Land North of Linthouse Lane, Wolverhampton

Strategic Transport Assessment

DTA

Transport Planning Consultants

Land North of Linthouse Lane, Wolverhampton

Strategic Transport Assessment

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1.0 INTRODUCTION

1.1 DTA Transportation Limited has been commissioned on behalf of Taylor Wimpey to provide transport advice in relation to the proposed allocation of Land North of Linthouse Lane for residential development within the emerging South Staffordshire Local Plan. The location of the site is shown on **Figure 1**.

1.2 This Strategic Transport Assessment (TA) has been prepared following discussions with South Staffordshire Council (SSC), Staffordshire County Council (SCC), the City of Wolverhampton Council (CWC) and National Highways (NH). It provides a high level strategic review of the impact of the proposed site allocation within the emerging Local Plan and focusses on deliverability. A more detailed TA would be required at the planning application stage.

1.3 The pertinent paragraphs from the National Planning Policy Framework (NPPF) in relation to the transport evidence base are set out below:

> ***Para 104.*** *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.*
>
> ***Para 105.*** *The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.*

1.4 In terms of sustainable accessibility, the site is well located to take advantage of existing foot, cycle and public transport services in the local area. Opportunities for maximising connectivity between the proposed development and the local area are discussed in this report.

1.5 Three potential points of vehicle access have been identified at this stage and separate pedestrian/ cycle access points are also proposed and are shown on the illustrative site layout plan at **Appendix A**.

1.6 As part of STA, an assessment of the impact of the proposals on the operation of the local road network has been undertaken. This has primarily been done to inform the viability assessment of the emerging Local Plan and to derive indicative costs in relation to potential mitigation works. A separate report assessing the impact of the proposed strategic allocations on the strategic road network has also been prepared.

2.0 POLICY CONTEXT

2.1 National Policy

National Planning Policy Framework

2.1.1 In July 2021, the Government published a revised National Planning Policy Framework (NPPF).

2.1.2 Paragraph 111 of the NPPF is clear 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"*.

2.1.3 Within this context, the NPPF identifies in Paragraph 104 and 105 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".

The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making".

2.1.4 Paragraph 113 of the NPPF goes on to state that: *"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed"*.

2.1.5 In reinforcing the principle of supporting sustainable development, paragraph 10 stipulates that at the heart of the Framework is *"...a presumption in favour of sustainable development".*

Planning Practice Guidance (March 2014)

2.1.6 The Department for Communities and Local Government (CLG) first published the Planning Practice Guidance (PPG) in 2014, which reinforces the guidance contained in the NPPF. It is now an online resource which is regularly updated.

2.1.7 The PPG in Paragraph: 002 Reference ID: 42-002-20140306 states that Travel Plans and Transport Assessments are ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements.

2.1.8 The Guidance goes on to explain what these documents are, why they are important, what information they should contain and how they should relate to one another.

Circular 02/2013 – The Strategic Road Network and the Delivery of Sustainable Development

2.1.9 Circular 02/2013 replaces the policy set out in Circular 02/2007 'Planning and the Strategic Road Network' and DfT Circular 01/2008 Policy on Service Areas and other Roadside Facilities on Motorways and All-purpose Trunk Roads in England. It sets out the way in which HE will engage with communities and developers to deliver sustainable development, whilst safeguarding the primary function and purpose of the SRN.

2.1.10 In terms of assessing development impact, Paragraph 25 of the Circular states that:

"The overall forecast demand should be compared to the ability of the existing network to accommodate traffic over a period up to ten years after the date of registration of a planning application or the end of the relevant Local Plan whichever is the greater. This is known as the review period."

National Model Design Code

2.1.11 The National Model Design Code sets out clear design parameters to help local authorities and communities decide what good quality design looks like in their area. It expands on the ten characteristics of good design set out in the National Design Guide, which reflects the government's priorities and provides a common overarching framework for design.

2.2 Local Policy

South Staffordshire Local Plan and Emerging Local Plan

2.2.2 The South Staffordshire Local plan provides the planning framework for all new development in South Staffordshire and is comprised of two documents; the Core Strategy which was adopted in 2012 and the Site Allocations Document which was adopted in 2018.

2.2.3 The Council is currently undertaking a review of the Local Plan and a consultation on the Preferred Options took place between November and December 2021. The Preferred Options consultation document identified Land North of Linthouse Lane as a Strategic Development Location to deliver a minimum of 1,200 homes to 2038, an on-site primary school and a local centre to include retail and community facilities of an appropriate scale.

Staffordshire Local Transport Plan 3 (2011)

2.2.4 In April 2011, SCC published the Strategy Plan for Staffordshire's third Local Transport Plan. It sets out the County Council's proposals for transport provision within the county, including walking, cycling, public transport, car-based travel and freight, together with the management and maintenance of local roads and footways.

3.0 BACKGROUND CONDITIONS AND ACCESSIBILITY

3.1 Site Location

3.1.1 The development site lies approximately 5km north east of Wolverhampton. The site is bound to the north by Blackhalve Lane, to the east by Kitchen Lane, to the south by Linthouse Lane and to the west by Wood End Road. The location of the site is shown on **Figure 1**.

3.1.2 The site currently comprises open farmland, which is well related to the existing urban edge and provides a sustainable location for an urban extension to meet the longer term housing needs for Wolverhampton

3.2 Strategic Road Network

A449 Stafford Road

3.2.1 The A449 Stafford Road to the west of the site is a dual carriageway road, with two lanes in each direction, which provides a strategic north-south corridor linking into Stafford and the West Midlands. It is designated as trunk road between the A5 and M54, and street lighting is provided within the central reserve along the full length of the road between the A5 and M54.

3.2.2 The A449 connects with the M54 at Junction 2 via a large, signalised grade-separated roundabout, before continuing south into Wolverhampton (where it is no longer part of the strategic road network). To the north of M54 Junction 2, the road is subject to a 40mph speed limit before transitioning to a 60mph speed limit at Shaw Hall Lane. To the south, the A449 is dual carriageway road that passes through the centre of Wolverhampton.

3.2.3 As part of the employment scheme at ROF Featherstone, which has now been granted planning approval, a new access onto the A449 is proposed. The road, which includes a 7.3m wide carriageway and adjoining pedestrian/ cycle facilities, will connect the A449 Stafford Road with Cat and Kittens Lane. As shown on the drawing attached as **Appendix B**, a new roundabout will be constructed off the A449 and a bridge is to be provided over the WCML. A new four-arm roundabout will then be provided on Cat and Kittens Lane.

M54 Motorway

3.2.4 The M54 motorway runs between the M6 Junction 10A to the east and Telford to the west. In the vicinity of the site, between Junctions 1 and 2, it is a dual three-lane motorway. It has two lanes to the east of Junction 1 and to the west of Junction 2.

3.2.5 Direct connections to/from the M6 Motorway to the north are not available due to the arrangement at M6 Junction 10A. Therefore, a significant volume of traffic currently uses the A460 to the north of M54 Junction 1 when travelling between the two motorways. Traffic travelling north and west also uses the A449 and A5 from M6 Junction 12.

3.2.6 Junction 2 of the M54 is located to the north-west of the development site, where there is a four-arm fully signalised grade-separated roundabout connecting the M54 motorway with the A449 Stafford Road. The westbound on-slip and eastbound off-slip to the motorway are not directly from this roundabout, but from two smaller roundabouts via the A4510 to the west of the junction, which also provide access to the nearby i54 business park.

3.2.7 To the east, M54 Junction 1 is a grade-separated roundabout with slip roads provided to/ from the M54 Motorway with east and west facing slips. To the north of the M54, the A460 continues as a single carriageway road past Featherstone and through Shareshill, providing connection to M6 Junction 11.

3.2.8 A Development Consent Order (DCO) was submitted to the Planning Inspectorate earlier this year for the creation of a new link road between M54 Junction 1 and M6 Junction 11. This includes significant alterations to M54 Junction 1 as indicated on the plan attached as **Appendix C**. The DCO was accompanied by a Transport Assessment and it was granted consent in April 2022.

3.2.9 The provision of the link road is specifically focussed on reducing traffic flows and associated levels of congestion/ delays on the A460 to the east of the site. Once implemented, the scheme is forecast to reduce traffic flows by approximately 26,000 vehicles per day (two-way) or to 11% of what they would have been without the scheme.

3.3 Local Road Network

Blackhalve Lane

3.3.1 Blackhalve Lane bounds the site to the north and is a single carriageway, two way road and is subject to a 50mph speed limit. To the west, the speed limit reduces to 30mph towards the junction with Wood Hayes Road and Wood End Road. To the east, the speed limit reduces to 30mph on the approach to the village of Essington.

3.3.2 There are verges on both sides of the road and currently there are no pedestrian footways present nor street lighting.

Wood Hayes Road

3.3.3 Wood Hayes Road to the north-west of the site is a single carriageway, two way road and is subject to a 30mph speed limit.

3.3.4 On the approach to the junction with Blackhalve Lane, there are footways present on both sides of the carriageway and frontage access to a number of residential properties.

3.3.5 The junction with Blackhalve Lane takes the form of a signalised crossroad junction and there are pedestrian crossing facilities on all arms of the junction.

Wood End Road

3.3.6 Wood End Road forms the western boundary to the site and is a single carriageway, two way road and is subject to a 30mph speed limit.

3.3.7 There are pedestrian footways on both sides of Wood End Road which are of good width and quality. In some sections, the pedestrian footway is segregated from the carriageway by a grass verge. There is street lighting present on Wood End Road and direct access to residential properties and driveways.

3.3.8 At the south western corner of the site, Wood End Road forms a roundabout junction with Linthouse Lane and Lower Prestwood Road. There are a number of local facilities located on Wood End Road, near the roundabout, including a restaurant, Chinese takeaway, off licence and hair salon.

Linthouse Lane

3.3.9 Linthouse Lane forms the southern boundary of the site and is a single carriageway, two way road and is subject to a 30mph speed limit. There are also bus stops present on Linthouse Lane.

3.3.10 There is a pedestrian footway on the southern side of Linthouse Lane and street lighting present along the route. At the junction with Wood End Road and Lower Prestwood Road there is an uncontrolled pedestrian crossing on the Linthouse Lane arm of the junction, equipped with tactile paving, dropped kerbs and a pedestrian refuge island.

3.3.11 East of the junction with Prestwood Avenue, there is a pedestrian footway along the southern edge of the carriageway which is of good width and quality. This pedestrian footway is segregated from the carriageway by a grass verge. Approximately 180m east of Spondon Road, the footway is located directly alongside the carriageway.

Kitchen Lane

3.3.12 Kitchen Lane forms the eastern boundary of the site and is a single carriageway, two way road. Kitchen Lane joins Linthouse Lane via a priority T-junction. Kitchen Lane is subject to a 30mph speed limit and has a pedestrian footway on the eastern edge of the carriageway. There is street lighting present along the route and there is direct frontage access to a number of residential properties along Kitchen Lane.

A460 Cannock Road

3.3.13 The A460 Cannock Road connects the M6 to the north via Junction 11 with the M54 to the south via Junction 1. To the south of M54 Junction 1, the A460 is a dual carriageway road until the A460 \ Bognop Road roundabout, before continuing as a single-carriageway road into Wolverhampton.

3.3.14 Beyond M6 Junction 11, the A460 crosses the M6 Toll and there is a four-arm roundabout providing access to the A4601 and M6 Toll eastbound on-slip. The A460 then runs parallel to the M6 Toll before turning north to provide access to Cannock.

3.3.15 At the north-eastern end of Featherstone village, A460 connects with New Road and Park Lane at a traffic signal controlled junction.

3.4 Highway Safety

3.4.1 A high level review of highway safety in relation to the local highway network links has been undertaken based on five-year personal injury collision (PIC) data for the latest period of 2016-2020. This information is summarised in **Table 1**.

Table 1 – PIC Link Review

Link	Number of PICs by Link			
	Fatal	Serious	Slight	Total
Blackhalve Lane between Wood Hayes Road and Brownshore Lane	0	1	4	5
Wood Hayes Road between Blackhalve Lane and A460 Cannock Road	0	0	1	1
Blackhalve Lane between Wood Hayes Road and A460 Cannock Road	0	0	7	7
Wood End Road between Blackhalve Lane and Linthouse Lane	0	2	1	3
Linthouse Lane between Wood End Road and Kitchen Lane	0	1	8	9
Kitchen Lane between Linthouse Lane and Upper Sneyd Road	0	0	1	1
Linthouse Lane between Kitchen Lane and A4124 Lichfield Road	0	0	7	7
Griffiths Drive north of Linthouse Lane	0	1	4	5
Total	0	5	33	38

3.4.2 Overall, it is evident from the available data that the number of PICs occurring on the highway network within the vicinity of the site is generally low. The greatest number on a single link occurs on Linthouse Lane between Wood End Road and Kitchen Lane. In this regard it is noted that CWC has identified the need for a traffic calming scheme to be implemented on both Linthouse Lane and Kitchen Lane should the site be brought forward for development in the future. This will in turn reduce vehicle speeds and improve highway safety within the vicinity of the development.

3.5 Traffic Surveys

3.5.1 Manual turning count and automated traffic count surveys were undertaken in March 2022 on the local road network. A summary of the traffic movements on the adjacent highway network including Linthouse Lane, Blackhalve Lane and Kitchen Lane is provided in **Table 2**.

Table 2 – Link Flow Summary

Link	Two-way Vehicle Flows		
	AM Peak	PM Peak	Daily
Linthouse Lane	1,137	1,161	14,246
Blackhalve Lane	719	839	9,013
Kitchen Lane	209	212	2,477

3.6 Walking and Cycling

3.6.1 The area is served by good quality pedestrian routes, through attractive and active environments. Existing pedestrian facilities in the vicinity of the site include formal footways, shared footway/cycleway and Public Rights of Way (PRoW).

3.6.2 In the vicinity of the site there are footways on the on both sides of Wood End Road, on the southern edge of Linthouse Lane and on the eastern edge of Kitchen Lane. These lit footways are generally in good condition and of sufficient width to comfortably accommodate pedestrian movements. On the western edge of Wood End Road, the footway is segregated from the carriageway by a grass verge.

3.6.3 There are a number of PRoWs located through the site and also in the surrounding areas. The PRoWs provide links to Bognop Road, Linthouse lane, Blackhalve Lane and Old Hampton Lane. An extract from the online Public Rights of Way map showing the PRoW network in the wider area is attached as **Appendix D**.

3.6.4 There are currently limited cycling facilities in the vicinity of the site and cyclists are accommodated on the carriageway. In the vicinity of the site, Blackhalve Lane is categorised as a 'white' route while Linthouse Lane and Wood End Road are categorised as a 'yellow' route on the Wolverhampton cycling map. The 'white' routes are described as being 'Good for beginners. Low traffic levels, low speeds.' Whilst the 'yellow' route is described as 'Generally good conditions for all abilities. Minor roads, low traffic levels except at some periods during school run and rush hour. Wide enough for overtaking at lower speeds. Some lorry or bus movements.' The Wolverhampton Cycle Map is attached as **Appendix E**.

