



# Shifnal Employment Land Study

A Report by Hatch  
September 2020

# Harrow Estates Plc

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# 1. Purpose of the Report

- 1.1 Harrow Estates Plc are preparing representations to the Pre-Submission Draft of the Shropshire Local Plan 2016 to 2038. The focus of the representations is on potential employment sites to the east of Shifnal (sites SHF018b & SHF018d).
- 1.2 The sites are identified in the Pre-Submission Draft at 39 hectares gross, and yielding 15.6 hectares of net developable land. The Pre-Submission Draft states:  
“The development of these two inter-related sites will significantly improve the employment land offer, commercial premises, business representation and employment in Shifnal”
- 1.3 Hatch were commissioned by Harrow Estates Plc to support their representations.
- 1.4 Specifically, the role of Hatch is to:
  - First, provide evidence on why the land at sites SHF018b & SHF018dc is needed for employment uses
  - Second, provide evidence on the types of employment accommodation that would be best suited to the site(s)
  - Third, quantify the full range of economic benefits that would be generated by the site both through construction and when operational and occupied.
- 1.5 Hatch is a specialist economics consultancy. We comprise the former economics consultancy of Regeneris Consulting who had a 20 year track record of advising on employment land and housing land matters.

## 2. Shifnal in Context

- 2.1 Shifnal is located to the south of the M54 between Telford and Wolverhampton. As well as the established functions of Telford and Wolverhampton as significant employment and business centres, the M54 corridor is recognised as a strategically important location for industry, with a particular focus on advanced manufacturing and engineering, technology-led business and logistics and distribution.

Figure 2.1 Location of Shifnal within Shropshire



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- 2.2 The emerging local plan has identified the Shifnal alongside, a number of other locations, including; Albrighton, Alveley, Cosford, Shifnal and Stanmore, that are potential growth areas within Shropshire, that could see relatively high levels of residential and employment growth.
- 2.3 Shropshire's emerging Local Plan (Pre-Submission Draft) seeks to secure a sustainable and balanced strategy for the growth of Shifnal from 2016 to 2038, the Local Plan makes several references to the development of land in Shifnal:

- “Shifnal will be the focus for investment, employment, housing and development on the M54/A5 Strategic Corridor through Shropshire with access to Junctions 4 and 3 with proximity to Wolverhampton and the i54 major investment site.”
- “Shifnal will have a key role in providing homes, jobs, services and facilities to the Place Plan area, other Green Belt communities and the M54/A5 Strategic Corridor. Over the Local Plan period, the town will deliver around 1,500 dwellings and make available around 41 hectares of employment land to provide choice and competition in the market. New housing and employment will make provision for the needs of the town and surrounding hinterland, including attracting inward investment and allowing existing businesses to expand.”
- “The strategic location, function, size (as the largest Key Centre in Shropshire) and accessibility of Shifnal have the effect of promoting the town as a growth point on the M54 corridor and within this sub-regional area of the West Midlands.”

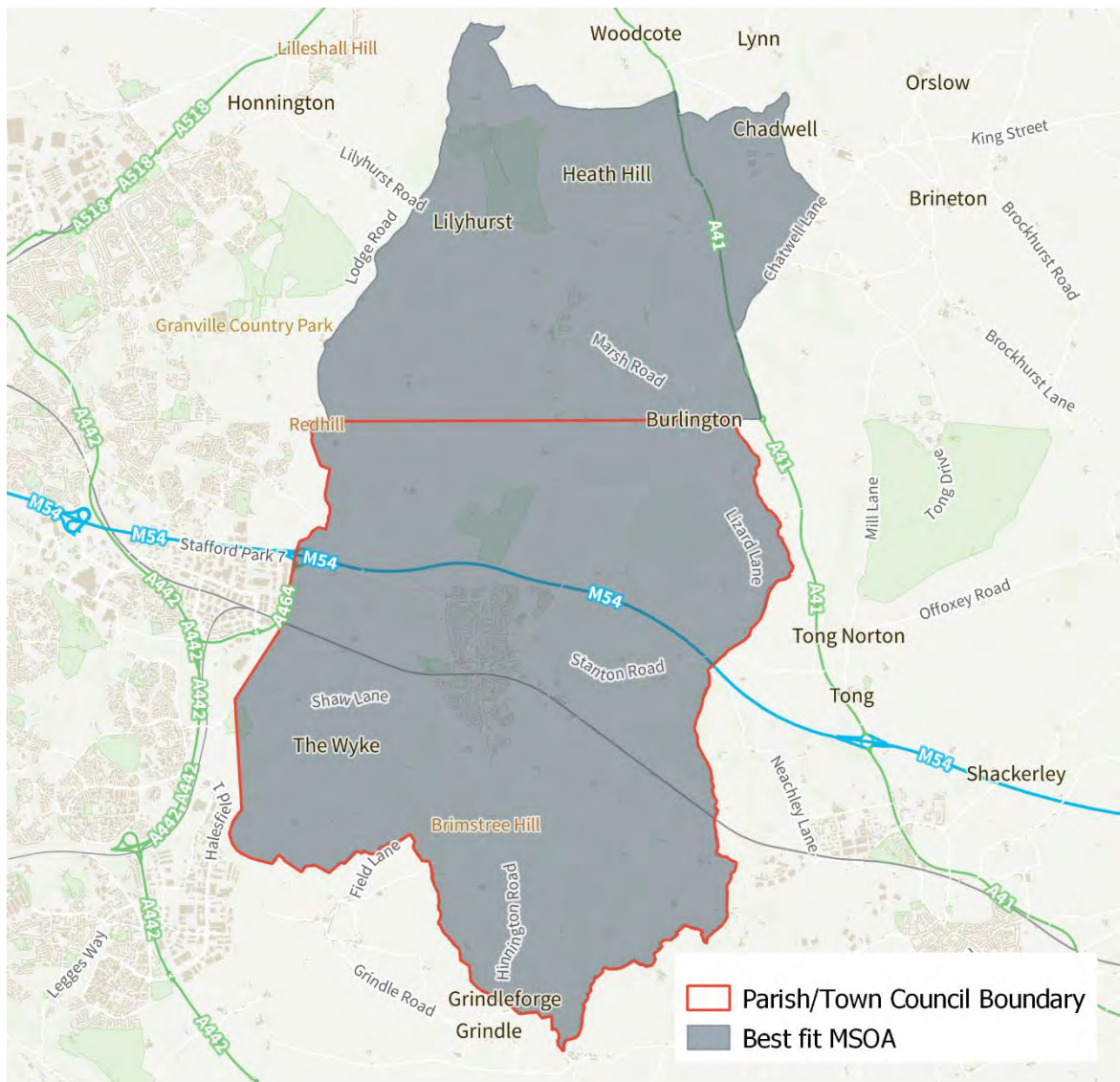
2.4 The development of the proposed employment sites is aligned with Shifnal’s current economic context as a location of future balanced growth through development of both residential and development sites.

### 3. Economic, Employment and Labour Market Trends

#### Local Impact Area

3.1 Figure 3.1 shows the parish/town council boundary for Shifnal, which corresponds with Shifnal’s neighborhood plan boundary. This section draws on the latest data available for the statistical area that is most closely aligned to the council’s boundary, the Middle Layer Super Output Area (MSOA) boundary that covers Shifnal and the rural area to the North of the A5 (which crosses through Burlington). This ‘best fit’ MSOA is referred to as the Shifnal local impact area for the purpose of this report.

Figure 3.1 Shifnal’s Local Impact Area



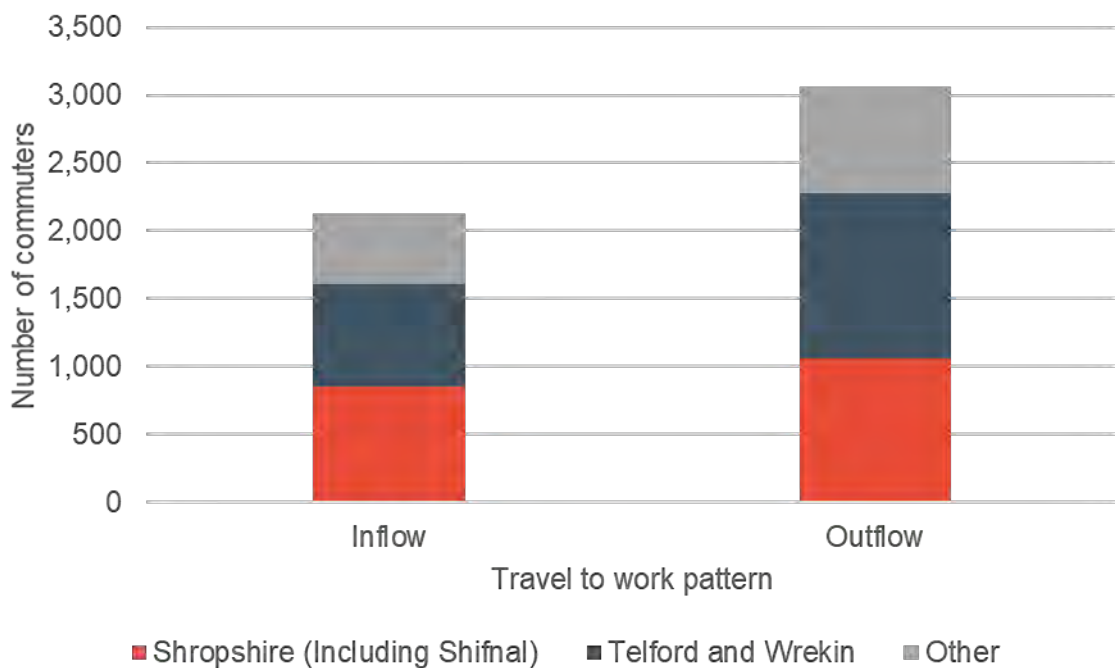
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## Current Employment in Shifnal

- 3.2 Shifnal is the seventh largest employment centre in Shropshire and home to 2,750 jobs. However, the area has a low job density of 500 jobs per 1,000 working aged people compared to an average of 717 jobs per 1,000 working aged people in Shropshire and 760 per 1,000 nationally. The low job density seen in Shifnal is symptomatic of a sustained period of lower investment into new employment sites.
- 3.3 Shifnal’s low job density is also related to Shifnal’s role as a dormitory town. Shropshire’s 2019 employment land review (page 80) states “There is currently an imbalance between the residential and employment land uses in this settlement lending the town a distinctively ‘dormitory’ character”.
- 3.4 Local commuting patterns shown in Figure 3.2 evidences this point as census data shows a daily net outflow of commuters from the Shifnal local impact area of over 900 commuters per day.

Figure 3.2 Daily commuting patterns to and from Shifnal



Source: Census 2011

- 3.5 The three largest employment sectors in Shifnal are arts, entertainment and recreation, construction and education. Together they account for almost half (44%) of Shifnal’s employment. These sectors represent a limited sectoral profile against the strategically important sectors highlighted in Shropshire’s Economic Growth Strategy for 2017 – 2021. Balanced growth through development of employment sites presents an opportunity for Shifnal to expand its sectoral profile into sectors which are aligned with the wider local economy and strategically important sectors that link in with Shropshire’s aspirations and the wider strengths of Telford and Wolverhampton, especially in advanced manufacturing.

### Shifnal’s Wider Impact Area

- 3.6 The local impact area together with the 2 MSOA areas located in Telford and Wrekin, to the West of Shifnal, make up Shifnal’s ‘wider impact area’ for the purpose of this report.



This area has a significantly different employment and business profile than the local impact area due to the presence of industrial areas on the fringes of Telford.

- 3.7 The top industries in the wider impact area by job provision shown in Table 3.1 account for over 70% of total jobs in this area. Manufacturing provides 4,250 (23%) of Shifnal's jobs and is almost 3 times as concentrated as is seen on average nationally. Since 2009, Shifnal's wider impact area has experienced a growth in manufacturing jobs of 620 jobs (17% growth).

Table 3.1 Shifnal's Wider Impact Areas Employment Strengths – Top Industries (by sections)

Sector	Jobs	% of Total Employment	Location Quotient	Change from 2009 to 2018
<b>Manufacturing</b>	<b>4,250</b>	<b>23%</b>	<b>2.9</b>	<b>620</b>
Administrative and support	2,500	14%	1.5	1,530
Wholesale and retail trade	2,250	12%	0.8	365
Information and communication	1,875	10%	2.5	-160
Education	1,250	7%	0.8	200
Transportation and storage	1,125	6%	1.3	170

Source: ONS, Business Register and Employment Survey

- 3.8 Drilling down into the top 10<sup>1</sup> subclasses<sup>2</sup> presented in Table 3.2 reveals the employment strengths in Shifnal's wider impact area at a more granular level. There are several manufacturing subclasses included in the top 10 subclasses, operating in a variety of sectors. It should be noted that many of the strengths of the wider impact areas employment base offer themselves to highly skilled work such as skilled manufacturing and computer consultancy activities.

Table 3.2 Shifnal's Wider Impact Area Employment Strengths - Drill Down into Top 10 Subclasses by Number of Jobs

	Number of Jobs	% of Jobs
Temporary employment agency activities	1,625	9%
Computer consultancy activities	1,500	8%
Manufacture of cocoa, and chocolate confectionery	600	3%
Manufacture of office machinery and equipment (except computers and peripheral equipment)	600	3%
Operation of warehousing and storage facilities for land transport activities of division 49	550	3%
Manufacture of other parts and accessories for motor vehicles	475	3%
Primary education	425	2%
General public administration activities	400	2%
Wholesale of wood, construction materials and sanitary equipment	375	2%
General secondary education	375	2%

Source: ONS, Business Register and Employment Survey

<sup>1</sup> By number of jobs

<sup>2</sup> ONS, 5 digit SIC codes

3.9 To put the employment strengths in the wider impact area strengths into context, the strengths are closely aligned with the profile seen in Telford & Wrekin. In particular its manufacturing base, as Telford & Wrekin’s manufacturing sector is more than twice as concentrated than nationally. In terms of economic profile, Shifnal could have the potential to become more closely aligned to the wider area and accommodate a similar sector base.

### Business Base

3.10 ONS data shows there are 400 business enterprises located in the Shifnal local impact area. 91% of which businesses are micro sized (with 0 – 9 employees), considerably higher than the national average and typical of a town within Shropshire. The data also shows there are no large businesses located in the Shifnal local impact area<sup>3</sup>.

3.11 In comparison the wider Shifnal area is home to 1,000 businesses. Its business base stands out against other areas in terms of its size profile due to the higher concentration of businesses with 10 or more employees compared to micro sized businesses. Suggesting the area is particularly attractive to large and medium sized businesses. Notably the area follows a similar trend to Telford and Wrekin, which also is home to a greater proportion of large and medium sized businesses than the other areas.

**Table 3.3 Percentages of Business by Size, 2019**

Area		Total	Size of Business (Number of Employees)			
			Micro (0 to 9)	Small (10 to 49)	Medium-sized (50 to 249)	Large (250+)
Shifnal Local Impact Area	<b>No.</b>	<b>400</b>	<b>365</b>	<b>30</b>	<b>5</b>	<b>0</b>
	%		91%	8%	1.3%	0%
Shifnal Wider Impact Area	<b>No.</b>	<b>1,000</b>	<b>845</b>	<b>110</b>	<b>35</b>	<b>10</b>
	%		85%	11%	3.5%	1.0%
Shropshire			91%	8%	1.2%	0.3%
Telford and Wrekin			86%	10%	2.5%	0.7%
Wolverhampton			87%	11%	2.0%	0.5%
Black Country			87%	11%	2.0%	0.4%
Greater Birmingham and Solihull			89%	9%	1.6%	0.4%
The Marches			90%	9%	1.4%	0.3%
Great Britain			89%	9%	1.5%	0.4%

Source: ONS, IDBR, UK Business Counts. Enterprises, Number of businesses is rounded to the nearest 5.

3.12 Development of employment land in Shifnal has the potential to attract larger businesses to the local impact area, facilitate growth of its current businesses and balance the structure of its business base whilst achieving balanced growth in Shifnal and Shropshire.

3.13 In Shifnal’s wider impact area (of the top industries by number of enterprises) Information and communication and manufacturing stand out as the most concentrated sectors. They are 1.3 and 1.7 times more concentrated respectively than is seen nationally.

3.14 Drilling down into the ONS data for top 10 subclasses reveals the business strengths in the wider Shifnal area at a more granular level. The largest subclass in terms of enterprises is ‘Computer consultancy activities’, which accounts for 7% of the total businesses. Management consultancy activities (other than financial management) also makes up a large proportion of the business base, accounting for 6% of enterprises.

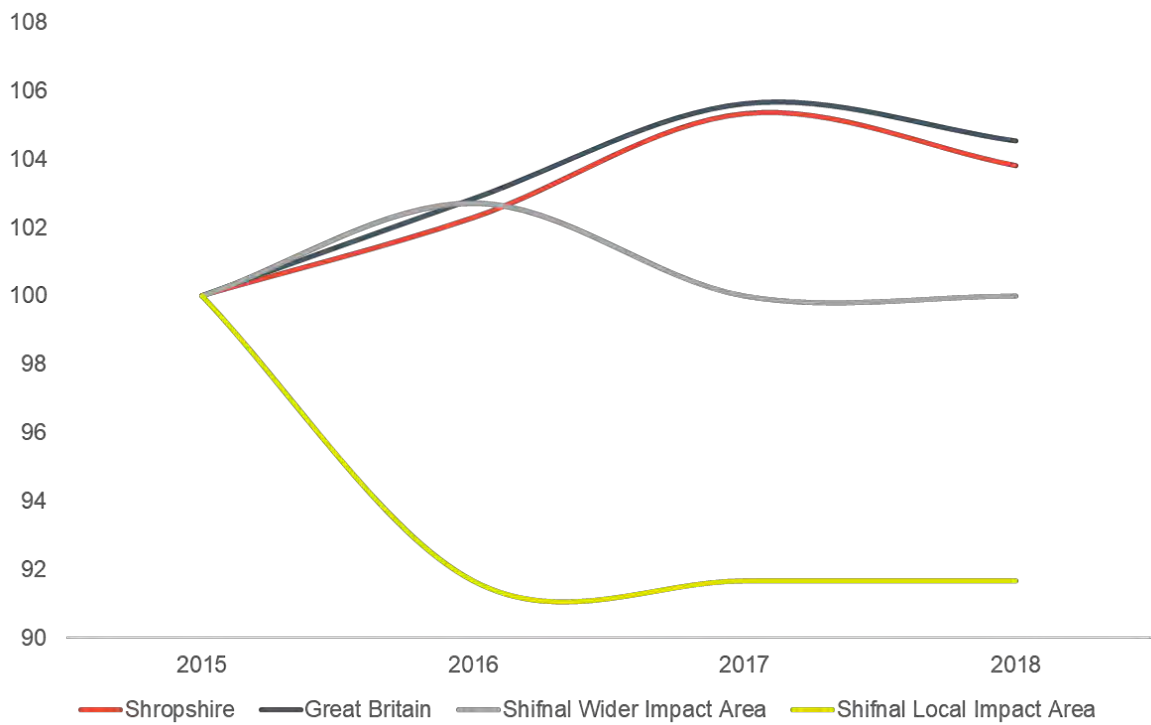
<sup>3</sup> Please note this ONS data is rounded to the nearest 5 businesses.

