



Southern Gateway Masterplan Chichester

Transport Appraisal | Volume 1 | Report

May 2017





Basin Road Level Crossing

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This report is supported by a comprehensive set of technical appendices that are collated within a separate report.

Volume 2 - Technical Appendices

Appendix A	Bus Routes, Frequency and Location
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1. Non-Technical Summary

Peter Brett Associates LLP (PBA) has been commissioned by Chichester District Council (CDC), working with West Sussex County Council (WSCC), to prepare this Transport Appraisal to review and provide recommendations for the Southern Gateway Masterplan proposals.

The masterplan seeks to improve the public realm, pedestrian movement and connectivity between the Station, Canal Basin and City Centre, whilst co-ordinating the needs of all road users.

CDC's aims for this Transport Appraisal for the Southern Gateway Masterplan are to;

- Improve the public space for pedestrians and cyclists;
- Reconfigure the highway layout to improve the area;
- Create a Gateway to the south of Chichester City Centre; and
- Develop the Southern Gateway Masterplan.

A review of the masterplan area was conducted to understand the existing constraints and issues along with a review of each road user group. Which covered walking, cycling, public transport and general vehicle access. This was completed through a desktop study, on-site observations and traffic surveys.

This highlighted a number of key observations;

- The primary movement for pedestrians and cyclists was a north - south movement along Stockbridge Road and Southgate, between the City Centre and Railway Station.
- The primary movement for vehicles is an east - west movement across the gyratory.
- A number of the accidents involved pedestrians and / or cyclists.

Following the review of the existing situation, a total of eleven conceptual improvements schemes were generated. This included small scale improvement schemes through to radical and fundamental changes to the area. Each option was designed following the Manual for Streets hierarchy, which looks to priorities pedestrians and cyclists, over general traffic. A five stage appraisal process was established in order to identify the preferred scheme. This process covered the following;

Stage 1 - Appraisal against objectives using the road user hierarchy;

Stage 2 - Gyratory Design;

Stage 3 - Traffic Impact;

Stage 4 - Costings; and

Stage 5 - Stakeholder Review.

At Stage 1, four of the conceptual schemes were discounted, because they didn't fulfil the assessment criteria set out within the masterplan and Chichester Vision documents. The seven remaining options were taken forward to Stage 2; where a further conceptual scheme was discounted. This was due to the limited highway width, Grade II listed buildings and vehicle swept path requirements. The remaining six options were taken forward.

At Stage 3, two of the conceptual schemes were discounted, due to their significant impacts on the highway network. These remaining four options were taken forward by the study stakeholder group to stage 4; where they were provided with an indicative construction cost estimate. All of the schemes were taken forward to Stage 5, for the stakeholder review, prior to identifying the preferred schemes.

Following completion of the stakeholder review, and further consultation with the Steering and Project groups; two further conceptual schemes were discounted. The agreed two preferred options were identified as Options 10 and 11.

Option 10

Option 10 proposes to restrict movement across the Stockbridge Road level crossing to public transport, taxis, pedestrians and cyclists only. Basin Road level crossing would become the primarily north-south route for general traffic. This provides an opportunity for a bus interchange at the railway station and reduces potential conflict areas between vulnerable road users and vehicles.



The existing Southgate gyratory would be retained and modified to a single lane, creating greater public realm space.

A new road is proposed north of Canal Wharf through the Royal Mail Sorting Office. This increases the developable area around the Canal Basin and provides a greater public realm space.

The indicative construction cost for Option 10 is estimated to be approximately £5.3 Million.

Option 11

Option 11 proposes to restrict movement through the Stockbridge Road level crossing to public transport, taxis, emergency vehicles, pedestrians and cyclists only. This provides an opportunity for a bus interchange at the railway station and reduces potential conflict areas between vulnerable road users and vehicles.

The existing Southgate gyratory would be removed and Avenue de Chartres would be extended through Listed buildings to meet Basin Road. South Street would become a shared space area, with improved public



realm areas and appropriate local access restrictions for deliveries towards the railway Station to be considered.

A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area in line with the main objectives of the masterplan.

The indicative construction cost for Option 11 is estimated to be approximately £8.2 Million.

Conclusion

The two preferred options will be taken forward through the consultation of the Chichester Southern Gateway Masterplan, to gain the public's view on the proposals.

2. Introduction

Context

Peter Brett Associates LLP (PBA) has been commissioned by Chichester District Council (CDC), working with West Sussex County Council (WSCC), to prepare this Transport Appraisal to review and provide recommendations for the Southern Gateway Masterplan proposals.

The masterplan seeks to improve the public realm, pedestrian movement and connectivity between the Station, Canal Basin and City Centre, while co-ordinating the needs of all road users.

Southern Gateway Masterplan

The masterplan identifies a broad mix of options and design criteria for a number of different development sites. Each of which may have a different impact on the road network.

The masterplan presents an opportunity to explore aspirations to rationalise the road space and rebalance the way in which it is used; by providing enhancements to the area for pedestrians and cyclists.

The masterplan area includes the Chichester Railway Station, Bus Station and forms part of the main inner city ring road around Chichester City Centre. There is significant potential to improve the public realm and present a more attractive environment for those arriving into the city by building upon the emerging vision for Chichester, with an emphasis on improving the area to create a leisure/ cultural Quarter, as shown in **Figure 1**.

Design Aims and Principles

CDC's aims for this Transport Appraisal for the Southern Gateway Masterplan are to;

- Improve the Public Realm;
 - Connectivity to the Station, Canal Basin, the City Centre via South Street, Market Avenue, Chichester Gate Leisure Centre for pedestrians, cyclists and public transport users.
- Reconfigure highway access to the area;
 - Review congestion and severance on the Gyrotory and Stockbridge Road and Basin Road level crossings.
- Provide a Gateway to the south of Chichester City Centre to create sense of place, to be mechanism for redevelopment and to improve sustainable travel between the City and the City Centre; and
- Inform the development of the Southern Gateway Masterplan.

Objectives

The objectives of this document are to:

- Review the existing Highway network,
- Produce feasible and viable concept highway layout designs; and
- Review the impact of the concept transport designs on the future Highway network.

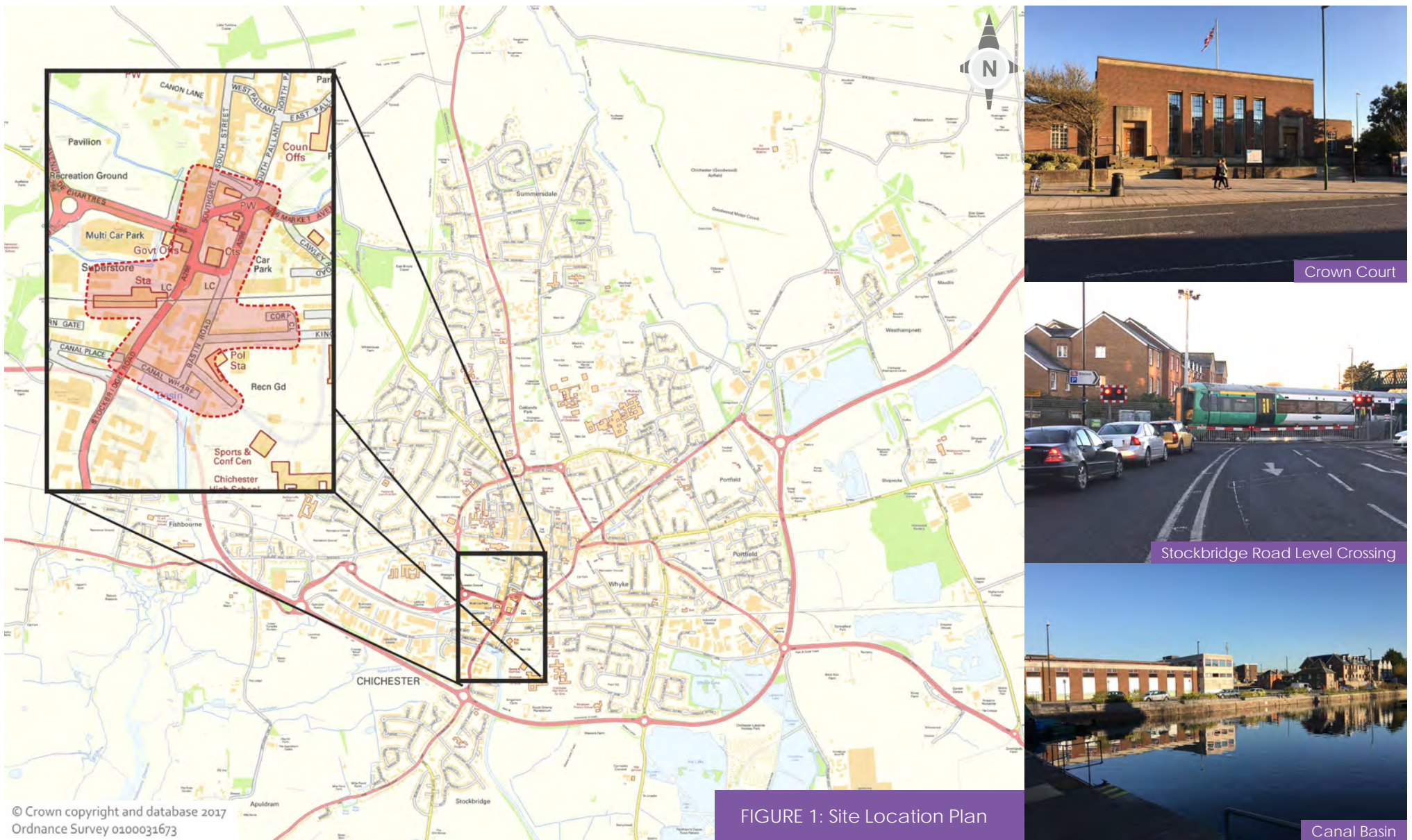


FIGURE 1: Site Location Plan

3. Context

Introduction

This section provides a review of transport policy relating to the proposed masterplan. The transport policy documents which are considered relevant to the masterplan are listed below and some are discussed in more detail.

- Chichester District Council Local Plan: Key Policies 2014 - 2029
- Chichester Vision 2017
- Chichester Road Space Audit Document
- West Sussex Transport Plan 2011 - 2026; and
- West Sussex Walking and Cycling Strategy 2016 - 2026

Chichester District Council Local Plan: Key Policies 2014 – 2029

CDC adopted its Local Plan Key Policies 2014 - 2029 in July 2015. This document forms a suite of policies at a local level by which planning applications are considered.

Chichester City Development Principle 12.7 introduces the potential for redevelopment of the area known as the 'Southern Gateway' and states "If necessary the Council would explore the potential to develop and reshape this area further through the preparation of a Supplementary Planning Document(s) or Development Plan Document(s) which set out a coordinated planning framework for the area.

Chichester Vision 2017

CDC produced the Chichester Vision to act as a template against which to test new projects and proposals emerging for the City. The Vision has been out to public consultation in since March 2017 and is anticipated to be adopted in late Spring 2017.

The Vision looks to follow three key themes:

- An Accessible and Attractive City – create attractive streets and open spaces with an aim to give more priority for walking and cycling through further pedestrianisation and improved public transport
- A Vibrant and Growing Economy – pursue development opportunities and take a co-ordinated approach to new development by making better and more efficient use of public sector land.
- A Leading Visitor Destination - become a vibrant city offering fantastic retail experience and providing heritage, culture and leisure opportunities.

The Vision document supports the underlying principles of the masterplan document created by David Lock Associates.

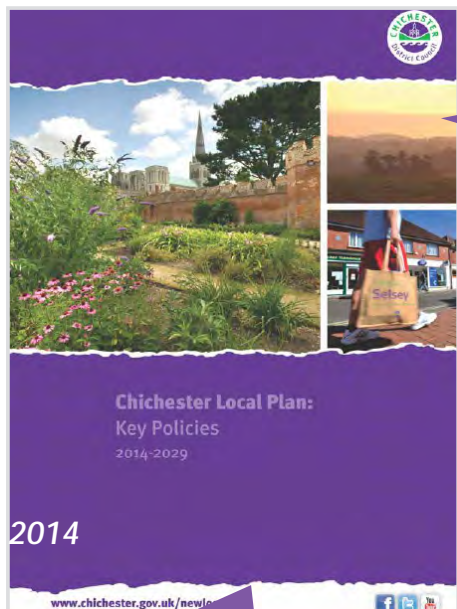
Chichester Road Space Audit Document

Chichester Road Space Audit prepared by WSP-PB on behalf of WSCC focuses on the following elements:

- On street parking issues;
- Off street parking capacity;
- Road space reallocation; and
- Long term traffic management and development.

This document supports the Local Plan by promoting the policy of improving the urban realm in areas with high development opportunities focusing on improving the quality of the street for pedestrians.

This document promotes the potential of Southgate to be transformed from a vehicle dominated area to a pedestrian and cycle friendly environment, promoting key links to attractions and public transport interchanges.



Introduces Southern Gateway

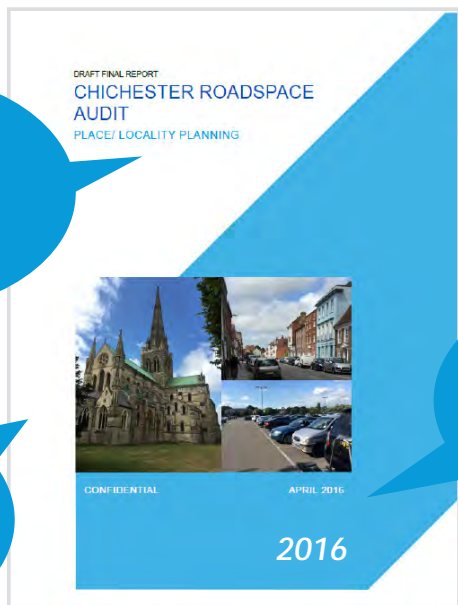
Explores Options For Reducing Traffic Congestion and Improving Safety at Southgate Gyratory

To, Not Through

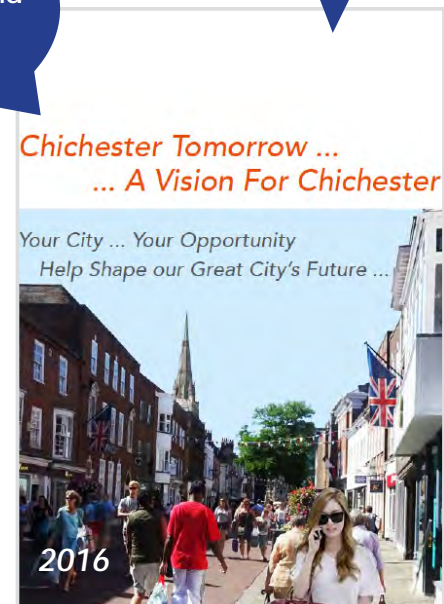
Reducing Traffic Demands by Encouraging a Switch to Other Modes

Attractive Streets and Open Spaces

Easily Accessibly with Less Traffic, Pedestrianisation Good Public Transport



Reallocation of Road Space



David Lock Associates Proposed Masterplan

David Lock Associates (DLA) were commissioned by CDC to produce a masterplan for the Southern Gateway. The DLA masterplan looked to achieve five key objectives:

- Making sure First Impressions Count;
- Reinforcing a Mix of City Uses;
- Contributing towards a Wider Movement Strategy;
- Providing a Flexible Framework; and
- Achieving Design Quality.

These objectives supported the overall design principles set out by CDC and seek to improve links from the railway station to the city centre and between the various development sites.

The DLA masterplan highlighted and identified a number of Key Development and Public Realm Opportunities throughout the masterplan area.

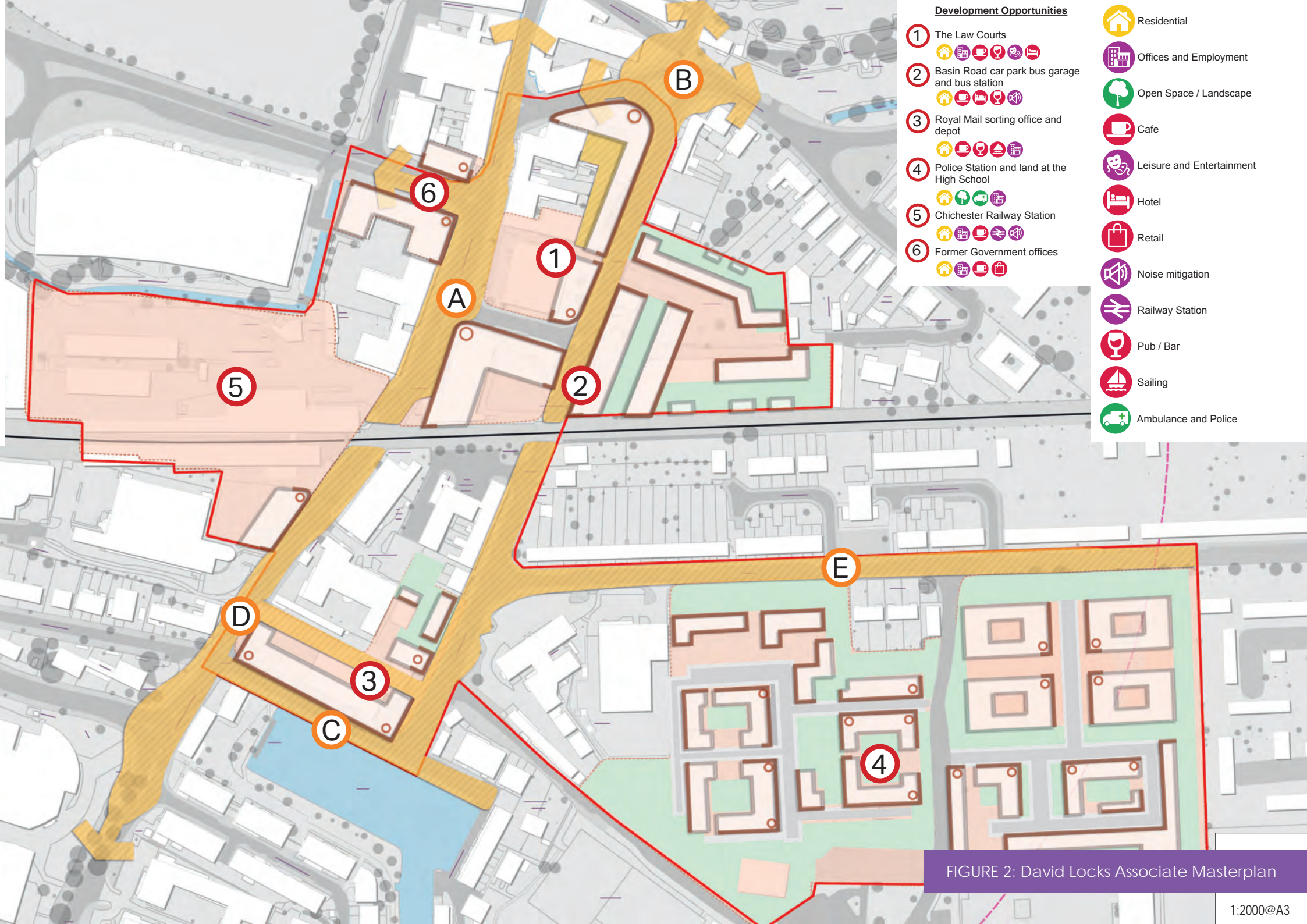
Figure 2 illustrates the proposed masterplan prior to the completion of this Transport Appraisal. This layout is subject to change following the issue of this document.

The development opportunities are:

1. The Law Courts;
2. Basin Road car park, bus garage and bus station;
3. Royal Mail Sorting office and depot;
4. Police Station and land at the High School;
5. Chichester Railway Station; and
6. Government Offices.

The public realm priorities are:

- A. Southgate;
- B. South Pallant/ Market Avenue;
- C. Canal Basin and Basin Road;
- D. Stockbridge Road; and
- E. Kingsham Road.



- Development Opportunities**
- 1 The Law Courts
 (Icons: Residential, Offices and Employment, Pub / Bar)
 - 2 Basin Road car park bus garage and bus station
 (Icons: Residential, Pub / Bar, Sailing, Ambulance and Police)
 - 3 Royal Mail sorting office and depot
 (Icons: Residential, Pub / Bar, Sailing, Ambulance and Police)
 - 4 Police Station and land at the High School
 (Icons: Residential, Open Space / Landscape, Sailing, Ambulance and Police)
 - 5 Chichester Railway Station
 (Icons: Residential, Open Space / Landscape, Railway Station, Ambulance and Police)
 - 6 Former Government offices
 (Icons: Residential, Offices and Employment, Pub / Bar)

- (Icon: House) Residential
- (Icon: Office building) Offices and Employment
- (Icon: Tree) Open Space / Landscape
- (Icon: Coffee cup) Cafe
- (Icon: Entertainment) Leisure and Entertainment
- (Icon: Hotel) Hotel
- (Icon: Shopping bag) Retail
- (Icon: Speaker) Noise mitigation
- (Icon: Railway tracks) Railway Station
- (Icon: Wine glass) Pub / Bar
- (Icon: Sailboat) Sailing
- (Icon: Ambulance) Ambulance and Police

FIGURE 2: David Locks Associate Masterplan

4. Parameters

Study Area

The Southern Gateway Masterplan area is located between the City Centre and the Canal Basin; covering approximately 12 hectares. The masterplan area includes the following existing key locations;

- Magistrates Court;
- Crown Courts;
- Railway Station;
- Bus Stations & Depot;
- Royal Mail Sorting Office; and
- Chichester High School for Boys.

The masterplan location is shown in **Figure 3**.

The existing masterplan area is made up of a mixture of residential, retail and commercial developments and acts as a major point of arrival with Chichester Railway and Bus stations located within the area. The masterplan area is split by the West Coastway railway line running east-west through the centre, which effectively splits the highway network into north and south Areas. There are two railway crossings, located on Stockbridge Road and Basin Road.





Key:

- Buildings that can be replaced
- ▨ Developable Area

FIGURE 3: Study Area

Existing Highway Network

The masterplan area is accessed by Avenue de Chartres to the northwest, South Street to the north, Market Avenue to the northeast, Kingsham Road to the south east, Terminus Road to the southwest and Stockbridge Road to the south. A one-way gyratory system circulates around the Magistrates and Crown Courts to the north of the railway formed of Basin Road and Southgate connecting Avenue de Chartres and Market Avenue.

Southgate Gyratory is situated within the northern section of the masterplan area operating as a one-way system, forming part of the inner city ring road. Stockbridge Road and Basin Road connects the Southgate Gyratory across the West Coastway railway line to Canal Basin and further south to the A27 Chichester Bypass. Stockbridge Road and Basin Road level crossings operate together due to the short distance between the two level crossing.

The A27 road bypasses around the southern extent of the city and connects Chichester to Worthing and Brighton to the east, and Portsmouth and Southampton to the west. Stockbridge Road connects the A27 to Southgate Gyratory, with this acting as one of six access points connecting Chichester and the A27.

South Street acts as the main connection from Chichester City Centre to the masterplan area. The land usage along South Street is mainly retail outlets, restaurants and food stores.

Basin Road's northern section operates as a one-way system alongside the Magistrates and Crown Courts before becoming a two-way road just north of the level crossing, next to the bus station. It continues as a two-way road south of the level crossing and becomes Canal Wharf. The land usage along Basin Road is mainly residential with access to the Bus Station and Depot, Crown Court, Chichester Police Station, Royal Mail Sorting Office and Chichester High School.

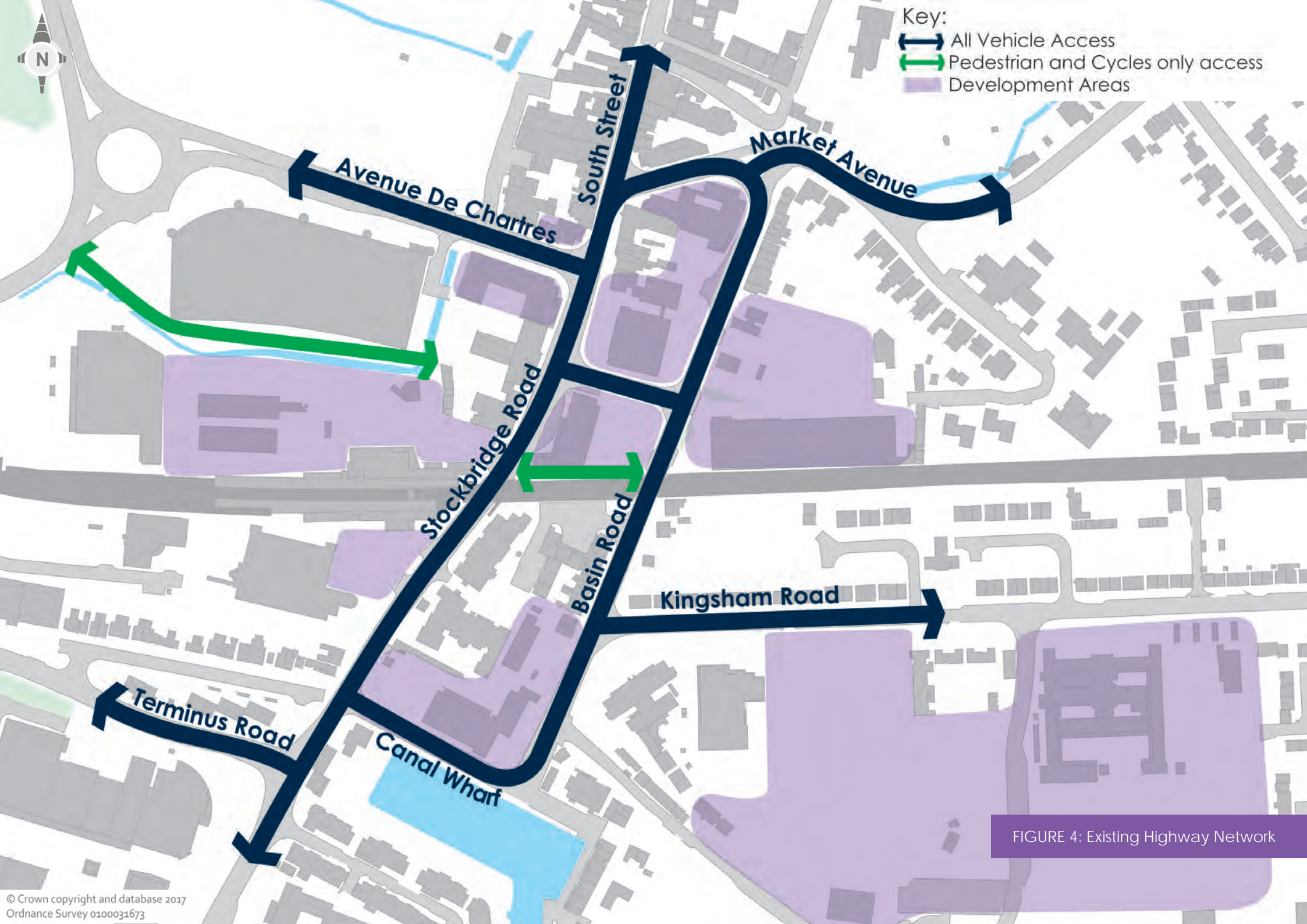
Kingsham Road is a 20mph residential road with access to Chichester High School and Chichester Custody Centre. Canal Wharf acts as the southern east-west connection between Stockbridge Road and Basin Road and provides access to residential developments around the Canal Basin.

Stockbridge Road acts as the main connection from the south and crosses the West Coastway Railway Line next to the Railway Station. Access to both Chichester Railway Station car parks and Brompton Courts is via Stockbridge Road.

Avenue de Chartres acts as the main connection from the west.

In the local vicinity, the area east and south of the masterplan area is mainly residential in nature with a number of schools located in the area. The area north of the masterplan area is predominantly retail in nature. The area west of the masterplan area is mainly commercial in nature with a small area of green space and leisure facilities.





Key:
All Vehicle Access
Pedestrian and Cycles only access
Development Areas

FIGURE 4: Existing Highway Network

Existing Constraints

The site is subject to the following constraints as shown in **Figure 6**;

- Grade II Listed Buildings; To the north of Avenue De Chartres there is a group of Grade II Listed Buildings that front the public highway and restrict the available carriageway width;
- Locally Listed Building. The Chichester Crown Court, The Magistrates Court and Bus Depot are located within the Southgate gyratory, and are Locally Listed;
- Existing accesses;
- Conservation Area; and
- Air Quality Management Areas.

Air Quality Management Areas

Chichester has three Air Quality Management Areas (AQMA) within the city. The AQMAs are at the following locations and can be seen in **Figure 5**:

- Stockbridge Roundabout on the A27,
- Orchard Street situated to the North West of the Southern Gateway Masterplan on the Ring Road; and
- St Pancras situated to the North East of the Southern Gateway Masterplan on the Ring Road.