3.7 Public Transport

Bus

3.7.1 There are a number of bus stops located in the vicinity of the site including on Linthouse Road, Blackhalve Lane and Lower Prestwood Road.

3.7.2 Bus stops are located on Linthouse Lane to the south of the site near Spondon Road and these bus stops are equipped with bus shelters, timetable information and seating. Bus stops are also located on Linthouse Lane near Kitchen Lane and also near Prestwood Avenue. Additional bus stops can be found at the Blackhalve Lane/ Wood End Road/ Wood Hayes Road junction

3.7.3 A summary of bus services operating within the vicinity of the site is provided in **Table 3** and these are shown on **Figure 2**. A total of 7 two-way bus services per hour operate from the nearest bus stops on Linthouse Lane and Cannock Road during the weekday and on Saturday. There are 3 bus services per hour on a Sunday.

Table 3 – Local Bus Service Summary

Service	Route	Frequency
25	Wolverhampton – Penderford / Penderford Business Park	30 minutes
50	Wolverhampton – Wednesfield	5 per day
57	Wolverhampton – Bilston	60 minutes
65	Wolverhampton – Fordhouses via New Cross Hospital	60 minutes
69	Walsall – Wolverhampton	30 minutes
71	Huntington – Wolverhampton	60 minutes

Rail

3.7.4 Wolverhampton Railway Station is located approximately 4.8km from the site. The station is equipped with 832 car parking spaces, which are free for rail users. There are 83 cycle storage spaces.

3.7.5 The station provides frequent train services to numerous destinations including Stafford, Birmingham, Manchester and London. West Midlands Metro services are also available in Wolverhampton, providing access to/ from the West Midlands conurbation.

3.8 Local Facilities

3.8.1 This section of the report considers access to the following services:

- Education;
- Retail;
- Leisure;
- Healthcare; and
- Employment.

3.8.2 The majority of trips that will be made by foot or cycle from the proposed development will be for the purpose of short shopping trips, access to leisure facilities, school journeys, and trips to bus stops as part of linked trips to other destinations.

3.8.3 It is generally considered that for distances under 2km, walking offers the greatest potential to replace short car trips. For distances under 5km, cycling also has the potential to substitute for short car trips. **Figure 2** shows some of the local amenities near the site.

Education

3.8.4 As part of the development scheme, land for educational purposes has been identified. Whilst the end use is still to be confirmed, it is likely to be a two form primary school which will serve future occupants of the site as well as potentially existing residents from the local area. Other primary schools located within the vicinity of the site are shown on **Figure 2**.

3.8.5 With regard to secondary education, it is not known at this stage which secondary school the children from this development would attend. However, if the distance to the secondary schools is greater than three miles then pupils would be entitled to free school travel. SCC would require this to be provided by the developer.

Retail

3.8.6 As shown on the indicative site layout at **Appendix A**, a District Centre is proposed as part of the scheme, which would provide a range of facilities including local retail shops. Local shopping facilities are also located to the southwest of the site at the Wood Hayes Road/ Linthouse Lane roundabout and in Ashmore to the east of the site as shown on **Figure 2**.

3.8.7 In terms of wider shopping facilities, the closest food superstore is Aldi which is located approximately 3km to the east of the site via the most direct route. Significant shopping facilities are located within the centre of Wolverhampton (located around 5km from the centre of the site) and Bentley Bridge Retail Park (circa 2.6km travel distance).

Leisure

3.8.8 There are various leisure opportunities located within Wolverhampton, including Wolverhampton Swimming and Fitness Centre, WV Active Aldersley, Bentley Bridge Leisure Park and numerous facilities within the town centre which is located around 5km from the centre of the site.

Healthcare

3.8.9 There is scope for a new GP surgery to be provided within the District Centre as part of the development proposals, which would serve residents of the proposed development whilst also accommodating any surplus demand from the local area. Alternatively, an off-site contribution towards health may be more appropriate.

3.8.10 In terms of existing healthcare provision, the closest GP surgery is Griffiths Practice which is located circa 1.2km from the centre of the site. The closest hospital to the site offering A&E services is the New Cross Hospital in Wolverhampton, located approximately 3.2km away from the site.

Employment

3.8.11 There are several significant employment generators in the vicinity of the site, including Key Industrial Park, i54 and Wolverhampton Business Parks which are located to the west of the site.

Summary

3.8.12 Overall, it is concluded that the site is well located in terms of access to local facilities and the scale of potential development of the site also lends itself to the provision of additional amenities. Opportunities for enhancing accessibility between the development site and these local facilities are considered in **Chapter 4**.

4.0 ACCESS ARRANGEMENTS

4.1 Vehicle Access

4.1.1 There are a number of opportunities to access the site by vehicle and three potential points of access have been identified at this stage which are shown on the illustrative site layout plan at **Appendix A**. The accesses, which are discussed below, have been subject to capacity assessments and this is set out in detail in **Chapter 5**. The final design and layout of any accesses would be the subject of a future detailed TA accompanying a planning application for the site.

Access Location Option 1 – Linthouse lane

4.1.2 Linthouse Lane is a circa 6.6m wide two-way single carriageway road with a pedestrian footway running along the southern edge of the carriageway. Linthouse Lane is subject to a 30mph speed limit and is lit, with good visibility provided in both directions.

4.1.3 A vehicular access in this location could potentially take the form of a signalised 3 arm junction, as indicated on **Drawing 24046-01-2**.

Access Location Option 2 – Blackhalve Lane

4.1.4 Blackhalve Lane is a circa 6.2m wide two-way single carriageway road and is currently subject to a 50mph speed limit.

4.1.5 A vehicular access in this location could potentially take the form of a signalised 3 arm junction, as indicated on **Drawing 24046-01**.

Access Location Option 3 – Kitchen Lane

4.1.6 Kitchen Lane is a circa 5.5m wide two-way single carriageway road with a pedestrian footway running along the southern edge of the carriageway. Kitchen Lane is subject to a 30mph speed limit and is lit.

4.1.7 A vehicular access in this location could potentially take the form of a priority T-junction given the low level of traffic currently using Kitchen Lane, as indicated on **Drawing 24046-01-4**. This would be subject to detailed review at the planning application stage.

4.2 Sustainable Access

Walking and Cycling

4.2.1 Key to promoting walking and cycling is the design of the development – specifically that the environment addresses actual and perceived safety issues. Underlying this is an emphasis on placemaking with a user hierarchy which places pedestrians at the top reflecting the ethos extolled by Manual for Streets (MfS). The National Model Design Code suggests that to ensure walking and cycling are the first choice for short local journeys, the routes should be *"continuous, clear, relatively direct and attractive [...] both within a large site and into the surroundings."*

4.2.2 It is important that the site is integrated into the existing area both to ensure that there are a coherent network of routes, and to ensure that there are not external issues that would undermine the efforts to encourage walking and cycling within and to/from the site. This is achieved by identifying gaps in the provision for pedestrians and cyclists on the local road network.

4.2.3 Pedestrians and cyclists will have many opportunities to access the site. Each vehicular access would have foot/ cycle facilities and, where necessary, crossing points will be provided and incorporated into the proposed site access junctions. In addition, pedestrians will be able to access the site via the existing PRoW which runs through the site and it is proposed to upgrade the PRoW through the site. The locations of the access junctions and PRoW allow for convenient access to the existing pedestrian and public transport networks.

4.2.4 SCC and CWC have identified a number of foot/ cycle improvements that they would like to see come forward as part of any future development of the site, including:

- Provision 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 to the south;
- Good connections to Staffordshire Railway Walk through the site, taking into account potential land ownership issues;

- Improvements to the pedestrian access from the Blackhalve Lane \ Wood End Road junction to the development site; and
- The implementation of a traffic calming scheme on both Kitchen Lane and Linthouse Lane.

4.2.5 These potential walking and cycling improvements are shown on **Figure 3** and the details of these improvements would be developed and reviewed at the planning application stage in conjunction with the local highway authorities.

4.2.6 In terms of the development site, it would be designed to facilitate foot and cycle movements along desire lines, linking to the external access points. This will include the provision of the following where appropriate in line with MfS and MfS2:

- A good level of street and path lighting;
- Warning signs prior to junctions;
- On-site roads designed to 20mph;
- Tactile and coloured surfacing;
- Safety kerbing;
- Reduced junction mouth widths to promote slower vehicle speed where appropriate; and
- Signage to direct pedestrians and cyclists to key facilities and places of interest, including distances.

4.2.7 The illustrative site layout plan at **Appendix A** is designed to provide attractive active travel corridors to allow maximum permeability of the site by these modes of travel.

4.2.8 A mix of cycle parking facilities will be provided at the development to comply with local standards and will be designed and tailored to the likely needs of future occupants.

Public Transport

4.2.9 The existing public transport facilities in relation to the proposed development site are discussed in **Section 3.7**.

4.2.10 CWC have identified the need for public transport improvements to be delivered as part of the future development of the site, either by introducing additional bus stops on Blackhalve Lane, Linthouse Lane and Kitchen Lane or by relocating the existing bus stops. The details of any improvements would be set out and agreed at the planning application stage.

4.2.11 The layout of the site would be designed to ensure that all dwellings are located within 400m of a bus stop. The above is in line with the National Model Design Code which states that a *"site or location has good public transport accessibility when dwellings have a public transport stop within walking distance"*.

5.0 REVIEW OF TRAFFIC IMPACT

5.1 Introduction

5.1.1 The Preferred Options consultation document identified Land North of Linthouse Lane as a Strategic Development Location to deliver a minimum of 1,200 homes to 2038, an on-site primary school and a local centre to include retail and community facilities of an appropriate scale. A review of the likely traffic generation, distribution/ assignment of traffic and consideration of off-site highway capacity has been undertaken on this basis.

5.2 Trip Generation

5.2.1 The vehicle trip rates used in this STA have been provided by SCC and have been derived from recent extensive surveys and Transport Assessments in various areas of South Staffordshire, namely Perton (2 no.), Penkridge and Cheslyn Hay. The vehicle trip rates and associated trip generation for the site are set out in **Table 4**. Measures for further reducing traffic generation would be set out in a comprehensive Travel Plan at the planning application stage.

Table 4 – Vehicle Trip Rates & Trip Generation

	Morning Peak (08:00 – 09:00)			Evening Peak (17:00 – 18:00)		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Vehicle Trip Rates (per dwelling)	0.108	0.339	0.447	0.328	0.158	0.486
Vehicle Trip Generation (1200 Units)	130	407	537	394	190	584

5.3 Distribution

5.3.1 To understand the potential future distribution of traffic generated by the proposed development, 2011 Census journey to work data has been interrogated for the Middle Super Output Area (MSOA) of Walsall 011 in line with the feedback received during scoping. This data is attached as **Appendix F**.

5.3.2 A summary of main journey to work destinations for residents living within the MSOA is provided in **Table 5**.

Table 5 – Journey to Work Destinations

Destination	Percentage
Birmingham	6.8%
Cannock Chase	2.5%
Dudley	2.7%
Lichfield	1.2%
Sandwell	7.0%
South Staffordshire	4.6%
Telford & Wrekin	1.2%
Walsall	41.8%
Wolverhampton	25.2%
Total	7.1%

** Includes all areas with less than 1% draw*

5.3.3 Vehicle traffic has been assigned between the site and workplace MSOAs using the origin-destination tool within ArcGIS based on journey time. This exercise has been undertaken for the morning peak and evening peak in order to take into account potential congestion and delay on the network. Diagrams showing the resulting assignment of traffic through the local road network are attached as **Appendix G**.

5.4 Background Growth

5.4.1 To account of background housing and employment growth, the observed 2022 traffic flows were factored using the DfT's TEMPRO 7.2c computer programme using the National Trip End Model (NTEM) dataset 72 and the 'Road Traffic Forecast 2018 Scenario 1 – Reference'.

5.4.2 For the interrogation of the TEMPRO database, the MSOA of South Staffordshire 007 within which the site is located was chosen. The growth rates for 'car drivers only' were then selected with the trip end type being defined as 'origin/destination'. These were obtained for the weekday AM and PM peaks (07:00 – 09:59 & 16:00 – 18:59). The resulting growth factors are shown in **Table 6** for the assessed scenarios.

Table 6 – TEMPRO Growth Factors

Years	Road Type	AM Growth Figure	PM Growth Figure
2022-2038	Principal	1.0707	1.0675

5.4.3 No specific committed developments were identified within the scope of the assessment work carried out for the Land North of Linthouse Lane site.

5.5 Cumulative Impact

5.5.1 For the strategic road network, the cumulative impact of all of the proposed strategic site allocations has been assessed in accordance with the methodology set out in PJA Technical Note dated 11th May 2022. This is set out in a separate report assessing the impact of the proposed strategic allocations on the strategic road network.

5.6 Site Access Assessments

1. Linthouse Lane – Site Access

5.6.1 The operation of the Linthouse Lane site access was assessed using LinSig and the results of the assessment are copied below in **Table 7**.

Table 7 – Linthouse Lane Site Access Assessment Results

Arm	AM Peak		PM Peak	
	DoS	Queue	DoS	Queue
	2038 with Development			
Linthouse Lane (West)	44.5	7	46.2	8
Site Access	50.7	2	23.8	1
Linthouse Lane (East)	69.4	14	69.5	13

5.6.2 The analysis demonstrates that the site access would operate within capacity in the future with the proposed development.

2. Blackhalve Lane – Site Access

5.6.3 The operation of the Blackhalve Lane site access was assessed using LinSig and the results of the assessment are copied below in **Table 8**.

Table 8 – Blackhalve Lane Site Access Assessment Results

Arm	AM Peak		PM Peak	
	DoS	Queue	DoS	Queue
	2038 with Development			
Blackhalve Lane (East)	37.3	3	33.6	3
Site Access	36.3	2	17.0	1
Blackhalve Lane (West)	34.2	3	62.7	6

5.6.4 The analysis demonstrates that the site access would operate within capacity in the future with the proposed development.

3. Kitchen Lane – Site Access

5.6.5 The operation of the Kitchen Lane site access was assessed using the PICADY module in Junctions 10 and the results of the assessment are copied below in **Table 9**.

Table 9 – Kitchen Lane Site Access Assessment Results

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2038 + DEV									
Stream B-AC	D1	0.3	9.24	0.26	A	D2	0.1	8.15	0.12	A
Stream C-AB		0.0	5.40	0.03	A		0.1	6.15	0.10	A

5.6.6 The analysis demonstrates that the site access would operate within capacity in the future with the proposed development.

5.7 Local Road Network Assessments

4. Blackhalve Lane \ Wood End Road \ Wood Hayes Road Traffic Signal Junction

5.7.1 The operation of the Blackhalve Lane \ Wood End Road \ Wood Hayes Road traffic signal controlled junction was assessed using LinSig and the results of the assessment are copied below in **Table 10**, which presents the results for the links with the highest Degree of Saturation (DoS).

