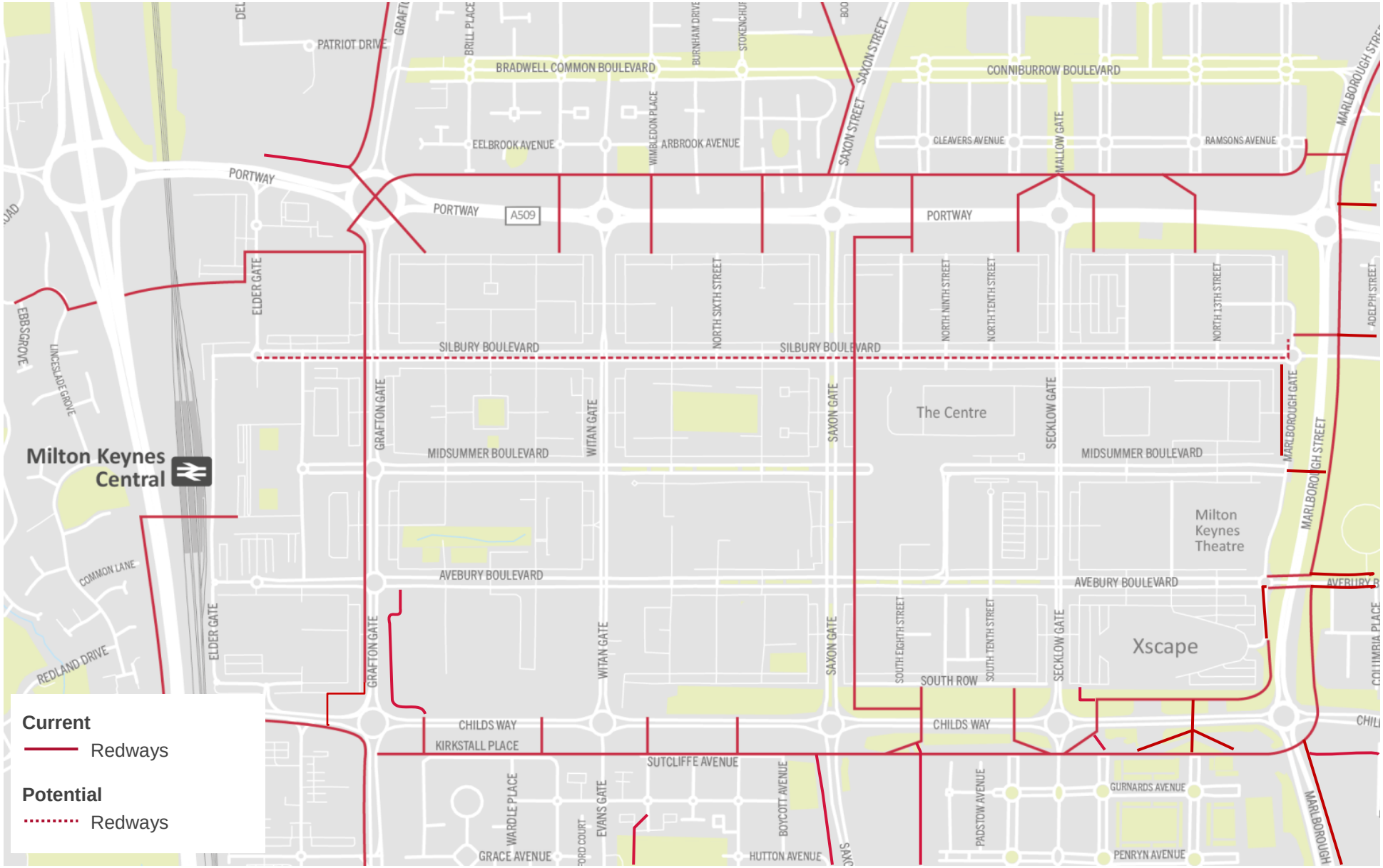
B.10 One opportunity that could be taken forward as part of this strategy is the implementation of a cycle expressway that runs east-west along Silbury Boulevard.

B.11 Positioning an east-west cycle expressway along Silbury Boulevard would avoid conflict with the proposed transit corridor along Midsummer Boulevard, and would also limit the impact on the bus alignment that partially runs along Avebury Boulevard. The potential route is illustrated in Figure 4-2

B.12 This would also support greater accessibility from the station to the central areas, and would provide an express cycle route to the northern side of Campbell Park, which is identified for potential residential development in the CMK Business Neighbourhood Plan.

B.13 The provision of enhanced trip end facilities is a specific issue for CMK. This includes cycle parking at interchanges (e.g. including the proposed bus interchange) and parking and shower facilities at work places, which would make cycling more attractive and viable as a commuting option.

Figure 4.2: Redways Routes in CMK (existing and potential)



Cycle Hire

B.14 A priority for the strategy is to provide a range of better options for people to travel within CMK. Cycle Hire has the potential to act as the 'last mile' mode of transport, and the size and topography of CMK is suitable for cycle hire. There are over 535 bike sharing programmes in operation around the world, and whilst different types of the scheme exist, they all share the same goal of promoting sustainable travel for short-distance trips in urban areas, offering a direct alternative to motorised public transport or private vehicles. In the UK Transport for London operates the Barclays Bike Hire scheme in central and inner London. Smaller schemes operate in Blackpool, Lincoln, Reading, Liverpool, Nottingham and Glasgow.

B.15 Cycle Hire schemes can be relatively cost effective to set up, with the main costs arising from the purchase of bikes and docking stations, along with some minor infrastructure improvements. The main cost challenge comes with their operation, where an effective pricing regime is needed to encourage short-term use while generating sufficient revenue to help cover operating and maintenance costs. Security is also important, as theft is a common issue for authorities running cycle hire schemes.

B.16 A cycle hire scheme has been announced, sponsored by Santander, which will roll out in very near future. MKC will work closely with Santander, the wider business

community and its voluntary and community organisations to promote the Cycle Hire scheme to help promote more bicycle use in CMK.

B.17 Through each of the above, and the borough-wide measures set out in the Cycle Strategy, the measures will support the stated ambition for Milton Keynes “to be more aspirational and aim towards becoming an exemplar cycling city, encouraging walking and cycling at every opportunity.”

Passenger Transport Measures

Public Transport Interchange

B.18 There has been a long held aspiration to improve the quality of bus provision and interchange facilities in Central Milton Keynes. This has since been viewed in parallel with ambitions to enhance Midsummer Boulevard East (MBE) so it can better "contribute to the economic, social and cultural performance of the Primary Shopping Area (PSA)".

B.19 The ongoing consultation on MBE has generated proposals for a pedestrian dominated promenade to the west of Secklow Gate, and a pedestrian-friendly boulevard to the east of Secklow Gate. Buses currently stop along the western section of MBE, so the aspiration to pedestrianise this section requires the relocation of these stops, whilst ensuring that good access to the retail heart was maintained.

B.20 The radial nature of the bus network in Milton Keynes means that most bus journeys that are not to CMK require an interchange within CMK. However, while bus interchange is possible at any of the clusters of stops along Midsummer Boulevard (including at Milton Keynes Central), there is not currently a location that provides high quality bus interchange.

B.21 A new bus facility also has the potential to significantly enhance the quality of bus travel in Milton Keynes, through providing a modern and attractive interchange that provides a full range of passenger facilities. This, in turn, has the potential to increase bus usage, facilitate modal shift and contribute to the wider LTP and CMK Transport and Parking Strategy objectives.

B.22 A new public transport interchange in Central Milton Keynes would therefore support the wider public realm aspirations of the town, and enhance the overall quality and attractiveness of public transport.

B.23 There are trade-offs between some of these objectives. For example, the desire to pedestrianise Midsummer Boulevard East will mean that stops will inevitably be further from the current retail core. Also, there is a balance between the need to 'future-proof' and the scale of the development opportunity that can be realised.

B.24 Through the informal consultation a number of bus interchange options and variants were presented that signified a different balance between these trade-offs. Based on the consultation responses and the objectives of the overall strategy, and public

transport interchange in particular, a preferred location has been identified outlining specification for the interchange.

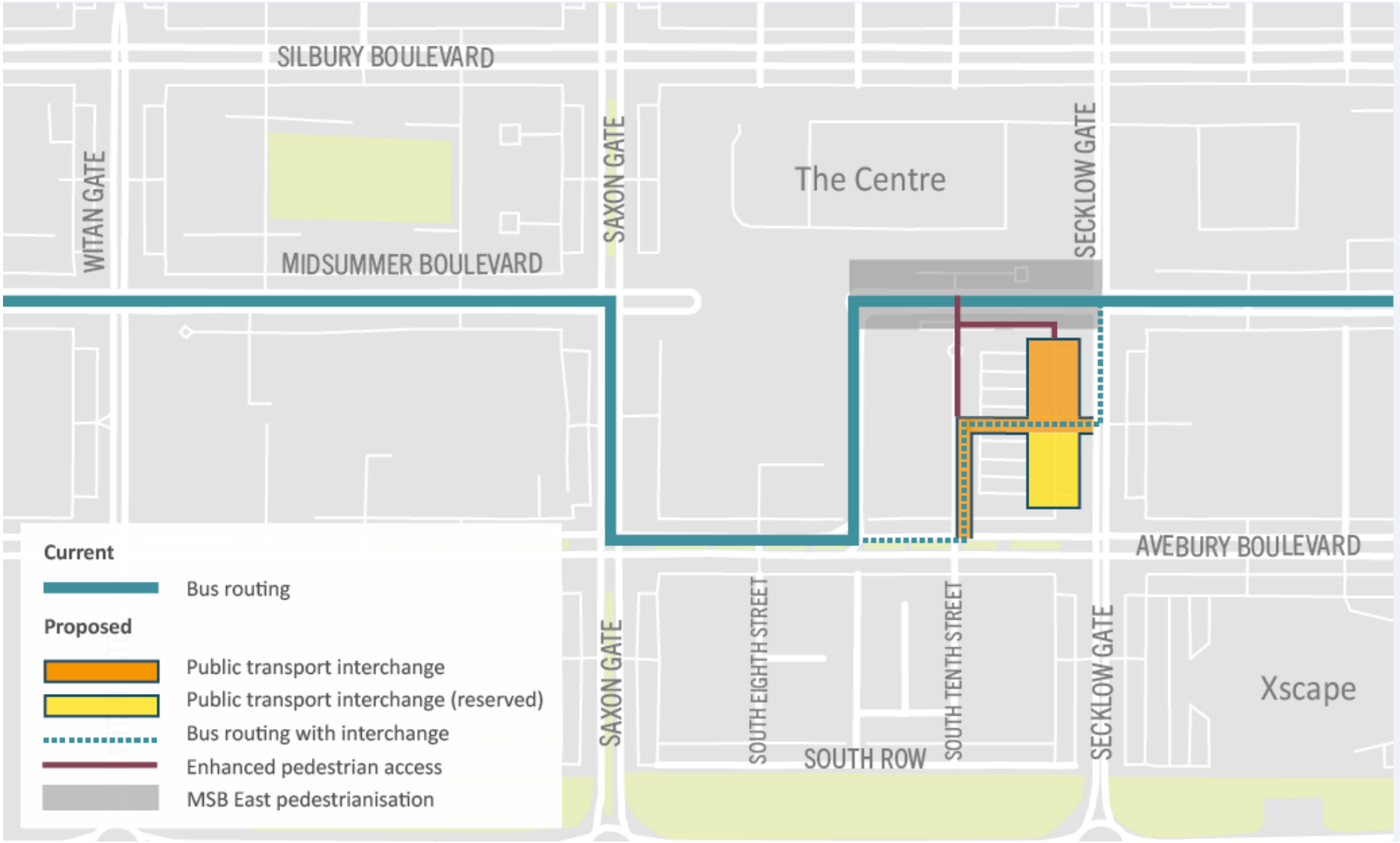
B.25 The preferred option is presented schematically in Figure 4.3, and the potential layout design of the preferred option (Option D) is presented, alongside the other options considered.

B.26 The detailed design for the public transport interchange needs to be developed, including the key outputs that the interchange should adhere to, in terms of location, size, vehicle and pedestrian access, and facilities. This needs to be planned in conjunction with emerging development aspirations for the site and the wider public realm in Midsummer Boulevard East.

B.27 The layout shown in (for Options D) is not therefore definitive proposed solution, but provides an illustration and ‘proof of concept’ of a layout that meets the key criteria for the interchange design. The key features of the proposed interchange are described below.

B.28 All the options proposed including the preferred option would be subject to financial viability, design feasibility, planning consent approval and full consultation.

Figure 4.3: Public Transport Interchange



Location

B.29 Bus services currently serve stops on Midsummer Boulevard and Lower Ninth, providing good access to the retail core. It is important that the bus interchange provides good access for bus users to Midsummer Boulevard for two main reasons:

B.30 Midsummer Boulevard is the focus of demand, and a location removed from this will inconvenience current bus users and reduce the overall attractiveness of bus, which in turn could impact on the demand for, and viability of, services.

B.31 The bus interchange needs to provide an interchange between bus and a future transit route along Midsummer Boulevard.

B.32 At the outset of the development of the strategy, an indicative location for a new public transport interchange was identified with potential sites identified on both sides of Secklow Gate. To provide direct access to Midsummer Boulevard, the preferred option for locating the public transport interchange is on the west side of Secklow Gate.

B.33 The development aspiration that the facility is located on the eastern-side of the block was taken into account to enable the re-development of the high-value site currently occupied by The Point (closer to Midsummer Place).