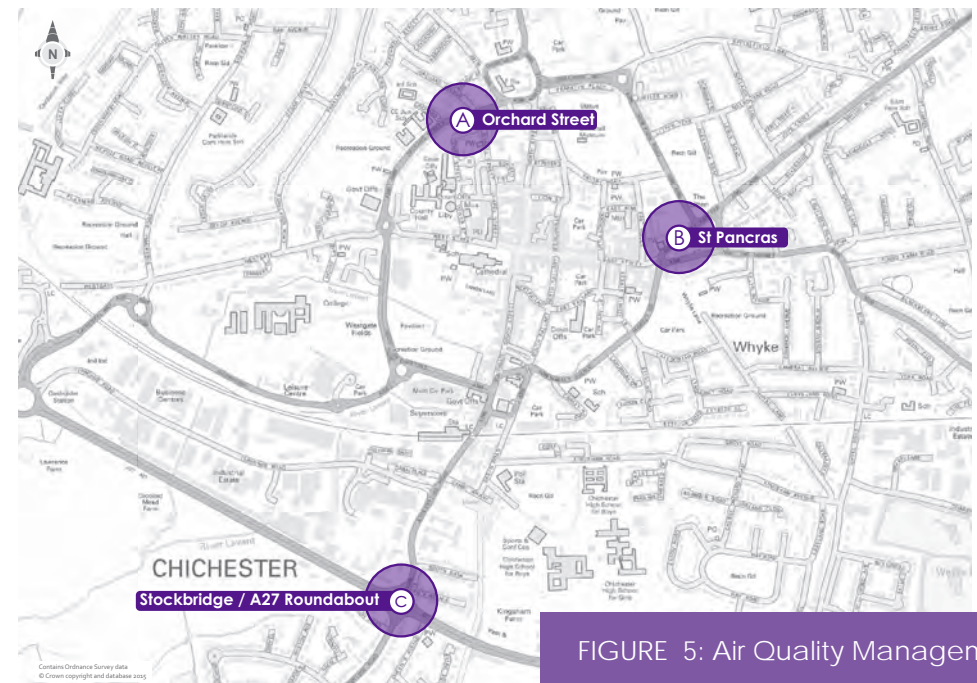
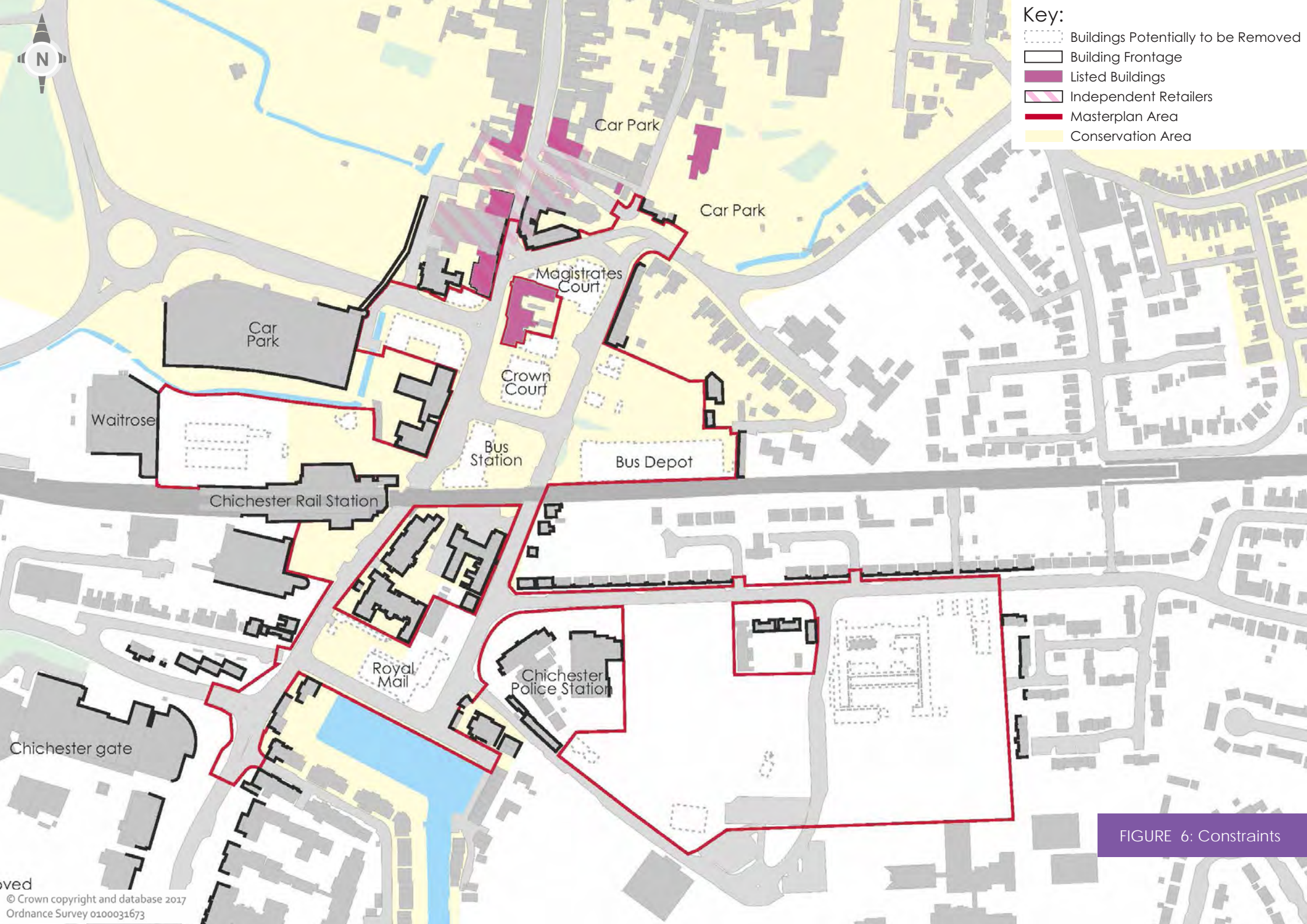


FIGURE 5: Air Quality Management



- Key:**
- Buildings Potentially to be Removed
 - Building Frontage
 - Listed Buildings
 - Independent Retailers
 - Masterplan Area
 - Conservation Area

FIGURE 6: Constraints

Pedestrian and Cycle Network

A review of the Pedestrian Network highlighted a number of controlled and uncontrolled crossings throughout the masterplan area.

There is an existing pedestrian footbridge located at the Stockbridge Road level crossing which allows pedestrian movement over the railway when the level crossing is in use. This pedestrian bridge could be classed as inadequate due to the steepness of the steps and that it does not cater for the mobility impaired, parents with prams or pushchairs, people with heavy luggage or cyclists.

There is an existing pedestrian footbridge over Avenue de Chartres which connects the Avenue de Chartres car park and Deanery Close. Another footbridge connects the Avenue de Chartres car park to the Waitrose carpark and a shared cycle/footway which runs from the Railway Station alongside the carpark to Westgate Leisure Centre and Chichester College.

The Railway station has existing cycle storage facilities in the form of wheel racks located outside the northern entrance, with capacity for 180 bicycles

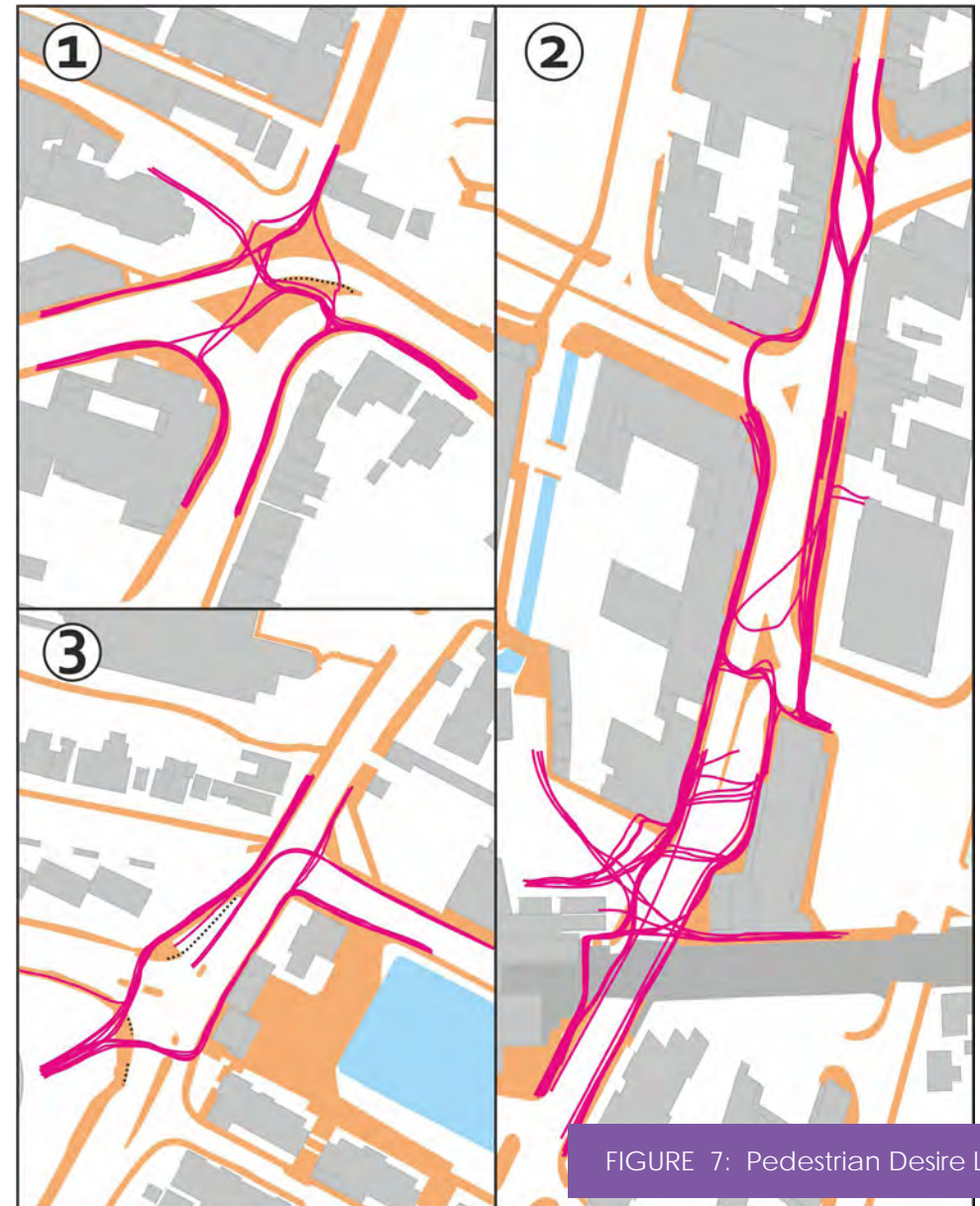


FIGURE 7: Pedestrian Desire Lines

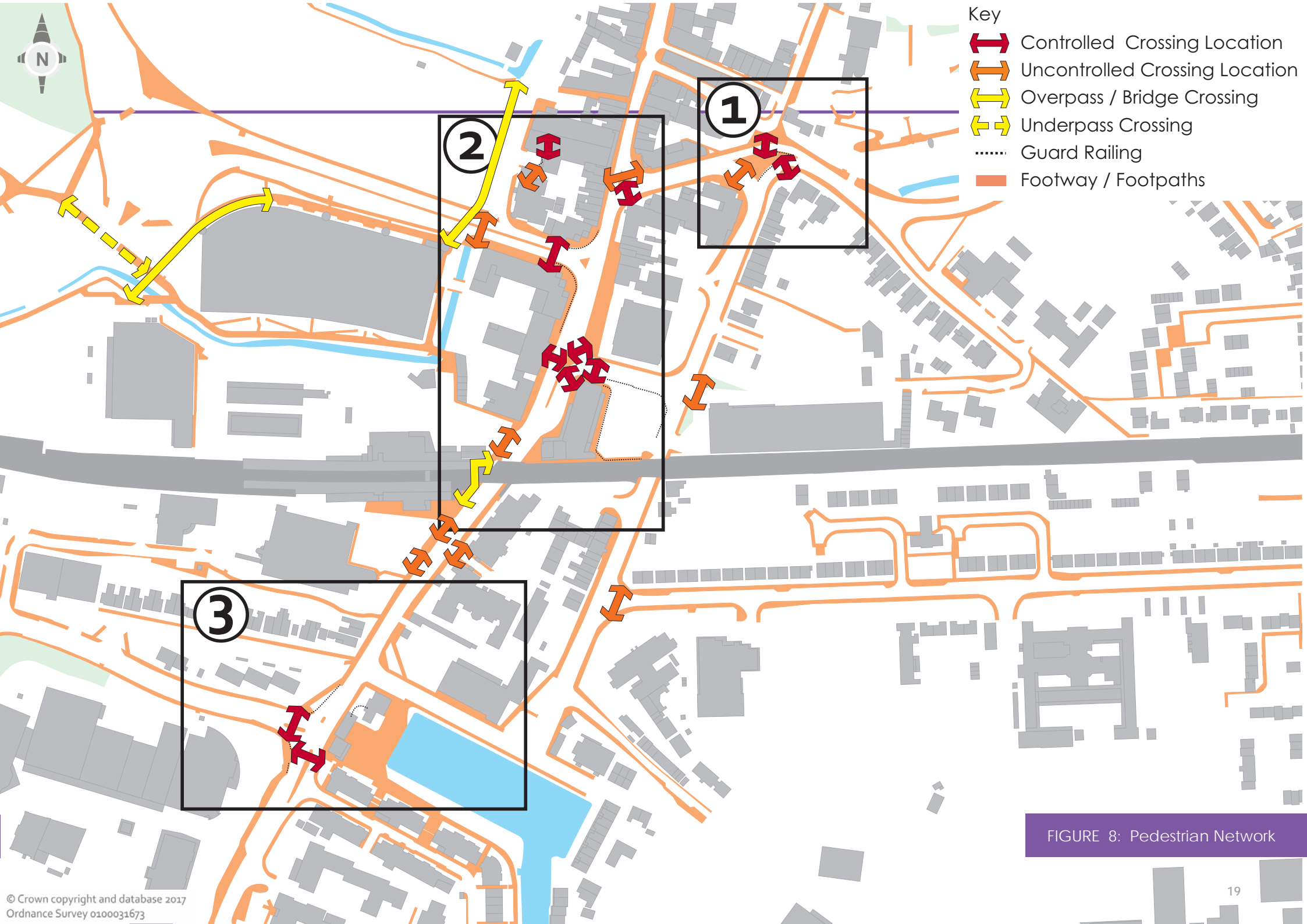


FIGURE 8: Pedestrian Network

Bus Network

The Bus Station and Depot are located within the masterplan area and are accessed from Basin Road and Stockbridge Road. A large number of bus routes run through or terminate at the bus station.

Bus stops are located at the following locations:

- A. Stockbridge Road;
- B. Canal Wharf – located outside the Royal Mail Sorting Office;
- C. High School Grounds – located within the Chichester High School for Boys;
- D. Kingsham Road;
- E. High School – located on Kingsham Road next to the High School entrance;
- F. Market Avenue; and
- G. Bus Station.

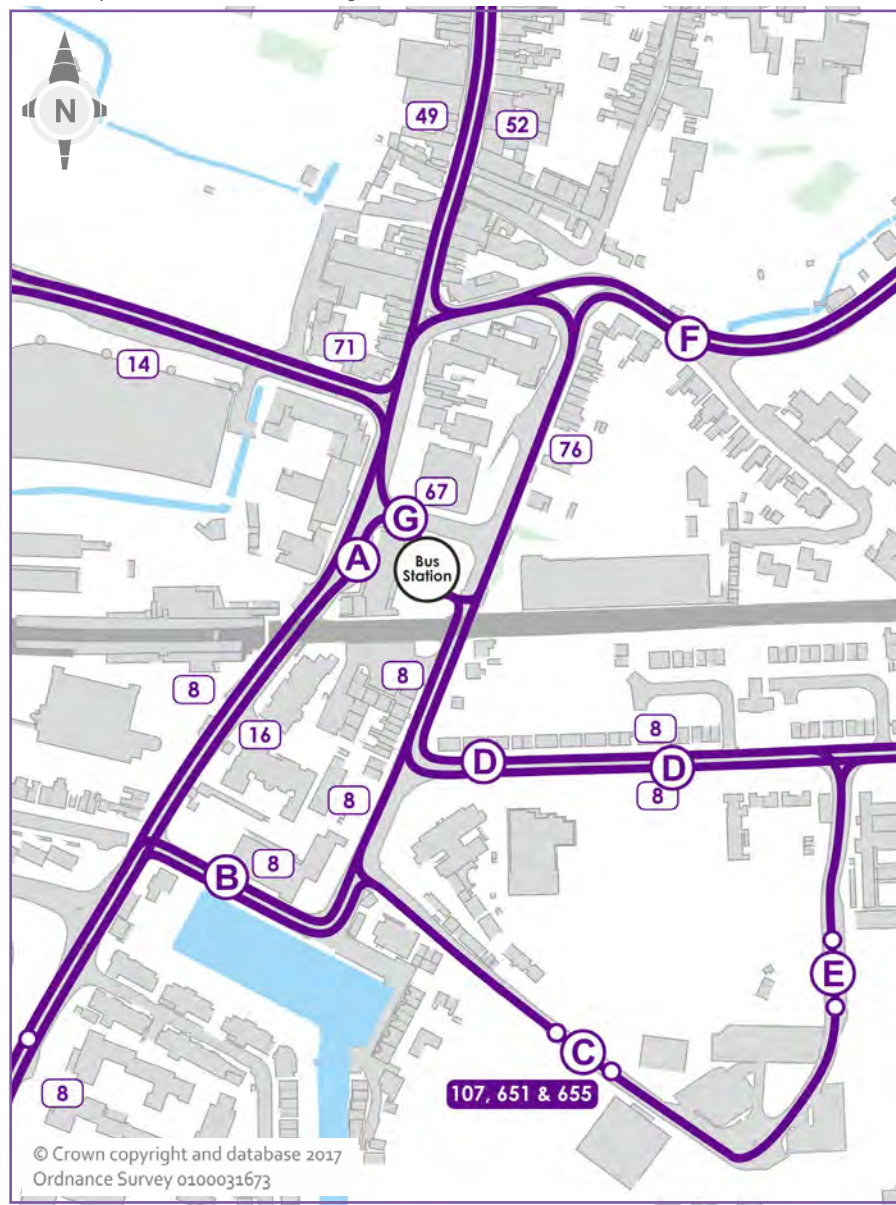
A full breakdown of the bus routes, destinations and frequencies can be found in [Appendix A](#).

It is proposed that the existing bus station is to be removed; and the depot is to be relocated either within Chichester or to another local town. This relocation would have implications for the existing bus routes and would have to be considered when proposing concept transport schemes.



Chichester Bus Station

Bus stop Locations and Key Routes



Network Rail

Chichester Railway Station is owned by Network Rail and managed by the operator Southern Rail. Network Rail are responsible for the two level crossings located on Stockbridge Road and Basin Road. As previously mentioned, both crossings operate together due to their close proximity to each other. Therefore when trains are approaching Chichester Station from the west, because of a safety reason related to the potential overrunning of trains stopping at the platform, both level crossing are closed.

Initial discussions with Network Rails signal control team has highlighted that for a train approaching from the west; if Stockbridge Road level crossing was to be permanently closed, then Basin Road level crossing could operate independently. This would allow vehicle movement across Basin Road level crossing whilst a train is at the station.

The railway line has a fundamental effect on the Southern Gateway Masterplan area and therefore further consultation was carried out throughout the option development.

Further consultation with Network Rail on preferred options is discussed in [Chapter 9](#) and in [Appendix G](#).



Stockbridge Road Level Crossing



Pedestrian Footbridge



Basin Road Level Crossing



Basin Road Level Crossing

Car Parking

There are a number of car parks within the masterplan area with varying capacities. The Chichester Road Space Audit undertaken by WSP-PB on behalf of WSCC reviewed the current occupancy of each car park within the City. **Figure 10** shows the capacity of car parks within the local area base on the information provided in this document on a neutral day.

Car Park	Capacity	Occupancy
Avenue de Chartres Long Stay	890	66%
Deanery Lane Short Stay	36	63%
South Pallant Short Stay	52	93%
Cawley Prioory/ East Pallant Short Stay	246	96%
Basin Road Long Stay	115 (to be closed)	97%
Chichester Gate	400	Survey not undertaken.
Chichester Railway Station	32	Survey not undertaken.

- Spare capacity across 4 car parks circa 335 parking spaces.
- Loss of Basin Road car park, and retention relocation of spare capacity to circa 220 spare parking spaces (25% spare capacity).



Basin Road Crossing

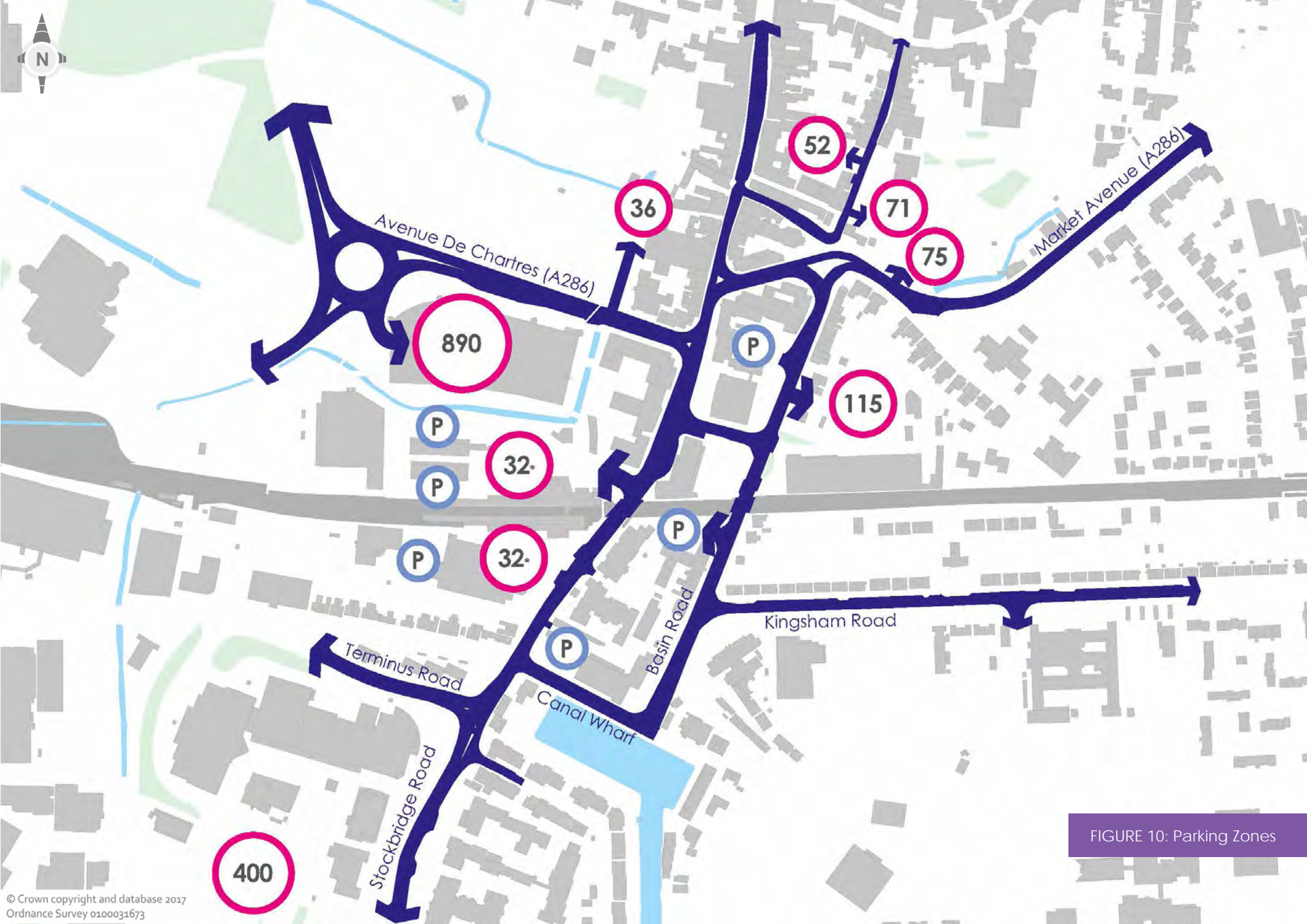


FIGURE 10: Parking Zones

Issues and Observations on Site

PBA carried out a site walkover of the masterplan area on 30th November 2016 and 1st December 2016. A number of issues were observed and are summarised below:

- Pedestrian crossings causes congestion through Stockbridge Road/ Basin Road junction;
- Delivery vehicles mount kerb along Stockbridge Road;
- Extremely poor visibility for pedestrians using uncontrolled crossing point at the junction between Market Avenue and Basin Road;
- Numerous directional arrow road markings can be confusing for drivers along the northern section of Basin Road;
- Queuing traffic blocks traffic entering gyratory at Basin Road junction above level crossing;
- No footway along Basin Road adjacent to the bus station;
- Buses turning into bus station can cause congestion along Basin Road;
- Large “keep clear” box for drivers to observe next to level crossings mean that queues can extend for some distance along Basin Road and Stockbridge Road;
- Cyclists travelling along Stockbridge Road slow traffic speeds due to space constraints;
- Basin Road Car Park is at capacity;
- Pedestrians cross Avenue de Chartres at grade without using the traffic signals crossing;
- High volume of school children walk towards town centre;
- Buses travel through hatched road markings to reach bus station when queues at level crossing form along Basin Road;
- Queuing traffic usually blocks through yellow box on Stockbridge Road/Basin Road junction;
- It was observed that Stockbridge Road is preferred over Basin Road. Assumed due to give way junction onto Stockbridge Road;
- PM Peak traffic congestion assumed to be caused by A27/Stockbridge Road roundabout;
- Station Car Parks are used by parents to drop off their children;
- Large Movement of pedestrians across Station Car Park towards Waitrose and past the taxi rank between Waitrose and the multi-storey car park
- When Stockbridge level crossing is down, there is an uncontrolled two-way pedestrian crossing movement across Stockbridge Road from the bus station; and
- The Police station and High Schools would require separate in and out access for security reasons.

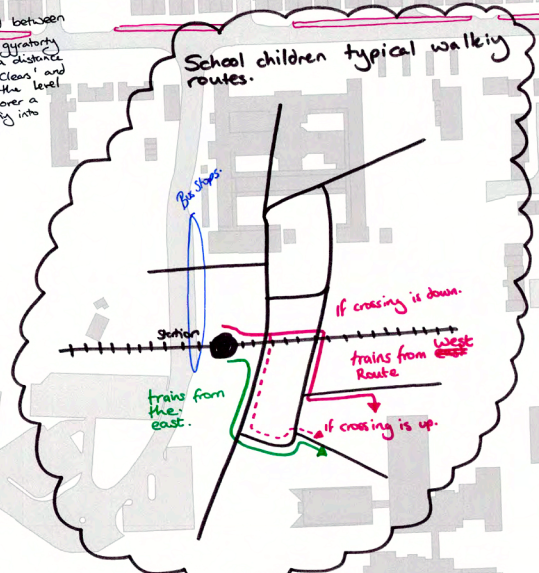
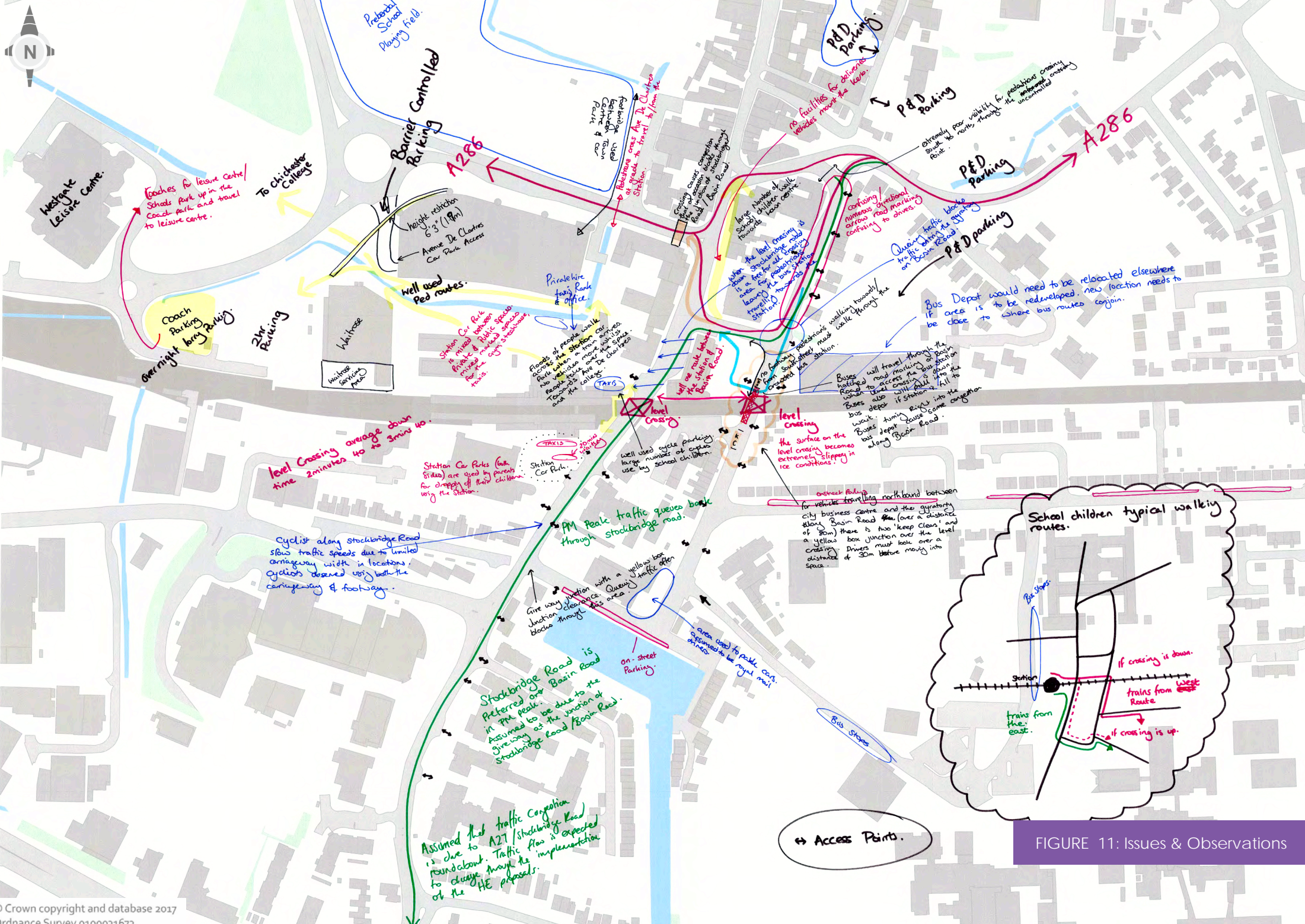


FIGURE 11: Issues & Observations

Movement Analysis

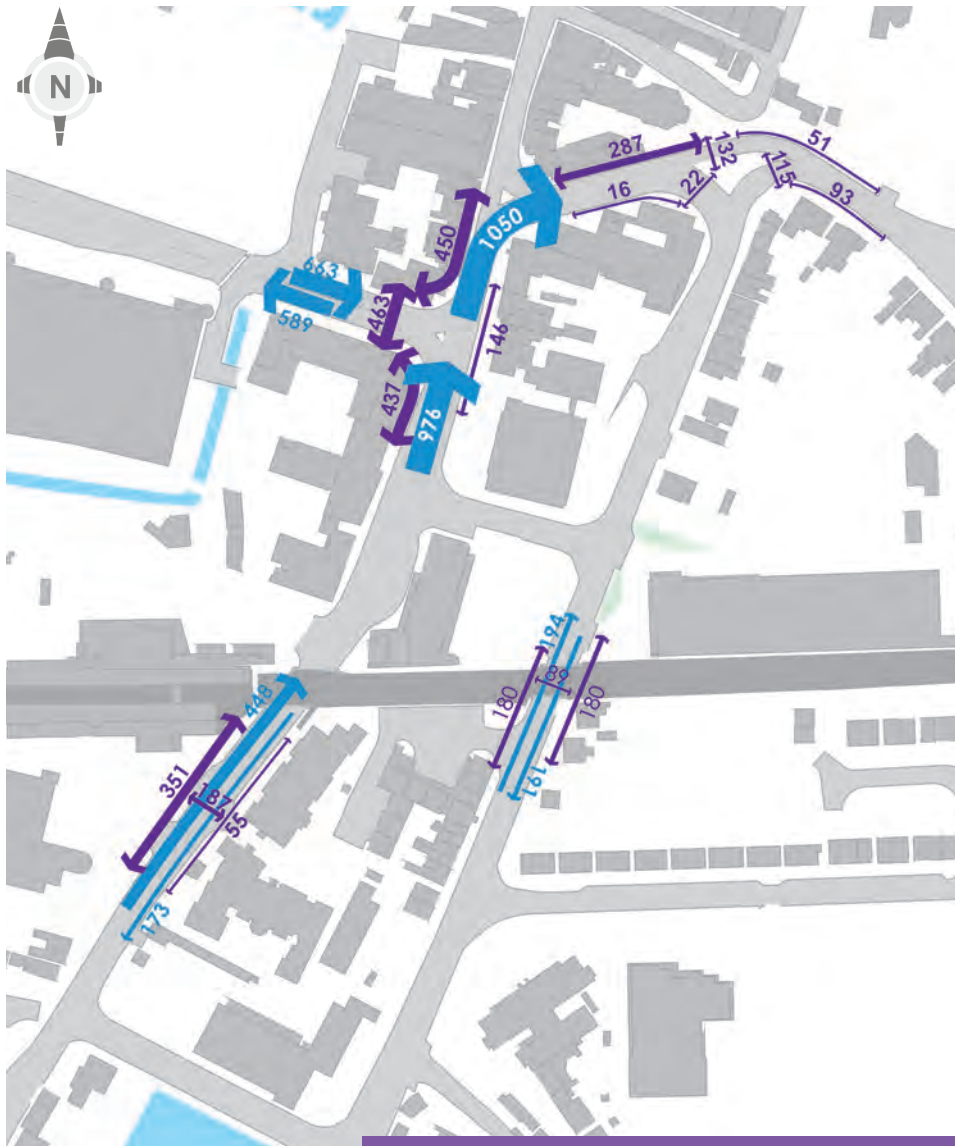
Traffic Surveys were undertaken throughout the masterplan area. Analysis of this data showed that there was a high pedestrian north-south movement through the Southern Gateway Masterplan along Stockbridge Road and Southgate. This can be attributed to movement between the Railway and Bus stations and Chichester City Centre.