- 3.15 Strengths in the wider impact areas sectors and subclasses represents an opportunity for Shifnal to attract businesses which are aligned to the strengths of the wider impact area.

### Employment Change in Recent Years

- 3.16 In recent years the local impact area has seen a decline and stagnation in employment, which fell by 8% from 2015 to 2016 and remained at the same level until 2018, whilst Shropshire and Great Britain have seen growth of 4% and 5% respectively from 2015 to 2018. Notably, Shifnal brings the performance of its wider local impact area down, this area saw initial growth but has also struggled to sustain this growth in recent years. Investment in employment sites in Shifnal would help bring the employment growth to the local area which would contribute to future economic growth aspirations in Shropshire.

**Figure 3.3 Indexed Employment Change 2015-18 (2015=100)**



Source: ONS, Business Register and Employment Survey

### Looking to the Future

- 3.17 The emerging local plan sets out provisions to develop 1,500 residential dwellings within Shifnal from 2016 to 2036. This will significantly expand Shifnal's population from its current position, which is below 9,000, to well over 10,000 residents.
- 3.18 To achieve balanced growth, which is identified throughout the emerging local plan as a priority, Shifnal will need to see a commensurate quantity of employment land development. An increase of 1,500 dwellings represents 4.8% of Shropshire's identified total housing development target over the plan period. Taking a similar approach, balanced development of employment land to accompany this residential development would represent around 5% of the employment land need, which is identified as 300 hectares. Therefore, development of around 15 hectares of employment land in Shifnal would represent a commensurate quantity of employment land development in the town and

facilitate balanced growth. The proposed development of circa 15.6 hectares net closely aligns with the level of commensurate development suggested above.

- 3.19 The development of employment sites in Shifnal would allow Shifnal to contribute the economic potentially of high growth and strategic sectors within Shropshire. Local authority / Oxford Economics forecasts (under a ‘productivity growth for faster GVA growth’ scenario) shows that from 2020 to 2036, in Shropshire, it is forecasted that there will be the largest GVA growth in the Real estate and Professional (£413 million), Wholesale and retail trade (£363 million), scientific and technical sectors (£355 million).
- 3.20 Shropshire is also expected to achieve significant growth in its strategically important sectors. Shropshire is forecasted to experience growth in Advanced manufacturing (£114.5 million), Food and drink sector (£73.7 million), Tourism and the visitor economy sector (£125.2 million), Digital and creative sector growth (£190.3 million) and Agri-tech (£48.1 million). Development of employment sites in Shifnal would play an important role in contributing to the growth levels mentioned above.

### **Summary of Shifnal’s Economic, Employment and Labour Market Trends**

- Shifnal has a low ratio of jobs to population, with a job density far below the national average. This is related to a lack of investment in employment sites over a sustained period.
- Shifnal’s imbalance between residential and employment land uses has led to the towns distinctive dormitory character, which is evident in its relatively large daily net outflow of commuters.
- Shifnal has a limited sectoral mix in terms of its alignment with strategic sectors, whereas Shifnal’s wider impact area attracts a strong mix of job. This presents Shifnal with an opportunity to become more closely aligned with the wider impact area, Shropshire’s strategic sectors and the sectoral strengths across the region. Advanced manufacturing is an example of a sector which has high growth potential locally and regionally.
- Shifnal lacks the presence of major employers. Development of employment land would have the potential to attract more significant businesses to Shifnal (and Shropshire) and present opportunities for growth of existing businesses which would bring balance to the structure of Shifnal’s business base.
- In recent years Shifnal has struggled to achieve growth in its employment base, new investment would help reverse the stagnation in employment growth.
- Employment growth is needed at a time when Shifnal’s population is likely to experience significant population growth within the local impact area. Development of 1,500 residential units over the plan period should be supplemented with a commensurate level of employment land, the council suggest a level of employment land development that is sensible and in line with the proposed level of residential development.
- Development of employment sites in Shropshire will be required to achieve similar levels of GVA growth that are forecasted in the faster GVA growth scenario. Such a scenario would see high levels of growth including over £100 million GVA growth in advanced manufacturing within Shropshire.

## 4. Property Market Evidence

4.1 Using CoStar Property Market Intelligence software and supplemented with other data sources where required, property market evidence has been analysed for both the office and industrial property markets. This section provides property market evidence for the following areas:

- Shifnal’s local area – the immediate built up area of Shifnal
- A 2.5m radius of Shifnal - distance chosen to include Shifnal’s wider employment area and to not incorporate Telford
- The M54 Corridor – covers the corridor between the M6 (to the East) and Telford (to the West), which is essentially the area between Junctions 1 and 4.

### Office Market

#### Shifnal

4.2 CoStar provides data for 11 office buildings within Shifnal with a total floor space of 19,000 square feet, the average (NIA) size of office property in Shifnal totals 1,730 square feet. The vast majority of occupiers in Shifnal’s office stock serves the needs of micro/small businesses who cater to the needs of the local area. In comparison, within 2.5 miles of the center of Shifnal there is a total office floor space stock of 152,000 square feet.

4.3 Since 2017, the only take-up of office space (totaling 10,000 sq. ft) in the vicinity of Shifnal has been at Stafford Park, situated between Shifnal and Telford. The town itself has seen very few office leasing’s over the last 15 years, reflecting what appears to be a small occupier base and local needs which are principally met in high street office stock.

4.4 Vacancy rates in Shifnal have been low in recent years. According to CoStar data, in 3 out of the last 5 years there was no vacant space in Shifnal. It is not clear from the data whether this is indicative of high (and possibly unmet) demand, or whether it simply reflects a local market in which there is both limited demand and supply.

4.5 Rental prices for office space in Shifnal vary from below £9 per square foot to up to £15 per square foot. The average rate of office rent for the area within 2.5 miles of Shifnal is £9.39 per square foot. This represents an affordable rental level and is consistent with the town’s characteristics as an office location in which office-based activity is dominated by smaller and lower grade stock.

4.6 Shifnal’s office inventory has remained the same over recent years as there has been no construction of new office space. There is currently no significant office development underway locally.

Figure 4.1 Shifnal (2.5 miles) – Key Market Indicators



Source: CoStar 2020

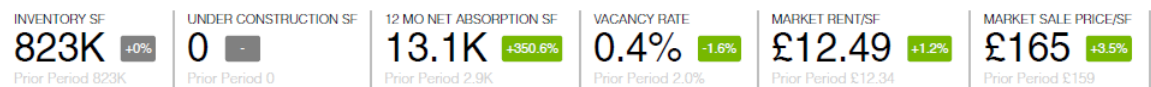
#### M54 corridor

4.7 There is a total of 823,000 square feet of office stock within the M54 corridor. Since 2017, take-up along the M54 corridor (totaling 290,000 sq. ft) has predominantly been at either

end of the corridor in and around Telford, and towards Wolverhampton Business Park. The i54 development, which is currently expanding, includes some office facilities but these are generally part of larger industrial operations. Of the limited Grade A stock across the wider area, the i9 and i10 developments in Wolverhampton are by far the largest and were fully occupied pre- Covid-19. The focus of office development and market activity in Wolverhampton and the Black Country has been on public transport (particularly rail) connected, central urban locations. This has occurred over a period since the last recession during which time the office development market slowed very substantially, and which saw very little of the out-of-town office park or campus type development that was a feature of the mid-late 1990s and 2000s nationally.

- 4.8 There is very little vacant space along the M54 corridor. CoStar data shows that the vacancy rate is currently 0.4%. This may in part reflect the characteristics of the area’s economy in which sectors including manufacturing, engineering and logistics and distribution are its most widely recognized strengths rather than significant office-based activity. It may also be a marker of a reasonable level demand for the office space that is available, although this is not necessarily borne out by rental values.
- 4.9 The M54 corridor attracts higher rental prices than both Shifnal and Shropshire. The average market rent price for office space according to CoStar data is £12.49 per square foot. Evidence of higher market rents along the M54 corridor might suggest a premium attached to motorway linked sites, but also reflect the presence of newer and better-quality space located on sites along the corridor including Telford.
- 4.10 There is currently no development of new office space on the M54 corridor. However, in 2018 an office development was constructed at Exchange Court, Wolverhampton Business Park, it is estimated<sup>4</sup> to attract rental values of £17-21 per square foot. As described above, Wolverhampton City Council’s focus has been on creating a Grade A office supply in the city centre.

Figure 4.2 M54 Corridor – Key Market Indicators



Source: CoStar 2020

## Industrial

### Shifnal

- 4.11 CoStar provides data for 15 industrial/light industrial buildings within Shifnal’s built up area, with a total floor space of 177,000 square feet. This space is comprised of warehouses, light manufacturing and service space. The average (NIA) size of office property in Shifnal totals 11,800 square feet. In comparison, within 2.5 miles of the centre of Shifnal there is a significantly larger total industrial floor space stock of 5.5 million square feet.
- 4.12 There have been 46 transactions within a 2.5 mile radius of Shifnal since the start of 2017 (totaling almost 510,000 sq.ft.), the majority of which are new deals driven by demand for warehousing space. As with office deals, most were at Stafford Park, including Unit 12 Queensway Link, Stafford Park 17.

<sup>4</sup> The CoStar Estimated Rent™ is CoStar’s estimated starting rent for new leases in a building. Estimated Rents are determined through a proprietary algorithm that includes several key data points, such as current historical asking rents, historical lease transactions, market submarket trends, and more.



- 4.13 although there were also several deals at Halesfield to the south west of Shifnal. Most deals were for below 5,000 square feet, however there are a few examples of deals over 10,000 square feet ranging up to 55,000 square feet.
- 4.14 As with office space, the data shows very little vacant industrial space in and around Shifnal (<1%). This is more likely to reflect the strength of demand for light industrial and storage facilities across the area, markets which our research suggests have held up well and which are likely to reflect the strength of automotive and other advanced manufacturing and engineering sectors in the area.
- 4.15 Market rents for industrial space in the area within 2.5 miles of Shifnal averages at £4.99 per square foot. The data is dominated by Stafford Park and it is not clear whether there any premium attached to Stafford Park. However, based on recent transactions overseen by local agents, it has been suggested that market rents are closer to £6.50 per square foot, especially for modern high spec premises.
- 4.16 There are no industrial premises under construction in the immediate vicinity of Shifnal. However, analysis of Shropshire Council’s Annual Monitoring Report data shows there were completions of 2.1 ha of B1c, B2 and B8 employment land in the Shifnal area between 2006 and 2017, which are understood to be principally developments at Stafford Park.

Figure 4.3 Shifnal (2.5 miles) – Key Market Indicators



Source: CoStar 2020

### M54 Corridor

- 4.17 CoStar provides data for 162 industrial properties along the M54 corridor containing 9 million square feet of industrial stock. This is comprised of a mixture of light industrial and industrial uses.
- 4.18 Take-up along the M54 corridor has also been focused around Stafford Park with only 12 additional transactions recorded beyond the 46 described above. There have been four large leases (+50,000 sq. ft) since 2017, with AO.com amongst the tenants.
- 4.19 There were 11 deals in the 10,000-50,000 sq. ft range, and a further 43 in the sub-10k range including; Unit A3, Access 442, Hadley Park East, Unit 4, Hadley Trade Park and Units 2 & 3, Hadley Trade Park, Telford. Based on information from local agents, the agreed rents for these transactions were in the region of £7.50 per square foot, which is higher than the CoStar estimate (£5.30 per square foot).
- 4.20 This is consistent with the pattern across the wider Wolverhampton and Black Country area. The volume of light industrial unit transactions was dominated by sub-5,000 sq. ft deals and 10k-15k sq. ft during the latter half of the 2010s, with rising rental values reflecting strengthening demand and tight supply.
- 4.21 Along the M54 corridor, the vacancy rate is slightly higher than is seen locally, at 3% but is not indicative of there being any significant surplus of good quality stock available. Most vacant property along the M54 is reported at Stafford Park which reflects its position as the largest such location for industrial uses.
- 4.22 Average rental prices are slightly higher along the M54 corridor than is the case locally, but affordability appears to be good. Across the wider area extending into the Black Country, there is evidence of rising rental values from the middle of the 2010s onwards, driven both by demand for light industrial units and a strong logistics and distribution market. Market



analysis carried out in 2018-19 by Hatch relating to Wolverhampton Science Park, and more recent work in Shropshire, suggest that:

- Demand for smaller, light industrial space has held up well despite economic conditions towards the end of the decade
- There are shortages of good quality, modern light industrial units including flexible space (ie hybrid workspace/office units) and grow on space
- Demand has been fueled in part by owner occupier demand, with appetite amongst small business owners to own their business property

4.23 There is 60,000 sq. ft of industrial development under construction at i54 which will be tenanted by Morris Site Machinery. This is part of the ongoing western extension of i54.

Figure 4.4 M54 Corridor – Key Market Indicators



Source: CoStar 2020

## Covid 19 Impacts

4.24 Covid-19 has had immediate and significant impacts on the area’s economy. As is the case across the UK, the crisis had immediate negative effects on many businesses, with substantial numbers of businesses taking up the government furlough scheme, thousands of businesses and self-employed owners securing business support grants, and rising business failures. Amongst the headlines for area are:

- Claimant count unemployment across Shropshire, Telford and Wrekin and Wolverhampton which has doubled since December 2020, adding an additional 16,500 people to the unemployed. Shropshire has seen unemployment increase by 140% in 7 months.
- Take-up of furlough for 100,000 workers across the area at July 2020, around 30% of all eligible roles.
- A further 37,000 self-employed people taking up the government grant scheme, around 75% of all those self-employed.

4.25 The Office for Budget Responsibility is the government’s independent advisor on the economy and public sector budgets. Its 2020 Fiscal Sustainability report (July) shows a projected loss of 2.9 million jobs nationally by 2021 in its central scenario. As the government furlough scheme is wound down, recent announcements of major redundancies nationally point to what is likely to be a significant acceleration of job losses and business failures through autumn and winter 2020. Recovery back to pre-Covid19 levels is projected only by 2024-5.

4.26 Across Wolverhampton, Telford & Wrekin and Shropshire, notable announcements include Jaguar Land Rover (1,100, June 2020), Aerospace (255 jobs). These are the type of skilled engineering and manufacturing jobs which are a strategic priority for the M54 corridor and Black Country. Commentary on JLR suggests potential for 2,200 jobs to be lost across its supply chain. Whilst it is too soon to determine how deep and prolonged will be the effects of recession on these sectors and the area, this is an important part of the context in which the development of new industrial and office space will be set over the next 2-3 years at least.

- 4.27 The analysis of property market data earlier in the report provides some pointers as to the early impacts of Covid-19 on the commercial property market. Work Hatch is carrying out on employment land and property markets elsewhere in the UK, and our broader economic development and regeneration work, suggests several emerging patterns relevant to future employment development:
- Reinforcement of the need for warehousing space to support the shift to online retail. This was already a sector in which the West Midlands was faced with a very tight supply of land and property, particularly sites capable of accommodating 100k sq. ft+. Key drivers include:
    - accelerated growth in online trade during the pandemic as large numbers of consumers switched to deliveries of convenience and comparison goods;
    - an increased need for storage space in response to experiences of shortages of suppliers, particularly imports. The shortage of health supplies has been a prominent example, and Hatch has seen evidence of the NHS and health providers seeking additional space as a consequence;
    - responses by office-based companies including growing demand for satellite workspaces out of city centres to reduce the need to travel and provide alternatives to home bases; reconfiguration of existing office space to reflect Covid-19 safeguarding; reduction of office space requirements as homeworking becomes a more proven practice (although the need for distancing may also have the reverse effect);
    - evidence that affordability is becoming a more pressing issue as the effects of recession bite, with implications for higher value office markets in city centres and business parks, and higher specification industrial premises. The previous recession saw many firms that survived the downturn in 2008 shift into consolidation mode, leading to a period of significant reduced demand for space;
    - renewed attention to the accessibility of space by private transport (ie car) in response to concerns about the safety of public transport, although we have heard only isolated instances of this message;
    - anecdotal evidence of a broader shift in preferences about living and working locations. Hatch has heard evidence of substantial increases in demand for homes in smaller towns, villages and rural areas from current residents of major cities, and particularly from London. There is potential for this to become part of a wider change affecting other large cities.
- 4.28 It is too soon to determine which of these impacts of the crisis will become lasting changes, and how significant their impact will be on the demand for commercial floorspace. However, it is reasonable to assume that some sectors will see a downturn in demand over the short term, and that others will see new and different requirements by occupiers.
- 4.29 On the face of it, Shifnal's location close to the M54 and with rapid access to Junction 3 was already a strength of the site and this remains the case. If there are lasting impacts from the Covid-19 crisis, its attractive rural setting, its proximity to Wolverhampton and Telford, and its accessibility to major industrial and other employment areas in the Black Country, Birmingham and Telford could be considered additional advantages.
- 4.30 A clear growth strategy through the Local Plan process, which plans positively for future growth, will be important in the current climate to ensure the Council's growth aspirations are continued to be met.

## Summary of Property Market Evidence

- Shifnal has a limited commercial property market that appears to largely cater to smaller businesses serving local need, with a small number of industrial and trading operations based on Shifnal Industrial Estate.
- Analysis of activity across a wider 2.5-mile area around Shifnal shows that Stafford Park dominates the property market, reflecting Telford’s role as a key location for modern industrial operations including both advanced manufacturing/engineering and the logistics/distribution sector. Much of the recent transactions and development activity appear to have been concentrated on that site.
- The office market for the local area and M54 corridor show low vacancy and affordable rental rates, with some examples of higher priced stock for offices on M54 linked sites. In Shifnal, the office market appears to be overwhelmingly micro and small businesses operating in the town and probably service a local consumer and business base.
- Despite low vacancy rates, the price data do not point to substantial latent demand for office space in Shifnal or the immediate surrounding area. However, generally across the West Midlands and Shropshire, there continues to be demand for affordable office/workspace reflecting a business base that predominantly comprises micro and small businesses, although this is difficult to quantify.
- The data points to stronger market demand/need for industrial space in the area, although this is not specific to Shifnal itself but is indicative of the area’s economic strengths in automotive engineering, other transport manufacturing activity and the logistics industry which has fuelled demand for larger scale employment developments over the past few years .
- It is too soon to establish the likely impacts of the Covid-19 crisis on future demand for commercial premises and land. Whilst recession is likely to have some significant short-term impacts on business demand, a number of potential changes for which some anecdotal evidence is emerging may work in favour of Shifnal and towns like it. This includes:
  - increases in homeworking and the potential to provide workspace in smaller towns and rural areas as commuters and their employers limit journeys to city and larger town offices;
  - evidence that manufacturing supply chain robustness, including inventories/storage have been adversely affected by lockdown restrictions, possibly encouraging reshoring and additional storage space needs;
  - evidence of strengthening appetite from house buyers for smaller towns and rural locations as people exit cities (and particularly the largest cities) in response to the crisis.
- In summary, the property market analysis indicates:
  - Strongest case is for provision of B1(c) light industrial units, with evidence suggesting consistent demand for units in the range 5k sq. ft up to 15k sq. ft
  - Site also well suited to a mix of smaller and mid-sized B2 and B8 logistics units, say 10k sq. ft to 30k sq. ft, for which there is healthy demand.
  - Some likely demand for B1(a) office to feature. But only as a modest component. B1(a) likely to be a relatively modest share of the overall B1 provision
  - Policy calls for “campus style” development – so need to try to capture the above in a well-planned attractive site layout.