B.34 The footprint shown covers the area required for bus movements and circulation. Provision would be required for passenger and staff facilities, as described below. This would need to be integrated into the interchange or into the wider development.

Vehicle Access to / from Interchange

B.35 Access to / from the site would be provided from Secklow Gate and Lower Tenth Street. The Secklow Gate access is located approximately mid-way between MSB and Avebury Boulevard – an option of providing access close to MSB is not practicable due to the raised level of the junction of Secklow Gate and MSB. The access onto Lower Tenth Street is recommended to avoid directing buses through the busy Avebury Boulevard and Secklow Gate junction, which would result in conflict with general traffic and likely queuing at busy periods.

B.36 At present, buses suffer a high degree of journey time unreliability which affects passengers and the ability of bus operators to keep to timetable. Bus priority recommendations are described later in this Chapter, and this includes specific recommendations on the access to and from the proposed interchange.

Size and Operation

B.37 The bus-stops at The Point currently service 100 buses per hour across 12 stops, with possible growth from new development suggesting a requirement of around 20 stops in the future.

B.38 The preferred option (Option D in Appendices) shows an interchange preference that could be constructed in Phases. The first Phase would comprise the orange shaded section located on the northern section of the site. The capacity of the initial Phase would, accommodate 192 buses per hour (16 stops at 12 buses per hour per stop). The facility could be extended to the southern section in line with future demand and service requirements providing capacity for up to 240 buses per hour (20 stops, at 12 per hour).

B.39 The development of the northern section alone (in conjunction with the on-street stops) should be sufficient to accommodate longer-term planned growth. However, this should be subject to further detailed design and the southern section of the site be identified (and safeguarded) as a potential site at this stage.

Further detailed design of the interchange facility would consider:

- Whether the increased use of cashless (off vehicle) payment and / or dynamic scheduling could increase the throughput of buses per hour
- Whether the bus interchange should accommodate larger buses (the concept design have 13m strands), and the related issue of whether coaches should be allowed to use the facility
- Whether the facility affords the opportunity to reconfigure bus services. Currently many bus services run through CMK and this reduces the operator's ability to mitigate the impacts of journey time unreliability to better regulate the service frequency. A new interchange could enable more terminating services to be provided with the benefit of more layover time to regulate the service better. This would provide passengers with an attractive option for interchange with other bus services.

Interchange Facilities

B.40 The interchange should include facilities for passengers, including enclosed shelters for passengers, toilets /baby change, real time passenger information (RTPI) and an

information desk. A café and retail units could be provided either integrated within the facility or integrated into the adjacent development.

B.41 There should also be provision for driver and operator facilities, include male and female toilets and mess room(s)for drivers and bus station staff, controller's office, cleaning equipment store, electrical intake cupboard.

B.42 The overall area required for such passenger and operator facilities, based on facilities elsewhere, would be around 300 m^2.

Pedestrian Access

B.43 The location of the interchange is further from the retail core than current bus stops. This means that high quality pedestrian access and enhanced public realm will be required between the interchange and MSB. This would need to be provided:

- To the south side MSB (which is at a lower grade that the elevated carriageway) in the direction of both the retail core and the theatre.
- Along the northern section of Lower Tenth Street.
- The detailed planning of the interchange should be integrated with the wider plan to enhance public realm and facilitate / encourage movement within and around MSB east. This wider plan includes aspirations to also provide better access for pedestrians from retail centre towards Xscape.

Integration with Public Realm Proposals

B.44 The proposed location has been developed to facilitate and enable the pedestrianisation of MBE, west of Secklow Gate, as per the current proposals being considered for MBE. The proposals are also consistent with any future aspiration to pedestrianise MSB east of Secklow Gate and buses would, in this case, be required to access the interchange via Silbury / Secklow Gate rather than Midsummer Boulevard / Secklow Gate.

B.45 With the pedestrianisation of Midsummer Boulevard East (west of Secklow Gate) the existing bus stops will be retained on MSB east of Secklow Gate to serve the theatre and MK Gallery.

Cycle Parking Provision

B.46 The development of the interchange design (in conjunction with the wider public realm) should also give consideration for the location of cycle parking facilities close to the interchange, including cycle hire docking stations.

B.47 Milton Keynes Council is currently carrying out a feasibility study for a cycle hub in Central Milton Keynes to better serve current and future cyclists. The cycle hub feasibility study would look at enhancing facilities including secure cycle parking, bike repair and service workshop, shower and changing facilities and working with partners to develop the hub as social enterprise.

Powered-Two-Wheelers Provision (PTW)

B.48 The council is looking to update its powered-two-wheeler strategy and this will be incorporate within the LTP4. The PTW Strategy will be reviewed to give a balanced consideration to support the infrastructure needed to bring about the greater use of PTWs for journeys to and within CMK. The provision for safe use of electric scooters, 3-wheelers scooters as well as more powerful motor bikes will be enhanced through working closely with Milton Keynes Motorcycle Association and other organisations.

B.49 Powered two wheelers can play an important role in the development of a fully sustainable integrated transport system. PTWs offer an affordable and flexible form of personal transport for journeys which are difficult to undertake by other sustainable modes such as walking, cycling and public transport. Although powered two wheelers are not totally ‘green’ they offer significant environmental advantages over the private car.

B.50 In general the PTWs offer similar flexibility to the car use and within urban areas they can move freely and are able to park in small spaces. They are an affordable way to increase mobility and widen access to employment and local services. In recent years there has also been a growth in the use of powered three-wheelers that offer similar flexibility with enhanced stability.

Taxi Provision

B.51 The integrated design of the public transport interchange within the context of the wider MBE proposals will also need to consider the re-location options for taxis, which are currently located outside the Point (on MBE).

B.52 With advances in technology, such as cash-less transactions, smart-phone call-up taxis services etc.; taxis can offer a good reliable transport alternative to personal car use. The council needs to work closely with the taxi operators to take on board the new advances in technology to better serve the public. Waiting areas and number of dedicated parking spaces for Taxis will need to be improved to give the travelling public a better experience of the service.

B.53 Similar to the two person autonomous pods, modern three-wheeled cycles might provide a new mode of sustainable cheap private hire transport to and from station square and the shopping district.

Improving Bus Journey Times and Reliability

B.54 he key issue for buses in CMK is the journey time variability that affects passengers, timetable reliability and the overall costs of operation to the operators. There are options to improve the quality and attractiveness of bus services by addressing this issue.

Bus Priority / Addressing Key Pinch-points

B.55 Measures to improve bus journey times will need to minimise disruption to motorists. This could include Automatic Vehicle Detection, bus gates, and bus lanes that provide additional capacity, rather than removing capacity away from motorists. An option is for these lanes to also provide additional capacity for High Occupancy Vehicles (HOVs) to promote car sharing further.

B.56 There are key pinch-points within CMK that should be addressed as part of the strategy. These are:

- Dedicated access and / or greater enforcement at the entry and exit to bus interchange at Central Milton Keynes station.
- Priorities at key junctions including Midsummer Boulevard / Saxon Gate, Saxon Gate – Avebury Boulevard
- In conjunction with the proposed public transport interchange, priorities between the interchange and Secklow Gate and Avebury Boulevard.

Transit Alignment through Midsummer Boulevard

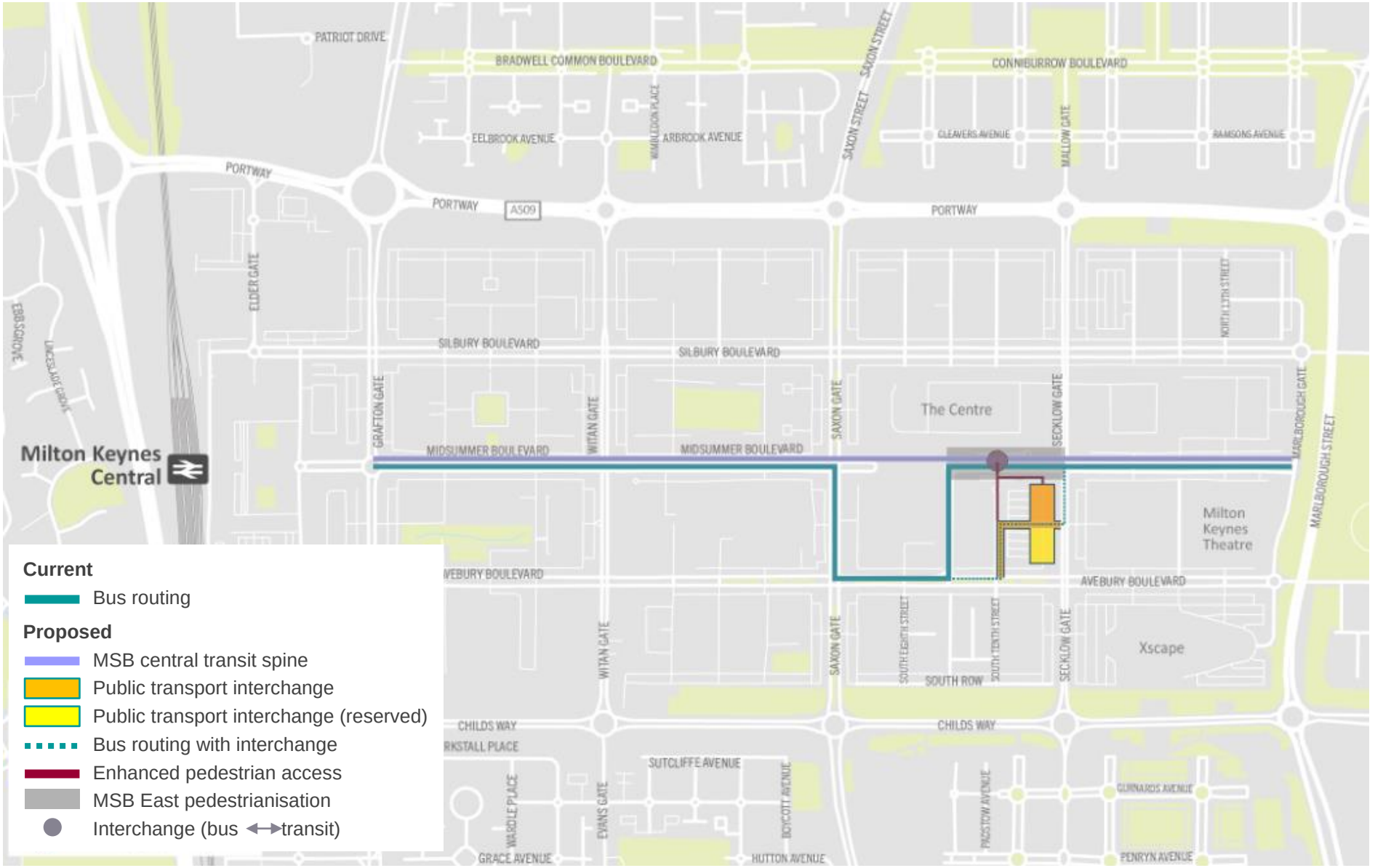
B.57 There has long been an aspiration to improve the quality and attractiveness of public transport in Milton Keynes, and recognition of the role improved public transport has in supporting the long-term growth and success of the town. In support of this aim there has long been a reserved transit alignment along Midsummer Boulevard, including a 20m (proposed to be reduced to 15m) corridor that runs through the pedestrianized thoroughfare of the intu:mk shopping centre. Ambitions for a future-orientated public transport route through MSB are restated in the CMK Business Neighbourhood Plan.

B.58 The informal consultation set out the potential benefits of utilising this alignment to provide a high quality public transport spine connecting the key demand drivers within Milton Keynes. The consultation showed very strong support for the principle of developing this transit alignment. The route is shown in Figure 4.4.

B.59 A transit route along this axis would provide a number of potential benefits:

- Enhanced connectivity within CMK, by joining up the key demand attractors of the station, employment area, retail core and cultural quarter with a direct route along a single axis. At present the ‘dog-leg’ movements made by buses and the associated delays at junctions mean that buses to not successfully perform this role.
- The potential to deliver modal shift to bus, through a greater ability to directly serve the retail core and to provide faster journey times to locations throughout CMK and on cross-city services.
- The potential to reconfigure bus (and other) services to feed into the central axis via ‘interchange hubs’ at either end of Midsummer Boulevard. Buses could then either be rationalised (i.e. serve hubs at either and of MSB) or could run along different routes (e.g. Silbury and Avebury Boulevards) to provide better overall transit accessibility to and within CMK.

Figure 4.4: MSB Transit Spine Reserved Transit Alignment



B.60 While the potential benefits of direct transit route along CMK are clear, there will need to be further detailed work to understand how this could be implemented in the short and medium term.

Short and Medium/ Longer Term Transit Options

B.61 There are existing and emerging bus and transit-based vehicle technologies that could enhance the quality of provision to the user, and reduce the negative environmental effects that current buses have due to their emissions. The legal agreement with INTU:MK requires vehicles to be zero emission (at point of use) for them to be permitted to run along the reserved corridor alignment through the shopping centre.

Low Emission Electric Buses

B.62 In the short-term the use of low emission electric buses would be the most deliverable option for the MSB corridor.

Electric bus, Saxon Gate

B.63 The Milton Keynes Electric Bus Project is an innovative approach to charging electric buses to enable the quieter, cleaner future of public transport in Milton Keynes. This involves an ongoing trial where six organisations led by subsidiary of Mitsui & Co Europe (and also including Milton Keynes Council and bus operator Arriva) have replaced seven diesel buses with all-electric counterparts on the number 7 route in Milton Keynes. The new buses can recharge their batteries wirelessly through the day which means that electric buses will be capable of the equivalent load of a diesel bus. The buses are anticipated to remove approximately 500 tonnes of tailpipe CO2 emissions per year as well as 45 tonnes of other tailpipe emissions.