Currently these pedestrian movements are severed by Avenue de Chartres and the Southgate Gyratory. Avenue de Chartres provides priority for vehicles over pedestrians, constraining and restricting pedestrian's movement in the area, as shown on [Figures 12](#) and [13](#).

A full copy of the traffic surveys can be found within [Appendix B](#).



Aveune de Chartres / Southgate



© Crown copyright and database 2017
Ordnance Survey 0100031673

FIGURE 12: Movement Analysis AM (PCU's)



© Crown copyright and database 2017
Ordnance Survey 0100031673

FIGURE 13: Movement Analysis PM (PCU's)

Origin Destination Vehicle Survey

An Automatic Number Plate Recognition (ANPR) survey was undertaken on 1st December 2016 to gain a better understanding of the origins and destinations of trips passing through the Southern Gateway Masterplan area.

AM Peak Period

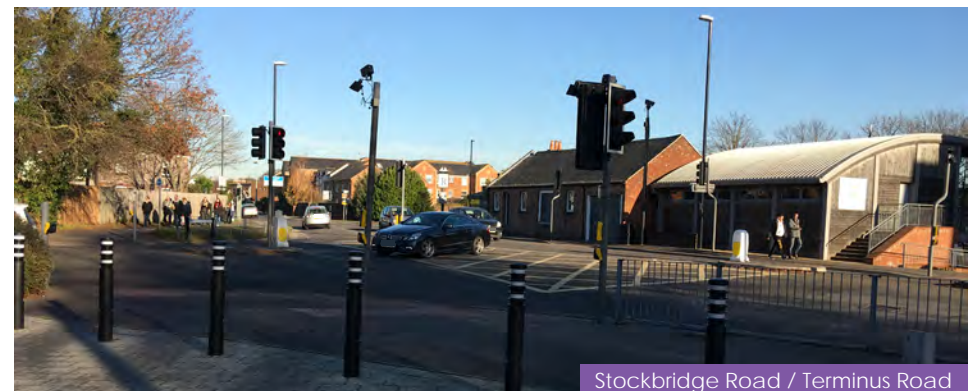
As shown on **Figure 14**, upon review of the (ANPR) data it was found that the greatest demand in the AM peak was the traffic movement between Avenue de Chartres and Market Avenue through the Southgate Gyratory.

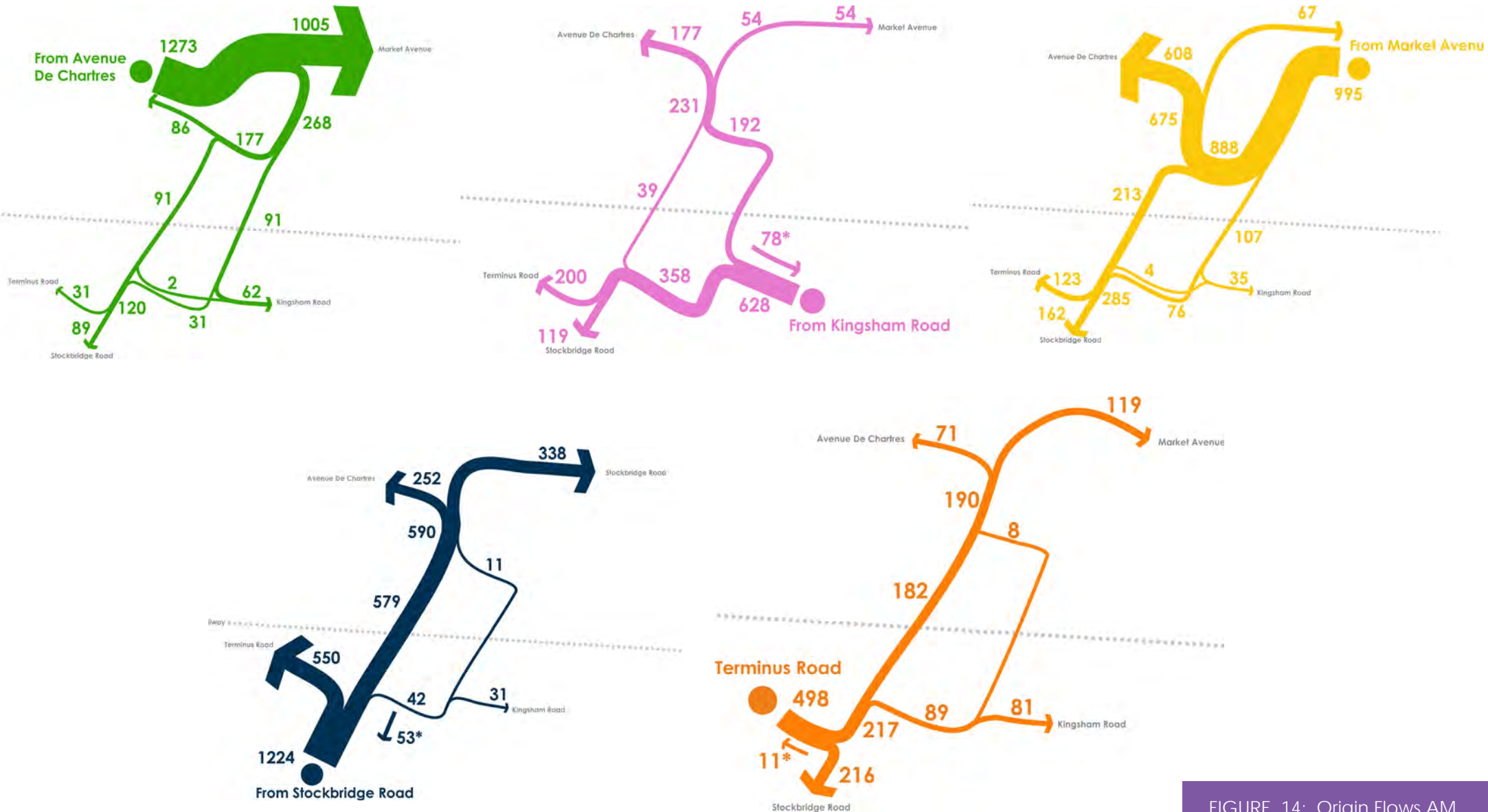
This could be attributed to the fact that the Southgate Gyratory forms part of the inner city ring road and due to the large car parks situated off Avenue de Chartres and Cattlemarket Car Park situated off Market Avenue.

There is a large vehicular movement from Stockbridge Road north towards the city centre. This can be attributed to the fact that Stockbridge Road is the main connection from the A27 through the masterplan area.

There is a large vehicular movement from Stockbridge Road into Terminus Road in the AM peak. This could be due to the fact that Terminus Road offers access to one of Chichester's employment areas.

There is a moderate vehicular movement from Kingsham Road to Stockbridge Road in the AM peak. This could be due to residents along Kingsham Road traveling to work.





* Trips returning to origin point, route undetermined

FIGURE 14: Origin Flows AM

Chapter 4 | Parameters

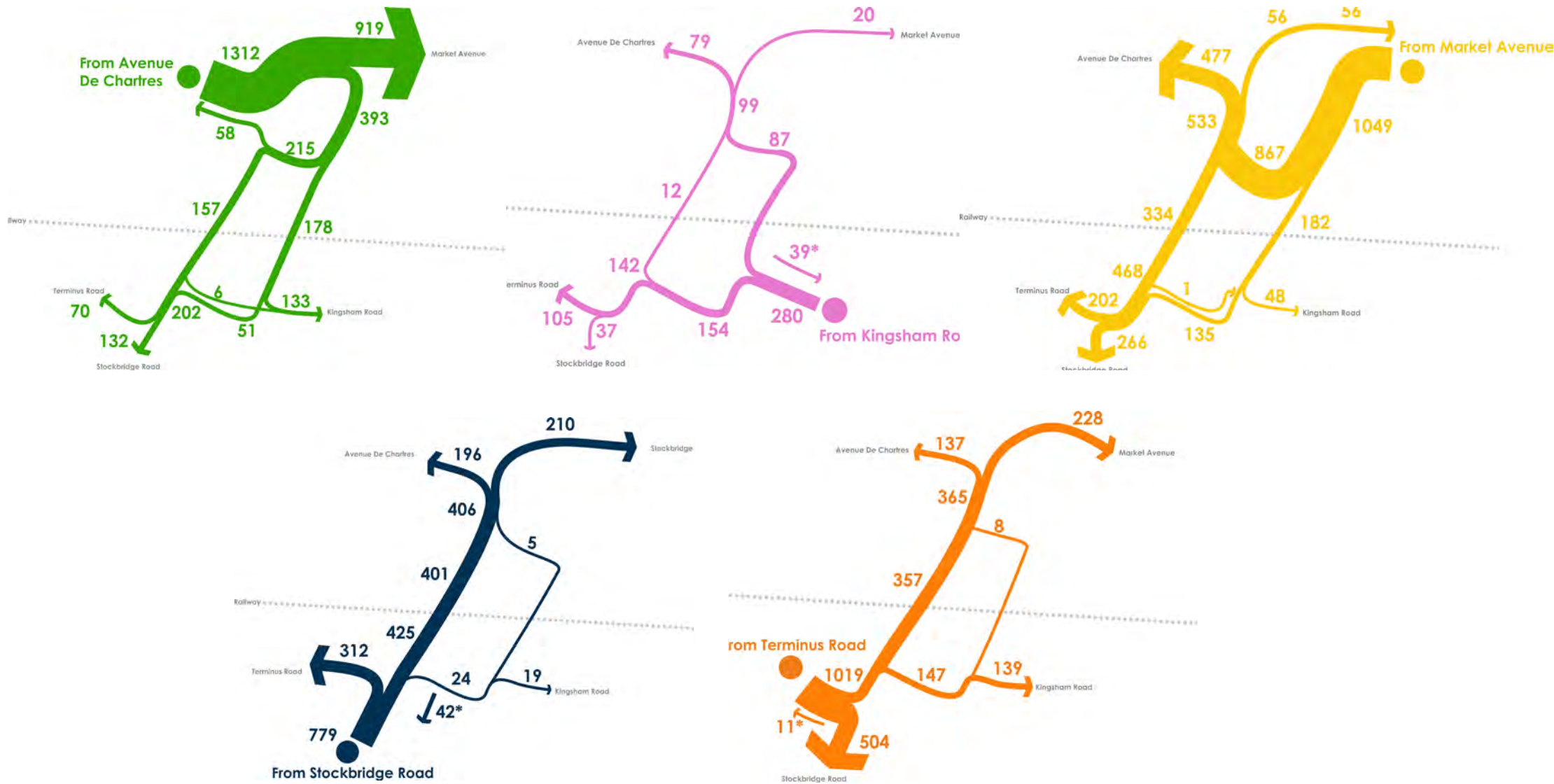
PM Peak Period

Upon review of the (ANPR) data it was found that the greatest demand in the PM Peak was the traffic movement between Avenue de Chartres and Market Avenue through the Southgate Gyratory, as shown on **Figure 15**.

There is a moderate vehicular movement south through the masterplan area to Stockbridge Road.

There is a large vehicular movement from Terminus Road into Stockbridge Road in the PM. This could be attributed to the employment areas along Terminus Road finishing for the day.





* Trips returning to origin point, route undetermined

FIGURE 15: Origin Flows PM

Personal Injury Collision Data Analysis Results

PBA requested five years of Personal Injury Collision (PIC) data for the masterplan area shown in **Figure 16**; this corresponds with the local highway network surrounding the proposed Southern Gateway Masterplan development. This was provided by WSCC for the five-year period between the dates of 17/11/2011 and 10/10/2016. The full PIC data analysis is provided in **Appendix C**.

From the data provided by WSCC, there were a total 41 collisions over the five years of collision data (17/11/2011 to 10/10/2016). Of these collisions, 42 casualties were recorded. There was a high proportion of vulnerable road users recorded with 16 pedestrian casualties (38.1%) and 17 cyclist casualties (40.5%).

There were no fatal collisions over the study period that occurred in the PIC data catchment area. Additionally, there were no references to the road layout being a contributory factor for any of the 41 collisions.

Analysis of the collision records provided by WSCC has not identified any specific concern with regards to the geometric design and/or road layout of the local highway network. There are no reoccurring patterns with regard to the frequency of the severity of collisions noted. The data does show that there is a cluster of collisions around the Avenue de Chartres and Southgate junction. This could be attributed to the large number of movements between vehicles and vulnerable road users at this location, which can be seen in the movement analysis chapter.

There is not considered to be an existing highway safety concern which could be exacerbated by the proposed development.



A

Southgate



B

Avenue de Chartres / Southgate



C

Stockbrigde Road Level Crossing

Key:
 Slight Collision
 Severe Collision

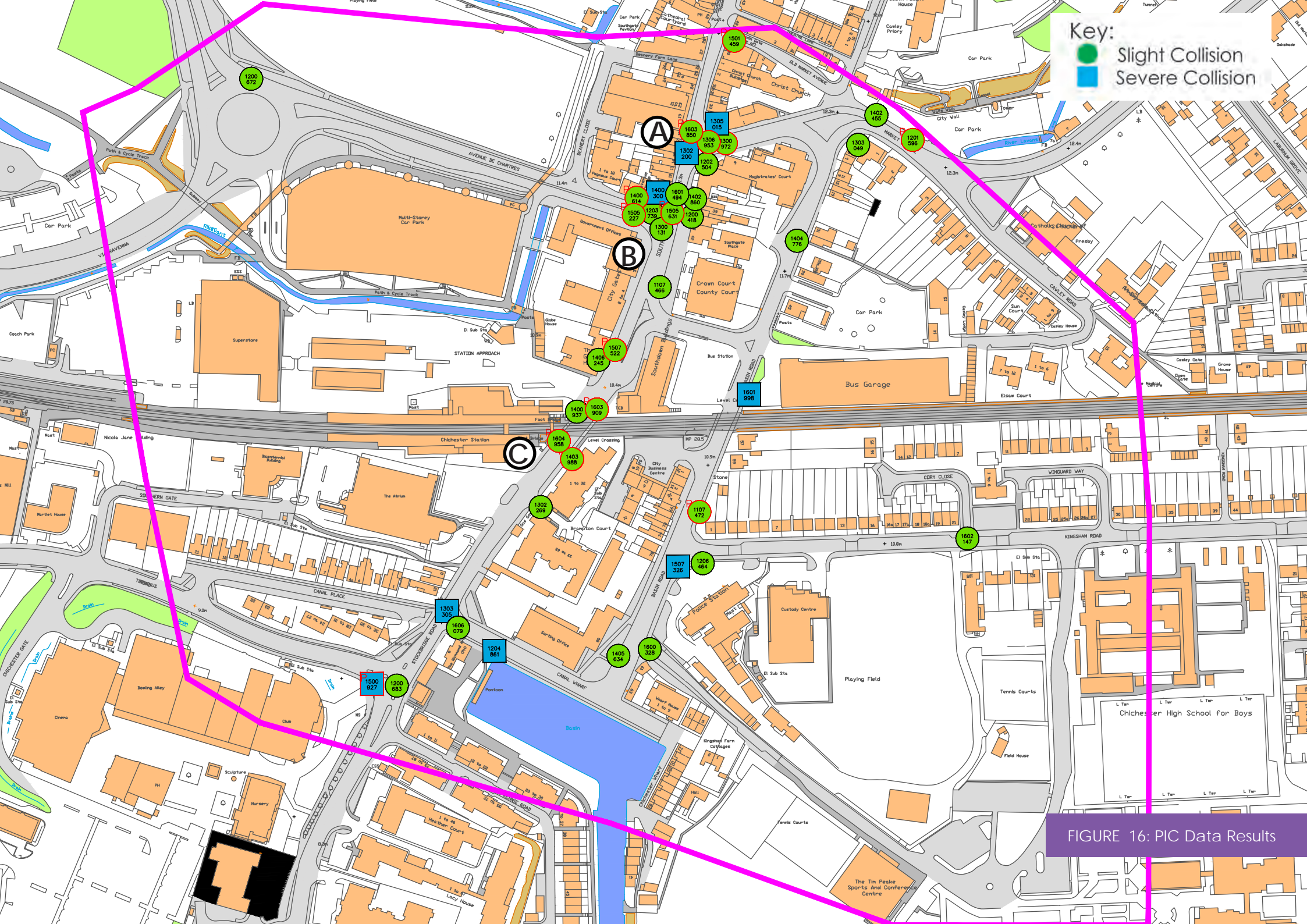


FIGURE 16: PIC Data Results


Key Observations

The primary vehicular movement is east-west from Avenue de Chartres to Market Avenue via Southgate Gyratory in both AM and PM peak periods.

Personal Injury Collision data analysis has shown that a number of accidents involve vulnerable road users (pedestrians and cyclists), these were mostly centred around the Avenue de Chartres and Southgate junction.

The primary pedestrian movement is north-south from the Railway Station towards the City Centre via the Avenue de Chartres pedestrian crossing.

Significant queues form during the PM peak along Stockbridge Road and lead to congestion around Southgate Gyratory back to Market Avenue. This reduces the circulatory movement of Southgate Gyratory significantly.



There are a number of Grade II Listed Buildings located on either side of Southgate Road between Avenue de Chartres and South Street and the façade of the Crown Court and the Magistrates Courts is Locally Listed.

It has been observed that Stockbridge Road is the preferred route south across the railway. This could potentially be due to the junction between Canal Wharf and Stockbridge Road sometimes taking a significant time to exit.

During busy periods when the Stockbridge Road level crossing is closed, uncontrolled pedestrian movements from the Bus to Railway station has been observed.

There are three Air Quality Management Areas located within the local area.

5. Concept Options

Principles of Options

The following objectives were used to form the underlying principles when generating the options and were taken from the masterplan document and supported by the Chichester Vision document. The proposed options looked to:

- Make Public Realm Improvements by improving connectivity to the Station, Canal Basin, the City Centre via South Street, Market Avenue, Chichester Gate Leisure Centre for pedestrians, cyclists and public transport users;
- Reconfigure highway access,
- Review congestion and severance on the Iyrtory and Stockbridge Road; and
- Provide a gateway to the south of Chichester City Centre.

These principles were used to form the base of each option generated starting with small scale development schemes through to radical and fundamental changes to the whole masterplan area. A number of options looked to build upon the previous option suggested to start forming the bases for phased scheme implementation.

Following the creation of these conceptual options Network Rail declared that they would not support a scheme that proposed a pedestrian-only level crossing facility. However, they would support either a public transport, pedestrian and cycle crossing, or a full closure with a new pedestrian and cycle bridge.

Option Generation

A number of options were generated using the principles stated above as a foundation and ranged from small scale localised improvements to a radical fundamental shift in movement throughout the masterplan.

User Hierarchy

The options were designed with the Manual for Streets (MFS) hierarchy as a guide, as seen in [Figure 17](#).



Source: Manual for Streets 1 (2007)

FIGURE 17: Road User Hierarchy

Options Appraisal Process

In order to identify a preferred scheme the conceptual options have been appraised against a five stage process, as set out within **Figure 18**.

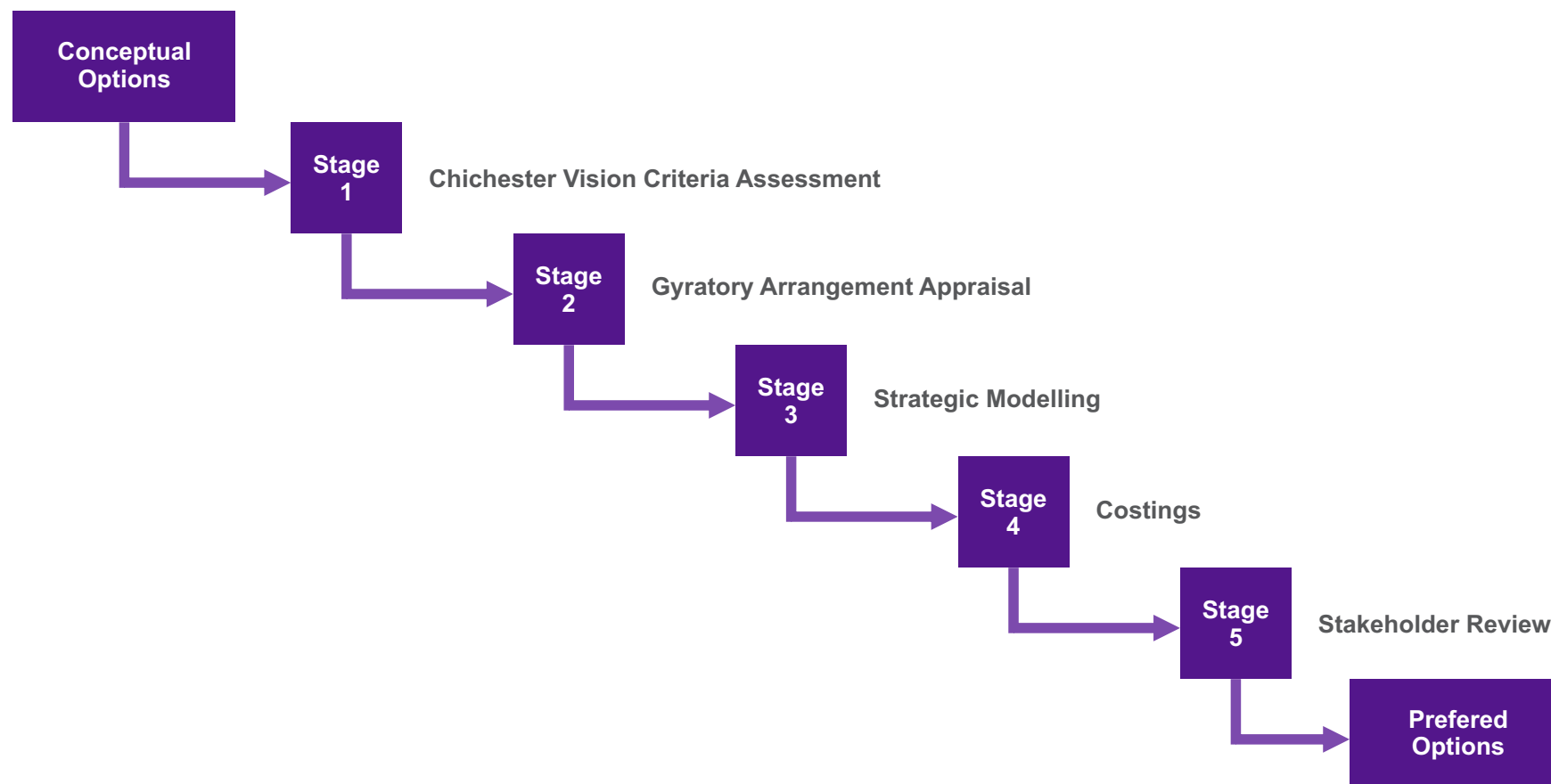


FIGURE 18: Option Appraisal Process

Option 1

- A. Option 1 proposes to remove the traffic flows around the Canal Basin and maximise the developable area by removing the east-west link between Stockbridge Road and Basin Road. This would provide a greater public realm area around the Canal Basin area in line with the main objectives of the masterplan.
- B. As a result of these proposals, vehicular traffic moving east-west through the southern part of the masterplan area would have to cross both level crossings and therefore add additional traffic to the Southgate Gyratory. The existing Southgate Gyratory would be retained and act as the only east-west movement through the masterplan area for vehicles.
- C. Option 1 looks to improve the public transport interchange around the station to help offset the loss of the bus station.

Pros

Greater public realm and additional development space around the Canal Basin area

Opportunity for public transport hub around the Railway Station

Cons

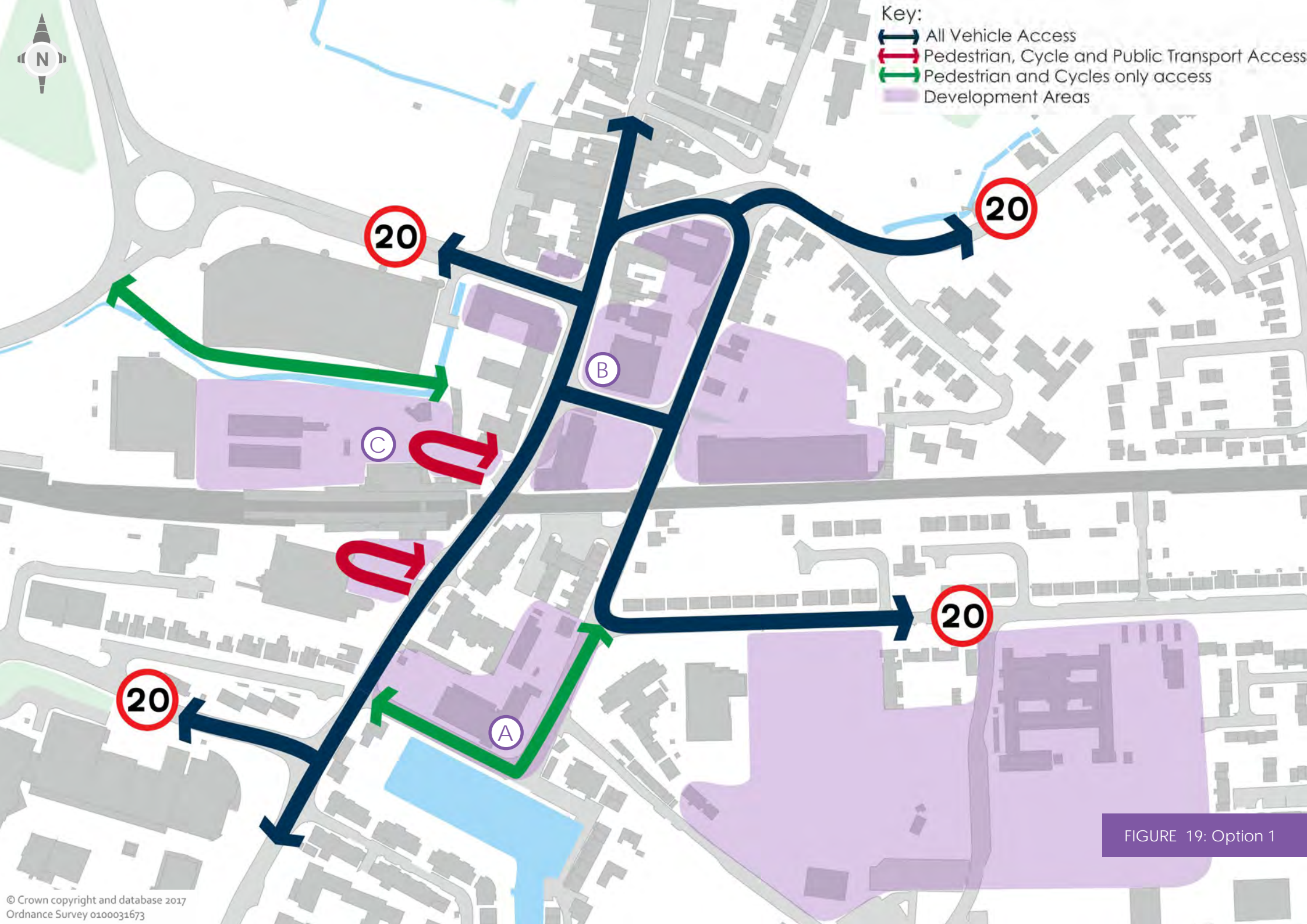
Reassignment of southern part of masterplan area east-west movement across both level crossings

Anticipated High volumes of traffic across Stockbridge Road and Basin Road level crossings

Requires Stockbridge Road Pedestrian Bridge Upgrade

No





Key:
 ⇄ All Vehicle Access
 ⇄ Pedestrian, Cycle and Public Transport Access
 ⇄ Pedestrian and Cycles only access
 Development Areas

FIGURE 19: Option 1

Option 2

- A. Option 2 proposes to improve the connectivity between the Railway Station and South Street for pedestrians and cyclists. This would be achieved by creating a public transport corridor and public realm area along Southgate.
- B. This public transport corridor provides the opportunity for a potential bus interchange along Southgate to offset the loss of the bus station.
- C. The existing Southgate gyratory would be removed and Avenue de Chartres would be rerouted over the new bridge past the multi-storey carpark and through the railway station carpark. This could have a potential impact on the movement around the northern Station entrance and increase conflict between vehicles and vulnerable road users (pedestrians and cyclists).
- D. Removal of the Southgate gyratory would lead to additional development space within the masterplan area. However, east-west traffic through the northern section of the masterplan area would be forced south, having to cross both level crossings. This could potentially lead to high volumes of traffic along the newly constructed Canal Wharf road and additional congestion on the internal ring road.
- E. A new road is proposed north of the existing Canal Wharf which would provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.
- F. A new junction between South Pallant and Basin Road would allow access to Cawley Priory Car Park and residential areas along South Pallant.

