

# A61 South of Chesterfield

Strategic Review

FINAL

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## Quality information

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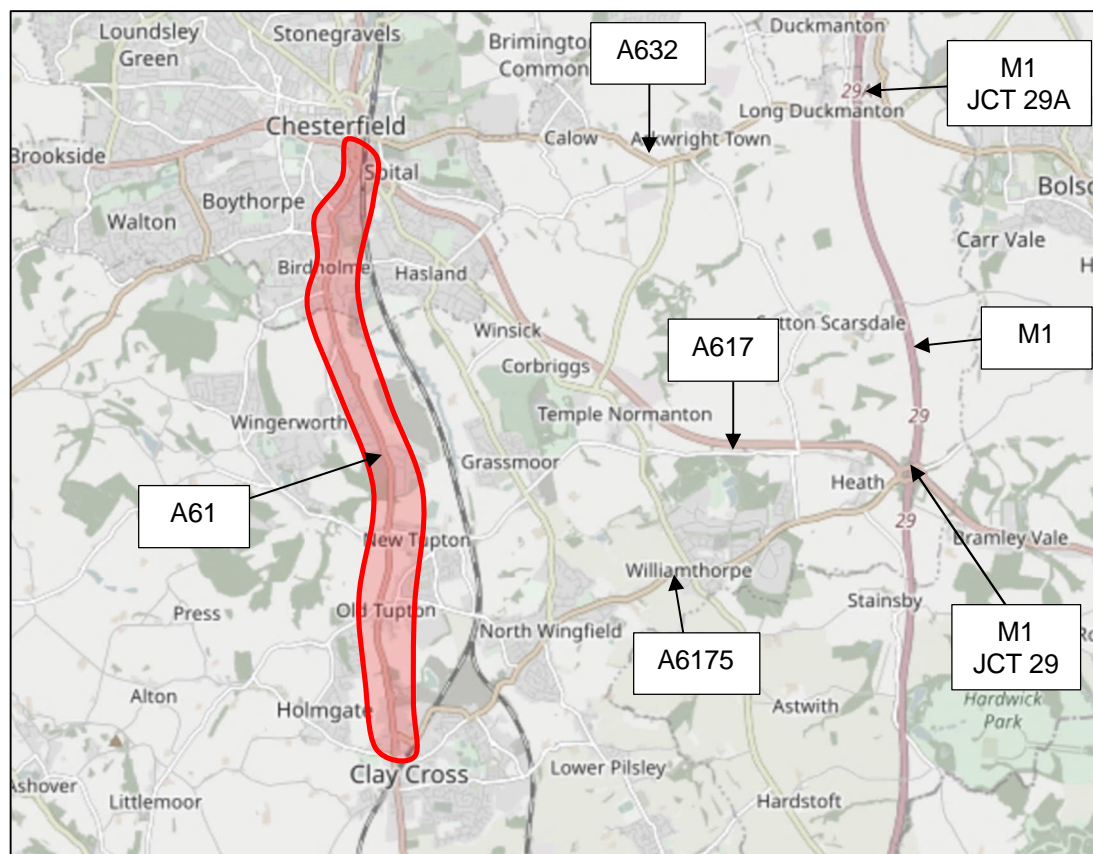
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# 1. Introduction

## 1.1 Overview

- 1.1.1 AECOM has been commissioned by Derbyshire County Council (DCC) to provide a **Strategic Review** of options available with respect to improvements along the A61 (South of Chesterfield). Figure 1.1 identifies the area considered by this work.

**Figure 1.1:** A61 (South of Chesterfield)



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- 1.1.2 The corridor extends from the Hornsbridge roundabout in the north, to the junction with the A6175 in Clay Cross the south, i.e. the extent of the A61 between the routes formed by the A617 and A6175 to and from M1 Junction 29.
- 1.1.3 The work considers mobility within this corridor by all modes, and is concerned primarily with a review of existing work rather than new analysis. It is intended to discuss the contents of this review with stakeholders to identify if there are additional potential schemes that would warrant inclusion and development, prior to finalisation.

## 1.2 Existing Work

1.2.1 The A61 (South of Chesterfield) has been the subject of several discrete pieces of work. These include:

- **Avenue Transport Assessment** (URS, 2013): Document submitted in support of the redevelopment of the former Avenue Coking Works. This examined junction capacity between Hornsbridge Roundabout and Tupton.
- **A61 – A617 Link Road Assessment** (URS, 2013): Document prepared on behalf of Derbyshire County Council to examine the potential benefits of providing a new route between the A61 and A617 (south of Chesterfield).
- **A61 Growth Corridor Strategy** (Mouchel, 2016): Technical Notes which both identified and sifted a long list into a package of options for further development along the A61 corridor (north and south of Chesterfield).
- **A61 Growth Corridor, Intelligent Transport Systems (ITS) Strategy** (AECOM, 2017 & 2019): Document provided a review of the transport technology in place along the A61 Corridor, and presented a way forward to modernise the network.
- **Egstow Park Transport Assessment** (Phil Jones Associates, 2017): Document submitted in support of the development of Egstow Park, including a new direct connection between the western (A61) access and eastern (A6175) access, which will be a single carriageway road with a design speed of 30 mph.
- **Chesterfield Walking and Cycle Network Wayfinding Strategy** (AECOM, 2019): Document which reviewed the existing cycle network signage and identified a potential Dutch-style scheme of nodes and hubs. Included indicative wayfinding designs and costs.
- **East Midlands Manufacturing Zone (North Derbyshire) Mobility Strategy** (AECOM, 2020): Document which examined mobility issues to seven manufacturing sites across north Derbyshire, three of which are located along the A61 (South of Chesterfield). These sites are: Avenue, Egstow Park and Coney Green.

## 2. Policy Context

### 2.1 National Planning Policy Framework: NPPF, 2019

2.1.1 The NPPF emphasises the promotion of sustainable transport. Paragraph 102 states that transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- a) the potential impacts of development on transport networks can be addressed;
- b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
- c) opportunities to promote walking, cycling and public transport use are identified and pursued;
- d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
- e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.

2.1.2 The above builds on the guidance contained in the *Manual for Streets* (Department for Transport, DfT, 2007) which emphasises a user hierarchy which places the needs of pedestrians and cyclists first, followed by public transport users.

### 2.2 Local Plans

2.2.1 The A61 (South of Chesterfield) routes across two administrative boundaries with regards to local land-use planning: Chesterfield Borough Council (CBC) and North East Derbyshire District Council (NEDDC). Both Local Plans are currently being updated, and therefore information has been taken from the submission drafts as these reflect the latest position with regards to the A61 corridor.