## 5. Economic Impact Analysis

- 5.1 This section sets out the economic impacts of the proposed development during the both construction phase (temporary benefits) and operational phase (long-term permanent benefits).

### Construction Related Benefits

---

#### Total Investment

- 5.2 At this stage, there are no formal cost estimates for the development therefore, a cost range has been used to demonstrate the potential construction investment. The ranges are based on SPONS benchmarks<sup>5</sup> which provide a low and high cost per m<sup>2</sup> of floorspace developed, dependent on the proposed end use. It should be noted that these costs are conservative, as they do not consider the costs for site preparation, preliminaries and onsite and offsite infrastructure.
- 5.3 Based on the 156,000m<sup>2</sup> of floorspace proposed, the initial cost of construction is **estimated to be between £90 million and £100 million**. This investment will support a number of jobs during the construction phase, some of which would be local.
- 5.4 Based on the overall construction cost and build periods related benefits have been estimated, which are detailed in the following section.

#### Construction Jobs

- 5.5 Phased construction and delivery of the development is estimated to last approximately 10 years, from initial site preparation through to development.
- 5.6 Based on the Homes England (formerly HCA) construction job assumptions<sup>6</sup> and the total construction investment, it is estimated the Proposed Development will support in the region of **900 – 1,100 person years of employment**.
- 5.7 Due to the varied nature of construction projects, these jobs would not necessarily be FTEs. However, to provide an indication of the number of FTEs the Proposed Development could support, the number of jobs have been split over the 10-year build period. Based on this assumption this would equate to **approximately 90 – 110 FTEs** per annum in construction.
- 5.8 The latest BRES data suggests there are around **8,000 employed within the Construction sector** in Shropshire, which equates to 6.7% of all employment, compared to 4.8% in the West Midlands. **This suggests a sizeable and relevant construction skills base is available in the local and sub-regional area.**

### Operational Economic Impacts

---

#### Direct Economic Impacts

- 5.9 Shropshire Council is not proposing to allocate a specific mix of commercial uses within the draft site-specific policy for the proposed development. This is important to provide flexibility to respond to the market over the course of the site's delivery. For the purposes

<sup>5</sup> See Note 5.

<sup>6</sup> Homes England (formerly Homes and Communities Agency); Calculating Cost Per Job, Best Practice Note (3<sup>rd</sup> Edition), 2015. Number of workers a year per £1m of construction spending.

of this assessment, however, the following reasonable and evidence-based assumptions have been made;

- 70% of developable land devoted to B2/B8, with an equal split (50% / 50%) between the two uses.
- 20% for light industrial /workspace use which aligns with the Council's aspirations for a campus layout.
- 10% B1a to show a small part of this B1c portion in the form of offices, but probably no more than 10%.

5.10 These predicted impacts could, therefore, be subject to change based on the final masterplan and mix of uses across the development. The proposed developable area, specifically referenced for the site, in the Shropshire County Council emerging Local Plan is 156,000 m<sup>2</sup> of floorspace. This has been divided based on the percentage split detailed above.

5.11 Once fully occupied, the development could support approximately **4,200** gross FTE jobs directly on site. The breakdown of the potential employment and associated wages and Gross Value Added<sup>7</sup> (GVA) supported by the proposed development is shown in Tables 5.1 and 5.2 below.

Use Class	Floorspace m <sup>2</sup>	Emp. Density m <sup>2</sup> per FTE	FTEs	Assumed Sector	Wages (millions)	GVA (millions)
B2	54,600	36	1,500	Manufacturing	£54	£100
B8	54,600	77	700	Transport & Logistics	£24	£44
B1c	31,200	47	660	Manufacturing	£22	£41
B1a	15,600	12	1,300	Administrative & Support Services	£32	£64
<b>Total</b>	<b>156,000</b>	<b>NA</b>	<b>4,200</b>	<b>NA</b>	<b>£132</b>	<b>£249</b>

5.12 The total employment supported on site could be over **4,200 FTEs**, with almost **£132m** in **wages** and over **£249m of GVA** generated per annum.

	Estimated Impact
<b>FTEs supported</b>	4,200
<b>Wages per annum</b>	£132m
<b>Gross Value Added (GVA) per annum</b>	£249m

## Indirect and Induced Economic Impacts

5.13 The indirect impacts of the Development refer to the impacts (jobs and GVA) that are located within supply chains and operational expenditure. The induced impacts refer to the jobs and GVA that are generated by the expenditure of the additional wage income of direct workers and indirect workers.

5.14 At this initial stage a ready reckoner based on the HCA Additionality Guide 2015 has been used to estimate the number of indirect and induced jobs supported by the proposed development.

5.15 A composite multiplier of 1.1 is used as a ready reckoner for an area with average supply linkages, at this stage we have assumed this is the case for Shropshire. Further analysis

<sup>7</sup> Based on ONS Annual Business Survey 2018; GVA per Employee. Manufacturing (£66,000), Transport & Storage (£62,000) and Administrative and support service activities (£24,000)

on local supply chains and commuting patterns will need to be used to help establish a more and localised multiplier.

- 5.16 Based upon this analysis, the gross indirect and induced impact of the Development would be an additional **420 FTE jobs** and an additional **£10m GVA** per annum for the economy of Shropshire and the wider catchment area.

## Total Economic Impacts

- 5.17 Taking gross direct, indirect and induced impacts together would lead to an economic impact of **4,620 jobs and £259m in GVA for the economy of Shropshire.**

Impact	FTE jobs	GVA (£m) per annum
Direct Impacts	4,200	£249
Indirect & induced impacts	420	£10
Total economic impacts	4,620	£259

Source: Hatch Regeneris. Figures may not sum due to rounding. All figures are gross impacts

## Wider Benefits

- 5.18 There are a range of wider benefits generated by the Proposed Development which have also been explored as part of this work.

### Business Rates

- 5.19 We estimate that the Development would generate **around £3.6 million** per annum in business rates that would be collected by Shropshire County Council.
- 5.20 Under the business rate retention arrangements introduced by the UK Government in 2013, local authorities such as Shropshire retain around 50% of business rates paid locally. This directly benefits and supports the provision of public services to residents across the County Council area.

### Regeneration Benefits

- 5.21 The investment linked to the Development site could also generate wider regeneration benefits for the Shropshire, which include;
- **Image and Perception of Shifnal and Shropshire** – the development of a modern, large scale and fit-for-purpose site for the manufacturing and transport sector will raise the public profile of Shifnal and Shropshire as a desirable location for manufacturing and transport & logistics. It will also demonstrate investor confidence in the area, which could attract and stimulate further investment in the future.
  - **Diversifying employment opportunities** – the new employment land could attract larger employers to Shifnal, which would diversify the types of employment on offer in the area, which could not only help retain skills and labour (reducing outflows of labour) but attract new skills and labour to Shifnal.
  - **Supporting wider growth and catalytic impacts** – investment in employment land within the Shifnal could attract further investment, stimulating economic growth in the local area and wider impact area. This will also help support the forecast population growth that is anticipated across Shropshire in the coming years.



## 6. Summary & Conclusions

6.1 The main conclusions from the study are summarised below.

- **Limited sectoral mix within immediate Shifnal area** – Shifnal has a limited sectoral mix in terms of its alignment with strategic sectors, whereas Shifnal's wider impact area attracts a strong mix of job. This presents Shifnal with an opportunity to become more closely aligned with the wider impact area, Shropshire's strategic sectors and the sectoral strengths across the region. Advanced manufacturing is an example of a sector which has high growth potential locally and regionally.
- **Lack of major employers within Shifnal** – The Shifnal business base is dominated by smaller local businesses. The proposed development would have the potential to attract larger employers to Shifnal (and Shropshire) and present opportunities for growth of existing businesses which would bring balance to the structure of Shifnal's business base.
- **Employment investment would help stimulate growth** – Shifnal's imbalance between residential and employment land uses has led to the town's distinctive dormitory character, which is evident in its relatively large daily net outflow of commuters. As a result, in recent years Shifnal has struggled to achieve growth in its employment base, new investment would help reverse the stagnation in employment growth. Development of employment sites in Shropshire will be required to achieve similar levels of GVA growth that are forecasted in the faster GVA growth scenario. Such a scenario would see high levels of growth including over £100 million GVA growth in advanced manufacturing within Shropshire
- **Employment growth can support future population growth** – Employment growth is needed at a time when Shifnal's population is likely to experience significant population growth within the local impact area. Development of 1,500 residential units over the plan period should be supplemented with a commensurate level of employment land, the council suggest a level of employment land development that is sensible and in line with the proposed level of residential development.
- **Shifnal has a limited commercial property market** – Shifnal largely caters to smaller businesses serving local need, with a small number of industrial and trading operations based on Shifnal Industrial Estate. However, attracting larger employers to the area would help stimulate and diversify the local economy. The mix of space proposed by the development could help provide the space larger occupiers need whilst also supporting local businesses with grow-on and expansion space.
- **Employment space needed to meet demand locally and regionally** - The data points to stronger market demand/need for industrial space in the area, although this is not specific to Shifnal itself but is indicative of the area's economic strengths in automotive engineering, other transport manufacturing activity and the logistics industry which has fueled demand for larger scale employment developments over the past few years. The development could help meet existing and future demand.
- **Impacts of the Covid-19 crisis** – It is too early to establish the likely impacts of the Covid-19 crisis on future demand for commercial premises and land. Whilst recession is likely to have some significant short-term impacts on business demand, a number of potential changes for which some anecdotal evidence is emerging may work in favour of Shifnal and towns like it. This includes:



- **increases in homeworking and the potential to provide workspace** in smaller towns and rural areas as commuters and their employers limit journeys to city and larger town offices;
- **evidence that manufacturing supply chain robustness, including inventories/storage have been adversely affected by lockdown** restrictions, possibly encouraging reshoring and additional storage space needs;
- **evidence of strengthening appetite from house buyers for smaller towns** and rural locations as people exit cities (and particularly the largest cities) in response to the crisis.

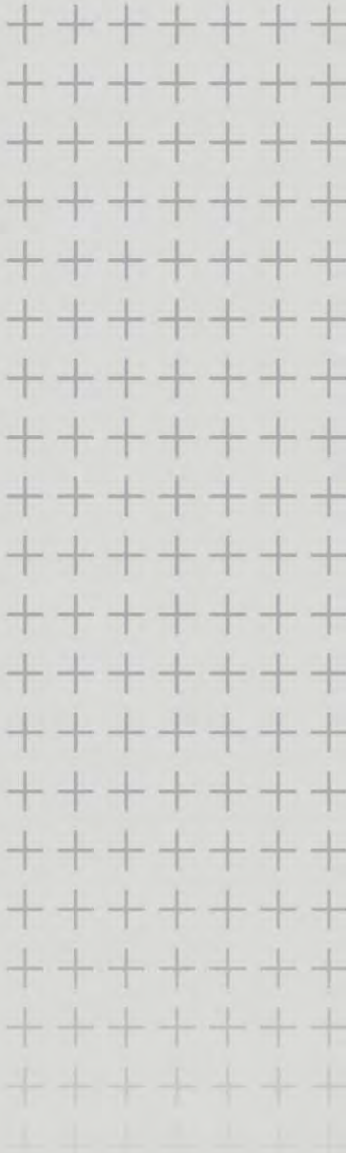
6.2 Based on the socio-economic context, future trends and drivers, as well as analysis of the commercial property market, the recommended deliverable uses to feature on the indicative masterplan at this stage are:

- **Strongest case is for provision of B1(c) light industrial** units, with evidence suggesting consistent demand for units in the range 5k sq ft up to 15k sq ft
- **Site is also well suited to a mix of smaller and mid-sized B2 and B8 logistics units**, 10k sq. ft to 30k sq. ft, for which there is healthy demand.
- **Some likely demand for B1(a) office to feature but only as a modest component.** B1(a) likely to be a relatively modest share of the overall B1 provision
- **Policy calls for “campus style” development** – so there is a need to try to capture the above in a well-planned attractive site layout.

6.3 The initial findings that have been drawn out of the analysis within this report have been cross-referenced against local agent advice and the findings are in broad alignment.

6.4 Based on the evidence, it is recommended that Shropshire Council retain flexibility with respect to the proportions of different commercial uses within the site-specific allocation policy for the proposed development. This will enable the site to respond positively to market requirements across its delivery programme.

# HATCH

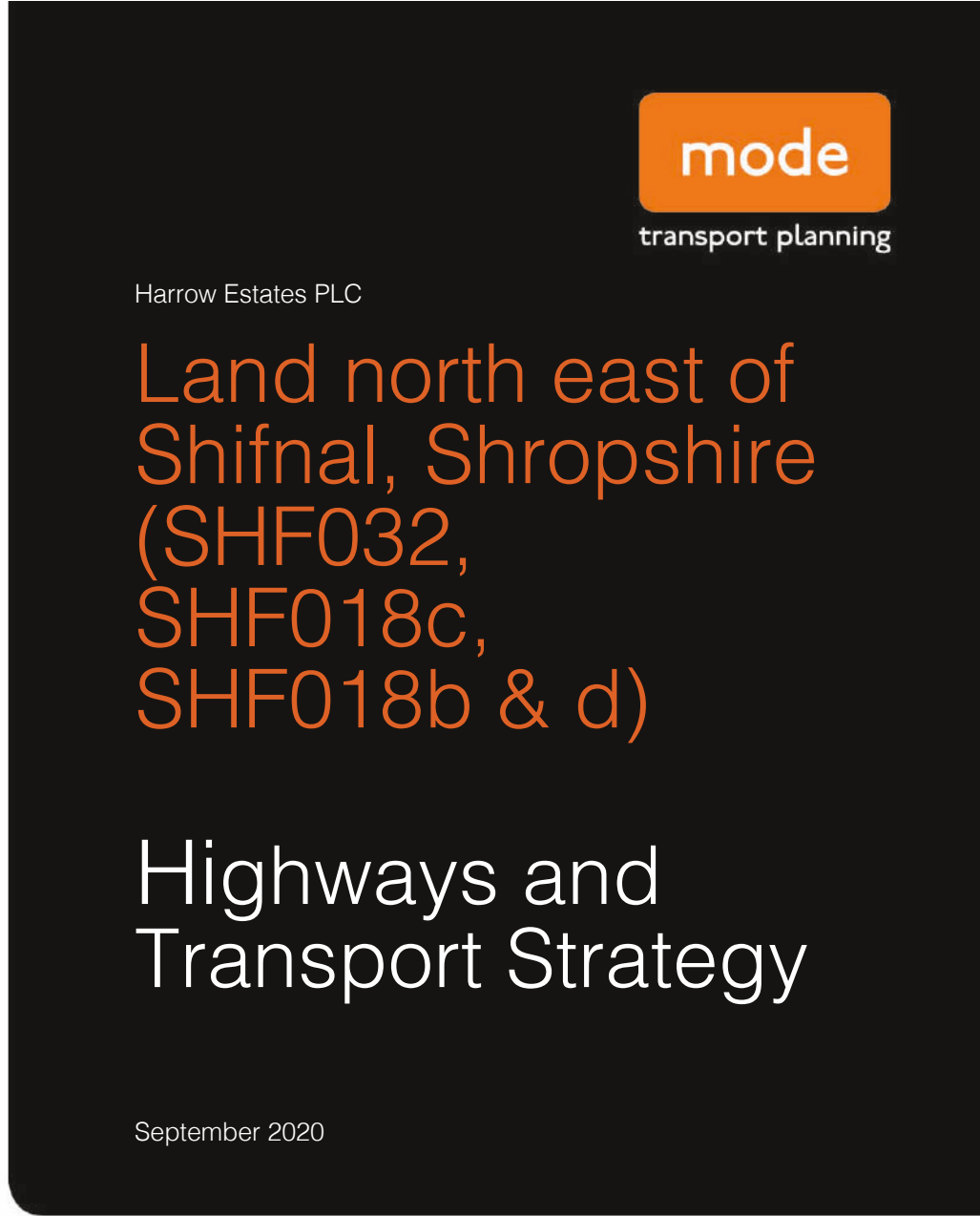
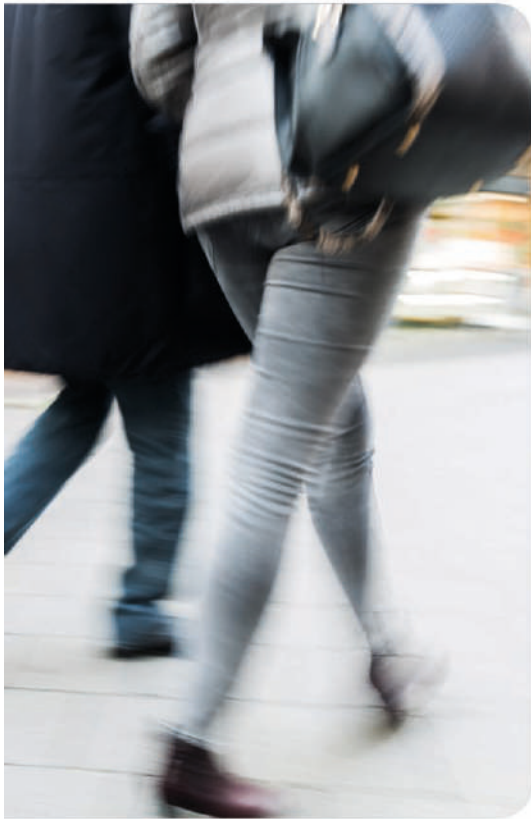


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**mode**

transport planning

Harrow Estates PLC

Land north east of  
Shifnal, Shropshire  
(SHF032,  
SHF018c,  
SHF018b & d)

Highways and  
Transport Strategy

September 2020



Harrow Estates PLC

Land at Shifnal, Shropshire (SHF032, SHF018c, SHF018b & d)

