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Birmingham Development Plan

Green Belt Development Movement Infrastructure Plan

January 2014

Project Code: PJA.1064

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Version Control and Approval

Version	Date	Main Contributors	Issued by	Approved by
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Contents

1 Introduction

1.1 Background

1.1.1 The Birmingham Development Plan 'Planning for sustainable growth' (Pre-submission Version) was published in December 2013 (BDP). The document is an important step forward in planning the future of Birmingham. It recognises the challenge of how the city must accommodate the growth of 150,000 people with homes, jobs and the right built environment.

1.1.2 The plan takes a positive approach to planning good infrastructure and providing high quality built and natural environments in order to avoid overcrowding, worklessness and poor health. A part of this has been in identifying where new housing and employment development can realistically be accommodated. The strategy of the BDP is to meet the city's growth requirements within its boundary as far as possible, but there will be a requirement for some provision to be made for both new housing and employment to meet Birmingham's needs in adjoining areas.

1.1.3 Connectivity and the provision of new high quality transport links are fundamental to the success of the plan. The Birmingham Mobility Action Plan (BMAP) is the transport vision for the City. It develops a strategy for the use of existing infrastructure and a plan for new connections to be made. It recognises that investment in the transport network has to help residents reduce their car dependency. BMAP forms the overarching principles against which more detailed strategies contained in this plan have been prepared and are measured.

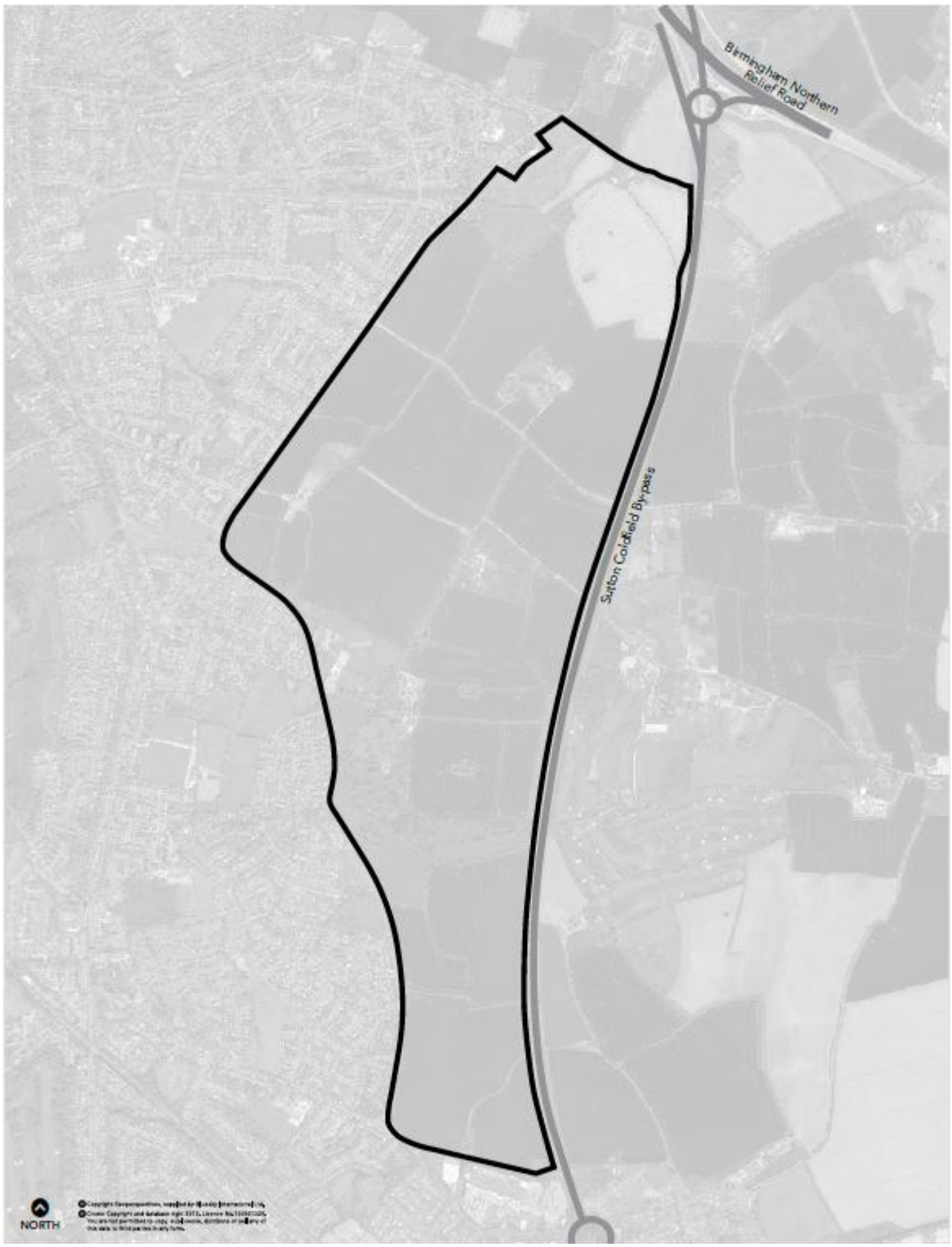
1.1.4 A part of the evidence base behind the BDP is the Infrastructure Delivery Plan, which identifies the key infrastructure projects necessary to support the City's growth aspirations, including transport schemes.

1.2 Langley Sustainable Urban Extension

1.2.1 Policy GA5 of the BDP identifies that land to the west of the A38 at Langley will be removed from the Green Belt to provide a sustainable urban extension of approximately 6,000 new homes.

1.2.2 It is described as a destination for families wishing to live in Birmingham with well connected, integrated and sustainable transport links. It will have a range of supporting facilities including primary and secondary schools, health care facilities and local shops and services.

Figure 1-1: GA5 Langley SUE (Plan 9, P.51 of BDP)

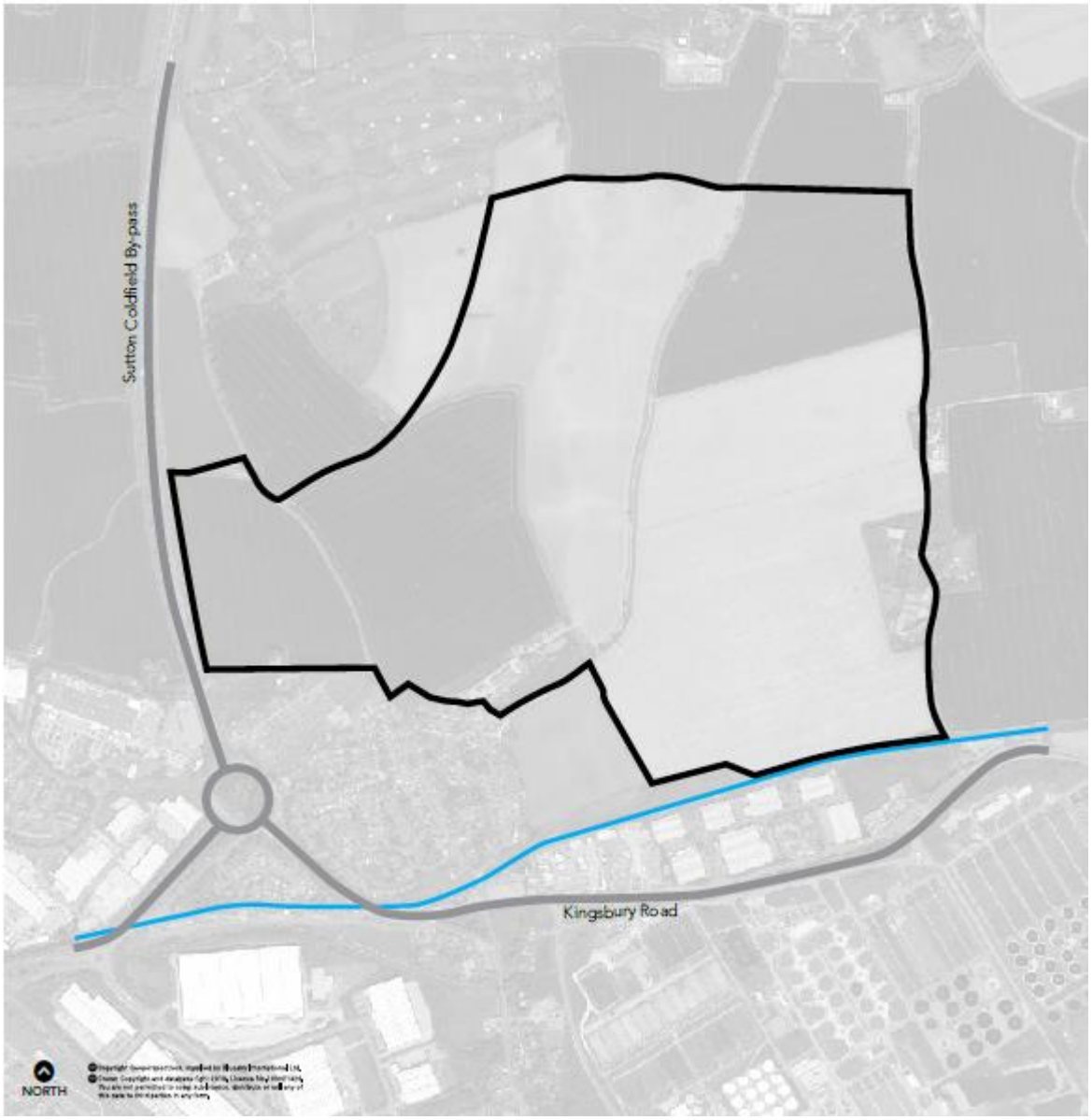


1.3 Peddimore employment development

1.3.1 Policy GA6 of the BDP identifies that land to the east of the A38 at Peddimore, Minworth will be removed from the Green Belt to provide 80 ha of new employment land.

1.3.2 It is described as high quality employment land to meet the needs of the expanding growth sectors in research and development, industry, warehousing and distribution. The development will benefit from a new junction with the A38, new bus connections, and links into the city's expanding cycle network.

Figure 1-2: Peddimore (Plan 10, P53 of the BDP)



1.4 The purpose of this report

1.4.1 An evidence base is being gathered by Birmingham City Council to support the BDP, a part of which has been the development of the Infrastructure Delivery Plan. Mott MacDonald is developing the transport evidence base for the BDP. This involves assessing the area wide impacts of the BDP through strategic modelling (West Midlands PRISM Model). This assessment has been carried out and further consideration is now being given to the detail, cost and delivery of the new infrastructure, including that identified in the IDP.

1.4.2 The purpose of this report is to develop this in more detail as a Movement Strategy for the Peddimore and Langley development sites.

1.4.3 The following report is a live document, which means that it may change following receipt of views expressed through public and stakeholder consultation. The report presents a picture of infrastructure that could be developed to support these developments. It is accepted that some of these items could be discounted on the grounds of viability or deliverability, and others will be the subject of change or enhancement.

1.4.4 The City Council is also in detailed discussions with delivery partners and key stakeholders including Highways Agency, Centro, Staffordshire County Council, Warwickshire County Council, Solihull MBC and Walsall MBC.

1.5 Report structure

1.5.1 The report is structured as follows:

- Chapter 2 Travel Demand: In order appraise where infrastructure should go, and how effective it should be, it is necessary to first understand how people move through the area both now and in the future;
- Chapter 3 Overview of Transport Strategy: The transport strategy has been developed to be an integrated plan for key movement corridors and areas of influence, to provide for the majority of journeys, which tend to be short. However the infrastructure also has a strategic function, particularly with respect for longer journeys, which are typically between home and work;
- Chapter 4 Routes to Sutton Coldfield, Walmley and Minworth: Potential interventions for a local multi-modal infrastructure plan
- Chapter 5 Routes to City Centre, Bromford Corridor and North Birmingham: Potential interventions within the wider city for a multi-modal infrastructure plan
- Chapter 6 Routes to North Solihull and Warwickshire: Potential interventions beyond the city for a multi-modal infrastructure plan.

2 Travel Demand

2.1.1 In order to determine where transport interventions will be required, it is necessary to understand the number and type of journeys that will be generated by the urban extension, as well as journey origins and destinations. For this purpose a Travel Demand Model (TDM) is being developed. This will provide more detail than the West Midlands PRISM Model, against which this TDM is to be validated.

2.1.2 This chapter presents the initial outputs of the emerging model.

2.2 Method summary

2.2.1 This TDM is a four stage model, which uses industry-standard methodologies and techniques. The four stages of the travel demand model are as follows:

- Trip generation – a calculation of the number of external trips that the development will generate in the peak hours.
- Journey purpose – the purpose of travel of the trips that are generated at the site.
- Trip distribution – the direction of travel of the trips that are generated at the site.
- Modal split – the travel choices for journeys generated by the sites.

2.2.2 Since the aim of the Langley site is to provide a sustainable development for prospective residents, a number of trips will be contained within the development. These trips will not have an impact on the existing local network and are therefore not included in the outputs of the travel demand model.

2.2.3 A modal shift away from the private car has been targeted as a result of improved sustainable infrastructure.

2.3 Trip Generation

2.3.1 Results from surveys contained in the TRICS[1] database have been used as proxies to forecast the trip generation of the development sites.

2.3.2 For each land use intended for development, surveys from land uses of similar size and location provide trip rates, which in turn can be multiplied to the quantum of development of each land use, and so predict the number of trips. These trips are then aggregated to provide a total external trip generation for Langley and Peddimore separately.

[1] http://www.trics.org/

Table 2-1: Two-way Person Travel Demand at the Development Sites

Site	AM Peak (08:00-09:00)	PM Peak (17:00-18:00)
Langley Residential SUE	2485	2803
Peddimore Employment Site	2172	1785

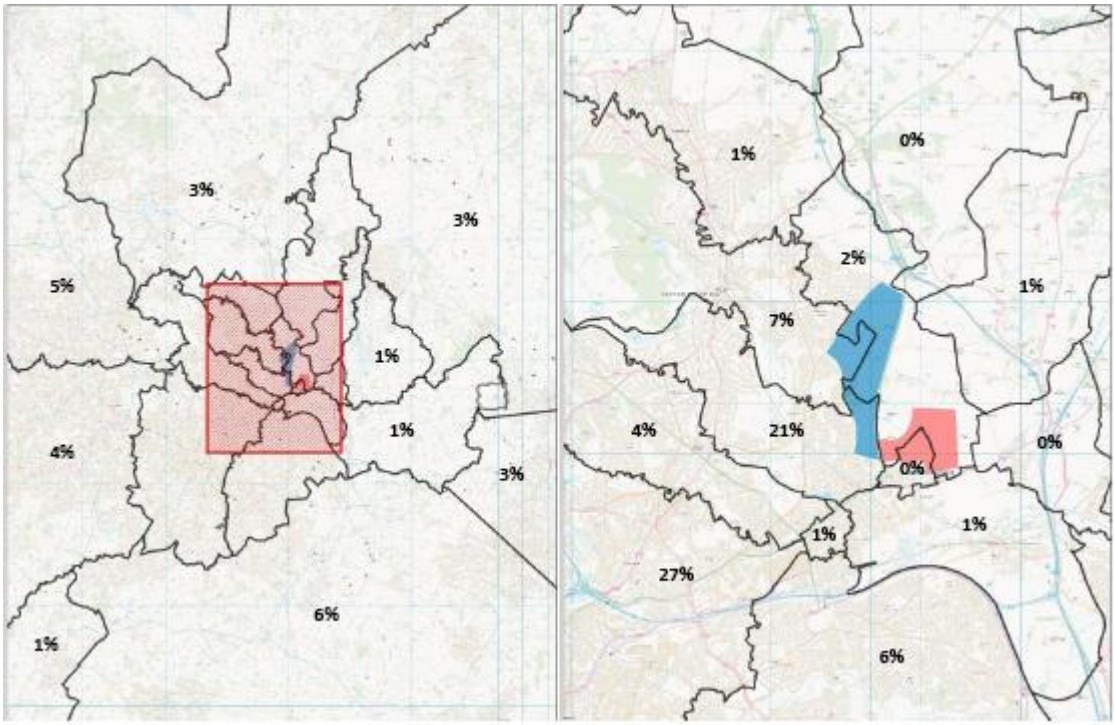
2.4 Journey Purpose

2.4.1 Data for the Sutton Coldfield area has been obtained from TEMPro[2] to consider the purpose of the journeys that will be taken to and from the site. Typical journey purposes include for employment, education, retail and recreation. Since a number of schools, shops and other amenities will be provided on site, the majority of the external trips generated are to and from work.

2.5 Trip Distribution

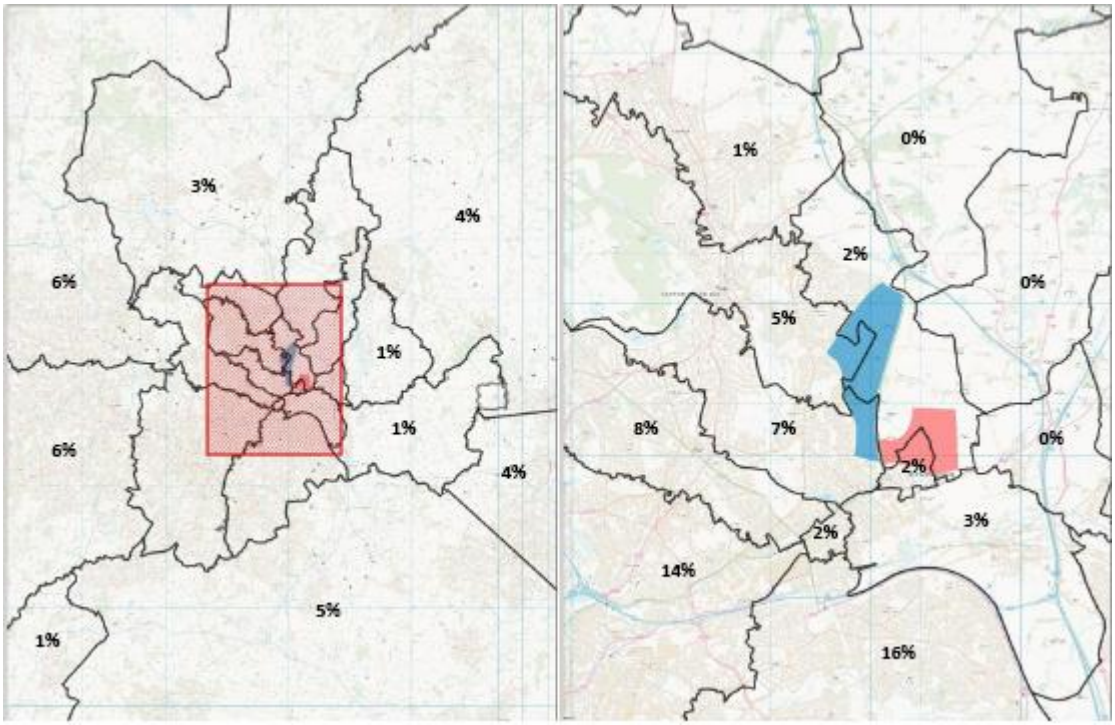
2.5.1 To forecast the distribution of trips from the development sites, an industry-standard gravity model was produced, which predicts the number of trips to a destination, by journey purpose, based on its distance from the site and its capacity to provide for that journey purpose.