Pros

Removal of Southgate gyratory creates large developable area within centre of masterplan area

Considerable public transport priority through Southgate with new public transport corridor

Opportunity to provide bus interchange on Southgate

Opportunity to create a gateway feature to South Street and City Centre

Extension of City Centre through South Street to railway station

Cons

Reassignment of gyratory east-west movement across both level crossings

Anticipated High volumes of traffic across Stockbridge Road level crossing and along Canal Wharf

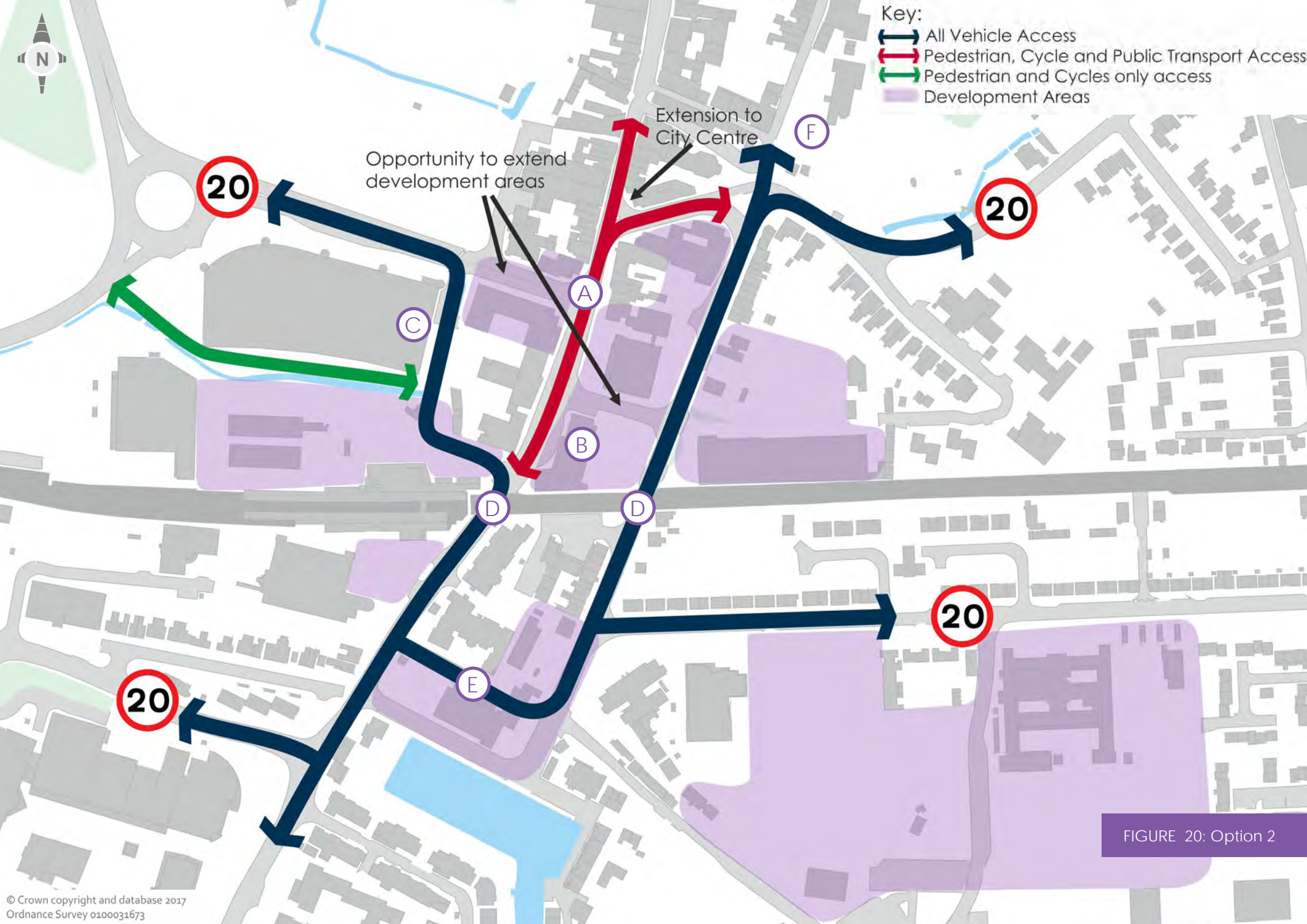
Potential increase in congestion around inner city ring road via introduction of level crossings

New culvert over River Lavant

Requires Stockbridge Road Pedestrian Bridge Upgrade

No





- Key:
- All Vehicle Access
 - Pedestrian, Cycle and Public Transport Access
 - Pedestrian and Cycles only access
 - Development Areas

Opportunity to extend development areas

Extension to City Centre

FIGURE 20: Option 2

Option 3

- A. Option 3 proposes to remove the Southgate gyratory which would improve the east-west movement through the masterplan area and reduce the conflict points between vulnerable road users and vehicles. The removal of the Southgate gyratory would create a large developable area within the centre of the masterplan area.
- B. Option 3 looks to create and improve a public transport hub around the Railway station. This would include restricting vehicular movements across Stockbridge Road level crossing to public transport, pedestrians and cyclists only. This could lead to an increase in travel movements along Canal Wharf and Basin Road.
- C. Option 3 proposes to make South Street a public transport corridor restricting movement to the City centre for general users.
- D. A new junction between South Pallant and Basin Road would allow access to Cawley Priory Car Park and residential areas along South Pallant.
- E. A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.

Pros

Removal of Southgate gyratory creates large developable area within centre of masterplan area

Opportunity for public transport hub around the Railway Station

Extension of City Centre through South Street to railway station

Cons

Requires third party land and the demolition of Grade II Listed Buildings in order for two-way articulated vehicle movement to be feasible

Increase in road width for articulated vehicle movements reduces the potential public realm areas available

Anticipated increase in traffic flow over Basin Road level crossing

New culvert over River Lavant (if bus link is required)

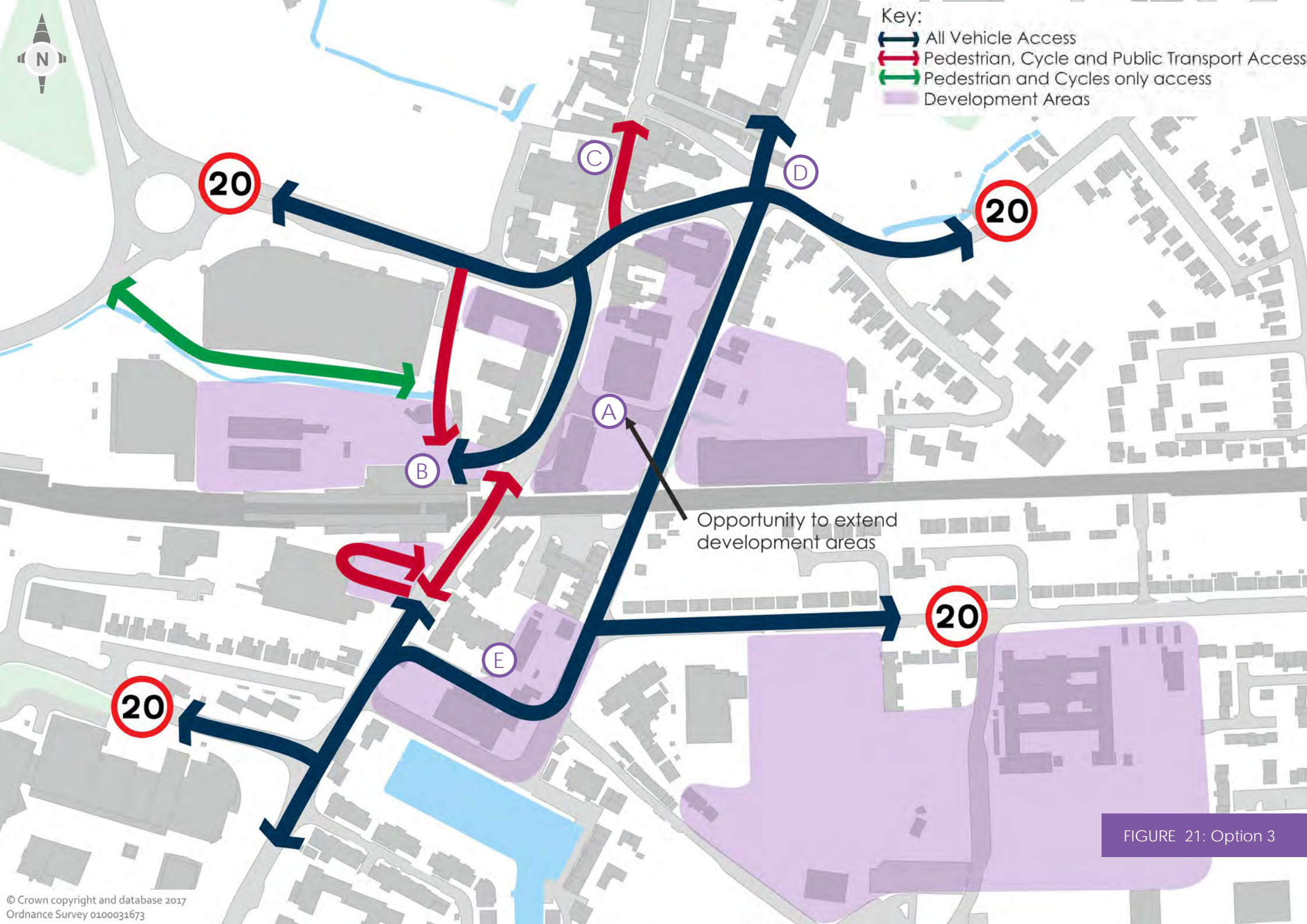
Negative impact on existing properties on Basin Road to the south of the level crossing

Requires Stockbridge Road Pedestrian Bridge Upgrade

No



Stockbridge Road Level Crossing



- Key:
- All Vehicle Access
 - Pedestrian, Cycle and Public Transport Access
 - Pedestrian and Cycles only access
 - Development Areas

Opportunity to extend development areas

FIGURE 21: Option 3

Option 4

- A. Option 4 proposes to close Basin Road level crossing permanently to all forms of movement, to facilitate a public transport corridor. This public transport corridor would help offset the loss of the bus station.
- B. A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.
- C. This option, similar to option 3, requires a number of Grade II Listed buildings to be demolished to facilitate two way articulated movement between Avenue de Chartres and Market Avenue.



Basin Road

Pros

Provides opportunity for bus interchange along Basin Road to offset loss of bus station

Additional development space created by closing Basin Road completely

Cons

Requires third party land and the demolition of Grade II Listed Buildings in order for two-way articulated vehicle movement to be feasible

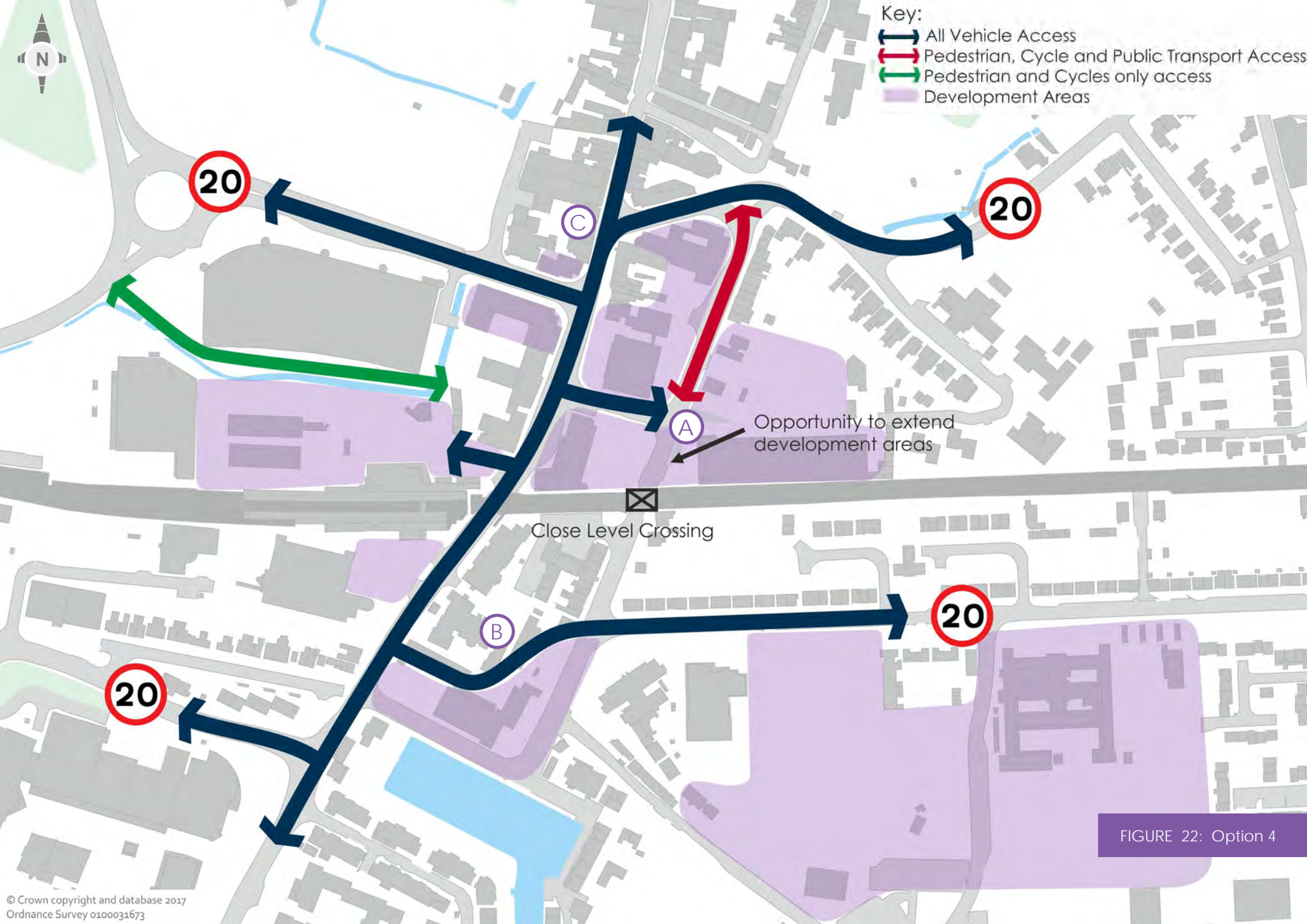
Anticipated increase in traffic flow over Stockbridge Road level crossing

Proposed bus interchange located away from railway station across Stockbridge Road. Potential increase in conflict between vulnerable road users and vehicles

Requires Stockbridge Road Pedestrian Bridge Upgrade

No

Likely to require a new pedestrian bridge over Basin Road level crossing



- Key:
- All Vehicle Access
 - Pedestrian, Cycle and Public Transport Access
 - Pedestrian and Cycles only access
 - Development Areas

Opportunity to extend development areas

Close Level Crossing

FIGURE 22: Option 4

Option 5

- A. Option 5 proposes to restrict movement through the Stockbridge Road level crossing to public transport, taxis, pedestrians and cyclists only, thus improving journey times for public transport through the masterplan area. This provides an opportunity for a bus interchange at the railway station and reduces potential conflict areas between vulnerable road users and vehicles.
- B. A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.
- C. A bus link could be constructed between Avenue de Chartres and the Railway station which could reduce the number of buses using the gyratory and shorten bus routes.

Pros	
Provides an opportunity for bus interchange at the railway station	
Provides bus loop to improve flow on event days	
Potential reduction of conflict between vulnerable road users and vehicles at Stockbridge Road level crossing	
Improve public transport journey times across level crossings	
Cons	
Anticipated increase of traffic flows through Basin Road and Canal Wharf.	
Lack of integration between South Street and Railway Station	
New culvert over River Lavant (if bus link required)	
Negative impact on existing properties on Basin Road to the south of the level crossing	
Requires Stockbridge Road Pedestrian Bridge Upgrade	No



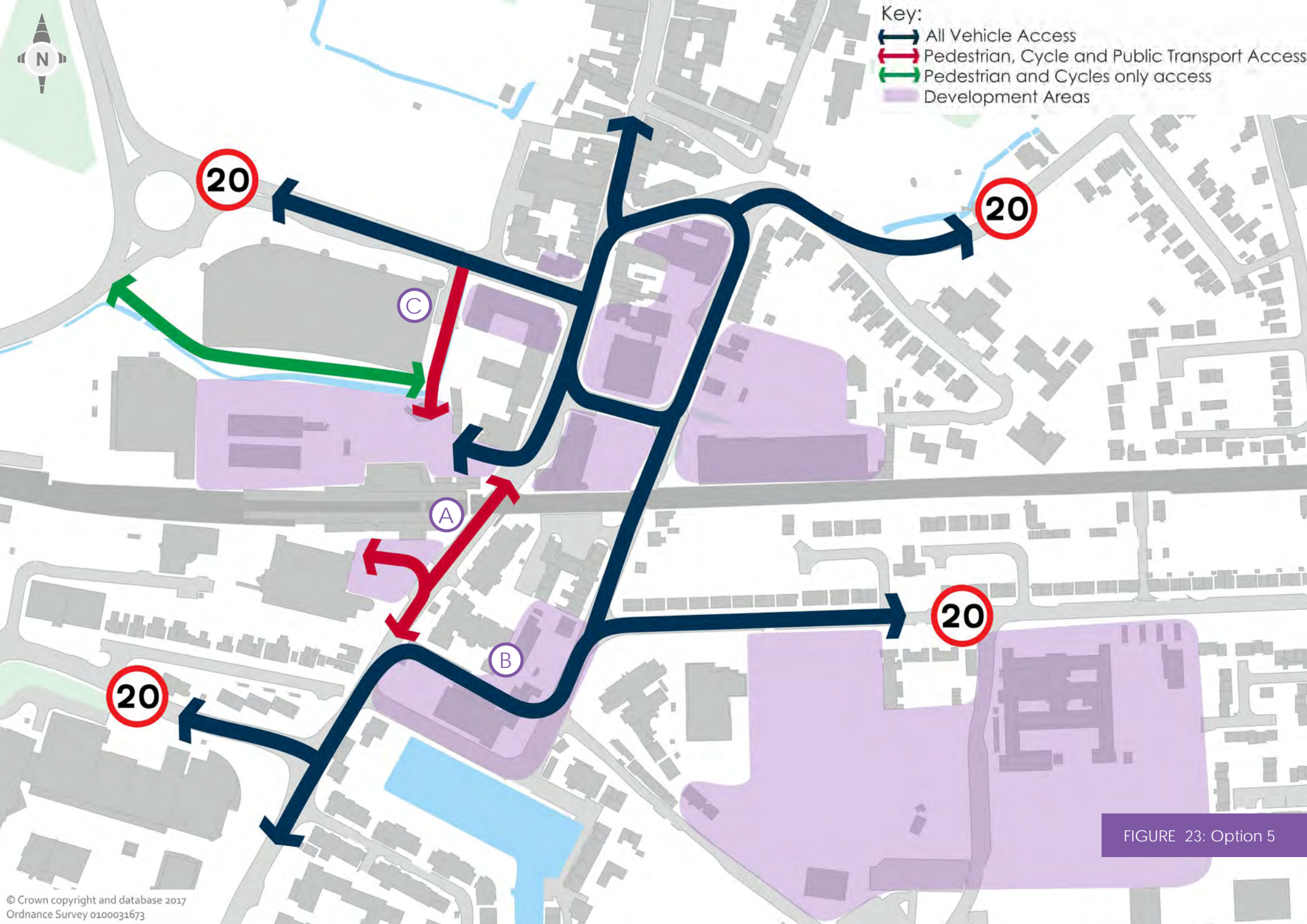


FIGURE 23: Option 5

Option 6

- A. Option 6 proposes to close the Stockbridge Road level crossing to all forms of movement and construct a new pedestrian and cycle bridge. The Southgate gyratory would be removed and a new road will be constructed through the centre of the masterplan area. This would improve the east-west movement through the masterplan area and reduce the number of conflict points between vulnerable road users and vehicles.
- B. South Street would become a public transport corridor and extend towards the station to improve connectivity between the Railway Station and City Centre in line with the masterplan objectives. New public transport interchanges would be constructed within both Railway Station carparks to further enhance the public transport priority within the masterplan Area.
- C. A new bus link could be provided between Avenue de Chartres and the Railway station, which would reduce the road footprint along Stockbridge Road and therefore could potentially create a larger developable area.
- D. The removal of the Southgate gyratory creates a new developable area that could be used to create a gateway feature. However, window air space would be needed for existing buildings on north side of New Market Avenue.
- E. A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.

Pros

- Provides an opportunity for bus interchange at the railway station
- Considerable public transport priority through Southgate with new public transport corridor
- Opportunity to create a gateway feature to South Street and City Centre
- Provides bus loop to improve flow on event days
- Removes conflict between vulnerable road users and vehicles at Stockbridge Road level crossing
- Removal of Southgate gyratory generates land for potential development
- Extension of City Centre through South Street to railway station

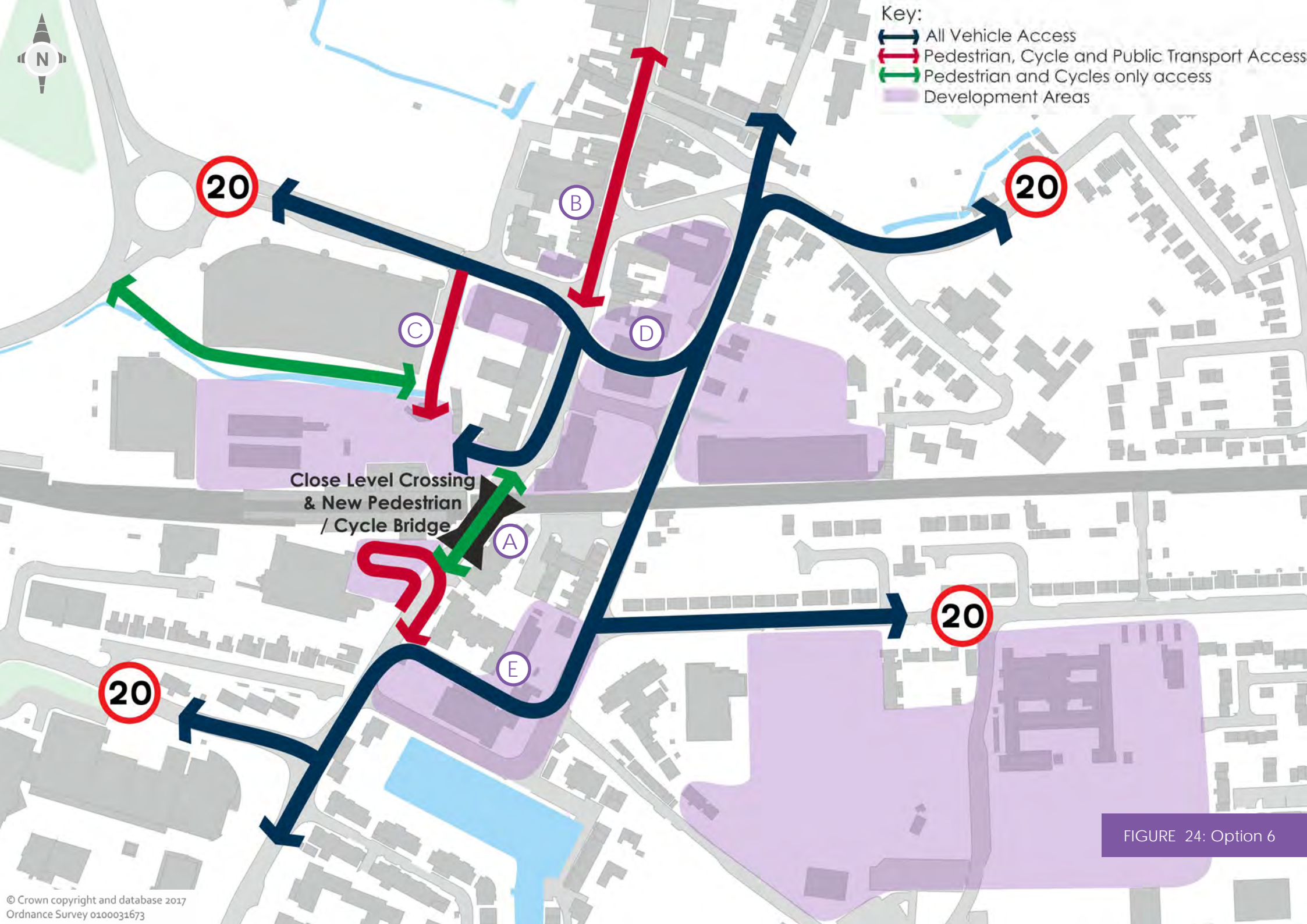
Cons

- Requires the construction of a new foot/cycle bridge at Stockbridge Road level crossing
- New culvert over River Lavant (if bus link is required)
- Anticipated increase of traffic flows through Basin Road level crossing and Canal Wharf
- Negative impact on existing properties on Basin Road to the south of the level crossing

Requires Stockbridge Road Pedestrian Bridge Upgrade

Yes

Possible Bridge Improvements can be found within Appendix E.



Key:

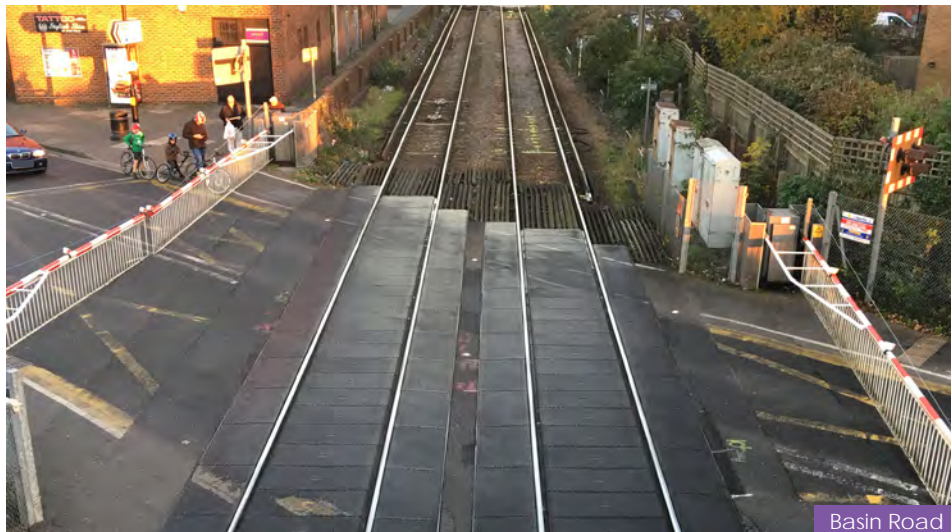
- All Vehicle Access
- Pedestrian, Cycle and Public Transport Access
- Pedestrian and Cycles only access
- Development Areas

Close Level Crossing
& New Pedestrian
/ Cycle Bridge

FIGURE 24: Option 6

Option 7

- A. Option 7 proposes to close both level crossings to all highway user movements and construct a new pedestrian and cycle bridge over the Stockbridge Road and Basin Road level crossings. The existing Southgate gyratory would be retained, however the closure of the Basin Road level crossing would lead to an increased developable area between the Bus Station and Depot.
- B. New public transport interchanges would be constructed within both Railway Station carparks to further enhance the public transport priority within the masterplan Area.
- C. A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.