Highways and Transport Strategy



Harrow Estates PLC

# Land north east of Shifnal, Shropshire (SHF032, SHF018c, SHF018b & d)

## Highways and Transport Strategy

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**PROJECT NO:**

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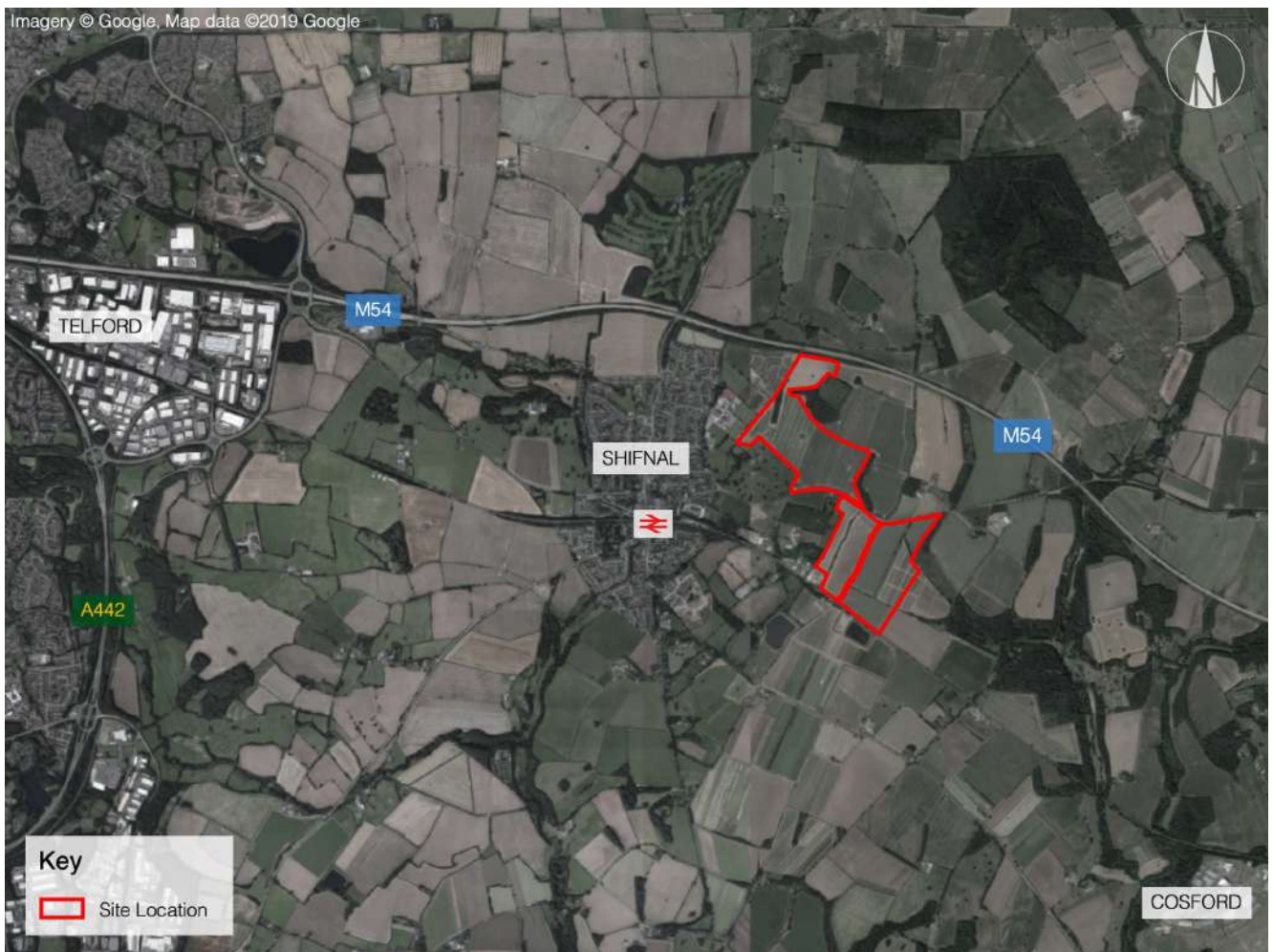


# 1 Introduction

## 1.1 Overview

1.1.1 mode transport planning (mode) has been commissioned by Harrow Estates PLC to prepare a Highways and Transport Strategy for potential development plots located to the north east of Shifnal, in Shropshire. The site location is shown in **Figure 1.1**.

Figure 1.1: Site Location



1.1.2 The site is located east of Telford, south of the M54 and comprises land to the north and south of Stanton Road. The site is split over a number of agricultural land parcels with areas of woodland and hedges bordering some of the fields. Stanton Road dissects the northern and southern land parcels and runs east to west forming Aston Road on entry to Shifnal.

1.1.3 This Highways and Transport Strategy considers the transport opportunities provided by the proposed development in this location, including access by sustainable modes. It also determines the level of traffic expected to be generated by the proposed development during the typical AM and PM peak hours and considers this in relation to existing network capacity.

- 1.1.4 The Shropshire Council (SC) draft Local Plan review covers growth in the county up to 2038 and identifies preferred allocation sites for development as well as land safeguarded for potential development beyond the plan period.
- 1.1.5 An assessment of the transport related impacts of preferred allocations SHF018b and SHF018d in isolation is provided in a standalone Transport Assessment report. This Highways and Transport Strategy considers the implications of the delivery of SHF018b and SHF018d for employment uses in combination with the delivery of SHF018c and SHF032 for residential uses.
- 1.1.6 A comparative analysis of the relative transport implications of SHF032 and SHF018c for residential uses versus the safeguarded residential land on the south-western boundary of Shifnal has also been carried out as part of this report.

## 1.2 Report Structure

- 1.2.1 Following this introduction, this report is structured as follows:
  - **Chapter 2** describes the existing situation, including a thorough review of accessibility by all modes and to local facilities and amenities;
  - **Chapter 3** provides a review of local infrastructure proposals relevant to the site;
  - **Chapter 4** offers details of the sustainable access strategy proposed at the site;
  - **Chapter 5** provides details of the vehicular access strategy proposed at the site;
  - **Chapter 6** reviews the findings of preliminary capacity assessments undertaken at key junctions to determine the impact of development traffic;
  - **Chapter 7** provides a high-level comparison of development parcels SHF032 and SHF018c against land safeguarded for housing to the south and west of Shifnal; and,
  - **Chapter 8** summarises and concludes the findings of report.

## 2 Existing Conditions

### 2.1 Overview

2.1.1 This chapter describes the existing site and local transport network for all modes of transport in order to determine the current accessibility of the site.

### 2.2 Site Description

2.2.1 The site is located to the east of Shifnal approximately 5km east of Telford, in Shropshire. The M54 motorway runs in an east to west orientation to the north of Shifnal and abuts the northern most land parcel; the site location is shown in **Figure 1.1**.

2.2.2 The land parcels that form the overall site are shown in **Figure 2.1**. Further information regarding each of the parcels is provided in **Table 2.1**.




Figure 2.1: Development Parcels



Table 2.1: Site Land Parcels

Ref	Approximate Scale (Ha)	Proposed Land Use	Capacity
-----	------------------------	-------------------	----------



Development Site – Main Parcels				
	SHF032	2.8	C3 Residential	80 dwellings
	SHF018b & SHF018d	37.1	B1/B2/B8 Employment	156,000 sqm
Development Site – Alternative Safeguarded Residential Land Parcels				
	SHF018c	30.2	C3 Residential	700 dwellings

## 2.3 Local Highway Network

2.3.1 The site is split over a number of land parcels that straddle Stanton Road and Upton Lane. The northern parcel is located east of Coppice Green Lane. The various land parcels can currently be accessed via a number of gated accesses and hedge openings along Coppice Green Lane, Stanton Road and Upton Lane. A plan of the roads considered in this review is shown in **Figure 2.2**.

Figure 2.2: Local Highway Network



### Stanton Road

2.3.2 Stanton Road bears east from a recently constructed roundabout with Coppice Green Lane and Aston Road, and connects Shifnal with Newport Road north of the M54. Stanton Road is a rural lane with verges and hedgerows along most of its length in proximity of the site. There are also sections of wall alongside

the carriageway in areas. In proximity of the roundabout with Aston Road, a 30mph speed limit applies; as the road bears east, the national speed limit applies, this includes the section of road along the site frontage on Stanton Road.

- 2.3.3 There is a footpath adjacent to the consented care home, situated behind the hedgerow on the Southern side of Stanton Road linking to the Stanton Road/Lamledge Lane roundabout.
- 2.3.4 The road is typically between 6 and 7.5m wide and has centreline markings along most of its length between the roundabout and Upton Lane. The road is covered by street lighting between Aston Road and Lamledge Lane.
- 2.3.5 The land parcel west of Upton Lane can currently be accessed immediately west of the junction of Stanton Road and Upton Lane via an opening in the hedgerow, shown in **Figure 2.3**.

Figure 2.3: Stanton Road Access from Junction with Upton Lane



### Coppice Green Lane

- 2.3.6 Coppice Green Lane bears north-east from Curriers Lane, north of Aston Road and connects to rural lanes north-east of Shifnal and north of the M54 motorway. The road has centreline markings between Curriers Lane and the bridge over the M54 motorway. The road has recently been upgraded following delivery of a residential development on land to the west of Coppice Green Lane. The road has centreline markings along the entire site frontage on Coppice Green Lane and a 30mph speed limit in place. This reverts to the national speed limit in proximity of the northern extent of the site boundary on Coppice Green Lane.



- 2.3.7 The road has a footway along the western side of the carriageway where the recent residential development has been delivered. This continues south along the western side of the carriageway before linking with a footpath connecting west with Curriers Lane.
- 2.3.8 The site can currently be accessed via an existing agricultural gated access approximately 30m south of the north-western corner of the site on Coppice Green Lane, as shown in **Figure 2.4**.

Figure 2.4: Coppice Lane Gated Access



### Upton Lane

- 2.3.9 Upton Lane bears south from Stanton Road and crosses over the Birmingham to Shrewsbury Railway Line before meeting the A646. The lane is rural in nature with a narrow carriageway and no road markings; passing places are evident in areas allowing two vehicles to pass. In areas there are narrow grass verges in front of hedgerows, in other areas the hedgerows abut the carriageway, limiting visibility.
- 2.3.10 Where the site straddles Upton Lane the national speed limit is in place; although the nature of the lane would significantly influence and reduce traffic speeds. Due to the nature of the road, no footways or street lighting are in place.
- 2.3.11 The development parcel east of Upton Lane can be accessed via an opening in the hedge as shown in **Figure 2.5**.



Figure 2.5: Site Access east of Upton Lane



### Aston Road

- 2.3.12 Aston Road bears west from the recently constructed roundabout with Stanton Road and connects Stanton Road with Bradford Street, Victoria Road and Shifnal Town Centre.
- 2.3.13 The road has centreline markings along its extents and is subject to a 30-mph speed limit. Frontage access is provided to residential properties along either side of the road. As the road approaches Shifnal Railway Station, vehicles can currently park on-street on either side of the carriageway east of the Railway Station, this can effectively narrow the road to one lane, with give and take between oncoming vehicles. This parking is likely to be generated by demand from rail users, along with visitors to the Town Centre.
- 2.3.14 The road has footways along either side of the carriageway from the roundabout; as the road approaches Shifnal Railway Station, the footways narrow to a nominal c. 0.7m to 1.0m width alongside the railway viaduct on the northern side of the carriageway. The service strip along the southern side of the carriageway is unsuitable for use by pedestrians.
- 2.3.15 It is understood that SC received a S106 contribution from application 13/03055/FUL to deliver a pedestrian crossing on Aston Road as well as to hard surface the existing track linking Spring Hill and Aston Road to allow for terraced houses fronting Aston Road to park to the rear.

**Bradford Street**

2.3.16 Bradford Street connects Aston Road with Shrewsbury Road to the north and Victoria Road to the south. The short link road also acts as part of Shifnal’s High Street, with Cheapside to the west of Bradford Street providing an area for on-street parking.

2.3.17 The road forms part of the High Street which is made up of Bradford Street and parts of Market Place and Shropshire Road. On-street parking is permitted along Cheapside, a service road west of Bradford Street. Footways are provided alongside both sides of the carriageway, with a zebra crossing facility across Bradford Street approximately 50m north of the junction with Aston Street.

**2.4 Walking and Cycling**

2.4.1 A desktop review of existing walking and cycling routes in vicinity of the site has been undertaken. The primary desire lines from the development parcels will all lead towards Shifnal Town Centre and Shifnal Railway Station, as shown in **Figure 2.6**.

Figure 2.6: Primary Walking and Cycling Desire Lines



2.4.2 A review of SC’s cycle map shows that National Cycle Network (NCN) Route 81 runs through Shifnal. NCN Route 81 connects Aberystwyth and Wolverhampton via Shrewsbury and Telford. More locally

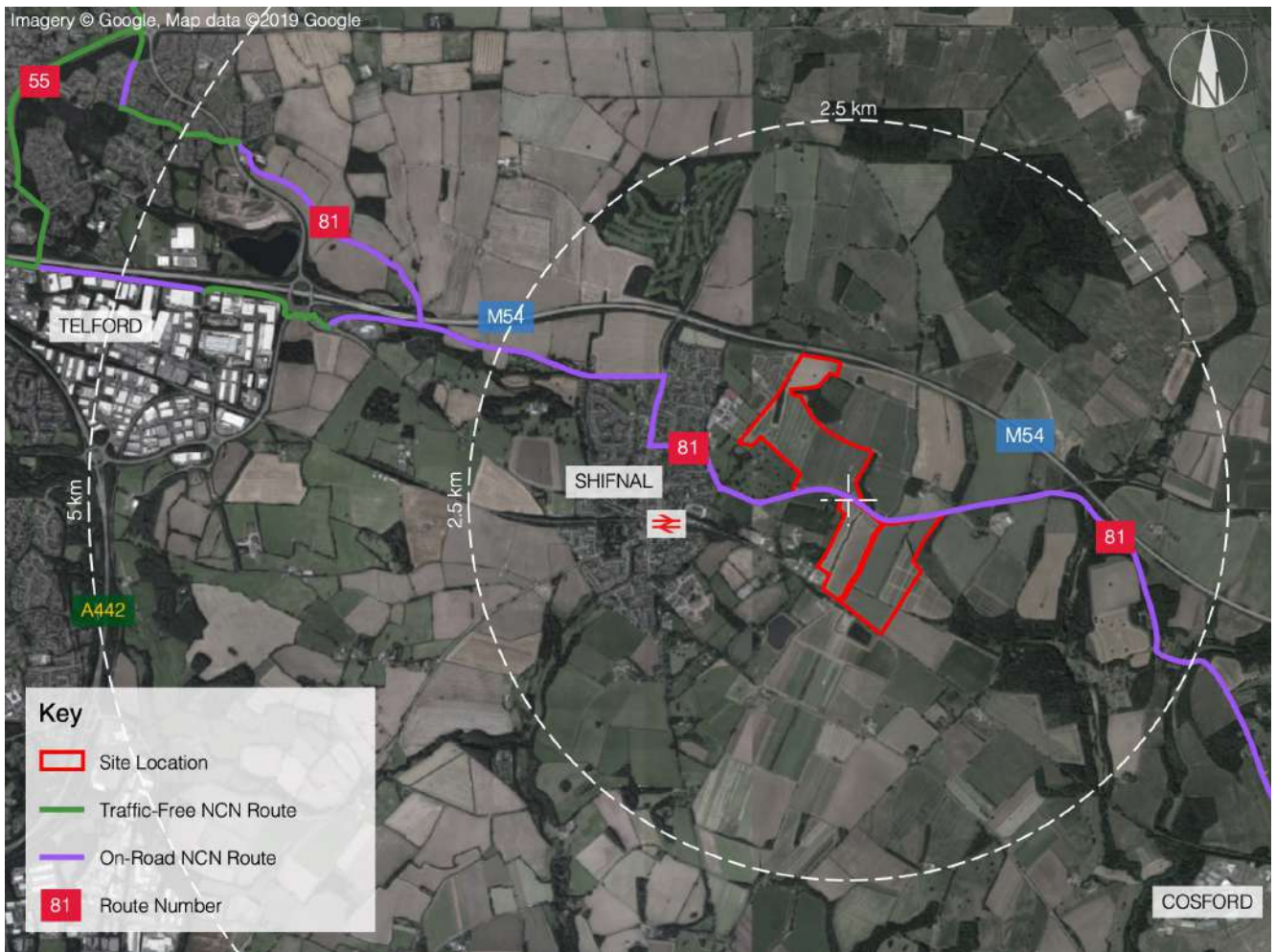


Route 81 provides a connection between Shifnal and Telford, and of relevance to the site, provides an on-road connection to Shifnal High Street via Carriers Lane.

2.4.3 The section of the NCN through Shifnal is all on-road, with no markings or formal provision for cyclists along Stanton Road; the route is therefore advisory in nature. NCN Route 81 in context of the site and desire lines is shown in **Figure 2.7**.

2.4.4 Additionally, NCN Route 81 connects with NCN Route 55 just over 5km from the site, east of Telford in proximity of Telford Way and north of Hollinswood Interchange. This provides a further connection into Telford Town Centre.

Figure 2.7: NCN Cycle Routes



2.4.5 In terms of pedestrian provision, a new footway has been completed on the western side of Coppice Green Lane in proximity of the northern site boundary. This runs south from the new development west of Coppice Green Lane and connects with Carriers Lane south of Shifnal Primary School.

2.4.6 There is no footway provision along the site frontage on Stanton Road; however, there is a Public Right of Way (PRoW) (ref: 0141/5/1), connecting Lamledge Lane, in proximity of site SHF018a, with Springhill.

## 2.5 Bus Services

- 2.5.1 The Chartered Institution of Highways & Transportation (CIHT) Buses in Urban Developments Guidance<sup>1</sup> summarises the recommended maximum walking distances for core bus corridors, high-frequency bus routes and less frequent routes, with the respective recommended maximum walking distances being 500m, 400m and 300m.
- 2.5.2 A number of bus services operate within Shifnal; however, the current bus provisions are mainly concentrated within Shifnal Centre, with only the 891 bus service operating along Stanton Road. The closest existing bus stops on Stanton Road are located east and west of the Stanton Road junction with Lamledge Lane. From these stops the 891 bus service can be boarded, which provides an hourly service between Wolverhampton and Telford via Shifnal in both directions.
- 2.5.3 The location of the existing bus stops on Stanton Road and in Shifnal Town Centre are shown in **Figure 2.8**. The typical daytime frequency of the bus services is summarised in **Table 2.2**.

Figure 2.8: Local Bus Stops



<sup>1</sup> Chartered Institute of Highways and Transportation, [Buses in Urban Developments](#) (2018) [modetransport.co.uk](http://modetransport.co.uk) | September 2020

Table 2.2 Summary of Local Bus Services

Service No.	Route	Weekday Frequency	Weekend Frequency	Days of Operation
14 / 14A	Telford - Priorslee - (Stafford Park) – Shifnal	2 per hour	1 per hour (Sat. only)	6 days (Mon. – Sat.)
891	Wolverhampton - Albrighton - Shifnal - Telford	1 per hour	5 per day (Sat. only)	6 days (Mon. – Sat.)
113 / 114 / 115 / 116	Telford Town Centre - Shifnal - Norton – Bridgnorth	1 per hour	4 per day (Sat. only)	6 days (Mon. – Sat.)

2.5.4 The nearest bus stops on Stanton Road and Curriers Lane provide access to the 981 service, which operates hourly between Wolverhampton and Telford. Additionally, the 14 /14A can also be reached within 400m of the western site boundary, providing more frequent bus services between Shifnal and Telford. These services and stops provide future residents and employees with an opportunity to travel sustainably using public transport. Due to the nature and layout of Shifnal, being dissected by the railway line, in order to effectively promote sustainable travel and public transport use, and improvements would be best focused on walking and cycling facilities between the site and the centre of Shifnal.

