Capricorn Transport Planning

BLOOR HOMES

LAND EAST OF BILBROOK, STAFFORDSHIRE

STRATEGIC TRANSPORT ASSESSMENT

| Transportation Planning | Traffic Engineering | Sustainable Travel | Road Safety |

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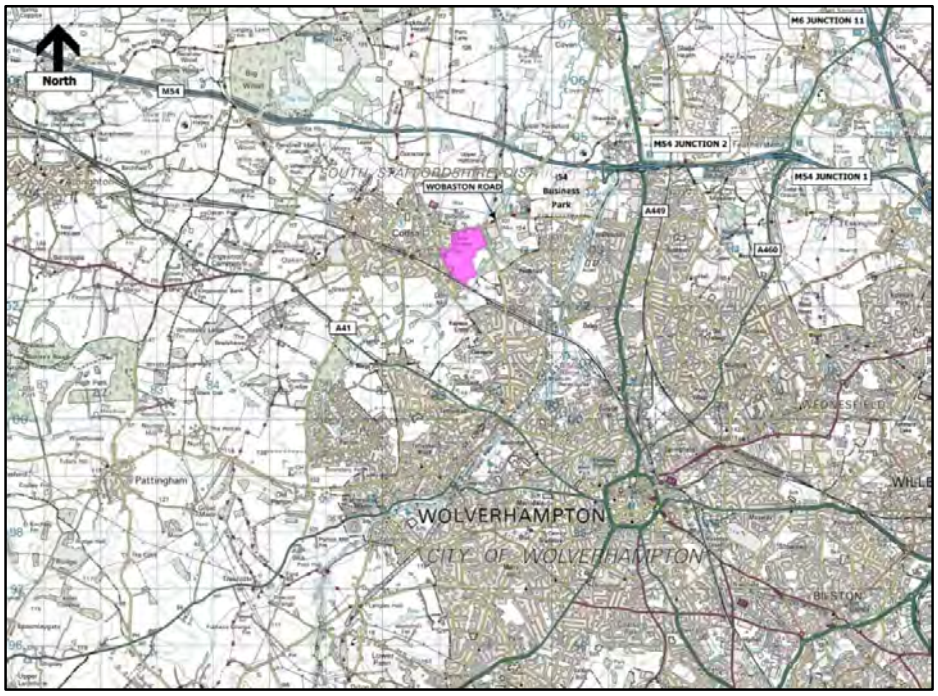
1.0 INTRODUCTION

1.1 Background

1.1.1 Capricorn Transport Planning Ltd (CTP) is appointed by Bloor Homes to advise on the highways and transport issues affecting a proposed residential development on land to the east of Bilbrook, Staffordshire. **Figure 1.1** shows the location of the site in its wider context.

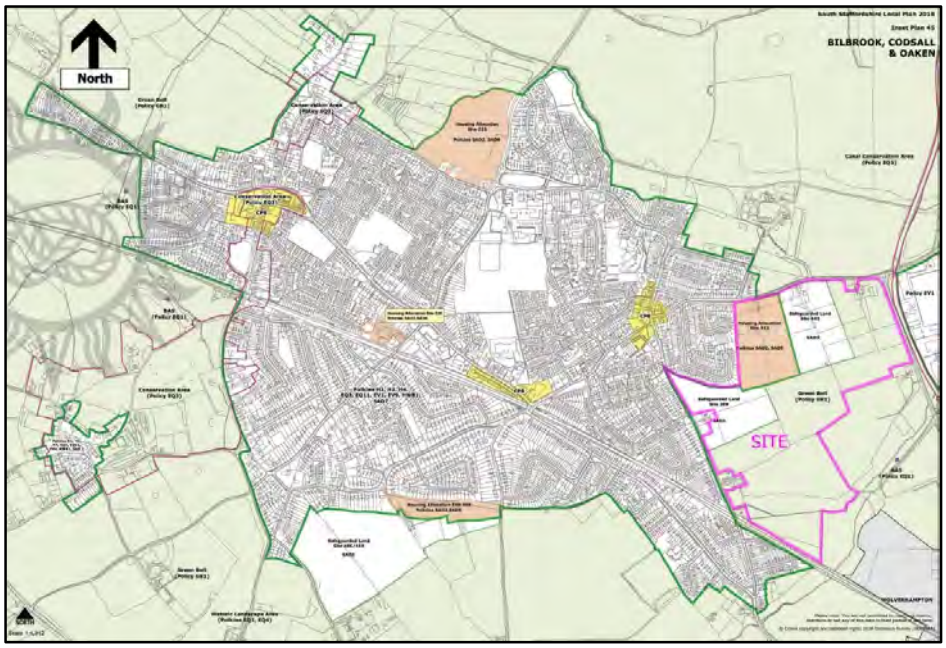
Figure 1.1: Site Location



1.1.2 The land lies immediately to the south-east of the existing Bilbrook village area, between Pendeford Mill Lane, to the north; Barnhurst Lane to the east; the River Penk corridor to the south-east; and Lane Green Road to the west.

1.1.3 The land includes two sites that are referenced in the South Staffordshire District Council (SSDC) *Site Allocations Document* (SAD). **Figure 1.2** is an extract from the SAD that shows these policy areas relative to the site as a whole.

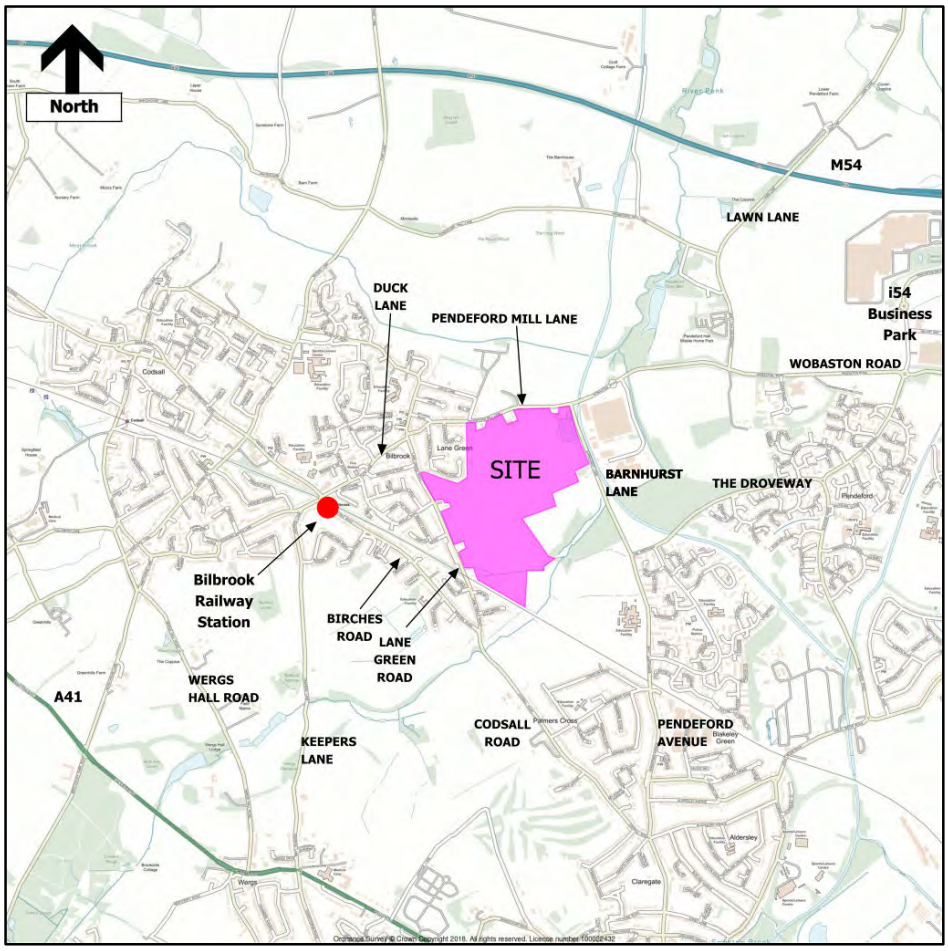
Figure 1.2: Site Boundaries and Local Plan Policy Areas



1.1.4 SAD Housing Allocation Site 443, at the north-west corner of the site, is currently being developed by Bloor Homes as *Bilbrook Mill* to provide 164 dwellings, with a recently-constructed access from Pendeford Mill Lane. Safeguarded Land sites 443 to the east and 209 to the south have already been identified by SSDC for longer-term development needs. Bloor Homes is promoting the allocation of the additional land area west of Barnhurst Lane and south of the SAD sites, as far as the railway line.

1.1.5 The site as a whole has highway frontages to Pendeford Mill Lane, Barnhurst Lane and Lane Green Road including existing housing site allocation 443. **Figure 1.3** shows the site boundaries and surrounding local highway network in greater detail.

Figure 1.3: Local Highway Network



1.2 Proposed Development

1.2.1 All of the remaining land within the site beyond Bilbrook Mill is now proposed for allocation within SSDC's emerging Local Plan to provide 848 dwellings, a primary school, local centre with retail facilities and public open space. The school, retail and open space uses would be ancillary to the main residential use.

1.2.2 The development would be accessed from new junctions with Pendeford Mill Lane, Barnhurst Lane and Lane Green Road, which would be connected by an internal link road. A preliminary Masterplan of the scheme is presented in **Appendix A**.

1.3 Scope of Report

1.3.1 This report provides a *Strategic Transport Assessment* (STA) to support the allocation of the site in the draft Local Plan. The STA identifies an indicative scheme of transport infrastructure and mitigation measures to accommodate the scheme.

1.3.2 This STA has been prepared with regard to the requirements of SSDC and the three highway authorities who have responsibility for various parts of the adjacent highway network as follows:

- Staffordshire County Council (SCC) is responsible for the local highway network immediately adjacent to the site and throughout the South Staffordshire District.
- City of Wolverhampton Council (CWC) is responsible for the local highway network to the south and east of the South Staffordshire district boundary.
- National Highways (NH) is responsible for the Strategic Road Network (SRN), which can be accessed at M54 Junction 2 to the east of the site and M54 Junction 3 to the west.

1.3.3 Preliminary discussions were held with SSDC and the highway authorities, further to which CTP prepared a STA Scoping Report dated 11/02/22.

1.3.4 Following the circulation of the Scoping Report, further correspondence with SCC took place and the scope of the STA was subsequently agreed with SCC. Comments were later received from CWC, which have also been taken into consideration. Records of this correspondence are presented in **Appendix B**.

1.3.5 The requirements of NH have been the subject of separate extensive discussions involving promoters of other proposed strategic sites within South Staffordshire that would also affect the SRN. It has been agreed that a single assessment will be prepared to identify the cumulative impact of all proposed Local Plan sites, the mitigation that is required and an apportionment of the associated delivery costs between the sites. This work will be reported separately and is not covered by this STA, which instead focusses on the SCC and CWC local highway networks.

1.4 Report Structure

1.4.1 The STA is structured as below:

- A summary of the STA's objectives is provided (Section 2);
- The over-arching transport and planning policies relevant to the assessment are briefly reviewed (Section 2);
- The methodology adopted to meet the objectives and policy requirements is

presented (Section 2);

- The site and surrounding transport network are briefly described (Section 3);
- Existing opportunities for sustainable travel are identified (Section 3);
- An overview of the development Masterplan is provided (Section 4);
- The proposed access strategies for vehicles, public transport, pedestrians and cyclists are presented (Section 4);
- The agreed forecasts of development traffic generation and its distribution on the adjacent highway network are summarised (Section 5);
- The extent of the highway network and key junctions that would be potentially affected by the scheme, as agreed at the scoping stages (the "*Area of Influence*"), is defined (Section 5);
- The levels of additional development-related traffic using key highway corridors and junctions within the Area of Influence are identified, and the locations to be assessed in detail confirmed (Section 5);
- Traffic survey data used in the assessment is listed and assessed (Section 6);
- A review of collision records and road safety at affected locations within the *Area of Influence* is presented (Section 6);
- The future year assessment scenarios are defined (Section 7);
- Traffic forecasts used in developing these scenarios (including details of planned and committed developments taken into account, the future assessment years and background traffic growth assumptions) are described (Section 7);
- Capacity assessments are presented for the agreed study area junctions that would potentially be affected by the development (Section 8);
- Highway capacity-related mitigation measures are identified and preliminary proposals are presented (Section 9);
- The strategy off-site improvements to active-travel infrastructure is outlined (Section 10);

- The key findings of the STA are summarised and conclusions are presented (Section 11).

1.4.2 The STA is now submitted as part of the evidence base required for the Local Plan process and for further consideration by SSDC and the three highway authorities.

2.0 METHODOLOGY

2.1 Objectives

2.1.1 The STA has been prepared in response to SSDC's request for a site specific STAs for each of the four strategic housing sites that are proposed for allocation in the emerging Local Plan (Policies SA1 to SA4 as summarised below).

2.1.2 The cumulative impact of the four strategic sites has already been assessed by SCC using NH's SATURN traffic model of the M54/M6 Link Road scheme. Detail of this work is set out in SCC's consultation response as discussed in the STA Scoping Report contained in **Appendix C**.

2.1.3 SCC subsequently advised SSDC that the level of detail required for the Local Plan evidence base could be provided through STAs prepared by each individual scheme promoter.

2.1.4 The objective of this STA is to identify the general scale, location and format of transport infrastructure and mitigation measures required to accommodate the proposed development east of Bilbrook (Policy SA1) at a level of detail sufficient to support its inclusion in the Local Plan.

2.1.5 The STA therefore seeks to provide a robust highways evidence base with sufficient content to obtain the support of the affected local highway authorities, subject to further detailed assessments that would be provided as part of any future planning application(s).

2.1.6 This STA identifies the required transport infrastructure and mitigation measures, which will be subject to preparation of preliminary cost estimates by the developer as a separate exercise. These estimates will then inform an assessment of viability as part of the Local Plan process.

2.1.7 The STA identifies the volume of peak period traffic that would be generated on the SRN adjacent to the site but does not assess traffic impacts on the SRN in detail. Following circulation of the STA Scoping Report, it was agreed with NH that assessment of impacts on the SRN will be undertaken as a separate exercise. The SRN assessment will identify whether and where mitigation works are required, the general form of such works and the relative contribution of each proposed Local Plan allocation to their need in terms of traffic impact. The cost of these works will then be estimated and apportioned to each proposed allocation accordingly.

2.2 Planning Policy

2.2.1 Transport planning policies relevant to this STA are contained within the following documents:

- The National Planning Policy Framework (NPPF);
- The South Staffordshire Local Plan;
- The Staffordshire Local Transport Plan (LTP3)

National Planning Policy Framework (NPPF)

2.2.2 The revised NPPF was published in July 2021 and sets out the Government's policies for helping to deliver sustainable development through the planning system. Local authorities are required to take these policies into account when formulating local development plans and they are also a material consideration when determining planning applications.

2.2.3 The NPPF's over-arching policy theme is that there is a presumption in favour of sustainable development. It states that the planning system should actively manage patterns of growth and guide significant developments to locations that are or can be made sustainable, by limiting the need to travel and providing a choice of travel modes.

2.2.4 To ensure that sustainable development is pursued in a positive way, Paragraph 104 of the NPPF 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.

2.2.5 In the context of the Bilbrook development, the following requirements of NPPF paragraph 106 are relevant:

Planning policies should:

a) support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities;

b) be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned;

c) identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development;

d) provide for attractive and well-designed walking and cycling networks with supporting facilities such as secure cycle parking (drawing on Local Cycling and Walking Infrastructure Plans).

2.2.6 Paragraph 110 advises that decisions on proposed site allocations should then take account of whether:

- *appropriate opportunities to promote sustainable transport modes can be – or have been - taken up, given the type of development and its location;*
- *safe and suitable access to the site can be achieved for all users;*
- *the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*
- *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.*

2.2.7 NPPF Paragraph 111 then confirms that:

Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

2.2.8 Paragraph 112 relates to development planning applications, but its broad principles should also be applied to site allocations. It states that developments should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

2.2.9 The STA has full regard to the objectives of the NPPF and seeks to demonstrate that the site can be satisfactorily connected to the adjacent highway and sustainable travel networks.

South Staffordshire Local Plan

2.2.10 The current development plan for South Staffordshire comprises:

- The *Core Strategy*, adopted in December 2012;
- *Site Allocations Document (SAD)*, adopted in September 2018.

2.2.11 The ***Core Strategy*** provides the current spatial planning strategy for the district up to 2028. The *SAD* identifies the land adjacent to Pendeford Mill Lane as site reference 443. **Policy SAD2** allocates the western part of this land for residential development, which is now being implemented as *Bilbrook Mill*. **Policy SAD3** safeguards the eastern portion of Site 449 and Site 209 to meet longer term housing requirements beyond 2028 or through a future Local Plan review.

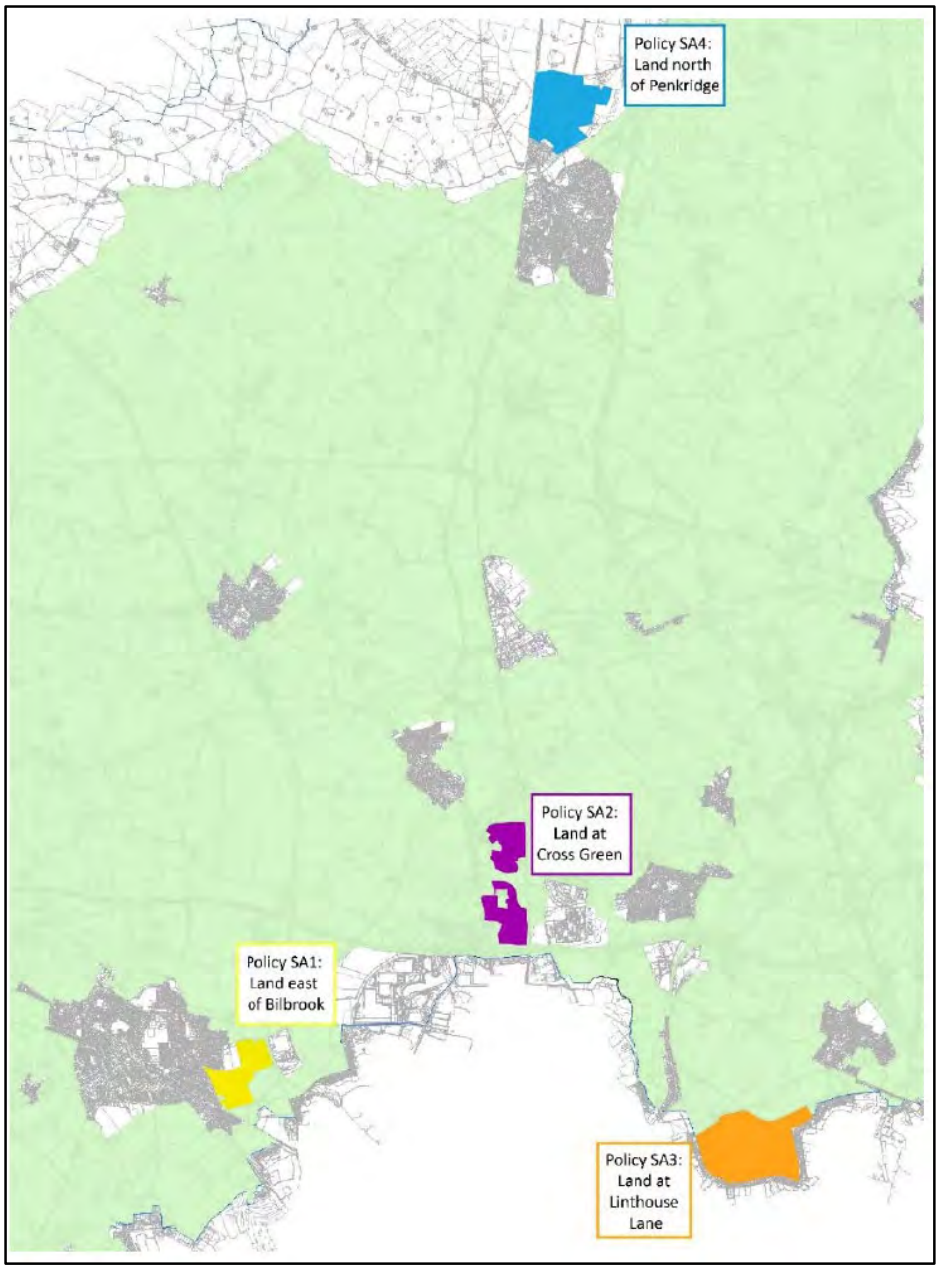
2.2.12 The ***Local Plan Review - Preferred Options*** document, dated November 2021, sets out the timetable for the new Local Plan and presents draft policies and preferred options for development, which have been subject to public consultation.

2.2.13 The ***Preferred Options*** document identifies Codsall and Bibrook as Locality 4, in which the land east of Bilbrook is identified as a preferred new allocation (848 dwellings). Land to the south of Codsall is identified as an allocation of existing safeguarded land (317 dwellings).

2.2.14 Codsall/Bilbrook is identified in **Draft Policy DS3** as a *Tier 1 settlement* with a wide range of service and facilities and with access to the railway network and larger areas offering significant employment.

2.2.15 The document identifies the 4 strategic housing allocations as **Draft Policies SA1 to SA4**, the land east of Bilbrook being covered by **Draft Policy SA1**. The locations of the 4 strategic sites, as reproduced from the ***Preferred Options*** document are shown in **Figure 2.1** below.

Figure 2.1: SSDC Proposed Strategic Housing Sites



2.2.16 **Draft Policy SA1** (site reference 519) envisages that the Bilbrook site will provide the following:

- A minimum of 848 homes;
- A new neighbourhood that will integrate with the wider village community;
- A new school;
- High quality connections with existing facilities in Bilbrook and Codsall;

- Access to leisure and recreation including along the Canal towpath;
- Sustainable access to regionally important i54 employment site and other employment opportunities in Wolverhampton.

2.2.17 The development of the site is to be guided by a Supplementary Planning Document (SPD), which will include an Infrastructure Delivery Strategy. The SPD will include an approved Masterplan and will address various requirements including: the highways and sustainable/active travel infrastructure; links to the wider area; and a *Link Road* connecting Pendeford Mill Lane, Lane Green Road and Barnhurst Lane.

2.2.18 **Draft Policy EC11** sets out the proposals for promoting sustainable transport, which seek to deliver new walking and cycle provision in accordance with government design standards, working with neighbouring planning and highways authorities. The proposed policy also seeks to strengthen bus and rail services in response to increased demand created by new development and to ensure development is designed to promote high quality walking and cycling within sites and to nearby services and facilities.

2.2.19 The proposed transport strategy for the Bilbrook site has been developed with appropriate regard to these policy aspirations.

Local Transport Plan (LTP)

2.2.20 The current Local Transport Plan is the LTP3, which covers the period 2011-2026 and sets out SCC's proposals for transport provision, including walking, cycling, public transport, car-based travel and freight. It also sets out policies for the management and maintenance of local roads and footways and seeks to ensure that the transport system is able to support local economic growth and environmental protection policies.

2.2.21 A key aim of LTP3 is increased travel choice in order to promote a modal shift towards walking, cycling and public transport particularly in the most heavily used and congested transport corridors.

2.2.22 The LTP comprises the following documents:

- Staffordshire Local Transport Plan 2011 - Strategy Plan;
- Staffordshire Local Transport Plan 2011 - Implementation Plan;
- District Integrated Transport Strategies, one for each of the eight districts of Staffordshire.

2.2.23 The *LTP3 Strategy Plan* deals with specific policy areas, such as walking, cycling, accessibility and highways development control. The following policies can be applied to development planning applications but the principles are also considered relevant to this STA:

- *LTP3 Policy 1.4: We will maximise the reliable operation of the existing road network.* This policy includes provision for Travel Plans and encouragement of walking, cycling and public transport use, particularly on congested transport corridors.

- *LTP3 Policy 3.1: We will support the adoption of sustainable land-use planning policies and reduce the impact of development where it negatively affects the highway network.* This policy outlines SCC's commitment to work with local planning authorities, to encourage use of sustainable travel through development layout and design; to secure improvements to transport networks through planning obligations; and to ensure the delivery of Travel Plans which contain modal shift targets, annual performance monitoring and remedies and enforcement obligations.

- *LTP3 Policy 3.2: We will help improve bus services.* This policy details SCC's commitment to maintaining and improving bus service provision.

- *LTP3 Policy 5.1: We will promote alternatives to private motor vehicles.* This policy describes how the County Council intends to work with planning authorities to ensure developments are positioned in sustainable locations, or in locations that are desirable for economic reasons, and will encourage planning authorities to commit to on-going review of car parking standards.

- *LTP3 Policy 6.1: We will create a physical and cultural environment in which everyone feels confident to walk and cycle.* This policy outlines the County Council's Cycling Strategy and Walking Strategy.

- *LTP3 Policy 6.2: We will help residents to access services.* This policy cross-refers largely to other policies contained within the LTP, including Policies 3.1 and 3.2.

2.2.24 The *South Staffordshire Integrated Transport Strategy 2014-2028 (October 2017)* includes an outline package of proposed measures for delivery in the period up to 2026, which are intended to facilitate economic growth and improve transport

connections with the West Midlands conurbation. The package includes the following initiatives relevant to the Bilbrook site:

- Improved rail services and station facilities;
- Improvements to bus route 5 between Codsall and Wolverhampton;
- Possible increases in car parking capacity at Codsall railway station;
- Completion of the National Cycle Network enhancements between Codsall and Bilbrook;
- Possible initiatives to improve Bilbrook Lane/Duck Lane/Wolverhampton Road.

2.2.25 The access and transport strategy for the Bilbrook site will be developed with appropriate regard to these policies and proposals.

2.3 Study Approach

2.3.1 During discussions on the scope of the STA, SCC advised that the M54/M6 Link Road traffic model is not sufficiently detailed in the area west of the A449 to provide a satisfactory assessment of the local highway network adjacent to the Bilbrook site. It was therefore agreed that a separate local trip distribution and assignment model would be prepared using "travel to work" data from the 2011 National Census.

2.3.2 The local model was developed and presented within the STA Scoping Report dated 11/02/22. It was subsequently refined and adjusted to take into account comments received from SCC (see correspondence at **Appendix B**).

2.3.3 Using trip generation rates supplied by SCC (presented in Section 6), the local model provides development traffic flow forecasts, which define an *Area of Influence* of the Bilbrook scheme. The highway corridors and the junctions within the Area of Influence to be assessed in detail by the STA were agreed with the local highway authorities following submission of the STA Scoping Report.

2.3.4 The STA provides the following information to support allocation of the site within the Local Plan:

- The proposed strategy for access to the site by vehicles, including details of each proposed site access junction;
- The proposed strategy for access to the site by active travel modes (walking and cycling);

- Broad proposals for achieving satisfactory access to bus services, based on discussions to be held with SCC, CWC and the bus operator;
- Confirmation of the agreed trip generation, trip distribution, background traffic growth and committed development traffic assumptions;
- Confirmation of the development's *Area of Influence* and the assessment study area;
- Details of the base traffic data used in the traffic impact assessments;
- A broad assessment of any road safety issues that might need to be addressed at affected locations on the local highway network, based on collision data supplied by the highway authorities;
- Capacity assessments of the proposed site access junctions;
- Capacity assessments of the off-site junctions agreed with the highway authorities as requiring detailed consideration;
- Preliminary design drawings of highway mitigation schemes arising from these assessments, suitable for consideration and preliminary costing;
- The locations and types of off-site improvements to the pedestrian and cycle networks, consistent with the strategy identified by SCC and any additional requirements of CWC;
- Any other mitigation requirements.

2.3.5 The STA does not provide details of internal highway and travel infrastructure other than to confirm the general design principles and requirements that would enable satisfactory access by vehicles (including buses and service vehicles), pedestrians and cyclists. Detailed proposals would be submitted as part of future planning applications.

3.0 EXISTING CONDITIONS

3.1 Location

3.1.1 The site is located at the eastern edge of the existing Bilbrook developed area, approximately 800m of Bilbrook village centre (measured from the centre of the site).

3.1.2 Bilbrook itself lies adjacent to the larger village of Codsall to the west. The two village centres are approximately 1km apart.

3.1.3 Wolverhampton city centre lies approximately 4km to the south-east of the site. The i54 Business Park, an employment site of national and regional significance, lies approximately 1km to the east.

3.1.4 Although the site is entirely within the SSDC local authority area, the Wolverhampton city boundary lies directly to the south-east of the site and several main highway routes nearby are therefore the responsibility of CWC.

3.1.5 The site also lies close to the M54, M6 and M6 Toll motorways, all of which are part of the SRN and therefore the responsibility of NH. The nearest access to the motorway network is via the A449 at M54 Junction 2 to the east or Junction 3 to the west. Alternative points of access to the SRN are available at M6 Junctions 11 and 12, M54 Junction 1 and M6 Toll Junction T8.

3.2 Local Highway Network

3.2.1 Bilbrook and Codsall are served by the following main highway corridors:

- Pendeford Mill Lane and Wobaston Road provide a route between Bilbrook village centre and the A449 to the east.
- Barnhurst Lane, Pendeford Avenue and Lower Street provide a route from Pendeford Mill Lane to the A41 at Tettenhall, to the south.
- Duck Lane passes through Bilbrook village centre from Pendeford Mill Lane to Bilbrook railway station.
- Lane Green Road connects Bilbrook village centre with Codsall Road to the south, which in turn connects with the Pendeford Avenue/Lower Street corridor towards the A41.
- Birches Road connects Bilbrook railway station with Codsall Road and the

Pendeford Avenue/Lower Street corridor.

- Heath House Lane, Histons Hill and Elliotts Lane provide a north-south route through Codsall, which connects the A41 to the south with Brewood and Penkridge to the north.

- Wolverhampton Road and Wood Road provide an east-west route through Codsall, connecting Duck Lane at Bilbrook railway station with Codsall Wood, from which the A5 can be accessed near Weston-under-Lizard.

3.2.2 The site has highway frontages to Pendeford Mill Lane, Barnhurst Lane and Lane Green Road. These routes are described briefly below.

3.2.3 Along the site frontages, **Pendeford Mill Lane** is a single carriageway road of semi-rural character, with limited frontage development. However, it has street lighting and a speed limit of 30mph to the west, rising to 40mph some 300m east of Joey's Lane.

3.2.4 An off-carriageway foot-cycleway is provided on the northern side of the Pendeford Mill Lane/Wobaston Road route. This facility links Bilbrook with Barnhurst Lane, the i54 Business Park and the A449 corridor beyond. A new footway and pedestrian crossing have been installed at the Bilbrook Mill site access, but beyond this location there is currently no footway along the south side of Pendeford Mill Lane.

3.2.5 **Barnhurst Lane** is a single-carriageway road with a footway on its eastern side only. The route has infrequent side road junctions but has some street lighting and is subject to a speed limit of 40mph. The route meets Pendeford Mill Lane at a 3-arm ghost-island priority junction, adjacent to the site's north-eastern corner.

3.2.6 **Lane Green Road** is a single-carriageway road with footways to each side, except along the site frontage where the eastern footway is replaced by a grass verge. The route has regularly spaced side road junctions on its western side, which provide access to the existing residential area beyond. It is subject to both weight and height restrictions, the latter of which is due to a low railway bridge south of the site. It has street lighting and is subject to a speed limit of 30mph.

3.2.7 Much of Bilbrook village centre lies around the junctions of Duck Lane with Pendeford Mill Lane and Lane Green Road. Traffic calming features are provided at these locations in the form of a raised zebra crossings of Duck Lane and other road humps. The speed limit throughout most of the village centre is 30mph, although Bilbrook

Road to the north is subject to a 20mph speed limit and has a series of road humps. There are waiting restrictions (double yellow lines) throughout the village centre area and a parking layby on the south side of Duck Lane adjacent to the local shops west of Lane Green Road.

3.3 Walking Routes

3.3.1 Guidance on walking distances to local amenities is provided in the Chartered Institution of Highways and Transportation (CIHT) document, *"Providing for Journeys on Foot*" (2000). The Guidelines indicate that a walking distance of 400m is acceptable for trips within town centres and that a distance of 800m is acceptable elsewhere. The corresponding walking distances for commuting trips or schools are given as 500m and 1km respectively. A "preferred maximum" walking distance of 2km is identified.

3.3.2 The 2km distance was subsequently adopted in central government guidance and was incorporated into the former PPG13 advice note, which stated that:

"Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly those under two kilometres".

3.3.3 Current guidance within the Manual for Streets (MfS) continues to adopt this guidance. Paragraph 4.4.1 of MfS states that:

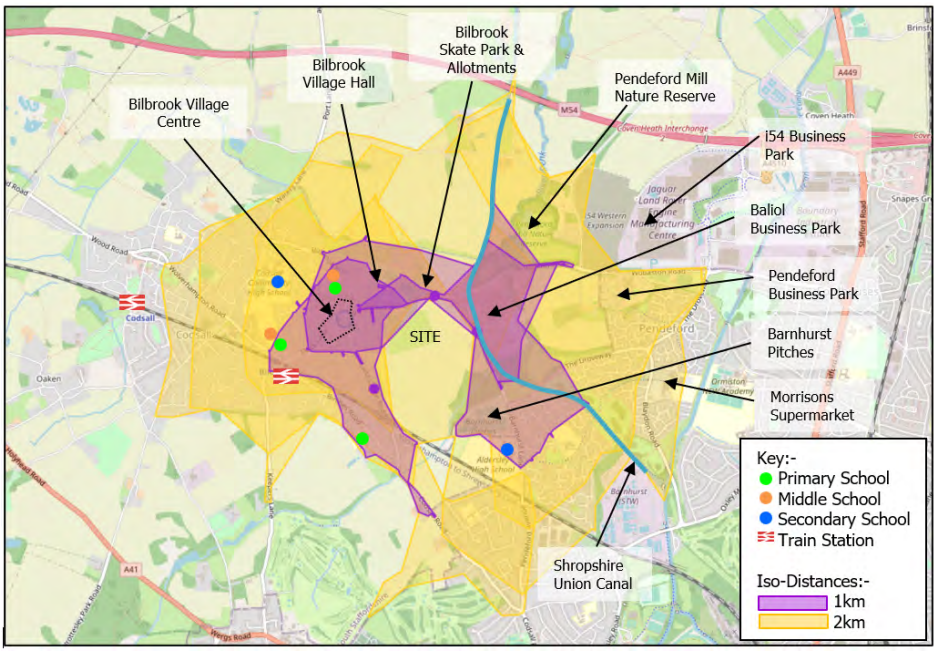
"Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPS13 states that walking offers the greatest potential to replace short car trips, particularly those under 2 km."

3.3.4 These guideline distances remain in use by many local authorities to determine access to facilities by walking.

3.3.5 The CIHT Guidance advises that the 400m distance is equivalent to an approximate walking time of 5 minutes and this standard is typically adopted as the desirable maximum walking distance to local bus services. It is noted, however, that SCC considers 350m to be a reasonable walking distance to a bus stop. Whilst there are bus stops within 350m of the Lane Green Road part of the site, maximising opportunities for access to public transport is expected to require bus services to be re-routed and/or diverted into the site. This is discussed further below.

3.3.6 The CIHT guideline walking distances of 1km and 2km are equivalent to approximately 12 minute and 25-minute walk times respectively. **Figure 3.1** shows indicative 1km and 2km walking catchment isochrones from the approximate centre of the site. These provide an indication of the areas and facilities that could potentially be reached on foot and may therefore attract significant pedestrian movements.

Figure 3.1: Walking Catchment and Local Facilities



3.3.7 The following major trip attractors are located within the 1km distance:

- Bilbrook village centre;
- Bilbrook railway station;
- Bilbrook Village Hall, Joey's Lane;
- Allotments and skate park;
- Birches First School, Lane Green and St Christopher's primary schools;
- Bilbrook Middle School;
- Baliol Lane employment area, east of Barnhurst Lane;
- Shropshire Union Canal (recreation walking route);
- Barnhurst football pitches.

3.3.8 Bilbrook village centre contains a range of local facilities including shops, restaurants, pubs, a bank, a post office and a doctors' surgery. There are also local shops and a Co-op convenience store near Bilbrook railway station. Together, these facilities are expected to attract a significant proportion of external pedestrian trips generated by the scheme.

3.3.9 A range of additional potential trip attractors is available within the 2km distance, including:

- Codsall village centre and railway station;
- Codsall Middle and High schools;
- i54 Business Park;
- Pendeford Business Park;
- Pendeford Mill nature reserve;
- Morrison's supermarket, Blaydon Road;

3.3.10 The range of local facilities and amenities within a reasonable walking distance of the site is therefore comprehensive. It is considered that there is significant potential for local development trips to be made on-foot, particularly to Bilbrook village centre and railway station, but also to employment opportunities along the Pendeford Mill Lane and Barnhurst Lane corridors.

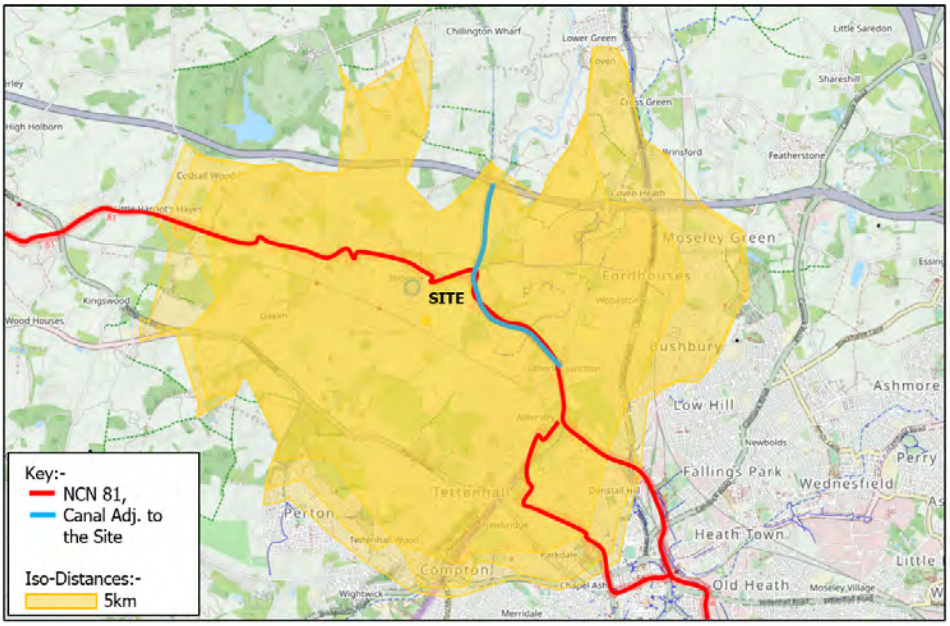
3.3.11 Existing links to these areas and the need for improvements and connections to the site are considered in Sections 4 and 10.

3.4 Cycling Routes

3.4.1 Guidance in the former Planning Policy Guidance Note 13 (PPG13) included advice on cycling journey lengths. Although PPG13 has since been superseded, it is still commonly accepted that cycling offers strong potential to replace car trips for many journeys under 5km or those made as part of a multi-modal trip that includes cycling and public transport. A 5km distance is equivalent to a typical cycling time of 15 to 20 minutes.

3.4.2 **Figure 3.2** shows an indicative 5km cycle catchment isochrone centred on the site. The general topography within this area is mostly flat or gently undulating and therefore potentially attractive to existing and potential cyclists.

Figure 3.2: Cycling Catchment and Routes



3.4.3 There is a range of on and off-road cycle routes within the local area, including the existing shared-use foot/cycleway along the north side of Pendeford Mill Lane and Wobaston Road, which is part of National Cycle Network (NCN) Route 81.

3.4.4 Route 81 connects Bilbrook and Codsall villages with Wolverhampton city centre, via Pendeford Mill Lane and the eastern towpath of the Shropshire Union Canal. It is a traffic-free route between the site and Wolverhampton city centre. Route 81 can also be accessed to the east of the site via The Droveway or a local cycle route that passes along Long Furrow and Reapers Walk leading to the Shropshire Union Canal.

3.4.5 It is recognised that the section of Route 81 along the Canal towpath south of Wobaston Road and The Droveway is of variable quality and may require improvements such as bound surfacing. The scope for the proposed development to contribute to these is considered in Section 10 and should be explored in any future planning application.

3.4.6 A significant developed area lies within 5km of the site, including:

- Codsall and Bilbrook;
- Wolverhampton (north, west and edge of city centre);
- i54 Business Park;
- Other employment areas around M54 Junction 2 and Brinsford.

3.4.7 These areas provide a wide range of amenities and employment, retail and leisure opportunities that would be attractive to residents of the proposed development.

3.4.8 The cycle route network in Wolverhampton is well developed, with off-road routes of good quality linking the city centre with the Wobaston Road and A449 corridors. These include the foot/cycleway alongside Wobaston Road, which has been significantly improved between the i54 Business Park and the A449 with substantially segregated facilities for pedestrians and cyclists.

3.4.9 It is noted, however, that signage of cycle routes within Wolverhampton is inconsistent and improvements may be required to encourage residents of the development site to cycle to and from the city centre.

3.4.10 It is considered that there is significant potential for many trips generated by the development to be made by cycle, including:

- Trips to/from the Wobaston Road employment areas and i54 Business Park;
- Trips to/from Wolverhampton city centre;
- Trips made as part of an onward journey by rail using Bilbrook railway station.

3.4.11 To maximise these opportunities, improved links to Bilbrook railway station, the NCN and the Pendeford Mill Lane/Wobaston Road cycle route are considered in Sections 4 and 10.

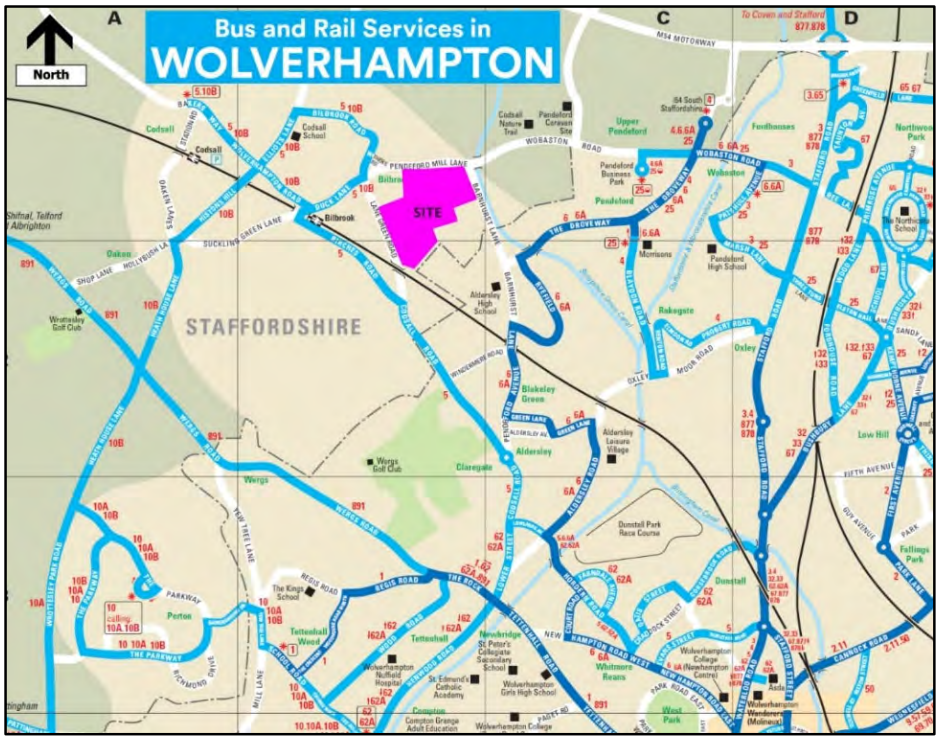
3.5 Bus Services

3.5.1 The area adjacent to the site is served by the following existing bus routes:

- Route 5, Bilbrook to Wolverhampton via Duck Lane and Birches Road (20-minute service frequency);
- Route 6/6A, i54 Business Park to Wolverhampton via Pendeford Avenue and Ryfield (10-minute service frequency);
- Route 10B, Bilbrook and Codsall to Wolverhampton via Duck Lane, Bilbrook Road, Histons Hill and Perton (limited service).

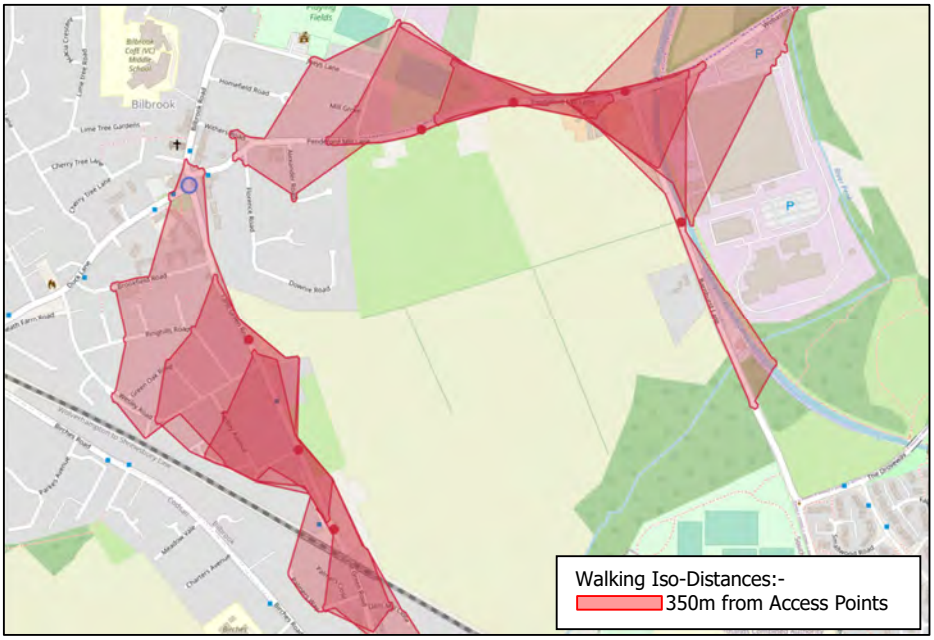
3.5.2 **Figure 3.3** shows the location of these existing routes relative to the site. All three pass close to but do not currently reach any of the site frontages.

Figure 3.3: Existing Bus Routes



3.5.3 **Figure 3.4** shows indicative 350m walking distances from the proposed pedestrian access points to the development, as described in Section 4. Within this distance are bus stops in Bilbrook village centre (Duck Lane) and on Lane Green Road. The centre of the site is approximately 400m from Lane Green Road and areas closer to Barnhurst Lane and Pendeford Mill Lane would be further than 400m from the existing bus stops.

Figure 3.4: 350m Walking Distance from Site Access Points



3.5.4 It is therefore proposed that bus services would be diverted, with scope to re-route through the site in the future. SCC has been requested to consider and advise on the potential and commercial viability of re-routing existing bus services via the proposed development. Proposal for bus access are described further in Section 4.

3.6 Rail Services

3.6.1 Rail services can be accessed at Bilbrook railway station, which lies within 1km of the centre of the site. It could therefore be accessed on foot or by cycle via Duck Lane.

3.6.2 Bilbrook station is operated by West Midlands Railway and lies on the Shrewsbury to Wolverhampton and Birmingham railway line. The station has various facilities including customer information displays, pay phones, shelters, seating, step free access to platforms and customer help points.

3.6.3 From Bilbrook, there is a regular hourly train service to Wolverhampton and Birmingham New Street throughout the day. Typical journey times are approximately 7 minutes to Wolverhampton and around 30 minutes to Birmingham.

3.6.4 Rail services would therefore be an attractive travel option for commuter trips to Wolverhampton and Birmingham, or longer distance trips to other destinations.

3.6.5 Access to the railway station on foot and by cycle will be enhanced through connectivity measures to be provided as part of the development access and mitigation strategy, as described in Sections 4 and 10.

4.0 PROPOSED DEVELOPMENT

4.1 Scheme Content

4.1.1 The proposed development would form an extension of the existing Bilbrook urban area. An indicative scheme Masterplan is presented in **Appendix A**. The land area currently being developed or promoted by Bloor Homes includes the on-going Bilbrook Mill scheme and would result in a total of approximately 1,000 new homes being provided.

4.1.2 This STA considers the land beyond Bilbrook Mill that is now proposed for allocation to provide:

- 848 dwellings;
- A 1-form entry primary school with scope to extend for 2-form entry;
- Local retail uses, possibly including a small supermarket.

4.1.3 The school and retail uses are expected to primarily serve the development itself and would not be expected to attract significant additional vehicle traffic from the local highway network beyond. However, the site access junctions have been designed with reserve capacity to accommodate additional localised turning movements associated with these land uses as explained below and shown in Section 8.

4.1.4 Further detailed assessment of the traffic implications of the school and retail uses will be provided as part of any future planning application, as required by SCC.

4.2 Vehicle Access Strategy

4.2.1 The proposed scale of development would need to be served by a series of loop roads or connected streets to provide permeability and efficient access to the external highway network, without giving rise to significantly increased traffic demands within Bilbrook village centre.

4.2.2 The development would be therefore served by a ***Link Road*** connecting Pendeford Mill Lane, Barnhurst Lane and Lane Green Road. To enable the Link Road to serve as a bus route, it is proposed that it would be constructed to the standards specified in the SCC Residential Design Guide for a "*Collector Road*", where applicable. It would thus have a carriageway width of 6.5m and 3.0m wide foot/cycleways to either side.

4.2.3 It is anticipated other internal connected roads, not forming part of the bus route, would have a reduced carriageway width of 6m or would be designed to the *Major*

Residential Access Road standard, thus having a carriageway width of 5.5m with footways to either side.

4.2.4 The Link Road would be designed to serve the needs of the development and distribute traffic onto the external highway network such that the majority does not need to use Duck Lane within Bilbrook village centre. It would therefore provide an appropriate route for development traffic with destinations to the east and south of Bilbrook, facilitating efficient access to the strategic highway network (A449 and M54) and Wolverhampton city centre via Wobaston Road or Barnhurst Lane.

4.2.5 Some development traffic with origins and destinations to the north and west would use the Duck Lane corridor through the centre of Bilbrook and the need to manage traffic within this area has therefore been considered further.

4.2.6 The Link Road is not intended as a through-route for non-development traffic and is expected to include design features to reduce vehicles speeds and give priority to pedestrians and cyclists where required.

4.2.7 The development would be served by four main access junctions as follows:

- Site Access 1: Priority junction with Pendeford Mill Lane (now complete as the Bilbrook Mill access);
- Site Access 2: Compact roundabout junction with Pendeford Mill Lane between Bilbrook Mill access and Barnhurst Lane;
- Site Access 3: Compact roundabout junction with Barnhurst Lane;
- Site Access 4: Compact roundabout junction with Lane Green Road and Oakfield Road.

4.2.8 The proposed *Link Road* would connect the Pendeford Mill Lane, Barnhurst Lane and Lane Green Road roundabouts (Site Accesses 2, 3 and 4).

4.2.9 In addition to the four main accesses listed above, a priority junction access from Lane Green Road north of Wesley Road is also proposed (Site Access 5). Following discussions with SCC, this proposal will be companied by further measures to avoid attracting vehicular traffic to the northern part of Lane Green Road and Wesley Road as discussed below.

4.2.10 An overview of the access strategy and the locations of the proposed junctions are shown on **Drawing C22001/JCT/OV/SA/001**. Proposals for each of the site access junctions are explained further below.

Site Access 1: Pendeford Mill Lane/Bilbrook Mill

4.2.11 This junction was approved under planning application reference 18/00710/FUL and has since been constructed to serve Bilbrook Mill. It comprises a priority T-junction with a ghost-island right turn lane and a traffic signal-controlled TOUCAN crossing on its east side. A photograph of the junction is shown in **Figure 4.1** and the layout of the existing junction layout is shown on **Drawing C22001/JCT/SA/EX/001**.

Figure 4.1: Site Access 1 (As Built)

4.2.12 The junction was designed with sufficient capacity to accommodate additional development beyond Bilbrook Mill as demonstrated in Section 8. No alterations to the existing layout are therefore proposed.

Site Access 2: Pendeford Mill Lane Compact Roundabout

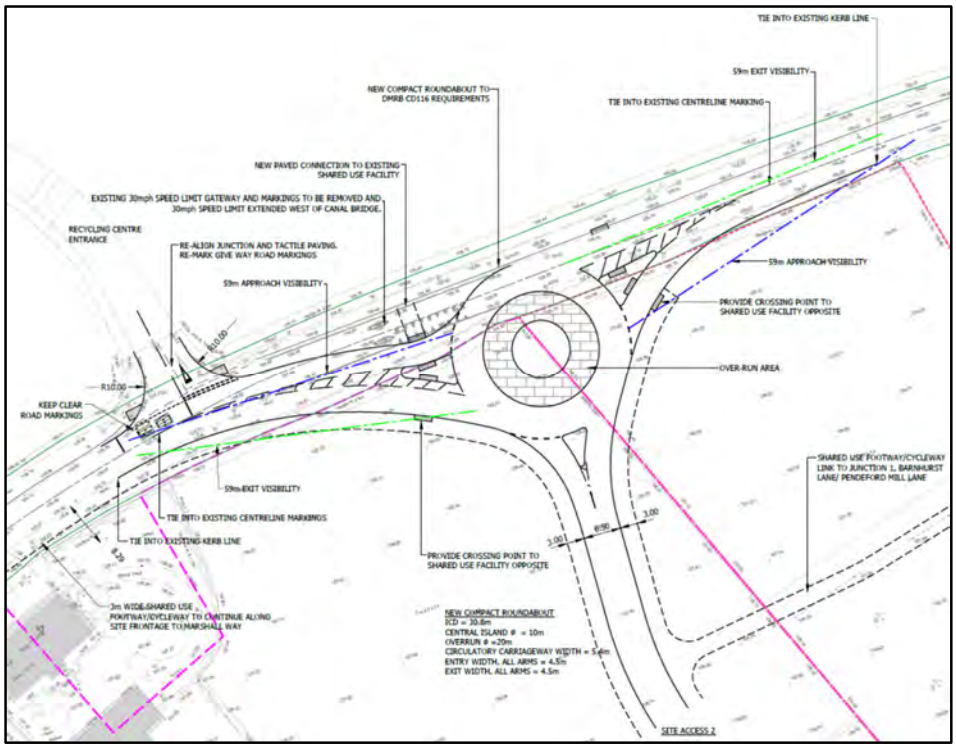
4.2.13 This compact roundabout would provide a junction of the Link Road with Pendeford Mill Lane. The roundabout would also provide a "gateway" to the Bilbrook urban area and assist in reducing vehicle speeds at the entry to the village. In combination with a developed frontage, this would provide an opportunity to reduce the speed limit on Pendeford Mill Lane from 40mph east of Barnhurst Lane to 30mph on the approach to the junction.

4.2.14 The scheme presented below has been designed to the geometric requirements of the DMRB (ref: CD116). Key features include:

- New 3 arm compact (30.8m ICD) roundabout with 10m island diameter and 20m overrun apron diameter;
- 59m entry and exit forward visibility splays (for proposed 30mph speed limit);
- Existing Recycling Centre access to be protected by "Keep Clear" road markings;
- Uncontrolled pedestrian crossing facilities provided on all arms of the junction (with refuges incorporated within the splitter islands);
- Existing 30mph speed limit adjacent to Site Access 1 to be extended eastwards to include the Barnhurst Lane Junction.

4.2.15 The proposed access is presented as **Drawing C22001/JCT/SA/PR/003**, and an extract is provided below.

Figure 4.2: Site Access 2, Pendeford Mill Lane



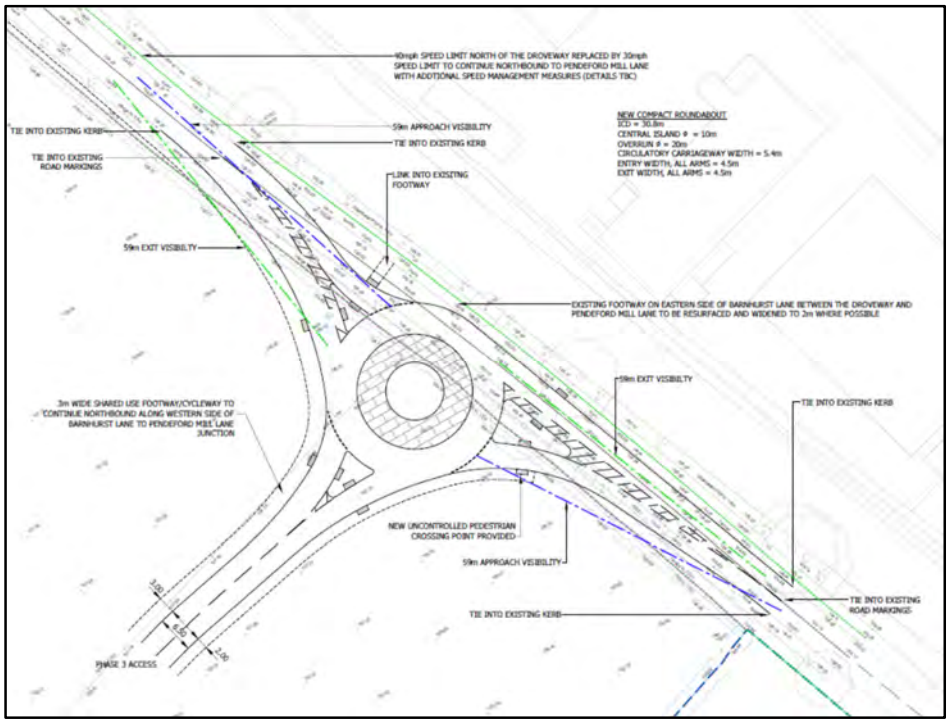
Site Access 3: Barnhurst Lane Compact Roundabout

4.2.16 The scheme presented below has been designed to the geometric requirements of the DMRB (ref: CD116). Key features include:

- New 3 arm compact (30.8m ICD) roundabout with 10m island diameter and 20m over-run apron diameter;
- Existing 40mph speed limit on Barnhurst Lane to be reduced to 30mph from The Droveway to Pendeford Mill Lane (which would also be subject to a 30mph limit as described for Site Access 2);
- Change in speed limit to be reinforced through speed management measures such as road markings and signage (subject to further discussions with SCC).
- 59m entry and exit forward visibility splays (for proposed 30mph speed limit);
- Uncontrolled pedestrian crossing facilities provided on all arms of the junction with refuges incorporated in the splitter islands.

4.2.17 The proposed access is presented as **Drawing C22001/JCT/SA/PR/003**, and an extract is provided below.

Figure 4.2: Site Access 3, Barnhurst Lane



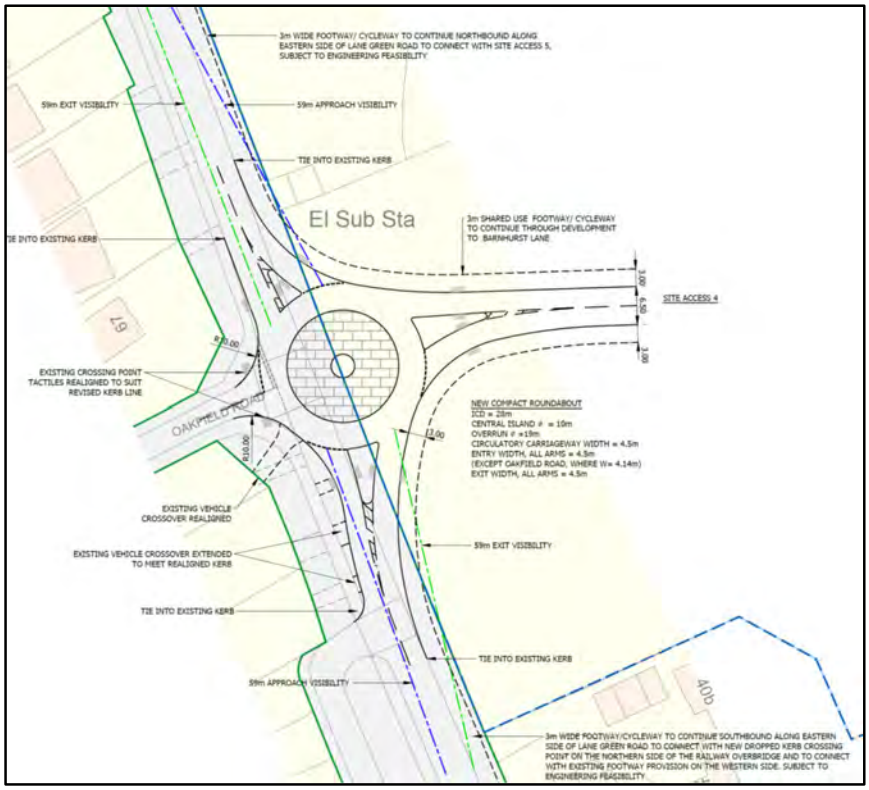
Site Access 4: Lane Green Road Compact Roundabout

4.2.18 The scheme presented below has been designed to the geometric requirements of the DMRB (ref: CD116). Key features include:

- New 4 arm compact (28m ICD) roundabout with 10m island diameter and 19m overrun apron diameter;
- 59m entry and exit forward visibility splays (for existing 30mph speed limit);
- Uncontrolled pedestrian crossing facilities provided on all arms of the junction with refuges within the splitter islands;
- Minor extensions or realignments of private driveways within the adopted highway, to maintain access to existing dwellings;
- Provision of new 2.0m wide footway or 3.0m wide foot/cycleway along the Lane Green Road site frontage (subject to feasibility).

4.2.19 The proposed access is presented as **Drawing C22001/JCT/SA/PR/004**, and an extract is provided below.

Figure 4.4: Site Access 4, Lane Green Road



4.2.20 SCC has raised concerns about existing levels of on-street parking along Lane Green Road, Brookfield Road and Wesley Road and the potential for development traffic to use these routes. Whilst these matters would be addressed in detail as part of a future planning application, it is considered that the following strategy would enable use of the local network to be managed satisfactorily:

- Provision of new foot/cycleway along Lane Green Road to encourage trips to Bilbrook town centre on foot or by cycle.
- The use of waiting restrictions (e.g. – double yellow lines) in the vicinity of the Site Access 4 to prohibit on-street parking.
- Installation of traffic calming/speed management measures on Wesley Avenue and Oakfield Road, and Wesley Road between the two. The type and number of features would be subject to further discussion with SCC but could include marked and/or sheltered on-street parking bays, road humps and road signage/carriageway markings. The objective would be to discourage use of these routes by both development and non-development traffic.
- Brookfield Road and the remainder of Wesley Road from Wesley Avenue to Duck Lane are subject to on-street car parking, which in itself reduces traffic speeds and the efficacy of these roads as part of a through-route. However, additional features such as formally marked and/or sheltered parking bays could be implemented as part of an extended area of traffic calming if considered appropriate by SCC.
- Installation of traffic calming/speed management measures on Lane Green Road. As Lane Green Road is proposed as a possible bus route to serve the development (see below), these are likely to take the form of horizontal deflection features such as kerb build-outs, rather than road humps. Lane Green Road currently has a carriageway width of approximately 6m, and there is scope to reduce this width as a means of controlling vehicle speeds. The details of such a scheme would be subject to further discussions with SCC.
- Further management of development-related traffic demands through residential and school Travel Plans.

4.2.21 It should again be noted that the purpose of the Link Road is to enable development traffic to efficiently reach routes to the south and east of the site without the need to

travel through Bilbrook village centre. It is not intended to provide an alternative route for existing traffic using Duck Lane though the village centre.

4.2.22 The Link Road would have a design speed of 20mph and would incorporate features to manage vehicle speeds and reduce its attractiveness as an alternative to Duck Lane.

4.2.23 The above strategy will be subject to further discussions with SCC and will seek to avoid additional traffic being attracted to Wesley Avenue, Oakfield Road and Lane Green Road as a result of providing the Link Road and associated development.

4.3 Pedestrian and Cycle Access

4.3.1 Development of the site provides opportunities to create new walking and cycling routes between the established southern part of Bilbrook and the employment areas off Barnhurst Lane and Wobaston Road to the east. There is also scope to encourage walking and cycling from the development to the main trip attractors at Bilbrook village centre and railway station as well as local schools. The pedestrian and cycle access strategy seeks to maximise these opportunities and is described below.

4.3.2 The major pedestrian desire lines from the site are expected to be determined by the key trip attractors identified in Section 3, principally:

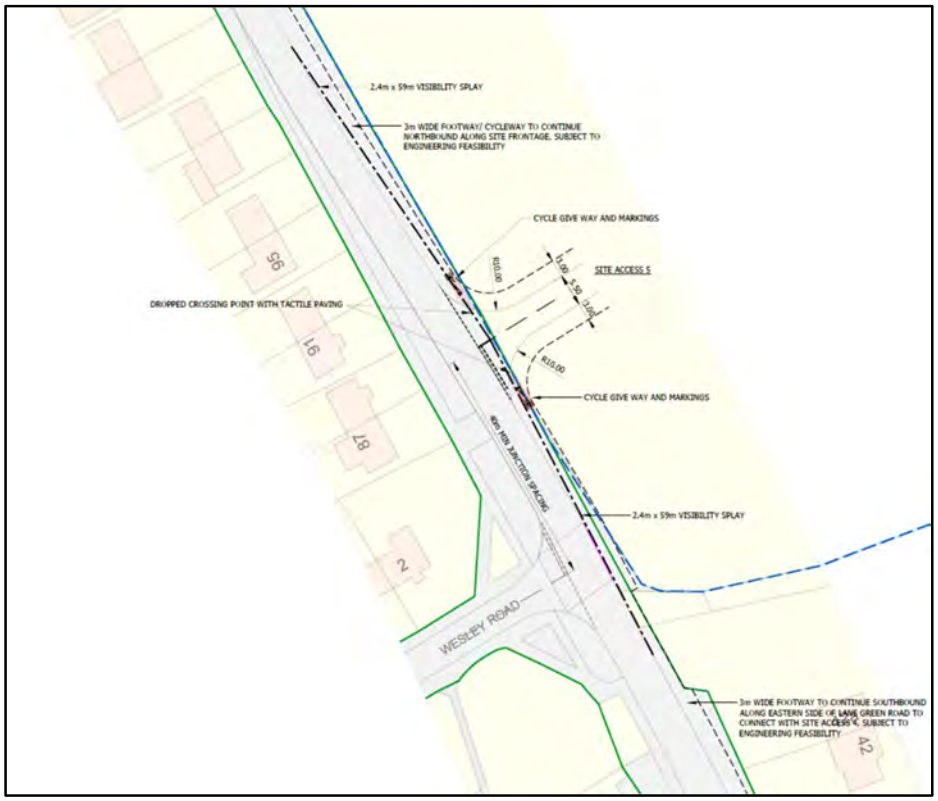
- Bilbrook village centre (via Pendeford Mill Lane or Lane Green Road);
- Bilbrook railway station (via Duck Lane, Brookfield Road, Oakfield Road or Wesley Road/Wesley Avenue);
- Bilbrook Village Hall and adjacent open space (via Pendeford Mill Lane and Joey's Lane);
- Canal path (via Pendeford Mill Lane, or Barnhurst Lane/The Droveway);
- i54 Business Park and adjacent employment areas (via Wobaston Road);
- Lane Green First School and Codsall Community High School (via Joey's Lane);
- St Christopher's Primary and Codsall Middle schools (same routes as Bilbrook railway station);
- Birches First School via Lane Green Road and Birches Avenue.

4.3.3 The site access strategy seeks to provide for convenient access to the main Pendeford Mill Lane, Barnhurst Lane, Lane Green Road and Duck Lane corridors closely matches to these desire line points.

4.3.4 Access for pedestrians and cyclists would therefore be provided at Site Access locations 1 to 4, which also incorporate crossing facilities as described above.

4.3.5 Pedestrian and cyclist access would also be provided from Lane Green Road at Site Access 5, as illustrated on **Drawing C22001/JCT/SA/PR/005** and on **Figure 4.5** below.

Figure 4.5: Site Access 5, Lane Green Road



4.3.6 Pedestrian footways at Site Access 5 will provide a more direct link to the village centre from the southern and western parts of the development.

4.3.7 At detailed planning application stage, it may be appropriate to consider additional pedestrian/cycle only accesses along Lane Green Road, Barnhurst Lane and Pendeford Mill Lane, depending on detailed layout requirements.

4.3.8 The main internal corridors for pedestrian and cycle movement as indicated on the site Masterplan (**Appendix A**) are as follows:

- Along the Link Road, between Pendeford Mill Lane, Barnhurst Lane and Lane Green Road (Site Accesses 2, 3 and 4). Foot/cycleways of at least 3.0m width would be provided along this route, where possible on both sides. Crossing points would be provided at the site access junctions and other suitable locations.

- Between the Link Road and Site Access 5, connecting with the proposed new school.

- Additional north-south and east-west walking and cycling routes through the green space areas, connecting the Link Road with Pendeford Mill Lane (via Bilbrook Mill), Barnhurst Lane (near the junction with Pendeford Mill Lane) and Lane Green Road (close to the railway line).

4.3.9 These facilities seek to maximise the development's permeability and provide a choice of routes between the new dwellings and the adjacent road corridors.

4.3.10 New footways and/or cycle facilities would also be provided alongside Pendeford Mill Lane, Barnhurst Lane and Lane Green Road to connect these site access points, together with crossing facilities at suitable locations. General arrangements are summarised below:

Lane Green Road

- New 2.0m wide footway or 3.0m wide foot/cycleway along the full length of the Lane Green Road site frontage to connect the existing footway to the north with Site Accesses 4 and 5, thus providing a continuous link to/from Bilbrook town centre. The design, width and cross-section of this facility would be subject to an assessment of level differences between the site and the road and an engineering feasibility study.

- New uncontrolled pedestrian crossing at the southern end of the Lane Green Road site frontage, to connect the proposed new site frontage footway with the existing facility along the western side of the road.

- Additional uncontrolled crossings at Site Accesses 4 and 5 and at north end of proposed new footway.

Barnhurst Lane

- New 3.0m foot/cycleway along the Barnhurst Lane site frontage from the junction with Pendeford Mill Lane to Site Access 3.

- Existing footway along the east side of Barnhurst Lane to be re-surfaced between Pendeford Mill Lane and The Droveway and widened to a minimum of 2.0m where feasible within the existing highway boundary. Provision of a 3.0m wide shared use facility along this section is unlikely to be feasible due to limited verge width between the carriageway edge and the Canal boundary.

Pendeford Mill Lane

- New 3.0m wide foot/cycleway between Site Access 2 and the existing signal-controlled pedestrian crossing at Marshall Way (Site Access 1).

- New 3.0m wide foot/cycleway running within the site, between the Link Road south of Site Access 2 and the Pendeford Mill Lane/Barnhurst Lane junction. This would enable a continuous 3.0m wide facility to be provided approximately parallel to Pendeford Mill Lane avoiding the pinch-point in available land a short distance to the west of Barnhurst Lane.

4.3.11 The location of the site access points for pedestrians and cyclists and proposed new site frontage footways are indicated diagrammatically on **Figure 4.6**.

Figure 4.6: Proposed Pedestrian and Cycle Access Strategy

4.3.12 To ensure that this proposed network is satisfactorily connected to the major trip attractors beyond the site, complementary off-site improvements are proposed in Section 10.

4.4 Public Transport Access

4.4.1 The nearest bus stops to the development site are located within Bilbrook village centre, on Bilbrook Road and Duck Lane, approximately 600m and 700m respectively from the centre of the site. Bilbrook Mill has provided a new pedestrian crossing to connect with the foot/cycleway along the northern side of Pendeford Mill Lane, which provides access to Bilbrook village and enables pedestrian access to the existing bus network.

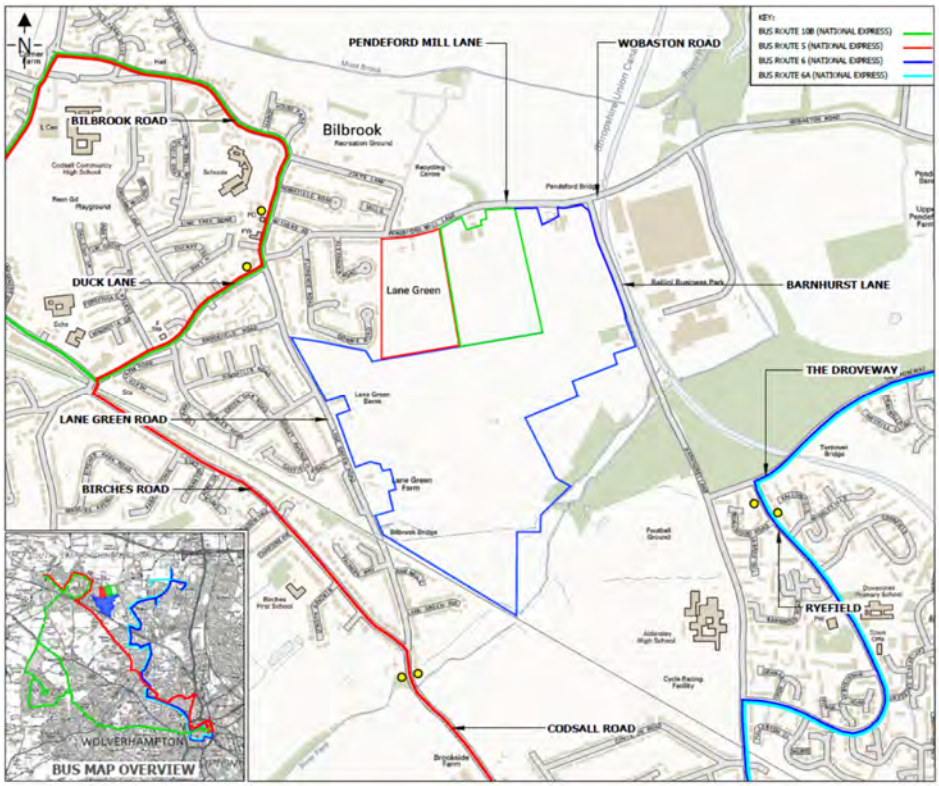
4.4.2 To reduce walking distances and maximise the use of public transport by residents of the proposed additional development, it is anticipated that existing bus services would need to be extended and/or enhanced to pass closer to or through the development area.

4.4.3 A preliminary public transport strategy has been developed with the aim of providing access to bus services within desirable maximum walking distances from the majority of residences within the development of 350m where possible and 400m otherwise.

4.4.4 As shown in Section 3, existing bus services 5 and 10 pass close to the site, forming a loop within Bilbrook local centre. Both currently provide a good frequency of service at 3 to 6 buses per hour. Bus route 6/6A connects the i54 Business Park to Wolverhampton via Pendeford Avenue and operates at a 10-minute service frequency.

4.4.5 These existing bus services are shown in the context of the site on **Figure 4.7**.

Figure 4.7: Existing Bus Services Relative to Site Boundary

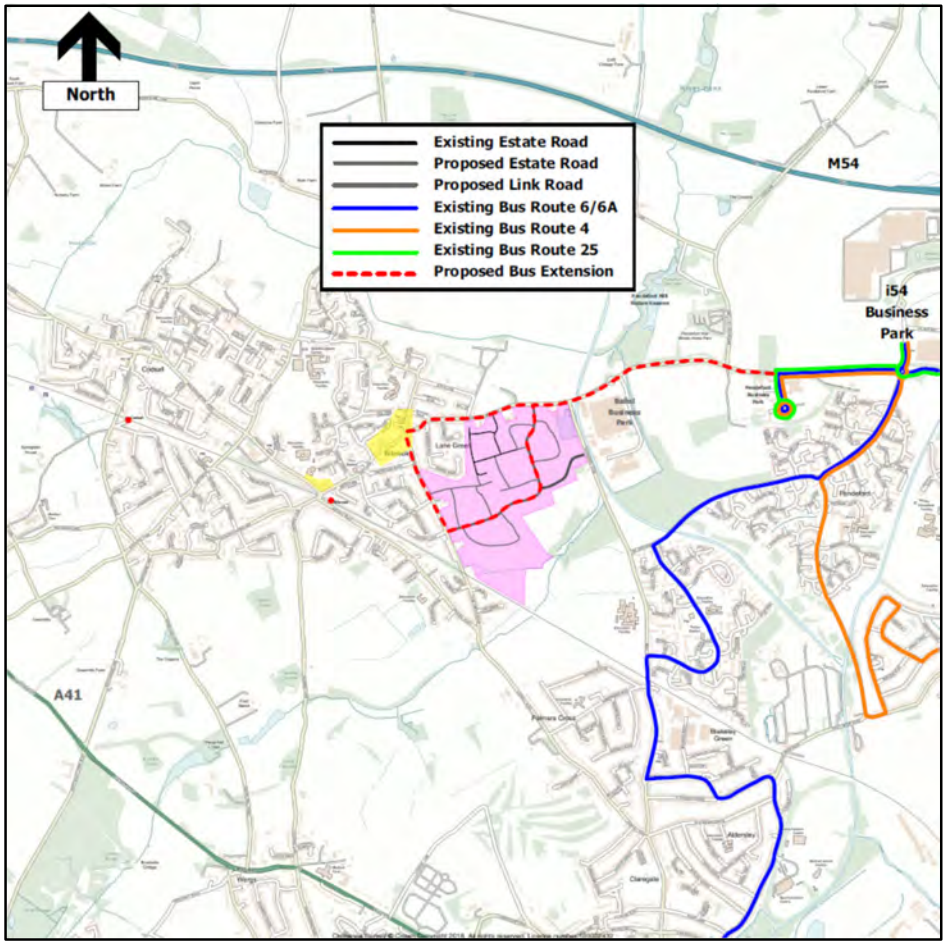


4.4.6 It was initially proposed that either of routes 5 or 10 could eventually be diverted into the site via Pendeford Mill Lane, the proposed Link Road and Lane Green Road, before re-joining their original routes. However, following a meeting with the local operator (National Express West Midlands), SCC has advised that re-routeing of service 5 through would not be practicable. A preferable solution would therefore be to extend one of the services currently terminating at the i54 Business Park along Wobaston Road and into the site. This would also provide better overall connectivity for Codsall including across to i54.

4.4.7 In addition to route 6/6A, the i54 Business Park is currently served by routes 4 and 25, which also pass along Wobaston Road. Route 4 provides up to 3 buses per hour and terminates at the i54 Business Park. Route 25 provides buses per hour to the i54 Business Park, with some services terminating at the Pendeford Business Park to the west.

4.4.8 At this stage, it is assumed that any of these services could be expended to connect with Bilbrook via the proposed development. A potential route for extension of bus services from the i54 Business Park is shown on **Figure 4.8** below.

Figure 4.8: Proposed Bus Access Strategy



4.4.9 SCC has at this stage advised that a financial contribution would need to be secured via a Section 106 Agreement, to cover the cost of operating a Monday to Saturday daytime service between the hours of 07:00 and 19:00 for a minimum of 5 years, at an estimate cost of £150,000 per annum. This would cover the additional vehicle resource needed to extend a route to and through the site, on the assumption that this could not be done on a commercially viable basis during the early stages of development.

4.4.10 The Link Road would be designed to accommodate bus services and would thus provide a through-route between Pendeford Mill Lane (at Site Access 2) with Lane Green Road (Site Access 4). This section of the Link Road would be provided at the earliest opportunity (subject to commercial and technical considerations) with suitable internal pedestrian routes to ensure that the majority of the residents would be within the desirable maximum walking distances of a bus service identified above.

4.4.11 In the early phases of development, prior to completion of the Link Road, it would be possible for the extended bus service to terminate at Site Access 2 on Pendeford Mill Lane where vehicles would be able to undertake a U-turn.

4.4.12 The above strategy would need to be investigated further and agreed with SCC and the bus service operator(s).

5.0 AREA OF INFLUENCE

5.1 Overview

5.1.1 The STA Scoping Report provided a set of development traffic forecasts, which were used to identify an *Area of Influence (AoI)*. The AoI encompasses locations where material traffic increases could arise. Within this area, the highway links and junctions to be considered in detail, by agreement with the highway authorities, form the STA *Study Area*.

5.1.2 The development traffic forecasts are based on a set of vehicle trip rates supplied by SCC. These were used to calculate total development-generated traffic, which was then assigned to the surrounding highway network using a trip distribution model built using National Census data.

5.1.3 Following submission of the Scoping Report, adjustments to the trip distribution and assignment model assumptions were made to address comments provided by SCC.

5.1.4 The trip generation rates and revised trip distribution/assignment model are described below.

5.2 Trip Generation

5.2.1 When undertaking their modelling of the strategic housing sites, SCC used trip generation rates derived from a sample of four TAs for housing developments within the SSDC planning area. The information provided by SCC is provided in the TA Scoping Report and the resulting trip rates (an average of the SCC sample) are summarised in **Table 5.1**.

Table 5.1: SCC Trip Generation Rates (Vehicle Trips per Dwelling)

Time	Arrivals	Departures	TOTAL
AM Peak Hour	0.108	0.339	**0.447**
PM Peak Hour	0.328	0.158	**0.486**

5.2.2 Application of these trip rates to a proposed development of 848 dwellings results in peak hour traffic generation forecasts as summarised in **Table 5.2**.

Table 5.2: Residential Traffic Generation – 848 Dwellings (Vehicles)

Time	Arrivals	Departures	TOTAL
AM Peak Hour	92	287	**379**
PM Peak Hour	278	134	**412**

5.2.3 The above trip generation forecasts have been agreed with the highway authorities.

5.2.4 The proposed primary school and retail facilities would be of a scale that meets the needs generated by the development. They are not, therefore, expected to give rise to significant additional traffic flows on the highway network beyond the site accesses.

5.2.5 It is noted however, that the SCC sample includes a set of surveyed trip rates for a larger scheme at Perton, which included a supermarket, local centre and primary schools but were lower than the trip rates for the remaining sites. These complementary land uses are therefore, to at least some extent, represented within SCC's sample.

5.2.6 Therefore, no additional allowance for the trip generation of the school or retail land uses on the wider highway network has been made within this STA. At this stage, the site access junctions have been designed with reserve capacity for additional turning movements generated by the primary school and potential small supermarket during the peak periods.

5.2.7 It is recognised that the detailed TA(s) that accompany planning applications for development at the site would need to consider the access requirements and associated traffic demands generated by these uses in greater detail.

5.3 Trip Distribution

5.3.1 The extent of the trip distribution model includes the main traffic routes within a cordon defined by the A5 to the north; Cannock to the east; the A41 to the south-west; and the A4150 Wolverhampton ring road to the south-east.

5.3.2 The distribution of development traffic within this highway network has been estimated using population and travel-to-work data from the 2011 National Census statistics. The development site is located in the South Staffordshire 008 Mid-Layer Super-Output Area (MSOA), which includes the existing Bilbrook urban area and the employment areas to the east. The MSOA is therefore considered representative of the likely trip characteristics of the proposed development.

5.3.3 The residential trip distribution model is based on "car driver" trips from the South Staffordshire 008 MSOA to all local MSOAs within the South Staffordshire local authority area; all MSOAs within the Wolverhampton city area; and all other local borough, district and unitary authorities in the UK.

5.3.4 *Google Maps* has been used to provide an indication of the quickest peak period routes between the local MSOA and the various origins/destinations. Where alternative routes were identified, these were manually weighted in accordance with their relative travel times.

5.3.5 The resulting trip distribution and traffic assignments were summarised in the STA Scoping Report. The trip distribution was subsequently revised in several areas to address comments received from SCC and NH.

5.3.6 The revised trip distribution calculations and resulting traffic assignments are presented in **Appendix D**. The trip distribution is summarised in **Table 5.3**.

Table 5.3: Trip Assignment Summary

ROUTE	%	CORDON POINT/AREA
A: A449 NORTH	3.7%	North of A5
B: EAST OF A449	7.9%	Bushbury, Wednesfield areas
C: WEST OF A449	10.2%	i54 employment areas
D: THE DROVEWAY	1.4%	Pendeford area
E: M6 NORTH	2.9%	North of A5
F: A460 NORTH	1.5%	North of A5
G: M6 TOLL & A5 EAST	2.5%	East of Cannock
H: M6 SOUTH	15.6%	South of M54
I: A449 SOUTH (CITY CTR)	8.2%	North of Ring Road
J: LAWN LANE & COVEN	3.2%	A5 east of J12
K: LOWER STREET	4.5%	Claregate, Aldersley areas
L: A41 EAST (CITY CTR)	14.1%	West of Ring Road
M: B4161 HENWOOD ROAD	8.2%	South of A41
N: A41 WEST	9.4%	South of M54 Junction 3
O: WOOD ROAD	1.4%	Codsall Wood area
P: M54 WEST	5.3%	East of Junction 3
TOTAL	**100%**	

5.3.7 Table 5.3 indicates that a significant proportion of traffic would have origins/destinations within the greater Wolverhampton area. Destinations north of the city centre (Routes B, C, D, I and K) account for approximately 32% of trips, of which some 10% would be to/from the i54 employment area (Route C).

5.3.8 A further 22% (Routes L and M) would use the A41 and B4161 routes to the west and south of the city centre. Taking into account other local traffic, the total proportion using the Barnhurst Lane/Codsall Road/Lower Street route south of the site would be 27% (Routes K, L and M).

5.3.9 Some 11% of traffic is forecast to pass through Bilbrook and Codsall (via Routes N and O).

5.3.10 The majority of longer distance traffic is forecast to use the M6 south (Route H), via M54 Junction 2, to reach Birmingham and its surrounding areas as well as destinations further to the south and east. The M6 south route accounts for approximately 16% of trips. A further 5% (Route P) of traffic is forecast to use the M54 to the west, accessing the motorway at Junction 3.

5.3.11 The volumes of traffic predicted to use the M6 North (Route E) and M6 Toll (Route G) are relatively modest by comparison. The quickest means of reaching these routes were found to be: M6 Junction 12 via Lawn Lane, A449 at Coven and A5; and M6 Toll Junctions T7 or T8 via M54 Junctions 2 and 1 and the A460. However, a proportion of these movements can be expected to switch to the M54/M6 Link Road once constructed.

5.3.12 Generated traffic forecasts from Table 5.2 have been assigned to routes leading to/from the site in accordance with the above distribution. This results in the following routes carrying most significant flows of development traffic:

- Wobaston Road between Barnhurst Lane and the A449;
- A449 between Wobaston Road and M54 Junction 2;
- M54 East of Junction 2 and the M6 South of Junction 10A;
- Codsall Road/Lower Street corridor to/from the A41 at Tettenhall;
- A41 between Tettenhall and the city centre;

5.3.13 The above results are broadly similar to those obtained by SCC using the M54/M6 traffic model. The main difference is that fewer trips are assigned via Wood Road and the A41 to the west, and correspondingly more are assigned via M54 Junction 2 to the east. However, SCC's assessment included the SAD 409/416 sites at Keepers Lane and Wergs Hall Road, Codsall which are closer to the A41 and Wood Road routes.

5.3.14 The manual trip distribution also excludes the M54/M6 Link Road. The effects of this scheme are understood to be addressed within the M54/M6 model. However, the M54/M6 Link Road is not expected to give rise to significant changes in the assignment of trips generated by the Bilbrook site within the local area described above.

5.4 Agreed Study Area

5.4.1 To assess where material traffic flow increases would occur, the advice provided within the former DfT *"Guidance on Transportation Assessment"* has been followed to provide an indication of the development's area of influence. Although this DfT guidance is no longer current, no replacement criteria for the assessment of material traffic flow increases have been made available and the advice is still considered relevant across the industry.

5.4.2 The former DfT guidelines provide no specific thresholds and do not advocate the use of percentage thresholds alone to determine where there is a material increase in traffic flow. However, they suggest that a two-way increase in traffic flow of more than 30 vehicles *may* require further consideration or more detailed assessment.

5.4.3 This threshold has been used to provide an initial list of junctions that require further consideration. Additional locations that do not necessarily exceed the 30-vehicle threshold were also added at the request of SCC.

5.4.4 The resulting AoI and the major junctions on the local highway network are shown on **Drawing C22001/SK01**. The forecast peak hour development traffic flows into these junctions are summarised in **Table 5.4**. Locations where the figure exceeds 30 vehicles are highlighted in yellow; locations with increases of more than 50 vehicles are highlighted in orange.

Table 5.4: Development Traffic Flows Into Key Junctions (Vehicles)

JUNCTION		AM	PM
J1	PENDEFORD MILL LANE/BARNHURST LANE	131	142
J2	BARNHURST LANE/THE DROVEWAY	157	170
J3	PENDEFORD AVENUE/CODSALL LANE ROUNDABOUT	101	110
J4	BIRCHES AVENUE/LANE GREEN ROAD	51	55
J5	DUCK LANE/LANE GREEN ROAD	41	45
J6	PENDEFORD MILL LANE/BILBROOK ROAD	41	45
J7	WOBASTON ROAD/LAWN LANE	131	142
J8	WOBASTON ROAD/THE DROVEWAY/i54	231	233
J9	A449/WOBASTON ROAD ROUNDABOUT	202	219
J10	M54 JUNCTION 2	141	153
J11	A449/BREWOOD ROAD DOUBLE ROUNDABOUTS	37	40
J12	A5/A449 GAILEY ROUNDABOUT	25	27
J13	M54 JUNCTION 1 ROTARY	15	17
J14	A41/B4161/LOWER STREET SIGNALS	85	92
J15	A41/HEATH HOUSE LANE SIGNALS	36	39
J16	WOLVERHAMPTON ROAD/HISTONS HILL SIGNALS	41	45
J17	M54 JUNCTION 3 ROTARY	29	31
J18	M6 JUNCTION 11	15	17
J19	M6 JUNCTION 12	11	12
J20	M6 TOLL JUNCTION T8	15	17
J21	BREWOOD ROAD/LAWN LANE PRIORITY JUNCTION	25	19
J22	WOLVERHAMPTON ROAD/BIRCHES RD/DUCK LANE	41	45

5.4.5 It has been agreed that the cumulative impact of all four proposed Local Plan strategic allocations at the SRN junctions (shown in red type) will be assessed separately. As such junction numbers 10, 12, 13, 17, 18, 19 and 20 are not considered further within this report.

5.4.6 Table 5.4 shows that the following non-SRN junctions would experience traffic flow increases of more than 30 vehicles:

- J1: Pendeford Mill Lane/Barnhurst Lane;
- J2: Barnhurst Lane/The Droveway roundabout;
- J3: Pendeford Avenue/Codsall Lane roundabout;
- J4: Birches Avenue/Lane Green Road;
- J5: Duck Lane/Pendeford Mill Lane;
- J6: Pendeford Mill Lane/Bilbrook Road;
- J7: Wobaston Road/Lawn Lane;

- J8: Wobaston Road/The Droveway/i54 (Innovation Drive);
- J9: A449/Wobaston Road roundabout (Vine Island);
- J14: A41/B4161/Lower Street signals;
- J15: A41/Heath House Lane signals;
- J16: Wolverhampton Road/Histons Hill signals;
- J22: Wolverhampton Road/Birches Road/Keepers Lane/Duck Lane.