Figure 2-1: Distribution of trips from Langley Residential SUE



[2] https://www.gov.uk/government/collections/tempro

Figure 2-2: Distribution of trips from Peddimore Employment Site



2.6 Modal Split

2.6.1 Official labour market statistics were obtained from nomis[3] to forecast a modal share for the journeys to work generated by Langley and Peddimore. The nearby residential area of Walmley and the employment site at Midpoint Park have been used as proxies for the development.

2.6.2 For journeys to other destinations, mode splits for Sutton Coldfield from the TEMPro database were used.

2.6.3 The principal modes of transport are as follows:

- Car driving;
- Car sharing (as a passenger);
- Public transport (including rail and bus);
- 'Slow modes' (walking and cycling); and
- Other (including motorcycling and taxi).

[3] http://www.nomisweb.co.uk/

Figure 2-3: Anticipated Modal Share for Langley Residential SUE

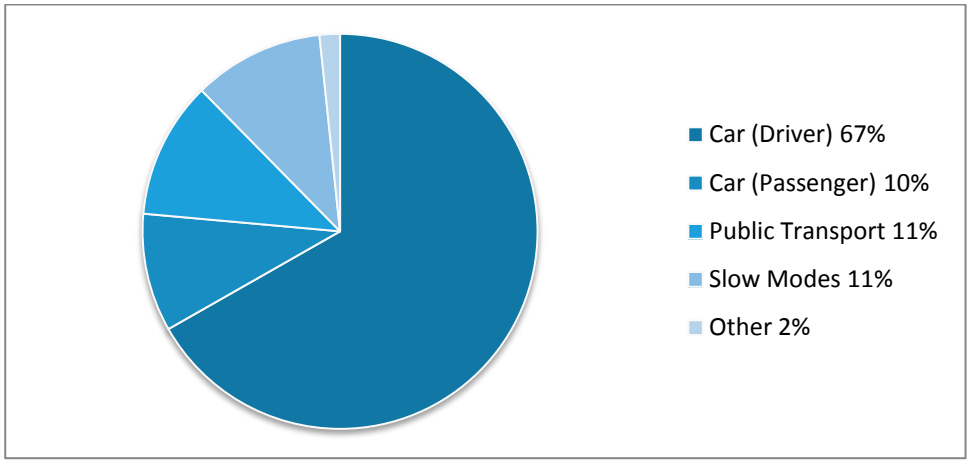
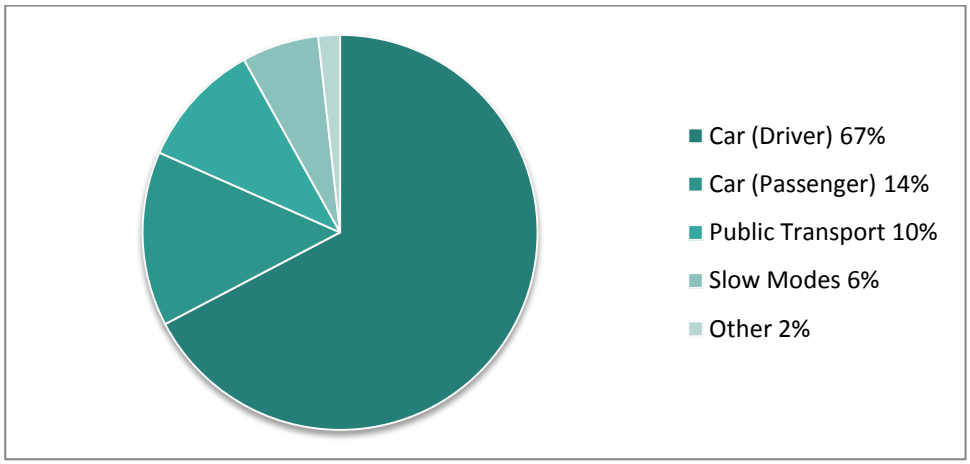


Figure 2-4: Anticipated Modal Share for Peddimore Employment Site



2.6.4 The number of public transport users, particularly at Langley, is lower than desired. A modal shift can be aspired to in order to increase the number of sustainable travel options and decrease the number of car users.

2.7 Modal Shift

2.7.1 Through various measures, including improvements to public transport, pedestrian and cycle networks, and highway infrastructure, a modal shift can be encouraged so that sustainable travel both at the Green Belt development, and in the wider area, is more desirable.

Table 2-2: Mode Splits for Journeys to Work from Residencies in 2001

Ward	Mode		
	Public Transport	**Car**	**Slow Modes**
Longbridge	24%	56%	11%
Northfield	23%	58%	10%
King's Norton	26%	57%	8%
Billesley	24%	58%	8%
Tyburn	23%	51%	16%
Birmingham Average	**25%**	**58%**	**11%**

2.7.2 Other sites on the edge of the city display similar mode splits to the average of Birmingham, so it is realistic to aim for a modal shift towards the average of the city.

Figure 2-5: Revised Modal Share Target for Langley Residential SUE

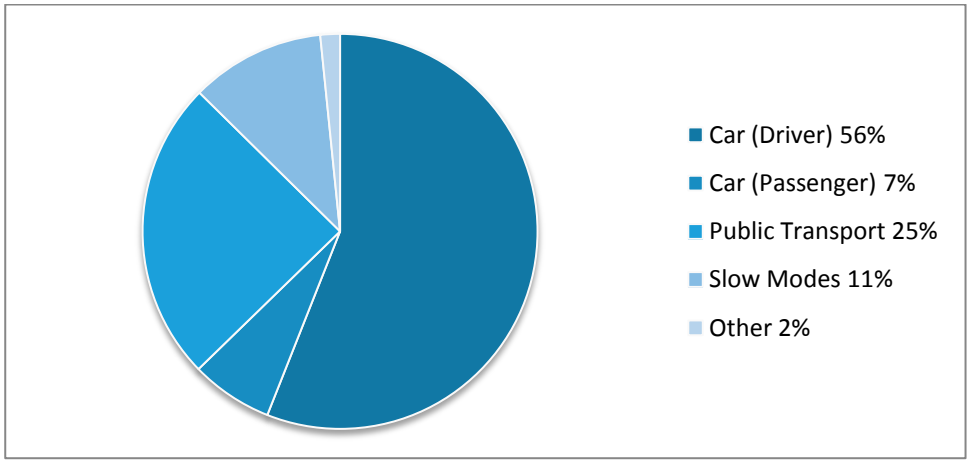
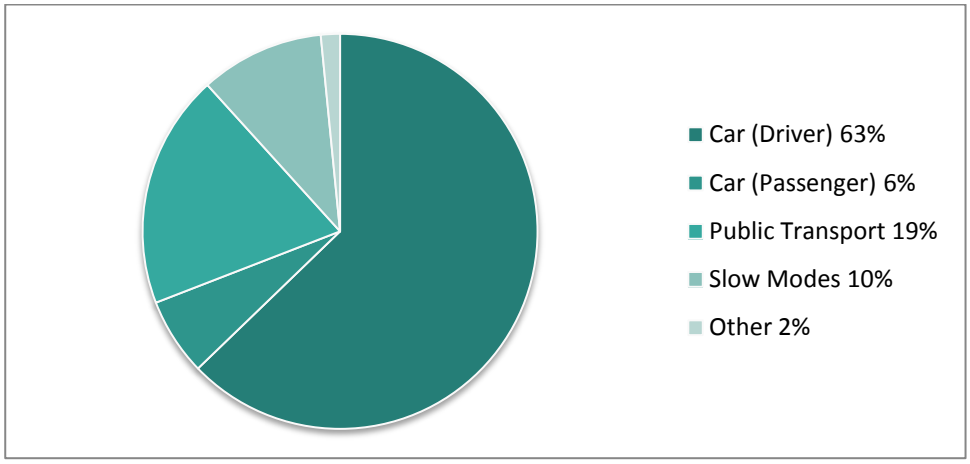


Table 2-3: Mode Splits for Journeys to Work to Employment in 2001

Ward	Mode		
	Public Transport	**Car**	**Slow Modes**
Birmingham Average	25%	59%	9%
Birmingham Average (without Ladywood)	18%	63%	10%

2.7.3 It is reasonable to expect that the Peddimore site will have a modal split similar to that of Midpoint Business Park. However, through the implementation of Travel Plan measures and improvements to public transport and cycling connectivity, a modal shift commensurate with the average for Birmingham, not including the City Centre, may be achievable.

Figure 2-6: Revised Modal Share Target for Peddimore Employment Site



2.8 Travel Demand Model Outputs

2.8.1 The distribution of trips by mode can then be calculated. The destinations have been aggregated by main destination, so as to give an overview of the potential impact of the development in different directions.

Table 2-4: Distribution of External Person Trips at Langley Residential SUE (without modal shift)

Direction	AM Peak	PM Peak
Walmley & Wylde Green	400	717
Reddicap Heath & Sutton Coldfield Town Centre	273	215
Water Orton, Minworth & Curdworth	50	108
Castle Vale, Castle Bromwich & Solihull	188	195
Kingstanding & Aldridge	100	100
Bromford Corridor, City Centre & Rest of Birmingham	715	712
Black Country & Beyond	259	258
Lichfield & Beyond	73	72
M42 Junction 9 & Beyond	428	426

Table 2-5: Distribution of External Trips at Peddimore Employment Site (without modal shift)

Direction	AM Peak	PM Peak
Walmley & Wylde Green	158	130
Reddicap Heath & Sutton	165	136
Water Orton, Minworth & Curdworth	124	102
Castle Vale, Castle Bromwich & Solihull	425	349
Kingstanding & Aldridge	168	138
Bromford Corridor, City Centre & Rest of Birmingham	356	292
Black Country & Beyond	289	238
Lichfield & Beyond	76	63
M42 Junction 9 & Beyond	409	336

3 Overview of the Emerging Transport Strategy

3.1 Key Principles

3.1.1 To be sustainable, the development needs to be supported by a transport network that accommodates the trips it generates, both within and outside the site. The provision of good connectivity is necessary for a development to attract and retain residents, and therefore become a vibrant neighbourhood. In this way, the travel demands and network effects of the development are mitigated. Similarly for the employment development to attract and retain business occupiers there has to be adequate accessibility for the workforce, and provision for the movement of materials and products.

3.1.2 Sustainability also requires that the movement generated by the new development does not significantly affect movement within existing neighbourhoods. It is important that these existing activities are sustained, and that the new development offers an enhancement to, rather than a detraction from, the economic prosperity and the quality of life in the area.

3.1.3 The addition of new development can be an opportunity to improve transport conditions in the local area. This development, combined with the existing area, will provide a critical mass which will more readily justify investment in sustainable transport infrastructure.

3.1.4 Modal choice for shorter journeys is better than for longer distance trips, as people are more likely to walk or cycle, or catch the bus. These shorter journeys make up the majority of trips throughout the day and are easier to manage and predict. This therefore creates a focus for investment in transport infrastructure.

3.1.5 These principles have been observed in the formulation of a strategy to mitigate the new movement generated by the proposed development.

3.2 Movement and Travel Modes

3.2.1 Three broad axes of movement have been identified:

- Locally around the proposed development, including to Sutton Coldfield Town Centre, Minworth, Castle Vale, Walmley, Whitehouse Common and the local neighbourhoods between them.
- To the City Centre, including national public transport connectivity and the Bromford Industrial Corridor and North Birmingham more widely; and,
- To East Birmingham and North Solihull, Staffordshire and Warwickshire and, national connectivity by road.

The Local Area

3.2.2 In the local area, travel distances are short. Many journeys would be 2 miles or less in length, and few longer than 3 miles. Walking and cycling are proposed as the primary modes of travel, supported by public transport for those who find these active travel modes unfeasible or unattractive. New car travel would be discouraged; and a modal shift to walking, cycling and public transport encouraged among existing car users, a process referred to as 'trip banking'.

3.2.3 This would enable those new car trips that are generated in the local area to be better accommodated within the existing overall highway capacity. This strategy does not preclude local improvements to highway capacity where for instance, congestion is a serious barrier to movement, but the main aim is to discourage an increase in private car use.

City Centre, Bromford and North Birmingham

3.2.4 The corridor to the City Centre attracts a large volume of people. Traffic management and parking conditions are already in place to encourage a modal shift. A direct public transport service to the city centre is proposed, to pass along the Bromford Industrial Corridor with a high standard of service including both a 'Sprint' rapid transit service and a 'Citylink' bus service. Connecting these routes with existing and new orbital bus services, public transport connectivity to and from most parts of North Birmingham would be possible.

3.2.5 Nearer to the site, parts of the Bromford Industrial Corridor lie within a distance that would be acceptable for cycling by many commuters. New and improved cycling infrastructure would be provided as an extension of the expanding city network to serve local needs.

3.2.6 There will inevitably be some increase in private car travel and goods vehicle movement. The strategy proposes to concentrate these movements on the primary and secondary highway network to avoid an increase in through traffic within residential neighbourhoods. Therefore, some increases in capacity are proposed on the main traffic routes.

East Birmingham and North Solihull, Staffordshire and Warwickshire

3.2.7 The majority of trips to these areas will be car-borne or HGV traffic. Therefore additional highway capacity is likely to be the key requirement.

3.2.8 Improved orbital bus services between Solihull and Sutton Coldfield, via East Birmingham and Coleshill, are proposed. While they would pass through Warwickshire, they are primarily intended to improve connectivity between metropolitan areas by addressing the severance due to the River Tame and parallel highway and railway infrastructure.

3.2.9 A higher modal share for cycling would be feasible for travel to/from some residential settlements and employment destinations in Warwickshire that are close to the proposed development. Routes to these destinations have also been considered.

3.3 Status of Proposals

3.3.1 The proposed infrastructure and services for each travel mode are presented for consultation. They are not definitive in scope or fixed in detail; the input of stakeholders is important in the formation of the preferred strategy.

Walking and Cycling

3.3.2 The attraction of travel on foot and bicycle is directly affected by the condition of the local infrastructure. While this can be overcome at relatively low cost, detailed local knowledge is required to identify the problem and devise an appropriate solution.

3.3.3 A strategic plan of this nature cannot address such detail, and the input of knowledgeable local parties will be appropriate and valuable. At this stage, consideration is more focused on the scope of the cycling proposals, in terms of their geographic coverage and the particular journey purposes on which modal shift to walking and cycling should be focused.

Public Transport: Bus

3.3.4 The public transport proposals are presented as new bus services as an addition to the existing public transport network. In practice, the proposed services would lead to a revision of existing bus services, either because their current role is superseded by one or several of the proposed services, or to better integrate with the new services.

3.3.5 Public transport works as a whole network as well as at the individual service level, and re-planning of the network will require careful consideration of effects on existing neighbourhoods and workplaces. Discussions with Centro regarding refinement of the proposed services and their integration into a revised bus network have commenced and are on-going.

3.3.6 Consultation will be extended to bus service operators, to draw on their market and operational knowledge and to understand how they might react to the proposed development and supporting transport infrastructure. Their input to the formulation of infrastructure proposals for bus services will also be valuable.

Public Transport: Rail

3.3.7 Proposals for connectivity and interchange with the passenger rail network will require the input of Network Rail and local train operators.

3.3.8 The Infrastructure Development Plan supporting the BDP requires the delivery of improvements to the railway network, specifically the opening of the Sutton Park line. This is outlined in the in the West Midlands Rail Vision, Centro's 'Towards a World Class Integrated Transport Network' and the BMAP Green Paper:

"This includes the opening of the Camp Hill, Tamworth and Sutton Park lines, facilitated by construction of the Camp Hill Chords connecting lines for passenger services into Moor Street station, with potential for new stations at Hazlwell, Kings Heath, Moseley, Fort Parkway, Castle Bromwich, Minworth, Walmley, Sutton Coldfield and Streetly. This will not only provide improved access to the city centre for these locations, but is also a key piece of infrastructure which links the wider City together and provides opportunities to interchange into the rest of the mass transit network. More specifically: Camp Hill Line – Network Rail recognises the congested nature of the A435 through Moseley and Kings Heath, and the opportunity for rail to provide some relief to road congestion; Opening these connections into Birmingham Moor Street will also allow some long distance passenger services to route away from Birmingham New Street and thus improved service reliability/punctuality for many other services.

3.3.9 However it is also acknowledged that there are some challenges to the delivery of this infrastructure, such as: the cost of delivering the Camp Hill Chords; the technical difficulties on the network at Water Orton; and the capacity limitations due to freight and high speed trains on the Tamworth Line.

3.3.10 This infrastructure will clearly have benefit to Sutton Coldfield, which has congested roads and a commuter railway line which is approaching capacity, partly as a result of travel demand from areas to the east (both within Sutton Coldfield and further afield) which are not well served by public transport.

3.3.11 While these railway lines do not directly serve Langley or Peddimore, and therefore do not form a part of the infrastructure strategy for these sites, they do serve neighbouring areas in Walmley, Minworth and Castle Vale. They have the potential to create a radical modal shift in the area and reduce the traffic volumes on the A38 and core routes within Sutton Coldfield which are critical to the local economy. Therefore this infrastructure remains an important part of the Infrastructure Delivery Plan.

3.3.12 Similarly BMAP reports the potential for HS2 to bring improvements in passenger journey times to London, but more importantly to release capacity on the existing rail network and in particular Birmingham New Street. This may in turn free up capacity for other local and regional rail services, such as from Tamworth and Sutton Coldfield.

Motor Traffic and Highway Infrastructure

3.3.13 The private car and goods vehicle trips will undertake a part of their journey on regional and strategic highways, which are the responsibility of Birmingham City Council, adjacent highway authorities and the Highways Agency. The views of and suggestions made by those authorities will be a valuable contribution to the transport strategy and the development of highway proposals.

3.3.14 Roads, in particular secondary and neighbourhood access roads, are places for people to be and for activities to take place; they are not just movement corridors. Furthermore, these roads are crucial for the delivery of the walking and cycling component of the strategy. Engagement with residents, businesses and other occupiers along these roads will capture information useful to the formulation of highway proposals for private motor traffic and for other modes too.

3.4 Delivery and Funding

3.4.1 Schemes contained in the strategy will be delivered over a period of time commensurate with the build-out of the development proposals, in line with the BDP's 2031 time horizon. The timing of individual schemes would be matched to particular elements of the development. This will be defined at a later stage.

3.4.2 Some elements could be delivered by the developer, particularly those partly or wholly within their site area.

3.4.3 In some cases, a piece of infrastructure or service might be funded from multiple developer contributions; the infrastructure would support the development as a whole and not be divisible between individual parcels.

3.4.4 In other instances, a scheme might have such economic development benefit that it is appropriate for the scheme to be progressed by public authorities and agencies, irrespective of these BDP development proposals. In such cases, it would be appropriate for these schemes to take account of movements generated by the proposed development. A funding mechanism might be used to attract a developer contribution; however, substantial funding from other sources would underpin the scheme.

3.5 Infrastructure and Service Proposals

3.5.1 Diagrams on the following pages present a complete picture of the strategy. It is important that interventions for each mode are considered in combination with others; so the presentation of separate diagrams is for clarity only.

3.5.2 It is fundamental to the transport strategy that mitigation will be achieved through all three principal travel modes. The following chapters of this report describe the combination of schemes by mode proposed for each key movement axis, accompanied by local area plans.

3.5.3 The diagrams are preceded by a key: this is applicable to the inset panels for each movement axis addressed in the following chapters.