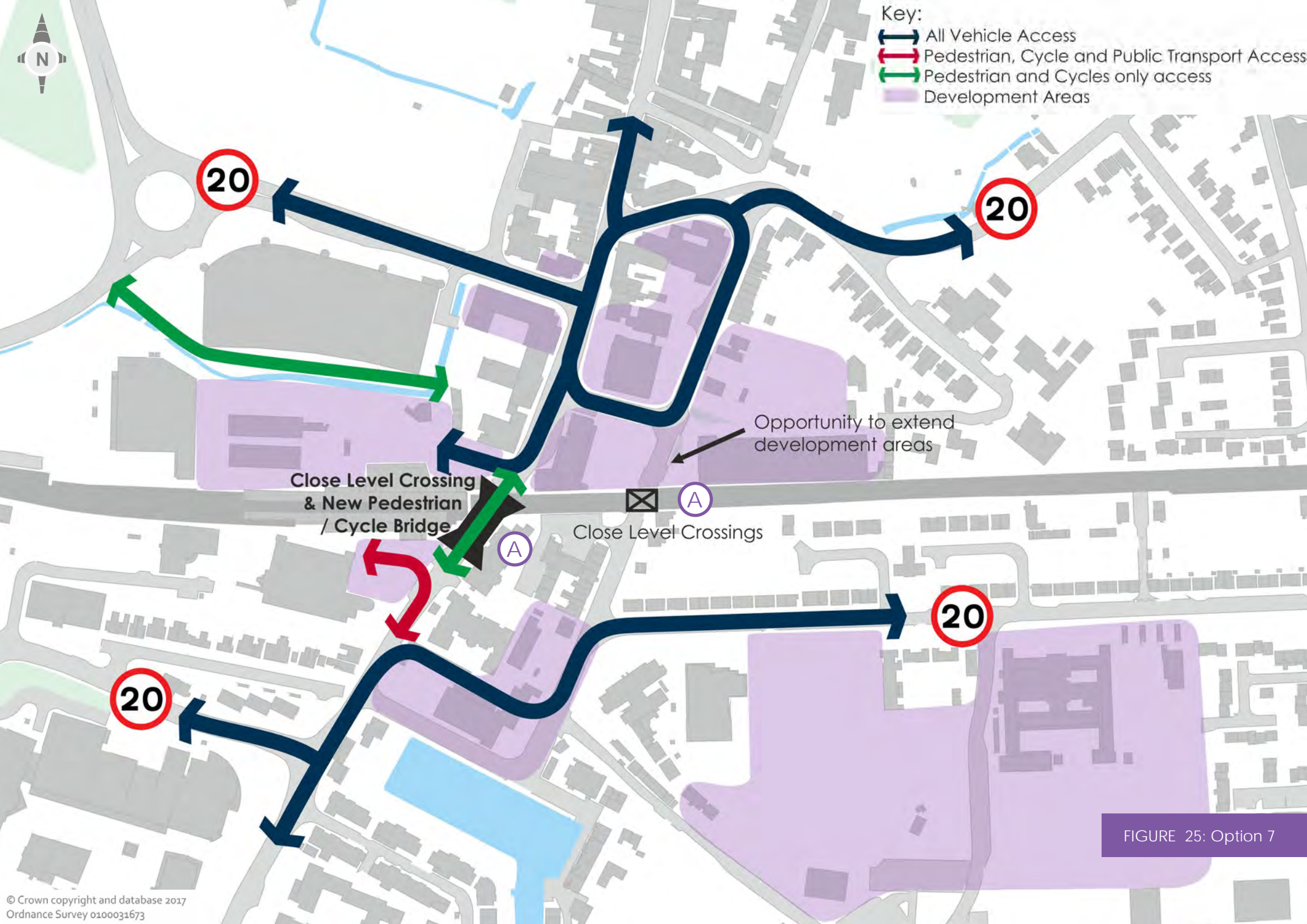
Pros

- Provides an opportunity for bus interchange at the railway station
- Removes conflict between vulnerable road users and vehicles at Stockbridge Road and Basin Road level crossings
- Increases developable space between the Bus Station and Depot

Cons

- Requires the construction of a new foot/cycle bridge at Stockbridge Road level crossing
- Severely restricts north south movements for public transport and emergency vehicles through masterplan area
- Lack of integration between South Street and Railway Station
- Closure of level crossings would lead to reassignment of traffic within the local area.
- Diversion of traffic wishing to cross the rail line to the Whyke Road level crossing using Kingsham Avenue.
- Increased pressure on parts of the A27 Bypass

Requires Stockbridge Road Pedestrian Bridge Upgrade	Yes
Including providing a new pedestrian bridge across Basin Road level crossing. Possible Bridge Improvements for Stockbridge Road can be found within Appendix E.	



- Key:
- All Vehicle Access
 - Pedestrian, Cycle and Public Transport Access
 - Pedestrian and Cycles only access
 - Development Areas

20

20

Close Level Crossing
& New Pedestrian
/ Cycle Bridge

Opportunity to extend
development areas

Close Level Crossings

A

A

20

20

FIGURE 25: Option 7

Option 8

- A. Option 8 proposes to close the Stockbridge Road level crossing to all forms of movement and construct a new pedestrian and cycle bridge over the level crossing. Basin Road level crossing would restrict movement through to public transport, taxis, emergency vehicles, pedestrians and cyclists only.
- B. The existing Southgate gyratory would be removed and Avenue de Chartres would be extended through the Crown Court to meet Basin Road. However, window air space would be needed for existing buildings on north side of New Market Avenue.
- C. A new bus interchange would be constructed within the north and south Railway Station forecourts and a public transport corridor would extend south from the City Centre towards the Railway Station.
- D. A new bus link could be provided between Avenue de Chartres and the Railway station, which would reduce the road footprint along Stockbridge Road and therefore could potentially create a larger developable area.
- E. A new junction between South Pallant and Basin Road would allow access to Cawley Priory Car Park and residential areas along South Pallant.
- F. A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.

Pros

- Provides an opportunity for bus interchange at the railway station
- Considerable public transport priority through Southgate with new public transport corridor
- Opportunity to create a gateway feature to South Street and City Centre
- Provides bus loop to improve flow on event days
- Removes conflict between vulnerable road users and vehicles at Stockbridge Road level crossing
- Removal of Southgate Gyratory generates land for potential development
- Extension of City Centre through South Street to railway station
- Anticipated reduction in traffic flows through masterplan area

Cons

- Requires the construction of a new foot/cycle bridge at Stockbridge Road level crossing
- Severely restricts north south movements for all vehicle except buses and emergency vehicles
- New culvert over River Lavant (if bus link is required)
- Diversion of traffic wishing to cross the rail line to the Whyke Road level crossing using Kingsham Avenue.
- Increased pressure on parts of the A27 Bypass

Requires Stockbridge Road Pedestrian Bridge Upgrade

Yes

Possible Bridge Improvements can be found within Appendix E.

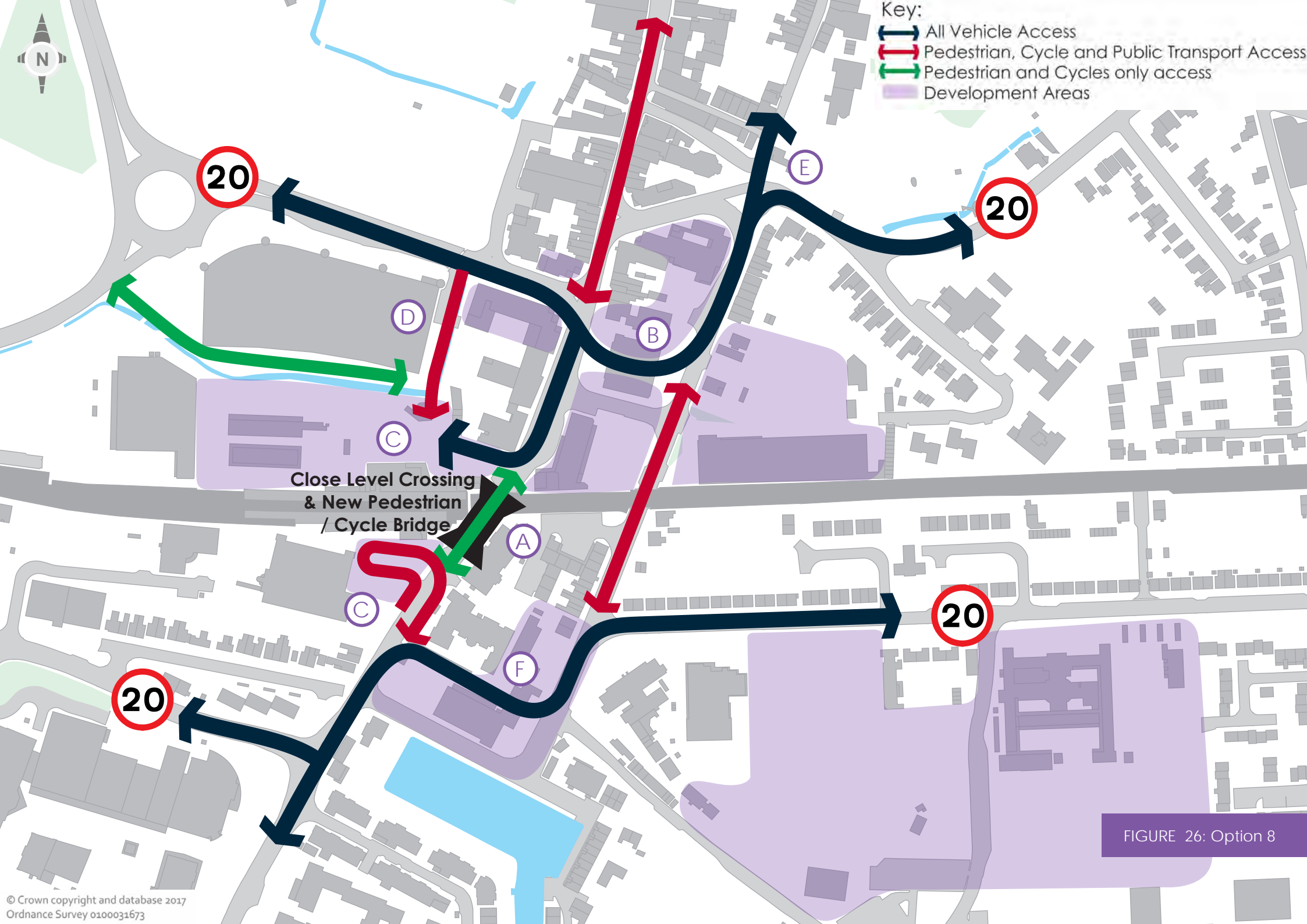


FIGURE 26: Option 8

Option 9

- A. Option 9 proposes to close the Stockbridge Road level crossing to all forms of movement and construct a new pedestrian and cycle bridge over the level crossing. Basin Road level crossing would restrict movement through to public transport, taxis, emergency vehicles, pedestrians and cyclists only
- B. The existing Southgate gyratory would be removed and Avenue de Chartres would be extended through the Crown Court to meet Basin Road. Part of this road would become a bus link which removes east-west movement for general vehicles through the masterplan area. However, window air space would be needed for existing buildings on north side of New Market Avenue.
- C. A new bus interchange would be constructed within the north and south Railway Station forecourts and a public transport corridor would extend south from the City Centre towards the Railway Station.
- D. There is potential for a new bus link between Avenue de Chartres and the Railway station, which would reduce the road footprint along Stockbridge Road and therefore could potentially create a larger developable area.
- E. A new junction between South Pallant and Basin Road would allow access to Cawley Priory Car Park and residential areas along South Pallant.
- F. A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.

Pros

- Provides the opportunity for the creation of a public transport hub within city centre setting.
- Provides an opportunity for bus interchange at the railway station
- Considerable public transport priority through Southgate with new public transport corridor
- Opportunity to create a public realm and a gateway feature to South Street and City Centre
- Provides bus loop to improve flow on event days
- Removes conflict between vulnerable road users and vehicles at Stockbridge Road level crossing
- Removal of Southgate gyratory generates land for potential development
- Extension of City Centre through South Street to railway station
- Anticipated reduction in traffic flows through masterplan area
- Complete removal of through traffic passing through masterplan area

Cons

- Requires the construction of a new foot/cycle bridge at Stockbridge Road level crossing
- Severely restricts north south movements for all vehicle except buses and emergency vehicles
- Breaks the inner city ring road, which would have significant impacts on the wider local and strategic networks
- New culvert over River Lavant required
- Increase in traffic flow through all 3 Air Quality Management Areas in at least one peak

Requires Stockbridge Road Pedestrian Bridge Upgrade	Yes
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Possible Bridge Improvements can be found within Appendix E.

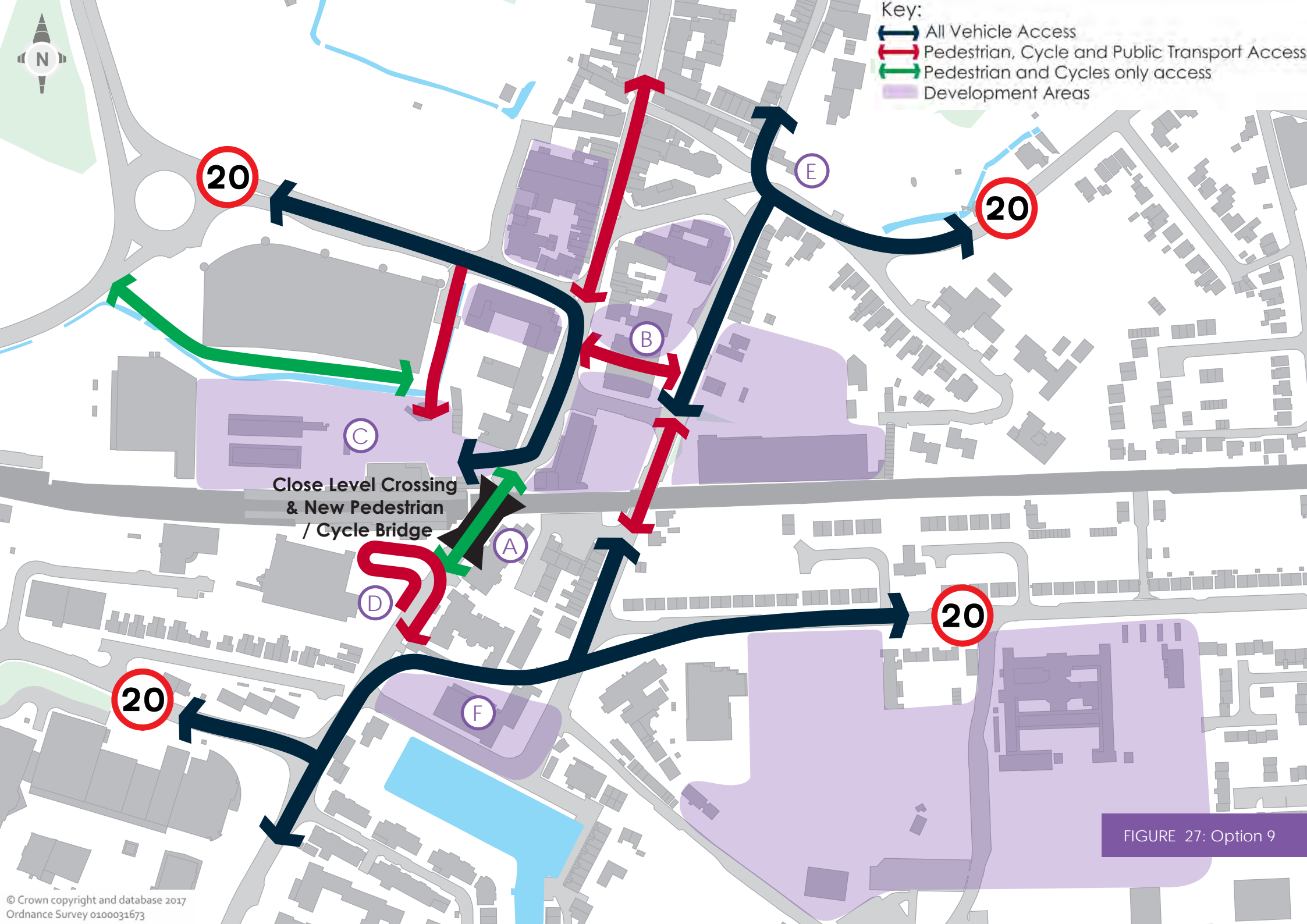


FIGURE 27: Option 9

Option 10

- A. Option 10 proposes to restrict movement across the Stockbridge Road level crossing to public transport, taxis, pedestrians and cyclists only. Basin Road level crossing would become the primarily north-south route for general traffic. This provides an opportunity for a bus interchange at the railway station and reduces potential conflict areas between vulnerable road users and vehicles.
- B. The existing Southgate gyratory would be retained and modified to a single lane, thus reducing vehicle capacity and creating greater public realm space.
- C. A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.

Pros

Provides an opportunity for bus interchange at the railway station

Potential reduction of conflict between vulnerable road users and vehicles at Stockbridge Road level crossing

Reduced lane width around Southgate gyratory creates more pedestrian and cyclist friendly area

Improve public transport journey times across level crossings

Cons

Anticipated increase of traffic flows through Basin Road and Canal Wharf

Lack of integration between South Street and Railway Station

Negative impact on existing properties on Basin Road to the south of the level crossing

Requires Stockbridge Road Pedestrian Bridge Upgrade

No

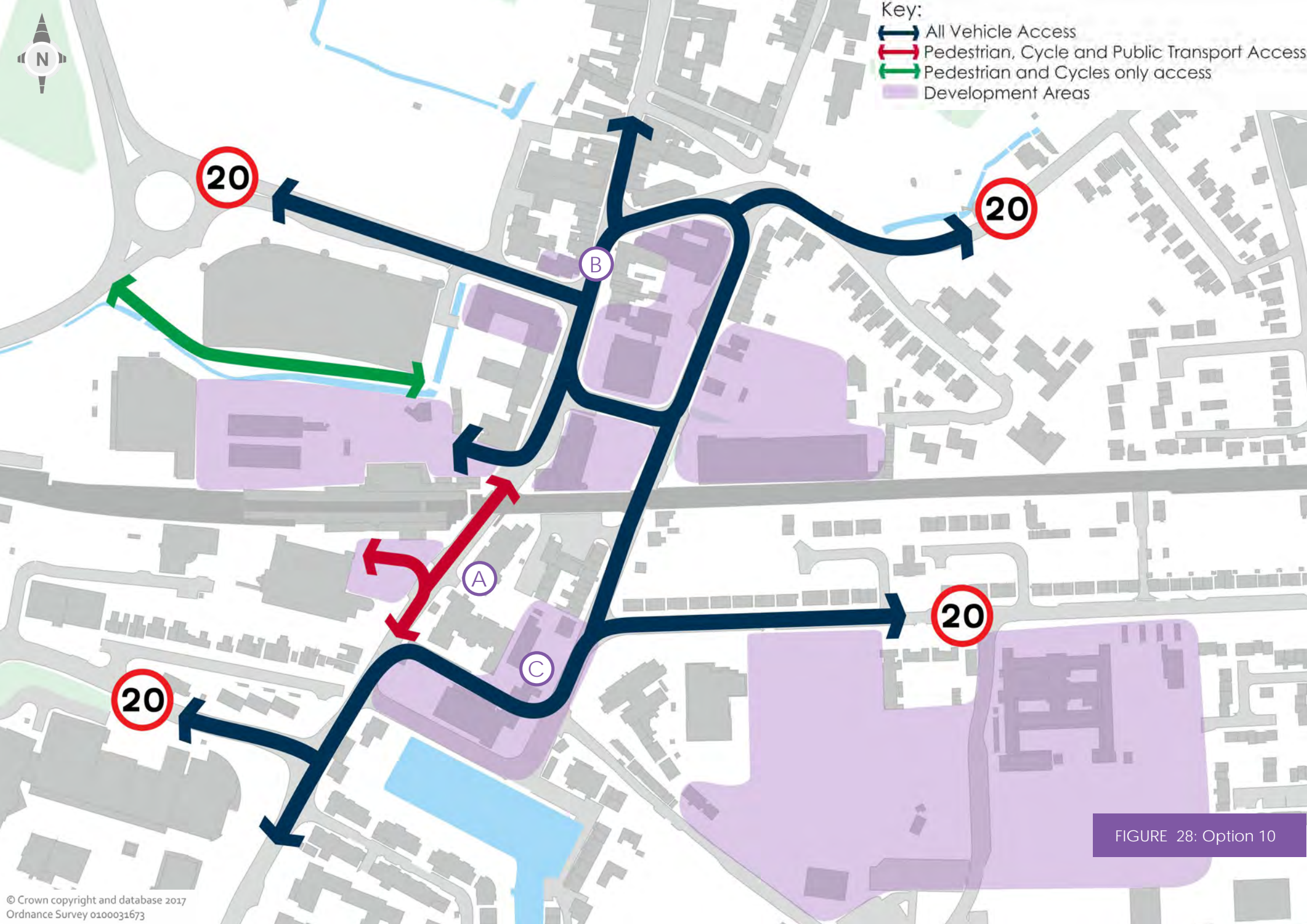


FIGURE 28: Option 10

Option 11

- A. Option 11 proposes to restrict movement through the Stockbridge Road Level Crossing to public transport, taxis, emergency vehicles, pedestrians and cyclists only, thus improving journey times for public transport through the masterplan. This provides an opportunity for a bus interchange at the Railway Station and reduces potential conflict areas between vulnerable road users and vehicles.
- B. The existing Southgate gyratory would be removed and Avenue de Chartres would be extended through Grade 2 Listed buildings to meet Basin Road. However, window air space would be needed for existing buildings on north side of New Market Avenue.
- C. South Street would become a shared space area with improved public realm areas and appropriate local access restrictions for deliveries towards the railway Station would be considered.
- D. A new road is proposed north of the existing Canal Wharf which would increase the developable area around the Canal Basin and provide a greater public realm area adjacent to the Canal Basin in line with the main objectives of the masterplan.
- E. A new junction between South Pallant and Basin Road would allow access to Cawley Priory Car Park and residential areas along South Pallant.

Pros

- Provides an opportunity for bus interchange at the railway station
- Opportunity to create a gateway feature to South Street and City Centre
- Removes conflict between vulnerable road users and vehicles at Stockbridge Road level crossing
- Removal of Southgate gyratory generates land for potential development
- Extension of City Centre through South Street to railway station
- Anticipated reduction in traffic flows through masterplan area

Cons

- Anticipated increase of traffic flows through Basin Road and Canal Wharf.
- Demolition of Grade 2 Listed buildings
- Negative impact on existing properties on Basin Road to the south of the level crossing

Requires Stockbridge Road Pedestrian Bridge Upgrade

No

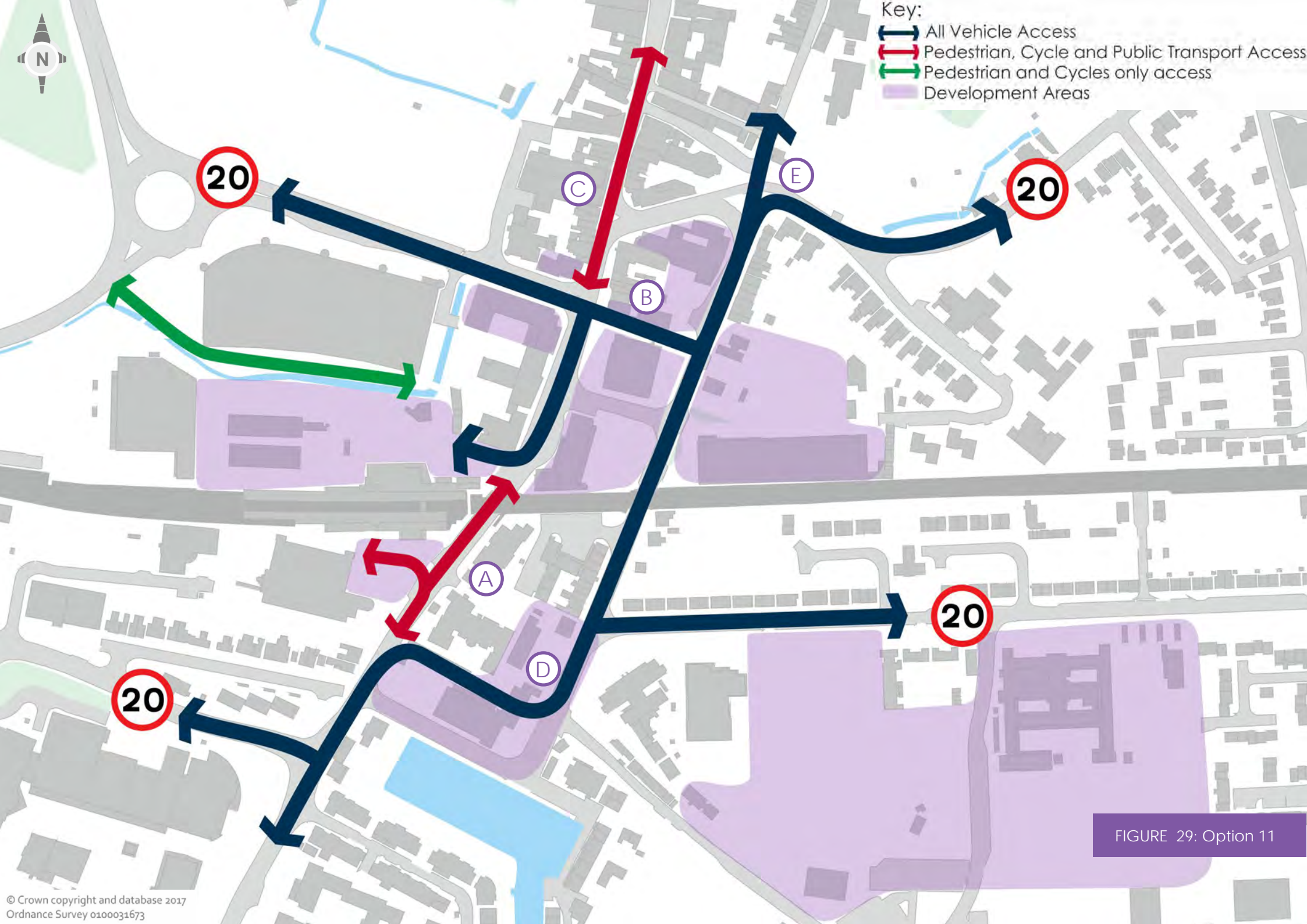


FIGURE 29: Option 11

6. Chichester Vision Criteria Assessment (Stage 1)

All 11 options have been assessed against a set of criteria that score each option against the principles of the MFS Road User Hierarchy. A full copy of the criteria and scoring of each option can be found within [Appendix D](#).

The criteria has been generated to help assess each option in terms of non-transport related objectives. These criteria focused on:

- Public Realm Space; and
- Developable Plot Area.

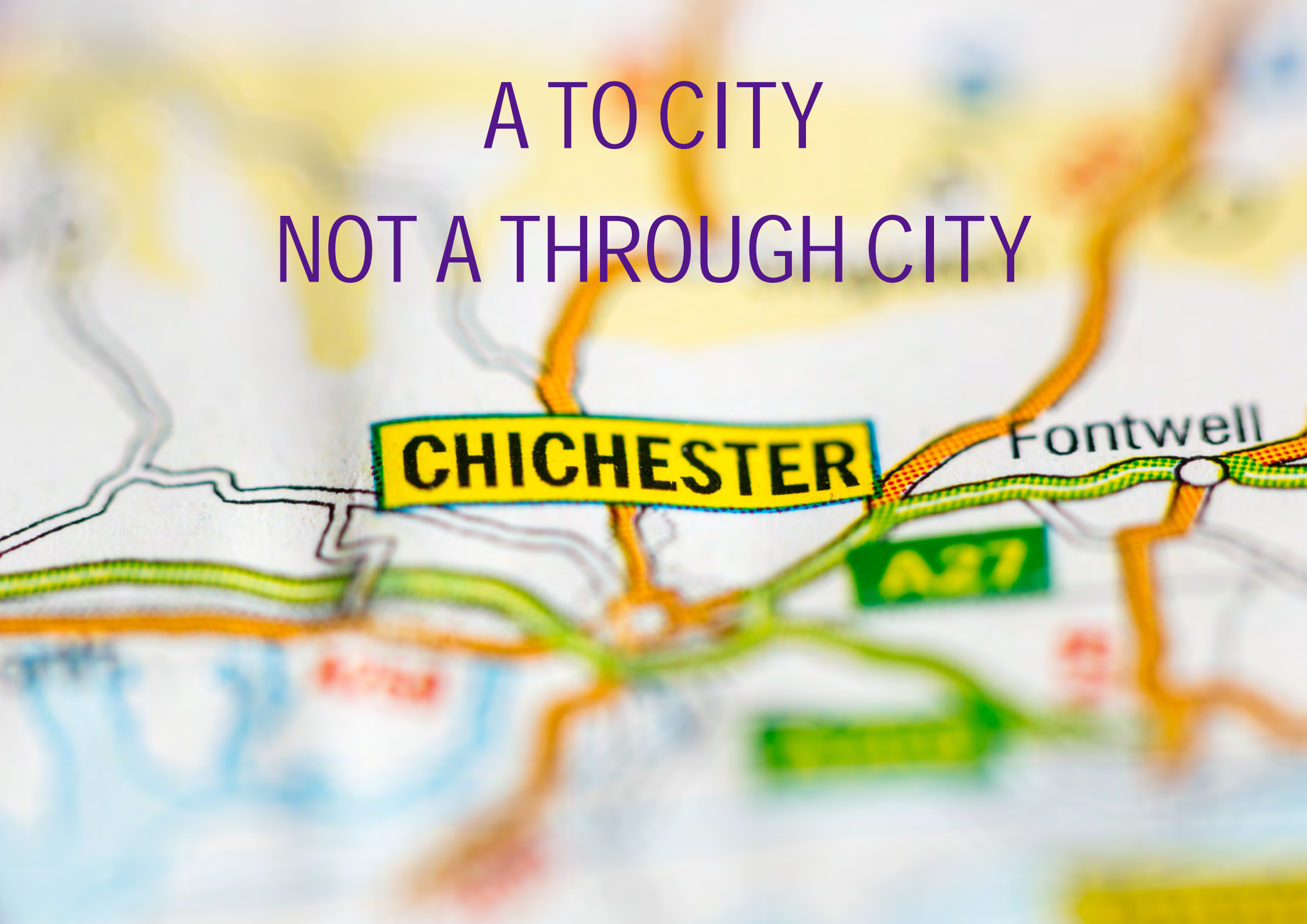
The scoring used to assess the transport criteria was based on the principles for road user hierarchy in MFS 1 (2007) and has evolved over time with consultation and guidance from the steering group.

Options 8, 9 and 11 have ranked highest because they fulfil the assessment criteria and meet the key objectives highlighted within the masterplan document. Each option was further assessed for masterplan Criteria to provide a more detailed view of each options strengths and weaknesses.

Options 1, 2, 4 and 7 have not been taken forward as potential options as they did not fulfil the assessment criteria set out within the masterplan and Vision documents.

Option Appraisal Process Score Options Ranked Based on Vision Objectives				
Option	Vision Scoring	Increase Public Realm	Increase Development Space	
9	494	*****	****	Options taken forward
8	476	****	****	
11	446	***	****	
6	438	***	****	
10	396	**	****	
5	384	**	****	
3	350	***	***	Options to be discounted
2	309	***	**	
7	172	*	****	
4	45	**	*	
1	40	*	*	

A TO CITY
NOT A THROUGH CITY



7. Gyratory Arrangement Appraisal (Stage 2)

The option generation process highlighted that the Avenue de Chartres / Southgate junction was the key junction that unlocked the Southern Gateway Masterplan area. As this is the intersect of the two key movement corridors through the junction, as shown in [Figure 30](#).

- East – west vehicular movement; and
- North – south pedestrian / public transport and vehicular movement.

Further option refinement, an independent and separate to section 5 review of the potential arrangement and impacts of providing a junction that facilitated the east-west movement corridors was undertaken, for the gyratory. However, these options have derived in part from the work to support section 5.

A principal consideration of the transport schemes was to assess the ability to remove Southgate gyratory and replace it with a single two-way vehicular link that connected Avenue de Chartres and Market Avenue.

The area to the north of the junction is subject to land constraints in the form of the Grade II and locally listed buildings. Therefore, the review considered the junction layout options with a holistic view to provide the optimum solution to develop the masterplan scheme.

