Milton Keynes
City Council

Central Milton Keynes Growth Study

Addendum

Study of key junctions to support a Strategic Outline Business Case for the Midsummer Boulevard Greenway Proposals

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Revision Log

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Milton Keynes City Council

Contents

Introduction

Corstorphine & Wright

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The following Key Junctions Study has been led by Alan Baxter Associates and supported by Corstorphine & Wright as an addendum to the Growth Opportunity Study (GOS) for Central Milton Keynes (CMK).

The GOS, including a Masterplan Framework, includes a long-term Vision, Placemaking Principles, and Emerging Masterplan Framework for Central Milton Keynes. Movement is one of the core components of these, and the GOS sets out strategies for Public Transport, Vehicular Movement, and Cycling.

Subsequent to this, further work has been undertaken through parallel studies which also concern movement in CMK. This includes a business case for the proposed Mass Rapid Transit (MRT) system by Arup, and a business case for the proposed Midsummer Boulevard Greenway by Waterman.

The purpose of this study is to help guide the emerging proposals for these business cases, so that they align with the broader vision, principles and strategies outlined in the GOS.

The key junctions selected include:

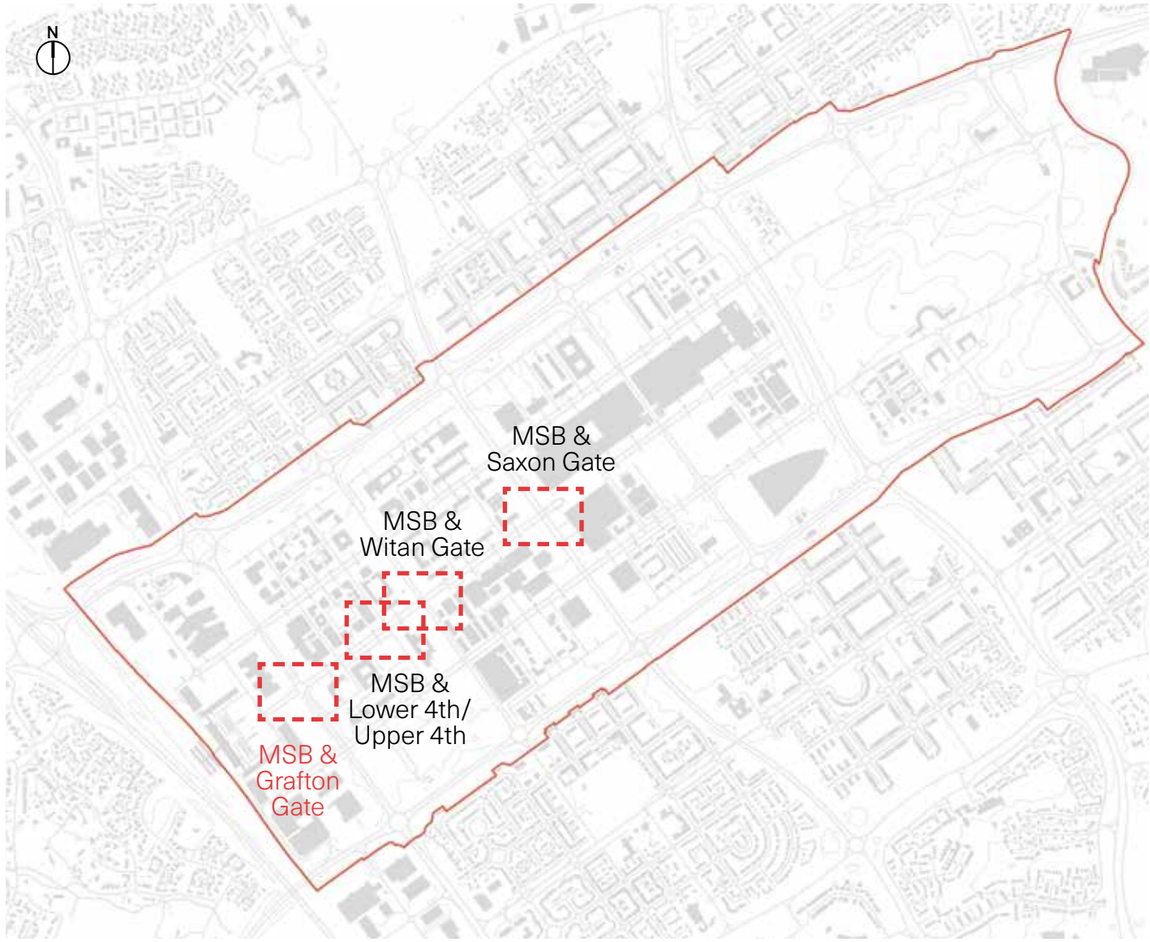
- Midsummer Boulevard & Grafton Gate;
- Midsummer Boulevard & Witan Gate;
- Midsummer Boulevard & Saxon Gate; and
- Midsummer Boulevard & Upper/Lower Fourth Street.

The diagrams and descriptions communicate the principles of the changes that would be made. It is envisaged that these outline proposals could be developed in greater detail as part of a Greenway Public Realm Plan, and could also help guide changes to other junctions within CMK.

Additionally, it is noted that there may be a range of scenarios for changes to junctions (and to Midsummer Boulevard). The GOS set out a long-term vision, but also principles for phased improvements. Therefore, for the purpose of this study, “Minimum” and “Maximum” options have been considered.

Broadly speaking, the minimum consists of the highway changes needed to enable the MRT to be routed onto the southern carriageway of Midsummer Boulevard. This would support the overall vision of the Growth Opportunity Study, which assumes that the southern carriageway is bus-only, and that the northern carriageway would be repurposed for pedestrians and cycles. The minimum also assumes the delivery of a minimum extent of a two-way cycleway and new pedestrian route along Midsummer Boulevard, along with links to connect these to the wider network within CMK.

The maximum, would entail full transformation of Midsummer Boulevard and adjacent Gates as envisaged in the GOS. This would include additional changes to vehicular traffic movement, as well as additional provision for walking and cycling.