Figure 3-1: Key for diagrams on proposals for highway interventions

	Corridor A – Whitehouse Common
	Corridor B – Lindridge Road
	Corridor C – Sutton Coldfield
	Corridor D – border of Langley residential SUE
	Corridor E – Walmley & Wylde Green north
	Corridor F – Walmley & Wylde Green south
	Corridor G – Chester Road
	Corridor H – A38 Kingsbury Road
	Corridor I – A4097 Kingsbury Road
	Corridor J – Water Orton
	Corridor K – M42 Junction 9
	Langley residential SUE
	Peddimore employment site
	Proposed local highway improvement measures

Figure 3-2: Corridors identified for highway interventions

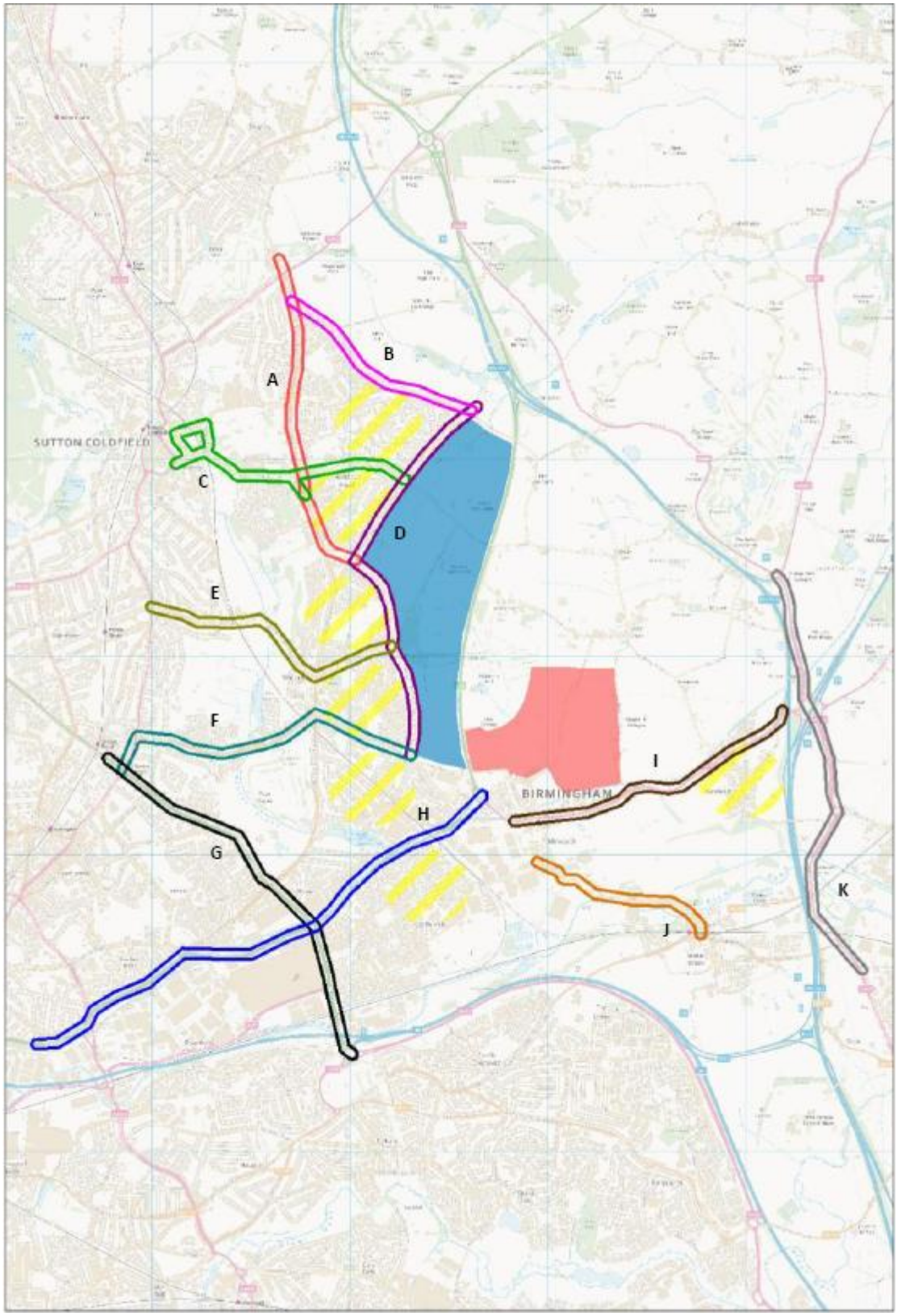


Figure 3-3: Key for diagrams on proposals for cycle and pedestrian networks

	North
	East
	South
	West
	Local Route
	Langley residential SUE
	Peddimore employment site
	Existing major employment sites
H	Hospital
	School/College (see figures 4-2, 4-3, 5-2 & 6-2)
	Shop (see figures 4-2, 4-3, 5-2 & 6-2)
	Health Clinic (see figure 4-2)

Figure 3-4: Overview of emerging cycling and walking network

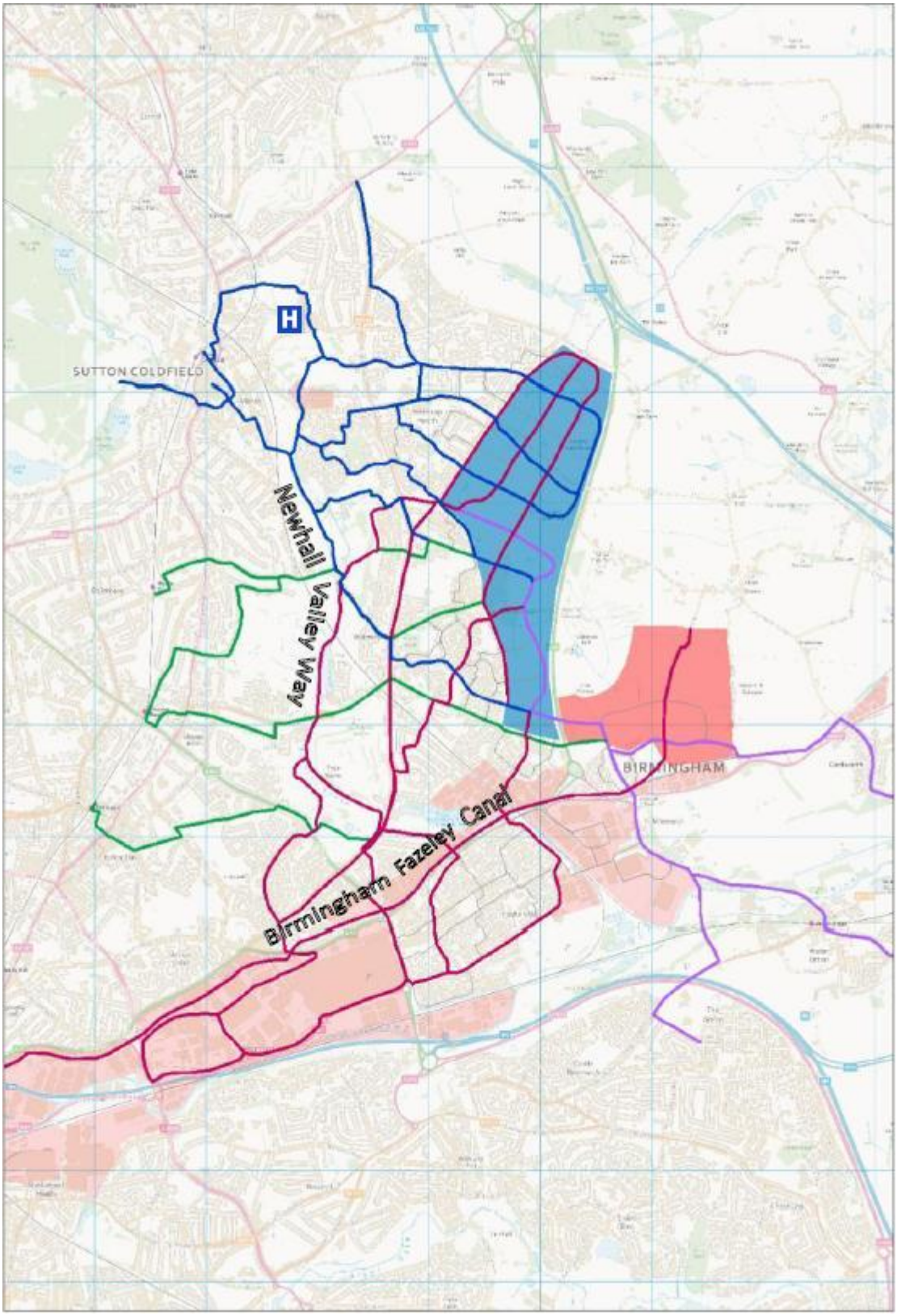
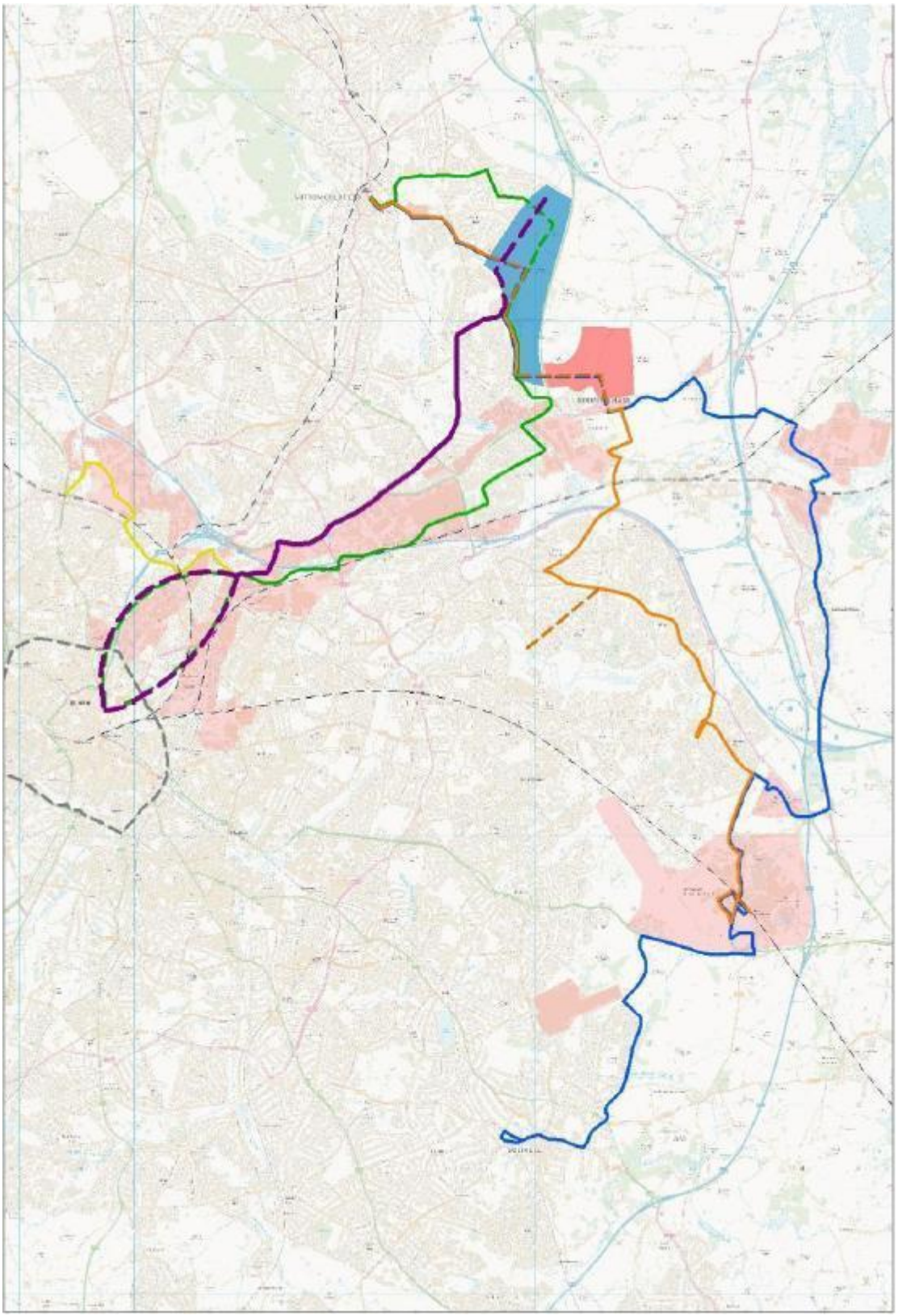


Figure 3-5: Key for diagrams on proposals for public transport networks

	Purple Sprint service – bus rapid transit
	Green CityLink bus service
	Yellow bus service
	Orange service
	Blue bus service
	Existing bus routes – selected sections
	Rail passenger service
	Interchange points
	Birmingham City Centre boundary
	Langley residential SUE
	Peddimore employment site
	Existing major employment sites

Figure 3-6: Overview of emerging network for public transport proposals



4 Routes to Sutton Coldfield, Walmley and Minworth

4.1 Context

4.1.1 People living on the Langley residential development will be attracted to those local services and amenities that are not provided on site, including Sutton Coldfield town centre and local jobs in Minworth and Peddimore. Therefore it is essential that local work, education, shopping and leisure destinations are adequately served by the transport network to reduce longer distance trips.

4.1.2 People who work on the Peddimore employment development may come from further afield, but adequate transport provision is needed to ensure that people have a choice of mode other than the private car.

4.1.3 The aims of the strategy are therefore to:

- Support the commercial vitality of Sutton Coldfield town centre;
- Encourage community cohesion with good accessibility to local schools, colleges and recreational facilities;
- Enable people to connect with those who live near them; and,
- Provide a means of getting to work other than by private car.

4.2 Travel Demand

4.2.1 The peak period is defined as 08:00-09:00 in the AM and 17:00-18:00 in the PM.

4.2.2 The development will mean a significant increase in peak period movement in the local area:

- Between Langley and Sutton Coldfield town centre an additional 200 person trips per peak hour are expected;
- Between Langley and ,Minworth plus Peddimore 250 new person trips per peak hour will be created;
- To Peddimore from areas other than Langley 2,000 new person trips per peak hour will be created; and,
- The Peddimore employment site will generate an additional 75 trips per peak hour by heavy goods vehicles.

4.3 Objectives of Interventions

- Provide sufficient capacity on all modes to accommodate the increase in travel-to-work trips; which would be available for travel to other destinations outside commuter peak periods;
- No significant increase in average journeys times into the Sutton Coldfield town centre;

- No significant increase in travel times into Minworth employment areas at peak times; and,
- To connect local communities by removing barriers to walking and cycling, e.g. actual and perceived danger of motor traffic.

4.4 Overarching Transport Strategy

4.4.1 The strategy is designed to achieve a high share of travel by non-car modes from Langley. Travel distances are short, with many destinations within 2 miles, and thus an easy cycling distance for most people. Improved bus services would have a particular role for travel into Sutton Coldfield town centre.

4.4.2 Highway improvements fall into two categories: traffic restraint within residential roads to the west of Langley and in Castle Vale to discourage through motor traffic; and improvements to primary route capacity. The traffic restraint interventions would support the strategy by providing safer, more pleasant conditions for cycling away from main roads.

4.4.3 The strategy will deliver transport improvements for existing neighbourhoods, facilitating a modal shift from car to other modes. This is known as 'trip banking' and would assist reducing existing congestion problems in the area.

4.5 Infrastructure and Services: Motor Traffic

4.5.1 This section should be read with reference to Figures 4-1 – 4-4 contained at the end of this Chapter. Highway improvements for motor traffic to Minworth are covered in this chapter as part of connectivity to Warwickshire.

District Highway Corridor: Springfield Road and Thimble End Road, Webster Way

4.5.2 Car trips from Langley towards Peddimore, Minworth, the Bromford Industrial Corridor and the City Centre would be attracted to these roads, substantially increasing north-south traffic flows. This could conflict with people trying to move in an east-west direction including cycle routes and bus services to Sutton Coldfield town centre.

4.5.3 The A38 Sutton Coldfield By-Pass, lying immediately to the east of Langley, carries traffic flows that are below its link capacity. Therefore it is proposed to provide a new connection to the SCBP at Peddimore, using an at-grade roundabout approximately 400m to the north of the Walmley Ash Lane road bridge. This will provide new east-west connections to the Langley and Peddimore developments and further consideration is being given to new connections to the A38 at Oxleys Road and/or Lindridge Road.

4.5.4 This infrastructure would allow traffic from the Langley development, Reddicap Heath and Falcon Lodge to reach Peddimore and Minworth Island for onward journeys towards Bromford, the City

Centre and the M42 Junction 9, relieving congestion on Springfield Road, Thimble End Road, Webster Way and Walmley Ash Road.

4.5.5 The new Peddimore roundabout also enables cars and goods vehicles to access the proposed industrial development.

District Highway Corridor: Lindridge Road between Springfield Road and Whitehouse Common Road

4.5.6 Car trips from Langley towards destinations north and west of Sutton Coldfield, including Tamworth, Lichfield and Cannock, would be attracted to these roads to access routes out of Sutton Coldfield. Without intervention this will increase delays at the junction of A453 Tamworth Road with B4148 Whitehouse Common Road and Lindridge Road with Whitehouse Common Road.

4.5.7 The additional connections with the A38 Sutton Coldfield By-Pass, described above, would provide traffic with a more attractive alternative route, relieving congestion on local roads. However, these new A38 connections could also attract traffic from the existing built up area onto Lindridge Road.

4.5.8 Additionally then further improvements will be considered:

- Lindridge Road junction with Whitehouse Common Road, which could be reconfigured to increase capacity; and,
- Traffic management on Lindridge Road to control speed and promote a smoother flow of traffic.

District Highway Corridor: Thimble End Road, Walmley Road, Hollyfield Road and Whitehouse Common Road

4.5.9 This route would also be affected by car trips between Langley South and destinations north and west of Sutton Coldfield, as well as traffic from Four Oaks and Mere Green to the Peddimore industrial development.

4.5.10 Again new connections to the A38 Sutton Coldfield By-Pass and traffic management on Lindridge Road (outlined above) would relieve some traffic flow on this section of the network. Further interventions are currently being considered:

- Improving the capacity of the Tamworth Road junction with Whitehouse Common Road;
- Improving the capacity of the Whitehouse Common Road junction with Lindridge Road;
- Widening of the approaches to reduce right-turn blocking, and revised phasing to include bus detection at Whitehouse Common Road junction with Rectory Road; and,

- Improvement at the Hollyfield Road junction with Reddicap Heath Road.

District Highway Corridor: Reddicap Heath Road, Reddicap Hill, Coleshill Road and Walmley Road into Sutton Coldfield Town Centre

4.5.11 It is considered that a modal shift from car to cycling and public transport is critical both to the sustainability of the current economy in Sutton Coldfield Town Centre, and for it to be able to accommodate new shoppers and jobs taken up by Langley residents. This can only achieved by implementing a comprehensive multi-modal transport plan for the town. This may be the subject of separate studies, but in any case is likely to involve a mix of physical and technology-driven urban traffic management control measures. The purpose will be to rebalance the network to ensure that alternative means of travel (walking, cycling and public transport) are an equitable and credible alternative to the private car.