The option refinement reviewed five possible routing options for providing a two-way vehicular link through the Southgate gyratory. The options were:

- Two-way link along Market Avenue implemented by the removal of 5 Grade II Listed buildings;
- Two-way link along Market Avenue implemented by the removal of 7 Grade II Listed buildings;
- Two-way link by extending Avenue de Chartres east through 3 Grade II Listed buildings;
- Two-way link by extending Avenue de Chartres east through the Crown Court, which has a locally listed façade; and
- Two-way link by modifying and expanding the southern road of the Southgate gyratory.

- Two-way link by extending Avenue de Chartres east through the Crown Court, which has a locally listed façade; and
- Two-way link by modifying and expanding the southern road of the Southgate gyratory.

A full review of each option can be found in [Appendix E](#) and illustrated in [Figure 31](#).

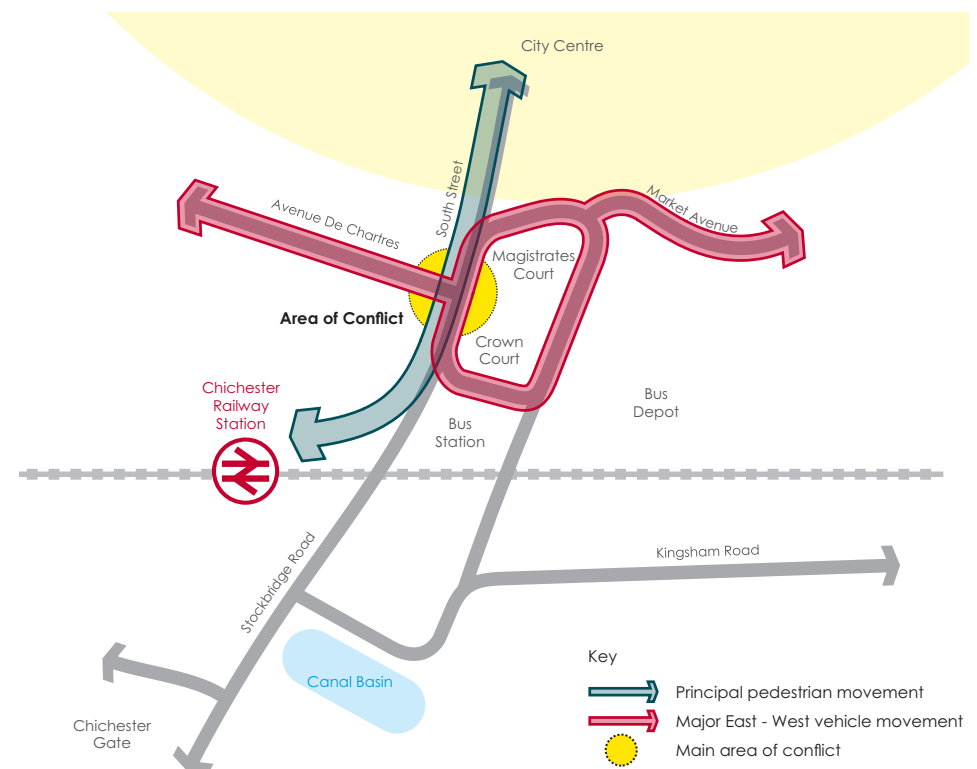


FIGURE 30: Corridor Plan

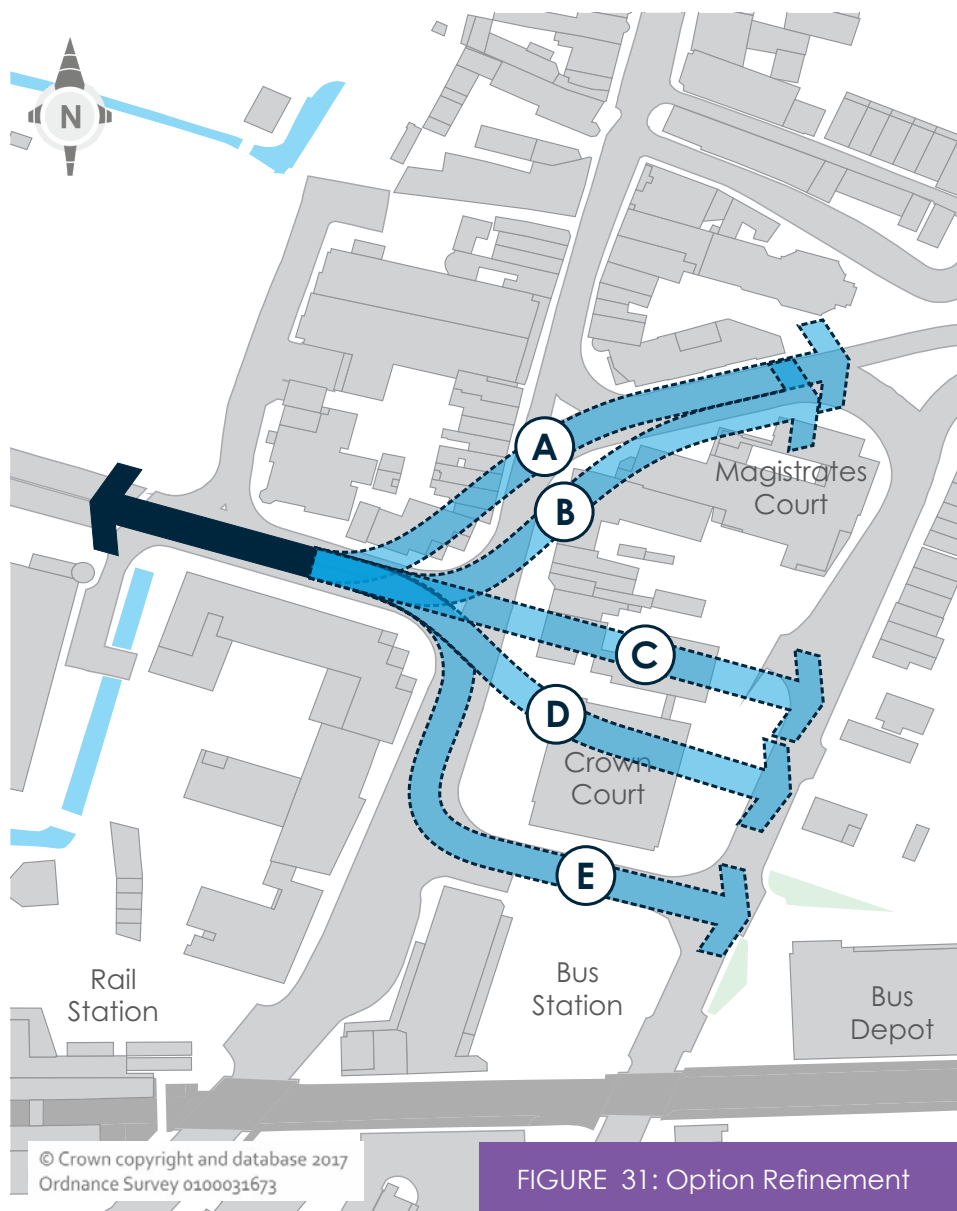


FIGURE 31: Option Refinement

Following the appraisal of the gyrotary arrangement options, it was concluded that option 3 was not a suitable solution due to the limited highway width, removal of a number of Grade II listed buildings and vehicle swept path requirements.

Option Appraisal Process	
3	Options to be discounted
5	Options taken forward
6	
8	
9	
10	
11	

Option E was discounted because there inadequate stacking capacity for vehicles between a new signalised junction on Basin Road and the existing level crossing.

8. Strategic Modelling Results (Stage 3)

Context

Transport modelling has been undertaken to provide an understanding of the potential changes in traffic flows as a result of highway changes within Chichester City Centre. This relates to the potential redevelopment within part of the city centre, an area known as Chichester Southern Gateway.

This report provides details of the modelling assessment that PBA has undertaken and sets out the most relevant modelling outputs.

Options

In order to achieve the main objective of having a phased reduction in the level of traffic in Chichester city centre by 2035, this study has modelled the six remaining options as follows:

- Option 5: Closure at Stockbridge Road level crossing to general traffic;
- Option 10: Option 5 principles + narrowing of the A286 Southgate/Basin Road gyratory lanes;
- Option 6 and Option 11: Option 5 principles + new link between Avenue De Chartres and Basin Road, and closure of the A286 Southgate/Basin Road gyratory. Both options follow the same design principles with the only difference being the new link alignment;
- Option 8: Option 6/11 principles + closure of Basin Road level crossing to general traffic; and
- Option 9: Option 8 principles + closure of the link between Avenue De Chartres and Basin Road to general traffic.

Chichester Model

The Chichester SATURN model, provided by Highways England (HE), has been utilised for the purpose of this study. The model has been developed by HE for the following scenarios:

- 2014 Base Year; and
- 2035 Forecast Do Minimum (DM).

Models have been provided that cover the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00). It has been agreed with CDC and WSCC that the study will use the 2035 DM plus development as the future scenario for the modelling.

Localised Model

The HE SATURN model was created by HE to understand the traffic impacts on the strategic network associated with options to improve the A27, rather than focusing on localised impacts within the city centre. Therefore, traffic surveys were undertaken in Chichester City centre to understand how the model represented local trips in the study area of the City Centre. Traffic survey results can be found in Appendix B.

A comparison of the new data against the modelled flows was undertaken to understand whether any model recalibration was required.

The amendments of east-west and north-south trips were undertaken to improve the calibration of the model. For the purpose of the model being used for at this stage, this was an appropriate and proportionate way forward.

Local Plan A27 Committed Improvements

In addition to the previous changes, different Local Plan Developments were considered and added into the 2035 DM model to make this more representative of the future situation. Those developments contain different improvements on the following A27 junctions, shown on **Figures 32 to 35**.

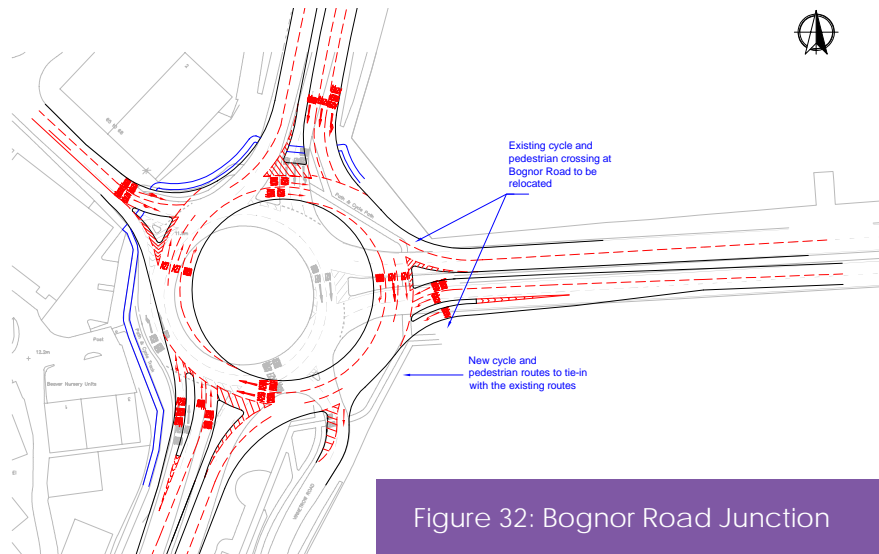


Figure 32: Bognor Road Junction

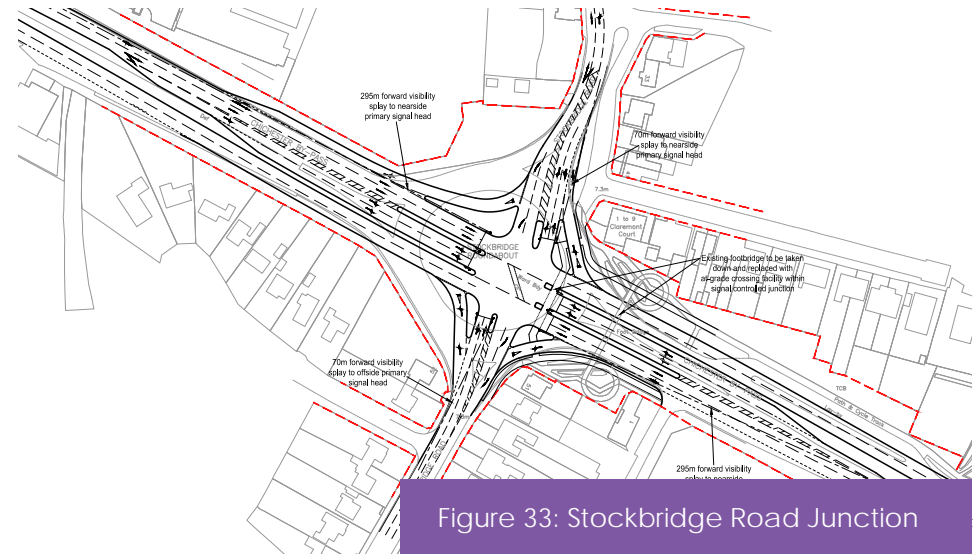


Figure 33: Stockbridge Road Junction

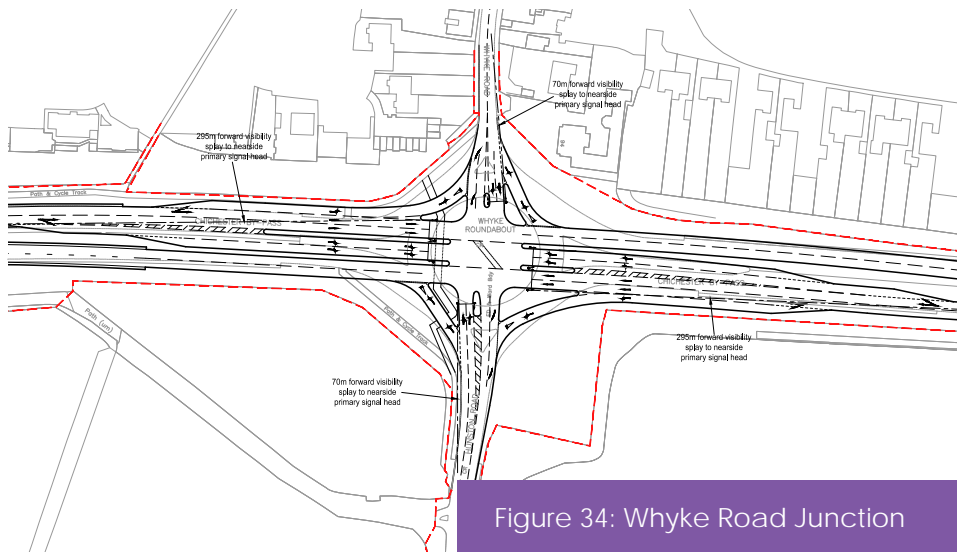


Figure 34: Whyke Road Junction

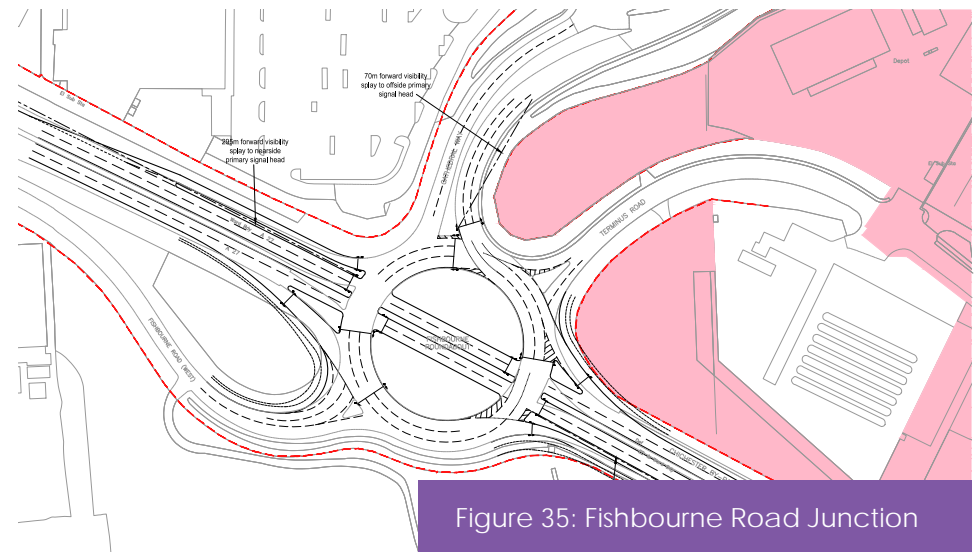


Figure 35: Fishbourne Road Junction

Integration of Development Sites

The masterplan document highlighted six key sites for potential development opportunities. These are:

- A. The Law Courts,
- B. Basin Road car park, Bus Depot and Station,
- C. Royal Mail Sorting Office and Depot,
- D. Land at the Police Station and High School,
- E. Land at Chichester Station, and
- F. Government Offices

In order for a preliminary assessment of the proposed developments impacts on the highway network, consultation with David Lock Associates was undertaken to produce a provisional development scheme masterplan with assigned land uses and access points, as shown in **Figure 36**.

These land uses were inputted into the modelling software to assess the impacts on the highway network. Trip rates were taken from Appendix C of the A27 Chichester Bypass Traffic Forecasting Report produced by HE in July 2016.

The trip rates for development area D were increased, based on an edge of town centre development to better represent the location.

Development Summary

	Dwellings	Commercial	Retail
A	30	-	3000
B	50	-	2000
C	25	-	2000
D	255	25000	-
E	30	3500	-
F	0	3500	-
Total	390 Units	33000 sqm	7000 sqm

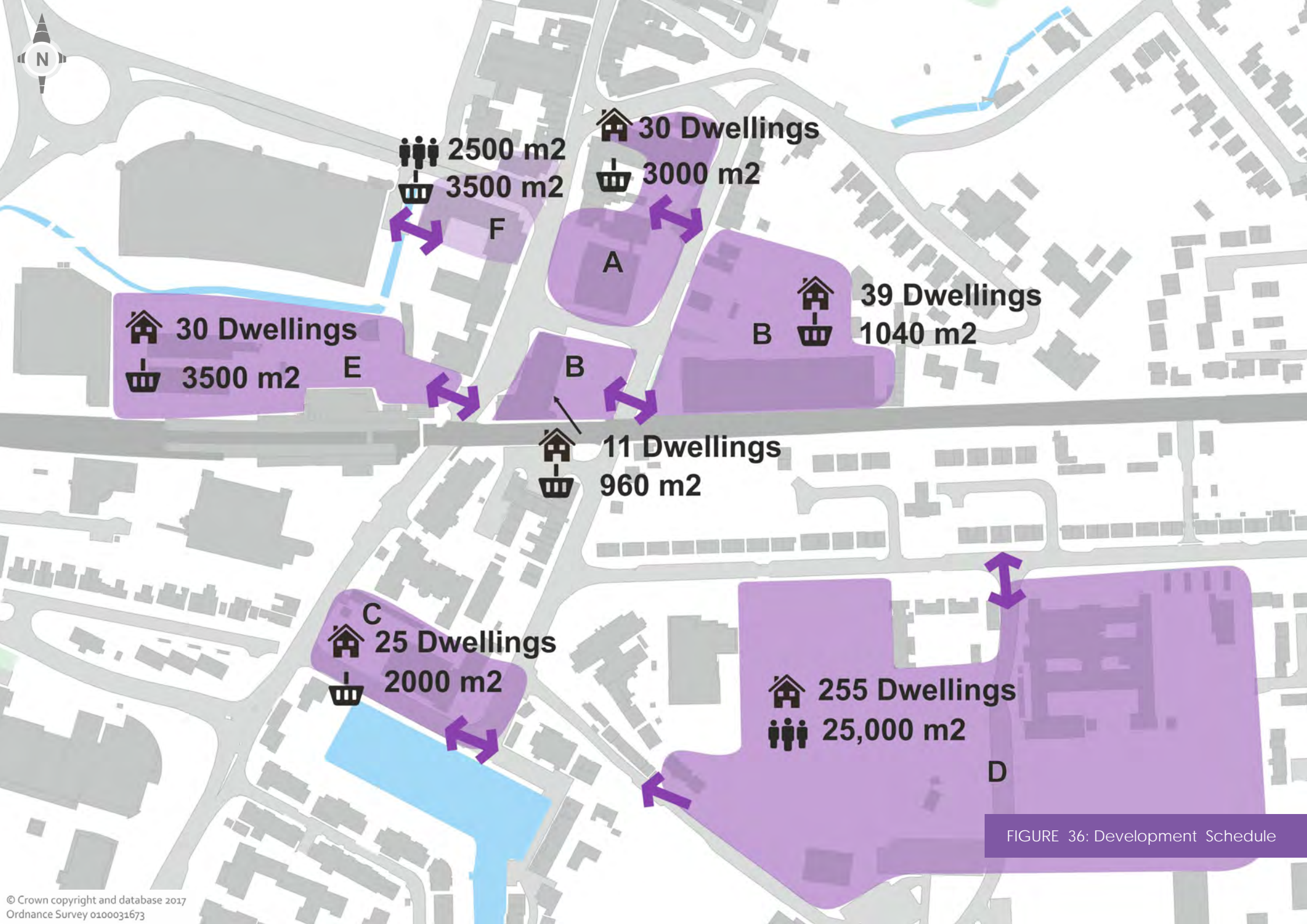


FIGURE 36: Development Schedule

Option 5

This section provides a summary of the AM and PM peak hour transport modelling results for Option 5. Full details of the assessment and results can be found within [Appendix H](#). This scheme focuses on the closure of Stockbridge Road level crossing to general traffic.

Flow Pattern Changes

The diagrams show the increases in red and decreases in green on the local and city wide network as a result of Option 5 being implemented. [Figure 38](#) shows the PM peak has the higher displacement of trips with the A27 seen as the alternative route around the city to the South West. The reduction around the local area of the scheme is also more significant in the AM peak, as shown in [Figure 37](#).

Link Flow Changes

The tables replicate the flow pattern and show that the scheme has a greater impact in the AM peak. However, the flows which are reassigned on the majority of roads are generally low. The main increases are on Basin Road and the A27. However, the level of flow reassignment is lessened with Option 5 because it still retains north/south and east/west movements across the gateway, albeit via a restrained network.

Journey Time

Option 5's highest increase in journey times is around 60 seconds with the majority much lower across the AM and PM peak. This reinforces that Option 5 still offers a cross city movement, but includes a level of restraint and reassignment, which has a limited impact on the journey time across the city.

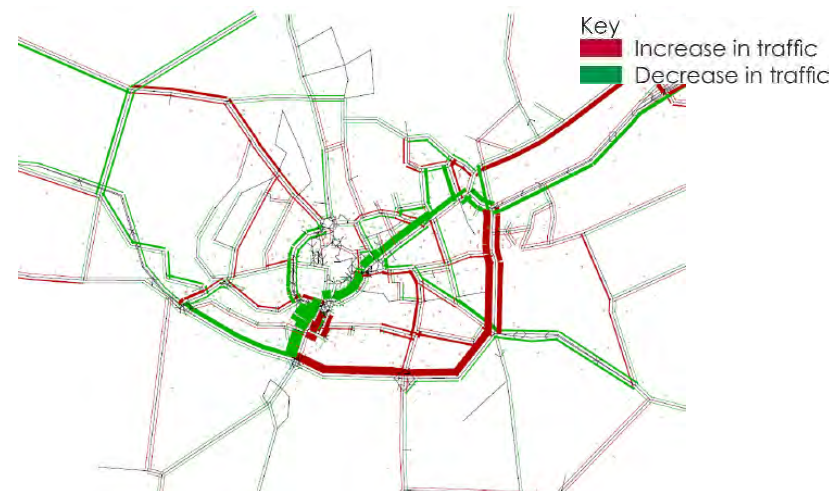


FIGURE 37: Option 5 Flow Changes - AM Peak

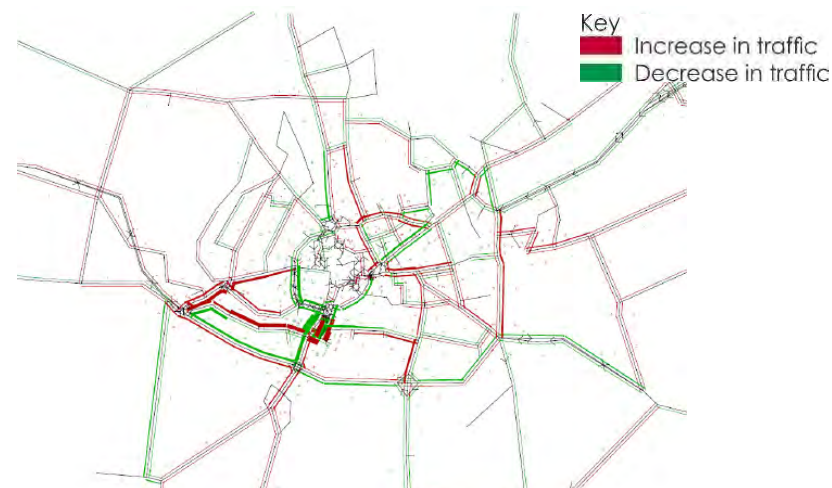


FIGURE 38: Option 5 Flow Changes - PM Peak

Actual Flow Changes

Link		2035 DM + Development		Option 5		Difference	
		AM (8-9)	PM (17-18)	AM (08-09)	PM (17-18)	AM (08-09)	PM (17-18)
Westgate	EB	133	105	147	106	14	1
	WB	112	265	102	340	-10	75
A286 West	NB	788	632	673	593	-116	-39
	SB	800	676	762	588	-37	-88
Avenue De Chartres	EB	558	902	675	832	117	-70
	WB	630	454	611	406	-20	-48
Priory Rd	EB	18	67	17	72	0	5
	WB	82	90	86	91	4	0
New Park Rd	NB	379	652	405	682	26	29
	SB	773	622	744	598	-29	-24
Spitafield Ln	EB	390	700	425	722	35	22
	WB	341	421	379	459	38	38
Market Av	NB	721	1055	410	1056	-311	1
	SB	913	372	900	331	-13	-41
Whyke Rd	NB	247	607	332	631	85	25
	SB	286	971	301	965	15	-6
Basin Rd	NB	186	89	384	234	198	145
	SB	154	318	288	444	133	126
Kingsham Rd	EB	436	551	447	490	11	-61
	WB	222	221	257	220	35	0
Stockbridge Rd	NB	720	276	15	9	-705	-267
	SB	215	340	16	27	-199	-313
Terminus Rd	EB	371	493	376	618	4	125
	WB	270	262	287	250	16	-12
A27 East	EB	1924	2453	2215	2459	291	6
	WB	2758	2423	2752	2390	-6	-33
A27 West	EB	3099	2711	3085	2747	-13	36
	WB	2366	2336	2214	2274	-152	-62

Journey Times

AM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 5	Opt. 5 / 2035 Base
1	EW	99	95	-4
	WB	115	122	+7
2	EB	228	228	0
	WB	207	202	-5
3	EB	531	545	+14
	WB	605	601	-4
4	NB	386	440	+54
	SB	482	481	-1
5	NB	755	816	+61
	SB	585	619	+34

PM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 5	Opt. 5 / 2035 Base
1	EW	95	94	-1
	WB	108	110	+2
2	EB	201	245	+44
	WB	196	230	+34
3	EB	517	511	-6
	WB	568	569	+1
4	NB	396	450	+54
	SB	402	437	+35
5	NB	602	626	+24
	SB	746	743	-3

Option 6 and 11

This section provides a summary of the AM and PM peak hour transport modelling results of Option 6 and 11. Full details of the assessment and results can be found within **Appendix H**. Both schemes look to close Stockbridge Road level crossing to general traffic and make the eastern side of the gyratory (Basin Road) open to all traffic. The difference between option 6 and 11 is the position of the new link road through the existing gyratory. Option 6 has been modelled as this provides a worse case in terms of stacking capacity between the new junction and the level crossing.

Flow Pattern Changes

The diagrams show the increases in red and decreases in green on the local and city wide network as a result of Option 6 and 11 being implemented. **Figure 39** shows that the AM peak has the higher displacement of trips, with the A27 seen as the alternative route around the city to the Southeast. However, the level of restriction around the gyratory has increased and so the PM witnesses a higher impact when compared to Option 5, as shown in **Figure 40**.

Link Flow Changes

Due to the increased level of reassignment, there is an increase in localised redistribution of trips around the gyratory on the AM and PM peaks. The primary reassignment within the modelled area is still the A27 similar to Option 5.

Journey Time

The impact of Option 6 and 11 can be seen in the tables, in that the highest increase in journey times is around 83 seconds which is around 20% to 30% higher than Option 5, however the majority are much lower across the AM and PM peak. This reinforces that Option 6 and 11 still offers a cross city movement, but includes a higher level of restraint and reassignment than Option 5, which has a limited impact on the journey time across the city.

