St Helens Council

BOLD FOREST GARDEN SUBURB TRANSPORT REVIEW

AUGUST 2019

CONFIDENTIAL

St Helens Council

BOLD FOREST GARDEN SUBURB TRANSPORT REVIEW

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INTRODUCTION

1 INTRODUCTION

1.1 WSP has been commissioned by St Helens Council to carry out a transport review of the proposed Bold Forest Garden Suburb, which will form part of the supporting evidence for the inclusion of the site in the St Helens Local Plan 2020-2035. The Local Plan will be submitted to the Planning Inspectorate in Autumn 2019.

1.2 The Local Plan identifies Bold as a key location for new housing development. The 132.86-hectare site has a proposed development capacity of 2,988 units, and would likely be supported by facilities and amenities such as a school and a neighbourhood centre.

1.3 This Transport Review forms the first stage in a multi-stage masterplanning process, and the intention is that a Supplementary Planning Document (SPD) will be adopted in late 2021, following a more detailed viability, infrastructure and development options assessment.

1.4 The Council aspires to create a unique and innovative garden suburb that will be designed around open green space and a sustainable transport system in order to create a residential area that differs from a typical housing estate. The development must be consistent with the vision, aims, objectives and policies of the 2017 Bold Forest Park Area Action Plan (BFPAAP). Connections to public transport and active travel will be placed at the core of the masterplan.

1.5 Figure 1-1 shows the location of the area of land that would fall under the proposed allocation. This area currently lies within the Green Belt south of St Helens and would need to have such designation repealed before the site can be allocated.

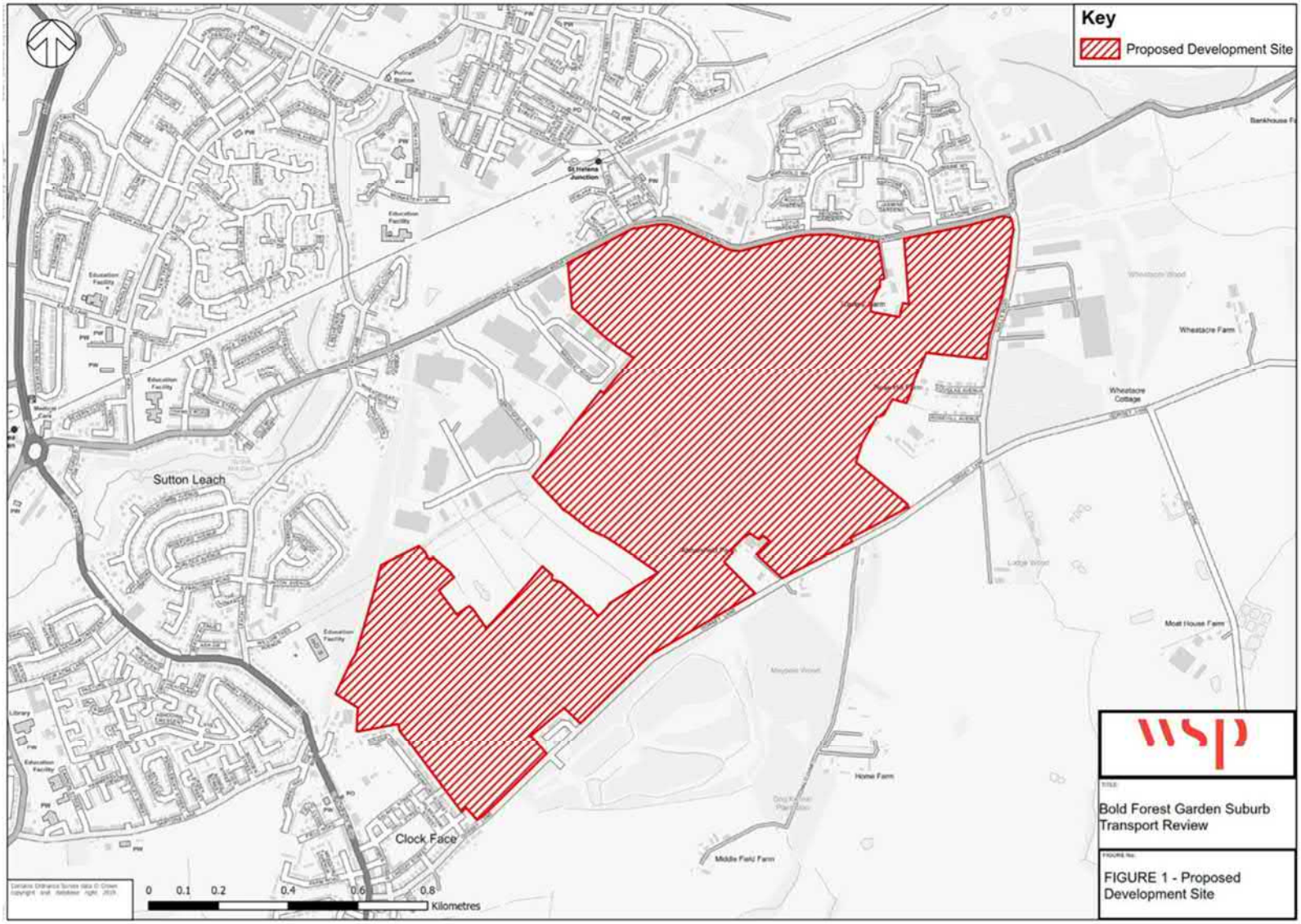
1.6 The transport review consisted of two key elements:

- The development of a spreadsheet-based assessment tool to examine the likely trip generation, distribution and assignment on the local highway network, based on a core and alternative scenario; and
- The preparation of a study report setting out the findings of a site visit and a review of local transport infrastructure, identifying likely masterplanning design requirements and identifying strategic network improvements.

1.7 In addition, consideration has been given to wider transport initiatives that could support development of the site, including the mass transit system currently being investigated by Warrington Council.

1.8 The report concludes with a summary of findings and next steps.

Figure 1-1 - Proposed Development Site



2

BOLD FOREST SPREADSHEET MODEL

2 BOLD FOREST SPREADSHEET MODEL

Overview

2.1 An Excel-based spreadsheet model has been developed to assist in testing the potential impact of the Bold Forest Garden Village development on the local and wider highway network. The spreadsheet has been designed such that the Council can easily amend various assumptions to understand the impact of changing the development mix, build out rate and modal split on the highway network. For the purposes of this report, a core scenario and an alternative scenario have been tested as a starting point.

2.2 The model uses base data from the 2017 St Helens SATURN model combined with TRICS, TEMPro and 2011 Census data to provide a tool that can be used to test the percentage impact of varying the quantum of development and modal split on each junction arm. It should be noted that TEMPro is based on the National Trip End Model (NTEM), which includes dwellings and employment projections at a local authority level rather than at an individual development level. Therefore the forecast traffic data used in the spreadsheet model does not specifically reflect potential interactions with traffic movements that may be associated with other Local Plan site allocations.

Network Diagram

2.3 A network diagram was created which represents the highway network surrounding the Bold Forest site (see **TF1** in **Appendix A**). This shows turning movements at the following junctions:

Junction A – M62 Junction 7 – Signalised Gyratory

Junction B – A570 St Helens Linkway / Elton Head Road – Signalised Crossroads

Junction C – Marshalls Cross Road / Robins Lane / Scorecross – Roundabout

Junction D – Marshalls Cross Road / Elton Head Road – Signalised Junction

Junction E – Marshalls Cross Road / Mill Lane /Clock Face Road / Chester Lane – Roundabout

Junction F – Gorsey Lane / Clock Face Road – Priority Junction

Junction G – B5204 Reginald Road / Mill Lane / Leach Lane – Double mini roundabout

Junction H – B5204 Reginald Road / Helena Road – Priority Junction

Junction I – B5204 Reginald Road / Bold Road / Neills Road – Priority Junction

Junction J – Neills Road / Gorsey Lane – Priority Junction

Junction K – Gorsey Lane / Clay Lane – Priority Junction

Junction L – M62 Junction 8 – Signalised Gyratory

2.4 For the purposes of this study, three access points have been chosen:

- A ‘gateway’ to the development is suggested at Junction H (B5204 Reginald Road / Helena Road). This would involve the creation of a signalised crossroads in place of the priority junction.
- Two further access points have been chosen at Gorsey Lane (Junction M) and Clock Face Road (Junction N).

2.5 There are 8 entry/exit nodes in the perimeter of the study area which traffic has been distributed to/from, as follows:

- Node 1 – A570 to/from St Helens Town Centre;
- Node 2 – To/from Newton-le-Willows;
- Node 3 – M62 to/from east;
- Node 4 – A49 to/from Warrington;
- Node 5 – A569 to/from Warrington;
- Node 6 – A557 to/from Halton;
- Node 7 – M62 to/from west; and
- Node 8 – To/from Prescot.

Trip Generation

2.6 The TRICS database (version 7.6.2) has been interrogated to obtain trip rates for the following land uses, in accordance with the proposed development mix provided by the Council:

- Houses – privately owned;
- Flats – privately owned; and
- Affordable local authority housing.

2.7 The following selections were made when interrogating the TRICS database:

- Sites in England, Wales and Scotland excluding Greater London;
- Edge of town centre, suburban area or edge of town centre sites only;
- Number of houses 1000 – 500; number of apartments 50 – 200; and
- Multimodal trip rates for vehicles, pedestrians, cyclists and public transport users.

2.8 The trip rates used to test the agreed scenarios as part of this transport review are provided in the TRICS tabs. These were used to calculate the number of expected trips based on the quantum of development and development mix, which have been manually input to the trip generation tab. The trip rates and the quantum of development and development mix can be updated to test further scenarios.

2.9 The Trip Generation tab shows multimodal trip rates and the resulting numbers of pedestrian, cyclists and public transport users that could be expected. It also allows for the future adaptation of the model to show multimodal distribution; at present only vehicles are distributed on the network.

Trip Distribution and Assignment

2.10 The trips are distributed on the network according to the 2011 Census data for two Middle Layer Super Output Areas (MSOAs): St Helens 020 and St Helens 022. These output areas were chosen as they are in the immediate vicinity of the site and give an appropriate mix of housing types. The Census data gives the place of work and method of travel to work, from which assumptions are made regarding route choice – in this case the quickest route (based on journey times from Google) is presumed. Where two routes are similar in time and distance, a 50/50 split is assumed.

2.11 The trips are then assigned to the network based on these routes. The 'Trip Assignment' tab shows the turns taken to and from each entry and exit node to each of the proposed access points, with the trips distributed by percentage according to the distribution obtained from the Census data.

2.12 There are also a proportion of internal trips which are not distributed onto the network – this includes journeys within the output areas and trips to and from any non-residential development that will support the garden suburb such as schools, shops and other amenities.

Baseline Data

2.13 Baseline data has been obtained from the St Helens SATURN model developed by WSP. The model is based on data collected in 2017.

2.14 The relevant data for the study area has been extracted for the AM Peak (08:00 – 09:00) and the PM Peak (17:00-18:00), with flows shown in Passenger Car Units (PCUs) on the '2017 SATURN' diagrams.

Future Year Data

2.15 TEMPro growth factors have been applied to the 2017 SATURN data to obtain a baseline for 2035.

2.16 No localised growth figure is available for 2049 and therefore an estimation has been made by taking the percentage change from the national growth factor from 2040 to 2049 and applying it to the localised growth figure from 2040.

2.17 It should be noted that when considering future year scenarios that are 16 and 30 years into the future, certain wider assumptions about technology, car use and policy are made which may well be very different to actual trends. The further into the future we try to predict, the less accurate our assumptions will be.

Scenario Testing

2.18 Four scenarios have been tested using the spreadsheet model for the purposes of this initial transport review. The first two scenarios use a travel to work modal split as per the 2011 Census data and two further scenarios assume a significant shift towards sustainable modes of transport, in recognition of the level of ambition for the site and its setting as a garden suburb.

<u>2011 Census Modal Split Scenario:</u>

- 2035 with 500 units built out – modal split unchanged from 2011 – 30% affordable housing.
- 2049 assuming a build out rate of 500 units by 2035 and 80 units per year from 2035-2049, giving a total of 1,620 units – modal split unchanged from 2011 and 30% affordable housing.

<u>Modal Shift Scenario</u>

- 2035 with 500 units built out – modal shift towards sustainable modes assumed.
- 2049 presuming a build out rate of 80 per year to 1620 units – modal shift towards sustainable modes assumed.

Modal Split

The default travel to work modal split has been derived from 2011 Census data. From this a future scenario was derived, where an optimistic 35% modal shift towards sustainable travel is achieved. A summary of the assumed travel to work modal split in each scenario is shown in Table 2-1.

Table 2-1 - Modal Split Scenarios

Scenario	All	WfH	Metro	Train	Bus	Taxi	MC	Car Driver	Car Passenger	Cycle	Walk	Other
2011 Census	100%	0%	0%	2%	2%	1%	1%	71%	11%	1%	7%	4%
Modal Shift	100%	3%	6%	12%	10%	1%	1%	39%	8%	9%	7%	4%
Overall Modal Shift	-	+3%	+6%	+10%	+8%	0%	0%	-32%	-3%	+8%	0%	0%

2.19 Although optimistic, it is considered that this level of modal shift can be achieved through the creation of an innovative development that puts sustainability travel at its core. A 10% increase in rail passengers could be achieved by providing high frequency bus services between the site and St Helens Junction and Lea Green, where improvements to services and infrastructure will drive modal shift.

2.20 In the 5-year period from 2013 to 2018, rail patronage at Lea Green increased by 21%. The introduction of Transpennine Express services as part of the May 2018 timetable change provides fast connections to Liverpool, Manchester and beyond, and is expected to lead to a further increase in patronage.

2.21 Should the proposed development at Bold Forest be connected to the Warrington mass transit system that is currently being considered by Warrington Council, it could reasonably be expected that 6% of car travellers could shift to metro, based on the 12% of people in MSOA St Helens 020 and 022 who work in Warrington.

2.22 It has been assumed that bus patronage could increase by up to 8%. This is based on the success of the local Bus Alliance and improvements arising from the LCR bus strategy, which are having a positive impact on bus patronage.

2.23 Walking to work is expected to remain the same proportion of mode share, given the distances between the site and employment areas.

2.24 Cycling propensity is currently between 0% and 15% in St Helens 020 and 022. The government target is for this to increase to between 7% and 9%; therefore an 8% increase in cycling has been assumed. This will be achieved by embedding high-quality cycle infrastructure within the development itself and at key trip attractors, connected by high-quality cycle routes.