4.5.12 The specific measures being considered at this time include:

- Improvements at the Reddicap Heath Road junction with Hollyfield Road to assist bus travel, address conflicting turning movements and control traffic flow using signal timings;
- The introduction of traffic signal control at the junctions of Walmley Road with Hollyfield Road and Reddicap Heath Road;
- Traffic management along Reddicap Heath Road and Reddicap Hill to provide improved safety for cyclists;

4.5.13 Consideration is given to the need for commercial vehicle access to business premises, e.g. Reddicap Trading Estate.

District Highway Corridor: Coleshill Road, Coleshill Street, Rectory Road and Riland Road

4.5.14 This quadrant of roads is affected by constraints on the movement of high vehicles including buses into/out-of Sutton Coldfield town centre. Alterations to junction priorities and/or restricting right-turn movements at some of the junctions between each of these roads could reduce delays for bus services with little increase in travel times for private car travel.

District Highway Corridor: Fox Hollies Road and Wylde Green Road

4.5.15 There is a risk that these roads would attract additional traffic due to traffic restraint on the route via Reddicap Hill, and also as an alternative route to Penns Lane for connection to the A452 Chester Road. This is not desirable as it connects with the A5127 Birmingham Road at a junction where a capacity enhancement would be difficult to provide, and could lead to an increased flow of traffic on local roads in Boldmere to the west of the Birmingham Road. Traffic management interventions would be implemented to discourage through traffic on this route.

Neighbourhood Roads to West of Proposed Development

4.5.16 Changes in traffic flows on the district highway network could encourage drivers to seek routes through residential neighbourhoods. This would undermine the walking and cycling components of the strategy, which encourage routeing via neighbourhood roads; it would also affect local residents. Traffic management and traffic calming will be considered within the Falcon Lodge, Reddicap Heath, Walmley and Castle Vale neighbourhoods.

4.5.17 There will be a need for improved infrastructure for short journeys on foot between Langley South and Walmley local centre. This would comprise pedestrian crossings over Webster Way and opening of pedestrian access to Calder Drive, Turchill Drive and Brookhus Farm Road.

4.6 Infrastructure and Services: Cycling

Cycle Network: Sutton Coldfield town centre and adjacent neighbourhoods

4.6.1 Direct and coherent cycle routes would radiate from Langley in all directions. The network would include new and improved routes from and within adjacent neighbourhoods to encourage modal shift. This network would build on existing cycling infrastructure; training and promotion implemented by Bike North Birmingham (http://www.birmingham.gov.uk/bikenorthbirmingham), and would complement that which will be delivered under the Birmingham Cycle Revolution programme (http://www.birmingham.gov.uk/bcr).

4.6.2 Sutton Coldfield town centre is a key destination for travel by bike. It lies within 3 miles of the farthest part of the Langley residential development, which is equates to around 20 minutes cycling. The opportunity to avoid town centre parking search time and charges, and to park a bike much closer to the final trip end, provide a good basis for promoting mode switch from driving to cycling.

4.6.3 The network envisaged would have a density such that a designated cycle route is within approximately 500m of all residences, within both Langley and adjoining neighbourhoods. The network would also pass within approximately 500m of key trip attractors, e.g. industrial estates, schools, and local centres. The proposed network directly serves school entrances.

4.6.4 These routes would comprise a combination of: segregated cycle paths, e.g. alongside the carriageway or through parks or open space; routing via quiet residential areas; and traffic management interventions on the carriageway to enable cyclists to share space with motor traffic in a way that they are safe and feel safe. This may include closure of selected roads to motor vehicles to remove through traffic from residential areas, though care would be required to avoid relocating traffic problems to other parts of the network.

4.6.5 Control of traffic speed is key to improving conditions for cyclists. This need not increase overall journey times for motor traffic, as drivers often travel quickly on links between junctions only to

queue on the approach to the next junction. This is in line with Birmingham City Council's '20's plenty' proposals (http://www.birmingham.gov.uk/20mph).

4.6.6 Three core routes are being considered between North Langley and Sutton Coldfield, and three from South Langley. These would make extensive use of the existing Newhall Valley paths, National Cycle Network route 535: and alterations could be made to enhance directness, capacity and perceived safety of these existing routes. The North Langley routes might also serve Good Hope Hospital.

4.6.7 The primary entry into Sutton Coldfield town centre is via Ebrook Road and South Parade, via which five of the six core routes run. The convergence point is just east of the Sutton Park railway line, south east of Jerome Road. Making use of this traffic-free corridor provides the most attractive route for all cyclists, and there is opportunity to calm traffic on Ebrook Road and South Parade, which would be beneficial to the adjacent schools. The most northerly route would enter the town centre via Good Hope Hospital grounds, Boswell Road and Lichfield Road.

4.6.8 The routes could be inter-connected in such a way that a range of destinations around Sutton Coldfield could be reached directly from all neighbourhoods. These include Good Hope Hospital, Birmingham Metropolitan College, Reddicap Trading Estate, primary and secondary schools, and local centres at Walmley, Whitehouse Common and Reddicap Heath.

4.6.9 The major axes in the cycle network radiating from Sutton Coldfield town centre include Reddicap Heath Road, Churchill Road, Newhall Valley Way, Wylde Green Road, Calder Drive, Sir Alfreds Way and Rectory Park. This extensive network would enable a switch from car to bike from adjacent neighbourhoods, including Falcon Lodge, Whitehouse Common, Reddicap Heath, Walmley and Walmley Ash.

Cycle Network: Peddimore and Minworth

4.6.10 It is proposed that Langley is connected directly to Peddimore via a cycle link segregated from general traffic, including across the A38. The existing road via Walmley Ash Lane bridge over the A38 would remain and could also form part of the cycle network connecting Langley and Peddimore. The network of routes between Langley and Sutton Coldfield town centre described above would also mean that Falcon Lodge, Whitehouse Common, Reddicap Heath, Walmley and Walmley Ash would also be directly connected to Peddimore.

4.6.11 An east-west cycle route is also being considered along Walmley Ash Road and Walmley Ash Lane. This route extends beyond Peddimore to provide access to Midpoint Business Park. It also provides a local connection between Minworth village and Peddimore, Forge Lane and the Walmley Ash ASDA superstore.

4.6.12 The primary cycle routes in the Peddimore and Minworth areas would also serve Forge Lane, Cottage Lane, Water Orton Lane, Walmley Ash Lane, Midpoint Boulevard, and Park Lane. A mixture of traffic calming and shared use footways would cater for cyclists on these roads. Old Kingsbury Road is free from through traffic, and would provide a connection with the Birmingham-Fazeley Canal towpath route from the Bromford Industrial Corridor.

4.7 Infrastructure and Services: Public Transport

Citylink bus service: Castle Vale – Langley South – Langley North – Falcon Lodge – Good Hope Hospital – Sutton Coldfield Town Centre

4.7.1 A new bus service is being considered between Castle Vale and Sutton Coldfield via Minworth Island, Walmley Ash Road and Langley. It would serve the proposed development, Falcon Lodge and Good Hope Hospital. This service would be a part of a City Centre route via the Bromford corridor.

4.7.2 As the service would form the main bus route between Falcon Lodge and town centre; it is considered that current services 71 and 904 could be revised.

4.7.3 The service would be part of the 'CityLink' network proposed in the Birmingham Mobility Action Plan [BMAP]. CityLink services have high-specification buses, real-time information at all stops, and traffic management to provide more punctual running than is typical for bus services.

4.7.4 Highway infrastructure to enable the proposed service might include: priority for buses at Rectory Road junction with Whitehouse Common Road; priority at Minworth Island; and a bus-only link between Kingsbury Road and Manby Road in the Castle Vale estate.

4.7.5 Minor works could be required to provide new bus stops at some locations. Other works would be within the development site.

Citylink bus service: Peddimore – Langley South – Reddicap Heath – Reddicap Hill – Sutton Coldfield Town Centre

4.7.6 A new bus service is being considered, which connects the Peddimore employment development via Walmley Ash Road to reach the south part of Langley. From there, it would cross Springfield Road to reach Walmley Road and Reddicap Heath. From Reddicap Heath, it would continue via Reddicap Hill to Sutton Coldfield town centre.

4.7.7 This proposed service would be a combination of two services that would originate in East Birmingham and North Solihull. This proposal may also lead to revisions to service 71.

4.7.8 Highway infrastructure to enable the proposed service might include: priority for buses at Kingsbury Road junction with Water Orton Lane; new traffic signals to reduce delays to buses at

Hollyfield Road junction with Walmley Road; and, bus priority at the proposed A38 Peddimore access junction.

4.7.9 Minor works could be required to provide new bus stops at some locations. Other works would be within the development site.

4.8 Issues for Neighbouring Communities

4.8.1 The proposed service would lead to revisions to service 71 that currently forms the most frequent service to Sutton Coldfield town centre from Walmley, though via an indirect route; also connections to Good Hope Hospital and Minworth ASDA superstore. The retention of good bus links to these destinations is important and will require detailed appraisal of bus service viability following the introduction of proposed new bus services.

4.8.2 Revision to bus service 71 might remove direct bus links to parts of Minworth from Reddicap Heath and Falcon Lodge; passengers would need to interchange between bus routes at the proposed Langley bus hub. High departure frequency on the proposed services would reduce the negative effect of the requirement to transfer between services.

4.8.3 The proposed CityLink bus service would become the primary bus route between Castle Vale and Sutton Coldfield town centre and Good Hope Hospital, in place of the current bus service 71, though that may continue in a modified form. This bus service revision has the potential to provide a substantial improvement in accessibility to town centre and hospital employment for Castle Vale residents. However, there is a risk that these bus service revisions could adversely affect some links that residents currently find useful, e.g. to parts of Minworth. A comprehensive appraisal of accessibility to employment by bus will be required to devise revisions to other service and create service pattern that delivers net benefits overall. However, some individual connections might be adversely affected.

4.8.4 Proposed traffic calming measures would be require consultation with local residents, businesses and other stakeholders, to achieve the aims of discouraging through traffic while not unnecessarily restricting local access.

Figure 4-1: Locations of emerging proposals for highway improvements in Sutton Coldfield & Walmley

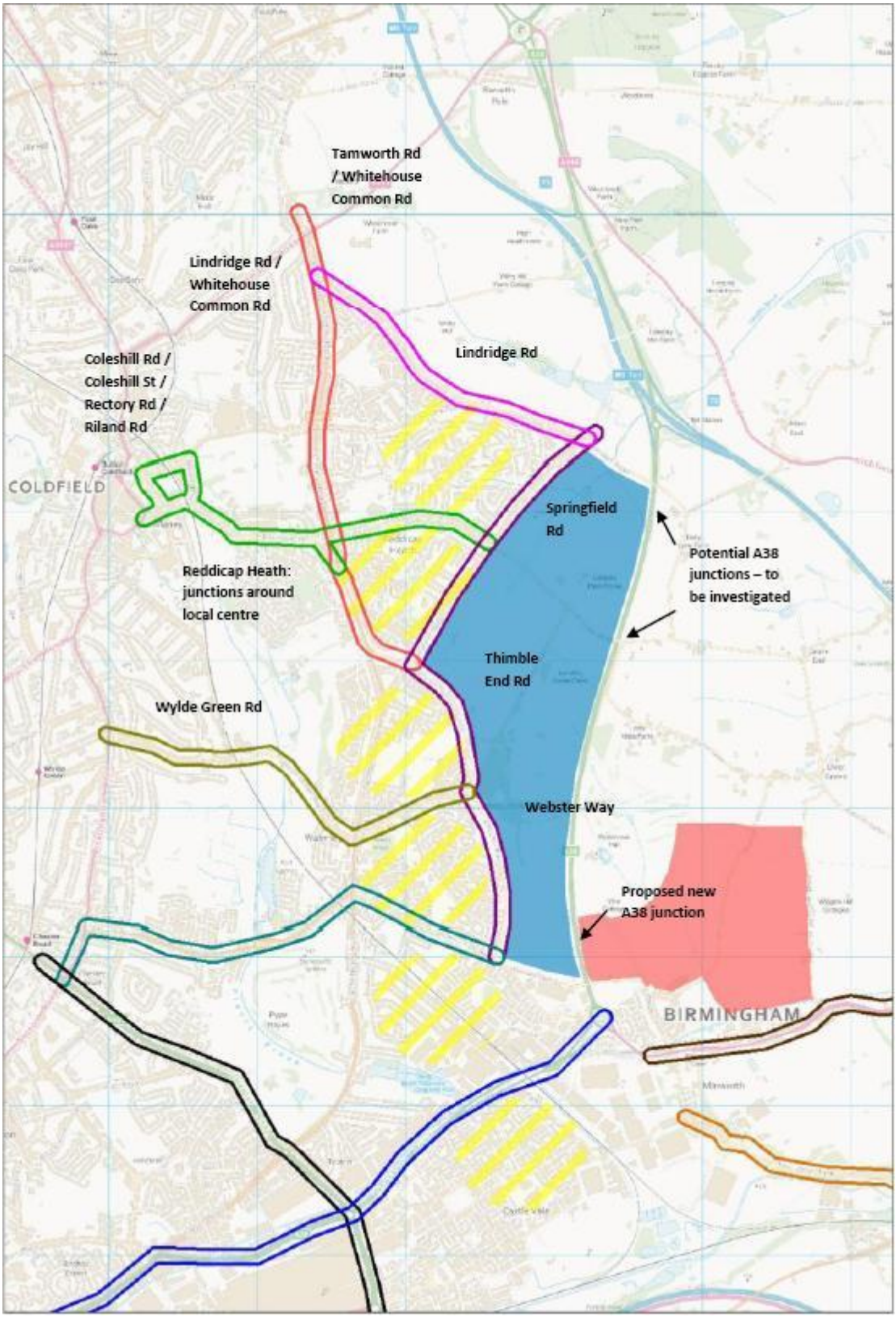


Figure 4-2: Emerging cycle and pedestrian proposals for connectivity to Sutton Coldfield (blue route)

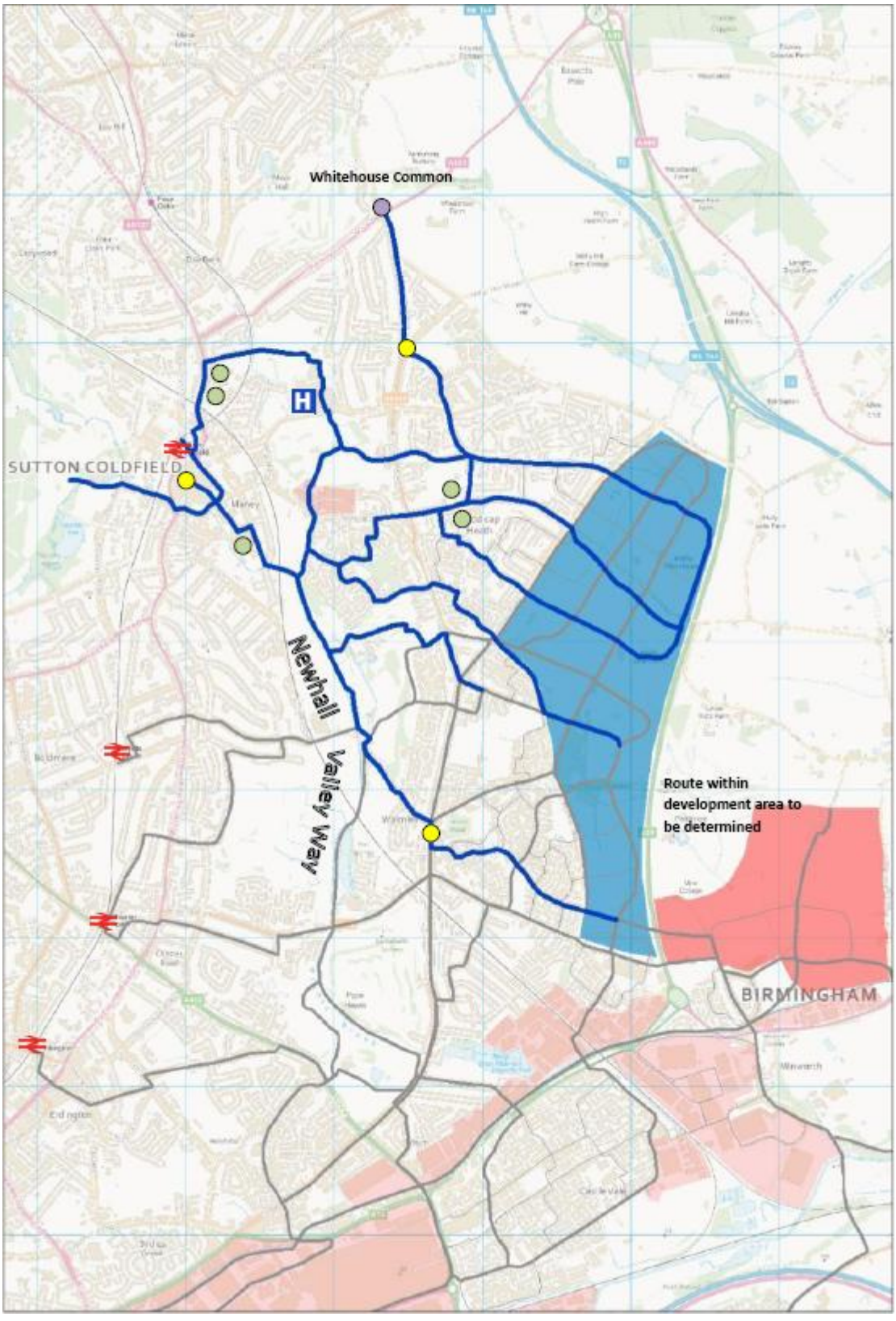


Figure 4-3: Emerging cycle and pedestrian proposals for connectivity to Walmley and Wylde Green (green route)