Key junctions included in this study

Midsummer Boulevard and Grafton Gate

Existing configuration

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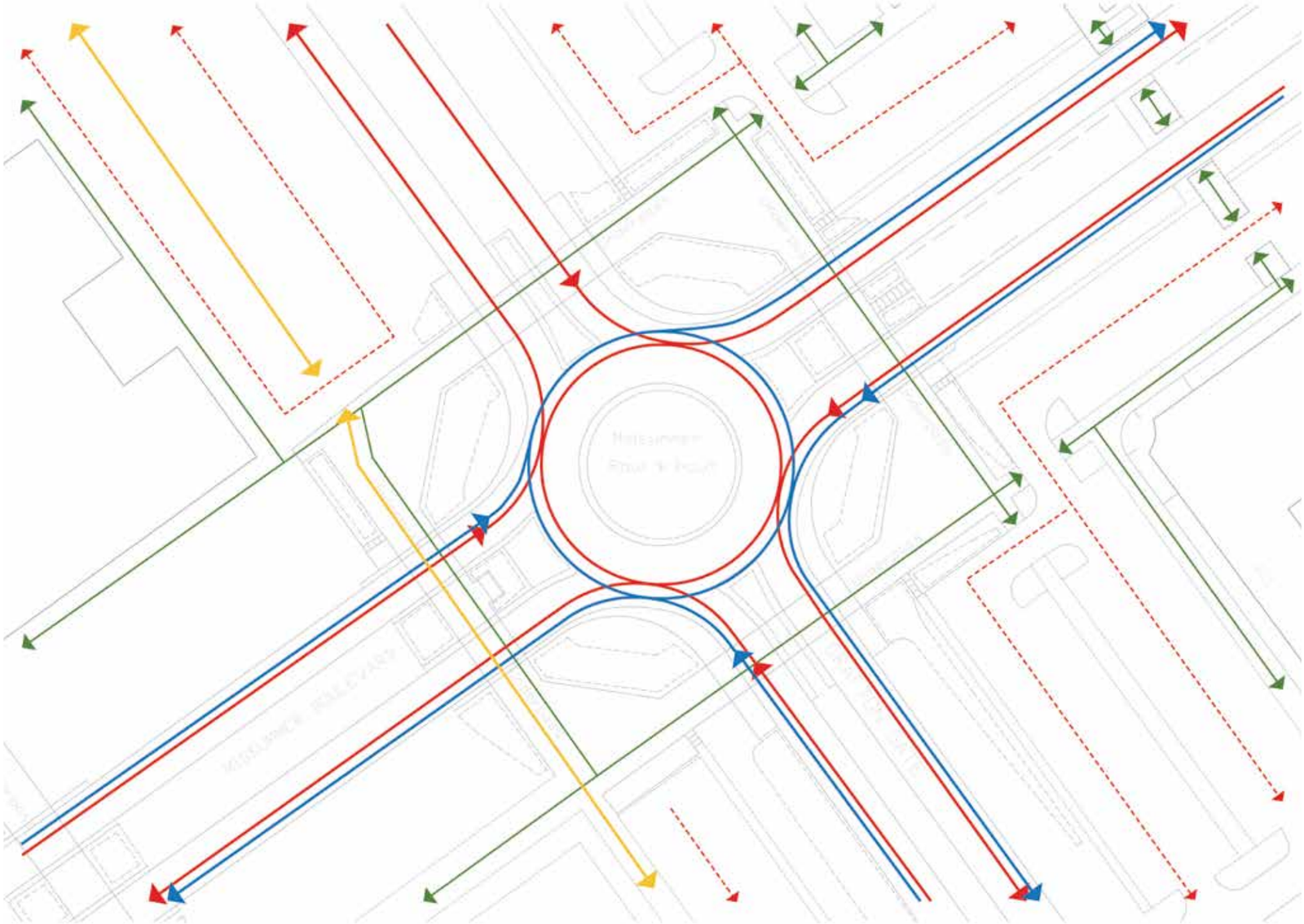
The existing junction consists of a roundabout, with dual carriageways on Midsummer Boulevard and Grafton Gate. Pedestrian movement takes place at the underpass level, with adjacent Porte Cocheres enabling crossings of Midsummer Boulevard. For cycling, there is a redway on the west side of Grafton Gate, which also uses the underpass.



Midsummer Boulevard and Grafton Gate as existing

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Minimum intervention

Midsummer Boulevard and Grafton Gate - minimum intervention

The minimum intervention at this junction assumes the highway changes needed to enable the MRT to be routed onto the southern carriageway of Midsummer Boulevard. Existing bus services are also assumed to use the southern carriageway in the short term.