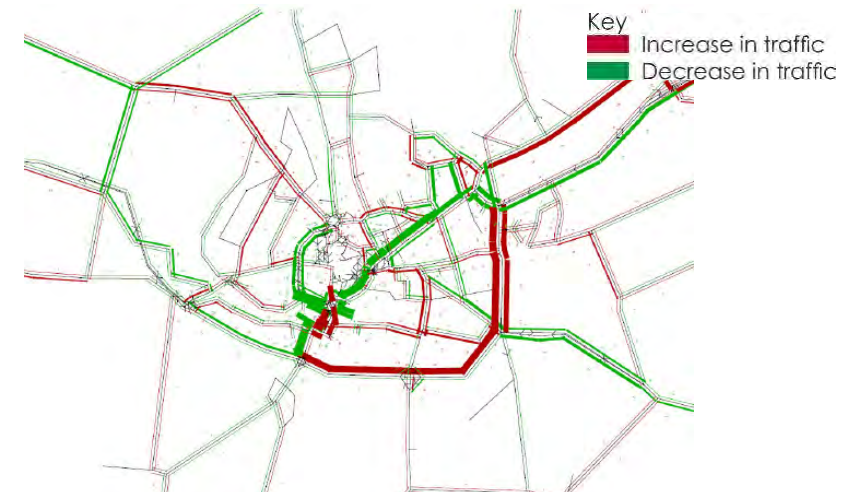


FIGURE 39: Option 6 and 11 Flow Changes - AM Peak

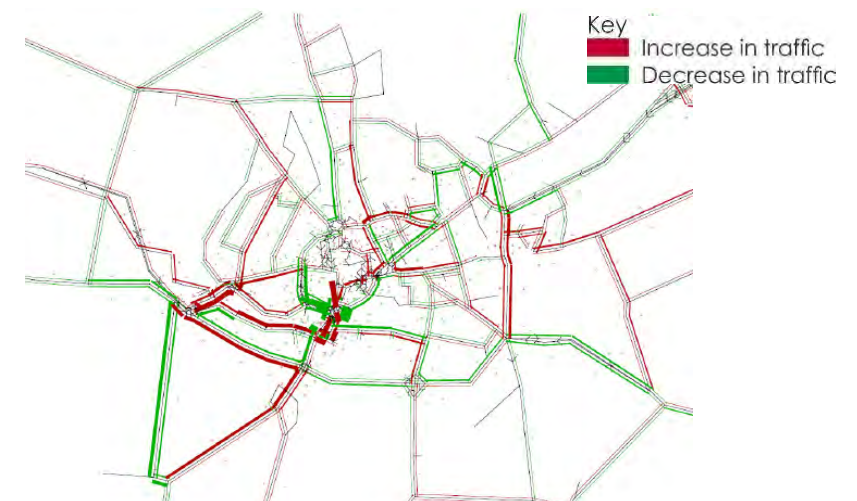


FIGURE 40: Option 6 and 11 Flow Changes - PM Peak

Actual Flow Changes

Link		2035 DM + Development		Option 6		Difference	
		AM (8-9)	PM (17-18)	AM (08-09)	PM (17-18)	AM (08-09)	PM (17-18)
Westgate	EB	133	105	152	111	19	6
	WB	112	265	103	343	-9	78
A286 West	NB	788	632	675	581	-113	-51
	SB	800	676	717	578	-83	-98
Avenue De Chartres	EB	558	902	576	816	18	-85
	WB	630	454	594	379	-37	-75
Priory Rd	EB	18	67	25	72	7	5
	WB	82	90	83	101	1	11
New Park Rd	NB	379	652	419	694	40	41
	SB	773	622	749	567	-24	-55
Spitafield Ln	EB	390	700	423	735	33	35
	WB	341	421	377	469	37	48
Market Av	NB	721	1055	453	1050	-268	-5
	SB	913	372	897	316	-16	-56
Whyke Rd	NB	247	607	320	594	73	-13
	SB	286	971	320	961	34	-10
Basin Rd	NB	186	89	457	251	271	163
	SB	154	318	234	400	79	82
Kingsham Rd	EB	436	551	436	470	0	-80
	WB	222	221	247	226	25	6
Stockbridge Rd	NB	720	276	8	1	-713	-275
	SB	215	340	1	11	-214	-329
Terminus Rd	EB	371	493	352	627	-20	135
	WB	270	262	282	251	12	-11
A27 East	EB	1924	2453	2159	2444	235	-10
	WB	2758	2423	2758	2390	-1	-33
A27 West	EB	3099	2711	3088	2828	-11	117
	WB	2366	2336	2299	2288	-66	-48

Journey Times

AM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 6	Opt. 6 / 2035 Base
1	EW	99	102	+3
	WB	115	114	-1
2	EB	228	269	+41
	WB	207	211	+4
3	EB	531	533	+2
	WB	605	592	-13
4	NB	386	469	+83
	SB	482	494	+12
5	NB	755	832	+77
	SB	585	617	+32

PM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 6	Opt. 6 / 2035 Base
1	EW	95	107	+12
	WB	108	110	+2
2	EB	201	237	+36
	WB	196	234	+38
3	EB	517	518	+1
	WB	568	570	+2
4	NB	396	467	+71
	SB	402	446	+44
5	NB	602	634	+32
	SB	746	755	+9

Option 8

This section provides a summary of the AM and PM peak hour transport modelling results of Option 8. Full details of the assessment and results can be found within **Appendix H**. Option 8 looks to close both Stockbridge Road and Basin Road level crossing to general traffic, but retains the east/west link across the gyratory for general traffic.

Flow Pattern Changes

The diagrams show the increases in red are substantially higher than Options 5 and 6/11 as the level of restraint on the network has been maximised, although there are options which maximise this further. This scheme not only has an impact on the A27, but the increased level of restraint reassigns traffic through local roads around the gyratory and therefore has major impacts on roads and junctions within the city causing a number of them to exceed capacity. This is focused more heavily on the north/south movement, as east/west is still usable.

Link Flow Changes

The increased level of reassignment is significant both on the A27 and on local roads around the city centre as junctions and links are overloaded with the increased flows, which are not solely linked to the proposed Southern Gateway development, but more in relation to the road changes which serve the north/south movements across the area.

Journey Time

The impact of Option 8 is material in that journey times regionally and locally are extended by between 4 to 6 minutes across the AM and PM peaks. The changes in journey time show how the level of restraint could impacted both regional and local routes, especially on the north/south routes, however in practice few journeys would make the short trip by car over the level crossings for the journeys time route 2 analysis undertaken, particularly if both level crossings were closed (see **Appendix H**).

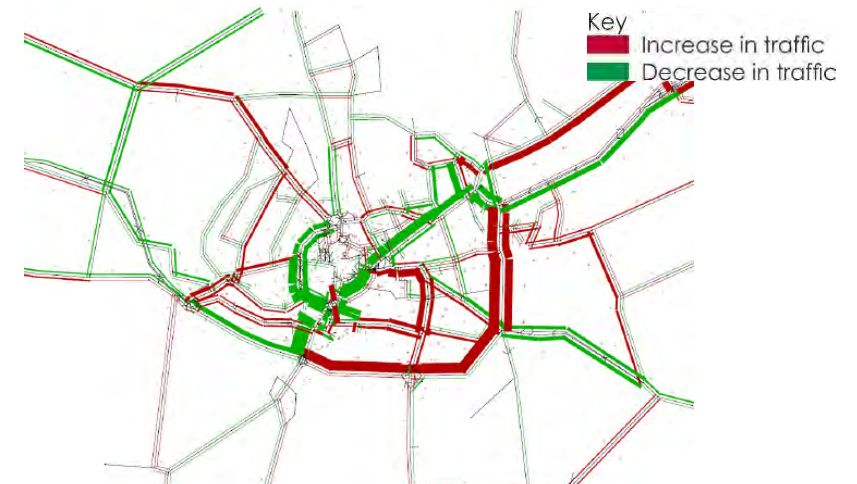


FIGURE 41: Option 8 Flow Changes - AM Peak

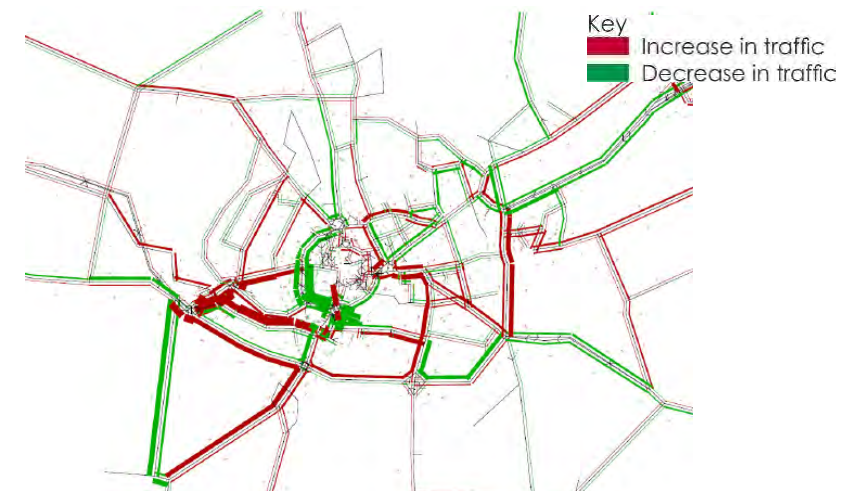


FIGURE 42: Option 8 Flow Changes - PM Peak

Actual Flow Changes

Link		2035 DM + Development		Option 8		Difference	
		AM (8-9)	PM (17-18)	AM (08-09)	PM (17-18)	AM (08-09)	PM (17-18)
Westgate	EB	133	105	222	136	89	32
	WB	112	265	116	461	4	196
A286 West	NB	788	632	487	446	-302	-186
	SB	800	676	629	365	-171	-312
Avenue De Chartres	EB	558	902	575	633	17	-268
	WB	630	454	565	388	-65	-66
Priory Rd	EB	18	67	20	86	2	20
	WB	82	90	85	124	3	33
New Park Rd	NB	379	652	432	722	53	69
	SB	773	622	753	532	-20	-90
Spitafield Ln	EB	390	700	437	773	47	73
	WB	341	421	392	472	51	51
Market Av	NB	721	1055	292	1050	-429	-5
	SB	913	372	923	292	10	-80
Whyke Rd	NB	247	607	440	757	193	150
	SB	286	971	392	959	106	-12
Basin Rd	NB	186	89	15	16	-171	-73
	SB	154	318	15	16	-140	-302
Kingsham Rd	EB	436	551	394	395	-42	-156
	WB	222	221	254	237	31	17
Stockbridge Rd	NB	720	276	8	1	-713	-275
	SB	215	340	1	11	-214	-329
Terminus Rd	EB	371	493	410	780	39	287
	WB	270	262	307	236	37	-26
A27 East	EB	1924	2453	2282	2548	358	94
	WB	2758	2423	2761	2405	3	-17
A27 West	EB	3099	2711	3081	2872	-18	161
	WB	2366	2336	2209	2306	-157	-29

Journey Times

AM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 8	Opt. 8 / 2035 Base
1	EW	99	98	-1
	WB	115	106	-9
2	EB	228	457	+229
	WB	207	325	+118
3	EB	531	586	+55
	WB	605	590	-15
4	NB	386	513	+127
	SB	482	549	+67
5	NB	755	878	+123
	SB	585	637	+52

PM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 8	Opt. 8 / 2035 Base
1	EW	95	102	+7
	WB	108	104	-4
2	EB	201	408	+207
	WB	196	328	+132
3	EB	517	516	-1
	WB	568	560	-8
4	NB	396	487	+91
	SB	402	427	+25
5	NB	602	665	+63
	SB	746	755	+9

Option 9

This section provides a summary of the AM and PM peak hour transport modelling results of Option 9. Full details of the assessment and results can be found within **Appendix H**. Option 9 looks to close both Stockbridge Road and Basin Road level crossing to general traffic and severs the east-west link across the gyratory for general traffic.

Flow Pattern Changes

The diagrams show the increases in red are substantially higher than Options 5 and 6/11 as the level of restraint on the network has been maximised the furthest. This scheme not only has an impact on the A27, but the increased level of restraint reassigns traffic through local roads around the gyratory and therefore has major impacts on roads and junctions within the city causing a number of them to exceed capacity.

Link Flow Changes

The increased level of reassignment is significant both on the A27 and on local roads around the city centre as junctions and links are overloaded with the increased flows, which are not solely linked to the proposed Southern Gateway development, but more in relation to the road changes which serve the north-south and east-west movements across the area.

Journey Time

The impact of Option 8 is material in that journey times regionally and locally are extended by between 4 to 6 minutes across the AM and PM peaks. The changes in journey time show how the level of restraint could impacted both regional and local routes, especially on the north/south routes, however in practice few journeys would make the short trip by car over the level crossings for the journeys time route 1 and 2 analysis undertaken, particularly if both level crossings were closed (see **Appendix H**).

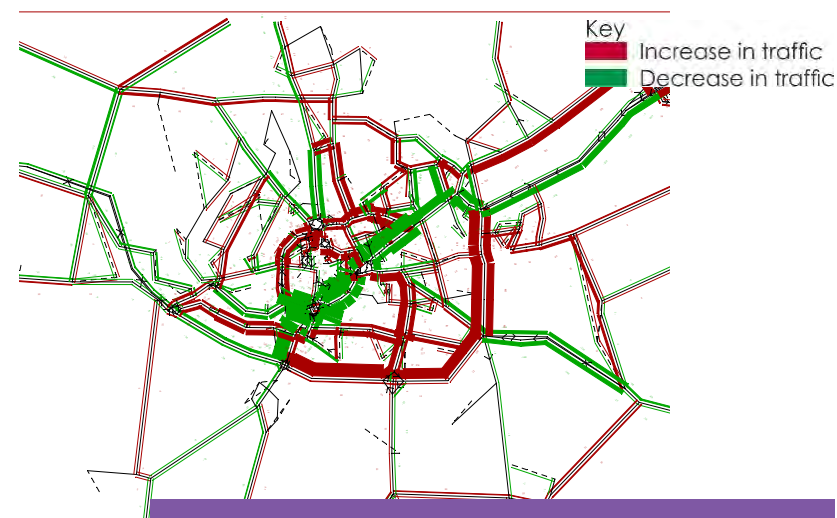


FIGURE 43: Option 9 Flow Changes - AM Peak

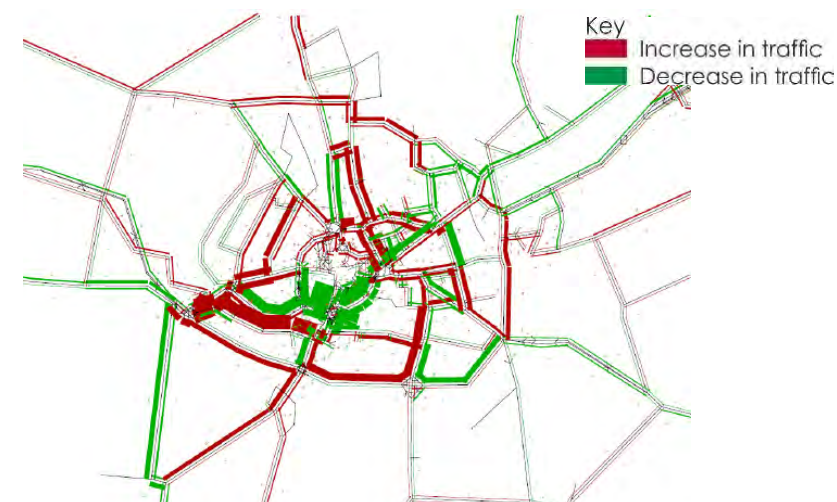


FIGURE 44: Option 9 Flow Changes - PM Peak

Actual Flow Changes

Link		2035 DM + Development		Option 9		Difference	
		AM (8-9)	PM (17-18)	AM (08-09)	PM (17-18)	AM (08-09)	PM (17-18)
Westgate	EB	133	105	153	309	20	204
	WB	112	265	131	486	19	221
A286 West	NB	788	632	876	605	87	-27
	SB	800	676	953	449	153	-227
Avenue De Chartres	EB	558	902	181	25	-378	-877
	WB	630	454	98	234	-532	-220
Priory Rd	EB	18	67	31	127	13	60
	WB	82	90	292	142	210	52
New Park Rd	NB	379	652	431	858	52	206
	SB	773	622	745	789	-28	167
Spitafield Ln	EB	390	700	556	882	166	182
	WB	341	421	595	584	254	163
Market Av	NB	721	1055	110	531	-611	-524
	SB	913	372	581	126	-332	-246
Whyke Rd	NB	247	607	521	921	274	315
	SB	286	971	426	911	141	-60
Basin Rd	NB	186	89	15	16	-171	-73
	SB	154	318	15	16	-139	-302
Kingsham Rd	EB	436	551	412	417	-24	-134
	WB	222	221	369	252	147	31
Stockbridge Rd	NB	720	276	8	1	-713	-275
	SB	215	340	1	11	-214	-329
Terminus Rd	EB	371	493	488	994	117	501
	WB	270	262	426	251	156	-11
A27 East	EB	1924	2453	2417	2716	492	262
	WB	2758	2423	2778	2406	20	-17
A27 West	EB	3099	2711	3065	2881	-34	170
	WB	2366	2336	2285	2332	-80	-3

Journey Times

AM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 9	Opt. 9/ 2035 Base
1	EW	99	347	+248
	WB	115	370	+255
2	EB	228	472	+244
	WB	207	481	+274
3	EB	531	543	+12
	WB	605	640	+35
4	NB	386	539	+153
	SB	482	568	+86
5	NB	755	888	+133
	SB	585	646	+61

PM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 9	Opt. 9/ 2035 Base
1	EW	95	518	+423
	WB	108	360	+252
2	EB	201	425	+224
	WB	196	610	+414
3	EB	517	634	+117
	WB	568	555	-13
4	NB	396	514	+118
	SB	402	440	+38
5	NB	602	680	+78
	SB	746	793	+47

Option 10

This section provides a summary of the AM and PM peak hour transport modelling results of Option 10. Full details of the assessment and results can be found within **Appendix H**. This scheme focuses on the closure of Stockbridge Road level crossing to general traffic which is similar to Option 5. However, Option 10 seeks to include an additional level of restraint by narrowing the lanes and reallocating road space.

Flow Pattern Changes

The diagrams show the increases in red and decreases in green on the local and city wide network as a result of Option 10 being implemented. Figure 45 shows that the AM peak has the higher displacement of trips, with the A27 seen as the alternate route around the city to the south west. The reduction around the local area of the scheme is also more significant in the am peak. The level of reassignment is slightly higher than Option 5.

Link Flow Changes

The tables replicate the flow pattern, in that the scheme has a greater impact in the AM peak. However, the flows which are reassigned on the majority of roads are generally low. The main increases are on Basin Road and the A27, however the level of flow reassignment is lessened with Option 10 as even with the higher level of lane restraint compared to Option 5, it still retains north-south and east-west movements across the gateway, albeit via a restrained network.

Journey Time

The impact of Option 10 can be seen in the tables, in that the highest increase in journey times is around 107 seconds in the PM peak with the majority much lower across the AM and PM peak. This reinforces that Option 10 still offers a cross city movement, but includes a level of restraint and reassignment, which has a limited impact on the journey time across the city.

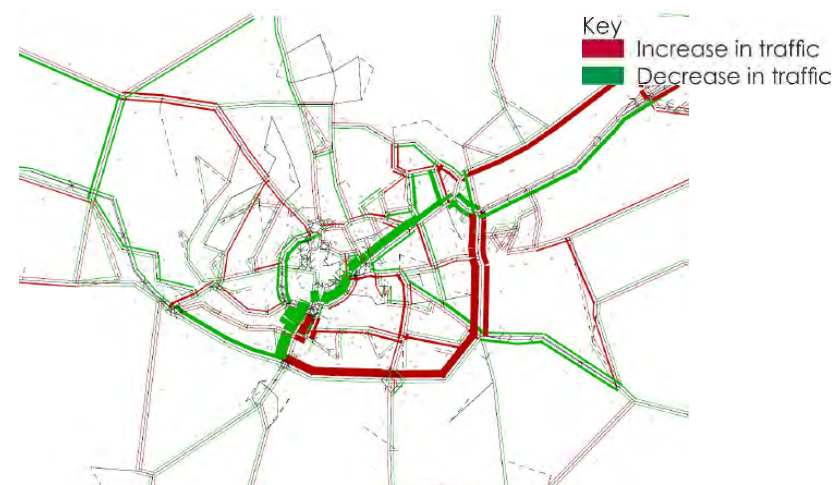


FIGURE 45: Option 10 Flow Changes - AM Peak

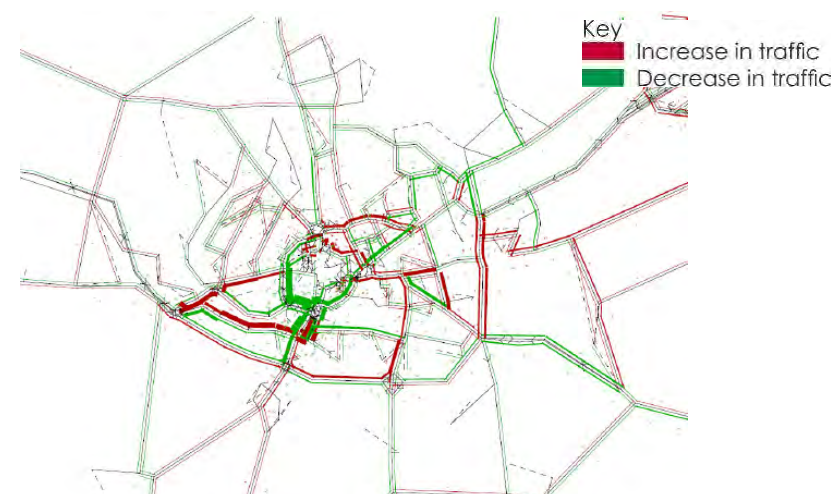


FIGURE 46: Option 10 Flow Changes - PM Peak

Actual Flow Changes

Link		2035 DM + Development		Option 10		Difference	
		AM (8-9)	PM (17-18)	AM (08-09)	PM (17-18)	AM (08-09)	PM (17-18)
Westgate	EB	133	105	147	120	14	15
	WB	112	265	104	372	-8	107
A286 West	NB	788	632	719	604	-69	-28
	SB	800	676	696	450	-104	-226
Avenue De Chartres	EB	558	902	560	601	2	-301
	WB	630	454	638	413	8	-41
Priory Rd	EB	18	67	25	157	7	90
	WB	82	90	80	89	-2	-1
New Park Rd	NB	379	652	386	677	6	24
	SB	773	622	787	596	14	-26
Spitafield Ln	EB	390	700	422	758	32	58
	WB	341	421	380	456	39	35
Market Av	NB	721	1055	375	927	-346	-128
	SB	913	372	943	359	30	-13
Whyke Rd	NB	247	607	325	661	78	54
	SB	286	971	302	951	17	-20
Basin Rd	NB	186	89	410	221	224	132
	SB	154	318	248	380	93	62
Kingsham Rd	EB	436	551	437	474	0	-76
	WB	222	221	272	219	50	-1
Stockbridge Rd	NB	720	276	15	9	-705	-267
	SB	215	340	16	27	-199	-313
Terminus Rd	EB	371	493	388	668	17	175
	WB	270	262	280	246	10	-16
A27 East	EB	1924	2453	2220	2511	296	57
	WB	2758	2423	2757	2396	-2	-27
A27 West	EB	3099	2711	3083	2742	-15	31
	WB	2366	2336	2236	2307	-130	-29

Journey Times

AM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 10	Opt. 10 / 2035 Base
1	EW	99	107	+8
	WB	115	113	-2
2	EB	228	290	+62
	WB	207	201	-6
3	EB	531	550	+19
	WB	605	596	-9
4	NB	386	434	+48
	SB	482	491	+9
5	NB	755	813	+58
	SB	585	614	+29

PM Peak Hour Journey Times (seconds)				
Route	Direct.	2035 Base	Opt. 10	Opt. 10 / 2035 Base
1	EW	95	147	+52
	WB	108	104	-4
2	EB	201	308	+107
	WB	196	222	+26
3	EB	517	530	+13
	WB	568	562	-6
4	NB	396	446	+50
	SB	402	428	+26
5	NB	602	630	+28
	SB	746	744	-2

Modelling Summary

The Chichester SATURN model, provided by HE, has been utilised for the purpose of this study. The model has been developed by HE for the following scenarios:

- 2014 Base Year; and
- 2035 Forecast Do Minimum (DM).

The modelling outputs that are not presented in this section are provided in [Appendix H](#).

It has been agreed with CDC and WSCC that the study will use the 2035 DM as the future scenario for the modelling.

Base Model and Calibration

The HE model was created in the main, to provide and understand the traffic impacts on the strategic network rather than focusing on localised impacts in Chichester city centre. Therefore, a local validation exercise has been completed and new traffic surveys were undertaken in Chichester city centre to understand how the model represented local trips in the town which is the assessment area (Chichester City Centre). The output of this exercise is a revised 2014 Base Model.

A comparison of the new data against the modelled flows, was undertaken to understand whether any model recalibration was required. This exercise highlighted that the HE model required additional calibration of vehicle movements to better match the count data within the City Centre.
















Impact of Options

The modelling has shown that the differing level of restraint that each option imposes on the local highway network is material to the regional and local reassignment of vehicle movements around the network and the increased congestion they create.

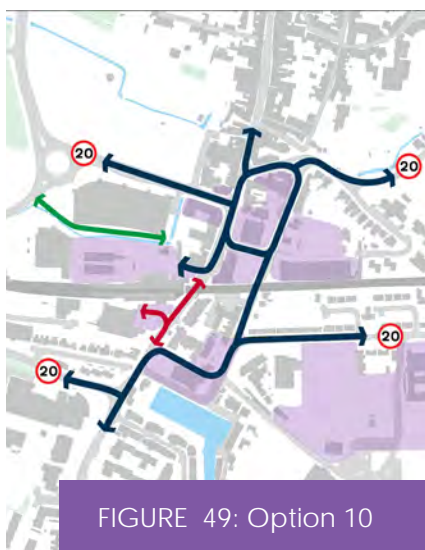
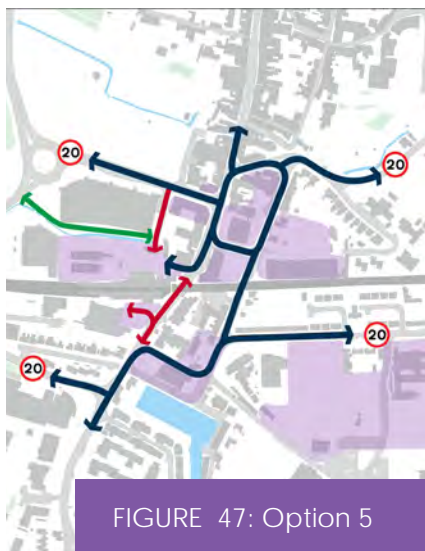
This document seeks to provide a summary of data across three observations as per below for the AM and PM peaks;

- Flow Pattern Changes;
- Actual Flow Changes; and
- Journey Times.

The table below seeks to indicate the impact of each of the options on the peaks for the three observations above.

Option	Flow Pattern Changes	Actual Flow Changes	Journey Times
Option 5			
Option 6/11			
Option 8			
Option 9			
Option 10			

The modelling has shown that Options 8 and 9 have a material impact on both the local and regional highway network, and would result in the need for wider mitigation improvements on other junctions across the network. For this reason, these are being discounted at this time. However, if CDC and WSCC decided to take these options forward, then these options could form future phases, but at this time they have been removed.



Option Selection	
9	Options to be Discounted
8	
11	Options taken forward
6	
10	
5	Options to be discounted
3	
2	
7	
4	Options to be discounted
1	

9. Costing (Stage 4)

The options taken forward are based on the scheme objectives, parameters highlighted, options generated, option refinement and modelling undertaken. This study has identified four preferred schemes which are as follows:

- Option 5 – Introduction of a bus gate across Stockbridge Road;
- Option 6 – Closure of Stockbridge Road level crossing, and the removal of the Southgate Gyratory;
- Option 10 – Introduction of a bus gate across Stockbridge Road and modification of Southgate Gyratory; or
- Option 11 – Removal of Southgate Gyratory, bus gate across Stockbridge Road and shared space extend down South Street. (similar to option 60).

A preliminary cost estimation of the construction of the highway network was undertaken for the above preferred schemes.

Option	Construction Estimate
Option 5	£3.9 million
Option 6	£8.6 million
Option 10	£ 5.3 million
Option 11	£8.2 million

The cost estimation only covered the construction of the Highway Network and a number of assumptions were used in order for this to be undertaken.

Key Assumptions

The key assumptions made in order for a cost estimation are shown below. A full breakdown of all assumptions can be found in [Appendix E](#);

- No building demolition has been priced within this cost estimation.
- All utilities have been excluded from this cost estimate. It is possible that the contingency figure applied may accommodate a percentage of the utility diversions, however utility costs can vary considerably;
- It has been assumed that existing buildings and associated infrastructure have been demolished and removed from site prior to commencing works. This has not been included within the estimate.
- No allowance for contaminated land has been made within the cost estimate; and
- No assumptions have been included in relation to any bus depot relocation costs.



Canal Basin

10. Stakeholder Review (Stage 5)

Project Team and Steering Group

PBA have engaged with CDC and WSCC throughout the design process.

Highways England

At the time this report was published; CDC and HE were still in discussion. However, Option 10 and 11 were in principle were considered to be acceptable, subject to final monitoring review.

Stagecoach

PBA have engaged with Stagecoach who are the main bus operator within Chichester and hold the lease on the existing bus station and depot. Stagecoach were consulted on both Options 10 and 11, they responded positively to both options in principle, with a preference of Option 11.

Stagecoach have indicated an additional bus link / culvert bridge over the River Lavant would only provide marginal benefit and that bus stops and movements could be accommodated without this new link.

Network Rail

PBA have engaged with Network Rail throughout the option development process to understand the benefits of closing Stockbridge Road level crossing. There have also been discussions about the future permitted users of the level crossing at Stockbridge Road. This is covered on page 22.

Option Selection

Following further consultation with the Steering and Project Groups, Options 5 and 6 were discarded because:

- Options 5 and 10 are similar in principle, however, Option 10 included additional improvements to the arrangement of the gyratory. It was felt that improvement to the gyratory was needed to fulfil the aim of the vision. Therefore Option 5 was discounted, and Option 10 taken forward.
- Options 6 and 11 are also similar in principle, except for the positioning of the new link road, and subsequent loss of either Grade II listed structures or locally listed structures. It was the view of the Steering and Project groups that there was support for retaining the Crown Court over the loss of 3 Grade II Listed buildings. Therefore Option 6 was discounted, and Option 11 taken forward.