Table 10 – Blackhalve Lane \ Wood End Road \ Wood Hayes Road Assessment Results

Arm	AM Peak		PM Peak	
	DoS	Queue	DoS	Queue
	2022 Existing			
Blackhalve Lane (East)	86.7	22	68.3	12
Wood End Road	87.0	12	91.9	16
Blackhalve Lane (West)	90.7	20	92.9	30
Wood Hayes Road	57.3	11	36.9	6
	2038 without Development			
Blackhalve Lane (East)	83.4	22	75.2	13
Wood End Road	101.5	20	100.2	23
Blackhalve Lane (West)	106.1	39	101.9	46
Wood Hayes Road	61.3	12	39.0	6
	2038 with Development			
Blackhalve Lane (East)	114.8	80	118	51
Wood End Road	111.7	36	114	50
Blackhalve Lane (West)	115.4	58	116	91
Wood Hayes Road	61.1	12	45	8

5.7.2 The analysis demonstrates that the junction is currently operating at capacity and would be over capacity in the future as a result of background growth. The proposals are demonstrated to result in a further worsening in junction operation. An indicative mitigation scheme has therefore been identified at this junction and this is discussed further in **Chapter 6**.

5. Linthouse Lane \ Kitchen Lane Junction

5.7.3 The operation of the Linthouse Lane \ Kitchen Lane junction was assessed using the PICADY module within Junctions 10. The results of the assessment are copied below in **Table 11**.

Table 11 – Linthouse Lane \ Kitchen Lane Assessment Results

	AM							PM						
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2022													
Stream B-C	D1	0.2	7.84	0.16	A	2.11	37 % [Stream B-A]	D2	0.2	8.44	0.14	A	1.91	47 % [Stream B-A]
Stream B-A		0.4	16.31	0.28	C				0.2	13.65	0.19	B		
Stream C-AB		0.4	4.85	0.14	A				0.7	5.55	0.24	A		
	2038 Without Dev													
Stream B-C	D3	0.2	8.30	0.18	A	2.29	28 % [Stream B-A]	D4	0.2	8.82	0.15	A	2.07	37 % [Stream B-A]
Stream B-A		0.5	18.07	0.32	C				0.3	14.98	0.22	B		
Stream C-AB		0.4	4.83	0.15	A				0.8	5.67	0.27	A		
	2038 + Dev													
Stream B-C	D5	0.5	12.74	0.34	B	3.56	13 % [Stream B-A]	D6	0.3	10.11	0.20	B	3.23	19 % [Stream B-A]
Stream B-A		0.8	22.06	0.42	C				0.5	19.46	0.32	C		
Stream C-AB		0.6	5.19	0.21	A				1.5	6.96	0.42	A		

5.7.4 The analysis demonstrates that the junction would operate within capacity in the future with the proposed development and that mitigation is not required.

6. Linthouse Lane \ Lichfield Road \ Stubby Lane Mini Roundabout Junctions

5.7.5 The operation of the Linthouse Lane \ Lichfield Road \ Stubby Lane mini-roundabout junctions was assessed using the ARCADY module within Junctions 10. The results of the assessment are copied below in **Table 12**.

Table 12 – Linthouse Lane \ Lichfield Road \ Stubby Lane Assessment Results

	AM							PM						
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2022													
1 - Western Roundabout - 1 - Linthouse Lane (N)	D1	12.6	67.36	0.94	F	25.20	-8 % [2 - Eastern Roundabout - 1 - Lichfield Road (E)]	D2	3.6	24.42	0.79	C	10.37	-6 % [2 - Eastern Roundabout - 2 - Stubby Lane]
1 - Western Roundabout - 2 - Lichfield Road (E)		1.5	5.60	0.60	A				1.4	5.10	0.57	A		
1 - Western Roundabout - 3 - PH ACCESS		0.0	5.89	0.00	A				0.0	5.63	0.00	A		
1 - Western Roundabout - 4 - Lichfield Road (W)		0.7	4.78	0.40	A				1.3	6.52	0.55	A		
2 - Eastern Roundabout - 1 - Lichfield Road (E)		18.4	99.07	0.97	F	45.56			4.7	27.50	0.82	D	26.34	
2 - Eastern Roundabout - 2 - Stubby Lane		3.9	39.90	0.80	E				7.5	63.10	0.90	F		
2 - Eastern Roundabout - 3 - Lichfield Road (W)		1.9	7.36	0.66	A				2.1	8.00	0.67	A		
	2038 Without Dev													
1 - Western Roundabout - 1 - Linthouse Lane (N)	D3	42.5	200.72	1.03	F	69.24	-13 % [2 - Eastern Roundabout - 1 - Lichfield Road (E)]	D4	6.2	39.44	0.87	E	14.68	-12 % [2 - Eastern Roundabout - 2 - Stubby Lane]
1 - Western Roundabout - 2 - Lichfield Road (E)		1.7	6.32	0.62	A				1.6	5.58	0.60	A		
1 - Western Roundabout - 3 - PH ACCESS		0.0	6.02	0.00	A				0.0	5.82	0.00	A		
1 - Western Roundabout - 4 - Lichfield Road (W)		0.8	5.10	0.43	A				1.6	7.51	0.60	A		
2 - Eastern Roundabout - 1 - Lichfield Road (E)		53.0	252.81	1.06	F	104.94			7.9	44.04	0.89	E	55.66	
2 - Eastern Roundabout - 2 - Stubby Lane		6.2	60.40	0.88	F				22.0	168.87	1.01	F		
2 - Eastern Roundabout - 3 - Lichfield Road (W)		2.4	8.75	0.69	A				2.6	9.31	0.72	A		
	2038 + Dev													
1 - Western Roundabout - 1 - Linthouse Lane (N)	D5	137.5	597.96	1.18	F	215.29	-20 % [1 - Western Roundabout - 1 - Linthouse Lane (N)]	D6	11.0	66.57	0.93	F	22.49	-19 % [2 - Eastern Roundabout - 2 - Stubby Lane]
1 - Western Roundabout - 2 - Lichfield Road (E)		1.7	6.16	0.62	A				1.7	5.84	0.62	A		
1 - Western Roundabout - 3 - PH ACCESS		0.0	5.97	0.00	A				0.0	5.92	0.00	A		
1 - Western Roundabout - 4 - Lichfield Road (W)		0.9	5.24	0.44	A				1.8	8.62	0.64	A		
2 - Eastern Roundabout - 1 - Lichfield Road (E)		80.9	385.64	1.11	F	152.19			12.2	67.14	0.94	F	146.96	
2 - Eastern Roundabout - 2 - Stubby Lane		7.4	68.34	0.90	F				74.6	511.59	1.15	F		
2 - Eastern Roundabout - 3 - Lichfield Road (W)		2.5	9.17	0.71	A				2.9	10.02	0.74	B		

5.7.6 The analysis demonstrates that the junction is currently operating at capacity and would be over capacity in the future as a result of background growth. The proposals are demonstrated to result in a further worsening in junction operation. An indicative mitigation scheme has therefore been identified at this junction and this is discussed further in **Chapter 6**.

7. Kitchen Lane \ High Hill \ Upper Sneyd Road \ Brownshore Lane Junction

5.7.7 The operation of the Kitchen Lane \ High Hill \ Upper Sneyd Road \ Brownshore Lane traffic signal controlled junction was assessed using the PICADY module in Junctions 10 and the results of the assessment are copied below in **Table 13**.

Table 13 – Kitchen Lane \ High Hill \ Upper Sneyd Road \ Brownshore Lane Assessment Results

	AM							PM						
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2022													
Stream B-C D	D1	1.4	19.76	0.58	C	12.01	15 % [Stream B-CD]	D2	0.8	13.60	0.45	B	9.62	37 % [Stream B-CD]
Stream B-AD		0.8	18.12	0.45	C				0.5	13.51	0.34	B		
Stream A-B C D		0.0	5.41	0.00	A				0.0	5.63	0.01	A		
Stream D-AB		0.3	10.39	0.23	B				0.3	10.32	0.24	B		
Stream D-B C		0.4	12.35	0.29	B				0.5	12.70	0.32	B		
Stream C-ABD		0.2	6.29	0.14	A				0.2	6.00	0.13	A		
	2038 Without Dev													
Stream B-C D	D3	1.8	24.46	0.64	C	14.15	8 % [Stream B-CD]	D4	1.0	15.12	0.49	C	10.40	28 % [Stream B-CD]
Stream B-AD		1.1	22.00	0.51	C				0.6	14.76	0.37	B		
Stream A-B C D		0.0	5.38	0.00	A				0.0	5.62	0.01	A		
Stream D-AB		0.3	10.96	0.25	B				0.4	10.90	0.26	B		
Stream D-B C		0.5	13.05	0.32	B				0.5	13.44	0.35	B		
Stream C-ABD		0.2	6.36	0.15	A				0.2	6.05	0.14	A		
	2038 + Dev													
Stream B-C D	D5	3.1	37.97	0.76	E	20.15	-1 % [Stream B-CD]	D6	2.0	24.30	0.67	C	14.79	7 % [Stream B-CD]
Stream B-AD		1.7	34.72	0.63	D				0.9	21.55	0.49	C		
Stream A-B C D		0.0	5.54	0.00	A				0.0	5.70	0.01	A		
Stream D-AB		0.5	12.74	0.31	B				0.4	11.84	0.30	B		
Stream D-B C		0.6	14.87	0.37	B				0.6	14.83	0.38	B		
Stream C-ABD		0.4	7.15	0.25	A				0.3	6.38	0.19	A		

5.7.8 The analysis demonstrates that the junction would operate within capacity in the future with the proposed development and that mitigation is not required.

8. Wood End Road \ Linthouse Lane \ Lower Prestwood Road Roundabout

5.7.9 The operation of the Wood End Road \ Linthouse Lane \ Lower Prestwood roundabout junction was assessed using the ARCADY module within Junctions 10. The results of the assessment are copied below in **Table 14**.

Table 14 – Wood End Road \ Linthouse Lane \ Lower Prestwood Road Assessment Results

	AM							PM						
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2022													
1 - Linthouse Lane	D1	2.7	15.55	0.73	C	11.75	13 % [1 - Linthouse Lane]	D2	1.3	7.55	0.55	A	7.59	44 % [3 - Lower Prestwood Road]
2 - Wood End Road (S)		0.4	6.40	0.27	A				0.8	7.77	0.44	A		
3 - Lower Prestwood Road		0.7	6.10	0.39	A				1.2	8.57	0.55	A		
4 - Wood End Road (NW)		2.9	12.87	0.74	B				0.8	6.42	0.45	A		
	2038 Without Dev													
1 - Linthouse Lane	D3	4.1	21.95	0.80	C	15.62	6 % [1 - Linthouse Lane]	D4	1.5	8.41	0.59	A	8.47	35 % [3 - Lower Prestwood Road]
2 - Wood End Road (S)		0.4	6.86	0.30	A				0.9	8.62	0.48	A		
3 - Lower Prestwood Road		0.7	6.52	0.42	A				1.5	9.70	0.60	A		
4 - Wood End Road (NW)		4.2	17.33	0.81	C				1.0	7.07	0.49	A		
	2038 + Dev													
1 - Linthouse Lane	D5	16.1	76.92	0.96	F	37.15	-6 % [1 - Linthouse Lane]	D6	1.9	10.01	0.66	B	10.58	21 % [3 - Lower Prestwood Road]
2 - Wood End Road (S)		0.5	7.77	0.34	A				1.3	10.54	0.56	B		
3 - Lower Prestwood Road		0.8	7.08	0.45	A				2.2	12.81	0.68	B		
4 - Wood End Road (NW)		6.4	25.28	0.87	D				1.4	8.93	0.58	A		

5.7.10 The analysis demonstrates that the junction is currently operating within capacity and would be approaching capacity in 2038 during the morning peak as a result of development traffic. Whilst the impact is not considered to be significant, corresponding to a mean maximum queue (MMQ) of 16 PCUs on the Linthouse Lane approach, an indicative mitigation scheme has been identified at this junction and is discussed further in **Chapter 6**.

9. Linthouse Lane \ Griffiths Drive \ White House Avenue Roundabout

5.7.11 The operation of the Linthouse Lane \ Griffiths Drive \ White House Avenue roundabout was assessed using the ARCADY module within Junctions 10. The results of the assessment are copied below in **Table 15**.

Table 15 – Linthouse Lane \ Griffiths Drive \ White House Avenue Assessment Results

	AM							PM						
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2022													
1 - Griffiths Drive	D1	1.2	11.23	0.55	B	8.88	36 % [1 - Griffiths Drive]	D2	0.7	8.10	0.41	A	10.73	20 % [2 - Linthouse Lane (SE)]
2 - Linthouse Lane (SE)		1.1	8.36	0.52	A				2.7	14.53	0.73	B		
3 - White House Avenue		0.1	4.99	0.06	A				0.0	5.35	0.04	A		
4 - Linthouse Lane (NW)		1.4	8.06	0.57	A				1.2	7.92	0.55	A		
	2038 Without Dev													
1 - Griffiths Drive	D3	1.5	13.02	0.60	B	10.00	27 % [1 - Griffiths Drive]	D4	0.8	8.74	0.45	A	12.74	12 % [2 - Linthouse Lane (SE)]
2 - Linthouse Lane (SE)		1.3	9.21	0.56	A				3.6	18.20	0.78	C		
3 - White House Avenue		0.1	5.20	0.07	A				0.0	5.62	0.04	A		
4 - Linthouse Lane (NW)		1.7	9.03	0.62	A				1.5	8.81	0.59	A		
	2038 + Dev													
1 - Griffiths Drive	D5	1.9	15.82	0.65	C	12.23	18 % [1 - Griffiths Drive]	D6	0.9	9.19	0.46	A	19.70	1 % [2 - Linthouse Lane (SE)]
2 - Linthouse Lane (SE)		1.5	10.06	0.59	B				7.1	32.41	0.88	D		
3 - White House Avenue		0.1	5.34	0.07	A				0.1	6.09	0.05	A		
4 - Linthouse Lane (NW)		2.6	12.20	0.72	B				1.8	9.84	0.63	A		

5.7.12 The analysis demonstrates that the junction would operate within capacity in the future with the proposed development and that mitigation is not required.

10. Blackhalve Lane \ Cannock Road Roundabout

5.7.13 The operation of Blackhalve Lane \ Cannock Road roundabout was assessed using the ARCADY module within Junctions 10. The results of the assessment are copied below in **Table 16**.