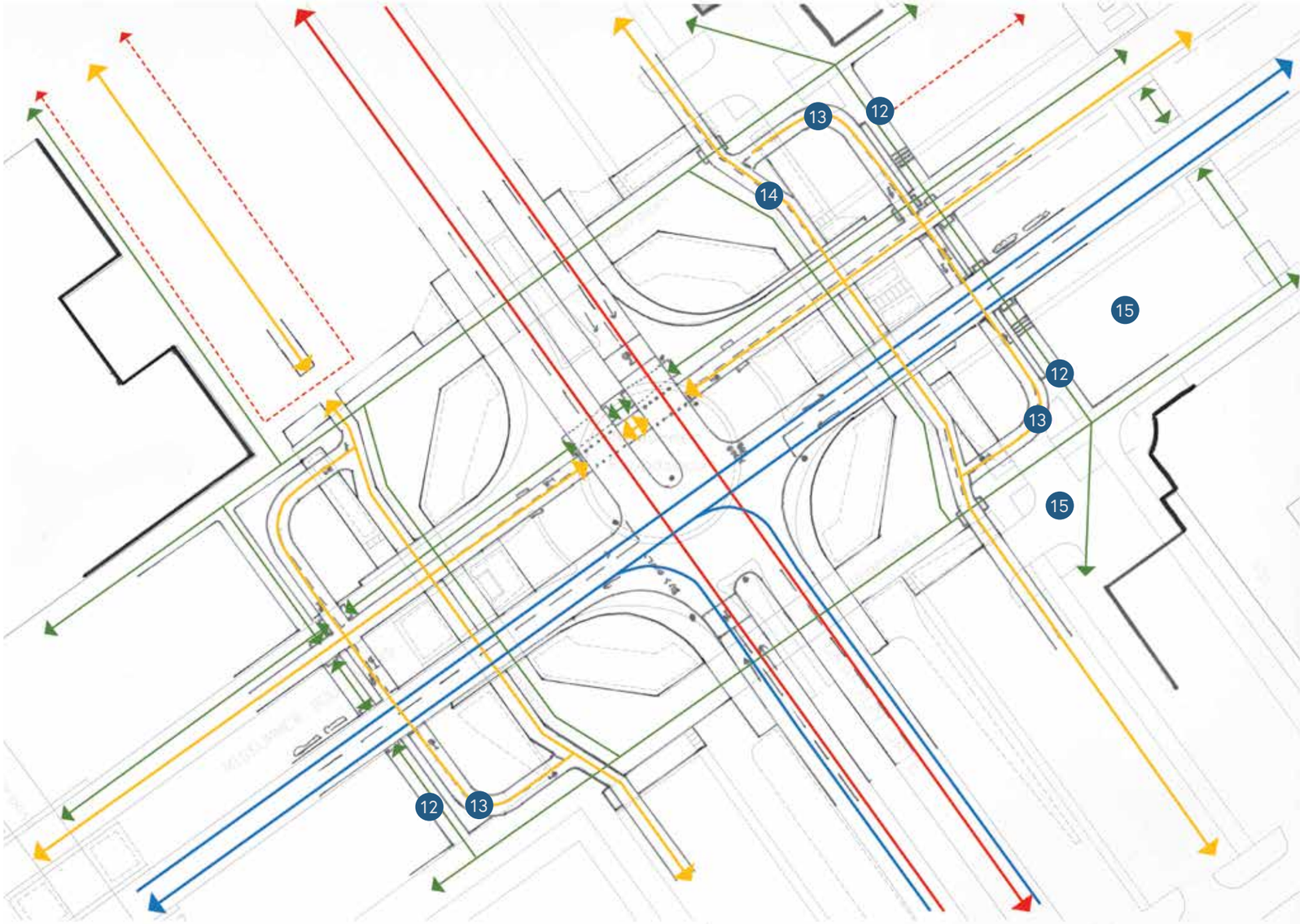
This change in traffic flow would necessitate the retrofit of the roundabout to a signalised junction. This would be comparable to the recent retrofit of Avebury Boulevard & Grafton Gate from roundabout to signalised junction (in 2021). However at Midsummer Boulevard as the northern carriageway would now used by pedestrians and cycles, a signalised pedestrian/cycle crossing would also be provided across Grafton Gate.

Following these changes, general traffic would continue north-south on Grafton Gate. As buses would undertake turns at the various arms of this junction, these movements would be incorporated into the signal staging. Turns would also be accommodated using adequate kerb radii.

It will also be important to provide pedestrian and cycle connections from the new routes on Midsummer Boulevard to the existing network at the internal access roads and underpasses, including Redway V6. This can be via new links adjacent to the Santander Building.

1. Removal of roundabout central island
2. Build out of kerb at MSB northern carriageway
3. Tightening of kerb at MSB southern carriageway
4. New signals introduced
5. Amended road markings and signage
6. Carriageway to become bus-only
7. New pedestrian corridor on MSB northern carriageway
8. New cycleway on MSB northern carriageway
9. New cycle and pedestrian crossing on Grafton Gate
10. New pedestrian connection from MSB to existing pedestrian routes
11. New cycle connection from MSB to existing redway network

Maximum intervention



Midsummer Boulevard and Grafton Gate - maximum intervention

In the full delivery of the vision and strategies in the GOS, Grafton Gate would still include north-south general traffic. These changes will already have been delivered in the minimum option, so no further changes would be expected for vehicles in the maximum option.

Additional scope delivered with the maximum option would therefore include further pedestrian and cycle provision. This would include a new redway on the east side of Grafton Gate. Improved pedestrian and cycle connections between the new routes on Midsummer Boulevard to the existing network at the internal access roads and underpasses would also be delivered. Due to small level differences on the east side, this may mean the use of ramps and stairs.

12 Addition pedestrian connections from MSB to existing pedestrian routes

13 Additional cycle connection from MSB to existing redway network

14 New redway on the east side of Grafton Gate

15 New landscaping opportunities, including on former areas of surface parking

(Note: refer to minimum option for other key changes)