2.2.2 **North East Derbyshire District Council:** The NEDDC Local Plan (Submission Draft) states that;

*“The A61 Growth Corridor Strategy sets out the intention of the authorities to work in partnership to deliver the best outcome for the social and economic wellbeing of the area. Development proposals planned adjacent to the A61 will increase the demand for movement along the corridor and the adjacent roads. No ‘engineering’ solution would deal fully with the impacts, and nor would it be appropriate to approach the issue in this way. Instead, the Strategy recognises the need for a balanced approach, and identifies the A61 corridor as a priority location for a combination of sustainable transport measures and highway improvements.*

*Along the A61, there will be a particular focus on addressing the current capacity issues and unlocking development potential along the corridor between Chesterfield and Clay Cross. The strategy together with an investment plan for the A61 Growth Corridor has identified priority projects and interventions, and funding is in place to support growth along the corridor. This District Council will continue to work in partnership with the County Council and Chesterfield Borough Council to support and develop this work.*

*In addition to the proposals to provide the second principal access to help bring forward the Avenue Strategic Site at Wingerworth it is expected that through this work a number of packages of interventions will be taken forward with secured funding to help mitigate the overall impact of development in the area. Such interventions will be likely to include bus detection and upgrades to traffic signal control at junctions along the A61 south of Chesterfield town centre; the completion of walking and cycling routes between the Avenue site and Peak Resort; and the provision of real-time bus information and other roadside displays giving traffic and parking guidance to road users along the A61 corridor.*

*Whilst the A61/A617 Avenue link road, with potential to support the regeneration of the Avenue site, is identified as a possible solution to address highway capacity issues along the A61, the County Council is pursuing an alternative mitigation strategy through the A61 Growth Corridor strategy and investment plan to help accommodate the increase demand for travel for which funding is already in place. As such policy SS3 requires that development of the Avenue Strategic Site Allocation does not prejudice the construction of the A61/A617 Avenue link road should it be needed beyond the plan period.”*

2.2.3 In addition, the Local Plan Policy SS4 (Former Biwaters site) references the provision of a through road from the A61 to Furnace Hill / A6175.

2.2.4 **Chesterfield Borough Council:** The CBC Local Plan is currently being updated. The Submission Local Plan (awaiting approval) includes the following relevant planning policy:

**Policy LP23 (Influencing the Demand for Travel)**

*To reduce congestion, improve environmental quality and encourage more active and healthy lifestyles, the Council will seek to maximise walking, cycling and the use of public transport through the location and design of development and parking provision. Priority will be given to measures to encourage more sustainable travel choices.*

*To secure this aim, the council will expect development proposals to demonstrate the following (in order or priority):*

*a) site specific and area wide travel demand management (measures to reduce travel by private car and incentives to use walking, cycling and public transport for appropriate journeys, including intensive travel planning);*

*b) improvements to walking and cycling facilities and public transport services that are provided early in the build out period of new developments and that are sufficient to encourage sustainable modes of transport;*

*c) optimisation of the existing highway network to prioritise walking, cycling and public transport that are provided early in the build out period of new developments, such as measures to prioritise the needs of pedestrians above the car and improved or new cycle and bus lanes; and*

*d) highway capacity enhancements to deal with residual car demand where the initiatives required under points (a) to (c) above are insufficient to avoid significant additional car journeys.”*

*e) Provision of opportunities for charging electric vehicles where appropriate. The impacts of any remaining traffic growth expected, shall be mitigated through physical improvements to the highways network where necessary, to ensure that development has an acceptable impact on the functioning and safety of the highway network.*

*Priority areas for combinations of sustainable transport measures and highways improvements will be:*

- *The A61 Corridor*
- *The A619 Chatsworth Road*



- *The A619 corridor through Brimington and Staveley*
- *Chesterfield Town Centre*
- *Access to Chesterfield Railway Station*

2.2.5 The CBC Local Plan also includes an Infrastructure Delivery Plan (IDP) which includes two specific delivery packages relevant to the A61 (South of Chesterfield):

*A61 Growth Corridor improvements, including Whittington Moor Roundabout improvements, Sheepbridge junction improvements, A61/St Augustines Road junction improvements, provision of new and upgraded pedestrian cycle routes, and technological solutions, including bus real time information, urban traffic management system, and variable message signs*

*Improvement of walking and cycling routes, identified on Key Cycle Network/Local Cycle Network, including delivery of Standard Gauge for Sustainable Travel (A61 Growth Corridor improvements see above) • Whittington Moor to Sheepbridge cycle route. • A61 Hornsbridge roundabout to Storrorth Lane cycle route upgrade • Wayfinding strategy.*

## 2.3 Local Transport Plan

2.3.1 The Derbyshire Local Transport Plan (LTP3) sets out a transport vision, goals, challenges and a strategy covering the period from 2011 to 2026. It is understood that work is currently ongoing to re-fresh the LTP3; however, at the time of writing the 2011 document is the latest version.

2.3.2 The Derbyshire LTP3's five transport goals are:

- Supporting a resilient local economy;
- Tackling climate change;
- Contributing to better safety, security and health;
- Promoting equality of opportunity; and
- Improving quality of life and promoting a healthy natural environment.

2.3.3 The plan puts emphasis on supporting a resilient local economy, contributing to better safety, security and health, and improving quality of life and promoting a healthy natural environment. It aims to achieve longer term benefits for climate change and measures to help people under the equality of opportunity goal.

2.3.4 With respect to the A61 (South of Chesterfield) corridor, the LTP identifies three specific schemes:

- A61 Chesterfield Inner Relief Road Junctions
- A61 / A617 'Avenue' Link Road; and
- Clay Cross Station.

## 2.4 Other Relevant Government Policy

2.4.1 Within *Decarbonising Transport: Setting the Challenge* (DfT, 2020), the Government's previous aim to double cycling by 2025 (from a 2013 base) is restated, and the document also confirms the intention to end the sale of petrol / diesel vehicles by 2035.

## 3. A61 Route Characteristics

### 3.1 Overview

- 3.1.1 This section comprises a description of the A61 (South of Chesterfield). It does not consider existing or ongoing work to improve the network, which is included in Section 4.