5.4.7 In addition to these, SCC has advised that the following junction should be assessed in detail, notwithstanding forecast traffic flow increases of less than 30 vehicles:

- J21: Brewood Road/Lawn Lane junction, Coven

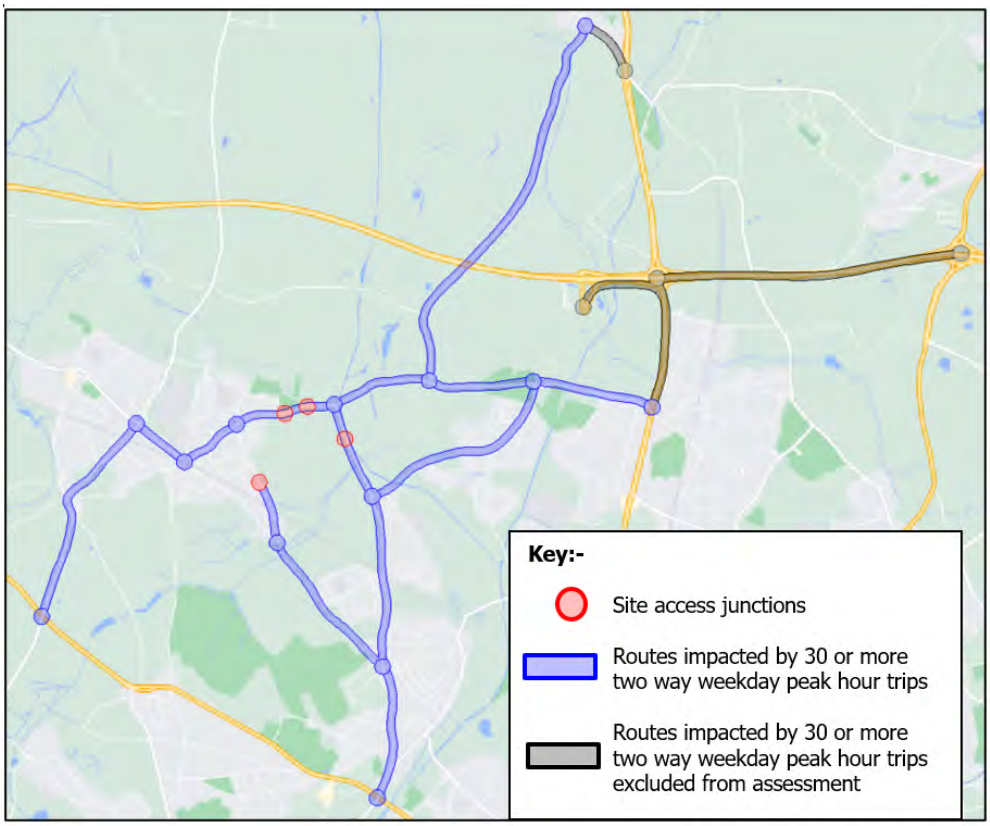
5.4.8 Development traffic of more than 30 vehicles are also forecast on routes towards Wolverhampton city centre via the A41 to the north-west, and the A449 to the north and B4161 to the south-west. However, these increases would remain modest relative to existing traffic flows.

5.4.9 It is considered that development traffic travelling towards and around Wolverhampton city centre would vary in its use of the above routes in response to peak period traffic conditions, with dynamic reassignment of other non-development traffic also occurring. Some traffic travelling via the A41 would also be expected to use the Holdern Road/New Hampton Road East corridor, which is not represented in the trip distribution model.

5.4.10 As a result, traffic flow increases on the A41 and A449 corridors towards the city centre are unlikely to give rise to significant impacts in practice. The scope for physical improvements of junctions along these routes, in particular study area junctions J3 and J14, is limited as discussed in Section 8. It is therefore considered that development traffic using these routes should be managed through other interventions such as improving access to the bus and rail networks and encouraging the use of sustainable and active travel modes.

5.4.11 A diagram illustrating the extent of the study area is presented in **Figure 5.1**.

Figure 5.1: Illustration of Traffic Impact Study Area



6.0 BASE DATA

6.1 Traffic Surveys

6.1.1 Traffic surveys were undertaken at the various Study Area junctions by PCC Traffic Information Consultancy during June 2021 and April 2022. The locations and dates of these surveys are summarised in **Table 6.1**.

Table 6.1: Location of Dates of Junction Traffic Surveys

STUDY AREA JUNCTION		DATE OF SURVEY	
		Tuesday 22/06/21	Tuesday 05/04/22
J1	PENDEFORD MILL LANE/BARNHURST LANE	✓	
J2	BARNHURST LANE/THE DROVEWAY	✓	
J3	PENDEFORD AVENUE/CODSALL LANE ROUNDABOUT	✓	
J4	BIRCHES AVENUE/LANE GREEN ROAD	✓	
J5	DUCK LANE/LANE GREEN ROAD	✓	
J6	PENDEFORD MILL LANE/BILBROOK ROAD	✓	
J7	WOBASTON ROAD/LAWN LANE		✓
J8	WOBASTON ROAD/THE DROVEWAY/i54		✓
J9	A449/WOBASTON ROAD ROUNDABOUT		✓
J14	A41/B4161/LOWER STREET SIGNALS		✓
J15	A41/HEATH HOUSE LANE SIGNALS		
J16	WOLVERHAMPTON ROAD/HISTONS HILL SIGNALS		✓
J21	BREWOOD ROAD/LAWN LANE PRIORITY JUNCTION		✓
J22	WOLVERHAMPTON ROAD/BIRCHES RD/DUCK LANE	✓	
-	DUCK LANE/WESLEY ROAD	✓	
-	LANE GREEN ROAD/WESLEY ROAD	✓	
-	LANE GREEN ROAD/OAKFIELD ROAD	✓	

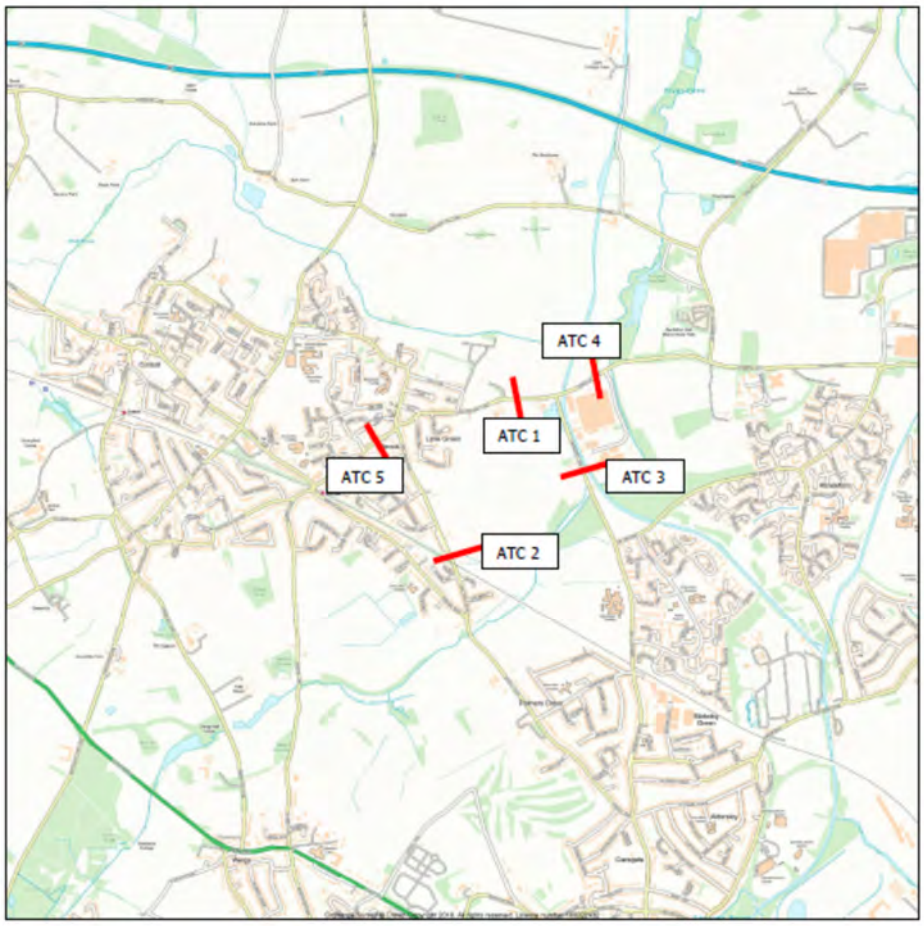
6.1.2 Traffic survey data is therefore available for all Study Area junctions, except J15 (A41/Heath House Lane). The capacity of J15 is to be assessed using an existing LINSIG model, which contains a set of forecast traffic flows that was previously agreed with SCC. Further details are provided in Section 8.

6.1.3 The list of surveys also includes the junctions at each end of Wesley Road, with Duck Lane and Lane Green Road; and the junction of Lane Green Road with Oakfield Road. These were included to enable the assessment of Site Access 4 and its potential wider effects.

6.1.4 Automatic Traffic Counts (ATCs) on the Pendeford Mill Lane and Lane Green Road site frontages were undertaken between Tuesday 22 June and Monday 28 June 2021.

These were updated with new ATC data collected between Thursday 31 March and Wednesday 06 April 2022, together with additional surveys undertaken at the Lane Green Road site frontage and on Wobaston Road and Duck Lane to the east and west of the site respectively. The 2022 ATC survey locations are shown in **Figure 6.1**.

Figure 6.1: Location of Automatic Traffic Counter Surveys (2022)



6.1.5 The raw traffic survey data listed above is not included in this STA but will be made available to the highway authorities and other interested parties as required.

6.2 Traffic Flows and Speeds

6.2.1 A summary of the traffic flows and speeds provided by the various ATC surveys is provided in **Table 6.2**.

Table 6.2: Surveys Traffic Speeds and Flows

SITE REF.	LOCATION	DATE	DIRECTION	85TH %ile SPEED (mph)	TRAFFIC FLOW (VEHICLES)		
					AM (08:00-09:00)	PM (17:00-18:00)	AAWT* (24hr)
ATC1	Pendeford Mill Lane	JUNE 2021	Eastbound	34	550	384	5858
			Westbound	35	417	576	5874
ATC2	Lane Green Road	JUNE 2021	Northbound	34	125	117	1278
			Southbound	34	169	102	1398
ATC1	Pendeford Mill Lane	MAR/APR 2022	Eastbound	32	715	511	6599
			Westbound	31	432	736	6803
ATC2	Lane Green Road	MAR/APR 2022	Northbound	35	128	115	1264
			Southbound	35	180	93	1374
ATC3	Barnhurst Lane	MAR/APR 2022	Northbound	38	271	185	2526
			Southbound	37	190	258	2325
ATC4	Wobaston Road	MAR/APR 2022	Eastbound	36	770	431	6825
			Westbound	33	491	809	6902
ATC5	Duck Lane	MAR/APR 2022	Eastbound	26	601	438	6151
			Westbound	26	423	559	5769

* Annual Average Weekday Traffic

6.2.2 Table 6.2 shows that 85th percentile vehicle speeds on Pendeford Mill Lane and Barnhurst Lane are below the current prevailing 40mph speed limits, which suggests that there is a reasonable basis for reducing the speed limit on these sections of highway to 30mph as proposed in Section 4.

6.2.3 Vehicle speeds on Lane Green Road are above the current 30mph speed limit. However, it is considered that the installation of a new compact roundabout at the junction with Site Access 4 and Oakfield Road will assist in reducing traffic speeds along this link, to the benefit of road safety. Additional traffic calming features could also be provided, as indicated in Section 4.

6.2.4 Table 6.2 shows differences in the results obtained from the ATC surveys undertaken in 2021 and 2022. This is considered further below.

6.3 Validation and Adjustment of Survey Data

6.3.1 The ATC data obtained for Pendeford Mill Lane, Lane Green Road, Barnhurst Lane and Wobaston Road in 2022 has been compared with the equivalent AM and PM link flows derived from the 2021 junction turning counts. This comparison is presented in **Table 6.3**.

Table 6.3: Comparison of 2021 and 2022 Link Flows (Vehicles)

SITE REF.	LOCATION AND PEAK HOUR	DIRECTION	2021	2022	% DIFFERENCE
ATC1 vs J1	Pendeford Mill Lane AM PEAK HOUR	Eastbound	552	715	30%
		Westbound	413	432	5%
		Two-Way	**965**	**1147**	**19%**
	Pendeford Mill Lane PM PEAK HOUR	Eastbound	364	511	40%
		Westbound	573	736	28%
		Two-Way	**937**	**1247**	**33%**
ATC2 vs J4	Lane Green Road AM PEAK HOUR	Northbound	111	128	15%
		Southbound	178	180	1%
		Two-Way	**289**	**308**	**7%**
	Lane Green Road PM PEAK HOUR	Northbound	135	115	-15%
		Southbound	97	93	-4%
		Two-Way	**232**	**208**	**-10%**
ATC3 vs J1	Barnhurst Lane AM PEAK HOUR	Northbound	264	271	3%
		Southbound	179	190	6%
		Two-Way	**443**	**461**	**4%**
	Barnhurst Lane PM PEAK HOUR	Northbound	187	185	-1%
		Southbound	231	258	12%
		Two-Way	**418**	**443**	**6%**
ATC3 vs J2	Barnhurst Lane AM PEAK HOUR	Northbound	267	271	1%
		Southbound	179	190	6%
		Two-Way	**446**	**461**	**3%**
	Barnhurst Lane PM PEAK HOUR	Northbound	185	185	0%
		Southbound	234	258	10%
		Two-Way	**419**	**443**	**6%**
ATC3 vs J2	Wobaston Road AM PEAK HOUR	Eastbound	609	770	26%
		Westbound	385	491	28%
		Two-Way	**994**	**1261**	**27%**
	Wobaston Road PM PEAK HOUR	Eastbound	381	431	13%
		Westbound	634	809	28%
		Two-Way	**1015**	**1240**	**22%**

6.3.2 The differences on Pendeford Mill Lane are significant, the 2022 two-way flows west of Barnhurst Lane being 19% and 30% higher in the AM and PM peak hours respectively.

6.3.3 Traffic flows on Lane Green Road are much lower, and the percentage comparison between 2021 and 2022 is therefore less meaningful. In numerical terms, the differences between the two data sets are not considered significant.

6.3.4 Traffic flows on Barnhurst Lane are also modest and the percentage comparison between 2021 and 2022 is therefore less meaningful. In numerical terms, the differences between the two data sets are not considered significant.

6.3.5 The flow differences on Wobaston Road are more significant, the 2022 two-way flows east of Barnhurst Lane being 27% and 22% higher in the AM and PM peak hours respectively.

6.3.6 The comparison suggests that traffic flows on Pendeford Mill Lane and Wobaston Road have increased since the 2021 surveys were carried out. There is no strong evidence that flows on Lane Green Road or Barnhurst Lane have increased significantly.

6.3.7 To provide a robust assessment of the Pendeford Mill Lane site accesses, the base data for 2022 has been used for the capacity assessments. For the Pendeford Mill Lane/Barnhurst Lane junction, straight ahead flows on Pendeford Mill Lane and Wobaston Road as surveyed in 2021 have been increased by a factor of 30% to bring them in line with the 2022 surveys.

6.4 PCU Conversion

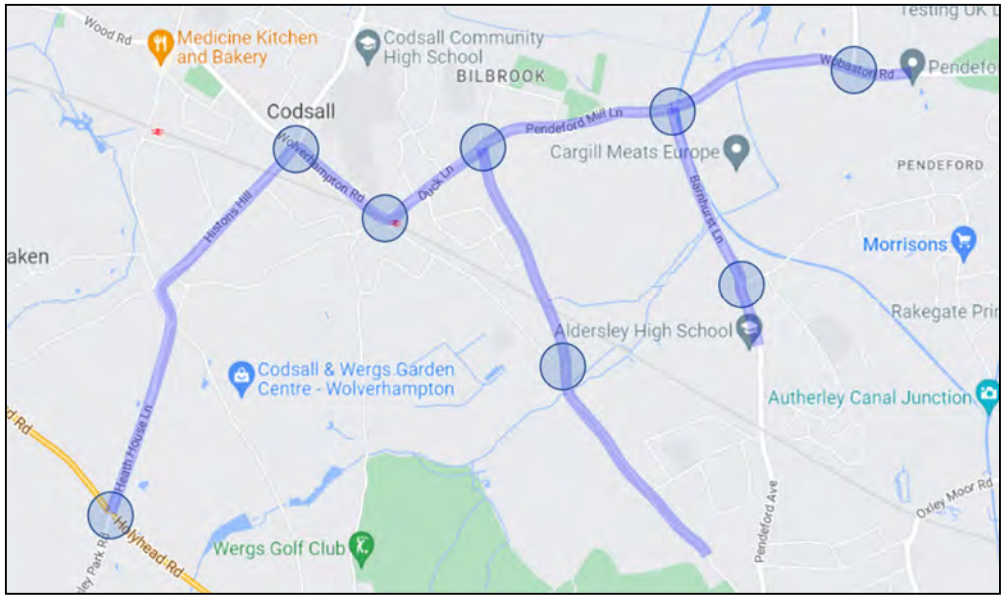
6.4.1 To provide a standard basis for the capacity assessments, surveyed traffic flows have been converted from vehicles to Passenger Car Units (PCUs) using standard factors.

6.5 Collision Analysis

6.5.1 Records of Personal Injury Collisions (PICs) were obtained from SCC's Accident Investigation team for the most recent 5-year period available at the date of preparing this report.

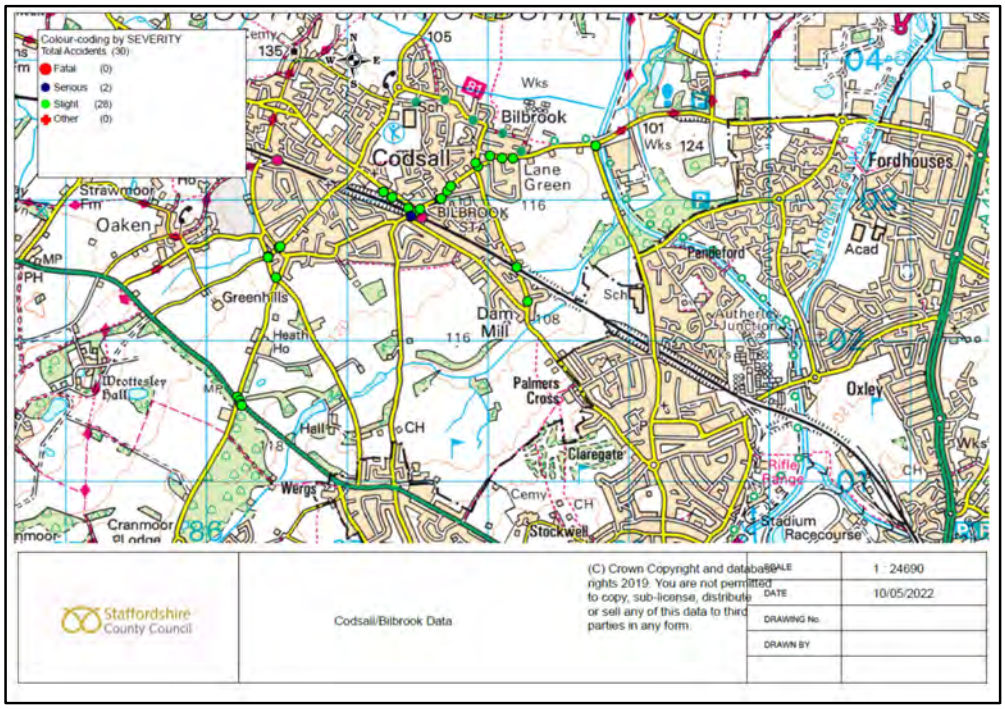
6.5.2 The PIC study area includes the roads and junctions indicated on **Figure 6.2**.

Figure 6.2: Extent of Collision Study Area



6.5.3 The search results cover a 5-year period from 01/01/2016 to 31/01/2021 during which 30 PICs were recorded period. A copy of the supplied data plot map is presented in **Appendix E**, from which the collision plot map is reproduced as **Figure 6.3**.

Figure 6.3: SCC Collision Plot Map (2016-2021)



6.5.4 A summary of the recorded PICs and casualties by year and road user category is provided in **Table 6.4**.

Table 6.4: PICs and Casualties by Road Users Category

Year	Total		Pedestrian		Cyclist		Children		Motor Cyclist	
	PICs	Casualties	PICs	Casualties	PICs	Casualties	PICs	Casualties	PICs	Casualties
2016	7	8	2	2	0	0	2	2	0	0
2017	4	6	0	0	1	1	0	0	1	1
2018	5	6	1	1	0	0	0	0	4	4
2019	9	12	1	1	1	1	1	1	0	0
2020	4	4	1	1	1	1	0	0	0	0
2021	1	1	0	0	0	0	0	0	0	0
Totals	**30**	**37**	**5**	**5**	**3**	**3**	**3**	**3**	**5**	**5**

6.5.5 A summary of the number of casualties by year and severity is provided in **Table 6.5**.

Table 6.5: Casualties by Year and Severity

Year	Fatal	Serious	Slight	Total
2016	0	1	7	**8**
2017	0	0	6	**6**
2018	0	0	6	**6**
2019	0	0	12	**12**
2020	0	1	3	**4**
2021	0	0	1	**1**
Totals	**0**	**2**	**35**	**37**

6.5.6 The average rate of PICs is 6 per year across the study area as a whole, which is not considered unduly significant in view of its extents and the number of major routes included. Of a total of 37 casualties recorded over the 5-year period, only 2 resulted in serious injury and all other collisions involved slight injury.

6.5.7 Pedestrians accounted for 5 of the recorded casualties (including 2 children), one of involving serious injury. Cyclists accounted for 3 casualties. A further 7 were vehicle passengers (including one child), and the remaining 22 involved drivers (including 5 motorcyclists), one of which also resulted in serious injury.

6.5.8 A more detailed review of the data has been undertaken by considering the clusters shown on the plot map provided by SCC (Figure 6.3). Clusters involving 3 or more PICs have been identified at the following locations:

- **Cluster 1**: At or adjacent to the Duck Lane/Birches Road/Keepers Lane/Wolverhampton Road double mini-roundabouts (study area Junction 22);
- **Cluster 2**: Duck Lane at or adjacent to the junctions with Wesley Road, Brookfield Road, Pendinas Drive and Orchard Lane;
- **Cluster 3**: At or adjacent to the junctions of Duck Lane with Pendeford Mill Lane, Lane Green Road; and the junctions of Pendeford Mill Lane with Withers Lane and Alexander Road.

6.5.9 Each of the above cluster sites is discussed below.

Cluster 1

6.5.10 A total of 4 PICs incidents was recorded, one resulting in serious injury to a cyclist. Within this cluster, 3 PICs occurred when the road surface was wet or damp and 2 during the hours of darkness, although street lighting was present and lit. One PIC (serious injury) involved a cyclist, another a pedestrian and the remaining two involved cars. The incidents were distributed across the study period, having occurred in 2016, 2017, 2019 and 2020.

6.5.11 The serious-injury PIC occurred a car entered the roundabout and collided with a cyclist already negotiating the roundabout. Contributory factors were listed as *slippery road* and *driver errors*.

6.5.12 The pedestrian casualty occurred on Duck Lane approaching the roundabout. The details suggest that the pedestrian collided with the offside of a car travelling from north-east to south-west whilst attempting to cross the road. The records indicate that the driver failed to observe the pedestrian and that it is likely to have occurred at or adjacent to an existing zebra crossing.

6.5.13 The third PIC occurred at the junction and involved two cars resulting in a slight-injury casualty from each vehicle. The first was travelling from Duck Lane to Keepers Lane and was waiting to enter the roundabout. The second was travelling from Duck Lane to Wolverhampton Road. No further information is provided but the available data suggests a rear-end shunt type collision.

6.5.14 The fourth PIC occurred on the Wolverhampton Road approach to the junction and involved two cars. The recorded data suggests that the cause is likely to have been driver error.

6.5.15 There are no common themes or patterns between the 4 PICs that suggests any specific cause or any deficiency in road geometry.

Cluster 2

6.5.16 A total of 4 PICs occurred at this location, including one that resulting in a serious injury. One PIC occurred when the road surface was wet or damp and 2 PICs occurred during the hours of darkness (street lighting present and lit). Two PICs involved pedal cyclists, one a motorcyclist, and another a child pedestrian. The incidents were distributed across the study period, having occurred in in 2016, 2017, and 2019.

6.5.17 The serious injury PIC occurred in 2016 and involved a pedestrian who stepped out into the carriageway into the path of a car travelling from north-east to south-west on Duck Lane, south of Wesley Road and adjacent to the Codsall Fire Station. It appears that the collision did not occur at a formal pedestrian crossing.

6.5.18 The first of the two cyclist casualties resulted from a collision at the junction of Wesley Road with Duck Lane. There is no clear description in the records to confirm how the incident occurred or the contributory factors.

6.5.19 The second cyclist casualty resulted from a PIC at the junction of Orchard Lane with Duck Lane. The records indicate that a car travelling southbound on Duck Lane turned into Orchard Lane across the path of a cyclist travelling in the opposite direction. The incident appears to have resulted from driver error (failure to give-way to oncoming traffic).

6.5.20 The final PIC involved a motorcyclist at the junction of Pendinas Drive with Duck Lane. The records indicate that a car turned out of Pendinas Drive towards Duck Lane southbound, across the path of a motorcyclist travelling northbound on Duck Lane. The incident appears to have resulted from driver error (failure to give-way to oncoming traffic).

6.5.21 There are no common themes or patterns between the 4 PICs that suggests any specific cause or any deficiency in road geometry.

Cluster 3

6.5.22 This cluster includes 5 PICs, all resulting in slight injuries. All occurred when the road surfaces were dry and in fine weather conditions. Three accidents occurred during the hours of daylight and the remaining two during the hours of darkness (street lighting present and lit). Three of the incidents involved pedestrians and the remaining two involved cars. The incidents were distributed across the 5-year study period, having occurred in 2016, 2018, 2019, and 2020.

6.5.23 The first of the three pedestrian-related PICs occurred in 2016 on Withers Road approaching the junction with Pendeford Mill Lane. The records state that a car was reversing onto a footway and collided with the pedestrian. The cause appears to have been driver error.

6.5.24 The second pedestrian casualty occurred on Pendeford Mill Lane approaching the junction with Bilbrook Road. A car was recorded as having reversed on the carriageway adjacent to shops on the southern side of Pendeford Mill Lane and collided with a pedestrian. The cause appears to have been driver error.

6.5.25 The final pedestrian incident occurred on Bilbrook Road, north of its junction with Pendeford Mill Lane. The information provided suggests that a car reversed out of a parking space, adjacent to shops, and collided with a pedestrian. Again, the cause appears to have been driver error.

6.5.26 Of the remaining two incidents, the first involved a single car on Pendeford Mill Lane travelling eastbound (east of Mill Grove). The driver was impaired by alcohol and lost control of the vehicle.

6.5.27 The final incident occurred at the Pendeford Mill Lane/Alexander Road junction during the hours of darkness and involved two cars. The first vehicle was travelling from Alexander Road and turning right into Pendeford Mill Lane (eastbound), whilst the second was travelling westbound on Pendeford Mill Lane. The two vehicles collided, resulting in a single slight-injury casualty. The cause appears to have been driver error.

6.5.28 There are no common themes or patterns between the 5 PICs that suggests any specific cause or any deficiency in road geometry.

Road Surrounding the Development Site

6.5.29 The proposed development would be served by new access junctions with Lane Green Road, Pendeford Mill Lane, and Barnhurst Lane. Incidents recorded in the

vicinity of these proposed accesses are reviewed below, together with those at the Pendeford Mill Lane/Barnhurst Lane/Wobaston Road junction at the site's north-east corner.

Lane Green Road

6.5.30 One incident was recorded during the study period along the Lane Green Road site frontage, just north of the railway line. The incident occurred in February 2017 during the hours of daylight and in fine dry weather conditions. It involved two cars, one of which was recorded as having failed to signal or given a misleading signal. A single slight-injury casualty resulted. There is no evidence from the available data that the road environment was a contributory factor.

Pendeford Mill Lane

6.5.31 No PICs were recorded on the Pendeford Mill Lane site frontage during the study period.

Barnhurst Lane

6.5.32 No PICs were recorded along the Barnhurst Lane site frontage during the study period.

Pendeford Mill Lane/Barnhurst Lane/Wobaston Road Junction

6.5.33 A single PIC occurred at this junction during in February 2017, during the hours of daylight and in fine weather conditions, although the road surface was recorded as wet or damp. It involved two cars and appears to have resulted from one emerging from the side road (Barnhurst Lane) into the path of another travelling westbound from Wobaston Road to Pendeford Mill Lane. The incident resulted in two slight-injury casualties.

6.5.34 Whilst the above records provide no evidence of an existing road safety issue at this junction, proposals to introduce traffic signal control as set out in Section 9 would reduce the risk of collisions of the type described above.

Summary

6.5.35 The available data provides no strong evidence of specific local accident problems that might be related to traffic conditions or road geometry on the study area highway network. Although 30 collisions were recorded within the study area during the most recent 5-year period, they were spread over a large area. Of the three cluster locations identified, none appear to have significant highway geometry issues that would unduly increase the risk of collisions and all recorded PICs appear to have resulted from driver error.

6.5.36 Approximately 40% of casualties were vulnerable road users (pedestrians, cyclists, children or motorcyclists). A large proportion of these casualties occurred on Duck Lane between Bilbrook village centre and railway station. The volume of traffic that

would be generated by the proposed development along this corridor is not forecast to be unduly significant. However, the corridor is considered further within this STA and improvements to pedestrian and cyclist provision are considered in Section 10.

6.5.37 Having regard to the above assessment, it is considered that the proposed development would not give rise to any significant increase in the risk of road traffic accidents in the local area, subject to satisfactory design of the proposed access junctions and off-site mitigation measures.

7.0 ASSESSMENT SCENARIOS

7.1 Assessment Year

7.1.1 An assessment year of 2038 has been agreed with SCC, consistent with the Local Plan Review period.

7.1.2 For the CWC highway network, the on-going Black Country Core Strategy Review covers the period to 2036. A 2038 assessment year is therefore robust for application to junctions within the CWC area.

7.1.3 NH's usual assessment requirements are set out in *DfT Circular 02/2013*, and in this case the assessment year would be the end of the Local Plan period, i.e. 2038. The SRN assessment work will be undertaken separately at on this basis.

7.2 Background Traffic Growth

7.2.1 Growth in background traffic to assessment year levels has been assessed using the TEMPRO 7.2 system and datasets. In accordance with current DfT guidance, the TEMPRO growth forecasts are based on the 2018 Road Traffic Forecasts (RTF) "Scenario 1" central assumptions with respect to economic growth and fuel costs.

7.2.2 Traffic growth factors for the "car driver" travel mode have been obtained in accordance with the above approach. The TEMPRO traffic growth factor calculations are presented in the STA Scoping Report, which identified traffic growth factors for the South Staffordshire and Wolverhampton City local authority areas. In accordance with comments subsequently received from SCC, local factors for the South Staffordshire 008 MSOA have been used instead of the district-wide forecasts. This has resulted in slightly higher growth factors than proposed in the Scoping Report, thus providing a more robust assessment.

7.2.3 Growth factors between the traffic survey years and assessment year for the South Staffordshire 008 and Wolverhampton City local authority areas are compared in **Table 7.1**. No adjustments to the TEMPRO trip end data have been made to account for any of the currently planned developments in the area. This is likely to result in an element of double-counting of traffic growth effects but will provide a robust assessment.

Table 7.1: Background Traffic Growth Factors (2021 to 2038)

Local Authority Area	Peak Period	NTM Growth Factors	
		2021-2038	2022-2038
South Staffordshire 008	AM	1.113	1.105
	PM	1.112	1.105
Wolverhampton	AM	1.149	1.139
	PM	1.149	1.138

7.2.4 The traffic growth factors for the two local authorities are somewhat different, those for the CWC area being higher. The differences between the AM and PM peak hour factors in each local authority area are not significant, however.

7.2.5 The proposed development would have close links to the Wolverhampton area. To provide a consistent basis for the assessment, a composite traffic growth factor has been used for all study area junctions.

7.2.6 Reference to Section 5 shows that destinations within Wolverhampton city centre would account for approximately half of development trips. It is therefore considered reasonable to provide standard averages of the SSDC and CWC peak hour growth factors, which have therefore been calculated as follows:

- 2021 to 2038: 1.131 (AM & PM)
- 2022 to 2038: 1.122 (AM & PM)

7.2.7 The average factors have been applied to the surveyed traffic flows at each study area junction prior to adding committed development traffic. Traffic flow diagrams are presented in **Appendix F**.

7.3 Committed Development

7.3.1 For the purpose of this STA, committed developments have been defined as major proposals not yet implemented (and therefore not represented within the traffic surveys), which could materially affect future traffic patterns at junctions within the study area of interest over and above background traffic growth effects.

7.3.2 Further to discussions with SSDC and SCC on the scope of the STA, the following proposed major developments have been taken into account as committed developments in accordance with this definition:

- Proposed residential development at Station Road, Codsall (70 dwellings plus new station car park);

- Safeguarded land at Keepers Lane and Wergs Hall Road, Codsall (317 dwellings on SAD sites 406 and 419).

7.3.3 The traffic generation of these sites (a combined total of 387 additional dwellings) have been assessed using the trip generation rates and trip distribution assumptions presented in Section 5.

7.3.4 The assignment of this additional development traffic to the highway network is presented on the flow diagrams in **Appendix D**. The forecasts take account of different routing options that would apply to trips between the committed development sites and the A41 area to the south, which would use Keepers Kane, Wergs Hall Road and Heath House Lane. Some traffic may also use Stafford Lane to reach the A41, which would reduce demands at Junction 16 (A41/Heath House Lane). However, as the latter junction is understood to have limited capacity, any traffic that might use Stafford Lane has instead been assigned to Heath House Lane in order to provide a robust assessment.

7.3.5 Notwithstanding its status as a committed development, SCC has requested that the cumulative impact of the Keepers Lane scheme and the land east of Bilbrook is identified. The required assessment scenarios are considered further below.

7.3.6 In addition, although partly occupied, traffic associated with the Bilbrook Mill development located on Pendeford Mill Lane has been added to the background scenario traffic flows, obtained from the approved TA for that site. This will result in an element of double counting of trips but is considered to be a robust approach. The traffic flow forecasts associated with the consented Bilbrook Mill development are also presented in **Appendix F**.

7.4 Assessment Scenarios

7.4.1 The capacity of each study area junction has been assessed under the following *Do Minimum* (DM) and *Do Something* (DS) scenarios:

- DM1: 2038 + Station Road, Codsall
- DM2: 2038 + Station Road, Codsall + Keepers Lane
- DS1: DM1 + Bilbrook development (848 dwellings)
- DS2: DM1 + Bilbrook + Keepers Lane (848 + 317 = 1165 dwellings)

7.4.2 The inclusion of these four scenarios enables the impact of the Bilbrook development to be assessed relative to other major developments that would contribute to assessment year traffic levels.

7.4.3 SCC has requested that the impact of the Keepers Lane and Bilbrook sites together (1165 dwellings) is demonstrated. This can be identified in absolute terms by comparing results for the DS2 scenario with the DM1 scenario. However, it is important to recognise that Keepers Lane is a committed site and the impact of the Bilbrook development in DS2 must also be considered relative to DM2, which includes Keepers Lane.

7.4.4 Notwithstanding the above, SCC has requested that the highway capacity assessments demonstrate acceptable network conditions for the DS2 scenario or the solutions that are proposed to achieve this outcome. The STA has been progressed on this basis, with mitigation being considered where conditions under DS2 are materially worsened compared with DM1.

8.0 CAPACITY ASSESSMENTS

8.1.1 This section of the TA provides a summary of the capacity assessments undertaken at the proposed site access junctions and existing off-site study area junctions, as follows:

- Site Access junctions 1 to 4;
- J1: Pendeford Mill Lane/Barnhurst Lane;
- J2: Barnhurst Lane/The Droveway roundabout;
- J3: Pendeford Avenue/Codsall Lane roundabout;
- J4: Birches Avenue/Lane Green Road;
- J5: Duck Lane/Pendeford Mill Lane;
- J6: Pendeford Mill Lane/Bilbrook Road;
- J7: Wobaston Road/Lawn Lane;
- J8: Wobaston Road/The Droveway/i54 (Innovation Drive);
- J9: A449/Wobaston Road roundabout (Vine Island);
- J14: A41/B4161/Lower Street signals;
- J15: A41/Heath House Lane signals;
- J16: Wolverhampton Road/Histons Hill signals;
- J21: Brewood Road/Lawn Lane junction, Coven;
- J22: Wolverhampton Road/Birches Road/Keepers Lane/Duck Lane.

8.1.2 The capacity of roundabouts or priority junctions has been assessed using TRL Software's JUNCTIONS 10 modelling suite (all site access junctions and off-site junctions J1, J2, J3, J4, J5, J6, J7, J8, J9, J21 and J22).

8.1.3 JUNCTIONS 10 provides Ratio of Flow to Capacity (RFC) values, which indicate how close to capacity each approach or traffic stream will operate. An RFC value of less than or equal to 1.00 indicates that the entry is operating within capacity. The desirable maximum RFC value for new junctions at the appropriate design year is 0.85, allowing some reserve capacity for daily fluctuations in traffic demand.

8.1.4 JUNCTIONS 10 results for priority junctions are quoted by traffic stream. The software does not provide results for "free-flow" streams that are not delayed (e.g. - straight ahead major road movement where it is not blocked by vehicles waiting to

turn right into the side road), which are therefore marked within the summary table as "*Not Opposed*".

8.1.5 The capacity of existing traffic signal junctions (J14, J15 and J16) has been assessed using LINSIG v3 models. LINSIG provides Degree of Saturation (DoS) values, which indicate how close to capacity each entry lane will operate. The desirable maximum DoS value for new junctions at the appropriate design year is 90%.

8.1.6 All modelled queues are quoted in Passenger Car Units (PCUs). For the purposes of conversion into queue lengths, a single PCU can be considered to have a length of 5.75 metres.

8.1.7 The full capacity assessment results are not included in this STA but will be made available to the highway authorities and other interested parties as required.

8.2 Site Access Junctions

8.2.1 The complete development east of Bilbrook will be served by 4 vehicular access junctions as described in Section 4. These include the recently constructed Bilbrook Mill access (Site Access 1), which will be affected by additional development in the proposed allocation site.

8.2.2 The distribution of traffic between the site accesses has been estimated based on the relative proportion of the development that each would serve using the Masterplan layout. To provide a robust assessment of the proposed new site access junctions, it has been assumed that all development traffic generated would use new Site Access junctions 2, 3 or 4 and that Site Access 1 would serve only Bilbrook Mill. In practice, Site Access 1 would also be available for use by development beyond Bilbrook Mill, which would reduce the traffic load at the other accesses.

8.2.3 The JUNCTIONS 10 model outputs are summarised below.

Table 8.1: Site Access Capacity Assessment Summary

JUNCTION NAME AND ARM OR TRAFFIC STREAM	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
SA1: Pendeford Mill Lane/Marhall Way (Bilbrook Phase 1 as constructed)																
(A) Pendeford Mill Lane (East)	Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed	
(B) Site Access 1 (Existing)	0.28	0.4	0.30	0.4	0.29	0.4	0.32	0.5	0.37	0.6	0.41	0.7	0.38	0.6	0.44	0.7
(C) Pendeford Mill Lane (West)	0.01	0.0	0.01	0.0	0.01	0.0	0.01	0.0	0.03	0.0	0.03	0.1	0.03	0.0	0.03	0.0
SA2: Proposed Access / Pendeford Mill Lane																
(A) Pendeford Mill Lane (East)					0.43	0.8	0.45	0.9					0.78	3.7	0.83	5.1
(B) Site Access 2 (Proposed)					0.10	0.1	0.10	0.1					0.06	0.1	0.07	0.1
(C) Pendeford Mill Lane (West)					0.79	4.0	0.85	5.9					0.56	1.4	0.59	1.6
SA3: Proposed Access / Barnhurst Lane																
(A) Barnhurst Lane (South)					0.31	0.5	0.31	0.5					0.31	0.5	0.31	0.5
(B) Site Access 3					0.17	0.2	0.17	0.2					0.08	0.1	0.08	0.1
(C) Barnhurst Lane (North)					0.24	0.3	0.24	0.3					0.29	0.5	0.30	0.5
SA4: Proposed Access / Lane Green Road / Oakfield Road																
(A) Lane Green Road (South)					0.16	0.2	0.16	0.2					0.18	0.2	0.18	0.2
(B) Oakfield Road					0.04	0.0	0.04	0.0					0.03	0.0	0.03	0.0
(C) Lane Green Road (North)					0.18	0.2	0.18	0.2					0.12	0.2	0.12	0.2
(D) Site Access 4					0.04	0.0	0.04	0.0					0.02	0.0	0.02	0.0

8.2.4 The results confirm that all 4 proposed junctions are forecast to operate within capacity, with a minimum of approximately 15% reserve capacity at the Site Access 2 on Pendeford Mill Lane and in excess of 50% reserve capacity at all other access junctions. The results are considered robust for the reasons set out previously. It is therefore considered that the access junctions to would satisfactorily serve the

proposed residential development, with some headroom for additional trips that may be generated by the ancillary land uses.

8.3 Off-Site Junctions

8.3.1 Models of the existing study area junctions of interest were built using geometric parameters measured on-site or from base mapping. In the first instance, the models were run using 2021 or 2022 surveyed flows and the modelled queues were compared with observed traffic queue behaviour as provided by the traffic surveys.

8.3.2 In most cases, the differences between modelled and observed queues were not found to be significant. Observation of survey video footage showed that in most cases, queues were sporadic and short-lived, with long periods of no or minimal queuing. At certain junctions, differences between modelled and observed queues can be explained by other factors such as on-street parking.

8.3.3 Calibrating models to reproduce the maximum recorded queues under such circumstances would therefore not be representative of average conditions and is considered inappropriate.

8.3.4 Specific observations of driver behaviour relevant to the operation of individual junctions are reported for each junction below.

8.4 J1: Pendeford Mill Lane/Barnhurst Lane

8.4.1 The queue data collected at this junction suggests that sporadic queues occur on Barnhurst Lane, particularly during the AM peak hour. However, further study of video camera footage collected during the survey shows that the maximum observed values occurred only for brief periods during the peak hour and that queues were typically below the reported maximum levels. On this basis, the differences between modelled and observed queues are not considered to warrant specific calibration of the model.

8.4.2 Prior to applying traffic growth factors to derive assessment year flows, the straight-ahead flows recorded in the 2021 surveys were factored to reflect the higher major road flows recorded in 2022, as described in Section 6.

8.4.3 The assessment results for the future year scenarios are presented below.

Table 8.2: J1 Assessment Results

J1: PENDEFORD MILL LANE/WOBASTON ROAD/BARNHURST LANE	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Wobaston Road (East)	Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed	
(B) Barnhurst Lane	1.03	15.1	1.09	21.9	**1.32**	**53.2**	**1.41**	**63.9**	0.80	3.5	0.87	5.2	**1.00**	**11.4**	**1.11**	**20.4**
(C) Pendeford Mill Lane (West)	0.27	0.4	0.27	0.4	0.27	0.4	0.28	0.4	0.23	0.3	0.24	0.3	0.25	0.3	0.26	0.4

8.4.4 The junction is forecast to operate above capacity during the AM peak hour in the DM1 and DM2 scenarios. The addition of the Bilbrook development in the DS1 and DS2 scenarios would give rise to a further deterioration in performance during the AM peak hour and would also cause the junction to operate above capacity during the PM peak hour.

8.4.5 The assessment therefore indicates that improvements are required to accommodate the Bilbrook development. Proposed mitigation measures for this junction are presented and assessed in Section 9.

8.5 J2: Barnhurst Lane/The Droveway Roundabout

8.5.1 The queue data collected at this junction suggests that sporadic queues occur on each approach. However, the video camera footage shows that queues disperse quickly and are interspersed with long periods where no queues form. It is therefore considered that specific calibration of the model is not appropriate.

8.5.2 The assessment results for the future year scenarios are presented below.

Table 8.3: J2 Assessment Results

J2: BARNHURST LANE/THE DROVEWAY MINI-ROUNDABOUT	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Barnhurst Lane (North)	0.34	0.5	0.34	0.5	0.51	1.1	0.51	1.1	0.36	0.6	0.37	0.6	0.44	0.8	0.44	0.8
(B) The Droveway	0.57	1.3	0.57	1.3	0.61	1.6	0.61	1.6	0.52	1.1	0.52	1.1	0.62	1.6	0.62	1.6
(C) Barnhurst Lane (South)	0.68	2.2	0.68	2.2	0.71	2.5	0.71	2.5	0.45	0.8	0.45	0.8	0.52	1.1	0.52	1.1

8.5.3 The junction is forecast to operate within capacity in all scenarios, and would therefore accommodate traffic growth, committed development and the proposed Bilbrook development without the need for improvements.

8.6 J3: Pendeford Avenue/Codsall Lane Roundabout

8.6.1 The queue video data collected at this junction suggests that sporadic queues occur on each approach but are generally short-lived and in most cases do not exceed around 5 vehicles for the majority of both peak hours. Occasional longer queues of 13 to 14 vehicles were recorded on Blackburn Avenue and Codsall Road southbound during the AM peak hour, but these were observed to disperse quickly. Overall, it is therefore considered that specific calibration of the model is not appropriate and would result in unreliable results.

8.6.2 The assessment results for the future year scenarios are presented below.

Table 8.4: J3 Assessment Results

J3: PENDEFORD AVENUE/CODSALL LANE ROUNDABOUT	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Pendeford Avenue	0.86	5.5	0.86	5.5	**0.95**	**11.6**	**0.95**	**11.6**	0.75	3.0	0.75	3.0	0.78	3.5	0.78	3.5
(B) Blackburn Avenue	0.82	4.0	0.82	4.0	**0.90**	**6.2**	**0.90**	**6.2**	0.61	1.6	0.61	1.6	0.64	1.8	0.64	1.8
(C) Codsall Road (South)	0.62	1.7	0.62	1.7	0.64	1.9	0.64	1.9	0.78	3.7	0.78	3.7	**0.86**	**5.9**	**0.86**	**5.9**
(D) Knights Avenue	0.12	0.1	0.12	0.1	0.12	0.1	0.12	0.1	0.08	0.1	0.08	0.1	0.09	0.1	0.09	0.1
(E) Codsall Road (North)	0.69	2.3	0.69	2.3	0.74	2.9	0.74	2.9	0.36	0.6	0.36	0.6	0.39	0.7	0.39	0.7

8.6.3 During the AM peak hour, the junction is forecast to operate at practical capacity in the DM1 and DM2 scenarios, with the Pendeford Avenue (southbound) arm operating just above capacity. The Bilbrook development would result in the Pendeford Avenue (southbound) and Blackburn Avenue (westbound) arms operating above capacity in the DS1 and DS2 scenarios. However, the forecast increases in queues on these arms arising from both the Keepers Lane and Bilbrook developments together (DS2 vs. DM1) are not significant at approximately 6 and 2 PCUs respectively.

8.6.4 During the PM peak hour, the junction is forecast to operate close to practical capacity. The DS2 scenario (Bilbrook and Keepers Lane developments combined) would have a modest impact on the Codsall Road (northbound) arm resulting in a maximum RFC value of 0.86 and a queue of just under 6 PCUs. This is not considered to represent a material impact on performance compared with DM1.

8.6.5 The junction is surrounded on all sides by built development and the scope for improvements are limited. Whilst it would be possible to widen the Pendeford Avenue and Blackburn Avenue approaches slightly to improve their operation during the AM peak hour, the benefits are likely to be marginal in practice. Furthermore, the junction of Lower Street with the A41 (Junction 14) some 1.2km to the south has no reserve capacity (see results presented later) and significant increases in traffic

arrival rates arising from improvements to Junction 3 could therefore be detrimental to the performance of Junction 14.

8.6.6 It is therefore considered that the forecast impact of the development at Junction 3 is not severe and that improvements are unlikely to be beneficial or justified.

8.7 J4: Birches Avenue/Lane Green Road

8.7.1 No significant queueing was recorded at this junction during either peak hour. The assessment results are presented below.

Table 8.5: J4 Assessment Results

J4: BIRCHES ROAD/LANE GREEN ROAD	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Birches Road	Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed	
(B) Lane Green Road	0.42	0.7	0.42	0.7	0.49	1.0	0.49	1.0	0.22	0.3	0.22	0.3	0.26	0.3	0.26	0.3
(C) Codsall Road	0.28	0.6	0.28	0.6	0.32	0.7	0.32	0.7	0.34	0.8	0.34	0.8	0.44	1.2	0.44	1.2

8.7.2 The junction is forecast to operate within capacity in all scenarios, and would therefore accommodate traffic growth, committed development and the proposed Bilbrook development without the need for improvements.

8.8 J5 and J6: Duck Lane Junctions with Lane Green Road and Bilbrook Road

8.8.1 The length of the Duck Lane link between Lane Green Road (Junction 5) and Bilbrook Road/Pendeford Mill Lane (Junction 6) is relatively short and some interaction between the two junctions may therefore occur. The approved TA for Bilbrook Phase 1 (now Bilbrook Mill) initially modelled the two as a combined junction but found that this did not reproduce observed queues accurately. Individual models were therefore built for each junction. For consistency, the same approach has been applied in this STA.

8.8.2 Observed queues at each junction were generally modest and do not indicate that the junction is operating at or near to capacity. Further study of video camera footage collected during the survey shows that the maximum observed values occurred only for brief periods during the peak hour and were generally caused by issues unrelated to junction capacity, including the presence of zebra crossings on Duck Lane to each side of the two junctions. Additionally, the bend in Duck Lane between the two junctions appears to give rise to cautious and, occasionally, unusual or erratic driver behaviour. On this basis, the differences between modelled and observed queues are not considered sufficient to warrant specific calibration of the model.

8.8.3 The assessment results for the future year scenarios are presented below.

Table 8.6a: J5 Assessment Results

J5: DUCK LANE/LANE GREEN ROAD	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Duck Lane (NE)	Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed	
(B) Lane Green Road	0.48	0.9	0.51	1.0	0.50	1.0	0.53	1.1	0.37	0.6	0.39	0.6	0.38	0.6	0.40	0.7
(C) Duck Lane (West) [C-A]	0.40	1.3	0.44	1.6	0.40	1.4	0.45	1.7	0.31	0.9	0.33	1.0	0.33	1.0	0.35	1.1
(C) Duck Lane (West) [C-B]	0.41	0.1	0.45	0.1	0.42	0.1	0.46	0.1	0.34	0.1	0.36	0.1	0.36	0.1	0.38	0.1

Table 8.6b: J6 Assessment Results

J6: PENDEFORD MILL LANE/DUCK LANE	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Duck Lane (SW)	Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed	
(B) Bilbrook Road	0.66	1.8	0.70	2.2	0.67	1.9	0.72	2.3	0.37	0.6	0.39	0.6	0.38	0.6	0.41	0.7
(C) Duck Lane (East) [C-A]	0.25	0.7	0.27	0.8	0.27	0.8	0.29	0.8	0.34	1.1	0.38	1.3	0.35	1.2	0.39	1.4
(C) Duck Lane (East) [C-B]	0.27	0.0	0.28	0.0	0.29	0.0	0.30	0.0	0.35	0.0	0.39	0.0	0.36	0.0	0.40	0.0

8.8.4 The junctions themselves are therefore forecast to operate within capacity in all scenarios. However, it is recognised that the general traffic capacity of this part of

the highway network is limited and that significant increases arising from the proposed Bilbrook development are not desirable in terms of road safety or amenity in the village centre.

8.8.5 The Bilbrook scheme is forecast to give rise to additional total flows through the two junctions of 41 vehicles and 45 vehicles during the AM and PM peak hours respectively. This is equivalent to approximately 1 additional vehicle every 1.5 minutes and is not expected to give rise to any significant adverse impacts in practice. However, there may be scope for modifications to be provided as part of the wider management strategy for Lane Green Road (see Section 4). The aim of these would be to discourage additional traffic from using the network through the village centre and to improve the environment for pedestrians. Possible measures are discussed in Section 9.

8.9 J7: Wobaston Road/Lawn Lane

8.9.1 This existing priority junction has separate lanes for left and right turning traffic on the Lawn Lane (minor arm) approach. The traffic survey data collected at this location suggests that queues are generally modest, but slightly longer in the Lawn Lane right turn lane. Sporadic queues occur on Lawn Lane during both peak hours, which can at times result in delays for vehicles turning onto Wobaston Road. This appears to result largely from occasional platoons of traffic travelling westbound on Wobaston Road. However, these delays appear to be sporadic and short-lived and are not considered to warrant specific calibration of the model.

8.9.2 The assessment results for the future year scenarios are presented below.

Table 8.7: J7 Assessment Results

J7: WOBASTON ROAD/LAWN LANE	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Wobaston Road (East)	0.09	0.1	0.10	0.1	0.10	0.1	0.11	0.1	0.13	0.1	0.13	0.1	0.13	0.1	0.13	0.2
(B) Access	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
(C) Wobaston Road (West)	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
(D) Lawn Lane (D to AB)	0.22	0.3	0.24	0.3	0.25	0.3	0.32	0.5	0.20	0.2	0.87	2.7	1.01	4.5	1.12	6.1
(D) Lawn Lane (D to BC)	0.64	1.7	0.71	2.2	0.75	2.6	0.83	3.9	0.84	4.4	0.92	7.1	1.00	11.7	1.10	20.7

8.9.3 The junction is forecast to operate within capacity in all scenarios during the AM peak hour.

8.9.4 During the PM peak hour, the Lawn Lane entry to the junction is forecast to operate close to or slightly above practical capacity during the DM2 scenarios. The addition of the Bilbrook development in the DS1 and DS2 scenarios would cause this arm of the junction to operate more significantly above capacity.

8.9.5 The assessment therefore indicates that improvements are required to accommodate the Bilbrook development. Proposed mitigation measures for this junction are presented and assessed in Section 9.

8.10 J8: Wobaston Road/The Droveway/i54

8.10.1 Data collected at this existing roundabout junction indicates that queues are generally modest, with some longer but sporadic queues on The Droveway (northbound) and Wobaston Road (eastbound) approaches. However, these were occasional and, in the case of Wobaston Road, appear to result from slower movement of traffic away from the junction eastbound due other factors such as the bus stop some 225m to the east. Overall, it is considered that specific calibration of the model is not appropriate.

8.10.2 The assessment results are presented below.

Table 8.8: J8 Assessment Results

J8: WOBASTON ROAD/THE DRIOVEWAY/INNOVATION DRIVE (i54) ROUNDABOUT	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Innovation Drive	0.04	0.0	0.04	0.0	0.04	0.0	0.04	0.0	0.06	0.1	0.06	0.1	0.07	0.1	0.07	0.1
(B) Wobaston Road (East)	0.59	1.6	0.60	1.6	0.62	1.8	0.63	1.8	0.72	2.7	0.75	3.2	0.81	4.4	0.84	5.4
(C) The Droveway	0.57	1.4	0.57	1.4	0.64	1.9	0.65	1.9	0.39	0.7	0.41	0.7	0.44	0.8	0.46	0.9
(D) Wobaston Road (West)	0.53	1.2	0.57	1.4	0.61	1.7	0.65	2.0	0.45	0.9	0.47	1.0	0.48	1.0	0.50	1.1

8.10.3 The junction is forecast to operate within capacity in all scenarios, and would therefore accommodate traffic growth, committed development and the proposed Bilbrook development without the need for improvements.

8.11 J9: A449/Wobaston Road Roundabout (Vine Island)

8.11.1 Queue data for this junction suggests that occasional queues build up on all approaches, but that these clear quickly and the roundabout itself generally flows freely. There are signal-controlled pedestrian crossings on the A449 southbound, south of Bee Lane and Wobaston Road westbound, which occasionally cause queues to interact with traffic leaving the roundabout. However, these queues were sporadic and it is not considered appropriate to adjust the model on this basis.

8.11.2 The assessment results are presented below.

Table 8.9: J9 Assessment Results

J9: A449/WOBASTON ROAD ROUNDABOUT (VINE ISLAND)	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Stafford Road North	0.82	4.9	0.83	5.2	0.85	5.8	0.86	6.3	0.80	4.4	0.82	4.9	0.85	5.9	0.86	6.7
(B) Stafford Road South	0.65	2.1	0.66	2.1	0.67	2.2	0.68	2.3	0.71	2.7	0.74	3.0	0.77	3.6	0.79	4.1
(C) Wobaston Road (West)	0.54	1.3	0.57	1.5	0.62	1.8	0.64	2.0	0.45	0.9	0.47	1.0	0.49	1.0	0.50	1.1

8.11.3 The junction is forecast to operate within capacity in all scenarios, except DS2 (AM and PM), when the A449 North arm is predicted to operate marginally above capacity (RFC = 0.86). However, the impact on capacity and queuing compared with the DM1 scenario would not be significant and it is therefore considered that improvements are not required to accommodate the Bilbrook development.

8.12 J14: A41/B4161/Lower Street

8.12.1 The queue data obtained for this existing traffic signal junction indicates that significant peak period queues occur on all approaches. The future year assessment results are summarised below.

Table 8.10: J14 Assessment Results

J14: A41/B4161/LOWER STREET TRAFFIC SIGNALS	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)
(1/1) Lower Street	97.10	13.8	98.10	14.8	**98.80**	**16.8**	**106.30**	**31.2**	101.90	19.7	104.70	24.1	**112.20**	**38.7**	**108.60**	**32.4**
(2/1+2/2) A41 Tettenhall Road	97.90	20.5	98.50	21.6	**103.00**	**34.0**	**99.60**	**30.6**	107.70	62.6	109.30	70.4	**106.50**	**59.2**	**111.60**	**86.8**
	97.90		98.50		**103.00**		**106.00**		107.70		109.30		**106.50**		**115.40**	
(3/1) A41 The Rock	98.40	22.1	101.50	30.0	**103.50**	**35.2**	**100.30**	**28.8**	95.60	17.4	100.60	25.6	95.60	17.0	100.60	25.6
(4/1) Henwood Road	102.10	20.4	101.90	20.2	94.90	12.1	**105.50**	**27.8**	101.60	19.7	103.70	23.2	**115.20**	**44.6**	**108.50**	**32.8**
PRC	-13.40%		-13.30%		**-15.00%**		**-18.10%**		-19.70%		-21.40%		**-28.00%**		**-28.20%**	

8.12.2 The results confirm that the junction is forecast to operate significantly above capacity in the DM1 and DM2 scenarios with queues on all four approaches. The addition of Bilbrook development traffic is forecast to give rise to a further deterioration in junction performance during both peak hours. However, this comparison assumes that there would be no re-routing of traffic in response to increased demand and queueing, which is considered unrealistic. In practice, alternative routes are available from drivers to reach Wolverhampton city centre and destinations to the south, east and west. These include the A449 and Ring Road (A4150) or the Lowlands Avenue/Hordern Road route, both of which avoid Junction 14.

8.12.3 It is considered that in practice, drivers would not tolerate significantly increased levels of queueing and delay at Junction 14, resulting in reassignment of non-development and development traffic to these or other alternative routes.

8.12.4 The scope for improvement of Junction 14 is very limited due to adjacent land and level constraints. From discussions with CWC, it is understood that the junction has recently been refurbished with new equipment and currently operates under the SCOOT method of control. CWC's traffic signal team has confirmed that because of the junction's location at the top of a hill, with no available land surrounding it, there is no scope for widening and CWC has no future plans to undertake any improvements.

8.12.5 The junction currently does not provide signal-controlled pedestrian crossing phases. However, CWC has not identified the installation of such facilities as a high priority

and there is an existing signal-controlled pedestrian crossing of Lower Street adjacent to St Michael's School which appears to serve this purpose.

8.12.6 It is considered that some improvement could be achieved by installing MOVA control in conjunction with the existing SCOOT system. The potential improvements that this might offer are considered in Section 9 but will be discussed further with CWC.

8.12.7 Additional mitigation would need to be achieved by non-highway related measures such as of enhancements to existing bus services and improvements to NCN Route 81 and other parts of the Wolverhampton cycle network. These measures, described further in Section 10, would facilitate modal shift towards public transport, walking or cycling for both development and non-development trips with origins in the Codsall/Bilbrook areas. This is considered to be the most appropriate mitigation strategy for this part of the CWC highway network.

8.13 J15: A41/Heath House Lane

8.13.1 The capacity of this junction has been assessed using a LINSIG model supplied by SCC. The model is understood to include an improvement scheme to accommodate current Local Plan development and the safeguarded site at Keepers Lane. SCC has agreed that this future year scenario can be used to test the impacts of the Bilbrook development.

8.13.2 It has been agreed with SCC that the model can be used in its current form to demonstrate the future capacity of the improvement scheme (at a modelled year of 2032) with and without Bilbrook trips. The results of this analysis are presented below.

Table 8.11: J15 Assessment Results (from SCC LINSIG Model)

J15: A41/HEATH HOUSE LANE TRAFFIC SIGNALS	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)
(1/1) A41 Holyhead Road (NW Left)	DM1 Scenario not relevant as model includes improvements associated with the Keepers Lane development.		2.60	0.0	DS1 Scenario not relevant as model includes improvements associated with the Keepers Lane development.		7.50	0.0	DM1 Scenario not relevant as model includes improvements associated with the Keepers Lane development.		2.70	0.0	DS1 Scenario not relevant as model includes improvements associated with the Keepers Lane development.		4.90	0.0
(1/2 & 1/3) A41 Holyhead Road (NW Ahead & Right)			92.70	22.7			92.70	22.7			75.20	21.3			79.90	23.6
			92.70				92.70				75.20				80.00	
(2/1 & 2/2) Heath House Lane			54.10	5.8			59.40	5.9			74.10	11.9			80.10	17.1
			54.10				59.40				74.10				80.10	
(3/1) A41 Holyhead Road (SE Ahead & Left)			51.10	8.8			50.90	8.8			50.90	11.5			52.60	11.6
(3/3 & 3/2) A41 Holyhead Road (SE Ahead & Right)			55.20	10.3			55.30	10.3			54.30	13.7			58.40	14.6
			55.20				55.30				54.30				58.40	
(4/2 & 4/1) Wrottesley Park Road			92.20	30.2			91.90	29.9			73.10	17.1			75.30	16.0
			92.30				92.10				73.10				66.30	
PRC			-3.00%				-3.00%				19.70%				12.30%	

8.13.3 The results show that the improved junction is forecast to operate just above capacity during the AM peak hour and within capacity during the PM peak hour. The addition of traffic generated by the Bilbrook development would give rise to modest increases in queueing on Heath House Lane during the PM peak hour, but the overall impact on junction performance would be negligible.

8.13.4 No further improvements would therefore be required to accommodate the Bilbrook development.

8.14 J16: Wolverhampton Road/Histons Hill

8.14.1 The survey data collected at this existing traffic signal junction indicates maximum queues of 20 vehicles or more on all 4 approaches during the peak hours.

8.14.2 The higher levels of queuing appear to occur sporadically and, during the AM peak hour, appear to be affected by school crossing patrols on the Elliotts Lane (north) and Histons Hill (south) arms. Additionally, right turning vehicles on Wolverhampton Road were observed to cross the centre line within the junction to allow following traffic undertaking ahead or left-turn movements to pass.

8.14.3 The future year assessment results are summarised below.

Table 8.12: J16 Assessment Results

J16: WOLVERHAMPTON ROAD/HISTONS HILL TRAFFIC SIGNALS	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)
(1/1) Elliotts Lane	94.00	16.6	96.20	17.9	**96.20**	**18.0**	**98.50**	**20.7**	103.30	31.2	103.30	31.3	**108.00**	**40.6**	**108.00**	**40.6**
(2/1) Wolverhampton Rd (East)	95.30	16.9	95.30	16.9	**97.50**	**20.0**	94.70	17.7	105.00	43.7	103.30	40.6	**107.20**	**47.6**	**105.70**	**44.0**
(3/1) Wolverhampton Rd (West)	75.30	11.1	75.30	11.1	73.30	11.1	73.70	11.6	77.60	13.2	81.80	14.2	71.40	10.7	73.00	10.9
(4/1) Histons Hill (South)	95.80	16.6	94.20	15.7	**98.20**	**18.8**	**96.50**	**19.2**	103.90	25.0	104.20	25.5	**109.00**	**34.2**	**109.30**	**34.9**
PRC	-6.50%		-6.90%		**-9.10%**		**-9.50%**		-16.70%		-15.70%		**-21.10%**		**-21.50%**	

8.14.4 The results confirm that the junction is forecast to operate above capacity in all scenarios. The additional traffic in DS2 is forecast to give rise to a modest impact on junction performance compared with DM1 during the AM peak hour, with increases in queues of up to 3 or 4 PCUs on each approach. These would not normally be regarded as significant increases.

8.14.5 The junction is forecast to operate more significantly above capacity during the PM peak hour and the impact of the DS2 scenario on queuing is therefore forecast to be more significant during this period, with increases of up to 10 PCUs on the Histons Hill and Elliotts Lane arms compared with DM1.

8.14.6 The scope for improvements to accommodate the Bilbrook development is therefore considered in Section 9.

8.15 J21: Brewood Road/Lawn Lane Junction

8.15.1 Queue data for this junction suggests that occasional queues build up on the Lawn Lane (minor road) approach during both peak hours, with some queuing also occurring on Brewood Road (major road) at the junction. However, queues are sporadic and short lived, generally dispersing rapidly and followed by period with no discernible queuing. It is therefore not considered necessary to adjust or calibrate the model.

8.15.2 The assessment results are presented below.

Table 8.13: J21 Assessment Results

J21: BREWOOD ROAD/LAWN LANE	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(A) Brewood Road (South)	Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed		Not Opposed	
(B) Lawn Lane	0.77	3.2	0.80	3.6	0.84	4.4	**0.86**	**5.2**	0.60	1.4	0.61	1.5	0.63	1.6	0.64	1.7
(C) Brewood Road (North) C-A	0.31	0.9	0.31	0.9	0.31	0.9	0.31	0.9	0.15	0.3	0.15	0.3	0.15	0.3	0.15	0.3
(C) Brewood Road (North) C-B	0.34	0.1	0.34	0.1	0.34	0.1	0.35	0.1	0.21	0.1	0.21	0.1	0.21	0.1	0.21	0.1

8.15.3 The junction is forecast to operate within capacity in all scenarios, except DS2 (AM only), when the Lawn Lane arm is predicted to operate marginally above capacity (RFC = 0.86). However, the impact on capacity and queuing compared with the DM1 and DM2 scenarios would not be significant and it is therefore considered that improvements are not required to accommodate the proposed Bilbrook development.

8.16 J22: Wolverhampton Road/Birches Road/Keepers Lane/Duck Lane

8.16.1 This existing double mini-roundabout junction has been modelled in JUNCTIONS 10 as two connected roundabouts. The survey data collected at the junction indicates generally modest levels of queuing during both peak hours.

8.16.2 The assessment results are presented below.

Table 8.13: J22 Assessment Results

J22: WOLVERHAMPTON ROAD/BIRCHES ROAD/KEEPERS LANE DOUBLE ROUNDABOUT JUNCTION	AM Peak								PM Peak							
	DM1		DM2		DS1		DS2		DM1		DM2		DS1		DS2	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)
(1) Duck Lane / Wolverhampton Rd: (A) Wolverhampton Rd	0.70	2.5	0.72	2.7	0.71	2.6	0.73	2.9	0.58	1.5	0.60	1.6	0.62	1.7	0.64	1.9
(1) Duck Lane / Wolverhampton Rd: (B) Duck Ln (east)	0.72	2.7	0.75	3.2	0.77	3.4	0.80	4.0	0.81	4.4	0.90	8.3	0.83	5.0	0.92	9.8
(1) Duck Lane / Wolverhampton Rd: (C) NB Link	0.40	0.7	0.42	0.8	0.40	0.7	0.42	0.8	0.42	0.8	0.49	1.0	0.43	0.8	0.49	1.1
(2) Birches Road / Keepers Lane: (A) SB Link	0.57	1.4	0.59	1.5	0.57	1.4	0.59	1.5	0.47	0.9	0.53	1.2	0.47	0.9	0.53	1.2
(2) Birches Road / Keepers Lane: (B) Birches Road (east)	0.74	2.9	0.76	3.2	0.74	2.9	0.76	3.2	0.61	1.6	0.69	2.3	0.61	1.6	0.69	2.3
(2) Birches Road / Keepers Lane: (C) Keepers Lane	0.63	1.7	0.65	1.8	0.63	1.7	0.65	1.8	0.60	1.5	0.64	1.8	0.60	1.5	0.64	1.8

8.16.3 The junction is forecast to operate within capacity in all scenarios during the AM peak hour. During the PM peak hour, the Duck Lane (westbound) approach to the northern roundabout (Roundabout 1) is forecast to operate above capacity in the DM2 scenario (RFC = 0.90). The DS2 scenario would increase the RFC value on this arm to 0.92, and the forecast queue would increase from 8.3 to 9.8 PCUs. Compared with DM1, the impact would be an increase in queue length of approximately 5 PCUs.

8.16.4 These increases are not considered significant and that improvements are not required to accommodate the proposed Bilbrook development.

8.17 Summary

8.17.1 Further to the capacity analysis and assessments reported above, the following junctions require further consideration and mitigation measures:

- Junction 1: Pendeford Mill Lane/Barnhurst Lane/Wobaston Road
- Junction 7: Wobaston Road/Lawn Lane
- Junction 14: A41/B4161/Lower Street traffic signals
- Junction 16: Wolverhampton Road/Histons Hill traffic signals

8.17.2 Proposed improvements at the above locations are presented and assessed in Section 9.

9.0 HIGHWAY MITIGATION PROPOSALS

9.1 Scope

9.1.1 Mitigation proposals for the off-site highway network have been developed on the basis of the capacity assessment results as reported in Section 8. These proposals are explained and analysed below.

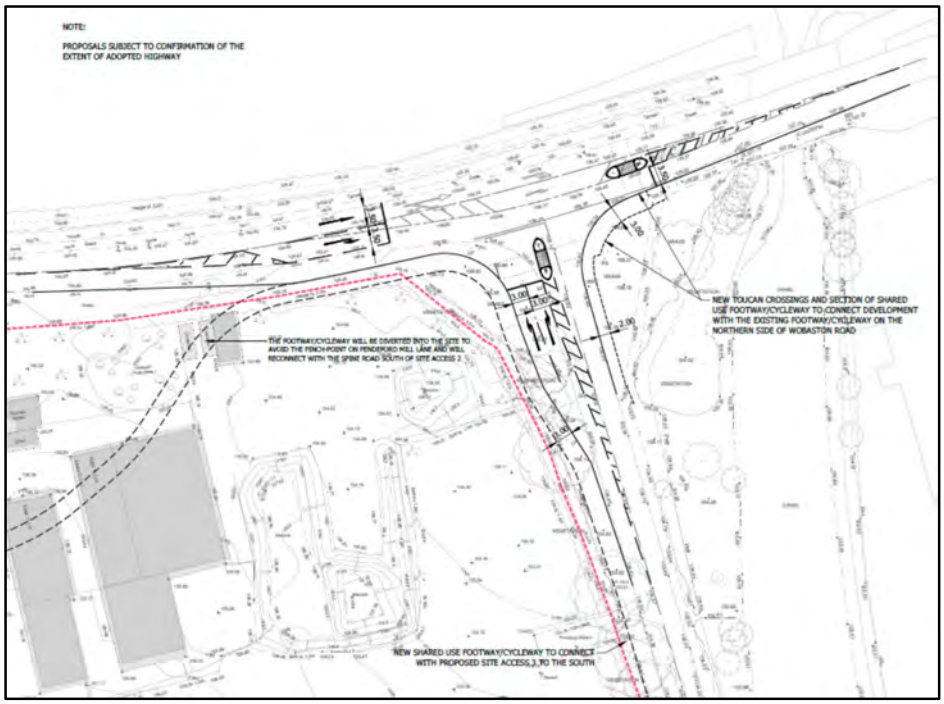
9.1.2 Improvements to the off-site walking and cycling networks are also identified to ensure that the proposed site accesses described in Section 4 are satisfactorily connected to the key trip attractors surrounding the site.

9.1.3 As indicated in Section 8, traffic impacts at the existing study areas junctions are cumulative and are created by both the proposed development site and the safe-guarded Keepers Lane site. It would therefore be reasonable for contributions to be made toward all mitigation proposals by the developers of both sites.

9.2 Junction 1: Pendeford Mill Lane/Barnhurst Lane/Wobaston Road

9.2.1 To address the identified traffic impacts and improve pedestrian crossing provision at this key location, it is proposed that traffic signals would be installed at the junction. A preliminary general arrangement drawing is presented on **Drawing C22001/JCT/MIT/001** and an extract is presented as **Figure 9.1** below.

Figure 9.1: J1 - Proposed Improvements



9.2.2 The scheme includes a new pedestrian and cycle route connection from the south-west corner of the junction into the development site, which would re-join Pendeford Mill Lane to the west, at Site Access 2. This would overcome a local pinch-point adjacent to Numbers 5 and 6 Pendeford Mill Lane, which do not form part of the available land. The width of the verge passing these properties in insufficient to provide a full foot/cycleway.

9.2.3 A new signal-controlled Toucan crossing would be provided on the east side of the junction, connecting the development with the existing foot-cycleway along the north side of Wobaston Road and the access to the canal towpath. A similar crossing of Barnhurst Lane would be provided to connect with the pedestrian/cycle route within the development.

9.2.4 The capacity of the improved junction has been assessed using LINSIG. The junction is assumed to operate on a 90-second cycle with the pedestrian phase being called every second cycle. The results are compared with the current layout (DM scenarios without development) below.

Table 9.1: J1 Assessment Results – Mitigation Scheme

J1: PENDEFORD MILL LANE/WOBASTON ROAD/BARNHURST LANE	AM Peak								PM Peak							
	DM1		DM2		DS1 + MITIGATION		DS2 + MITIGATION		DM1		DM2		DS1 + MITIGATION		DS2 + MITIGATION	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)
(A) Wobaston Road (East)	Not Opposed		Not Opposed		67.9	12.9	60.8	1.32	Not Opposed		Not Opposed		80.2	23.4	84.4	27.2
(B) Barnhurst Lane	1.03	15.1	1.09	21.9	79.7	9.2	83.4	63.9	0.80	3.5	0.87	5.2	79.1	5.8	82.2	5.9
(C) Pendeford Mill Lane (West)	0.27	0.4	0.27	0.4	80.0	19.1	84.3	0.4	0.23	0.3	0.24	0.3	55.5	7.5	66.5	8.5
PRACTICAL RESERVE CAPACITY	N/A		N/A		12.5%		6.7%		N/A		N/A		12.2%		6.7%	

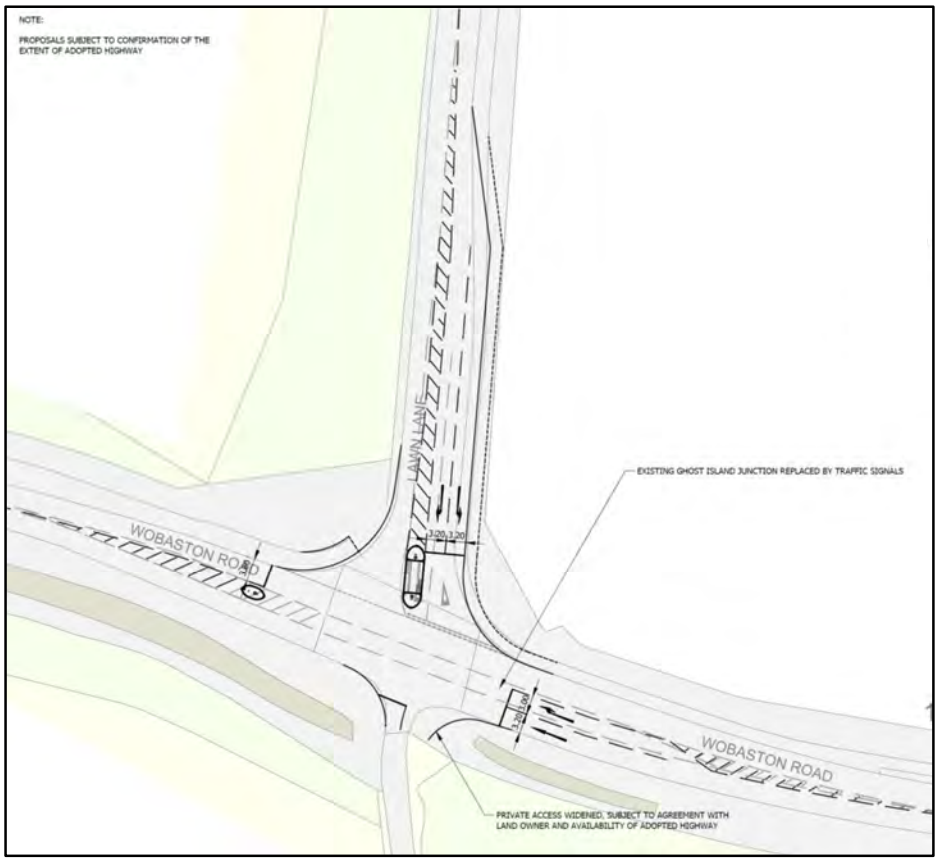
9.2.5 Table 9.1 shows that the proposed traffic signals arrangement would provide significant reserve capacity in the DS1 scenario and more than adequate reserve capacity in the DS2 scenario. The operation of the junction during the AM peak hour would be significantly improved compared with the DM1 and DM2 scenarios.

9.2.6 There is scope to further optimise the layout of the junction at planning application stage, with additional land being available from within the site on the west side of Barnhurst Lane and south of Pendeford Mill Lane. Forecast queues could be optimised further through the use of MOVA control if considered appropriate.

9.3 Junction 7: Wobaston Road/Lawn Lane

9.3.1 To address the identified traffic impacts on Lawn Lane, it is proposed that traffic signals would be installed at the junction. A preliminary general arrangement drawing is presented on **Drawing C22001/JCT/MIT/007** and an extract is presented as **Figure 9.2** below.

Figure 9.2: J7 - Proposed Improvements



9.3.2 The proposals are indicative at this stage and would be further optimised at planning application stage. However, the provision of traffic signal control at this location would be consistent with provision elsewhere along the Wobaston Road corridor, including the proposals for the Barnhurst Lane junction described previously.

9.3.3 A signal-controlled crossing of Lawn Lane would be provided to improve conditions pedestrians and cyclists using the existing foot/cycleway.

9.3.4 The existing farm access on the south side of the junction has been shown indicatively as being under traffic-signal control and modelled accordingly. This element of the scheme is subject to confirmation of highway records, as traffic signal

equipment would need to be provided within highway land. Otherwise, the access would remain priority-controlled, giving way to traffic on Wobaston Road and Pendeford Mill Lane as at present.

9.3.5 The capacity of the improved junction has been assessed using LINSIG. The junction is assumed to operate on an 80-second cycle with pedestrian crossing phases every cycle and the farm access phase being called only occasionally. Traffic demands for the right turn from Wobaston Road to Lawn Lane are modest (around 1 vehicle per minute) and vehicles are therefore allowed to turn right within gaps in oncoming traffic or during the inter-green period. The results are compared with the current layout (DM scenarios without development) below.

Table 9.2: J7 Assessment Results – Mitigation Scheme

J7: WOBASTON ROAD/LAWN LANE	AM Peak								PM Peak							
	DM1		DM2		DS1 + MITIGATION		DS2 + MITIGATION		DM1		DM2		DS1 + MITIGATION		DS2 + MITIGATION	
	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX RFC	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)	MAX DoS %	MAX Q (pcu)
(A) Wobaston Road (East)	0.09	0.1	0.10	0.1	39.2	6.5	40.5	6.8	0.13	0.1	0.13	0.1	75.0	24.6	79.7	27.9
(B) Access	0.00	0.0	0.00	0.0	5.0	0.2	5.0	0.2	0.00	0.0	0.00	0.0	14.1	0.6	14.1	0.6
(C) Wobaston Road (West)	0.00	0.0	0.00	0.0	79.5	24.1	84.2	28.1	0.00	0.0	0.00	0.0	53.2	13.8	55.8	14.8
(D) Lawn Lane (D to AB)	0.22	0.3	0.24	0.3	81.2	6.5	82.6	7.1	0.20	0.2	0.87	2.7	76.5	9.2	78.7	10.0
(D) Lawn Lane (D to BC)	0.64	1.7	0.71	2.2	81.2		82.6		0.84	4.4	0.92	7.1	76.5		78.7	
PRACTICAL RESERVE CAPACITY	N/A		N/A		10.9%		6.9%		N/A		N/A		17.7%		13.0%	

9.3.6 Table 9.2 shows that the proposed traffic signals arrangement would provide more than adequate reserve capacity in the DS2 scenario.

9.4 Junction 14: A41/B4161/Lower Street

9.4.1 As discussed in Section 8, this existing traffic signal junction is forecast to operate significantly above capacity without the additional development at Bilbrook and has no practical scope for widening to create additional capacity.

9.4.2 It is considered that the appropriate strategy for managing traffic demands at this junction and on the Lower Street corridor beyond is for the development to improve access to the public transport network and encourage walking and cycling between the development and Wolverhampton city centre. The strategies for these improvements are outlined in Section 4 and considered further in Section 10.

9.4.3 Some improvement to the junction's capacity could be achieved through the use of MOVA control. This has been simulated in LINSIG by applying an increase in stop-line saturation flows of 2.8%, which is typical of what can be achieved compared with the previously modelled fixed time scenario.

9.4.4 The results of this change are compared with the DM assessment results below, using capacity (Degree of Saturation) and total delay (PCU/hr) as the main comparators, since MOVA control would provide its main benefit in terms of reduced delays.

Table 9.3: J14 Assessment Results – Mitigation Scheme

J14: A41/B4161/LOWER STREET TRAFFIC SIGNALS	AM Peak								PM Peak							
	DM1		DM2		DS1 + MITIGATION		DS2 + MITIGATION		DM1		DM2		DS1 + MITIGATION		DS2 + MITIGATION	
	MAX RFC	Delay PCU/hr	MAX RFC	Delay	MAX DoS %	Delay PCU/hr	MAX DoS %	Delay PCU/hr	MAX RFC	Delay PCU/hr	MAX RFC	Delay PCU/hr	MAX DoS %	Delay PCU/hr	MAX DoS %	Delay PCU/hr
(1/1) Lower Street	97.1	11.3	98.1	11.6	97.6	116.0	97.0	10.7	101.9	15.9	104.7	20.4	108.8	28.8	109.4	30.1
(2/1+2/2) A41 Tettenhall Road	97.9	15.4	98.5	11.5	95.4	11.5	97.9	18.7	107.7	51.2	109.3	59.1	105.4	44.3	108.4	59.9
	97.9		98.5		96.5		102.4		107.7		109.3		106.9		111.2	
(3/1) A41 The Rock	98.4	22.1	101.5	13.2	97.3	13.2	103.8	29.4	95.6	10.4	100.6	18.4	91.7	7.4	94.8	9.8
(4/1) Henwood Road	102.1	61.6	101.9	7.4	92.4	7.4	92.7	7.4	101.6	15.7	103.7	19.3	107.6	26.8	107.5	27.0
PRACTICAL RESERVE CAPACITY	-13.4%		-13.3%		-8.5%		-15.4%		-19.7%		-21.4%		-20.8%		-23.5%	

9.4.5 Comparing the results for the DS2 and DM2 scenarios, the impact of the Bilbrook development on junction performance would be reduced. In conjunction with improvements to the sustainable travel networks as outlined above, it is considered that traffic impacts can be reduced to an acceptable level.

9.4.6 This proposal is offered for further discussion with CWC.

9.5 Junction 16: Wolverhampton Road/Histons Hill

9.5.1 The existing junction staging arrangement at this location allows the Wolverhampton Road (east-west) arms to run together in a single stage, whereas Histons Hill and Elliotts Lane operate in separate individual stages.

9.5.2 The available collision records show no incidents at the junction over the most recent available 5-year period and therefore no evidence that the concurrent running of the Wolverhampton Road arms is unsafe. A similar arrangement is therefore proposed for Elliotts Lane and Histons Hill.

9.5.3 The results of this change are compared with the original DM assessment results below.

Table 9.4: J16 Assessment Results – (Traffic Signal Phasing Altered)

J16: WOLVERHAMPTON ROAD/HISTONS HILL TRAFFIC SIGNALS (MITIGATION OPTION A)	AM Peak								PM Peak							
	DM1		DM2		DS1 + MITIGATION		DS2 + MITIGATION		DM1		DM2		DS1 + MITIGATION		DS2 + MITIGATION	
	MAX RFC	Delay PCU/hr	MAX RFC	Delay	MAX DoS %	Delay PCU/hr	MAX DoS %	Delay PCU/hr	MAX RFC	Delay PCU/hr	MAX RFC	Delay PCU/hr	MAX DoS %	Delay PCU/hr	MAX DoS %	Delay PCU/hr
(1/1) Elliotts Lane	94.0	16.6	96.2	17.9	53.7	8.6	53.7	9.7	103.3	31.2	103.3	31.3	65.1	11.5	67.9	11.5
(2/1) Wolverhampton Rd (East)	95.3	16.9	95.3	16.9	69.6	10.9	69.6	10.2	105.0	43.7	103.3	40.6	83.6	17.3	80.8	16.6
(3/1) Wolverhampton Rd (West)	75.3	11.1	75.3	11.1	54.5	8.7	54.5	8.2	77.6	13.2	81.8	14.2	53.1	8.6	53.4	8.6
(4/1) Histons Hill (South)	95.8	16.6	94.2	15.7	69.6	10.1	69.9	11.5	103.9	25.0	104.2	25.5	83.9	12.2	78.9	13.0
PRACTICAL RESERVE CAPACITY	-6.5%		-6.9%		29.3%		28.8%		-16.7%		-15.7%		7.3%		11.5%	

9.5.4 The reduction in the number of stages as proposed would significantly improve the performance of the junction, which would operate with more than adequate reserve capacity in the DS2 scenario. The operation of the junction during both peak hours would also be significantly improved compared with the DM1 and DM2 scenarios.

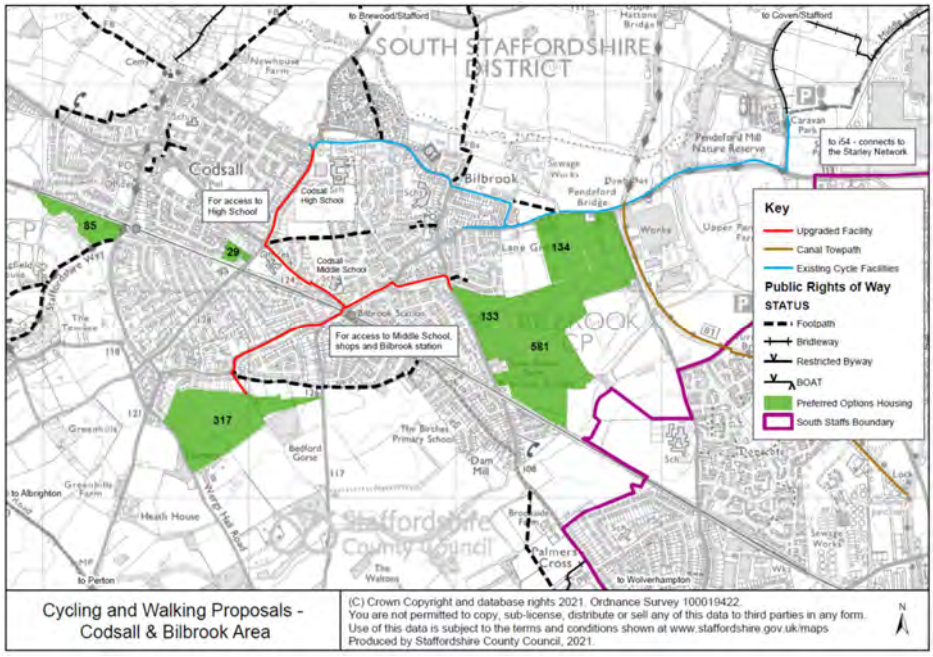
9.5.5 This approach to mitigation will be discussed further with SCC.

10.0 SUSTAINABLE TRAVEL STRATEGY

10.1 Overview

10.1.1 SCC has outlined the active travel routes that it would like to see come forward to support the proposed allocations in Bilbrook. As part of its consultation response to SSDC, it has provided a plan of these routes, reproduced as **Figure 9.4**.

Figure 10.1: SCC Active Travel Routes (Consultation Response to SSDC)



10.1.2 The plan indicates an upgraded route between Lane Green Road and Bilbrook railway station via Brookfield Road. In practice, pedestrian trips to the railway station could also be made via Oakfield Road, Wesley Avenue and Wesley Road. These routes would be of particular importance to the proposed development.

10.1.3 The following specific comments by SCC are also relevant to the land east of Bilbrook:

- A suitable crossing facility will be required in the vicinity of Duck Lane/Brookfield Road;
- Connections will be required into existing facilities along Pendeford Mill Lane and beyond.

10.1.4 There is an existing zebra crossing of Duck Lane west of Brookfield Road, which provides for pedestrian crossing movements. However, there may be scope to

upgrade this facility for shared use by pedestrians and cyclists. This is considered further below.

10.1.5 Improvements to Pendeford Mill Lane are to be provided as part of the site access strategy together with improvements to crossing facilities at the Barnhurst Lane junction, as described previously. However, the existing foot/cycleway on the north side of Pendeford Mill Lane and Wobaston Road is not to current standards and there appears to be scope to improve this section. Proposals are considered further below.

10.1.6 The scope for improvements to the following corridors have been considered:

- Pendeford Mill Lane/Wobaston Road between Barnhurst Lane and the Wolverhampton city boundary.
- Lane Green Road between the site and the village centre.
- Duck Lane between the village centre and Bilbrook railway station.
- Other local residential routes between Lane Green Road and Duck Lane.
- Joeys Lane between Pendeford Mill Lane and Bilbrook Road.
- Barnhurst Lane between Pendeford Mill Lane and The Droveway.
- NCN Route 81, the Canal towpath and other routes between Wobaston Road and Wolverhampton city centre.

10.1.7 An audit of these existing routes has been undertaken and a plan showing the location and type of potential improvements is presented on **Drawing C22001/SK02**. The issues and solutions identified for each corridor are summarised below.

10.2 Pendeford Mill Lane and Wobaston Road

10.2.1 There is an existing shared-use foot/cycleway on the northern side of this route, which links Bilbrook village centre to the west with the i54 Business Park and other employment sites to the east. It also provides access to the Canal path and NCN Route 81 east of the Barnhurst Lane junction.

10.2.2 The foot/cycleway has recently been improved in the vicinity of Bilbrook Mill and is generally of a good standard between Joeys Lane and Barnhurst Lane. Beyond the Wolverhampton city boundary to the east, it is of a higher standard, with substantially segregated pedestrian and cyclist facilities (See **Figure 10.2** below).