Results – Summary of Percentage Impact

2.25 The development trips were added to the future year baseline data to obtain 2035 and 2049 base plus development flows. From this, it was possible to work out the percentage impact per arm at each of the junctions on the network. A summary of the results is given below with full percentage impacts shown on **TF2-TF9** in **Appendix A**.

Junction A: M62 Junction 7 – Signalised Gyratory	
With 2011 Census Modal Split	
2035	No significant impact – max 2% A570 (N) in AM
2049	A570 (N) 7% AM, 4% PM
With Future Modal Shift Towards Sustainable Travel	
2035	No significant impact – max 1% A570 (N) in AM
2049	A570 (N) 4% AM, 2% PM

Junction B: A570 St Helens Linkway / Elton Head Road – Signalised Crossroads	
With 2011 Census Modal Split	
2035	Elton Head Rd (E): 12% AM, 7% PM, others 2% or below
2049	Elton Head Rd (E): 37% AM, 23% PM; Elton Head Rd (W): 3% AM, 6% PM
With Future Modal Shift Towards Sustainable Travel	
2035	Elton Head Rd (E): 7% AM, 4% PM, others 2% or below
2049	Elton Head Rd (E): 21% AM, 13% PM; Elton Head Rd (W): 1% AM, 3% PM

Junction C: Marshalls Cross Road / Robins Lane / Scorecross	
With 2011 Census Modal Split	
2035	Marshalls Cross Rd: 5% AM, 3% PM, others 2% or below
2049	Marshalls Cross Rd: 18% AM, 10% PM; Scorecross: 7% AM, 12% PM
With Future Modal Shift Towards Sustainable Travel	
2035	Marshalls Cross Rd: 3% AM, 2% PM, others 2% or below
2049	Marshalls Cross Rd: 10% AM, 4% PM; Scorecross: 4% AM, 7% PM

Junction D: Marshalls Cross Road / Elton Head Road – Signalised Junction	
With 2011 Census Modal Split	
2035	Marshalls Cross Rd (S): 11% AM, 7% PM; Elton Head Rd: 6% AM, 12% PM
2049	Marshalls Cross Rd (S): 29% AM, 15% PM; Elton Head Rd: 14% AM, 25% PM
With Future Modal Shift Towards Sustainable Travel	
2035	Marshalls Cross Rd (S): 2% AM, 4% PM; Elton Head Rd: 3% AM, 6% PM
2049	Marshalls Cross Rd (S): 19% AM, 11% PM; Elton Head Rd: 9% AM, 23% PM

Junction E: Marshalls Cross Road / Mill Ln /Clock Face Rd / Chester Lane - Roundabout	
With 2011 Census Modal Split	
2035	Mill Ln: 4% AM, 3% PM; Clock F' Rd: 7% AM, 4% PM; Marshalls Cross 2% AM, 4% PM
2049	Mill Ln: 23% AM, 18% PM; CF' Rd: 39% AM, 20% PM; Marshalls Cross 12% AM, 21% PM
With Future Modal Shift Towards Sustainable Travel	
2035	Mill Ln: 5% AM, 5% PM; CF' Rd: 6% AM, 4% PM; Marshalls Cross 2% AM, 3% PM
2049	Mill Ln: 12% AM, 10% PM; Clock F' Rd: 22% AM, 11% PM; Marshalls Cross 7% AM, 11% PM

Junction F: Gorsey Lane / Clock Face Road – Priority Junction
With 2011 Census Modal Split
Clock Face Rd (N): 10% AM, 12% PM; Gorsey Lane: 16% AM, 10% PM
Clock Face Rd (N): 30% AM, 35% PM; Gorsey Lane: 48% AM, 31% PM
With Future Modal Shift Towards Sustainable Travel
Clock Face Rd (N): 5% AM, 6% PM; Gorsey Lane: 9% AM, 6% PM
Clock Face Rd (N): 16% AM, 19% PM; Gorsey Lane: 26% AM, 17% PM

Junction G: B5204 Reginald Rd / Mill Lane / Leach Lane – Double Mini Roundabout	
With 2011 Census Modal Split	
2035	Reginald Road: 9% AM, 4% PM; Mill Lane: 4% AM, 9% PM
2049	Reginald Road: 26% AM, 11% PM; Mill Lane: 12% AM, 28% PM
With Future Modal Shift Towards Sustainable Travel	
2035	Reginald Road: 5% AM, 2% PM; Mill Lane: 2% AM, 5% PM
2049	Reginald Road: 14% AM, 6% PM; Mill Lane: 7% AM, 15% PM

Junction H – B5204 Reginald Road / Helena Road – Priority Junction	
With 2011 Census Modal Split	
2035	Reginald Road: 4% AM, 9% PM; Bold Road: 2% AM, 3% PM. New access point
2049	Reginald Road: 12% AM, 28% PM; Bold Road: 5% AM, 9% PM. New access point
With Future Modal Shift Towards Sustainable Travel	
2035	Reginald Road: 2% AM, 5% PM; Bold Road: 1% AM, 2% PM New access point
2049	Reginald Road: 7% AM, 16% PM; Bold Road: 3% AM, 5% PM. New access point

Junction I – B5204 Reginald Road / Bold Road / Neills Road– Priority Junction	
With 2011 Census Modal Split	
2035	Travers Entry: 5% AM; Neills Road 3% PM; others 2% or below
2049	Travers Entry: 15% AM, 7% PM; Neills Road: 5% AM, 8% PM
With Future Modal Shift Towards Sustainable Travel	
2035	Travers Entry: 3% AM; others 2% or below
2049	Travers Entry: 8% AM, 4% PM; Neills Road: 3% AM, 4% PM

Junction J – Neills Road / Gorsey Lane – Priority Junction	
With 2011 Census Modal Split	
2035	Gorsey Ln (E): 6% AM, 7% PM; Gorsey Ln (W): 13% AM, 7% PM; Neills Road: 3% AM
2049	Gorsey Ln (E): 17% AM, 22% PM; Gorsey Ln (W): 41% AM, 21% PM; Neills Road: 10% AM
With Future Modal Shift Towards Sustainable Travel	
2035	Gorsey Ln (E): 7% AM, 4% PM; Gorsey Ln (W): 3% AM, 4% PM; Neills Road: 2% AM
2049	Gorsey Ln (E): 22% AM, 12% PM; Gorsey Ln (W): 9% AM, 12% PM; Neills Road: 6% AM

Junction K – Gorsey Lane / Clay Lane – Priority Junction	
With 2011 Census Modal Split	
2035	Gorsey Ln: 19% AM, 8% PM; Clay Ln (N) 9% AM, 9% PM; Clay Ln(S) 5% AM, 7% PM
2049	Gorsey Ln: 57% AM, 24 PM; Clay Ln (N) 26% AM, 28% PM; Clay Ln(S) 16% AM, 22% PM
With Future Modal Shift Towards Sustainable Travel	
2035	Gorsey Ln: 10% AM, 4% PM; Clay Ln (N) 5% AM, 5% PM; Clay Ln (S) 3% AM, 4% PM
2049	Gorsey Ln: 32% AM, 13% PM; Clay Ln (N) 14% AM, 16% PM; Clay Ln (S) 9% AM, 12% PM

Junction L – M62 Junction 8 – Signalised Gyratory	
With 2011 Census Modal Split	
2035	Clay Lane 9% AM, 4% PM; all others 2% or below
2049	Clay Lane 28% AM, 12% PM
With Future Modal Shift Towards Sustainable Travel	
2035	Clay Lane 9% AM,4% PM; all others 2% or below
2049	Clay Lane 16% AM, 7% PM

Initial Findings

2.26 The percentage impact gives an indication of which junctions are expected to experience a significant increase in traffic volume in the future year scenarios compared to the 2017 baseline flows. The level of impact will depend on how well each junction currently performs and how much capacity there is to accommodate future development traffic.

2.27 It is clear that traffic heading to and from the M62 Junction 8 is forecast to have a significant impact on the Neills Road/Gorsey Lane priority junction and the Bold Road/Travers Entry/Neills Road priority junction, both of which are observed to have visibility issues.

2.28 Traffic heading to and from the M62 junction 7 is forecast to have a significant impact on the Marshalls Cross Road/Mill Lane/Clock Face Road/Chester Lane roundabout as well as the signalised junction with Elton Head Road at Lea Green station.

2.29 Traffic heading to and from St Helens town centre also contributes to the impact at these junctions, as well as the Marshalls Cross Road/Robins Lane/Scorecross roundabout junction.

2.30 A modal shift of 35% away from vehicle borne trips could play a significant role in reducing the potential impact of the development traffic on the local network. In 2035, the impact is typically reduced by between 1% and 5% at each junction; and in 2049 the impact is typically reduced by between 5% and 10% at each junction.

2.31 In order to determine exactly how significant the impact of development traffic could be, it is recommended that local junction modelling using ARCADY/PICADY/LinSIG is carried out, to determine a baseline and future ratio of flow to capacity at each junction.

3

EXISTING TRANSPORT CONDITIONS

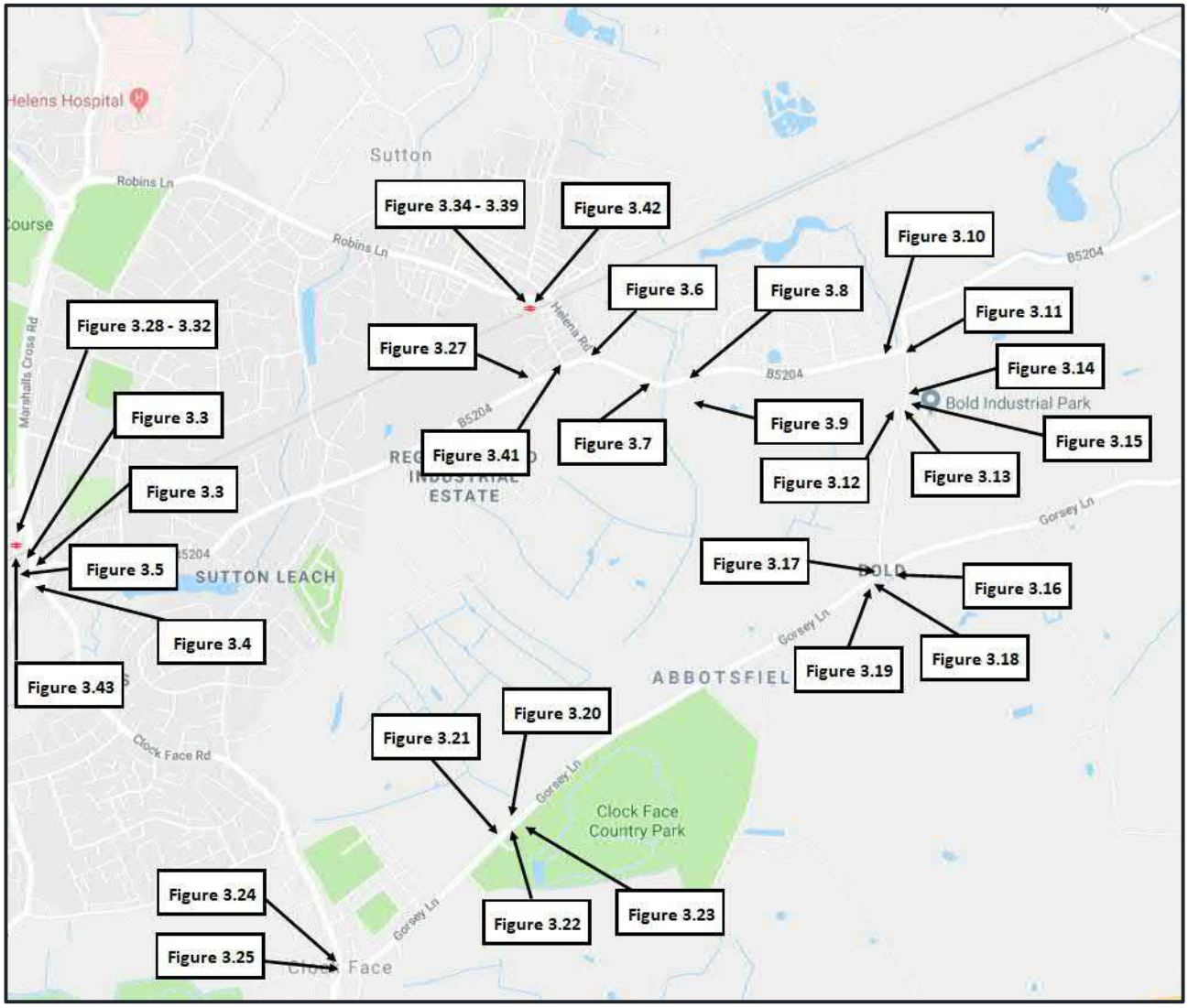
3 EXISTING TRANSPORT CONDITIONS

Overview

3.1 Existing transport conditions were examined via a desktop study and a site visit, which was carried out on 01/07/19 between 2pm and 5pm. The main aims of the site visit were to look at the existing transport conditions and facilities surrounding the proposed development site, as well as to identify potential access points to the proposed development site.

3.2 The map provided in Figure 3-1 indicates the location of where each photograph was taken.

Figure 3-1 - Photograph Locations



Highways

Linkway/Fords/Pub/Ravenhead Retail Park Roundabout

3.3 At this roundabout junction the traffic was backed up around the roundabout and some exits were blocked as a result of significant queuing. The multiple lane roundabout was particularly busy at the time of the site visit which could have been due to the ongoing roadworks surrounding the retail park.

Route from M62 Junction 7 (via linkway and Eton Head Road)

3.4 Along this section of the network the speed limit is 70mph, however, due to the construction of a roundabout, the speed limit is restricted to 40mph through the current road works section.

Bull & Dog Roundabout

3.5 The roundabout located near the Bull & Dog Pub has wide multiple lanes which create good visibility for both drivers and pedestrians (Figure 3-2). Initial observations suggest that the lanes have already undergone some width reduction due to white lines being put in place in order to deter vehicles from using the full width (Figure 3-3).

3.6 During the site visit no signalised crossing was observed for pedestrians; the only form of crossing which was provided was a small island in the middle of each arm of the roundabout which consisted of worn tactile paving (Figure 3-4).