### 3.2 Highway Configuration and Infrastructure

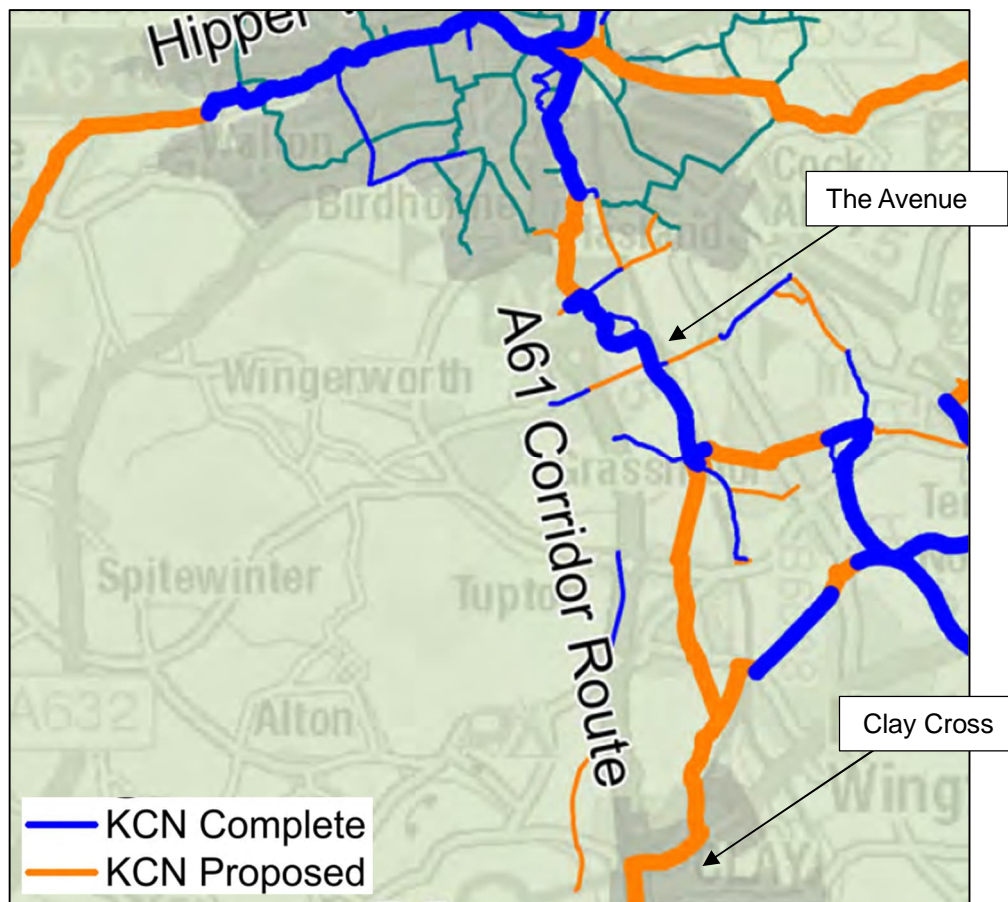
- 3.2.1 **Hornsbridge to Storforth Lane:** This section of route is governed by a 30mph speed limit. At the northern end of the study area, the Hornsbridge roundabout was signalised to facilitate redevelopment of the former Donkins site (which is now occupied by B&Q and a Ford dealership). Pedestrian facilities are available across the A61 (south) but not across other arms due to pedestrian prohibitions. The junction is a location of traffic delay for entry from all arms, and can also interfere with the nearby Lordsmill roundabout. It is noted that there are a high number of collisions at this junction.
- 3.2.2 Routeing south, the first signalised junction is the Alma Leisure Park. This provides pedestrian crossing facilities. At times of high demand for right-turns into the site, the operation of the junction can block ahead moving traffic routeing north to the Hornsbridge roundabout. Queues on the A61 itself can also impede traffic from leaving the Alma Leisure Park.
- 3.2.3 The next signalised junction is A61 / St. Augustine's Road. Between the Alma Leisure Park and St. Augustine's Road are a number of priority-controlled T-junctions serving residential development, many of which are protected by yellow box markings (compliant with the Traffic Signs Regulations and General Directions, TSRGD, Diagram 1045). Of these side roads, Baden Powell Road is an important bus route. Many of the side-roads do not benefit from right-turn harbourages (meaning that traffic waiting to turn right into the minor arms can block ahead moving traffic). It is also noted that some side roads have been blocked, likely to reduce turning movements to / from the A61 and therefore improve the flow of traffic.
- 3.2.4 The A61 / St. Augustine's Road junction has recently been modernised and been provided with pedestrian crossing facilities over both the A61 and St. Augustine's Road itself. Previously, this had been an intimidating location for pedestrians crossing and required the judgement of gaps in traffic with poor sightlines to oncoming vehicles (particularly turning left into St. Augustine's Road from the A61 south).
- 3.2.5 The next signalised junction is the A61 / Storforth Lane junction. Between St. Augustine's Road and Storforth Lane are further priority-controlled T-junctions, again protected by yellow box markings. Storforth Lane has a pedestrian refuge allowing pedestrians to cross more efficiently (from a highway capacity perspective) with traffic under signalised control.
- 3.2.6 To the south of Storforth Lane, Langer Lane forms a priority junction and is protected by yellow box markings, with safety cameras also present for both northbound and southbound traffic. A pedestrian refuge to the south of the junction allows uncontrolled crossings of the A61.
- 3.2.7 In addition to the crossing facilities at the above-named junctions, signal controlled pedestrian crossings are available north of Baden Powell Road, north of St. Augustine's Road, south of Bacon Street, and south of Redvers Buller Road. These crossings all utilise on-crossing and nearside detection (rather than a timer) which is the most efficient control system available.
- 3.2.8 Bus stops along this section of route are all on-carriageway which is the preference of public transport operators since it reduces delays to vehicles re-entering the traffic stream. This will, however, cause transient queuing to vehicles waiting behind.

- 3.2.9 **Langer Lane to Tupton:** This section of route is governed by a 50mph speed limit. Poor horizontal and vertical visibility on the length to The Avenue is mitigated through the provision of solid central white lines which prohibit overtaking.
- 3.2.10 At the Avenue, a new roundabout has been constructed to provide access into a new housing estate. From this access to the junction with Mill Lane, the A61 is wider allowing for right-turn harbourages into minor arms, and bus laybys. Pedestrian refuges are also provided to allow uncontrolled crossing of the A61.
- 3.2.11 From Mill Lane to Tupton, the route is again a rural two-way carriageway, with road markings seeking to reduce speed.
- 3.2.12 **Tupton to Clay Cross:** The two junctions at Tupton are standard roundabout junctions. Between them, the A61 widens with the central area hatched out and uncontrolled pedestrian refuges provided. The route continues in similar character (but without the pedestrian refuges) towards Clay Cross.
- 3.2.13 On the approach to Clay Cross, sub-standard vertical and horizontal alignment means that overtaking is prohibited on different sections travelling north and south. A new roundabout has been constructed on the A61, which is part of a proposed new link to the A6175. A second roundabout provides access to Bridge Street and shopping facilities. From here, the A61 narrows and provides multiple side road accesses with some junctions protected by yellow box markings. Two Puffin-style pedestrian crossings have been provided across the A61. These crossings all utilise on-crossing and nearside detection (rather than a timer) which is the most efficient control system available.