Figure 10.2: Wobaston Road Foot/Cycleway in Wolverhampton

10.2.3 Between Barnhurst Lane and Lawn Lane, the footway is of a lower standard and not wide enough for cyclists to pass pedestrians comfortably. There is, however, a grass verge between the footway and the carriageway, which would enable the existing facility to be widened (see **Figure 10.3** below).

Figure 10.3: Wobaston Road Foot/Cycleway in south Staffordshire

10.2.4 Subject to further investigations, it is proposed that the existing foot/cycleway within South Staffordshire is improved to a similar standard to the Wolverhampton section, resulting in a continuous high-quality cycle route being available between Bilbrook Mill (Site Access 1) and the A449.

10.2.5 The Wolverhampton city cycle network can be accessed from the A449 at Vine Island and provides a choice of routes to the city centre, many of which are traffic free. The improvements described above would significantly improve cycling access from the development to the i54 Business Park and other employment areas, and would increase the attractiveness of cycling to Wolverhampton city centre.

10.2.6 There is currently no footway on the southern side of Pendeford Mill Lane other than the short section at the Bilbrook Mill access, where a signal-controlled crossing has also been provided to connect with the northern foot/cycleway. As part of the site access strategy, the footway east of Bilbrook Mill would be extended as far as the proposed Site Access 2 roundabout, where crossing facilities would be provided within the splitter islands to connect it with the existing northern foot/cycleway.

10.2.7 There is no scope to provide a continuous footway along the south side of Pendeford Mill Lane east of Site Access 2 due to limited highway verge width past Numbers 3, 4, 5 and 6 Pendeford Mill Lane. Bloor Homes does not control private land to the rear of the verge at these locations. It is therefore proposed that an off-line foot/cycleway

would be provided within the site, running approximately parallel to Pendeford Mill Lane and reconnecting with it at the Barnhurst Lane junction.

10.2.8 The proposed traffic signal layout at the Pendeford Mill Lane/Barnhurst Lane junction would provide signal-controlled Toucan crossings of Barnhurst Lane and Wobaston Road to connect the development cycle infrastructure with the extisting foot/cycleway and Canal path access on the north side of Wobaston Road.

10.3 Lane Green Road

10.3.1 Between Duck Lane and Brookfield Road, Lane Green Road has footways on both sides. Dropped-kerb crossing facilities with tactile paving are provided at the Brookfield Road junction. However, on-street parking takes place in the adjacent roads, which can obstruct pedestrian/vehicle inter-visibility. It is considered that the scope for waiting restrictions around the junction should be explored as part of a future planning application.

10.3.2 To the south of the Brookfield Road junction, there is no footway on the eastern side of Lane Green Road. As a minimum, it is proposed that a 2.0m wide footway is provided within the existing grass verge, subject to confirmation that this is part of the adopted highway. There may be scope to provide a wider 3.0m foot/cycleway; however, an assessment of engineering feasibility is required to address differences in levels between the grass verge and the Lane Green Road carriageway.

Figure 10.4: Existing Grass Verge on Lane Green Road

10.3.3 The footway would extend from the end of the existing footway as far as the railway overbridge to the south, where an uncontrolled crossing facility would be provided to reconnect it with the existing footway on the west side of Lane Green Road. The new footway would thus connect Site Accesses 4 and 5 with Bilbrook village centre and Birches Road to the south.

10.3.4 As identified in Section 4, it is anticipated that a scheme of traffic and speed management measures is likely be required for Lane Green Road between the development and the village centre. Subject to further investigation, a gateway to this managed area could be formed where Lane Green Road passes beneath the railway line, by constructing a wider footway within the existing carriageway as part of a build-out feature providing for priority-controlled one-way traffic flow under the bridge.

Figure 10.5: Railway Overbridge, Lane Green Road

10.3.5 Traffic and speed management measures would need to be suitable for use of Lane Green Road by any buses that might serve the development in the future.

10.4 Duck Lane

10.4.1 There are existing zebra crossings within the village centre on Duck Lane west of Lane Green Road and on Pendeford Mill Lane east of Bilbrook Road. However, there is scope to provide additional pedestrian priority over other traffic and improve the public realm in this area. This could be achieved by raising the carriageway to footway level between and including the two crossings, with alternative materials and surfacing to create a space that gives priority to pedestrians over traffic. This would also assist in reducing traffic speeds. An example of this type of treatment is the A523 through Poynton town centre in Cheshire (**Figure 10.6** below).

Figure 10.6: Example of Pedestrian Priority Scheme, Poynton Town Centre

10.4.2 Between Lane Green Road and Brookfield Road, there are good quality footways on both sides of Duck Lane. A zebra crossing of Duck Lane is provided to the west of Brookfield Road. This could be improved by incorporating it within a similar raised table area of carriageway, incorporating the crossing of Brookfield Road. This type of improvement would also assist in reducing traffic speeds and give additional priority to pedestrians.

10.4.3 Between Brookfield Road and the double mini-roundabout junction at Bilbrook railway station, existing footways and pedestrian crossing facilities are generally of a reasonable standard. There is an existing zebra crossing of Duck Lane to the east of the junction and uncontrolled crossing facilities at the roundabout itself, on the desire line to retail uses Wolverhampton Road.

10.4.4 To the west of Brookfield Road, there is a wide grassed area to the rear of the footway. Subject to further investigations of the ownership of this verge, there may be scope to widen the existing footway to a 3.0m wide foot/cycleway between Brookfield Road and the existing zebra crossing east of Bilbrook railway station.

10.5 Brookfield Road and Surrounding Streets

10.5.1 Although Brookfield Road is highlighted on SCC's consultation plan (Figure 10.1), other routes are also expected to be used by residents of the Bilbrook development to reach the railway station area, including Oakfield Road, Wesley Avenue and Wesley Road. These are considered suitable for use by pedestrians and cyclists as quiet routes between the development accesses at Lane Green Road and the railway station area. They have footways on both sides, which are generally of a satisfactory standard.

10.5.2 On-street parking and footway parking occurs on Brookfield Road, which could create difficulties for pedestrians. It is considered that there may be scope to formalise and manage on-street parking by providing marked bays in conjunction with the use of bollards to discourage footway parking. These solutions would be explored further at planning application stage.

10.6 Joeys Lane

10.6.1 Joeys Lane is part of a 20mph speed limit zone that also includes Bilbrook Road to the west. It has footways on both sides, which are separated from the carriageway by grass verges and are generally of a reasonable standard. There are speed humps at intervals along the carriageway. Joeys Lane provides access to the village hall and playing fields and also forms part of the route of NCN Route 81.

10.6.2 Joeys Lane is narrow and is subject to on-street parking, which can create difficulties for pedestrians and cyclists. In addition, there is currently no footway along the northern side of the road between the Village Hall and Bilbrook Road.

10.6.3 It is considered that a 3.0m wide foot/cycleway could be provided within the existing grass verge along most parts of Joeys Lane (subject to confirmation that this is part of the adopted highway) to improve access to the Village Hall and provide an off-carriageway facility for cyclists. There is a short section east of the Village Hall where level differences between the carriageway and footway may limit the scope for widening (see **Figure 10.7**). However, it is considered that the narrower existing footway cross-section would be acceptable over this short distance.

Figure 10.7: Joeys Lane Footway East of Village Hall

Figure 10.8: Joeys Lane Grass Approach to Village Hall from East

10.7 Barnhurst Lane

10.7.1 Barnhurst Lane has an existing narrow footway on its eastern side, between Wobaston Road and The Droveway. However, the footway surface is in poor condition. As part of works to provide Site Access 3, the footway would be resurfaced and, where there is sufficient width within the adopted highway boundary, widened to a minimum of 2.0m.

10.7.2 There does not appear to be sufficient width between the rear of the footway on the east side of Barnhurst Lane and the Canal boundary to provide a full 3.0m foot/cycleway. However, Barnhurst Lane would provide a reasonably direct waliomg and cycling link to the Canal path at the Wayside pedestrian bridge, east of the Droveway. At present, there are no pedestrian crossing facilities at the roundabout junction of Barnhurst Lane with The Droveway as shown in **Figure 10.9**. A new uncontrolled crossing facility could be provided at this location, subject to further investigations.

Figure 10.9: Existing Footway, Barnhurst Lane/The Droveway Roundabout

10.7.3 A new 3.0m wide foot/cycleway would be provided on the west side of Barnhurst Lane from the improved junction with Pendeford Mill Lane to the Site Access 3 roundabout, where pedestrian crossing facilities would be included within the splitter islands to connect it with the eastern footway.

10.8 NCN Route 81 and Canal Path

10.8.1 The existing Canal path provides a continuous route between Wobaston Road at Barnhurst Lane and Wolverhampton city centre. However, the surface of the path between Wobaston Road and The Droveway is in generally poor condition, which limits its attractiveness as an all-weather route.

10.8.2 Whilst there is scope to upgrade the surface of this section of the Canal path, it would remain unlit and relatively remote from adjacent development. As such, it is likely to remain attractive mainly as a recreation facility rather than a pedestrian/cyclist route for commuting or other regular journeys. Barnhurst Lane is considered to provide a more viable route for such trips and the footway would be upgraded as far as The Droveway (see above) to accommodate such use.

10.8.3 There is greater scope to upgrade the surface of the remaining unsurfaced sections of path between The Droveway and the Autherley Canal Junction, from which point the route becomes wider and better surfaced. Improvements to this standard could be delivered through a Section 106 financial contribution to enable SCC to agree a scheme with the Canals and Rivers Trust.

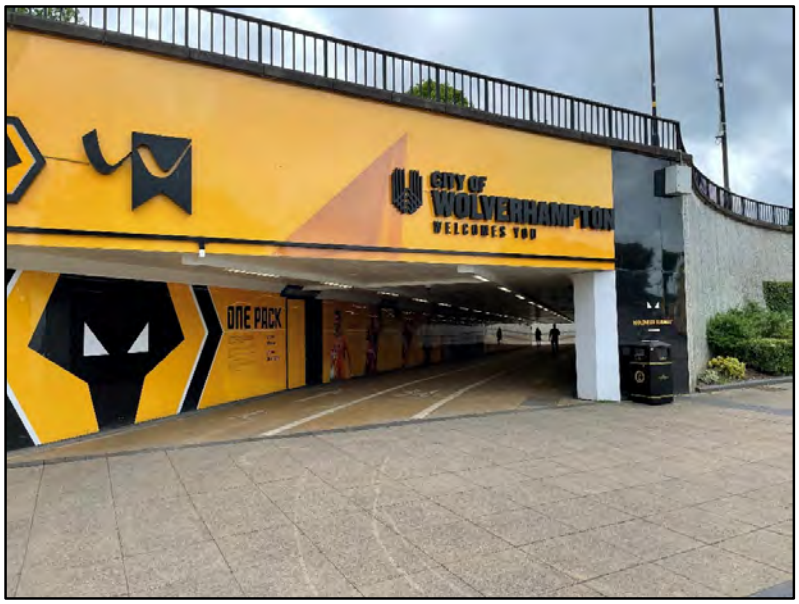
Figure 10.10: Example of Improved Section of Canal Path

10.9 Wolverhampton Cycle Network

10.9.1 The cycle route network in Wolverhampton is well developed and of good quality. Upgrading the Wobaston Road foot/cycleway within south Staffordshire would improve access to this network via the A449, from which there is a choice routes to the city centre. Many of these routes are traffic free and inter-connect with the Canal path and grade-separated crossings of A4150 Ring Road.

Figure 10.11: Canal Path Cycle Route, Wolverhampton City Centre

Figure 10.12: Pedestrian/Cycle Underpass of Ring Road



10.9.2 The signage of cycle routes within Wolverhampton is inconsistent and the network can be difficult to navigate for unfamiliar uses. It is anticipated that some improvements would be required to encourage additional cycling to and from the city centre, as part of the mitigation strategy for the highway network within the CWC area. These could be provided by means of a negotiated developer contribution.

11.0 SUMMARY AND CONCLUSIONS

11.1 Summary

11.1.1 This report presents the findings of a *Strategic Transport Assessment* (STA) that supports the allocation of land east of Bilbrook for development in the emerging South Staffordshire Local Plan. The land is being promoted for development by Bloor Homes.

11.1.2 The site is one of four strategic housing sites that are proposed for allocation and is identified as Policy SA1 of the emerging Local Plan. It lies to the east of the ongoing Bilbrook Mill development by Bloor Homes, to which it would be connected.

11.1.3 The proposed development would comprise:

- 848 dwellings;
- A 1-form entry primary school with scope to extend for 2-form entry;
- Local retail uses, possibly including a small supermarket.

11.1.4 The STA has been provided to form part of the Local Plan evidence base. It presents a high-level assessment of the development's impact on the surrounding highway and transport networks and identifies an indicative scheme of transport mitigation measures to support the development.

11.1.5 This STA is submitted for further consideration by and discussion with the affected highway authorities:

- Staffordshire County Council (SCC);
- Wolverhampton City Council (CWC);
- National Highways (NH).

11.1.6 The STA has been prepared in accordance with a *Scoping Report* that was submitted to the highway authorities in February 2022 and takes into account comments subsequently received.

11.1.7 The requirements of NH have been the subject of separate discussions involving promoters of other proposed strategic sites within South Staffordshire, which also affect the SRN. Further to this, a single assessment will identify the cumulative impact of all four strategic Local Plan sites and the required mitigation and associated costs to be apportioned between them. This work will be reported separately and is

not covered by this report, which focusses on the SCC and CWC local highway networks.

11.1.8 The STA outlines the strategy for access to the development by vehicles, pedestrians, cyclists and public transport users. The key infrastructure elements of this strategy are as follows:

- The existing Bilbrook Mill access junction with Pendeford Mill Lane (Marshall Way) would be connected with the development.
- A new roundabout junction on Pendeford Mill Lane between Marshall Way and Bilbrook Mill.
- A new roundabout junction with Barnhurst Lane between Pendeford Mill Lane and The Droveway.
- A new roundabout junction with Lane Green Road and Oakfield Road, south of Bilbrook village centre.
- A priority junction access from Lane Green Road between Wesley Road and Brookfield Road.
- A Link Road connecting the Pendeford Mill Lane, Barnhurst Lane and Lane Green Road roundabouts, to enable development traffic to access the external highway network efficiently and minimise the need to pass through Bilbrook village centre.
- 3.0m wide foot/cycleways along both sides of the Link Road and crossing facilities at each roundabout junction.
- New footway or foot/cycleway along the Lane Green Road site frontage.
- New foot/cycleway along the Barnhurst Lane site frontage between the proposed site access and Pendeford Mill Lane.
- Upgrades to existing footway on the east side of Barnhurst Lane between the site access and The Droveway.
- New foot/cycleway within the development south of Pendeford Mill Lane to connect the Link Road with Barnhurst Lane.
- Traffic signals with integrated pedestrian crossing phases at the Pendeford

Mill/Barnhurst Lane junction, connecting the existing foot/cycleway on the north side of Pendeford Mill Lane with a new facility within the development.

11.1.9 Preliminary design drawings of the proposed access arrangements and associated pedestrian and cycle infrastructure have been prepared to demonstrate the proposed general layouts.

11.1.10 SCC has also identified off-site walking and cycling routes that require consideration, including those liking the site to the village centre, the railway station and the employment areas served by Pendeford Mill Lane and Wobaston Road to the east. An indicative improvement strategy for these areas is presented for further discussion with SCC and CWC.

11.1.11 Discussions with SCC, CWC and the local bus operator are ongoing. The STA provides a broad strategy for the extension and enhancement of existing bus services that serve Bilbrook. The design of the Link Road will enable bus services to enter and pass through the site, to minimise walking distances between dwellings and bus stops. However, in the short term, the bus access strategy provides for existing services to be diverted closer to the site along existing roads.

11.1.12 Highway capacity assessments of the site access junctions and the following off-site junctions have been undertaken, as agreed with SCC (refer to **Drawing C22001/SK01**):

- J1: Pendeford Mill Lane/Barnhurst Lane;
- J2: Barnhurst Lane/The Droveway roundabout;
- J3: Pendeford Avenue/Codsall Lane roundabout;
- J4: Birches Avenue/Lane Green Road;
- J5: Duck Lane/Pendeford Mill Lane;
- J6: Pendeford Mill Lane/Bilbrook Road;
- J7: Wobaston Road/Lawn Lane;
- J8: Wobaston Road/The Droveway/i54 (Innovation Drive);
- J9: A449/Wobaston Road roundabout (Vine Island);
- J14: A41/B4161/Lower Street signals;
- J15: A41/Heath House Lane signals;
- J16: Wolverhampton Road/Histons Hill signals;

- J21: Brewood Road/Lawn Lane junction, Coven;
- J22: Wolverhampton Road/Birches Road/Keepers Lane/Duck Lane.

11.1.13 The assessments indicate that the following off-site junctions would require mitigation measures:

- Junction 1: Pendeford Mill Lane/Barnhurst Lane/Wobaston Road – traffic signals to be installed.
- Junction 7: Wobaston Road/Lawn Lane – traffic signals to be installed.
- Junction 14: A41/B4161/Lower Street traffic signals – widening or other physical works are not feasible and traffic impacts are to be addressed through improvements to public transport services and pedestrian/cycle infrastructure on the wider network to reduce the demand for car-based trips on the Lower Street corridor though the junction.
- Junction 16: Wolverhampton Road/Histons Hill traffic signals – re-phasing of traffic signals.

11.1.14 Improvements to off-site pedestrian and cycle infrastructure would include:

- New traffic signal junction at Pendeford Mill Lane/Barnhurst Lane.
- Upgrade of foot/cycleway on the north side of Wobaston Road from Barnhurst Lane to the Wolverhampton city boundary and i54 Business Park.
- Barnhurst Lane eastern footway resurfacing and widening.
- Improved crossing facilities at Barnhurst Lane/The Droveway roundabout to improve access to the Canal path at Wayside bridge.
- Canal path surfacing improvements from The Droveway to Autherley Junction.
- New/improved footway or foot/cycleway on north and east sides of Joeys Lane.
- Public realm improvements in village centre including raised junction area on Duck Lane between Lane Green Road and Bilbrook Road.
- Traffic calming and/or waiting restrictions on Lane Green Road, Wesley Road and Oakfield Road.

- Duck Lane footway between Bilbrook railway station and Brookfield Road to be improved and widened for shared use by cyclists where feasible within the highway boundary.

11.1.15 It is considered that subject to these improvements, the proposed development could be satisfactorily accommodated.

11.2 Conclusions

11.2.1 Satisfactorily access to the site for vehicles, pedestrian, cyclists and public transport users can be achieved. Subject to delivery of the access strategy identified in this STA, the development could be satisfactorily connected to local facilities and accessible by sustainable travel modes.

11.2.2 The residual impact of the development on the local highway network would not be severe subject to implementation of the mitigation measures identified.

11.2.3 It is therefore concluded that the proposed development could be satisfactorily accommodated by the adjacent transport network and that in this respect the site is suitable for allocation in the Local Plan.

DRAWINGS

SITE ACCESS 1
SEE DRAWING: C22001/JCT/SA/EX/001

SITE ACCESS 2
SEE DRAWING: C22001/JCT/SA/EX/002

SITE ACCESS 3
SEE DRAWING: C22001/JCT/SA/EX/003

SITE ACCESS 4
SEE DRAWING: C22001/JCT/SA/EX/004

SITE ACCESS 5
SEE DRAWING: C22001/JCT/SA/EX/005

1. THIS DRAWING IS NOT TO BE SCALED FOR CONSTRUCTION PURPOSES.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

KEY:
- PHASE 1 BOUNDARY
- PHASE 2 BOUNDARY
- PHASE 2B BOUNDARY
- PHASE 3 BOUNDARY

REV	DESCRIPTION	DATE	BY	AUTH
A	TOPO UPDATED. SITE ACCESS JUNCTIONS SA2, SA5 AND JUNCTION 1 UPDATED.	20.06.22	AMP	SM

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CLIENT
BLOOR HOMES

PROJECT
LAND EAST OF BILBROOK
STAFFORDSHIRE

TITLE
DEVELOPMENT ACCESS STRATEGY: OVERVIEW

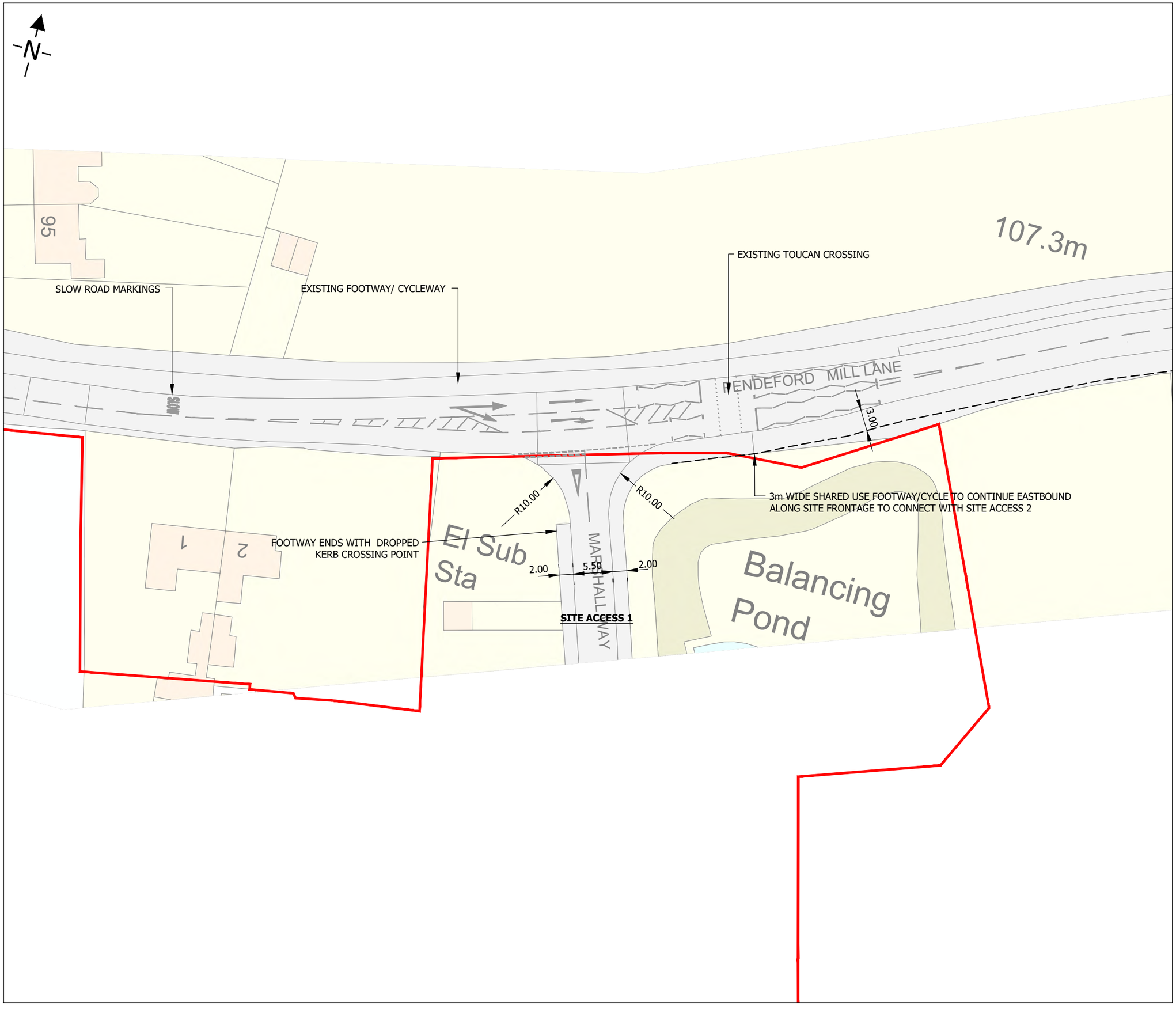
DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
AMP	SM	1:4000	A3	30.05.22

PROJECT NO.	DRAWING NO.	REV
C22001	JCT/OV/SA/001	A

1. THIS DRAWING IS NOT TO BE SCALED FOR CONSTRUCTION PURPOSES.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

KEY:

PHASE 1 BOUNDARY



REV	DESCRIPTION	DATE	BY	AUTH
A	FOOTWAY/CYCLEWAY TO EAST OF ACCESS ADDED	03.05.22	AMP	SM

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PROJECT
LAND EAST OF BILBROOK
STAFFORDSHIRE

TITLE
DEVELOPMENT ACCESS STRATEGY:
SITE ACCESS 1, PENDEFORD MILL LANE

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
AMP	SM	1:500	A3	30.05.22

PROJECT NO.	DRAWING NO.	REV
C22001	JCT/SA/EX/001	-

KEY:
- PHASE 2 BOUNDARY
- PHASE 2B BOUNDARY
- HIGHWAY BOUNDARY
(INTERPRETED FROM PLAN SUPPLIED BY SCC)

TIE INTO EXISTING KERB LINE

59m EXIT VISIBILITY

NEW COMPACT ROUNDABOUT TO DMRB CD116 REQUIREMENTS

TIE INTO EXISTING CENTRELINE MARKING

NEW PAVED CONNECTION TO EXISTING SHARED USE FACILITY

EXISTING 30mph SPEED LIMIT GATEWAY AND MARKINGS TO BE REMOVED AND 30mph SPEED LIMIT EXTENDED WEST OF CANAL BRIDGE.

RECYCLING CENTRE ENTRANCE

RE-ALIGN JUNCTION AND TACTILE PAVING. RE-MARK GIVE WAY ROAD MARKINGS

59m APPROACH VISIBILITY

59m APPROACH VISIBILITY

PROVIDE CROSSING POINT TO SHARED USE FACILITY OPPOSITE

OVER-RUN AREA

R10.00

R10.00

KEEP CLEAR ROAD MARKINGS

59m EXIT VISIBILITY

TIE INTO EXISTING CENTRELINE MARKINGS

TIE INTO EXISTING KERB LINE

3m WIDE SHARED USE FOOTWAY/CYCLEWAY TO CONTINUE ALONG SITE FRONTAGE TO MARSHALL WAY

PROVIDE CROSSING POINT TO SHARED USE FACILITY OPPOSITE

SHARED USE FOOTWAY/CYCLEWAY LINK TO JUNCTION 1, BARNHURST LANE/ PENDEFORD MILL LANE

3.00 6.50 3.00

NEW COMPACT ROUNDABOUT
ICD = 30.8m
CENTRAL ISLAND ϕ = 10m
OVERRUN ϕ =20m
CIRCULATORY CARRIAGEWAY WIDTH = 5.4m
ENTRY WIDTH, ALL ARMS = 4.5m
EXIT WIDTH, ALL ARMS = 4.5m

SITE ACCESS 2

1. THIS DRAWING IS NOT TO BE SCALED FOR CONSTRUCTION PURPOSES.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

REV	DESCRIPTION	DATE	BY	AUTH
A	SPINE ROAD EXTENDED TO SHOW FOOTWAY/ CYCLEWAY LINK. TOPO UPDATED	20.06.22	AMP	SM

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PROJECT
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STAFFORDSHIRE

TITLE
DEVELOPMENT ACCESS STRATEGY:
SITE ACCESS 2, PENDEFORD MILL LANE

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
AMP	SM	1:500	A3	30.05.22

PROJECT NO.	DRAWING NO.	REV
C22001	JCT/SA/EX/002	A

KEY:
PHASE 3 BOUNDARY
PHASE 2B BOUNDARY
HIGHWAY BOUNDARY
(INTERPRETED FROM PLAN SUPPLIED BY SCC)

40mph SPEED LIMIT NORTH OF THE DROVEWAY REPLACED BY 30mph SPEED LIMIT TO CONTINUE NORTHBOUND TO PENDEFORD MILL LANE WITH ADDTIONAL SPEED MANAGEMENT MEASURES (DETAILS TBC)

59m APPROACH VISIBILITY

TIE INTO EXISTING KERB

TIE INTO EXISTING KERB

TIE INTO EXISTING ROAD MARKINGS

LINK INTO EXISITNG FOOTWAY

59m EXIT VISIBILTY

NEW COMPACT ROUNDABOUT
ICD = 30.8m
CENTRAL ISLAND ϕ = 10m
OVERRUN ϕ = 20m
CIRCULATORY CARRIAGEWAY WIDTH = 5.4m
ENTRY WIDTH, ALL ARMS = 4.5m
EXIT WIDTH, ALL ARMS = 4.5m

EXISTING FOOTWAY ON EASTERN SIDE OF BARNHURST LANE BETWEEN THE DROVEWAY AND PENDEFORD MILL LANE TO BE RESURFACED AND WIDENED TO 2m WHERE POSSIBLE

59m EXIT VISIBILTY

TIE INTO EXISTING KERB

3m WIDE SHARED USE FOOTWAY/CYCLEWAY TO CONTINUE NORTHBOUND ALONG WESTERN SIDE OF BARNHURST LANE TO PENDEFORD MILL LANE JUNCTION

NEW UNCONTROLLED PEDESTRIAN CROSSING POINT PROVIDED

59m APPROACH VISIBILITY

TIE INTO EXISTING ROAD MARKINGS

TIE INTO EXISTING KERB

3.00
6.50
2.00
SITE ACCESS 3

1. THIS DRAWING IS NOT TO BE SCALED FOR CONSTRUCTION PURPOSES.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

REV	DESCRIPTION	DATE	BY	AUTH

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LAND EAST OF BILBROOK
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TITLE
DEVELOPMENT ACCESS STRATEGY:
SITE ACCESS 3, BARNHURST LANE

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
AMP	SM	1:500	A3	30.05.22

PROJECT NO.	DRAWING NO.	REV
C22001	JCT/SA/EX/003	-

KEY:
PHASE 3 BOUNDARY
HIGHWAY BOUNDARY
(INTERPRETED FROM PLAN SUPPLIED BY SCC)

N

3.00

3m WIDE FOOTWAY/ CYCLEWAY TO CONTINUE NORTHBOUND ALONG EASTERN SIDE OF LANE GREEN ROAD TO CONNECT WITH SITE ACCESS 5, SUBJECT TO ENGINEERING FEASIBILITY

59m EXIT VISIBILITY

59m APPROACH VISIBILITY

TIE INTO EXISTING KERB

El Sub Sta

TIE INTO EXISTING KERB

3m SHARED USE FOOTWAY/ CYCLEWAY TO CONTINUE THROUGH DEVELOPMENT TO BARNHURST LANE

3.00
6.50
3.00

SITE ACCESS 4

77

67

R10.00

EXISTING CROSSING POINT TACTILES REALIGNED TO SUIT REVISED KERB LINE

OAKFIELD ROAD

R10.00

3.00

NEW COMPACT ROUNDABOUT
ICD = 28m
CENTRAL ISLAND ϕ = 10m
OVERRUN ϕ =19m
CIRCULATORY CARRIAGEWAY WIDTH = 4.5m
ENTRY WIDTH, ALL ARMS = 4.5m
(EXCEPT OAKFIELD ROAD, WHERE W= 4.14m)
EXIT WIDTH, ALL ARMS = 4.5m

EXISTING VEHICLE CROSSOVER REALIGNED

EXISTING VEHICLE CROSSOVER EXTENDED TO MEET REALIGNED KERB

59m EXIT VISIBILITY

TIE INTO EXISTING KERB

TIE INTO EXISTING KERB

59m APPROACH VISIBILITY

40b

3m WIDE FOOTWAY/CYCLEWAY TO CONTINUE SOUTHBOUND ALONG EASTERN SIDE OF LANE GREEN ROAD TO CONNECT WITH NEW DROPPED KERB CROSSING POINT ON THE NORTHERN SIDE OF THE RAILWAY OVERBRIDGE AND TO CONNECT WITH EXISTING FOOTWAY PROVISION ON THE WESTERN SIDE. SUBJECT TO ENGINEERING FEASIBILITY

1. THIS DRAWING IS NOT TO BE SCALED FOR CONSTRUCTION PURPOSES.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

REV	DESCRIPTION	DATE	BY	AUTH

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PROJECT
LAND EAST OF BILBROOK
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TITLE
DEVELOPMENT ACCESS STRATEGY:
SITE ACCESS 4, LANE GREEN ROAD

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
AMP	SM	1:500	A3	30.05.22

PROJECT NO.	DRAWING NO.	REV
C22001	JCT/SA/EX/004	-

KEY:

PHASE 3 BOUNDARY

HIGHWAY BOUNDARY
(INTERPRETED FROM PLAN SUPPLIED BY SCC)

2.4m x 59m VISIBILITY SPLAY

3m WIDE FOOTWAY/ CYCLEWAY TO CONTINUE NORTHBOUND ALONG SITE FRONTAGE, SUBJECT TO ENGINEERING FEASIBILITY

CYCLE GIVE WAY AND MARKINGS

R10.00

3.00

5.50

3.00

SITE ACCESS 5

DROPPED CROSSING POINT WITH TACTILE PAVING

R10.00

CYCLE GIVE WAY AND MARKINGS

40m MIN JUNCTION SPACING

2.4m x 59m VISIBILITY SPLAY

WESLEY ROAD

3m WIDE FOOTWAY TO CONTINUE SOUTHBOUND ALONG EASTERN SIDE OF LANE GREEN ROAD TO CONNECT WITH SITE ACCESS 4, SUBJECT TO ENGINEERING FEASIBILITY

95

97

18

2

42

1. THIS DRAWING IS NOT TO BE SCALED FOR CONSTRUCTION PURPOSES.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

REV	DESCRIPTION	DATE	BY	AUTH
A	JUNCTION UPGRADED TO VEHICULAR ACCESS	20.06.22	AMP	SM

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PROJECT
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TITLE
DEVELOPMENT ACCESS STRATEGY: SITE ACCESS 5, LANE GREEN ROAD

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
AMP	SM	1:500	A3	30.05.22

PROJECT NO.	DRAWING NO.	REV
C22001	JCT/SA/EX/005	A

KEY:

PHASE 2B BOUNDARY

NOTE:

PROPOSALS SUBJECT TO CONFIRMATION OF THE EXTENT OF ADOPTED HIGHWAY

Pendeford Bridge

THE FOOTWAY/CYCLEWAY WILL BE DIVERTED INTO THE SITE TO AVOID THE PINCH-POINT ON PENDEFORD MILL LANE AND WILL RECONNECT WITH THE SPINE ROAD SOUTH OF SITE ACCESS 2

NEW TOUCAN CROSSINGS AND SECTION OF SHARED USE FOOTWAY/CYCLEWAY TO CONNECT DEVELOPMENT WITH THE EXISTING FOOTWAY/CYCLEWAY ON THE NORTHERN SIDE OF WOBASTON ROAD

NEW SHARED USE FOOTWAY/CYCLEWAY TO CONNECT WITH PROPOSED SITE ACCESS 3 TO THE SOUTH

Sewage Pumping Station

1. THIS DRAWING IS NOT TO BE SCALED FOR CONSTRUCTION PURPOSES.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

REV	DESCRIPTION	DATE	BY	AUTH
A	FOOTWAY/ CYCLEWAY LINK TO SPINE ROAD AND TOPO UPDATED	20.06.22	AMP	SM

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PROJECT
LAND EAST OF BILBROOK
STAFFORDSHIRE

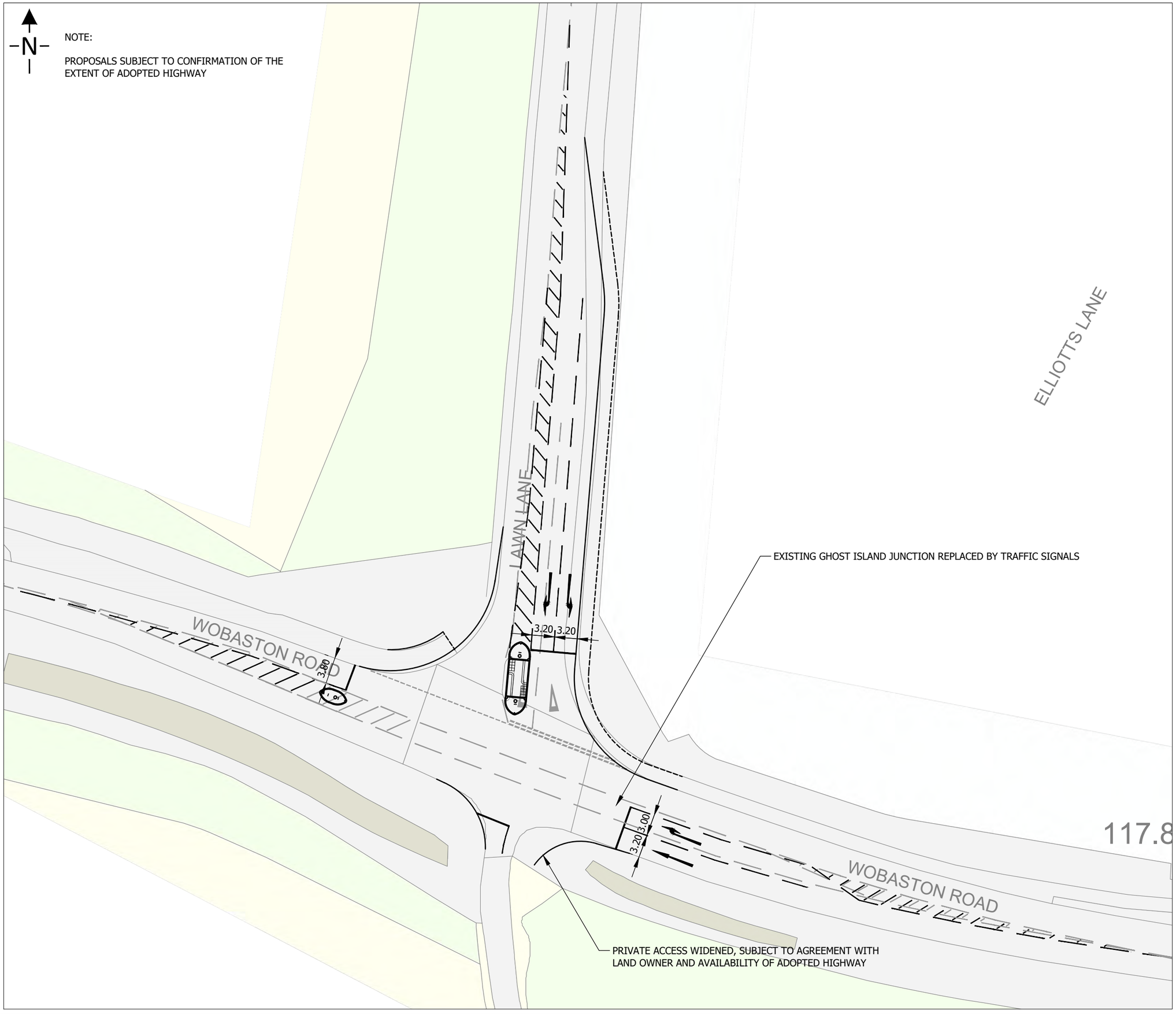
TITLE
MITIGATION LAYOUT, JUNCTION 1:
PENDEFORD MILL LANE/BARNHURST LANE

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
AMP	SM	1:500	A3	30.05.22

PROJECT NO.	DRAWING NO.	REV
C22001	JCT/MIT/001	A

NOTE:

PROPOSALS SUBJECT TO CONFIRMATION OF THE EXTENT OF ADOPTED HIGHWAY



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2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

REV	DESCRIPTION	DATE	BY	AUTH

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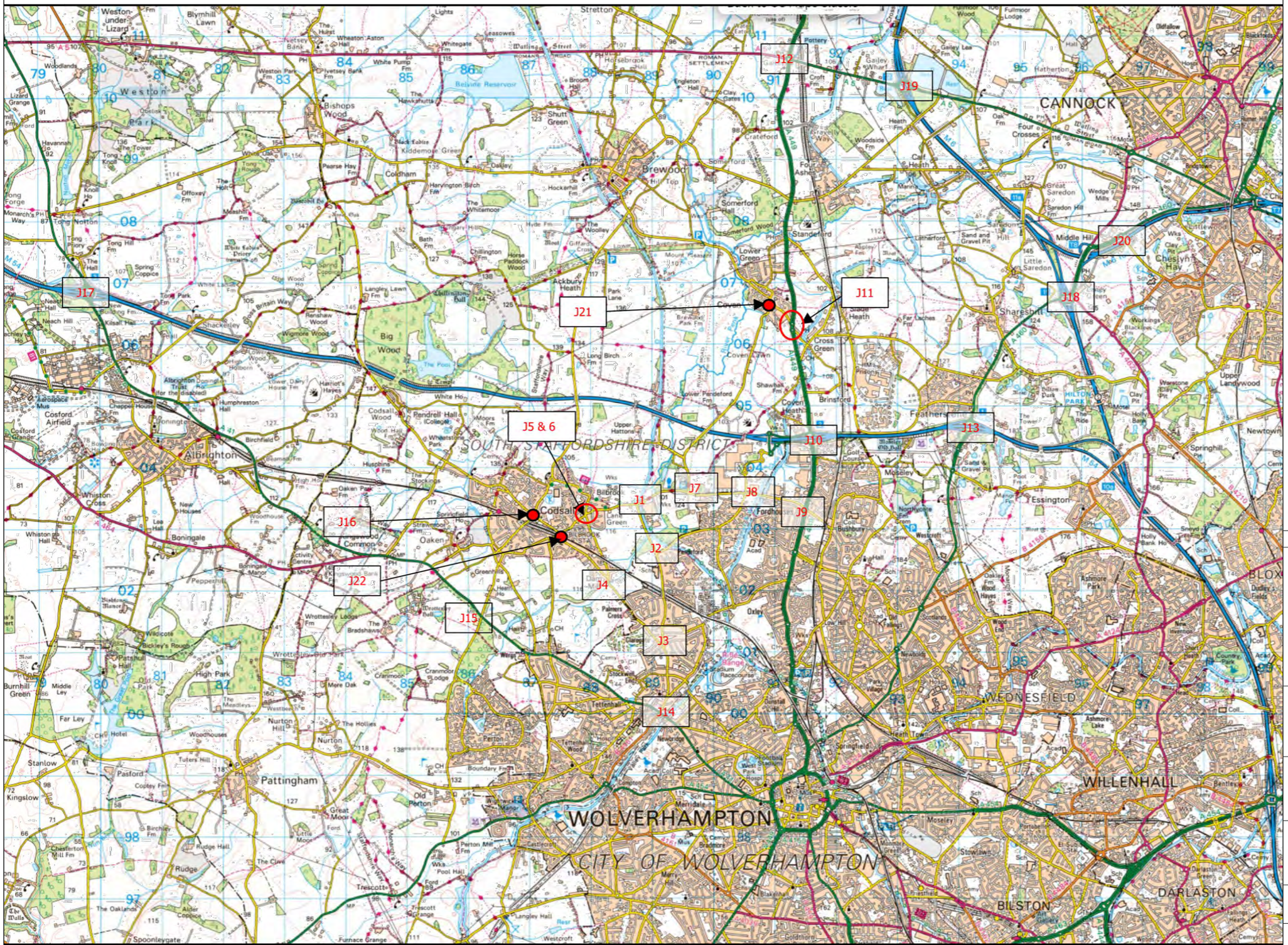
PROJECT
LAND EAST OF BILBROOK
STAFFORDSHIRE

TITLE
MITIGATION LAYOUT, JUNCTION 7:
WOBASTON ROAD/LAWN LANE

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
AMP	SM	1:500	A3	30.05.22

PROJECT NO.	DRAWING NO.	REV
C22001	JCT-MIT-007	-



1. THIS DRAWING IS NOT TO BE SCALED FOR CONSTRUCTION PURPOSES.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

REV	DESCRIPTION	DATE	BY	AUTH
A	DRAWING TITLE AND JUNCTION LOCATIONS UPDATED FOR STA	30/05/22	SM	SAM

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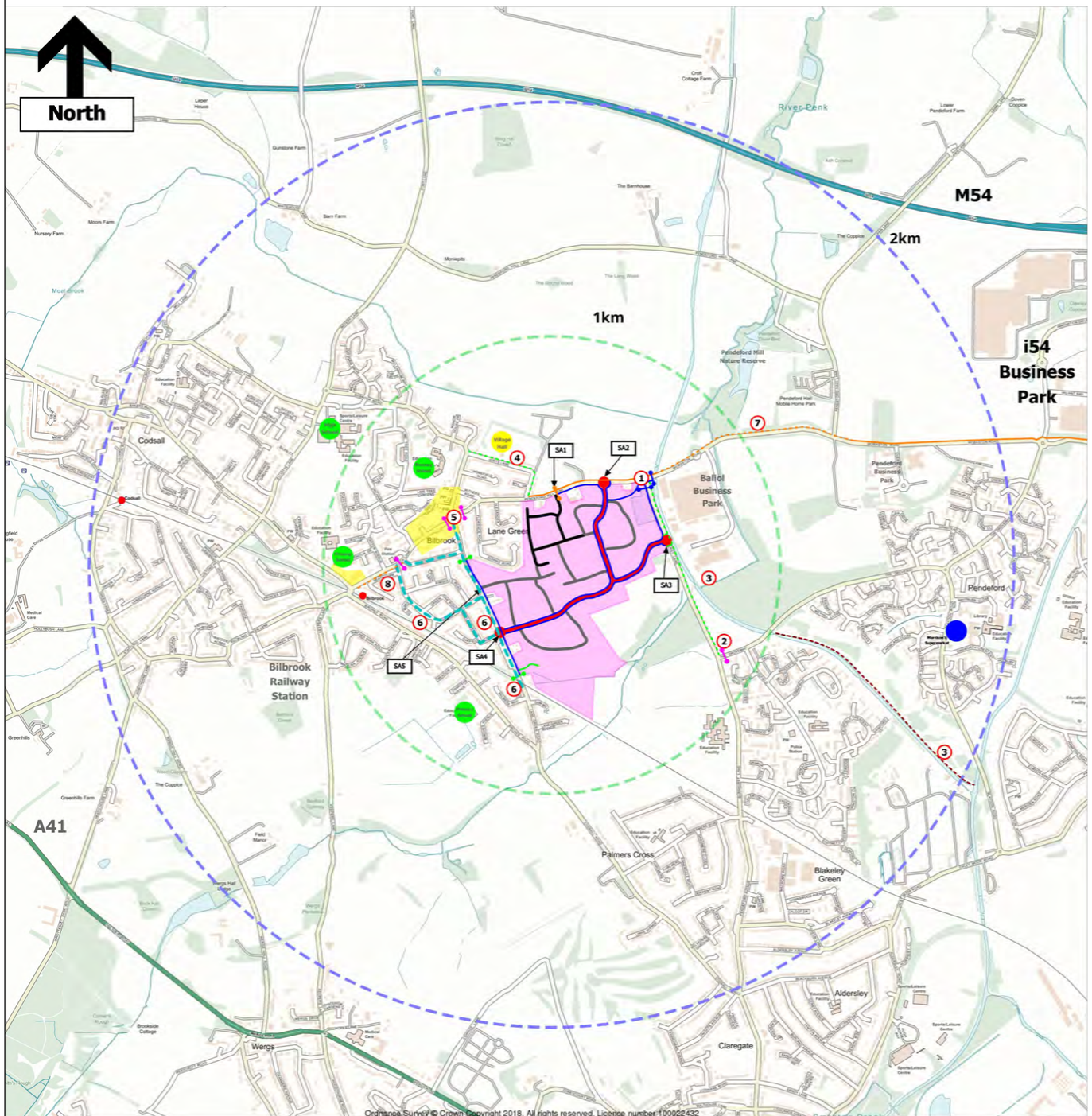
PROJECT
LAND EAST OF BILBROOK

TITLE
STA STUDY AREA:
JUNCTION LOCATIONS

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
SM	SM	N.T.S.	A3	08.02.22

PROJECT NO.	DRAWING NO.	REV
C22001	SK01	A



Existing Estate Road
Proposed Estate Road
Proposed Link Road
Existing Footway/Cycleway
Footway/Cycleway to be Improved
Proposed Footway/Cycleway
Proposed Footway
Footway to be Improved
Other Right of Way to be Improved
Proposed Traffic Management
Existing Controlled Crossing
Proposed Controlled Crossing
Improved Crossing Facilities
Proposed Uncontrolled Crossing

1. **New traffic signal junction**
2. **Barnhurst Lane eastern footway resurfacing**
3. **Canal path surfacing improvements**
4. **New/improved footway on Joeys Lane**
5. **Raised junction in village centre**
6. **Traffic calming and/or waiting restrictions**
7. **Wobaston Road Foot/Cycleway to be upgraded**
8. **Duck Lane Foot/Cycleway to be provided**

1. THIS DRAWING IS NOT TO BE SCALED FOR CONSTRUCTION PURPOSES.
2. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND LEVELS ON SITE.

REV	DESCRIPTION	DATE	BY	AUTH
A	DRAWING UPDATED TO TAKE INTO ACCOUNT CLIENT COMMENTS	20/06/22	SM	SAM

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PROJECT
LAND EAST OF BILBROOK

TITLE
PEDESTRIAN AND CYCLE NETWORK: IMPROVEMENT STRATEGY PLAN

DRAWN	AUTHORISED	SCALE	SHEET SIZE	DATE
SM	SM	N.T.S.	A3	30.05.22

PROJECT NO.	DRAWING NO.	REV
C22001	SK02	A

APPENDIX A: DEVELOPMENT MASTERPLAN

Accomodation Schedule:

Site Area: 46.9 hectares
Number of Homes: 1,096 homes
Net Developable: 29.42 hectares
Up to Two Form Entry First School: 1.3 hectares
Green Infrastructure: 16.18 hectares
Average Gross Density: 23 homes/hectare
Average Net Density: 37 homes/hectare

n*ORTH

0m 20m 40m 60m 80m 100m

Scale 1:2,500 (@A2)

Bilbrook

Recreation Ground

Recreation Ground

Pendeford Mill Lane

Pendeford Bridge

Balliol Business Park

Shropshire Union Canal

Barnhurst Lane

Square

Play

Village Green

Parcel 1
4.25 ha
164 homes
@38 units/ha

Parcel 3
3.14 ha
109 homes
@35 units/ha

Parcel 4
4.62 ha
162 homes
@35 units/ha

Mews

Square

Square

Square

Parcel 5
1.34 ha
47 homes
@35 units/ha

Lane Green

Parcel 6
2.66 ha
106 homes
@40 units/ha

Mews

Square

Parcel 2
3.79 ha
151 homes
@40 units/ha

Parcel 7
1.46 ha
51 homes
@35 units/ha

Lane Green Barns

Lane Green Road

Mews

1FE Primary School
(0.8ha site)

2FE Extension
(0.5ha site)

Central Green

Play

Square

Parcel 8
2.10 ha
94.5 homes
@45 units/ha

Parcel 9
6.06 ha
212 homes
@35 units/ha

Square

Lane Green Farm

Play

Bilbrook Bridge

Codsall Road

Dam Mill

River Penk

Football Ground

Key

- Site Boundary
- Site with Full Planning Permission
- Existing Trees
- Existing Hedgerows
- Green Infrastructure
- Developement Parcels
- Primary Gateway
- Secondary Gateway
- Pedestrian/Cycle Gateway
- Proposed Trees (Indicative)
- Existing Watercourse/ Ditch
- Proposed Balancing Ponds (Indicative Locations)
- Proposed Leisure Footpaths
- Proposed/Existing Strategic Cycleway
- Avenue & Vistas
- Street
- Lane
- Shared Drive (unadopted)
- Shared Space Square or Mews
- 1FE First School/ Land Reserved for 2FE school extension

e*SCAPE urbanists 10 years 2009 - 2019

Project Title
Land at Pendeford Mill Lane, Bilbrook

e*SCAPE Job No.
018-001

Client
Bloor Homes Midlands

Drawing Number
018-001-P003

Revision
REV C

Drawing Title
Parameters Masterplan

Scale
1:2,500 @ A2

Date
March '20

APPENDIX B: SCOPING CORRESPONDENCE

From:	Jarvis, Jon (E,I&S)
To:	Sean McGregor
Cc:	Edward Fox; Patrick Walker; Hawe, Simon (E,I&S); Mudhar, Amrit (E,I&S); marianne.page@wolverhampton.gov.uk; Thomas, Patrick; MILLARD Matt; Max Whitehead; JONES Derek
Subject:	RE: South Staffordshire Local Plan: Land East of Bilbrook - SCC Comments
Date:	18 March 2022 11:23:49
Attachments:	image001.png

Hi Sean

Please see my comments in Blue below which should enable you to progress with the STA.

Kind regards

Jon

From: Sean McGregor <sean.mcgregor@capricorn-tp.co.uk>
Sent: 15 March 2022 14:38
To: Jarvis, Jon (E,I&S) <jon.jarvis@staffordshire.gov.uk>
Cc: Edward Fox <E.Fox@sstaffs.gov.uk>; Patrick Walker <P.Walker@sstaffs.gov.uk>; Hawe, Simon (E,I&S) <simon.hawe@staffordshire.gov.uk>; Mudhar, Amrit (E,I&S) <amrit.mudhar1@staffordshire.gov.uk>; marianne.page@wolverhampton.gov.uk; Thomas, Patrick <Patrick.Thomas@highwaysengland.co.uk>; MILLARD Matt <mmillard1@systra.com>; Max Whitehead <Max.Whitehead@bloorhomes.com>; JONES Derek <djones1@systra.com>
Subject: RE: South Staffordshire Local Plan: Land East of Bilbrook - SCC Comments

Hi Jon,

Apologies for the delay replying to your comments. I have provided a response (in red type) to each point in the body of your email, setting out how we propose to deal with the issues you have raised.

Due to the short timescale for submissions to the LPA, we propose to deal with these points within the STA report, rather than issuing a revised Scoping Report. However, I will issue a revised trip distribution/assignment model ahead of this to address your comments on Table 5.3 of the Scoping Report. I trust this is acceptable.

Please come back to me if you would like to discuss any of these issues further.

Best regards,

Sean McGregor
Director

Capricorn Transport Planning
Transport Planning | Traffic Enginering | Sustainable Travel | Road Safety

19 Graystones Close, West Bridgford, Nottingham NG2 6QU
M. 0777 334 7121
E. sean.mcgregor@capricorn-tp.co.uk

From: Jarvis, Jon (E,I&S) <jon.jarvis@staffordshire.gov.uk>
Sent: 07 March 2022 15:35
To: Sean McGregor <sean.mcgregor@capricorn-tp.co.uk>
Cc: Edward Fox <E.Fox@sstaffs.gov.uk>; Patrick Walker <P.Walker@sstaffs.gov.uk>; Hawe, Simon (E,I&S) <simon.hawe@staffordshire.gov.uk>; Mudhar, Amrit (E,I&S) <amrit.mudhar1@staffordshire.gov.uk>; marianne.page@wolverhampton.gov.uk; Thomas, Patrick <Patrick.Thomas@highwaysengland.co.uk>; MILLARD Matt <mmillard1@systra.com>; Max Whitehead <Max.Whitehead@bloorhomes.com>; JONES Derek <djones1@systra.com>
Subject: RE: South Staffordshire Local Plan: Land East of Bilbrook - SCC Comments

Hi Sean

Apologies for the delay in getting back to you. Please find SCC's comments on your scoping note below:

General – remove all references to distances stated "as the crow flies". These are not helpful and information is readily accessible to determine more realistic distances. Noted.

Paragraph 2.1.1. There is limited offer at the centre discussed here. It will be important to provide quality links to the shopping area near Bilbrook railway station too. Noted.

Paragraph 2.2.1. Bullet 2 Pendeford Road should be Pendeford Avenue. Noted.

Paragraph 2.3.4. SCC consider 350m a reasonable walk to a bus stop, rather than the 400m set out here. Noted, but 400m is in accordance with national guidance and there is evidence that people are wiling to walk further than 400m to access bus services. Achieving 350m for a reasonable proportion of dwellings is expected to require diversion of bus services within the development – you or your colleagues were to arrange a meeting with the local bus operator to discuss this matter. Please provide an update on this as the provision of satisfactory bus services is one of the key elements of the access strategy. 350m is SCC policy. Agreed that it will be useful to meet with SCC's public transport colleagues and operators to understand their thoughts on how best to serve the site, without causing harm to exiting services. Also whether longer walking distances would be acceptable in this case. I had previously mentioned this in other comments on your scope. Simon Hawe will be in contact regarding a public transport meeting.

Paragraph 2.3.6. References to the schools are incorrect. Codsall and Bilbrook operate a 3 tier system, Codsall Middle School should also be referenced. Also, mention of Aldersley High School which is in

Wolverhampton. Codsall has a high school and it is understood that the high school will need additional infrastructure to cater for children from this development. Noted – locations to be reviewed in STA.

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Paragraph 3.2.3. Distribution of development traffic at the site accesses needs to be based on reasonable assumptions, not just so that it avoids Duck Lane as the potential impact at the double minis on Duck Lane needs to be considered. The distribution assumes that traffic to/from the south via Lower Street would use the Link Road to access the external highway network via Lane Green Road or Barnhurst Lane. There would be no need for this traffic to use the Duck Lane junctions referred to above. Other traffic would be distributed in accordance with the census-based model, utilising Duck Lane where this provides a reasonable route to destinations west of the site. Apologies, our initial comment was misleading with an incorrect reference to double minis. The junction we were referring to is next to the Woodman Inn – Pendeford Mill Lane/ Lane Green Road/ Duck Lane/ Bilbrook Road (I think in the very distant past this was double minis – pre Google images!). This junction is quite contentious locally. The point was that depending where in the site a trip starts from it may well need to be distributed out towards the north and then west.

Paragraph 3.2.5. How will the route from the link road to the additional priority junction be managed to keep it “discreet”, as traffic routeing north from this junction would impact Duck Lane which already experiences capacity issues during peak periods This matter will be considered as part of the master planning process.

Paragraph 3.4.1. See earlier comment about potential issues with extending existing services into the site. Please see comment at 2.3.4

above.

Paragraph 4.1.3. The need for site specific STAs has come from South Staffordshire Council not SCC. Noted, although SSDC advised that the request had come from SCC. It's not an overly important issue but my thoughts are that it is SSDC's Local Plan so I think the reference need to be them not SCC. SCC is a statutory consultee and has no jurisdiction over the plan. SCC advised SSDC that to gain the level of detail they require at this stage of their plan that STAs from the developer may be the best route.

Paragraph 4.1.4. It was SCC's understanding that the developer would provide preliminary scheme cost estimates, including those for cycling / walking and PT where necessary. Noted – to be discussed further with Bloor Homes.

Section 4.3. The proposed approach to trip generation, distribution and assignment is likely to require further refinement as part of any future planning application as it may not be appropriate to base trip generation and mode share entirely on Census 2011 method of travel to work data. Other home based journey purposes should also be considered including shopping, leisure and education. Noted that this needs to be considered for detailed TA to support future planning application.

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Section 5.3. Trip Distribution. It may have been useful to combine MSOA 008 and 009 to create the trip distribution, rather than limiting it to 008. However, at this stage SCC is content to continue with the work produced on 008.

Table 5.3 contains a routing summary (this is assignment, not distribution). SCC think that this could do with some refinement. Some of the concerns picked up include:

- SCC think it unlikely that many commuters would choose the M6 Toll; Agreed – we will review and revise our assumptions for this route.
- SCC consider it likely that Lawn Lane (route J) may be used by more vehicles heading north along the A449, rather than routing

along Wobaston Road; To be reviewed.

- 100% of trips to Stafford are unlikely to route on the M6 north at junction 12, many would use the A449; Noted and will be reviewed. However, NH requires all such trips to be routed via M6J12 as a worst-case scenario (to be considered as a separate sensitivity test).
- the plan in appendix E shows 23/7=30 trips through the A41 signals with Heath House Lane. There are further trips from the committed development and safeguarded site. This is a sensitive location and a mitigation scheme capable of delivering housing growth in Perton has been designed. This utilises all available highways land. Additional trips through the junction at this level from the Codsall / Bilbrook sites would require capacity testing to determine whether further improvements (if possible) are required. SCC has LinSig models prepared for this. It should be noted that there are other routes for vehicles heading west and the existing count at this location shows relatively low movements to and from the west, indicating that potentially these other routes are used. If this junction is to be assessed then committed developments in Perton need to be added to the traffic flows. It would be helpful if this LINSIG model could be provided to us so that we can assess traffic impacts at this location. Please confirm whether the base traffic flows in the model are suitable for addition of Bilbrook/Perton development traffic, or whether a new traffic survey should be undertaken. I will supply the LinSig to you. It is informed by a Nov 2019 survey and I'm happy that you use that rather than re-survey. The model include developments in Perton and background growth. You may need to adjust both these slightly but we can discuss in more detail when I forward on.
- Routes to MSOA 010 and 011 (Perton area) are likely to use the A41 signals with Heath House Lane, rather than B4161. To be reviewed.

Paragraph 5.4.2. 30 two-way development trips experienced at a junction is a general rule of thumb. Fewer vehicles in sensitive locations have the potential to have severe impacts on the operation of a junction and should not be ruled out simply because they do not meet the 30 two-way trips criteria. Noted, but the main objective of the Scoping Report was to identify which junctions should eb considered for assessment in the STA. The 30-vehicle threshold provides one indicator of this, but we have also added the junctions identified in your comments at 5.4.7, 5.4.8 and 5.4.9 below. We trust this is acceptable in terms of the junctions that will now be considered in the STA.

Paragraph 5.4.7. SCC would expect to see a capacity assessment of the Duck Lane / Birches Road / Keepers Lane double mini roundabouts. This is a sensitive location. This additional junction will be considered in the STA.

Paragraph 5.4.8. Brewood Road/ Lawn Lane priority T-junction should be considered for assessment This additional junction will be considered in the STA.

Paragraph 5.4.9. SCC would expect to see a capacity assessments of Histons Hill / Wolverhampton Road traffic signals (junction 16) and the A41 / Heath House Lane signals (junction 15) (see above comments regarding the latter). Junction 17 is not in SCC jurisdiction, and is possibly NH's junction. Junctions 15 and 16 will also be considered in the STA. Junction 17 to be discussed with NH.

Paragraph 5.4.12. It should be noted that additional junctions may be required as part of the Transport Assessment submitted as part of any future planning application and therefore any traffic surveys to be undertaken should have this in mind so that baseline data is consistent for the strategic and more refined transport assessments. Noted, but we would expect all major junctions of concern to be identified at this stage as part of the Local Plan process.

Section 7.2 Background Traffic Growth. It may have been more appropriate to use South Staffordshire MSOA 008, which covers the Bilbrook area and was used for the purposes of creating a traffic distribution, rather than the whole of South Staffordshire District. This will be reviewed for the STA. If appropriate, alternative growth factors will be forwarded for agreement in advance.

Paragraph 7.2.6. Would a population weighted average be more appropriate? This will be reviewed for the STA. If appropriate, alternative growth factors will be forwarded for agreement in advance.

Paragraph 7.3.1. Committed development should be confirmed with South Staffordshire Council. Noted.

Paragraph 7.3.3. There is also potential for vehicles to route along Stafford Lane, for vehicles heading west (as discussed in earlier comments). To be considered as part of trip distribution review.

Paragraph 8.1.1. SCC would like to understand the impact of your site and the safeguarded site together (totalling 1,165 dwellings). Please adjust the scenarios so that this can be accommodated. 3 scenarios to be considered as follows:

- DM = 2038 plus committed development
- DS1 = DM + Bilbrook development (848 dwellings)
- DS2 = DS1 + Keepers Lane development (317 dwellings)

Please confirm that these are acceptable. These are acceptable. For the purposes of demonstrating that the Local Plan allocation(s) is sound, it

is important that you demonstrate acceptable network conditions for DS2, or demonstrate that there are solutions where necessary.

Kind regards

Jon

Jon Jarvis | Senior Strategy Officer
Economy, Infrastructure and Skills
Third Floor, Staffordshire Place 1
Tipping Street, Stafford, ST16 2DH
Tel: **01785 276763**
E-mail: **jon.jarvis@staffordshire.gov.uk**
www.staffordshire.gov.uk

From: Sean McGregor <sean.mcgregor@capricorn-tp.co.uk>
Sent: 14 February 2022 15:56
To: Edward Fox <E.Fox@sstaffs.gov.uk>; Patrick Walker <P.Walker@sstaffs.gov.uk>; Hawe, Simon (E,I&S) <simon.hawe@staffordshire.gov.uk>; Mudhar, Amrit (E,I&S) <amrit.mudhar1@staffordshire.gov.uk>; Jarvis, Jon (E,I&S) <jon.jarvis@staffordshire.gov.uk>; Dawson, Nick (E,I&S) <nick.dawson@staffordshire.gov.uk>; marianne.page@wolverhampton.gov.uk; Thomas, Patrick <Patrick.Thomas@highwaysengland.co.uk>
Cc: Max Whitehead <Max.Whitehead@bloorhomes.com>
Subject: South Staffordshire Local Plan: Land East of Bilbrook

Afternoon all,

Further to recent discussions and correspondence, please find attached the Scoping Report in respect of the Strategic Transport Assessment (STA) that is to be prepared to support the above Local Plan allocation.

We would be grateful if you could review the Scoping Report and provide your comments as soon as possible so that the STA can be progressed to an agreed format and any required traffic data collected as soon as possible.

If you have any questions, please don't hesitate to get in touch.

Regards,

Sean McGregor
Director

Capricorn Transport Planning
Transport Planning | Traffic Enginering | Sustainable Travel | Road Safety

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From: Jarvis, Jon (E,I&S)
To: Sean McGregor
Cc: Mudhar, Amrit (E,I&S); Hawe, Simon (E,I&S)
Subject: FW: South Staffordshire Local Plan: Land East of Bilbrook - SCC Comments
Date: 18 March 2022 11:32:49
Attachments: image001.png
C22001-TASR-DIST_02.pdf
C22001-TASR-DIST_02.xlsx

Hi Sean

I'm happy to accept your changes to the routing assignments. I still think that there is some potential for re-routing in the west to avoid the A41 / Heath House Lane signals, for trips heading west, as mentioned in my original comments (e.g. use of Stafford Lane). However, I'm happy that you leave these as they are as it will provide a robust assessment of the traffic signals.

Kind regards

Jon

From: Sean McGregor <sean.mcgregor@capricorn-tp.co.uk>
Sent: 16 March 2022 15:36
To: Jarvis, Jon (E,I&S) <jon.jarvis@staffordshire.gov.uk>
Subject: RE: South Staffordshire Local Plan: Land East of Bilbrook - SCC Comments

Hi Jon,

I have now amended the trip distribution model to take into account your comments. The following changes have been made:

1. All trips previously assigned to the M6 Toll now assigned to the parallel A5 route, although this corridor accounts for only 2.5% so makes little practical difference.
2. Trips to/from A449 North (Cordon Point A) now split such that 70% use Lawn Lane and 30% use A449 via Wobaston Road.
3. All trips to Stafford (2.67% of the total) now assigned to A449 (Cordon Point A) rather than M6J12. NH has stated that it will not accept this and requires all Stafford trips to be routed via M6J12, but this can be dealt with as a sensitivity test.
4. Trips to from the SSDC 010 and 011 MSOAs have been re-routed via the A41/Heath House Lane junction instead of the A41/B4161, although this accounts for only 1.8% of all trips and makes little practical difference.
5. Diagrams amended to indicate i54 access via M54J2.

The revised trip distribution is attached (also in MS Excel format to assist with your review). The changes relating to items 1 to 4 above are highlighted in blue.

The differences arising from these changes are summarised in the table below – as you can see the differences between the Scoping Report (V1) and revised (V2) versions are minimal.

ROUTE	CORDON POINT/AREA	V1 %	V2 %	*Diff.*	COMMENT
A: A449 NORTH	North of A5	2.4%	3.7%	***1.3%***	
B: EAST OF A449	Bushbury, Wednesfield areas	7.9%	7.9%	***0.0%***	
C: WEST OF A449	i54 employment areas	10.2%	10.2%	***0.0%***	
D: THE DROVEWAY	Pendeford area	1.4%	1.4%	***0.0%***	
E: M6 NORTH	North of A5	4.3%	2.9%	***-1.3%***	
F: A460 NORTH	North of A5	1.5%	1.5%	***0.0%***	
G: M6 TOLL & A5 EAST	East of Cannock	2.5%	2.5%	***0.0%***	***V2 is A5 only.***
H: M6 SOUTH	South of M54	15.6%	15.6%	***0.0%***	
I: A449 SOUTH (CITY CTR)	North of Ring Road	8.2%	8.2%	***0.0%***	
J: LAWN LANE & COVEN	A5 east of J12	3.2%	3.2%	***0.0%***	
K: LOWER STREET	Claregate, Aldersley areas	4.5%	4.5%	***0.0%***	
L: A41 EAST (CITY CTR)	West of Ring Road	14.1%	14.1%	***0.0%***	
M: B4161 HENWOOD ROAD	South of A41	9.5%	8.2%	***-1.4%***	
N: A41 WEST	South of M54 Junction 3	8.0%	9.4%	***1.4%***	
O: WOOD ROAD	Codsall Wood area	1.4%	1.4%	***0.0%***	
P: M54 WEST	East of Junction 3	5.3%	5.3%	***0.0%***	
TOTAL		**100%**	**100%**		

We would like to agree the trip distribution with you before proceeding further (noting that NH have additional comments, which we will respond to separately).

Please come back to me with any further comments as soon as you can.

Regards,

Sean McGregor
Director

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From: Sean McGregor
Sent: 16 March 2022 09:50
To: Jarvis, Jon (E,I&S) <jon.jarvis@staffordshire.gov.uk>
Subject: RE: South Staffordshire Local Plan: Land East of Bilbrook - SCC Comments

Hi Jon,

Further to my email below, we understand that you are making information from the M54/M6 model available for use in the assessments of the Penkridge site at the relevant SRN junctions.

Could you please advise what information is available from the model for the following locations and in what format (assuming the model is satisfactory in these areas):

- M54 Junction 2
- M54 Junction 1
- M6 Junction 11
- M6 Junction 12
- A5/A449 Gailey Roundabout
- A449/Wobaston Road (not SRN but close to M54J2 and may interact with it).

We understand that we will still need traffic survey data for locations where detailed assessments are likely to be required. I will send a list of the surveys we are planning to undertake shortly.

NH in its Technical Note has stated that:

"…further evidence will be required in relation to those junctions expected to accommodate fewer than 30 trips, to demonstrate that these junctions are operating within capacity in the base and future years, and that there are no parts of these junctions where existing or expected queue lengths would indicate a likelihood of disruption to junction operation, or to the main line of the route or motorway in question. The necessary data may be available from the SCC modelling exercises; the applicant should seek to establish this directly with SCC."

Are you able to provide this information?

Happy to discuss on the phone if easier. Look forward to hearing from you asap.

Regards,

Sean McGregor
Director

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Sent: 15 March 2022 14:38
To: Jarvis, Jon (E,I&S) <jon.jarvis@staffordshire.gov.uk>
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Subject: RE: South Staffordshire Local Plan: Land East of Bilbrook - SCC Comments

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Please come back to me if you would like to discuss any of these issues further.

Best regards,

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Paragraph 3.1.3. The retail (especially if Lidl / Aldi) and education uses on-site could attract reasonable amounts of off-site trips, especially once the primary school has been expanded. SCC reserve the right to request a more detailed assessment as part of any future planning application, once more details are known. Noted that this needs to be considered for detailed TA to support future planning application.

Section 5.3. Trip Distribution. It may have been useful to combine MSOA 008 and 009 to create the trip distribution, rather than limiting it to 008. However, at this stage SCC is content to continue with the work produced on 008.

Table 5.3 contains a routing summary (this is assignment, not distribution). SCC think that this could do with some refinement. Some of the concerns picked up include:

- SCC think it unlikely that many commuters would choose the M6 Toll; Agreed – we will review and revise our assumptions for this route.
- SCC consider it likely that Lawn Lane (route J) may be used by more vehicles heading north along the A449, rather than routing along Wobaston Road; To be reviewed.
- 100% of trips to Stafford are unlikely to route on the M6 north at junction 12, many would use the A449; Noted and will be reviewed. However, NH requires all such trips to be routed via M6J12 as a worst-case scenario (to be considered as a separate sensitivity test).
- the plan in appendix E shows 23/7=30 trips through the A41 signals with Heath House Lane. There are further trips from the committed development and safeguarded site. This is a sensitive location and a mitigation scheme capable of delivering housing growth in Perton has been designed. This utilises all available highways land. Additional trips through the junction at this level from the Codsall / Bilbrook sites would require capacity testing to determine

whether further improvements (if possible) are required. SCC has LinSig models prepared for this. It should be noted that there are other routes for vehicles heading west and the existing count at this location shows relatively low movements to and from the west, indicating that potentially these other routes are used. If this junction is to be assessed then committed developments in Perton need to be added to the traffic flows. It would be helpful if this LINSIG model could be provided to us so that we can assess traffic impacts at this location. Please confirm whether the base traffic flows in the model are suitable for addition of Bilbrook/Perton development traffic, or whether a new traffic survey should be undertaken.

- Routes to MSOA 010 and 011 (Perton area) are likely to use the A41 signals with Heath House Lane, rather than B4161. To be reviewed.

Paragraph 5.4.2. 30 two-way development trips experienced at a junction is a general rule of thumb. Fewer vehicles in sensitive locations have the potential to have severe impacts on the operation of a junction and should not be ruled out simply because they do not meet the 30 two-way trips criteria. Noted, but the main objective of the Scoping Report was to identify which junctions should eb considered for assessment in the STA. The 30-vehicle threshold provides one indicator of this, but we have also added the junctions identified in your comments at 5.4.7, 5.4.8 and 5.4.9 below. We trust this is acceptable in terms of the junctions that will now be considered in the STA.

Paragraph 5.4.7. SCC would expect to see a capacity assessment of the Duck Lane / Birches Road / Keepers Lane double mini roundabouts. This is a sensitive location. This additional junction will be considered in the STA.

Paragraph 5.4.8. Brewood Road/ Lawn Lane priority T-junction should be considered for assessment This additional junction will be considered in the STA.

Paragraph 5.4.9. SCC would expect to see a capacity assessments of Histons Hill / Wolverhampton Road traffic signals (junction 16) and the A41 / Heath House Lane signals (junction 15) (see above comments regarding the latter). Junction 17 is not in SCC jurisdiction, and is possibly NH's junction. Junctions 15 and 16 will also be considered in the STA. Junction 17 to be discussed with NH.

Paragraph 5.4.12. It should be noted that additional junctions may be required as part of the Transport Assessment submitted as part of any future planning application and therefore any traffic surveys to be undertaken should have this in mind so that baseline data is consistent for the strategic and more refined transport assessments. Noted, but we would expect all major junctions of concern to be identified at this stage as part of the Local Plan process.

Section 7.2 Background Traffic Growth. It may have been more appropriate to use South Staffordshire MSOA 008, which covers the Bilbrook area and was used for the purposes of creating a traffic distribution, rather than the whole of South Staffordshire District. This will be reviewed for the STA. If appropriate, alternative growth factors will be forwarded for agreement in advance.

Paragraph 7.2.6. Would a population weighted average be more appropriate? This will be reviewed for the STA. If appropriate, alternative growth factors will be forwarded for agreement in advance.

Paragraph 7.3.1. Committed development should be confirmed with South Staffordshire Council. Noted.

Paragraph 7.3.3. There is also potential for vehicles to route along Stafford Lane, for vehicles heading west (as discussed in earlier comments). To be considered as part of trip distribution review.

Paragraph 8.1.1. SCC would like to understand the impact of your site and the safeguarded site together (totalling 1,165 dwellings). Please adjust the scenarios so that this can be accommodated. 3 scenarios to be considered as follows:

- DM = 2038 plus committed development
- DS1 = DM + Bilbrook development (848 dwellings)
- DS2 = DS1 + Keepers Lane development (317 dwellings)

Please confirm that these are acceptable.

Kind regards

Jon

Jon Jarvis | Senior Strategy Officer
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From: Sean McGregor <sean.mcgregor@capricorn-tp.co.uk>
Sent: 14 February 2022 15:56
To: Edward Fox <E.Fox@sstaffs.gov.uk>; Patrick Walker <P.Walker@sstaffs.gov.uk>; Hawe, Simon (E,I&S) <simon.hawe@staffordshire.gov.uk>; Mudhar, Amrit (E,I&S) <amrit.mudhar1@staffordshire.gov.uk>; Jarvis, Jon (E,I&S) <jon.jarvis@staffordshire.gov.uk>; Dawson, Nick (E,I&S) <nick.dawson@staffordshire.gov.uk>; marianne.page@wolverhampton.gov.uk; Thomas, Patrick <Patrick.Thomas@highwaysengland.co.uk>
Cc: Max Whitehead <Max.Whitehead@bloorhomes.com>
Subject: South Staffordshire Local Plan: Land East of Bilbrook

Afternoon all,

Further to recent discussions and correspondence, please find attached the Scoping Report in respect of the Strategic Transport Assessment (STA) that is to be prepared to support the above Local Plan allocation.

We would be grateful if you could review the Scoping Report and provide your comments as soon as possible so that the STA can be progressed to an agreed format and any required traffic data collected as soon as possible.

If you have any questions, please don't hesitate to get in touch.

Regards,

Sean McGregor
Director

Capricorn Transport Planning
Transport Planning | Traffic Enginering | Sustainable Travel | Road Safety

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From: Gerwyn Owen
To: Sean McGregor
Subject: RE: Bilbrook Development - Information
Date: 29 April 2022 15:04:17
Attachments: ~WRD0002.jpg

Sensitivity: PROTECT

Hi Sean,

Thanks for the update.

Just so that you are aware my concerns relate to my local knowledge of the traffic situation from before the covid pandemic.

I would agree that the Lower Street route will be accommodating a larger share of the traffic generated by the proposed development. However the traffic previously backed up from the traffic signals at the Lower Street \ Tettenhall Road junction to such an extent that inbound drivers would seek an alternative route towards Wolverhampton City Centre and the next option was the Lowlands Avenue – Hordern Road route.

Also during the PM Peak, outbound traffic would experience difficulties in exiting Lowlands Avenue onto Lower Street. This would lead to a number of drivers leaving Wolverhampton to turn right at the Hordern Road traffic signals, travel along Aldersley Road, then turn left into Burland Avenue and use Blackburn Avenue to access Codsall Road at the roundabout with Pendeford Avenue, thereby avoiding the Lowlands Avenue \ Lower Street junction.

I appreciate you have a timescale to observe, so I am not requesting that you carry out traffic surveys based on my observations before the covid pandemic. However I thought you should be made aware of these possible issues.

I hope this helps.

Have a good bank holiday.

Regards.

Gerwyn Owen
Professional Lead - Transport Development
Tel. Office: 01902 555724
Tel. Mobile: 07880 175167

E-mail: Gerwyn.Owen@wolverhampton.gov.uk
City of Wolverhampton Council

From: Sean McGregor <sean.mcgregor@capricorn-tp.co.uk>
Sent: 29 April 2022 12:39
To: Gerwyn Owen <Gerwyn.Owen@wolverhampton.gov.uk>
Subject: RE: Bilbrook Development - Information

Hi Gerwyn,

Thanks for your comments below.

With regard to the Lowlands Avenue/Aldersley Road/Hordern Road junction, we are not anticipating that significant volumes of development traffic would use this.

From our trip distribution model, we estimate that around 50% of the traffic loaded on the network from residential areas feeding Lower Street (Route K) could use the junction, accounting for the following:

AM = 8 vehicles (2-way).

PM = 9 vehicles (2-way).

The trip distribution model assigns other traffic from the Bilbrook site along Lower Street via the A41 Tettenhall Road (Route L) towards the city centre and destinations immediately to the south and east of the city centre as follows:

AM = 54 vehicles (2-way).

PM = 58 vehicles (2-way).

Google Earth routing assessments suggest that the alternative route via Lowlands Avenue and Hordern Road would not be used by this traffic during the peak hours.

We therefore consider there would not be a material increase in traffic at this location. However, if you do require us to consider the junction in further detail as a sensitivity test, we would need to undertake a traffic survey, unless you hold suitable existing data. I am not sure whether there would be time to collect additional data within the timeframe for completion of the STA, and would be grateful if you could consider further whether this junction needs to be included at this stage in the light of the above information.

Happy to discuss further as necessary.

Best regards,

Sean McGregor
Director

Capricorn Transport Planning
Transport Planning | Traffic Engineering | Sustainable Travel | Road Safety

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From: Gerwyn Owen <Gerwyn.Owen@wolverhampton.gov.uk>
Sent: 29 April 2022 11:08
To: Sean McGregor <sean.mcgregor@capricorn-tp.co.uk>
Subject: Bilbrook Development - Information

Sensitivity: PROTECT

Hi Sean

Can I firstly apologise for the delay in getting back to you.

Following on from the meeting earlier this week, please see the following comments with regards to the proposed Bilbrook Development:-

The impact that the vehicle trips generated by the proposed development would have on the following routes into \ out of Wolverhampton are the areas of concern:-

- Pendeford Mill Lane – Wobaston Road – Stafford Road
- Lane Green Road – Codsall Road – Lower Street
- Codsall Road – Lowlands Avenue – Hordern Road

It is acknowledged and accepted that locations along these routes are already being investigated in detail as part of the proposed development. These are shown below:-

- Barnhurst Lane / The Droveway roundabout.
- Pendeford Avenue / Codsall Road roundabout.
- Wobaston Road / The Droveway / i54 (Innovation Drive).
- A449 Stafford Road / Wobaston Road roundabout (Vine Island).
- A41 Tettenhall Road / B4161 Henwood Road / Lower Street traffic signals.

Can I request that the following location is also investigated in detail:-

- Lowlands Avenue / Aldersley Road / Hordern Road traffic signals

The proposal to add additional buses on the existing routes surrounding the development site, or the redirecting of existing bus services into and around the proposed development site would need discussing with the CoWC and Transport for West Midlands but sounds positive.

Whilst it is difficult to comment in detail about the use of 4 Transport Assessments for housing developments within

the SSDC Planning Area to determine trip generation, this methodology is acknowledged.

As a resident of Bilbrook myself, I would express caution that the proposed school and the proposed retail use would primarily generate trips from within the development. It is my belief that both of these uses are likely to generate vehicle trips from outside of the development, but it is acknowledged that this will impact on the roads within Bilbrook rather than the roads in Wolverhampton.

Again please accept my apologies for the delay in getting back to you, but I hope these comments help for the moment.

Regards.

Gerwyn Owen
Professional Lead - Transport Development
Tel. Office: 01902 555724
Tel. Mobile: 07880 175167

E-mail: Gerwyn.Owen@wolverhampton.gov.uk
City of Wolverhampton Council

Image removed by sender.

APPENDIX C: SCC PRELIMINARY ASSESSMENT

Economic Development & Planning Policy
Staffordshire Place 1
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Please ask for: James Chadwick

Local Plans Team
South Staffordshire Council
Council Offices
Wolverhampton Road
Codsall
South Staffordshire
WV8 IPX

Date 13 December 2021

Via Email only

Re: Local Plan Review – Preferred Options

Dear Kelly

Thank you for consulting Staffordshire County Council (SCC) on your Local Plan Review Preferred Options Consultation. It is clear from the evolution of the Plan that advice and recommendations given by SCC in previous rounds of consultation and during our regular meetings have been taken on board.

It is acknowledged that sections 1.8 to 1.10 set out the significance of Climate Change for the Local Plan and that climate change measures will be a consistent thread that will run through the plan. However, the Vision for the Plan makes no reference to Climate Change. Given the significance should the Vision also include reference to Climate change mitigation and adaptation.

The Issues and Challenges to be considered by the Plan are well covered and the Strategic Objectives are supported.

It is acknowledged that the Plan makes a significant contribution towards the wider Greater Birmingham Housing Market Area (GBHMA) needs. Early consideration of this has allowed us to assess the associated infrastructure requirements for the planned growth.

The Longer Term Growth Aspirations for a New Settlement will allow for consideration of accommodating further unmet housing need in a Planned manner and informed by the likely infrastructure requirements. In considering the area of search set out in Appendix F it is considered that limiting the search to an independent/freestanding new settlement may limit options. It is therefore suggested that Policy DC4 should also provide for consideration of expanded settlements within the area of search following the same criteria as a new settlement.

Staffordshire County Council

Transport

We have the following comments to make from a Transport Planning perspective.

Pp 15 Question 1 Do you agree that the evidence base set out in Appendix A is appropriate to inform the new Local Plan ?

From a transport perspective, the following documents should be considered for inclusion within the evidence base:

1. South Staffordshire District Integrated Transport Strategy, rather than the Staffordshire Local Transport Plan 2011. The District Integrated Transport Strategy will be updated to reflect the emerging Publication Plan and will inform the next revision to the Infrastructure Delivery Plan.
2. Brinsford Parkway Station Strategic Outline Business Case
3. Staffordshire Freight Strategy 2019
4. Transport Impacts (with Staffordshire County Council) 2022 – Note that this document has yet to be completed and published. It will contain transport modelling assessments relating to the impacts of sites covered by policies SA1-SA4, accessibility mapping and connectivity proposals for sites within SA1-SA5.

PP 17 Question 1 b) The South Staffordshire District Integrated Transport Strategy will be updated to reflect the emerging Publication Plan and will inform the next revision to the Infrastructure Delivery Plan.

Pp25 Question 3 a) Yes, but Table 4 could include a reference to the support for new rail-based parkway at Brinsford and this should be echoed in Strategic

Pp 29 Housing
Pp 31 para 4.16 talks about *'limiting new (housing) allocations at Perton to the existing safeguarded land reflecting the lack of a finalised junction improvement scheme at the A41 and the remoteness of Greenbelt Site options from education facilities'*

SCC has undertaken work that demonstrates that additional housing could be accommodated by implementing an identified improvement scheme at the A41/Wrottesley Park Junction. Furthermore, there are options to improve connectivity / provide transport that could make development acceptable from a school transport perspective.

Pp 46 Policy DS3 – The Spatial Strategy

SCC has assisted SSDC by providing the transport evidence to support its Spatial Strategy to 2038, providing high level transport modelling, accessibility and connectivity advice. This will help in identifying and addressing infrastructure issues from housing development with cumulative and cross boundary impacts. SCC supports the provision of a rail-based parkway at land at Cross Green development and is working in partnership with City of Wolverhampton Council and SSDC to assist with delivery. Similarly, SCC have helped with the development of several of the district's freestanding employment sites (e.g. I54, ROF Featherstone Brinsford and Four Ashes)

and following the WMI decision, support their continued development, subject to appropriate mitigation where necessary.

Pp 49 Policy DS4 – Longer Term Growth Aspirations for a New Settlement
Policy DS4 Question 6.
The wording should mention that a range of technical studies will need to be undertaken to justify the proposal and evidence how the new settlement will be delivered in a way that achieves the objectives.

Pp 51 Site Allocations
Housing
For this consultation response, SCC is providing detailed transport comments and observations on each of the four proposed strategic housing allocations included within Policies SA1-SA4 and the smaller housing sites included within Policy SA5. These comments derive from technical work undertaken in partnership with SSDC to help inform plan-making.

SCC commentary covers the following themes:

- Site accessibility
- Connectivity (active modes – walking and cycling and public transport)
- Potential highway Impact

Site accessibility

TRACC analysis has been undertaken by SCC to help identify the most sustainable locations across South Staffordshire and provide a basis for establishing the relative sustainability of settlements based on existing service provision.
TRACC calculates journey times based upon public transport timetable data, road network information and a range of user-defined parameters.
The following calculations have been undertaken:

- PT Access to Employment AM Peak 07:30 to 09:30
- PT Access to Hospitals Wed 08:00 to 10:00
- Bus Access to Supermarkets Wed 10:00 to 13:00
- Bus Access to Supermarkets Sat 10:00 to 13:00
- Walk Access to Middle Schools
- Walk Access to Primary & First Schools
- Walk Access to GP Surgeries

A maximum journey time threshold of 60 minutes was set for the PT and Bus calculations. This includes the initial walk time to the stop, and interchange time plus the final walk from the stop to the destination. The software computes a journey time for every 10-minute interval within the defined time period to the nearest destination point and the shortest journey times are returned. Therefore, the accessibility contour maps represent the best journey time that can be achieved within the defined time period. This is via the road and footpath network, so better simulates an actual journey rather than just a straight line distance from origin to first stop or from the final stop to the destination point. The maximum walk distance to access a public transport stop has been set at 350m.

The bus timetables used are the most up to date including known service changes at the time of calculation (valid to September 2021) but also reflecting the likely provision to key employment sites such as West Midlands Rail Freight Interchange as per the S106 requirements for these sites.

The rail timetable used is valid from January 2020 so prior to the Covid pandemic. The rail services have changed so frequently over the past 18 months it is not possible to know if the service level at present will continue or whether services will increase back to previous levels. Service levels at Landywood and Penkridge stations are at present roughly the same as they were in terms of frequency back in 2020, but at Codsall and Bilbrook stations the frequency is still reduced compared to January 2020 service levels.

The proposed development site plans were geo-referenced in ArcGIS to provide an indicative site layout which was loaded into TRACC to provide a road/footpath layout allowing the demonstration of accessibility where applicable.

For the access to employment calculation, a revised methodology has been used for some of the job numbers, particularly the job totals in town centres where revised numbers have been provided where known from data supplied by the Economic Development team.

Extra locations such as hospitals have been included as destinations in their own right. Where available, job numbers provided by hospital trusts have been used, or splits between hospital sites used where we have information provided directly by the trust. Where hospital trusts operate more than one site (such as New Cross and Cannock Chase Hospitals) and staff numbers cannot be split, a proportion has been used based on the split supplied for County Hospital in Stafford and Royal Stoke University Hospital.

Other locations which could be accessed via the Midland Metro from Wolverhampton such as West Bromwich, Bilston and Wednesbury have also been included. Job numbers for these towns have been sourced via the Black Country Consortium at MSOA level for each town. These provide additional centres where residents of South Staffordshire could be employed and are able to reach within a journey time of 60 minutes.

For some destination types, such as employment, it is not appropriate to calculate accessibility to the nearest destination point; as the nearest point of employment may not be suitable i.e. lack of job choice. For employment destinations a Hansen score was calculated. This combines the number of destinations that can be accessed within a 60-minute journey time with the disbenefits of travel in terms of journey time and the total number of jobs available at the destination. The higher the score, the greater the level of access and choice. Due to the change in job figures, the data is displayed in six bands rather than quartiles as done previously, to help distinguish the difference in access to the range and number of jobs.

For the supermarket calculations, a review of the destinations used in the previous calculation was done and certain supermarkets have been removed and others added in. This has been done to reflect the change over the previous 18 months due to the

Staffordshire County Council

Covid pandemic how people have changed their food shopping habits. Some smaller branches of the Co-op have been included where they might not have been previously.

It is not possible to confirm the pedestrian facilities available on each road and in rural areas it is likely that some walking routes particularly between settlements would not be considered safe for pedestrians and children in particular.