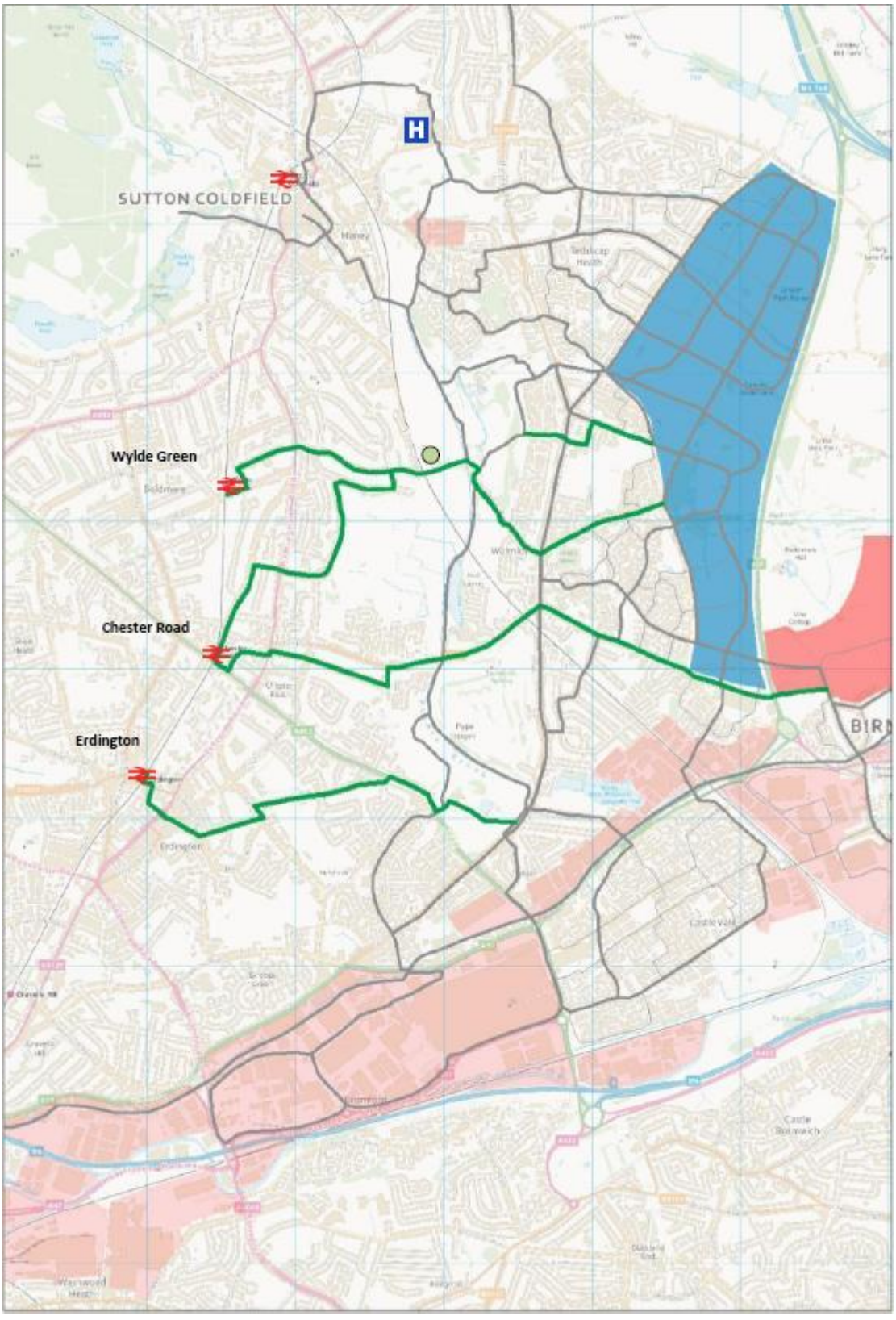
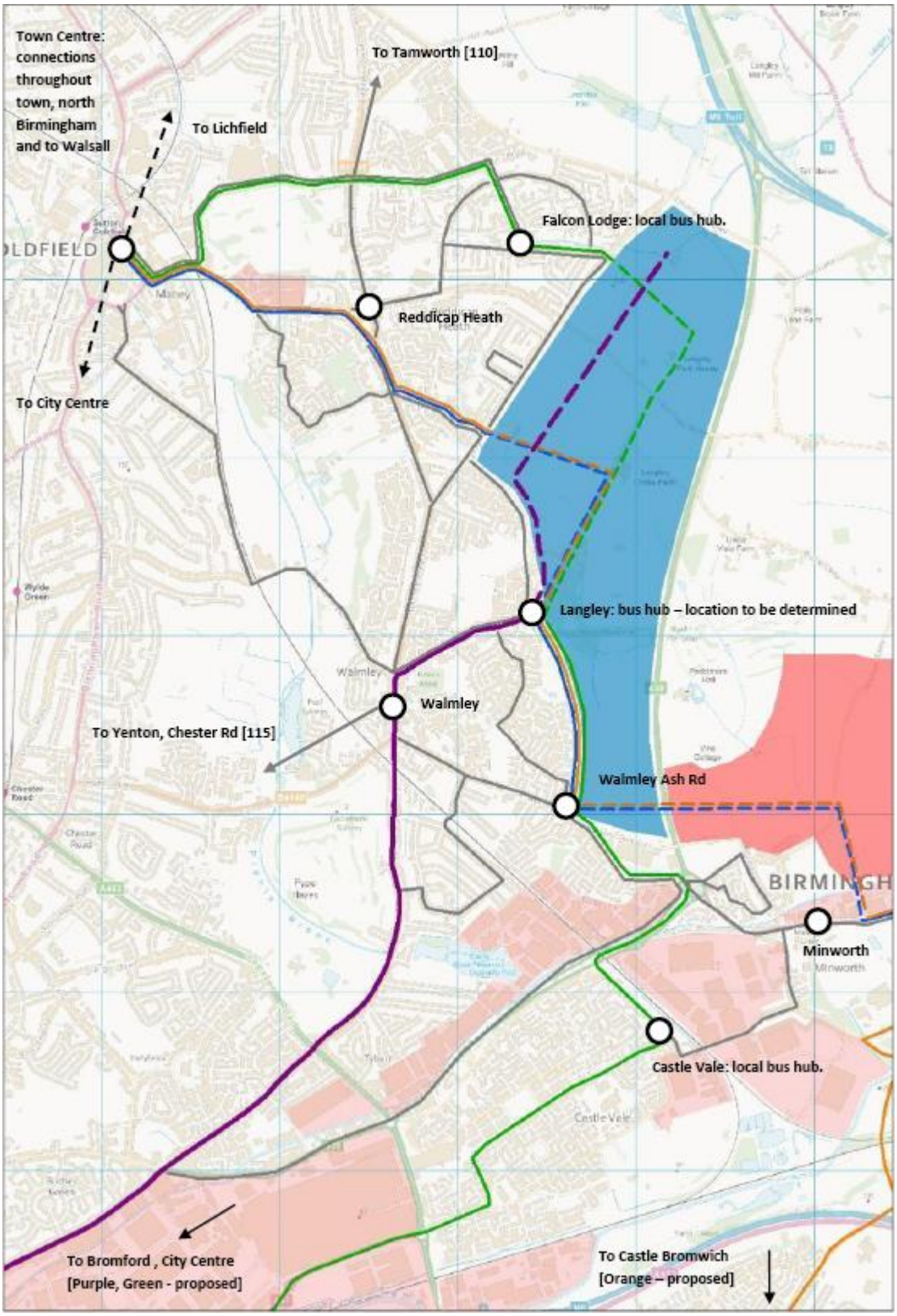


Figure 4-4: Emerging public transport proposals for Sutton Coldfield, Walmley and Minworth



5 Routes to City Centre, Bromford Corridor and North Birmingham

5.1 Context

5.1.1 Bromford Industrial Corridor and the City Centre are two distinct destinations: each attracts journeys for a different range of purposes. This includes differences in travel to work patterns: where the City Centre has a greater proportion of professional and administrative, retail and leisure jobs; the Bromford Industrial Corridor has a greater proportion of manufacturing, wholesale and related jobs. They are however addressed jointly as many of the transport proposals serve both destinations.

5.1.2 There are key destinations in parts of Birmingham that lie outside of the Bromford Industrial Corridor. By public transport, journeys to these could be accomplished with interchange between new services and the existing orbital bus services.

5.1.3 For car and cycle travel, journeys to out-of-corridor destinations would tend to follow the movement desire line. Therefore, infrastructure improvements would be required along selected corridors to accommodate such movement.

5.1.4 The aims of the strategy are to:

- Secure the role of the city centre as the regional hub for business, commercial services, and premium retail, which is central to the Birmingham Development Plan [BDP].
- Support the retention and growth of advance manufacturing industry, and support the supply chain, as a key to Birmingham's economic prosperity.
- Support the viability of the Bromford Industrial Corridor as a location where existing companies can be retained and enabled to grow.
- Provide a means of getting to work other than by private car.

5.2 Travel Demand

5.2.1 The development will mean a significant increase in peak period journeys made along this corridor:

- Between Langley and the Bromford Industrial Corridor plus City Centre an additional 700 person trips per peak hour are expected.

5.3 Objectives of Interventions

- Provide sufficient capacity by all modes to accommodate increased travel-to-work; this capacity would be available for travel to other destinations outside commuter peak periods; and,

- No significant increase in average journeys times into the City Centre or Bromford Industrial Corridor; and,
- Achieve travel times on public transport into the City Centre comparable with that of the motor car.

5.4 Overarching Transport Strategy

5.4.1 The objectives of the interventions are to achieve a high share of travel by non-car modes from Langley, which can move more people using the same space.

5.4.2 To the City Centre, public transport would be the principal alternative to car travel. To the Bromford Industrial Corridor, cycling would be an important contributor to a high non-car modal share. Facilitating access to the railway network to transfer journeys off the highway network also forms part of the overall strategy.

5.4.3 The strategy will deliver transport improvements for existing neighbourhoods, facilitating a modal shift from car to other modes. This is known as 'trip banking' and would assist reducing existing congestion problems in the area.

5.4.4 Given the overarching strategy to support industrial growth, it is necessary to increase highway capacity on key arterial routes to sustain reliable travel times for business and goods traffic.

5.5 Infrastructure and services: Motor Traffic

5.5.1 This section should be read with reference to Figures 5-1 to 5-6 contained at the end of this Chapter.

Primary Highway Network: A38 Kingsbury Road and Tyburn Road, Minworth to Gravelly Hill

5.5.2 This is the natural route for car travel into the Bromford Industrial Corridor and the City Centre. The transport strategy will focus on promoting increased use of public transport and cycling in this corridor, as it is not desirable to greatly increase traffic capacity and therefore flows. However some improvements would be appropriate to maintain access for goods traffic to businesses along the corridor, as follows:

- Improvements at Minworth Island (Junction of Kingsbury Road with A38 Sutton Coldfield By-Pass, and Walmley Ash Road). This might involve traffic signal control combined with widening of the approaches and circulatory carriageway;
- Improvements at Tyburn Island (Junction of A38 Kingsbury Road with Chester Road). Consideration is being given to providing additional capacity on top of other funded upgrades, such as the potential for conversion from a roundabout to a signal controlled crossroads;

- Improvements at the A38 Kingsbury Road junction with Tyburn Road, which may involve traffic management to discourage the use of Tyburn Road north for longer distance journeys. This would support congestion relief in Walmley and assist with the delivery of the BMAP 'Sprint' bus rapid transit through the junctions; and,
- Alterations to the A38 Tyburn Road junction with Bromford Lane and Wheelright Road. Traffic management control might assist passage of 'Sprint' bus rapid transit through the junctions, with limited negative effect on motor traffic.

Primary Highway Network: A452 Chester Road, The Yenton to Newport Road

5.5.3 The Chester Road is a primary route within Sutton Coldfield and a key axis for traffic to Peddimore from Walsall, Sutton Coldfield, Castle Bromwich and M6 junction 5. Infrastructure currently being considered for improvements includes:

- Improvements to increase capacity for pedestrians, cyclists and public transport at 'The Yenton', which is the junction of Chester Road with Birmingham Road and Sutton Road. This should be addressed jointly with infrastructure on the Penns Lane corridor;
- Alterations to the Bagot Arms roundabout (Junction of Chester Road with Eachelhurst Road and Tyburn Road), to accommodate 'Sprint' bus rapid transit on the north-east/south-west movement and increased general traffic on the north-west/south-east movement. This will require a reallocation of road space which could involve innovative measures to replace the roundabout with a traffic-signal controlled crossroads, to enlarge the current roundabout and incorporate a innovative arrangement for traffic movements, or a hybrid of the two;
- Improvements at Tyburn House Island (Junction of A38 Kingsbury Road with Chester Road). Consideration is being given to providing additional capacity on top of other funded upgrades, such as the potential for conversion from a roundabout to a signal controlled crossroads;
- Consideration will be given to the operational capacity of the Spitfire Island (Chester Road junction with Fort Parkway and Tangmere Drive) once committed improvements have been implemented. These improvements include a large signal controlled roundabout with segregated left slip from Fort Parkway onto Chester Road.
- The City Council is considering the reserve operational capacity in consultation with the Highways Agency of the 'Newport island' (Chester Road junction with Newport Road, the Collector Road and slips to M6 Junction 5).

District Highway Network: Walmley Ash Road, Penns Lane and Birmingham Road

5.5.4 This route is the natural line between Langley and Peddimore to Erdington, Wylde Green, Boldmere, and further afield to Walsall. Various junctions are being assessed to measure reserve capacity, and any interventions that might be required:

- Junction of Walmley Ash Road with Webster Way;

- Potential capacity improvements at Walmley Ash Road junction with Eachelhurst Road and Penns Lane and the accommodation of the 'Sprint' bus rapid transit;
- Penns Lane junction with Yenton local centre at Wylde Green where traffic management could be used to increase capacity for movement between Penns Lane and Chester Road. This should be addressed jointly with the Chester Road / Birmingham Road / Sutton Road junction. Options include traffic signal control of the Penns Lane junction with Birmingham Road.
- Walmley Ash Road junction with Penns Lane, where traffic management interventions to control speed would assist the smooth flow of traffic, which would support the inclusion of these roads in the cycle network.

5.6 Infrastructure and Services: Cycling

Cycle Network: Bromford Corridor

5.6.1 As an area with a high concentration of employment, providing cycle links to the Bromford Corridor from existing and proposed neighbourhoods is a key aim of the transport strategy. Fort Dunlop, Jaguar Land Rover Castle Bromwich, and the industries around Castle Vale and Hanson's Bridge all lie within 3 miles of the centre of Langley South, which equates to approximately a 20 minute cycle ride with provision of a high standard of cycling facilities. The range of destinations is increased when the faster journey times offered by the continuity and directness of the Birmingham-Fazeley Canal towpath is taken into account. Furthermore, providing cycle links to the Bromford Corridor from other neighbourhoods in north-east Birmingham would promote trip banking.

5.6.2 Direct and coherent cycle routes would therefore pass through the Langley development and via Walmley, Castle Vale, Pype Hayes and Tyburn into the Bromford corridor. Extensive use would be made of existing traffic free routes along the Birmingham-Fazeley Canal and via Newhall Valley, which are both existing National Cycle Network Routes, and the existing facilities along Chester Road and the A47.

5.6.3 The network could have a density such that a designated cycle route is within approximately 500m of all residences within Langley, Walmley, Castle Vale, Tyburn and Pype Hayes.

5.6.4 These routes would comprise a combination of: segregated cycle paths, e.g. alongside the carriageway or through parks or open space; routing via quiet residential areas; and traffic management interventions on the carriageway to enable cyclists to share space with motor traffic in a way that they are safe and feel safe. This may include closure of selected roads to motor vehicles, to remove through traffic from residential areas, though care would be required to avoid relocating traffic problems to other parts of the network.

5.6.5 Control of traffic speed is key to improving conditions for cyclists. This need not increase overall journey times for motor traffic, as drivers often travel quickly on links between junctions only to

queue on the approach to the next junction. This is in line with Birmingham City Council's '20's Plenty' propoals (http://www.birmingham.gov.uk/20mph).

5.6.6 The core route would be the improvement of the Birmingham-Fazeley Canal towpath between Hanson's Bridge and Curdworth, as an extension of the existing proposed enhancements west of this section as part of Birmingham Cycle Revolution.

5.6.7 Forge Lane, Ashurst Road, Springfield Road, Walmley Road, Newhall Valley Way and Eachelhurst Road are also strategically significant links in the proposed network. The network is inter-connected to provide a wide range of destinations and route options.

5.6.8 To address severance, direct cycle and pedestrian links would be provided to join up cycle and walking routes either side of major road corridors.

Cycle Network: City Centre

5.6.9 The northern edge of Langley is approximately 10 miles from Birmingham City Centre, and despite the time advantages of using the canal towpaths, this distance equates to around 1 hour by bike, and thus may not be considered a realistic mode choice by many people for a commuting trip.

5.6.10 However, Langley is within 3 miles, approximately 20 minutes cycling time, of Sutton Coldfield, Wylde Green, Chester Road and Erdington stations on the Cross-City Line. Therefore, by utilising cycling for part of the journey, Aston, Birmingham City Centre, Birmingham University and Longbridge employment clusters can all be reached without needing to drive.

5.6.11 Cycle routes will therefore be considered to connect Langley and intermediate neighbourhoods to these stations. In addition to connectivity with Langley, these routes offer an alternative to driving to the station for existing station users in the intermediate hinterland, and thus potential to promote trip banking.

5.6.12 These routes are generally aligned east-west to facilitate the shortest-possible cycling distance. Chester Road station is served by two routes, one of which is a spur from the Wylde Green route, on account of it being in a cheaper fare zone and thus the relatively small difference in cycle journey time compared to Wylde Green may be viewed as being sufficiently outweighed by the season ticket savings possible.

5.6.13 These routes could comprise a combination of: segregated cycle paths, e.g. alongside the carriageway or through parks or open space; routing via quiet residential areas; shared use footways; and traffic management interventions on the carriageway to enable cyclists to share space with motor traffic in a way that they are safe and feel safe. This may include closure of selected streets to motor vehicles, to remove through traffic from residential areas, though care would be required to avoid relocating traffic problems to other parts of the network.

5.6.14 Control of traffic speed is key to improving conditions for cyclists. This need not increase overall journey times for motor traffic, as drivers often travel quickly on links between junctions only to queue on the approach to the next junction. This is in line with Birmingham City Council's '20's Plenty' propoals (http://www.birmingham.gov.uk/20mph).

5.7 Infrastructure and Services: Public Transport

Sprint rapid transit: Langley – Walmley – Pipe Hayes – Star City – City Centre

5.7.1 Sprint forms a key proposal in the Birmingham Mobility Action Plan [BMAP]. It is road-based rapid transport system that provides a passenger experience similar to a modern tram service, both on the vehicle and at stops. A frequent and punctual service would be achieved through a combination of segregation from general traffic, designated lanes within the general carriageway where these would not add to delays for other traffic, and intelligent traffic signal control.

5.7.2 The proposed Sprint service would take the most direct route available between Langley and the City Centre. It would serve a variety of trip attractors in order to achieve good patronage across the day and week; that is a key part of the justification for it. The preferred routeing between Star City and the City Centre would be determined through further appraisal.

5.7.3 Sprint stops would be more widely spaced than is typical for bus stops. Thus, Sprint would not entirely replace bus services along the roads on which it would operate, though they would be altered to reflect changing patterns of use.

5.7.4 Sprint ticketing would be fully integrated with other public transport. A premium fare tariff compared to bus fares might apply, as is the case with Metro.

5.7.5 Highway infrastructure to accommodate Sprint would include dual carriageway provision where Eachelhurst Road crosses over the Sutton Park railway line; though a solution might be possible that does not require this. A public transport interchange hub would be provided at Star City.

5.7.6 Minor works would be required at junctions, e.g. traffic signal adjustment, and to provide stops. Other works would be within the development site or on what are currently private or access roads.

Citylink bus service: Langley – Minworth – Castle Vale – The Fort - Star City – Aston – City Centre

5.7.7 Improved bus services on major arterial corridors, referred to as 'CityLink', are proposed in BMAP to complement and support rail, Metro and Sprint services in an integrated network. CityLink services would have high-specification buses, real-time information at all stops, and traffic management to provide more punctual running than is typical for bus services. Stops would be more closely spaced than on Sprint.

5.7.8 A combination of high existing bus patronage in this corridor, additional travel demands from Langley, and City Centre growth set out in previous plan submissions, would justify the provision of a CityLink bus service in addition to Sprint in this corridor; though not running along the same roads between Langley and the City Centre. The proposed CityLink service would form the primary bus route between Castle Vale and the City Centre, and potentially also Aston subject to a further routeing appraisal. It would run at least in part via the Fort Parkway and Heartlands Parkway, substantially shortening the route compared to the current bus service 67 via Tyburn Road. It could operate on a partly limited stop basis, for example between Star City and the City Centre.