### 3.3 Cycling Infrastructure

- 3.3.1 The Derbyshire Key Cycle Network (KCN) for the A61 (South of Chesterfield) is shown in Figure 3.1. This shows that there are currently 'missing links' between Chesterfield and The Avenue, and between The Avenue and Clay Cross.
- 3.3.2 **From Hornsbridge to Storforth Lane:** A shared pedestrian-cycle lane exists along the western side of A61, with wide pavements which offer a safe alternative to cycling on the road. Cyclist-priority crossings are identified with green-coloured asphalt and a raised speed table over the Bryon Street, Redvers Buller Road, Lord Roberts Road and Trevorroad Crescent road junctions.
- 3.3.3 As noted previously, a toucan crossing exists over the A61 at Rother Vale Road. The street is filtered to only allow pedestrians and cyclists to make this connection, with metal artwork creating an effective barrier to vehicle movement. From Rothervale Road, the cycle infrastructure moves off-road with no cycle lanes along the A61 up to The Avenue site.
- 3.3.4 **From Storforth Lane to Clay Cross:** Past the entrance to The Avenue (only) the footway has been widened to a shared footway / cycleway on the eastern side of the carriageway. This section is approximately 200m in length.
- 3.3.5 To the south there is a segregated footway / cycleway on the western side of the carriageway between Nethermoor Road and Ashover Road. This section is rutted by tree roots, dark at night and is approximately 750m in length.
- 3.3.6 Past the entrance to Farnsworth Road / Egstow Park (only) the footway has been widened to a shared footway / cycleway on the eastern side of the carriageway. This section is approximately 260m in length.

**Figure 3.1:** Extract of the Derbyshire KCN



### 3.4 Traffic Flows

3.4.1 The DfT database has been used to identify the current usage of the A61 (South of Chesterfield). Data from 2018 is the latest available on the DfT database. This information is provided in Table 3.1.

**Table 3.1:** Annual Average Daily Traffic (AADT, Two-way, 2018)

Location	AADT (2018)
North of St. Augustine's Road	22,000
South of St Augustine's Road	18,500
The Avenue & Wingerworth	14,500
North of Clay Cross	16,300

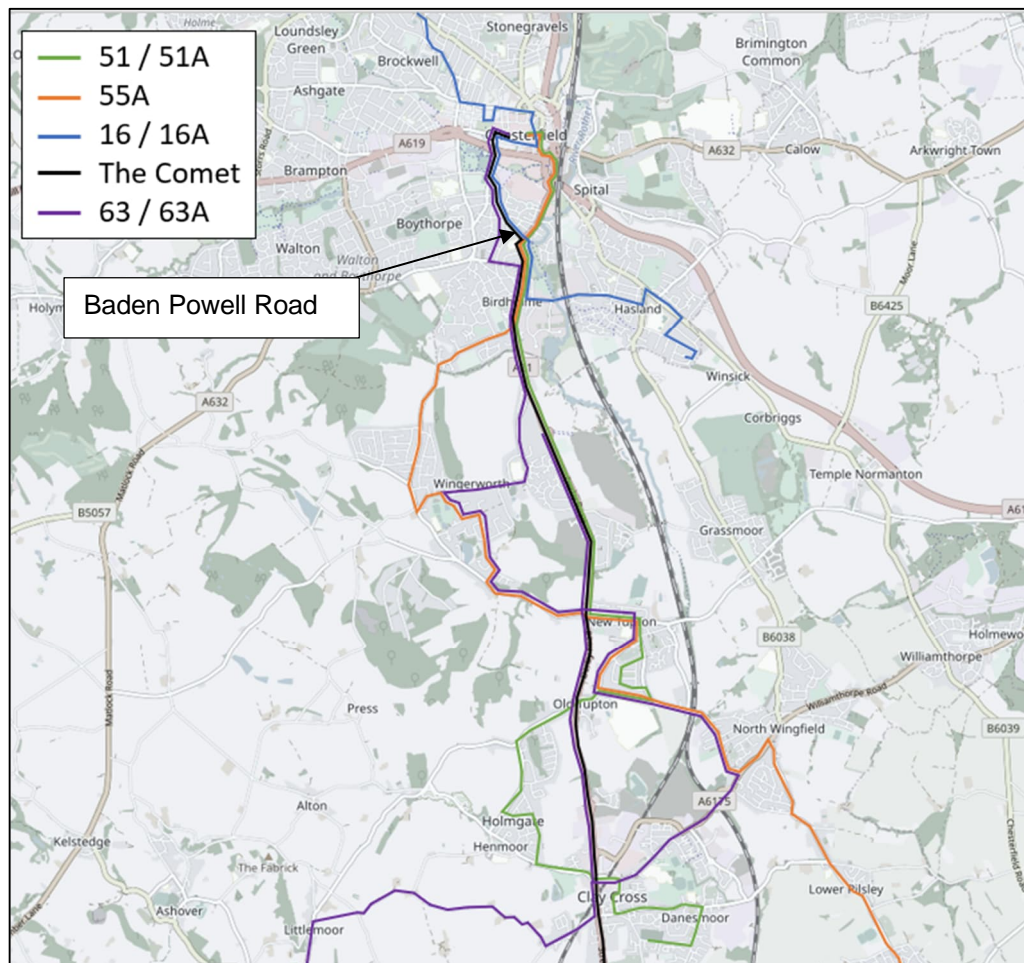
3.4.2 For comparison to the above, a rural two-way A-class road of 7.3m width is designed to accommodate up to 13,000 AADT. (If the width is 10m, then this increases to 21,000 AADT). As noted previously, the narrowest sections of route are north of St. Augustine's Road and within Clay Cross. As such, the narrowest sections of the A61 coincide with the largest traffic demands along the route.

3.4.3 The *North Derbyshire Highway Assignment Model* (NDHAM) has been examined to determine the routes that traffic on the A61 immediately south of Storforth Lane is currently using both travelling northbound and southbound. This shows a large proportion of trips continuing to route on the A61 north of Chesterfield. The full Select Link Analysis is contained in Appendix A.

### 3.5 Public Transport

3.5.1 Figure 3.2 shows the bus routes using the A61 (South of Chesterfield).

**Figure 3.2:** Bus Routes using A61 (South of Chesterfield)



3.5.2 The above figure shows longer distance routes using the A61 for its entire length, and local routes crossing the A61 at Tupton, and then re-converging on the A61 over its most congested section north of Storforth Lane. Figure 3.2 also highlights the importance of Baden Powell Road as a route for buses into the town centre.



## 4. Options Review

### 4.1 Overview

4.1.1 The work by Mouchel in 2016 identified a long list of options, and sifted these options against corridor objectives and deliverability criteria to identify a recommended package. Following this, funding bids have been submitted by DCC to D2N2 in order to progress two discrete elements of work: namely *21st Century Transport Platform* and *Standard Gauge for Sustainable Transport*.

- *21st Century Transport Platform*: included options regarding bus priority, real time passenger information (RTPI), signage improvements to car parks, traffic management, variable message signs (VMS) and traffic signal upgrades.
- *Standard Gauge for Sustainable Transport*: Chesterfield Town Centre to Storforth Lane cycle route upgrade

4.1.2 More recently, the *EMMZ Mobility Strategy (North Derbyshire)* recommended interventions specifically aimed at manufacturing sites around Chesterfield, three of which fall within the A61 (South of Chesterfield) corridor. These are at The Avenue, Coney Green and Egstow Park. A *Chesterfield Walking and Cycle Network Wayfinding Strategy* was also prepared in 2019 based around the Dutch system of cycle signage.