For primary school accessibility calculations; it is more appropriate to calculate accessibility on foot as children who live beyond 2 miles to their nearest primary school are entitled to free transport. This calculation uses the road network and applies an average walk speed of 4.8kph.

Accessibility assessments are presented as a separate enclosure and allow a comparison of the merits of each location, to inform later work should the site(s) be allocated within the plan.

Connectivity

Cycling and walking routes are an important element of any new housing development to help avoid over reliance on journeys by car, particularly for shorter trips. It is important that the proposed Preferred Option developments within South Staffordshire's Local Plan provide good well-planned walking and cycling routes to key attractions within settlements such as schools, village centres and public transport hubs. In addition, it is important that new developments create pleasant environments for their residents to live in and the provision of nearby attractive leisure routes can help facilitate this. Any new facilities should, where possible, be designed to LTN1/20 standards although the use of lightly trafficked and low speed roads can be acceptable.

Recommended walking and cycling proposals are presented in the enclosed plans to help make the identified sites acceptable from a connectivity standpoint. These have been informed by site inspections (personal and remote), GIS analysis and professional opinion.

Public transport provision is also very important to ensure all residents have access to services and alternatives to private car travel. In some areas it will also be vital to ensuring children can get to their allocated schools.

Highway Impact (Strategic Housing Site Assessments)

In order to assess the high-level traffic impacts of the large strategic housing sites included within Policies SA1 – SA4, SCC acquired National Highways' (NH), formerly Highways England, SATURN traffic model. This was recently updated to inform their bid for funding for the M54-M6 link and inform scheme design. SCC has further updated this model to include the proposed development at the four strategic housing sites; specifically, **1,329** new homes (including **200** already consented) to the north of Penkridge; **1,200** at Cross Green; **1,200** at Linthouse Lane; and **848** at Bilbrook together with **317** planned for Codsall, making a total of **1,165**. In addition, the proposal for Brinsford Parkway railway station (with around 500 car park spaces) was included in the model, given its close links with the strategic housing site at Cross Green.

In order to represent each development in the model, an existing trip distribution from similar adjacent zones was replicated and factored by the number of peak hour development trips that each development is likely to generate. This trip rate was derived from recent extensive surveys and Transport Assessments in various areas of South Staffordshire, namely Perton (2 no.), Penkridge and Cheslyn Hay. This was considered to provide a representative trip rate for these large strategic site proposals. To put this into perspective, it would be expected that for every 1000 new houses built there would be around 450 to 500 new trips on the road network. Trip distribution and rates for the Parkway Station car park at Brinsford were estimated with the help of data within the Strategic Outline Business Case which has been prepared to demonstrate the need for a station in this area.

It is important to understand the history of the SATURN model and its potential limitations, none of which are considered to affect its appropriateness for the purposes of this exercise which is to provide an overview of highway impacts to determine if there are likely to be any insurmountable problems should the development sites come forward. The original SATURN model is the Midlands Regional Transport Model (MRTM), which was then partially updated to support the bid for funding for the M54-M6 Link Road. SCC were provided with a cordoned version of this model, covering the South Staffordshire and Wolverhampton areas. Due to its strategic nature, some of the network coding is coarse, with some generalisation of the local road network. For example, only one route through Penkridge village, accessed via the A449, is included where there are actually a few route options. In reality, any vehicles on this route are likely to be split over the available routes.

In order to provide cumulative and individual assessments of the likely traffic impacts from all four strategic housing locations across Staffordshire's road network, the updated SATURN model has been interrogated to determine where the introduction of the proposed developments cause a change in traffic of more than 100 2-way trips in the modelled peak hours (0800-0900 hours and 1700-1800 hours). SCC has also provided model results to the City of Wolverhampton Council (CWC) for them to understand the impacts on their network. It is important to note that changes to traffic levels do not only occur due to the proposed development trips loading onto the network; existing trips also re-route as the new trips are accommodated. For example, some existing trips on the A449 (north of Penkridge) appear to switch to the M6 as the A449 becomes more heavily trafficked with 1,329 new homes accessing directly onto it.

Cumulative Assessment of the Highway Impact of the Proposed Strategic Housing Sites

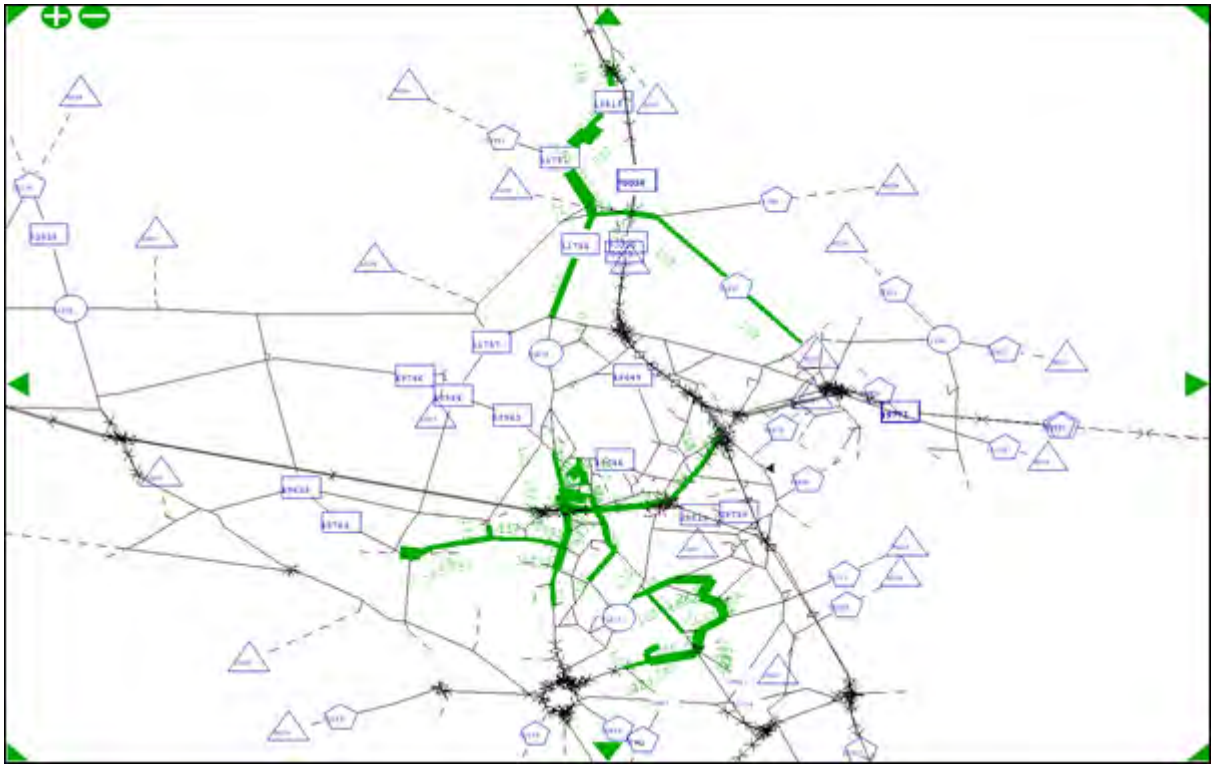
SCC has applied the updated model to provide an overview assessment of the cumulative impact of the four strategic housing sites (1,329 new homes, including the 200 already consented, to the north of Penkridge; 1,200 at Cross Green (plus the 500 space Parkway railway station); 1,200 at Linthouse Lane; and 1,165 in Codsall and Bilbrook.

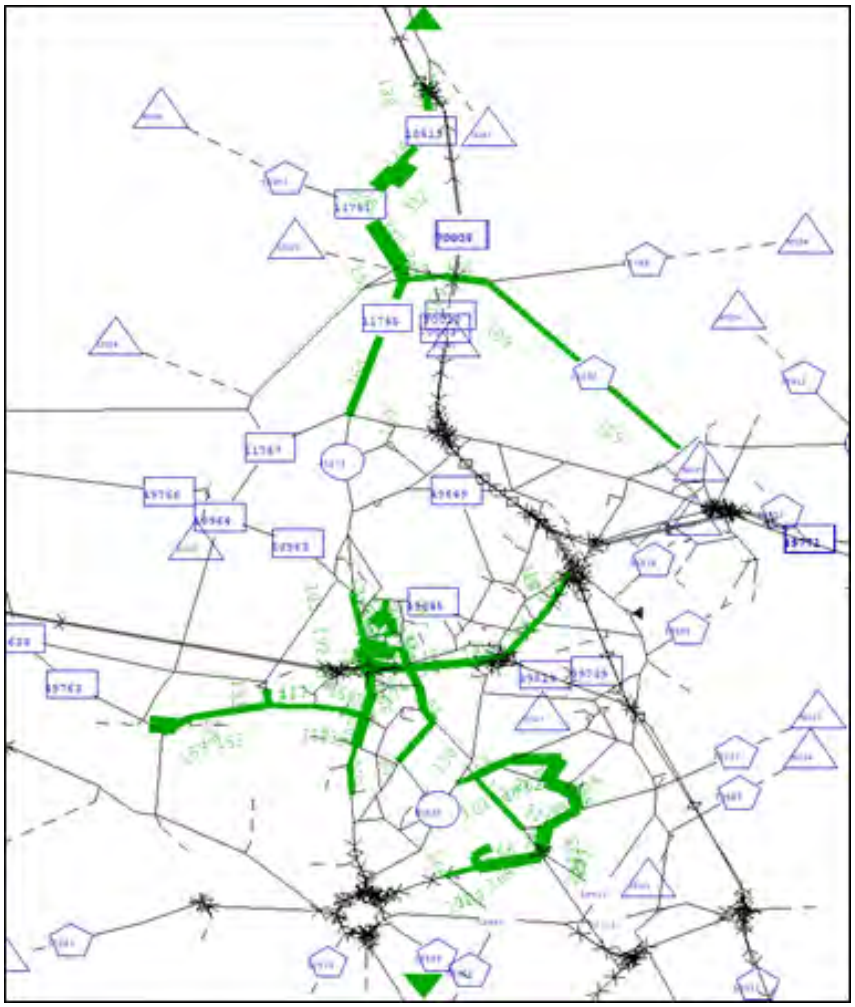
The cumulative assessment shows there are reasonably consistent effects across both the AM and PM peaks. On the whole, changes in traffic levels greater than 100 trips occur in reasonably close proximity to each of the proposed developments, with less impact further away as vehicles disperse through the network. Screenshots from the

model shown below demonstrate this, highlighting the changes in traffic near to Penkridge, Codsall/Bilbrook, Brinsford and Linthouse Lane:

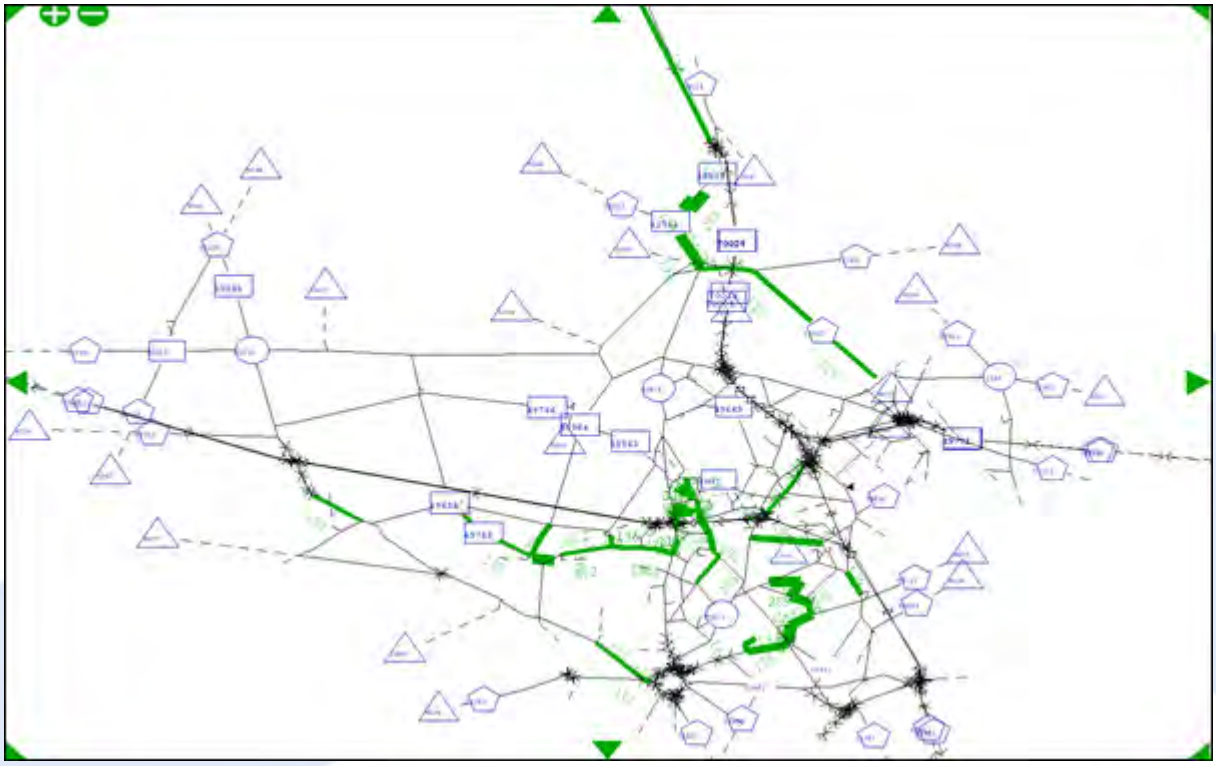
Screenshots Showing Changes in Peak Hour Traffic Levels Along Impacted Routes

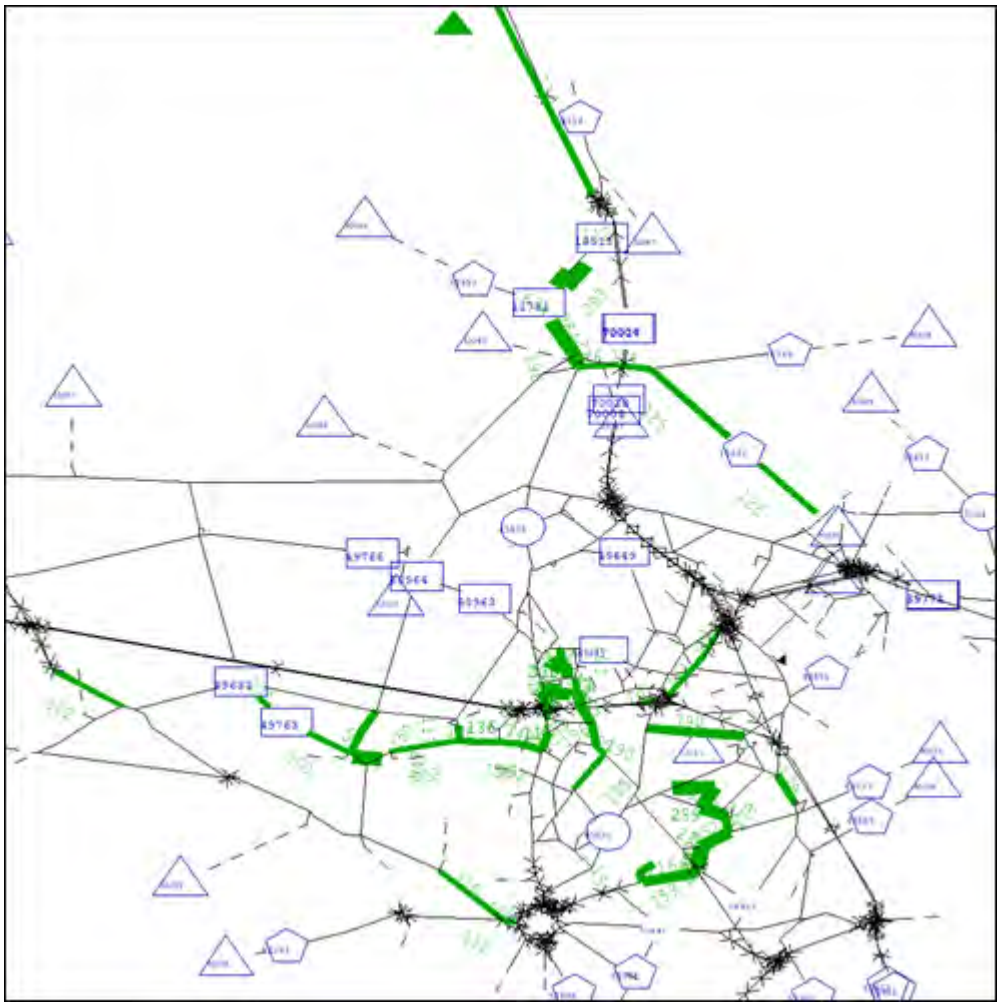
AM Peak





PM Peak





As can be seen, there are significant changes on the following parts of the road network:
AM Peak (0800 – 0900 hours)

- A449 between M6J13 and Gailey;
- Through Penkridge to Cannock via the B5012;
- A449 between Coven (double roundabouts) and the Oxley area of Wolverhampton;
- M54J2 to M6 (via new link road);
- Cat and Kittens Lane and Bushbury Lane (into Wolverhampton);
- Wobaston Road and Pendeford Mill Lane (into Bilbrook); and
- Blackhalve Lane, B4484 Long Knowle Lane, Lichfield Road and Wednesfield Way (all within Wolverhampton's boundary).

PM Peak (1700 – 1800 hours)

- M6J13 northbound;
- A449 between M6J13 and Penkridge centre;
- Through Penkridge to Cannock via the B5012;
- A449 between Brinsford and the Wobaston Road area of Wolverhampton;
- Bognop Road (from A460 to Essington village);
- Cat and Kittens Lane and Bushbury Lane (into Wolverhampton);

- Wobaston Road and Pendeford Mill Lane (into Bilbrook);
- Wood Road (between Codsall and Codsall Wood);
- Albrighton Bypass (south of M54J3);
- A41 as it approaches Wolverhampton ring road; and
- Blackhalve Lane, Lichfield Road, Wednesfield Way and a small section of A462 to the south of Sneyd Lane to Lichfield Road (all within Wolverhampton's boundary).

Land East of Bilbrook and Land at Keepers Lane and Wergs Hall Road, Codsall (Total of 1,165 dwellings)

Staffordshire County Council has the following comments and observations in response to the strategic site and other proposed allocation(s) in the Bilbrook and Codsall areas. These include 848 new homes on Land East of Bilbrook (covered by Policy SA1)and also 317 homes at Keepers Lane and Wergs Hall Road.

Accessibility

Please refer to the accessibility plans in the enclosures. None of the sites are within 350 metres of an existing bus service or rail station and consequently do not have access to supermarkets, employment or hospitals by public transport. The whole of both sites are within a 20-minute walk of GP services. The Bilbrook site is within a 10-minute walk of a new first school whilst the Codsall site is within 20 minutes of an existing first school. Both sites are within a 20-minute walk of existing middle schools.

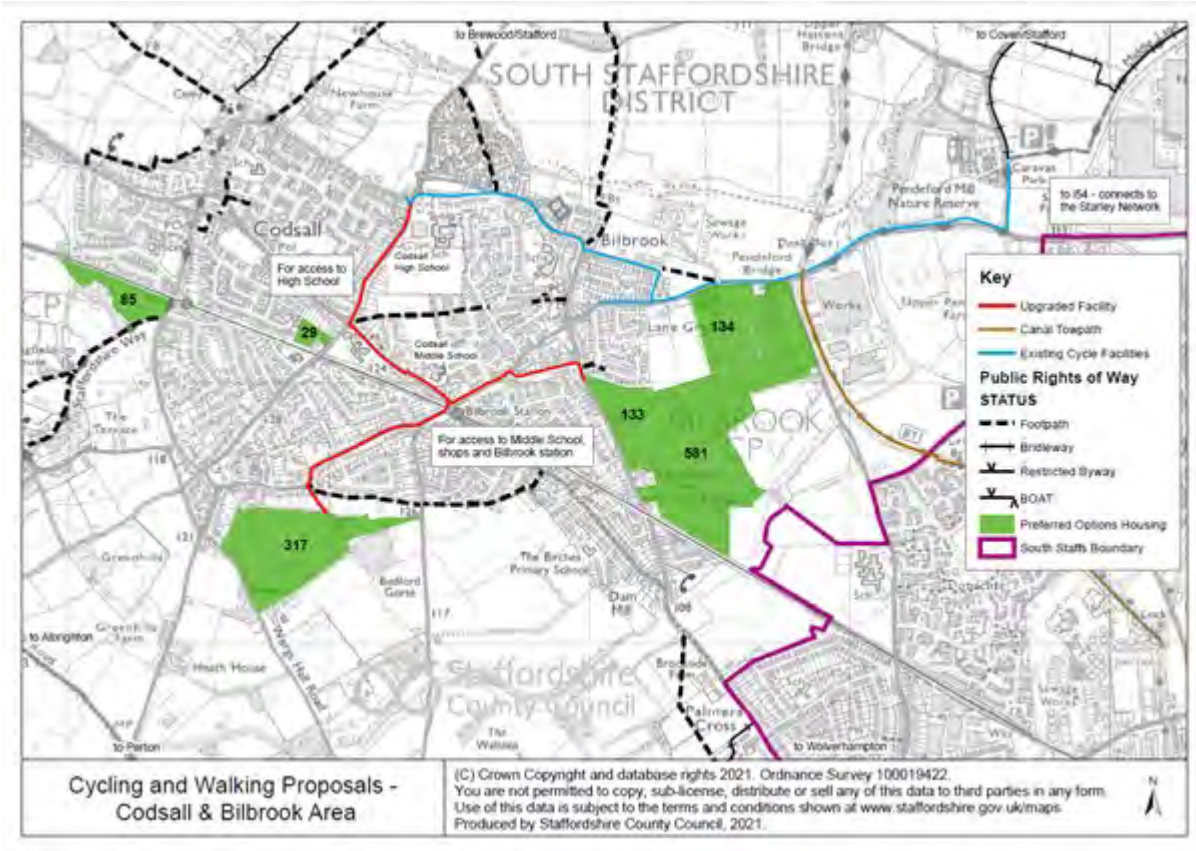
Walking and Cycling Proposals

The Preferred Option development proposals are for 1,165 new homes in the Bilbrook and Codsall area, spread over the two largest sites. The developers will need to ensure that their sites are well connected to key attractions within the vicinity of the developments including the Middle and High schools, the railway stations and village centres. There may also be opportunities to provide or connect into more attractive leisure routes.

The Cycling and Walking Proposals Plan for Codsall and Bilbrook Area shows the active travel routes that SCC would like to see come forward in support of the proposed new developments. These include:

- Provision or enhancement of a cycling and walking facilities from the southern site onto Suckling Green Lane heading in a north-easterly direction onto Keepers Lane and through the double mini roundabout junction to Wolverhampton Road / Duck Lane. Depending on traffic flows, this could require just signage. The route will provide access from the new housing to Bilbrook train station and the local amenities available here. In addition, in conjunction with the routes below, it will also provide access to the middle and high schools.
- Continuing from above, in a north-westerly direction along Wolverhampton Road, passed Codsall Middle School and the council offices, to Histons Hill traffic lights and then northbound to Codsall High School. A suitable crossing facility will be required as the route switches from the north side of the road to the south.

- Continuation of the route to Bilbrook railway station, heading north-easterly along Duck Lane to Brookfield Road, then along Brookfield Road to Lane Green Road and connecting into the northern site in Bilbrook. A suitable standard crossing facility will be required in the vicinity of Duck Lane / Brookfield Road.
- Connections will be required from the northern site into the existing facilities along Pendeford Mill Lane and beyond.



Highway Impact

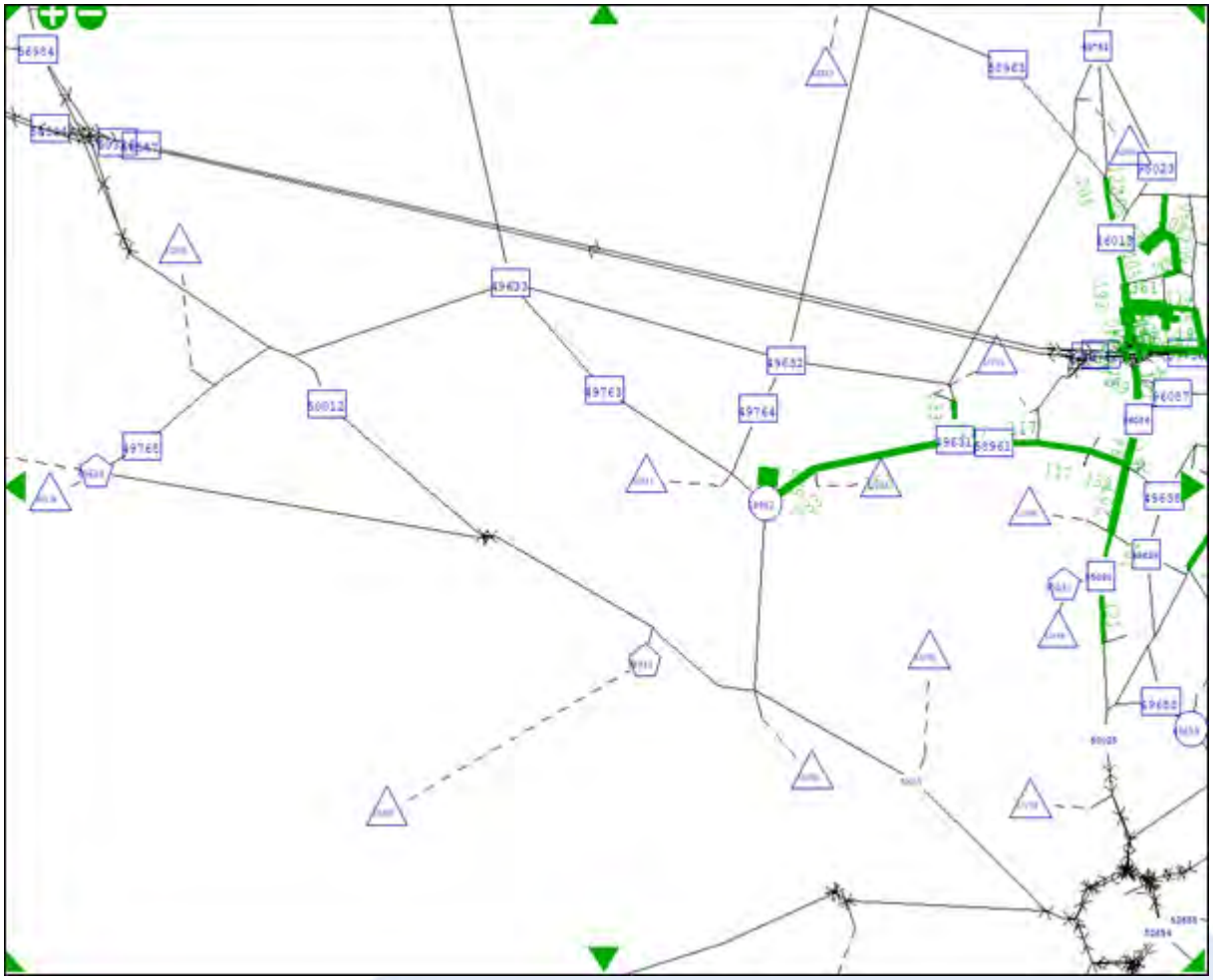
One of the limitations of the SATURN model is that some parts of the network, due to its strategic nature, have been coded 'coarsely' with some generalisation of the local road network. This becomes more prevalent the further away from the A road and Strategic Road Network locations are. As can be seen in the screenshots below, the model network through Codsall and Bilbrook does have a level of coarseness and generalisation. For example, only one route is modelled to the A41, which is intended to represent several potential routes including via Histons Hill, Wergs Hall Road and Keepers Lane. However, the model outputs do give information on the directions of travel that trips from the new developments wish to take so allowances can be made for this. In this case, the impacts on the A41 junctions will be shared rather than accruing at the one place and should therefore be less problematic.

Focussing on the Codsall and Bilbrook areas in more detail, in practice two larger sites make up the majority of the strategic allocation - 848 new homes on Land East of Bilbrook and 317 homes at Keepers Lane and Wergs Hall Road.

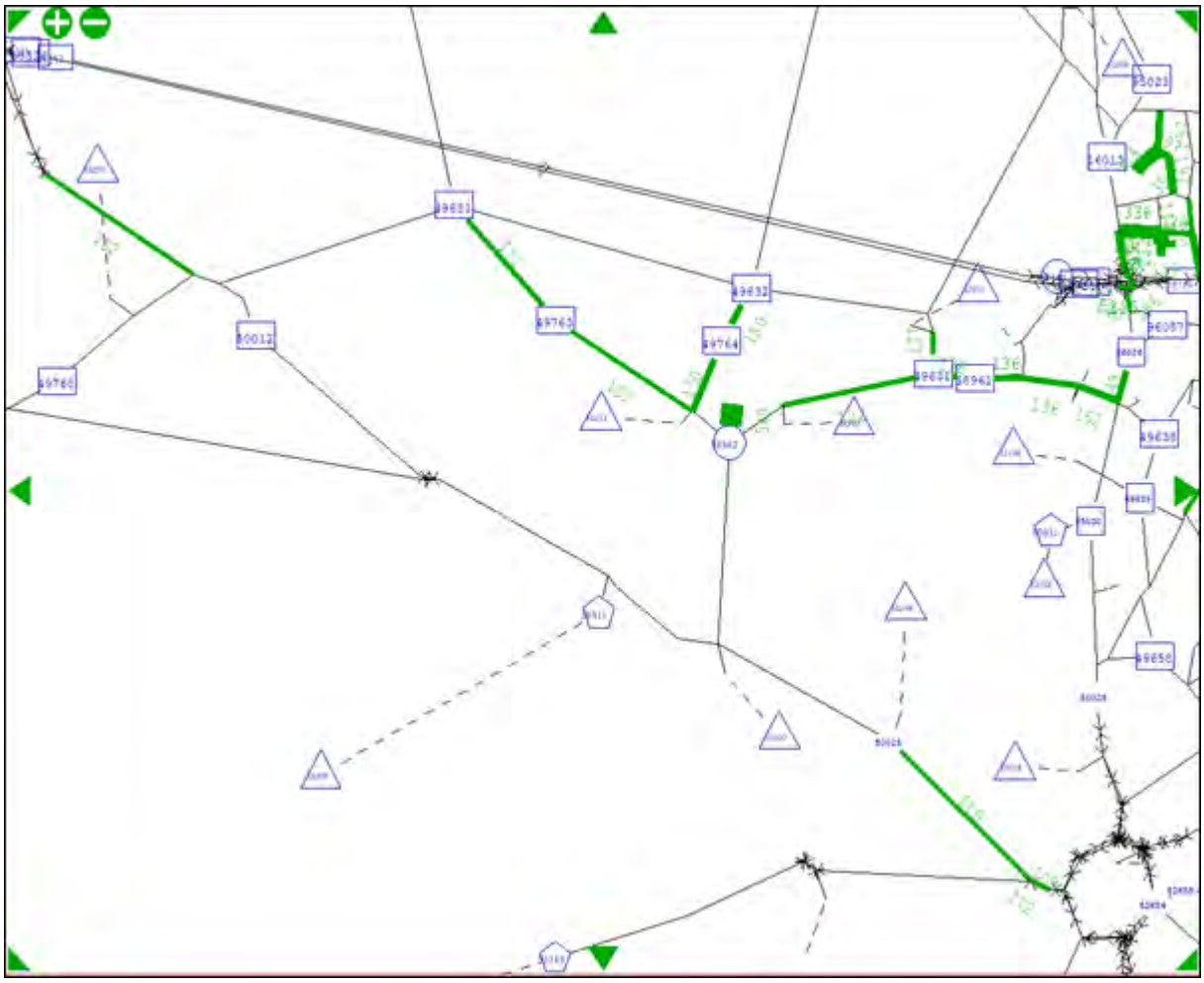
Analysis of the traffic model has shown that there are increases in trips (i.e. greater than 100 2-way trips) in the modelled peak hours (0800-0900 hours and 1700-1800 hours) in the following nearby locations. These are also displayed on the ensuing screenshots:

- A449 between Coven (double roundabouts) and the Oxley area of Wolverhampton;
- M54J2 to M6 (via new link road);
- Wobaston Road and Pendeford Mill Lane (into Bilbrook); and
- Wood Road (between Codsall and Codsall Wood);
- Albrighton Bypass (south of M54J3); and
- A41 as it approaches Wolverhampton ring road.

AM Peak



PM Peak



While the impacts of this development will affect SCC's road network, much of it will be on CWC and NH (National Highways) networks. All three authorities will need to advise on the scope of any Transport Assessments that the developer is required to undertake to ensure that mitigation is provided where necessary.

Increases on the A449 between Wobaston Road and M54 J2, and additional flows on M54 between J2 and the M6 are partly from the sites in Codsall and Bilbrook, but also from Cross Green site and to a lesser extent the Linthouse Lane site.

In terms of Staffordshire's network, it is considered unlikely that there are any impacted locations that could not be mitigated to ensure the network continues to operate satisfactorily.

The developer will need to assess (and mitigate where necessary) the impact of trips at junctions onto the A41, and also several junctions on the route making up Pendeford Mill Lane, Duck Lane, Wolverhampton Road and Histons Hill. Whilst any assessment requirements won't be limited to these, the junctions of Duck Lane / Wolverhampton Road / Keepers Lane / Birches Road and Histons Hill / Elliots Lane / Wolverhampton Road are known to be congested at peak times and are likely to require improvement.

The intention is that the traffic flow information derived from this model is used to inform the scope of the more detailed transport assessment work being prepared by the developers promoting these sites. It is possible to use the model information to estimate the relative contributions towards mitigation where several developments are impacting in a given location.

Land at Cross Green (1,200 dwellings and Proposed Brinsford Parkway Railway Station)

SCC has the following comments and observations in response to the strategic site at Cross Green (circa. 1,200 new homes, with a Parkway railway station).

Accessibility

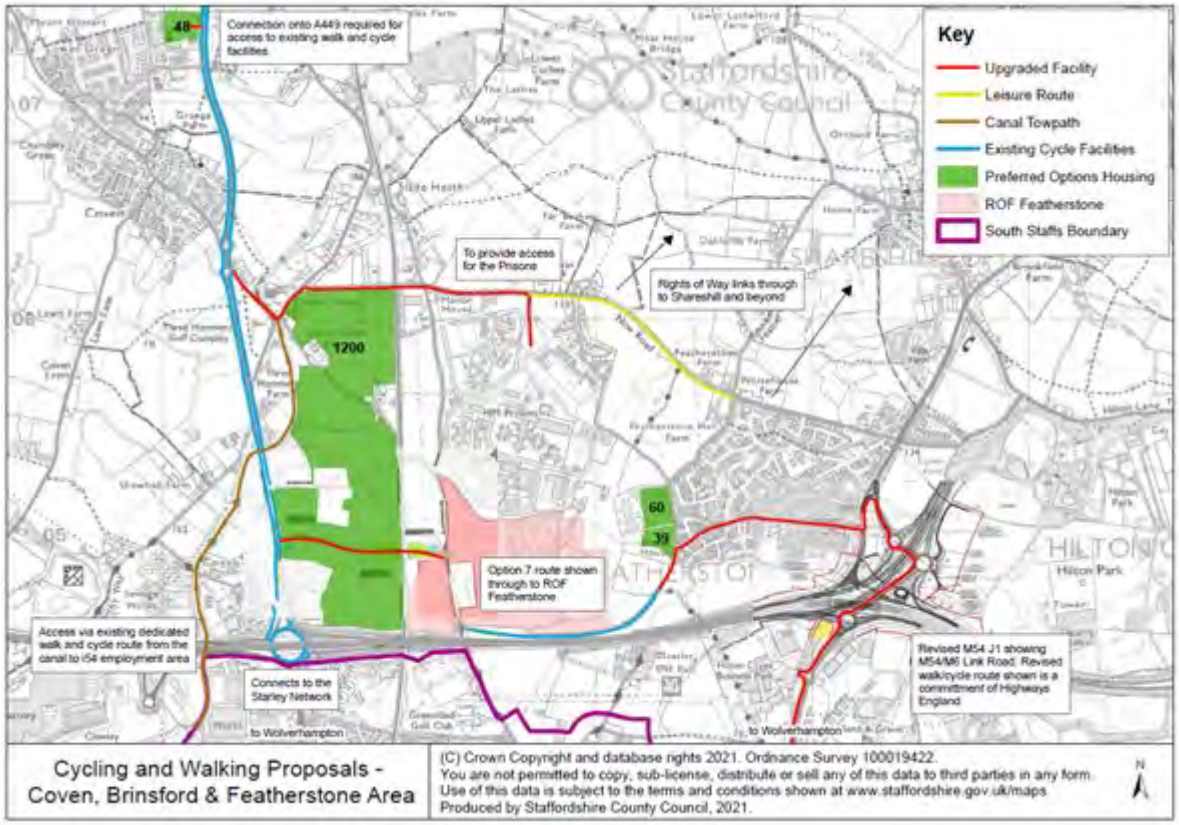
Please refer to the accessibility plans in the attached 'Accessibility Plans.zip' file. Virtually none of the site is within 350 metres of an existing bus service or rail station and consequently does not have access to supermarkets, employment or hospitals by public transport. The whole site is within a 30-minute walk of GP services. Approximately two thirds of the site is within a 10-minute walk of a new first / primary school whilst the remainder is within 20 minutes. It needs to be established whether two tier or three tier education will be operated.

Walking and Cycling Proposals

The developer will need to ensure that their sites are well connected to key attractions within the vicinity of the development including schools, the railway station and other nearby local amenities. There may also be opportunities to provide and connect into more attractive leisure routes via the canal and existing footpaths and bridleways.

The plan below (Cycling and Walking Proposals - Coven, Brinsford and Featherstone Area) shows the active travel routes that SCC would like to see come forward in support of the proposed new developments. These include:

- Footway / cycleway provision along Brewood Road, connecting into the existing facilities on the A449 with an improved LTN 1/20 standard junction;
- Footway / cycleway provision along New Road, connecting into the existing employment destinations at and near to the prisons at Oaks Drive;
- Continue footway and cycle provision along New Road, between Oaks Drive and Featherstone Lane (approximately 1km) to provide linkages to various leisure routes which can be accessed to the north of New Road in the vicinity of Featherstone Lane. Providing access to leisure routes will help with placemaking and provide a quality living environment for new residents; and
- Improved access to the Canal towpath at the Dark Lane / Old Stafford Road / Brewood Road junction combined with enhancements to the canal towpath (where required) between The Anchor Inn and I54 employment area. providing connectivity to jobs and the conurbation, taking into account environmental constraints.
- The proposed new road linking the A449 to ROF Featherstone and providing the main access to the Cross Green site, is currently designed with a 3.0m shared footway cycleway facility. To comply with LTN 1/20 this should be redesigned and delivered with a segregated facility



Highway Impact

Focussing on the Cross Green area, 1,200 proposed new homes and 500 car park spaces at the Brinsford Parkway station have been included within the SATURN traffic model. Trips from this development will have the choice to access the existing road network via A449, New Road or Cat and Kittens Lane.

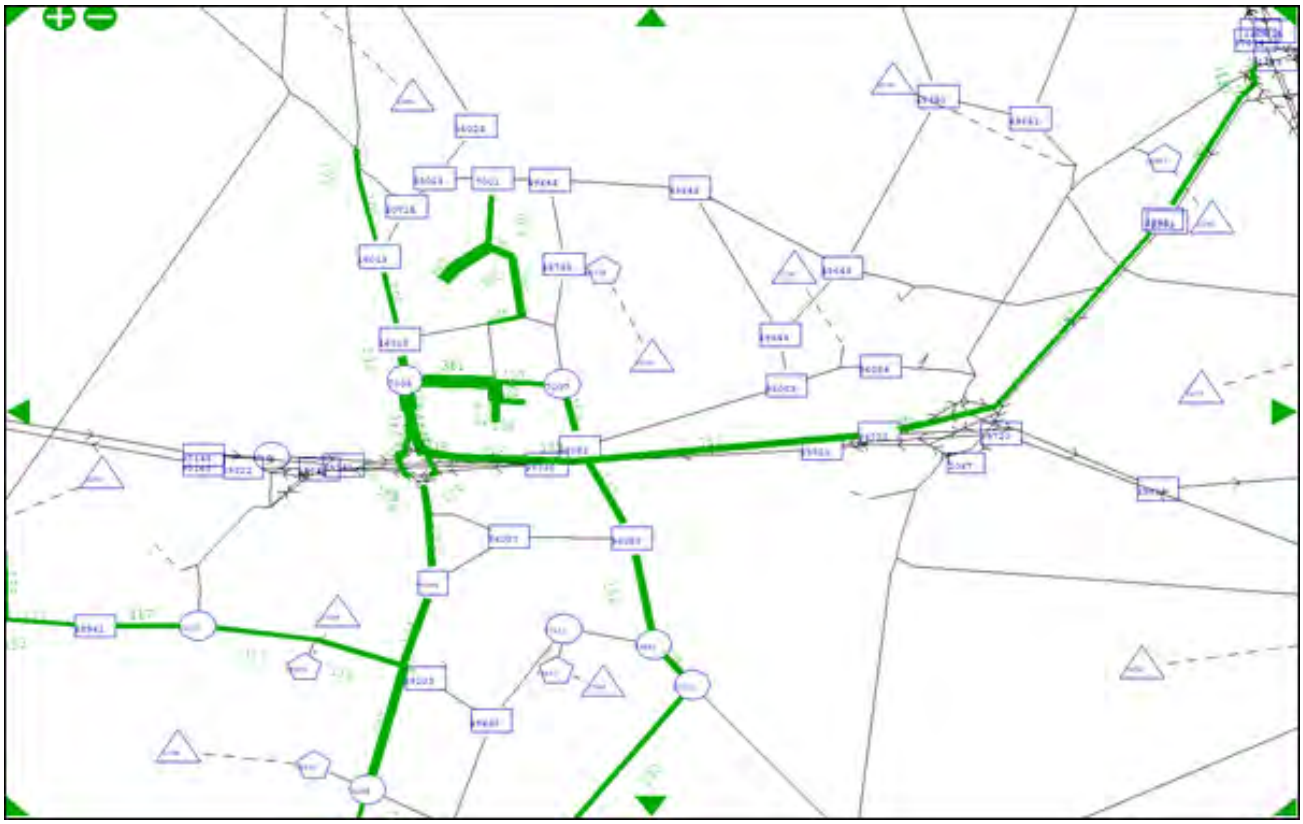
There are two new committed road schemes in the area that will affect future route choices and traffic flows. These are a link through this housing proposal from Cat and Kittens Lane to the A449 (to be provided by the developers of ROF Featherstone) and the M54-M6 link, providing relief to the A460 to the east of this development. These are both included within the traffic modelling.

Analysis of the traffic model has shown that there are increases in trips (i.e. greater than 100 2-way trips) in the modelled peak hours (0800-0900 hours and 1700-1800 hours) in the following nearby locations - also displayed on the following screenshots:

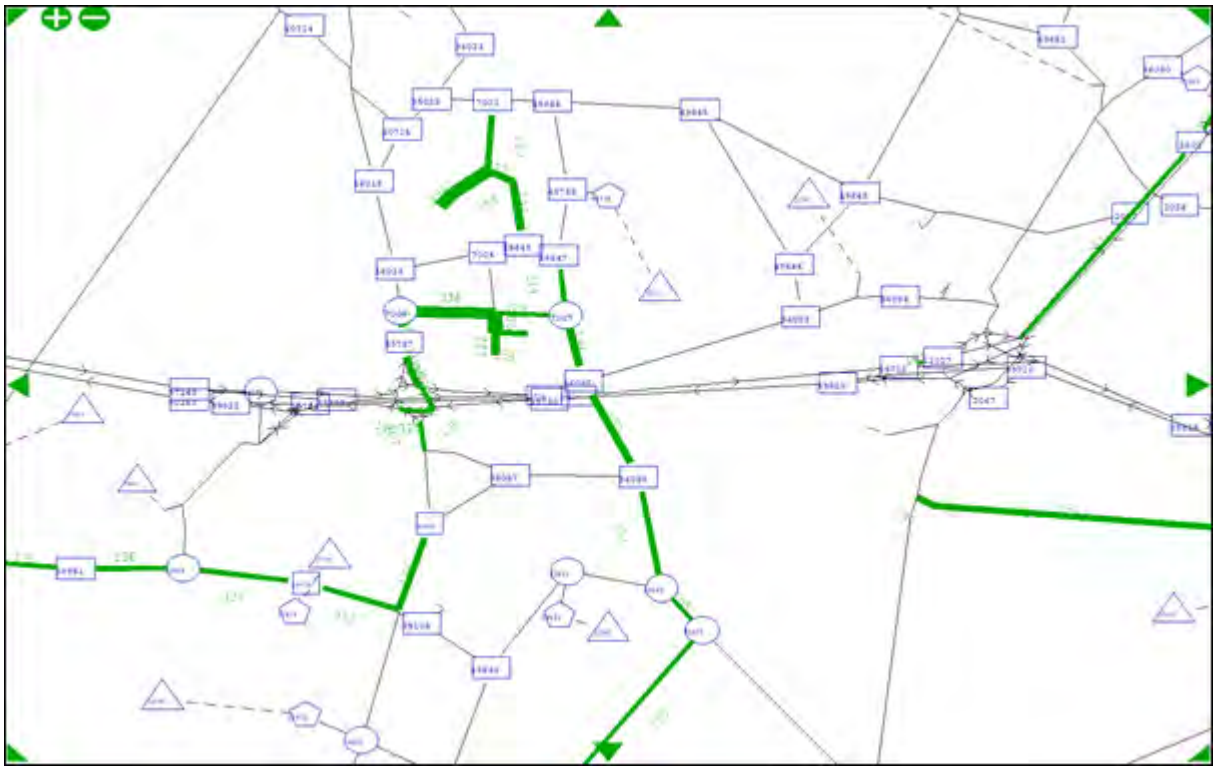
- A449 between Coven (double roundabouts) and the Oxley area of Wolverhampton;
- M54J2 to M6 (via new link road); and
- Cat and Kittens Lane and Bushbury Lane (into Wolverhampton).

Staffordshire County Council

AM Peak



PM Peak



As well as the locations listed above, the screenshots show impacts on Wobaston Road and Bognop Road. However, further investigation of increases on Wobaston Road and Pendeford Mill Lane (into Bilbrook) have shown that this is mainly due to the strategic sites within Codsall and Bilbrook. Increases on Bognop Road are mainly associated with traffic from the Linthouse Lane strategic site.

Increases on the A449 between Wobaston Road and M54J2, and additional flows on M54 between J2 and the M6 are from this site and the Codsall / Bilbrook sites. There is also a smaller impact on the M54 from the Linthouse Lane site.

While some of the impacts of this development will affect SCC's road network, the majority will be on CWC and NH (National Highways) networks. All three authorities will need to advise on the scope of any Transport Assessments that the developer is required to undertake to ensure that mitigation is provided where necessary. In terms of Staffordshire's network it is considered unlikely that there are any impacted locations that could not be mitigated to ensure the network continues to operate satisfactorily.

The intention is that the traffic flow information derived from this model is used to inform the scope of the more detailed transport assessment work being prepared by the developers promoting these sites. It is possible to use the model information to estimate the relative contributions towards mitigation where several developments are impacting in a given location.

Land off Linthouse Lane (1,200 dwellings)

Staffordshire County Council has the following comments and observations in response to the strategic site off Linthouse Lane.

This site is situated on the edge of the administrative boundary and many of the impacts and proposals may be witnessed in the City of Wolverhampton Council's (CWC) area.

Accessibility

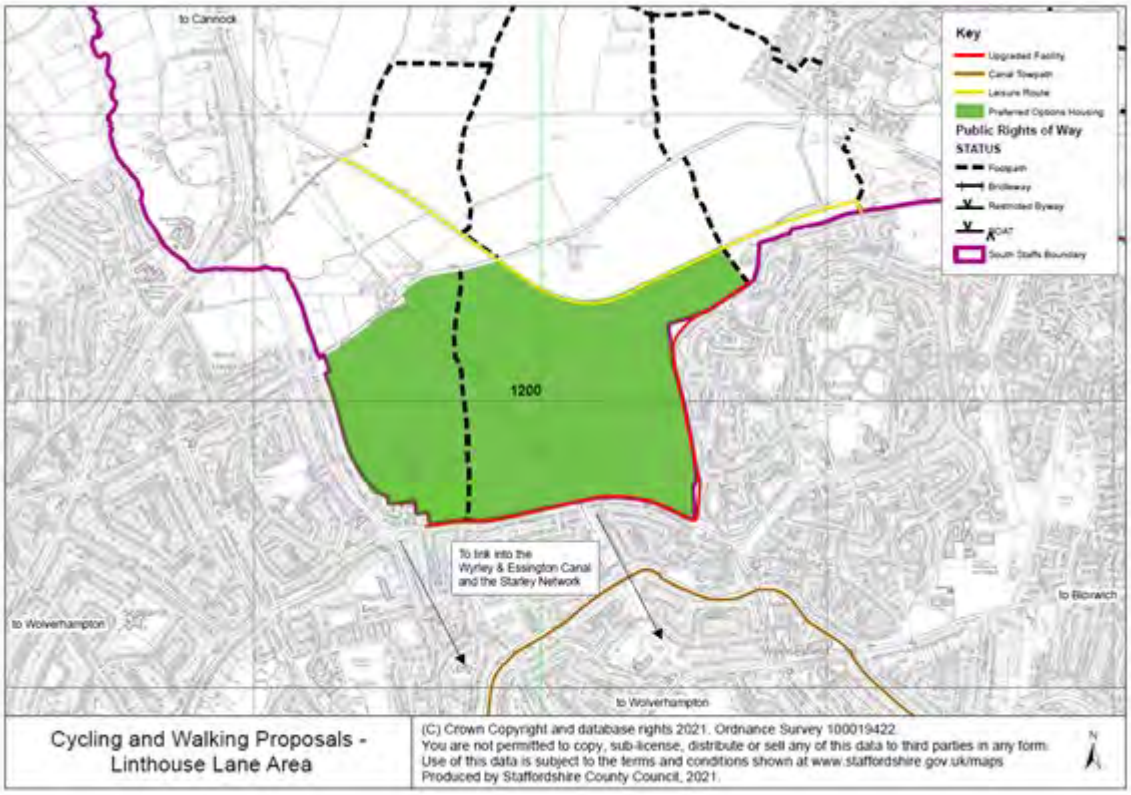
Please refer to the accessibility plans in the attached 'Accessibility Plans.zip' file. The western and southern edges of the site are within 350 metres of a bus service and hence between 11 and 20 minutes access by bus to supermarkets on a weekday and Saturday; have access to a limited choice of employment via bus; and are within 11 to 30 minutes access to hospital by bus. The remainder of the site has no access. The whole site is within a 20-minute walk of GP services and a 10-minute walk of a new primary school.

Walking and Cycling Proposals

This Preferred Option development proposal is for 1,200 new homes within South Staffordshire but on the edge of Wolverhampton. Most of the impacts of the development will be within the CWC boundary, as will most of the local facilities and amenities used by its residents. The developer will need to ensure that the site is well connected to key attractions within the vicinity of the development and should also consider opportunities to provide or connect into more attractive leisure routes.

Cycling and walking opportunities for this site will largely need to be determined by City of Wolverhampton Council. However, the plan below (Cycling and Walking Proposals – Linthouse Lane Area) shows the active travel routes that SCC thinks should come forward in support of this development. These include:

- Consideration of a segregated cycle/footway on Linthouse Lane and Kitchen Lane and LTN 1/20 crossing provision providing access to residential areas to the west, south and east;
- Good connections to the canal and the Starley Network in the south; and
- Good connections to Staffordshire Railway Walk in the north, taking into account potential land ownership issues.



Highway Impact

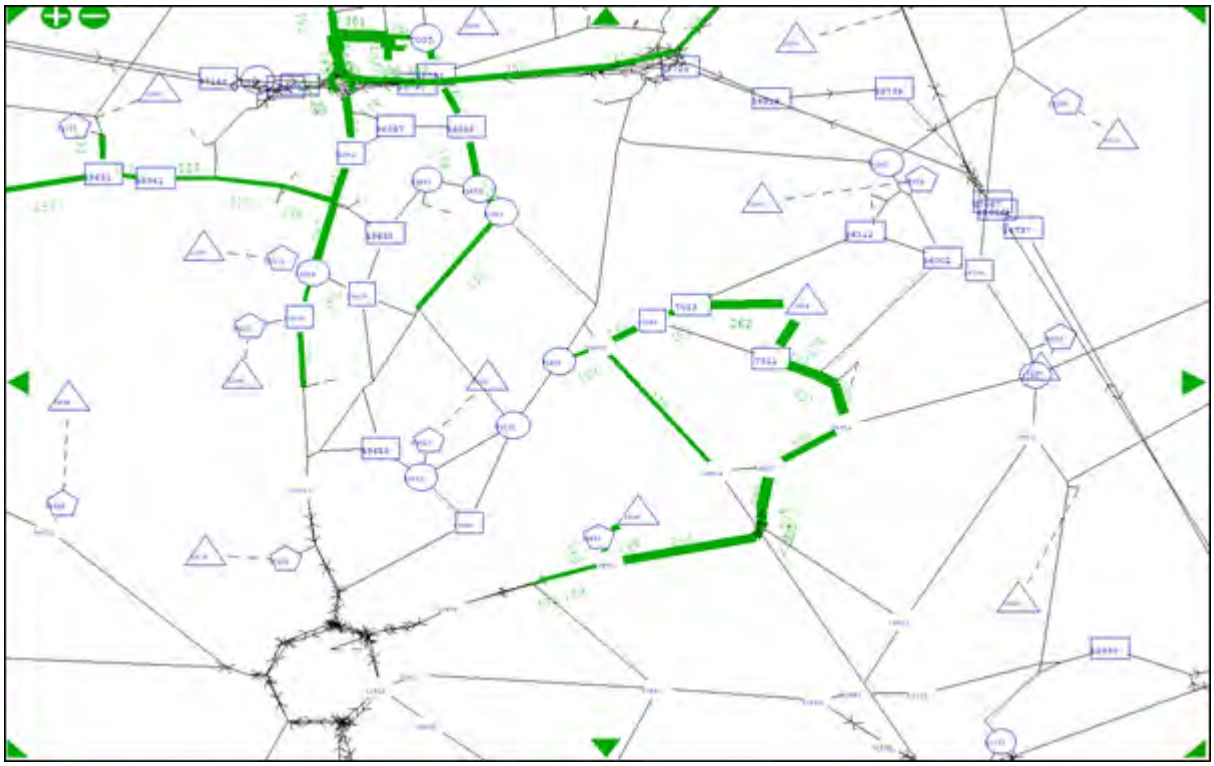
Focusing on the Linthouse Lane site in more detail, 1,200 new homes were modelled in the SATURN traffic model with access to the existing road network via Blackhalve Lane and Linthouse Lane.

Analysis of the model has shown that there are increases in trips (i.e. greater than 100 2-way trips) in the modelled peak hours (0800-0900 hours and 1700-1800 hours) in the following nearby locations. These are also displayed on the ensuing screenshots:

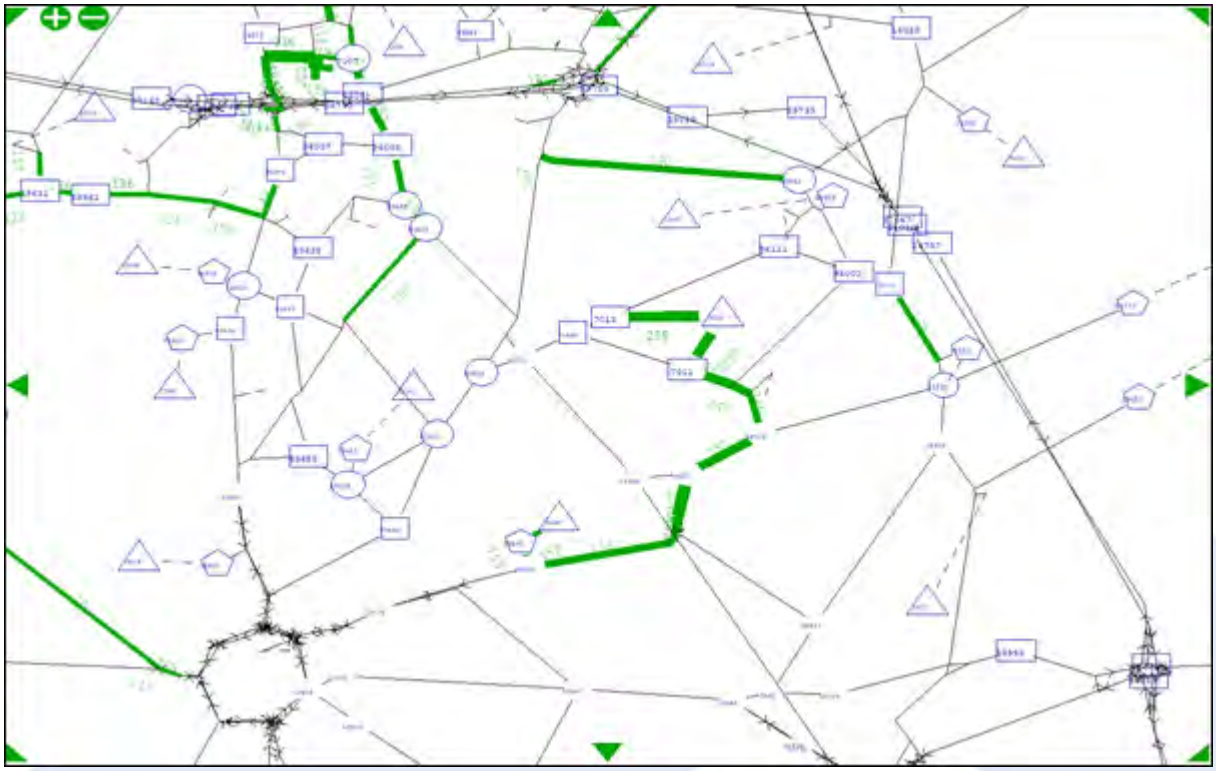
- M54J2 to M6 (via new link road);
- Blackhalve Lane, B4484 Long Knowle Lane, Lichfield Road and Wednesfield Way and a small section of A462 to the south of Sneyd Lane to Lichfield Road (all within Wolverhampton's boundary); and
- Bognop Road (from A460 to Essington village).

Staffordshire County Council

AM Peak



PM Peak



The impacts of this development will affect only small sections of SCC's road network. The majority of the impacts will be seen on CWC's roads and also some of the NH (National Highways) network. All three authorities will however need to advise

on the scope of any Transport Assessments that the developer is required to undertake to ensure that mitigation is provided where necessary.

SCC has shared outputs from the SATURN model with CWC for them to consider the impacts on their network. Please refer to CWC's consultation response for more information.

The traffic Model indicates that increases in traffic flows on the M54 between J2 and the M6 are in some part due to this development, though most of the cumulative impact is from the sites at Cross Green and in Codsall and Bilbrook. In terms of Staffordshire's network it is considered unlikely that there are any impacted locations that could not be mitigated to ensure the network continues to operate satisfactorily.

The developer will need to assess (and mitigate where necessary) the impact of trips on the A460, Bognop Road and travelling through Essington.
The intention is that the traffic flow information derived from this model is used to inform the scope of the more detailed transport assessment work being prepared by the developers promoting these sites. It is possible to use the model information to estimate the relative contributions towards mitigation where several developments are impacting in a given location.

Penkridge Area (Penkridge North 1,129 dwellings)

SCC has the following comments and observations in response to the strategic site at Penkridge which includes a site to the north of the village for 1,129 dwellings, accessed directly off the A449. There is also an existing consent in this location for 200 new homes, bringing the overall number of dwellings in this area to 1,329 units.

Accessibility

Please refer to the accessibility plans in the attached 'Accessibility Plans.zip' file. Approximately 50% of the site is within a 350 metre walk of a bus stop. This proportion of the site is within a 10-minute bus journey to a supermarket on a weekday and a Saturday; has access to a limited choice of employment via bus and rail; and is within a 40-minute bus journey to a hospital. Most of the site is within a 30-minute walk distance of GP services. Most of the site is within a 10-minute walk of a new first school and a 40-minute walk of Penkridge Middle School.

Walking and Cycling Proposals

The developer will need to ensure that the site is well connected to key attractions within the village such as the Middle and High Schools, the village centre and the railway station. There are also opportunities to provide more attractive leisure routes from the site to the village via the canal and existing footpaths and bridleways.

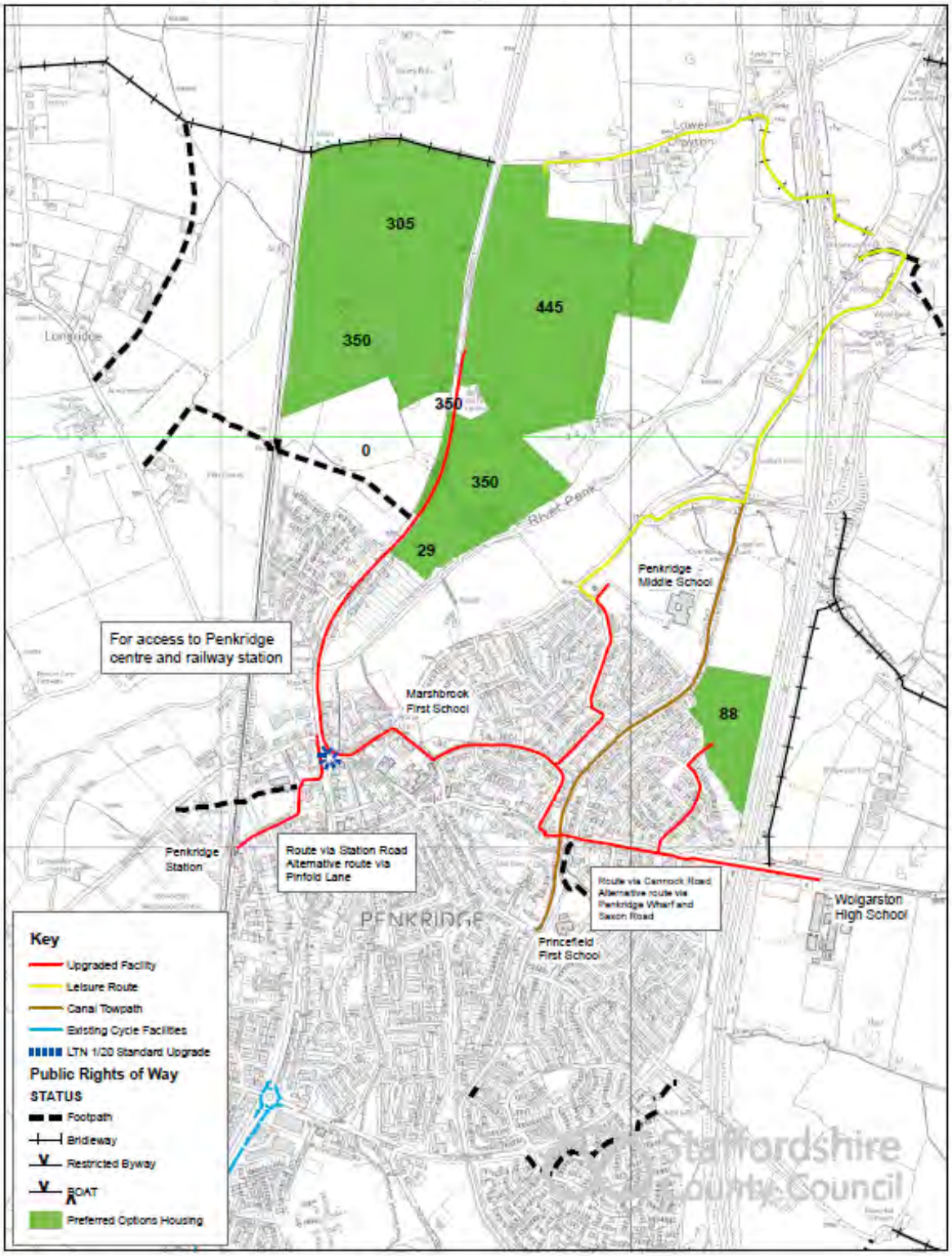
The plan below (Cycling and Walking Proposals – Penkridge Area) shows the active travel routes that SCC would like to see come forward in support of the proposed new developments. These include:

- Shared footway / cycle provision along the A449 from a crossing facility at the southern parcel of the development to Crown Bridge junction;

- Connections from Crown Bridge to the railway station, via St. Michael's Square and Station Road;
- Connections from Crown Bridge to the Middle School, via Mill Street, Bell Brook, Haling Road and Marsh Lane; and
- Connections to the High School from Haling Road and Cannock Road.
- The more attractive leisure route would head east out of the northern site, under the M6 via an existing crossing and joining the canal near Teddesley and heading south towards the village, with a spur off to the Middle school. Upgrades to towpaths and footpaths/bridleways would be required.

Staffordshire County Council

Cycling and Walking Proposals - Penkridge Area



N

Staffordshire County Council

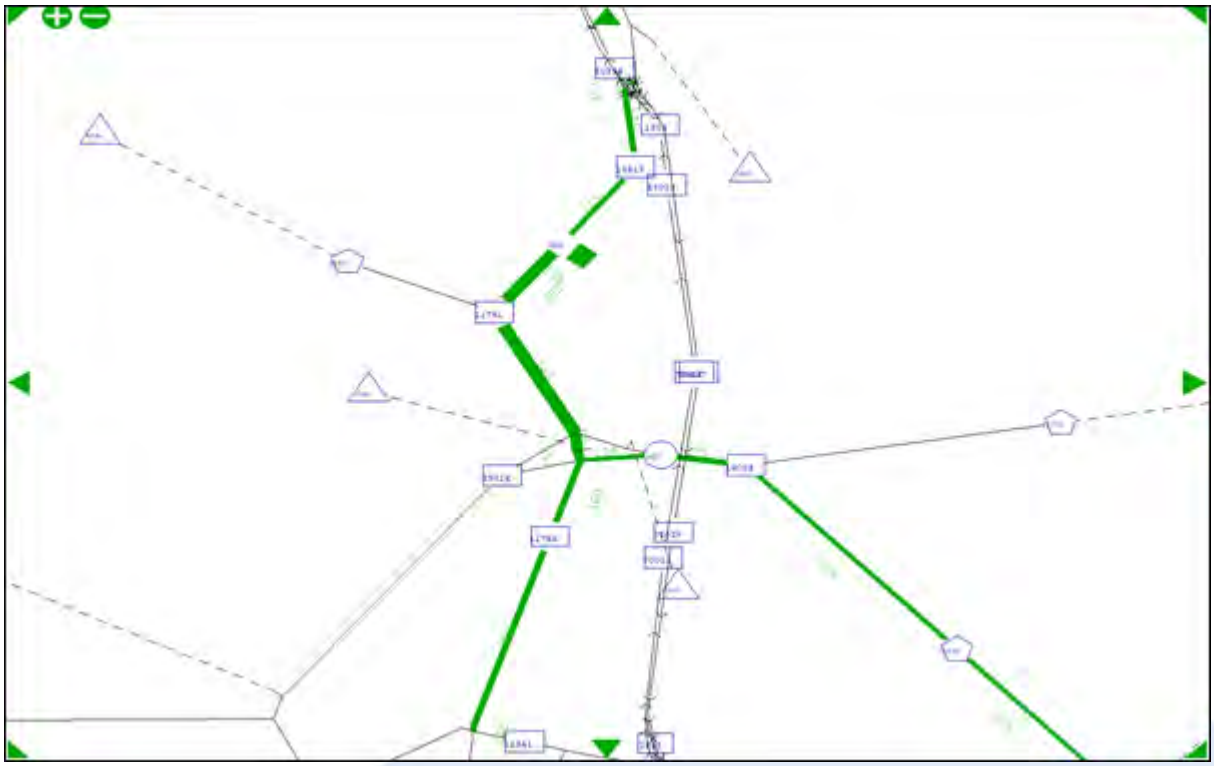
Highway Impact

Focussing on the Penkridge area, 1,329 new homes have been included in the traffic model, loading directly off the A449 to the north of the village centre. This includes an allocation of 1,129 new homes plus 200 which already have consent but were not included in the existing traffic model. A smaller site for 88 dwellings (Land at Cherrybrook) has not been included in this strategic modelling exercise.

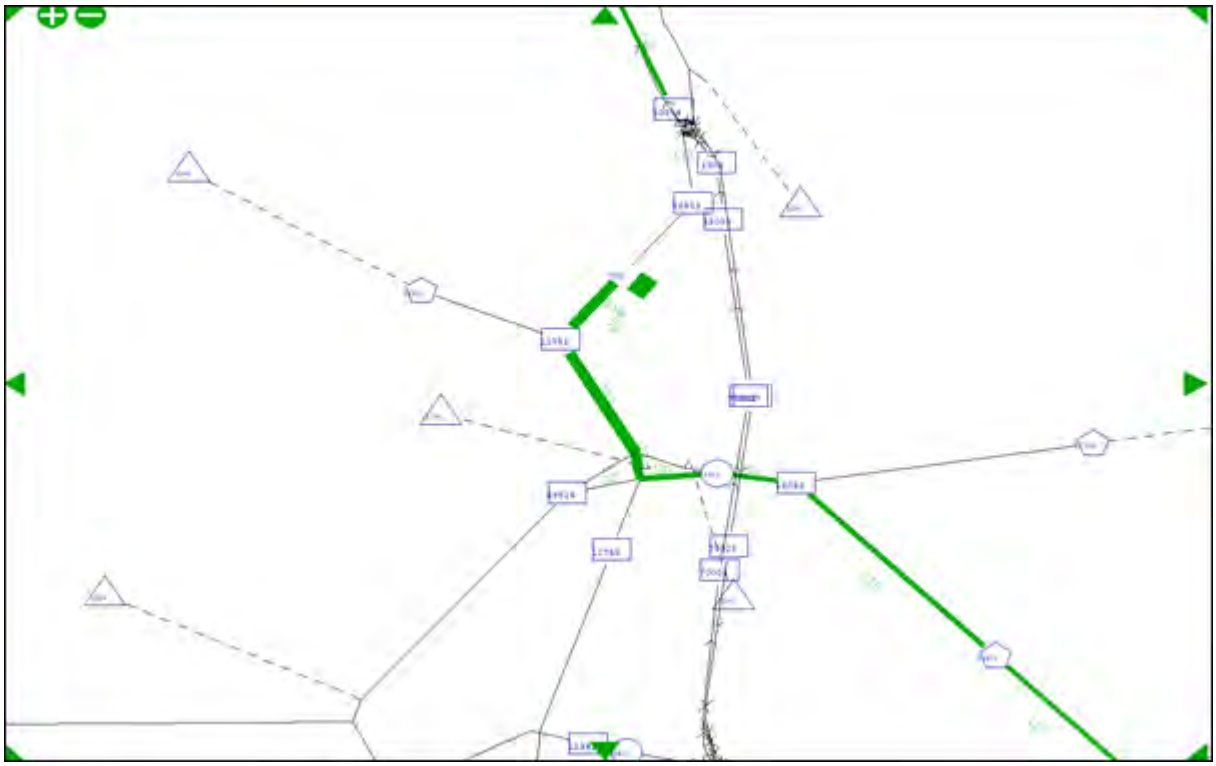
Analysis of the traffic model has shown that there are increases in trips (i.e. greater than 100 2-way trips) in the modelled peak hours (0800-0900 hours and 1700-1800 hours) at the following locations. These are also displayed on the screenshots below:

- M6;
- A449 (from M6J13 to Gailey); and
- through Penkridge towards Cannock.
  Most of these increases will be due to trips from the Penkridge site, although a small number of them will have originated from the other strategic sites contained within the model.

AM Peak



PM Peak



There is an increase of around 150 2-way trips on the A449 between the site and M6J13 in the AM peak, slightly less in the PM peak. The developer will need to provide an assessment of M6 J13 to see whether any mitigation is required.

To the south on the A449, there are around 300 to 350 additional 2-way trips between the development and the centre of the village. The traffic disperses as it leaves the village, with some trips terminating within the village, some travelling to and from Cannock (around 150 2-way trips in each peak hour) and some heading towards Gailey (just over 150 2-way trips in the AM peak, much less in the PM).

This additional traffic on the A449 will put pressure on the side roads and the ability for vehicles to exit from them. The developer will need to assess the capacity of various junctions along the route through the village. The main junction in the centre of Penkridge at Stone Cross is highly likely to require an improvement, and potentially other junctions such as the A449 / New Road. In addition, routes through the village towards Cannock will need to be assessed. Gailey island has been problematic for many years and will require an assessment. The proposed nearby freight depot will also add traffic at this location. However, the introduction of the new M54-M6 link road should relieve some pressure at the roundabout and the additional trips are unlikely to cause any unsurmountable problems.

None of these increases are considered to be at a level that would cause insurmountable problems and a thorough Transport Assessment will be required from the developers to understand what mitigation would be required to ensure the network continues to operate satisfactorily. The intention is that the traffic flow information derived from this model is used to inform the scope of the more detailed transport assessment work being prepared by the developers promoting these sites. It is

possible to use the model information to estimate the relative contributions towards mitigation where several developments are impacting in a given location.

Pp 53 Policy SA1 – Strategic Development Location : Land East of Bilbrook.

Pp 54 Policy SA2 – Strategic Development Location : Land Cross Green.

Pp 55 Policy SA3 – Strategic Development Location : Land North of Linthouse Lane.

Pp 56 Policy SA4 – Strategic Development Location : Land North of Penkridge.

SCC welcomes the preparation of Supplementary Planning Documents (SPD) and Infrastructure Delivery Strategies (IDS) to inform the release and phasing of these strategic sites. As referred to above, Staffordshire County Council has been working in partnership with SSDC, undertaking technical work to help show how these large housing allocations could be made acceptable in transport terms and this information can help inform the SPD and IDS.

Pp 57 Q7 SCC supports the proposed housing allocations in policies SA1-SA4 as long as they are supported by a robust evidence base that demonstrates how they can be made acceptable in transport terms. SCC has been working with SSDC to provide high level assessment work to help identify any showstoppers from a capacity, accessibility and connectivity perspective. This work will be presented in the 'Transport Impacts (with SCC) 2022' report.

b) Do you agree that given the scale of the 4 sites detailed in policies SA1-SA4, these warrant their own policy to set the vision for the site, alongside a requirement for a detailed masterplan and design code. Yes – from a transport acceptability perspective, the policy, vision and master planning needs to be developed at the earliest opportunity informed by the technical work referred to, supplemented by evidence provided by site promoters.

Pp58 Housing Allocations

pp 58 – pp 59 - Policy SA5 proposes housing allocations for settlements in Tiers 1-4 and other sites adjacent to neighbouring towns and cities (Stafford – Weeping Cross – 168 units and CWC Langley – 390 units). Appendix C contains housing allocation maps and proformas. It is noted that all of the proposed accesses just refer to vehicles and pedestrians, with no reference cycle access.

Pp 60 Q 8. SCC has reviewed the sites within Policy SA5 from a development management perspective and provided comments already regarding their potential to be served from the highway. Plans showing relative accessibility have also been produced for the majority of these sites.

Plans showing recommended and potential walking and cycling improvements to provide necessary connectivity have also been produced and are enclosed. These should be used to guide further assessment work should the sites be allocated.

SCC will expect each developer to engage with our Development Management section to scope out a Transport Assessment and identify any mitigation that is required to make the developments acceptable in transport terms. It is not envisaged at this stage that there would be any unsurmountable problems that would stop these sites coming forward through the Local Plan process.

Pp 63 Employment

Policy SA7 concerns the Employment Allocation – West Midlands Interchange.

Pp 65 Q 10 - SCC was an active participant in the Development Consent Order (DCO) process leading to the grant of planning consent and supports the proposed allocation having agreed the necessary mitigation to make development here acceptable in transport terms.

Pp 66 Development Management Policies.

Pp 66 para 6.4. It is noted that policies do not reflect the final wording but highlight key requirements, aims and measures that the final submitted policies will deliver.

Pp 71 HC9 – Design requirements

South Staffordshire Design Guide 2018 requires updating to reflect Cycle Infrastructure Design (Local Transport Note 1/20), Department for Transport, 2020, as advised by the National Model Design Code that refers to LTN 1/20 as detailed guidance that should inform local design codes. The five core design principles in LTN 1/20 are essential requirements that developers need to take into account. Based on best practice, routes should be Coherent; Direct; Safe; Comfortable and Attractive. By encompassing LTN 1/20 standards within South Staffordshire's Design Guide, developers will be aware of what is expected in Design and Access Statements and site-specific masterplans. This will ensure that high quality pedestrian and cycle facilities are regarded as an essential component of all site access and off-site highway works.

Pp 72 HC12 Parking Standards – the approach to electric vehicle charging for new development is welcomed to help reduce the impacts of climate change.

Pp 76 HC19 Wider green infrastructure design principles – the approach is welcomed to promote active travel.

Policy HC19 recognises the need to ensure that active travel opportunities are met within green infrastructure. It should be reflected in the Green Infrastructure SPD that delivery of this policy may require the upgrade of bridleways, footpaths and canals to provide high quality off-road provision for both pedestrians and cyclists to improve connectivity between development sites and local facilities/schools.

Pp78 Economic Vibrancy, Building a strong local Economy

EC1 Sustainable economic growth. The approach regards the promotion of active travel measures and multifunctional green spaces is welcomed but the policy needs to mention the requirement for public transport access to employment land.

SCC is concerned that the importance of Freight Infrastructure has not been sufficiently recognised.

SCC agrees that South Staffordshire is an attractive location for commercial development with a diverse range of small, medium, and large businesses and firms and its potential role in meeting the unmet employment needs of neighbouring authorities. We recognise the ambition to continue support and development of strategic employment sites including at i54 South Staffordshire, ROF Featherstone and West Midlands Interchange leading to greater inward investment and prosperity. We also note the concerns relating to the concentration of large scale developments, such as the West Midland Interchange (WMI) strategic rail freight interchange, which may pose a threat to the district in terms of the cumulative impact on the surrounding infrastructure.

We also recognise the importance of considering growth options in relation to their impacts on the highway network and how these are mitigated including the impacts of increased HGV usage and ability to park safely and securely.

HGV parking should be included as an example within policy EC1 – Sustainable Economic Growth which identifies support for provision of necessary infrastructure.

Pp 81 Community Services Facilities and Infrastructure

Policy EC9 - Infrastructure also identifies SSDCs willingness to work with partners to enable, support and co-ordinate delivery of infrastructure to support growth and infrastructure requirements within the Infrastructure Delivery Plan.

It is suggested that the Staffordshire Freight Strategy 2019 is referred to as a key evidence document within the Preferred Options report it can be found via the following link:

https://www.staffordshire.gov.uk/Transport/transportplanning/localtransportplan/Documents/Staffordshire-Freight-Strategy-June-2019-final-version.pdf

We are aware of critical shortages of HGV parking and driver welfare facilities across Staffordshire including South Staffordshire District. The Department for Transport National Survey of Lorry Parking 2017 identified that this HGV parking shortage is experienced across the region. Government too has recognised the critical importance of infrastructure to support hauliers and the logistics sector. In a ministerial statement of 8th November 2021 Government stated the planning system should play its part in meeting the needs of hauliers and addressing current deficiencies. Setting out proposals for short term measures and commitment to update both the National Lorry Parking Survey and Highways Circular 02/2013 The Strategic Road Network and the delivery of sustainable development.

Planning policies and decisions should recognise the importance of providing adequate overnight lorry parking facilities, taking into account any local shortages, to reduce the risk of parking in locations that lack proper facilities or could cause a nuisance. Proposals for new or expanded distribution centres should make provision for sufficient lorry parking to cater for their anticipated use.

The National Planning Policy Framework (NPPF) identifies two specific matters in relation to HGV parking:

1. the provision of overnight lorry parking facilities through planning policies, which should either propose sites or provide a supportive policy framework for anyone wanting to develop a lorry park. Key here is 'local shortages' where the highway authority will liaise with LPAs to ensure their plans make provision for lorry parks;

2. logistics sites should have adequate parking provision –existing sites may have parking but it is mostly operational i.e. part of the loading/unloading process. Other provision may be needed, similar to that proposed at the West Midlands Interchange not simply based on spaces per sq. m.

HGV parking areas are an important element of the logistics network and provide vital rest areas for drivers, help ensure safety for all road users and provide much needed security for transported goods, vehicles and drivers. These should be considered for inclusion within the reviewed Infrastructure Delivery Plan as they can be considered essential to support growth proposals.

HGV parking and driver welfare facilities are not specifically identified within the Preferred Options Plan and we feel this is an omission given the National Policy and the recent Ministerial Statement. Options for provision of facilities for HGV should be considered and identified for the next iteration of the Local Plan. We would be happy to provide support where required.

Pp 81 EC11 Sustainable transport – approach generally welcomed but the policy needs to support the delivery of Staffordshire's Bus Service Improvement Plan (BSIP) which also needs to be listed as key evidence.

Note on SCC LCWIP Process

Staffordshire's Local Cycling and Walking Infrastructure Plan (LCWIP) 2021 covers Burton upon Trent, Cannock, Lichfield, Newcastle-under-Lyme, Stafford and Tamworth. In 2021/22 the LCWIP is being expanded to include other medium-sized towns including Cheslyn Hay/Great Wyrley/Landywood. The LCWIP appraisals follow the methodology outlined by Department for Transport guidance. GIS analysis determines the routes that are likely to have the highest demand for cycling by mapping origin and destination points for commuter, school trips and forecast trips to/from development sites. These routes are further prioritised based on proximity to employment (including town centres), rail stations and accident data. The routes identified through the analysis are audited to determine a proposed coherent cycle network. Core walking zones focused on town centres are also assessed in terms of attractiveness, comfort, directness, safety and coherence. The outcome of the 2021/22 appraisals will be reported in an updated LCWIP due to be approved and published in 2022/23 and further updates will be made as resources permit.

Pp83 Under Key Evidence:

- add 'Brinsford Parkway Station Strategic Outline Business Case'.
- Delete Staffordshire Local Transport Plan 2011 and replace with South Staffordshire District Integrated Transport Strategy (to 2038) #

- Add Staffordshire Freight Strategy 2019
- Add Staffordshire's Bus Service Improvement Plan (BSIP) 2021

#The District Integrated Transport Strategy will be updated to reflect the emerging Publication Plan and will inform the next revision to the Infrastructure Delivery Plan.

Pp 92 Q 11 - do you agree with the proposed policy approaches set out in Ch 6?

Please see transport comments provided.

Q12
Do you agree that DS1-DS4 and SA1 – SA7 are strategic policies a) yes
b) are there any other policies in Ch 6 that need to be identified as strategic policies? No.

Pp 96 Appendix B Strategic Masterplanning Location Proformas Land East of Bilbrook

The proforma plan should show the proposed link road between Pendeford Mill Lane, Barnhurst Lane and Lane Green Road.

Education

Staffordshire County Council (SCC) has a statutory duty to ensure that there are sufficient school places to meet the needs of the population. The School Organisation Team (SOT) acts on behalf of the Local Authority to carry out this duty and to ensure that resources are used efficiently.

The district of South Staffordshire is made up of four distinct areas for the purpose of school place planning: 1) Cheslyn Hay & Great Wyrley, 2) Kinver & Wombourne, 3) Codsall & Perton and 4) Penkridge. These areas are broken down into smaller 'school place planning areas' and are used to plan the number of school places required. These school place planning areas have been grouped based on the geographical location of schools, and by assessing pupil movement between schools and catchment areas in line with Department for Education guidance.

A two-tier education system, with Primary (4-11 years) and Secondary (11-18 years) schools, operates in Cheslyn Hay & Great Wyrley and Kinver & Wombourne, whilst in Codsall, Perton and Penkridge, a three-tier system with First (4-9 years), Middle (9-13 years) and High (13-18 years) schools, operates.

Sixth form provision is offered on site at all secondary and high schools within the district.

SOT has been working with South Staffordshire District Council to devise a strategy to aid their Local Plan aspirations. We expect that this will continue as the Local Plan progresses.

There has already been a total of 750 dwellings that have been delivered from 2018 to 2021. It is noted that SSDC are proposing to make provision for at least 4,131 dwellings between 2021 and 2038 which will equate to an annual requirement of around 243 dwellings. SSDC are also looking to deliver a proportion of the unmet

need of the Greater Birmingham Housing Market Area (GBHMA) which is an additional 4,000 dwellings. The number of dwellings proposed influences what additional school places would be necessary and whether this would take the form of expanding existing local schools and/or the provision of new schools.

The Local Plan should help to ensure that there is sufficient education infrastructure available to mitigate the impact of the proposed new homes in the right place at the right time. SCC would request that land is allocated for educational infrastructure when considering areas for development. Whether this is land adjacent to existing schools, land within a large, proposed development or land within a number of proposed developments.

To mitigate the indicative minimum dwelling numbers in tiers 1-3 villages (including the areas adjacent to neighbouring towns and cities) a total of 632 first school places, 1,067 primary school places, 506 middle school places, 762 secondary school places, 379 high school places and 279 post 16 places are required.

There are a further 288 sites in rural and tier 4 -5 settlements and 450 windfall sites: a total of 738 dwellings. Dependent on location a total of 111 first school places, 155 primary school places, 89 middle school places, 111 secondary school places, 66 high school places and 22 post 16 places are required.

It is appreciated that the Local Plan Review document sets out indicative levels of growth in each area, some mitigation for existing sites has already taken place and we have sought to provide some commentary on the locations for proposed growth at the end of this section. It should be noted that the numbers given above do not include additional Nursery provision or additional SEND provision. Provided below are some general principles that should be considered in the site selection process when determining scale of growth, location of sites and potential policy considerations.

School sizes are referred to in as Forms of Entry (FE), which are the number of classes of 30 per school year group. For example, a 2FE school would have 2 classes of 30 pupils in every year group (60 pupils per school year group). It is also possible for schools to operate at half forms of entry for example 1.5FE equals 45 children per year group, and in these instances, schools operate with classes that are mixed across year groups.

From an educational perspective some schools and governing bodies believe that teaching children from two age groups in one class (mixed age teaching) is beneficial to the pupils. However, there are many educators who don't believe this is the most appropriate method to organise and teach pupils, as it can present challenges due to the differences in ages and abilities which can affect learning outcomes.

Within the district 28 of the 46 schools physically located in the area are Academies or Free Schools, and this number is growing all the time as new free schools open, or maintained schools convert to or become sponsored academies. Academies and Free Schools are independent from the local authority and the Academy Trust would be the decision makers for any proposed expansions.

Irrespective of school governance it is important that the views of schools, Trusts and governing bodies are considered when proposing expansions or new schools, especially where this would require a different class organisation than currently being used. Currently we believe that any options that require a school to organise into mixed age teaching would not be the preferred option by the majority of schools.

A development or a combination of small developments of 750+ dwellings in an area may trigger the need for a new first/primary school and a development of around 5,000 dwellings a new secondary school. A 0.5FE (15 places per year group) expansion to an existing school could be considered for developments of up to 500 dwellings.

Any new first school(s) would need to be at least 1FE (150 places) plus nursery provision and would require land of 7,635m2 to be provided and allocated within the local plan to facilitate this. To deliver a new 1FE First School (150 places + nursery provision) would cost in the region of £5 million pounds (as at Q4-2020). A 2FE First School (300 places + nursery provision) would require land of 12,870m2 to be provided and allocated within the local plan to facilitate this and would cost in the region of £6.9 million pounds (as at Q4-2020).

Any new primary schools would need to be at least 1FE (210 places) plus nursery provision and require land of 11,415m2 to be provided and allocated within the local plan to facilitate this. To deliver a new 1FE Primary School (210 places + nursery provision) would cost in the region of £6,045,195 million pounds (as at Q4-2020). A 2FE Primary School (420 places + nursery provision) would require land of 20,430m2 to be provided and allocated within the local plan to facilitate this and would cost in the region of £9.5 million pounds (as at Q4-2020).

Any new secondary schools would need to be at least 5FE (750 places) and require land of 86,076m2 to be provided and allocated within the local plan to facilitate this. To deliver a new secondary school of 5FE would cost in the region of £20 million pounds plus (as at Q4-2020).

The costs above are based on estimated new school costs as at Q4 2020. The building cost multiplier and new school costs are due to be updated and it is anticipated that the estimated cost could increase significantly due to current market conditions. This is a **minimum cost to deliver any new school** and will need to be updated as and when any new school is required.

Where new schools are required the sites would need to be of regular shape, level topography, without significant topographical features that would be considered incongruent with the site's use as a school, free from contamination and other adverse ground conditions, and suitable for the phase of education proposed. Other site requirements will also be required such as (but not limited to) drainage and vehicular access and will be detailed and discussed when appropriate.

Where existing schools have insufficient land to expand on their current site consideration may be given to allocating additional land adjacent to the school to facilitate growth if this is achievable. In addition, any new school proposed may also need to have additional land safeguarded to allow for future growth.

As noted above we will continue to work alongside SSDC to identify the required mitigation for education infrastructure for proposed local plan housing through continued liaison.

Consideration is also required of the implications of proposed housing developments on school transport. Children in the villages/settlements without local schools may be entitled to home to school transport where the catchment or nearest school is over two miles walking distance at primary age or three miles at secondary age, or where there is no available walking route to school. Therefore, there would be additional implications in terms of transport costs, logistics and highway constraints around school sites.

Any proposed development where the catchment and nearest schools are in excess of the walking distances noted above, or where there is no available walking route to access schools, may increase the cost to the public purse for school transport. Consideration must be given to the ongoing costs both to the developer and the public purse of transport costs for pupils living on such developments, and the sustainability and environmental impacts of the site(s). S106 contributions may be required to offset any additional transport costs related to new development. However, SSDC should consider whether growth in such areas is sustainable as ultimately the public purse will pick up the cost of school transport when any developer subsidy ends.

In relation to the preferred areas of growth and the housing allocations for other areas we comment as follows:

Proposed Housing Growth – Locality 1

Penkridge Town

Provision for 1,217 dwellings, 88 dwellings through allocation of existing safeguarded land and a further 1,129 dwellings as part of the preferred new housing sites in Penkridge.

Penkridge operates a three-tier education system and contains three first schools, one middle school and one high school; the high school serves Penkridge Centre and the wider rural area.

There are 563 dwellings in Penkridge that have been/are being built out or have planning approval. This has resulted in a 0.5FE (75 places) expansion at Princefield First School which is in the process of being completed and a 0.5FE (60 places) expansion at Penkridge Middle which was completed in September 2020.

To mitigate the proposed new housing further educational infrastructure would be required. The new site has a new 1FE (150 places plus nursery provision) First School allocated. This land would need to be at least 7,635m2; the costs and details on the requirements for the land are detailed above.

Penkridge Middle School and Wolgarston High School would both require up to 1FE of additional school infrastructure to mitigate the impact of the proposed developments (an additional 120 and 90 places respectively).

Southern Edge of Stafford – (A34 corridor)

Provision for 168 dwellings as part of the preferred new housing sites around the southern edge of Stafford along the A34.