B.64 Now proving to be successful, the electric buses offer the potential to provide a more sustainable and low emission service throughout the city, and specifically would

provide a less intrusive and zero emission (at point of use) vehicle that could be more acceptable running through the centre of CMK.

B.65 A key considerations in implementing this would be around the linkages with the pedestrianisation proposals for MSBE, and operation through the intu:mk shopping centre. The other consideration would be whether the corridor would be 'open access' to any vehicle meeting the required specification, or whether a service frequency would be specified to balance passenger needs with those of pedestrians and other users.

Automated Transit

B.66 In the medium to longer-term there is the potential for automated transit to operate along the corridor. Milton Keynes is at the forefront of the development and testing of technology solutions in transport. A study has been commissioned to look at the routing and priority options for driverless public transit. The first trial of the system will be taken place toward the end of 2015.

B.67 The feasibility, timing, cost and possible implementation timescale for any such solution is unclear, but the prospect of driverless public transit offers the prospect of a high-quality, low emission and flexible / responsive service that would be attractive to users and would fit sympathetically within the future vision for a pedestrianized Midsummer Boulevard. The automated nature of services offers the prospect of efficient and dynamic service planning (increasing effective system capacity) and safe interaction with pedestrians and other road users.

B.68 A transit vehicle would need to offer a capacity greater than that for personalised pods (2-person) in order to efficiently accommodate likely demand on the corridor.

B.69 Other technology options including rapid transit (e.g. light rail, tram, monorail, guided bus) were identified, but were considered not to be viable for a combination of cost (fundability), feasibility and acceptability grounds. The informal consultation response supported this finding.

Integration with Public Realm and Development Proposals

Integration with Public Realm Proposals

B.70 There needs to be detailed consideration of how transit options for MSB would integrate within the wider proposals for Midsummer Boulevard East. As both the transit and public realm proposals are at the concept stage, there is the opportunity

to bring these strands together to ensure that Midsummer Boulevard fulfils its role in terms of both ‘movement’ and ‘place’.

Integration with intu:mk centre Future Development

B.71 The integration of a transit route running through the intu:mk shopping centre also presents potential issues and options. A key issue is whether a transit route should operate ‘at-grade’ and therefore mix with street level shoppers, or should be elevated to segregate shoppers from transit vehicles and waiting passengers.

B.72 In principle segregation would be better, but this could only be achieved at significant cost and with associated issues around feasibility, operability and visual impact on the urban environment along Midsummer Boulevard (if the alignment were to descend down to ground level).

B.73 In the shorter-term it is likely that a low emission-bus based solution would need to operate at-grade, due to the prohibitive costs of grade-segregation, which would potentially be abortive if a future automatic transit-based solution were implemented in the medium to longer term, There would need to be consideration of how the alignment would integrate with the intu:mk shopping centre.

B.74 The option of a segregated transit route would need to be considered alongside redevelopment proposals for intu:mk. The alignment would also need to integrate with the proposed Public Transport Interchange at on MSB, west of Secklow Gate. Midsummer Boulevard is at a significantly higher elevation than the proposed bus station, and therefore the most logical point for a bus passenger – transit service is where MSB ‘ramps down’ towards Lower Tenth Street. Given these challenges another option is for the transit route to operate ‘at grade’ and to segregate this from shoppers within intu:mk by creating a plaza at first floor level, which direct access (via stairs, escalators or lifts) to and from the transit stop.

B.75 Further consideration of these issues would need to be reflected in developing the transit option further.

Alignment Options along Midsummer Boulevard

B.76 A detailed assessment of alignment options have not been undertaken, but in broad terms the alternative would be to run along what is currently the central reservation (which was originally intended to be reserved for future transit) or to run adjacent to

the carriageway (either with transit services both operating on the same side of the carriageway, or utilising both sides of the carriageway – one per direction).

Opportunity for Bus Network Reconfiguration in Conjunction with MSB Transit Spine

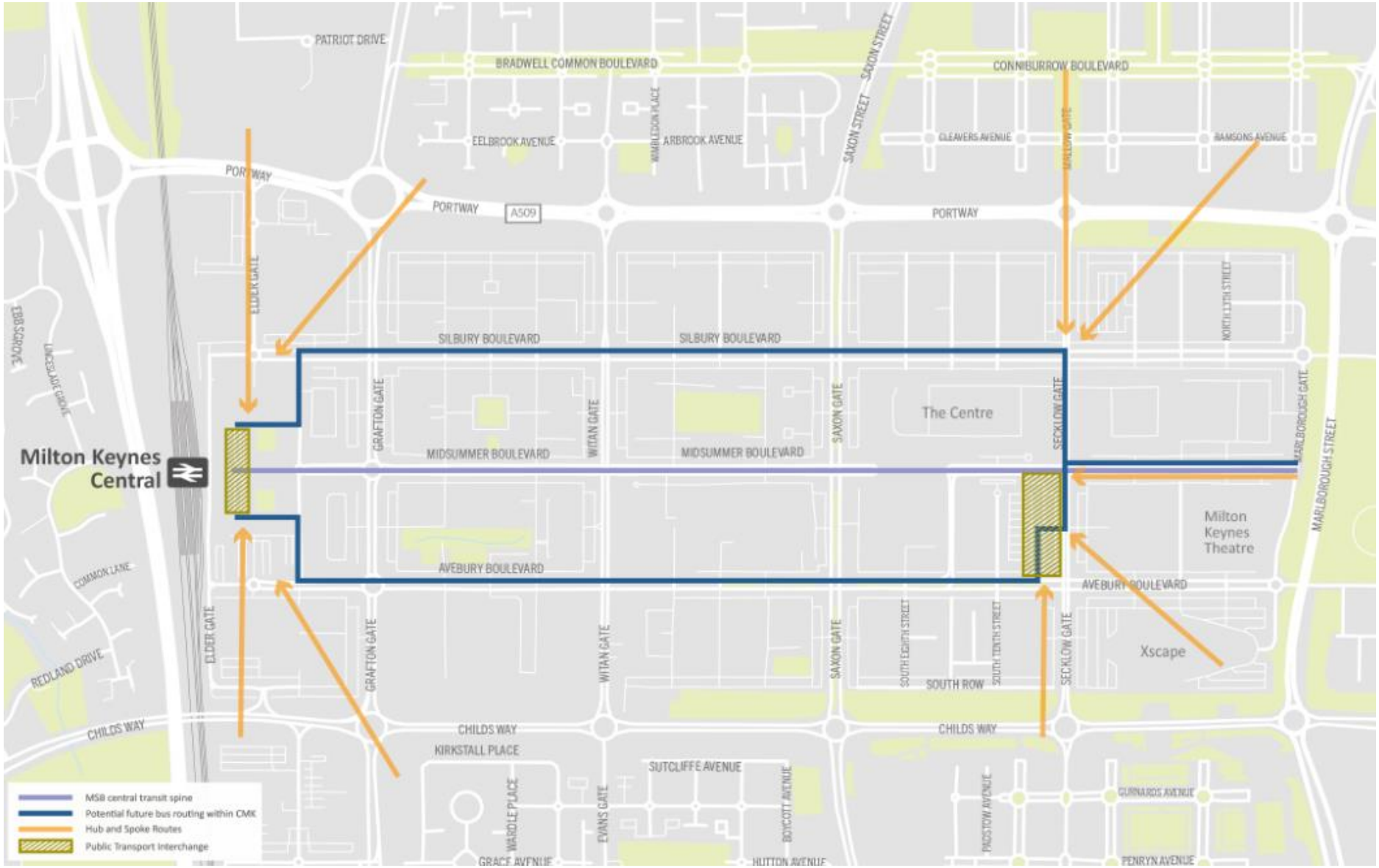
B.77 With the introduction of a new transit spine, there would be a case for reconsidering bus routing options within CMK.

B.78 While the choice of routes is largely the domain of bus operators, with the transport spine there could be a case for re-routing buses away from Midsummer Boulevard, so that transit spine and conventional bus services are not replicated. Indeed, the direct and faster routing for transit (as opposed to the more circuitous routing for conventional bus) weakens the commercial case for maintaining the current bus routing.

B.79 One option would be to develop a 'hub and spoke' network whereby bus services could serve either the new proposed public transport interchange or the bus interchange at the train station and then connect with transit to access locations served by Midsummer Boulevard. Another would be to maintain bus services running through CMK, but to operate services along Avebury and Silbury Boulevards. This would offer wider overall public transport accessibility within CMK. The options are not mutually exclusive, so a future network could combine elements of each.

B.80 This opportunity for bus network reconfiguration is shown, illustratively, in Figure 4.5.

Figure 4.5: Bus Reconfiguration Options



Transit Measures serving wider Central Milton Keynes

B.81 Current bus services only operate along a single route within CMK, meaning that there is a lower level of public transport accessibility to other parts of the central area. Moreover, better public transport services within Central Milton Keynes are required to complement the highway and parking demand management strategy components, whereby the provision of options between a parking space and final destination is a pre-requisite to make the overall strategy viable and effective.

B.82 This is an area where Milton Keynes is trialling new technologies that offer significant potential to serve this demand for movement in a demand responsive way. There are pilot programmes planned for both On-Demand Transit (Minibus) and Personalised Rapid Transit (pods) and it is prudent to wait for the outcome of these before a definitive option (or options) is identified.

B.83 What the strategy is clear about is that there is an imperative to provide a viable transit solution to serve wider movements within CMK. Of established technologies a shuttle bus system offers a solution based on a fixed route serving the Silbury and Avebury Boulevards. This could be viewed as either a shorter-term option or a 'next best' option depending upon the outcome of the technology trials. While on-demand minibus and pods are potentially complementary (they serve different geographies, and as on-demand services can be scaled in tandem to meet future demand), the shuttle bus would effectively replicate and compete with on-demand services – making both less financially viable.

Demand Responsive Public Transport – On-Demand Transit (Minibus)

B.84 The concept is for users to use a taxi like mode to get around, but share journeys with other passengers heading the same way to reduce costs. Users choose a start point and destination, and then choose whether to share a journey or take a private trip.

B.85 This service could employ dynamic / variable pricing, whereby the price could vary depending on whether users wanted a 'door to door' service (more expensive) or a drop off at a designated point close to a destination, and how far in advance a booking was made (cheaper if further in advance, as services can be better 'matched' with planned trips).

B.86 Benefits of the system are that it would offer greater flexibility and convenience than buses in terms of where it operates and the timing of services. It also has the potential to effectively serve community transport function and possibly reduce the need for, and cost of, subsidised bus services. The system would be cashless, which would be more convenient to users, and to speed up trips.

B.87 Helsinki currently operates an on-demand minibus service. The pilot version began with 10 mini buses, but with 4,500 having signed up, this could increase to 100 buses over the coming years.

B.88 Milton Keynes Council is actively considering the application of the concept in CMK and whether the service could be delivered commercially. Such a system would be able to operate both in CMK and the across the borough.

B.89 The potential operation across the borough could also help make transit a viable and attractive option for people who live in suburbs (cul-de-sacs) and for whom bus is not a viable option (as either the journey time is prohibitive due to circuitous routing, or the walk to the bus corridor is too long). This problem is essentially imposed by the land use pattern in the suburbs, and cannot be surmounted by fixed route bus services. An on-demand minibus could therefore complement conventional buses, where the latter would be focused on higher demand 'core' routes.

B.90 This on-demand minibus offers the potential to significantly increase public transport mode shares by serving a catchment and market that is 'out-of-scope' for potential mode-shift to conventional bus and potentially better serve shift workers, such as nurses and cleaners.

Demand Responsive Public Transport - Personalised Rapid Transit (Pods)

B.91 Milton Keynes is at the forefront of developing and trialling of pods. The driverless two-person pods are one of the outputs of the Low Carbon Urban Transit Zone programme, which is collaboration between a number of organisations including the Transport Systems Catapult, Automotive Council and the Open University. The trials are expected to be implemented by 2015 with 3 vehicles, with the ambition that a 40-50-strong fleet would be operational in the following two years. It is anticipated that vehicles would carry two people, operate at up to 12mph and operate along pavements using sensors to enable pods to avoid objects and pedestrians. The trips would be paid for and hailed using a mobile app. Pods would be limited, at least initially, to the pedestrian and cycle infrastructure and would operate within CMK.

Bus Shuttle

B.92 The existing bus network provides limited accessibility within CMK, in that all routes serve the same MSB corridor. A shuttle bus service would have the benefit of serving potentially more destinations, including those not on MSB such as the restaurant district and Xscape.