## 2.6 Rail Services

2.6.1 The nearest station is Shifnal Railway Station, located south of Aston Road. The station is located on the Birmingham to Shrewsbury line, with services operating hourly. Shifnal Railway Station is located c. 1km west of the centre of the site and can be accessed within a 15-minute walk or a 4-minute cycle. The typical frequency of train services that serve Shifnal Railway station is summarised in **Table 2.3**.

Table 2.3 Summary of Local Rail Services to/from Shifnal (direct services only)

Destination	Fastest Journey Time	Typical Frequency
Wolverhampton	21 minutes	every 60 minutes
Shrewsbury	26 minutes	every 60 minutes
Telford Central	5 minutes	every 60 minutes
Sandwell & Dudley	33 minutes	every 60 minutes
Birmingham New Street	41 minutes	every 60 minutes

2.6.2 Car parking is available at the station with capacity for up to 80 vehicles, additionally, the car park north of Aston Street provides an additional 101 spaces and is free. Cycle parking is also provided at the station with capacity for up to 12 bicycles.

## 2.7 Local Facilities

2.7.1 A review of the accessibility of the site in relation to local facilities and amenities has been undertaken as shown in **Figure 2.9**.



Figure 2.9: Local Facilities



2.7.2 Many of the facilities are located in Shifnal Town Centre and can be accessed within a c. 5-minute cycle or 15-minute walk from the centre of the site, providing an excellent opportunity for future residents and employees to access local amenities on-foot or by bike.

## 2.8 Mode Share

2.8.1 To establish the anticipated mode share of the future residents and employees, 2011 Census data relating to the 'Method of Travel to Work' for people who currently live or work in the Mid Layer Super Output Area (MSOA) E02006008 (Shropshire 025) in which the site is located, was reviewed. This established the proportion of trips by each mode, based on the 2011 Census, as summarised in **Table 2.4**.



Table 2.4 Method of Travelling to Work – Modal Share

Method of travel of work	Shropshire 025 Mode Split	
	Work in Shifnal (%)	Live in Shifnal (%)
Driving a car or van	73	76
On foot	14	10
Train	1	4
Passenger in a car or van	8	5
Bicycle	1	2
Bus, minibus or coach	1	2
Taxi	1	1
Motorcycle	0	1
Total	100%	100%

2.8.2 This shows that based on the 2011 Census data, approximately 81% of residents who live or work in the Shropshire 025 MSOA travel to work by car (c. 65% to 71% single occupancy), whereas between 10% and 14% walk to work, up to 4% use the train, 2% cycle to work and 2% use the bus. This demonstrates that by improving walking and cycling facilities to connect the site with the railway station and Shifnal Centre, there is an excellent opportunity to shift travel behaviours towards more sustainable modes of travel, and reduce reliance on the car, particularly single occupancy car trips.

## 3 Emerging Infrastructure Proposals

### 3.1 Overview

- 3.1.1 This chapter identifies the committed and emerging infrastructure and enhancement proposals within Shifnal.
- 3.1.2 A wider transport strategy was developed for Shifnal following consultation on Shropshire Council's (SC's) Site Allocation and Management of Development (SAMDev) Plan. This was done to consider the cumulative impact of proposed developments in Shifnal up to 2026, the end of the Local Plan period at the time.
- 3.1.3 The transport strategy for Shifnal was developed with a view to providing a joined-up approach to delivering highway improvements in Shifnal, delivered in a staged approach in-line with implementation of the various developments at thresholds of construction and occupation.
- 3.1.4 These emerging infrastructure proposals are contained in the Shifnal Transport Strategy Exhibition Information<sup>2</sup>. This includes any transport related infrastructure, comprising new and improved walking and cycling routes, improvements to bus and rail services and highway schemes.

### 3.2 Transport Proposals

#### Town Centre Enhancements

- 3.2.1 Through consultation with local residents in relation to the transport strategy for Shifnal, no strong opinion was demonstrated in relation to any of the options presented. However, there was significant local interest in relation to a town centre enhancement scheme, this at the time comprised the proposals shown in **Table 3.1** and illustrated in **Figure 3.1**. Further details and illustrations of the proposed schemes can be found in the exhibition document.

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<sup>2</sup> Shropshire Council, Shifnal Transport Strategy - [Shifnal Exhibition Information](https://www.modetransport.co.uk)  
modetransport.co.uk | September 2020

Table 3.1: Shifnal Transport Proposals

Location	Proposal
Aston Street / Bradford Street / Market Place	Junction improvements and improvements to public realm to discourage through traffic and improve safety & pedestrian accessibility.
Parking provision within Shifnal	Review of on / off street parking throughout Shifnal town centre to rationalise provision and make best use of space available. Proposals to limit on-street parking on key routes towards the town centre.
Pedestrian accessibility within Shifnal	Review of pedestrian facilities within Shifnal town centre to promote safe accessibility and sustainable travel choices. Improvements to routes and crossings to be delivered in 2019/20.
Five Ways junction	Potential improvements – junction operation to be monitored and scheme to be determined at later date.
Victoria Road / Shrewsbury Road / Broadway	Potential to include improvements throughout these streets as additional phase to the town centre enhancement works.
School Travel Plan	Enhancements to Curriers Lane, Park Lane & potentially adjacent streets to promote sustainable transport choices and calm vehicle speeds
Haughton Lane	Review of vehicle flow and potential traffic calming – to be determined in line with traffic calming measures along Haughton Road and Five Ways Junction
Haughton Village (west of Haughton Lane)	Review of vehicle flow and potential traffic calming including possible restrictions to one-way eastbound, depending on future monitoring of vehicle movements

Figure 3.1: Illustrative Town Centre Enhancements



3.2.2 The purpose of the enhancements works is to provide improvements to Shifnal’s town centre based on the following aims:

- Create an enhanced sense of place;
- Reflect the towns heritage;
- Promote more sustainable types of movement (public transport, walking & cycling);
- Accommodate the forecast growth in traffic associated with new developments;
- Enhance pedestrian wayfinding throughout the town;
- Improve pedestrian safety; and,
- Reduced through traffic within Shifnal.

3.2.3 The design of the scheme has been developed with a focus on creating a pedestrian-friendly environment that encourages sustainable movement and supports local vitality. Key aspects of the design in terms of movement include:

- New flexible public spaces to promote social activities and reclaim the streets of Shifnal for its residents, visitors and businesses;

- Slow speed environment with traffic calming features to improve safety for all users and encourage reduced vehicle speeds; and,
- Frequent crossing points, new bus stops and reconfiguration of parking spaces to improve accessibility for all to the town centre.

3.2.4 The schemes listed in **Table 3.1** will provide existing and future local residents and employees with significant improvements, particularly to encourage walking and cycling trips within Shifnal, and as part of multi-modal trips to wider destinations such as Telford and Wolverhampton.

3.2.5 It is understood that the majority of the proposals are to be funded through Section 106 Developer Contributions, albeit funding for the town centre enhancements requires support from the local community before it can be secured.

3.2.6 It is understood that work on the Shifnal Transport Strategy is still in progress with various options for the town centre enhancements still under development <sup>3</sup>. It is also understood that there is a shortfall in funding for the town centre enhancements <sup>4</sup>.

3.2.7 In terms of securing monies from developers towards the Shifnal Transport Strategy a number of sites have been identified as providing a contribution towards the development and implementation of these schemes (e.g. 13/02989/OUT and 14/00062/OUT) by way of mitigation specifically in relation to identified capacity constraints in the town.

3.2.8 Given the anticipated growth in Shifnal over the plan period up to 2038, new and improved infrastructure is likely to be required in order to suitably protect and enhance the constrained town centre for local residents, and to provide suitable capacity for future traffic travelling between surrounding settlements through Shifnal.

3.2.9 Furthermore, road safety and capacity improvement works have recently been completed at the priority junction formed between the A41 and Stanton Road to the east of the sites. The works comprise a right turn filter lane, carriageway re-alignment, surfacing, signs and lines plus street lighting and were delivered as part of the council's transport capital budget.

3.2.10 Moving forward beyond the plan period SC has identified in relation to the safeguarded sites to the south-west of Shifnal that a more comprehensive range of transport infrastructure is required to address growth needs. The following is identified:

- A new strategic highway from the A464 (south) to the A4169 leading to highway improvements at Five Ways and Innage Road.

3.2.11 SC recognise that the creation of a bypass around the town provides opportunity for traffic to avoid the principal town centre highway junction at the A464/Bradford Street. This growth is anticipated to occur beyond the current plan period.

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<sup>3</sup> <https://www.shropshirestar.com/news/transport/2020/01/22/traffic-lights-could-be-removed-from-notorious-shifnal-junction-under-multi-million-pound-transport-scheme/>

<sup>4</sup> [https://www.shifnaltowncouncil.gov.uk/STC/meetings\\_final.asp?id=242](https://www.shifnaltowncouncil.gov.uk/STC/meetings_final.asp?id=242)

<sup>5</sup> <https://www.shropshirestar.com/news/transport/2019/07/13/major-roadworks-planned-on-15-shropshire-routes/>  
modetransport.co.uk | September 2020

## 4 Sustainable Transport Proposals

### 4.1 Overview

- 4.1.1 This chapter sets out the high-level sustainable transport strategy for the proposals. Promoting sustainable transport for new sites is a key policy test within the NPPF. An outline strategy has been developed with a view to identifying the opportunities to promote sustainable travel at the site.
- 4.1.2 The sustainable transport strategy for the development proposals is predicated upon the following key items:
- Development of a network of pedestrian and cycle routes in the site, linking the various land parcels with existing infrastructure to provide connections to the Town Centre;
  - Provision of a new bus stop on Stanton Road in proximity of the main site access, providing access to bus services in closer proximity of the employment sites; and
  - Development of a comprehensive Framework Travel Plan to promote sustainable modes of transport from initial occupation.
- 4.1.3 A 'Movement Strategy' will be established to inform the development of the design. The main aims of the movement strategy will be to:

Provide safe and convenient surroundings for the movement of people, including those with restricted mobility and cyclists

Create safe routes for pedestrian, cycling and vehicular movement

Keep vehicle flows and traffic speeds low in the vicinity of homes, and minimise the danger and nuisance created by non-access traffic

Ensure that reasonable, and where possible direct, vehicular access to dwellings is available, and enable easy access for public transport and emergency vehicles

Minimise the danger and inconvenience caused by indiscriminate on-street parking

Allow for a diversity of spatial, architectural, and landscape elements appropriate to the unique character of the site and its surroundings

- 4.1.4 Layout designs should ensure that the convenience of access for pedestrians, cyclists and public transport operators is given priority over the need to accommodate the car. An overview of the opportunities presented by the site is provided in the following paragraphs.

### 4.2 Walking and Cycling

- 4.2.1 The site is in a good location, on the eastern edge of Shifnal with excellent opportunities for further residents and employees to travel to the Town Centre on-foot or by bicycle. In terms of walking and cycling routes, the site will be developed with a focus on prioritising pedestrian activity and cycle movements within the site to encourage non-car modes. In accordance with MfS (1 and 2), the internal layout will be designed by:



- Promoting an inclusive environment that recognises the needs of all people of all ages and abilities;
- Creating a network of streets that provide permeability and connectivity to main destinations and choice of routes;
- Designing to keep vehicle speeds below 20mph on residential streets unless there are overriding reasons for accepting higher speeds; and,
- Using the minimum number of highway design features necessary to make streets work properly.

4.2.2 Potential links to wider routes will be explored to link proposed internal pedestrian and cycle routes with existing and proposed off-site routes on Coppice Green Lane and along Stanton Road. The principal desire line is to the west towards the Town Centre where local facilities can be reached, and public transport can be accessed.

4.2.3 **Figure 4.1** illustrates the potential future sustainable access strategy for the site.

Figure 4.1: Illustrative Sustainable Access Strategy



1. Explore opportunities to provide improvements to pedestrian and cycle facilities on Stanton Road between the site access and existing provision heading towards the town centre. The appropriate infrastructure package will be explored with SC as part of a planning application but is likely to

comprise a combination of on and off-carriageway provision alongside complementary measures such as enhanced signage and speed restriction measures;

2. Proposed secondary routes providing added permeability and catering for secondary desire lines linking to the primary route;
  3. East-west connection between Shifnal Town Centre and the sites along Stanton Road. This could provide an off-road shared-use walking and cycling route alongside Stanton Road where the sites front the carriageway, with an opportunity to upgrade the existing on-road cycle route and provide an unbroken footway connection along Stanton Road.
  4. Potential to improve cycle parking facilities within the Town Centre and at Shifnal Railway Station.
- 4.2.4 The site frontage alongside Stanton Road enables for an off-road walking and cycling route connecting the sites with the existing footways and on-road cycle routes west of the sites, linking to Aston Road. There are also potential schemes to be explored to formalise on-road cycle routes towards Shifnal Town Centre and to enhance the environment for pedestrians and cyclists in the local area. This would provide excellent connections for residents and employees to travel by sustainable modes between the existing town and the development sites, contributing towards a reduced reliance on the private car.

### 4.3 Electric Vehicles

- 4.3.1 Whilst sustainable travel, particularly public transport, will be promoted for trips to and from the site. It is also recognised that there will be a continuing need for some residents and employees to have use of private cars. However, this presents an excellent opportunity to promote and incentivise these car users to use of eco-friendly or Electric Vehicles (EV), in-line with future aspirations of national government.
- 4.3.2 On the residential parcel, new homes will be provided with the opportunity to have EV charging points installed. Uptake of EV will be promoted through the Travel Plan.
- 4.3.3 Likewise, on the employment site, EV charging points will be provided in the car parking areas in prominent locations in order to promote use of EV's amongst businesses and employees.

### 4.4 Travel Plan

- 4.4.1 The travel planning strategy for the site will seek to ensure that the long-term management of the promotion and delivery of sustainable transport initiatives will be secured and managed at the residential and employment site by a dedicated TPC. Site-specific Travel Plans will be developed in consultation with SC's Travel Planning team. This will seek to establish a number of SMART targets and actions which will include measures that will be achievable, measurable, realistic and time-specific.
- 4.4.2 The Travel Plans will be provided to assist in the site's consideration for allocation and to support central government and local policies to actively manage patterns of growth in order to maximise the use of public transport, walking and cycling where possible. This will also assist in the aspirations set out in the Shifnal Transport Strategy, to limit unnecessary car usage through the town centre.

### 4.5 Future Technology and the Post-Covid-19 World

- 4.5.1 It is important that a flexible approach is applied to the various transport projects/initiatives going forward. The sustainable transport offer is in a continuous state of evolution with new technologies in various stages of development and legal status for example:

- Autonomous vehicles;

- Electric Scooters;
- Electric/Hydrogen powered buses; and,
- Autonomous vehicles.

- 4.5.2 Whilst the projects identified focus on increasing sustainable transport uptake using traditional modes, they should also consider how the technological and legal framework is changing over time for new modes of transport and where appropriate how these can be incorporated into Shifnal's offer. For example, the Department for Transport (DfT) is in the process of fast-tracking and expanding trials of rental e-scooters, with the introduction of legal changes on 4<sup>th</sup> July 2020 which allow the trials to proceed. The amendment to existing regulations allows rental e-scooters to be legally ridden on roads and in cycle lanes, which will be limited to 15.5mph, with riders recommended to wear helmets. Throughout the 12-month trial period, e-scooters will continue to be classed as motor vehicles, meaning that the rider must be 16 or over, with a provisional car, motorcycle or moped licence. Previously all usage was illegal on roads, cycle lanes and pavements, meaning these trials represent a major development for the use of e-scooters in the UK. Given the compact nature of Shifnal e-scooters provide a potential alternative form of sustainable transport that may warrant consideration.
- 4.5.3 Another important consideration is the Covid-19 crisis and how this has changed travel habits, attitudes to travel and lifestyle habits, such as remote working and online shopping.
- 4.5.4 Looking at national and local statistics, travel patterns during the crisis can be summarised as follows:
- Reduction in overall transport usage – according to DfT statistics for the period from February (pre-lockdown) to the start of May 2020, overall transport use was down at least 55% for all transport types across the UK.
  - Reduction in car usage – around 25% of normal usage at its lowest in mid-May, according to DfT statistics;
  - Reduction in public transport usage – rail usage down by over 95% at its lowest during lockdown, according to DfT statistics;
  - Increased levels of walking and cycling, particularly for leisure/exercise purposes;
  - Significant increase in working from home; and,
  - Significant increase in online shopping.
- 4.5.5 With some recent relaxation of lockdown measures, which we hope will continue and Covid controlled, vehicle movement statistics are showing signs of returning towards pre-Covid levels with more people reverting to previous working and shopping habits albeit Covid has acted as a catalyst for changes in travel behaviours particularly with respect to commuting and business travel.
- 4.5.6 At this time concerns remain as to safe use of public transport, given social distancing, and accordingly a return to pre-Covid levels of public transport use is likely to be a slower recovery indicating that the focus on sustainable transport post-Covid should encapsulate as many modes as possible to maximise the success rate.

## 5 Vehicular Access Strategy

### 5.1 Introduction

- 5.1.1 Based on the proposed quantum of development and the layout of the site, the site will need to be served by a number of vehicular accesses. Due to the anticipated nature of the employment land, it is envisaged at this stage that the residential parcel will be served separately from Coppice Green Lane, whereas the employment land will be accessed predominantly from Stanton Road.
- 5.1.2 The accesses will be designed in accordance with local and national policy. SC have recently been developing a new Design Guide, expected to be adopted later this year. In the meantime, the access junctions have been considered against the following guidance:
- LTN 2/08 Cycle Infrastructure Design;
  - Design Manual for Roads and Bridges;
  - LTN 1/11 Shared Space;
  - LTN 1/12 Shared Use Routes for Pedestrians and Cyclists;
  - Manual for Streets; and,
  - Manual for Streets 2.
- 5.1.3 The site will be designed to provide safe and suitable accesses to serve the development. The form and scale of the access junctions will be determined by capacity analysis as the scheme evolves, however, given the available frontage and existing junctions and infrastructure surrounding the site, there is flexibility to the access design and scale.