For school place planning purposes this site, due to its geographical location fall into Stafford South Primary Cluster and Stafford High School Cluster. Stafford operates a two-tier education system.

The catchment schools are All Saints CE (VA) Primary School (located within the South Staffordshire District boundary) and Walton High School.

Whilst it is expected that the proposed development may be able to be accommodated within the existing school infrastructure at both primary and secondary schools within the local area, further work will need to be undertaken to understand the impact of the combined infrastructure requirements of SSDC's Local Plan and Stafford Borough Council's Local Plan Review

Developer contributions may be required to mitigate the impact of the development.

Huntington

Provision for 83 dwellings, 39 dwellings through allocation of existing safeguarded land and a further 44 dwellings as part of the preferred new housing sites in Huntington.

For school place planning purposes these sites, due to their geographical location fall into Cannock 1 Primary Cluster and Cannock High School Cluster. Cannock operates a two-tier education system. The catchment schools are Littleton Green Primary School (located within South Staffordshire District boundary) and Cannock Chase High School.

It is expected that the proposed developments can be accommodated within the existing primary and secondary school infrastructure in Cannock.

Proposed Housing Growth – Locality 2

Land at Cross Green

Provision for 1,200 dwellings as part of the preferred new housing sites located in Cross Green.

The site at Cross Green has land allocated to provide a new 1FE (210 places plus nursery provision) school at primary phase. This land should be at least 11,415m2 to facilitate this. However, there may be a requirement for additional infrastructure at primary phase due to the total number of proposed dwellings being built (1,200),

which is higher than the 1,000 dwellings which could be accommodated within a new 1FE school. A site should be safeguarded to facilitate delivery of up to a 1.5FE new school (15,923m2) to ensure that the impact of the development can be fully mitigated.

The costs and details for the requirements of the land are detailed above.

Further discussions will need to be held with SCC, SSDC and proposed developers to outline the masterplan for the site so it can inform how the school would be built/opened.

It is expected that this development could be accommodated within existing infrastructure at middle/secondary phase, but further work needs to be completed and additional education infrastructure may still be required.

Transport to secondary education would be required from this site.

Brewood

Provision for 106 dwellings, 63 dwellings through allocation of existing safeguarded land and a further 43 dwellings as part of the preferred new housing sites in Brewood. Brewood operates a three-tier education system and contains one first school, one catholic primary and a middle school which serves the wider rural area. Brewood falls into the catchment area of Wolgarston High.

It is expected that the proposed developments can be accommodated within the existing first and middle school infrastructure, but additional infrastructure may be required at Wolgarston High School to mitigate the cumulative impact of the Local Plan dwellings proposed within the school's catchment.

Transport to high school education would be required from these sites.

Coven

Provision for 48 dwellings through allocation of existing safeguarded land in Coven. Coven operates a three-tier education system and contains one first school. For Middle and High provision Coven falls into the catchment areas of Brewood Middle and Wolgarston High.

It is expected that the proposed developments can be accommodated within the existing first and middle school infrastructure, but additional infrastructure may be required at Wolgarston High School to mitigate the cumulative impact of the Local Plan dwellings proposed within the school's catchment.

Transport to middle/high school education would be required from this site.

Wheaton Aston

Provision for 54 dwellings, 17 dwellings through re-allocated SAD housing allocations and a further 37 dwellings as part of the preferred new housing sites in Wheaton Aston. Wheaton Aston operates a three-tier education system and

contains one first school. For Middle and High provision Wheaton Aston falls into the catchment areas of Brewood Middle and Wolgarston High.

It is expected that the proposed developments can be accommodated within the existing first and middle school infrastructure, but additional infrastructure may be required at Wolgarston High School to mitigate the cumulative impact of the Local Plan dwellings proposed within the school's catchment

Transport to middle/high school education would be required from this site.

Proposed Housing Growth – Locality 3

Cheslyn Hay/Great Wyrley

Provision for 484 dwellings, 153 dwellings through re-allocated SAD housing allocations, 218 dwellings through allocation of existing safeguarded land and a further 113 dwellings as part of the preferred new housing sites in Cheslyn Hay/Great Wyrley.

Cheslyn Hay/Great Wyrley operates a two-tier education system and contains eight primary schools and two secondary schools.

It is expected that the proposed developments can be accommodated within the existing primary and secondary school infrastructure within the Cheslyn Hay/Great Wyrley high school place planning area.

Northern Edge of the Black Country (Linthouse Lane)

Provision for 1,976 dwellings as part of the preferred new housing sites located in Cross Green of which 1,200 houses would be delivered within this plan period at land north of Linthouse Lane.

The site at Linthouse Lane has land allocated to provide a new 2FE (420 places plus nursery provision) school at primary phase. This land should be at least 20,430m2 to facilitate this. The costs and details for the requirements of the land are detailed above.

Further discussions will need to be held with SCC, SSDC and proposed developers to outline the masterplan for the site so it can inform how the school would be built/opened e.g. phased opening up to 2FE.

It is expected that the proposed development can be accommodated within the existing secondary school infrastructure within the Cheslyn Hay/Great Wyrley high school cluster.

Transport to secondary education would be required from this site.

Featherstone and Shareshill

Provision for 49 dwellings through allocation of existing safeguarded land in Featherstone. Featherstone operates a two-tier education system and includes two

primary schools and the area falls into the Cheslyn Hay/Great Wyrley High school place planning area.

The proposed development may require additional educational infrastructure at primary phase, but it is expected it can be accommodated with the existing infrastructure at secondary phase.

Transport to secondary education would be required from this site.

Proposed Housing Growth – Locality 4

Codsall/Bilbrook 1279 dwellings

Provision for 1279 dwellings, 29 dwellings through re-allocated SAD housing allocations, 317 dwellings through allocation of existing safeguarded land and a further 933 dwellings as part of the preferred new housing sites in Codsall/Bilbrook. Codsall/Bilbrook operates a three-tier education system and contains three first schools, one catholic primary, two middle schools and one high school.

There are 421 dwellings in Codsall/Bilbrook that have been/are being built out or have planning approval.

The new site has a new 2FE (300 places plus nursery provision) First School allocated. This land would need to be at least 12,870m2, the costs and details on the requirements for the land are detailed above.

Further discussions will need to be held with SCC, SSDC and proposed developers to outline the masterplan for the site so it can inform how the school would be built/opened.

It is expected that the proposed developments can be accommodated within the existing middle school infrastructure within Codsall/Bilbrook but Codsall High School would require additional school infrastructure to mitigate the cumulative impact of the proposed developments within the school's catchment in Codsall/Bilbrook, Perton and Pattingham.

Perton

Provision for 150 dwellings through allocation of existing safeguarded land in Perton. Perton operates a three-tier education system and contains two first schools, one middle school and falls into the catchment area of Codsall High School.

It is expected that the proposed developments can be accommodated within the existing first and middle school infrastructure, but additional infrastructure may be required at Codsall High School to mitigate the cumulative impact of the proposed developments within the school's catchment in Codsall/Bilbrook, Perton and Pattingham.

Transport to high school education would be required from this site.

Pattingham – 40 dwellings

Provision for 40 dwellings, 18 dwellings through allocation of existing safeguarded land and a further 22 dwellings as part of the preferred new housing sites in Pattingham. Pattingham operates a three-tier education system contains one first schools, and pupils in Pattingham access Codsall Middle Schools and Codsall High School.

It is expected that the proposed developments can be accommodated within the existing first and middle school infrastructure, but additional infrastructure may be required at Codsall High School to mitigate the cumulative impact of the proposed developments within the school's catchment in Codsall/Bilbrook, Perton and Pattingham.

Transport to middle/high school education would be required from these sites.

Proposed Housing Growth – Locality 5

Wombourne

Provision for 514 dwellings, 275 dwellings through allocation of existing safeguarded land and a further 239 dwellings as part of the preferred new housing sites in Wombourne. Wombourne operates a two-tier education system and contains four primary schools and one secondary school.

The primary schools and secondary school in the area are reaching capacity and additional infrastructure may be required dependent on the timing of future development in this area. SOT would welcome further discussions with SSDC to discuss future housing trajectory expected in this area.

Western Edge of the Black Country (Langley Road)

Provision for 390 dwellings as part of the preferred new housing site around the southern edge of Stafford along the A34.

The catchment schools are Bhylls Acre Primary School (located within the City of Wolverhampton boundary) and Wombourne High School.

It is expected that the proposed development can be accommodated within the existing primary school based on expected build out rates of the proposed development. Additional infrastructure may be required at secondary school dependent on the timing of future developments in the school catchment. SOT would welcome further discussions with SSDC to discuss future housing trajectory expected in this area.

Transport to secondary school education may be required from this site.

Kinver

Provision for 162 dwellings, 36 dwellings through re-allocated SAD housing allocations, 82 dwellings through allocation of existing safeguarded land and a further 44 dwellings as part of the preferred new housing sites in Kinver. Kinver

operates a two-tier education system contains one infant, one junior school and one secondary school.

It is expected that the proposed development can be accommodated within the existing primary and secondary school infrastructure.

Swindon

Provision for 22 dwellings, 11 dwellings through allocation of existing safeguarded land and a further 11 dwellings as part of the preferred new housing sites in Swindon. Swindon operates a two-tier education system and has one primary school and pupils in Swindon can access secondary education at Wombourne/Kinver High School cluster.

It is expected that the proposed development can be accommodated within the existing primary and secondary school infrastructure.

Transport to secondary school education may be required from this site.

Proposed Housing Growth - other settlements/tier 5 settlements/windfall sites

There are a further 288 sites in rural and tier 5 settlements and 450 windfall sites: a total of 738 dwellings. Dependent on location a total of 111 first school places, 155 primary school places, 89 middle school places, 111 secondary school places, 66 high school places and 22 post 16 places are required.

As the location and numbers are not known at this time, we would assess the required mitigation (if any) on a site-by-site basis in conjunction with any cumulative impact with other proposed Local Plan sites in the same school place planning area.

Aspirations for a new settlement A449/Westcoast mainline (Wolverhampton - Stafford)

Further discussions will need to be held with SSDC and proposed developers to outline the masterplan for the site so it can inform how the schools would be built/opened.

It should be noted that it is unlikely existing secondary education infrastructure can accommodate a large settlement. Careful consideration will therefore need to be given to the impact on secondary education infrastructure, including how any potential new school could be funded, delivered and sustained.

Public Health and Care

The following response has been developed to highlight the Public Health and Wellbeing implications of the local South Staffordshire Preferred Option plan. In addition, we have prepared a 'South Staffs Health Needs Outcomes' document, which is enclosed with this letter. This document should assist in ensuring key health issues are captured and evidenced in the Local Plan.

Theme	Planning issue	Health and wellbeing issue	South Staffordshire Plan Response
Healthy housing	• Housing design •Accessible housing • Healthy living • Housing mix and affordability	•Lack of living space - overcrowding • Unhealthy living environment – daylight, ventilation, noise • Excess deaths due to cold / overheating • Injuries in the home • Mental illness from social isolation and fear of crime	The provision of affordable housing can create mixed and socially inclusive communities. The provision of affordable family sized homes can have a positive impact on the physical and mental health of those living in overcrowded, unsuitable or temporary accommodation. Both affordable and private housing should be designed to this high standard. *Response: The proposal highlights a clear requirement and tenure split for affordable housing.*
2. Active travel	• Promoting walking and cycling • Safety • Connectivity • Minimising car use	• Physical inactivity, cardiovascular disease and obesity • Road and traffic injuries • Mental illness from social isolation • Noise and air pollution from traffic	A travel plan can address the environmental and health impacts of development by promoting sustainable transport, including walking and cycling. *Response: Although the document does not clearly identify an Active Travel Plan, there is identified opportunities for active travel, such as cycling and walking, being planned effectively to support healthy and active lifestyles amongst all sections of the community.* Traffic management and calming measures and safe crossings can reduce road accidents involving cyclists and pedestrians and increase levels of walking and cycling. Developments should prioritise the access needs of cyclists and pedestrians. Routes should be safe, direct and convenient and barriers

			and gated communities should be avoided. Developments should be accessible by public transport. Space for pedestrians and cyclists should be given priority over commercial and private vehicles. Maximum car parking levels allows for provision to be reduced as far as practicable. Car clubs can be effective in reducing car use and parking demand at new residential developments. *Response: Opportunities for active travel, such as cycling and walking, are being planned effectively to support healthy and active lifestyles amongst all sections of the community.*
3. Healthy environment	• Construction • Air quality • Noise • Contaminated land • Open space • Play space • Biodiversity • Local food growing • Flood risk • Overheating	•Disturbance and stress caused by construction activity • Poor air quality - lung and heart disease • Disturbance from noisy activities and uses of equipment • Health risks from toxicity of contaminated land • Physical inactivity, cardiovascular disease and obesity • Mental health benefits from access to nature and green space and water • Opportunities for food growing – active	Construction activity can cause disturbance and stress, which can have an adverse effect on physical and mental health. Mechanisms should be put in place to control hours of construction, vehicle movements and pollution. Community engagement before and during construction can help alleviate fears and concerns. The long-term impact of poor air quality has also been linked to life-shortening lung and heart conditions, cancer and diabetes which currently has a rate of 81.1% slightly below the UK rate (86.3%) but above the regional rate (78.0%) Reducing noise pollution helps improve the quality of urban life.

		lifestyles, healthy diet and tackling food poverty • Excess summer deaths due to overheating	Access to open space has a positive impact on health and wellbeing. Living close to areas of green space, parks, woodland and other open space can improve physical and mental health regardless of social background. Access to nature and biodiversity contributes to mental health and wellbeing. New development can improve existing, or create new, habitats or use design solutions (green roofs, living walls) to enhance biodiversity. ***Response:*** *The plan proposes to create/enhance multifunctional green spaces and the enhancement of the Green Infrastructure Network, however there is no detail that illustrates how this proposal will address physical inactivity, reduce obesity and use the spaces effectively to reduce Mental Health. There is also no detail in the proposal relating to* providing space *for local food growing/allotment space, which also helps promote more active lifestyles, better diets and social benefits.* Regular participation in physical activity among children and young people is vital for healthy growth and development. The location of play spaces should be accessible by walking and cycling routes that are suitable for children to use. South Staffordshire has a higher-than-average prevalence for excess weight in Reception aged school children.

			Response: The Local Plan proposes to provide opportunities to promote a healthy weight environment supporting a Whole System Approach (WSA) to obesity in South Staffordshire and in addition are working as part of a WSA, when planning forms part of a wider approach to addressing obesity. Flooding can result in risks to physical and mental health. The stress of being flooded and cleaning up can have a significant impact on mental health and wellbeing. It is likely that increasing development densities and building coverage coupled with more frequent extreme weather events will increase urban flood risk. Parts of Southern Staffordshire are at risk from the following sources: fluvial, surface water, groundwater, sewers, reservoir inundation and canal overtopping/breaches. This study has shown that the most significant sources of flood risk in Southern Staffordshire are fluvial and surface water, (Southern Staffordshire ,Councils Level 1 Strategic Flood Risk Assessment Final Report October 2019) **Response:** *The proposal supports radical reductions in greenhouse gas emissions through the community's design, whilst also allowing for changing*

			demographics, future growth, and the impacts of climate change including flooding risk. However, it is not clear what the proposed plan is to reduce the risk of fluvial and surface water. Climate change with higher average summer temperatures is likely to intensify the urban heat island effect and result in discomfort and excess summer deaths amongst vulnerable people. Urban greening - tree planting, green roofs and walls and soft landscaping can help prevent summer overheating. *Response: Although the document does not clearly identify how air quality and climate change will be addressed there does appear to be some p*lanning for *the impact of climate change.*
4.Vibrant neighbourhood	• Healthcare services • Education • Access to social infrastructure • Local employment and healthy workplaces • Access to local food shops • Public buildings and spaces	• Access to services and health inequalities • Mental illness and poor self-esteem associated with unemployment and poverty • Limited access to healthy food linked to obesity and related diseases • Poor environment leading to physical inactivity • Ill health exacerbated through isolation, lack of social contact and fear of crime	Poor access and quality of healthcare services exacerbates ill health, making effective treatment more difficult. The provision of support services and advice on healthy living can prevent ill health. Access to a range of primary, secondary, and post-19 education improves self-esteem, job opportunities and earning capacity. In South Staffordshire, based on school location, for KS4 English & Maths Grades 9-5 (2019), South Staffordshire did not perform significantly above national and is

			statistically lower than the national average (37%). Good access to local services is a key element of a lifetime neighbourhood and additional services will be required to support new development. Not doing so will place pressure on existing services. *Response: Since lower educational attainment is linked to areas facing multiple socio-economic inequalities and includes South Staffordshire. It is good to see that the Local Plan Preferred Options document acknowledges some of the key health inequalities such as access to a good range of health services. However, at point "3.2 The strategic policies for an area should include policies and site allocations to address key issues" does not identify 'Health and Wellbeing/Preventative Health measures' as key issues to considered or addressed, as we know that the environment, we live in has a huge impact on our health. Further the evidence base detailed in "Promoting successful and sustainable communities" does not consider this either, particularly as 20.8% of 16+ have a limiting long-term illness (which is above England rate) and 49.4% of 65+ also have limiting long-term illness (above the England rate) that are primarily preventable and could be improved by addressing some of the most significant wider determinants*

			of health – those of the built and natural environment. The following evidence could have been considered – • *Marmot has recently reported on inequalities, and the environment was cited as a key determinant of health and wellbeing. (8) Marmot M. et al. Health equity in England: The Marmot Review 10 years on. London: Institute of Health Equity, 2020.) The report stated that the evidence of the relationships between health and the environment has grown and that the role the environment plays in influencing health is now better understood. Important areas that were covered included: air quality, transport, and housing.* • *Spatial planning for health: evidence review* Unemployment generally leads to poverty, illness and a reduction in personal and social esteem. Employment can aid recovery from physical and mental illnesses. Creating healthier workplaces can reduce ill health and employee sickness absence. *Response:* No evidence seen of how this will be addressed, these issues evident in the proposed plan. Data from NOMIS official Labour Market Profile shows that although the unemployment rate in South Staffordshire of 4.6% is below the West Midlands rate

			of 5.4% and UK rate of 5.0%. There should be some consideration given to the impact of unemployment as in some neighbourhoods a link can be drawn between the overlap of the spatial patterns of unemployment with the spatial distribution of social housing and socioeconomic problems (The Patterns of Unemployment and the Geography of Social Housing) The public realm has an important role to play in promoting walking and cycling, activity and social interaction. It also affects people's sense of place, security and belonging. It is a key component of a lifetime neighbourhood. Shelter, landscaping, street lighting and seating can make spaces attractive and inviting. Implementing inclusive design principles effectively creates an accessible environment, in particular for disabled and older people. ***Response:*** *The Local Plan Preferred Options document acknowledges inequalities in attainment levels within the district. However, other key health inequalities such as race inequality in housing and disadvantaged communities, are more likely to have less access to good quality open space, easy walking and cycling routes, well located services and good housing mix and design. They are also more likely to experience environmental burdens such as pollution, crime and social isolation which are not clearly addressed.*

Staffordshire County Council's Children and Families, Health and Wellbeing Team work closely with partners to drive forward improvements in health outcomes for children, young people and families across Staffordshire.

The County Council's Children and Families Health and Wellbeing Team have three priorities that focus our work: obesity, infant mortality, and mental health.

These priorities are shared within the Staffordshire Health and Wellbeing Board's Staffordshire Health & Wellbeing Strategy 2018-2023.

These priorities are also included in the Staffordshire Families Strategic Partnership – Staffordshire's Children, Young People and Families Strategy 2018-2028. Under the high-level priority 'Happy and Healthy' – *'improve children and families' mental health and emotional wellbeing'* and *'encourage communities to be more active and live healthier lifestyles'* and included. Under the high-level priority 'Safe and Belong' – *'Reduce infant and child mortality rates'* is included.

Appendix 1 contains an evidence base around the key priorities of the County Council's Children & Families, Health & Wellbeing Team (obesity, infant mortality, and mental health).

The County Council and partners have recently commenced work to establish and implement a whole systems approach (WSA) to address obesity and promote a healthy weight, called 'Better Health Staffordshire'. Obesity is a complex problem with multiple causes and significant implications for health and beyond. Tackling such an ingrained problem requires a long-term, system-wide approach that makes obesity everybody's business, tailored to local needs and works across the life course.

The use of the planning system to promote health and reduce inequalities is well established[1]. The Local Plan provides opportunities to promote a healthy weight environment supporting the WSA to obesity in South Staffordshire and Staffordshire. The Local Plan provides opportunity to demonstrate how South Staffordshire District Council, along with the County Council, are working as part of a whole system approach, where planning forms part of a wider approach to addressing obesity.

The Local Plan 'Preferred Options' document includes eight Strategic Objectives, all of which have some relevance to the health and wellbeing of the community.

Policies

In relation to the policies within the Plan the County Council welcomes the inclusion of Policy HC13 – Health and Wellbeing. This policy should provide the mechanism to address and promote health and wellbeing needs and support healthy communities. It is noted that the precise wording of the Policy is not included in the Preferred Options Plan just a direction of travel. We would be happy to assist in reviewing any draft

[1] Using the planning system to promote healthy weight environments (publishing.service.gov.uk)

wording ahead of the Publication Plan to ensure Health and Well-Being aspects are well considered.

The requirement for Design and Access Statements for large development (over 150+ dwellings) to demonstrate how specific measure have been designed to have a positive impact on the health and wellbeing of residents is welcome and supported.

The inclusion of a policy hook for a health and wellbeing Supplementary Planning Document (SPD) to provide further detailed guidance on how health and wellbeing benefits will be delivered through specific design interventions in also welcome and to be encouraged. We would be willing to support you in the production of the SPD.

The County Council appreciates the inclusion of Policy DS4 – Longer Term Growth Aspirations for a New Settlement. This sets the parameters for what a new settlement to be delivered would need to incorporate. The inclusion of 'green infrastructure and health' within this framework, where the settlement should be designed to provide choices and changes for all to live a healthy life, offers further opportunity to improve the health and wellbeing needs and opportunities for healthy lifestyles for residents.

Adult Social Care

It is acknowledged that the Plan identifies at Page 18 that meeting the housing needs of the ageing population is an issue to consider. It is also recognised in the same section that it is identified that the Local Plan will need to support the provision of specialist housing requirements of other groups, such as those with disabilities.

Policy HC4 - Homes for Older People sets out the requirements for new development to meet the needs of an ageing population and is supported. It is noted that the examples of general needs properties refer to single floor accommodation. There may be other options that facilitate two-storey accommodation such as through ceiling lifts, well designed stairs with stair lifts. The Plan should also make reference to housing for Older People also needing to be aspirational to encourage older persons to move from existing stock to new housing. Consideration of design and quality also needs to be a factor as well as numbers of units.

Policy HC5 - Specialist Housing Schemes provides support for proposals for specialist housing of all tenures. However, the examples listed in the plan lean towards specialist accommodation for older person e.g. extracare. Whilst this is needed and supported Policy HC5 doesn't appear to address providing for the wider population needs for people with disabilities across all age groups as identified on page 18. In preparing the detailed wording for Policy HC5 it is suggested that consideration in given to the following key Government documents published in late July 2021, which have a bearing on local planning across the full spectrum of disabilities:

- National Disability Strategy - GOV.UK (www.gov.uk) – addressing key barriers faced by disabled people including transport, housing and access to buildings and places.
- National strategy for autistic children, young people and adults: 2021 to 2026 - GOV.UK (www.gov.uk) – Stipulating commitments with regard to supported housing built by the new affordable homes programme

- Supported housing: national statement of expectations - GOV.UK (www.gov.uk) - Please also be aware of the following recent publication in relation to Supported Housing provision which covers supported housing provision for all needs:

The National Disability Strategy potentially provides advice and guidance that could be applied wider than Policy HC5 in terms of master planning, site layouts and design.

We may be able to assist later in the Plan period with local data but for now, a good source of data: Projecting Adult Needs and Service Information System (pansi.org.uk). There is also a link to Poppi data from this which covers the needs of older people and produces forward projections. This will cover a range of disabilities and needs and it generates data by district.

Ecology

In relation to Q1 the evidence base for the natural environment is appropriate.

Several allocations adjoin designated Biodiversity Alert Sites (BAS) and these will need to ensure the BAS's are buffered / protected and ideally enhanced.
The allocations sites are:

- Adjacent to Merry Hill, Wolverhampton
- Large site to east of Codsall / Bilbrook
- Small site to west of Codsall Station
- Site to west of Brewood

In addition the following site will need to consider onsite habitats:

- Adjacent to Merry Hill, Wolverhampton (onsite ponds and scrub / woodland)

Landscape

Question 4: Do you support the policy approach in Policy DS1 – Green Belt and Policy DS2 – Open Countryside?

Generally, the policy approach should protect and enhance the Green Belt and Open Countryside. In addition, the policy could consider compensation or carbon offsetting of new development by well-designed tree and woodland planting in the green belt and open countryside where it fits the local landscape character guidelines.

Some areas along the urban conurbation edges could make a significant contribution to the identity of the adjacent settlement edge. New, well planned landscape features could provide valuable boundary features separating urban areas from the surrounding countryside, such as strong woodland belts. The Spatial Strategy could include an innovative Green Infrastructure policy which could be considered hand in hand with site selection options on a strategic level. Such a policy could take an overarching view on climate change, habitat loss and replacement over the whole District. The precedents for this multifunctional approach include the Forest of Mercia and National Forest. Large scale woodland creation could also be seen in the context of the wealth of historic designed parklands throughout South Staffordshire.

Question 5: Do you support the policy approach in Policy DS3 – The Spatial Strategy to 2038?

The 5-tier classification for settlements is appropriate and it appears to achieve the necessary growth in housing and employment needs for the District.

Although it is mentioned in the report, the impact of the planned M6-M54 link road on the District infrastructure and settlements does not seem to have been considered. Additional landscape enhancement of the existing District highway infrastructure could offset the impact of the additional road travel as a result of expanding the Tier 1 and 2 settlements in particular.

The District is unusual in that whilst 80% of the area is in Green Belt and 14% is open countryside; there are significant historic major rural highways such as the A5, A34, A41, A449, A454, A458 and modern motorways including the M6, M54, and the M6Toll. All these roads will experience increased traffic throughout the plan period, and a strategic plan to enhance the setting of the roads by means of tree and woodland planting would help to integrate new development into the changing landscape. Where practical, the new landscape features should be multifunctional and should incorporate measures for active travel such as segregated cycleways, longer distance walking routes, new recreational opportunities, and linked ecological corridors.

The proposed radical changes to farming policies and the effects of the Environment Bill could also be considered in the Preferred Options. The farmed landscape is likely to undergo significant changes during the plan period, and the plan should embrace the change which should benefit both residents and the farming population, as well as the wider environment.

Question 6: Do you support the policy approach in and Policy DS4 – Longer Term Growth Aspirations for a New Settlement?

The Criteria for the siting and design of a new settlement adjacent to the A449 and West Coast Main line are aspirational at this stage it will be necessary to ensure that the settlement fits into the local landscape character in the way that most other settlements in the district have evolved over hundreds of years.

Historic Environment

In general the approach taken with regards to archaeology and the historic environment is supported.

Q1 Do you agree that the evidence base set out in Appendix A is appropriate to inform the new Local Plan? Yes - the evidence based with regards to archaeology and the historic environment, which comprises the existing South Staffordshire Historic Environment Assessment and a Stage 1 Historic Environment Site Assessment (HESA) is considered to be a robust and sufficient evidence base at this stage. The methodology of the HESA, which has been underpinned by a search of the Staffordshire Historic Environment Record (HER), has been developed in consultation with Historic England and the Staffordshire County Council Historic Environment Team, and is sufficiently detailed, and the HESA appears to be mostly (see Q8 below) accurate and well-considered.

Staffordshire County Council

Q3 a) Have the correct vision and strategic objectives been identified? Yes- Strategic Objective 13, which relates to 'Enhancing the Historic Environment' is supported and it is welcomed that specific mention is made of the district's canal network
3b) - Do you agree that the draft policies (Chapters 4 and 5) and the policy directions (Chapter 6) will deliver these objectives? AND Q11 Do you agree with the proposed policy approaches set out in Chapter 6?
Yes - The policy directions outlined in Chapter 6 (in particular NB9 and NB10) appear to be sufficiently comprehensive to sustainably deliver these objectives.

Q8 Do you support the proposed housing allocations in Policy SA5? The HESA (and subsequent updates) has done a very useful job in assessing the potential historic environment/archaeological issues for each application. However, it must be noted here that subsequent to the production of the HESA, the Staffordshire Historic Environment Record (HER) has been made aware of a potential Second World War gun battery within part of Site 582 'West of Wolverhampton'. The evidence that has been provided is compelling and it is strongly recommended that the Stage 2 HESA for this site is enhanced to also include an assessment of the significance of this site, preferably with the input of a relevant specialist in this field, and in line with the guidance provided in Historic England's Military Structures Listing Selection Guide (Historic England 2017).

Public Rights of Way

The plan acknowledges that there are *Challenges around increasing cycle and footpath provision for leisure or commuting, including connecting to established routes* (p. 21). Ultimately sustainable travel should be a key element of the plan when looking at sites and should form a primary consideration of decision making when looking at sites and how access to and from them can be improved. There needs to be an aspiration to improve accessibility on the walking and cycling networks (including towpath links) throughout the District.

It is essential that the plan should strive to increase the levels of physical activity and the public rights of way network should be integral to any schemes that are developed to promote this.

The Plan Policies should recognise that any development needs to take appropriate mitigation to ensure the public path network is protected. In addition it should be recognised that there are likely to be many non-definitive routes across proposed development sites which should be considered by any applicants. In many cases these routes could have become rights of way by virtue of established usage over many years and should be treated as public. There will also be sites where such usage or historic evidence has already resulted in applications being made to the County Council under Section 53 of the Wildlife and Countryside Act 1981 to add or modify the Definitive Map of Public Rights of Way, which affects the land in question.

Where development is likely to affect the path network, either directly or indirectly, then section 106 funding and/or appropriate planning conditions improve the path network should be considered and provided for by Plan Policy. Where such instances occur developers should be encouraged to enhance the existing path network where possible in line with Staffordshire County Council's Rights of Way Improvement Plan.

This could include:

- the creation of public bridleways or the upgrading of public footpaths to bridleways to improve provision for horse riders and cyclists across Staffordshire where there is currently a shortfall in available access routes.
- the creation and promotion of short circular walks to promote the health benefits of walking
- the replacement of stiles with gaps (where there are no stock) or gates (where there are) in line with Staffordshire County Council's Least Restrictive Principle for path furniture

Flooding and Drainage

We have provided technical commentary on the sites being considered for allocation during the selection process so will not repeat those comments here.

Policy NB7 - Managing flood risk, sustainable drainage systems & water quality is supported and recognises the previous engagement with SCC in its role as Lead Local Flood Authority. We acknowledge reference in the Plan to the SCC SUDS Handbook in relation to drainage design. We'd like to ensure that this follows through into the final Policy wording to ensure that the SUDS Handbook is a material consideration in Planning decision making to ensure SUDS design, delivery and maintenance is properly addressed in new development.

In addition it would be useful if the supporting text could advise developer that SCC offer a Pre-App advice service and we encourage this practice to be used and has proven extremely useful in recent developments.

Digital Connectivity

It is noted that improving access to suitable broadband and digital communication networks is listed as an Issue/challenge fort the Plan. However, thereafter there is no mention of broadband or digital network in the Plan Polices.

Staffordshire County Council, and all the district councils have collaborated for the last eight years in ensuring Staffordshire reaches a high level of superfast broadband coverage. This has enabled 97% of premises to date, to be able to access this increasingly vital service.

Over that period we have seen Local Plans and Neighbourhood Plans with various different policy approaches to ensure new development delivered Superfast Broadband connectivity from the outset. However, during that time we have seen examples of development being built out without digital infrastructure being provided as part of construction and frustrated occupiers not being able to connect to a service. Where such instances occur, the problem is exacerbated by section 58 of the New Roads and Street Works Act 1991. This protects a street from any new excavations following any major surfacing works and can be in place for up to five. So, for newly adopted roads the restriction is in place from the outset meaning broadband providers cannot come in and lay cabling unless they are prepared to undertake full-width reinstatement of the footway, which is cost prohibitive. Hence the importance of installing digital connectivity infrastructure during build out.

Technology does not stand still. As internet applications expand in scale and volume, internet traffic is doubling every two years, meaning that the current limitations of digital connectivity will cease to be fit for purpose within the next ten years i.e. we need to move on from Superfast Broadband. Government is now talking about 'Gigabit Broadband' through the Industrial Strategy. This is delivered by gigabit-capable connections that can provide speeds of over 1000 megabits per second (Mbps). Gigabit-capable connections are often, but not always, delivered by full fibre connections and can also be delivered via technologies such as cable (DOCSIS 3.1) and fixed wireless access. Government approach is technology neutral and does not prescribe the type of technology that must be used, provided that it can provide speeds of over 1000 Mbps. However, for most instances full fibre will be the preferred means of delivery.

Government is clear that the provision of gigabit-capable connectivity to new build developments is crucial. A consultation in 2018 proposed to change building regulations to legislate for all new builds to have gigabit connectivity. However, subsequently the Government has secured commitments from network operators, outlining their commitment to work with housing developers on providing gigabit-capable connections to all new build developments across the UK. Although the exact mix of commercial delivery and publicly subsidised coverage is yet to be defined, results from an Open Market Review (OMR) from DCMS are expected by end of 2021, a common requirement will be facilitating (red carpet approach) wherever possible and practical, the means of operational delivery.

Given the uncertainty over where and when Government may head with Legislative changes what we'd like to work with you and agree suitable Policy drafting to ensure development is catered for by gigabit-capable connectivity. We can also provide signposting to Government and supplier guidance that could feature in the supporting text.

Climate Change

As noted earlier it is acknowledged that climate change is a key theme running through the Plan and is incorporated into a number of policies.

In relation to Policy NB5 - Renewable and low carbon energy generation. It is noted support is given for renewable energy schemes, such as wind and solar. Bullet point 3 provides for general support for on-shore wind and proposes removal of the areas of search set out in the core strategy. Given National Policy for on-shore wind implying sites need to be allocated in a Local Plan to be considered, is it the intention of Policy NB5 that whole of the District is to be considered potentially suitable for wind farm development subject to a criteria based assessment?

It is recognised that Policy NB5 confirms that renewable energy schemes in the green belt may be justified, where very special circumstances can be demonstrated. Given the extent of the Green Belt in the District and the limited location of connection points to the electricity grid will the Plan provide further guidance and/or clarity on what may constitute very special circumstances for Renewable Energy Development?

Staffordshire County Council

Yours sincerely

James Chadwick
Principal Planning Policy Officer

Enclosures:

- Walking & Cycling Proposals (x 11)
- Accessibility Plans (x 7)
- APPENDIX 1 - Evidence Base: Children and Families Health and Wellbeing, Staffordshire County Council
- South Staffs Health Needs Outcomes Nov21

APPENDIX D: DEVELOPMENT TRAFFIC FORECASTS

BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK 2

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
usual residence	E02006181 : South Staffordshire 008 (2011 super output area - middle layer)

Place of work: 2011 census merged local authority district	CODE	Usual Residence: South Staffordshire 008 – Driving a car or van	%	A: A449 NORTH	B: EAST OF A449 (BUSHBURY)	C: WEST OF A449 (INC i54)	D: THE DROVEWAY	E: M6 NORTH	F: A460 NORTH	G: M6 TOLL (OR A5 EAST)	H: M6 SOUTH	I: A449 SOUTH (CITY CTR)	J: LAWN LANE (& A5 EAST OF M6J12)	K: LOWER STREET	L: A41 EAST (CITY CTR)	M: B4161 SOUTH OF A41	N: A41 WEST	O: WOOD ROAD	P: M54 WEST	TOTAL
County Durham	E41000047	1	0.07%	0%	0%	0%	0%	50%	0%	30%	20%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Warrington	E41000007	1	0.07%	0%	0%	0%	0%	75%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	100%
Cheshire East	E41000049	2	0.13%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	100%
Cheshire West and Chester	E41000050	1	0.07%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	100%
Preston	E41000155	1	0.07%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Rochdale	E41000261	1	0.07%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Stockport	E41000263	1	0.07%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	100%
Knowsley	E41000267	2	0.13%	0%	0%	0%	0%	85%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	100%
St. Helens	E41000269	1	0.07%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
East Riding of Yorkshire	E41000011	1	0.07%	0%	0%	0%	0%	0%	0%	75%	25%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Rotherham	E41000274	1	0.07%	0%	0%	0%	0%	15%	0%	65%	20%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Bradford	E41000288	1	0.07%	0%	0%	0%	0%	75%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Calderdale	E41000289	2	0.13%	0%	0%	0%	0%	75%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Nottingham	E41000018	1	0.07%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
South Derbyshire	E41000078	3	0.20%	0%	0%	0%	0%	0%	0%	80%	20%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Charnwood	E41000162	1	0.07%	0%	0%	0%	0%	0%	0%	75%	25%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Harborough	E41000163	1	0.07%	0%	0%	0%	0%	0%	0%	20%	80%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Hinckley and Bosworth	E41000164	3	0.20%	0%	0%	0%	0%	0%	0%	60%	40%	0%	0%	0%	0%	0%	0%	0%	0%	100%
North West Leicestershire	E41000166	2	0.13%	0%	0%	0%	0%	0%	0%	70%	30%	0%	0%	0%	0%	0%	0%	0%	0%	100%
East Northamptonshire	E41000184	2	0.13%	0%	0%	0%	0%	0%	0%	15%	85%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Kettering	E41000185	4	0.26%	0%	0%	0%	0%	0%	0%	20%	80%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Northampton	E41000186	1	0.07%	0%	0%	0%	0%	0%	0%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	100%
South Northamptonshire	E41000187	1	0.07%	0%	0%	0%	0%	0%	0%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Ashfield	E41000196	1	0.07%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Telford and Wrekin	E41000020	86	5.61%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	100%
Stoke-on-Trent	E41000021	10	0.65%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	100%
Shropshire	E41000051	57	3.72%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	60%	100%
Cannock Chase	E41000213	41	2.67%	0%	0%	0%	0%	0%	40%	0%	0%	0%	60%	0%	0%	0%	0%	0%	0%	100%
East Staffordshire	E41000214	4	0.26%	60%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Lichfield	E41000215	20	1.30%	0%	0%	0%	0%	0%	0%	60%	0%	0%	40%	0%	0%	0%	0%	0%	0%	100%
Newcastle-under-Lyme	E41000216	5	0.33%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	100%
South Staffordshire 001	E02006174	18	1.17%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
South Staffordshire 002	E02006175	7	0.46%	50%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	100%
South Staffordshire 003	E02006176	22	1.44%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
South Staffordshire 004	E02006177	2	0.13%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
South Staffordshire 005	E02006178	3	0.20%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
South Staffordshire 006	E02006179	25	1.63%	50%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	100%
South Staffordshire 007	E02006180	6	0.39%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
South Staffordshire 008	E02006181	96	6.26%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
South Staffordshire 009	E02006182	51	3.33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
South Staffordshire 010	E02006183	12	0.78%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
South Staffordshire 011	E02006184	15	0.98%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
South Staffordshire 012	E02006185	9	0.59%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	100%
South Staffordshire 013	E02006186	11	0.72%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	100%
South Staffordshire 014	E02006187	2	0.13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Stafford	E41000218	41	2.67%	50%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Tamworth	E41000220	5	0.33%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
North Warwickshire	E41000239	5	0.33%	0%	0%	0%	0%	0%	0%	70%	30%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Rugby	E41000241	1	0.07%	0%	0%	0%	0%	0%	0%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Stratford-on-Avon	E41000242	2	0.13%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Warwick	E41000243	3	0.20%	0%	0%	0%	0%	0%	0%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Bromsgrove	E41000251	4	0.26%	0%	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	10%	20%	0%	0%	0%	100%
Redditch	E41000253	3	0.20%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wychavon	E41000255	3	0.20%	0%	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	10%	20%	0%	0%	0%	100%
Wyre Forest	E41000256	5	0.33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Birmingham	E41000281	55	3.59%	0%	0%	0%	0%	0%	0%	0%	70%	30%	0%	0%	0%	0%	0%	0%	0%	100%
Coventry	E41000282	4	0.26%	0%	0%	0%	0%	0%	0%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Dudley	E41000283	69	4.50%	0%	0%	0%	0%	0%	0%	0%	10%	25%	0%	0%	25%	40%	0%	0%	0%	100%
Sandwell	E41000284	50	3.26%	0%	0%	0%	0%	0%	0%	0%	60%	40%	0%	0%	0%	0%	0%	0%	0%	100%
Solihull	E41000285	11	0.72%	0%	0%	0%	0%	0%	0%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Walsall	E41000286	102	6.65%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 001	E02002149	16	1.04%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 002	E02002150	61	3.98%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 003	E02002151	9	0.59%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 004	E02002152	8	0.52%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 005	E02002153	1	0.07%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 006	E02002154	12	0.78%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 007	E02002155	8	0.52%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 008	E02002156	6	0.39%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 009	E02002157	23	1.50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
Wolverhampton 010	E02002158	6	0.39%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 011	E02002159	10	0.65%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 012	E02002160	32	2.09%	0%	50%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 013	E02002161	19	1.24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
Wolverhampton 014	E02002162	25	1.63%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Wolverhampton 015	E02002163	54	3.52%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 016	E02002164	10	0.65%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 017	E02002165	42	2.74%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Wolverhampton 018	E02002166	20	1.30%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	100%
Wolverhampton 019	E02002167	15	0.98%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Wolverhampton 020	E02002168	130	8.48%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
Wolverhampton 021	E02002169	16	1.04%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Wolverhampton 022	E02002170	0	0.00%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	100%
Wolverhampton 023	E02002171	4	0.26%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	100%
Wolverhampton 026	E02002174	2	0.13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Wolverhampton 027	E02002175	9	0.59%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Wolverhampton 028	E02002176	6	0.39%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Wolverhampton 029	E02002177	19	1.24%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	100%
Wolverhampton 030	E02002178	1	0.07%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Wolverhampton 031	E02002179	7	0.46%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
Wolverhampton 032	E02002180	6	0.39%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	100%
Wolverhampton 033	E02002181	4	0.26%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	100%
Wolverhampton 034	E02002182	0	0.00%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%	0%	100%
Wolverhampton 035	E02006894	24	1.57%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%	30%	0%	0%	0%	100%
Peterborough	E41000031	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Chelmsford	E41000102	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Epping Forest	E41000104	2	0.13%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Uttlesford	E41000109	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
East Hertfordshire	E41000129	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Welwyn Hatfield	E41000136	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Barnet	E41000294	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Merton	E41000315	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Newham	E41000316	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Richmond upon Thames	E41000318	2	0.13%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Westminster,City of London	E41000324	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Milton Keynes	E41000042	2	0.13%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Portsmouth	E41000044	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Aylesbury Vale	E41000056	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
South Bucks	E41000058	2	0.13%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Wycombe	E41000059	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Dartford	E41000139	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
West Oxfordshire	E41000207	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Plymouth	E41000026	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Cheltenham	E41000110	2	0.13%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Stroud	E41000114	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
West Somerset	E41000212	1	0.07%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Total		**1,533**	**100.00%**																	

Place of work	A: A449 NORTH	B: EAST OF A449 (BUSHBURY)	C: WEST OF A449 (INC i54)	D: THE DROVEWAY	E: M6 NORTH	F: A460 NORTH	G: M6 TOLL (OR A5 EAST)	H: M6 SOUTH	I: A449 SOUTH (CITY CTR)	J: LAWN LANE (& A5 EAST OF M6J12)	K: LOWER STREET	L: A41 EAST (CITY CTR)	M: B4161 SOUTH OF A41	N: A41 WEST	O: WOOD ROAD	P: M54 WEST	TOTAL	*CHECK*
County Durham	0.00%	0.00%	0.00%	0.00%	0.03%	0.00%	0.02%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Warrington	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	**0.07%**	*OK*
Cheshire East	0.00%	0.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	**0.13%**	*OK*
Cheshire West and Chester	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	**0.07%**	*OK*
Preston	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Rochdale	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Stockport	0.00%	0.00%	0.00%	0.00%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	**0.07%**	*OK*
Knowsley	0.00%	0.00%	0.00%	0.00%	0.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	**0.13%**	*OK*
St. Helens	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
East Riding of Yorkshire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Rotherham	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.04%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Bradford	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Calderdale	0.00%	0.00%	0.00%	0.00%	0.10%	0.00%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Nottingham	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
South Derbyshire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.16%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.20%**	*OK*
Charnwood	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Harborough	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Hinckley and Bosworth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.12%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.20%**	*OK*
North West Leicestershire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.09%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
East Northamptonshire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Kettering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.21%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.26%**	*OK*
Northampton	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
South Northamptonshire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Ashfield	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Telford and Wrekin	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.80%	0.00%	2.80%	**5.61%**	*OK*
Stoke-on-Trent	0.00%	0.00%	0.00%	0.00%	0.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	**0.65%**	*OK*
Shropshire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	0.00%	2.23%	**3.72%**	*OK*
Cannock Chase	0.00%	0.00%	0.00%	0.00%	0.00%	1.07%	0.00%	0.00%	0.00%	1.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**2.67%**	*OK*
East Staffordshire	0.16%	0.00%	0.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.26%**	*OK*
Lichfield	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.78%	0.00%	0.00%	0.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**1.30%**	*OK*
Newcastle-under-Lyme	0.00%	0.00%	0.00%	0.00%	0.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	**0.33%**	*OK*
South Staffordshire 001	1.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**1.17%**	*OK*
South Staffordshire 002	0.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.46%**	*OK*
South Staffordshire 003	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%	0.00%	**1.44%**	*OK*
South Staffordshire 004	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
South Staffordshire 005	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.20%**	*OK*
South Staffordshire 006	0.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**1.63%**	*OK*
South Staffordshire 007	0.00%	0.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.39%**	*OK*
South Staffordshire 008	0.00%	0.00%	6.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**6.26%**	*OK*
South Staffordshire 009	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.33%	0.00%	0.00%	**3.33%**	*OK*
South Staffordshire 010	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.78%	0.00%	0.00%	**0.78%**	*OK*
South Staffordshire 011	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.98%	0.00%	0.00%	**0.98%**	*OK*
South Staffordshire 012	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.29%	0.29%	0.00%	0.00%	0.00%	**0.59%**	*OK*
South Staffordshire 013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.36%	0.36%	0.00%	0.00%	0.00%	**0.72%**	*OK*
South Staffordshire 014	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Stafford	1.34%	0.00%	0.00%	0.00%	1.34%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**2.67%**	*OK*
Tamworth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.33%**	*OK*
North Warwickshire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.23%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.33%**	*OK*
Rugby	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Stratford-on-Avon	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Warwick	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.06%	0.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.20%**	*OK*
Bromsgrove	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%	0.00%	0.00%	0.00%	0.03%	0.05%	0.00%	0.00%	0.00%	**0.26%**	*OK*
Redditch	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.20%**	*OK*
Wychavon	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.14%	0.00%	0.00%	0.00%	0.02%	0.04%	0.00%	0.00%	0.00%	**0.20%**	*OK*
Wyre Forest	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.33%	0.00%	0.00%	0.00%	**0.33%**	*OK*
Birmingham	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.51%	1.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**3.59%**	*OK*
Coventry	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.08%	0.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.26%**	*OK*
Dudley	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.45%	1.13%	0.00%	0.00%	1.13%	1.80%	0.00%	0.00%	0.00%	**4.50%**	*OK*
Sandwell	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.96%	1.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**3.26%**	*OK*
Solihull	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.22%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.72%**	*OK*
Walsall	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**6.65%**	*OK*
Wolverhampton 001	0.00%	1.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**1.04%**	*OK*
Wolverhampton 002	0.00%	0.00%	3.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**3.98%**	*OK*
Wolverhampton 003	0.00%	0.00%	0.00%	0.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.59%**	*OK*
Wolverhampton 004	0.00%	0.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.52%**	*OK*
Wolverhampton 005	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Wolverhampton 006	0.00%	0.00%	0.00%	0.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.78%**	*OK*
Wolverhampton 007	0.00%	0.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.52%**	*OK*
Wolverhampton 008	0.00%	0.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.39%**	*OK*
Wolverhampton 009	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.50%	0.00%	0.00%	0.00%	0.00%	0.00%	**1.50%**	*OK*
Wolverhampton 010	0.00%	0.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.39%**	*OK*
Wolverhampton 011	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.65%**	*OK*
Wolverhampton 012	0.00%	1.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**2.09%**	*OK*
Wolverhampton 013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.24%	0.00%	0.00%	0.00%	0.00%	0.00%	**1.24%**	*OK*
Wolverhampton 014	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.63%	0.00%	0.00%	0.00%	**1.63%**	*OK*
Wolverhampton 015	0.00%	3.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**3.52%**	*OK*
Wolverhampton 016	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.65%**	*OK*
Wolverhampton 017	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.74%	0.00%	0.00%	0.00%	0.00%	**2.74%**	*OK*
Wolverhampton 018	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.65%	0.00%	0.65%	0.00%	0.00%	0.00%	0.00%	0.00%	**1.30%**	*OK*
Wolverhampton 019	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.98%	0.00%	0.00%	0.00%	**0.98%**	*OK*
Wolverhampton 020	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.48%	0.00%	0.00%	0.00%	0.00%	**8.48%**	*OK*
Wolverhampton 021	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.04%	0.00%	0.00%	0.00%	**1.04%**	*OK*
Wolverhampton 022	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**	*OK*
Wolverhampton 023	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.26%**	*OK*
Wolverhampton 026	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Wolverhampton 027	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.59%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.59%**	*OK*
Wolverhampton 028	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.39%	0.00%	0.00%	0.00%	**0.39%**	*OK*
Wolverhampton 029	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.62%	0.00%	0.62%	0.00%	0.00%	0.00%	0.00%	0.00%	**1.24%**	*OK*
Wolverhampton 030	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Wolverhampton 031	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.46%	0.00%	0.00%	0.00%	**0.46%**	*OK*
Wolverhampton 032	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.39%**	*OK*
Wolverhampton 033	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.26%**	*OK*
Wolverhampton 034	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**	*OK*
Wolverhampton 035	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.10%	0.47%	0.00%	0.00%	0.00%	**1.57%**	*OK*
Peterborough	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Chelmsford	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Epping Forest	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Uttlesford	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
East Hertfordshire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Welwyn Hatfield	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Barnet	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Merton	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Newham	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Richmond upon Thames	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Westminster,City of London	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Milton Keynes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Portsmouth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Aylesbury Vale	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
South Bucks	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Wycombe	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Dartford	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
West Oxfordshire	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Plymouth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Cheltenham	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.13%**	*OK*
Stroud	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
West Somerset	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**0.07%**	*OK*
Total	**3.7%**	**7.9%**	**10.2%**	**1.4%**	**2.9%**	**1.5%**	**2.5%**	**15.6%**	**8.2%**	**3.2%**	**4.5%**	**14.1%**	**8.2%**	**9.4%**	**1.4%**	**5.3%**	**100.00%**	*100.0%*

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.

Total check 1,533

SCC TRIP RATES	AM	PM	EAST OF BILBROOK AM	EAST OF BILBROOK PM	PERTON AM	PERTON PM
IN	0.108	0.328	92	278	34	104
OUT	0.339	0.158	287	134	107	50
2-WAY	**0.447**	**0.486**	**379**	**412**	**142**	**154**

Dwellings	
Bilbrook	848
Perton	317
	1165

Distribution

EAST OF BILBROOK

ROUTE	%	CORDON POINT/AREA	AM	PM
A: A449 NORTH	3.7%	North of A5	14	15
B: EAST OF A449	7.9%	Bushbury, Wednesfield areas	30	33
C: WEST OF A449	10.2%	i54 employment areas	39	42
D: THE DROVEWAY	1.4%	Pendeford area	5	6
E: M6 NORTH	2.9%	North of A5	11	12
F: A460 NORTH	1.5%	North of A5	6	6
G: M6 TOLL & A5 EAST	2.5%	East of Cannock	10	10
H: M6 SOUTH	15.6%	South of M54	59	64
I: A449 SOUTH (CITY CTR)	8.2%	North of Ring Road	31	34
J: LAWN LANE & COVEN	3.2%	A5 east of J12	12	13
K: LOWER STREET	4.5%	Claregate, Aldersley areas	17	18
L: A41 EAST (CITY CTR)	14.1%	West of Ring Road	54	58
M: B4161 HENWOOD ROAD	8.2%	South of A41	31	34
N: A41 WEST	9.4%	South of M54 Junction 3	36	39
O: WOOD ROAD	1.4%	Codsall Wood area	5	6
P: M54 WEST	5.3%	East of Junction 3	20	22
TOTAL	**100%**		**379**	**412**

A, E, F, G, H, P	31.6%	via M54J2
B, C, D, I, K	32.1%	Wolverhampton city area
L, M	22.3%	A41, B4161 west of city centre
B, I	16.1%	A449 south corridor
A, C, J	17.1%	i54 and Lawn Lane
K, L, M	26.8%	Codsall Road south
N, O	10.8%	Towards Codall and west

C22001 LAND EAST OF BILBROOK

TRANSPORT ASSESSMENT SCOPING STUDY

DEVELOPMENT TRAFFIC FLOWS **AM PEAK HOUR** **BILBROOK SITE**
VEHICLES 08:00 TO 09:00

Distribution

ROUTE		IN	OUT	2-WAY
A	3.7%	3	11	**14**
B	7.9%	7	23	**30**
C	10.2%	9	29	**39**
D	1.4%	1	4	**5**
E	2.9%	3	8	**11**
F	1.5%	1	4	**6**
G	2.5%	2	7	**10**
H	15.6%	14	45	**59**
I	8.2%	7	23	**31**
J	3.2%	3	9	**12**
K	4.5%	4	13	**17**
L	14.1%	13	41	**54**
M	8.2%	7	23	**31**
N	9.4%	9	27	**36**
O	1.4%	1	4	**5**
P	5.3%	5	15	**20**
TOTAL	**100%**	**92**	**287**	**379**
CHECK CORDON		*92*	*287*	

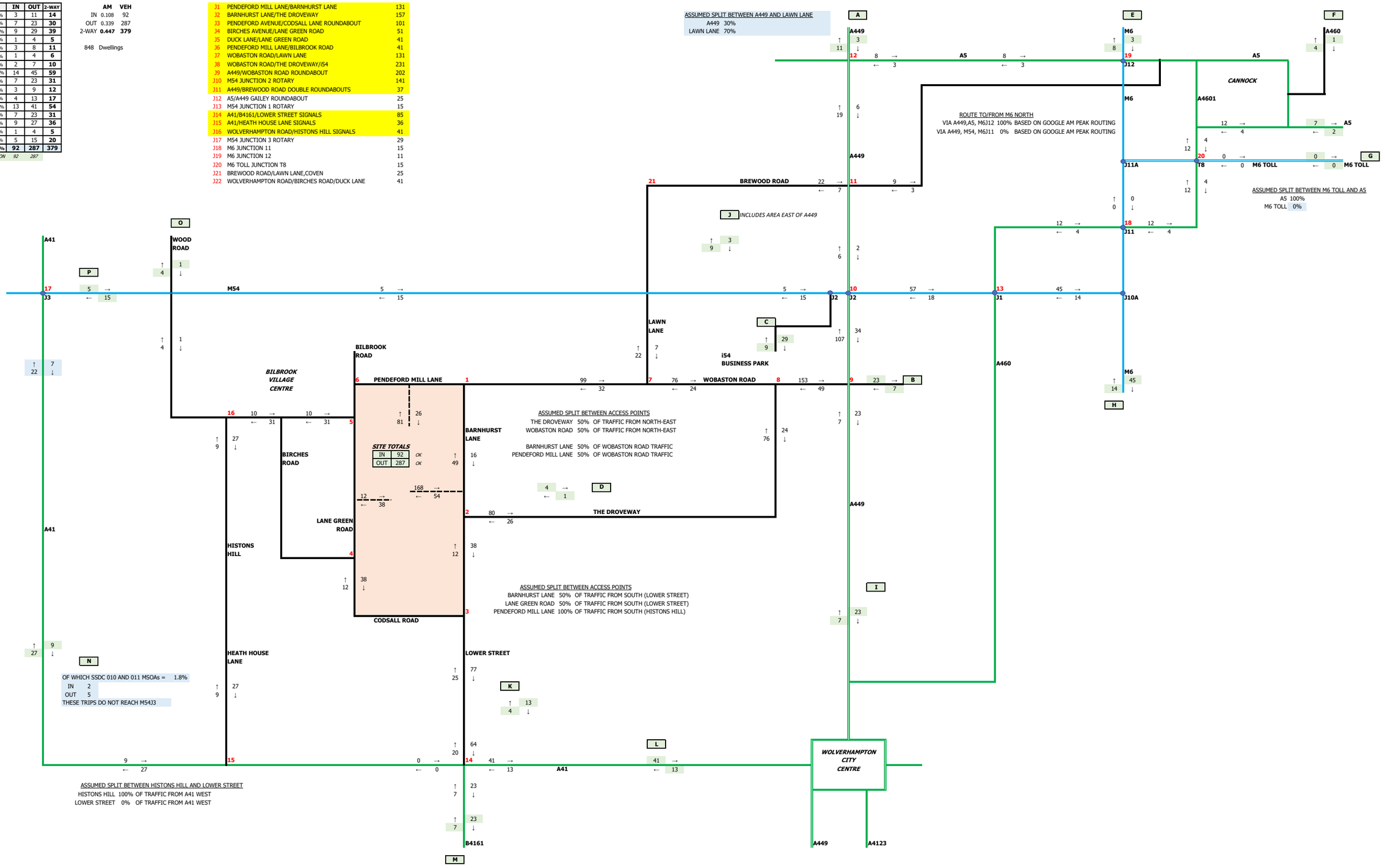
SCC TRIP RATES

	AM	VEH
IN	0.108	92
OUT	0.339	287
2-WAY	**0.447**	**379**

848 Dwellings

JUNCTION IMPACTS **Total Inflow (Vehicles)**

J1	PENDEFORD MILL LANE/BARNHURST LANE	131
J2	BARNHURST LANE/THE DROVEWAY	157
J3	PENDEFORD AVENUE/CODSALL LANE ROUNDABOUT	101
J4	BIRCHES AVENUE/LANE GREEN ROAD	51
J5	DUCK LANE/LANE GREEN ROAD	41
J6	PENDEFORD MILL LANE/BILBROOK ROAD	41
J7	WOBASTON ROAD/LAWN LANE	131
J8	WOBASTON ROAD/THE DROVEWAY/i54	231
J9	A449/WOBASTON ROAD ROUNDABOUT	202
J10	M54 JUNCTION 2 ROTARY	141
J11	A449/BREWOOD ROAD DOUBLE ROUNDABOUTS	37
J12	A5/A449 GAILEY ROUNDABOUT	25
J13	M54 JUNCTION 1 ROTARY	15
J14	A41/B4161/LOWER STREET SIGNALS	85
J15	A41/HEATH HOUSE LANE SIGNALS	36
J16	WOLVERHAMPTON ROAD/HISTONS HILL SIGNALS	41
J17	M54 JUNCTION 3 ROTARY	29
J18	M6 JUNCTION 11	15
J19	M6 JUNCTION 12	11
J20	M6 TOLL JUNCTION T8	15
J21	BREWOOD ROAD/LAWN LANE,COVEN	25
J22	WOLVERHAMPTON ROAD/BIRCHES ROAD/DUCK LANE	41



C22001 LAND EAST OF BILBROOK

TRANSPORT ASSESSMENT SCOPING STUDY

DEVELOPMENT TRAFFIC FLOWS **PM PEAK HOUR** **BILBROOK SITE**
VEHICLES 17:00 TO 18:00

Distribution

ROUTE		IN	OUT	2-WAY
A	3.7%	10	5	**15**
B	7.9%	22	11	**33**
C	10.2%	28	14	**42**
D	1.4%	4	2	**6**
E	2.9%	8	4	**12**
F	1.5%	4	2	**6**
G	2.5%	7	3	**10**
H	15.6%	43	21	**64**
I	8.2%	23	11	**34**
J	3.2%	9	4	**13**
K	4.5%	12	6	**18**
L	14.1%	39	19	**58**
M	8.2%	23	11	**34**
N	9.4%	26	13	**39**
O	1.4%	4	2	**6**
P	5.3%	15	7	**22**
TOTAL	**100%**	**278**	**134**	**412**
CHECK CORDON		*278*	*134*	

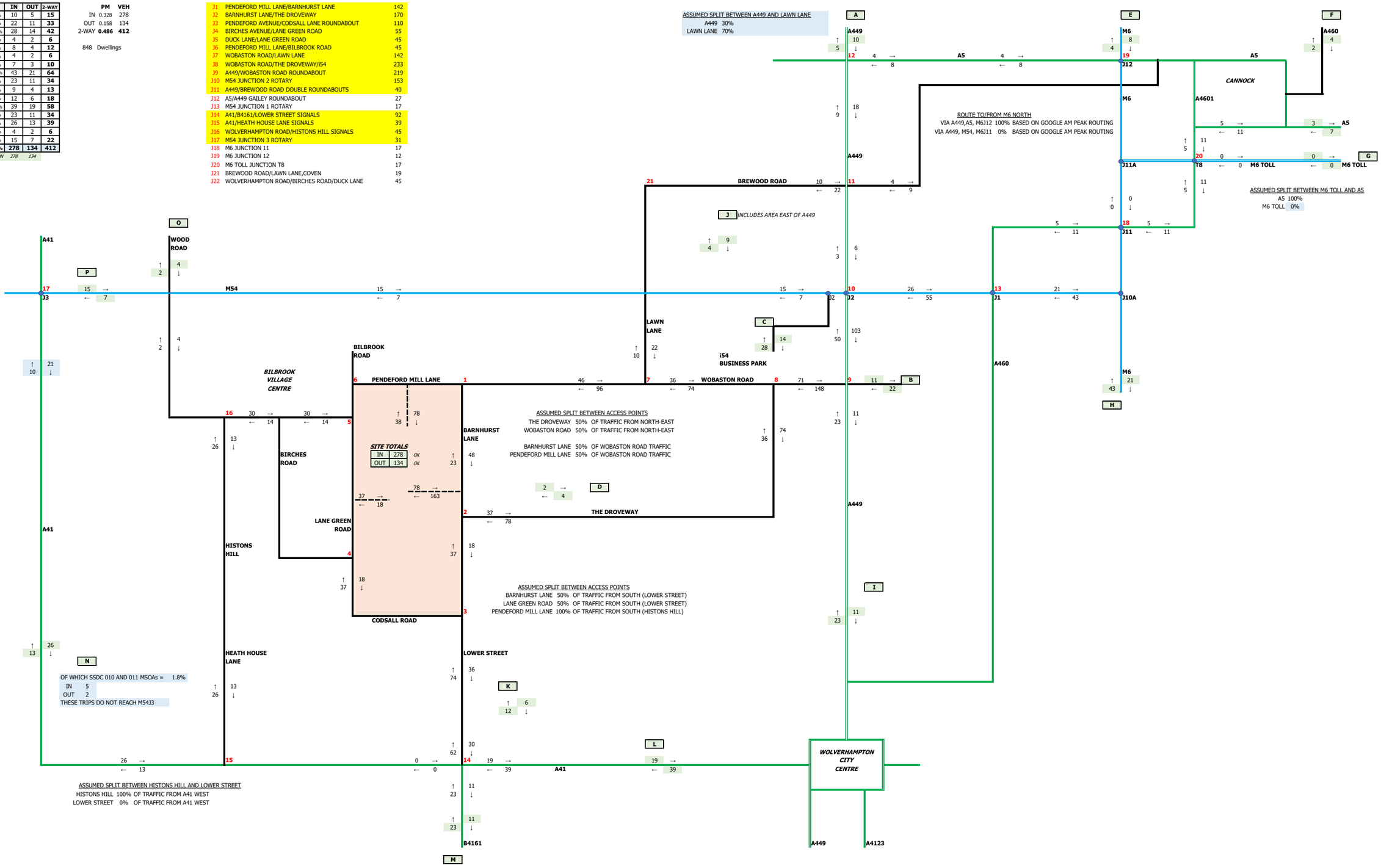
SCC TRIP RATES

	PM	VEH
IN	0.328	278
OUT	0.158	134
2-WAY	**0.486**	**412**

848 Dwellings

JUNCTION IMPACTS **Total Inflow (Vehicles)**

J1	PENDEFORD MILL LANE/BARNHURST LANE	142
J2	BARNHURST LANE/THE DROVEWAY	170
J3	PENDEFORD AVENUE/CODSALL LANE ROUNDABOUT	110
J4	BIRCHES AVENUE/LANE GREEN ROAD	55
J5	DUCK LANE/LANE GREEN ROAD	45
J6	PENDEFORD MILL LANE/BILBROOK ROAD	45
J7	WOBASTON ROAD/LAWN LANE	142
J8	WOBASTON ROAD/THE DROVEWAY/i54	233
J9	A449/WOBASTON ROAD ROUNDABOUT	219
J10	M54 JUNCTION 2 ROTARY	153
J11	A449/BREWOOD ROAD DOUBLE ROUNDABOUTS	40
J12	A5/A449 GAILEY ROUNDABOUT	27
J13	M54 JUNCTION 1 ROTARY	17
J14	A41/B4161/LOWER STREET SIGNALS	92
J15	A41/HEATH HOUSE LANE SIGNALS	39
J16	WOLVERHAMPTON ROAD/HISTONS HILL SIGNALS	45
J17	M54 JUNCTION 3 ROTARY	31
J18	M6 JUNCTION 11	17
J19	M6 JUNCTION 12	12
J20	M6 TOLL JUNCTION T8	17
J21	BREWOOD ROAD/LAWN LANE,COVEN	19
J22	WOLVERHAMPTON ROAD/BIRCHES ROAD/DUCK LANE	45



C22001 LAND EAST OF BILBROOK

TRANSPORT ASSESSMENT SCOPING STUDY

DEVELOPMENT TRAFFIC FLOWS **AM PEAK HOUR** **CODSALL SITE**
VEHICLES 08:00 TO 09:00

Distribution

ROUTE		IN	OUT	2-WAY
A	3.7%	1	4	**5**
B	7.9%	3	8	**11**
C	10.2%	4	11	**15**
D	1.4%	0	1	**2**
E	2.9%	1	3	**4**
F	1.5%	1	2	**2**
G	2.5%	1	3	**4**
H	15.6%	5	17	**22**
I	8.2%	3	9	**12**
J	3.2%	1	3	**4**
K	4.5%	2	5	**6**
L	14.1%	5	15	**20**
M	8.2%	3	9	**12**
N	9.4%	3	10	**13**
O	1.4%	0	2	**2**
P	5.3%	2	6	**7**
TOTAL	**100%**	**34**	**107**	**142**
CHECK CORDON		*34*	*107*	

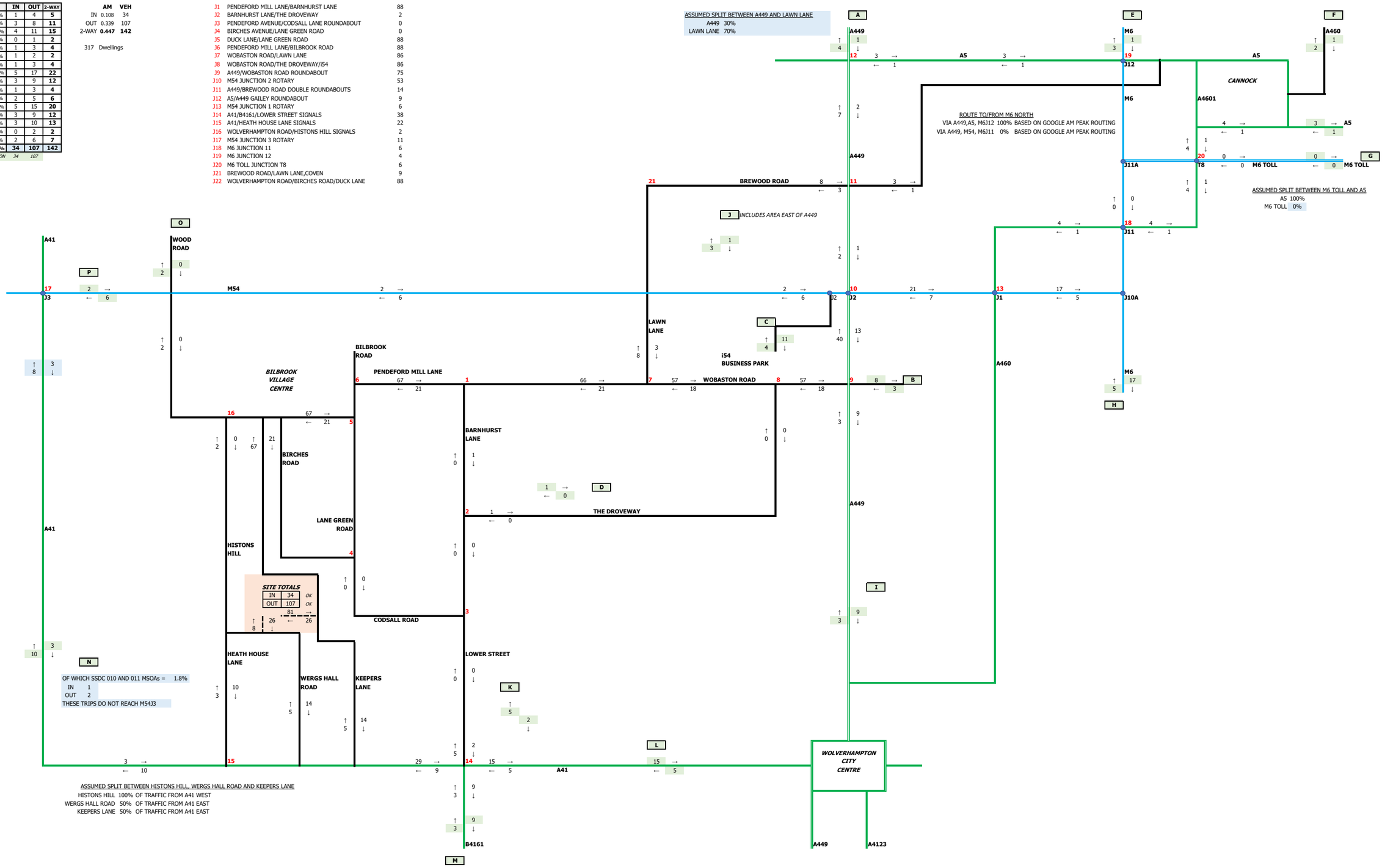
SCC TRIP RATES

	AM	VEH
IN	0.108	34
OUT	0.339	107
2-WAY	**0.447**	**142**

317 Dwellings

JUNCTION IMPACTS **Total Inflow (Vehicles)**

J1	PENDEFORD MILL LANE/BARNHURST LANE	88
J2	BARNHURST LANE/THE DROVEWAY	2
J3	PENDEFORD AVENUE/CODSALL LANE ROUNDABOUT	0
J4	BIRCHES AVENUE/LANE GREEN ROAD	0
J5	DUCK LANE/LANE GREEN ROAD	88
J6	PENDEFORD MILL LANE/BILBROOK ROAD	88
J7	WOBASTON ROAD/LAWN LANE	86
J8	WOBASTON ROAD/THE DROVEWAY/i54	86
J9	A449/WOBASTON ROAD ROUNDABOUT	75
J10	M54 JUNCTION 2 ROTARY	53
J11	A449/BREWOOD ROAD DOUBLE ROUNDABOUTS	14
J12	A5/A449 GAILEY ROUNDABOUT	9
J13	M54 JUNCTION 1 ROTARY	6
J14	A41/B4161/LOWER STREET SIGNALS	38
J15	A41/HEATH HOUSE LANE SIGNALS	22
J16	WOLVERHAMPTON ROAD/HISTONS HILL SIGNALS	2
J17	M54 JUNCTION 3 ROTARY	11
J18	M6 JUNCTION 11	6
J19	M6 JUNCTION 12	4
J20	M6 TOLL JUNCTION T8	6
J21	BREWOOD ROAD/LAWN LANE,COVEN	9
J22	WOLVERHAMPTON ROAD/BIRCHES ROAD/DUCK LANE	88



C22001 LAND EAST OF BILBROOK

TRANSPORT ASSESSMENT SCOPING STUDY

DEVELOPMENT TRAFFIC FLOWS **PM PEAK HOUR** **CODSALL SITE**
VEHICLES 17:00 TO 18:00

Distribution

ROUTE		IN	OUT	2-WAY
A	3.7%	4	2	**6**
B	7.9%	8	4	**12**
C	10.2%	11	5	**16**
D	1.4%	1	1	**2**
E	2.9%	3	1	**5**
F	1.5%	2	1	**2**
G	2.5%	3	1	**4**
H	15.6%	16	8	**24**
I	8.2%	8	4	**13**
J	3.2%	3	2	**5**
K	4.5%	5	2	**7**
L	14.1%	15	7	**22**
M	8.2%	8	4	**13**
N	9.4%	10	5	**14**
O	1.4%	1	1	**2**
P	5.3%	5	3	**8**
TOTAL	**100%**	**104**	**50**	**154**
CHECK CORDON		*104*	*50*	

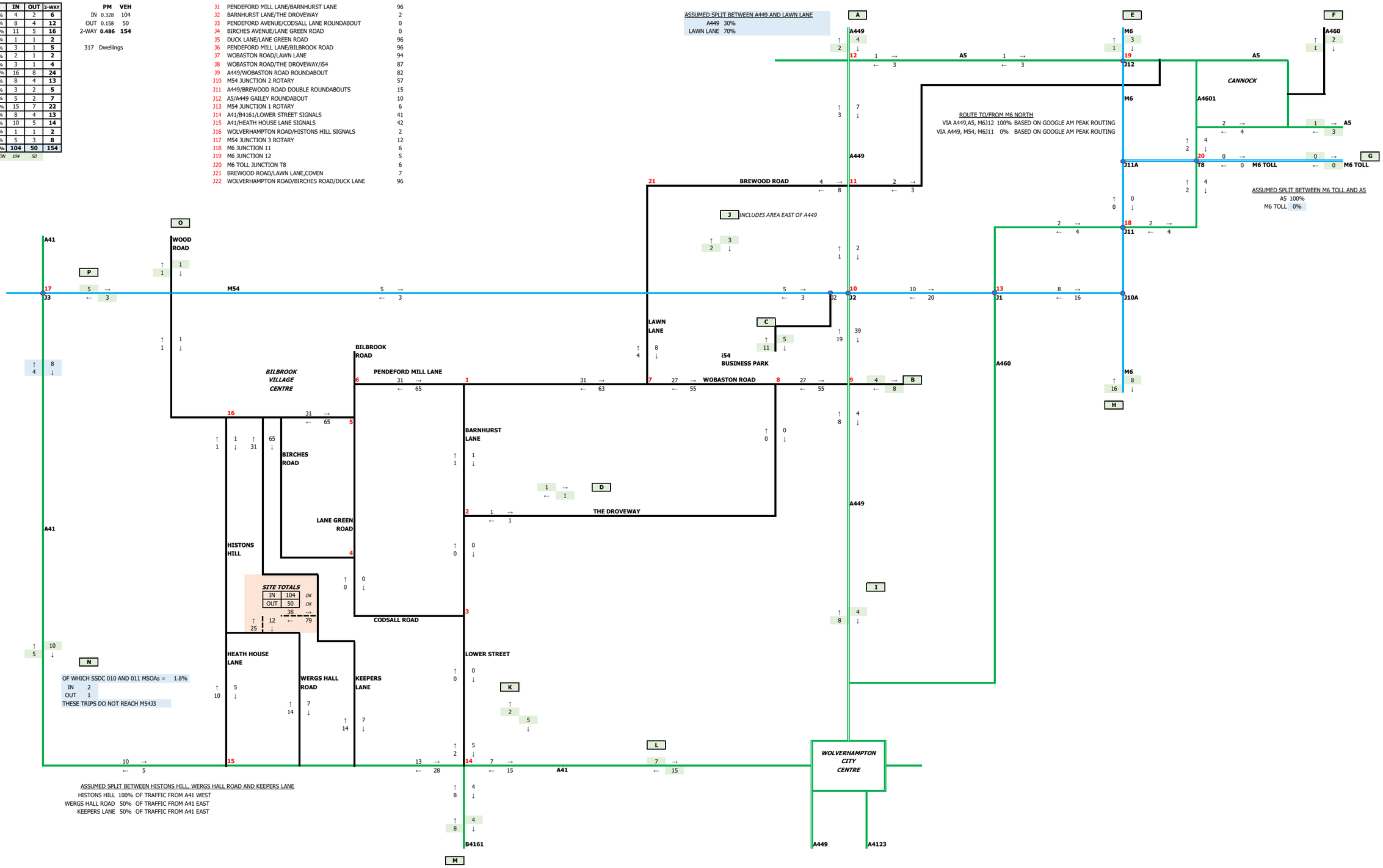
SCC TRIP RATES

	PM	VEH
IN	0.328	104
OUT	0.158	50
2-WAY	**0.486**	**154**

317 Dwellings

JUNCTION IMPACTS **Total Inflow (Vehicles)**

J1	PENDEFORD MILL LANE/BARNHURST LANE	96
J2	BARNHURST LANE/THE DROVEWAY	2
J3	PENDEFORD AVENUE/CODSALL LANE ROUNDABOUT	0
J4	BIRCHES AVENUE/LANE GREEN ROAD	0
J5	DUCK LANE/LANE GREEN ROAD	96
J6	PENDEFORD MILL LANE/BILBROOK ROAD	96
J7	WOBASTON ROAD/LAWN LANE	94
J8	WOBASTON ROAD/THE DROVEWAY/i54	87
J9	A449/WOBASTON ROAD ROUNDABOUT	82
J10	M54 JUNCTION 2 ROTARY	57
J11	A449/BREWOOD ROAD DOUBLE ROUNDABOUTS	15
J12	A5/A449 GAILEY ROUNDABOUT	10
J13	M54 JUNCTION 1 ROTARY	6
J14	A41/B4161/LOWER STREET SIGNALS	41
J15	A41/HEATH HOUSE LANE SIGNALS	42
J16	WOLVERHAMPTON ROAD/HISTONS HILL SIGNALS	2
J17	M54 JUNCTION 3 ROTARY	12
J18	M6 JUNCTION 11	6
J19	M6 JUNCTION 12	5
J20	M6 TOLL JUNCTION T8	6
J21	BREWOOD ROAD/LAWN LANE,COVEN	7
J22	WOLVERHAMPTON ROAD/BIRCHES ROAD/DUCK LANE	96



C22001 LAND EAST OF BILBROOK

TRANSPORT ASSESSMENT SCOPING STUDY

DEVELOPMENT TRAFFIC FLOWS **AM PEAK HOUR** **STATION ROAD SITE**
VEHICLES 08:00 TO 09:00

Distribution

ROUTE		IN	OUT	2-WAY
A	3.7%	0	1	**1**
B	7.9%	1	2	**2**
C	10.2%	1	2	**3**
D	1.4%	0	0	**0**
E	2.9%	0	1	**1**
F	1.5%	0	0	**0**
G	2.5%	0	1	**1**
H	15.6%	1	4	**5**
I	8.2%	1	2	**3**
J	3.2%	0	1	**1**
K	4.5%	0	1	**1**
L	14.1%	1	3	**4**
M	8.2%	1	2	**3**
N	9.4%	1	2	**3**
O	1.4%	0	0	**0**
P	5.3%	0	1	**2**
TOTAL	**100%**	**8**	**24**	**31**
CHECK CORDON		*8*	*24*	

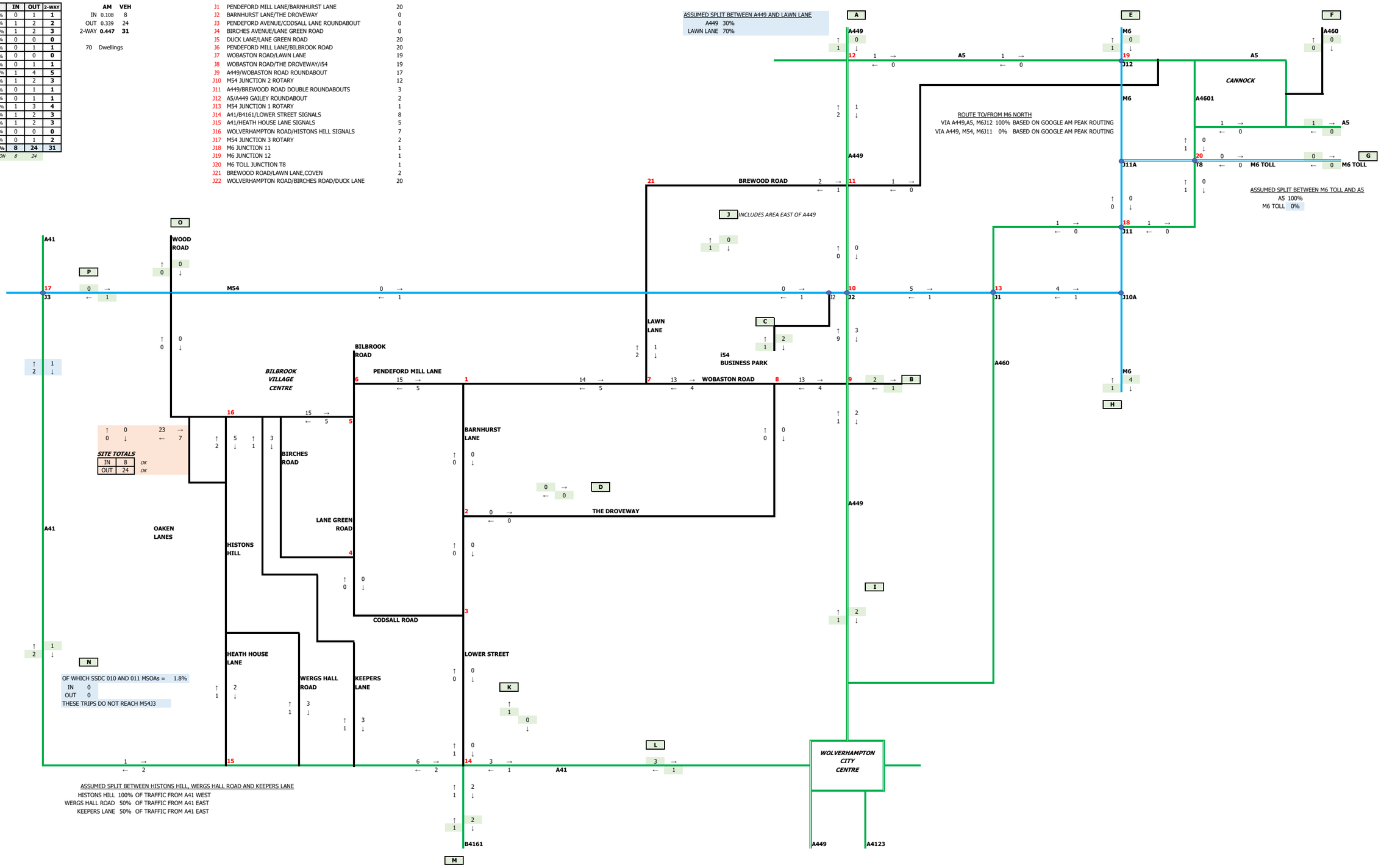
SCC TRIP RATES

	AM	VEH
IN	0.108	8
OUT	0.339	24
2-WAY	**0.447**	**31**

70 Dwellings

JUNCTION IMPACTS **Total Inflow (Vehicles)**

J1	PENDEFORD MILL LANE/BARNHURST LANE	20
J2	BARNHURST LANE/THE DROVEWAY	0
J3	PENDEFORD AVENUE/CODSALL LANE ROUNDABOUT	0
J4	BIRCHES AVENUE/LANE GREEN ROAD	0
J5	DUCK LANE/LANE GREEN ROAD	20
J6	PENDEFORD MILL LANE/BILBROOK ROAD	20
J7	WOBASTON ROAD/LAWN LANE	19
J8	WOBASTON ROAD/THE DROVEWAY/i54	19
J9	A449/WOBASTON ROAD ROUNDABOUT	17
J10	M54 JUNCTION 2 ROTARY	12
J11	A449/BREWOOD ROAD DOUBLE ROUNDABOUTS	3
J12	A5/A449 GAILEY ROUNDABOUT	2
J13	M54 JUNCTION 1 ROTARY	1
J14	A41/B4161/LOWER STREET SIGNALS	8
J15	A41/HEATH HOUSE LANE SIGNALS	5
J16	WOLVERHAMPTON ROAD/HISTONS HILL SIGNALS	7
J17	M54 JUNCTION 3 ROTARY	2
J18	M6 JUNCTION 11	1
J19	M6 JUNCTION 12	1
J20	M6 TOLL JUNCTION T8	1
J21	BREWOOD ROAD/LAWN LANE,COVEN	2
J22	WOLVERHAMPTON ROAD/BIRCHES ROAD/DUCK LANE	20



C22001 LAND EAST OF BILBROOK

TRANSPORT ASSESSMENT SCOPING STUDY

DEVELOPMENT TRAFFIC FLOWS **PM PEAK HOUR** **STATION ROAD SITE**
VEHICLES 17:00 TO 18:00

Distribution

ROUTE		IN	OUT	2-WAY
A	3.7%	1	0	**1**
B	7.9%	2	1	**3**
C	10.2%	2	1	**3**
D	1.4%	0	0	**0**
E	2.9%	1	0	**1**
F	1.5%	0	0	**1**
G	2.5%	1	0	**1**
H	15.6%	4	2	**5**
I	8.2%	2	1	**3**
J	3.2%	1	0	**1**
K	4.5%	1	0	**2**
L	14.1%	3	2	**5**
M	8.2%	2	1	**3**
N	9.4%	2	1	**3**
O	1.4%	0	0	**0**
P	5.3%	1	1	**2**
TOTAL	**100%**	**23**	**11**	**34**
CHECK CORDON		*23*	*11*	

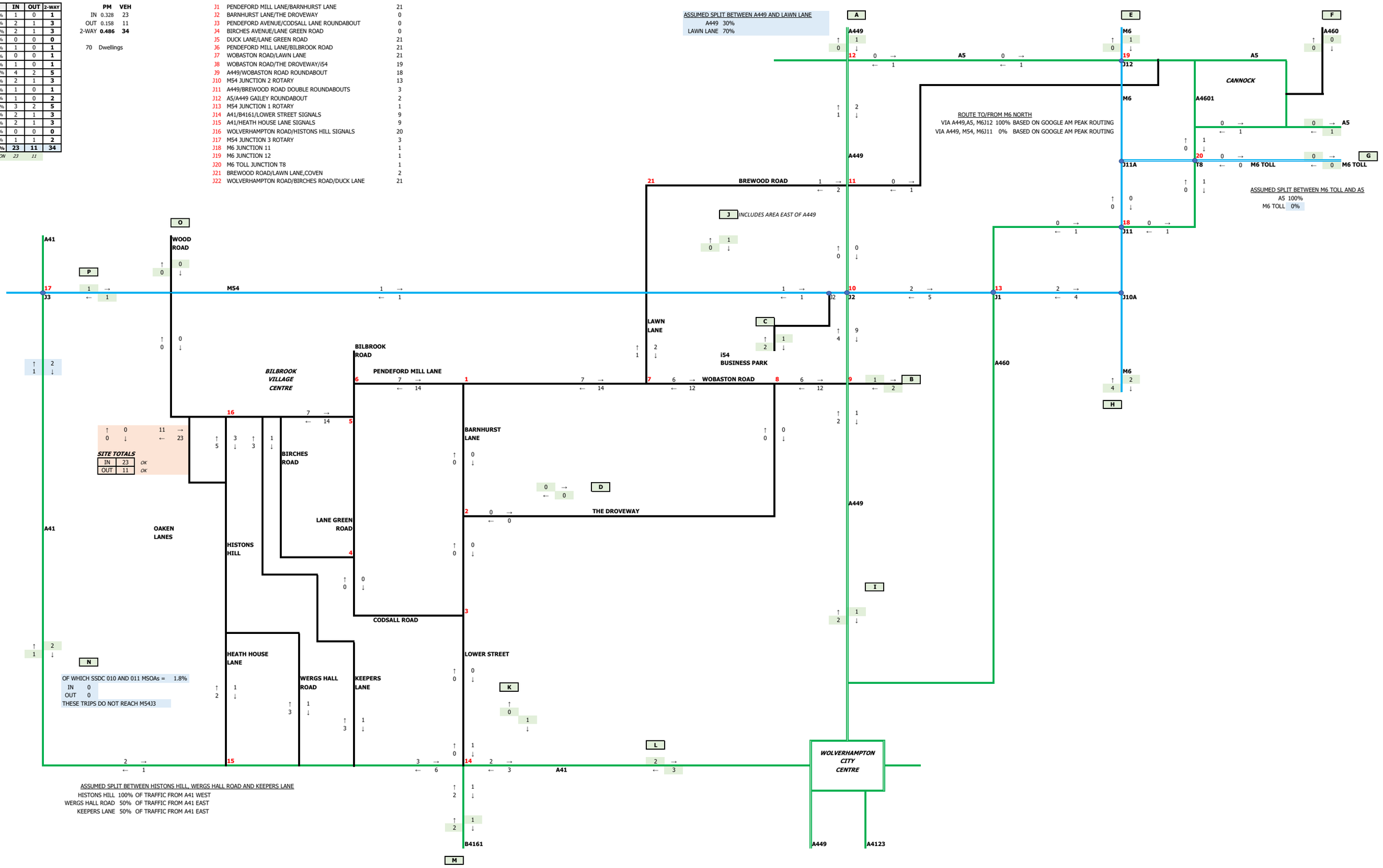
SCC TRIP RATES

	PM	VEH
IN	0.328	23
OUT	0.158	11
2-WAY	**0.486**	**34**

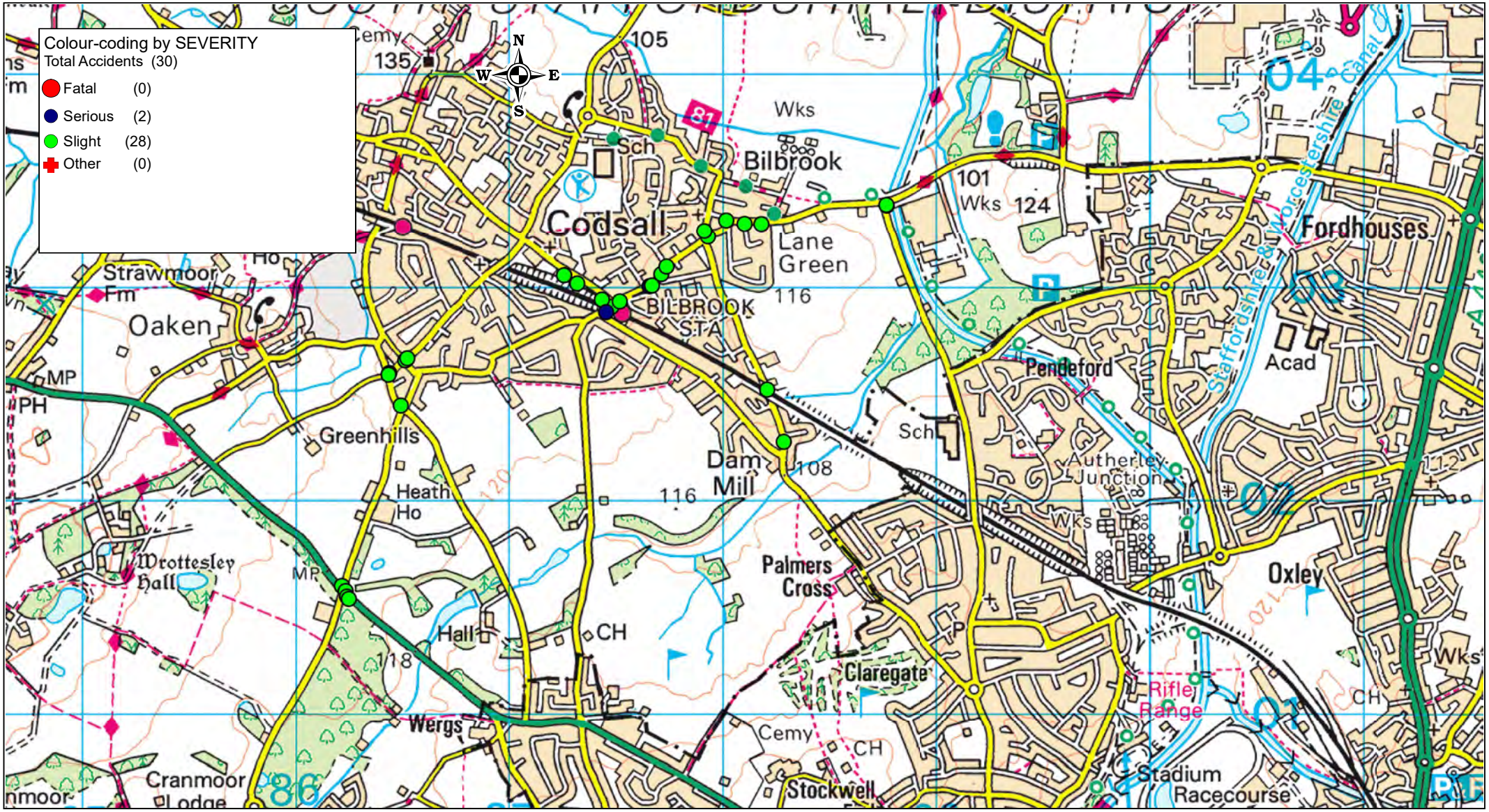
70 Dwellings

JUNCTION IMPACTS **Total Inflow (Vehicles)**

J1	PENDEFORD MILL LANE/BARNHURST LANE	21
J2	BARNHURST LANE/THE DROVEWAY	0
J3	PENDEFORD AVENUE/CODSALL LANE ROUNDABOUT	0
J4	BIRCHES AVENUE/LANE GREEN ROAD	0
J5	DUCK LANE/LANE GREEN ROAD	21
J6	PENDEFORD MILL LANE/BILBROOK ROAD	21
J7	WOBASTON ROAD/LAWN LANE	21
J8	WOBASTON ROAD/THE DROVEWAY/i54	19
J9	A449/WOBASTON ROAD ROUNDABOUT	18
J10	M54 JUNCTION 2 ROTARY	13
J11	A449/BREWOOD ROAD DOUBLE ROUNDABOUTS	3
J12	A5/A449 GAILEY ROUNDABOUT	2
J13	M54 JUNCTION 1 ROTARY	1
J14	A41/B4161/LOWER STREET SIGNALS	9
J15	A41/HEATH HOUSE LANE SIGNALS	9
J16	WOLVERHAMPTON ROAD/HISTONS HILL SIGNALS	20
J17	M54 JUNCTION 3 ROTARY	3
J18	M6 JUNCTION 11	1
J19	M6 JUNCTION 12	1
J20	M6 TOLL JUNCTION T8	1
J21	BREWOOD ROAD/LAWN LANE,COVEN	2
J22	WOLVERHAMPTON ROAD/BIRCHES ROAD/DUCK LANE	21



APPENDIX E: COLLISION DATA



Staffordshire County Council	Codsall/Bilbrook Data	(C) Crown Copyright and database rights 2019. You are not permitted to copy, sub-license, distribute or sell any of this data to third parties in any form.	SCALE: 1 : 24690 DATE: 10/05/2022 DRAWING No.: DRAWN BY:

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection:

Selected using Manual Selection

Notes:

Acc. Ref. No: 1639293 **Road:** C 40 **Grid Reference:** 387478 302917

District Council: South Staffordshire **Time:** 0810 Monday 04-January-2016

Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30

Severity: SLIGHT **Road surface** Wet/Damp

Location: DUCK LANE BILBROOK R'BT J/W BIRCHES BRIDGE

The accident occured at a mini roundabout on the C40, a single carriageway at its junction with the C6 controlled by a give way or uncontrolle

Special conditions and hazards: None

Vehicle 1 Car, travelling from NE to SW was going ahead but held up on the main carriageway. The vehicle was approaching junction or waiting/pa at junction approach. The female driver aged 60 lived in WV8.