4.1.3 The table below presents the various options considered to date (i.e. the Mouchel work, plus the EMMZ work), alongside their latest status. A Red-Amber-Green (RAG) rating has been applied to each intervention. Red has been taken as indicating no progress; Amber indicates scheme design is being progressed; and Green indicates physical works have been progressed.

4.1.4 Following this, a gap analysis has been undertaken to determine if potential options have been missed.

### 4.2 Walking and Cycling

Option	Description	Status
Cycle Parking / Hubs	New cycle parking provision in and around Chesterfield town centre and at key development sites to promote cycling. This is important to link routes and to enable cycling by providing places for cyclists to safely leave their cycles. An assessment of land use and demand will help to identify the most appropriate option(s).	Chesterfield Walking and Cycle Network Wayfinding Strategy prepared in 2019, including specification for hubs and indicative costs.
Town Centre Wayfinding Scheme	Comprehensive wayfinding scheme for the town centre to support local improvement and tourism.	Chesterfield Walking and Cycle Network Wayfinding Strategy prepared in 2019.
New Strategic Cycle Corridor	New strategic cycle corridor providing a continuous link between Clay Cross and Chesterfield Town Centre and northwards.  Phase 1 would include the section between Hornsbridge Roundabout and Storforth Lane (approx. 1.2km in length).	Funding secured from D2N2 for the Phase 1 work.  Phase 2 identified in the EMMZ Mobility Strategy to help support sites in Clay Cross.
Area Wide Crossing Review	Area wide crossing review to improve controlled crossings and improve drop-kerbs, access etc.	Pedestrian crossings on the A61 appear to be of the most modern 'Puffin' standard.

		A new crossing is proposed between The Avenue and Wingerworth, secured via planning condition.
		Wider review to be undertaken as part of other projects e.g. UTC.
Improved pedestrian crossing points on A61 south of Hornsbridge to The Avenue site	Improvements to existing pedestrian crossing points on the A61 (both at-grade and overbridges) to reduce severance and improve any known safety issues. Review of the number of crossing points and desire lines could result in removing some crossing points which could improve the operation of the A61.	Pedestrian crossings provided at A61 / St. Augustine's Road junction.  Wider review to be undertaken as part of other projects e.g. UTC.
E-Bike / Traditional Cycle Pool Bikes	EMMZ Mobility Strategy identified a potential package of E-bikes and traditional bikes to assist with mobility to / from the proposed EMMZ manufacturing sites.	Included in EMMZ Mobility Strategy for EMMZ sites (and associated Strategic Outline Business Case).
Cycle Audit	Review of cycle network from a cyclist's perspective.	Undertaken on A61 as part of EMMZ Mobility Strategy (to link from KCN to individual EMMZ sites) and as part of Derbyshire Trails Audit covering a wide area of north Derbyshire.

### 4.3 Public Transport

Option	Description	Status
Bus Stop Review / Audit	Review location of bus stops to ensure linkages to main catchment areas (existing and proposed developments).	Ad hoc reviews in response to passenger requests and local member liaison.
Bus Stop Improvements	Improvements to bus stops along the A61 to provide shelter, more information and a consistent approach along the corridor.	Real Time Passenger Transport Information (RTPI) has been installed along the A61.  DCC to prepare shelter standards with a view to informing ad hoc improvements via maintenance programme
Bus Priority	Improvements to existing MOVA controlled signal timings at key junctions on A61 to the south of Chesterfield (particularly St Augustine's Road and Storforth Lane).	Bus SCOOT installed.
Real Time Passenger Information (RTPI)	Provision of RTPI system providing live information about the arrival of services at bus stops across the county. This would require revenue funding to maintain and operate equipment once installed.	RTPI installed along A61 from Chesterfield to Alfreton.  EMMZ Mobility Strategy recommended extension into the three EMMZ sites (Avenue, Egstow Park, Coney Green)

Bus Priority	Localised widening and bus priority measures at key junctions on A61 to the south of Chesterfield (particularly St Augustine's Road and Storforth Lane).	No specific opportunities identified to date
Clay Cross Railway Station	Provision of a new railway station at Clay Cross. This is an aspiration in the Local Plan.  Clay Cross has a similar population size to Alfreton and Ilkeston (both of which have railway stations).	No progress, and not included in EMMZ Mobility Strategy preferred package by EMMZ stakeholders.  As part of the HS2 project, compatible trains run via Chesterfield, passing Clay Cross. As such, any proposed service changes between Nottingham and Chesterfield would be impacted by the HS2 project.

## 4.4 Highway Capacity

Option	Description	Status
A61 Hornsbridge Roundabout	Improved signing and lining of A61 southbound approach and circulatory carriageway.	Hornsbridge to be include in UTC system (see below).
A61 Alma Leisure Park	Traffic signal technology improvements and equipment refresh.	Scheme Implemented
A61 St Augustine's Road	Traffic signal technology improvements and equipment refresh.	Scheme Implemented
Reduced speed limit, Clay Cross to Chesterfield	Review speed limit with aim of providing consistency along the route in fitting with the urban / rural setting.	Seeking opportunities as part of maintenance programme and private developer contributions.
Greenery, Clay Cross to Chesterfield	Provision of more greenery along the whole section of the A61 between Clay Cross and Chesterfield to provide consistent rural theme in keeping with surrounding area.	Seeking opportunities as part of maintenance programme and private developer contributions.
Street Clutter	Review and remove street clutter where possible to enhance streetscape and reduce maintenance.	Seeking opportunities as part of maintenance programme and private developer contributions.
Urban Traffic Management Control (UTMC) system Common Database	Implementation of a system that acts as a data repository and allows processing of data to influence operational strategies (e.g. Signal timings / strategies, VMS, Parking Guidance).	Following successful funding bid to D2N2, at tender stage for both control room and UTC system.
A61 / Storforth Lane	Improved signal timings / widen approaches to improve capacity and provide better pedestrian / cycle facilities.	Scheme Implemented
Gateway Area	New gateway features on A61 between Clay Cross and Tupton (north of Biwater site) to highlight built up area (speed limits, traffic management / calming measures, pedestrian crossing points) to help create a common character along the corridor.	Seeking opportunities as part of maintenance programme and private developer contributions.