### 5.2 Vehicular Access Strategy

#### **Coppice Green Lane**

- 5.2.1 Coppice Green Lane connects with Curriers Lane south-west of the residential development parcel. Slight queuing and delay were observed at the junction with Curriers Lane, and likewise, at the Stanton Road / Aston Road roundabout. As with the isolated scenarios, the northern development parcels provide an opportunity to link Coppice Green Lane with Stanton Road. This offers the benefit of ensuring no impact in terms of HGV traffic, which will route east to the A41 Newport Road, at the Stanton Road / Aston Road roundabout. Additionally, this proposed primary road provides an alternative, shorter route for existing residents on Coppice Green Lane to travel east, potentially providing relief at the roundabout junction. There is also the potential to incorporate further pedestrian connectivity improvements within SHF032, along its boundary with Coppice Green Lane, to benefit future and existing residents.
- 5.2.2 Within the residential development the internal road network and streets will be designed in accordance with Manual for Streets. Most streets have traditionally been designed primarily for the movement of traffic. This continues to be important but within new developments should no longer dominate way roads are used and seen. One of Manual for Streets' key recommendations is that increased consideration should be given to the place function of a street. In the linked scenario, comprising delivery of all the land parcels, the residential parcels north of Stanton Road would all be linked internally, with access junctions taken from Coppice Green Lane and a new roundabout on Stanton Road. Within the site there would be a primary spine road, linking the northern and southern access junctions and providing a

through route from Coppice Green Lane to Stanton Road. Within the site, secondary roads would provide access to dwellings and minor roads.

**Upton Lane**

5.2.3 Upton Lane is currently a rural country lane and varies in width and standard along its length. During a site visit the road surface was observed to be in very poor condition in places, with the carriageway being narrow and limited passing places. As the development parcels site either side of Upton Lane, the site offers the opportunity to improve/upgrade Upton Lane north of the railway line.

5.2.4 Additionally, this eastern area of the development site would define the future eastern boundary of Shifnal. Therefore, delivery of the sites north and south of Stanton Road would offer an opportunity to reinforce the edge of the settlement, through the introduction of a roundabout. This would provide capacity to reduce conflict with HGV movements at the entrances to the employment sites, but also act as a natural traffic calming feature allowing for the 30mph speed limit to be extended and creating a lower speed and safer environment more suited to promote sustainable travel within Shifnal.

5.2.5 **Figure 5.2** illustrates the potential future vehicular access strategy for the site.

Figure 5.2: Illustrative Linked Vehicular Access Strategy





1. Proposed roundabout to define the boundary and act as a gateway to Shifnal, also acting as a natural traffic calming/speed reduction measure;
2. Proposed primary road through northern residential sites connecting Coppice Green Lane with Stanton Road, providing relief at Stanton Road / Aston Road roundabout; and,
3. Potential future link with sites south and west of Shifnal to form a full bypass route.

5.2.6 An illustrative preliminary drawing of the vehicular access strategy is shown in Drawing **J32-4331-PS-001**, attached at **Appendix A**.

## 6 Traffic Impact

### 6.1 Overview

6.1.1 This Chapter provides an overview of the associated travel demand resulting from development of the various land parcels included within the development site. It considers the forecast vehicular traffic generation and additional levels of traffic at local junctions based on forecast traffic distribution patterns using 2011 Census data.

6.1.2 The assessment is considered to be robust for various reasons as follows:

- No account has been made in development traffic forecasts for modal shift as a result of travel planning measures;
- No account has been made for movement of vehicle trips between the residential and employment land uses (effectively internalisation as the trips will have no impact on the wider network considered); and,
- Traffic survey traffic growth and development traffic forecasts, whilst following best practice, all rely upon pre-Covid data.

6.1.3 Whilst the full impacts of Covid on road traffic are not currently fully understood it is considered that Covid has acted as a catalyst for changes in peoples working habits and how they access services and goods. It is considered that Covid could lead to a long-term step change in terms of working from home, more flexible working hours (i.e. peak spreading) and accessing goods and services remotely. For example, the National Travel Survey table NTS0502 'Trip start time by trip purpose'<sup>16</sup> indicated that 23% and 35% of trips made in the traditional AM and PM peak hours were for the purpose of commuting/business based upon 2019 data. This demonstrates a significant proportion of baseline traffic that may have changed habits based solely upon this single journey purpose.

### 6.2 Traffic Surveys

6.2.1 In order to establish the baseline traffic flows, peak hour Manual Classified Counts (MCCs) were undertaken on Wednesday 1<sup>st</sup> May 2019, between 07:00 and 10:00, and 16:00-19:00. The MCCs were carried out the following locations on the surrounding highway network:

- **MCCs**
  - 1) Curriers Lane / Coppice Green Lane
  - 2) Aston Road / Curriers Lane / Stanton Road
  - 3) Broadway / Curriers Lane
  - 4) Stanton Road / Upton Lane
  - 5) A464 / Upton Lane

- 6) Newport Road / Stanton Road
- 7a) Market Place / Bradford Street
- 7b) Aston Street / Bradford Street
- 8) Priorslee Road / Shrewsbury Road / Victoria Road (Five Ways)

6.2.2 7-Day Auto Automated Traffic Counts (ATCs) were also undertaken at the following locations to determine the current traffic levels and to validate data obtained from the MCCs:

- **ATCs**
  - A) Coppice Green Lane
  - B) Stanton Road
  - C) Upton Lane

### 6.3 Traffic Growth

6.3.1 The traffic impact of the proposed development site has been considered in context to the period covered by the current Local Plan Review, which runs until 2038. TEMPro (V2) has therefore been used to forecast traffic growth between 2019 and 2038.

6.3.2 For the interrogation of the TEMPro database the growth rates for ‘car drivers only’ were selected with the trip end type being defined as ‘origin / destination’. Growth rates were obtained for the weekday AM and PM peak periods for the Middle Super Output Area (MSOA) Shropshire 025. Once the growth rates had been calculated, an NTM growth calculation for ‘Rural – Minor Roads’ was weighted to the TEMPro growth rates. A summary of the resulting growth rates used to forecast traffic growth from 2019 to the 2038 assessment year is presented in **Table 6.1**.

Table 6.1: TEMPRO Growth Factors

Year	Weekday AM Peak	Weekday PM Peak
2019 – 2038	1.1495	1.1503

### 6.4 Forecast Network Operation

6.4.1 **Tables 6.8** summarises the operational capacity of junctions 1 to 8 for the 2038 baseline assessment scenario. The tables summarise the worst-case operating arm for each junction with a traffic light system employed in the presentation of the results as follows:

- Junctions within capacity – RFC 0.85 or less – Green;
- Junctions nearing capacity – RFC 0.86-0.99 – Amber; and,
- Junctions exceeding capacity – RFC 1.00 or more – Red.

Table 6.8 Summary of Operation – 2038 Baseline

Junction Ref	Name	2038 Baseline (AM Peak)	2038 Baseline (PM Peak)
1	Coppice Green Lane / Curriers Lane	0.45	0.19

2	Aston Road / Curriers Lane / Stanton Road	0.64	0.34
3	Curriers Lane / Broadway	0.38	0.50
4	Upton Lane / Stanton Road	0.04	0.03
5	A464 / Upton Lane	0.05	0.05
6	Newport Road / Stanton Road	0.82	0.64
7a	Market Place / Bradford Street	1.08	1.28
7b	Aston Road / Bradford Street	1.05	0.72
8	Priorslee Road / Shrewsbury Road (Five Ways)	0.91	0.95

6.4.2 The results indicate that improvement schemes are likely to be required at the Aston Street / Bradford Street priority junction, Victoria Road / Bradford Street priority junction and the Priorslee / Shrewsbury Road / Victoria Road (Five Ways) roundabout. Whilst these are likely to be required prior to the delivery of development of the wider site, potential highways mitigation schemes for these junctions are already being explored as part of the Town Centre Enhancements scheme and are likely to be required regardless of whether development in and around Shifnal occurs.

6.4.3 It should be noted that the above results reflect the operation of junctions 7a/7b and 6 under their existing arrangements; however, the revised arrangements (discussed in **Chapter 3**) are not fully developed and hence further modelling of development impacts will be required as part of any future plan review or planning application once these are crystallised.

6.4.4 The town centre enhancement schemes are detailed in **Chapter 3** and have been developed with a view to reducing through traffic and increasing use of sustainable modes of travel. As such, in order to bring about a significant shift in travel behaviours and increase the number of local trips made by sustainable modes, it is recommended that an area-based Travel Plan is considered, covering the whole of Shifnal, developed in association with local residents, businesses and Shropshire Council. This would allow input from local stakeholders and allow for community champions to be tasked with developing, delivering and refining the Travel Plan to bring about a modal shift in community travel behaviours, away from single occupancy car use.

#### Further Considerations

6.4.5 The capacity assessments results indicate that improvement schemes are likely to be required at several junctions in the study area. Nonetheless, it is important to note that there are other potential opportunities to mitigate the traffic impact of the development site. The operation at the key town centre junctions in the AM and PM peak periods is forecast to result in queuing based on background traffic growth, without new development. However, increased capacity improvements within the town centre, could prejudice the council's ability to implement the town centre transport strategy, which is focused upon the delivery of improved public realm and not encouraging additional capacity for vehicles.



- 6.4.6 An important consideration as the proposals progress will be to ensure that the development does not result in a noticeable impact upon operation at the town centre junctions. Therefore, the development and associated transport infrastructure will need to be designed in order to promote and to encourage the use of public transport and walking/cycling travel over private vehicle trips. Transport improvements should also be considered that include initiatives to promote the use of low carbon vehicles, improve efficiency of freight movements, and importantly, reduce the need to travel. This aligns with the aims of the town centre enhancement scheme, particularly to promote more sustainable types of movement.
- 6.4.7 A comprehensive Travel Plan will be produced to accompany any future applications for development of the land parcels included within the assessment. The site offers an excellent opportunity to improve and promote sustainable travel within Shifnal, both for future employees and residents, along with existing residents, with potential to reduce reliance on the private car through delivery of an area-based Travel Plan. As set out in **Section 4**, this will primarily focus on improving pedestrian and cycle connections with the railway station, and services in the town centre.
- 6.4.8 Through behaviour change initiatives and investment in sustainable travel opportunities; such as the comprehensive town centre enhancement scheme (**Chapter 3**), there is likely to be a degree of mode shift away from single occupancy vehicle trips. In this case, it is envisaged that junction operation forecast represents a robust scenario, which in 'real terms' is unlikely to occur.
- 6.4.9 High level consideration has been given to alternative options at the core junctions in Shifnal, namely the linked junctions of Market Place / Bradford Street and Aston Road / Bradford Street and the Five Ways roundabout. These junctions are already forecast to operate in excess of capacity in the 2038 scenarios considered without the introduction of development traffic and options to improve them are limited by the availability of highway land. Accordingly, focussing on the linked junctions of Market Place / Bradford Street and Aston Road / Bradford Street a number of options have been considered whereby traffic volumes are reduced through restriction of movements. The options considered are summarised in **Table 6.10**.

Table 6.10 Summary of Localised Improvements

Option	Description
A	Stop north and southbound traffic flow on Bradford Street between Aston Street and Victoria Road
B	Stop north and southbound traffic flow on Bradford Street north of Aston Street
C	Stop east and westbound traffic flow on Aston Street, forcing traffic to divert via Bradford Street and Curriers Lane

- 6.4.10 Option A considered closing the section of Bradford Street between Aston Street and Victoria Road to through traffic. Whilst this will assist in improving the operation of the operation of the Market Place / Bradford Street and Aston Road / Bradford Street junctions by removing opposing flows it forces traffic to reroute via Five Ways roundabout. Some of the rerouting will comprise a shift in traffic from the Victoria Road to Shrewsbury Road arms; however, additional traffic (i.e. that currently arriving/departing from the A464 Market Place) will now be required to route via Five Ways roundabout.

- 6.4.11 Whilst this option will theoretically 'fix' the Market Place / Bradford Street and Aston Road / Bradford Street junctions it has the knock-on effect of compromising the operation of Five Ways roundabout which is also forecast to be at capacity.
- 6.4.12 Option B seeks to reduce traffic volumes at the Market Place / Bradford Street and Aston Road / Bradford Street junctions stopping north and southbound traffic movements on Bradford Street north of its junction with Aston Street.
- 6.4.13 The outcome of this option is again rerouting of traffic via Five Ways roundabout. In this instance the volume of traffic that would potentially reroute is lower than in Option A, and whilst any negative effects at Five Ways will be less acute than in Option A the improvements at Market Place / Bradford Street and Aston Road / Bradford Street junctions are less significant resulting in the junctions continuing to operate over capacity.
- 6.4.14 Finally, option C seeks to reduce traffic volumes by preventing east and westbound through vehicle movements on Aston Street.
- 6.4.15 The exact location where the highway would need to be stopped up or through use restricted via. A Traffic Regulation Order (TRO) will need to be determined in a more detailed study; however, Aston Street already serves a number of adjacent side road, properties and uses and therefore access will need to be maintained from either end of the break in through route.
- 6.4.16 This option is likely to lead to benefits in terms of reducing the number of right turning vehicles turning into Aston Street from Bradford Street and also vehicles turning out of Aston Street; however, it will again lead to reassignment of traffic via Five Ways and in all likelihood many vehicles will continue to use Bradford Street heading to the northern end of the high street. Effects are therefore likely to be muted on this basis.
- 6.4.17 It is therefore concluded that irrespective of the reserve sites considered that there is a wider strategic highway infrastructure requirement in Shifnal in order to address the capacity constraints that are forecast to manifest at the end of the plan period and beyond. The constrained nature of the highway network at the key junction locations and their interrelationship when mitigation options are considered indicates that a more strategic approach to future growth is required when considering highway infrastructure in Shifnal.
- 6.4.18 It is considered that this approach needs to be led by SC as the highway and planning authority as solutions are likely to involve Compulsory Purchase of land within the vicinity of problematic junctions in order to provide more space to enable comprehensive mitigation.
- 6.4.19 Noting the points raised earlier in this strategy regarding the effects of Covid-19 and the potential for traffic volumes to decrease or spread more evenly across the day due to behavioural changes and the anticipated longer-term delivery of the safeguarded sites beyond the plan period all options will need to be reviewed as part of any future plan making process. Whilst the mitigation options considered to date are likely to have a limited effect based upon current forecasts they should not be discounted as they may prove to provide sufficient mitigation should travel behaviours and trends change.

## 6.5 Traffic Assessment Scenarios

6.5.1 The collective site is formed of a number of different land parcels, as shown in **Figure 2.1**. The parameters used to determine the forecast traffic generation of each parcel, in terms of scale and land use are summarised in **Table 6.2**.

Table 6.2: Site Land Parcels

Ref	Approximate Scale (Ha)	Proposed Land Use	Capacity
SHF032	2.8	C3 Residential	80 dwellings
SHF018c	30.2	C3 Residential	700 dwellings
SHF018b & SHF018d	39	B1/B2/B8 Employment	156,000 sqm

6.5.2 These parameters have been used to determine the level of traffic that is forecast to be generated by each land parcel. The developable capacity of the employment sites has been assumed to be 40% of the gross site areas, in-line with the SC's Consultation of Preferred Sites<sup>7</sup> document.

6.5.3 For each of the junctions included within the study, operational assessments have been undertaken for the 2038 Base scenario, along with full delivery of the development as described in **Table 6.2**. As set out above the 2038 assessment year coincides with the end of the period covered by the current Local Plan Review.

## 6.6 Trip Rates

6.6.1 Residential trip rates have been taken from the Transport Assessment submitted in support of the nearby planning application for a residential development on Land at Houghton Road<sup>8</sup>.

6.6.2 A summary of the trip rates associated with the respective land parcels and use classes is given in **Table 6.4** with the resultant development traffic summarised in **Table 6.5**.

Table 6.4: Trip Rates

Ref	Approx. Capacity	Car/Van Trip Rates				HGV Trip Rates			
		AM		PM		AM		PM	
		Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
SHF032	80 dwellings	0.149	0.459	0.440	0.255	NA	NA	NA	NA
SHF018c	700 dwellings	0.149	0.459	0.440	0.255	NA	NA	NA	NA

Table 6.5: Traffic Generation

Ref	Approx. Capacity	Car/Van Trips				HGV Trips			
		AM		PM		AM		PM	
		Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.

<sup>7</sup> Shropshire Council, Local Plan Review: [Consultation on Preferred Sites](#) (2018)

<sup>8</sup> Shropshire Council, Planning Application 12/04646/OUT [Transport Assessment](#) (2012)

SHF032	80 dwellings	12	37	35	20	NA	NA	NA	NA
SHF018C	700 dwellings	104	322	308	178	NA	NA	NA	NA

## 6.7 Traffic Distribution

6.7.1 To understand where car/van development traffic is likely to route from the site, traffic was distributed across the local highway network using 2011 Census data relating to the locations of workplaces and residents alike, where existing employees or residents work or live in the local MSOA, E02006008 (Shropshire 025) and travel by car.

6.7.2 The local highway network was analysed and the main routes/areas surrounding the site were assigned to a zone. The zone plan is shown in **Figure 6.1** and the percentage of traffic travelling to and from each zone is summarised in **Table 6.6**.