Vehicle 2 Car, travelling from NE to NW was turning right on the main carriageway. The vehicle was approaching junction or waiting/parked at junct approach. The female driver aged 70 lived in WV8.

Casualty 1 (Vehicle 1) A female vehicle or pillion passenger aged 31 suffered a slight injury.

Casualty 2 (Vehicle 1) A male vehicle or pillion passenger aged 10 suffered a slight injury.

Acc. Ref. No: 1640906 **Road:** C 6 **Grid Reference:** 387433 302950

District Council: South Staffordshire **Time:** 2130 Tuesday 19-January-2016

Lighting: Darkness: street lights present and lit **Weather:** Fine without high winds **Speed limit:** 30

Severity: SLIGHT **Road surface** Dry

Location: WOLVERHAMPTON ROAD CODSALL OPP NO.139

The accident occured at a private drive on the C6, a single carriageway controlled by a give way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from SE to NW was going ahead other on the main carriageway. The vehicle was approaching junction or waiting/parked a junction approach. The female driver aged 28 lived in WV8.

Vehicle 2 Car, travelling from SE to NE was waiting to turn right on the main carriageway. The vehicle was approaching junction or waiting/parked a junction approach. The female driver aged 42 lived in WV6.

Casualty 1 (Vehicle 2) A female driver aged 42 suffered a slight injury.

Contributory Factors

Vehicle 1 Failed to look properly
Vehicle 1 Failed to judge other persons path or speed
Vehicle 1 Following too close
Vehicle 1 Careless/Reckless/In a hurry

Acc. Ref. No: 1644095 **Road:** C 217 **Grid Reference:** 386490 302456

District Council: South Staffordshire **Time:** 1240 Sunday 07-February-2016

Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30

Severity: SLIGHT **Road surface** Dry

Location: OAKEN LANES CODSALL APPROX 21MTS NW J/W WERGS HALL RD

The accident occured on the C217, a single carriageway .

Special conditions and hazards: None

Vehicle 1 Car, travelling from NW to SE was going ahead other on the main carriageway. The vehicle was not at, or within 20M of a junction. The m driver aged 86 lived in WV8.

Casualty 2 (Vehicle 1) A female vehicle or pillion passenger aged 53 suffered a slight injury.

Contributory Factors

Vehicle 1 Illness or disability, mental or physical

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection: **Notes:**

Selected using Manual Selection

Acc. Ref. No: 1651738 **Road:** C 260 **Grid Reference:** 386511 302667
District Council: South Staffordshire **Time:** 0945 Monday 07-March-2016
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: HISTONS HILL CODSALL J/W SUCKLING GREEN LANE

The accident occured at a T or staggered junction on the C260, a single carriageway at its junction with the C40 controlled by a give way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from SE to NE was turning right on the main carriageway. The vehicle was entering main road. The female driver aged 80 l in WV8.

Vehicle 2 Car, travelling from NE to SW was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or main roa The female driver aged 50 lived in WV10.

Casualty 1 (Vehicle 2) A female driver aged 50 suffered a slight injury.

Acc. Ref. No: 1676558 **Road:** C 40 **Grid Reference:** 387656 303013
District Council: South Staffordshire **Time:** 1530 Monday 06-June-2016
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SERIOUS **Road surface** Dry
Location: DUCK LANE OPP CODSALL FIRE STN

The accident occured at a T or staggered junction on the C40, a single carriageway at its junction with the Unclassified188 controlled by a giv way or uncontrolled. There was a zebra crossing within 50 metres..

Special conditions and hazards: None

Vehicle 1 Car, travelling from NE to SW was going ahead other on the main carriageway. The vehicle cleared junction or waiting/parked at junction The female driver aged 18 lived in WV8.

Casualty 1 (Vehicle 1) A male pedestrian aged 11 suffered a serious injury crossing from driver's offside5.

Contributory Factors

Casualty 1 Failed to look properly

Acc. Ref. No: 16102570 **Road:** D 164 **Grid Reference:** 388015 303323
District Council: South Staffordshire **Time:** 1050 Tuesday 16-August-2016
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 20
Severity: SLIGHT **Road surface** Dry
Location: WITHERS ROAD BILBROOK OS NO.15

The accident occured at a private drive on the D164, a single carriageway controlled by a give way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from NE to SW was reversing on footway. The vehicle was entering main road. The female driver aged 56 lived in WV8.

Casualty 1 (Vehicle 1) A male pedestrian aged 74 suffered a slight injury9.

Contributory Factors

Casualty 1 Failed to look properly
Casualty 1 Disability or illness, mental or physical

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection:
Selected using Manual Selection

Notes:

Acc. Ref. No: 16132650 **Road:** A 41 **Grid Reference:** 386214 301609
District Council: South Staffordshire **Time:** 1335 Sunday 16-October-2016
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 50
Severity: SLIGHT **Road surface** Wet/Damp
Location: HOLYHEAD RD CODSALL J/W WROTTESLEY PARK ROAD

The accident occured at a crossroads on the A41, a single carriageway at its junction with the C260 controlled by automatic traffic signal(s)..

Special conditions and hazards: None

Vehicle 1 Car, travelling from NW to SE was going ahead other on the main carriageway. The vehicle was approaching junction or waiting/parked a junction approach. The male driver aged 28 lived in WV13.
Vehicle 2 Car, travelling from NW to SE was going ahead but held up on the main carriageway. The vehicle was approaching junction or waiting/pa at junction approach. The male driver aged 27 lived in WV14.

Casualty 1 (Vehicle 2) A male vehicle or pillion passenger aged 20 suffered a slight injury.

Contributory Factors

Vehicle 1 Following too close

Acc. Ref. No: 17166654 **Road:** C 40 **Grid Reference:** 388765 303393
District Council: South Staffordshire **Time:** 1528 Wednesday 01-February-2017
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 40
Severity: SLIGHT **Road surface** Wet/Damp
Location: PENDEFORD MILL LANE J/W BARNHURST LANE

The accident occured at a T or staggered junction on the C40, a single carriageway at its junction with the Unclassified144 controlled by a giv way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from S to N was starting on the main carriageway. The vehicle was entering main road. The female driver aged 34 lived in
Vehicle 2 Car, travelling from NE to W was going ahead on a right bend on the main carriageway. The vehicle was mid junction - on roundabout or road. The female driver aged 40 lived in WV8.

Casualty 1 (Vehicle 1) A female driver aged 34 suffered a slight injury.
Casualty 2 (Vehicle 2) A female driver aged 40 suffered a slight injury.

Acc. Ref. No: 17172158 **Road:** D 143 **Grid Reference:** 388206 302530
District Council: South Staffordshire **Time:** 1425 Thursday 02-February-2017
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: LANE GREEN ROAD J/W LANE GREEN FARM

The accident occured at a private drive on the D143, a single carriageway controlled by a give way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from NE to SE was stopping on the main carriageway. The vehicle cleared junction or waiting/parked at junction exit. The female driver aged 29 lived in DY3.
Vehicle 2 Car, travelling from NW to SE was going ahead other on the main carriageway. The vehicle was approaching junction or waiting/parked a junction approach. The female driver aged 19 lived in WV6.

Casualty 1 (Vehicle 1) A female driver aged 29 suffered a slight injury.
Casualty 2 (Vehicle 2) A female driver aged 19 suffered a slight injury.

Contributory Factors

Vehicle 1 Failed to signal/Misleading signal
Vehicle 1 Sudden braking

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection: **Notes:**

Selected using Manual Selection

Acc. Ref. No: 17232556 **Road:** D 188 **Grid Reference:** 387667 303016
District Council: South Staffordshire **Time:** 1540 Friday 25-August-2017
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: WESLEY ROAD AT JN WITH DUCK LANE

The accident occured at a T or staggered junction on the D188, a single carriageway at its junction with the C40 controlled by a give way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from S to N was going ahead other on the main carriageway. The vehicle was approaching junction or waiting/parked at jur approach. The female driver aged 57 lived in WV6.
Vehicle 2 Pedal Cycle, travelling from SW to NE was going ahead other on the main carriageway. The vehicle was entering main road. The female aged 25 lived in WV8.

Casualty 1 (Vehicle 2) A female rider aged 25 suffered a slight injury.

Acc. Ref. No: 17240797 **Road:** C 40 **Grid Reference:** 387711 303070
District Council: South Staffordshire **Time:** 2350 Thursday 07-September-2017
Lighting: Darkness: street lights present and lit **Weather:** Raining without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Wet/Damp
Location: DUCK LANE AT JN WITH PENDINAS DRIVE

The accident occured at a T or staggered junction on the C40, a single carriageway at its junction with the Unclassified541 controlled by a giv way or uncontrolled. There was a zebra crossing within 50 metres..

Special conditions and hazards: None

Vehicle 1 Car, travelling from NW to SW was turning right on the main carriageway. The vehicle was entering main road. The male driver aged 28 li in WV1.
Vehicle 2 Motorcycle - unknown cc, travelling from SW to NE was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or main road. The male driver aged 18 lived in ST19.

Casualty 1 (Vehicle 2) A male rider aged 18 suffered a slight injury.

Contributory Factors

Vehicle 1 Failed to look properly
Vehicle 1 Poor turn or manoevre
Vehicle 1 Disobeyed Give Way or Stop sign or markings
Vehicle 1 Other

Acc. Ref. No: 18336518 **Road:** C 217 **Grid Reference:** 386432 302602
District Council: South Staffordshire **Time:** 1057 Saturday 05-May-2018
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: OAKEN LANESAT JN WITH STAFFORD LANE

The accident occured at a T or staggered junction on the C217, a single carriageway at its junction with the Unclassified25 controlled by a giv way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Motorcycle 50cc and under, travelling from SW to NE was stopping on the main carriageway. The vehicle was entering main road. The m driver aged 17 lived in WV6.
Vehicle 2 Car, travelling from NW to SE was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or main roa The male driver aged 60 lived in WV8.
Vehicle 3 Car, travelling from SE to NW was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or main roa The female driver aged 54 lived in WV6.

Casualty 1 (Vehicle 1) A male rider aged 17 suffered a slight injury.

Contributory Factors

Vehicle 1 Defective brakes

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection:

Selected using Manual Selection

Notes:

Acc. Ref. No: 18316179 **Road:** A 41 **Grid Reference:** 386232 301585
District Council: South Staffordshire **Time:** 2110 Wednesday 23-May-2018
Lighting: Darkness: street lights present and lit **Weather:** Fine without high winds **Speed limit:** 50
Severity: SLIGHT **Road surface** Dry
Location: HOLYHEAD ROAD A41 AT JN WITH HEATH HOUSE LANE

The accident occured at a crossroads on the A41, a single carriageway at its junction with the C260 controlled by automatic traffic signal(s)..

Special conditions and hazards: None

Vehicle 1 Motorcycle over 500cc, travelling from NE to SW was overtaking a static vehicle on the offside on the main carriageway. The vehicle was entering main road. The male driver aged 53 lived in WV6.
Vehicle 2 Car, travelling from SW to SE was turning right on the main carriageway. The vehicle was leaving main road. The male driver aged 71 live WV6.

Casualty 1 (Vehicle 1) A male rider aged 53 suffered a slight injury.
Casualty 2 (Vehicle 2) A male driver aged 71 suffered a slight injury.

Contributory Factors

Vehicle 1 Failed to look properly
Vehicle 1 Failed to judge other persons path or speed
Vehicle 2 Failed to judge other persons path or speed

Acc. Ref. No: 18304622 **Road:** C 217 **Grid Reference:** 386435 302607
District Council: South Staffordshire **Time:** 0815 Wednesday 20-June-2018
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: OAKEN LANES CODSALL J/W STAFFORD LANE

The accident occured at a T or staggered junction on the C217, a single carriageway at its junction with the Unclassified25 controlled by a giv way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from SW to NE was starting on the main carriageway. The vehicle was entering main road. The male driver aged 42 lived i SY4.
Vehicle 2 Motor Cycle over 50 cc and up to 125cc, travelling from NW to SE was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or main road. The male driver aged 33 lived in WV8.
Vehicle 3 Car, travelling from SE to NW was going ahead other on the main carriageway. The vehicle was approaching junction or waiting/parked a junction approach. The male driver aged 58 lived in ST17.

Casualty 1 (Vehicle 2) A male rider aged 33 suffered a slight injury.

Contributory Factors

Vehicle 1 Failed to look properly

Acc. Ref. No: 18815588 **Road:** C 40 **Grid Reference:** 387929 303247
District Council: South Staffordshire **Time:** 0910 Friday 19-October-2018
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: PENDEFORD MILL LANE OS MOTORWORLD

The accident occured on the C40, a single carriageway .

Special conditions and hazards: None

Vehicle 1 Car, travelling from S to N was reversing on the main carriageway. The vehicle was not at, or within 20M of a junction. The male driver ag lived in WV1.

Casualty 1 (Vehicle 1) A male pedestrian aged 26 suffered a slight injury0.

Contributory Factors

Vehicle 1 Failed to look properly

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection:

Selected using Manual Selection

Notes:

Acc. Ref. No: 18347040 **Road:** C 6 **Grid Reference:** 387257 303065
District Council: Cannock Chase **Time:** 1005 Friday 09-November-2018
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: WOLVERHAMPTON RD CODSALL J/W ACCESS RD TO SHOPS

The accident occured at a T or staggered junction on the C6, a single carriageway controlled by a give way or uncontrolled. There was a pelican/puffin/toucan within 50 metres..

Special conditions and hazards: None

Vehicle 1 Car, travelling from SW to SE was turning right on the main carriageway. The vehicle was entering main road. The female driver aged 74 in WV8.

Vehicle 2 Motorcycle - unknown cc, travelling from SE to NW was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or main road. The male driver aged 68 lived in B8.

Casualty 1 (Vehicle 2) A male rider aged 68 suffered a slight injury.

Contributory Factors

Vehicle 1 Failed to look properly

Acc. Ref. No: 19808193 **Road:** C 6 **Grid Reference:** 387318 303026
District Council: South Staffordshire **Time:** 1927 Friday 04-January-2019
Lighting: Darkness: street lights present and lit **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: WOLVERHAMPTON ROAD J/W SERVICE RD TO NO.82

The accident occured at a T or staggered junction on the C6, a single carriageway controlled by a give way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from NW to SW was turning right on the main carriageway. The vehicle was leaving main road. The female driver aged 26 in WS12.

Vehicle 2 Van or Goods 3.5 tonnes mgw and under, travelling from SE to NW was going ahead other on the main carriageway. The vehicle was mi junction - on roundabout or main road. The male driver aged 26 lived in WV8.

Casualty 1 (Vehicle 1) A female driver aged 26 suffered a slight injury.

Acc. Ref. No: 19816677 **Road:** C 40 **Grid Reference:** 387735 303105
District Council: South Staffordshire **Time:** 1800 Wednesday 06-February-2019
Lighting: Darkness: street lights present and lit **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: DUCK LANE JUNCTION WITH ORCHARD LANE

The accident occured at a T or staggered junction on the C40, a single carriageway at its junction with the Unclassified193 controlled by a giv way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from NE to NW was turning right on the main carriageway. The vehicle was leaving main road. The male driver aged 82 liv WV8.

Vehicle 2 Pedal Cycle, travelling from SW to NE was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or road. The male driver aged 35 lived in WV6.

Casualty 1 (Vehicle 2) A male rider aged 35 suffered a slight injury.

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection: **Notes:**

Selected using Manual Selection

Acc. Ref. No: 19824393 **Road:** C 217 **Grid Reference:** 386432 302600
District Council: South Staffordshire **Time:** 1645 Thursday 21-February-2019
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: OAKEN LANES J/W STAFFORD LANE

The accident occured at a crossroads on the C217, a single carriageway at its junction with the Unclassified25 controlled by a give way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from SW to NW was turning left on the main carriageway. The vehicle was entering main road. The male driver aged 86 liv WV8.
Vehicle 2 Car, travelling from SE to NW was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or main roa The female driver aged 69 lived in WV8.

Casualty 1 (Vehicle 1) A male driver aged 86 suffered a slight injury.

Acc. Ref. No: 19879259 **Road:** C 40 **Grid Reference:** 388764 303396
District Council: South Staffordshire **Time:** 0226 Tuesday 04-June-2019
Lighting: Darkness: street lights present and lit **Weather:** Fine without high winds **Speed limit:** 40
Severity: SLIGHT **Road surface** Dry
Location: PENDEFORD MILL LANE J/W BARNHURST LANE

The accident occured at a T or staggered junction on the C40, a single carriageway at its junction with the Unclassified44 controlled by a give or uncontrolled. There was a central reservation within 50 metres..

Special conditions and hazards: None

Vehicle 1 Car, travelling from SE to NW was going ahead other on the main carriageway. The vehicle was entering main road and skidded and overturned. The male driver aged 18 lived in WV4.
Vehicle 2 Car, travelling from SE to NW was going ahead other on the main carriageway. The vehicle was entering main road. The male driver of a unknown age .

Casualty 1 (Vehicle 1) A male driver aged 18 suffered a slight injury.
Casualty 2 (Vehicle 1) A male vehicle or pillion passenger aged 18 suffered a slight injury.
Casualty 3 (Vehicle 1) A female vehicle or pillion passenger aged 17 suffered a slight injury.

Contributory Factors

Vehicle 1 Disobeyed Give Way or Stop sign or markings
Vehicle 1 Exceeding speed limit
Vehicle 1 Loss of control
Vehicle 1 Aggressive driving
Vehicle 1 Stolen vehicle
Vehicle 1 Vehicle in course of crime

Acc. Ref. No: 19856091 **Road:** C 6 **Grid Reference:** 387256 303065
District Council: South Staffordshire **Time:** 1745 Friday 14-June-2019
Lighting: Daylight **Weather:** Raining without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Wet/Damp
Location: WOLVERHAMPTON RD J/W EXIT SHOPS CAR PARK

The accident occured at a private drive on the C6, a single carriageway controlled by a give way or uncontrolled. There was a pelican/puffin/t within 50 metres..

Special conditions and hazards: None

Vehicle 1 Car, travelling from SW to SE was turning right on the main carriageway. The vehicle was entering main road. The female driver aged 53 in WV6.
Vehicle 2 Car, travelling from SE to NW was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or main roa The male driver aged 17 lived in WV10.

Casualty 1 (Vehicle 2) A male driver aged 17 suffered a slight injury.

Contributory Factors

Vehicle 1 Junction restart
Vehicle 1 Failed to look properly
Vehicle 1 Failed to judge other persons path or speed

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection:

Selected using Manual Selection

Notes:

Acc. Ref. No: 19902599 **Road:** C 40 **Grid Reference:** 388179 303306
District Council: South Staffordshire **Time:** 0200 Sunday 15-September-2019
Lighting: Darkness: street lights present and lit **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: PENDEFORD MILL LANE OS NO.43

The accident occured on the C40, a single carriageway .

Special conditions and hazards: None

Vehicle 1 Car, travelling from W to E was going ahead other on the main carriageway. The vehicle was not at, or within 20M of a junction. The fema driver aged 23 lived in WV8.

Casualty 1 (Vehicle 1) A female driver aged 23 suffered a slight injury.

Contributory Factors

Vehicle 1 Impaired by alcohol
Vehicle 1 Distraction in vehicle
Vehicle 1 Loss of control

Acc. Ref. No: 19902509 **Road:** C 40 **Grid Reference:** 388100 303307
District Council: South Staffordshire **Time:** 1949 Thursday 24-October-2019
Lighting: Darkness: street lights present and lit **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: PENDEFORD MILL LANE AT JUNCTION WITH ALEXANDER ROAD

The accident occured at a T or staggered junction on the C40, a single carriageway at its junction with the Unclassified164 controlled by a giv way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Van or Goods 3.5 tonnes mgw and under, travelling from S to E was turning right on the main carriageway. The vehicle was entering mai road. The male driver of an unknown age .

Vehicle 2 Car, travelling from E to W was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or main road. male driver of an unknown age lived in WV8.

Casualty 1 (Vehicle 2) A male driver age unknown suffered a slight injury.

Acc. Ref. No: 19914020 **Road:** C 260 **Grid Reference:** 386520 302676
District Council: South Staffordshire **Time:** 1040 Saturday 16-November-2019
Lighting: Daylight **Weather:** Other **Speed limit:** 30
Severity: SLIGHT **Road surface** Wet/Damp
Location: HISTONS HILL APPROX 5MTS NE J/W SUCKLING GREEN LANE

The accident occured at a T or staggered junction on the C260, a single carriageway at its junction with the C40 controlled by a give way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from SE to NE was turning right on the main carriageway. The vehicle cleared junction or waiting/parked at junction exit. Th male driver aged 90 lived in WV6.

Vehicle 2 Car, travelling from NE to SW was going ahead other on the main carriageway. The vehicle was approaching junction or waiting/parked a junction approach. The female driver aged 47 lived in WV8.

Casualty 1 (Vehicle 1) A male driver aged 90 suffered a slight injury.
Casualty 2 (Vehicle 2) A female driver aged 47 suffered a slight injury.

Contributory Factors

Vehicle 1 Other
Vehicle 1 Buildings, road signs, street furniture

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection: **Notes:**

Selected using Manual Selection

Acc. Ref. No: 19940494 **Road:** C 40 **Grid Reference:** 387517 302942
District Council: South Staffordshire **Time:** 1505 Friday 06-December-2019
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Wet/Damp
Location: DUCK LANE O/S MCCARTHY & STONE APPARTMENTS

The accident occured on the C40, a single carriageway There was a zebra crossing within 50 metres..

Special conditions and hazards: None

Vehicle 1 Car, travelling from NE to SW was going ahead other on the main carriageway. The vehicle was not at, or within 20M of a junction. The m driver aged 81 lived in WV8.

Casualty 1 (Vehicle 1) A male pedestrian aged 13 suffered a slight injury crossing from driver's offside4.

Contributory Factors

Vehicle 1 Failed to judge other persons path or speed
Vehicle 1 Failed to look properly

Acc. Ref. No: 20984027 **Road:** A 41 **Grid Reference:** 386238 301558
District Council: South Staffordshire **Time:** 1700 Monday 09-March-2020
Lighting: Daylight **Weather:** Raining without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Wet/Damp
Location: HOLYHEAD ROAD (A41) J/W WROTTESLEY PARK ROAD

The accident occured at a crossroads on the A41, a single carriageway at its junction with the C260 controlled by automatic traffic signal(s)..

Special conditions and hazards: None

Vehicle 1 Van or Goods 3.5 tonnes mgw and under, travelling from SE to NW was stopping on the main carriageway. The vehicle was approaching junction or waiting/parked at junction approach. The male driver aged 50 lived in WV7.

Vehicle 2 Car, travelling from SE to NW was going ahead but held up on the main carriageway. The vehicle was approaching junction or waiting/pa at junction approach. The female driver aged 23 lived in TF11.

Casualty 1 (Vehicle 2) A female driver aged 23 suffered a slight injury.

Contributory Factors

Vehicle 1 Failed to look properly

Acc. Ref. No: 20993484 **Road:** A 41 **Grid Reference:** 386246 301548
District Council: South Staffordshire **Time:** 0656 Thursday 18-June-2020
Lighting: Daylight **Weather:** Raining without high winds **Speed limit:** 50
Severity: SLIGHT **Road surface** Wet/Damp
Location: HOLYHEAD ROAD (A41) APPROX 10MTS SE J/W WROTTESLEY PARK ROAD

The accident occured at a crossroads on the A41, a single carriageway at its junction with the C260 controlled by automatic traffic signal(s)..

Special conditions and hazards: None

Vehicle 1 Car, travelling from SE to NW was stopping on the main carriageway. The vehicle was approaching junction or waiting/parked at junction approach. The male driver aged 34 lived in WV6.

Vehicle 2 Car, travelling from SE to NW was going ahead but held up on the main carriageway. The vehicle was approaching junction or waiting/pa at junction approach. The female driver aged 51 lived in WV10.

Casualty 1 (Vehicle 2) A female vehicle or pillion passenger aged 42 suffered a slight injury.

Contributory Factors

Vehicle 1 Failed to look properly

Accidents between dates **01/01/2016** **and** **09/04/2022** (75) months

Selection: **Notes:**

Selected using Manual Selection

Acc. Ref. No: 20979262 **Road:** D 145 **Grid Reference:** 387912 303273
District Council: South Staffordshire **Time:** 1105 Saturday 20-June-2020
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Dry
Location: BILBROOK ROAD OS NO. 2

The accident occured at a T or staggered junction on the D145, a single carriageway at its junction with the Unclassified193 controlled by a g way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from E to N was reversing on footway. The vehicle was entering main road. The female driver aged 47 lived in WV8.

Casualty 1 (Vehicle 1) A male pedestrian aged 83 suffered a slight injury2.

Contributory Factors

Vehicle 1 Failed to look properly

Acc. Ref. No: 201079753 **Road:** C 6 **Grid Reference:** 387453 302892
District Council: South Staffordshire **Time:** 1630 Thursday 03-December-2020
Lighting: Darkness: street lights present and lit **Weather:** Raining without high winds **Speed limit:** 30
Severity: SERIOUS **Road surface** Wet/Damp
Location: BIRCHES BRIDGE AT JUNCTION WITH KEEPERS LANE

The accident occured at a mini roundabout on the C6, a single carriageway at its junction with the C40 controlled by a give way or uncontrolle

Special conditions and hazards: None

Vehicle 1 Car, travelling from SE to SW was turning left on the main carriageway. The vehicle was entering roundabout. The female driver aged 81 in WV8.

Vehicle 2 Pedal Cycle, travelling from NE to SW was going ahead other on the main carriageway. The vehicle was mid junction - on roundabout or road. The female driver aged 53 lived in WV8.

Casualty 1 (Vehicle 2) A female rider aged 53 suffered a serious injury.

Contributory Factors

Vehicle 1 Slippery road (due to weather)
Vehicle 1 Disobeyed Give Way or Stop sign or markings
Vehicle 1 Failed to look properly
Vehicle 1 Failed to judge other persons path or speed
Vehicle 1 Passing too close to cyclist, horse rider or pedestrian
Vehicle 1 Careless/Reckless/In a hurry

Acc. Ref. No: 211035227 **Road:** D 143 **Grid Reference:** 388283 302286
District Council: South Staffordshire **Time:** 0825 Friday 22-January-2021
Lighting: Daylight **Weather:** Fine without high winds **Speed limit:** 30
Severity: SLIGHT **Road surface** Frost/Ice
Location: LANE GREEN ROAD OS NO.1

The accident occured at a T or staggered junction on the D143, a single carriageway at its junction with the Unclassified203 controlled by a g way or uncontrolled..

Special conditions and hazards: None

Vehicle 1 Car, travelling from N to S was going ahead other on the main carriageway. The vehicle cleared junction or waiting/parked at junction exit female driver aged 25 lived in WV8.

Casualty 1 (Vehicle 1) A female driver aged 25 suffered a slight injury.

Contributory Factors

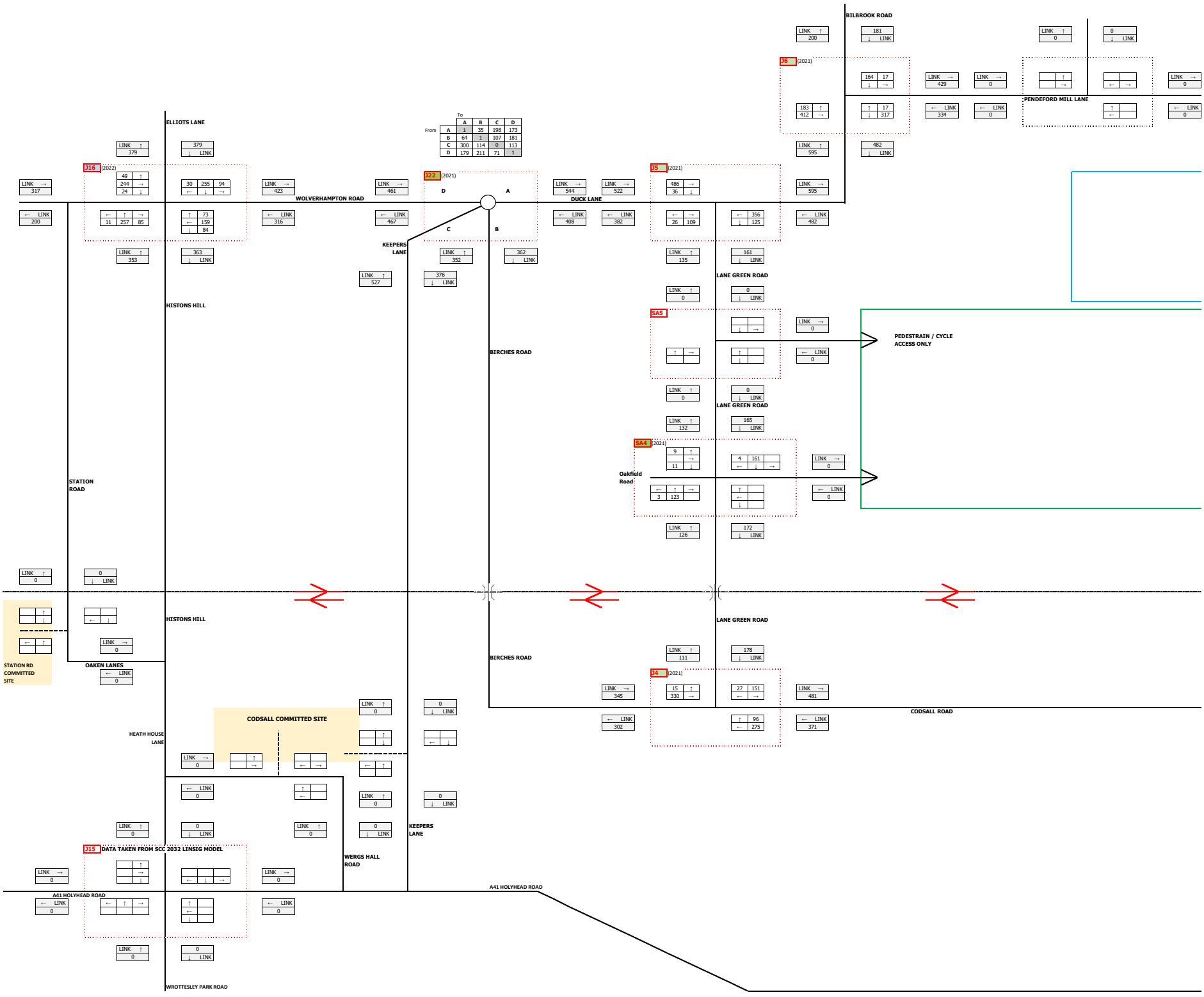
Vehicle 1 Slippery road (due to weather)
Vehicle 1 Swerved
Vehicle 1 Loss of control

Date	police_ref	Severity	accidentid	veh_ref	cas_ref	Class	Sex	age	Ped_Locn	Ped_Mvmt	Ped_Dirn	Pupil	Car_Pass	Psv_Pass	dftsp	school	Seatbelt	postcode	PED_INJ	Serious	CycHelmet	lsoa	msoa	mi_prinx	PolVehRef	Age_range	Veh_Type	Time_Range	DrvAge_Range
04/01/2016	1639293	3. Slight	25799	1	1	2. Vehicle Passeng	2. Female	31	. Not pedestrian	. Not pedestrian	. Not Pedestrian		2. Back seat	0. Not PSV Passenger			4. Unknown	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			187096	16392931	30 to 34	9. Car	0800-0859	60 to 64
04/01/2016	1639293	3. Slight	25799	1	2	2. Vehicle Passeng	1. Male	10	. Not pedestrian	. Not pedestrian	. Not Pedestrian		1. Front seat	0. Not PSV Passenger		1234	4. Unknown	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			187097	16392931	10 to 14	9. Car	0800-0859	60 to 64
19/01/2016	1640906	3. Slight	25816	2	1	1. Driver / Rider	2. Female	42	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV6	. Not a pedestrian	. Not coded	0. Not a cyclist			187234	16409062	40 to 44	9. Car	2100-2159	40 to 44
07/02/2016	1644095	3. Slight	25737	1	2	2. Vehicle Passeng	2. Female	53	. Not pedestrian	. Not pedestrian	. Not Pedestrian		1. Front seat	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			187427	16440951	50 to 54	9. Car	1200-1259	85 to 89
07/03/2016	1651738	3. Slight	26044	2	1	1. Driver / Rider	2. Female	50	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			4. Unknown	WV10	. Not a pedestrian	. Not coded	0. Not a cyclist			187693	16517382	50 to 54	9. Car	0900-0959	50 to 54
06/06/2016	1676558	2. Serious	26167	1	1	3. Pedestrian	1. Male	11	4. Crossing elsewh	3. Crossing from di	5. S bound		0. Not car passeng	0. Not PSV Passenger		1234	0. Not applicable	WV8	0. Not applicable	. Not coded	0. Not a cyclist			188515	16765581	10 to 14	9. Car	1500-1559	15 to 19
16/08/2016	16102570	3. Slight	26513	1	1	3. Pedestrian	1. Male	74	6. On footpath / ve	9. Unknown or oth	9. Unknown		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	0. Not applicable	. Not coded	0. Not a cyclist			189291	161025701	70 to 74	9. Car	1000-1059	55 to 59
16/10/2016	16132650	3. Slight	149993	2	1	2. Vehicle Passeng	1. Male	20	. Not pedestrian	. Not pedestrian	. Not Pedestrian		1. Front seat	0. Not PSV Passenger			0. Not applicable	WV13	. Not a pedestrian	. Not coded	0. Not a cyclist			189876	161326502	20 to 24	9. Car	1300-1359	25 to 29
01/02/2017	17166654	3. Slight	162652	1	1	1. Driver / Rider	2. Female	34	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV9	. Not a pedestrian	. Not coded	0. Not a cyclist			190926	171666541	30 to 34	9. Car	1500-1559	30 to 34
01/02/2017	17166654	3. Slight	162652	2	1	1. Driver / Rider	2. Female	40	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			190927	171666542	40 to 44	9. Car	1500-1559	40 to 44
02/02/2017	17172158	3. Slight	162485	1	1	1. Driver / Rider	2. Female	29	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			4. Unknown	DY3	. Not a pedestrian	. Not coded	0. Not a cyclist			190935	171721581	25 to 29	9. Car	1400-1459	25 to 29
02/02/2017	17172158	3. Slight	162485	2	2	1. Driver / Rider	2. Female	19	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			4. Unknown	WV6	. Not a pedestrian	. Not coded	0. Not a cyclist			190934	171721582	15 to 19	9. Car	1400-1459	15 to 19
25/08/2017	17232556	3. Slight	171056	2	1	1. Driver / Rider	2. Female	25	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	3. Not known				192299	172325562	25 to 29	1. Pedal Cycle	1500-1559	25 to 29
07/09/2017	17240797	3. Slight	174299	2	1	1. Driver / Rider	1. Male	18	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	ST19	. Not a pedestrian	. Not coded	0. Not a cyclist			192387	172407972	15 to 19	97. Motorcycle - ur	2300-2359	15 to 19
05/05/2018	18336518	3. Slight	186874	1	1	1. Driver / Rider	1. Male	17	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV6	. Not a pedestrian	. Not coded	0. Not a cyclist			193765	183365181	15 to 19	2. Motorcycle 50cc	1000-1059	15 to 19
23/05/2018	18316179	3. Slight	186102	1	1	1. Driver / Rider	1. Male	53	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV6	. Not a pedestrian	. Not coded	0. Not a cyclist			193868	183161791	50 to 54	5. Motorcycle over	2100-2159	50 to 54
23/05/2018	18316179	3. Slight	186102	2	2	1. Driver / Rider	1. Male	71	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV6	. Not a pedestrian	. Not coded	0. Not a cyclist			193869	183161792	70 to 74	9. Car	2100-2159	70 to 74
20/06/2018	18304622	3. Slight	180129	2	1	1. Driver / Rider	1. Male	33	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			194038	183046222	30 to 34	3. Motor Cycle ove	0800-0859	30 to 34
19/10/2018	18815588	3. Slight	189575	1	1	3. Pedestrian	1. Male	26	10. Unknown / othe	9. Unknown or oth	0. Standing still		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	SY5	0. Not applicable	. Not coded	0. Not a cyclist			194542	188155881	25 to 29	9. Car	0900-0959	20 to 24
09/11/2018	18347040	3. Slight	188823	2	1	1. Driver / Rider	1. Male	68	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	B8	. Not a pedestrian	. Not coded	0. Not a cyclist			194617	183470402	65 to 69	97. Motorcycle - ur	1000-1059	65 to 69
04/01/2019	19808193	3. Slight	192619	1	1	1. Driver / Rider	2. Female	26	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WS12	. Not a pedestrian	. Not coded	0. Not a cyclist			195081	198081931	25 to 29	9. Car	1900-1959	25 to 29
06/02/2019	19816677	3. Slight	192181	2	1	1. Driver / Rider	1. Male	35	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV6	. Not a pedestrian	. Not coded	3. Not known			194993	198166772	35 to 39	1. Pedal Cycle	1800-1859	35 to 39
21/02/2019	19824393	3. Slight	194716	1	1	1. Driver / Rider	1. Male	86	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			195315	198243931	85 to 89	9. Car	1600-1659	85 to 89
04/06/2019	19879259	3. Slight	204018	1	1	1. Driver / Rider	1. Male	18	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV4	. Not a pedestrian	. Not coded	0. Not a cyclist			197526	198792591	15 to 19	9. Car	0200-0259	15 to 19
04/06/2019	19879259	3. Slight	204018	1	2	2. Vehicle Passeng	1. Male	18	. Not pedestrian	. Not pedestrian	. Not Pedestrian		9. Unknown	0. Not PSV Passenger			0. Not applicable	WV4	. Not a pedestrian	. Not coded	0. Not a cyclist			197529	198792591	15 to 19	9. Car	0200-0259	15 to 19
04/06/2019	19879259	3. Slight	204018	1	3	2. Vehicle Passeng	2. Female	17	. Not pedestrian	. Not pedestrian	. Not Pedestrian		9. Unknown	0. Not PSV Passenger			0. Not applicable	WV6	. Not a pedestrian	. Not coded	0. Not a cyclist			197530	198792591	15 to 19	9. Car	0200-0259	15 to 19
14/06/2019	19856091	3. Slight	199417	2	1	1. Driver / Rider	1. Male	17	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV10	. Not a pedestrian	. Not coded	0. Not a cyclist			196252	198560912	15 to 19	9. Car	1700-1759	15 to 19
15/09/2019	19902599	3. Slight	200435	1	1	1. Driver / Rider	2. Female	23	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			196597	199025991	20 to 24	9. Car	0200-0259	20 to 24
24/10/2019	19902509	3. Slight	200937	2	1	1. Driver / Rider	1. Male		. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			196711	199025092	Unknown	9. Car	1900-1959	Unknown
16/11/2019	19914020	3. Slight	201684	1	1	1. Driver / Rider	1. Male	90	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV6	. Not a pedestrian	. Not coded	0. Not a cyclist			196949	199140201	90 plus	9. Car	1000-1059	90 plus
16/11/2019	19914020	3. Slight	201684	2	2	1. Driver / Rider	2. Female	47	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			196948	199140202	45 to 49	9. Car	1000-1059	45 to 49
06/12/2019	19940494	3. Slight	202206	1	1	3. Pedestrian	1. Male	13	1. Using Ped Cross	3. Crossing from di	4. SE bound	1. Pupil to / from sc	0. Not car passeng	0. Not PSV Passenger		1234	0. Not applicable	WV8	0. Not applicable	. Not coded	0. Not a cyclist			197095	199404941	10 to 14	9. Car	1500-1559	80 to 84
09/03/2020	20984027	3. Slight	205944	2	1	1. Driver / Rider	2. Female	23	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			4. Unknown	TF11	. Not a pedestrian	. Not coded	0. Not a cyclist			197936	209840272	20 to 24	9. Car	1700-1759	20 to 24
18/06/2020	20993484	3. Slight	205895	2	1	2. Vehicle Passeng	2. Female	42	. Not pedestrian	. Not pedestrian	. Not Pedestrian		1. Front seat	0. Not PSV Passenger			0. Not applicable	WV10	. Not a pedestrian	. Not coded	0. Not a cyclist			197913	209934842	40 to 44	9. Car	0600-0659	50 to 54
20/06/2020	20979262	3. Slight	205965	1	1	3. Pedestrian	1. Male	83	6. On footpath / ve	9. Unknown or oth	2. NE bound		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	0. Not applicable	. Not coded	0. Not a cyclist			197944	209792621	80 to 84	9. Car	1100-1159	45 to 49
03/12/2020	2010797533	2. Serious	213508	2	1	1. Driver / Rider	2. Female	53	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	3. Not known				198963	2010797532	50 to 54	1. Pedal Cycle	1600-1659	50 to 54
22/01/2021	2110352273	3. Slight	217078	1	1	1. Driver / Rider	2. Female	25	. Not pedestrian	. Not pedestrian	. Not Pedestrian		0. Not car passeng	0. Not PSV Passenger			0. Not applicable	WV8	. Not a pedestrian	. Not coded	0. Not a cyclist			199265	211035227	25 to 29	9. Car	0800-0859	25 to 29

APPENDIX F: TRAFFIC FLOW DIAGRAMS

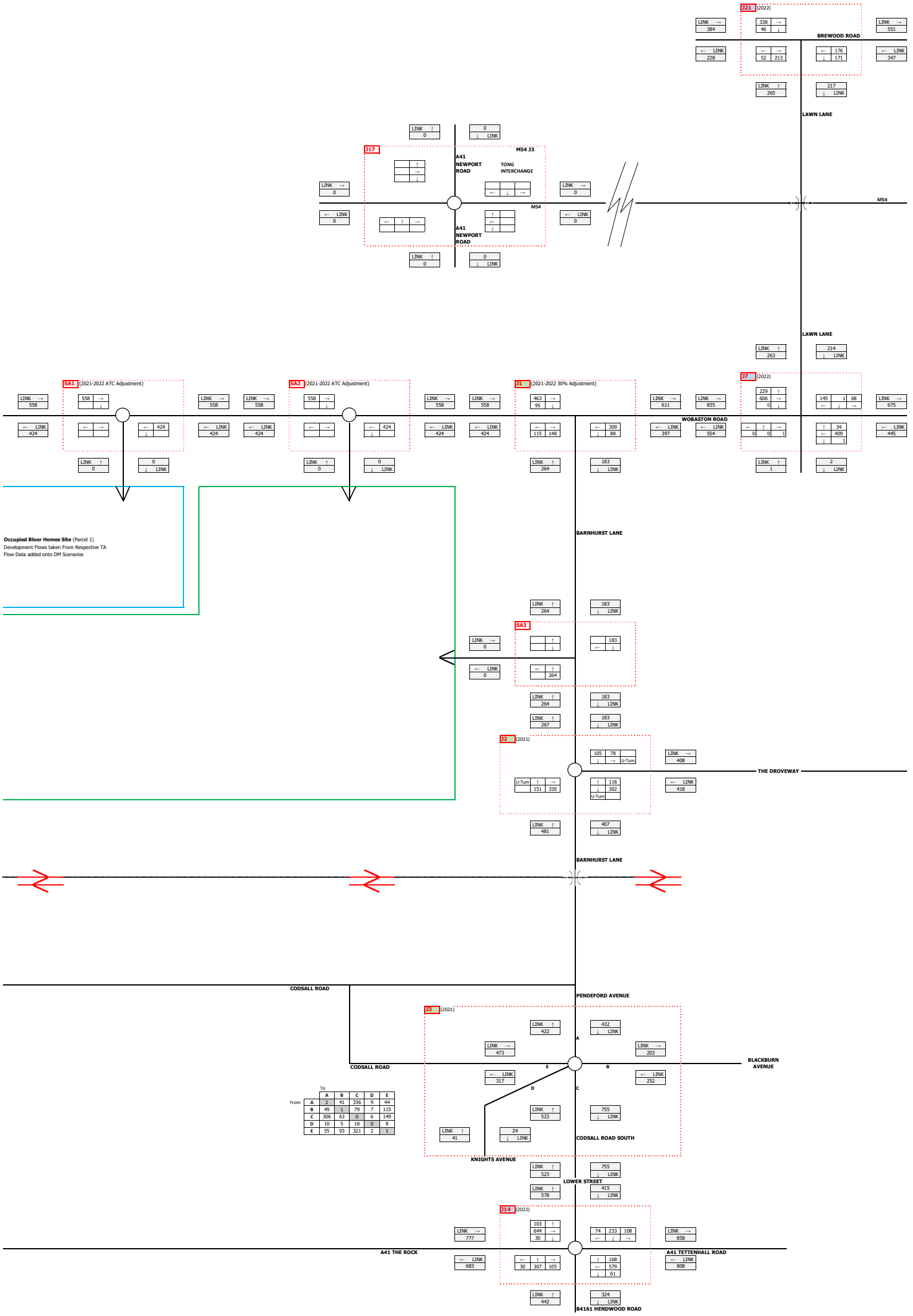
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
2021/22 SURVEY AM (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
2021/22 SURVEY AM (Sheet 2)

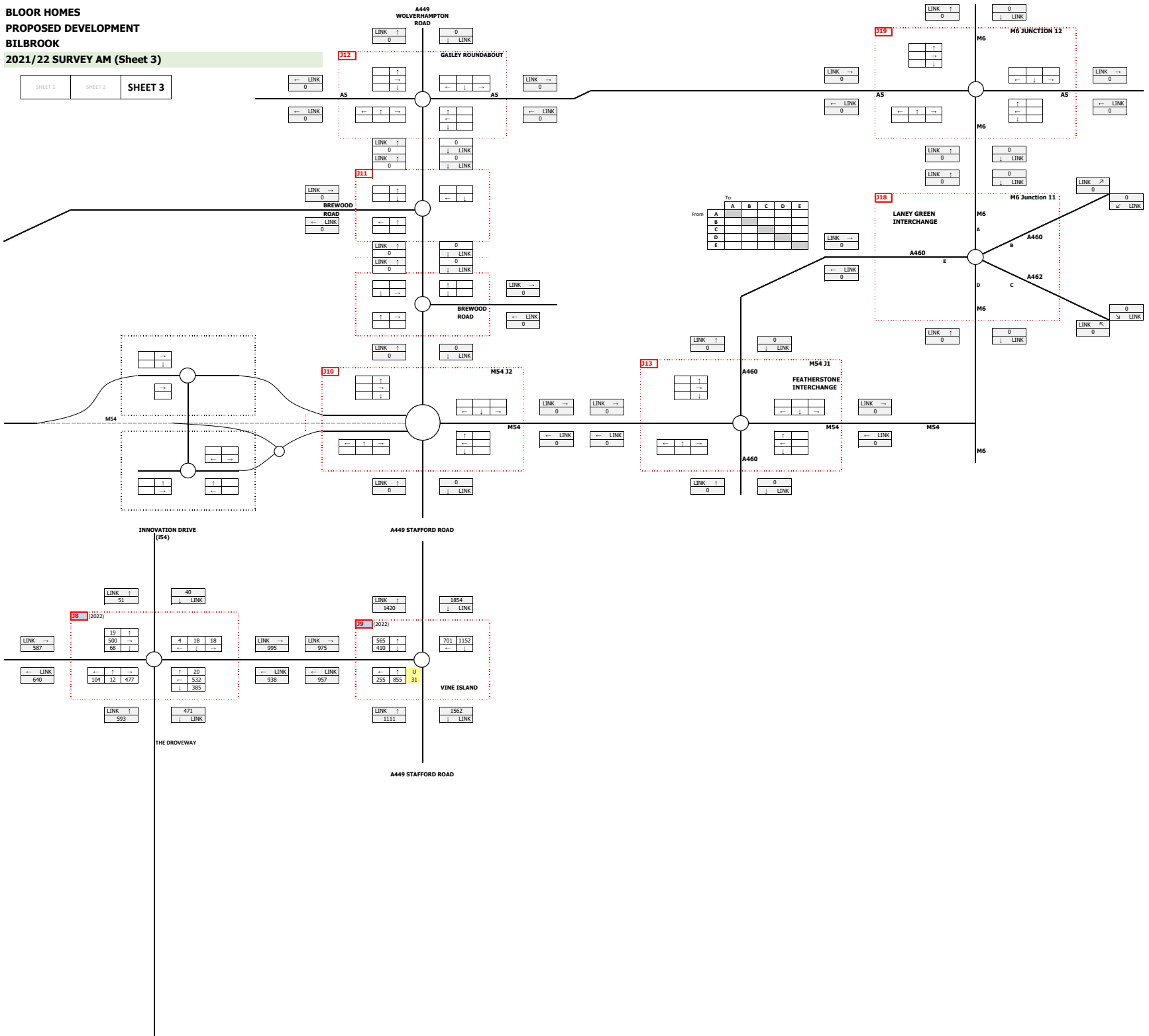
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A	2	41	336	9	44
B	49	1	79	7	115
C	306	63	0	6	149
D	10	5	18	0	8
E	55	93	321	2	1

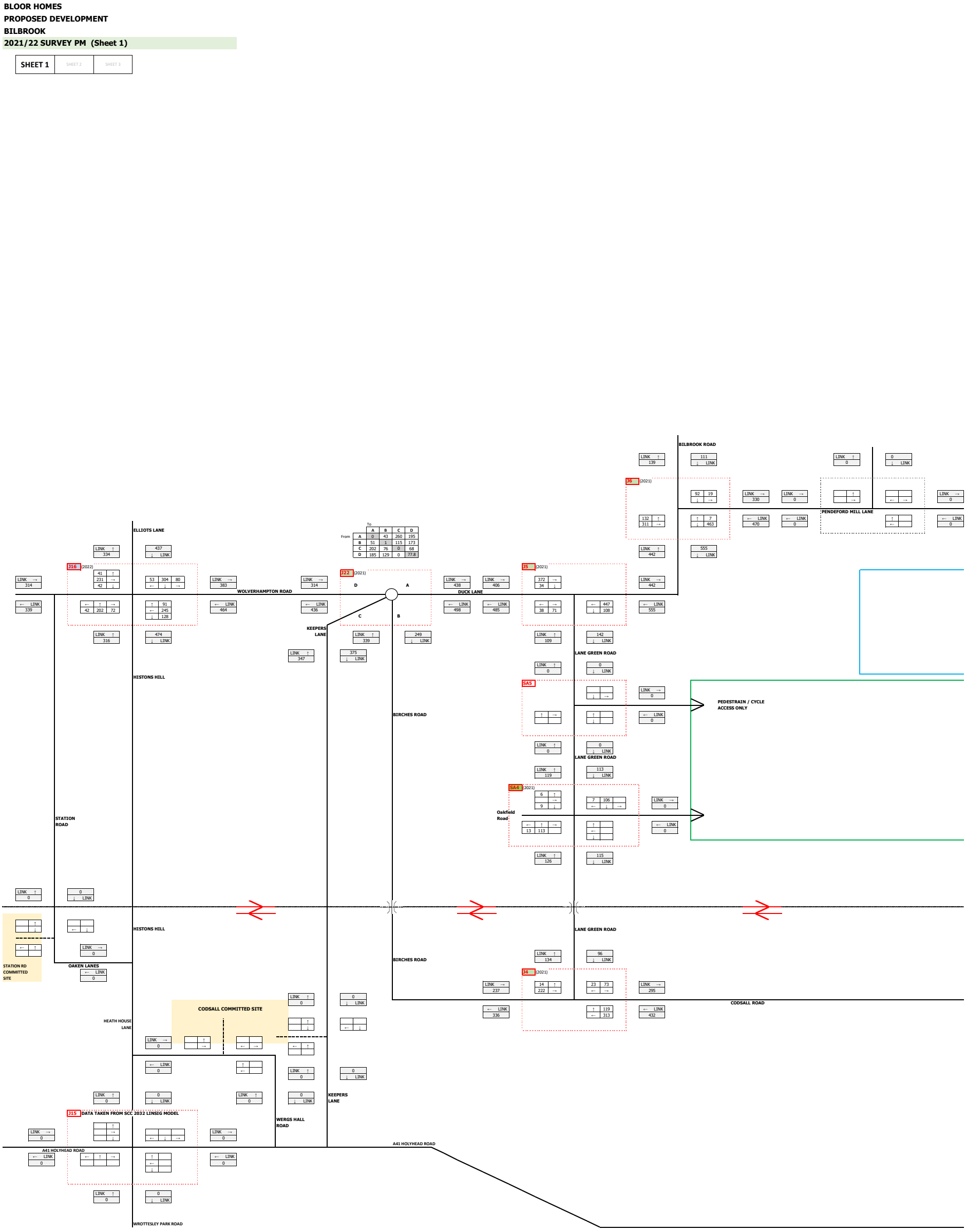
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
2021/22 SURVEY AM (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



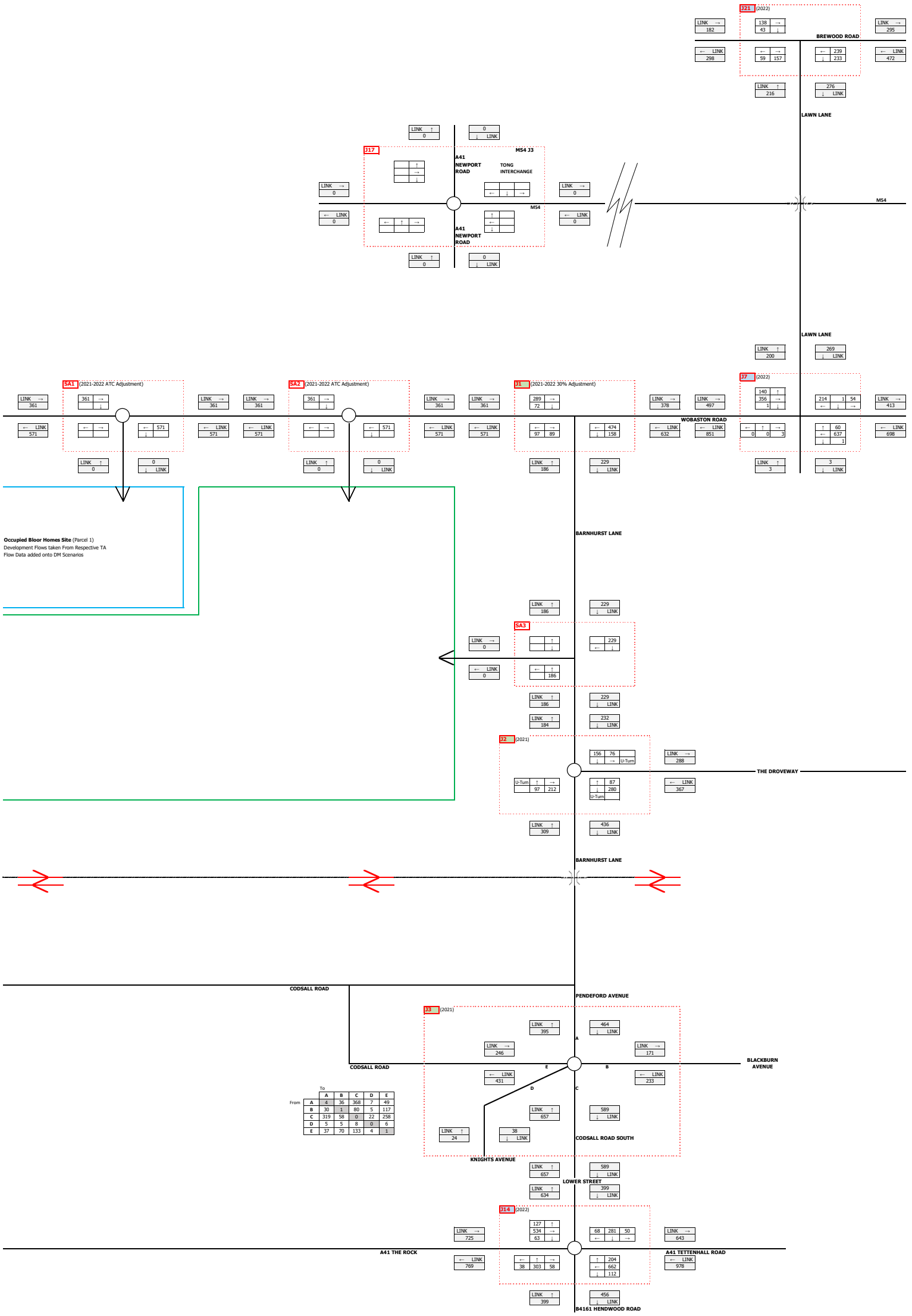
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
2021/22 SURVEY PM (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
2021/22 SURVEY PM (Sheet 2)

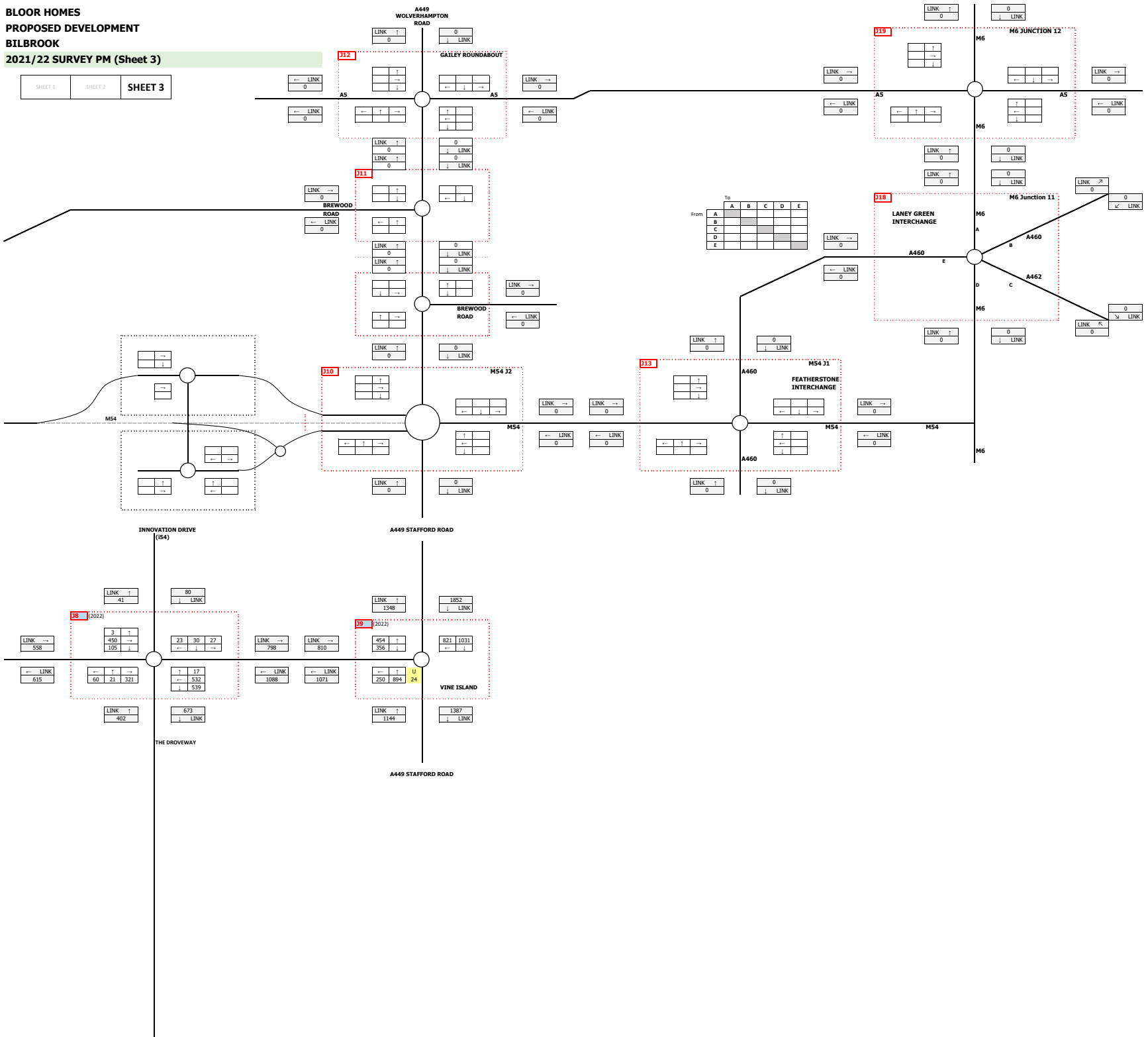
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A	4	36	368	7	49
B	30	1	80	5	117
C	319	58	0	22	258
D	5	5	8	0	6
E	37	70	133	4	1

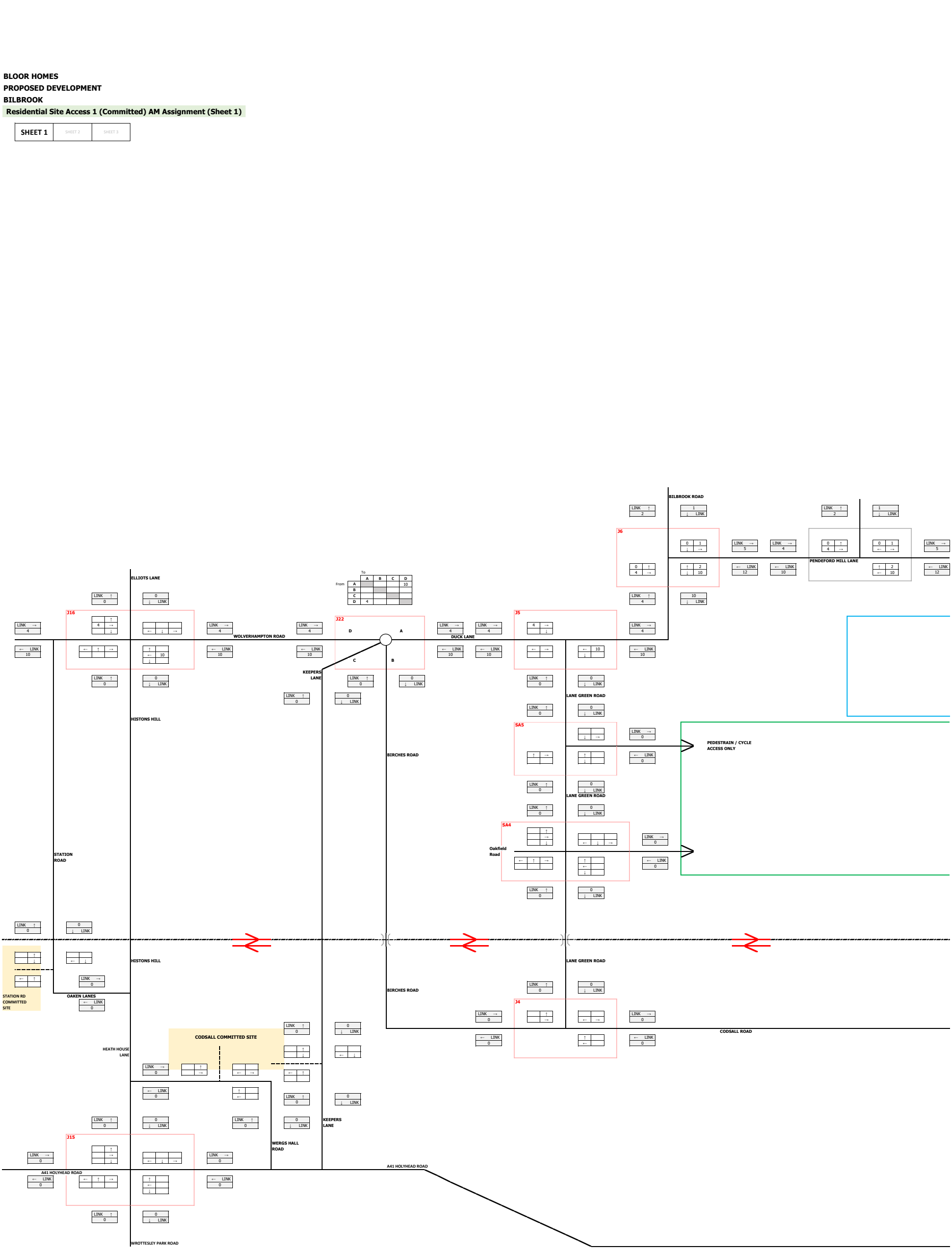
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
2021/22 SURVEY PM (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



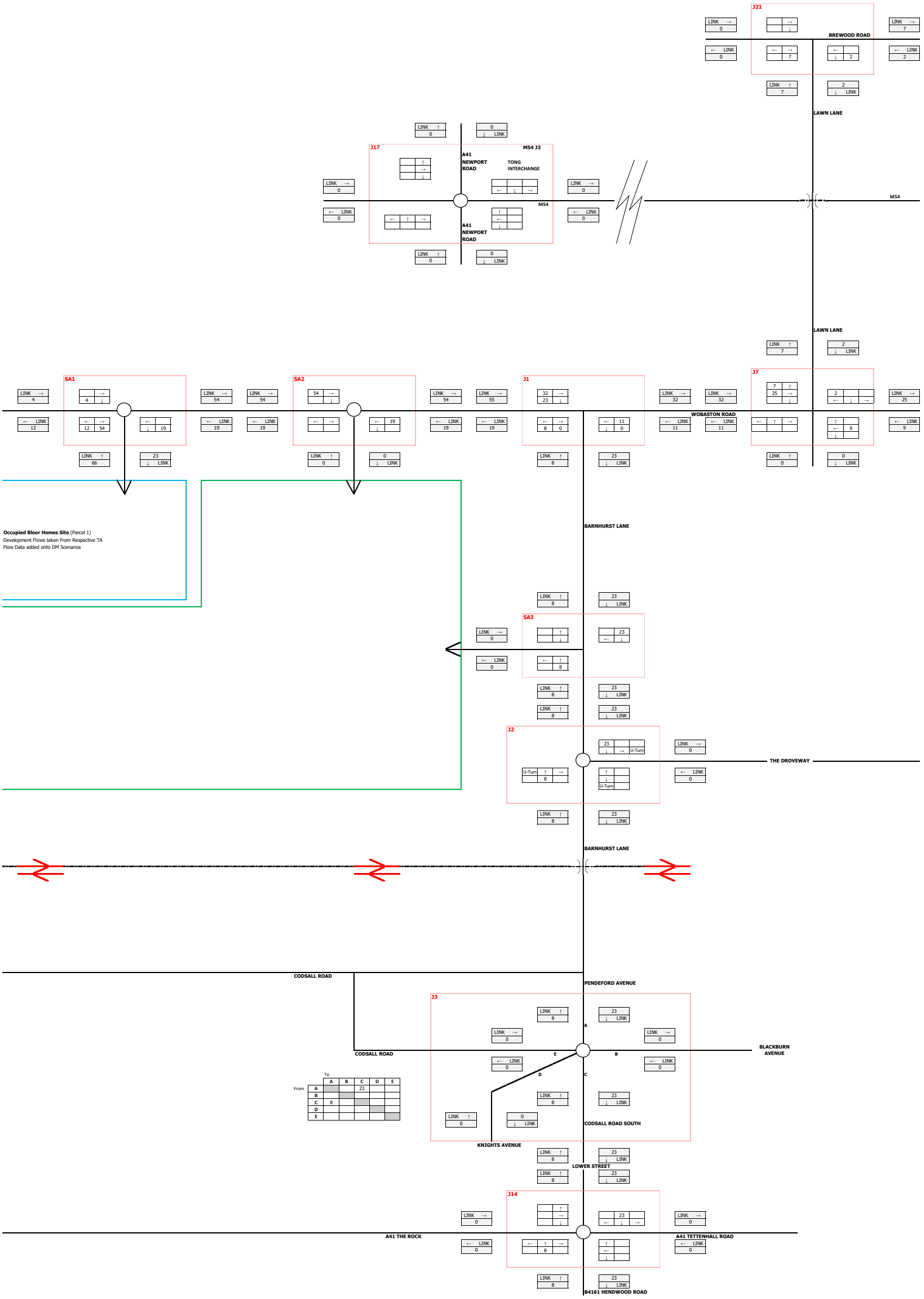
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Residential Site Access 1 (Committed) AM Assignment (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Residential Site Access 1 (Committed) AM Assignment (Sheet 2)

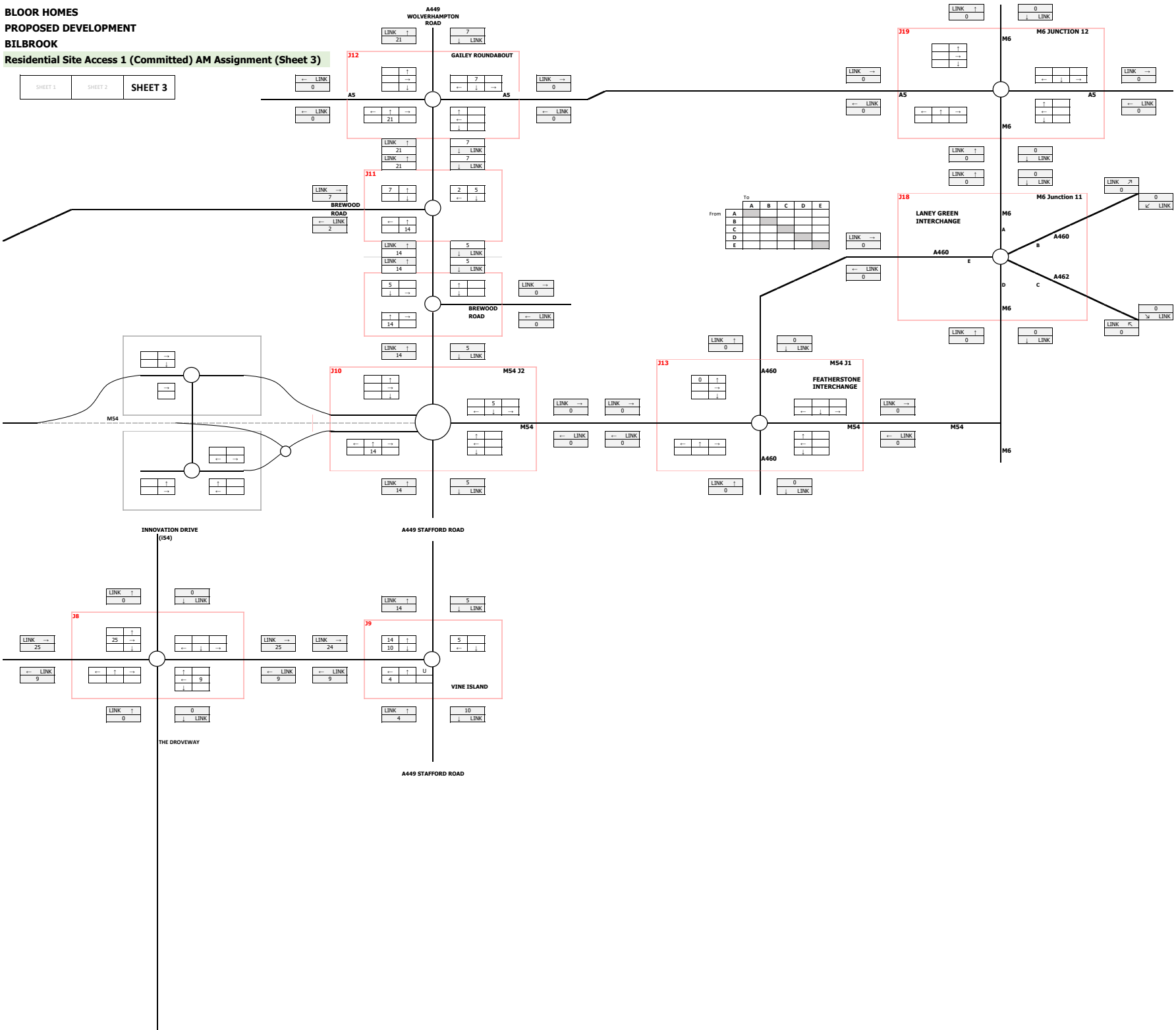
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A			23		
B					
C	8				
D					
E					

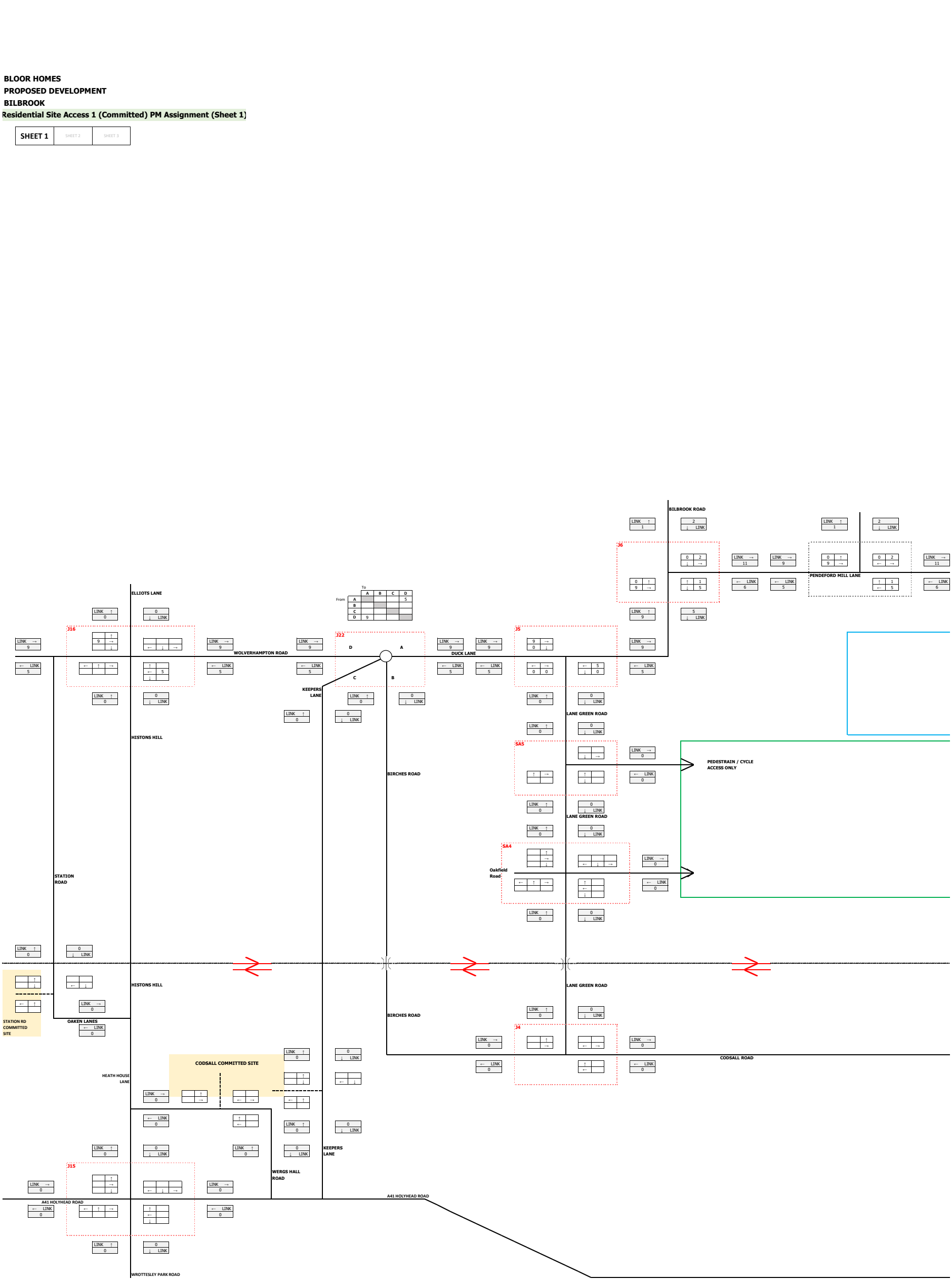
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Residential Site Access 1 (Committed) AM Assignment (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



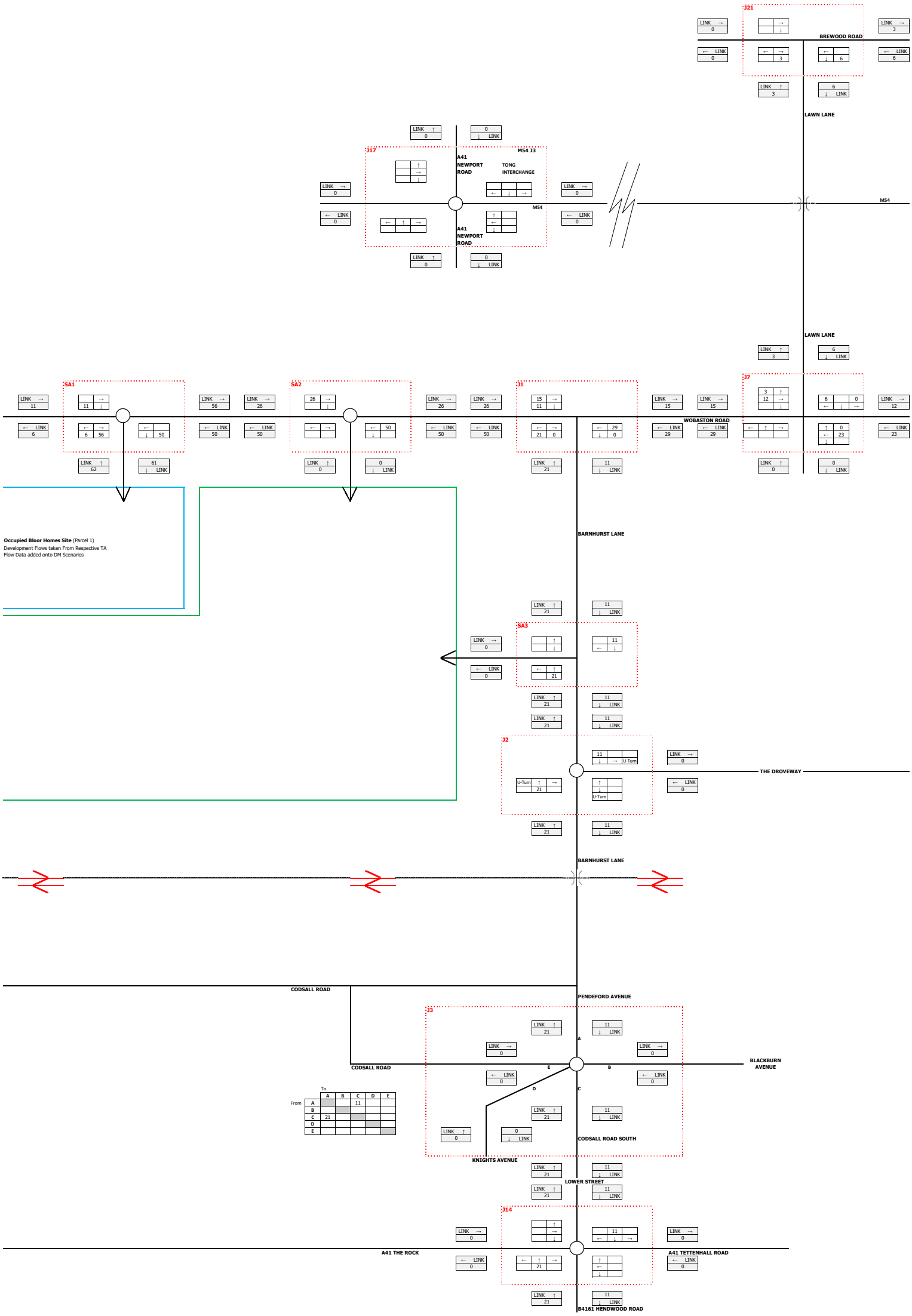
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Residential Site Access 1 (Committed) PM Assignment (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Residential Site Access 1 (Committed) PM Assignment (Sheet 2

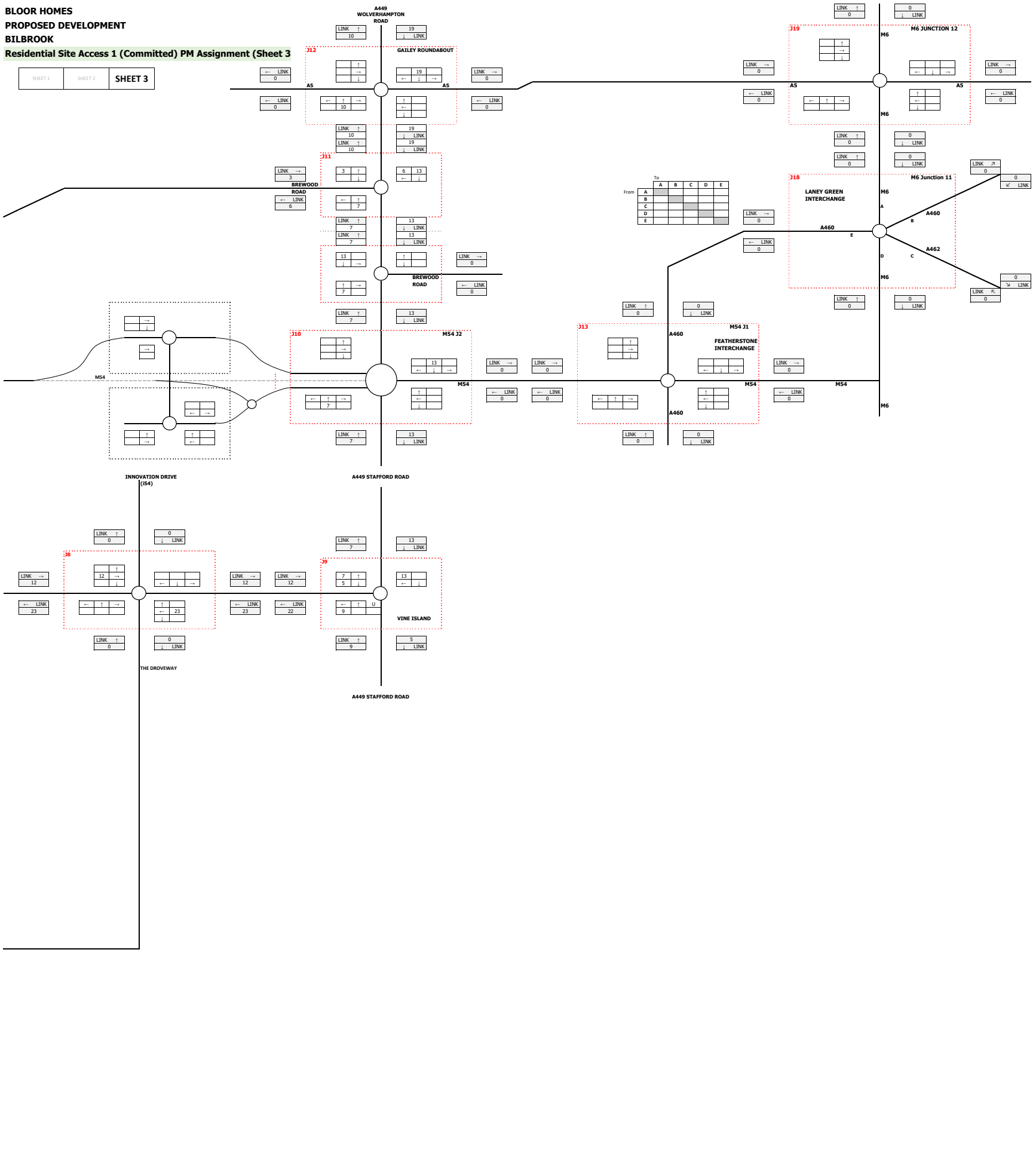
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A			11		
B					
C	21				
D					
E					

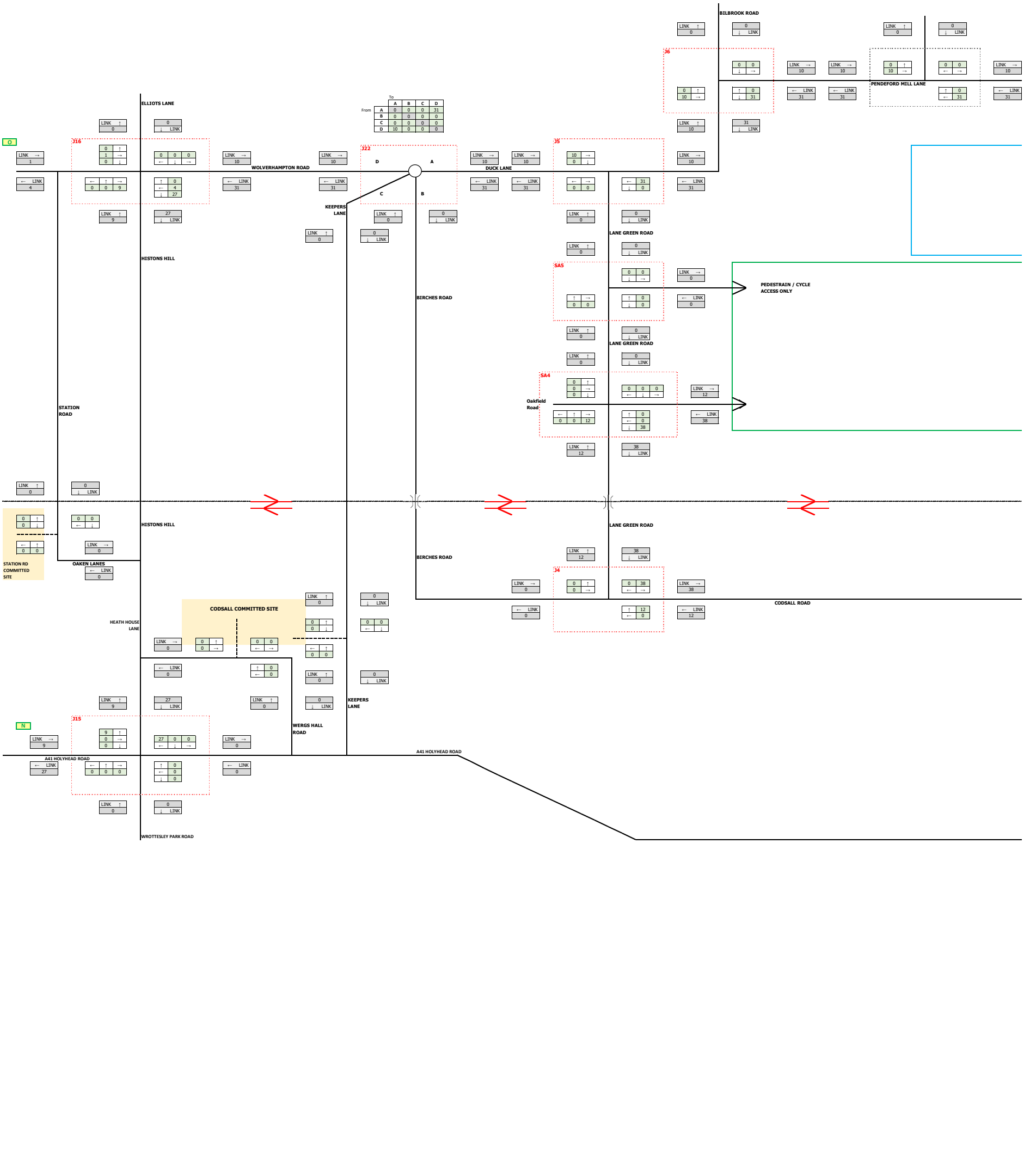
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Residential Site Access 1 (Committed) PM Assignment (Sheet 3