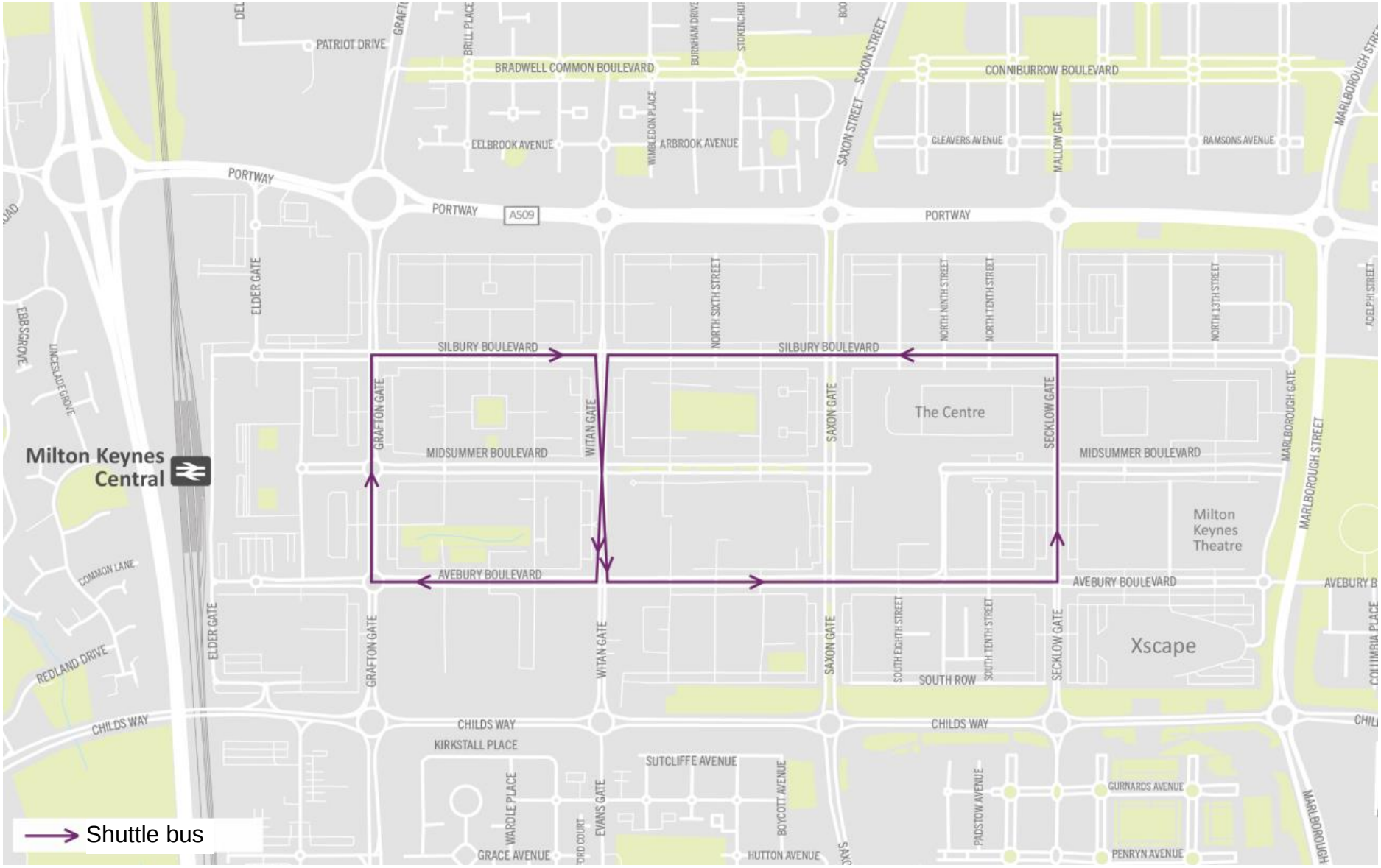
B.93 A possible routing could be a circuit or 'figure of eight' that runs east-west along Silbury and Avebury Boulevards and could run north-south along Saxon or Secklow Gate. This is illustrated in the figure 4.6 below.

B.94 Alternative routes to be considered could include a circuit that stretches from Elder Gate and the train station to reach the Theatre District.

B.95 A shuttle service has operated in the run up to Christmas (part funded by retailers, when demand is greatest), but an all-year-round service is unlikely to be commercially viable from on operator perspective, which means that a public subsidy and / or private contribution (e.g. from retailers) would be required. Comparable schemes we are aware of are not privately funded.

B.96 As a freestanding system, a bus shuttle service would not be a commercially viable proposition. However, it could have an integral role as part of a cost-effective strategy aimed at supporting future planned growth in the most efficient manner. This would be the case in the short-term, depending on the timing of implementation of on-demand transit services.

Figure 4.6: Potential Shuttle Bus Route



Parking and Highways Measures

B.97 Good quality and well managed car parking is and will continue to be important in maintaining Milton Keynes status as an attractive centre for business, retail and leisure activities. Parking provision needs to be carefully balanced alongside the other measures contained within this strategy so as not to undermine the wider ambitions of Milton Keynes to act as an exemplar for modern, sustainable cities and to achieve modal shift.

B.98 The significant forecast growth of Milton Keynes (40% increase in trips to CMK by 2026) needs to be accommodated in a manner that does not require an equivalent increase in parking provision, which some may consider to be unsustainable and inconsistent with the development aspirations for CMK.

B.99 It is outlined in the previous chapter that existing parking spaces are not being effectively utilised, with some car parks routinely full or nearly full, while others have significant space available. There is therefore a need to encourage some drivers to park further away from their destination and walk (or use public transport) for the final part of their trip.

B.100 The measures identified in this strategy (particularly those relating to behaviour change and modal shift) will take time to become established and have an effect. During that time it is important to ensure that the levels of access to CMK are satisfactory, hence the proposals for some immediate additional spaces, with further parking capacity in the short to medium term.

Parking Management Measures

B.101 Maximising the use of the available parking supply would go some way towards reducing the burden of funding the construction of new parking infrastructure in CMK. For example, increasing the average level of occupancy from the current level (73%) to 90% (identified as the maximum practical level of occupancy in the 2012 Stirling Maynard Report) would reduce the necessary number of additional parking spaces from 10,000 to 3,000 relative to the ‘business as usual’ projections ((i.e. assuming the same level of parking utilisation).

B.102 The week day occupancy surveys indicate a high level of utilisation towards the western end of CMK (i.e. blocks A-C), whilst the Saturday occupancy surveys indicate a higher level of utilisation towards the eastern end of the study area (i.e. blocks D-E). This is consistent with the more retail-centric eastern zone being busy

on a Saturday, with the employment and business areas (between the station and Saxon Gate) being busier during the weekday period.

B.103 This presents an opportunity to maximise the unused capacity, but it does suggest that a complementary set of measures would be required to help direct users from their parking space to their desired location.

B.104 The core tenet of the approaches to maximising the capacity utilisation is to accurately calculate the spare capacity at a given time, and then to efficiently direct drivers towards that spare capacity.

Parking Sensors

B.105 The use of technologies such as parking occupancy sensors enables the parking managers to have a clear view of the status of the parking bays in their area. Acquiring the parking space occupancy data can enable the operator to develop an overall picture of the parking network in their area.

B.106 Installing parking sensor networks has proven to be very beneficial in providing Local Authorities with intelligence that can be applied in a number of areas, such as land use planning, by providing a more detailed understanding of parking demand at given times. This intelligence can also be used by planners and road operators to assess the impact of certain events, incidents and traffic management measures on the availability of parking and demand in certain areas.

B.107 The use of technology can form an integral part of the parking strategy. Milton Keynes is already working in partnership with the Open University and other partners, as ‘MK:Smart’, geared towards its development as a smart city.

B.108 Parking technology can be used to provide users with advance information on the availability and cost of different parking options.

B.109 A pilot scheme using parking occupancy technology has deployed sensors from Deteq at parking spaces around the railway station, with occupancy data from the sensors being relayed to receivers on lampposts, and then being transferred to the central MK Data Hub for analysis. The pilot is to examine the scope for a wider roll out of parking space optimisation.

B.110 Similar investigations have taken place in other UK cities (London, Birmingham, Manchester) where parking occupancy sensors have been installed in each parking bay, and generate data to indicate whether or not the parking space is full. That data

was then used to direct drivers to available spaces. Since the initial pilot phase, the Westminster scheme has now been rolled out more widely, with an eventual plan to equip 10,000 spaces over the next few years. Drivers are directed to spare parking spaces parking using the ParkRight app. Payment can either be made through an app or using pay-by-phone services. Smart Parking were awarded contract to provide and install the sensors, and to provide and operate the ParkRight app.

B.111 The Council is currently trialling parking occupancy sensors in CMK to gather the data on parking utilisation. Initially these will be installed within the business and retail areas, with over 200 being deployed in 2015.

B.112 An additional benefit from parking sensors is that it would provide real-time year round utilisation data, and hence avoid the costs of the current parking surveys, which are carried out twice a year (with separate counts on week days and weekends in both July and December).

B.113 Different suppliers take different approaches to their systems, but many parking sensors include RFID which could be used to identify different permits types (subject to compatible technologies being used in the permit. This could enable specific permits e.g. blue badges, to be identified as valid for that parking bay. The information about the occupancy of those bays could be shared so that users with particular requirements could find out the status and availability of appropriate spaces.

B.114 The use of parking occupancy sensors could also lend itself to a pay on exit solution. This could be an attractive option to retailers and businesses, due to users not having to rush back to their cars before the end of their ticket period.

Variable Message Signage / Real Time Information

B.115 Once we have a clear picture of the available parking supply, practice from elsewhere shows that there are a range of approaches to directing drivers to the unoccupied parking spaces.

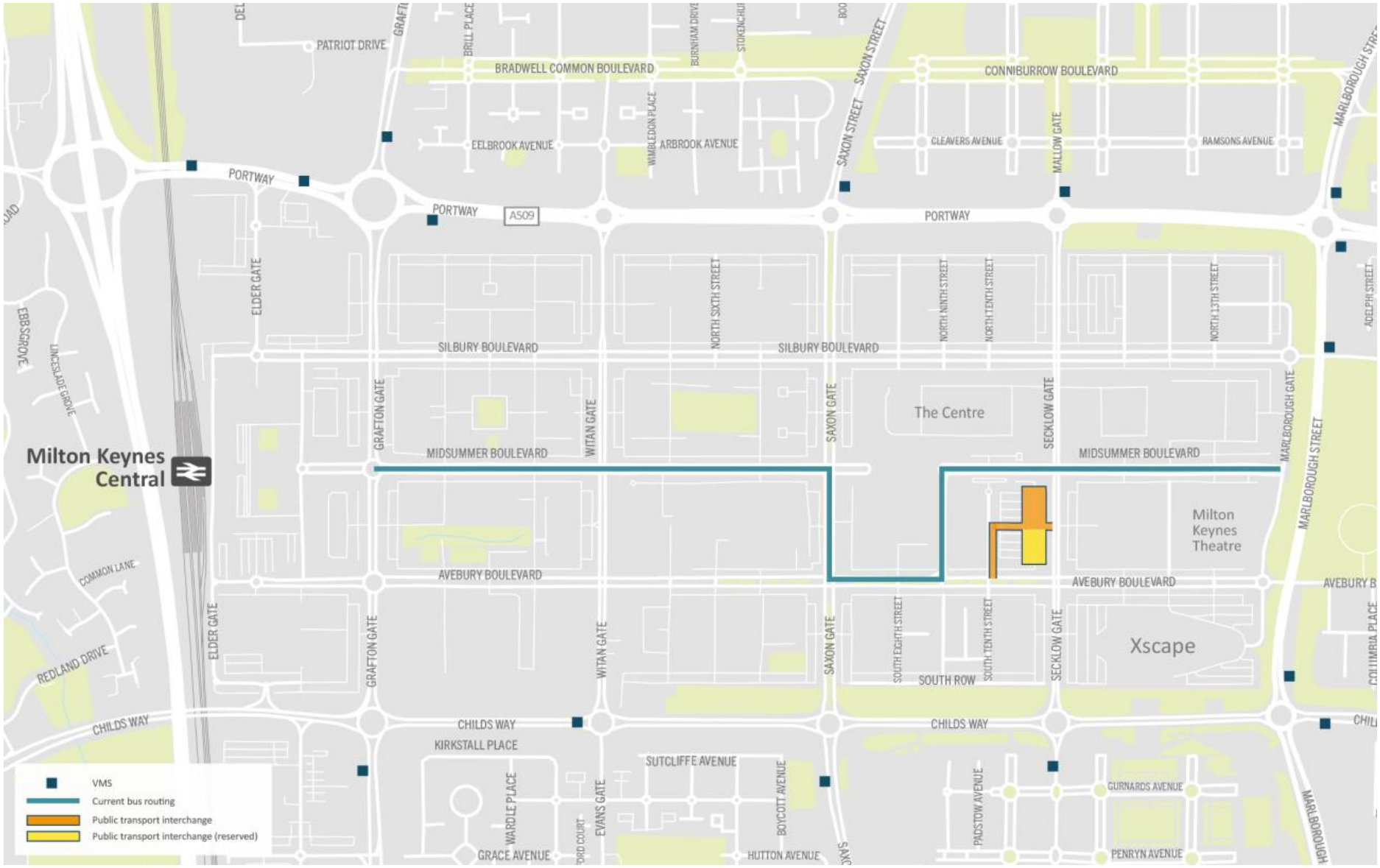
B.116 One measure is to provide drivers with real time car park occupancy information via on-road Variable Message Signs (VMS). This practice is common place in the UK for multi-storey car parks, with drivers being informed of the parking space status on the peripheral road network, and then local signage direct drivers to the car park location. This means that drivers are made aware of the car park occupancy status at an early stage, and thus reducing the likelihood of congestion on the roads surrounding

already full car parks. This would entail installing, maintaining and operating a series of VMS around the peripheral routes. Additionally, steps would need to be taken to pass the parking occupancy data through to a common database in the traffic control centre.

B.117 VMS can also be used to advise drivers about congestion on the highway network, and can be used to manage traffic for particular events.