Table 16 – Blackhalve Lane \ Cannock Road Assessment Results

	AM							PM						
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2022													
1 - A460 Cannock Road (N)	D1	1.1	7.82	0.49	A	6.56	44 % [3 - Willow Avenue]	D2	0.9	7.44	0.47	A	7.52	40 % [4 - A460 Cannock Road (S)]
2 - Blackhalve Lane		0.6	6.97	0.38	A				0.8	7.09	0.44	A		
3 - Willow Avenue		0.4	10.59	0.26	B				0.5	10.82	0.32	B		
4 - A460 Cannock Road (S)		0.8	4.83	0.43	A				1.6	6.96	0.61	A		
5 - Primroase Lane		0.4	5.14	0.28	A				0.6	6.95	0.37	A		
6 - Chesteron Road		0.5	7.51	0.32	A				0.5	9.23	0.34	A		
	2038 Without Dev													
1 - A460 Cannock Road (N)	D3	1.3	8.81	0.54	A	7.23	35 % [3 - Willow Avenue]	D4	1.1	8.30	0.51	A	8.52	31 % [4 - A460 Cannock Road (S)]
2 - Blackhalve Lane		0.8	7.71	0.42	A				0.9	7.86	0.48	A		
3 - Willow Avenue		0.4	11.93	0.30	B				0.6	12.16	0.36	B		
4 - A460 Cannock Road (S)		1.0	5.20	0.47	A				2.0	8.06	0.66	A		
5 - Primroase Lane		0.5	5.48	0.31	A				0.7	7.77	0.41	A		
6 - Chesteron Road		0.6	8.25	0.36	A				0.6	10.46	0.38	B		
	2038 + Dev													
1 - A460 Cannock Road (N)	D5	1.3	8.87	0.54	A	7.33	33 % [3 - Willow Avenue]	D6	1.1	8.44	0.51	A	8.68	30 % [4 - A460 Cannock Road (S)]
2 - Blackhalve Lane		0.8	7.99	0.44	A				0.9	7.96	0.48	A		
3 - Willow Avenue		0.4	12.22	0.31	B				0.6	12.26	0.36	B		
4 - A460 Cannock Road (S)		1.0	5.24	0.47	A				2.1	8.29	0.67	A		
5 - Primroase Lane		0.5	5.51	0.31	A				0.7	7.92	0.42	A		
6 - Chesteron Road		0.6	8.30	0.36	A				0.7	10.67	0.38	B		

5.7.14 The analysis demonstrates that the junction would operate within capacity in the future with the proposed development and that mitigation is not required.

11. <u>B4156 \ Bognop Road Mini-Roundabout</u>

5.7.15 It was requested by SCC that the impact of the development proposals on the B4156 / Bognop mini-roundabout be considered as part of the STA work. In traffic generation terms, the proposals are forecast to generate 4-5 two-way vehicle trips through the junction at peak times which is not significant and would be well within the daily variation in traffic movements.

6.0 POTENTIAL HIGHWAY MITIGATION WORKS

6.1 Introduction

6.1.1 Following the assessment of development impact discussed in **Chapter 5**, indicative highway mitigation measures have been identified at three junctions, including:

- Blackhalve Lane \ Wood End Road \ Wood Hayes Road Traffic Signal Controlled Junction
- Linthouse Lane \ Lichfield Road \ Stubby Lane Mini Roundabout Junctions; and
- Wood End Road \ Linthouse Lane \ Lower Prestwood Road Roundabout.

6.1.2 These are discussed in turn below.

6.2 Blackhalve Lane \ Wood End Road \ Wood Hayes Road Traffic Signal Controlled Junction

6.2.1 As set out in **Chapter 5**, this junction is forecast to operate over capacity in the future as a result of background growth and the proposals are demonstrated to result in a further worsening in junction operation. An indicative mitigation scheme has therefore been identified and this is sketched on **Drawing 24046-04-GA** and includes the following works:

- Widening to the southern side of Blackhalve Lane within highway land to provide internal storage for right turning traffic (prevent blocking of ahead and left movements); and
- Splitter islands to be provided on Blackhalve Lane East and Wood End Road to accommodate (uncontrolled) pedestrian crossings and offside primary signal heads and indicative green arrow (BL West arm).

6.2.2 Updated modelling has been undertaken using LinSig software and the results of this assessment are presented in **Table 17** below. This shows that the works would fully mitigate the impact of the development proposals.

Table 17 – Blackhalve Lane \ Wood End Road \ Wood Hayes Road Mitigation Results

Arm	AM Peak		PM Peak	
	DoS	Queue	DoS	Queue
	2038 with Development			
Blackhalve Lane (East)	85.5	16	64.3	7
Wood End Road	70.7	7	81.2	9
Blackhalve Lane (West)	61.7	5	79.8	12
Wood Hayes Road	83.1	10	50.7	5

6.3 Linthouse Lane \ Lichfield Road \ Stubby Lane Mini Roundabout Junctions

6.3.1 As set out in **Chapter 5**, this junction is forecast to operate over capacity in the future as a result of background growth and the proposals are demonstrated to result in a further worsening in junction operation. An indicative mitigation scheme has therefore been identified and this is sketched on **Drawing 24046-06-GA** and includes the following works:

- Additional flare to be provided on Linthouse Lane arm to form separate left and right turn lanes at the giveway arm (road markings not shown). The central roundel has been relocated slightly to the south of its existing position. Works to be undertaken within highway land with widening both sides. Amended pedestrian crossing to include dropped kerb and tactile paving as existing;

- Additional flare to be provided on Lichfield Road East arm to form separate left and right turn lanes at the giveway arm (road markings not shown). Works to be undertaken within highway land. Amended pedestrian crossing to include dropped kerb and tactile paving as existing; and

- Additional flare to be provided on Stubby Lane arm to form separate left and right turn lanes at the giveway arm (road markings not shown). Works to be undertaken within highway land requiring widening on both sides. Amended pedestrian crossing to include dropped kerb and tactile paving as existing.

6.3.2 Updated modelling has been undertaken using the ARCADY module in Junctions 10 and the results of this assessment are presented in **Table 18** below. This shows that the works would fully mitigate the impact of the development proposals.

Table 18 – Linthouse Lane \ Lichfield Road \ Stubby Lane Mitigation Results

	AM							PM						
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Netwo Resid Capac
	2038 + Dev													
1 - Western Roundabout - 1 - Linthouse Lane (N)	D5	6.1	26.13	0.86	D	13.15	1 % [2 - Eastern Roundabout - 1 - Lichfield Road (E)]	D6	2.0	11.42	0.66	B	8.05	1 % [2 - Eas Rounda - 2 - Stu Lane
1 - Western Roundabout - 2 - Lichfield Road (E)		2.1	7.12	0.67	A				1.9	6.32	0.65	A		
1 - Western Roundabout - 3 - PH ACCESS		0.0	24.44	0.01	C				0.0	19.21	0.01	C		
1 - Western Roundabout - 4 - Lichfield Road (W)		0.8	5.01	0.43	A				1.6	7.76	0.61	A		
2 - Eastern Roundabout - 1 - Lichfield Road (E)		6.2	30.37	0.86	D	18.77			2.8	14.61	0.73	B	16.25	
2 - Eastern Roundabout - 2 - Stubby Lane		2.1	18.44	0.68	C				4.6	31.36	0.83	D		
2 - Eastern Roundabout - 3 - Lichfield Road (W)		3.3	10.82	0.76	B				2.8	9.51	0.73	A		

6.4 Wood End Road \ Linthouse Lane \ Lower Prestwood Road Roundabout

6.4.1 As set out in **Chapter 5**, this junction is forecast approaching capacity in the future as a result of background growth and the proposals are demonstrated to result in a slight worsening in junction operation. An indicative mitigation scheme has therefore been identified and this is sketched on **Drawing 24046-08-GA** and includes the following works:

- Additional flare to be provided on Wood End Road North. Splitter island to be provided - no pedestrian crossing;
- Additional flare to be provided on Linthouse Lane East. Splitter island geometry to be improved with dropped kerbs and tactile paving on the pedestrian crossing Potential widening of the over-runnable area around the roundel; and
- Potential widening of the over-runnable area around the roundel.

6.4.2 Updated modelling has been undertaken using the ARCADY module in Junctions 10 and the results of this assessment are presented in **Table 19** below. This shows that the works would fully mitigate the impact of the development proposals.

Table 19 – Wood End Road \ Linthouse Lane \ Lower Prestwood Road Mitigation Results

	AM							PM						
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2038 + Dev													
1 - Linthouse Lane	D5	5.0	23.30	0.83	C	14.58	4 % [1 - Linthouse Lane]	D6	1.4	7.21	0.58	A	9.16	21 % [3 - Lower Prestwood Road]
2 - Wood End Road (S)		0.6	7.81	0.34	A				1.3	10.54	0.56	B		
3 - Lower Prestwood Road		0.8	7.09	0.45	A				2.2	12.81	0.68	B		
4 - Wood End Road (NW)		3.2	12.48	0.76	B				1.0	6.56	0.51	A		

6.5 Summary

6.5.1 Overall, the analysis demonstrates that the impact of the development proposals on the operation of the local highway network can be accommodated with the mitigation works proposed. These would be subject to a more detailed review and analysis at the planning application stage. A summary of the assessment results is provided in **Table 20**.

Table 20 – Junction Assessment Results Summary

Junction	Operation in 2038 without Dev	Operation in 2038 with Dev	Mitigation Required?	Operation with Mitigation
1. Linthouse Lane – Site Access	-	Within Capacity (highest DoS of 72% and Q of 15)	-	-
2. Blackhalve Lane – Site Access	-	Within Capacity (highest DoS of 62% and Q of 6)	-	-
3. Kitchen Lane – Site Access	-	Within Capacity (highest RFC of 0.26 and Q of 0)	-	-
4. Blackhalve Lane \ Wood End Road \ Wood Hayes Road Traffic Signal Controlled Junction	Over Capacity (highest DoS of 112% and Q of 58)	Over Capacity (highest DoS of 142% and Q of 120)	Y	Within Capacity (highest DoS of 86% and Q of 16)
5. Linthouse Lane \ Kitchen Lane Junction	Within Capacity (highest RFC of 0.32 and Q of 1)	Within Capacity (highest RFC of 0.42 and Q of 2)	N	-
6. Linthouse Lane \ Lichfield Road \ Stubby Lane Mini Roundabout Junctions	Over Capacity (highest RFC of 1.06 and Q of 53)	Over Capacity (highest RFC of 1.18 and Q of 138)	Y	Approaching Capacity (highest RFC of 0.86 and Q of 6)
7. Kitchen Lane \ High Hill \ Upper Sneyd Road \ Brownshore Lane Junction	Within Capacity (highest RFC of 0.64 and Q of 2)	Within Capacity (highest RFC of 0.76 and Q of 3)	N	-
8. Wood End Road \ Linthouse Lane \ Lower Prestwood Road Roundabout	Within Capacity (highest RFC of 0.81 and Q of 4)	Approaching Capacity (highest RFC of 0.96 and Q of 16)	Y	Within Capacity (highest RFC of 0.83 and Q of 5)
9. Linthouse Lane \ Griffiths Drive \ White House Avenue Roundabout	Within Capacity (highest RFC of 0.78 and Q of 2)	Approaching Capacity (highest RFC of 0.88 and Q of 7)	N	-
10. Blackhalve Lane \ Cannock Road Roundabout	Within Capacity (highest RFC of 0.66 and Q of 2)	Within Capacity (highest RFC of 0.67 and Q of 2)	N	-

7.0 CONCLUSIONS

7.1 DTA Transportation Limited has been commissioned on behalf of Taylor Wimpey to provide transport advice in relation to the proposed allocation of Land North of Linthouse Lane for residential development within the emerging South Staffordshire Local Plan.

7.2 This Strategic Transport Assessment has been prepared following discussions with South Staffordshire Council, Staffordshire County Council, the City of Wolverhampton Council and National Highways. It provides a high level strategic review of the impact of the proposed site allocation within the emerging Local Plan and focusses on deliverability. A more detailed TA would be required at the planning application stage.

7.3 The pertinent paragraphs from the National Planning Policy Framework (NPPF) in relation to the transport evidence base are set out below:

> ***Para 104.*** *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.*
>
> ***Para 105.*** *The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.*

7.4 In terms of sustainable accessibility, the site is well located to take advantage of existing foot, cycle and public transport services in the local area. Opportunities for maximising connectivity between the proposed development and the local area are discussed in this report and detailed schemes would be developed in conjunction with the local highway authorities at the planning application stage.

7.5 Three potential points of vehicle access have been identified including onto Blackhalve Lane, Linthouse Lane and Kitchen Lane. This initial analysis demonstrates the accesses could be delivered on these links within the land available. The exact form of the accesses and their locations would need to be agreed at the planning application stage as part of a detailed Transport Assessment.

7.6 As part of this preliminary work, an assessment of the impact of the development proposals on the operation of the highway network has been undertaken. Mitigation works have been identified at a number of locations for the purposes of deriving indicative costs to inform the viability assessment of the emerging Local Plan. Further detailed analysis of impact would be required in the future should the site be brought forward through planning.

DRAWINGS

Oakley Farm

154.3m visibility splay (ATC 85% - 53.6mph)

142.8m visibility splay (ATC 85% - 51.2mph)

6.75m access
2m footway
3.0m footway/cycleway

Pond

Co Const Bdy

Met Dist Bdy

Woodhayes Farmhouse

BLACKHALVE LANE

RH

El Sub Sta

FF

1 to 15 Wood Hayes Place

436

8

2

REV	DESCRIPTION	DRAWN	INITIALS	DATE

DTA
Transport Planning Consultants

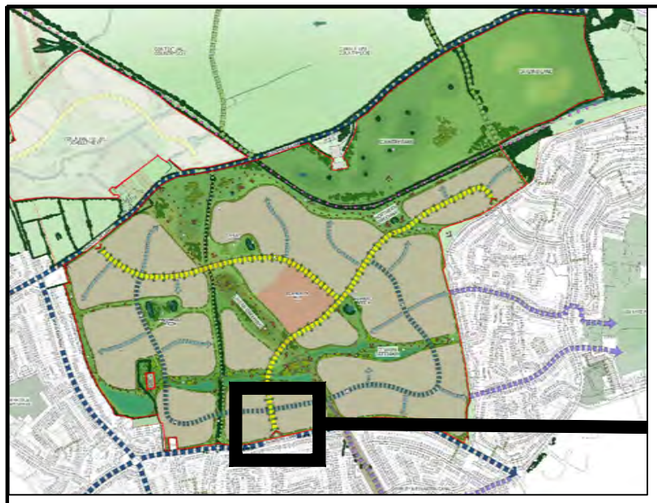
Forester House, Doctors Lane,
Henley in Arden,
Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
www.dtatransportation.co.uk

JOB TITLE: Land North of Linthouse Lane

CLIENT: Taylor Wimpey

DRAWING TITLE: Blackhalve Lane Site Access
Signalised Junction

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1/1000@A3	BP	27-04-22	24046-01	



6.75m access
2m footway
3.0m footway/cycleway

79.4m visibility splay
(ATC 85% - 36.4mph)

76.4m visibility splay
(ATC 85% - 35.5mph)

189
193
205
217
229
Surgery

REV	DESCRIPTION	DRAWN	INITIALS	DATE

DTA
Transport Planning Consultants

Forester House, Doctors Lane,
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Fax: +44(0)1564 793983
www.dtatransportation.co.uk