Gateway Area	New gateway features on A61 between north and south extents of The Avenue site in Wingerworth to highlight built up area (speed limits, traffic management / calming measures pedestrian crossing points) to help create a common character along the corridor.	Seeking opportunities as part of maintenance programme and private developer contributions.
Gateway Area	New gateway improvements at Hornsbridge roundabout and link up to Lordsmill roundabout which is the southern gateway into Chesterfield town centre to help create a common character along the corridor.	Seeking opportunities as part of maintenance programme and private developer contributions.
Traffic Management	Traffic management measures to reduce rat running on adjacent roads to the A61 (particularly Wingerworth area).	Seeking opportunities as part of maintenance programme and private developer contributions.
Urban Realm Improvements – Clay Cross	Deliver package of urban realm improvements to Clay Cross town centre to help support the local economy. To include review of highway priority arrangement / traffic management at Bridge Street (it is understood a one-way system was introduced around 2010).	Potential opportunities through Clay Cross Town Deal.
A61 / A617 Link Road	A new route between the radial routes of the A61 and A617. Historically, this has been viewed as an option to take traffic off the A61 as it enters Chesterfield.	<p>The Avenue northern roundabout was designed to include for potential enlargement if a scheme proceeded, and a land corridor is preserved as per Local Plan policy.</p> <p>Work in 2013 identified that, whilst the A61-A617 Link Road would provide particular traffic relief from existing east-west movements along Storforth Lane and Queen Victoria Road, the A61-A617 Link Road would cause minimal traffic flow changes upon the A61 between Langer Lane and the Hornsbridge Junction in either the AM or PM peak hours. As such, although the scheme had a positive Benefit:Cost Ratio, this was not aligned with scheme objectives.</p> <p>A new transport model of north Derbyshire is now available for updated scheme testing, based on anonymised mobile phone data.</p>

## 4.5 Smart Mobility

Option	Description	Status
Data Acquisition	Use of existing data services to obtain real-time and historic traffic data to manage the network and inform decision making. This would require revenue funding.	INRIX data has been procured to inform other initiatives including PTMS.
Radar and Bluetooth traffic detectors	Installation of detectors to collect real time data (journey times, queues, speed and volume). Similar to information obtained through 'Data Acquisition' option but will require new equipment but with lower coverage area. This would require revenue and capital funding.	To be considered as part of DCC's monitoring programme.
Pre-Emptive Traffic Management System (PTMS)	Derbyshire are developing a previously proven demonstrator application (known as Pre-Emptive Traffic Management System, PTMS) into a fully operational traffic management system that will provide real-time intelligence on Derbyshire's road network using floating vehicle data and generate information enabling drivers to make journey decisions to prevent further congestion.	Pilot project completed. DHART funding secured to develop operational system.
Travel App	EMMZ Mobility Strategy identified a potential travel app to assist with mobility to / from the proposed EMMZ manufacturing sites (and the wider area).	Included in EMMZ Mobility Strategy for EMMZ sites (and associated Strategic Outline Business Case).
Electric Vehicle Charging	EMMZ Mobility Strategy identified need for public electric vehicle charging points, given the Government objective to remove petrol / diesel cars from sale by 2035 and the lack of off-street charging for some homes in Derbyshire.	Included in EMMZ Mobility Strategy for EMMZ sites (and associated Strategic Outline Business Case).
Travel Planning	EMMZ Mobility Strategy identified a travel planning package to assist with mobility to / from the proposed EMMZ manufacturing sites (and the wider area).	Included in EMMZ Mobility Strategy for EMMZ sites (and associated Strategic Outline Business Case).

## 4.6 Gaps and Wider Scheme

- 4.6.1 The route review identified the use of the Baden Powell Road by bus services. A junction improvement here (including possible signalisation) may assist public transport vehicles turning right from the junction and therefore reduce southbound delays. This may, however, increase delays for traffic on the mainline routeing northbound and southbound.
- 4.6.2 It is assumed that a programme of land acquisition to enable widening of the A61 has been discounted on cost / social impact grounds.

## 4.7 Public & Stakeholder Input

- 4.7.1 No formal consultation has occurred to inform option development. Notwithstanding this, a list of schemes to be considered has been received from the Member of Parliament for North East Derbyshire, and these are listed below.
- 4.7.2 It is noted that some of these options may require policy consideration in terms of user hierarchy and prioritisation of A61 mainline traffic against trips to and from Chesterfield.

Option	Considerations	Potential Way Forward
Removal of pedestrian crossings in the Storforth Lane → Horns Bridge section	<p>Removal of pedestrian crossings would likely improve journey times for vehicles on the A61, and create delays / safety issues for pedestrian and cyclists. There would likely be national policy obstacles, which seeks to encourage walking / cycling.</p> <p>An alternative strategy would be to reduce delays by upgrading crossings to latest technology, incorporating into UTC, etc.</p>	Pursue Area Wide Crossing Review as per Section 4.2.
Removal or reprogramming of traffic lights from Storforth Lane to Horns Bridge	<p>Traffic lights are present at junctions and pedestrian crossings (as per the comments above). Removing lights from junctions would likely lead to improved travel times on the A61 mainline, but likely increase delays to / from side roads if reverted to priority T-junctions.</p> <p>Current strategy to incorporate junctions into UTC to co-ordinate signal timings.</p>	<p>Produce plan showing land required (if any) to deliver roundabouts at Storforth Lane, St. Augustine's Road and the Alma Leisure Park. Consider also land required for roundabout at A61 / Baden Powell Road.</p> <p>Undertake junction capacity tests to consider difference in performance between signals and roundabouts.</p>
Removal of the crossing pinch point which prevents northbound traffic feeding to the right into Storforth Lane	It is assumed this means removal of an uncontrolled pedestrian refuge to the south of Storforth Lane. The difference in performance at A61 / Storforth Lane junction is likely to be marginal, but could be tested.	Consider as part of area wide crossing review, and undertake LINSIG analysis of differing flare length.
Building of an additional lane on either side where the land permits	Overall changes to journey times likely to be marginal without a route-long scheme	Prepare plan showing opportunities for localised widening and undertake capacity analysis to determine likely benefits.
Creation of a roundabout at Storforth Lane	See above.	See above.
Clay Cross Bypass	It is understood that a bypass of Clay Cross was include in a now defunct Derbyshire Structure Plan. Such a scheme would have the potential to remove bottlenecks through Clay Cross and	Alignment likely to the west of the town to minimise length.