Midsummer Boulevard and Witan Gate

Existing configuration

Corstorphine & Wright

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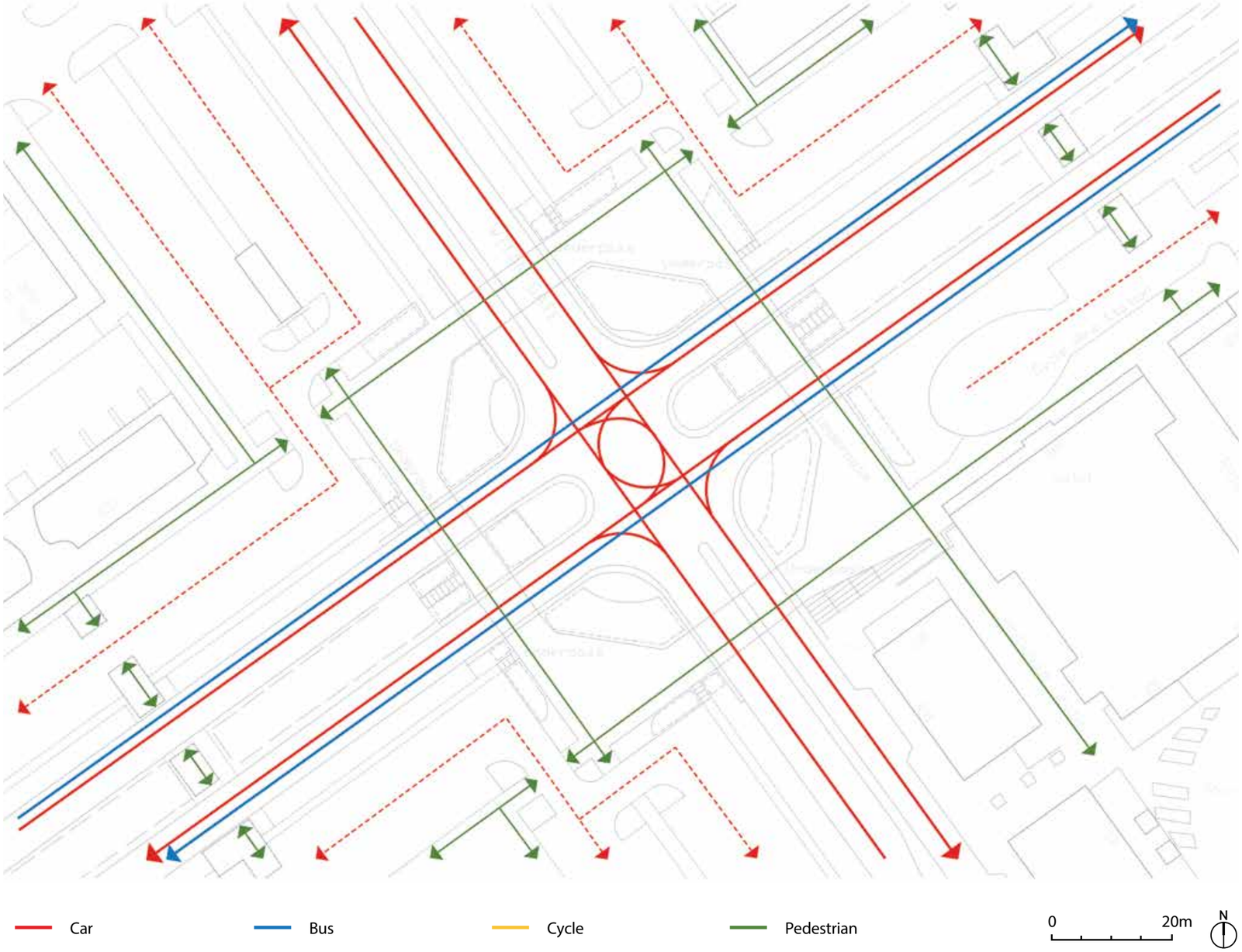
The existing junction is signalised, with dual carriageways on Midsummer Boulevard and Witan Gate. Pedestrian movement takes place at the underpass level, with adjacent Porte Cocheres enabling crossings of Midsummer Boulevard. There is no dedicated cycle infrastructure.



Midsummer Boulevard and Witan Gate as existing

Minimum intervention

Midsummer Boulevard and Witan Gate - minimum intervention

The minimum at this junction would consist of the highway changes needed to enable the MRT to be routed onto the southern carriageway of Midsummer Boulevard. Existing bus services are also assumed to use the southern carriageway in the short term.

The key changes at the junction would include to signals, kerb lines, signage, and road markings. With the northern carriageway of Midsummer Boulevard also now being used by pedestrians and cycles, a signalised pedestrian/cycle crossing would be provided across Witan Gate.

Additionally, a pedestrian connection and cycle connection would be provided from the new routes on Midsummer Boulevard to the existing network at the internal access roads and underpasses. Due to small level differences this may mean the use of ramps and stairs.

1. New kerb line at former MSB northern carriageway (closed to vehicles)
2. Reduced kerb radii at MSB southern carriageway (bus only)
3. Resignalisation of junction
4. Amended road markings and signage
5. Carriageway to become bus-only
6. New pedestrian corridor on MSB northern carriageway
7. New cycleway on MSB northern carriageway
8. New cycle and pedestrian crossing on Witan Gate
9. New pedestrian connection from MSB to internal access road
10. New cycle ramp from MSB to internal access road

Maximum intervention

Midsummer Boulevard and Witan Gate - maximum intervention

In the full delivery of the vision and strategies in the GOS, north-south vehicle traffic on Witan Gate is assumed to no longer be permitted. However vehicle turnaround areas would be provided. This would then enable a continuous MRT route, pedestrian route, and cycleway along Midsummer Boulevard, along with new landscaping opportunities. The signals at this junction would be removed altogether.

Additionally, a further north-south redway would be provided for cyclists along the west side of Witan Gate, at the underpass/access road level. An additional pedestrian connection and cycle connection would be provided from the new routes on Midsummer Boulevard to the network at underpasses/access road level.

11 Witan Gate stopped up to general traffic at the junction. New landscape opportunities in resulting areas.

12 Vehicle turnaround areas provided on Witan Gate

13 Signals removed

14 Continuous MRT lanes

15 Continuous cycle lanes

16 New pedestrian connection from MSB to internal access road

17 New cycle ramp from MSB to access road/ underpass level

18 New redway on west side of Witan Gate

19 New landscaping opportunities, including on former areas of surface parking

(Note: refer to minimum option for other key changes)