Option Appraisal Process	
5	Options to be Discounted
6	
8	
9	
11	Options taken forward
10	



David Lock Associates
Town Planning and Urban Design



To be Confirmed



11. Preferred Option Selection

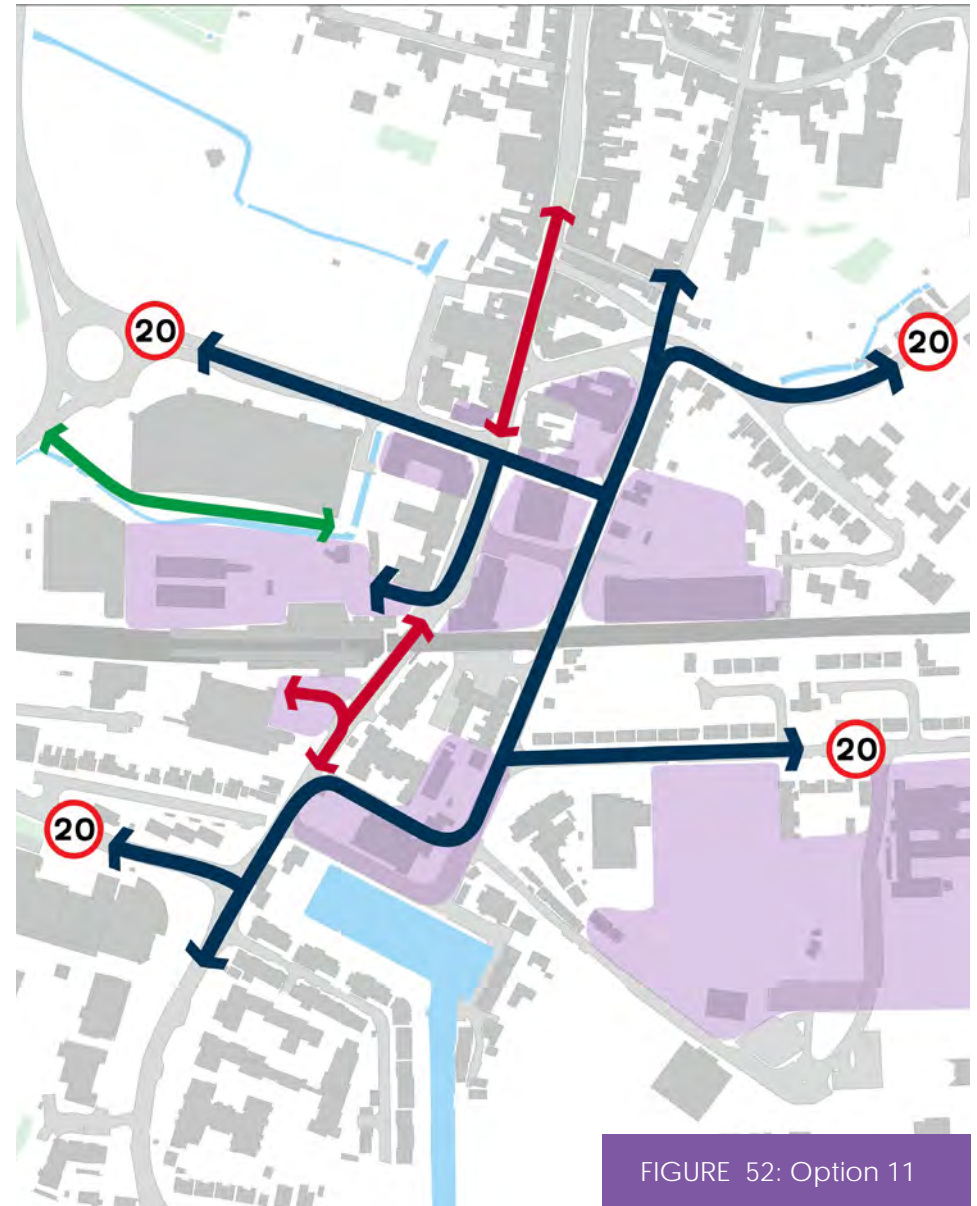
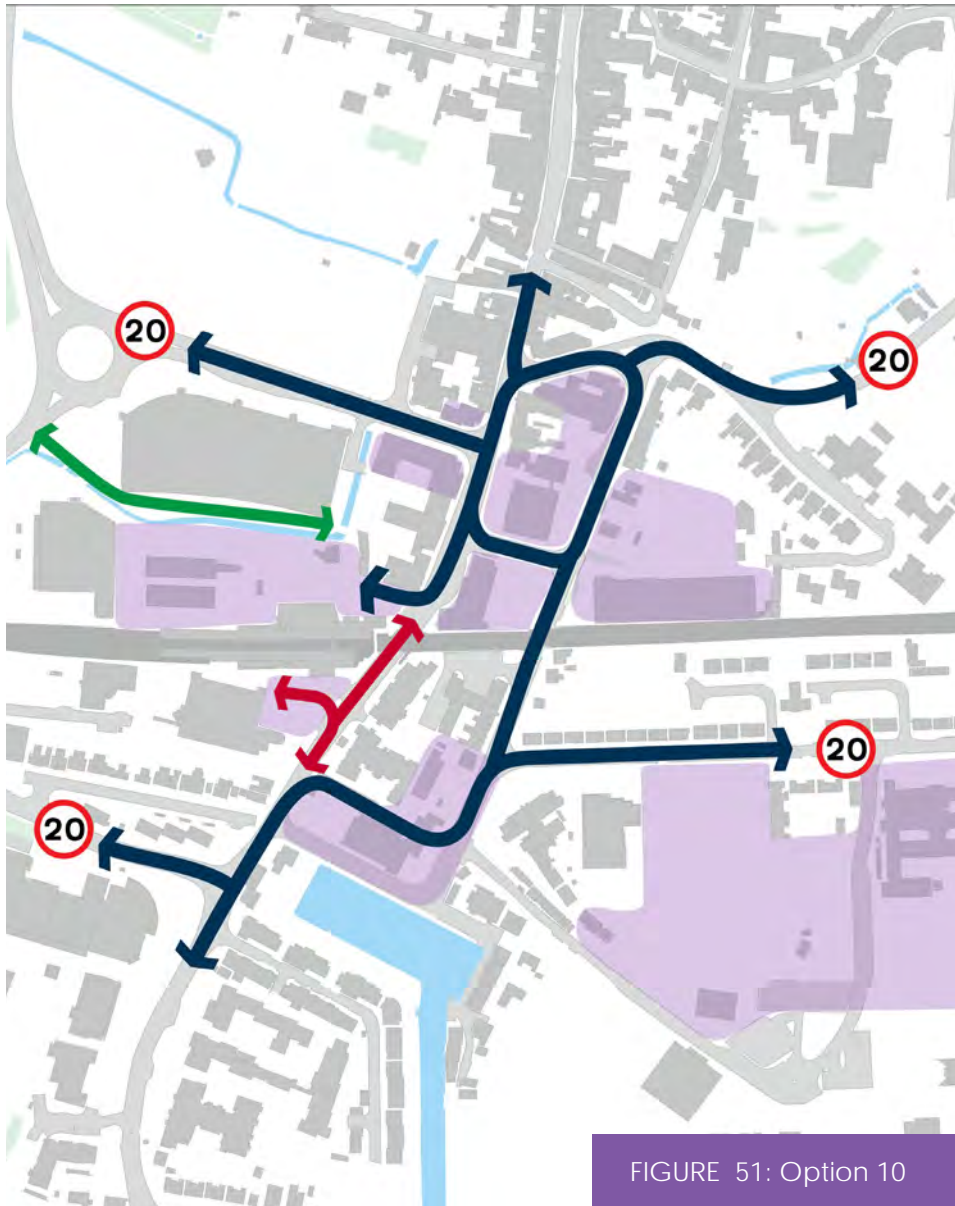
Option Recommendation

Following a staged review of the options initially produced at the beginning of this transport appraisal for the Southern Gateway Masterplan area, PBA would recommend taking Options 10 and 11 to public consultation.

Option 10 – Introduction of a bus gate across Stockbridge Road and modification of Southgate gyratory, (similar to option 5).

Option 11 – Removal of Southgate gyratory, bus gate across Stockbridge Road and shared space extending down South Street, (similar to option 6).

Option Selection	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
1	Discounted				
2	Discounted				
3	>	Discounted			
4	Discounted				
5	>	>	>	>	Discounted
6	>	>	>	>	Discounted
7	Discounted				
8	>	>	Discounted		
9	>	>	Discounted		
10	>	>	>	>	Preferred Scheme
11	>	>	>	>	Preferred Scheme



Option 10

An explanation of the key construction points of Option 10 are listed below:

- A. Improved areas of public realm;
- B. Proposed reduction in number of lanes and their width around gyratory;
- C. Proposed raised shared surface area along Southgate between South Street and the new junction between Stockbridge road and Canal Wharf;
- D. Proposed new bus and taxi interchange north and south of the Railway Station Car Park, to provide flexibility and opportunities for future bus services, rail replacement services, event uses;
- E. Proposed new bus gate across Stockbridge Road level crossing;
- F. Proposed new road between Stockbridge Road and Basin Road over Royal Mail Sorting Office site;
- G. Proposed new junction between Basin Road, High School Vehicle Exit and Canal Wharf;
- H. Shared space / access only route to the Canal Basin;
- I. New cycle lanes along Basin Road;
- J. New 20mph speed limit across the whole Southern Gateway Masterplan area; and
- K. Shared footway / cycleway connecting South Street to Chichester Railway Station, the Canal Basin, NCN2 and Chichester Gate.

Key Delivery Risks

Potential utility diversion or lowering at new road junctions between Stockbridge Road and Basin Road

Clearance of Royal Mail site for relocation of the Canal Wharf

Loss of station car parking

Proposed provision of bus stops

Total Development Space

6.3 ha

Construction Costs Estimates

£5.3 million

A breakdown of the construction cost for separate areas are enclosed in [Appendix J](#).



FIGURE 53: Option 10 - Concept Design

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Walking and Cycling

Each of the preferred options provide benefits to pedestrians in the form of a creation of a distinctive sustainable travel corridor. The spine transforms the space and connects the City Centre, Railway Station, Canal Basin and Chichester Gate with the proposed development areas. It is proposed that the corridor is to be constructed with high quality materials to change the environmental setting, informing drivers that they are entering a space with reversed user priorities.

The proposals include widening of the footway space to provide sufficient space for the movement between the buildings and land uses. Crossing locations have been shortened to create direct access across the carriageway.

It is proposed that in Option 10, general traffic will remain to circulate the existing gyratory. However, the carriageway space around the gyratory has been reduced to allow for carriageway space to be reallocated to pedestrians and cyclists.

It is proposed that a raise table crossing is provided at the crossing over Avenue de Chartres.

Figure 54 shows the proposed cycle facilities and provisions incorporated into the design. This includes sections of shared footway / cycleways, advisory cycle lanes, bus / cycle lanes and quiet streets. The combination of provisions creates a connected cycle network through the proposed masterplan area.

As part of the design, it is proposed that toucan crossing facilities are provided at Market Avenue / Basin Road, Basin Road / Southgate gyratory and Stockbridge Road / Southgate.

Consideration has been given to the removal of formal signalled crossings to be replaced by courtesy crossings in locations where the gyratory has been narrowed to a single lane (shared space).

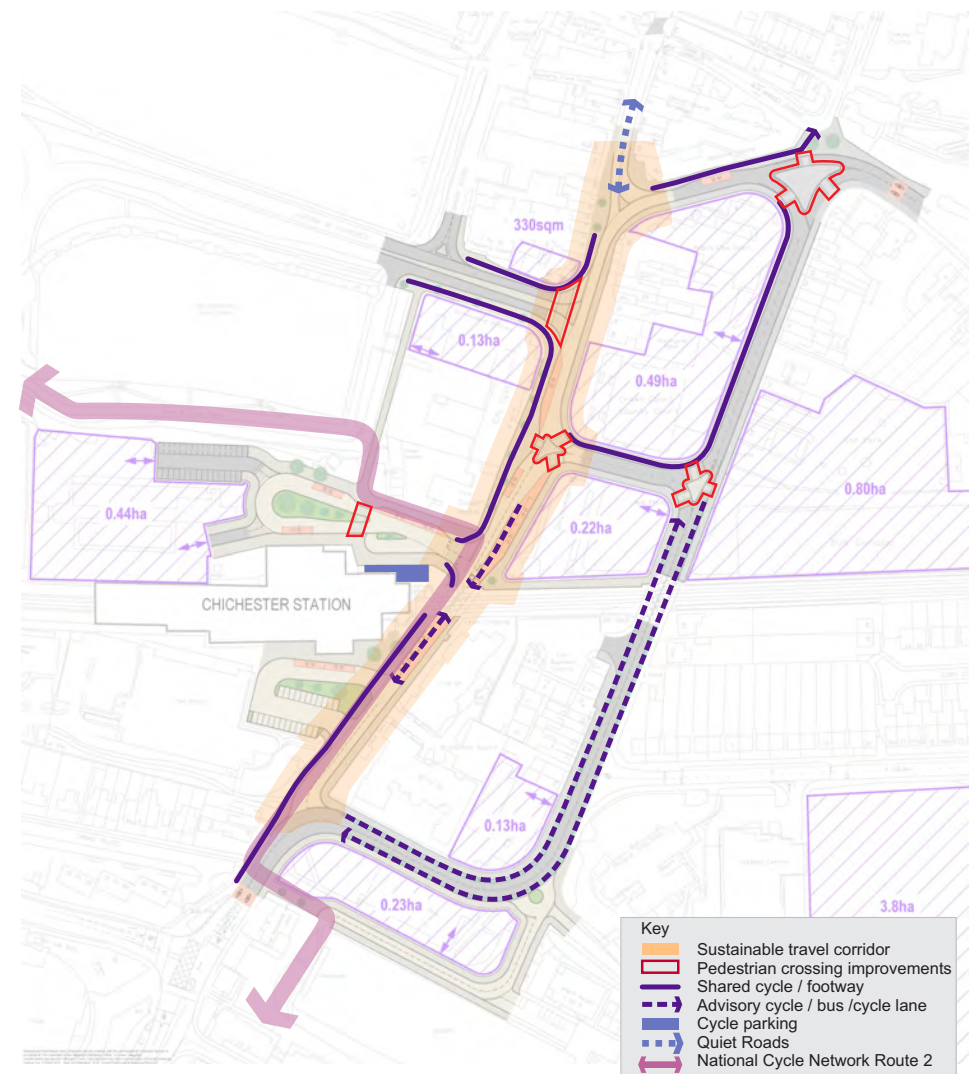


FIGURE 54: OPTION 10 - WALKING AND CYCLING

Access and Servicing

As part of Option 10, access to the existing properties are retained. However, for general vehicles travelling through the masterplan area, they will be restricted from travelling across Stockbridge Road level crossing. Access across the masterplan area would be via Basin Road level crossing.

It is proposed that Stockbridge Road level crossing could only be accessible to pedestrians, cyclists and buses.

Figure 55 shows the access arrangement to some key locations and development areas.

During early consultation with Stagecoach the use of the station car parks will not be required as the on road facilities are sufficient for all bus user requirements. However, if network rail were to redevelop any part of the car parks these options may need to be considered to support major events (for example Goodwood).

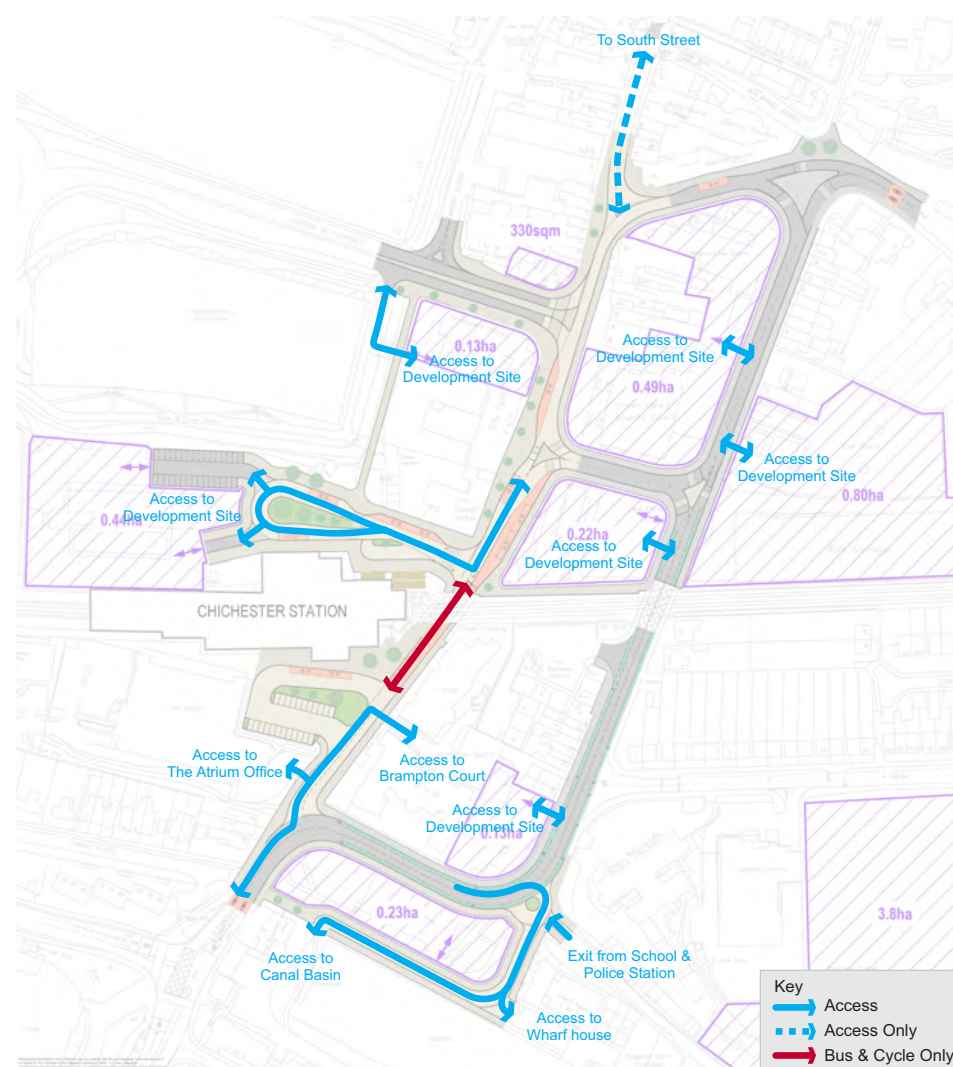


FIGURE 55: OPTION 10 - ACCESS AND SERVICING

Option 11

An explanation of the key construction points of Option 11 are listed below:

- A. Improved areas of public realm;
- B. Proposed new traffic signal box junction between Avenue de Chartres and Southgate;
- C. Proposed new road constructed between Avenue de Chartres and Basin road through 3 Grade 2 Listed buildings. This would involve a new traffic signal box junction onto Basin Road;
- D. Proposed new priority junction from Old Market Avenue onto Basin Road;
- E. Proposed raised shared surface area along Southgate between South Street and the new junction between Stockbridge road and Canal Wharf;
- F. Proposed new bus and taxi interchange north and south of the Railway Station Car Park, to provide flexibility and opportunities for future bus services, rail replacement services, event uses;
- G. Proposed new bus stop locations along Stockbridge Road;
- H. Proposed new bus gate across Stockbridge Road;
- I. Proposed new road between Stockbridge Road and Basin Road over Royal Mail Sorting Office site;
- J. Proposed new junction between Basin Road, High School Vehicle Exit and Canal Wharf;

- K. New 20mph speed limit across the whole southern gateway Masterplan area;
- L. New sheared and dedicated cycle facilities along Stockbridge Road and Basin Road. Providing connections between South Street to Chichester Railway Station, the Canal Basin, NCN2 and Chichester Gate; and
- M. Shared space / access only route to the Canal Basin.

Key Delivery Risks

Potential utility diversions when existing gyratory roads are removed.

Clearance of Royal Mail site for relocation of the Canal Wharf

Loss of station car parking

Proposed provision of bus stops

Demolition of 3 Grade 2 Listed Buildings

Total Development Space

6.28 ha

Construction Costs Estimates

£8.2 million

A breakdown of the construction cost for separate areas are enclosed in [Appendix J](#).



CHICHESTER STATION

FIGURE 56: Option 11 - Concept Design

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Basis

Walking and Cycling

Each of the preferred options provide benefits to pedestrians in the form of a creation of a distinctive sustainable travel corridor. The spine transforms the space and connects the City Centre, Railway Station, Canal Basin and Chichester Gate with the proposed development areas. It is proposed that the corridor is to be constructed with high quality materials to change the environmental setting informing drivers that they are entering a space with reversed user priorities.

The proposals include widening of the footway space to provide sufficient space for the movement between the buildings and land uses. Crossing locations have been shortened to create direct access across the carriageway.

Option 11 proposes to relocate all general traffic to the eastern edge of the gyratory along Basin Road, leaving the western edge along Southgate and Stockbridge Road clear to provide a restricted use, sustainable corridor.

To do so it is proposed that Avenue de Chartres is extended through the gyratory to create a new signalised junction. Therefore, creating a single point of crossing between general vehicles and pedestrians, cyclists and buses.

Figure 57 shows the proposed cycle provisions incorporated into the design. This shows that cyclists would be able to either use the proposed advisory cycle lanes along Basin Road, or the bus / cycle lanes along Stockbridge Road.

As part of the design, it is proposed that toucan crossing facilities are provided at the two new signalised junctions. It is also proposed that advanced cycle stop lines are provided on the approaches to these junctions.

Consideration has been given to the removal of formal signalised crossings to be replaced by courtesy crossings in locations where the gyratory has been narrowed to a single lane (shared space).

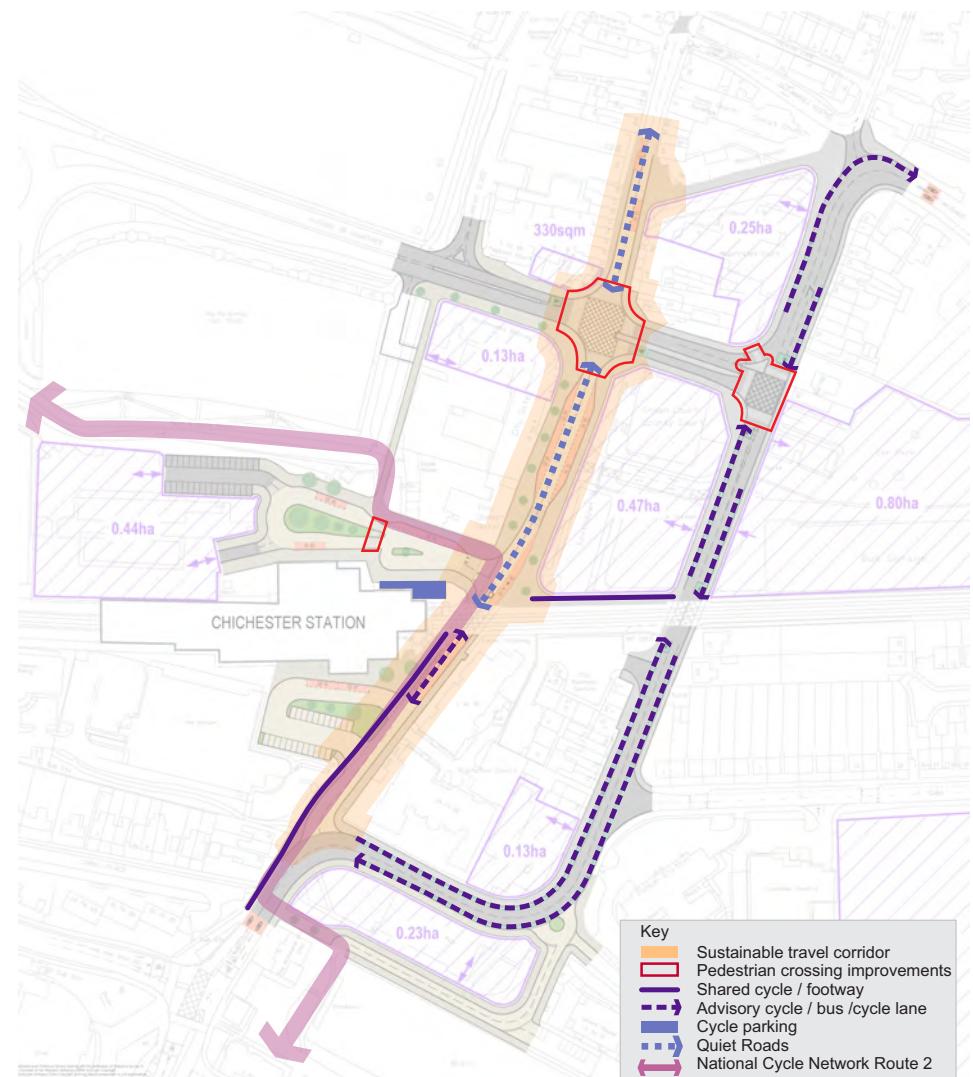


FIGURE 57: OPTION 11 - WALKING AND CYCLING

Access and Servicing

As part of Option 11, access to the existing properties are retained. However, for general vehicles travelling through the masterplan, they will be restricted from travelling across Stockbridge Road level crossing. Access across the masterplan area would be via Basin Road level crossing.

It is proposed that Stockbridge Road level crossing could only be accessible to pedestrians, cyclists and buses.

Figure 58 shows the access arrangement to some key locations and development areas.

During early consultation with Stagecoach the use of the station car parks will not be required as the on road facilities are sufficient for all bus user requirements. However, if network rail were to redevelop any part of the car parks these options may need to be considered to support major events (for example Goodwood).

Subject to demand and requirements for servicing a consideration is need for a right turn facility at this location for vehicles leaving Deanery Close.

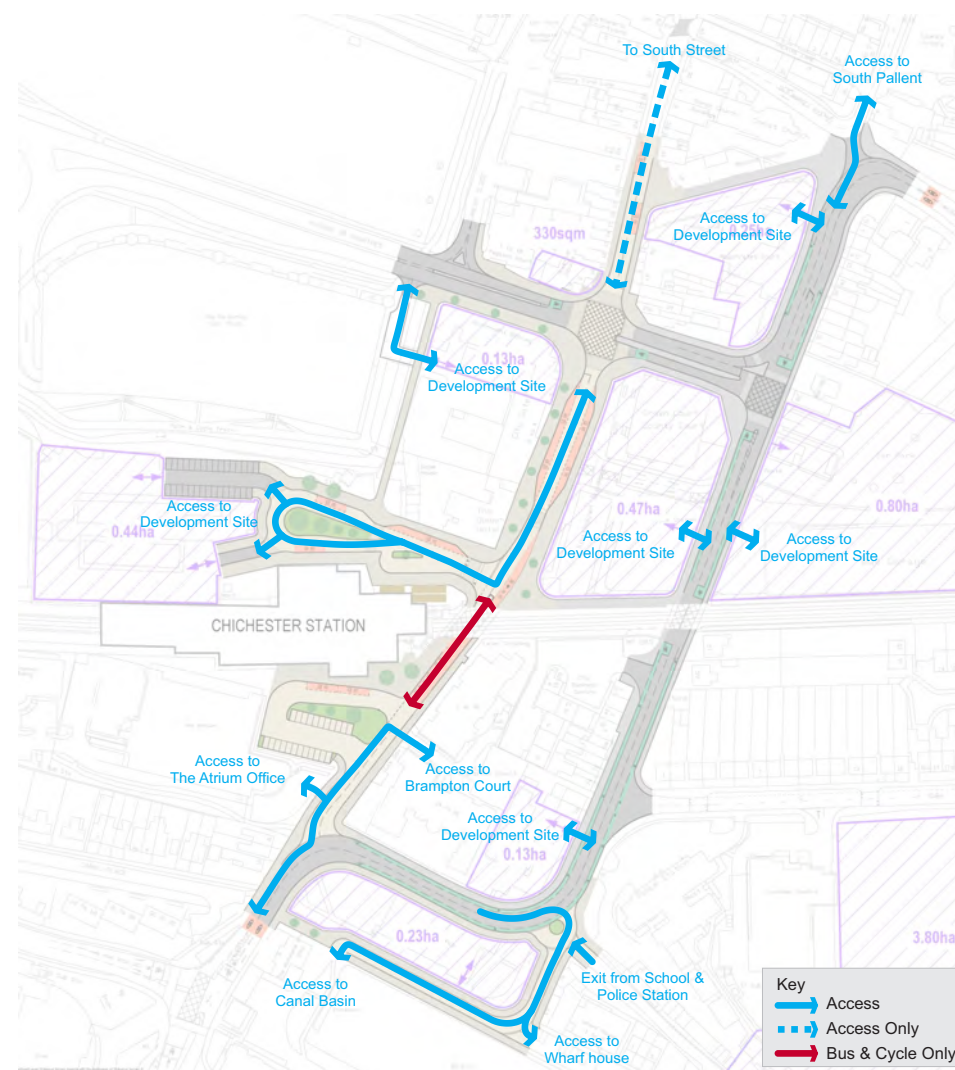


FIGURE 58: OPTION 11 - ACCESS AND SERVICING

12. Project Delivery Risks

Potential Risks to Project Delivery

There are some potential risks to Project Delivery that need to be highlighted at this stage. These risks could be:

- A. Funding for project;
- B. Acceptance from public; and
- C. Other – utilities / archaeology.

Project Funding

A potential risk to the project could be the lack of available funding to implement any of the proposed options. There are a number of Government funding streams that could be approached in order to generate funding for this project. However, if no funding could be obtained then the project may not be feasible to begin.

Public Acceptance

A potential project risk could be the lack of public support for the project. Significant public resistance or lack of support could lead to CDC or WSCC putting the project on hold.

Other Risks

There are a number of potential risks that could derail the project. This could include the cost of diverting or removing utilities within the masterplan area. Dependant on the number and type of utilities, the cost of implementing an option could potentially outweigh the development opportunities.

Other potential risks to the project could be the discovery of significant archaeological remains within the masterplan area. This could delay the project programme significantly, depending on the type and size of any discoveries.



CROWN COURT

13. Conclusion and Summary

A transport appraisal has been carried out for the Southern Gateway Masterplan area focusing on the key objectives to reduce through traffic and vehicle dominance within the masterplan area and create a gateway to the city along with viable development plots.

The main outcome from the traffic survey data was that the highest demand was east-west across the gyratory and not north/south across the railway lines.

Following extensive consultation with numerous stakeholders, PBA recommend two preferred options which are:

Option 10 – Introduction of a bus gate across Stockbridge Road and the modification of Southgate gyratory to reduce the number of lanes and their width.

Option 11 – Introduction of a bus gate across Stockbridge Road and the removal of Southgate gyratory; or

Grade 2 Listed and Locally Listed buildings play a major influence on the ability to alter the gyratory east-west. Option 11 proposes to extend Avenue de Chartres east towards Basin Road by demolishing 3 Grade 2 Listed buildings. This is seen as the most viable option following a SWOT analysis of alternative options.

Both preferred schemes offer almost identical overall development areas with no major gain for any single scheme. However, future viability analysis may show that one scheme has a better development environment. From a transport perspective, both options have no significant difference in impact on the Highway Network.

A modelling review shows an increased reassignment of traffic to the A27 and Northern Ring Road as each option is implemented with no significant alteration to the Highway Network flows.

Consultation with Network Rail has revealed that they would be happy to accept a bus gate across Stockbridge Road but not a pedestrian only crossing due to significant evidence that these types of crossings can lead to a number of near misses and misuse. Therefore, a pedestrian and cyclist bridge would be required if further closure of Stockbridge Road level crossing was implemented. Funding for this bridge could be sought at a later stage in the Southern Gateway Masterplan area development.

The Highway cost to implement the two preferred options would be:

Option	Construction Cost Estimates
Option 10	£5.3 million
Option 11	£8.2 million

*excludes cost of bridge.

The next step would be to carry out viability work for the updated masterplan and start to seek funding for the preferred options (without bridge).