3.7 The car park at the Bull & Dog Pub was identified as being underutilised and there were no visible signs displayed stating that parking is only for customers (Figure 3-5).

Figure 3-2 - Wide lanes at the roundabout near the Bull & Dog Pub

Figure 3-3 - White lines in place to reduce the width of the lanes

Figure 3-4 - Pedestrian crossing at the roundabout - dropped kerbs but no tactile paving

Figure 3-5 - Underutilised Car Park at the Bull & Dog Pub

Reginald Road

3.8 Along Reginald Road a housing development was identified adjacent to the proposed development site. There were a number of side streets observed leading to residential sites and the pavements with wide with grass verges.

St Helena's Road

3.9 During the site visit, Helena's Road was identified as a desire line from St Helens Junction Station to the proposed development site and can therefore be considered as a key gateway into the site. Whilst there was tactile paving in place at crossing points for pedestrians (Figure 3-6), there was no signalised crossing for either pedestrians or cyclists.

Figure 3-6 - Pedestrian crossing on Helena's Road

Bold Road

3.10 The speed limit along Bold Road was identified as 40mph (Figure 3-7), which seems high as the road is surrounded by residential properties. There was a public footpath observed which runs directly across the proposed development site (Figure 3-8 & 3-9). The residential properties adjacent to the proposed development site are set back from the edge of the road with railings acting as a physical barrier between the traffic and the residential area.

Figure 3-7 - Bold Road – 40mph Speed Limit

Figure 3-8 - Footpath across Proposed Development

Figure 3-9 - Public Footpath Entrance

Bold Road/Neill's Road Junction

3.11 The right turn from Bold Road to Neill's Road is difficult due to the poor visibility from the overgrown vegetation (Figure 3-10), even though the junction consists of wide lanes (Figure 3-11). It is considered that there is sufficient space for a mini roundabout in this location.

Figure 3-10 - Poor visibility on the bend due to overgrown vegetation

Figure 3-11 - Wide road with sufficient space for a mini roundabout

Neill's Road

3.12 Neill's Road is a narrow road with very narrow footways that are hindered by overgrown vegetation. The overgrown vegetation, coupled with bends in the road, lead to poor visibility for drivers (Figure 3-12). The speed limit was identified as 40mph. An industrial site is located on Neill's Road with access points to the site as well as to the car park servicing the industrial site (Figure 3-13, 3-14 & 3-15). Large HGVs were observed driving along Neill's Road to access the industrial site.

Figure 3-12 - Poor visibility due to overgrown vegetation and bends

Figure 3-13 - Industrial Site and Car Park Entrance

Figure 3-14 - Industrial Site Entrance

Figure 3-15 - Industrial Site Car Park

Neill's Road/Gorsey Lane Junction

3.13 A private road was identified straight ahead from Neill's Road which was an access point to a farm (Figure 3-16), potentially having tractors or large vehicles moving in/out of here. There was poor visibility at the junction due to overgrown vegetation (Figure 3-17) and there were signs for improvements to Burtonwood Highways (Figure 3-18). Gorsey Lane was observed as a narrow road with no footpath present along the north side of the road (Figure 3-19).

Figure 3-16 - Private Access to Farm

Figure 3-17 - Poor visibility with overgrown vegetation and tight bend

Figure 3-18 - Signs for improvements to Burtonwood Highways

Figure 3-19 - Narrow lanes and footway on south side; no footway on north side

Gorsey Lane

3.14 There was no footway along the north side of the road for the majority of its length (Figure 3-20). There was a footpath identified along a section of the north side of Gorsey Lane adjacent to a new housing estate; however, the footpath stops at the edge of the gardens of these properties (Figure 3-21). There is tactile paving in place at a crossing point near the newly developed houses adjacent to Clock Face Colliery Country Park (Figure 3-22 & 3-23). There was an access point identified for the riding centre along Gorsey Lane. There is the potential to have an access point from Gorsey Lane that connects directly through the development site to Helena's Road. The speed limit of the road was observed to be 50mph.

Figure 3-20 - Footway on south side

Figure 3-21 - Short north side footway adjacent to new housing development

Figure 3-22 - New crossing with tactile paving

Figure 3-23 - Clock Face Colliery Country Park adjacent to proposed development site

Gorsey Lane/Clock Face Road Junction

3.15 Difficulties in turning right from Gorsey Lane onto Clock Face Road due to high traffic levels were noted (Figure 3-24). Dropped kerbs with tactile paving were in place for pedestrians to cross the junction. The road is wide with good visibility (Figure 3-25).

Figure 3-24 - Difficulties turning right

Figure 3-25 - Wide lane with sufficient space for a cycle lane

Clock Face Road

3.16 On-street parking outside local properties means that the effective highway width is narrow. However, footways are wide, with tactile paving present on the side streets. There was a grass verge running parallel to the pedestrian footpath as far as the residential houses with some vegetation planted.

Clock Face and Marshalls Cross Road

3.17 The speed limit was 40mph with a mini roundabout present. There was an Aldi supermarket and bus lane present.

Bus Infrastructure

3.18 The proposed development site is currently served by a number of bus services (Figure 3-26):

- 32A
- 140
- 141
- 920

3.19 These services link the proposed development site with St Helens Junction Station, St Helens Town Centre and Newton-le-Willows. However, the frequency of each bus varies from 10 minutes at peak times (32A), 60 minutes at peak times (141) and 2 return journeys during the day and 1 return journey during the evening (920), as shown in Table 3-1.

Table 3-1 - Bus Routes Surrounding the Proposed Development Site

Bus Number	Route	Start/End of Service	Monday-Friday			Saturday		Sunday
			Peak Frequency	Day	Evening	Day	Evening	Day
32/32A	Clinkham Wood – Haresfinch – St Helens – Peasley Cross – St Helens Hospital – Sutton Manor – Clock Face	05:46-23:17	10 20 20	10 20 20	30 30 30	15 30 30	30 30 30	30 30 30
140	St Helens Bus Station – Parr – St Helens Junction – Clock Face – Bold – Bold Heath – Lingley Green Triangle	09:03-23:03	60	60	60	60	60	60
141	St Helens – Jackson Street – Morrisons (Baxter Lane) – St Helens Junction – Burtonwood – Collins Green – Earlstown – Bradlegh Estate –	08:25-23:37	60	120	60	120	60	60

	Newton-le-Willows Station							
920	St Helens – Thatto Heath – Sutton Manor – Clock Face – Parr – Haydock Industrial Estate	05:00-21:00	-	2 return journeys	1 return journey	2 return journeys	1 return journey	2 return journeys

Quality Bus Network

3.20 A Quality Partnership has been formed between Merseytravel, the bus operators and the local councils, where some bus services now form part of a Quality Bus Network. This means that certain bus services are more frequent and customers are able to use their bus ticket, regardless of the operator, on each of the routes. The bus routes which are included on this scheme and serve St Helens are:

- 10, 10A, 10B Liverpool – St Helens or Huyton
- 17 St Helens – Widnes
- 30 Sutton Manor – St Helens – Chain Lane

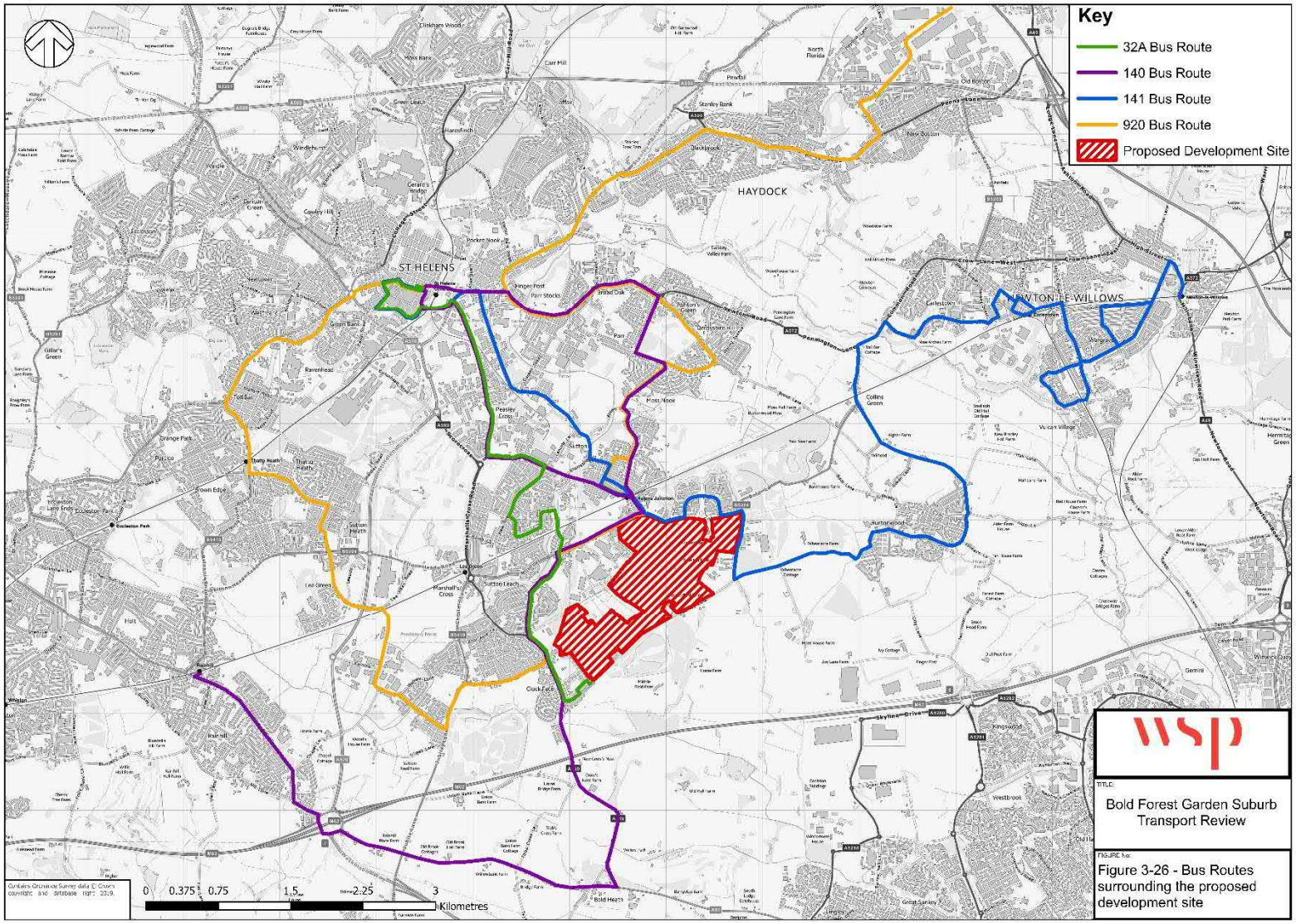
3.21 Table 3-2 shows the frequency at which these bus services operate on the new Quality Bus Network.

Table 3-2 - Quality Bus Network Routes

Bus Number	Frequency	Other Information
10, 10A, 10B	Approx. 4 minutes	14 buses every hour between Liverpool and St Helens
17	Approx. 10 minutes	This frequency is for Monday – Saturday daytimes
30	Approx. 10 minutes	This frequency is for Monday – Saturday daytimes

3.22 There is the opportunity to use the Quality Bus Network and divert some of the routes such as the number 30 and 17 through the proposed development site in order to create more bus services within the area to encourage the use of public transport over car use. However, further study would need to take place in order to assess the impact on journey time that diverting the bus route through the proposed development.

Figure 3-26 - Bus Routes Surrounding the Proposed Development Site



Reginald Road

3.23 Along Reginald Road there was a bus stop present; however, during the site visit the bus frequency within this area was low (Figure 3-27). The paint indicating to motorists that this layby is for buses is worn and difficult to read.

Figure 3-27 - Reginald Road Bus Stop

Clock Face Road

3.24 Near to the junction with Gorsey Lane there was a bus stop identified which was adjacent to a local corner shop and residential properties. The bus stop was set back from the edge of the road into the grass verge that runs parallel to the pedestrian footpath.

3.25 There was an additional bus stop located outside of Little Angels Nursery School which included a raised kerb for improved disabled and pram user access while boarding and leaving the bus.

3.26 There was a mini roundabout at the junction with Gartons Lane and the continuation of Clock Face Road. Again, there was another bus stop located outside of residential properties. Near to the junction with Leech Lane there was another bus stop outside of the houses on Clock Face Road with a built-up paving for improved disabled and pram user access to and from the bus.

Rail Infrastructure

3.27 The proposed development site is close to both St Helens Junction (Table 3-3) – approximately 13-minute walk or 4-minute cycle ride, and Lea Green Station (Table 3-4) – approximately 30-minute walk or 9-minute cycle ride.

3.28 Both stations offer direct services which connect to the major cities in the north west such as Manchester and Liverpool. However, in order to reach St Helens town centre which is served by St Helens Central Station, passengers need to change trains, typically at Huyton, as there are no direct trains from either station.

Table 3-3 - Rail Services from St Helens Junction

Train Route	Average Journey Time	First Train	Last Train	Number of Changes	Number of Trains per day	Train Fares from
St Helens Junction to Liverpool Lime Street	32 minutes	05:55	00:08	0 (Direct)	Approx. 35	£4.50
St Helens Junction to Manchester Piccadilly	31 minutes	05:51	23:58	0 (Direct)	Approx. 36	£8.20
St Helens Junction to Crewe	1 hour 9 minutes	05:51	16:55	0 (Direct)	Approx. 12	£15.40
St Helens Junction to Warrington Bank Quay	19 minutes	05:27	19:27	0 (Direct)	Approx. 11	£3.90
St Helens Junction to St Helens Central	26 minutes	05:55	00:08	1 change	Approx. 33	£4.60

Table 3-4 - Rail Services from Lea Green Station

Train Route	Average Journey Time	First Train	Last Train	Number of Changes	Number of Trains per day	Train Fares from
Lea Green Station to St Helens Central	1 hour 12 minutes	05:58	00:11	1	Approx. 34	£4.60
Lea Green Station to Liverpool Lime Street Station	25 minutes	05:58	00:11	0 (Direct)	Approx. 57	£2
Lea Green Station to Manchester Victoria/Manchester Piccadilly	32 minutes	05:32	23:55	0 (Direct)	Approx. 54	£3

Train Route	Average Journey Time	First Train	Last Train	Number of Changes	Number of Trains per day	Train Fares from
Lea Green to Crewe	1 hour 52 minutes	05:48	16:52	0 (Direct)	Approx. 10	£6
Lea Green to Warrington Bank Quay	22 minutes	07:27	19:24	0 (Direct)	Approx. 10	£4.60
Lea Green to Scarborough	2 hours 29 minutes	06:08	20:08	0 (Direct)	Approx. 14	£17

Lea Green Station

3.29 Initial observations show that the large space surrounding the station is not utilised effectively. There was no secure cycle storage located at the station - only bike stands (Figure 3-28). However, there is sufficient space (Figure 3-29) and demand for a secure cycle shed to be implemented as the bike stands were in use.