JOB TITLE	CLIENT
Land North of Linthouse Lane	Taylor Wimpey

DRAWING TITLE

Linthouse Lane Site Access
Signalised Junction

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
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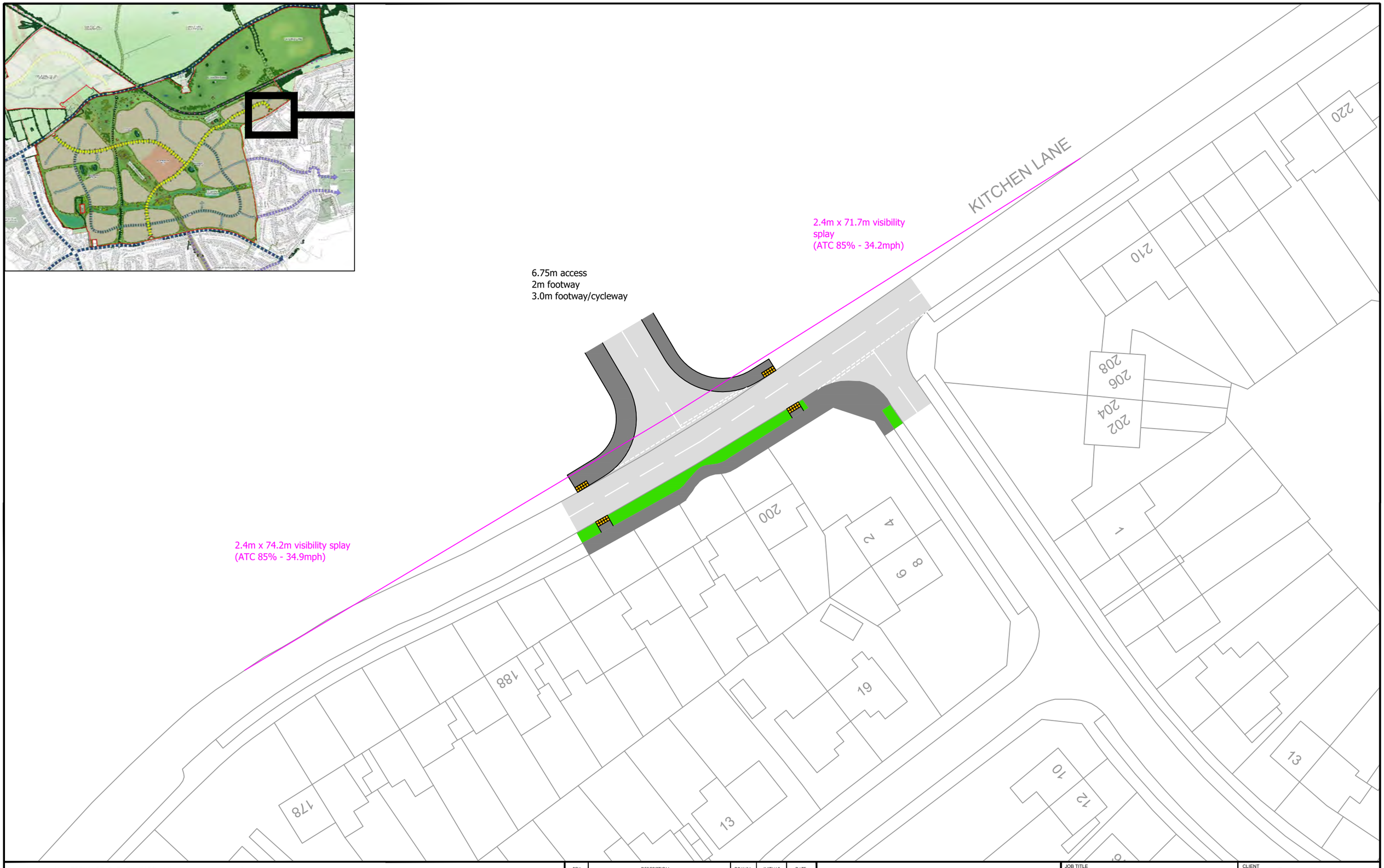

REV	DESCRIPTION	DRAWN	INITIALS	DATE

DTA
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Forester House, Doctors Lane,
Henley in Arden,
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Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
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JOB TITLE	CLIENT
Land North of Linthouse Lane	Taylor Wimpey

DRAWING TITLE

Kitchen Lane Site Access
Priority Junction

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1/500@A3	BP	27-04-22	24046-01-4	

FIGURES

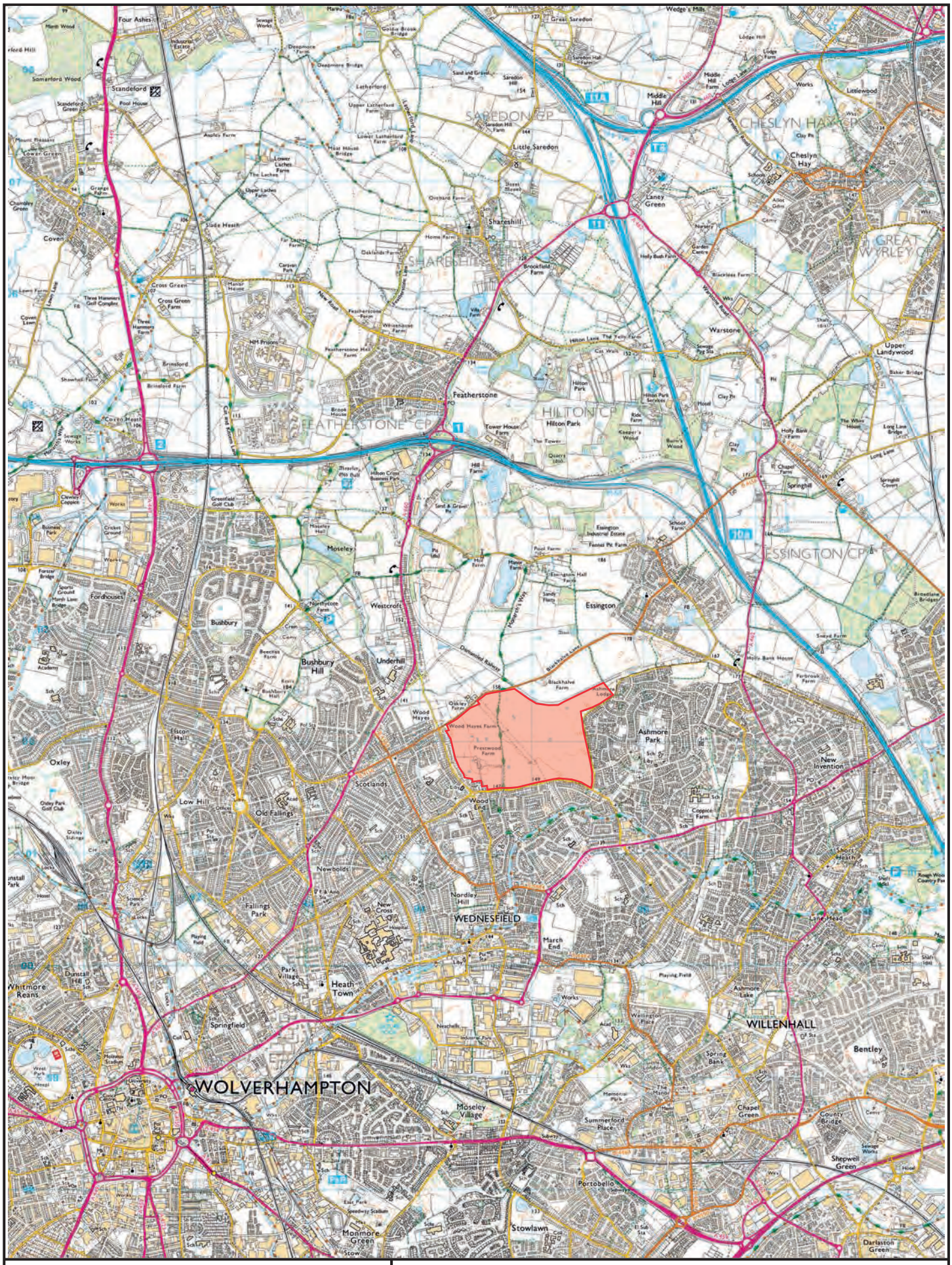

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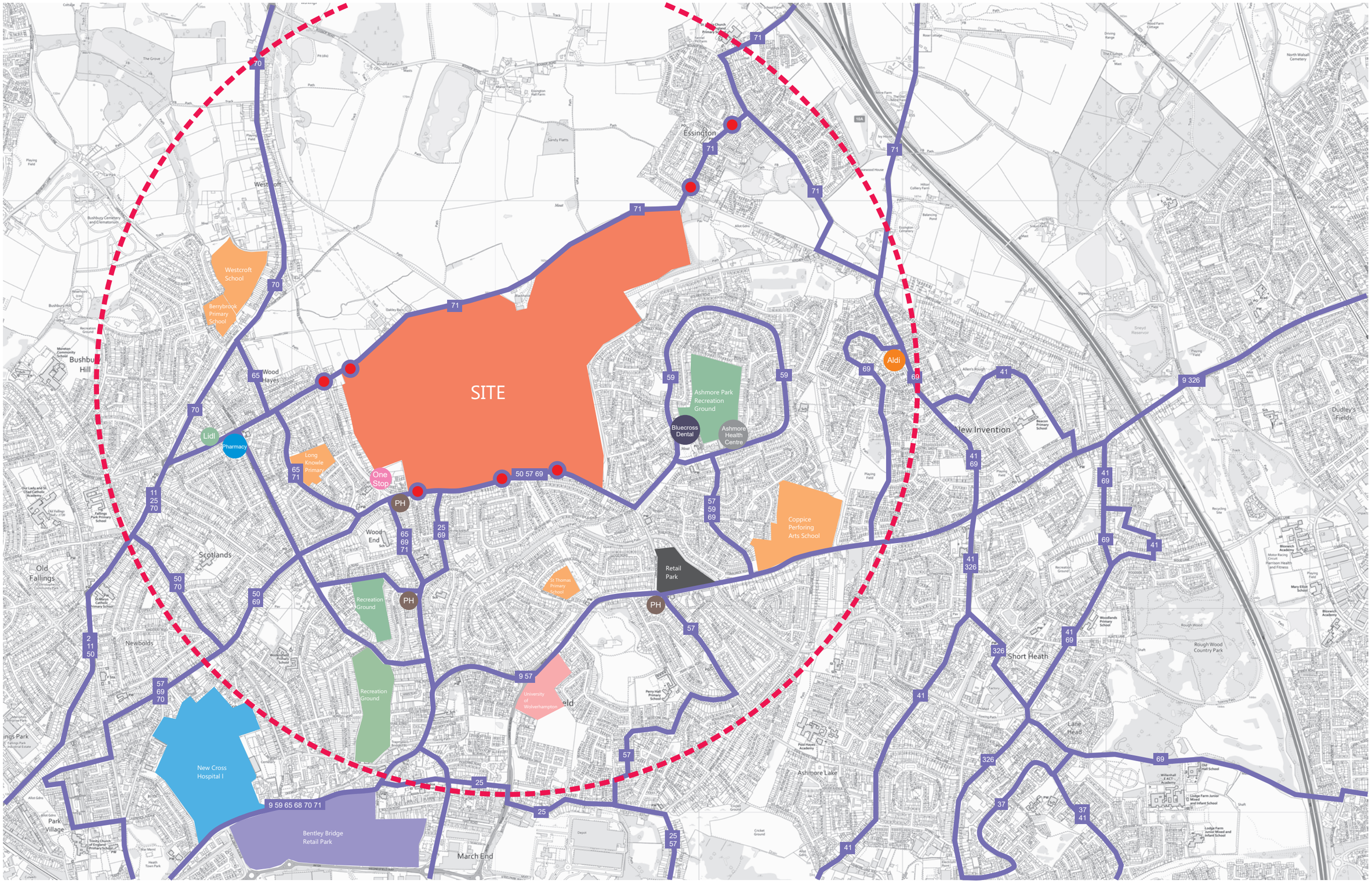
Figure 1
Drawing Title: Site Location Plan
Job Title: Land North of Linthouse Lane
Client: Taylor Wimpey

Scale : NTS

NORTH



DTA
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www.dtatransportation.co.uk

Notes:
- Bus Routes
- Bus Stops
- 2km Radius

Figure 2	Drawing No : 240246-LF
Drawing Title	Local Facilities Plan
Job Title	Land North of Linthouse Lane
Client	Taylor Wimpey

Scale : NTS

NORTH

Enhancements to existing PROWs to facilitate connectivity by foot \ cycle.

Opportunities for improving the dismantled railway leisure route

Foot/cycle facilities to be provided along Linthouse Lane / Kitchen Lane connecting existing PROW and leisure route.

Future traffic calming scheme to be implemented along Linthouse Lane / Kitchen Lane.

Opportunities for improving the existing canal towpath to provide enhanced connectivity for pedestrians / cyclists.

Improved connections to be provided between the site and canal towpath & Starley network.

DTA Transport Planning Consultants

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Figure 1
Drawing Title: Indicative Footway/Cycle Improvements
Job Title: Land North of Linthouse Lane
Client: Taylor Wimpey

Scale : NTS

NORTH

APPENDIX A

Illustrative Site Layout

KEY

- SITE LOCATION
  147.77 HECTARES
  365.15 ACRES
- BOUNDARY LINE BETWEEN SOUTH STAFFORDSHIRE DISTRICT AND WOLVERHAMPTON BOROUGH
- PROPOSED SITE ACCESS
- PROPOSED RESIDENTIAL DEVELOPMENT
  NDA OF 60.81 HA X 35-40 DPH =
  CIRCA **2,100** UNITS - **2450** UNITS
- POTENTIAL COMMUNITY HUB
  3 HECTARES (INC PRIMARY SCHOOL)
- PUBLIC OPEN SPACE (INCLUDING SUDS)
  PUBLIC OPEN SPACE BELOW THE DISMANTLED RAILWAY - 27.8 HA
  COUNTRY PARK - 18.14 HA
  GRAZING LAND - 12.49 HA
- 4.3M WIDE PRIMARY STREET WITH TWO 2M VERGES, 2M WIDE FOOTPATH AND 3M CYCLEWAY
- 5.5 SECONDARY STREET WITH 2M WIDE FOOTPATHS
- 4.8 TERTIARY STREET WITH 2M WIDE FOOTPATHS
- PRIMARY PEDESTRIAN MOVEMENT
- POTENTIAL PEDESTRIAN & CYCLE LINKS TO WIDER GREEN INFRASTRUCTURE
- PUBLIC RIGHT OF WAY
- DISMANTLED RAILWAY WALK
- ACTIVE TRAVEL ROUTE ON THE WYRLEY & ESSINGTON CANAL WITH LINKS BACK TO WOLVERHAMPTON CITY CENTRE
- POTENTIAL LINK TO WIDER NATIONAL CYCLE INFRASTRUCTURE
- EXISTING LANDSCAPE
- PROPOSED LANDSCAPE
- SUSTAINABLE URBAN DRAINAGE (TBC)
- EXISTING WATERBODIES
- 20M NO BUILD ECOLOGY OFFSET FROM TOP OF BANK (TBC)
- OVERHEAD CABLE WITH 30M EASEMENT (TBC)