SHEET 1 | SHEET 2 | **SHEET 3**



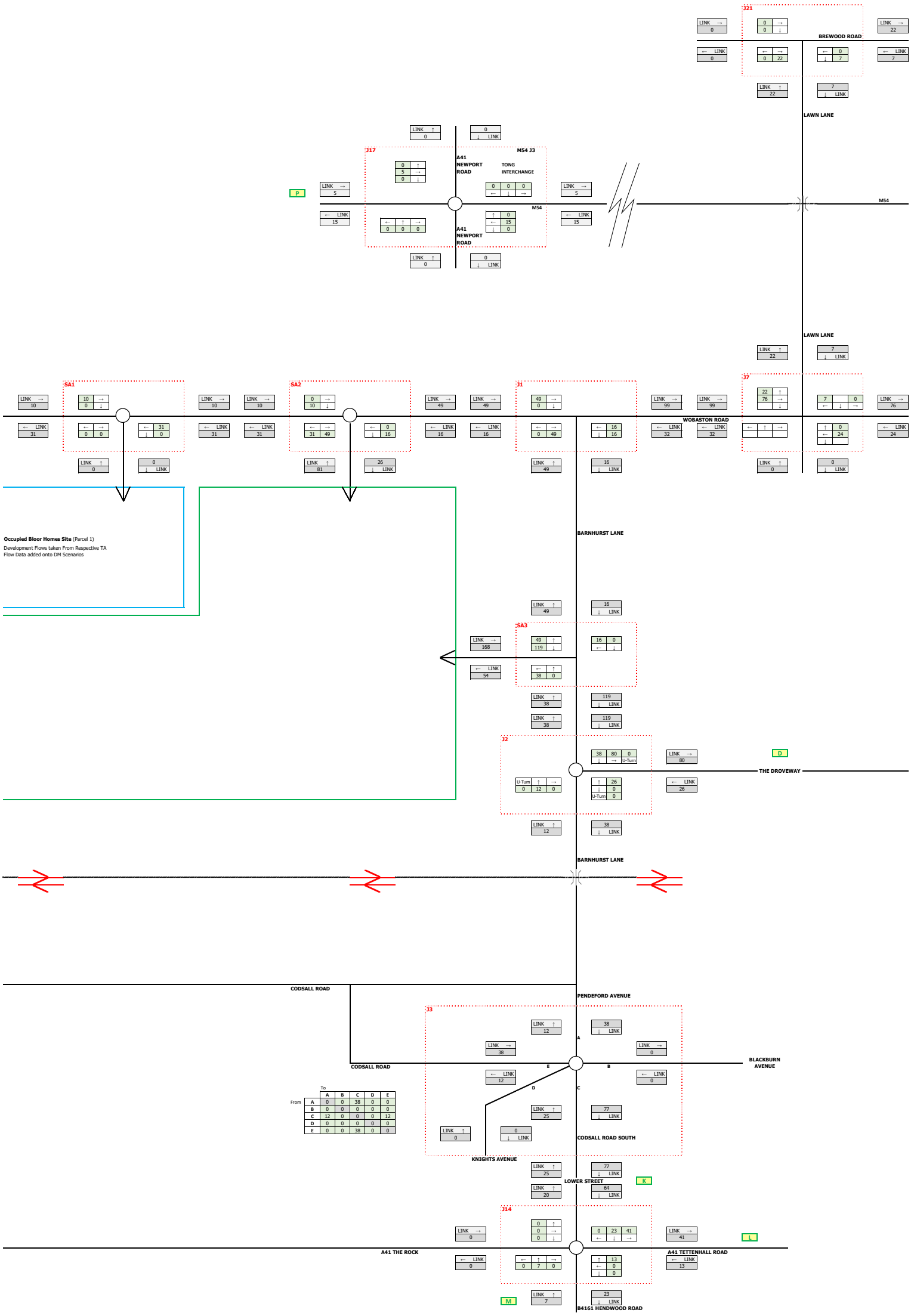
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Total Residential AM Assignment (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Total Residential AM Assignment (Sheet 2)

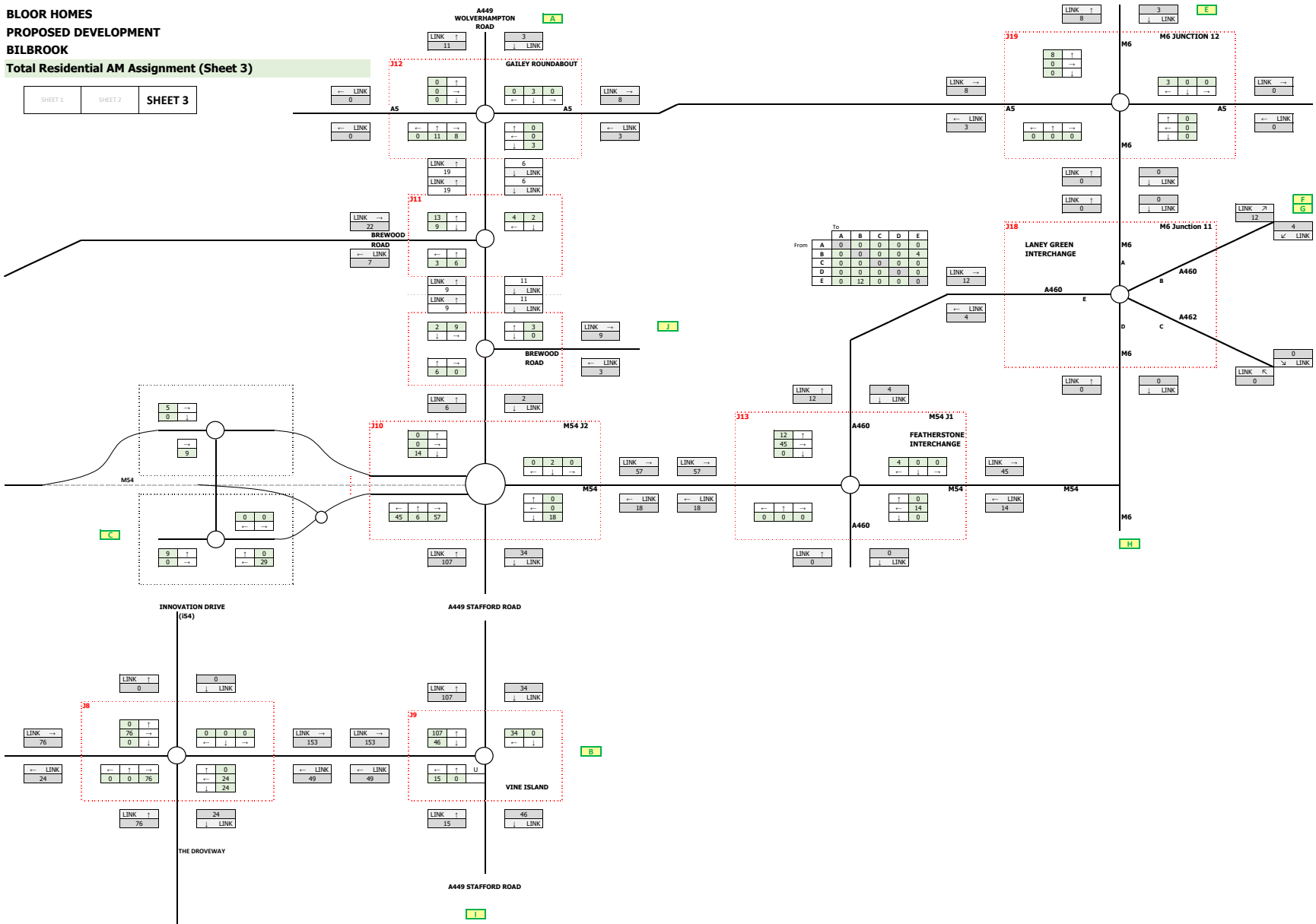
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A	0	0	38	0	0
B	0	0	0	0	0
C	12	0	0	0	12
D	0	0	0	0	0
E	0	0	38	0	0

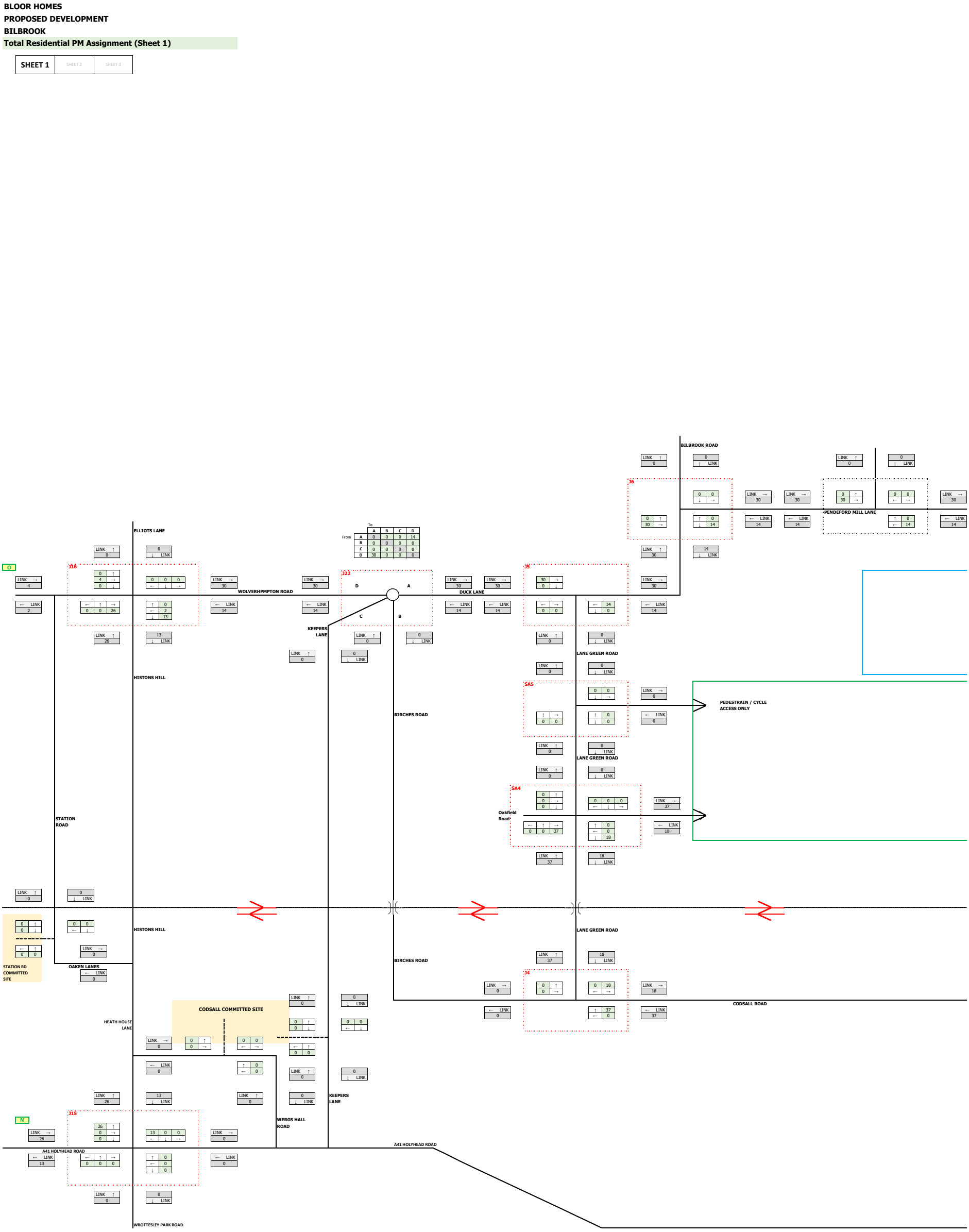
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Total Residential AM Assignment (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



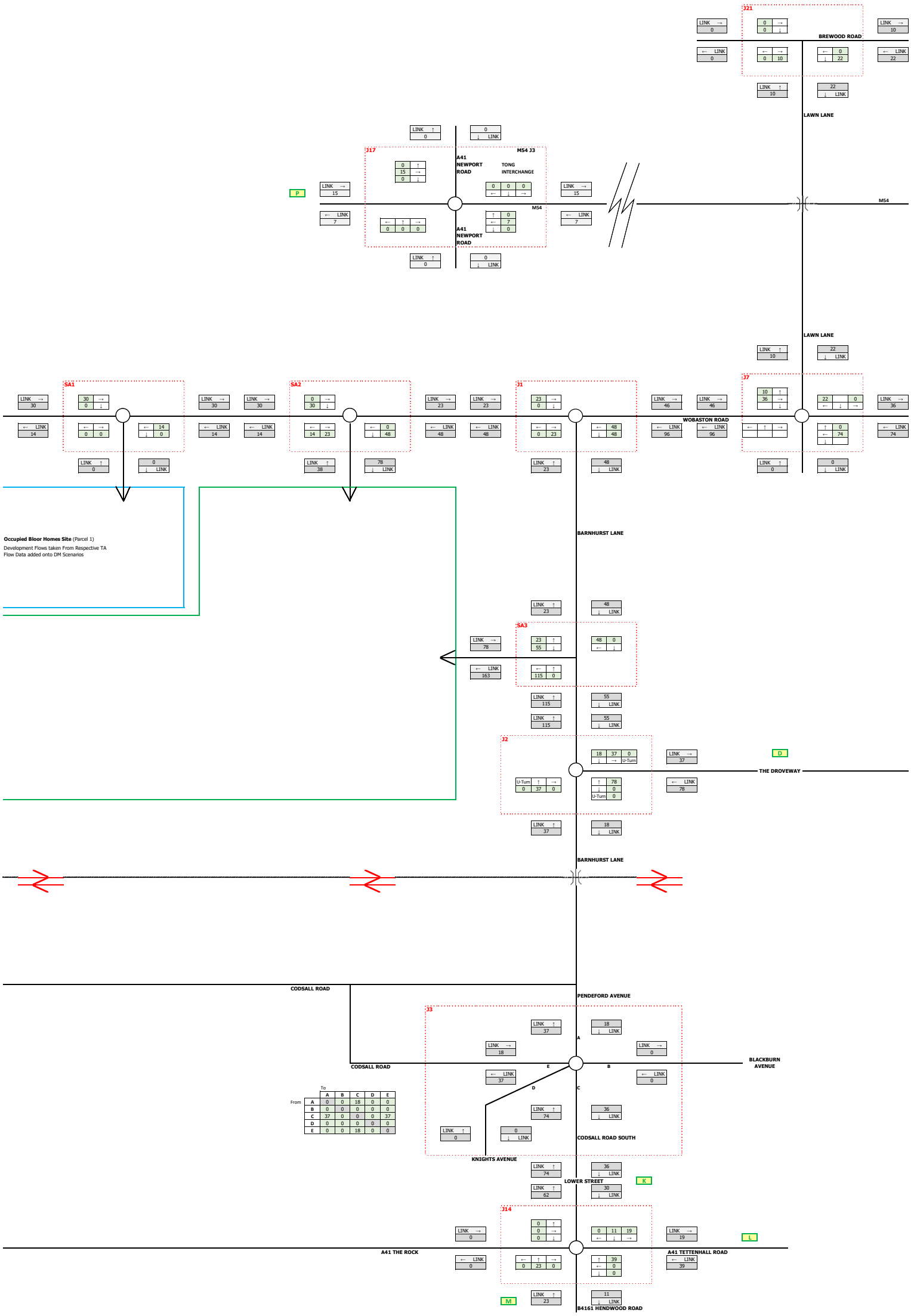
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Total Residential PM Assignment (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Total Residential PM Assignment (Sheet 2)

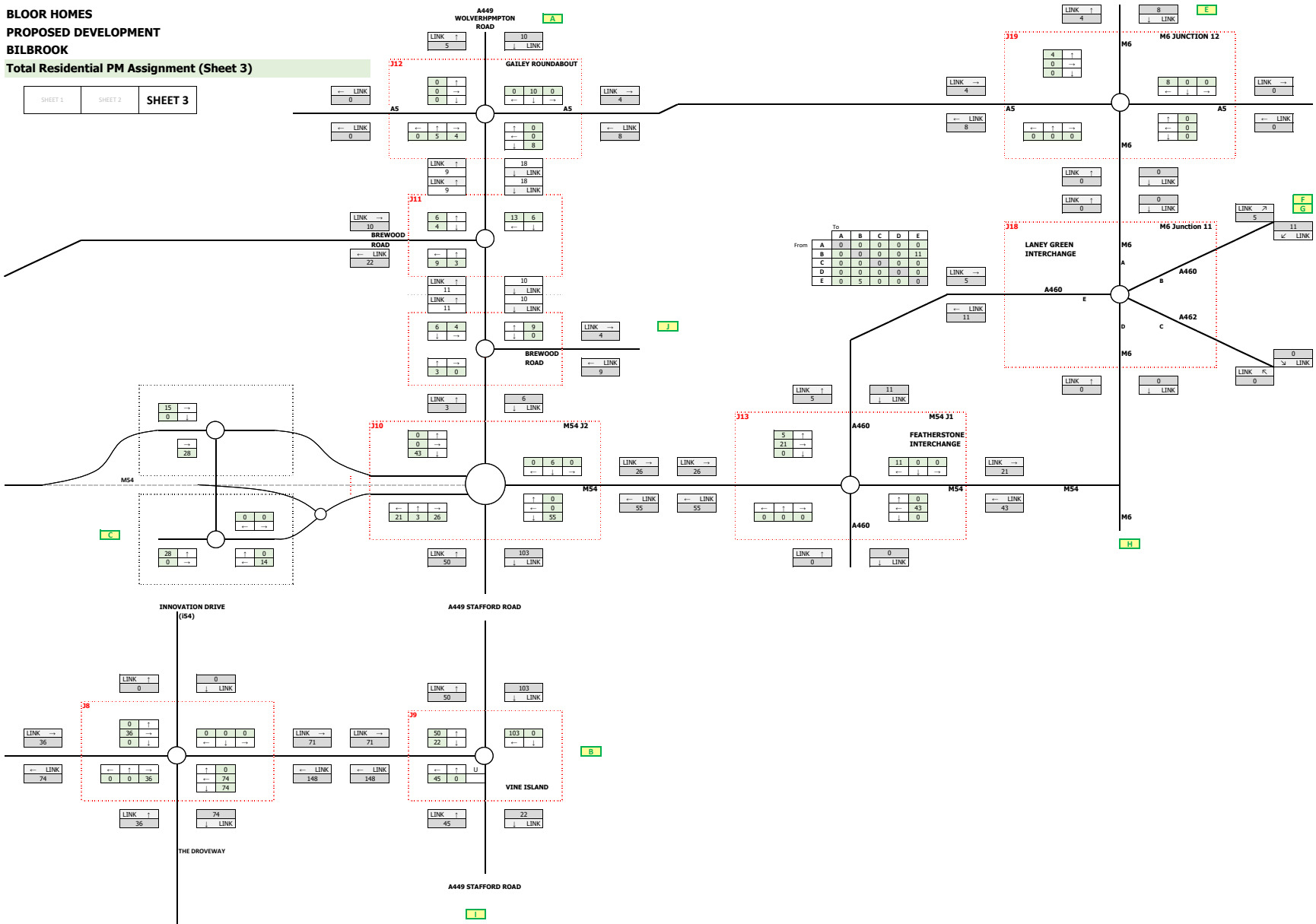
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A	0	0	18	0	0
B	0	0	0	0	0
C	37	0	0	0	37
D	0	0	0	0	0
E	0	0	18	0	0

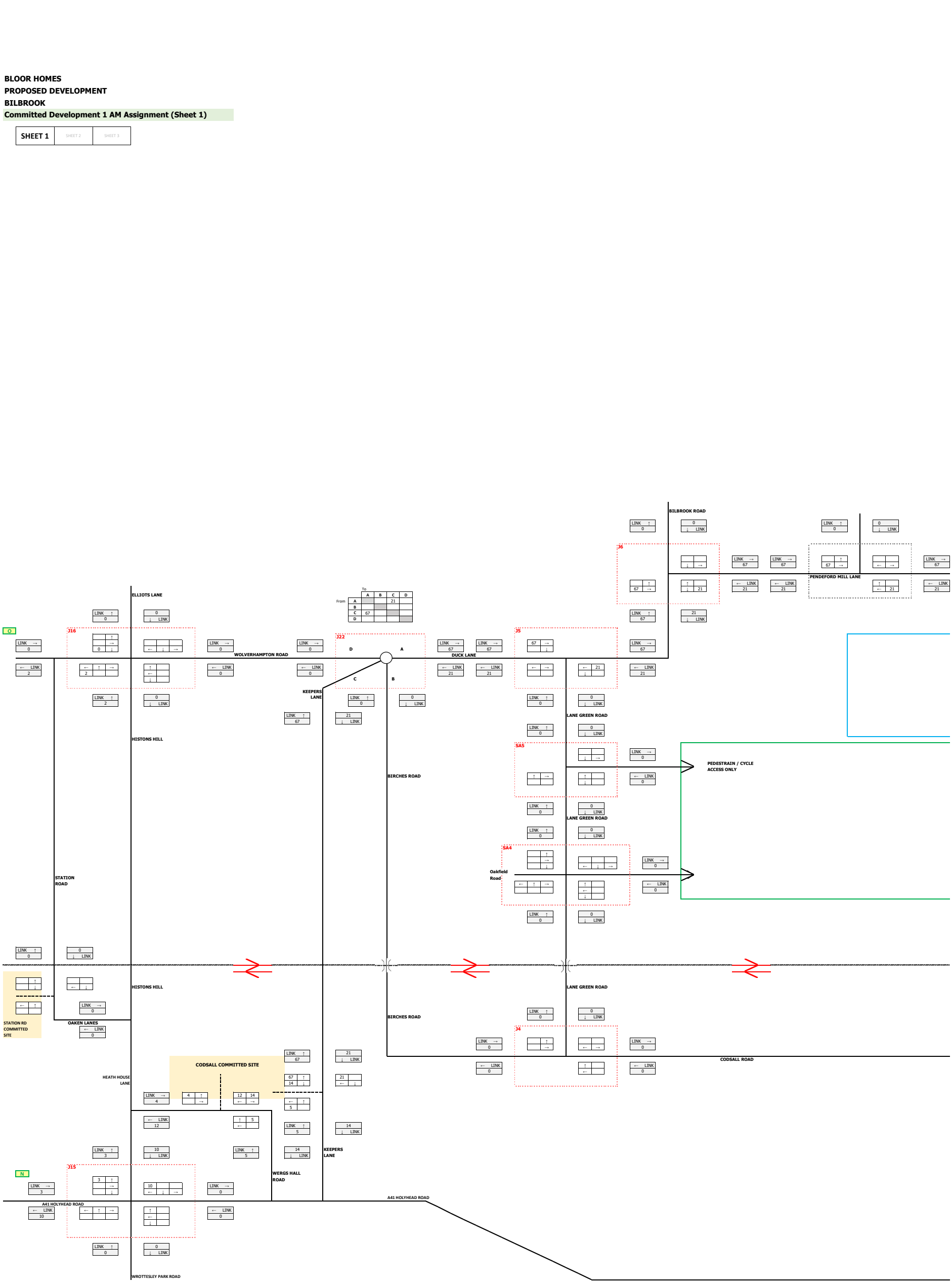
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Total Residential PM Assignment (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



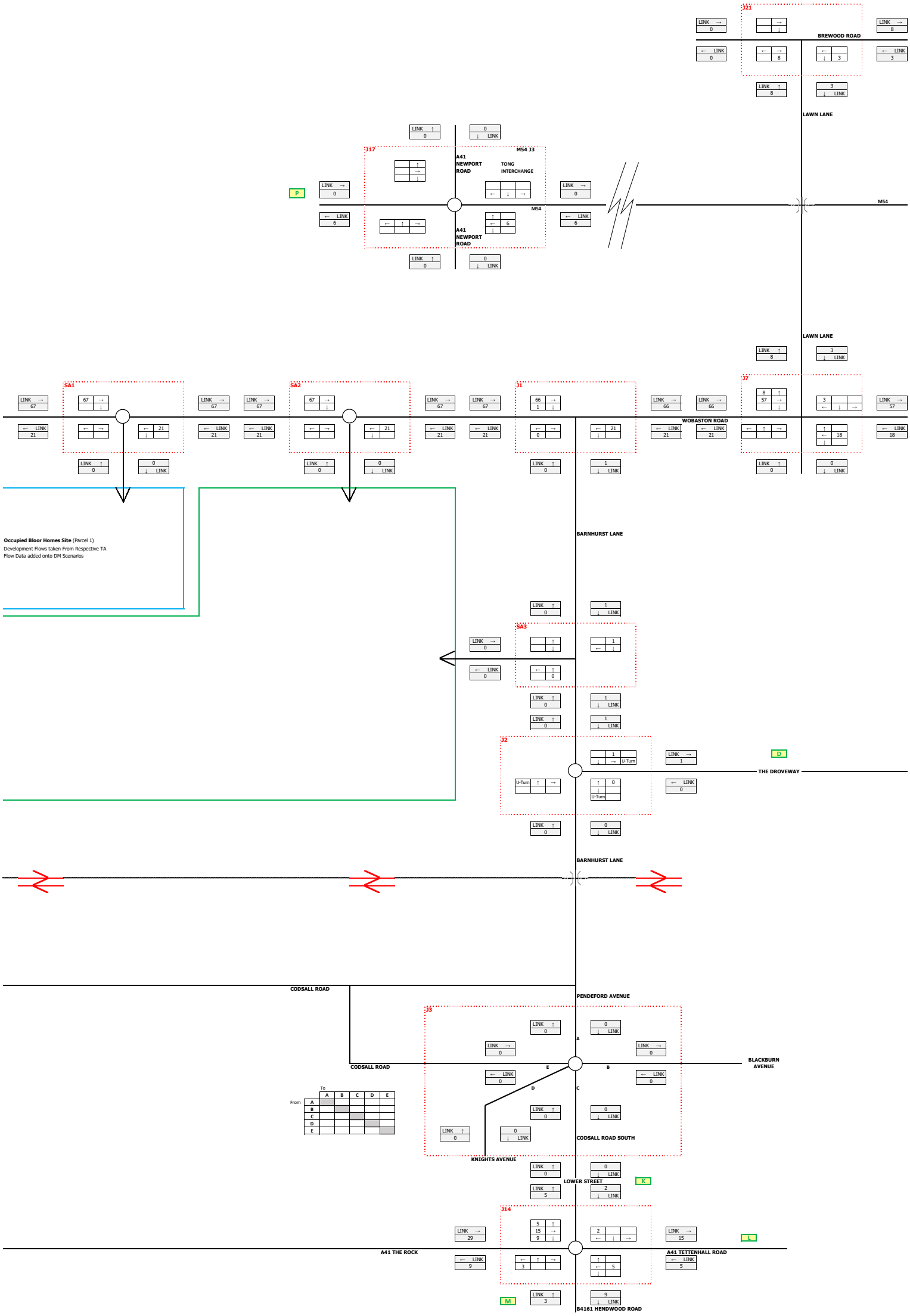
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 1 AM Assignment (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



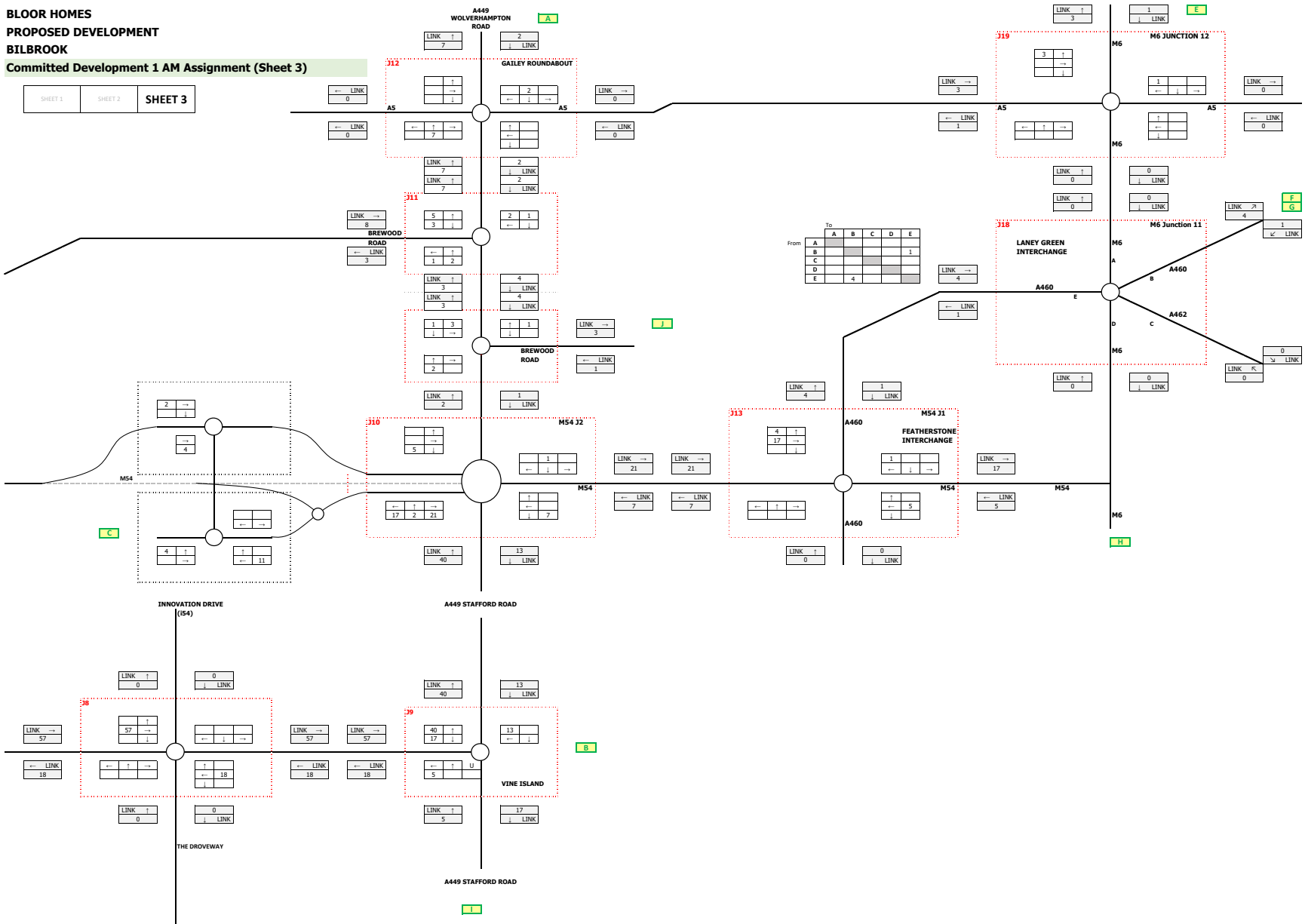
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 1 AM Assignment (Sheet 2)

SHEET 1	**SHEET 2**	SHEET 3



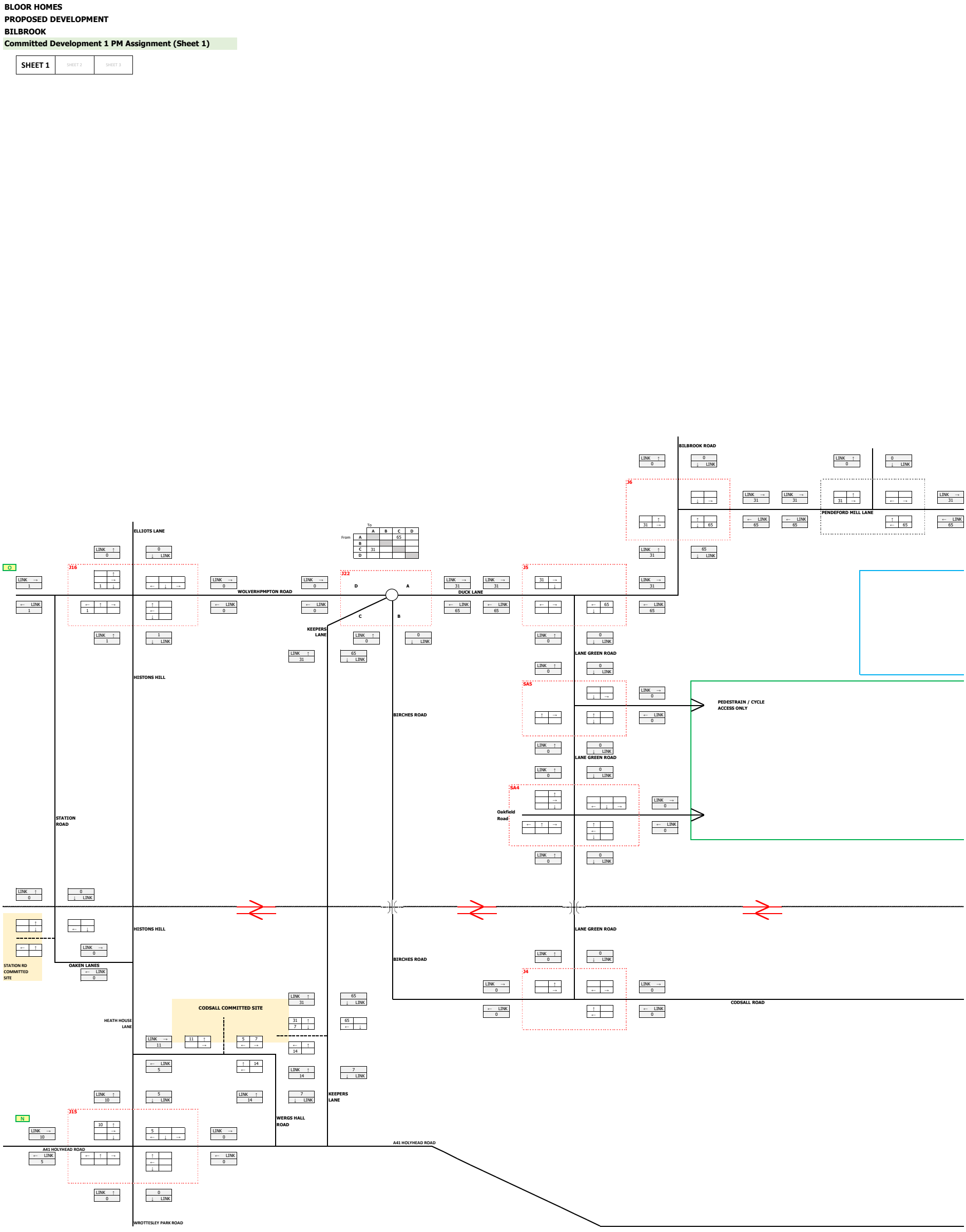
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 1 AM Assignment (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



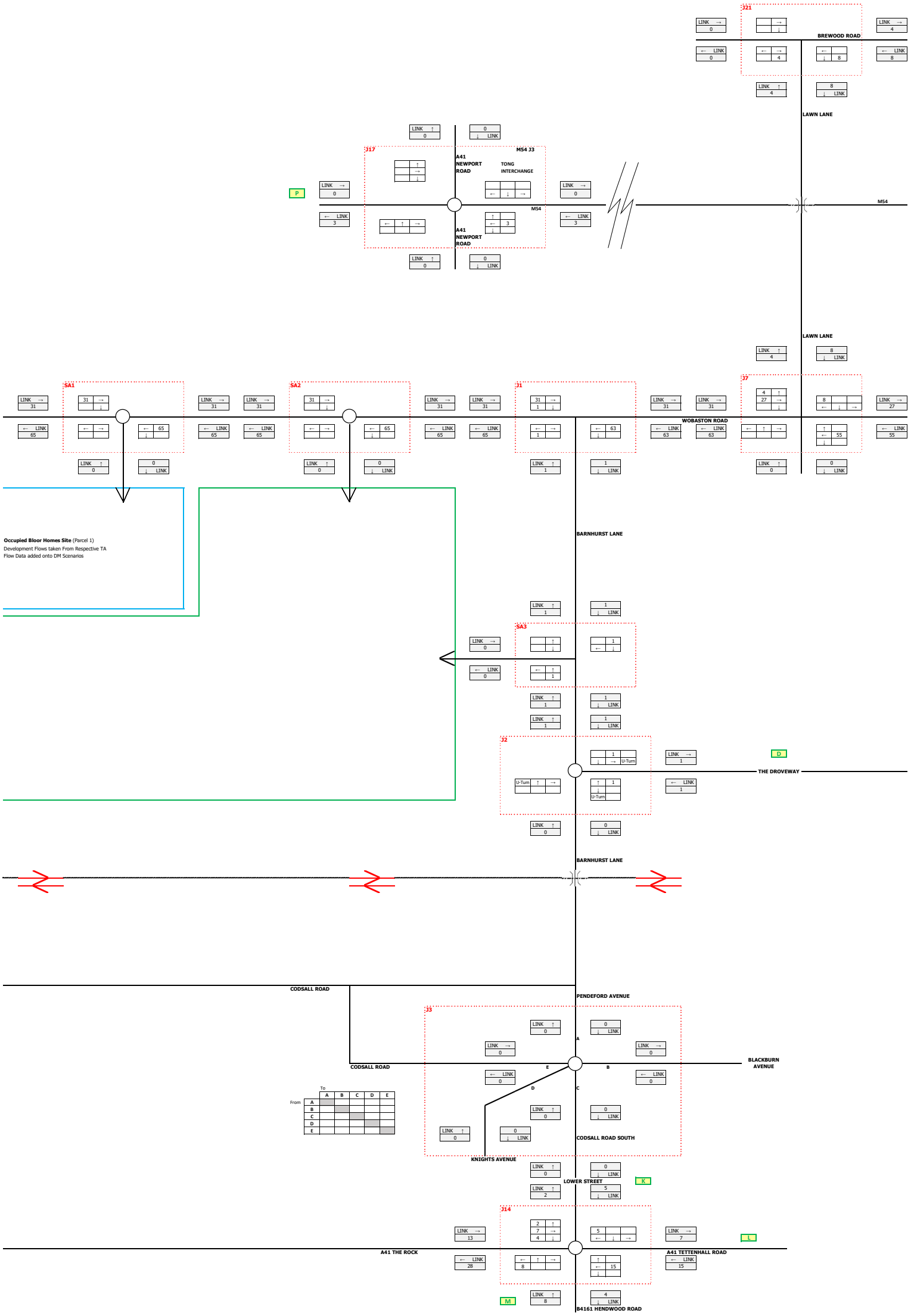
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 1 PM Assignment (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



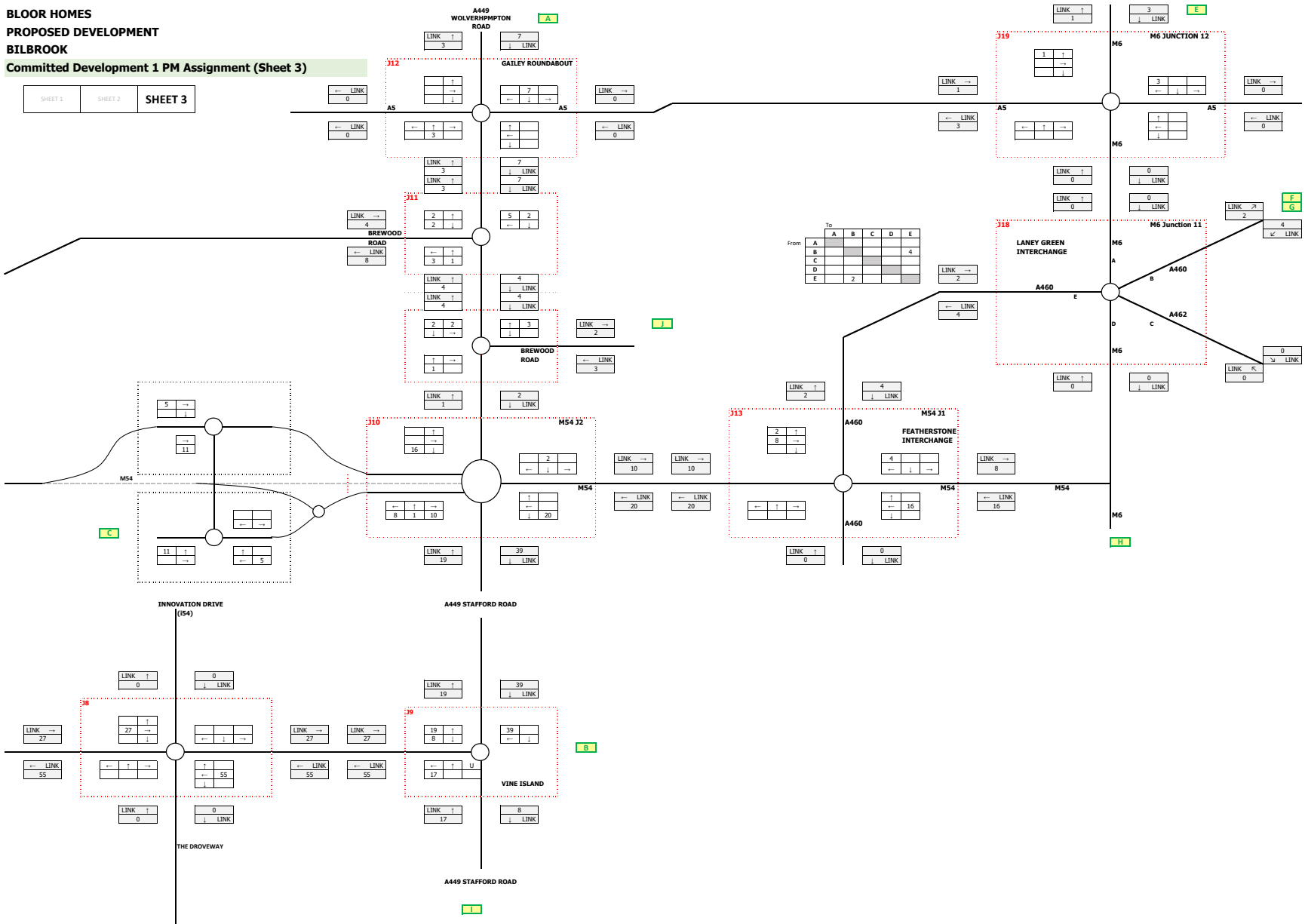
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 1 PM Assignment (Sheet 2)

SHEET 1 | **SHEET 2** | SHEET 3



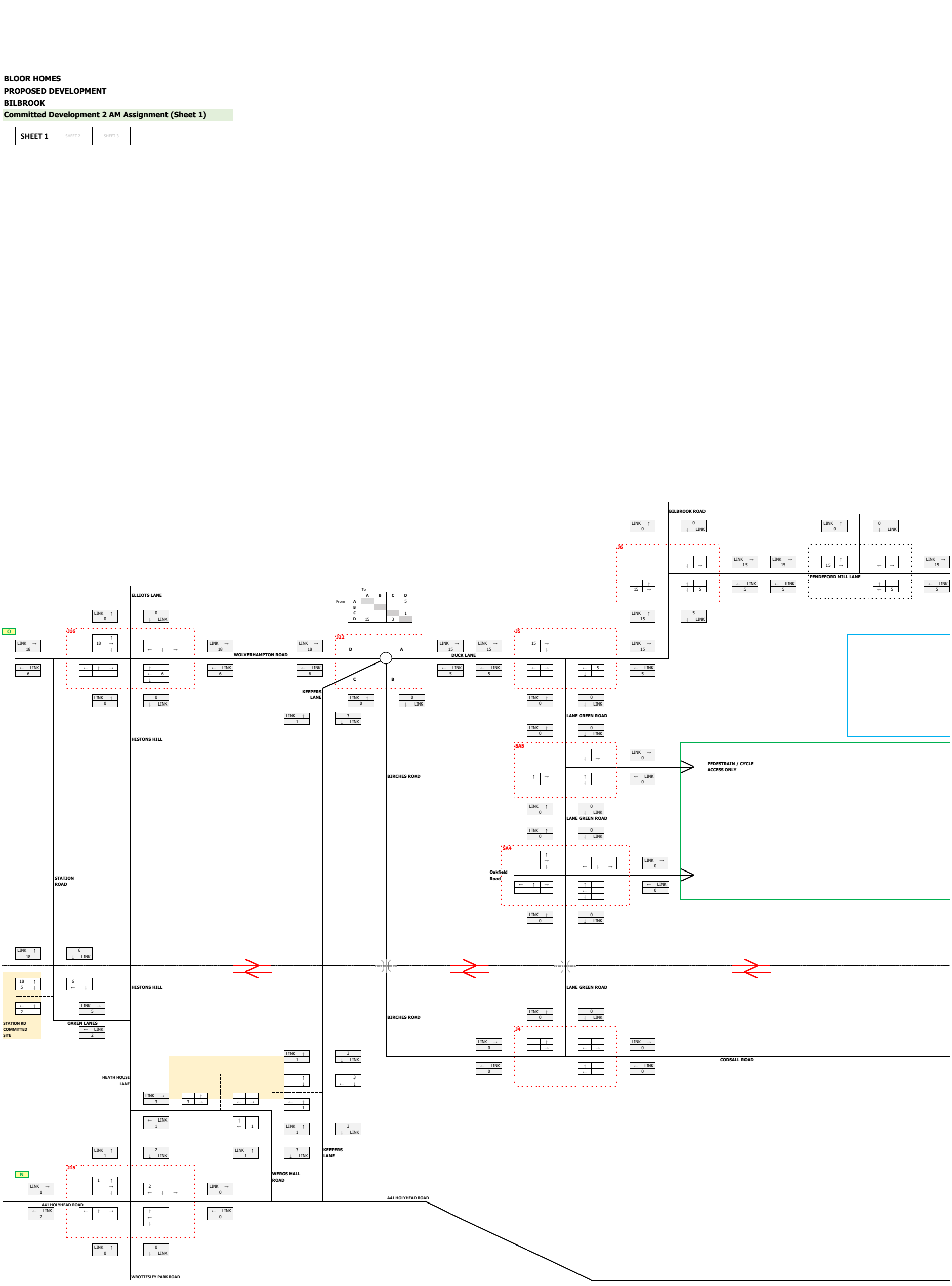
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 1 PM Assignment (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



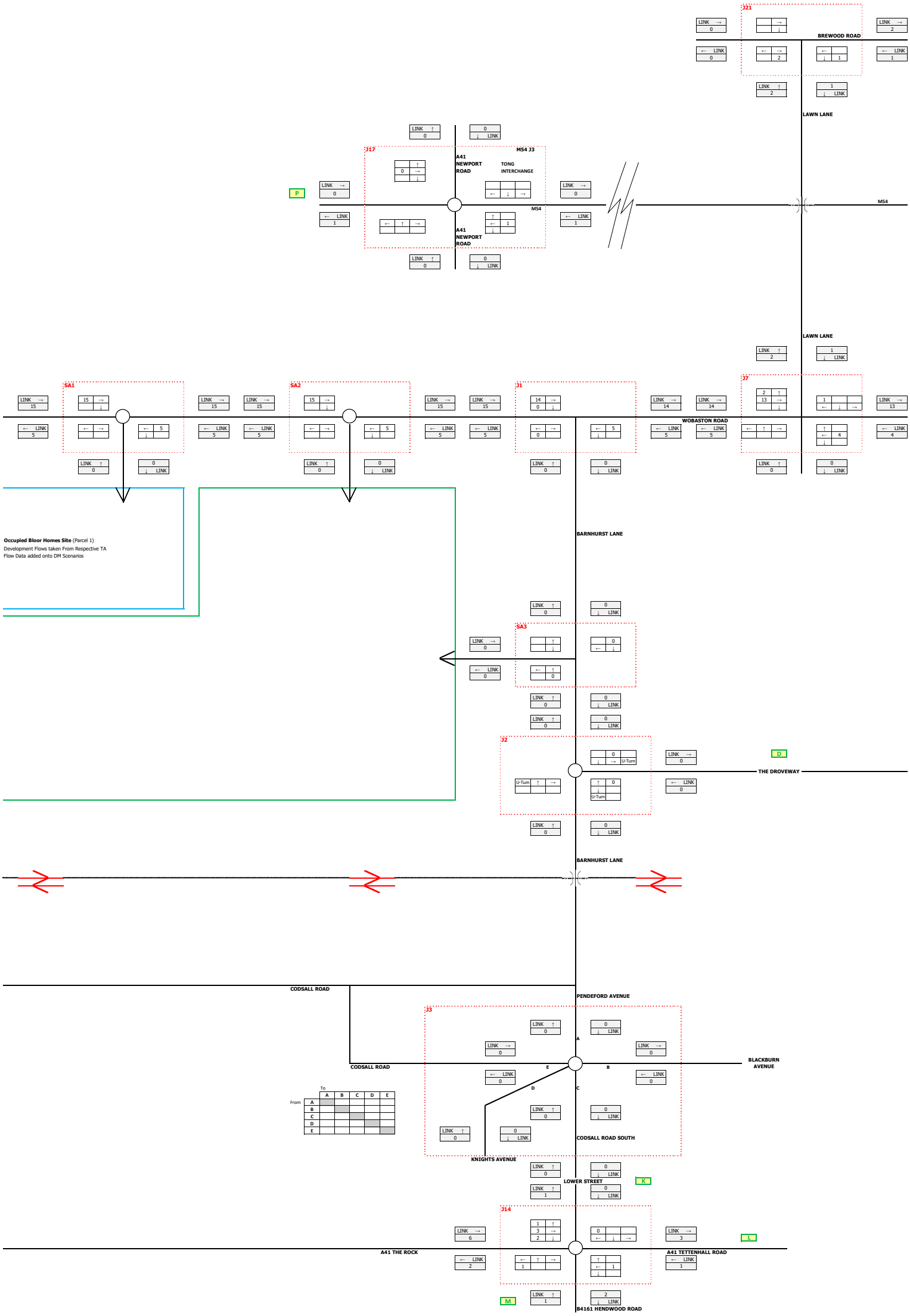
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 2 AM Assignment (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 2 AM Assignment (Sheet 2)

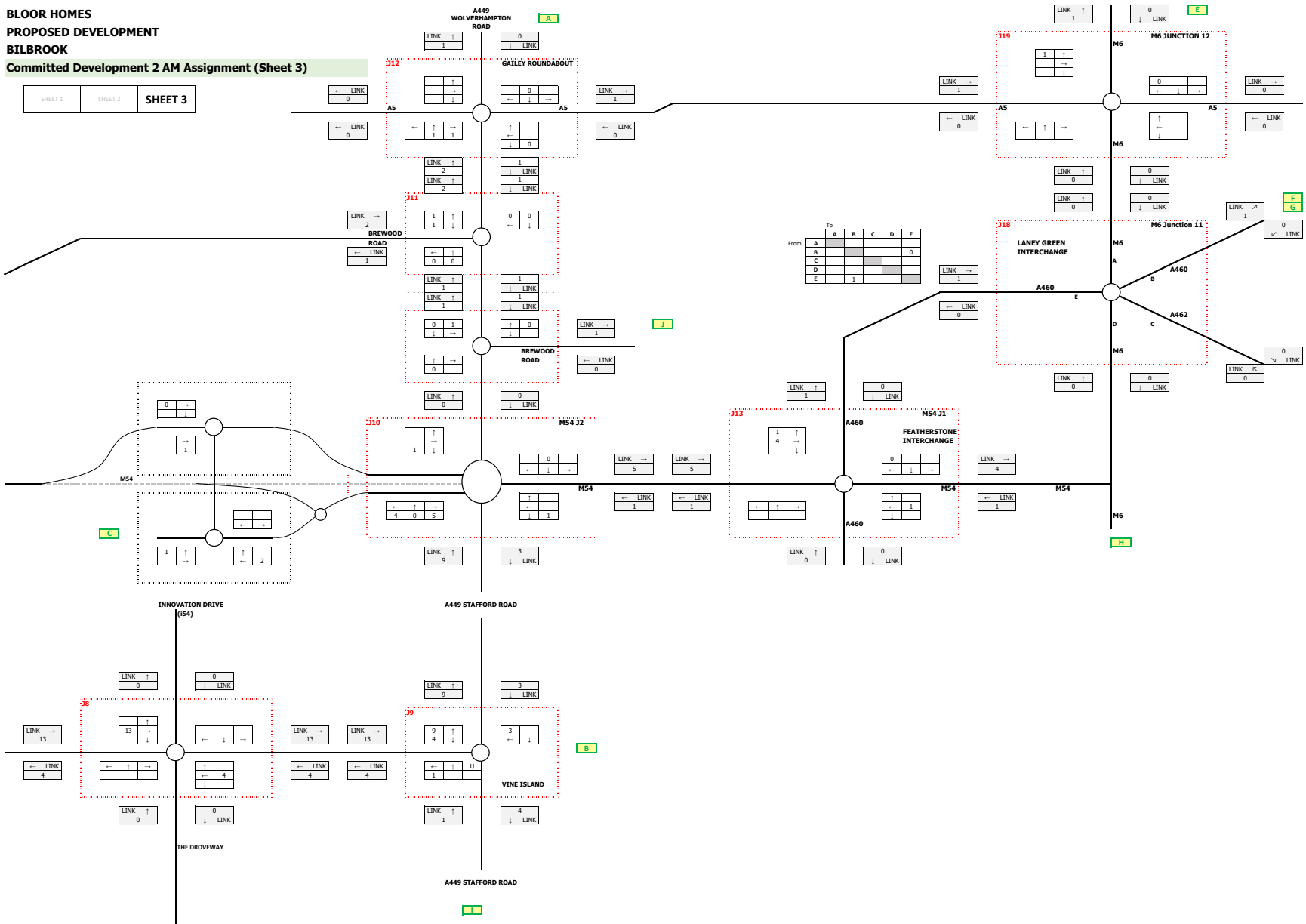
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A					
B					
C					
D					
E					

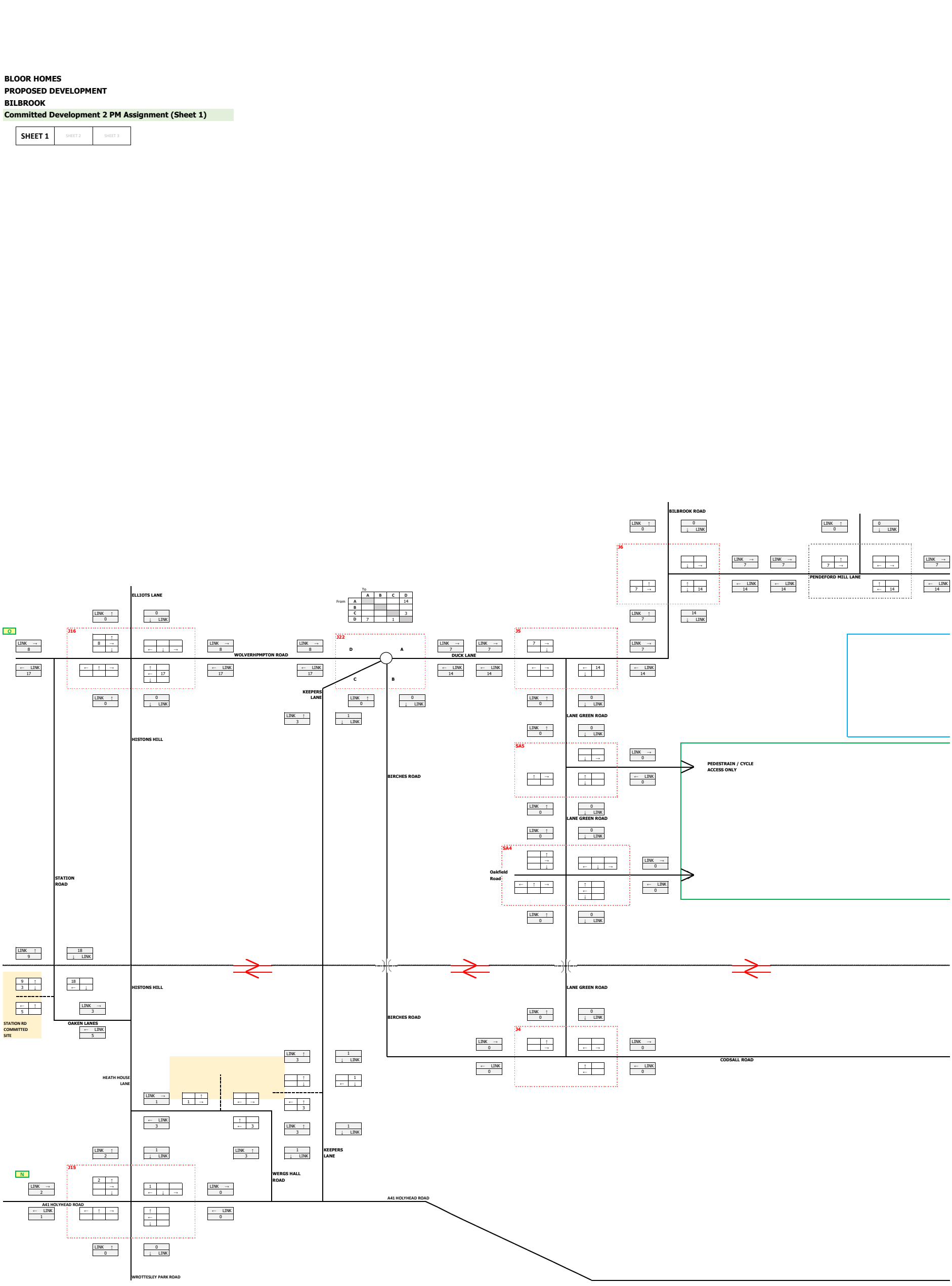
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 2 AM Assignment (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



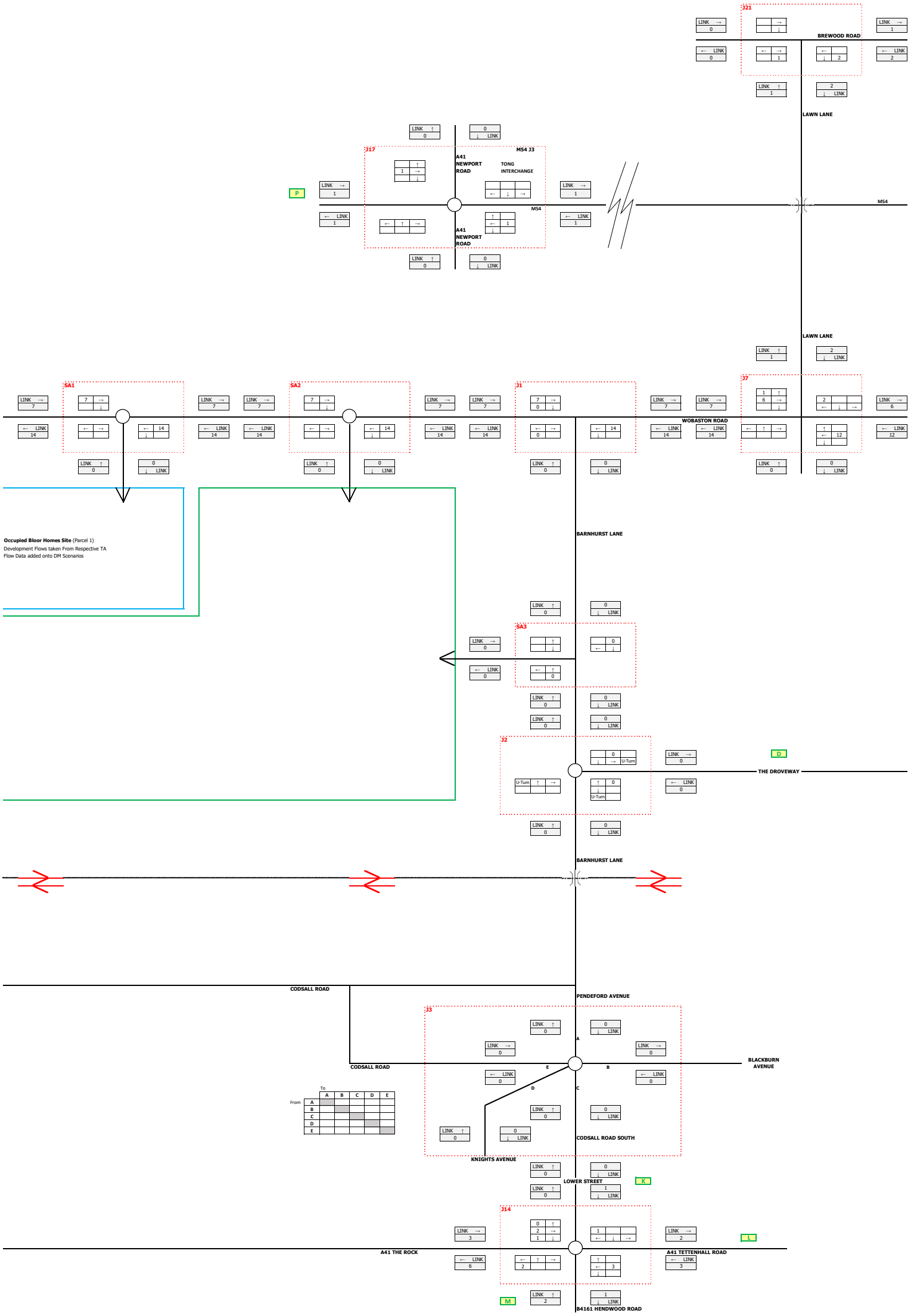
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 2 PM Assignment (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



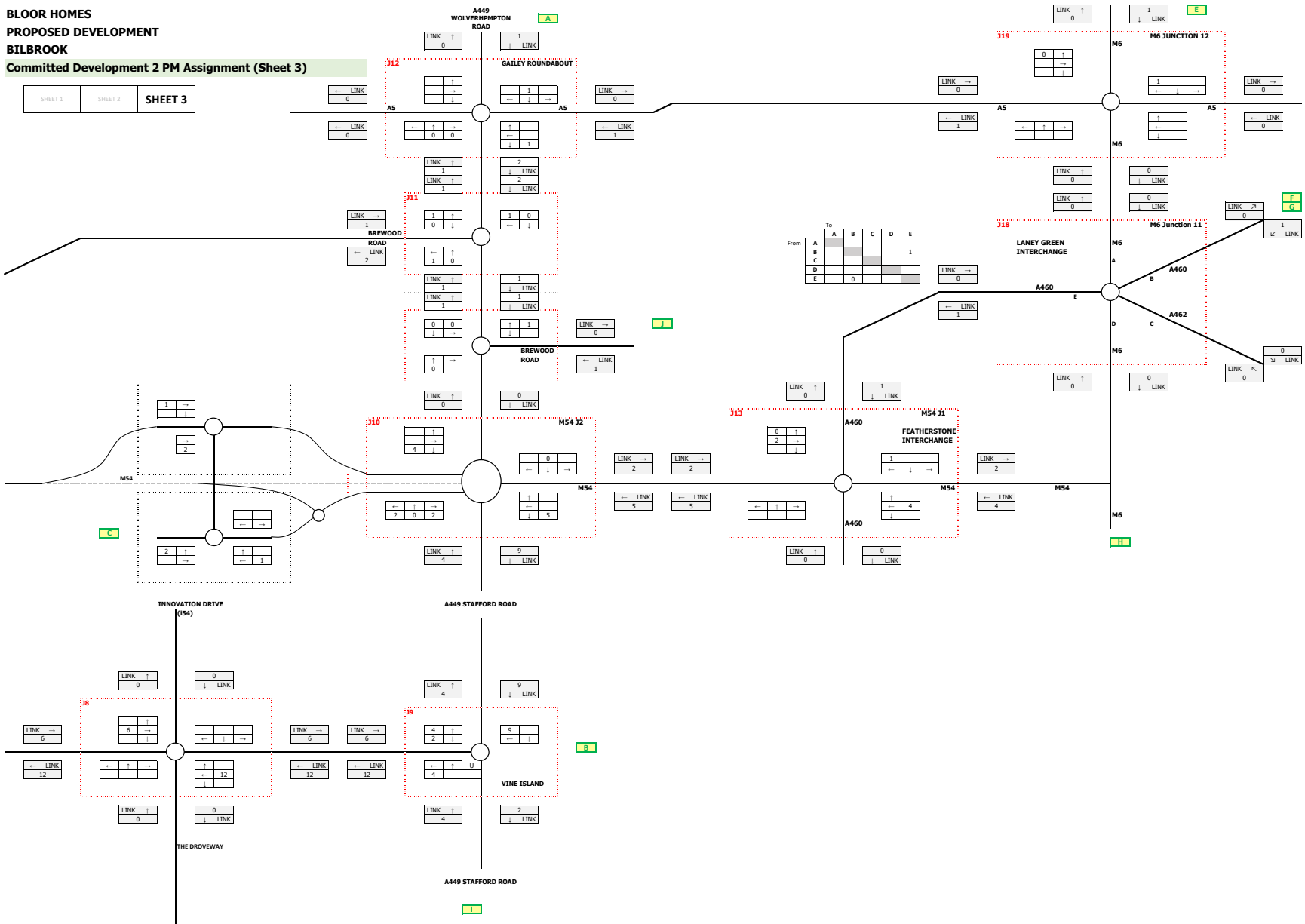
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 2 PM Assignment (Sheet 2)

SHEET 1 | **SHEET 2** | SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Committed Development 2 PM Assignment (Sheet 3)

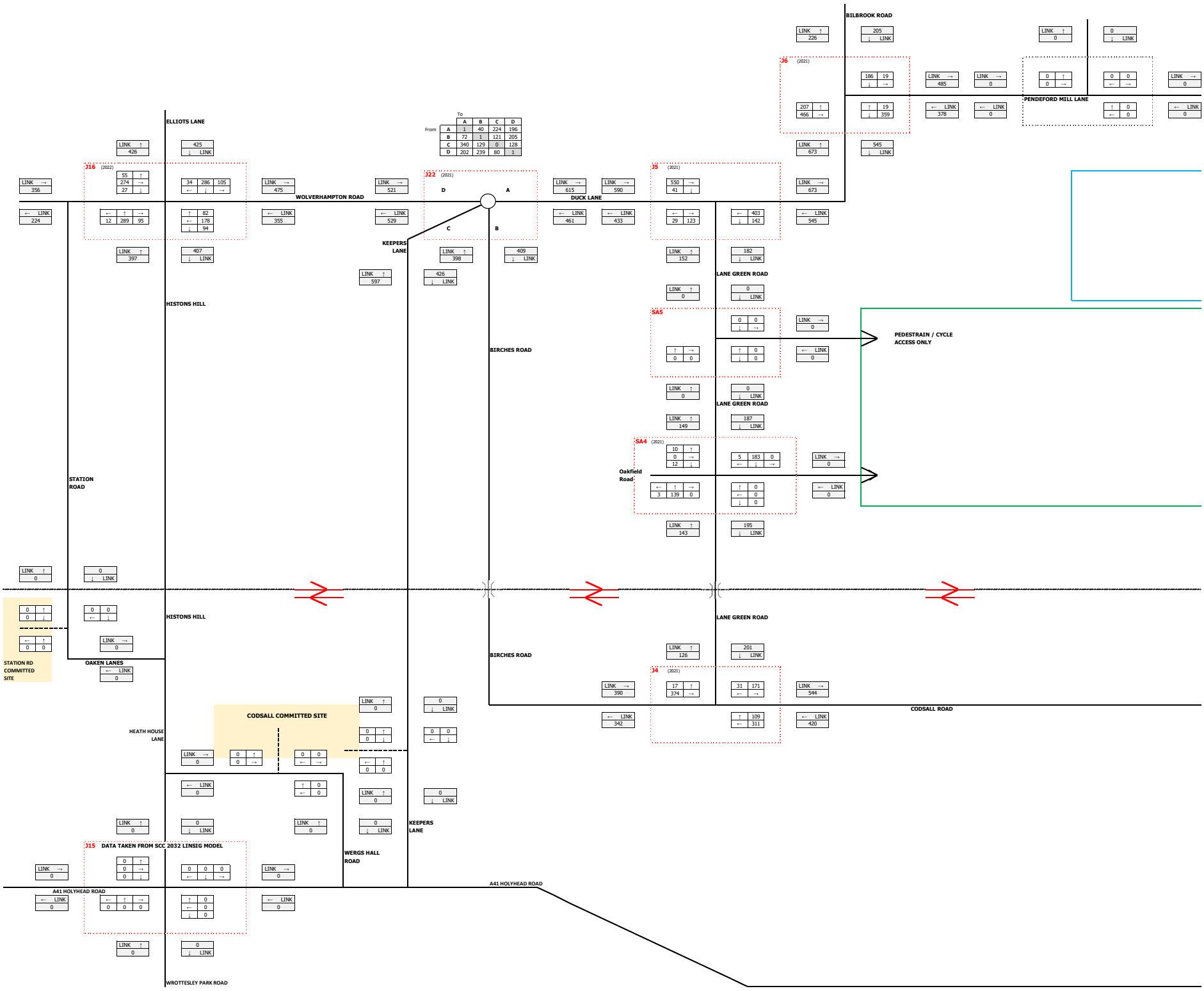
SHEET 1 | SHEET 2 | **SHEET 3**



BLOOR HOMES
PROPOSED DEVELOAMENT
BILBROOK
BASE AM 2038 (Sheet 1)

SHEET 1	SHEET 2	SHEET 3

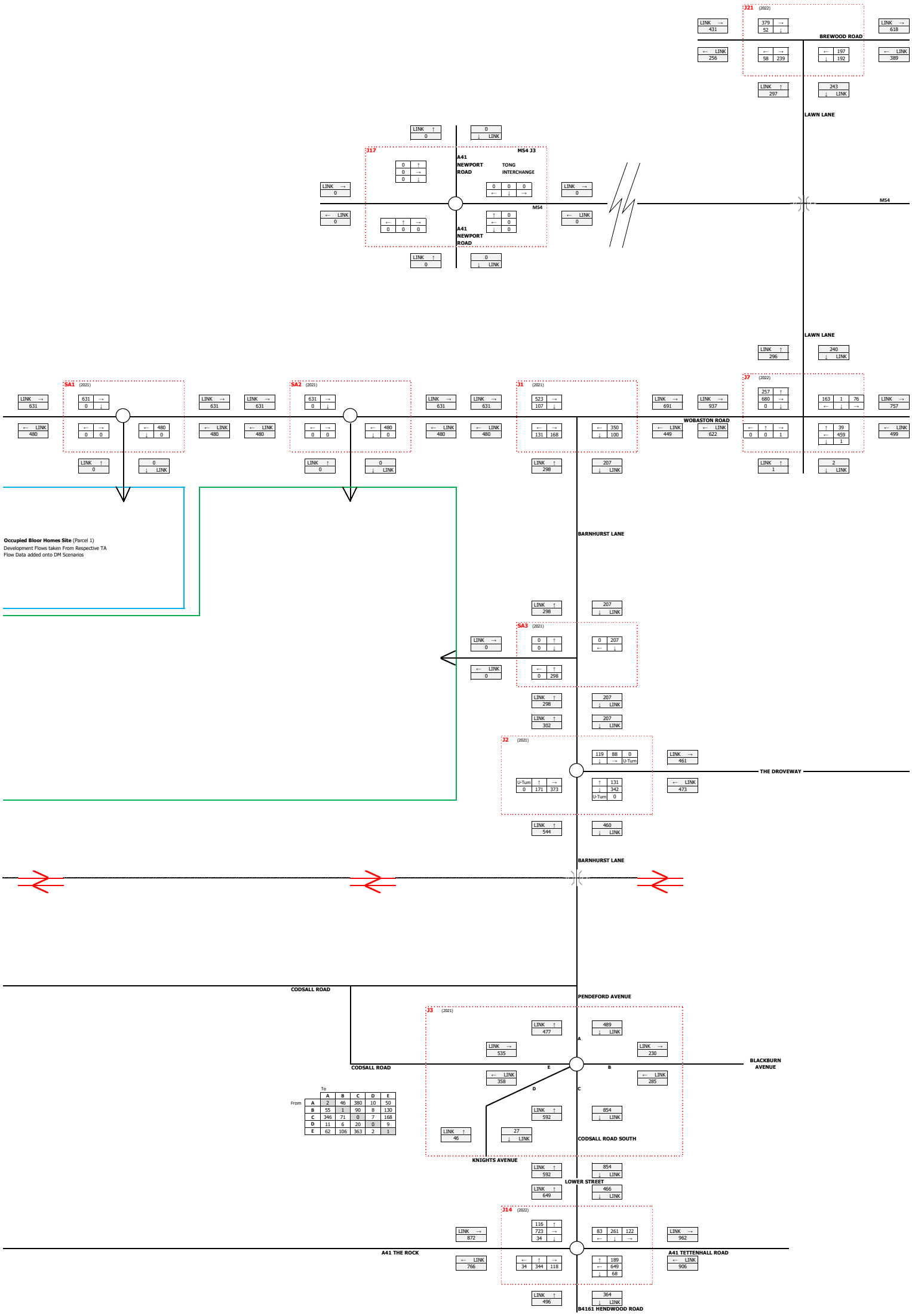
Peak	NTM Growth	
	21-38	22-38
Staff'shire 008	1.113	1.105
Wolverhampton	1.149	1.139
Average	1.131	1.122



BLOOR HOMES
PROPOSED DEVELOAMENT
BILBROOK
BASE AM 2038 (Sheet 2)

SHEET 1	**SHEET 2**	SHEET 3

Peak	NTM Growth	
	21-38	22-38
Staff'shire 008	1.1129	1.1051
Wolverhampton	1.1494	1.139
Average	1.1312	1.1221

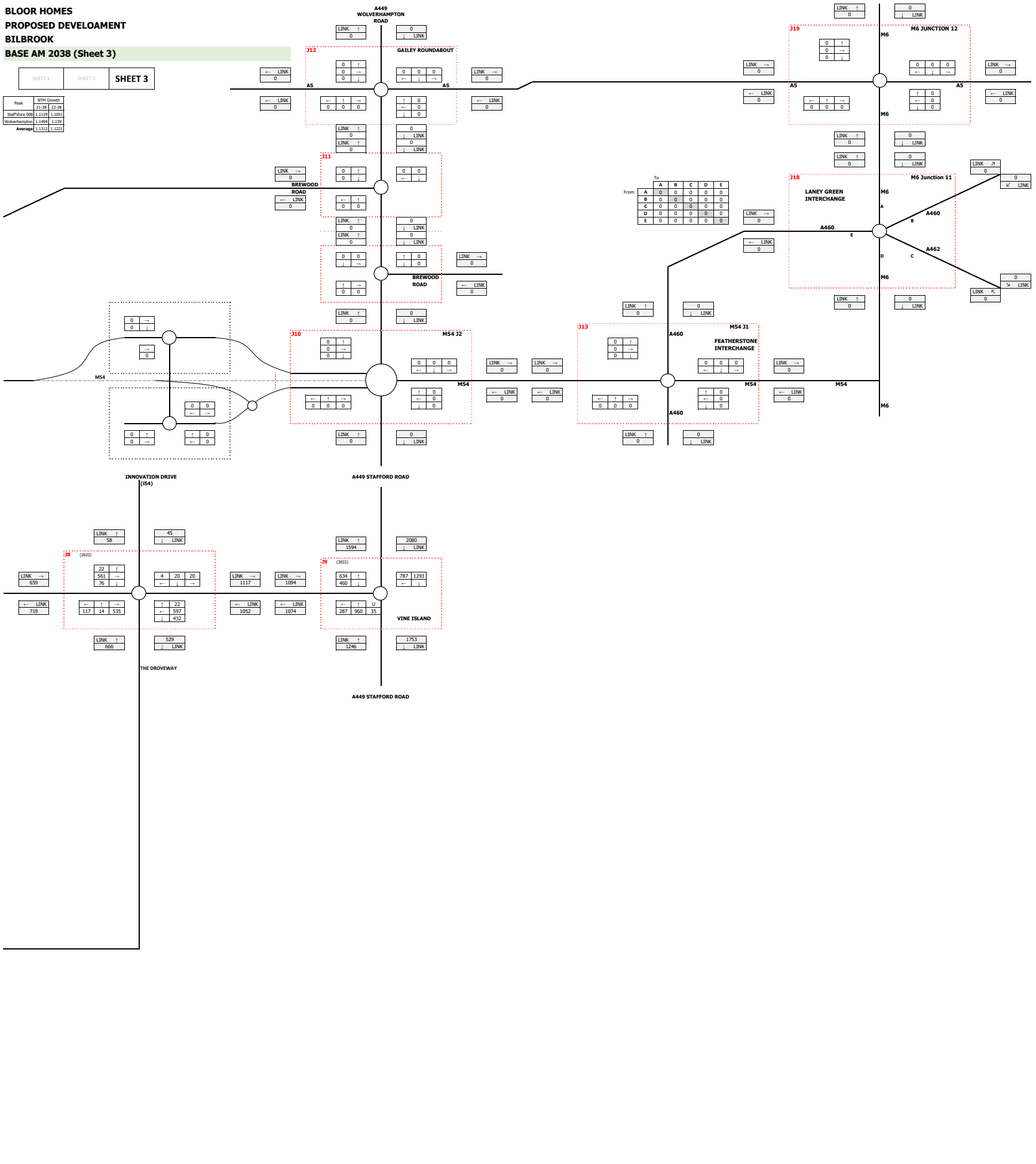


From \ To	A	B	C	D	E
A	2	46	380	10	50
B	55	1	90	8	130
C	346	71	0	7	168
D	11	6	20	0	9
E	62	106	363	2	1

BLOOR HOMES
PROPOSED DEVELOAMENT
BILBROOK
BASE AM 2038 (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**

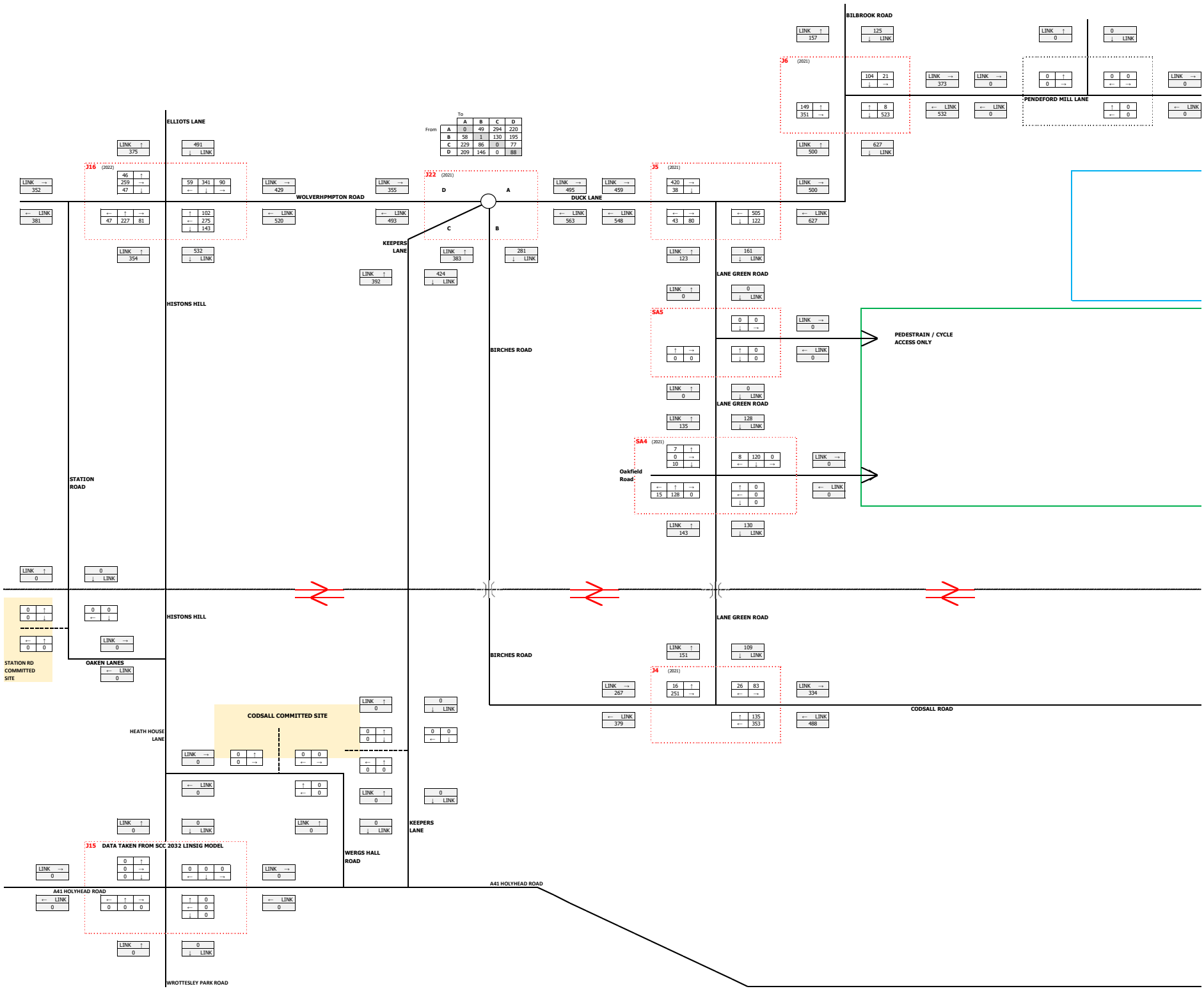
Peak	NTM Growth 21-38	NTM Growth 22-38
Staff'shire 008	1.1129	1.1051
Wolverhampton	1.1494	1.139
Average	1.1312	1.1221



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
BASE PM 2038 (Sheet 1)

SHEET 1	SHEET 2	SHEET 3

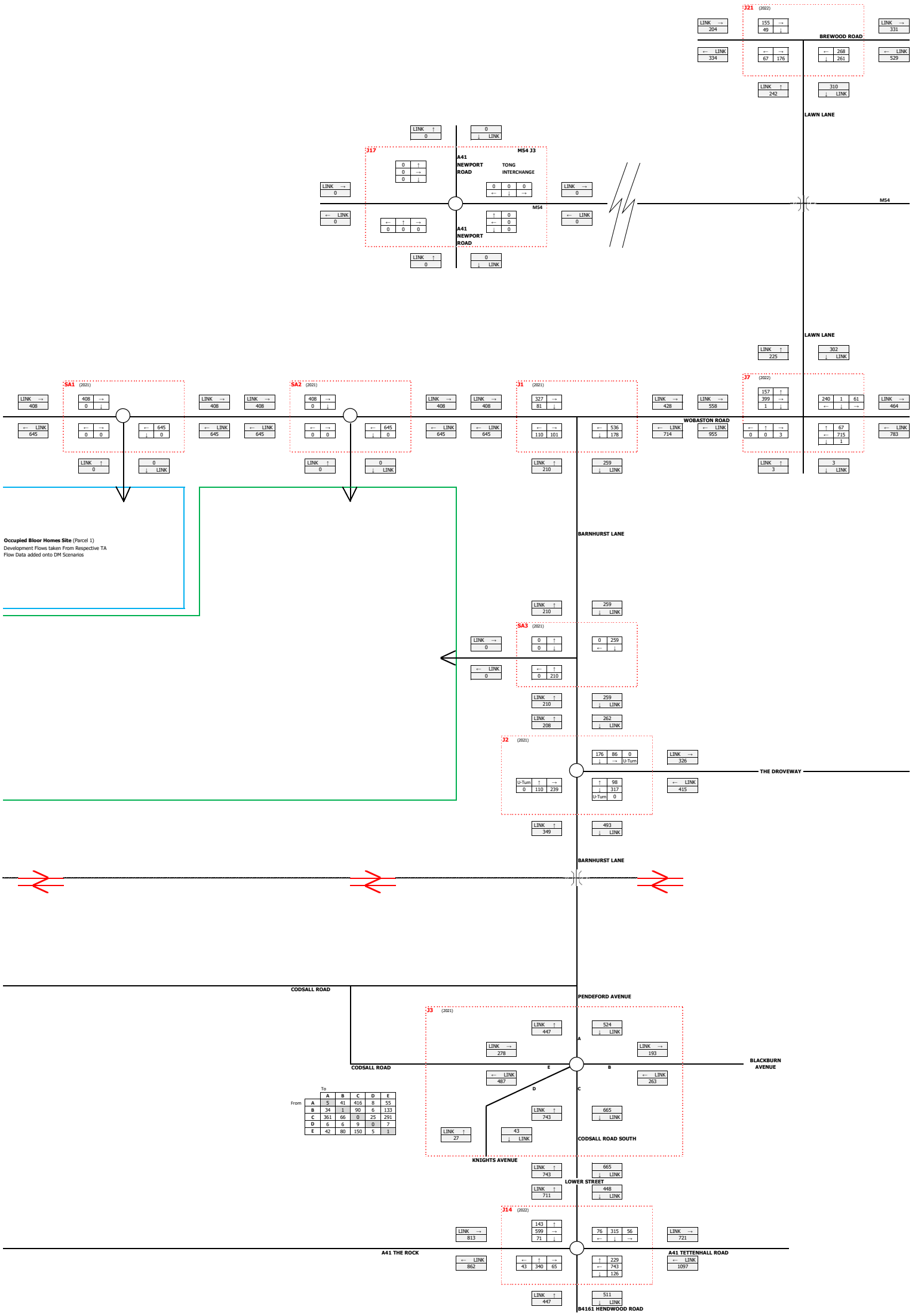
Peak	NTM Growth	
	21-38	22-38
Staff'shire 008	1.112	1.105
Wolverhampton	1.149	1.138
Average	1.130	1.121



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
BASE PM 2038 (Sheet 2)

SHEET 1	**SHEET 2**	SHEET 3

Peak	NTM Growth	
	21-38	22-38
Staff'shire 008	1.1122	1.1045
Wolverhampton	1.1487	1.1383
Average	1.1305	1.1214

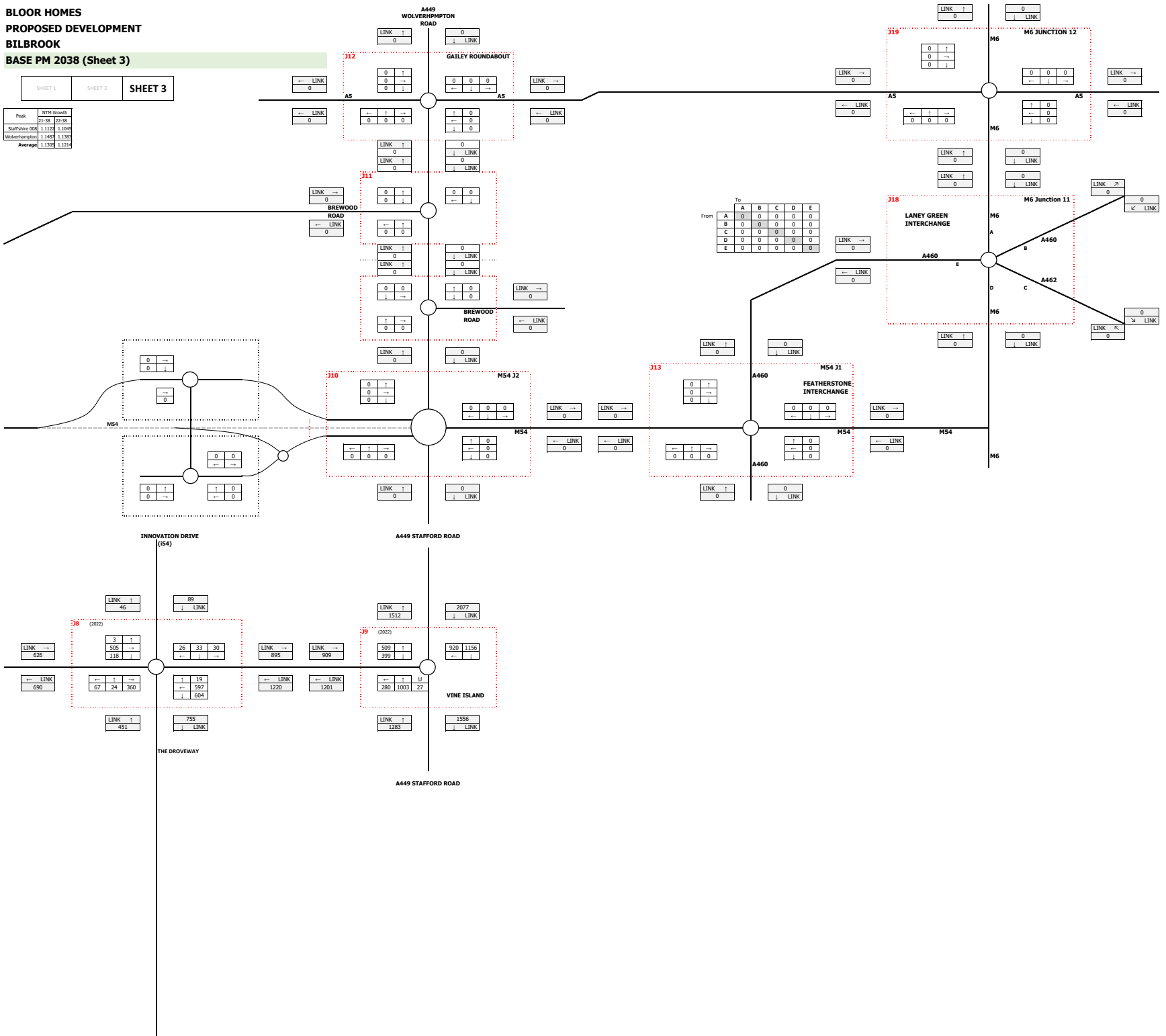


From \ To	A	B	C	D	E
A	5	41	416	8	55
B	34	1	90	6	133
C	361	66	0	25	291
D	6	6	9	0	7
E	42	80	150	5	1

BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
BASE PM 2038 (Sheet 3)