3.30 The road from Lea Green Station leading to the Bull & Dog pub has bollards in place, suggesting that this was once a road but is now closed to traffic (Figure 3-30).

3.31 Other observations included the overspill from the car park onto Elon Head Road which connects the station to the main road of Elton Head Road B5204 and Marshalls Cross Road indicating there is insufficient parking capacity. However, the high number of vehicles present could be due to the car park being misused by staff or parents from Sutton Academy.

3.32 Within the car park there is a taxi stand with capacity for four taxis. However, during the site visit no taxis were present and one car was occupying the space (Figure 3-31 & 3-32).

Figure 3-28 - Bicycle Stands at Lea Green Station

Figure 3-29 - Underutilised space at Lea Green Station

Figure 3-30 - Bollards preventing vehicles accessing this road

Figure 3-31 - Misuse of Taxi Stand

Figure 3-32 - Capacity for Four Taxis

St Helens Junction Station

3.33 Near the station entrance, along Helena's Road, a bridge restricts the width of the footway which may make it difficult to install a full segregated cycle lane in this area (Figure 3-33).

3.34 Initial observations upon entering the station grounds was the poor signage, in particular the signage for directions to the car park (Figure 3-34). It is difficult to navigate to the car park as the initial signs state no entry except for buses (Figure 3-35). It was then observed that the entrance to the car park for vehicles is the same road in which the buses use to exit the station; however, there was no right of way/priority sign shown which could cause collisions between vehicles accessing the car park and buses.

3.35 In addition to not having a logical entry point to the car park for drivers, visibility is poor due to the vegetation on the mini roundabout blocks the drivers view of any oncoming buses which again could lead to accidents (Figure 3-36, 3-37 & 3-38). The car park at the station has large capacity but was underutilised at the time of the site visit (Figure 3-39).

Figure 3-33 - Bridge near St Helens Junction – Narrow Footway

Figure 3-34 - Poor signage for car park access

Figure 3-35 - No entry sign except for buses and overgrown vegetation

Figure 3-36 - Bus stop at St Helens Junction Station

Figure 3-37 - Car Park Entrance could cause vehicle conflict - no give way signs

Figure 3-38 - Direction in which vehicles should enter car park with no direction signs

Figure 3-39 - Underutilised car park at St Helens Junction Station

Cycle Infrastructure

3.36 Whilst there is some cycle infrastructure in place, many of the roads surrounding the proposed development site are suggested cycle routes (Figure 3-40).

3.37 Observed cycle facilities include:

- A cycle sign painted on the road observed near Helena's Road (Figure 3-41) which highlights that vehicles have priority over cyclists.
- At Lea Green Station and St Helen's Junction Station there were bicycle storage facilities (Figure 3-42 & 3-43) which appear to be underutilised.

3.38 There are on-road cycle routes, off-road cycle routes and suggested cycle routes surrounding the proposed development site which connect to St Helen's town centre and other areas such as:

- Peasley Cross;
- Sutton;
- Moss Nook;
- Clock Face;
- St Helens Junction Station; and
- Lea Green Station.

Figure 3-40 - Cycle Routes Surrounding the Proposed Development Site

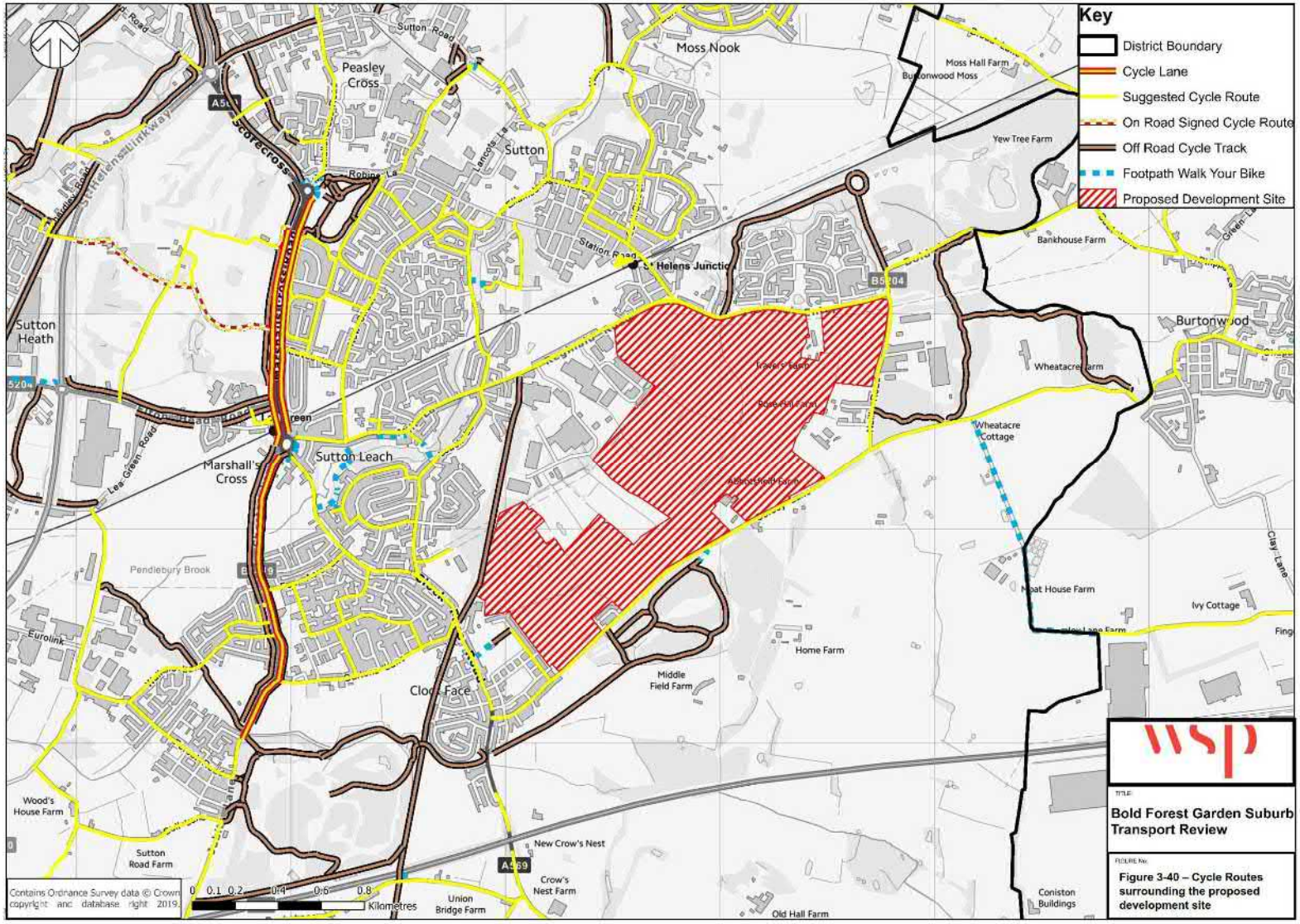


Figure 3-41 - Helena's Road Cycle Markings

Figure 3-42 - Bicycle Parking Facilities at Lea Green Station

Figure 3-43 - Bicycle Parking Facilities at St Helens Junction

4

TRANSPORT OPPORTUNITIES

4 TRANSPORT OPPORTUNITIES

Overview

4.1 As a result of its scale, Bold Forest provides an opportunity to do things differently from the start. There is a significant opportunity in relation to future needs and requirements, in particular climate change and sustainability. Scale provides the ability to make a meaningful difference, both in terms of inter-relationships with other sites and amenities but also in terms of ability to design the site to add cumulative value to networks from early stages.

4.2 At a strategic level, Bold Forest lies central to the north west's key cities of Manchester and Liverpool, being absolutely on-line in terms of its location on east-west road and rail corridors. It is also geographically central between the key centres of St Helens, Warrington and Runcorn/Widnes.

4.3 The site can be designed with these in mind, bearing in mind people rarely make travel decisions based on political boundaries. From a transport perspective, the opportunity of being central at both local and regional level needs to be exploited in terms of walking, cycling and public transport networks, to ensure that this primarily residential site links well with relevant employment, education and leisure amenities.

4.4 An important element of this is to work with potential wider transport improvements, such as the proposed transit between Warrington and Omega, which has the potential for extension to either Lea Green or St Helens.

4.5 In relation to rail, with the advent of Northern Powerhouse Rail there is strong potential to make more of current railway lines, which is directly relevant both in relation to the Chat Moss Line, with Lea Green and St Helens Junction as hubs, but also the Cheshire Lines Link to and from Liverpool/South Parkway with Chapelford (Warrington West), Widnes and Warrington Central all being points of future connectivity.

4.6 The site should not be 'ashamed' of its great access to the road network, but its scale, combined with strategic thinking in terms of connectivity, does provide a major opportunity for sustainability, particularly if layouts can be developed that orientate themselves to non-car accessibility. The most forward housing developments in Europe, such as Vauban, cited in this report have achieved significant benefits through early thinking on sustainable accessibility.

4.7 This section considers the specific local and strategic opportunities to facilitate multi-modal connectivity, and achieve the sustainable aspirations for the site.

Local Opportunities – Highway Network

4.8 There are various options which could improve the site's accessibility to and from the existing road network. However, it is particularly important to also consider the potential to remove traffic from the existing network and to provide new routes that can accommodate the level of traffic anticipated.

Access Point H – Helena's Road

4.9 Helena's Road has the potential to be the main gateway into the development, as the junction at Helena's Road and Bold Road is the main desire line from St Helen's Junction Station to the site. This entrance could be framed with a green space with a variety of vegetation in order to open the area up. Footways could be improved in terms of paving and greening.

Junction H: Helena's Road/Bold Road

4.10 The junction could potentially be reconfigured to a 4-way signalised junction with facilities for all users. There is also the option to include a cycle-only phase to prioritise cyclist movements. A segregated cycle lane could connect to St Helens Junction Station in order to promote active travel from the proposed development site. However, due to the narrowing of Helena's Road there may not be sufficient space for a fully segregated cycle lane and an on-road cycle lane may be more suitable along this section.

Junction I: Bold Road / Neill's Road

4.11 Along Bold Road towards the junction with Neill's Road the speed limit could be reduced from 40mph to 30/20mph in order to create a safer and more attractive environment for pedestrians and cyclists. A new roundabout junction could be created here, using development land where needed. This would increase the capacity of the junction and improve safety.

Junction J: Neill's Road / Gorsey Lane

4.12 Visibility at this junction is currently very poor. The replanting of vegetation at each corner would allow for a visibility splay in accordance with design standards, with the inclusion of a ghost island. There is also the potential to replace the priority junction with a roundabout.

Access Point M: Gorsey Lane

4.13 There is the opportunity to connect the proposed access point on Gorsey Lane directly with the proposed access point at Helena's Road to create a direct through road from one side of the proposed development site to the other. This then provides the opportunity to reroute buses along Gorsey Lane, through the housing site and connect to Helena's Road.

Junction F: Gorsey Lane / Clock Face Road

4.14 Although the road at this junction is wide, the waiting time to turn right from Gorsey Lane onto Clock Face Road was significantly higher than at the other junctions. A corner shop and a bus stop (adjacent to the corner shop) are situated close to the junction, which potentially increases the footfall of the area. Therefore, due to the busy junction and the potential to have pedestrians crossing the road the area would benefit from signalisation to allow full pedestrian movement to and from the bus stops and to provide a clear gateway into a formal residential and low speed area.

Access Point N (i): Hall Street off Clock Face Road

4.15 There is the opportunity to extend Hall Street (located in the residential area off Clock Face Road) to connect to the proposed development site as a western access point (7.5m in width). There would be no requirement for land acquisition as the current road ends at the start of the development site.

Access Point N (ii): Willow Tree Avenue (off Leech Lane)

4.16 There is the opportunity to extend Willow Tree Avenue (5.5m in width) through the development site in order to create an access point from the houses to Willow Tree Primary School. There would be no requirement for land acquisition as the current road ends at the start of the development site.

Access Point N (iii): Taunton Avenue (off Leech Lane)

4.17 A third option for a 5.5m or 7.5m wide access point on the west of the site is to extend Taunton Avenue through the development site. However, in order to create this link road there would be a requirement for land/property acquisition which would require negotiations with local residents and home owners.

4.18 Another option is to designate this access point for use by pedestrian and cyclists only. There is already a footpath in place which links to Willow Tree Avenue connecting to Willow Tree Primary School. This could be extended to the proposed development site in order to promote active travel and connect the site to a nearby educational facility.

Junction E - Marshalls Cross Road / Mill Lane / Clock Face Road / Chester Lane

4.19 At this roundabout there are very few pedestrian facilities, with worn tactile paving on the crossing for each arm. This area would benefit from an enhanced pedestrian crossing, especially as the area is popular with pedestrians accessing Lea Green Station.

4.20 There is also sufficient width on each lane to install a fully segregated cycle lane following the traffic route around the roundabout and into Lea Green Station. A more ambitious solution would be to install the cycle lane directly through the roundabout which would link directly with the train station, with cycle-only phasing to give cyclists priority at the junction.

Local Opportunities – Bus Services

4.21 Existing bus services could be re-routed through the proposed development site via Gorsey Lane and the road through the development site from Gorsey Lane to Helena's Road, in order to encourage residents to use public transport and provide a link to local rail services. In order to make this a viable option and attractive alternative to the car, the existing bus service frequency would need to be increased.

4.22 There is also the opportunity to add a new bus route which loops between St Helens town centre and Lea Green and St Helens Junction stations. This would provide a high frequency service to both residents of the proposed development and residents of surrounding developments, helping to reduce reliance on the car.

Local Opportunities – Walking and Cycling

4.23 In order to promote more active travel, it is recommended that segregated cycle lanes and pedestrian footpaths be provided throughout the proposed development site and surrounding areas. An existing public footpath runs directly through the proposed development site, which could be retained and enhanced with the provision of a cycle lane.