Figure 6.1: Distribution Zones (Car/Van trips only)

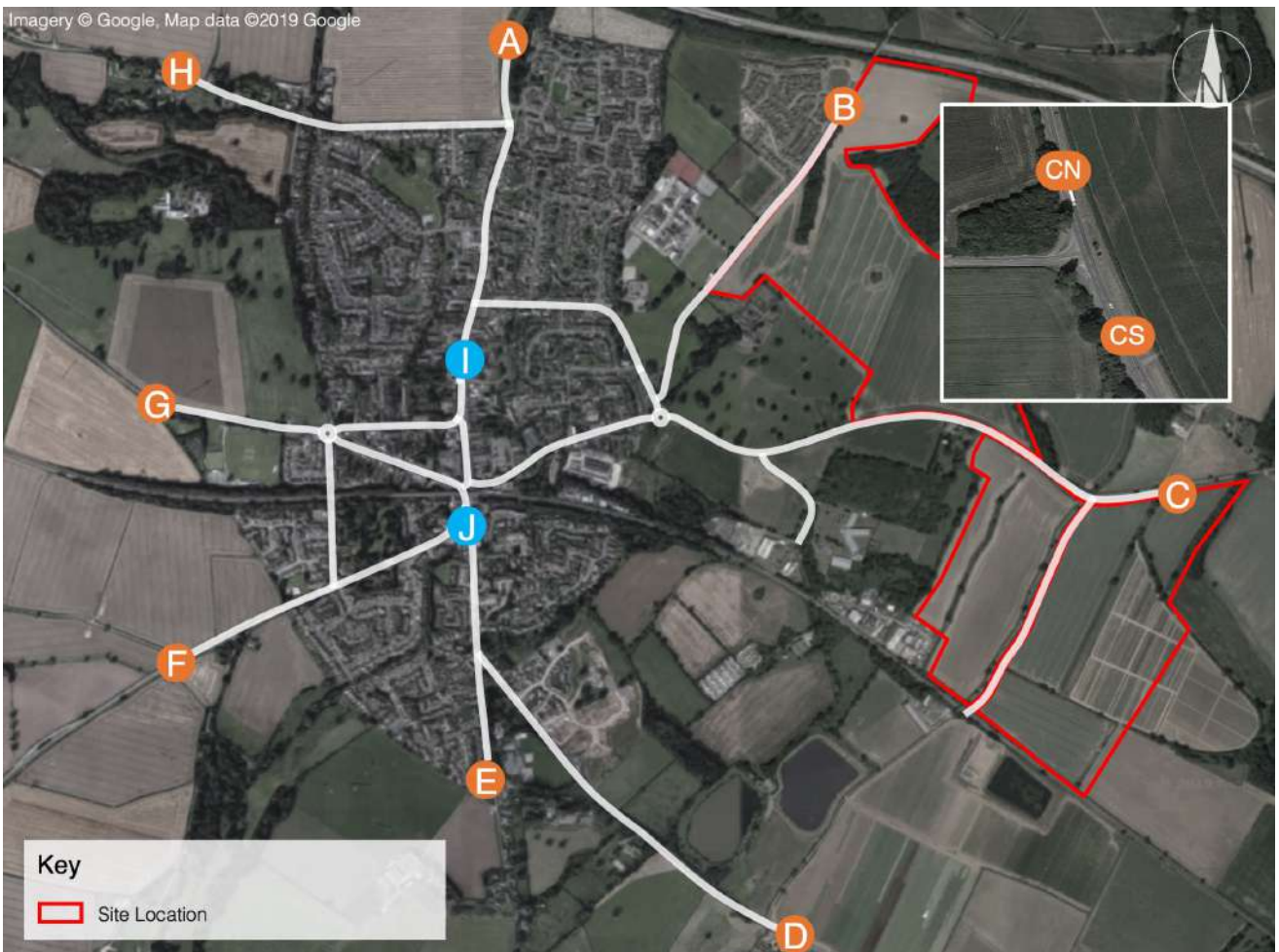


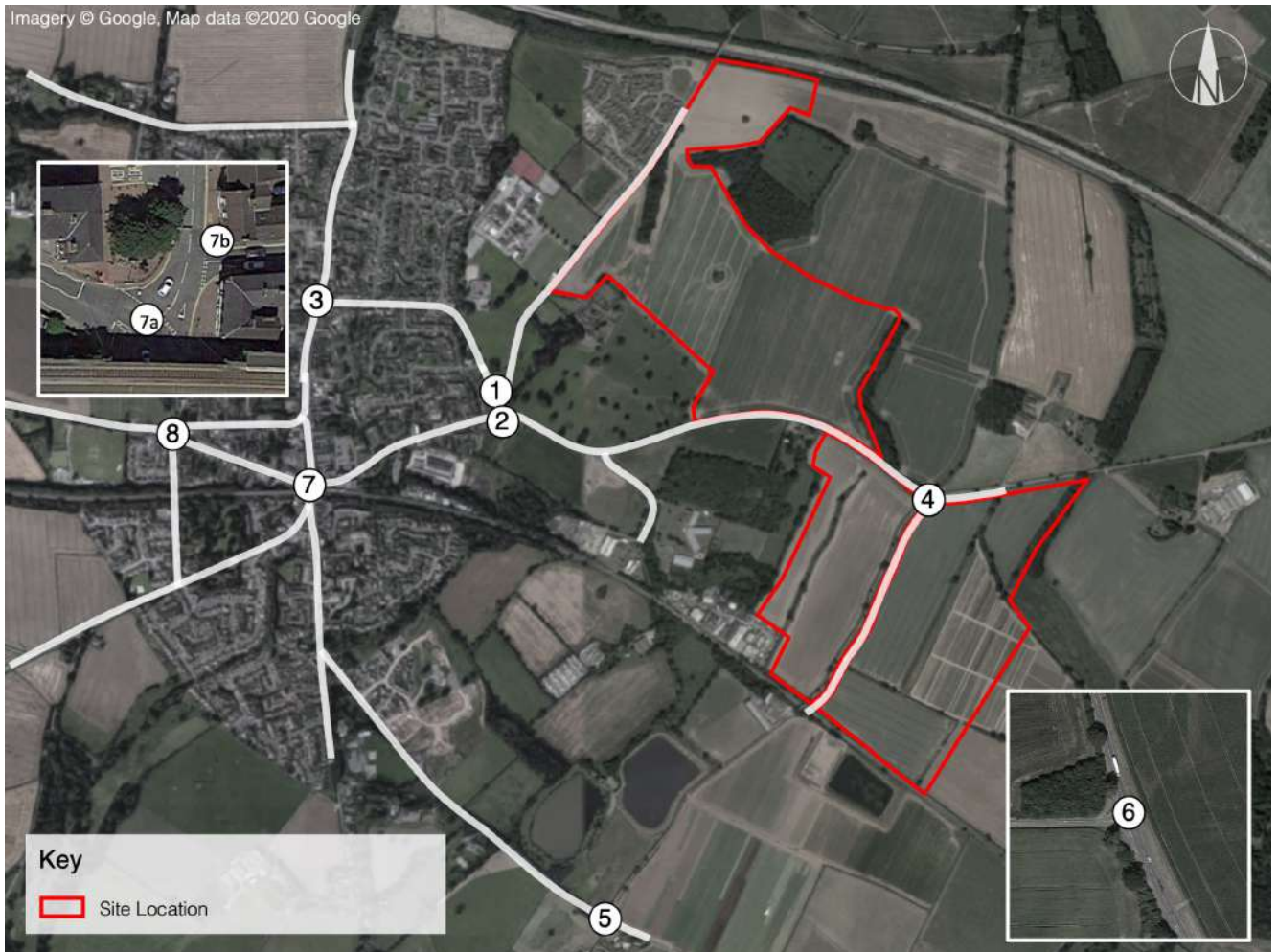


Table 6.6: Summary of Forecast Car/Van Traffic Distribution

Zone	Description	Residents in Shifnal travelling to/from work by car %
A	B4379 Newport Road	2.1%
B	Coppice Green Lane	0.0%
CN	A41 Newport Road (north)	7.5%
CS	A41 Newport Road (south)	18.4%
D	A464 Lower Upton	8.5%
E	Park Lane	2.6%
F	Church Street / A4169	13.0%
G	Priorslee Road	42.2%
H	Haughton Road	1.6%
I	Internal (north of Bradford Street)	1.6%
J	Internal (south of Bradford Street)	2.5%
Total		100%

6.7.3 This has been used to determine the level of development traffic expected to be generated at key off-site junctions in the AM and PM peak hours, as shown in **Figure 6.2**.

Figure 6.2: Key Junctions



6.7.4 Assuming the full build out of the residential sites a summary of the total additional forecast traffic at each junction and the percentage increase when compared against 2038 Base Traffic is summarised in **Table 6.7**.

Table 6.7: Summary of Forecast Traffic at Key Junctions

Junction Ref.	Name	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
		Two-Way Development Traffic	(%) Increase at Junction	Two-Way Development Traffic	(%) Increase at Junction
1	Coppice Green Lane / Curriers Lane	63	9%	80	20%
2	Aston Road / Curriers Lane / Stanton Road	433	43%	454	59%
3	Curriers Lane / Broadway	55	5%	64	6%
4	Upton Lane / Stanton Road	251	49%	225	41%
5	A464 / Upton Lane	71	12%	64	10%
6	Newport Road / Stanton Road	160	8%	164	9%
7a	Market Place / Bradford Street	381	21%	397	22%
7b	Aston Road / Bradford Street	400	31%	417	35%
8	Priorslee Road / Shrewsbury Road (Five Ways)	202	10%	210	11%

## 6.8 Conclusion

- 6.8.1 In conclusion it is noted that areas of the highway network in Shifnal are forecast to experience capacity issues by the end of the current plan period (2038). This conclusion is drawn irrespective of the location of further development beyond the current plan period.
- 6.8.2 SC is engaged in the design of an appropriate mitigation strategy for various locations within the town centre, however, the proposals are not crystallised, nor is there a firm timescale for their implementation.
- 6.8.3 Alternative options have been explored as part of this analysis by way of restricting movements at key junctions to release pressure; however, given the interlinked nature of the highway network between affected junctions effects are likely to be limited.
- 6.8.4 It is therefore concluded that a more strategic solution to junction capacity may be required beyond the plan period; however, it is also noted that COVID19 has acted as a catalyst for changes in travel behaviour that are not necessarily represented in current traffic data forecasts (which should also be taken into account).
- 6.8.5 Any future plan review or planning application relating to safeguarded land beyond the plan period will require a thorough review relative to road network operation and travel behaviours at the appropriate time.
- 6.8.6 With regards to land east of Shifnal it has been demonstrated that development traffic could impact the town centre area based upon current traffic forecasts (although this will also be the case if SC's currently proposed safeguarded sites to the south west are considered and even more so the case with respect to secondary school traffic).
- 6.8.7 The potential traffic impacts from the development proposals at land east of Shifnal are considered relative to those for land south-west of Shifnal in the following chapter in order to determine the propensity for each site to route traffic via the town centre for various journey purposes.

# 7 Alternative Residential Land Review

## 7.1 Overview

7.1.1 The proposed development parcels 'SHF018c' and 'SHF032' are being considered for promotion in the current Local Plan Review as an alternative residential site to the land safeguarded to the south and west of Shifnal. An overview of the sites is shown in **Figure 7.1**.

7.1.2 This chapter provides a summary of the strengths and weaknesses of the respective sites in terms of their suitability for development from a highways and transport perspective.

Figure 7.1: SC's Proposed Safeguarded Sites and Alternative Sites



## 7.2 Safeguarded Site Highway Infrastructure

7.2.1 As set out within the Shropshire Local Plan Review: Consultation on Preferred Sites (2018), the safeguarded land parcels to the south and west of Shifnal will require a highway link from the A464 (south) to the A464 (west) intersecting Park Lane, the B4169 and the rail line between parcels SHF017 north and P17a. These improvements, along with related schemes at Five Ways and Innage Road will create a one-way gyratory system via the rail line underpasses at Innage Road and between parcels SHF017 north and P17a. Notably land parcel P17a is no longer included in the identified safeguarded



land which will not allow for the delivery of a full bypass between the A462 south and west. The deliverable bypass based upon the extents of safeguarded land will only be partial, linking the A464 south with the A4169. This will allow for some traffic to bypass the Market Place / Bradford Street junction but is unlikely to provide significant benefit to the operation of the Five Ways roundabout. A partial bypass is unlikely to present a significant benefit for through traffic using the A464 either and traffic will still affect one or both problematic junction locations. Development to the south west of Shifnal will also have a greater impact on the town centre with respect to school trips at peak periods.

### 7.3 Site Review

7.3.1 **Table 7.1** provides an overview of the strengths associated with safeguarded land, as well as parcels ‘SHF018c’ and ‘SHF032’, with focus on sustainable transport opportunities, access to local amenities and traffic impacts.

Table 7.1: Strengths of Safeguarded Land / SHF018c & SHF032

SCC Safeguarded Land	Proposed Alternative Safeguarded Land Land Parcels SHF018c and SHF032
<b>Walking &amp; Cycling</b>	
Existing walking routes to railway station. Footpaths line existing residential areas, traffic calming and natural surveillance.	Existing walking routes and National Cycle Network route to access railway station.  Opportunity to provide more direct walking and cycling connections to tie in with committed improvements in the local area.  Opportunities for employees to walk between residential sites SHF032 and SHF018c and the adjacent employment sites (SHF018b / SHF018d).  Opportunities for residents to walk to the adjacent local primary and secondary schools.
<b>Public Transport</b>	
Circular route providing opportunities to extend bus route. Regular onward services from railway station.	Access to existing bus service along Stanton Road Regular onward services from railway station that can be accessed without travelling through the town centre area.  A more direct walking/cycling route to the railway station. Improvements to bus services could be delivered via pooled contributions between neighbouring employment and residential land uses. Given the mixed-use nature of these sites when considered in combination it is likely that bus patronage will be greater leading to a greater chance of eventual commercial operation.
<b>Access to Local Amenities</b>	
Close proximity to abundance of local amenities north of railway station.	Close proximity to abundance of local amenities north of railway station.  Several different schools accessible within close proximity of the site and not requiring travel through town centre.  Car based trips to main town centre car park on Aston Street not required to route through the town centre.



**Traffic Impact**

<p>Access to A442 south of Shifnal without routing through town centre.</p> <p>24.1% residential traffic is forecast to route via south and west of the site via the A464 south, Park Lane and the A4169 away from the town centre.</p>	<p>Spine road provides an opportunity to re-route eastbound traffic on Coppice Green Lane at the Aston Road/Stanton Road Roundabout.</p> <p>25.9% residential traffic is forecast to route via the A41 (i.e. to the east) away from the town centre.</p> <p>Access to M54 east of Shifnal without routing through town centre.</p> <p>Proximity of employment sites reduces the need to drive and does not require routing through the town centre.</p>
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7.3.2 **Table 7.2** provides a review of the weaknesses of the safeguarded land against parcels ‘SHF018c’ and ‘SHF032’. As for **Table 7.1**, focus has also been placed on sustainable transport opportunities, access to local amenities and traffic impacts.

**Table 7.2: Weaknesses of Safeguarded Land / SHF018c & SHF032**

SCC Safeguarded Land	Proposed Alternative Safeguarded Land Land Parcels SHF018c and SHF032
<b>Walking &amp; Cycling</b>	
<p>No local or national cycling routes in vicinity of the site.</p>	<p>Limited width footways on Aston Street.</p>
<b>Public Transport</b>	
<p>No direct bus service connections.</p>	<p>Following consultation with LA, unlikely that an extension to bus route into the site is feasible, albeit bus service does operate on the site frontage on Stanton Road. This stance will be revisited as part of any further review or planning application.</p>
<b>Access to Local Amenities</b>	
<p>Car based trips to secondary schools required to route through the town centre.</p> <p>Car based trips to employment areas east of Shifnal required to route through the town centre.</p> <p>Car based trips to main town centre car park on Aston Street required to route through the town centre.</p>	
<b>Traffic Impact</b>	
<p>Access to M54 or Telford requires traffic to route through constrained junctions in the town centre.</p> <p>Reliant on bypass to relieve traffic, subject to consultation and viability assessment. Without parcel P17a bypass effectiveness is limited.</p>	<p>Traffic from development to Telford routes through constrained junctions in the town centre.</p>

7.3.3 Both sites benefit from existing pedestrian facilities which provide connections to the town centre, railway station and local amenities. Parcels ‘SHF018c’ and ‘SHF032’ benefit further from the provision of NCN route 81, and potential opportunities to utilise enhanced pedestrian facilities along Currier Lane and Park Lane, which are to be provided as part of the Town Centre Enhancement scheme.

- 7.3.4 With regard to public transport facilities, parcels 'SHF018c' and 'SHF032' benefit from access to the existing bus services along Stanton Road. Nonetheless, following consultation with Shropshire Council, it is not considered that there would be sufficient long-term demand to merit the re-routing of existing services into the site. The safeguarded land parcels currently have no direct bus service provision and would therefore require the introduction of new services and bus stops.
- 7.3.5 Access to the railway station on foot is feasible from both sites, however more convenient cycle access is achievable from parcels 'SHF018c' and 'SHF032' through utilisation of a section of the NCN. From the station regular services provide connections to Birmingham, Wolverhampton, Shrewsbury and Telford.
- 7.3.6 Accessibility to local amenities, the majority of which are concentrated to the north of the train station, is comparable for both sites. Nonetheless, there is a greater provision of education facilities in the area surrounding parcels 'SHF018c' and 'SHF032', providing opportunities for travel by non-car modes. It must also be considered that parcels 'SHF018c' and 'SHF032' are located directly opposite the proposed employment sites (SHF018b & SHF018d), therefore providing genuine opportunities for commuting by sustainable means.
- 7.3.7 Traffic routing towards the M54 from parcels 'SHF018c' and 'SHF032' will likely route east, away from the town centre. From the safeguarded land, however, this traffic will impact on all of the three constrained junctions, on account of the existing one-way system in operation around the town centre. As outlined above, there are potential opportunities to mitigate the impact on constrained junctions in the town centre through the establishment of a bypass, though this will be subject to consultation and viability assessment.

## 7.4 Summary

- 7.4.1 Based on the evidence presented, there is merit in promoting parcels 'SHF018c' and 'SHF032' as an alternative to the land safeguarded for housing development to the south and west of Shifnal. This conclusion is drawn based upon the propensity of each site to draw traffic into/through the congested town centre as follows:
- East of Shifnal has potential to route slightly more traffic away from the town centre than south-west of Shifnal based upon current journey patterns;
  - East of Shifnal is better located relative to local schools (particularly secondary schools), both of which are also located to the east of the town centre – school run impacts on the town centre are therefore likely to be muted when compared to south-west Shifnal;
  - East of Shifnal is better located relative to the railway station (also east of the town centre). Trips to and from the station car park and drop-off trips are unlikely to affect the town centre;
  - Shifnal Town Centre provides a draw from both sites given the range of amenities and services available. Whilst it is hoped that many trips to and from the centre will be completed by sustainable means, it is inevitable that some trips will be completed by car. The main town centre car park is situated on Aston Street (east of the town centre) and on this basis car trips from east of Shifnal are much less likely to affect town centre infrastructure than those from south-west Shifnal which will route through the town centre; and,
  - With the draft employment allocation and Lamledge industrial estate both being situated adjacent to East of Shifnal trips between the residential and employment areas will again not affect the town

centre. Trips from south-west Shifnal seeking to access employment will have to route via the town centre.

- 7.4.2 Furthermore, both sites benefit from pedestrian access to the town centre, railway station and local amenities. Nonetheless, access to the above is also feasible from parcels 'A' and 'B' (sites SHF032 and SHF018C) by other modes, such as bus or bicycle. Furthermore, it is considered the development of parcels 'A' and 'B' would be reliant on the delivery of less extensive infrastructure; potential highways mitigation schemes for constrained junctions in the town centre are already being explored, and these are likely to be required regardless of whether development of the site occurs. 'SHF018c' and 'SHF032' offer a significant benefit where traffic is travelling east, towards Newport Road; whereas the safeguarded land, subject to delivery of the bypass, offers a benefit to traffic travelling west towards Telford. Without the bypass, both the safeguarded land and sites SHF032 and SHF018c will have an impact on constrained town centre junctions, albeit the affect from SHF032 and SHF018c is likely to be lower.
- 7.4.3 The location of housing on parcels 'SHF018c' and 'SHF032', east of the town is considered to be more favourable given that trips towards the M54 will route away from the town centre, and the proximity of the proposed development on parcels SHF018b & SHF018d provides realistic opportunities for future residents and employees to travel by sustainable modes, thus providing the potential to reduce the level of traffic generated on the local highway network through effective behaviour change/mode shift initiatives.