B.118 Figure 4.7 provides an indication of the potential location of VMS signs on the edge of CMK. The exact location and viability of the VMS sites would need to be explored in detail in a later piece of work looking at the implementation of the strategy. This will include consideration of the way that users could be notified of the parking situation at an earlier part of their journey, e.g. on the A509 or the A5 – this will need to be based upon an analysis of the travel patterns on a strategic level, as well as taking account of the technology trends at that time (e.g. growth of in-vehicle travel information).

Figure 4.7: Potential Vehicle Messaging Sign sites in CMK



Data Syndication

B.119 Milton Keynes should also consider sharing its parking space availability data with 3rd parties so that websites such as Parkopedia, or satellite navigation providers can incorporate the parking information into their services. This means that the parking availability information can reach a wider group of drivers (drivers could access information before travelling, en-route etc.) than would find out otherwise. Additionally, smartphone apps can be developed so drivers can check parking availability across CMK.

B.120 To achieve this, the data from the various car park providers in CMK would need to be aggregated so that it could be shared appropriately.

Dynamic pricing option

B.121 An approach that has been successfully trialled in a number of schemes, particularly in San Francisco and Los Angeles in the USA, was using dynamic pricing to support the demand for parking in particular areas. The principle here is to alter the price of parking in different areas, varied based on factors such as the desirability of the area, or the time of day/day of the week.

B.122 In San Francisco, the city authority decided to use dynamic pricing to ensure that the parking on a city block was no more than 80% occupied on-average. Once the average occupancy was identified as being over 60% occupied, the price of parking was increased. Conversely, if the occupancy of a block was lower than 40%, the price of parking was reduced. Overall, the amount of revenue generated by parking in San Francisco did not increase, but the city achieved their objective of having available spaces on block.

B.123 This approach requires intelligent parking meters and a clear understanding of the parking occupancy status across the area. This is an option that could be explored at a later phase of the strategy's implementation.

B.124 Dynamic pricing needs to be considered in the long term. The typical charges need to be of a sufficient level in order that differential pricing has a noticeable effect on driver behaviour.

Parking Supply options

B.125 While the demand-side and network management measures have the potential to reduce the future parking requirement, it is likely that some additional parking

capacity will be required, particularly to support the anticipated growth in the short-term.

B.126 This will need to be a mix of CMK parking provision and park and ride outside the centre and aligned to the areas with the most ambitious housing development proposals.

B.127 There is recognition from the strategy that it is important to find the most pragmatic package of options to take account of strategic objectives, the potential revenues generated by the package of options, and the cost of delivering the scenario.

B.128 The Council is providing 1,000 permanent employee spaces, located in or near to the business district. This will enable CMK to sustain the anticipated level of growth in the short term, and allowing for transit options, and the wider public transport provision, walking and cycling strategy to be further developed and implemented in the mid to long term. Additionally, it affords CMK the time needed to identify and develop the additional parking capacity that will eventually be needed to maintain the levels of accessibility that Milton Keynes has based its growth upon.

B.129 To better support parking demand that varies between weekdays and weekends, it is proposed to re-categorise some premium bays to standard tariff in Blocks A-C. At the present time, the premium bays in those blocks are underused during weekdays, and it is assumed that the pricing is the key factor that is preventing drivers from using them to their full potential.

Park and ride options

B.130 Park and ride can benefit busy town centres by reducing the number of car journeys into the centre, particularly during peak periods. This can help alleviate congestion and reduce the requirement for parking spaces.

B.131 Milton Keynes has a popular park and ride site, Coachway and Park and Ride facility at Junction 14, which provides bus transport into Central Milton Keynes. Exploring further park and ride opportunities could particularly assist in reducing the requirement for more parking spaces. Further park and ride sites could be identified, according to demand, for example sites neighbouring major new development.

B.132 We would look for potential park & ride sites around the strategic network routes (e.g. M1 and A5) around Milton Keynes and key radials (e.g. A509, A421, A4146), and suitable sites would be explored to serve the corridors to the West (such as the A5 /

A421 junction or around the National Bowl), the South (such as the A5/A4146 junction) and the East (such as at the M1 junction 13, or the A4146 / A421 junction).

B.133 The LTP3 has identified a number of potential locations for new Park and Ride sites in addition to the existing Coachway facility at Junction 14 on the M1.

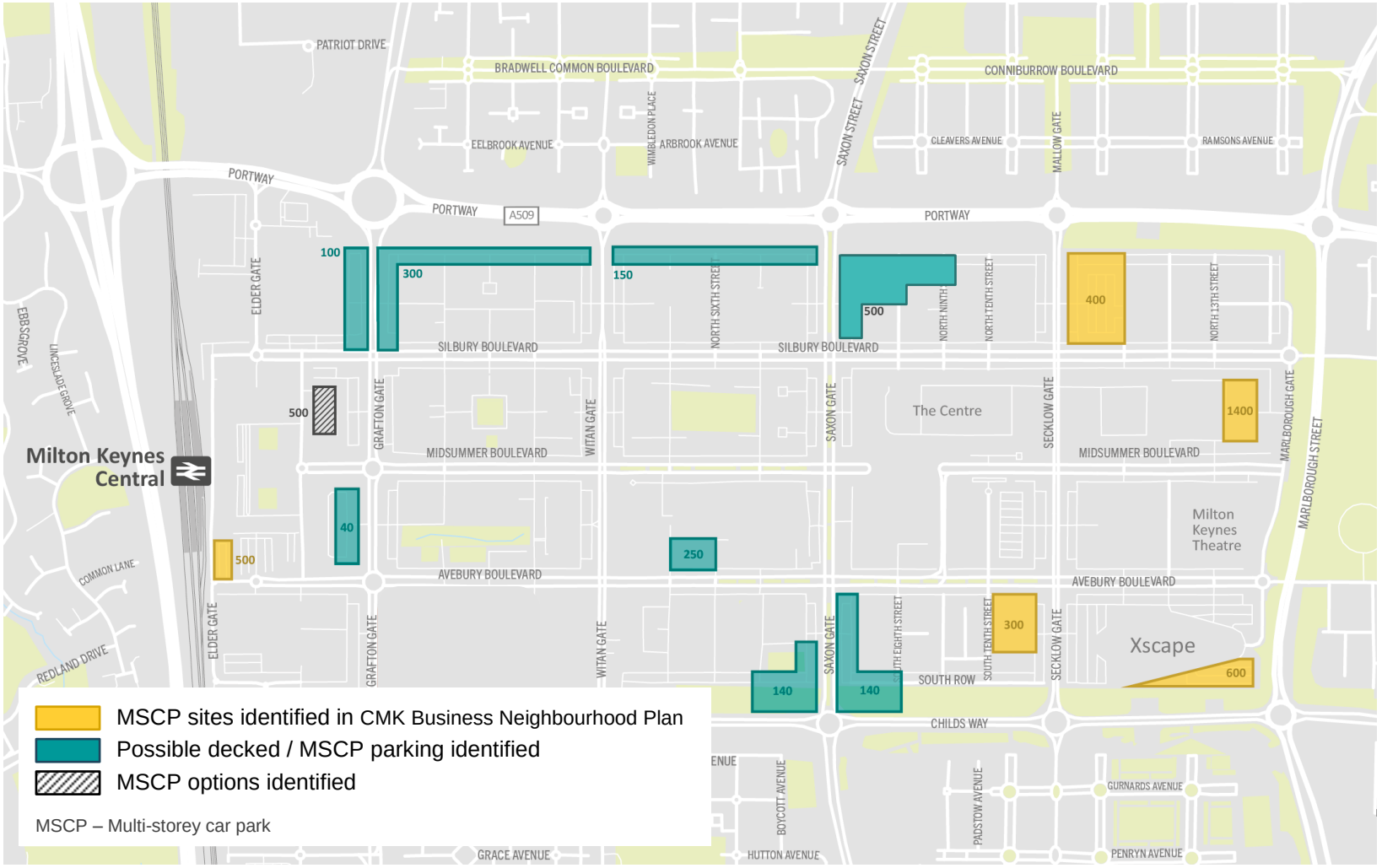
B.134 Initially these park and ride facilities could be based upon conventional bus services, but in the medium to long term could be linked to a wider Demand Responsive Transport service for Milton Keynes.

Additional parking capacity – longer term options

B.135 In the longer term it is critical to strike a balance between the land allocated to parking and the land earmarked for development. Careful consideration would need to be paid to the implications of sacrificing potentially valuable development land for the provision of additional parking capacity.

B.136 Figure 4.8 highlights the maximum potentially deliverable sites for new car parks that have been identified. Those yellow shaded sites are new multi-storey sites identified in the CMK Business Neighbourhood Plan. The blue sites have been identified as car parking sites that could potentially be developed as part of this Strategy. No detailed studies have taken place to assess the viability of these potential sites, so we are assuming a lower delivery of 3,000 out of the potential 5,625 spaces.

Figure 4.8: Identified Additional Car Park Sites



B.137 A feature of the sites identified is that they are mostly on the outer grid blocks. This, in part, reflects the availability of land but would also support a potential strategy in which required additional parking was located at the edge of CMK, to reduce the impact of vehicular movements within CMK. This would necessitate complementary transport options that enable people to get from these more peripheral locations to their final destination.

B.138 Additional weight is added to locating new capacity in peripheral areas when we consider the timing of the different strands of the strategy. The longer term development of additional parking capacity could overlap with the introduction of the more flexible demand responsive transport solutions and the availability of parking utilisation and occupancy data.

B.139 The following Table 4-1 lists potential additional parking sites have been identified:

Table 4-1 List of potential new additional parking facility sites

Block	Description	Estimated additional capacity generated
A1	Possibly in the form of Decking to the existing at-grade parking facility at the eastern end of the block	100 spaces
A2	Most likely in the form of a 4 storey MSCP on the site of an existing at-grade car park facility by the station	500
A3	Possibly in the form of Decking to the existing at-grade parking facility at the eastern end of the block	40
A3	Site identified by the CMK Business Neighbourhood Plan	500
B1	Decking or MSCP on the existing at-grade parking facility at the western and northern sides of the block	300
C1	Decking or MSCP to the existing at-grade parking facility at the northern sides of the block	150
C3	There is an undeveloped site on the Avebury Boulevard side of the block. This would be a new site and could be used for at-grade, decked or multi-storey parking (375 if decked, and 650 if 3-storey MSCP)	250 (at-grade)
C4	Possibly in the form of Decking to the existing at-grade parking facility at the southern and eastern ends of the block	140
D1	Possibly in the form Decking to the existing at-grade parking facility at the western and northern end of the block. There is also the potential to provide part of the new capacity as a MSCP (500 if combination of decking and MSCP)	200-500
D4	Possibly in the form of Decking to the existing at-grade parking facility at the eastern and southern ends of the block	135
D4	Most likely in the form of MSCP - Site identified by the CMK Business Neighbourhood Plan	300
E1	Possibly in the form of Decking to the existing at-grade parking facility at the western end of block	400 (Decked only)
E2	Multi-storey covering the existing at-grade parking facility at the eastern end of the block (creating a total of 1400 on a 3-storey MSCP)	1000
E4	Most likely in the form of MSCP - Site identified by the CMK Business Neighbourhood Plan	600
Total potentially deliverable spaces		**4625**
At grade	Permanent employee parking facilities	**800**
Total maximum potentially deliverable spaces		**5462**

B.140 In addition to the above, as part of commercial development on Blocks D3.3, D3.4, E3.1 and E3.2 there is a possibility that additional Multi Storey Car Parks could be built.

B.141 We need to be mindful when selecting sites for adding new parking capacity, there is a decision to be made regarding the trade-off between sacrificing land for development and providing land for parking. There are also additional considerations when identifying suitable sites and these would typically include, the planning requirements, the impact on existing adjacent developments. The highway network implications, the demand in that area, and the cost of constructing new capacity (new capacity should predominantly be located on peripheral blocks).

Supporting measures for parking and highways

Parking tariffs

B.142 Central Milton Keynes has a number of different types of parking facilities including a combination of on-street Free, Standard, Premium and Long Stay parking at grade, and off-street multi-storey car parks. The cost of parking in Central Milton Keynes is lower than other comparator town centres in the region.

B.143 The adoption of a flexible and dynamic pricing parking tariff would provide CMK with a level of revenue that could be used to fund other transport interventions, including the investment in additional parking supply. This is important when considering the provision of high quality MSCP in city centre locations, where land values are high and quality needs to be maintained.

Permits and leases

B.144 The Council will explore the possibilities of issuing dedicated leased spaces so that businesses could ensure that they had some spaces available in the vicinity of their premises. This approach can be reinforced by the use of technology (to help monitor the availability and direct drivers to specific spaces / zones).

Key Enablers – Behaviour Change

B.145 There is a significant degree of inertia in peoples' travel choices, and this is particularly prevalent for car drivers for whom, by definition, are not easily made aware of the range of quality of alternative choices available to them. To succeed the CMK transport and parking strategy needs to improve non-car travel choices, but also make car drivers aware of the enhanced options available.