5.7.9 Highway infrastructure to enable the proposed CityLink service could include:

- bus priority at Minworth Island;
- a bus-only link between Kingsbury Road and Manby Road in the Castle Vale estate;
- a public transport hub at Star City; and,
- Traffic management improvements on Lichfield Road, Aston.

5.7.10 Minor works could be required to provide stops at some locations. Other works would be within the development site.

Local bus service: Star City – Aston – Witton – Holford – Perry Barr

5.7.11 This bus service would provide a connection between the proposed Sprint and CityLink services at the Star City hub and major employment opportunities at Holford Industrial Estate and Perry Barr. It would provide a similar connection from other bus services on the Lichfield Road in Aston and from Cross City train services at Aston station.

5.7.12 The service would also substantially improve access for residents of Perry Barr and Witton to the proposed Aston Advance Manufacturing Hub and existing jobs at and around Star City. Interchange at Perry Barr with other bus services would widen the catchment area of this accessibility improvement. Perry Barr and Witton residents would also gain improved access to employment in the Bromford Industrial Corridor for residents of Perry Barr and Witton by connection at Star City into the proposed Sprint and CityLink services.

5.7.13 Justification of this service could be dependent on the delivery of increased employment in Aston, Witton and Perry Barr. It should be considered in the context of the whole BDP, not just the Langley and Peddimore greenbelt proposals addressed in this plan.

5.8 Issues for Neighbouring Communities

5.8.1 Sprint would be routed through Walmley local centre. This is important for several reasons:

- It is the most direct from Langley to the City Centre;
- Eachelhurst Road, which can readily accommodate a high-frequency service with very little delay to other traffic, can form part of the route;
- Connections with local bus services will enable interchange onto Sprint for those who live beyond acceptable walking distance of a Sprint stop;
- Walmley neighbourhood centre will attract local trips at the outer end of the route, rebalancing heavier loadings at the City end and utilising what would otherwise be spare capacity; and,
- This is a direct benefit to residents of Walmley and may enhance the vitality its neighbourhood centre.

5.8.2 In order to accommodate Sprint some changes will be required to traffic management, parking and the public realm in Walmley. This will require careful design to preserve the commercial viability of businesses and maintain an attractive local environment.

5.8.3 The proposed CityLink bus service through Falcon Lodge would provide a much improved connection to employment in the Bromford Industrial Corridor, and Sutton Coldfield. However direct bus links (Route 904) to Erdington may be reduced. Appraisal will be required of the relative gains and losses, and careful investigation of potential bus network revisions to mitigate shortcomings.

5.8.4 The proposed CityLink bus service would become the primary bus route between Castle Vale and the City Centre, in place of the current bus service 67, though that may continue in a modified form. This bus service revision has the potential to provide a substantial improvement in accessibility to city centre employment for Castle Vale residents, and to employment at certain locations in the Bromford Industrial Corridor, such as The Fort. However, there is a risk that these bus service revisions could adversely affect some links that residents currently find useful. A comprehensive appraisal of accessibility to employment by bus will be required to design a service pattern that delivers net benefits overall, while accepting that some individual connections might be adversely affected.

5.8.5 Sprint infrastructure would entail modification of the The Bagot Arms junction. This would affect the location of current on-street car parking and pedestrian crossing facilities, and change the streetscape in general. It is anticipated that an overall improvement in the public realm could be achieved; however some local stakeholders might feel that they are adversely affected.

5.8.6 The introduction of the proposed Sprint and Citylink services is likely to trigger the revision of bus services 67, 108 and 914, which could be reduced in frequency and/or follow a revised route. This would affect residents of Castle Vale and Pipe Hayes. The effect would be an increase in overall travel times from stops that are served by these bus routes but would not be served by Sprint.

Detailed analysis of the walk catchments of particular stops would be required to appraise the net overall effect of introducing Sprint and the consequential changes to bus services.

5.8.7 Additionally, while many could be happy to pay a Sprint premium fare to obtain a better service, some might prefer to pay the standard bus fare and accept the current standard of service.

5.8.8 Aston would be affected by the proposed CityLink bus service replacing current bus service 67, though the latter may continue in a modified form. Accessibility to some employment locations would be improved, but to others would be made poorer. A detailed analysis of trip patterns on service 67 (origins, destinations, and times of travel) would be required for the appraisal of service proposals.

Figure 5-1: Locations of emerging proposals for highway improvements in the Bromford Industrial Corridor

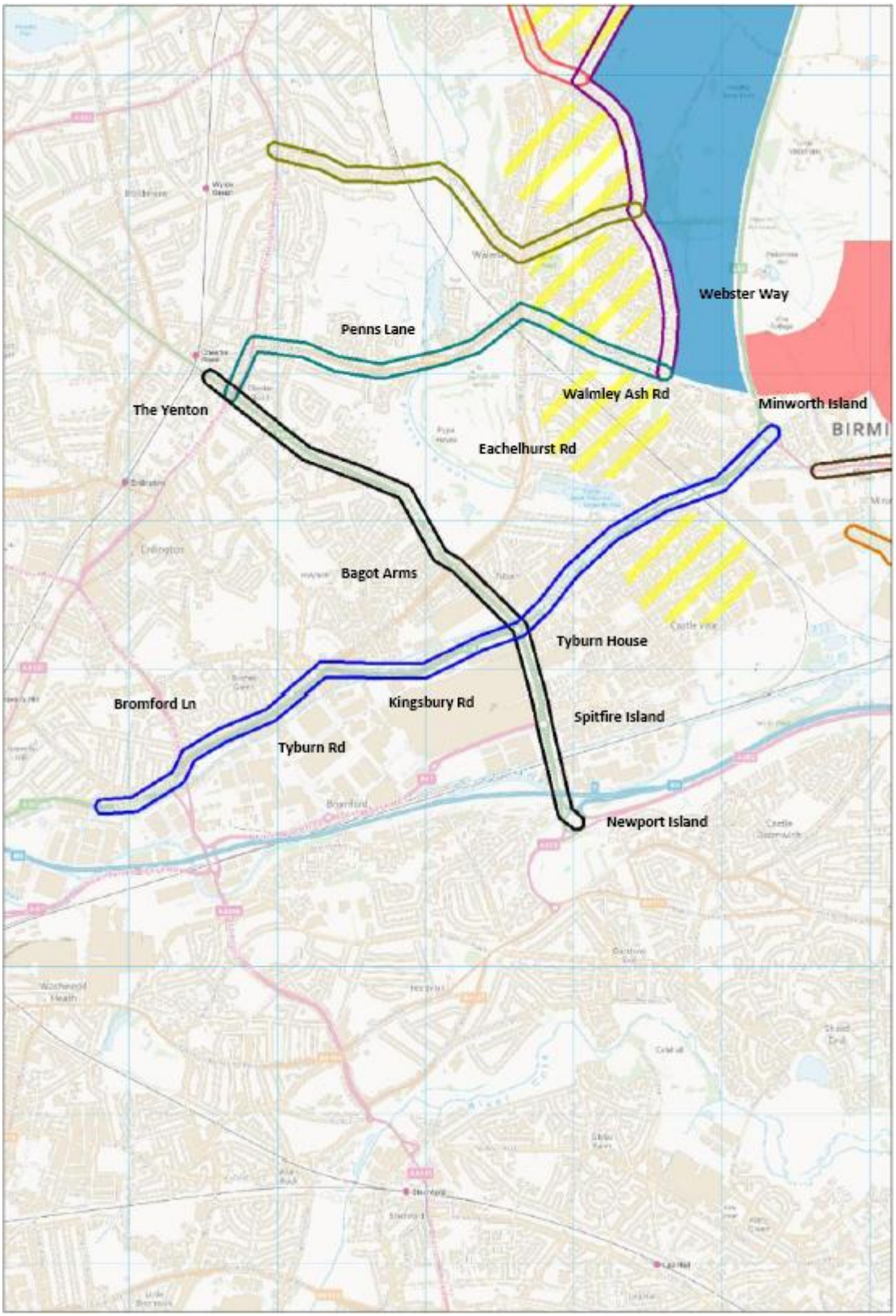


Figure 5-2: Emerging cycle and pedestrian proposals for connectivity to the Bromford Industrial Corridor

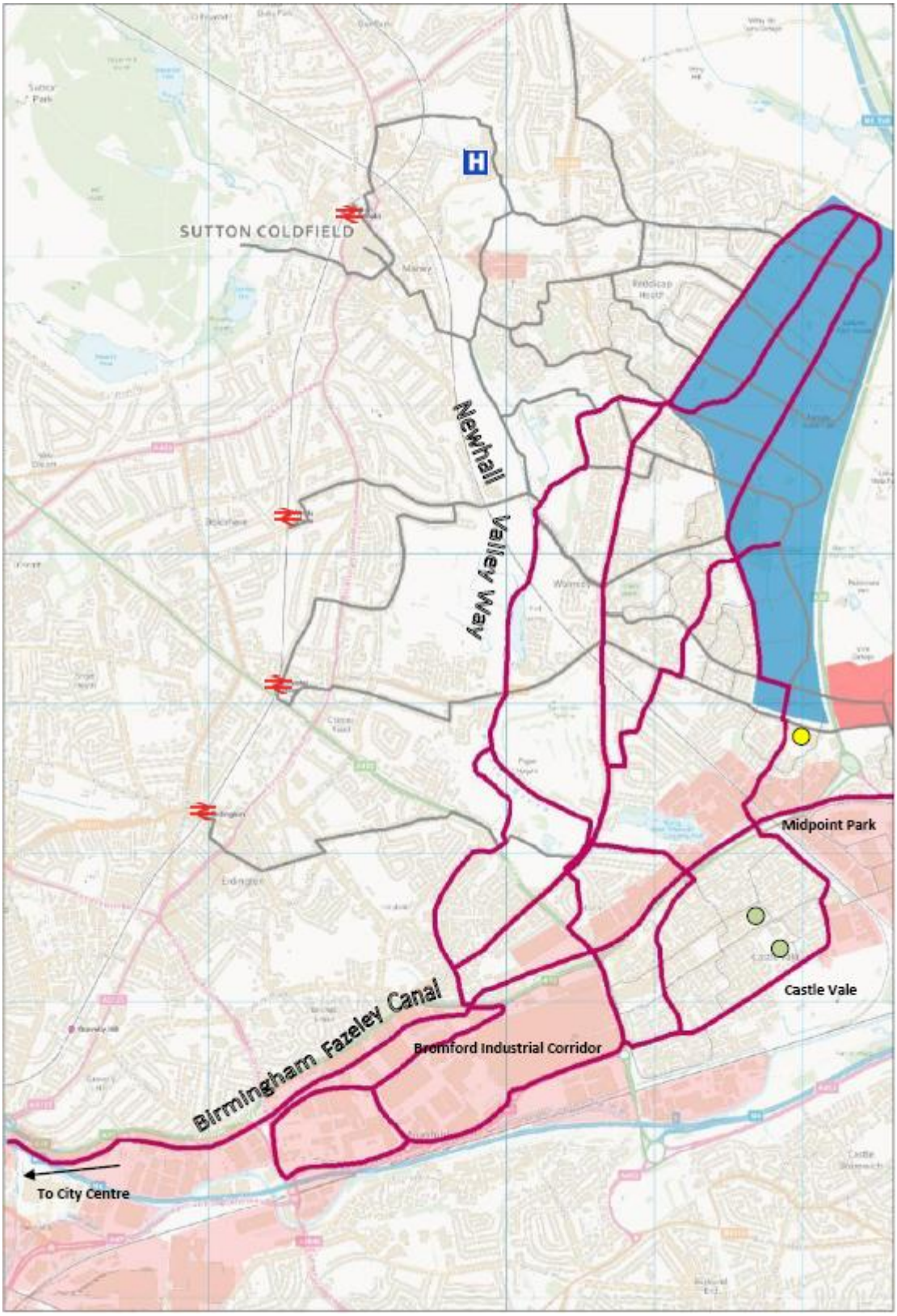


Figure 5-3: Overview of emerging public transport proposals for the Bromford Industrial Corridor and City Centre

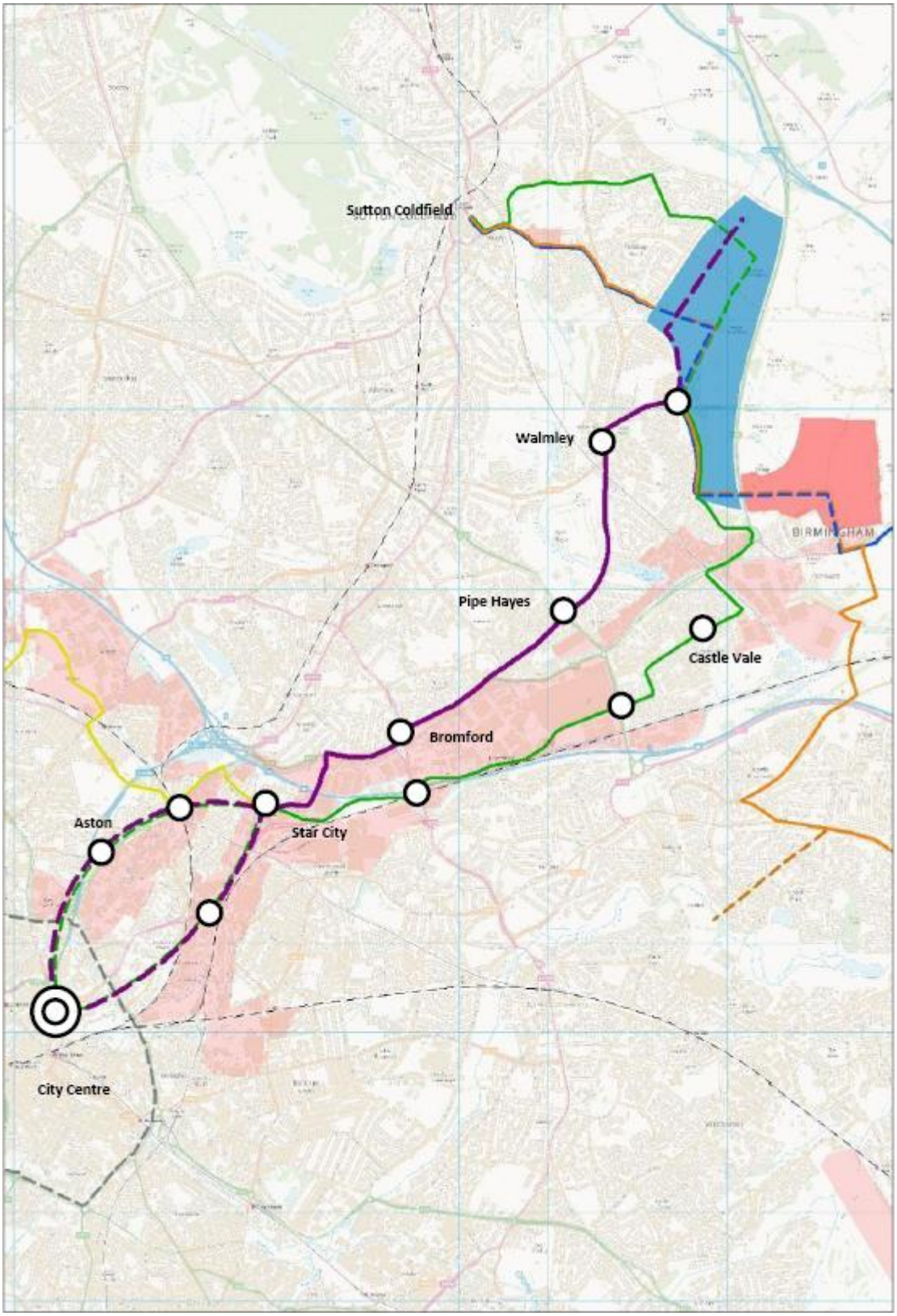


Figure 5-4: Emerging public transport proposals for connectivity towards the Bromford Industrial Corridor and City Centre

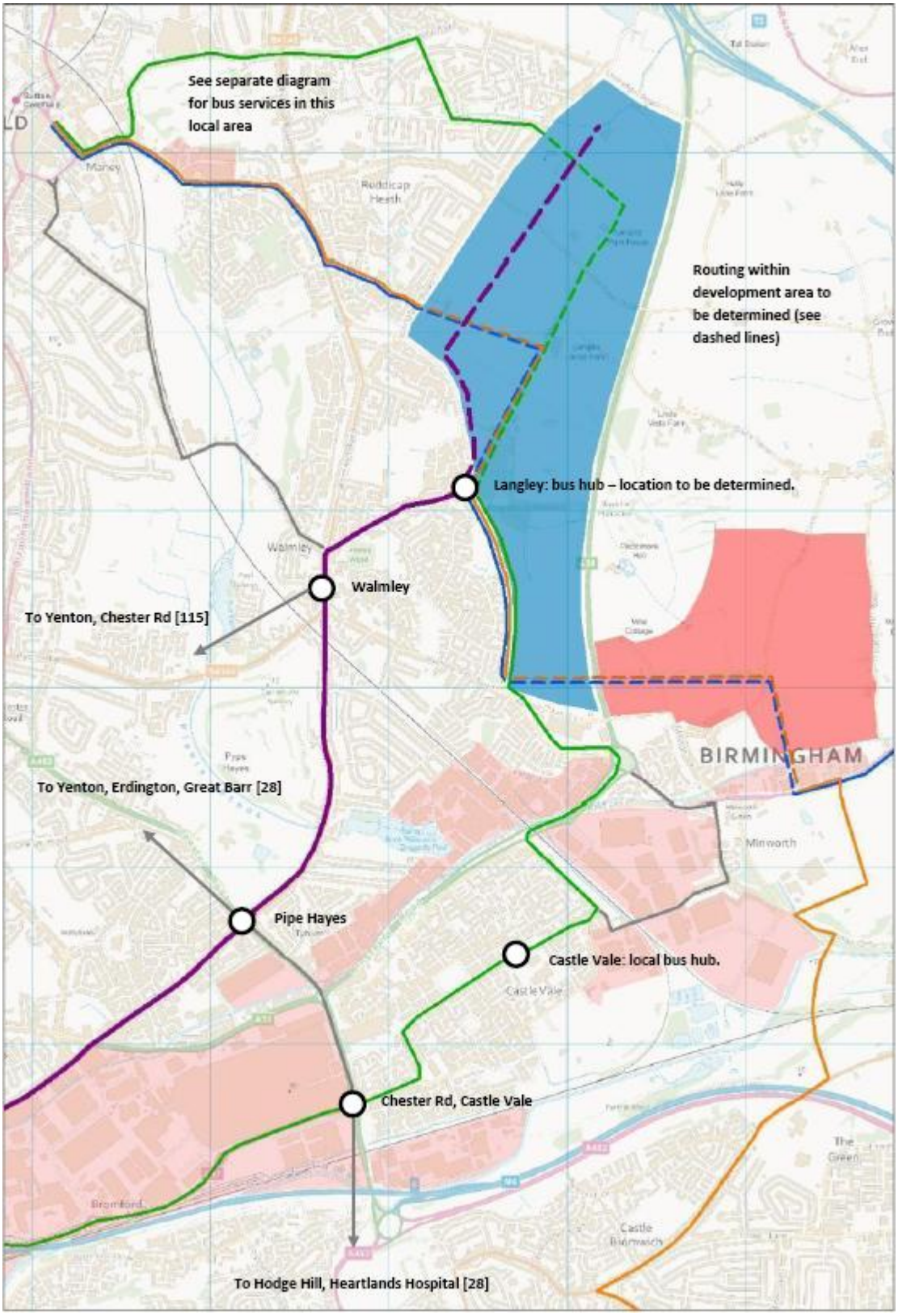


Figure 5-5: Emerging public transport proposals for connectivity through the Bromford Industrial Corridor