4.24 The addition of secure cycle storage facilities within the proposed development site and at rail stations would also support this. Furthermore, a cycle hire scheme would enable residents to hire bikes to use to access the station and local amenities.

4.25 In order to encourage more cycling in the area, a cycle-based 'Bike and Ride' initiative could encourage people to store their bicycle at the station and use the train, as it is approximately a 5-minute cycle ride from the centre of the proposed development site to St Helens Junction. Cycle infrastructure should be incorporated into the masterplan for the development site at the outset, as well as improving the cycling facilities at local rail stations and potentially also offering cycle hire services.

Strategic Opportunities – Warrington Mass Transit

4.26 Warrington mass transit was proposed as part of the 2019 Warrington Fourth Local Transport Plan, as a result of declining use of public transport to just 5.6% of residents for travel to work. In order to encourage more active and sustainable travel across the area and increase the use of bus and mass transit for people travelling to work to 15%, Warrington Council aspires to create a mass transit network that would help achieve this ambitious target.

4.27 The Council commissioned a study to investigate different modes of transport that could be considered for the mass transit network across Warrington. The two modes of transport which have been considered are Light Rail/Tram and Bus Rapid Transit Systems. Whilst the Council is still in the early feasibility stages, a Bus Rapid Transit network is currently favoured as a result of the success of similar schemes across the UK, in particular within Greater Manchester.

4.28 In order to successfully deliver a Bus Rapid Transit network, the scheme would need to include:

- Bus only roads – certain roads dedicated to buses only, with no access for other vehicles; and
- Priority Junctions – provision of priority for buses at all junctions, including the junctions which intersect with public highways.

4.29 The proposed areas which the mass transit network would serve include:

- Lingley Mere / Omega to the proposed Garden Suburb South East Urban Extension;
- Daresbury to Winwick;
- Birchwood to Fiddler's Ferry;
- Birchwood to the proposed Garden Suburb South East Urban Extension; and
- Lingley Mere / Omega to Birchwood.

4.30 There is a significant opportunity to connect the proposed development at Bold Forest Garden Suburb to the proposed mass transit network, from either Lingley Mere or Omega. If the development of the Bus Rapid Transit goes ahead, there is the opportunity to extend the network across Clock Face Country Park and Gorsey Lane to connect to the proposed development site.

4.31 This would provide a new link between St Helens and Warrington, creating a wider catchment for job opportunities for residents living within the Bold Forest development and reducing pressures on the Strategic Highway Network, helping to achieve the sustainability ambitions set for the site.

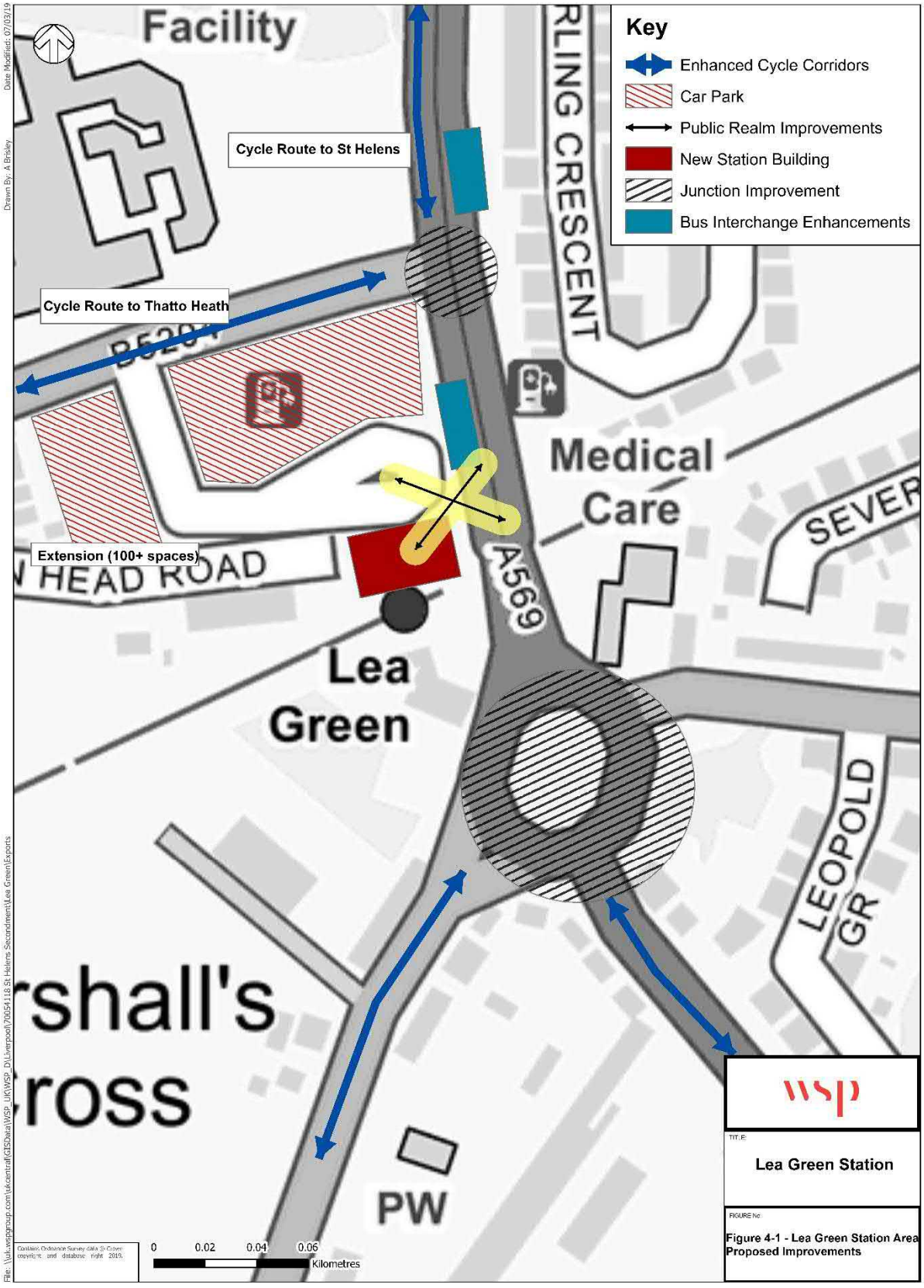
Strategic Opportunities – Omega M62 Crossing

4.32 WSP has been commissioned by Highways England to carry out a study that considers the possibility of creating a new road bridge over the M62 to the west of Junction 8 at Omega Business Park. The study is still in the early stages; however, should the scheme come forward it has the potential to take north/south traffic travelling towards Warrington away from the M62 Junction 8, allowing more capacity for traffic to and from the M62.

Strategic Opportunities – Eastern Region Interchange and Connectivity Scheme (ERIC)

4.33 At Lea Green Station there are proposed improvements to upgrade the station and surrounding area as part of the Eastern Region Interchange and Connectivity Scheme (ERIC), as shown in Figure 4-1.

Figure 4-1 - ERIC: Lea Green Station Area Improvements



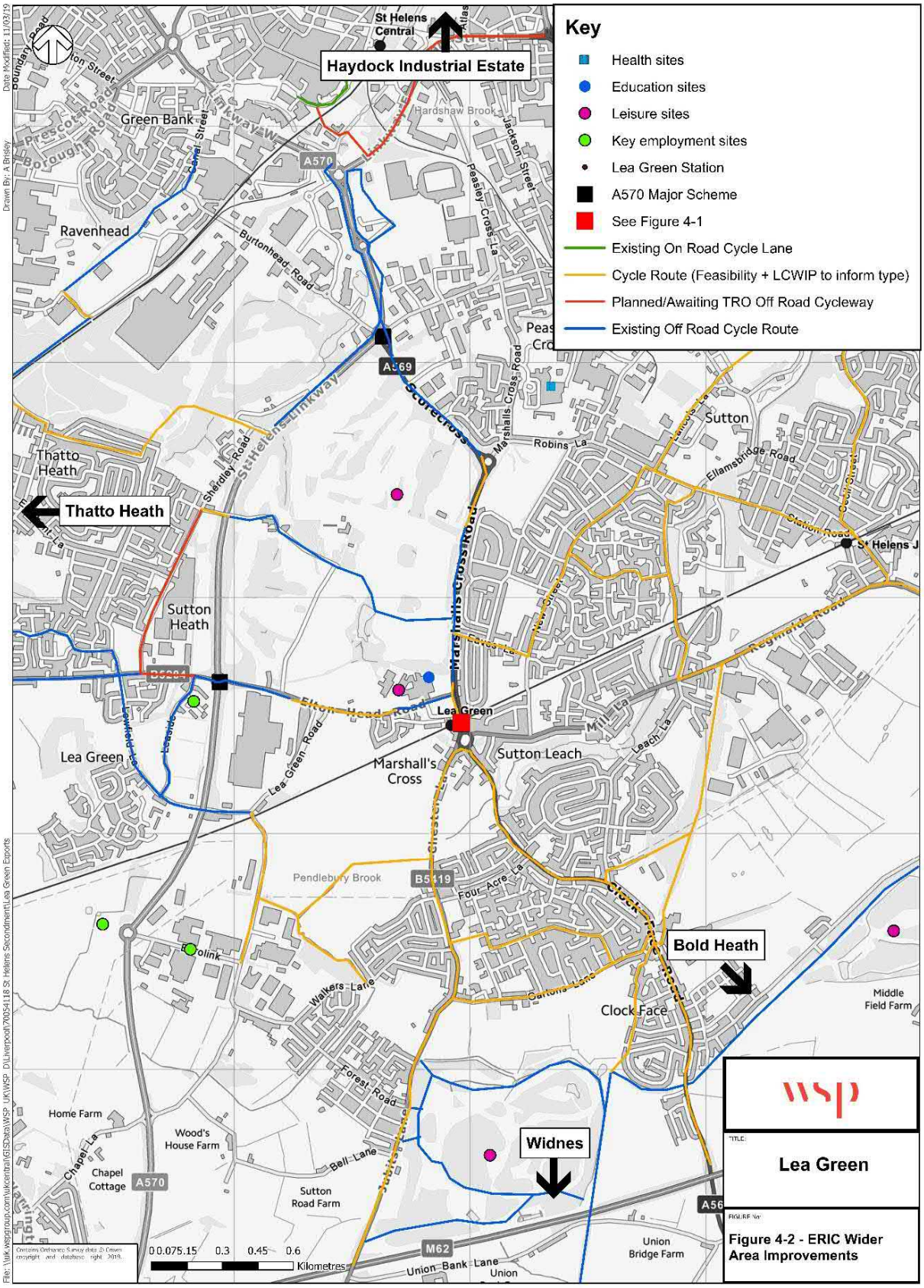
4.34 The proposed improvements include:

- Enhanced cycle corridors to St Helens and Thatto Heath, including a cycle route that not only surrounds the proposed Bold Forest development site, but which also runs through the site and connects to both Lea Green and St Helens Junction stations (Figure 4-2);
- A car park extension to include more than 100 spaces;
- Public realm improvements to the immediate area surrounding the station;
- A new station building;
- Bus interchange enhancements; and
- Junction improvements at the B5204 and A569 junction and the Bull & Dog roundabout junction.

4.35 These improvements will improve the attractiveness of rail for residents of the proposed development site and the wider surrounding area, providing direct cycle access to two rail stations that offer direct, fast and frequent connections to major employment areas, including Manchester, Liverpool and Warrington.

4.36 Coupled with enhanced end of trip facilities, this scheme could help to increase the proportion of residents at the proposed development and in the surrounding area who use sustainable modes.

Figure 4-2 - ERIC: Wider Area Improvements



Strategic Opportunities – St Helens Rail Study

4.37 St Helens Council is currently considering several options for improving rail access to St Helens town centre, including the possibility of reopening the Sutton Oak line between St Helens Central and St Helens Junction, or repurposing this route as a tram line or bus rapid transit corridor.

4.38 It will be important to ensure that the Bold Forest masterplan takes options for the Warrington mass transit into consideration. For example, it may be beneficial to identify and protect a route through the site which could serve as a rapid transit corridor (either tram or bus) which could connect St Helens Junction, Bold Forest and Omega, creating a network across St Helens and Warrington boroughs.

4.39 If a heavy rail option is taken forward for the Sutton Oak line, an extension of the Warrington rapid transit network through Omega, across Bold Forest to St Helens Junction would offer additional connectivity for residents and workers across the area, including new connections to Manchester city centre by train from St Helens Junction.

5

BEST PRACTICE REVIEW

5 BEST PRACTICE REVIEW

5.1 This section provides best practice examples of suburban areas which have been transformed by incorporating sustainable 'green' modes of transport into the overall design at the outset of the masterplanning process. Commentary has been provided which identifies thinking and ideas that could support a similar development at Bold Forest.

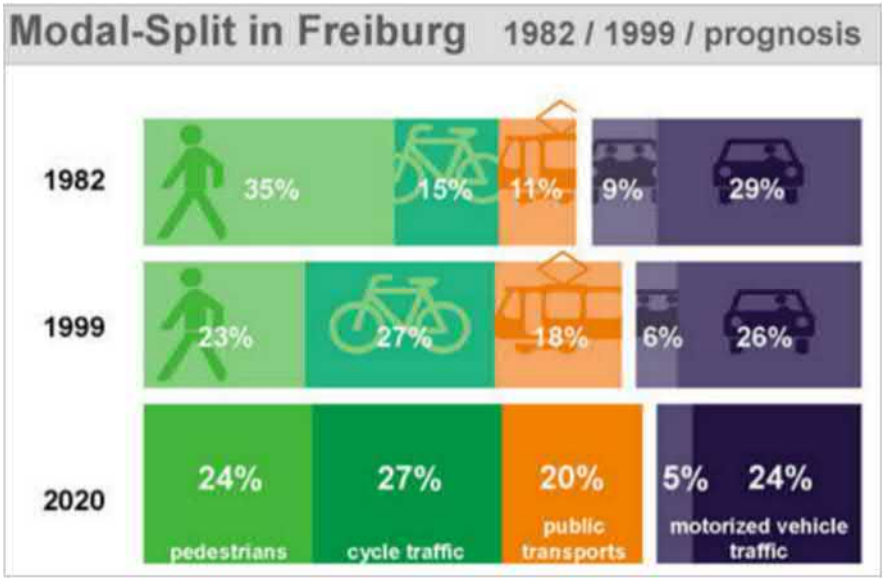
Vauban, Freiburg, Germany

5.2 Located in Freiburg, Southern Germany, Vauban is one of the world's most sustainable living cities as a result of the district being planned and constructed around a 'green' transportation system. The district is surrounded by a highly connected, strategic network of pedestrian and cyclist paths, with every property within walking distance of a sustainable form of transport such as a tram or cycle lane.