KEY PRINCIPLES

1. PROPOSED VEHICULAR ACCESS VIA LINTHOUSE LANE, KITCHEN LANE AND BLACKHALVE LANE;
2. PRIMARY VEHICULAR MOVEMENT THROUGH SITE;
3. LOOPED SECONDARY STREETS PROVIDING EMERGENCY LINKS BETWEEN PRIMARY MOVEMENT;
4. TERTIARY MOVEMENT SERVING SMALLER CLUSTERS OF DEVELOPMENT;
5. OUTWARD FACING PRIVATE LANES TO ALL GREEN/URBAN EDGES PROVIDING OUTWARD FACING DWELLINGS FOR NATURAL SURVEILLANCE OVER PUBLIC OPEN SPACES;
6. CENTRAL GREENWAY UTILISING PROPOSED SUSTAINABLE URBAN DRAINAGE TO PROVIDE AN ENHANCED WETLAND ECOLOGY CORRIDOR;
7. LINEAR GREENWAY PROVIDING MOVEMENT ROUTES THROUGH THE SITE AND OUT TO THE EXISTING MOVEMENT INFRASTRUCTURE;
8. NORTHERN GREENWAY LINKING BACK WITH GREEN SPACES ON KITCHEN LANE PROVIDING A VIEWING CORRIDOR TO THE WIDER CONTEXTUAL LANDSCAPE;
9. EXISTING PUBLIC RIGHT OF WAY RETAINED WITH ENHANCED LANDSCAPING;
10. POTENTIAL LOCATION FOR COMMUNITY HUB PROVIDING 3 HECTARES OF LAND;
11. ENHANCED OFFSETS TO EXISTING RESIDENTS ON WOOD END ROAD VARYING BETWEEN 20-25M;
12. EXISTING PONDS TO HAVE A 20M EXCLUSION ZONE FROM TOP OF BANK TO HELP ENHANCE EXISTING ECOLOGY
13. PEDESTRIAN MOVEMENT ROUTES PROVIDING CONNECTIONS BACK TO SURROUNDING MOVEMENT ROUTES;
14. LANDSCAPED VILLAGE GREENS PROVIDING SPACE FOR PLAY AND PROTECTION AND ENHANCEMENT OF EXISTING LANDSCAPE AND ECOLOGY; AND
15. LANDSCAPED COUNTRY PARK TO THE NORTH OF THE DISMANTLED RAILWAY

LAND OFF LINTHOUSE LANE, WOLVERHAMPTON | **DEVELOPMENT FRAMEWORK PLAN**

PLANNING | DESIGN | ENVIRONMENT | ECONOMICS | www.pegasusgroup.co.uk | TEAM/DRAWN BY: RL/IW | APPROVED BY: JW | DATE: 25/10/19 | SCALE: 1:2500@ A0 | DRWG: BIR.5060_12-1 | CLIENT: TAYLOR WIMPEY STRATEGIC LAND |

Pegasus Group

APPENDIX B

ROF Featherstone New Link Road

A449 ROUNDABOUT DESIGN TAKEN FROM BWB DRAWING - FEA-BWB-HGN-XX-M2-C-0100

REV	DATE	BY	DESCRIPTION	CHK	APD
G	16.06.21	JB	AMENDED JUNCTION ARRANGEMENT	JW	SE
F	19.01.21	PH	BUS STOP LAY-BY AMENDED	SE	SE
E	11.12.20	PH	RED LINE BOUNDARY UPDATED	SE	SE
D	10.12.20	PH	CAT & KITTENS ROUNDABOUT AMENDED	SE	SE
C	09.12.20	JB	HIGHWAY BOUNDARY UPDATED	SE	SE
B	25.11.20	JB	MINOR EDITS TO KEY	SE	SE

STATUS: FOR INFORMATION

TITLE: PROPOSED ACCESS ROAD

PROJECT: LOGIC 54

CLIENT: ST FRANCIS GROUP (FEATHERSTONE 2) LTD / PEVERIL SECURITIES LIMITED

DRAWN:	CHECKED:	APPROVED:
JB	JW	SE
PROJECT No: ITM15267	SCALE @ A1: 1:1250	DATE: 27.01.20

DRAWING No: ITM15267-GA-013

REV: G

i-Transport
Centurion House, 129 Deansgate
Manchester, M3 3WR
Tel: 0161 830 2172
www.i-transport.co.uk

DRAWING ISSUED FOR FEASIBILITY CONSIDERATION AND PLANNING PURPOSES ONLY. DRAWING NOT TO BE USED FOR CONSTRUCTION. I-TRANSPORT LLP ACCEPT NO RESPONSIBILITY FOR ERRORS MADE BY OTHERS IN SCALING FROM THIS DRAWING. MEASUREMENTS SHOULD BE TAKEN FROM FIGURED DIMENSIONS ONLY. CDM REQUIREMENTS CONSIDERED AT FEASIBILITY STAGE ONLY. FURTHER CONSIDERATION REQUIRED BY DETAILED DESIGN TEAM.

Z:\Projects\15267ITM ROF\Tech\Acad\i-Transport Drawings\Working Drawings\GA\ITM15267-GA-012F and 013G

APPENDIX C

M54 – M6 Link Road

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

EXCEPTIONAL RISKS RELATING TO THE WORKS ASSOCIATED WITH THIS DRAWING ARE IDENTIFIED BELOW.

CONSTRUCTION

MAINTENANCE / OPERATION / DECOMMISSIONING / DEMOLITION

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.
2. DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
3. ALL DIMENSIONS IN MILLIMETRES, ALL CHAINAGES, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE PROJECT HEALTH & SAFETY FILE FOR ANY IDENTIFIED POTENTIAL RISKS.
5. GENERAL ARRANGEMENT BASED ON MODEL REV P03.

KEY

LIMITS OF LAND TO BE ACQUIRED OR USED PERMANENTLY OR TEMPORARILY (THE ORDER LIMITS)

LAND NOT INCLUDED WITHIN THE ORDER LIMITS

Purpose of issue

SUITABLE FOR INFORMATION

Client
Highways England
The Cube
199 Wharfside Street
Birmingham
B1 1RN

Working on behalf of highways england

Project Title

M54 M6 Link Improvements

Drawing Title

GENERAL ARRANGEMENT SCHEME WIDE

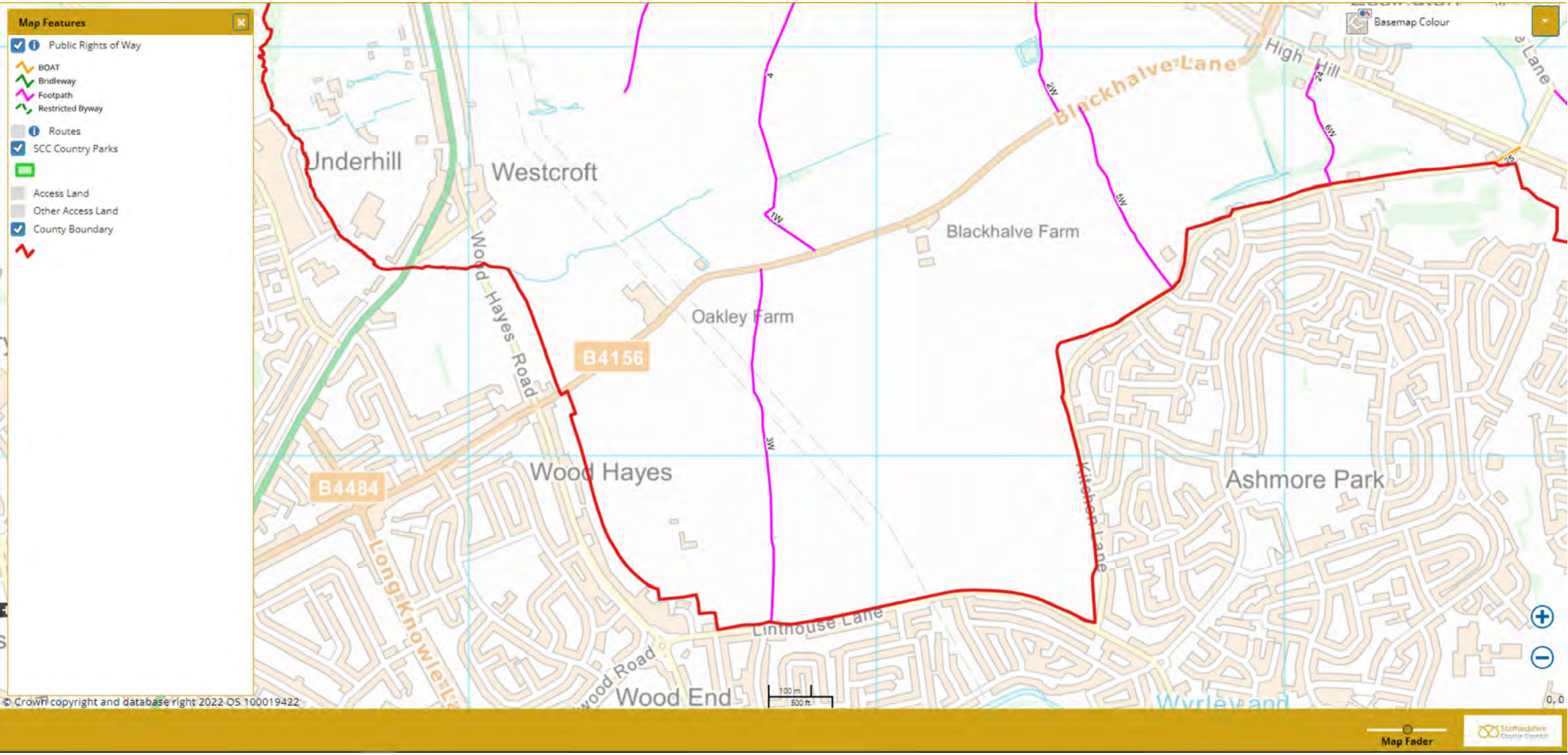
Internal Project No.	Suitability
60536736	S2
Scale @ A1	Zone
NTSH/NTSV	Highways General

Drawing Number
Highways England PIN | Originator | Volume
HE514465 -ACM -HGN-
Location
M54_SW_PR_Z -DR-CH-1001
Type | Role | Number

Rev P07

APPENDIX D

PROW Extract



Map Features
Public Rights of Way
BOAT
Bridleway
Footpath
Restricted Byway
Routes
SCC Country Parks
Access Land
Other Access Land
County Boundary
Basemap Colour
Underhill
Westcroft
Blackhalve Lane
High Hill
Blackhalve Farm
Oakley Farm
B4156
B4484
Wood Hayes Road
Wood Hayes
Kitchen Lane
Ashmore Park
Linthouse Lane
Long Knowle La
Wood End
100 m
500 ft
Map Fader
Staffordshire County Council

APPENDIX E

Wolverhampton Cycle Map

Wolverhampton Cycle Map

with walking tasks and footpaths

CYCLE SIGNS EXPLAINED

- Cycle route ahead
- No cycling
- Route for cyclists only
- Route for cyclists and pedestrians only
- Segregated route for cyclists and pedestrians
- Cycle lane
- Cycle lane ahead
- Recommended route for cyclists on road
- Contra-flow cycle lane
- Direction sign for recommended cycle route
- National Route (54 & 81) Marker
- Cycle Parking Point

Traffic signals for cyclists, where a cycleway crosses the road for here a shared use crossing is provided

seen opposite

seen by button

SPECIFICATION OF CYCLE GRADING

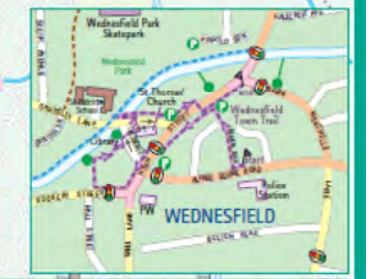
The map categorises the Wolverhampton highway network according to the degree of confidence and ability needed for cycling linked to levels of cycling competence prescribed by the National Cycle Training Standard.

The map uses a digital base map with all roads shaded according to the experience required to use them. There are four classifications of road. Whilst all classification is subjective, the following general criteria are applicable.

Easy — Riding Conditions — Difficult

Confidence and Ability

	Good for beginners. Low traffic levels, low speeds.
	Generally good conditions for all abilities. Minor roads, low traffic levels except at some periods during school runs and rush hour. Wide enough for overtaking at low speeds. Some lumpy or bad inconsistent.
	Conditions are not suitable for beginners. Busier roads, moderate speeds, national road conditions, some lumpy or bad inconsistent. Either low speeds and narrow, or wide with easy overtaking.
	Conditions are suitable for experienced confident cyclists. Commuter junctions, narrow/pinchpoints, faster and heavy traffic.



Your key to the map

Difficult cycle riding conditions

Easy cycle riding conditions

see specification of cycle grading panel above for further explanation

- Difficult junction
- Cycle lane offroad
- Cycle lane onroad
- Traffic restrictions with exemptions for cyclists
- Contraflow cycle lane
- National Cycle Network route
- Canal towpath suitable for cycling/walking
- Canal access point
- Shared use route (cycling permitted)
- Footpath (cycling prohibited) or track
- One way road
- Steep gradient (arrow points downhill)
- Walking trail
- Start or end of walking trail
- Place of interest or landmark
- Leisure centre
- Superstore or shopping centre
- School or place of education
- Hospital
- Cycle shop and repairs
- Cycle parking
- Cycle locker
- Zebra crossing
- Toucan crossing (pedestrians and cyclists share)
- Signalled pedestrian crossing (including traffic signals)
- Rail line and station
- Metro line and station