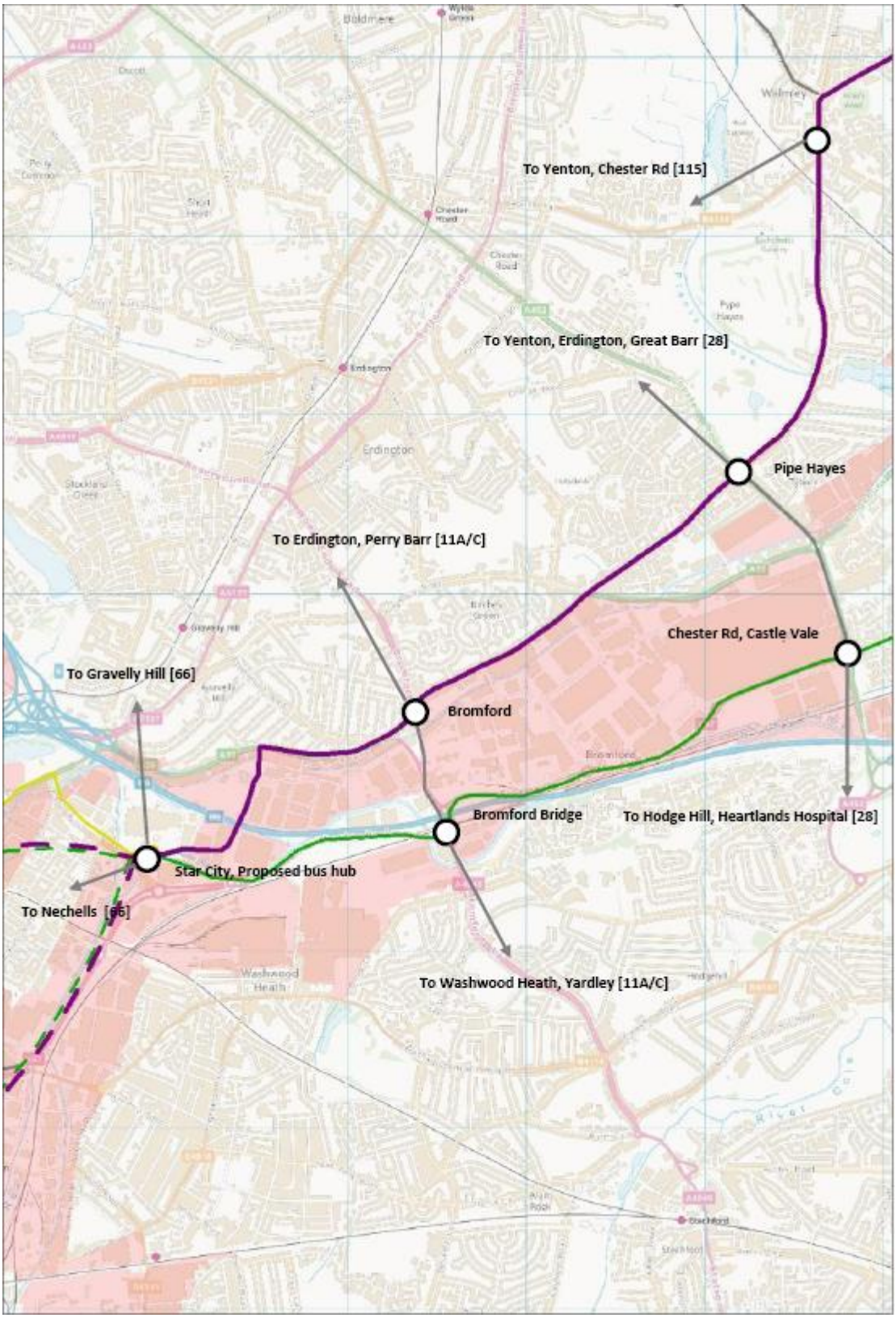
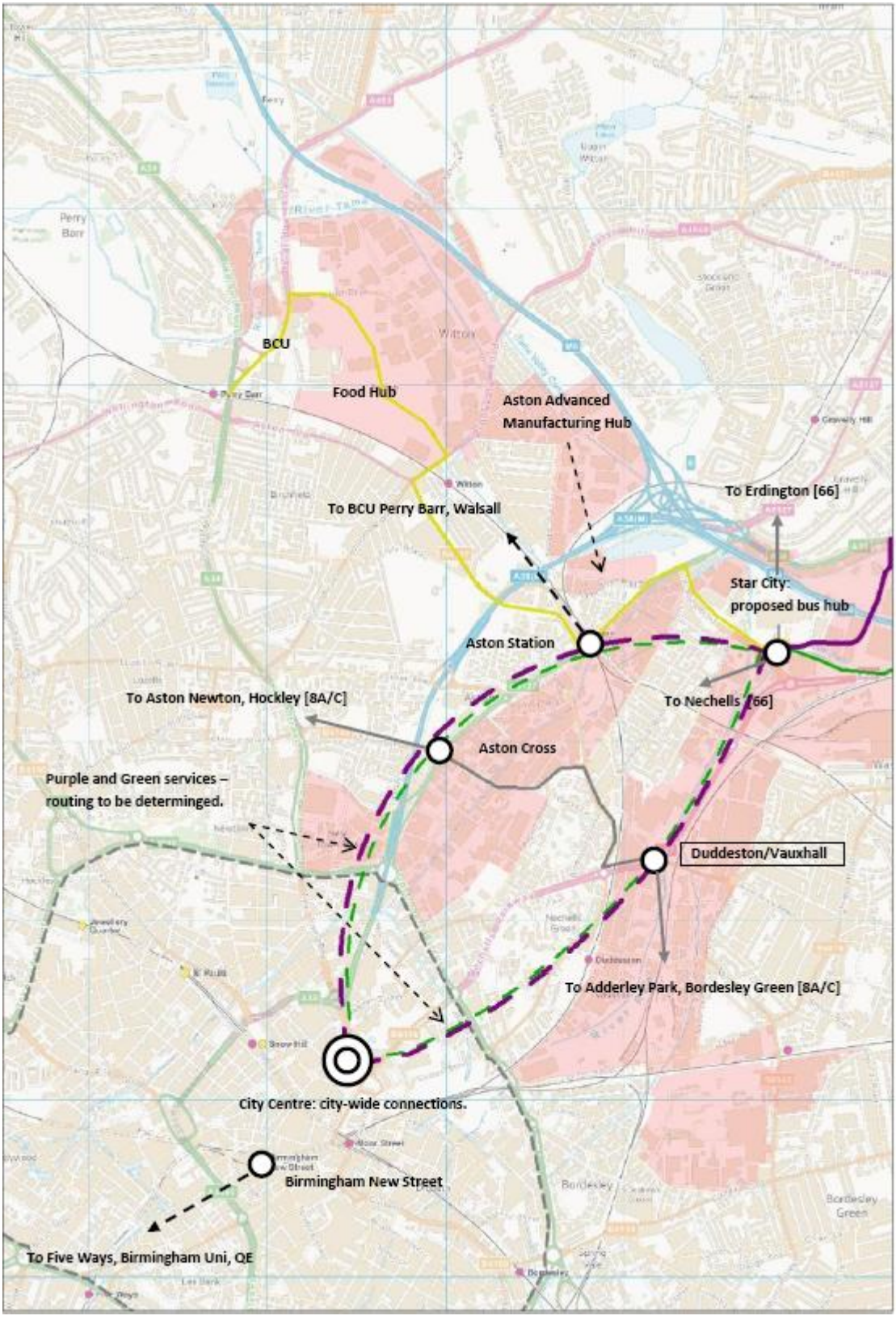


Figure 5-6: Emerging public transport proposals for connectivity to the City Centre and North Birmingham



6 Routes to North Solihull, Staffordshire and Warwickshire

6.1 Context

6.1.1 The Peddimore industrial development will attract staff from a wide area, including parts of east Birmingham south of the M6, from north Solihull and from Warwickshire. Some of these trips would travel via the M42 or via the A446, A4091 or A4097/A51 and thus pass through M42 Junction 9 at Dunton Island (M42 J9). The development would also generate a substantial volume of goods traffic, much of which would connect with the motorway network at M42J9 or use the road-rail intermodal terminal at Hams Hall, and thus also pass through this junction.

6.1.2 Langley residents may also wish to access employment opportunities at Hams Hall, Coleshill and Birmingham Airport and the NEC. People may also work in Solihull, though it is expected that residents would be more likely to seek equivalent employment closer to Langley in the first instance.

6.1.3 The aims of the strategy are to:

- Support the viability of advanced manufacturing and specialist support industries at Peddimore by facilitating a large workforce catchment area;
- Enable high prosperity for Langley residents through access to wide range of employment opportunities;
- Assist the economic recovery of neighbourhoods in East Birmingham and North Solihull through good access to new employment at Peddimore and improved access to existing employment in Minworth.

6.2 Travel Demand

6.2.1 The development will mean an increase in peak period journeys made in external corridors:

- Between Peddimore and Warwickshire plus Solihull an additional 900 person trips per peak hour are expected;
- Between Peddimore and Staffordshire an additional 80 person trips per peak hour are expected; and,
- Between Langley and Warwickshire plus Solihull an additional 750 person trips per peak hour are expected.

6.3 Objectives of Interventions

- Provide sufficient capacity by all modes to accommodate increased travel-to-work; which would be available for travel for other destinations outside commuter peak periods;
- Connect Peddimore to the M42 J9;

- Achieve public transport travel times to Peddimore of 60 minutes or less from Yardley and Chelmsley Wood.

6.4 Overarching Transport Strategy

6.4.1 The strategy is based on achieving a low car-driver mode share for staff travelling to Peddimore, through higher use of cycling, public transport and car sharing, while also providing sufficient motor vehicle capacity to the external highway network so that business traffic, both people and goods, has reliable travel times.

6.4.2 The strategy will deliver transport improvements for existing neighbourhoods, facilitating a modal shift from car to other modes. This is known as 'trip banking' and would assist reducing existing congestion problems in the area.

6.4.3 This would reduce the additional highway capacity required to accommodate the car and HGV trips that are generated by Peddimore.

6.5 Infrastructure and services: Motor Traffic

6.5.1 This section should be read with reference to Figures 6-1 to 6-7 contained at the end of this Chapter.

Primary Highway Network: A4097 Kingsbury Road

6.5.2 This road will be the key link to the motorway network providing regional and national highway connectivity for business and goods traffic for Peddimore, and also for staff originating in Warwickshire and parts of Staffordshire including Tamworth. The following interventions are being considered:

- Improvements at Minworth Island (Junction of Kingsbury Road with A38 Sutton Coldfield By-Pass, and Walmley Ash Road). This might involve traffic signal control combined with widening of the approaches and circulatory carriageway;
- Modification to the Kingsbury Road junction with Cottage Lane and Water Orton Lane, or the provision of an alternative through Peddimore;
- Modification of the Kingsbury Road junction with Coleshill Road and Wishaw Lane to reduce traffic speeds and enable safe access to the side road;
- The City Council are considering the reserve operational capacity in consultation with the Highways Agency of Dunton Island M42 J9 and the roundabout with the slips to the M6 Toll; and,
- Traffic management will be considered to discourage through traffic between the A446 and A4097, via Marsh Lane and Curdworth Village.

Primary Highway Network: A446 Lichfield Road, between A4091 and Gorsey Lane, Coleshill

6.5.3 Initial modelling indicates that Lichfield Road does not require improvement, however due to the likely increase in traffic; further consideration will be given to this corridor.

6.5.4 The City Council are considering the reserve operational capacity in consultation with the Highways Agency of Dunton Island M42 J9 and the roundabout with the slips to the M6 Toll.

Secondary Highway Network: Water Orton Lane

6.5.5 Consideration is being given to whether a new road link could be provided to relieve congestion in Water Orton Village, which forms part of the shortest route between Peddimore and Castle Bromwich village. Capacity is currently constrained by the single-track bridge across the River Tame.

6.6 Infrastructure and Services: Cycling

6.6.1 Provision for cycling through the corridors east of Langley and Peddimore would concentrate on: outbound commuting trips to Hams Hall and Coleshill; inbound trips from Curdworth, Coleshill, Water Orton, Smiths Wood and Castle Bromwich; and outbound trips to Park Hall Academy. This corresponds to three movement corridors.

6.6.2 Development of cycling facilities on these corridors is primarily designed to remove short trips by car from the road network, particularly to release road capacity for HGV movements between Bromford Corridor and Peddimore and the key logistics routes including A446, A5, M42 and M6T.

6.6.3 Route treatment would include: traffic free canal towpath; dedicated cycle track; shared-use paths; and on-carriageway accommodation but with traffic management interventions for the routes to be and feel safe.

6.6.4 The routes under consideration followed are:

- Birmingham-Fazeley Canal;
- Coleshill Road;
- Faraday Avenue, Hams Hall corridor;
- Water Orton Lane;
- New Road;
- Watton Lane, Coleshill corridor; and,
- Water Orton Lane, (with a potential shorter route to Castle Bromwich (Smith's Wood corridor.

6.6.5 The route to Smith's Wood and Castle Bromwich would make use of the cross-Tame link road if provided. This link road would be approximately 800m long, but the corresponding route for cyclists via the existing road network would be 2400m. An alternative pedestrian and cycle route along a similar cross-Tame alignment is being considered.

6.7 Infrastructure and Services: Public Transport

Citylink bus service: Birmingham Airport – Chelmsley Wood – East Birmingham / Coleshill – Minworth – Peddimore

6.7.1 Two new bus services are being considered between Birmingham Airport (and possibly Solihull), Chelmsley Wood and the development site via Coleshill and/or via Chester Road. Further analysis of current and potential travel patterns will be used to refine the bus service routeings.

6.7.2 These services would continue to Langley and to Sutton Coldfield to provide for local movements.

6.7.3 The proposed services would lead to revisions to services 71 and 966, and potentially service 777 within Warwickshire; to be determined through further appraisal. Other services might be affected depending on the routeing selected for the proposed service; for example, a service from Small Heath and Yardley to Peddimore could for formed by linking with current service 59.

6.7.4 Highway infrastructure to enable the proposed service might include an improved cross-Tame route from Water Orton Lane; and modifications to traffic calming and parking management in Curdworth.

6.8 Issues for Neighbouring Communities

6.8.1 The increase in traffic volumes at Minworth Island could encourage some drivers to seek a rat-run via Minworth village. Traffic management on Water Orton Lane could be an appropriate solution.

6.8.2 Revision to bus service 71 could remove a direct link to the employment adjacent to Chester Road at Castle Bromwich, e.g. the JLR plant. Revisions to other services would be required to address such lost links.

6.8.3 Increase traffic volumes at Dunton Island [M42J9] could encourage some drivers to seek a rat-run via Curdworth village. Closure of Marsh Lane to through traffic except cycles and buses could be the appropriate solution but would increase the length of some journeys into/out of the village.

6.8.4 The bus service option that adds a new service via Curdworth village would require traffic management revisions within the village.

6.8.5 If the cross-Tame link road is viable, it would lead to an increase in traffic flows on Chester Road between Newport Road, Castle Bromwich and Cooks Lane, Kingshurst. In particular, traffic might

seek access to the Collector Road [A47/A452] via roads through the Parkfield estate and through Smith's Wood.

Figure 6-1: Locations of emerging proposals for highway improvements in external corridors

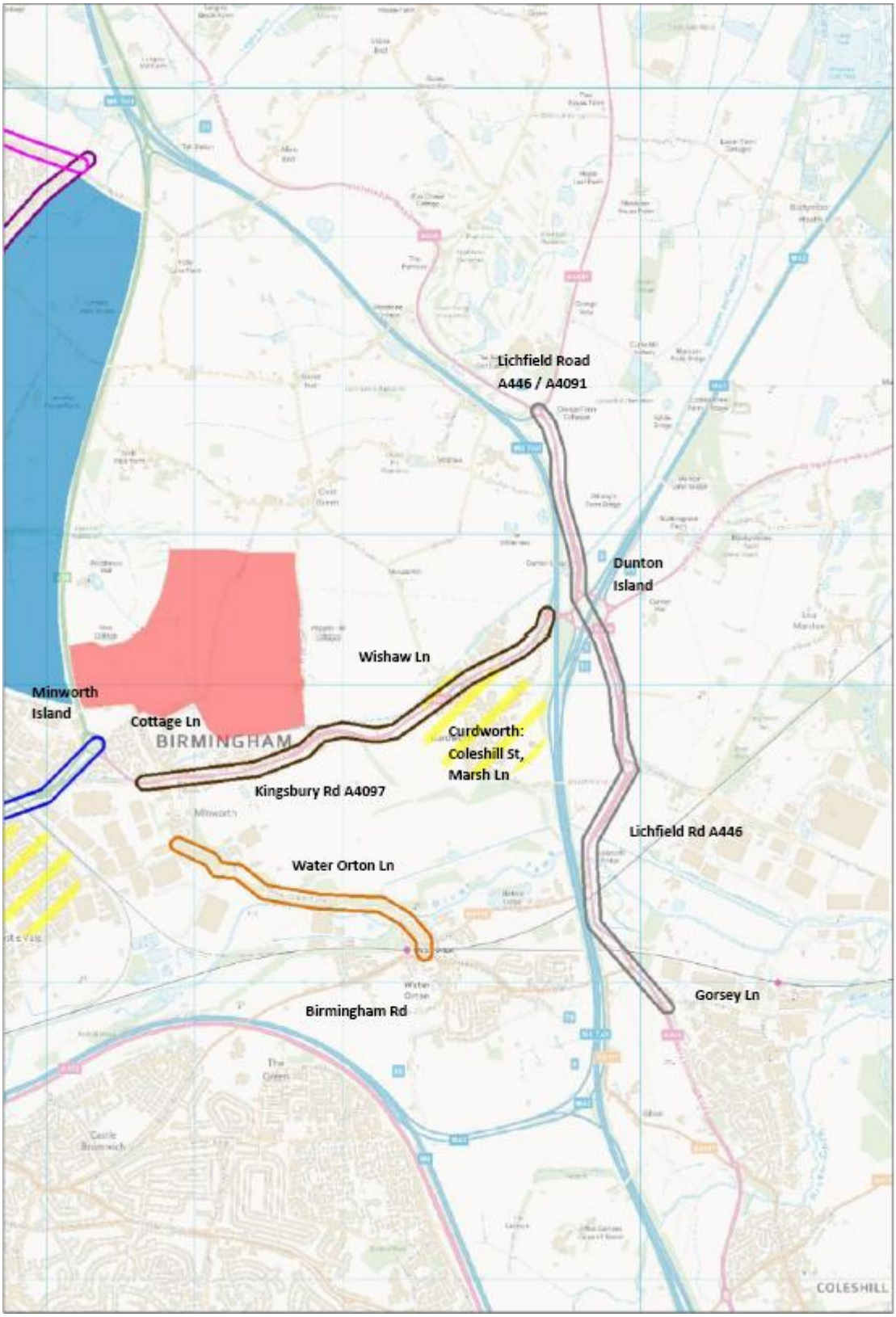


Figure 6-2: Emerging cycle and pedestrian proposals for connectivity to North Solihull and Warwickshire