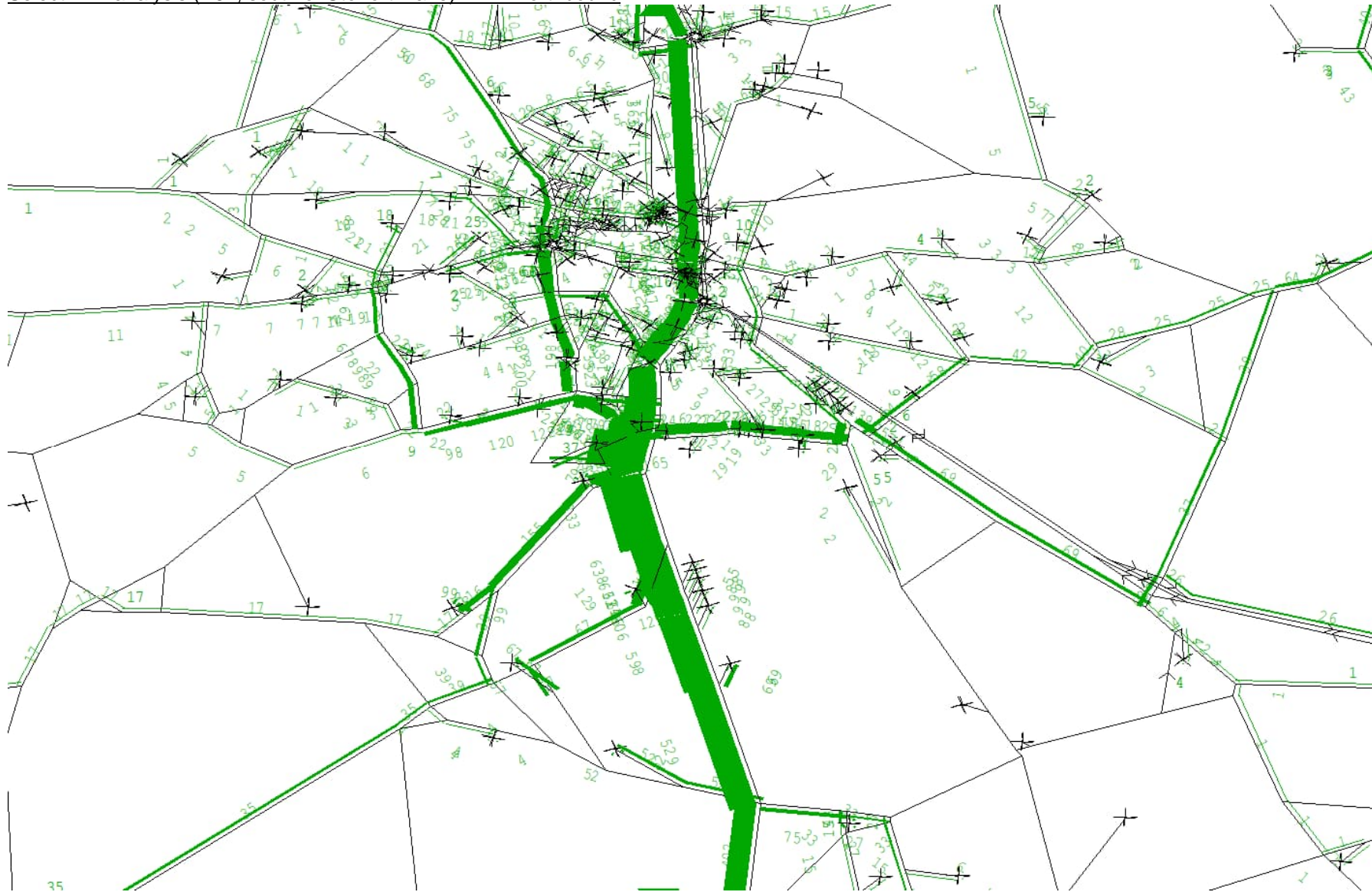
	provide town centre improvements for local access, walking & cycling and public transport.	Consider historic alignment and any new building on its length. Identify alignment. Model impacts to identify potential benefits and initial Benefit:Cost Ratio.
Park and Ride Scheme	<p>It is noted that the majority of Park and Ride sites in the UK require ongoing subsidy.</p> <p>It is far from certain therefore if a Park and Ride in Chesterfield would be viable. This is due to the low existing town centre parking charges, uncertainties with regards to demand, and likely difficulties in securing a time-benefit for users of the Park and Ride over those choosing to park in the town centre.</p> <p>A cheaper method of delivering Park and Ride style services would be to use a site already served by relatively frequent standard bus services, and promote such sites as 'informal' Park and Rides.</p>	<p>Basic intercept rate analysis undertaken in 2018 showed a high intercept would be required on the A61 South.</p> <p>A Park and Ride Feasibility Study could be undertaken to identify likely demand, number of buses required, land availability etc.</p>
Connector road to the A617 across the Avenue	See Section 4.4.	See Section 4.4.
Connector road to the A617 nearer to Temple Normanton	Alternative to Avenue link to the A617	A feasibility study could be used to identify alternative corridors to the Avenue alignment.
Train station in Clay Cross	See Section 4.3	See Section 4.3
Removal of some parts of the pavements from Storforth Lane to Horns Bridge to allow more lanes to be put in place	See above.	See above.
Re-opening of a through road in Grangewood to allow some traffic to divert	It is understood that this scheme was promoted to reduce 'rat running' through unsuitable streets.	Review scheme to determine if meeting objectives.
Closure of the entrances / exit onto St. Augustine's (ie replication of the road layout when it was blocked off temporarily last year)	Similar to the comments above, closure of junctions reduces delays to A61 mainline traffic but increases delays for traffic joining / departing the A61.	Undertake modelling using NDHAM to determine
Creation of a bypass to reach Walton	Select Link Analysis from latest NDHAM does show routeing into western Chesterfield. Also, would align and potentially support A61-A617 link (based on 2013 modelling outcomes)	Main issue likely geometric challenges. Therefore, first step would be to identify potential route alignments and land requirements, then undertake modelling using NDHAM to identify Benefit:Cost Ratio.
Demolition of some properties on Jawbones Hill to create a wider road	See above.	See above.

## 5. Next Steps

- 5.1.1 The purpose of this report was to draw together existing work into a single document. It is intended to discuss the contents with stakeholders to identify if there are additional potential schemes that would warrant inclusion and development.