5.3 In addition to being within walking distance of a transport network, every home is located within walking distance to every school, a number of businesses and shopping areas. Due to the efficient and green transportation network being so accessible, the number of cars is kept to a minimum. Not only do people have the pull of transport, jobs and retail areas being located so nearby as a reason not to drive, but car parking was not factored into the planning of the district. Therefore, the small number of residents who do own cars have to park on the outskirts of the area in a community car park and commute to their home through another form of transport.

5.4 As a result of such an extensive network of over 400km of segregated cycle paths and over 9,000 bicycle parking spaces located around Freiburg, including 'bike and ride' storage at various tram stations, the modal split has shifted towards sustainable modes. Figure 5-1 shows how the combined percentage of residents choosing to cycle, walk or use public transport to a destination increased from 61% in 1982 to 68% in 1999 with the predicted modal-split being at 71% by 2020.

Figure 5-1 - Modal Split in Freiburg



Source: https://www.smartcitiesdive.com/ex/sustainablecitiescollective/words-most-successful-model-sustainable-urban-development/229316/

5.5 Public transport use has seen the most significant increase, in part due to the frequency and reliability of public transport services. Trams run precisely every 7 minutes 30 seconds during rush hour (Figure 5-2). Another reason for this is the provision of subsidised train and tram tickets to residents, coupled with the lack of on-site parking.

Figure 5-2 - Freiburg Tram System

Source: Apolitical Group

The Hamptons in Worcester Park, Surrey, UK

5.6 The Hamptons has been transformed from an extensive area of wetlands to a sustainable green suburb, 10 miles from the centre of London. The final phase of the development had 645 houses developed, 40% of these were 'affordable homes'.

There are elements of Vauban which could be incorporated into the Bold Forest Development, in particular the strategic cycle and pedestrian network and provision of frequent, reliable public transport services that provide a viable alternative to the car. Designing the cycling and pedestrian network at the outset of the development and providing facilities such as schools on site allows residents to be within walking distance of key trip attractors. A similar high frequency public transport system could be achieved at Bold Forest with the extension of the Warrington mass transit system, as well as bus services which loop between the site, local rail stations and St Helens town centre.

5.7 Whilst a number of factors have contributed to the area being sustainable and 'green', transport has played a major role. The strategic transport network incorporates cycle lanes and footpaths in order to promote active sustainable travel. Cycle parking has also been improved at Worcester Park

Station, to encourage more ‘bike and ride’ travel. Additional incentives include residential discounts on bicycle purchases and a bicycle hire scheme.

5.8 Public transport has seen further improvements in respect of improving the bus services available to the area. As well as this, a car club has been formed to reduce vehicle ownership and provide flexibility to residents for longer distance trips.

5.9 There are large open pockets of green space running through the suburban area (Figure 5-3), to create a space of tranquillity and relaxation.

Figure 5-3 - Suburban Green Garden

Source: Berkeley Group

In order to create an innovative garden suburb, many of the elements from The Hamptons could be included in the development of Bold Forest Garden Suburb. The inclusion of a cycle and pedestrian network across the development site would encourage more active and sustainable travel. Upgrading cycle parking to secure facilities at both St Helens Junction and Lea Green stations in addition to a bicycle hire scheme would further enhance active travel. The idea of a car club or car sharing scheme within Bold Forest provides people with the opportunity to reduce overall car trips whilst also retaining the flexibility of car travel for some trips. A large open green space that is only accessible on foot or bicycle allows the Bold Forest development site to retain greenery and vegetation.

Houten, Netherlands

5.10 Like most Dutch cities, Houten is predominantly cycling and walking based. The design of the city encourages more people to walk and cycle to and from their homes, places of work and shops, based on a strategic network focused on cycling and walking.

5.11 Those who wish to travel by car must use the ring road that surrounds the outside of the city. Therefore, people travelling from one side of the city to the other must drive around the outer region of the city, increasing journey times.

5.12 The city has over 129km of cycle lanes, which have been constructed using red brick in order to separate them from the roads where vehicles are permitted. In order to further enhance the segregation between cyclists and drivers, bollards are in place at the entry and exit points to the cycle paths, which act as physical barriers to vehicles. The only time bicycles and vehicles share roads / lanes is in residential areas in order for residents to access their properties. Along these shared roads / lanes speeds are limited and road signs are in place which state that cyclists must be given right of way.

5.13 Figure 5-4 shows motorists giving way to a cyclist as cyclists have priority. Figure 5-5 shows the ring road surrounding the suburb which connects the different areas together.

Figure 5-4 - Cyclists have priority over vehicles

Source: NL Cycling

Figure 5-5 - Ring Road Surrounding Houten

Source: Google Maps

The installation of fully segregated cycle lanes, which have a distinctive pattern/brick that is different from the material used for the road, improves safety for cyclists. Within the development at Bold Forest, vehicles could be permitted to drive; however, the priority could be given to cyclists and pedestrians, encouraging more residents to travel sustainably and enhancing the overall look and feel of the development into a space that is not dominated by cars.

Curitiba, Brazil

5.14 Curitiba is one of the most sustainable and green cities in the world, primarily as a result of new leadership. Development shifted and focused on sustainable methods of development from transport systems, green areas and recycling initiatives (Figure 5-6).

5.15 The main form of transport is an integrated transport system in the form of Bus Rapid Transit (Figure 5-7). The sustainable transport system is efficient and affordable, reducing journey time by as much as 25 minutes and by having one ticket price for every journey made, regardless of the distance. The reason for the reduction in journey time has occurred not only because the buses have designated lanes that are segregated from other vehicles, they also have wider doors compared to standard buses, in order to increase the accessibility and speed in which passengers can embark and disembark (Figure 5-8).

5.16 This means that 28% of all trips around the city are made by bus. In addition to the Bus Rapid Transit System, a number of streets in the city centre were pedestrianised and cycle lanes follow a city wide strategic network in order to reduce congestion and emissions and promote more active and sustainable travel.

Figure 5-6 - A view of the green spaces dominating the urban area

Source: Contemporary Urbanism

Figure 5-7 - Bus Rapid Transit System

Source: ITDP

Figure 5-8 - Passengers quickly and safely disembarking the bus

Source: Reimagine.org

The provision of a bus rapid transit system serving the Bold Forest development, potentially as an extension to the Warrington mass transit system, would cause a significant shift from car to bus, enabling more space within the development to be allocated to active travel/green space. Adapting the buses in order to create wider doors would increase the speed in which people could board and alight the bus, improving journey times.

6

CONCLUSIONS AND NEXT STEPS

6 CONCLUSIONS AND NEXT STEPS

6.1 This review is the first stage of a much more comprehensive assessment of the proposed Bold Forest Garden Suburb from a transport perspective. The spreadsheet model developed as part of this piece of work can be taken forward and used to test emerging options and new scenarios.

6.2 In order to progress the project further, consideration will need to be given to forming a coherent vision and strategy for the Bold Forest Garden suburb. This vision should focus on sustainability and the innovative thinking that will drive a new type of development in the area.

6.3 The vision will then drive the creation of an indicative masterplan that breaks down the site into land use zones for different types of housing, retail, services, infrastructure and green space. This will also include options for vehicular access points and the internal road layout as well as active travel links and public transport routes.

6.4 There is an opportunity to create new through routes which serve both the development and the wider highway network, that would both mitigate the impact of development traffic and help to alleviate current congestion issues. This may lead to a betterment at some junctions as traffic is diverted via new routes that bypass junctions that are already approaching or over capacity.

6.5 From the initial findings, the junctions that are expected to experience the greatest percentage impact in terms of traffic flow as a result of development are:

- B5204 Reginald Road / Mill Lane / Leach Lane;
- B5204 Reginald Road / Bold Road / Neills Road;
- Neills Road / Gorsey Lane – Priority Junction;
- Marshalls Cross Road / Mill Lane / Clock Face Road / Chester Lane;
- Marshalls Cross Road / Elton Head Road;
- Gorsey Lane / Clock Face Road; and
- Gorsey Lane / Clay Lane.

6.6 In order to further understand the potential impact of development traffic, a series of local junction models will need to be created using software such as ARCADY, PICADY and LinSIG. These models can be fed by data used in the spreadsheet model and will establish a baseline and future year ratio of flow to capacity (RFC) at each junction.

6.7 Once it has been established which junctions may become capacity, a mitigation strategy can then be formed in which options are drawn up and tested. This may involve changes to existing junctions and/or the creation of new routes that by-pass problem areas.

6.8 In the creation of the Bold Forest Garden Suburb, there are opportunities to achieve a significant modal shift towards sustainable travel which would reduce the impact of the development on the local highway network.

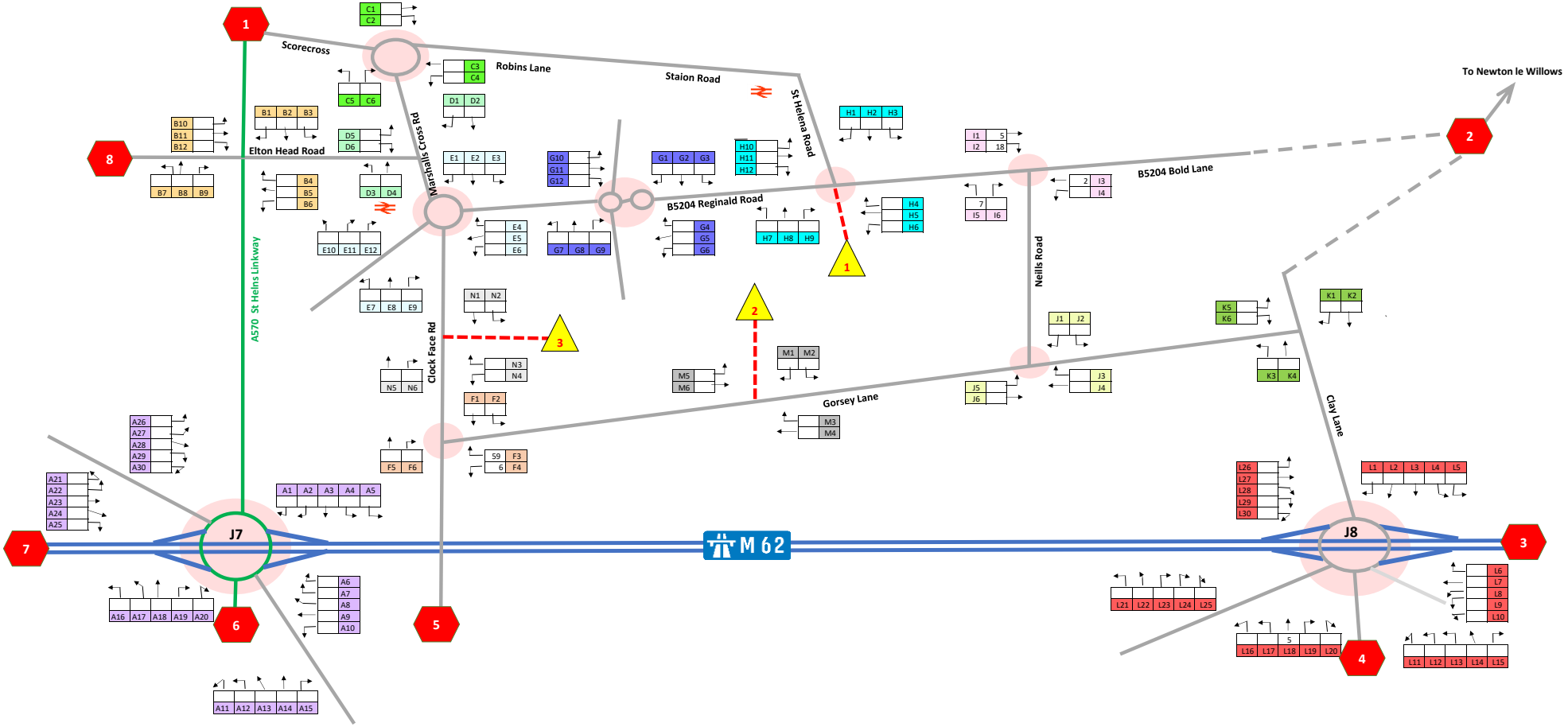
6.9 Further engagement will be required with Highways England with regard to the potential impact on the Strategic Road Network (SRN).

6.10 There should be engagement with Warrington Council as the project moves forward to establish how Bold Forest could link into future transport plans, in particular the development of the mass transit scheme which could be of significant benefit should it be extended.