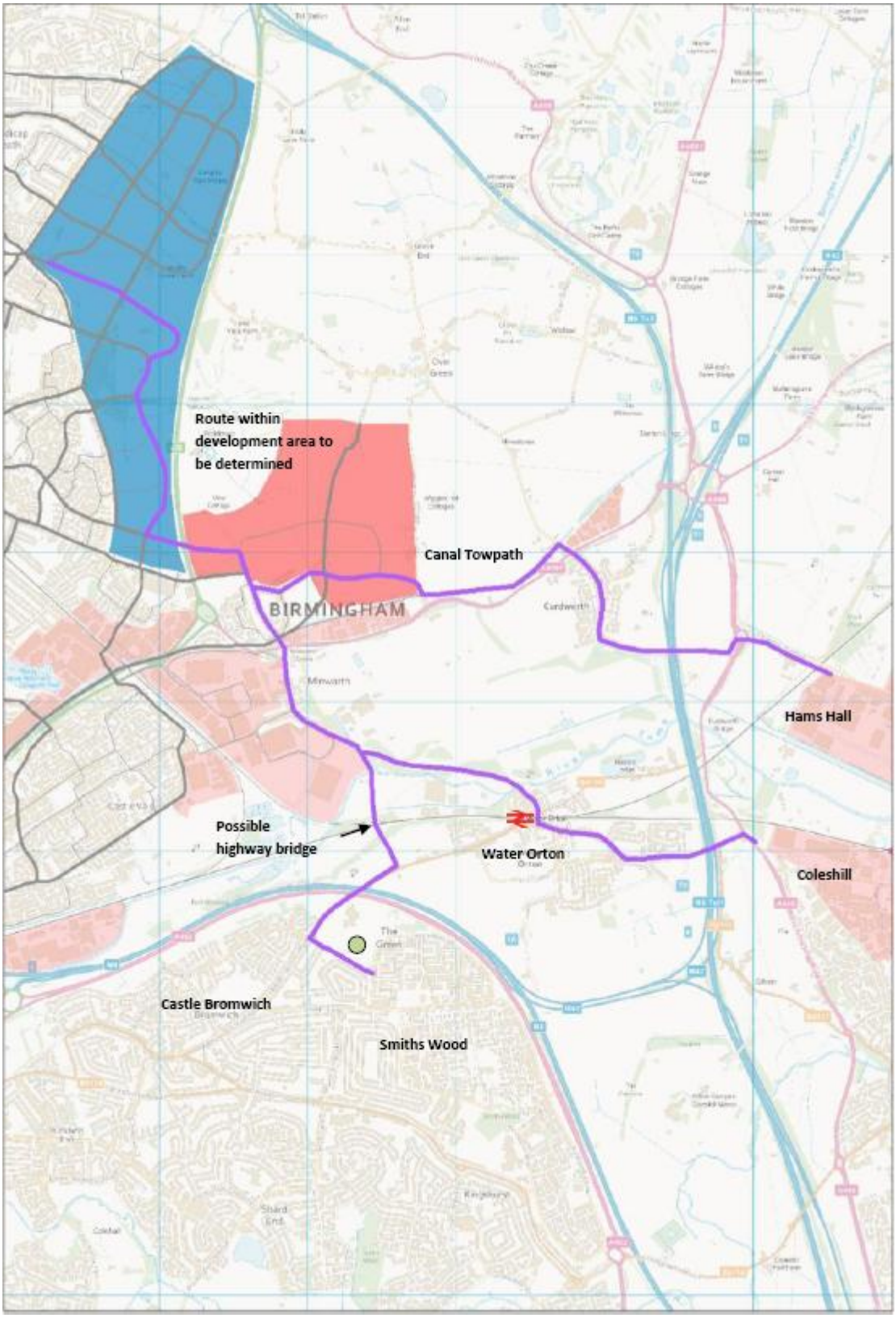


Figure 6-3: Overview of emerging public transport proposals for North Solihull and Warwickshire

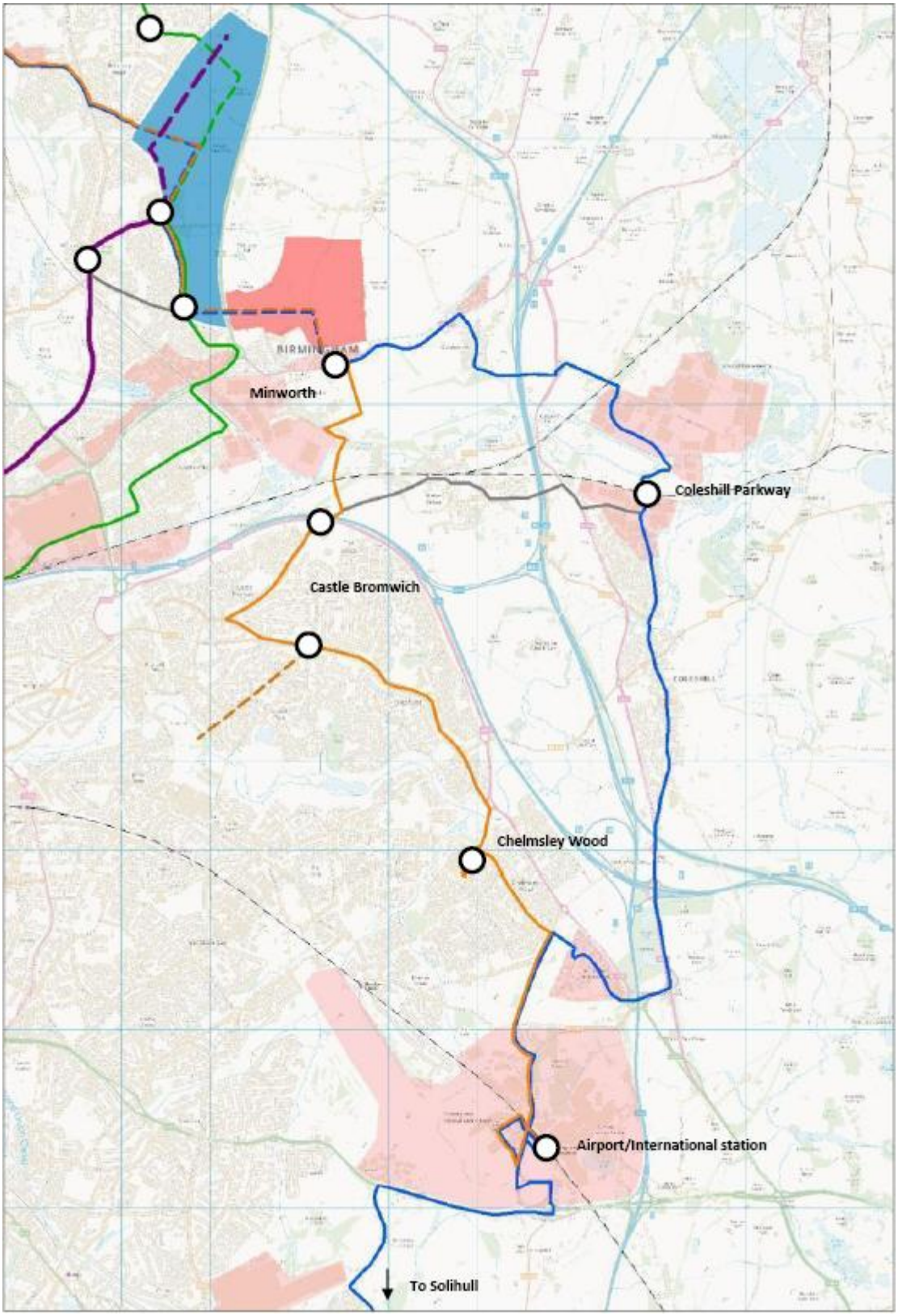


Figure 6-4: Emerging public transport proposals for connectivity towards North Solihull and Warwickshire

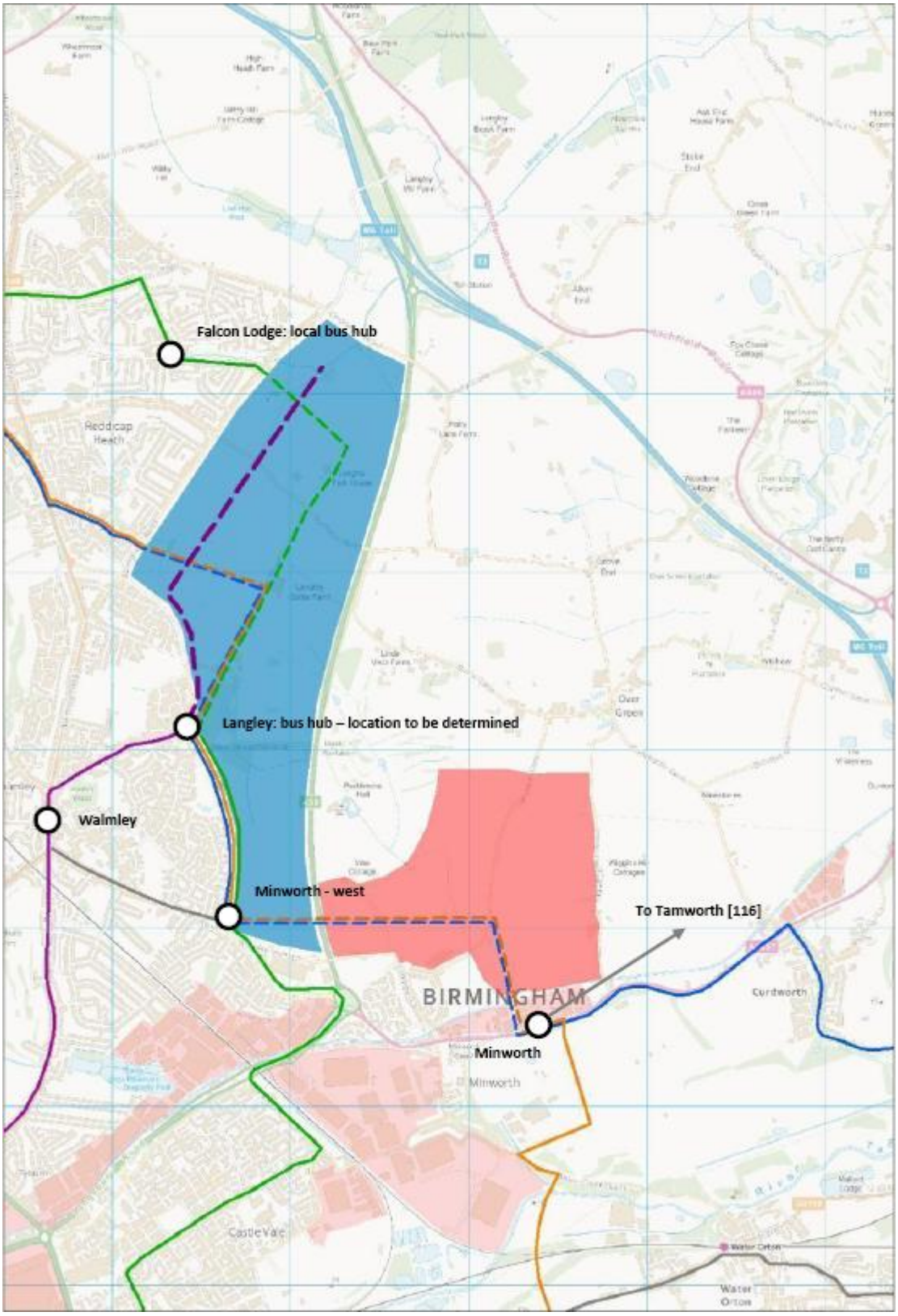


Figure 6-5: Emerging public transport proposals for connectivity through North Solihull

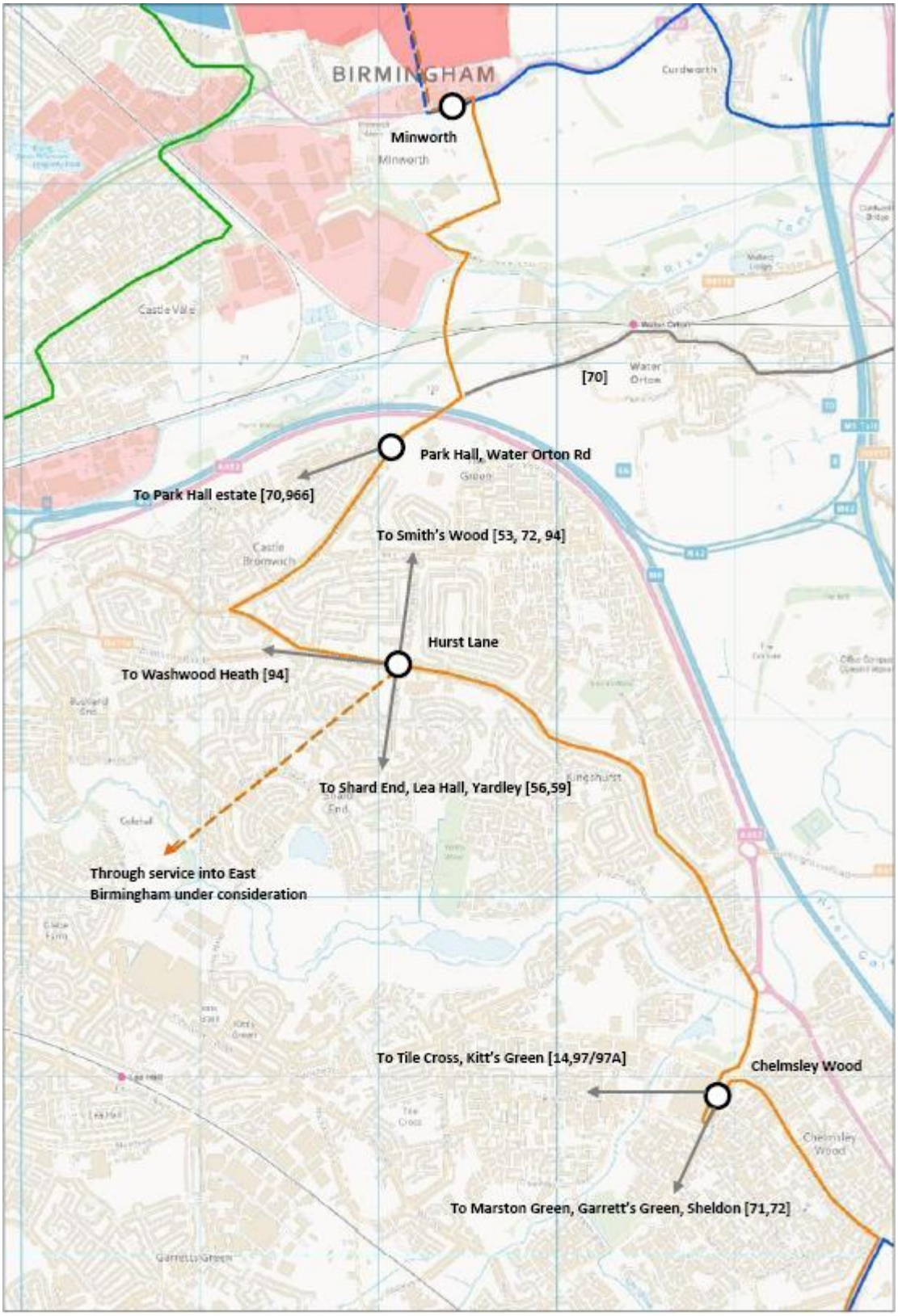


Figure 6-6: Emerging public transport proposals for connectivity through Warwickshire

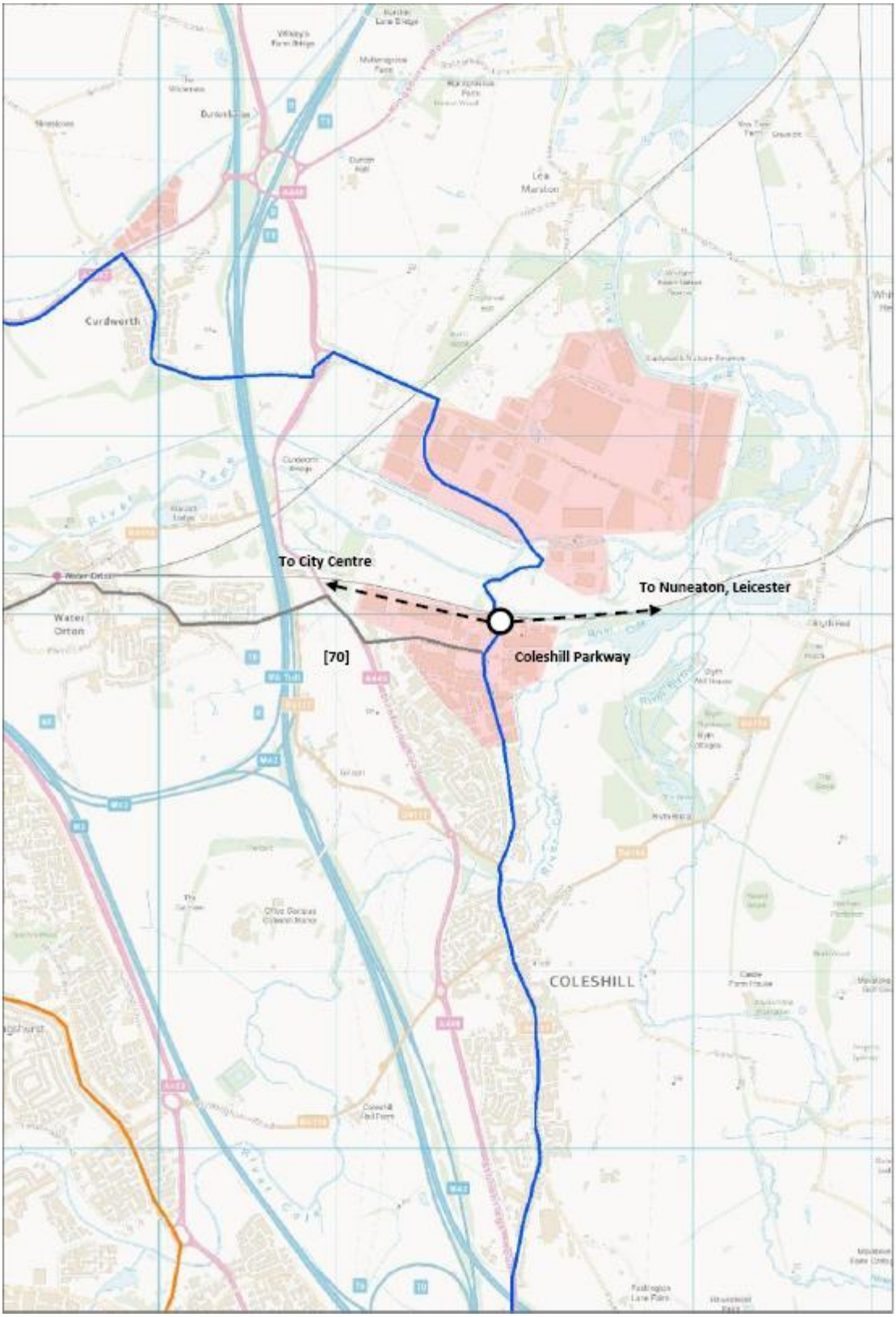


Figure 6-7: Emerging public transport proposals for connectivity to the Airport/NEC and Solihull town centre