Midsummer Boulevard and Saxon Gate

Existing configuration

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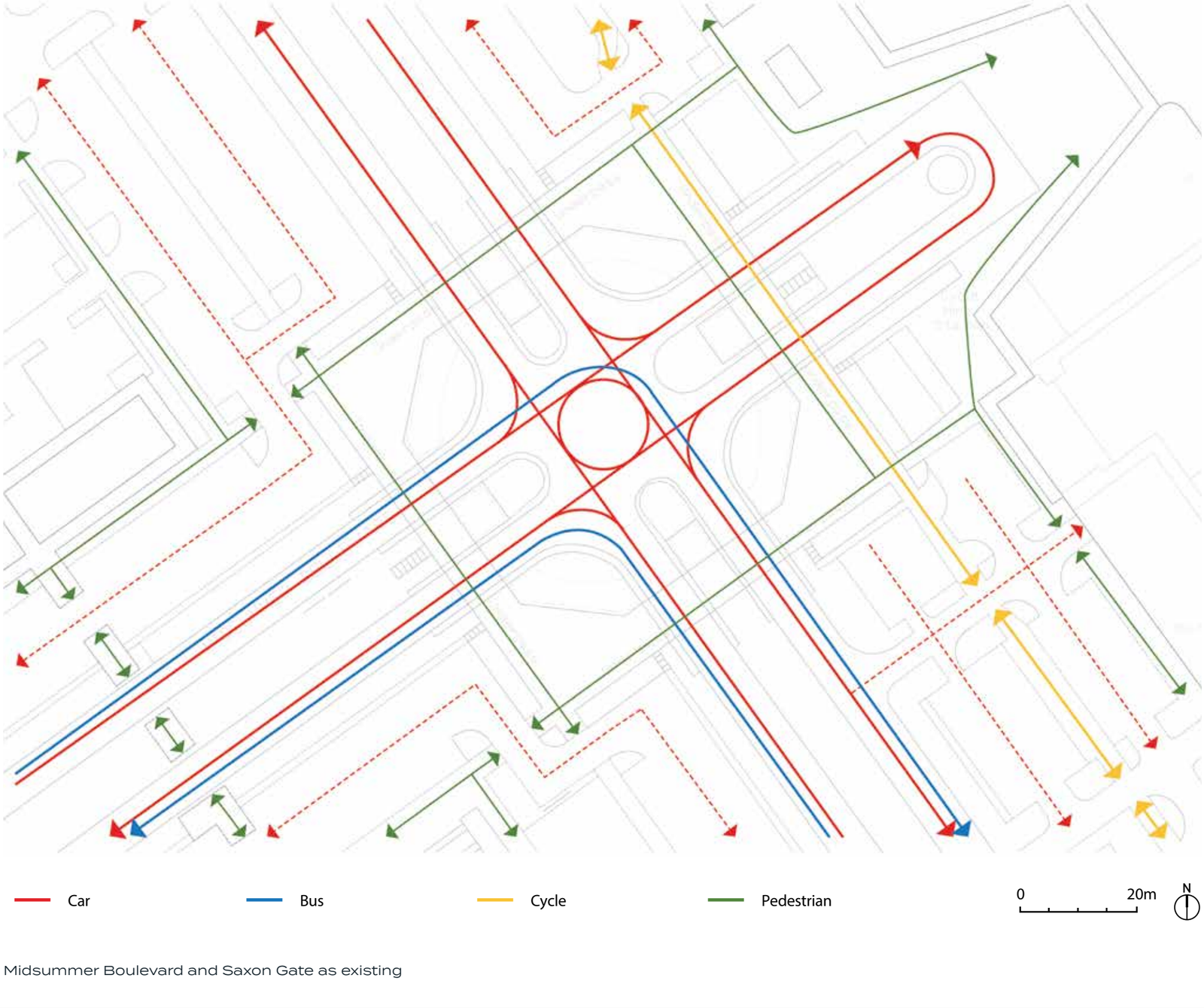
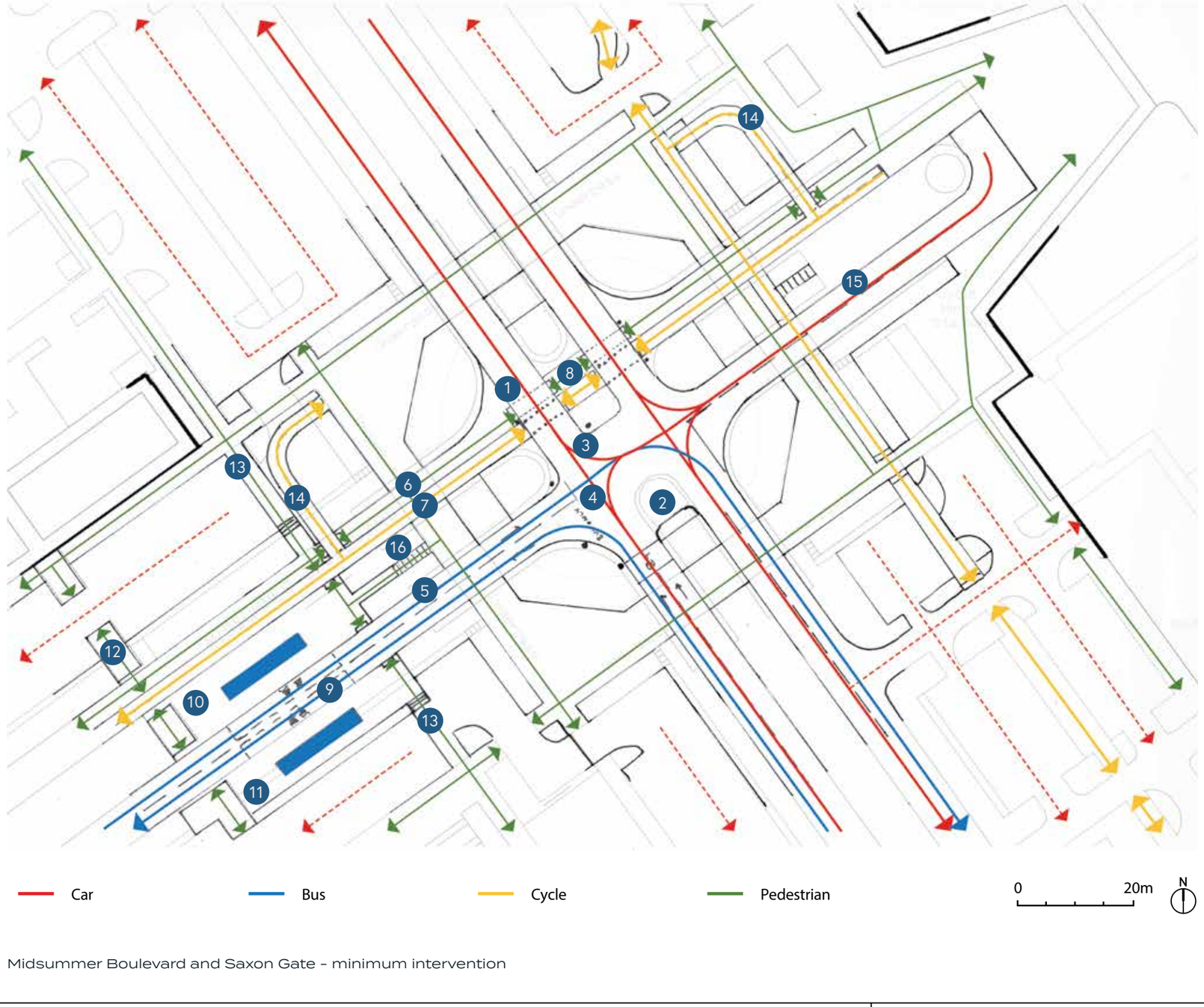
The existing junction is signalised, with dual carriageways on Midsummer Boulevard and Saxon Gate. Midsummer Boulevard is interrupted by Centre: MK, with a vehicular drop off area provided. Pedestrian movement takes place at the underpass level, with adjacent Porte Cocheres enabling crossings of Midsummer Boulevard. For cycling, there is a redway on the east side of Saxon Gate, which also uses the underpass.