0 km 500 m 1 km 1500 m 2 km

0 miles 1/2 mile 1 mile

Digital Cartography by Pindar Graphics 01294 310100 www.pindargraphics.com

APPENDIX F

Trip Distribution Data

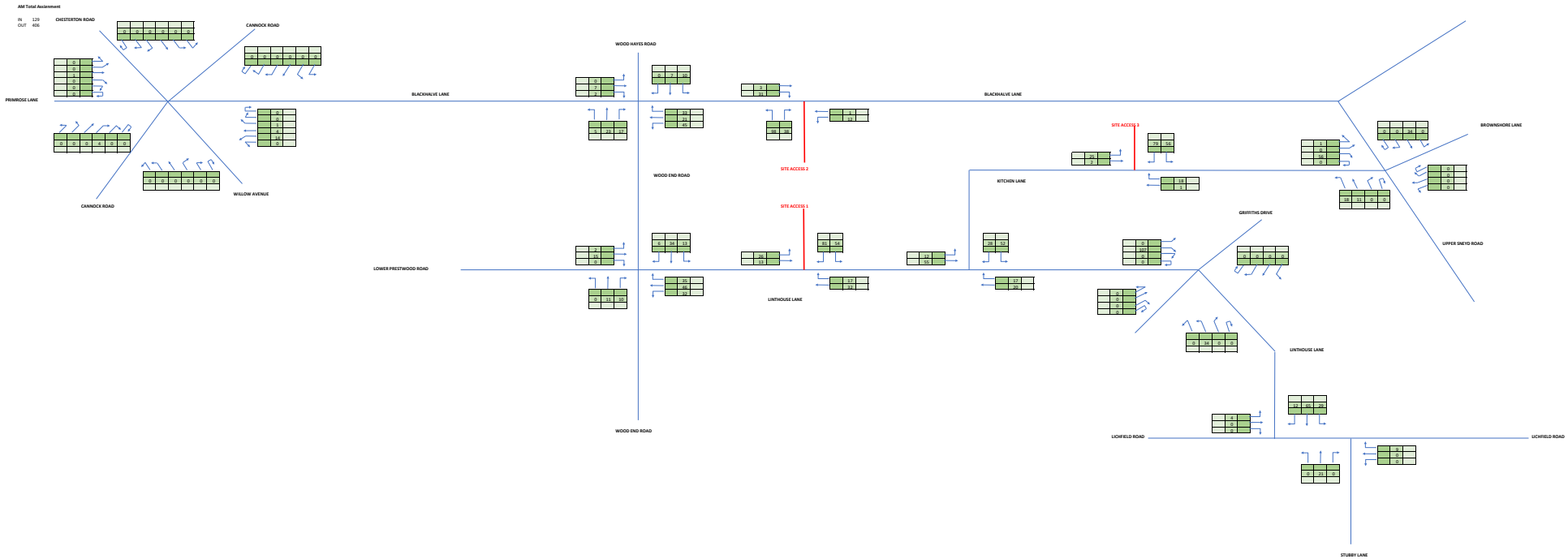
Workplace	All	Home	Underground	Train	Bus	Taxi	Motorcycle	Car_Driver	Car_Passenger	Bike	Foot	Other
Ashfield 010	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 002	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 003	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 006	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 007	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 008	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 009	4	0	0	0	1	0	0	3	0	0	0	0
Birmingham 010	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 013	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 017	1	0	0	0	1	0	0	0	0	0	0	0
Birmingham 020	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 021	3	0	0	0	0	0	0	3	0	0	0	0
Birmingham 022	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 025	2	0	0	0	0	0	0	2	0	0	0	0
Birmingham 028	6	0	0	0	0	0	0	5	1	0	0	0
Birmingham 029	4	0	0	0	0	0	0	3	0	1	0	0
Birmingham 030	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 031	3	0	0	0	0	0	0	3	0	0	0	0
Birmingham 033	2	0	0	0	0	0	0	2	0	0	0	0
Birmingham 036	3	0	0	0	0	0	0	3	0	0	0	0
Birmingham 039	3	0	0	0	0	0	0	3	0	0	0	0
Birmingham 040	2	0	0	0	0	0	0	1	1	0	0	0
Birmingham 043	4	0	0	0	0	0	0	4	0	0	0	0
Birmingham 047	3	0	0	0	0	0	0	3	0	0	0	0
Birmingham 049	1	0	0	0	1	0	0	0	0	0	0	0
Birmingham 050	32	0	6	4	1	0	0	21	0	0	0	0
Birmingham 051	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 052	3	0	0	0	0	0	0	3	0	0	0	0
Birmingham 053	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 060	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 064	1	0	0	1	0	0	0	0	0	0	0	0
Birmingham 066	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 070	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 071	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 074	2	0	0	0	0	0	0	2	0	0	0	0
Birmingham 078	4	0	0	0	0	0	0	4	0	0	0	0
Birmingham 079	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 081	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 087	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 094	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 096	2	0	0	0	0	0	0	2	0	0	0	0
Birmingham 097	2	0	0	1	0	0	0	1	0	0	0	0
Birmingham 102	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 108	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 113	2	0	0	0	0	0	0	2	0	0	0	0
Birmingham 118	2	0	1	0	0	0	0	1	0	0	0	0
Birmingham 123	1	0	0	0	0	0	0	1	0	0	0	0
Birmingham 130	3	0	0	0	0	0	0	3	0	0	0	0
Birmingham 134	2	0	0	0	0	0	0	2	0	0	0	0
Birmingham 135	9	0	0	5	0	0	0	4	0	0	0	0
Birmingham 136	7	0	0	2	0	0	0	5	0	0	0	0
Birmingham 137	9	0	0	1	0	0	0	7	1	0	0	0
Birmingham 138	32	0	1	9	0	0	1	17	1	0	2	1
Birmingham 139	4	0	0	0	1	0	0	3	0	0	0	0
Birmingham 140	4	0	0	0	0	0	0	3	1	0	0	0
Bolton 010	1	0	0	0	1	0	0	0	0	0	0	0
Bradford 039	1	0	0	0	0	0	0	1	0	0	0	0
Brent 015	1	0	0	0	1	0	0	0	0	0	0	0
Brent 017	1	0	0	0	0	0	0	1	0	0	0	0
Bromsgrove 005	1	0	0	0	0	0	0	1	0	0	0	0
Bromsgrove 011	1	0	0	0	0	0	0	1	0	0	0	0
Bury 016	1	0	0	0	0	0	0	1	0	0	0	0
Camden 028	1	0	0	0	0	0	0	1	0	0	0	0
Cannock Chase 002	2	0	0	0	0	0	0	2	0	0	0	0
Cannock Chase 007	2	0	0	0	0	0	0	1	1	0	0	0
Cannock Chase 008	2	0	0	0	0	0	0	2	0	0	0	0
Cannock Chase 009	3	0	0	0	0	0	0	3	0	0	0	0
Cannock Chase 010	5	0	0	0	0	0	1	4	0	0	0	0
Cannock Chase 011	9	0	0	0	1	0	0	7	1	0	0	0
Cannock Chase 012	35	0	0	0	1	0	0	33	1	0	0	0
Cannock Chase 013	10	0	0	0	0	1	0	7	2	0	0	0
Central Bedfordshire 026	4	0	0	0	0	0	0	4	0	0	0	0
Cheltenham 001	1	0	0	0	0	0	0	1	0	0	0	0
Cheshire West and Chester 035	3	0	0	0	0	0	0	3	0	0	0	0
Colchester 015	1	0	0	0	0	0	0	1	0	0	0	0
County Durham 045	2	0	0	0	0	0	0	2	0	0	0	0
Coventry 011	1	0	0	0	0	0	0	1	0	0	0	0
Coventry 019	2	0	0	0	0	0	0	2	0	0	0	0
Coventry 031	3	0	0	0	0	0	0	3	0	0	0	0
Coventry 036	2	0	0	0	0	0	0	2	0	0	0	0
Coventry 038	1	0	0	0	0	0	0	1	0	0	0	0
Dartford 006	1	0	0	0	0	0	0	1	0	0	0	0
Daventry 010	1	0	0	0	0	0	0	1	0	0	0	0
Derby 002	2	0	0	0	0	0	0	2	0	0	0	0
Derby 024	1	0	0	0	0	0	0	1	0	0	0	0
Derby 025	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 001	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 002	2	0	0	0	0	0	0	2	0	0	0	0
Dudley 004	3	0	0	0	1	0	0	2	0	0	0	0
Dudley 005	2	0	0	0	0	0	0	2	0	0	0	0
Dudley 006	8	0	0	0	1	0	0	7	0	0	0	0
Dudley 007	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 008	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 009	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 011	5	0	0	0	0	0	1	4	0	0	0	0
Dudley 012	7	0	0	0	0	0	0	6	1	0	0	0
Dudley 013	3	0	0	0	0	0	0	3	0	0	0	0
Dudley 015	10	0	0	1	0	0	0	7	2	0	0	0
Dudley 016	3	0	0	0	0	0	0	3	0	0	0	0
Dudley 017	2	0	0	0	0	0	0	2	0	0	0	0
Dudley 018	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 020	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 021	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 022	11	0	0	0	1	0	0	10	0	0	0	0
Dudley 033	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 034	2	0	0	0	0	0	0	2	0	0	0	0
Dudley 035	4	0	0	0	0	0	0	4	0	0	0	0
Dudley 037	1	0	0	0	0	0	0	1	0	0	0	0
Dudley 039	2	0	0	0	0	0	0	2	0	0	0	0
Dudley 043	1	0	0	0	0	0	0	1	0	0	0	0
Ealing 020	1	0	0	0	0	0	0	0	1	0	0	0
East Staffordshire 001	1	0	0	0	0	0	0	1	0	0	0	0
East Staffordshire 006	1	0	0	0	0	0	0	1	0	0	0	0
East Staffordshire 015	1	0	0	0	0	0	0	1	0	0	0	0
Fareham 002	1	0	0	0	0	0	0	1	0	0	0	0
Hambleton 007	2	0	0	0	0	0	0	0	0	0	2	0
Hambleton 009	2	0	0	0	0	0	0	0	1	0	0	1
Hart 011	1	0	0	0	0	0	0	0	0	0	1	0
Hillingdon 031	1	0	0	0	0	0	0	1	0	0	0	0
Islington 006	1	0	0	0	0	0	0	1	0	0	0	0
Islington 017	1	0	0	0	0	0	0	1	0	0	0	0

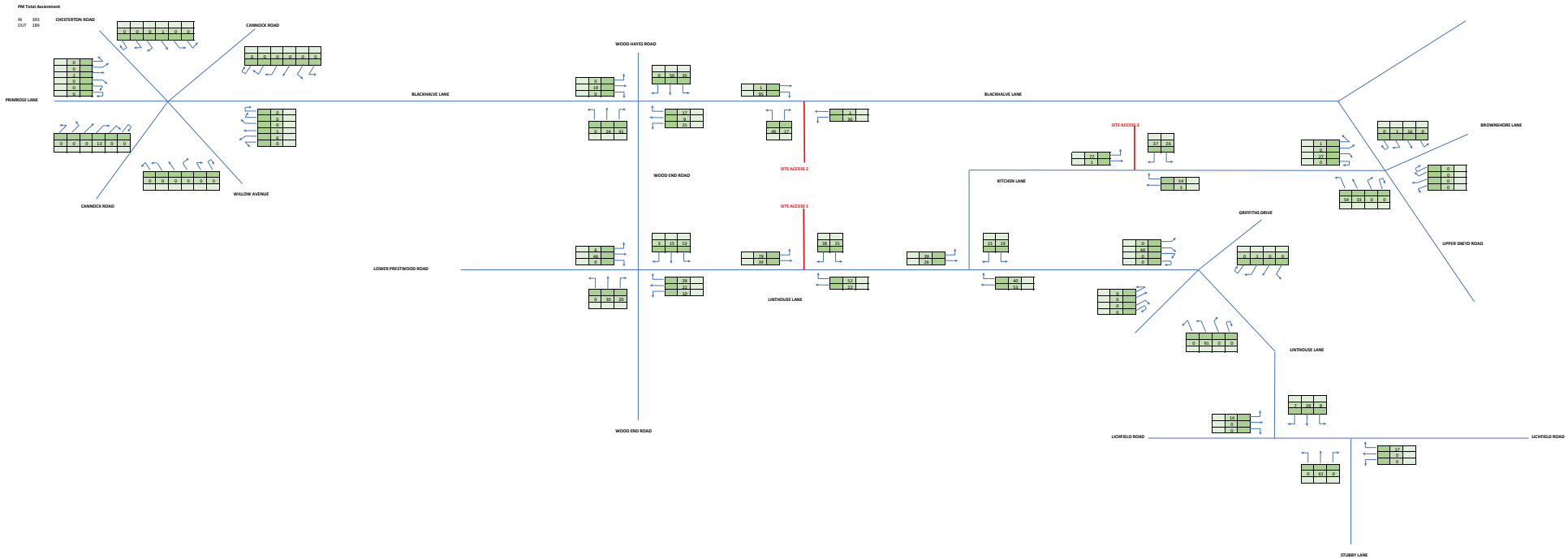
King's Lynn and West Norfolk 014	1	0	0	0	0	0	0	1	0	0	0	0
Leeds 030	1	0	0	0	0	0	0	1	0	0	0	0
Leeds 071	2	0	0	0	0	0	0	2	0	0	0	0
Leeds 111	1	0	0	1	0	0	0	0	0	0	0	0
Leicester 031	1	0	0	0	0	0	0	1	0	0	0	0
Leicester 039	1	0	0	0	0	0	0	1	0	0	0	0
Leicester 041	1	0	0	0	0	0	0	1	0	0	0	0
Lichfield 002	3	0	0	0	0	0	0	3	0	0	0	0
Lichfield 004	5	0	0	0	0	0	0	5	0	0	0	0
Lichfield 005	1	0	0	0	0	0	0	1	0	0	0	0
Lichfield 006	10	0	0	0	0	0	1	8	1	0	0	0
Lichfield 008	2	0	0	0	0	0	0	2	0	0	0	0
Lichfield 009	1	0	0	0	0	0	0	1	0	0	0	0
Lichfield 010	2	0	0	0	0	0	0	1	1	0	0	0
Lichfield 011	6	0	0	0	0	0	0	5	1	0	0	0
Lichfield 012	2	0	0	0	0	0	0	2	0	0	0	0
Liverpool 004	1	0	0	0	0	0	0	1	0	0	0	0
Liverpool 060	1	0	0	0	0	0	0	1	0	0	0	0
Luton 014	2	0	0	0	0	0	0	2	0	0	0	0
Malvern Hills 010	1	0	0	0	0	0	0	1	0	0	0	0
Manchester 047	1	0	0	0	0	0	0	1	0	0	0	0
Manchester 053	2	0	0	0	0	0	0	2	0	0	0	0
Melton 004	1	0	0	0	0	0	0	1	0	0	0	0
Milton Keynes 014	1	0	0	0	0	0	0	1	0	0	0	0
Newcastle-under-Lyme 010	1	0	0	0	0	0	0	1	0	0	0	0
Newcastle-under-Lyme 011	1	0	0	0	0	0	0	1	0	0	0	0
Newham 033	1	0	0	0	0	0	0	1	0	0	0	0
North Devon 005	1	0	0	0	0	0	0	0	0	0	1	0
North Warwickshire 002	2	0	0	0	0	0	0	2	0	0	0	0
North Warwickshire 004	6	0	0	0	0	0	0	6	0	0	0	0
North Warwickshire 006	5	0	0	0	0	0	0	5	0	0	0	0
North Warwickshire 007	1	0	0	0	0	0	0	1	0	0	0	0
North West Leicestershire 001	2	0	0	0	0	0	0	2	0	0	0	0
North West Leicestershire 003	1	0	0	0	0	0	0	1	0	0	0	0
North West Leicestershire 013	1	0	0	0	0	0	0	1	0	0	0	0
Nuneaton and Bedworth 011	1	0	0	0	0	0	0	1	0	0	0	0
Nuneaton and Bedworth 015	1	0	0	0	0	0	0	1	0	0	0	0
Plymouth 014	1	0	0	0	0	0	0	0	0	0	0	1
Preston 010	1	0	0	1	0	0	0	0	0	0	0	0
Redditch 004	1	0	0	0	0	0	0	1	0	0	0	0
Redditch 007	1	0	0	0	0	0	0	1	0	0	0	0
Reigate and Banstead 013	1	0	0	0	0	0	0	1	0	0	0	0
Sandwell 001	7	0	0	0	1	0	0	4	2	0	0	0
Sandwell 002	3	0	0	0	0	0	0	3	0	0	0	0
Sandwell 003	4	0	0	0	0	0	0	4	0	0	0	0
Sandwell 005	23	0	0	0	1	0	0	19	3	0	0	0
Sandwell 006	5	0	0	0	1	0	0	4	0	0	0	0
Sandwell 007	6	0	0	0	0	0	0	6	0	0	0	0
Sandwell 009	2	0	0	0	0	0	0	2	0	0	0	0
Sandwell 010	2	0	0	0	0	0	0	2	0	0	0	0
Sandwell 011	2	0	0	0	0	0	0	2	0	0	0	0
Sandwell 012	1	0	0	0	0	0	0	1	0	0	0	0
Sandwell 013	17	0	0	0	0	0	1	14	1	0	1	0
Sandwell 014	5	0	0	0	0	0	0	5	0	0	0	0
Sandwell 015	4	0	0	0	0	0	0	4	0	0	0	0
Sandwell 016	10	0	0	0	0	0	0	10	0	0	0	0
Sandwell 017	8	0	0	0	1	0	0	7	0	0	0	0
Sandwell 018	13	0	0	0	1	0	0	12	0	0	0	0
Sandwell 019	16	0	0	0	1	0	0	15	0	0	0	0
Sandwell 020	10	0	0	0	1	0	0	9	0	0	0	0
Sandwell 021	13	0	0	0	0	0	0	13	0	0	0	0
Sandwell 023	13	0	0	0	2	0	0	9	1	1	0	0
Sandwell 024	7	0	0	0	1	0	0	6	0	0	0	0
Sandwell 026	1	0	0	0	0	0	0	1	0	0	0	0
Sandwell 027	4	0	0	0	0	0	0	4	0	0	0	0
Sandwell 029	1	0	0	0	0	0	0	1	0	0	0	0
Sandwell 030	3	0	0	0	0	0	0	3	0	0	0	0
Sandwell 033	1	0	0	0	0	0	0	1	0	0	0	0
Sandwell 035	1	0	0	0	0	0	0	1	0	0	0	0
Sandwell 036	2	0	0	0	1	0	0	1	0	0	0	0
Sandwell 037	4	0	0	0	0	0	0	4	0	0	0	0
Sandwell 039	1	0	0	0	0	0	0	1	0	0	0	0
Sefton 012	1	0	0	0	0	0	0	0	1	0	0	0
Shropshire 015	3	0	0	0	0	0	0	3	0	0	0	0
Shropshire 016	2	0	0	0	0	0	0	1	1	0	0	0
Shropshire 020	1	0	0	1	0	0	0	0	0	0	0	0
Shropshire 027	5	0	0	0	0	0	0	5	0	0	0	0
Shropshire 033	2	0	0	0	0	0	0	1	0	0	1	0
Solihull 009	8	0	0	0	0	0	0	7	1	0	0	0
Solihull 011	1	0	0	0	0	0	0	1	0	0	0	0
Solihull 018	1	0	0	0	0	0	0	1	0	0	0	0
Solihull 019	2	0	0	0	0	0	0	2	0	0	0	0
Solihull 022	2	0	0	0	0	0	0	2	0	0	0	0
Solihull 026	2	0	0	0	0	0	0	2	0	0	0	0
Solihull 029	1	0	0	0	0	0	0	1	0	0	0	0
South Bucks 001	1	0	0	0	0	0	0	1	0	0	0	0
South Derbyshire 001	1	0	0	0	0	0	0	1	0	0	0	0
South Gloucestershire 011	1	0	0	0	0	0	0	1	0	0	0	0
South Ribble 008	1	0	0	0	1	0	0	0	0	0	0	0
South Ribble 014	1	0	0	0	0	0	0	1	0	0	0	0
South Somerset 010	3	0	0	0	3	0	0	0	0	0	0	0
South Staffordshire 001	7	0	0	0	0	0	0	7	0	0	0	0
South Staffordshire 002	21	0	0	0	0	1	0	17	3	0	0	0
South Staffordshire 003	2	0	0	0	0	0	0	2	0	0	0	0
South Staffordshire 004	13	0	0	0	0	0	0	12	1	0	0	0
South Staffordshire 005	6	0	0	0	0	0	0	6	0	0	0	0
South Staffordshire 006	29	0	0	0	1	1	0	26	1	0	0	0
South Staffordshire 007	24	0	0	0	1	2	0	18	3	0	0	0
South Staffordshire 008	9	0	0	0	0	0	0	9	0	0	0	0
South Staffordshire 009	2	0	0	0	0	0	0	2	0	0	0	0
South Staffordshire 010	1	0	0	0	0	0	0	1	0	0	0	0
South Staffordshire 011	1	0	0	0	0	0	0	1	0	0	0	0
South Staffordshire 012	6	0	0	0	0	0	0	6	0	0	0	0
South Staffordshire 013	2	0	0	0	0	0	0	2	0	0	0	0
South Staffordshire 014	1	0	0	0	0	0	0	1	0	0	0	0
Southwark 020	1	0	0	0	0	0	0	1	0	0	0	0
Stafford 003	2	0	0	0	0	0	0	1	0	0	0	1
Stafford 005	2	0	0	0	0	0	0	2	0	0	0	0
Stafford 006	2	0	0	0	0	0	0	2	0	0	0	0
Stafford 008	1	0	0	0	0	0	0	1	0	0	0	0
Stafford 010	7	0	0	0	0	0	0	7	0	0	0	0
Stafford 011	2	0	0	0	0	0	0	2	0	0	0	0
Stafford 016	2	0	0	0	0	0	0	0	2	0	0	0
Stockport 014	1	0	0	0	0	0	0	1	0	0	0	0
Stoke-on-Trent 001	1	0	0	0	0	0	0	1	0	0	0	0
Stoke-on-Trent 015	2	0	0	0	0	0	0	2	0	0	0	0
Stoke-on-Trent 016	2	0	0	0	0	0	0	2	0	0	0	0
Stoke-on-Trent 018	1	0	0	0	0	0	0	1	0	0	0	0
Stoke-on-Trent 032	1	0	0	0	0	0	0	1	0	0	0	0
Stoke-on-Trent 033	1	0	0	0	0	0	0	1	0	0	0	0
Suffolk Coastal 012	1	0	0	0	0	0	0	1	0	0	0	0
Tamworth 002	1	0	0	0	0	0	0	1	0	0	0	0