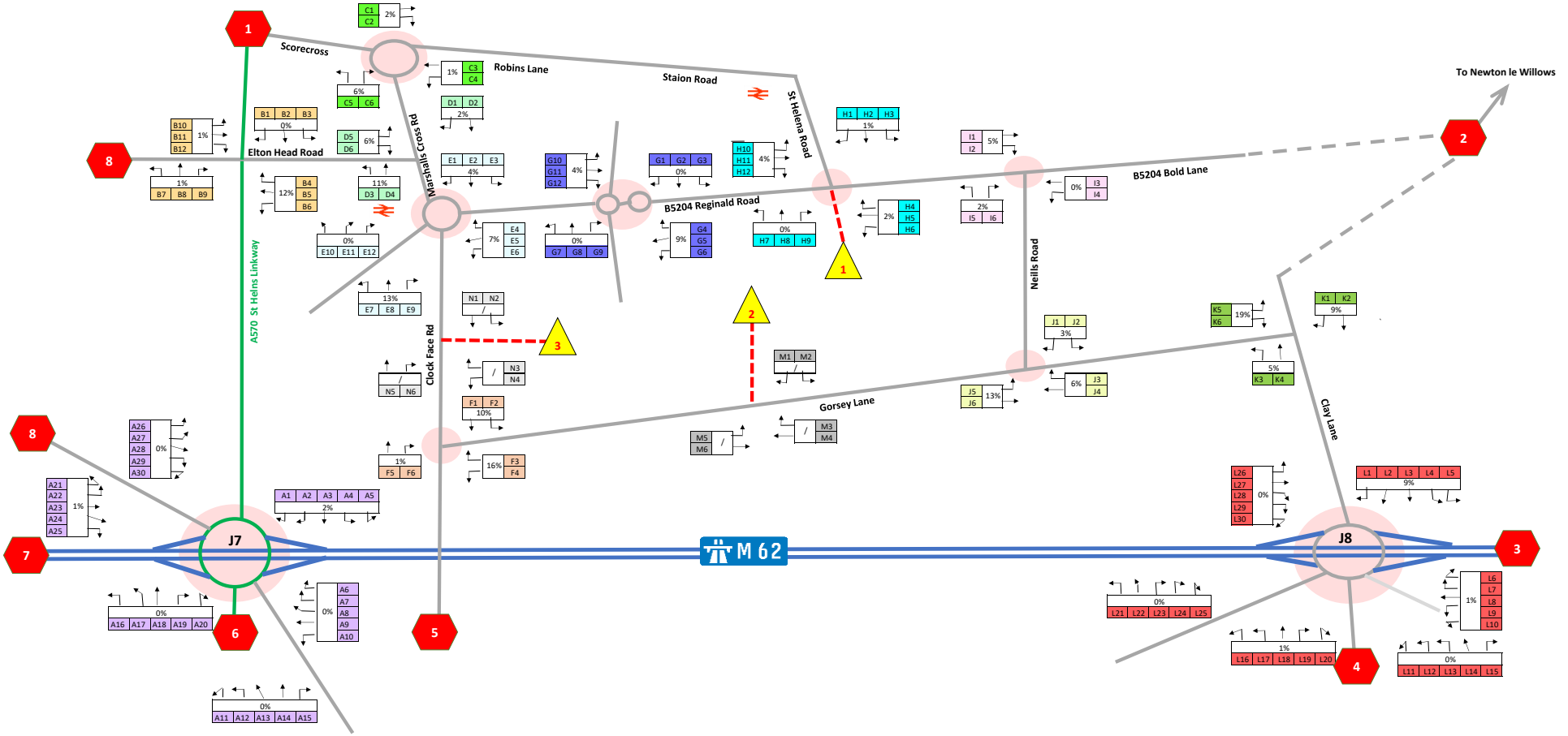
6.11 At all stages, stakeholder and community engagement will be required to ensure that the emerging plans are considerate towards the needs of the local community.

6.12 In the creation of the Bold Forest Garden Suburb, there are opportunities to achieve a significant modal shift towards sustainable travel which would reduce the impact of the development on the local highway network.

APPENDIX A



Title:	Network Diagram
Project:	Bold Forest
Reference:	TF1



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Project:	Bold Forest
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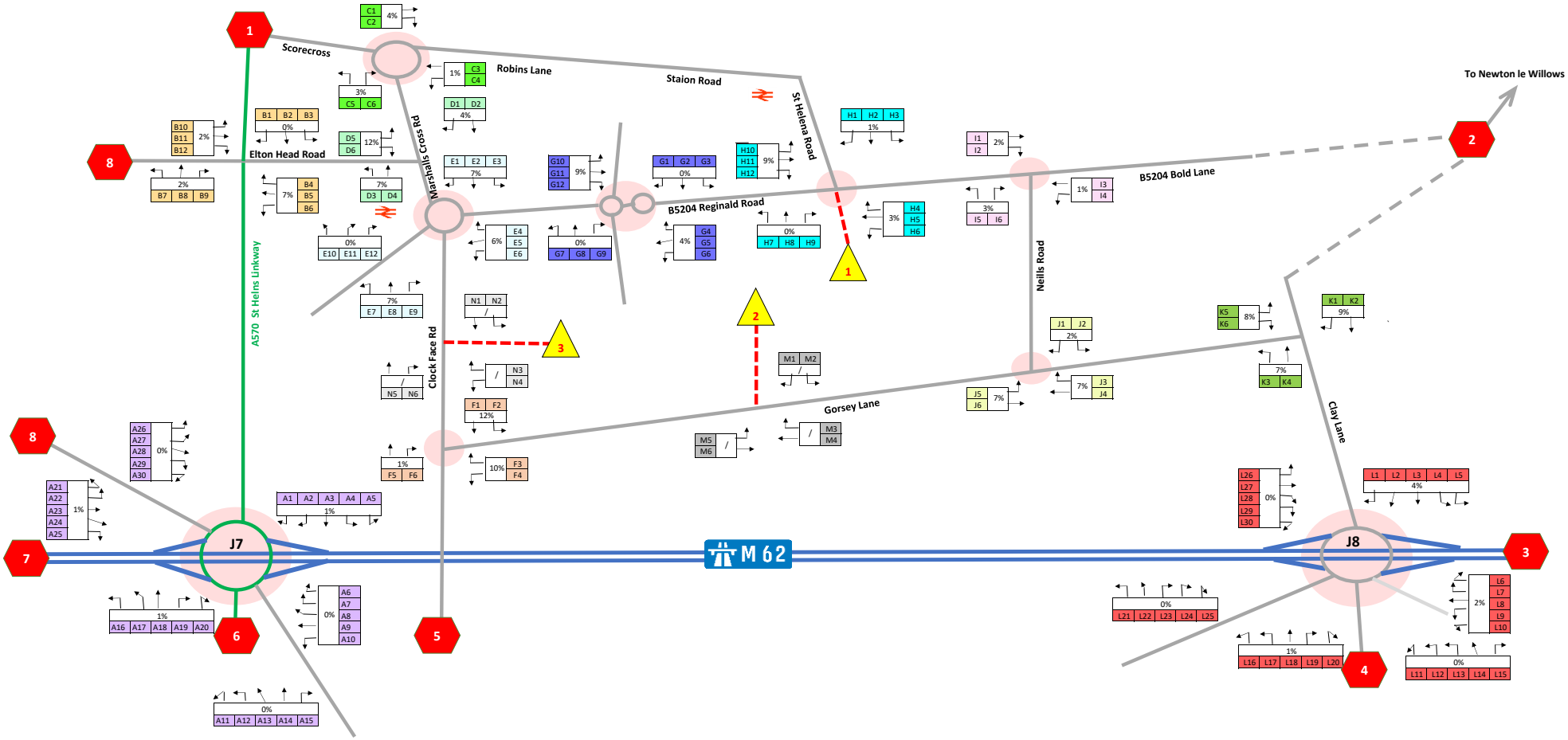

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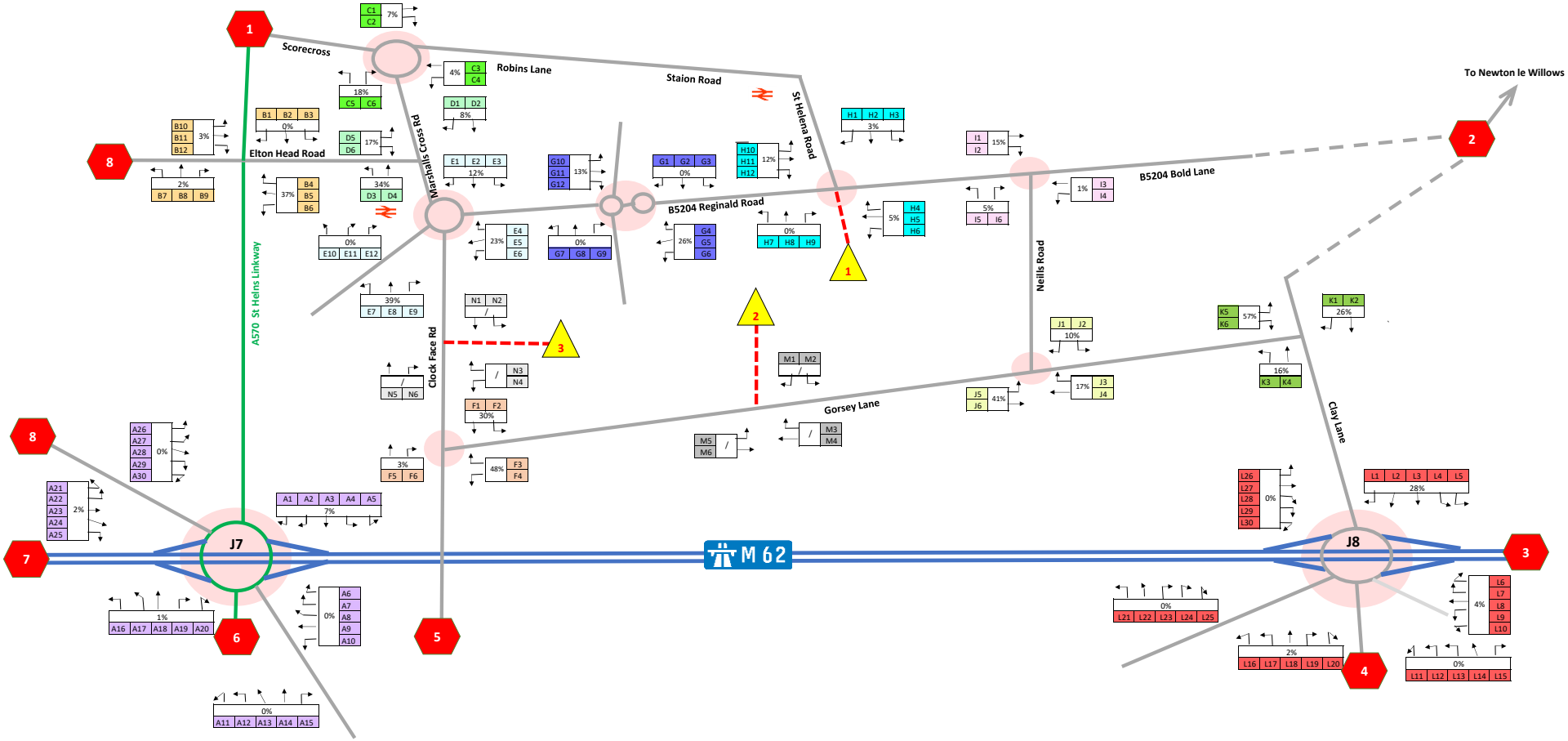

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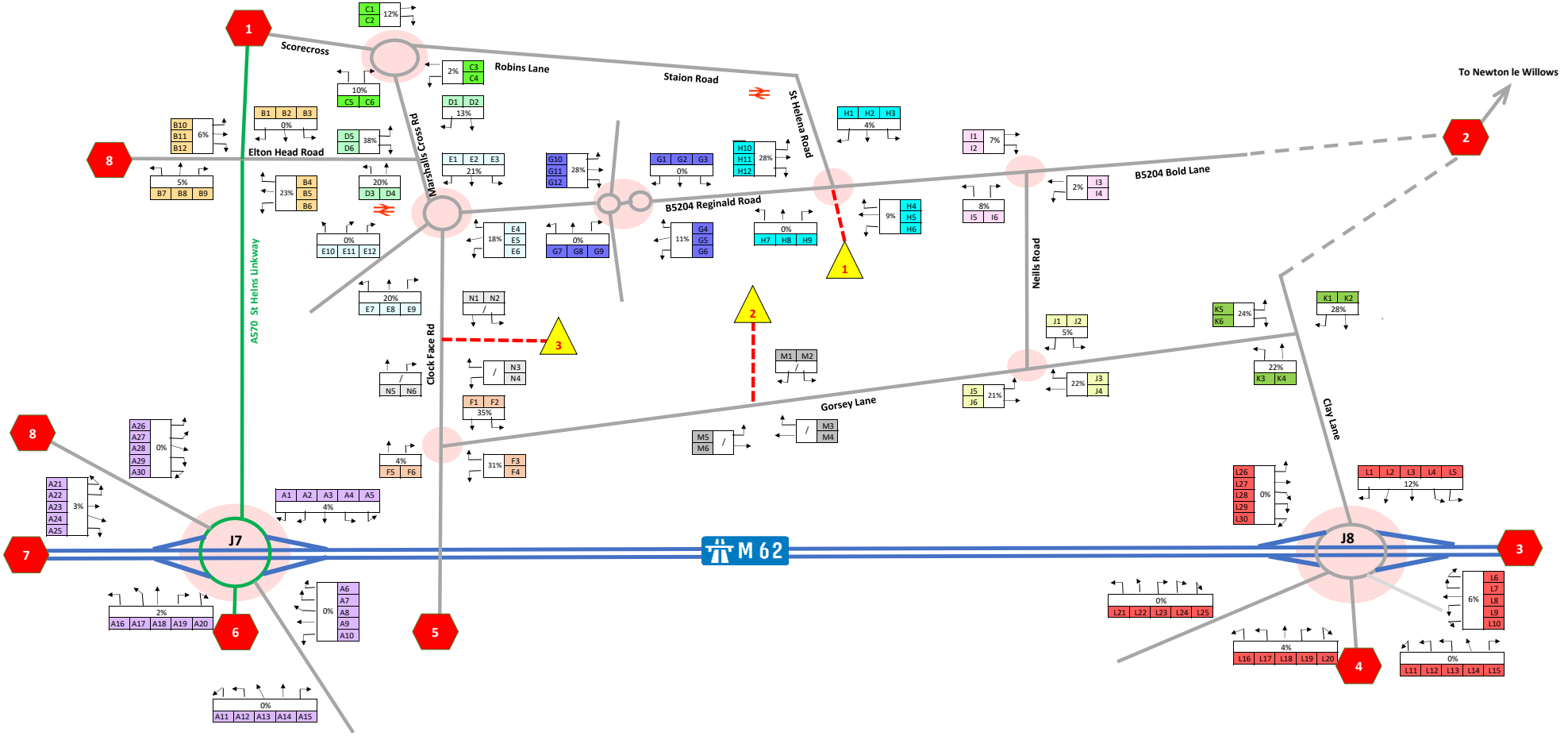