Midsummer Boulevard and Saxon Gate as existing

Minimum intervention



Midsummer Boulevard and Saxon Gate - minimum intervention

Whilst the fullness of the MRT proposals assume that buses would be routed through Centre: MK (see subsequent section), this would require substantial retrofit work to the shopping centre buildings. Therefore the minimum option for this junction assumes an MRT routing around the shopping centre (i.e. via Saxon Gate/Avebury Boulevard/Lower Ninth Street). This is also the current routing of the existing buses. The MRT and existing buses would have dedicated bus lanes on Midsummer Boulevard to the west of Saxon Gate, but mix with general traffic elsewhere.

The key changes at the junction would include to signals, kerb lines, signage, and road markings.

Meanwhile, on Midsummer Boulevard, the MRT routing assumes that "Saxon Gate" is a key interchange stop between all three MRT lines, and that the location of this is immediately to the west of Saxon Gate. In coordination with the vision of the Growth Opportunity Study, and the Midsummer Boulevard Greenway, this can be located approximately between an existing Porte Cochere crossing, and a newly proposed pedestrian/cycle crossing point. Bus cages can be located on the southern carriageway, with shelters etc. provided accordingly in former areas of soft landscaping and car parking.

The new pedestrian route and cycleway on the northern carriageway of Midsummer Boulevard are assumed, with a crossing of Saxon Gate. The cycleway would terminate prior to arriving at the Centre: MK entrance, but also link to the existing redway on the east side of Saxon Gate, via a new ramp connection. Additionally, a pedestrian link and cycle ramp would be provided on the west side of Saxon Gate, to enable pedestrian and cycle connections to the MRT stop.

1. New kerb line at former MSB northern carriageway (closed to vehicles)
2. Amended kerb line on Saxon Gate to facilitate buses turning
3. Resignalisation of junction
4. Amended road markings and signage
5. Carriageway to become bus-only
6. New pedestrian corridor on MSB northern carriageway
7. New cycleway on MSB northern carriageway
8. New cycle and pedestrian crossing on Witan Gate
9. New bus cages
10. MRT station on MSB central reserve
11. MRT station on MSB verge (level change to be accommodated)
12. Existing Porte Cochere crossing used for pedestrian access to MRT
13. New pedestrian connection from MSB and MRT stations to access road/New cycle connection from MSB and MRT stations to access road/ underpass level
14. New cycle connection from MSB to existing redway at underpass level
15. Existing Centre: MK drop off area reduced (with option to close entirely)
16. Existing stair from underpass level used for additional pedestrian connections to MRT

Maximum intervention

Midsummer Boulevard and Saxon Gate - maximum intervention

The maximum at this junction assumes a continuous east-west route for the MRT and for cycles through Centre: MK. It is also assumed that north-south vehicle traffic on Saxon Gate would no longer be permitted, but that Milton Keynes' local buses would still be permitted. In broad terms, it is assumed that local buses will have been relocated to Avebury Boulevard and Silbury Boulevard at this stage. However, in line with the public transport strategy envisaged in the GOS, some local buses would also be routed via Saxon Gate, thus enabling interchanges with the MRT.

With this public transport strategy in mind, as well as the strategies for vehicle, pedestrian, and cycle movement, the proposed junction would have bus-only carriageways, and be signalised. Pedestrian and cycle crossings would be provided for east-west movement across these busways. Vehicular turnaround areas would be provided on Saxon Gate, and the taxi drop off areas for Centre: MK could be reprovided in adjacent areas of former surface parking.

Stops for local buses would be provided north of the junction. The underpasses and additional pedestrian routes would enable interchanges between local buses and the MRT. If additional capacity is needed for local buses, then stops could be lengthened with additional shelters and cages, or additional stops could be provided to the south of the junction.

Additionally, a further north-south redway would be provided for cyclists along the west side of Saxon Gate, at the underpass/access road level. An additional pedestrian connection and cycle connection would be provided from the new routes on Midsummer Boulevard to the network at underpasses/access road level.