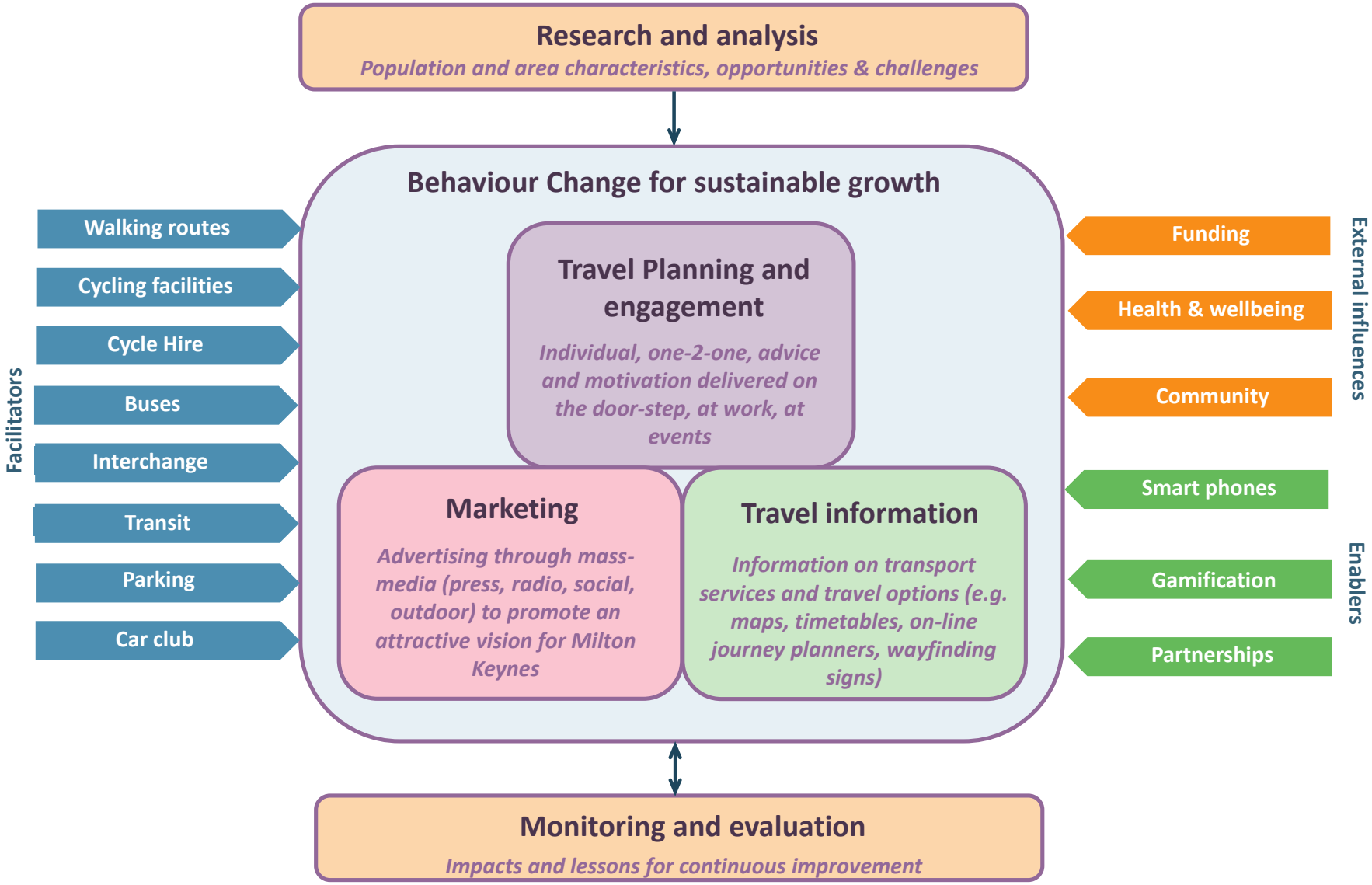
B.146 Behaviour Change Initiatives

B.147 A CMK Behaviour Change plan would complement other aspects of the Transport and Parking Strategy by ensuring their impact on travel behaviour is maximised. An overview of the Behaviour Change Plan is illustrated in Figure 4.9.

B.148 The three core elements of the Behaviour Change Plan are:

- **Travel Planning and Business Engagement:** this element involves Workplace Travel Plans in which employers are incentivised to deploy measures and schemes which encourage use of walking, cycling, bus, and car sharing; Personalised Travel Planning delivered at home in key corridors in which good quality alternatives to car are available but which are under-used; and events in CMK with attractions such as free bike check sessions, and help with downloading journey planning and activity monitoring Apps;
- **Marketing:** use of mass media including a public relations campaign to promote active and sustainable travel, with the long term aim of positioning Milton Keynes as being at the forefront of Intelligent Mobility and somewhere offering a choice of lifestyles supported by the latest innovations in transport technology (this will feed off the work of the Transport Systems Catapult);
- **Travel Information:** easy to use, readily accessible information can make a substantive difference to the attractiveness of unfamiliar modes so a smart-phone enabled journey planner plus improved signage and maps showing walking and cycling routes will play an important part in converting good intentions generated by the travel planning and marketing activity into actual behaviour change.

Figure 4.9: CMK Behaviour Change Plan



B.149 These ‘soft’ measures would be facilitated by the various infrastructure and service improvements within the strategy, including walking, cycling and bus service improvements, new automated transit services, cycle hire, and car clubs.

B.150 The approach to behaviour change is informed by ‘nudge’ theory (from Behavioural Economics) and the EAST approach (Easy, Attractive, Social and Timely).

B.151 In this context, an option to evaluate is “Beat the Street” in which the whole of Milton Keynes effectively becomes a game zone where people carry around a smart card and record their active travel on “Beat Boxes” spread around the town. Individual businesses, schools and neighbourhoods are encouraged to compete, with prizes awarded. A recent award winning project in Thurrock encouraged 10% of the population to participate and during a six week period recorded 70,126 miles made by walking and cycling.

B.152 In practice, the behaviour of those already driving will be relatively ingrained and hard to change without significant incentives or disincentives. On the other hand, people or businesses moving to Milton Keynes or starting work will be prime targets for being influenced. To this end, we will look to provide targeted business and personal travel planning advice to these groups.

Car club

B.153 In some businesses employees chose to drive to work because they need access to a car during the day. Providing access to a car at the workplace can reduce the need to drive to work. Working with a car club operator to provide corporate access to a car at workplaces can both reduce the need to drive to work and also improve efficiencies and reduce costs in organisations, for example reducing the amount of car parking needed, reducing the risks associated with employees using their own vehicles. Milton Keynes Council could use a car

club as part of day to day transport needs; this could be a catalyst for introduction of a car club scheme more widely across the borough for residents. Other large organisations, such as the Open University and Network Rail could also be served by a car club scheme.

Car Sharing

B.154 Car sharing (or ride sharing) to increase vehicle occupancy rates can be incorporated as a key measure within a work place travel plan. The Council has encouraged car sharing for its own staff in CMK through its MKC Car Share Parking Permit Scheme, offering free parking in prime locations in exchange for an annual membership fee. Engaging with large employers will be key, drawing on recent success stories such as British Gas who encouraged 70% of their staff in Solihull to use car sharing schemes when they moved from an office with 2,000 spaces to one with 380 spaces.

e-car club electric cars, Saxon Gate

C Public Transport Interchange Options

C.1 The identification and assessment of interchange options has been guided by the objectives for the new Public Transport Interchange. These are that the new public transport interchange should:

- support public realm aspirations and pedestrianisation of Midsummer Boulevard East (west of Secklow Gate);
- balance the total land take requirement with future prime site development opportunities;
- support future growth in bus patronage, and be 'future-proofed';
- maintain easy passenger accessibility to the retail core on Midsummer Boulevard, and other key attractors, such as the Theatre and Gallery;
- provide an enhanced passenger interchange;
- enhance operational efficiency and service reliability of buses; and
- provide for good interchange with any future transit service.

Options A to E (Interchange Options)

C.2 A number of interchange options were developed through the course of the study, from which a short-list of five options (Options A to E) were presented at the informal consultation that took place in summer 2015. These options are summarised in Appendix C – Table C1 and are presented graphically in Figures C1 to C5.

On-Street Option

C.3 In addition to interchange options, some stakeholders suggested that an option whereby there would not be a formal interchange facility, but buses would instead route along Avebury and Silbury Boulevards. The primary benefit of this was that, in not providing an interchange / passenger facility, there would be less land take and the opportunity to develop the site more intensively.

Option Assessment

C.4 The assessments of interchange options were then assessed against a range of key criteria to inform the identification of a preferred option. The results are summarised in Table C-2.

Appendix C – Table C1: Public Transport Interchange Options

Table C.1: Public Transport Interchange Options	Description	Design & stops	Max. bus frequency	Development	Pedestrian access
A	Uses the two blocks west of Secklow Gate and south of MSB, currently used as parking spaces, plus a corner of the development site used for a second access.	Drive in/out solution, with 16 stops and 4 stands for bus layovers	Based on a drive in/drive out designed stop allowing 12 buses per hour, the max. bus frequency is 168/hr	Potential to build over the second access/exit point to maximise development. There would be a small pocket of land for development next to the Avebury Boulevard/Secklow Gate junction.	At the northern block, passengers would use informal crossings to access the east stops. Amendments would be required to the design should formal crossings be desired. Pedestrian paths would run parallel to the second access point, with informal crossings and central islands to access all the bus stops.
B	Uses the two blocks west of Secklow Gate, plus a corner of the development site used for a second access and exit point.	Combines sawtooth design for 9 stops, with the remaining 6 as a drive in/drive out design for 15 stops. No provision of stands for bus layovers.	Based on a drive in/drive designed stop allowing 12 buses per hour and a sawtooth/drive in/reverse out designed stop allowing 8 buses per hour, the max. bus frequency is 144/hr	Uses land west of Secklow Gate, currently used as car parking spaces, but requires less space to the south, leaving a larger space (than Option A) for development next to the Avebury Boulevard/Secklow Gate junction.	Bus passengers would access the stops from a pedestrian route running along the western edge of the bus stops and providing access to Midsummer Boulevard. Pedestrian paths would run parallel to the second access point, with informal crossings and central islands to access all the bus stops.

Table C.1: Public Transport Interchange Options	Description	Design & stops	Max. bus frequency	Development	Pedestrian access
C	Uses one of the two blocks west of Secklow Gate, plus a second access/exit point running through the development site, but from Lower Tenth.	Combines sawtooth design for 4 stops, with the remaining 13 as a drive in/drive out design. No provision of stands for bus layovers.	188/hr	Providing the access to Secklow Gate via Lower Tenth uses more land through the centre of the site, but frees up larger development sites to the north and south, as well as the whole of the southern block next to the Avebury Boulevard/Secklow Gate junction for development.	A pedestrian path would be provided either side of Lower Tenth and as it extends east towards Secklow Gate. A path would link MSB with Lower Tenth. For the 4 most northerly bus stops, a path would run along the western edge of the bus stops and provide access to Midsummer Boulevard.
D	Uses the two blocks west of Secklow Gate, plus the necessary land take for a second access/exit point running through the development site, but from Lower Tenth. The southern block could be phased in, depending on demand for additional stops.	Drive in/drive out design, with 20 stops and 4 bus stands for bus layovers.	240/hr	This is similar to Option C in land take, but provides additional bus stops (and stands) on the southern block next to the Avebury Boulevard/Secklow Gate junction, resulting in a greater land take.	A pedestrian path would be provided either side of Lower Tenth and as it extends east towards Secklow Gate for access to the bus stops. A path would link MSB with Lower Tenth. At the northern and southern blocks, passengers would use informal crossings to access the east stops. Amendments would be required to the design should formal crossings be desired.

Table C.1: Public Transport Interchange Options	Description	Design & stops	Max. bus frequency	Development	Pedestrian access
E	Bus stops are placed through the development site, on the access route running from Lower Tenth to Secklow Gate, with potential development either side.	Drive in/out design with 16 stops, but with no stands for bus layovers	192/hr	Enables large development blocks to the north and south of the access route from Lower Tenth to Secklow Gate which is where the stops are all located.	A pedestrian path would be provided either side of Lower Tenth and as it extends east towards Secklow Gate for access to the bus stops. A path would link MSB with Lower Tenth.