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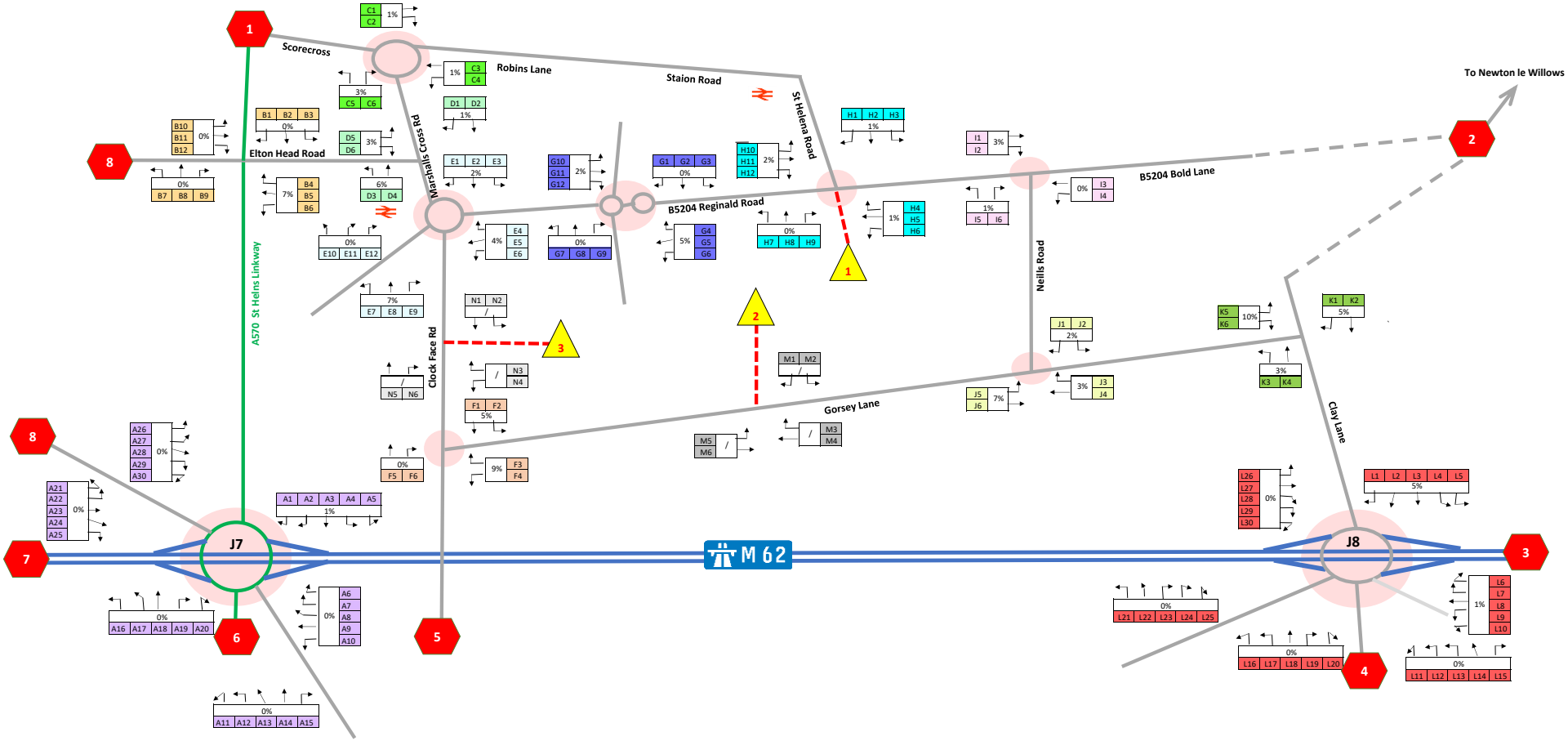
Reference:	TF5



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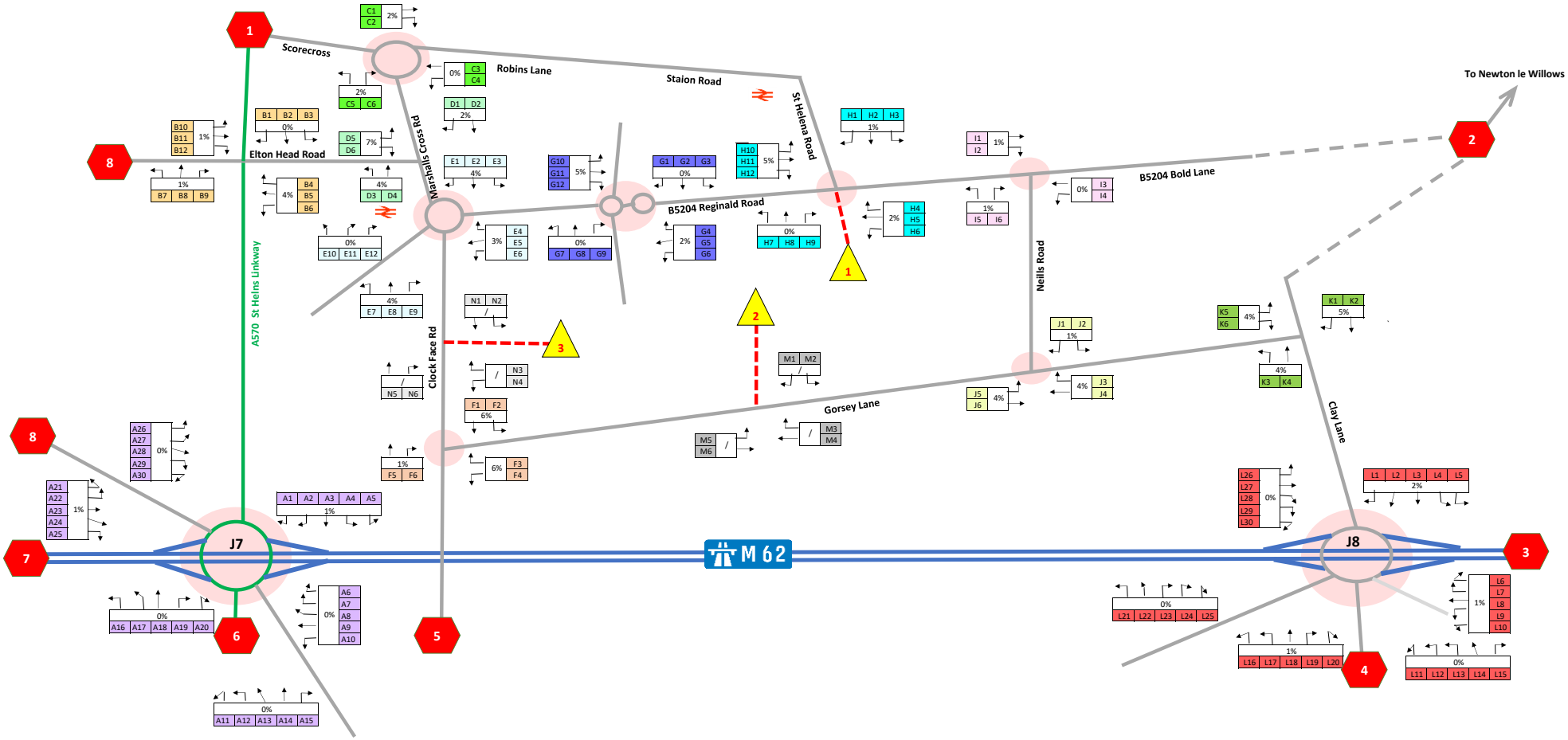
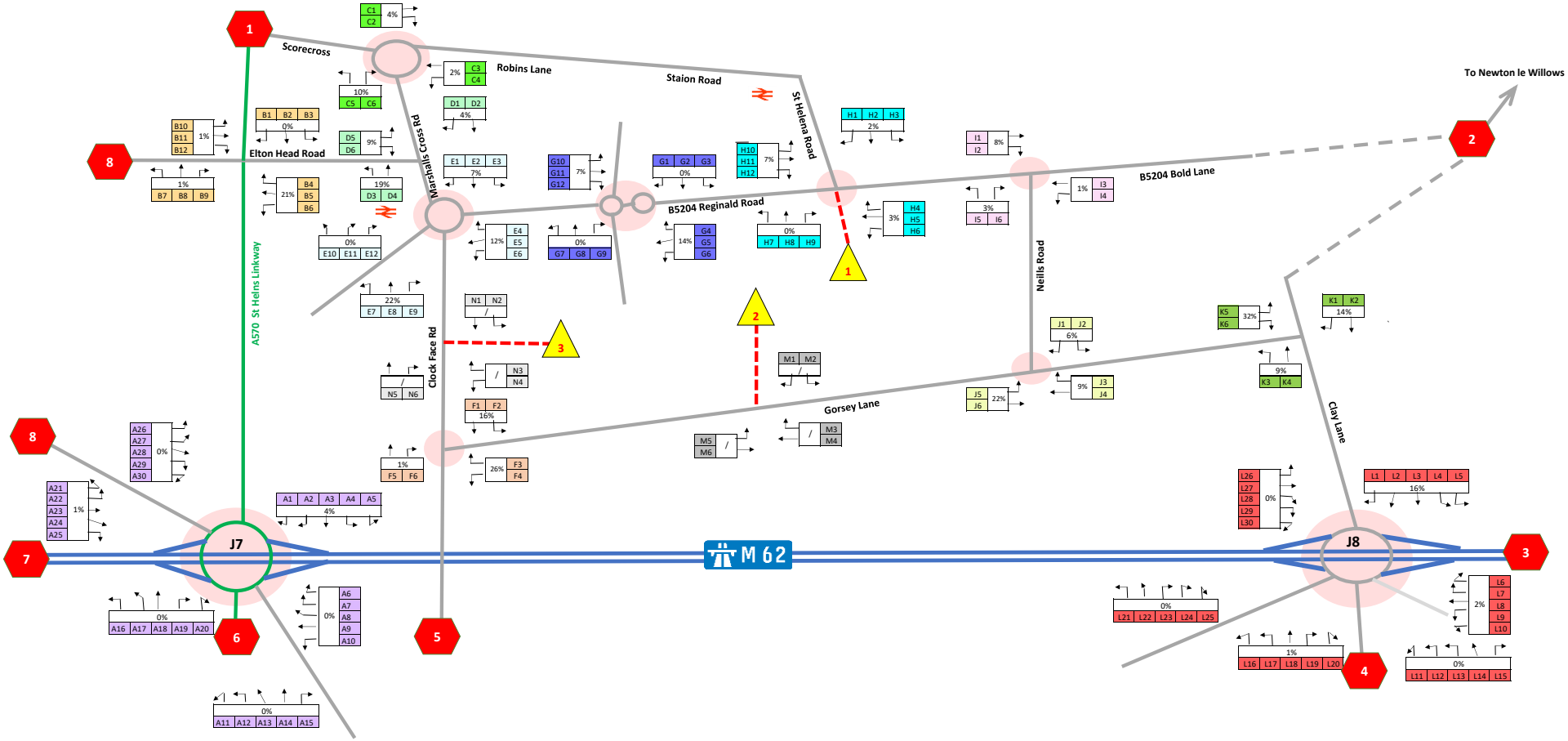


WSP

Title: 2035 % Impact FMS PM

Project: Bold Forest

Reference: TF7



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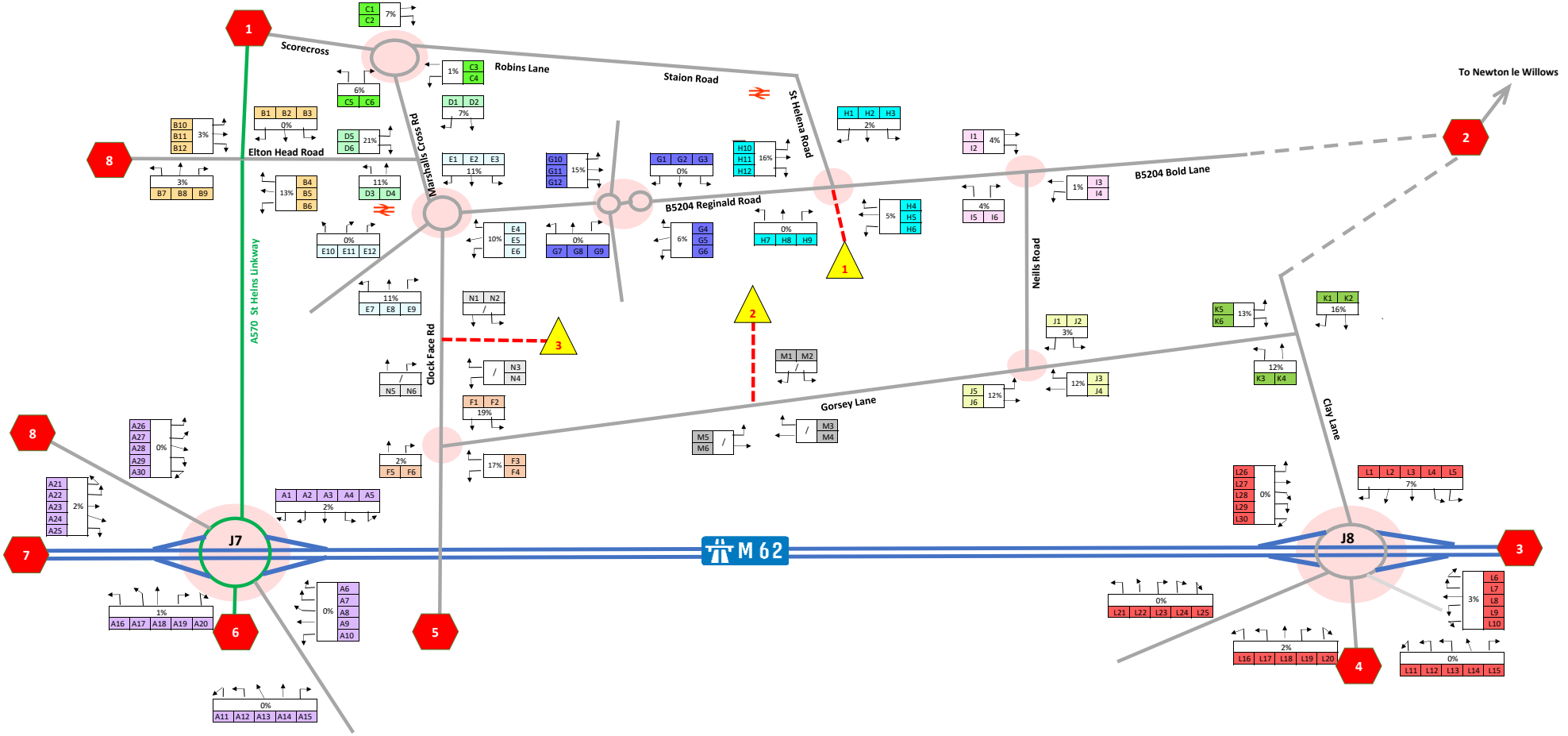

Title:	2049 % Impact FMS PM
Project:	Bold Forest
Reference:	TF9

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