18 Saxon Gate stopped up to general traffic at the junction

19 Vehicle turnaround areas provided on Saxon Gate

20 Bus only lanes north-south

21 Kerbing amended to facilitate bus-only movement

22 Amended road markings and signage

23 Resignalisation

24 Amended pedestrian and cycle crossings

25 MRT lanes extended through Centre: MK

26 Cycle lanes extended through Centre: MK

27 New stops for local buses

28 New redway on west side of Saxon Gate

29 New cycle ramp from MSB to access road/underpass level

30 Existing redway realigned to accommodate new building massing

31 Opportunity to provide vehicular drop areas elsewhere

32 New landscaping opportunities, including on former areas of surface parking

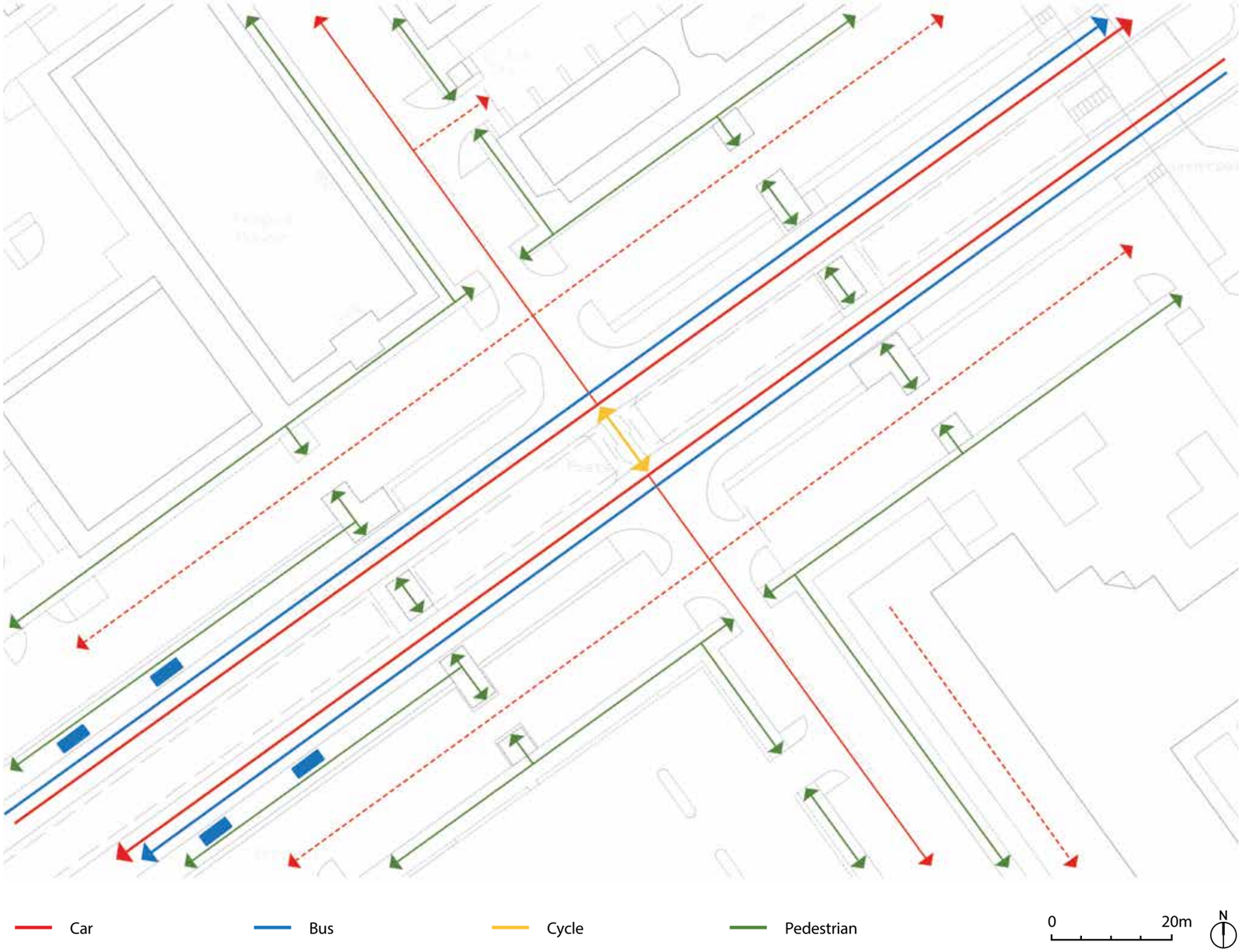
(Note: refer to minimum option for other key changes)