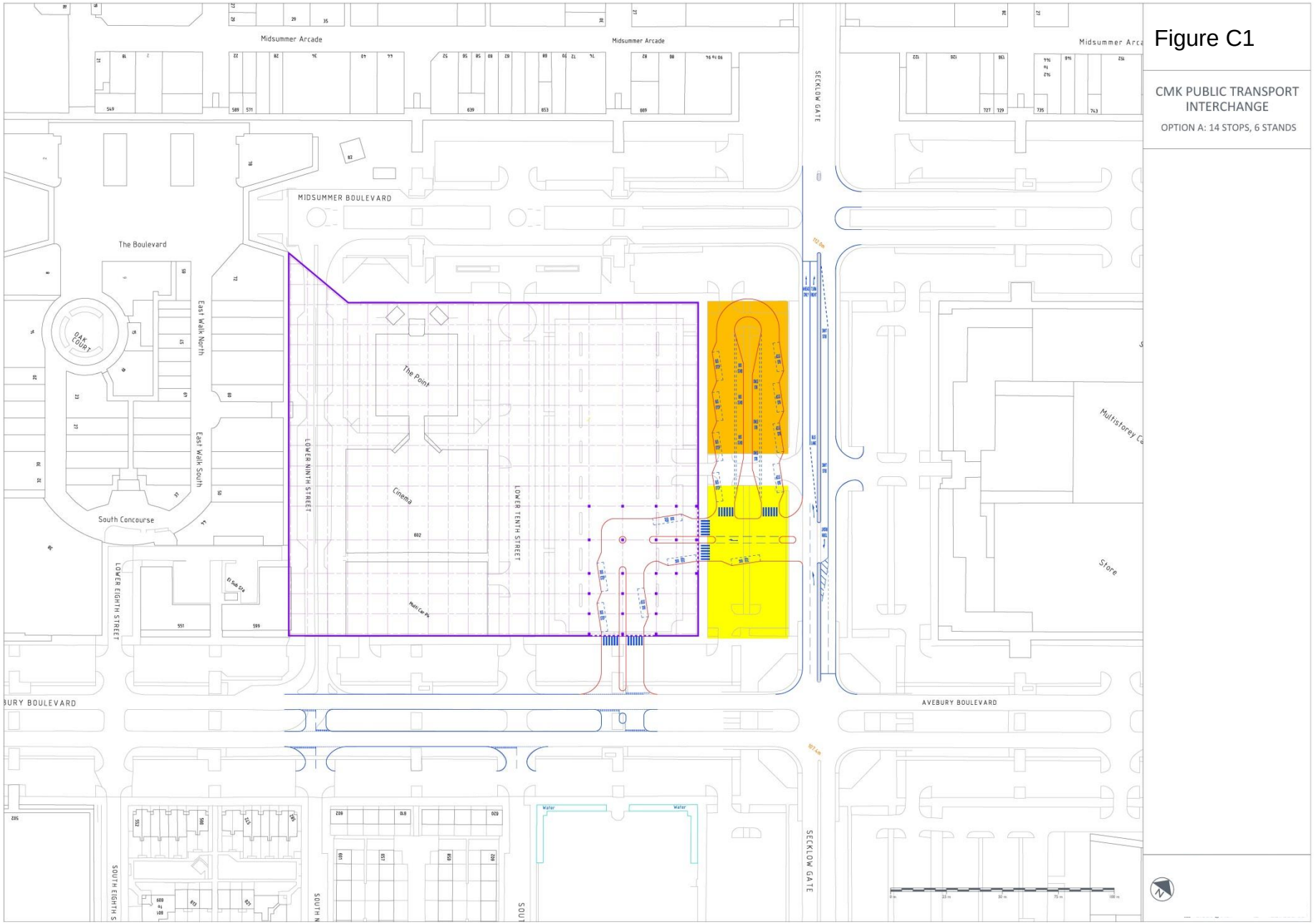


Figure C1

CMK PUBLIC TRANSPORT INTERCHANGE

OPTION A: 14 STOPS, 6 STANDS

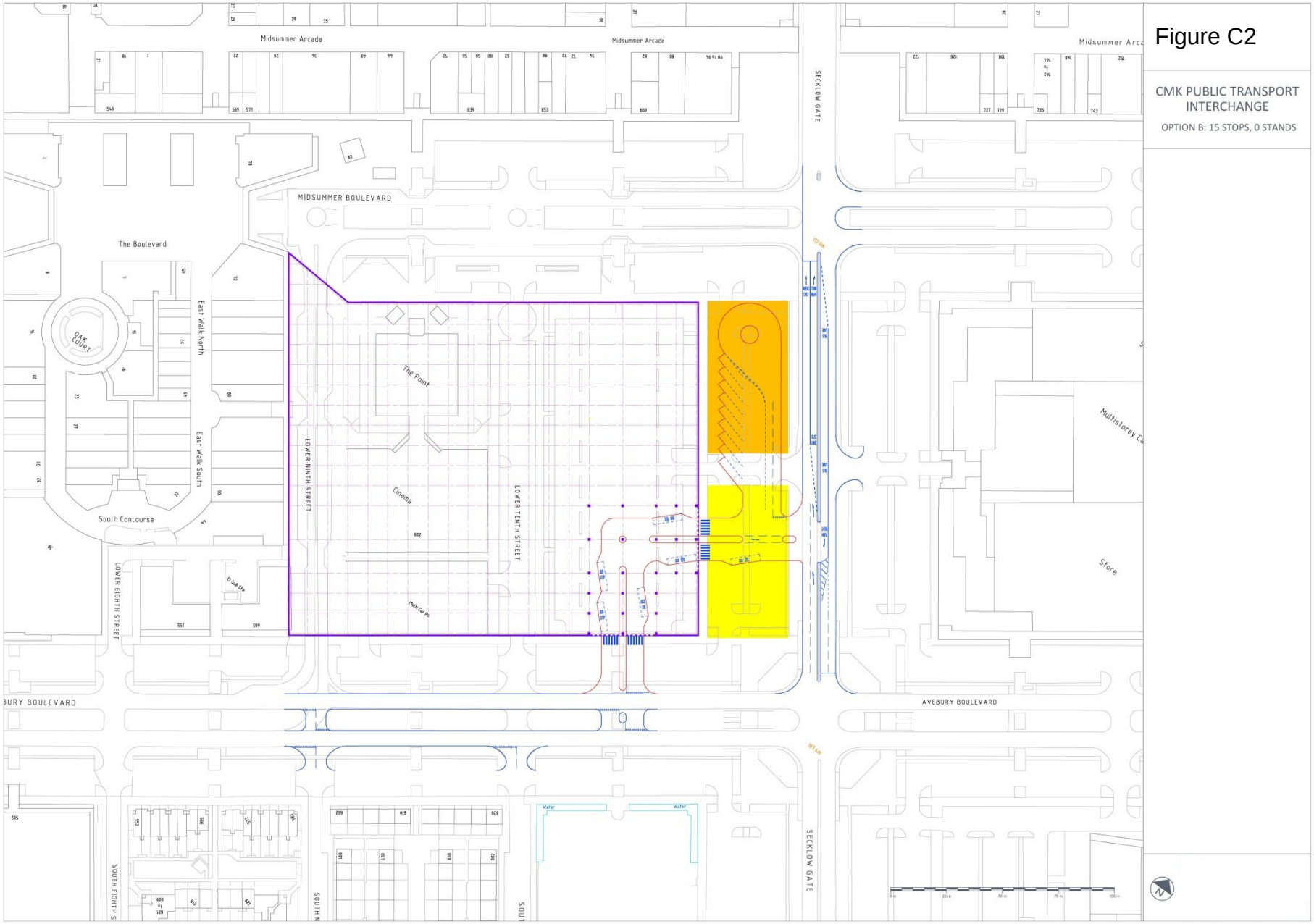


Figure C2

CMK PUBLIC TRANSPORT INTERCHANGE

OPTION B: 15 STOPS, 0 STANDS

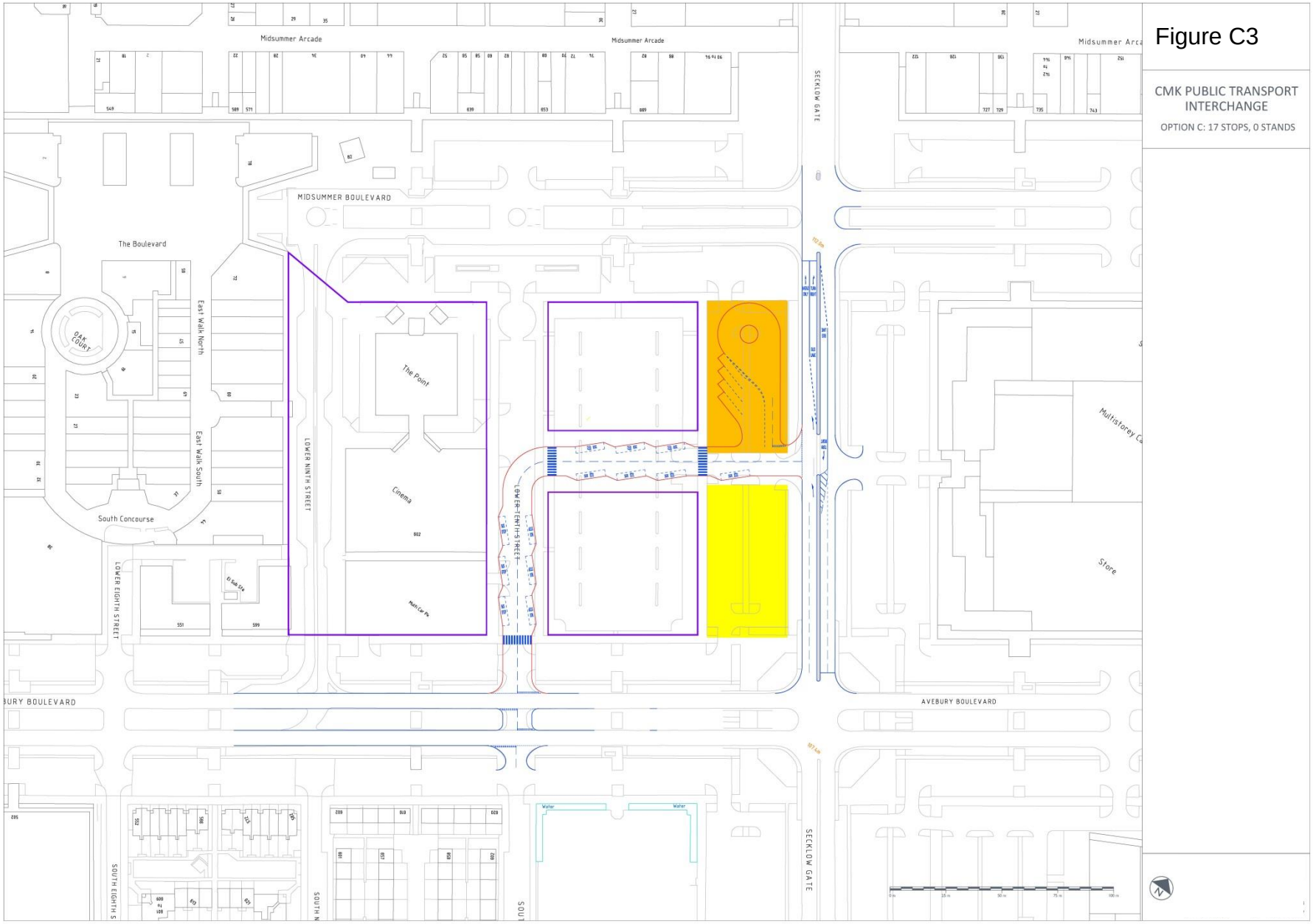


Figure C3

CMK PUBLIC TRANSPORT INTERCHANGE

OPTION C: 17 STOPS, 0 STANDS

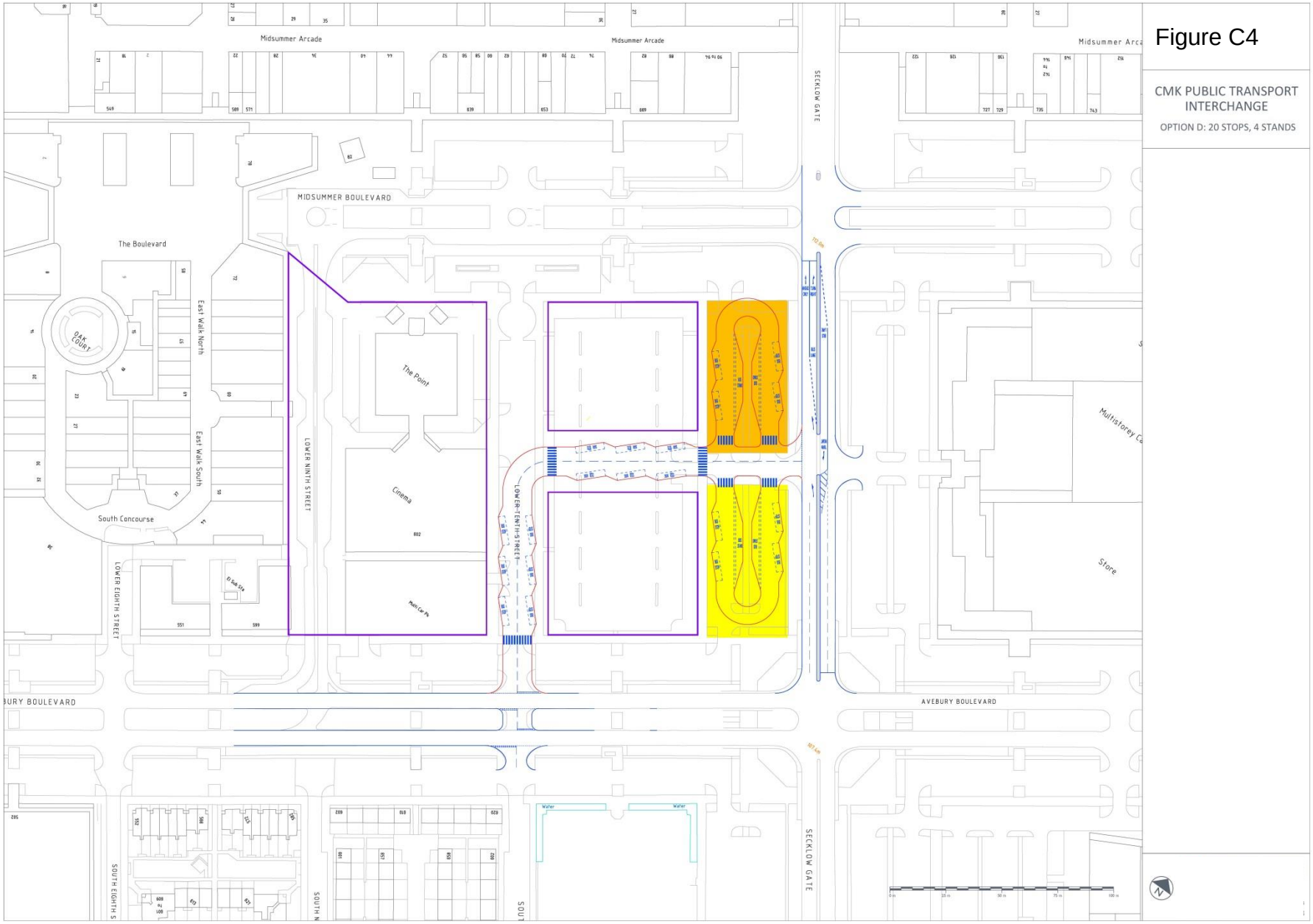


Figure C4

CMK PUBLIC TRANSPORT INTERCHANGE

OPTION D: 20 STOPS, 4 STANDS

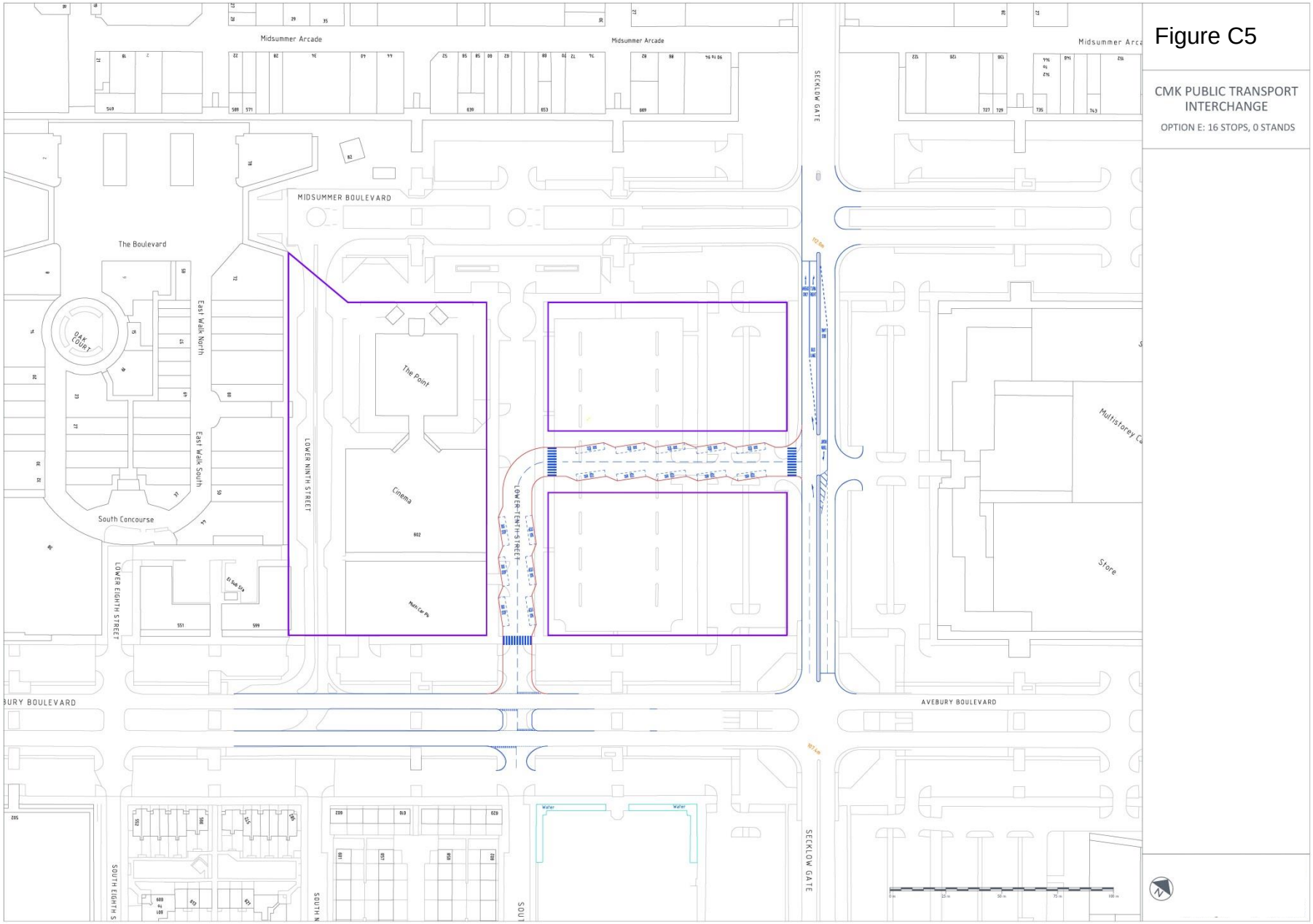


Figure C5

CMK PUBLIC TRANSPORT INTERCHANGE

OPTION E: 16 STOPS, 0 STANDS

Table C-2: Option Assessment Summary

	Current (MSB, Lower 9th)	A & B	C & D	E	On-Street (Secklow & Avebury)	Comment / Issues
Public Realm	**XXX**	√	√	√	√√	Pedestrianisation of MBE required existing stop facilities to be relocated.
Location	√√	√	√	**X**	**XXX**	Imperative to retain direct access to MSB for access to centre and to future transit. Option E doesn't fulfil criteria. Option of on-street stops on Secklow and Avebury unacceptable from passenger accessibility perspective.
Size / capacity	√	**XX**	√√	√	√	Needs capacity for up to 200 bph A&B do not offer sufficient capacity for future growth. C&D are extendable over time.
Bus Access	√	√	√	√	√	Need to ensure efficient access in and out. All options via Secklow Gate and Lower Tenth - avoid routing through busy Avebury Blvd and Secklow Gate. Priority / traffic control on entry / exit to Interchange
Passenger Facilities	√	√√	√√	√√	**V**	Enclosed shelters, information desk, RTPI, toilets / baby change. Café and retail units could be integrated into adjacent development.
Operator Facilities	√	√√	√√	√√	√	Toilets, mess room, controllers office, equipment and electrical intake cupboard. Would require c. 300 sq. m and need to be integrated within wider development (not shown in layouts).
Impact on development scale	√√√	√√	√	√√	√√√	All options developed to accommodate development. A,B and E would provide for more development. than C & D.
Overall Assessment	**XXX**	**XX**	√√	**X**	**XXX**	Current option unviable due to pedestrianisation. Option of buses serving Avebury / Secklow unacceptable from passenger accessibility perspective. Options A & B do not deliver sufficient longer-term capacity. Options E would not provide interchange with MSB of future transit. **Options C & D perform best overall.**

Option Assessment Results

C.5 The main reasons for identifying Options C and D as the preferred options are summarised below

Location (Rejection of On-Street Option)

C.6 Bus services currently serve stops on Midsummer Boulevard and Lower Ninth, providing good access to the retail core. It is important that the bus interchange provides good access for bus users to Midsummer Boulevard for two main reasons:

- Midsummer Boulevard is the focus of demand, and a location removed from this will inconvenience current bus users and reduce the overall attractiveness of busses, which in turn could impact on the demand for, and viability of, services.
- The bus interchange needs to provide an interchange between busses and a future transit route along Midsummer Boulevard (MSB).

C.7 The importance of a central location adjacent to MSB was seen as essential from a number of key stakeholders, including bus operators and passenger groups and a range of others, as MSB and the retail core are where passengers want to go, and also best serve locations either side of MSB.

C.8 At the outset of the development of the strategy, an indicative location for a new public transport interchange was identified with potential sites identified on both sides of Secklow Gate. The preferred option is that the public transport interchange should be located on the west side of Secklow Gate, and should provide direct access to Midsummer Boulevard.

C.9 The need for the interchange to provide good access to the retail hub and MSB meant that the 'on-street' option (of providing stops on Secklow and Avebury) was not deemed to be acceptable.

C.10 There were a number of related considerations in rejecting the on-street option:

- Relocating stops to Secklow and Avebury would make bus significantly less attractive as this would entail;
    - Longer walk distances of around 200 metres to MSB and 400m to Secklow, if getting off at Avebury, and vice-versa.
    - An effective halving of the service frequency as routes would either need to serve Secklow or Avebury (or one per direction), whereas current bus services all serve a single corridor.
    - A more unattractive and confusing network to users, as they would need to know which services ran along which corridor.
- In the short term providing poorer bus access to CMK would risk leading to a reduction in bus usage, and thereby affect the viability of some services. In the

medium to longer term this would mean busses would be less able to attract modal shift and hence to perform a role in supporting future growth.

C.11 Based on these factors, the assessment is that relocating bus stops and services to Secklow and Avebury would be significantly less attractive to bus users, and would therefore undermine the objectives of the LTP strategy and the MK Transport and Parking Strategy, and also undermine the recent increases in bus patronage seen in Milton Keynes.

C.12 Of the remaining options, Options A, B, C and D were assessed to be more attractive than Option E, as the latter would not provide for direct access to MSB or for interchange with any future transit option along MSB. For Option E, there would be no visible connectivity through to MSB, unless this was to be provided at the expense of reducing the footprint available for commercial development.

Size / Capacity for Growth (Rejection of Options A and B)

C.13 The bus-stops at The Point currently service 100 buses per hour (bph) across 12 stops, with possible growth from new development suggesting a requirement of up to 20 stops in the future catering for up to 200 bph.

C.14 Options A and B do not provide the capacity required for future growth, providing for 168 bph and 144 bph respectively. Options C and D provide significantly greater capacity and the potential to be constructed in phases so that capacity can respond to the demands of future growth.