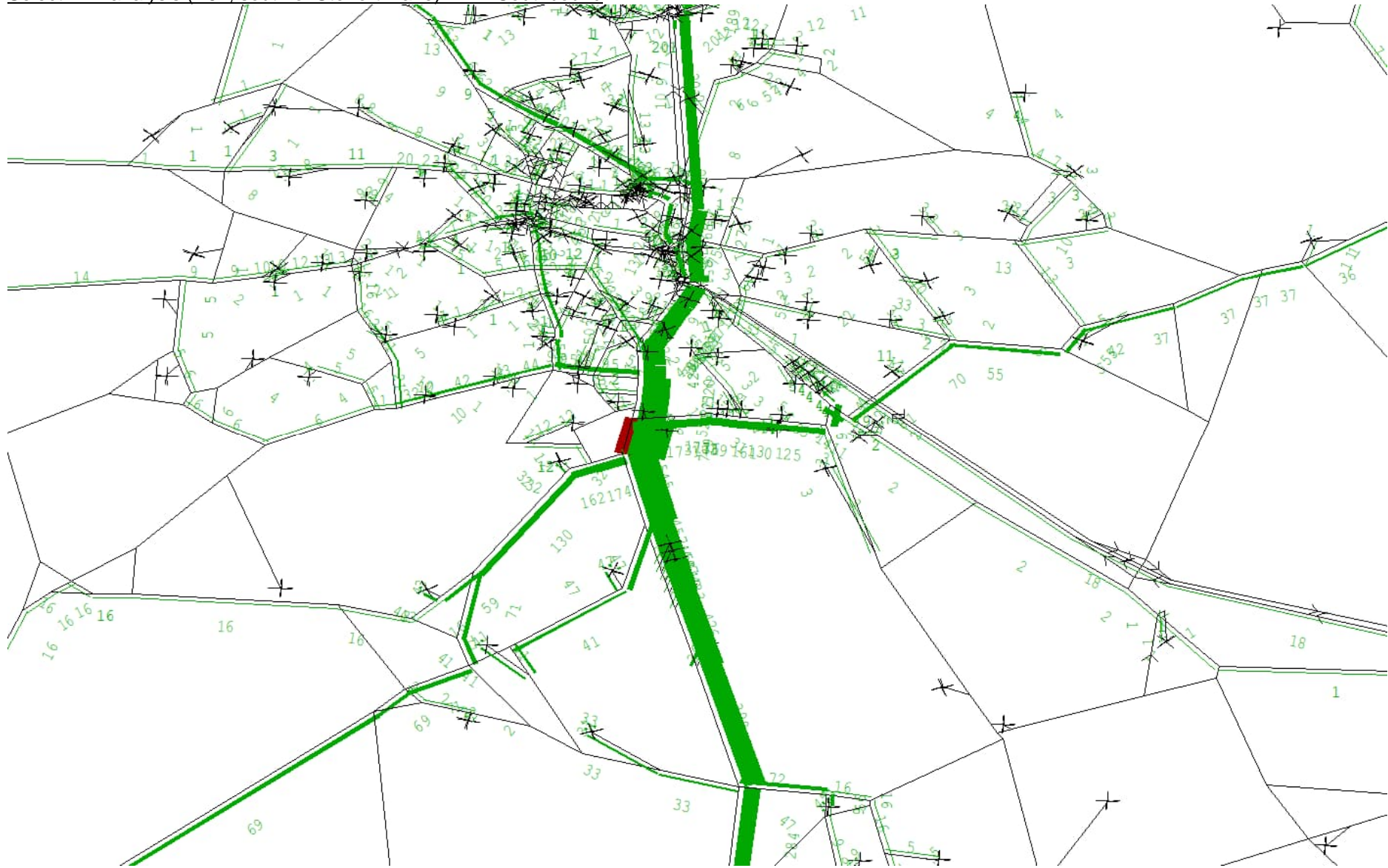
## Appendix A – Select Link Analysis

Select Link analysis (A61, south of Storforth lane) – AM Northbound



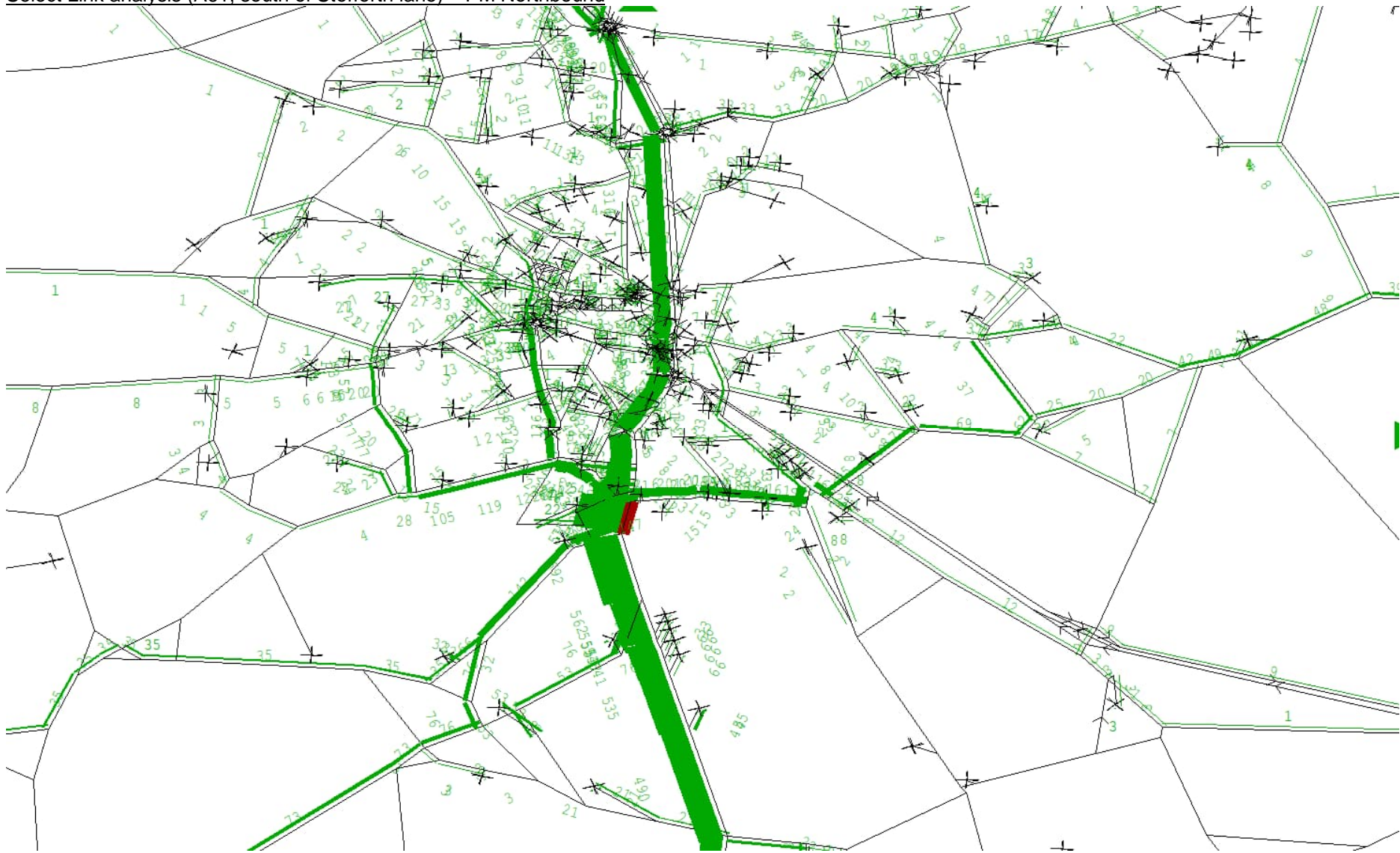


Select Link analysis (A61, south of Storforth lane) – AM Southbound





Select Link analysis (A61, south of Storforth lane) – PM Northbound



Select Link analysis (A61, south of Storforth lane) – PM Southbound