Midsummer Boulevard and Upper Fourth Street / Lower Fourth Street

Corstorphine & Wright

Alan Baxter

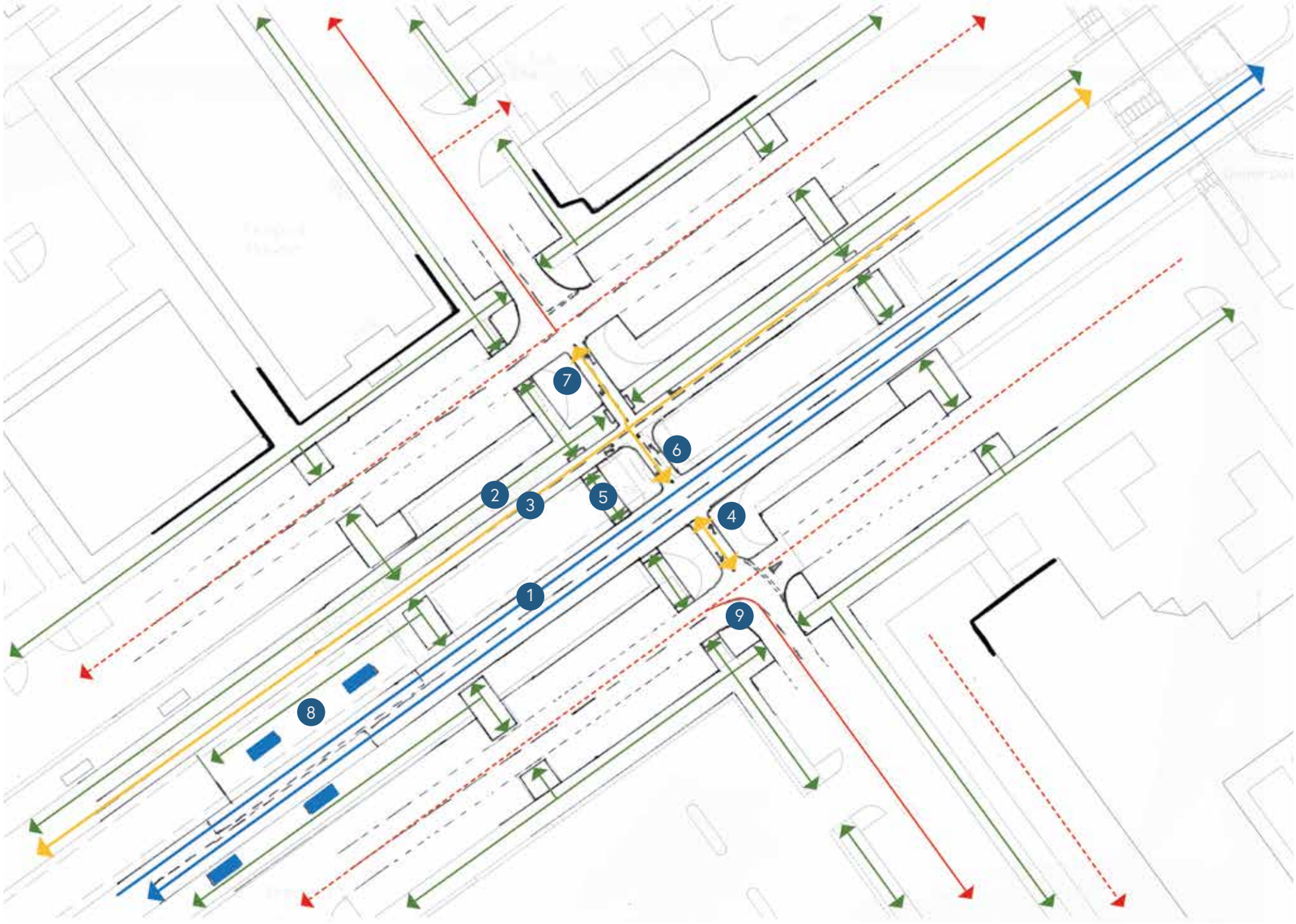
Existing configuration



Midsummer Boulevard and Upper/Lower Fourth Street represents a typical mid- block condition. At present, various properties have vehicle access via Midsummer Boulevard, as well as surface parking areas which they use. Pedestrian routes are parallel to buildings, with Porte Cocheres enabling crossings of Midsummer Boulevard. There are also some additional footways on the verges of Midsummer Boulevard, to provide local access to bus stops. A cycle crossing is available on the central reserve of Midsummer Boulevard, but there is no dedicated cycle infrastructure otherwise.

Midsummer Boulevard and Upper fourth / Lower Fourth Street as existing

Minimum intervention



Midsummer Boulevard and Upper fourth / Lower Fourth Street - minimum intervention

When the greenway changes are made, vehicle access from Midsummer Boulevard to the various parking areas will no longer be available. However, due to the generous existing vehicle access elsewhere and ample space in general, all of the internal roads within blocks and parking areas can be accessed from other directions. For example, Upper Fourth Street is accessed via Silbury Boulevard, Lower Fourth Street via Avebury Boulevard, and certain properties via Witan Gate.

The intention is to retain north-south foot and cycle access on Upper/Lower Fourth Street, and this would be integrated with the new pedestrian route and cycleway on the northern carriageway Midsummer Boulevard.

Meanwhile, with the southern carriageway of Midsummer Boulevard to be bus only, at a minimum the east-bound bus stop would need to be relocated onto the central reserve (i.e. if this work precedes the MRT scheme).

1. Southern carriageway of MSB to become bus only
2. New pedestrian corridor on MSB northern carriageway
3. New cycleway on MSB northern carriageway
4. Vehicle access from MSB to Upper/Lower Fourth Street to be closed
5. New pedestrian crossing of MSB, aligned with footways on Upper/Lower Fourth Street
6. Existing N-S cycle route on MSB retained/ enhanced
7. New N-S cycle routes on MSB provided
8. Bus stops relocated onto central reserve
9. Road markings in access road areas amended

Maximum intervention

Midsummer Boulevard and Upper fourth / Lower Fourth Street - maximum intervention

In the long term, the GOS envisages that the forecourt parking areas would be retrofitted, and gradually greened with new landscaping and Sustainable Urban Drainage (SuDS). However, this would be dependent on the redevelopment of each property, and the phased relocation of parking to back-of-house or undercroft areas.

10 MRT stops fully delivered

11 N-S cycle routes enhanced

12 Additional N-S pedestrian links

13 Vehicle carriageways pulled back from MSB

14 Light restrictions (e.g. low-level hedging) between green areas and MRT lanes

15 New landscaping opportunities, including on former areas of surface parking

(Note: refer to minimum option for other key changes)

Artist's impressions (MSB & Witan Gate)

Corstorphine & Wright

Alan Baxter

Existing configuration

Visual: Midsummer Boulevard and Witan Gate - As existing

Minimum intervention

Visual: Midsummer Boulevard and Witan Gate - Minimum intervention

Maximum intervention

Visual: Midsummer Boulevard and Witan Gate - Maximum intervention

Conclusion

Corstorphine & Wright

Alan Baxter

This study presents options for changes that could be made to key junctions along Midsummer Boulevard, in order to support the ambitions of the Growth Opportunity Study and Masterplan Framework for Central Milton Keynes. The options are approximately to a RIBA Stage 1 level of detail. If taken forward, the next steps are anticipated to be the following:

- Review the scope of improvements to be delivered along Midsummer Boulevard, together with any phasing considerations, and integration with other studies/ proposals (e.g. the MRT business case);
- Review the changes to be made at other junctions (e.g. Midsummer Boulevard & Elder Gate, Midsummer Boulevard & Marlborough Gate);
- Undertake relevant surveys;
- Undertake swept path analysis of vehicular movements;
- Traffic modelling of the junctions;
- Road Safety Audits;
- Liaison with the Local Highway Authority on the development of the designs, along with approvals, procedures etc.;
- Costing exercises of the proposals;
- Development of the designs to further RIBA Stages, in conjunction with any other proposals (e.g. MRT designs and public realm).

The vision for Midsummer Boulevard Greenway

Corstorphine & Wright

RIBA Chartered Practice

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