C.15 Options C & D show interchange options that could be constructed in phases. The first phase would comprise the orange shaded section located on the northern section of the site. The capacity of the initial phase would, depending on the internal layout of the station, accommodate between 188 and 204 buses per hour. The facility could be extended to the southern section in line with future demand and service requirements providing capacity for up to 240 buses per hour.

C.16 Under Option E it would not be possible to expand the interchange facility beyond its capacity of 192 buses per hour, as this option is based on the adjacent land being developed for other purposes.

Layout and Operations (Preference for Option D over Option C)

C.17 Based on bus operations elsewhere in the country, bus stops typically service eight to twelve buses per hour, depending on the layout. With a drive in/drive out solution, a frequency of twelve buses per hour can be assumed, compared to eight buses per hour for a drive in/reverse out solution, sometimes referred to as a ‘sawtooth’ design.

C.18 There was a strong preference through the informal consultation for Option D, which employed a ‘drive-in / drive out’ configuration rather than the drive in / reverse out configuration shown in Option C. This option provides greater operational efficiency

(high capacity /throughput per stop) and therefore also provides greater overall capacity within the same footprint.

C.19 For options C and D, the development of the northern section alone (in conjunction with the on-street stops) should be sufficient to accommodate longer-term planned growth. However, this should be subject to further detailed design with the southern section of the site being identified (and safeguarded) as a potential site at this stage.

Bus Access to / from Interchange

C.20 Access to / from the site for all options (A to E) would be provided from Secklow Gate and Lower Tenth Street. The Secklow Gate access is located approximately mid-way between MSB and Avebury Boulevard. An option of providing access close to MSB is not practicable due to the raised level of the junction of Secklow Gate and MSB. The access onto Lower Tenth Street is recommended to avoid directing buses through the busy Avebury Boulevard and Secklow Gate junction, which would result in conflict with general traffic and likely queuing at busy periods.

C.21 At present, buses suffer a high degree of journey time unreliability which affects passengers and the ability of bus operators to keep to timetable. Bus priority recommendations are described in the main report, and this includes specific recommendations on the access to and from the proposed interchange.

Passenger Facilities

C.22 The interchange should include facilities for passengers, including enclosed shelters, toilets / baby change, real time passenger information (RTPI) and an information desk. A café and retail units could be provided either integrated within the facility or integrated into the adjacent development. These would be required for all options.

Operator Facilities

C.23 There should also be provision for driver and operator facilities, include male and female toilets and mess room(s)for drivers and bus station staff, controller's office, cleaning equipment store, electrical intake cupboard.

C.24 The overall area required for such passenger and operator facilities, based on facilities elsewhere, would be around 300m². These would be required for all options.

Pedestrian Access

C.25 The location of the interchange is further from the retail core than current bus stops. This means that high quality pedestrian access and enhanced public realm will be required between the interchange and MSB. For Options C and D this would need to be provided:

- To the south side of MSB (which is at a lower grade that the elevated carriageway) in the direction of both the retail core and the theatre.
- Along the northern section of Lower Tenth Street.

C.26 For Option E the axis through Lower Tenth Street and onto MSB would, based on the existing road layout, need to include enhanced pedestrian access and public realm. The successful integration of the bus interchange and public realm would be more challenging due the physical distance between the bus interchange and MSB.

C.27 The planning of the interchange should be integrated with the wider plan to enhance public realm and facilitate / encourage movement within and around MSB east. This wider plan includes aspirations to also provide better access for pedestrians from the retail centre towards Xscape.

Impact on Development Scale

C.28 All options have been developed to accommodate development opportunities. In terms of the scale of impact, Options A, B and E would involve less land (that could otherwise be used for development) than Options B and C.

C.29 The on-street (Secklow and Avebury) would allow for the development of the full grid square and for the pedestrianisation of MBE. However, this would be at the cost of displacing bus services from the core of central Milton Keynes which is deemed unacceptable from a transport planning perspective as this would undermine the core objectives of the LTP and CMK Parking and Transport Strategy.

C.30 There are options to reconfigure the land for development / urban ream / interchange arising from the opportunity afforded by the removal of vehicles from Lower Ninth and potentially the northern section of Lower Tenth. In each case development could, in theory, take place on these roads, and alternative pedestrian provision (e.g. from the public transport interchange to MSB) could be provided.

Overall Assessment

C.31 The overall assessment is summarised in Table C2. The assessment shows that the location of Options C and D out-perform the other options across a range of criteria, and that this is therefore recommended as the preferred location of the bus interchange within the strategy. The configuration of Option D offers greater capacity and is better operationally than Option C, so is the single preferred option identified in the strategy.

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