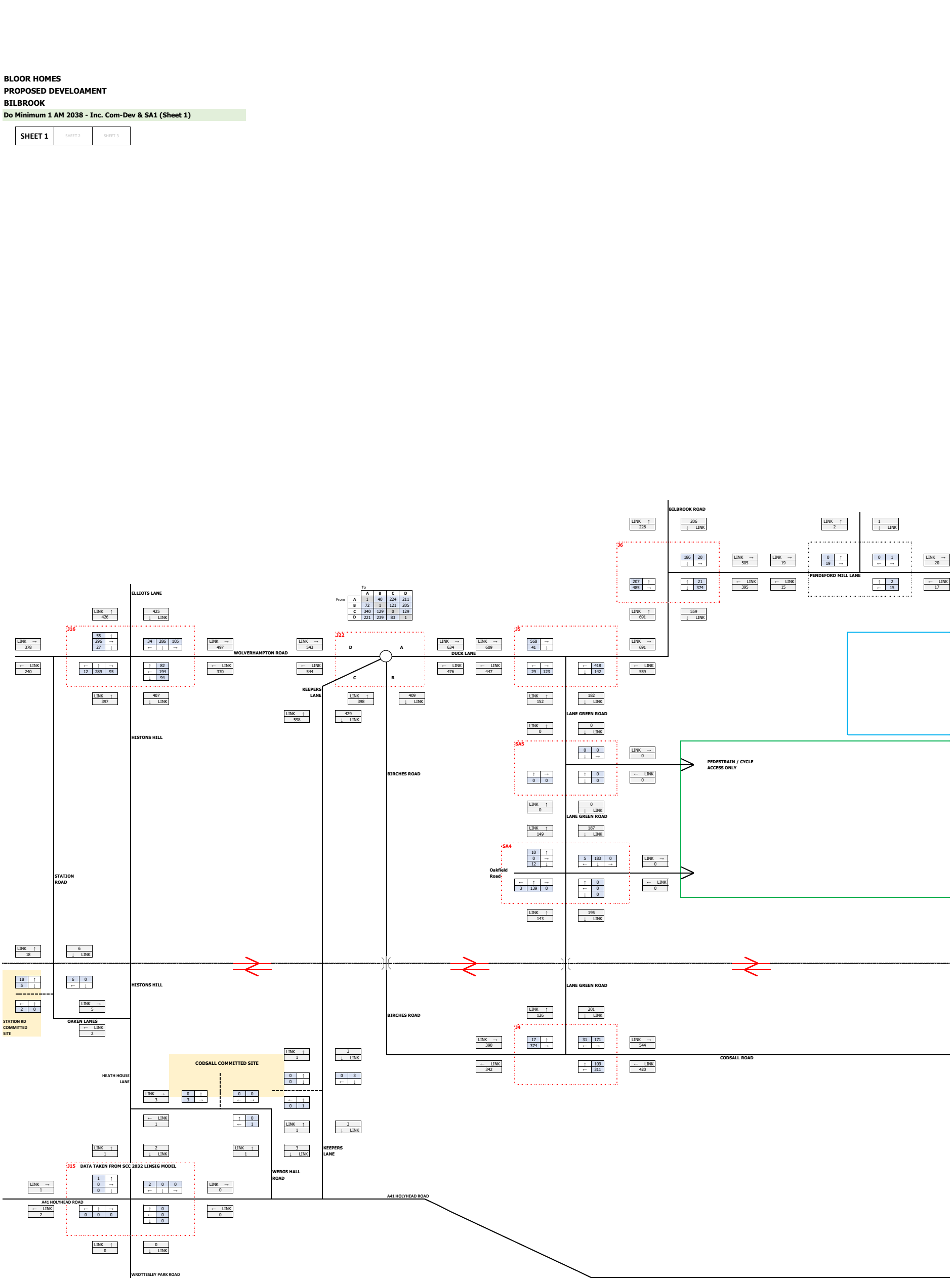
SHEET 1 | SHEET 2 | **SHEET 3**

Peak	NTM Growth 21-38	NTM Growth 22-38
Staff'shire 008	1.1122	1.1045
Wolverhampton	1.1487	1.1383
Average	1.1305	1.1214



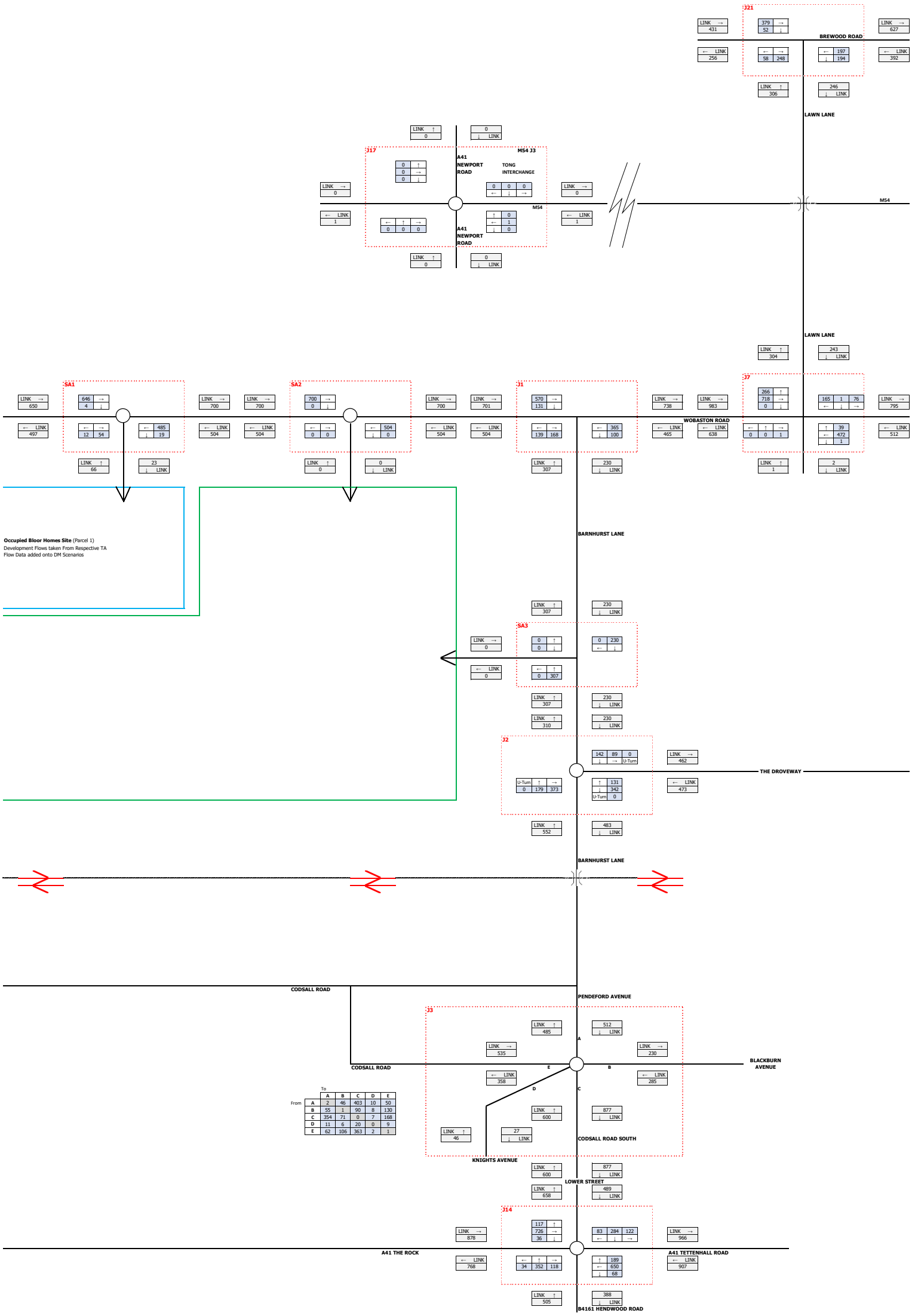
BLOOR HOMES
PROPOSED DEVELOAMENT
BILBROOK
Do Minimum 1 AM 2038 - Inc. Com-Dev & SA1 (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOAMENT
BILBROOK
Do Minimum 1 AM 2038 - Inc. Com-Dev & SA1 (Sheet 2)

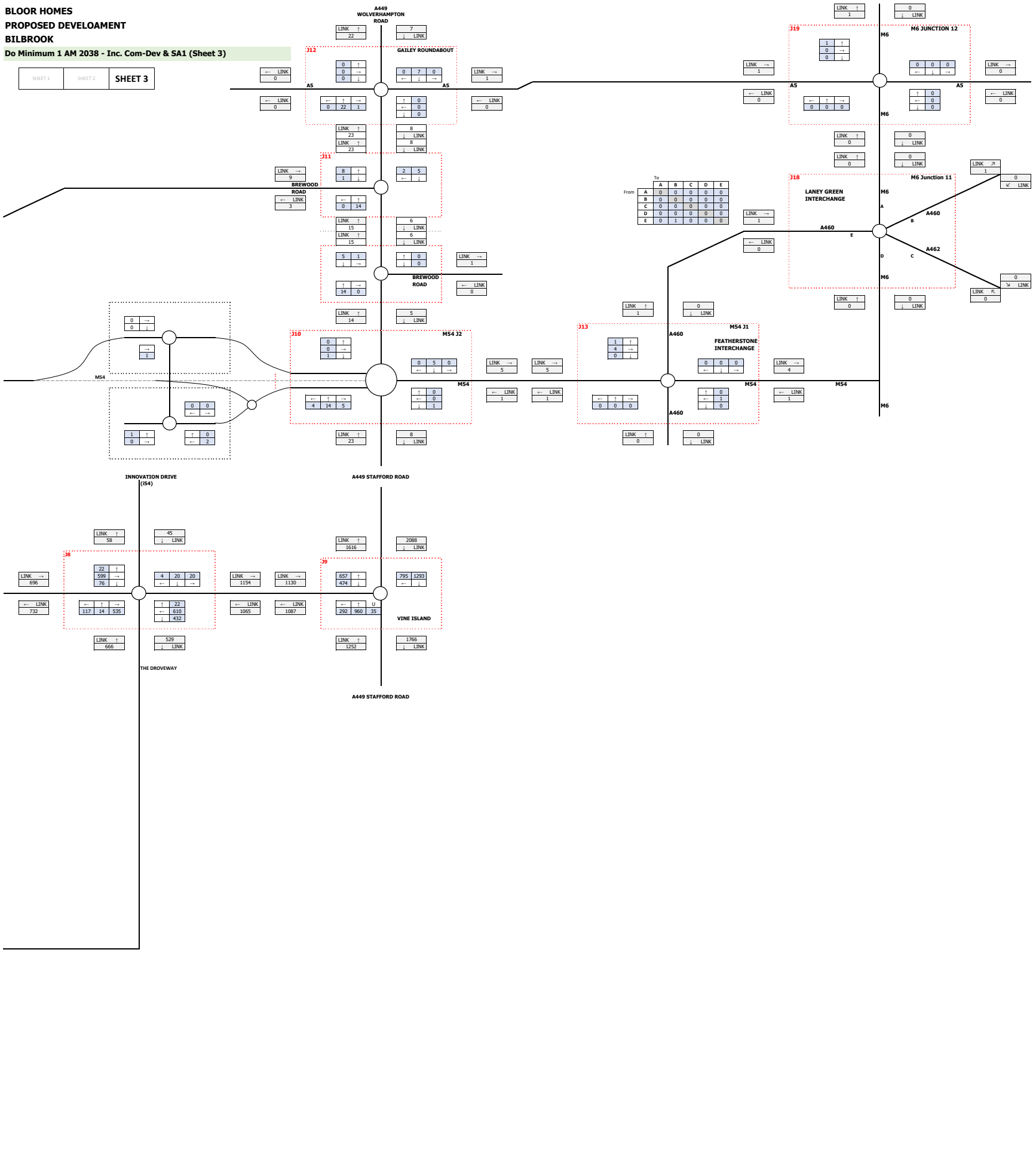
SHEET 1	SHEET 2	SHEET 3



From \ To	A	B	C	D	E
A	2	46	403	10	50
B	55	1	90	8	130
C	354	71	0	7	168
D	11	6	20	0	9
E	62	106	363	2	1

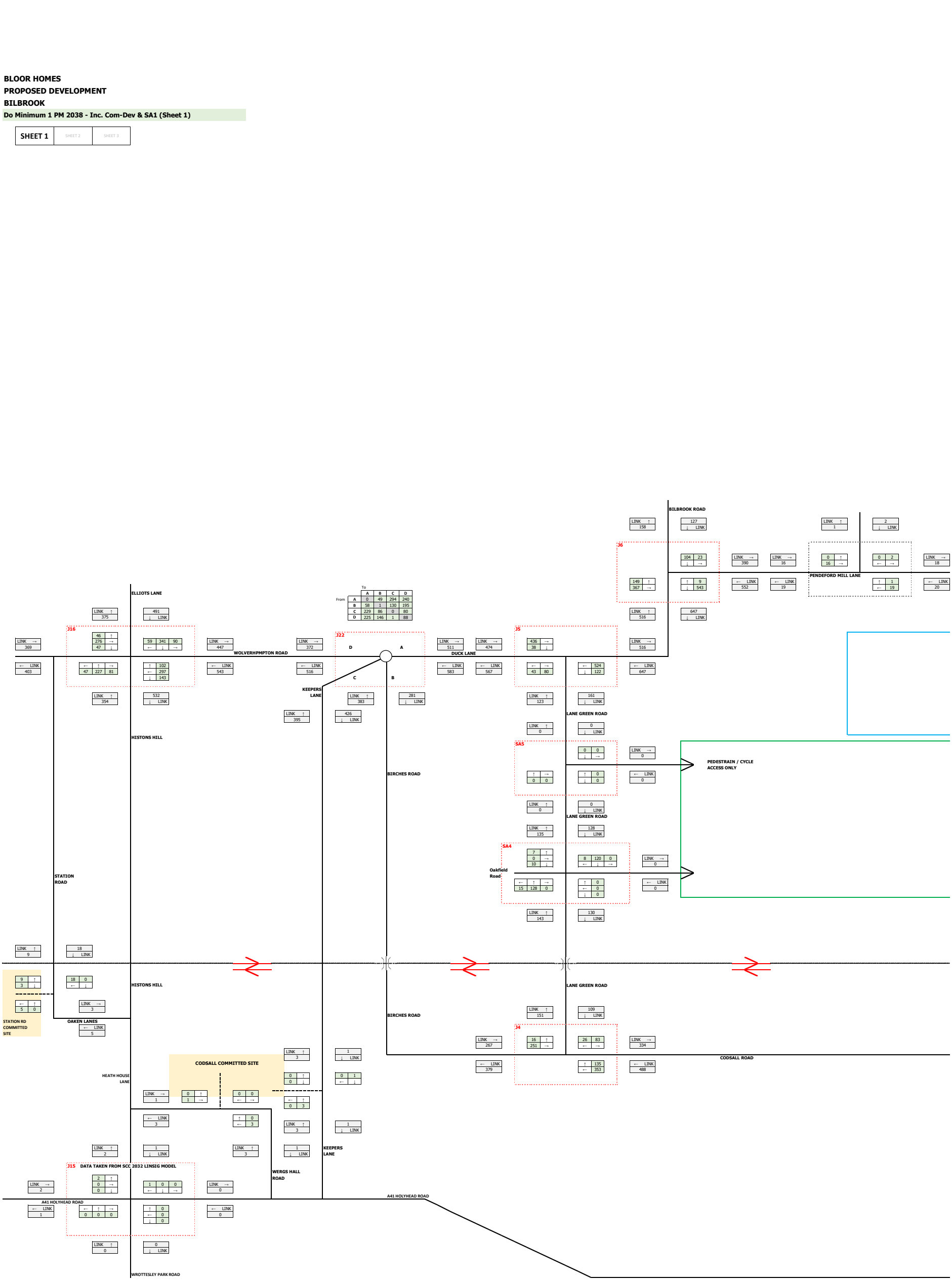
BLOOR HOMES
PROPOSED DEVELOAMENT
BILBROOK
Do Minimum 1 AM 2038 - Inc. Com-Dev & SA1 (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



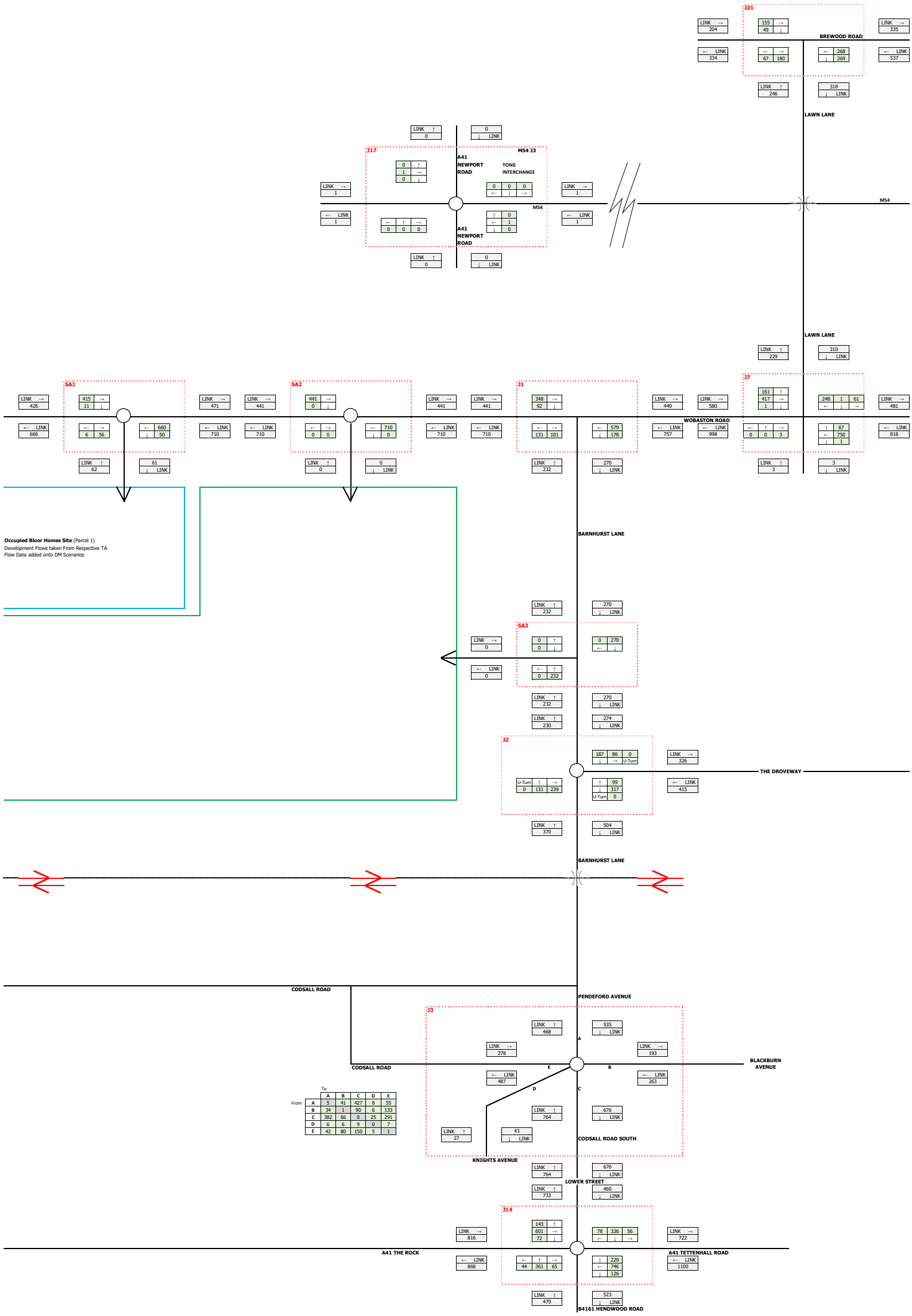
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Minimum 1 PM 2038 - Inc. Com-Dev & SA1 (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Minimum 1 PM 2038 - Inc. Com-Dev & SA1 (Sheet 2)

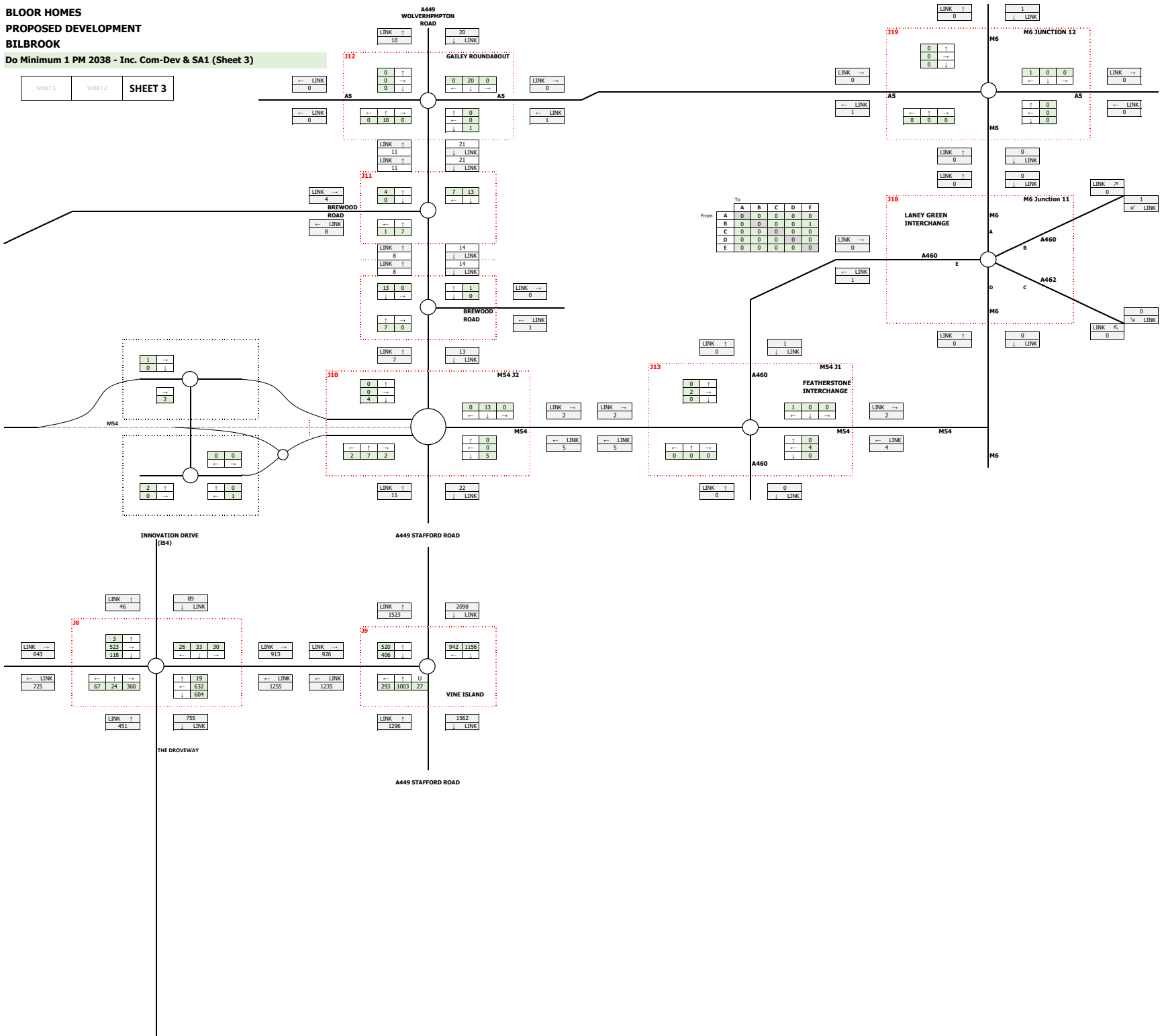
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A	5	41	427	8	55
B	34	1	90	6	133
C	382	66	0	25	291
D	6	6	9	0	7
E	42	80	150	5	1

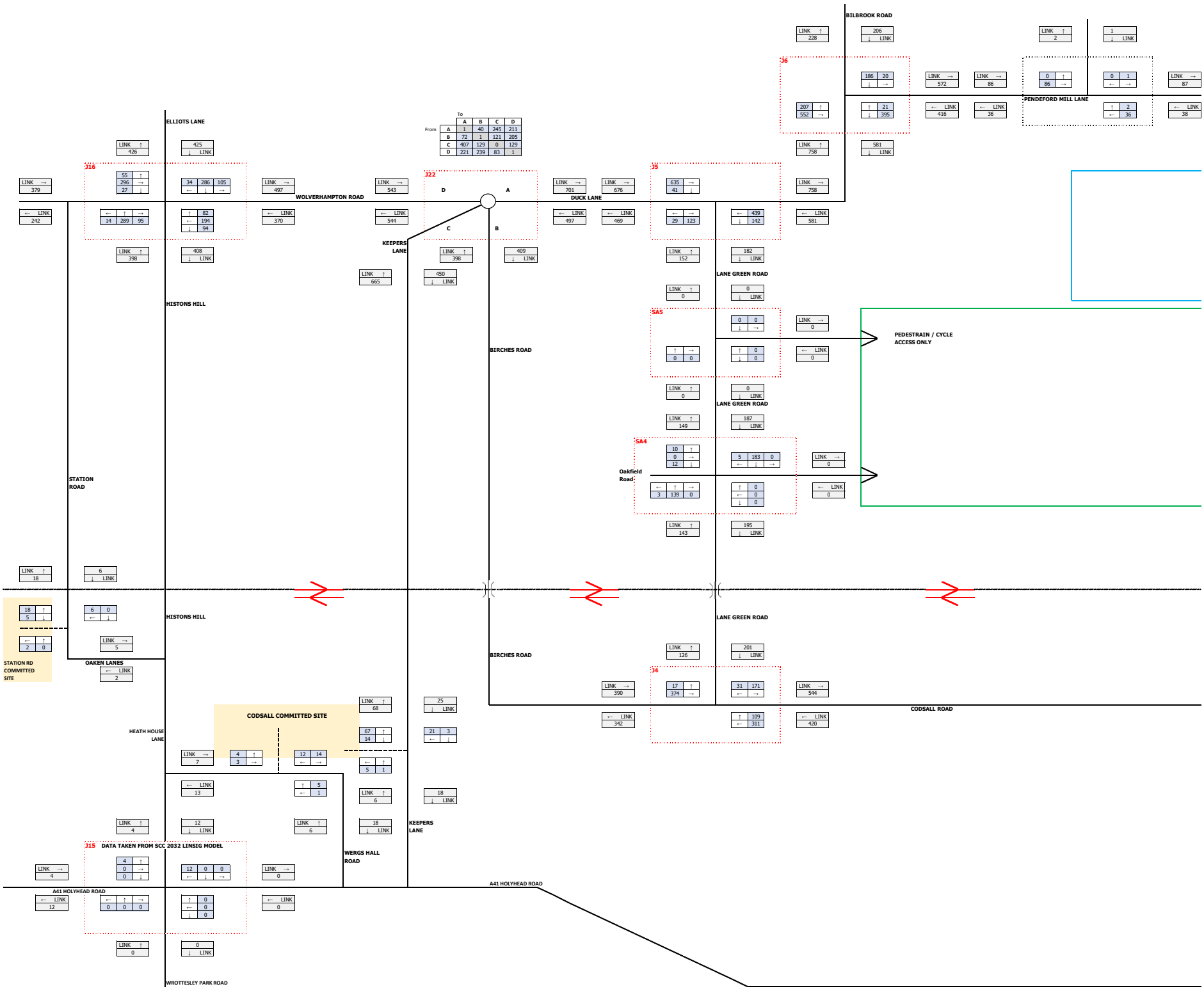
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Minimum 1 PM 2038 - Inc. Com-Dev & SA1 (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



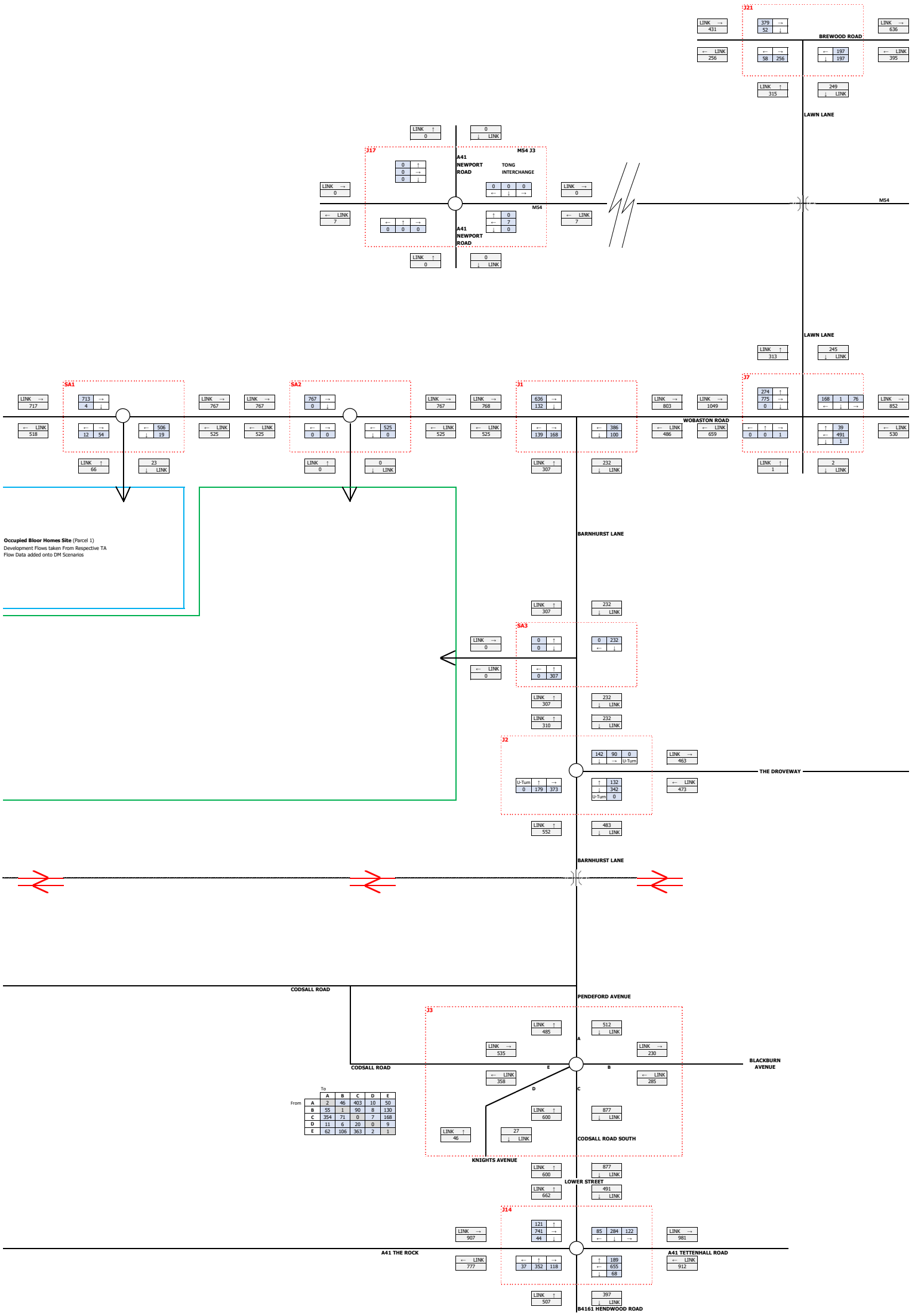
BLOOR HOMES
PROPOSED DEVELOAMENT
BILBROOK
Do Minimum 2 AM 2038 - Inc. Com-Dev, Keepers Ln & SA1 (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOAMENT
BILBROOK
Do Minimum 2 AM 2038 - Inc. Com-Dev, Keepers Ln & SA1 (Sheet 2)

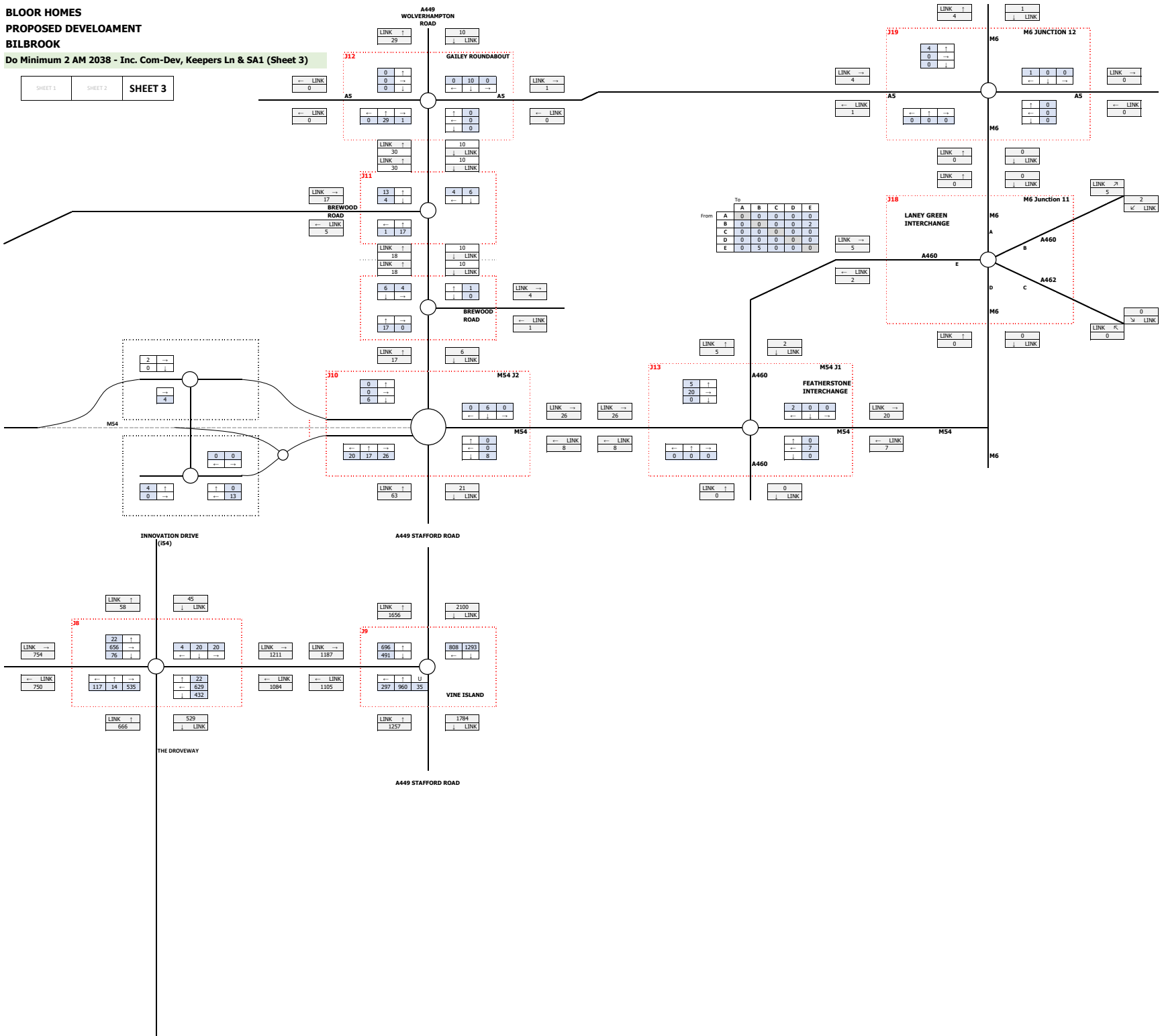
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A	2	46	403	10	50
B	55	1	90	8	130
C	354	71	0	7	168
D	11	6	20	0	9
E	62	106	363	2	1

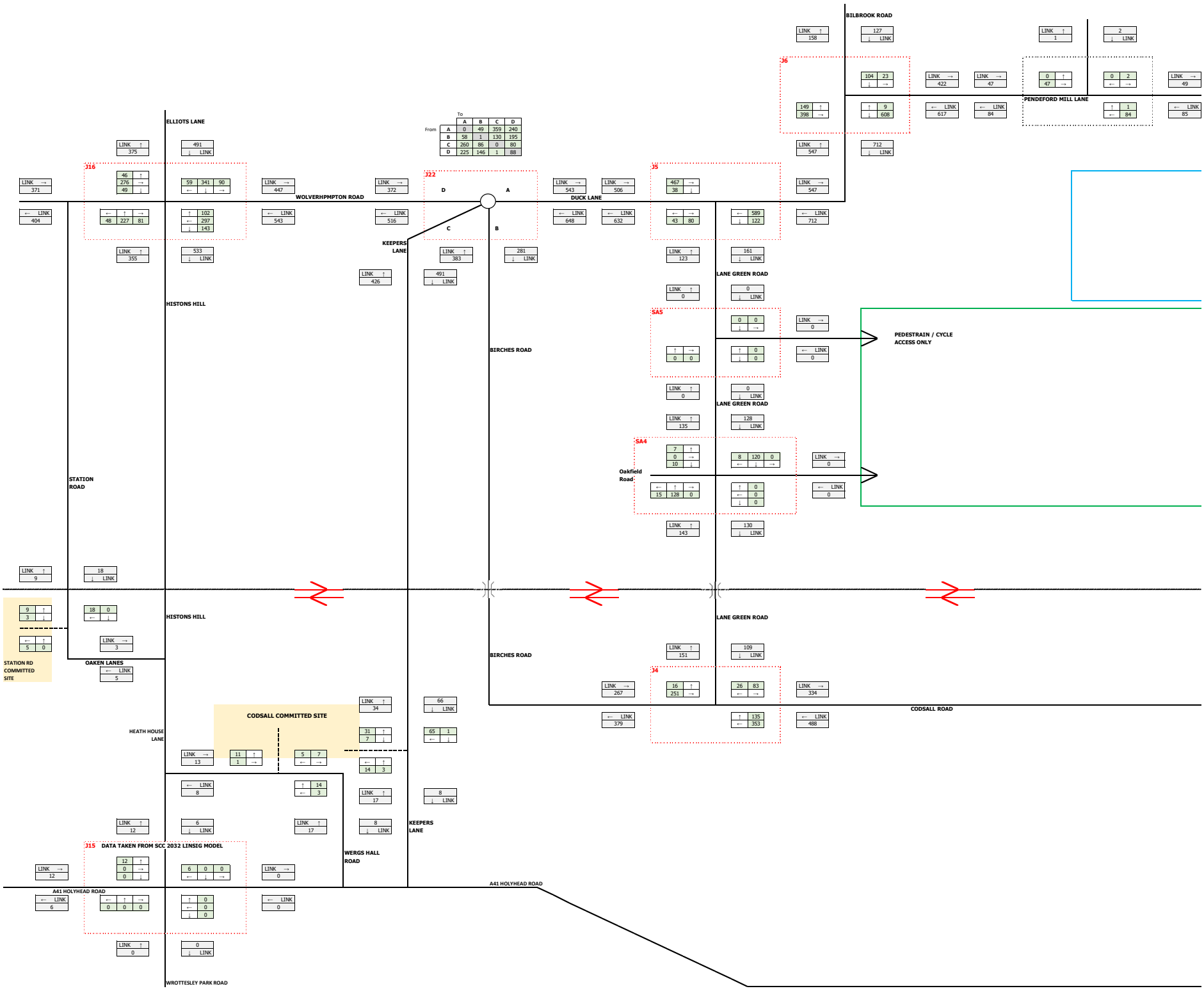
BLOOR HOMES
PROPOSED DEVELOAMENT
BILBROOK
Do Minimum 2 AM 2038 - Inc. Com-Dev, Keepers Ln & SA1 (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



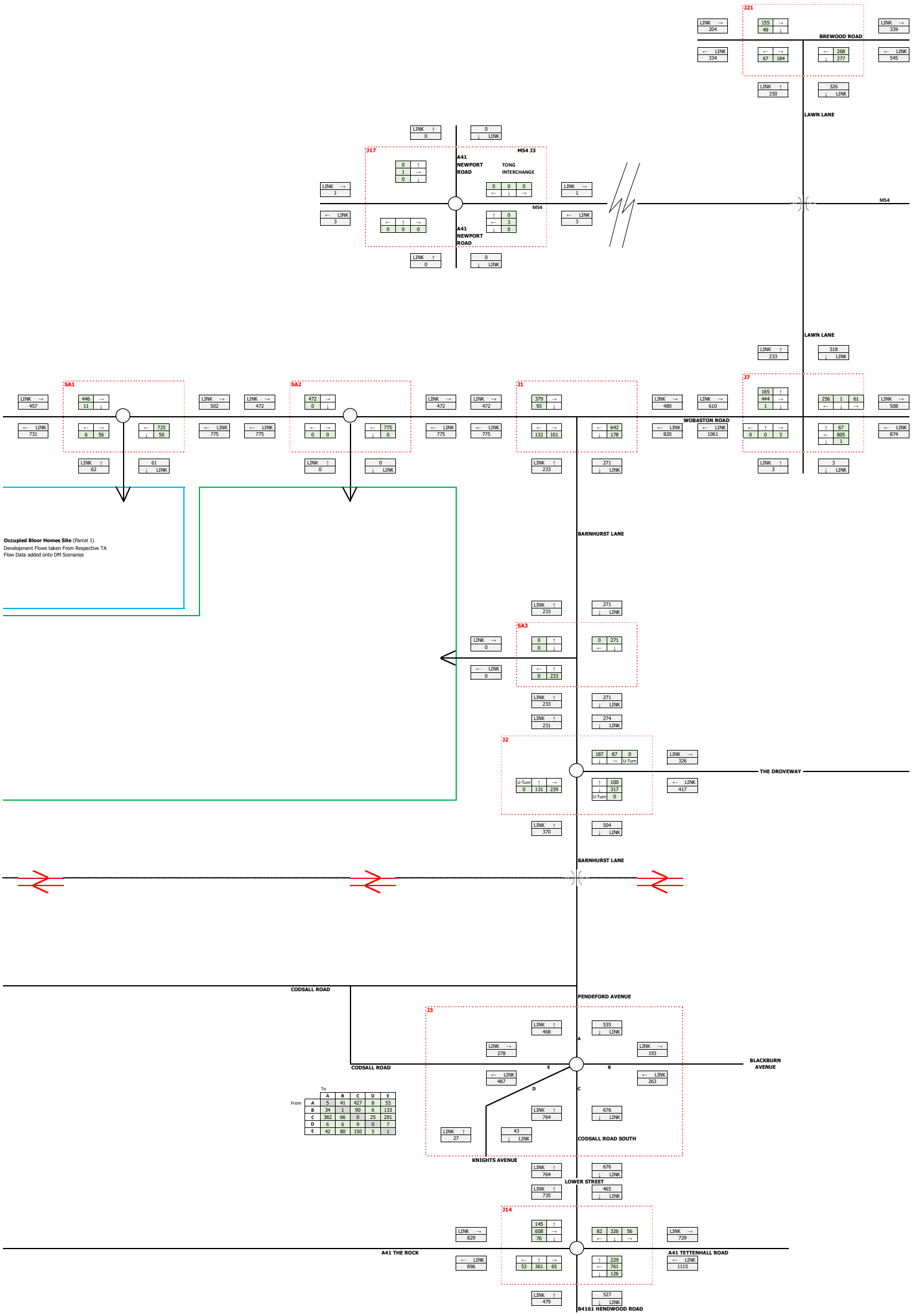
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Minimum 2 PM 2038 - Inc. Com-Dev, Keepers Ln & SA1 (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Minimum 2 PM 2038 - Inc. Com-Dev, Keepers Ln & SA1 (Sheet 2)

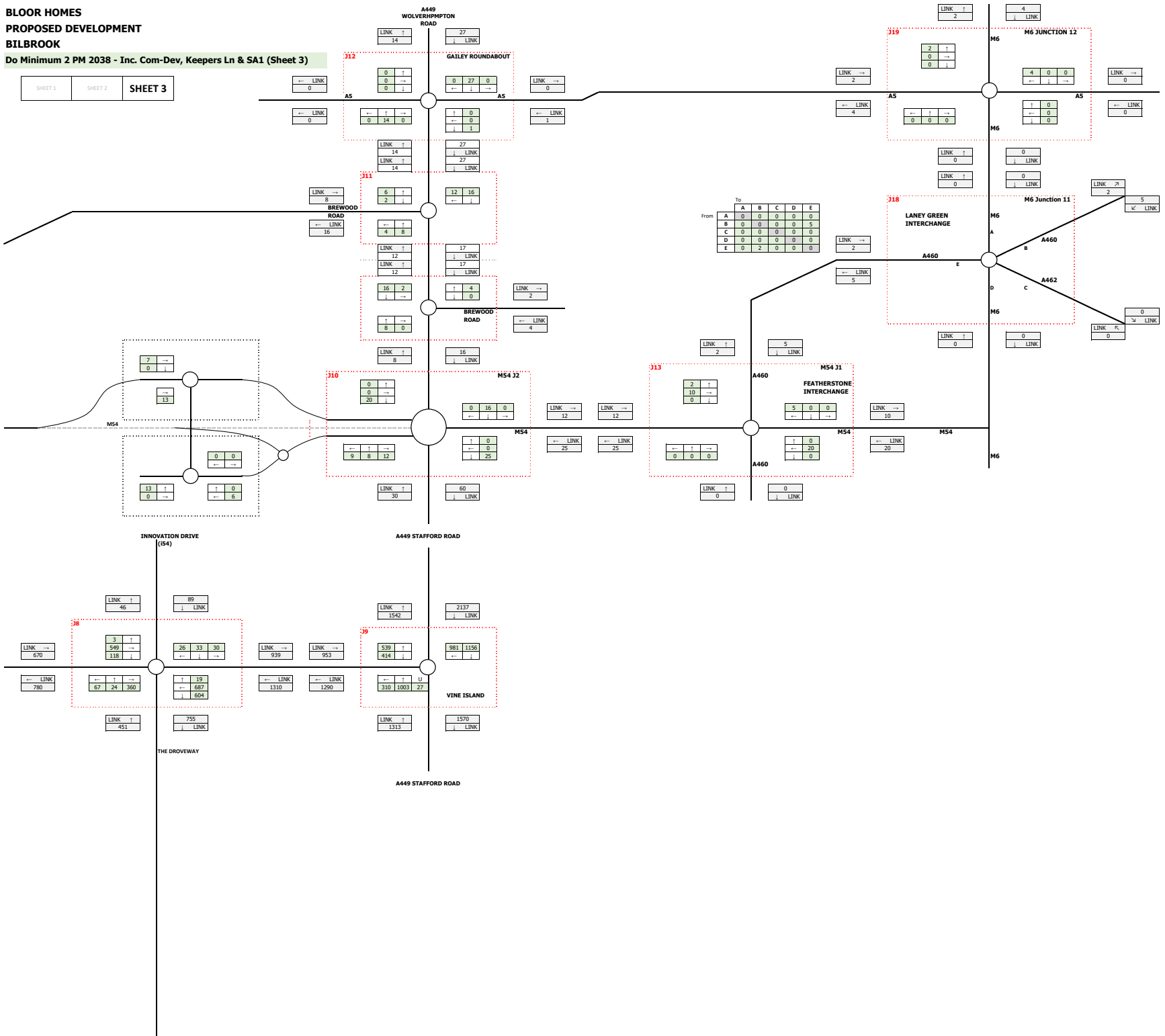
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A	5	41	427	8	55
B	34	1	90	6	133
C	382	66	0	25	291
D	6	6	9	0	7
E	42	80	150	5	1

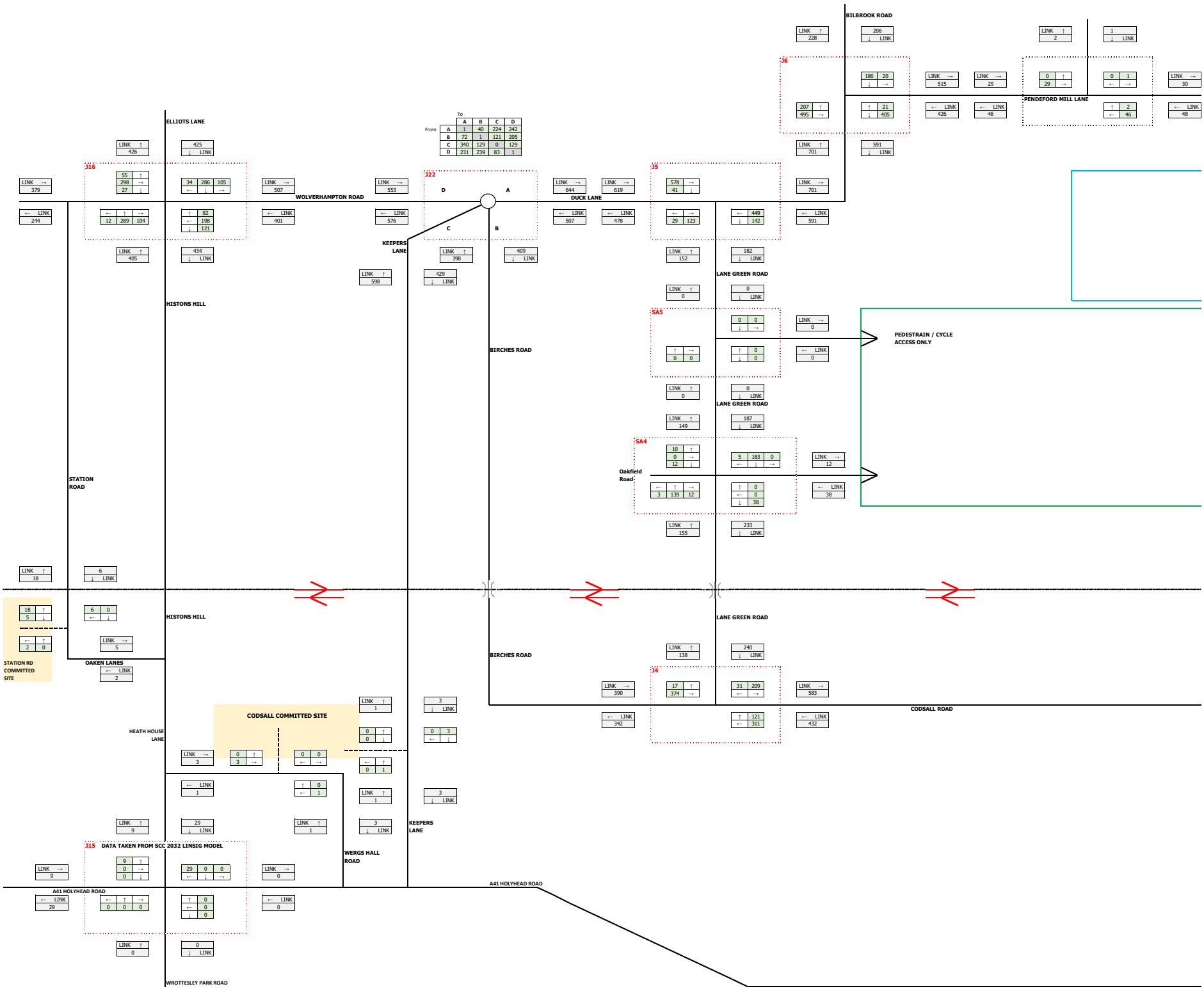
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Minimum 2 PM 2038 - Inc. Com-Dev, Keepers Ln & SA1 (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



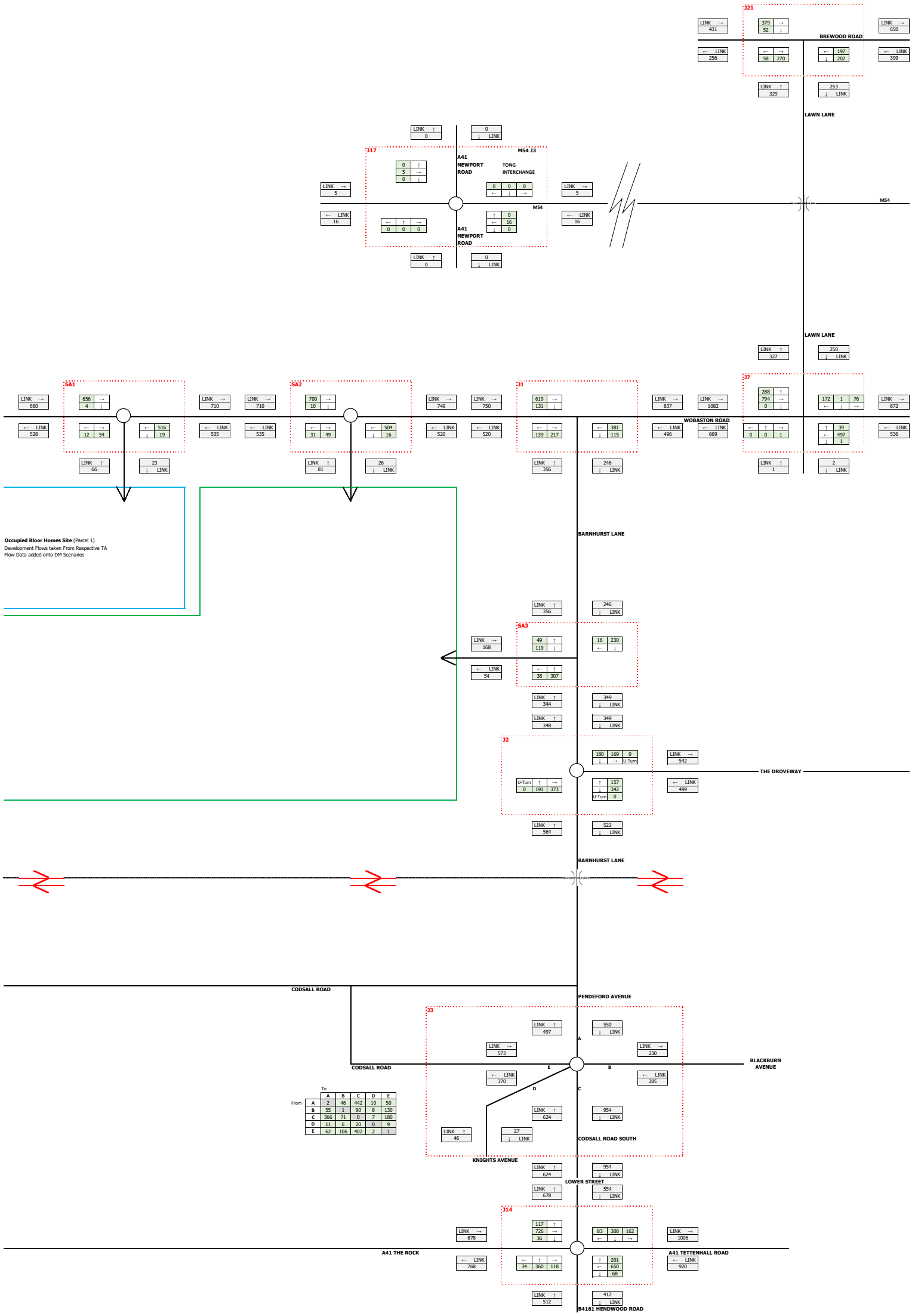
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 1 AM 2038 - DS1 Excl. Com Dev 1 [Keepers Ln] (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 1 AM 2038 - DS1 Excl. Com Dev 1 [Keepers Ln] (Sheet 2)

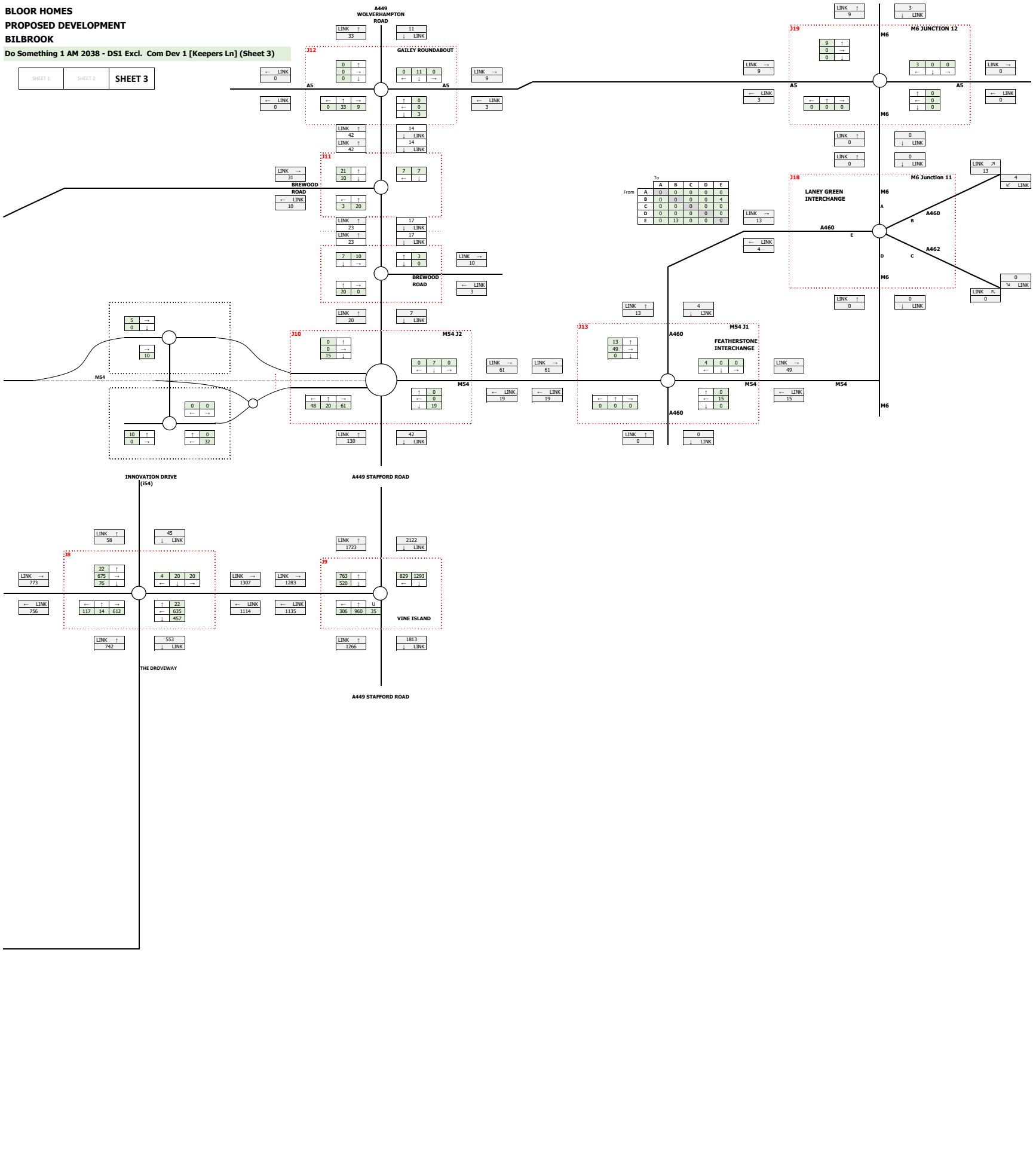
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A	2	46	442	10	50
B	55	1	90	8	130
C	366	71	0	7	180
D	11	6	20	0	9
E	62	106	402	2	1

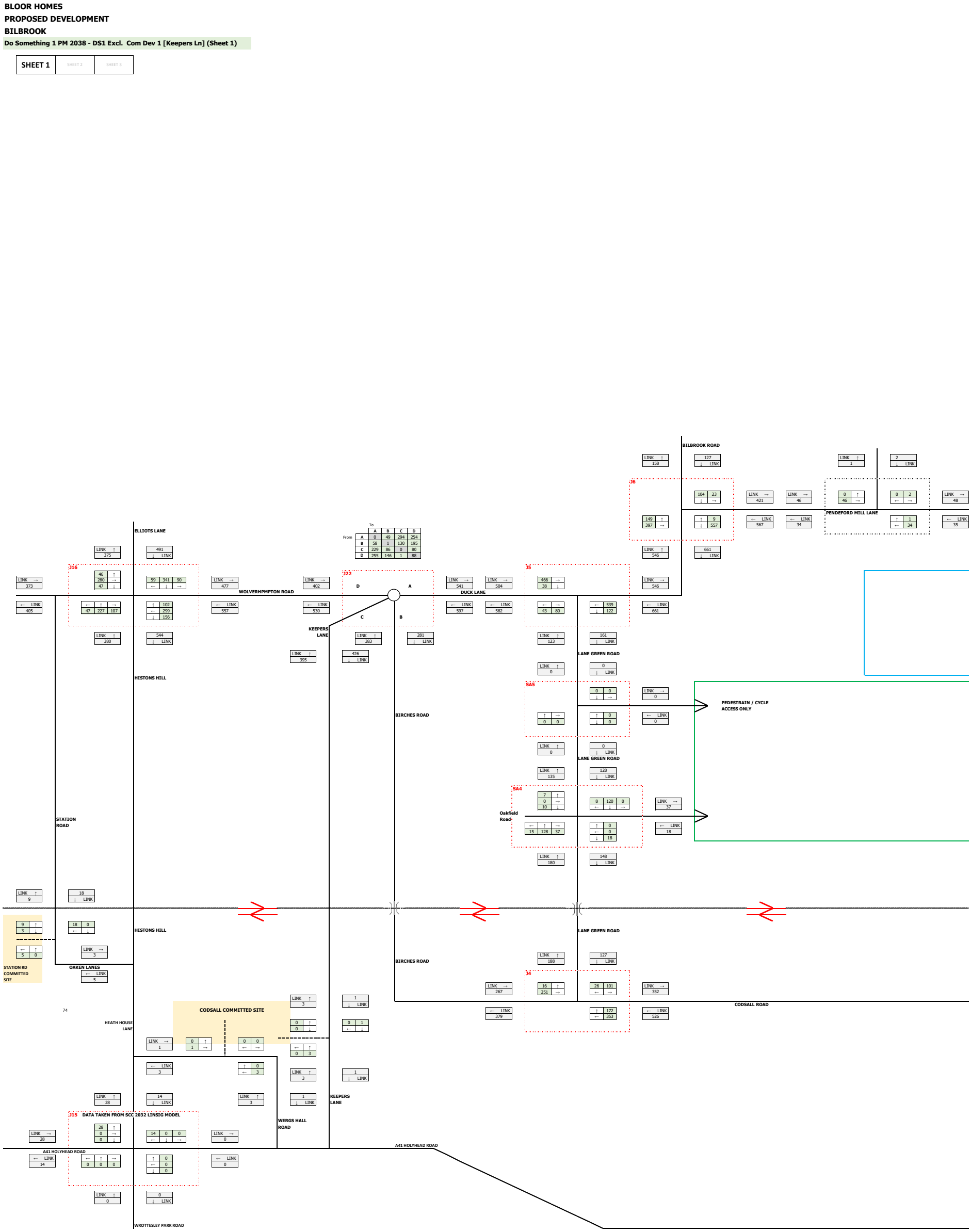
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 1 AM 2038 - DS1 Excl. Com Dev 1 [Keepers Ln] (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



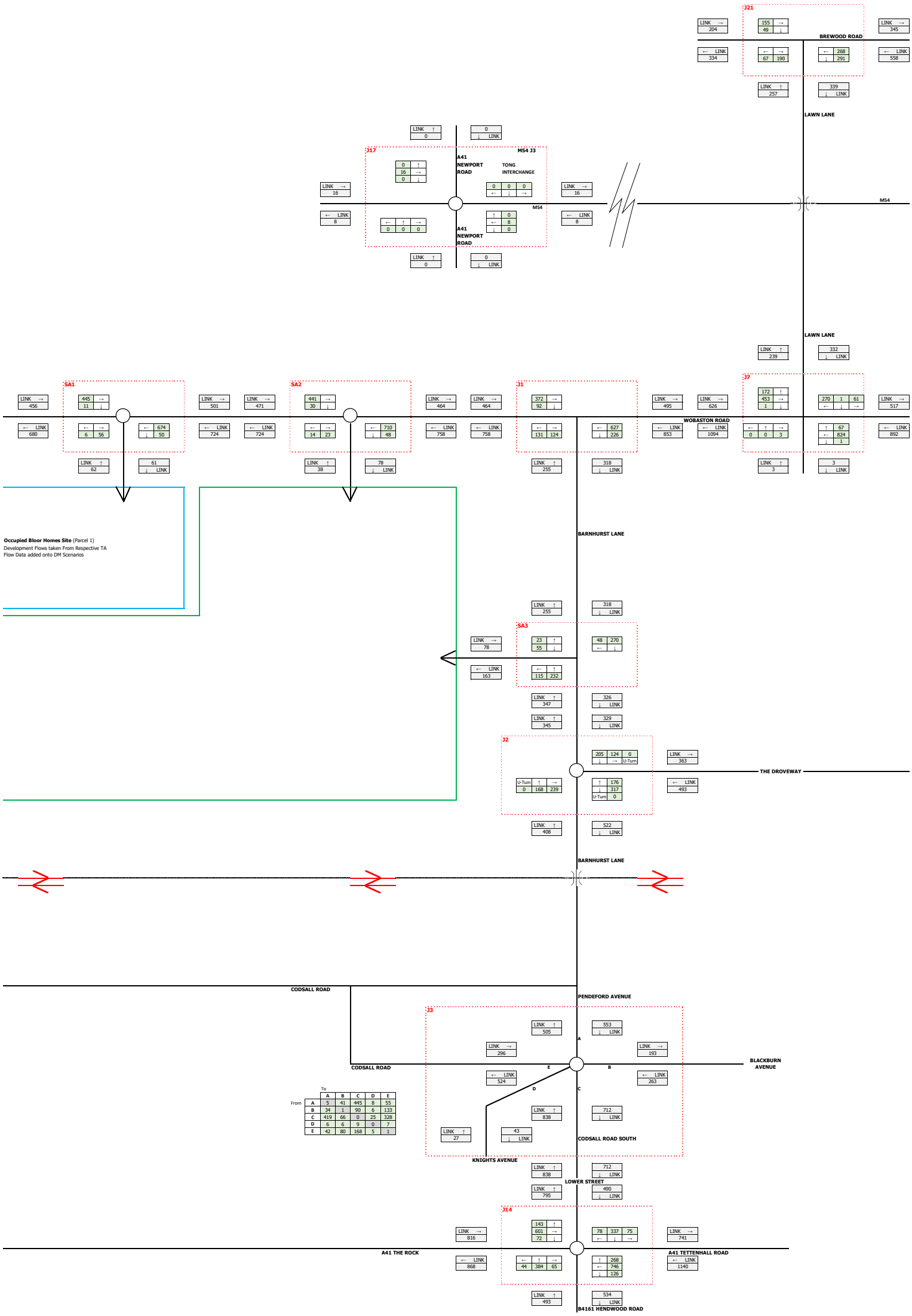
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 1 PM 2038 - DS1 Excl. Com Dev 1 [Keepers Ln] (Sheet 1)

SHEET 1 | SHEET 2 | SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 1 PM 2038 - DS1 Excl. Com Dev 1 [Keepers Ln] (Sheet 2)

SHEET 1	**SHEET 2**	SHEET 3

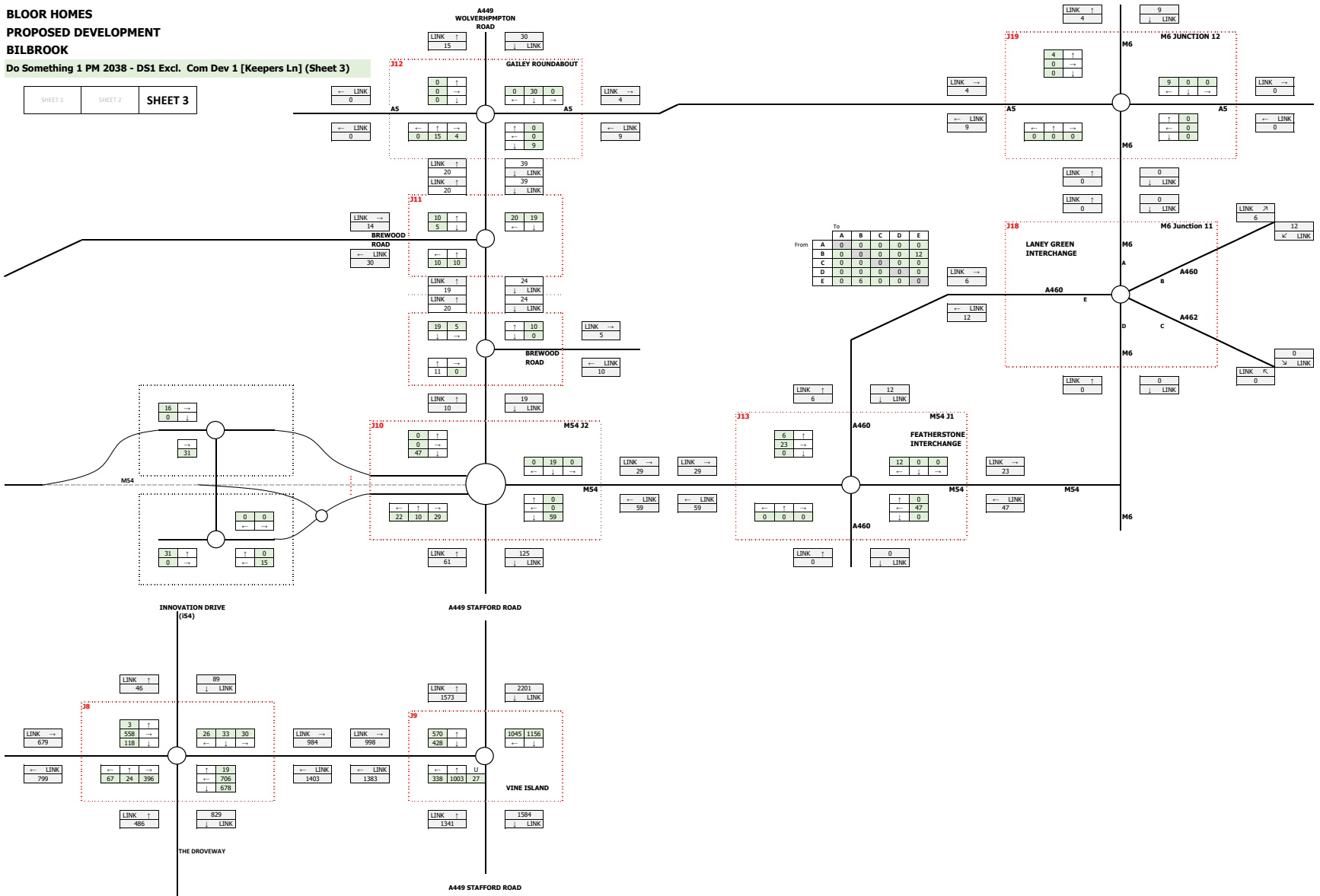


From \ To	A	B	C	D	E
A	5	41	445	8	55
B	34	1	90	6	133
C	419	66	0	25	328
D	6	6	9	0	7
E	42	80	168	5	1

BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK

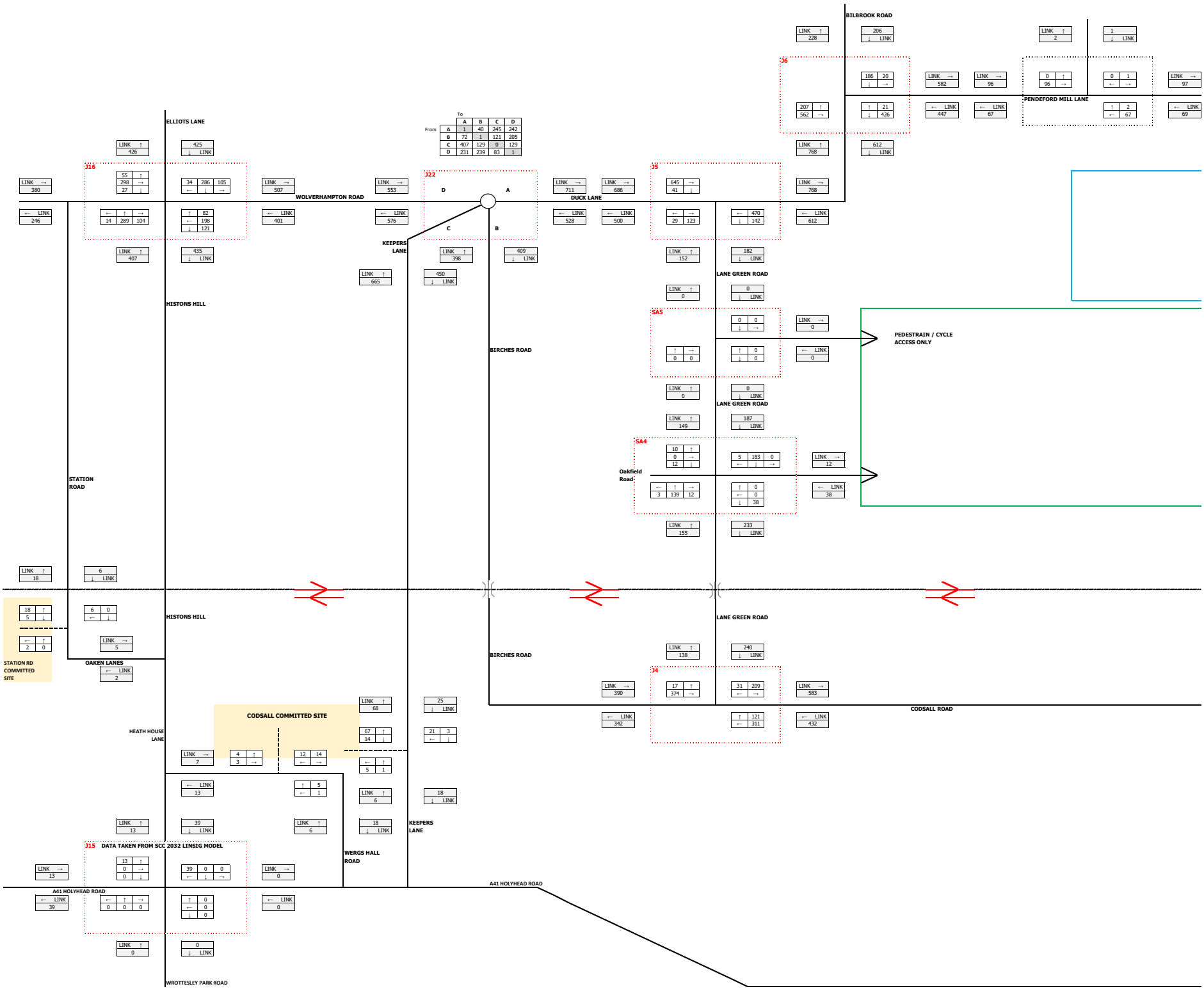
Do Something 1 PM 2038 - DS1 Excl. Com Dev 1 [Keepers Ln] (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



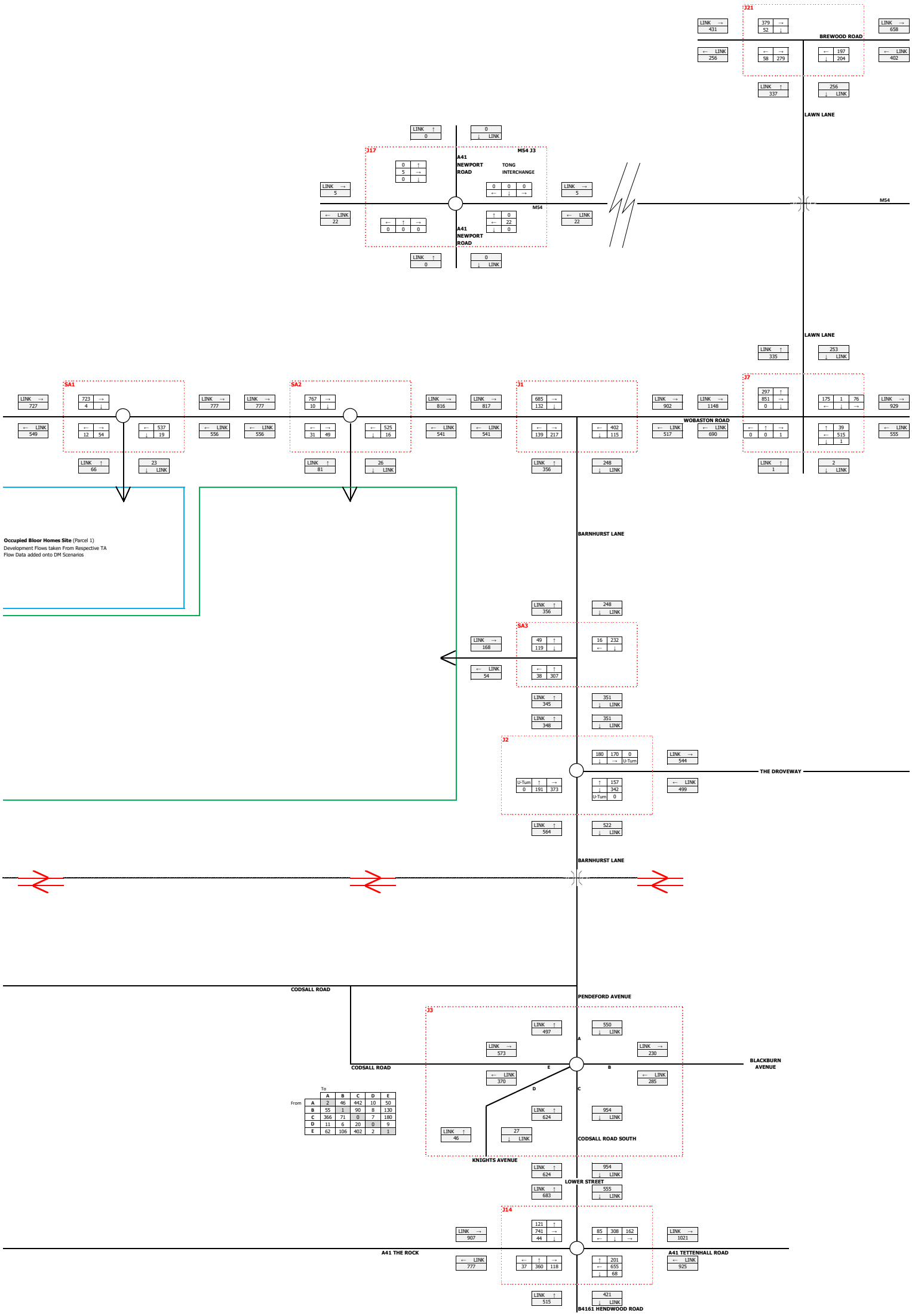
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 2 AM 2038 - DS1 Inc. Com Dev 1 [Keepers Ln] (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 2 AM 2038 - DS1 Inc. Com Dev 1 [Keepers Ln] (Sheet 2)

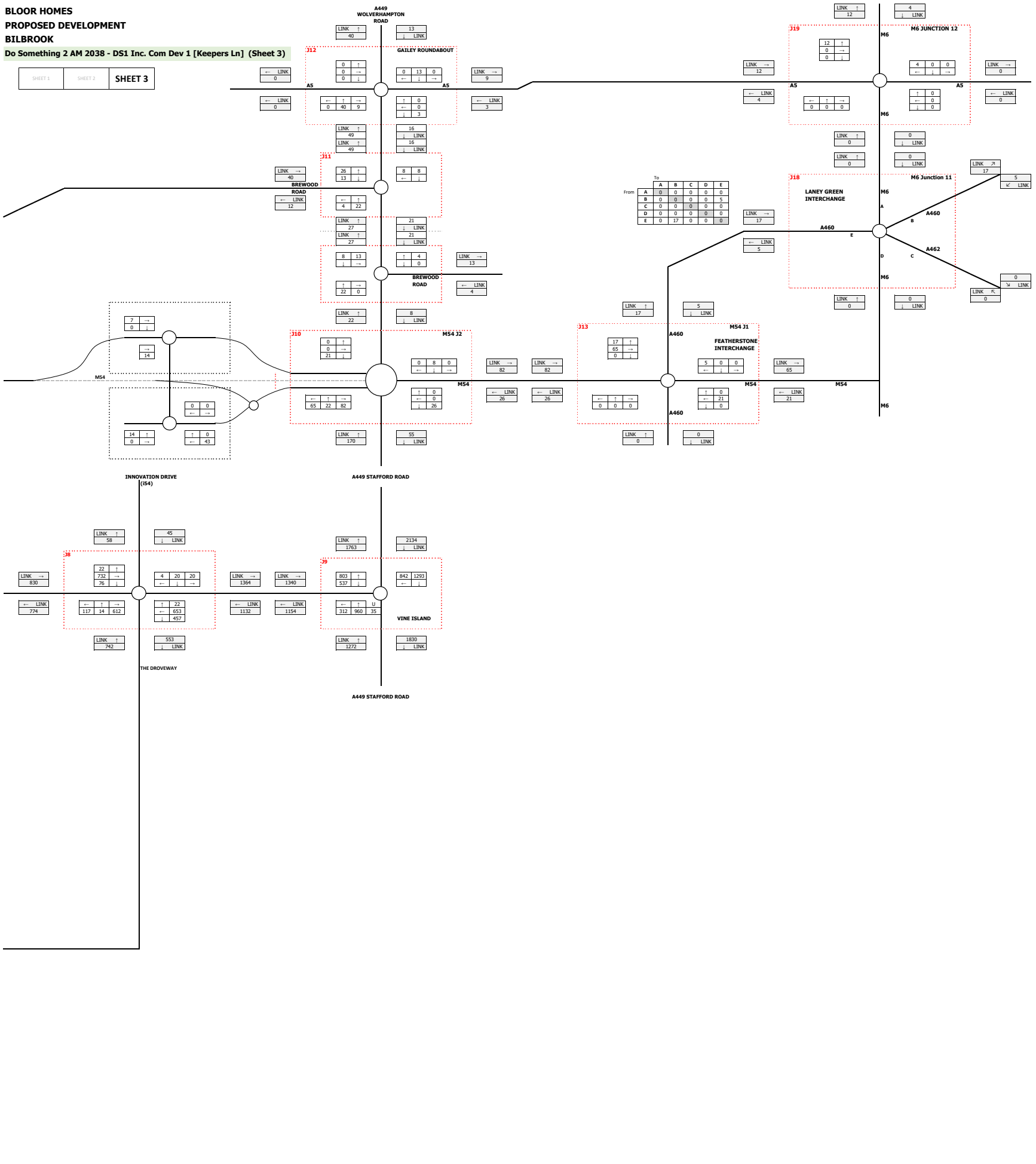
SHEET 1	**SHEET 2**	SHEET 3



From \ To	A	B	C	D	E
A	2	46	442	10	50
B	55	1	90	8	130
C	366	71	0	7	180
D	11	6	20	0	9
E	62	106	402	2	1

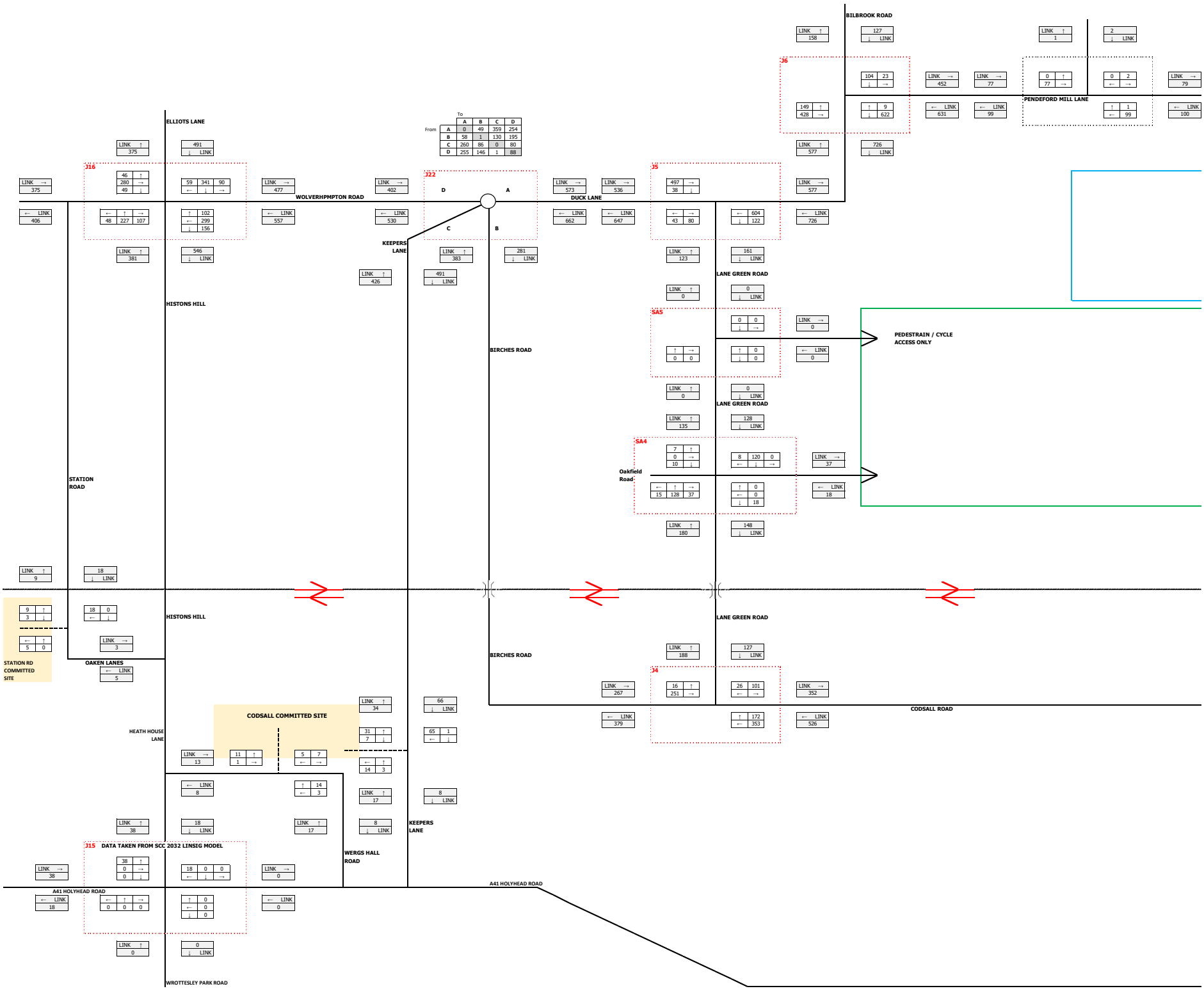
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 2 AM 2038 - DS1 Inc. Com Dev 1 [Keepers Ln] (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**



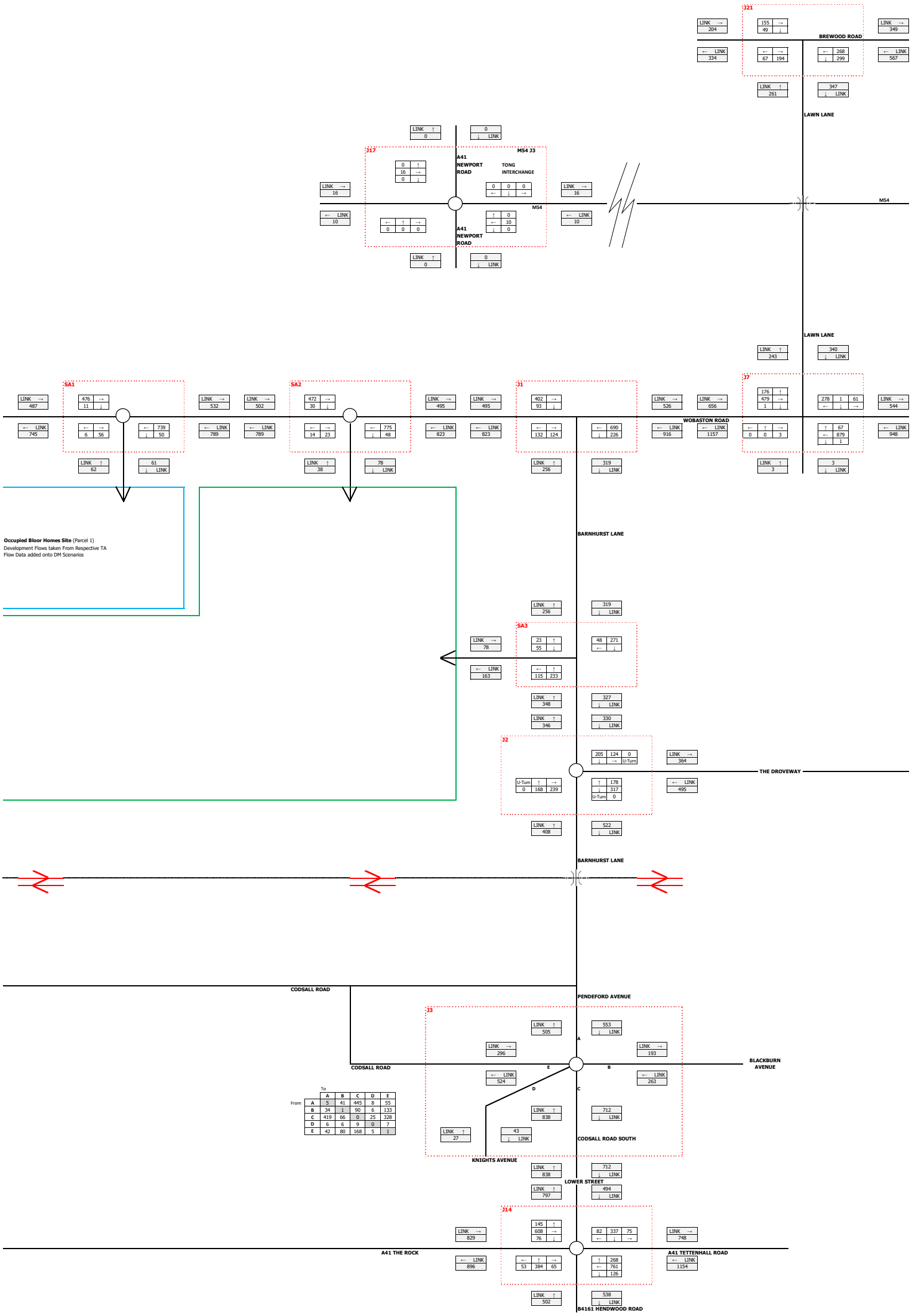
BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 2 PM 2038 - DS1 Inc. Com Dev 1 [Keepers Ln] (Sheet 1)

SHEET 1	SHEET 2	SHEET 3



BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 2 PM 2038 - DS1 Inc. Com Dev 1 [Keepers Ln] (Sheet 2)

SHEET 1	SHEET 2	SHEET 3



From \ To	A	B	C	D	E
A	5	41	445	8	55
B	34	1	90	6	133
C	419	66	0	25	328
D	6	6	9	0	7
E	42	80	168	5	1

BLOOR HOMES
PROPOSED DEVELOPMENT
BILBROOK
Do Something 2 PM 2038 - DS1 Inc. Com Dev 1 [Keepers Ln] (Sheet 3)

SHEET 1 | SHEET 2 | **SHEET 3**