Tamworth 005	1	0	0	0	0	0	0	1	0	0	0	0
Telford and Wrekin 004	1	0	0	0	0	0	0	1	0	0	0	0
Telford and Wrekin 005	1	0	0	0	0	0	0	1	0	0	0	0
Telford and Wrekin 008	1	0	0	0	0	0	0	1	0	0	0	0
Telford and Wrekin 009	5	0	0	0	0	0	0	5	0	0	0	0
Telford and Wrekin 010	1	0	0	0	0	0	0	1	0	0	0	0
Telford and Wrekin 011	1	0	0	0	0	0	0	1	0	0	0	0
Telford and Wrekin 012	3	0	0	1	0	0	0	2	0	0	0	0
Telford and Wrekin 014	1	0	0	0	0	0	0	1	0	0	0	0
Telford and Wrekin 015	3	0	0	0	0	0	0	3	0	0	0	0
Telford and Wrekin 016	5	0	0	0	0	0	0	5	0	0	0	0
Telford and Wrekin 018	4	0	0	0	0	0	0	4	0	0	0	0
Telford and Wrekin 022	2	0	0	0	0	0	0	2	0	0	0	0
Telford and Wrekin 023	5	0	0	0	0	0	0	2	3	0	0	0
Torbay 013	1	0	0	0	0	0	0	1	0	0	0	0
Tower Hamlets 033	2	0	2	0	0	0	0	0	0	0	0	0
Trafford 014	2	0	0	0	0	0	0	2	0	0	0	0
Walsall 001	11	0	0	0	0	0	0	9	2	0	0	0
Walsall 002	8	0	0	0	1	0	0	7	0	0	0	0
Walsall 003	4	0	0	0	0	0	0	4	0	0	0	0
Walsall 004	12	0	0	0	2	0	0	9	1	0	0	0
Walsall 005	6	0	0	0	0	0	0	5	1	0	0	0
Walsall 006	18	0	0	1	2	0	0	13	0	0	2	0
Walsall 007	2	0	0	0	0	0	0	2	0	0	0	0
Walsall 008	30	0	0	2	2	0	0	24	1	1	0	0
Walsall 009	15	0	0	0	0	0	0	7	3	0	5	0
Walsall 010	12	0	0	0	0	0	0	12	0	0	0	0
Walsall 011	68	0	0	0	1	0	0	30	3	2	32	0
Walsall 012	29	0	0	0	7	0	0	19	2	0	1	0
Walsall 013	5	0	0	0	0	0	0	4	0	1	0	0
Walsall 014	47	0	0	0	1	0	0	18	1	0	26	1
Walsall 015	30	0	0	0	1	0	0	25	3	1	0	0
Walsall 016	12	0	0	0	1	0	0	10	1	0	0	0
Walsall 017	76	0	0	0	3	0	3	57	10	2	1	0
Walsall 018	52	0	0	0	3	0	0	43	3	0	3	0
Walsall 019	27	0	0	0	1	0	0	22	2	0	2	0
Walsall 020	66	0	0	0	2	0	2	48	5	4	5	0
Walsall 021	20	0	0	0	2	0	0	16	2	0	0	0
Walsall 022	4	0	0	0	0	0	0	4	0	0	0	0
Walsall 023	14	0	0	0	2	0	0	9	2	1	0	0
Walsall 024	21	0	0	0	3	0	0	17	1	0	0	0
Walsall 025	120	0	0	0	6	0	1	93	13	4	3	0
Walsall 026	92	0	0	0	5	2	1	71	11	0	1	1
Walsall 027	94	0	0	0	7	4	0	70	8	0	5	0
Walsall 028	1	0	0	0	0	0	0	1	0	0	0	0
Walsall 029	6	0	0	0	0	0	0	6	0	0	0	0
Walsall 030	137	0	0	0	29	2	1	87	12	3	3	0
Walsall 031	16	0	0	0	2	0	0	14	0	0	0	0
Walsall 032	1	0	0	0	0	0	0	1	0	0	0	0
Walsall 033	36	0	0	0	0	0	1	33	2	0	0	0
Walsall 034	11	0	0	0	0	0	0	10	1	0	0	0
Walsall 035	1	0	0	0	0	0	0	1	0	0	0	0
Walsall 036	7	0	0	0	1	0	0	6	0	0	0	0
Walsall 037	7	0	0	0	0	0	0	7	0	0	0	0
Walsall 038	14	0	0	0	1	0	1	9	0	2	1	0
Walsall 039	3	0	0	0	0	0	0	3	0	0	0	0
Waltham Forest 016	1	0	0	0	0	0	0	1	0	0	0	0
Warrington 024	1	0	0	0	0	0	0	1	0	0	0	0
Warwick 005	4	0	0	0	0	0	0	4	0	0	0	0
Warwick 012	2	0	0	0	1	0	0	1	0	0	0	0
Warwick 014	1	0	0	0	0	0	0	1	0	0	0	0
Westminster 013	1	0	0	0	0	0	0	1	0	0	0	0
Wirral 014	1	0	0	0	0	0	0	1	0	0	0	0
Wolverhampton 001	11	0	0	0	0	0	0	9	1	1	0	0
Wolverhampton 002	28	0	0	0	0	0	1	25	2	0	0	0
Wolverhampton 004	5	0	0	0	0	0	0	5	0	0	0	0
Wolverhampton 005	18	0	0	0	2	0	0	7	1	0	8	0
Wolverhampton 006	9	0	0	0	0	0	0	8	1	0	0	0
Wolverhampton 007	4	0	0	0	0	0	0	4	0	0	0	0
Wolverhampton 008	15	0	0	0	3	0	0	12	0	0	0	0
Wolverhampton 009	1	0	0	0	0	0	0	1	0	0	0	0
Wolverhampton 010	16	0	0	0	0	0	0	12	2	1	1	0
Wolverhampton 011	9	0	0	0	1	0	0	7	1	0	0	0
Wolverhampton 012	124	0	0	0	14	0	1	91	14	3	1	0
Wolverhampton 013	17	0	0	0	0	0	1	16	0	0	0	0
Wolverhampton 014	3	0	0	0	1	0	0	2	0	0	0	0
Wolverhampton 015	101	0	0	0	16	0	0	77	8	0	0	0
Wolverhampton 016	8	0	0	0	2	0	0	5	1	0	0	0
Wolverhampton 017	20	0	0	0	3	0	0	15	2	0	0	0
Wolverhampton 018	21	0	0	0	0	0	0	18	3	0	0	0
Wolverhampton 019	3	0	0	0	2	0	0	0	1	0	0	0
Wolverhampton 020	142	0	1	0	40	0	0	90	9	1	1	0
Wolverhampton 021	10	0	0	0	1	0	0	9	0	0	0	0
Wolverhampton 022	3	0	0	0	0	0	0	3	0	0	0	0
Wolverhampton 023	5	0	0	0	0	0	0	5	0	0	0	0
Wolverhampton 026	1	0	0	0	0	0	0	1	0	0	0	0
Wolverhampton 027	33	0	0	0	3	0	0	27	1	0	2	0
Wolverhampton 028	2	0	0	0	0	0	0	2	0	0	0	0
Wolverhampton 029	26	0	0	0	0	0	0	22	2	2	0	0
Wolverhampton 030	2	0	0	0	0	0	0	2	0	0	0	0
Wolverhampton 031	1	0	0	0	0	0	0	1	0	0	0	0
Wolverhampton 032	10	0	0	0	1	0	0	9	0	0	0	0
Wolverhampton 033	8	0	0	0	0	0	0	8	0	0	0	0
Wolverhampton 034	1	0	0	0	0	0	0	1	0	0	0	0
Wolverhampton 035	27	0	0	0	3	0	0	22	2	0	0	0
Worcester 003	1	0	0	0	0	0	0	1	0	0	0	0
Worcester 011	1	0	0	1	0	0	0	0	0	0	0	0
Wychavon 001	2	0	0	0	0	0	0	2	0	0	0	0
Wychavon 014	2	0	0	0	0	0	0	2	0	0	0	0
Wyre Forest 009	5	0	0	0	0	0	0	5	0	0	0	0
Wyre Forest 010	2	0	0	0	0	0	0	2	0	0	0	0

APPENDIX G

Development Traffic Diagrams


AM Total Assignment
IN 129
OUT 406
CHESTERTON ROAD
CANNOCK ROAD
PRIMROSE LANE
BLACKHALVE LANE
WILLOW AVENUE
CANNOCK ROAD
WOOD HAYES ROAD
WOOD END ROAD
SITE ACCESS 2
SITE ACCESS 1
LINTHOUSE LANE
WOOD END ROAD
LOWER PRESTWOOD ROAD
BLACKHALVE LANE
SITE ACCESS 3
KITCHEN LANE
GRIFFITHS DRIVE
BROWNSHORE LANE
UPPER SNEYD ROAD
LINTHOUSE LANE
LICHFIELD ROAD
LICHFIELD ROAD
STUBBY LANE


PM Total Assignment
IN 393
OUT 189
CHESTERTON ROAD
CANNOCK ROAD
PRIMROSE LANE
CANNOCK ROAD
WILLOW AVENUE
BLACKHALVE LANE
WOOD HAYES ROAD
WOOD END ROAD
SITE ACCESS 2
SITE ACCESS 1
LOWER PRESTWOOD ROAD
LINTHOUSE LANE
WOOD END ROAD
BLACKHALVE LANE
SITE ACCESS 3
KITCHEN LANE
GRIFFITHS DRIVE
LINTHOUSE LANE
LICHFIELD ROAD
LICHFIELD ROAD
STUBBY LANE
BROWNSHORE LANE
UPPER SNEYD ROAD

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