## 8 Conclusions

### 8.1 Summary

- 8.1.1 mode transport planning (mode) has been commissioned by Harrow Estates to prepare a Highways and Transport Strategy for potential development plots located to the east of Shifnal, in Shropshire. The site is located east of Telford, south of the M54 and comprises land to the north and south of Stanton Road.
- 8.1.2 As part of Shropshire Council's Local Plan Review, the development parcels considered in this report are being promoted for allocation. This report also considers the relative merits of the proposed development parcels in relation to land currently safeguarded beyond the plan period to the south-west of Shifnal.
- 8.1.3 This report has been prepared to consider the transport opportunities provided by the proposed development in this location, including access by sustainable modes. It also determines the level of traffic expected to be generated by the proposed development during the typical AM and PM peak hours and considers this in relation to network capacity.
- 8.1.4 A review of the existing situation within the town indicated that the town is reliant on the use of private cars, with on-street parking taking place in proximity of the town centre, associated with the railway station and visitors to the town centre. Additionally, there is currently a lack of high-quality cycling routes linking the residential areas of Shifnal with the town centre.
- 8.1.5 In 2014, Shropshire Council commenced development of the Shifnal Transport Strategy, which is a series of transport improvements set to be delivered over the coming years. This identified a number of improvements to be made to local walking and cycling route in the town, in order to promote walking and cycling for short trips within the town. This also explored how parking in the town centre could be rationalised, in order to make the best use of space and deter people from driving to the town centre in order to improve the local street scene and reduce unnecessary car trips. The Shifnal Transport Strategy also identified key junctions where capacity improvement schemes have been designed.
- 8.1.6 Due to the layout of the town, re-routeing of bus services through sites SHF032 and SHF018c would be unfeasible in the short-term, as this would increase journey times and therefore detract from the benefit of using public transport. As such, the focus of the strategy has been to determine the most appropriate walking and cycling improvements linking with the town centre in order to maximise sustainable travel. The sustainable transport proposals are summarised in **Chapter 4**, which shows how the wider site is intended to be developed with a network of walking and cycling routes connecting with Coppice Green Lane and Aston Road, leading to the town centre. Additionally, new cycle parking facilities could be provided at the railway station and in the town centre to make cycling a convenient mode of travel in the town.
- 8.1.7 A Travel Plan will also be developed and promoted at the development. This will seek to ensure that the long-term management of the promotion and delivery of sustainable transport initiatives will be secured and managed at the residential and employment site by a dedicated TPC.
- 8.1.8 The traffic impact of the proposed development is considered in **Chapter 6**. The results indicate that improvement schemes are likely to be required at the Aston Street / Bradford Street priority junction, Victoria Road / Bradford Street priority junction and the Priorslee / Shrewsbury Road / Victoria Road (Five

Ways) roundabout. Whilst these will be required prior to the delivery of any safeguarded land, potential highways mitigation schemes for these junctions are already being explored as part of the Town Centre Enhancements scheme and are likely to be required regardless of whether development of the site occurs or not.

- 8.1.9 The traffic impact has been derived using the assumptions set out in **Chapter 6** and does not take account of any Travel Plan measures, or potential shift away from the private car that will be targeted through the promotion of sustainable travel. Additionally, no adjustment has been applied to the background traffic growth to take account of the allocations, therefore there has been an element of double counting.
- 8.1.10 Furthermore, no account has been taken of the potential beneficial effects of COVID in changing travel patterns and behaviours through remote working, peak spreading and obtaining goods and services remotely. This therefore presents a very robust assessment of the future operation of the local highway network.
- 8.1.11 It has been concluded that irrespective of the reserve sites considered that there is a wider strategic highway infrastructure requirement in Shifnal in order to address the capacity constraints that are forecast to manifest at the end of the plan period and beyond. The constrained nature of the highway network at the key junction locations and their interrelationship when mitigation options are considered indicates that a more strategic approach to future growth is required when considering highway infrastructure in Shifnal.
- 8.1.12 A comparison has also been undertaken of sites 'SHF018c' and 'SHF032' against a number of land parcels located south-west of Shifnal in **Chapter 7**. This considers the strengths and weaknesses of the respective parcels in terms of walking and cycling routes, public transport, proximity and accessibility to local amenities and their traffic impact.
- 8.1.13 Based on the analysis completed, there is merit in promoting parcels 'SHF018c' and 'SHF032' as an alternative to the land safeguarded for housing development to the south and west of Shifnal. This conclusion is drawn based upon the propensity of each site to draw traffic into/through the congested town centre as follows:
- East of Shifnal has potential to route slightly more traffic away from the town centre than south-west of Shifnal based upon current journey patterns;
  - East of Shifnal is better located relative to local schools (particularly secondary schools), both of which are also located to the east of the town centre – school run impacts on the town centre are therefore likely to be muted when compared to south-west Shifnal;
  - East of Shifnal is better located relative to the railway station (also east of the town centre). Trips to and from the station car park and drop-off trips are unlikely to affect the town centre;
  - Shifnal Town Centre provides a draw from both sites given the range of amenities and services available. Whilst it is hoped that many trips to and from the centre will be completed by sustainable means, it is inevitable that some trips will be completed by car. The main town centre car park is situated on Aston Street (east of the town centre) and on this basis car trips from east of Shifnal are much less likely to affect town centre infrastructure than those from south-west Shifnal which will route through the town centre; and,



- With the draft employment allocation and Lamledge industrial estate both being situated adjacent to East of Shifnal trips between the residential and employment areas will again not affect the town centre. Trips from south-west Shifnal seeking to access employment will have to route via the town centre.

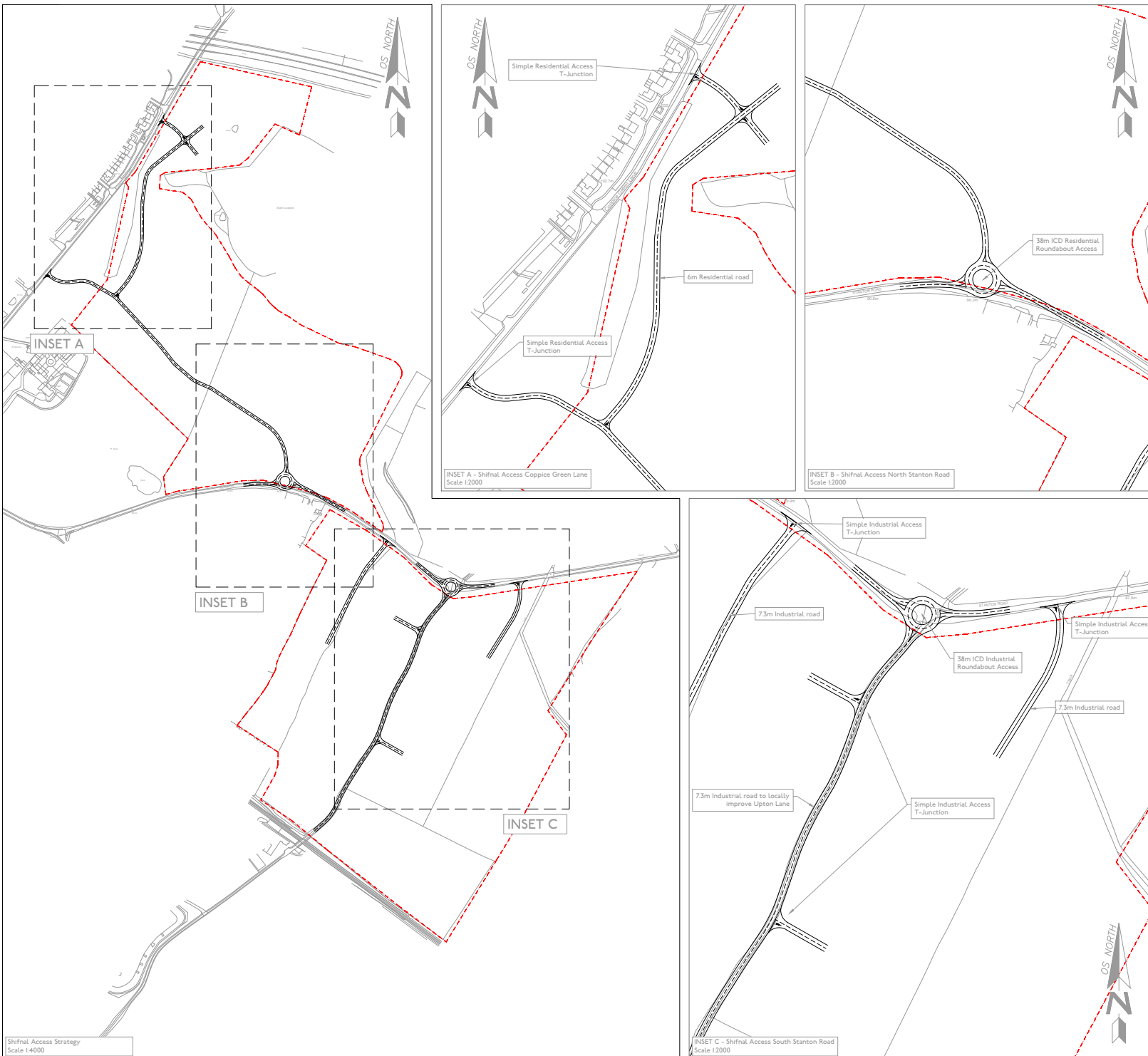
8.1.14 Overall, the site is in a good location to encourage existing residents in Shifnal, and future residents and employees at the development, to adopt more sustainable travel habits, minimising reliance on private cars and increasing trips on-foot and by bike, to the town centre, or as part of multi-modal trips by bus or train. Furthermore, the Travel Plan will be developed with a focus on increasing uptake of sustainable modes and changing travel behaviour in order to align with national government aspirations.

8.1.15 It is noted that Shifnal will likely face further transportation challenges beyond the current plan period that coupled with the current state of flux in travel behaviours due to COVID19 will require further detailed consideration as part of future plan reviews. Nonetheless it has been demonstrated that the location of land east of Shifnal provides a higher propensity for vehicle trips to avoid the town centre area than land south-west of Shifnal given its location relative to the strategic road network, schooling, employment, the railway station and town centre car parks.

8.1.16 On this basis it is concluded that SC should support the safeguarding of land to the east of Shifnal for development beyond the current plan period.

# APPENDICES

# APPENDIX A – Drawings



This drawing has been produced by mode transport planning.  
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--- Proposed Development Boundary

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Harrow Estates PLC

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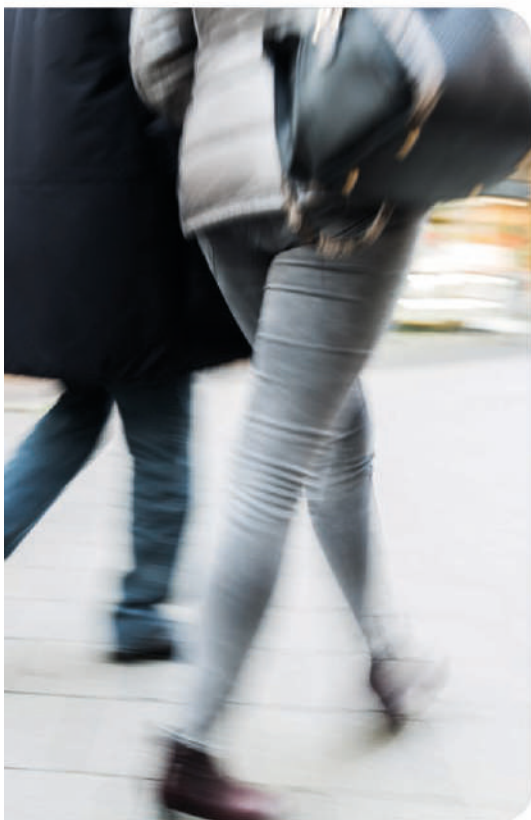


Harrow Estates PLC

# Employment land at Shifnal, Shropshire (SHF018b & SHF018d)

## Transport Assessment

September 2020



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Harrow Estates PLC

# Employment land at Shifnal, Shropshire (SHF018b & SHF018d)

## Transport Assessment

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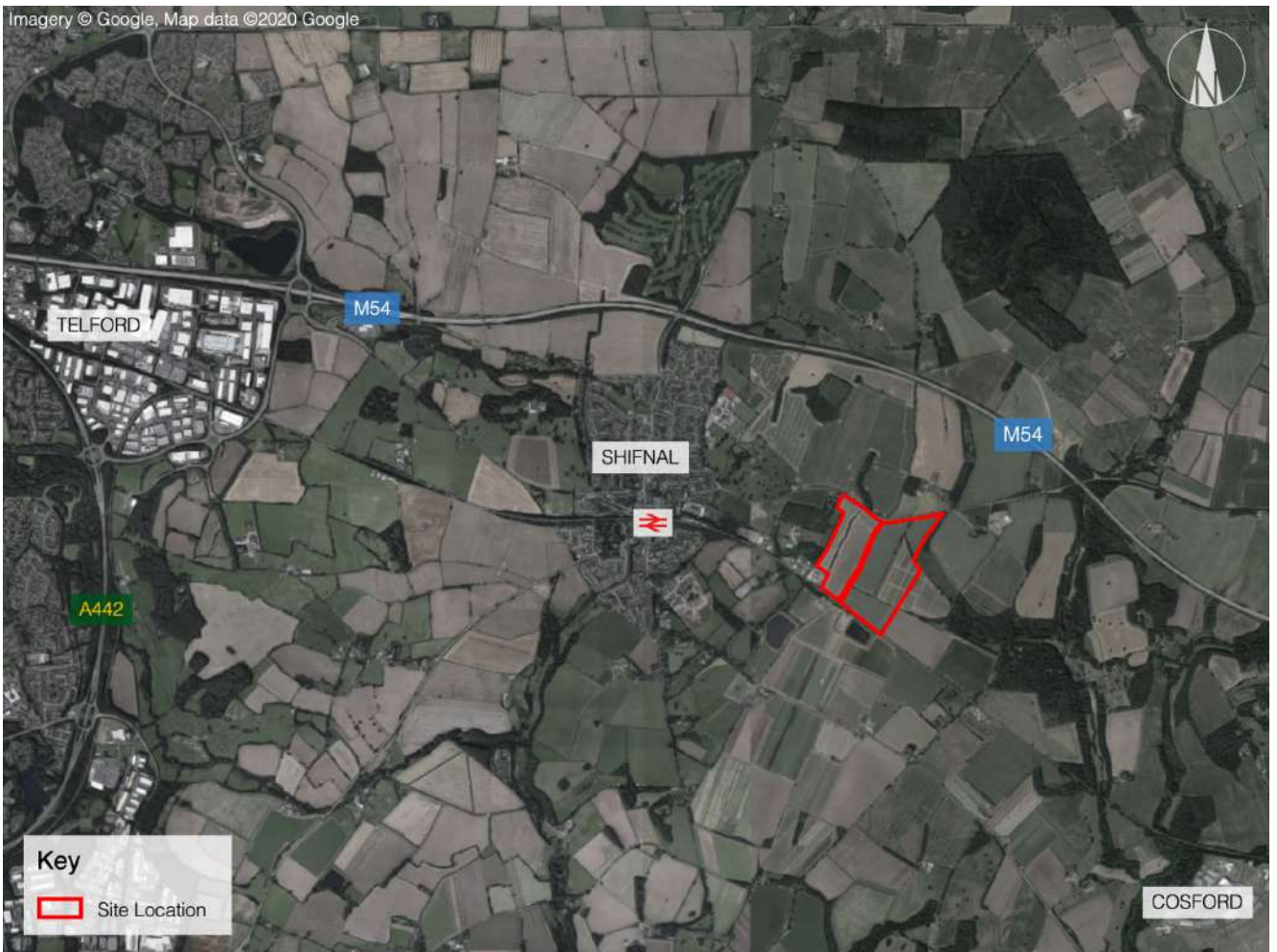


# 1 Introduction

## 1.1 Overview

1.1.1 mode transport planning (mode) has been commissioned by Harrow Estates PLC to prepare a Transport Assessment for an employment site of c.156,000sqm, as part of a number of wider potential development sites located to the east of Shifnal, in Shropshire. The location of the employment site is shown in **Figure 1.1**.

Figure 1.1: Site Location



1.1.2 The site is located east of Telford, south of the M54 and comprises land to the south of Stanton Road that runs in an east to west orientation forming Aston Road on entry to Shifnal.

1.1.3 This Transport Assessment considers the transport opportunities provided by the proposed development in this location, including access by sustainable modes. It also determines the level of traffic expected to be generated by the proposed development during the typical AM and PM peak hours and considers this in relation to existing network capacity.



## 1.2 Emerging Policy Position

- 1.2.1 The Shropshire Council Local Plan is currently in the process of review to cover the plan period of 2016 to 2038. The latest version of the draft Local Plan (dated August 2020) is currently being consulted on by SC.
- 1.2.2 With regards to Shifnal and specifically this Transport Assessment, Land east of Shifnal Industrial Estate (SHF018b and SHF018d) is identified as a preferred location for growth, namely for employment uses.
- 1.2.3 Schedule 15.1(ii) of the draft Local Plan describes various transport considerations in relation to the site as follows:
- *The development of land west of Upton Lane should consider the functional relationship with Shifnal Industrial Estate and the opportunity to link the two employment areas to create a secondary to the new employment area. This is considered in **Chapters 4** and **5** where the sustainable and site access strategy are considered. It is demonstrated that the draft allocation can be adequately accessed without the requirement for further access via the neighbouring industrial estate.*
  - *The sites should be serviced from the A41/M54 Junction 3 along Stanton Road with traffic restrictions on commercial vehicle movements to the site using the A464 / Aston Street through Shifnal via the town centre. The priority given to Stanton Road as the primary access will require improvements to Stanton Road along its length (Stanton Road highway safety is considered in **Chapter 2** and traffic impact in **Chapter 6**); however, any requirement to improve Stanton Road should arise from an evidenced safety or capacity assessment as part of a planning application, rather than be pre-conceived.*
  - *Strategic Transport Assessment and Transport evidence will be required to assess the effects of the development and the cumulative growth of Shifnal on the M54 Junction 3 and the A41/Stanton Road junction (this is considered further in the vehicle impact section at **Section 6.7** and will undoubtedly be a requirement of the scope of any subsequent planning application);*
  - *Sites SHF18b and SHF18d will share a principal access from Stanton Road to serve the employment area and Upton Lane to the viaduct bridge at the rail line will be improved and modified to form the primary distributor road serving the site. Upton Lane forms an historic thoroughfare and the road route or its historical presence will need to be conserved in the development (considered further in the Vehicular Access Strategy in **Chapter 5**);*
  - *Upton Lane forms a bridge viaduct over the rail line to the south of the site. Beyond, Upton Lane forms an inadequate local road and development should close the viaduct to traffic until the southern Upton Lane is improved and to recognise the weight restrictions over the bridge viaduct. It is desirable for the viaduct bridge to remain open to pedestrian and cyclist movements. (considered further in the Vehicular Access Strategy in **Chapter 5**);*
  - *Appropriate public transport links should be provided linking to parking facilities on the site to support wider use including the possibility for electric vehicle charging points. The potential to operate a dedicated Park and Ride service should be investigated in partnership with appropriate local community groups and bus operators (considered further in the Existing Conditions **Chapter 2** and the Sustainable Transport Proposals section at **Chapter 4**).*
  - *Significant and effective pedestrian and cycle links will be provided along Stanton Road, into and through the development to encourage safe and sustainable patterns of movement between the employment area and the town. A link with Shifnal Industrial Estate would provide an opportunity for a secondary*

*vehicular, pedestrian and cycling access from the south* (considered further in the Existing Conditions **Chapter 2** and the Sustainable Transport Proposals section at **Chapter 4**).

1.2.4 These items will typically be resolved as part of a formal planning application; however, this Transport Assessment is intended to provide further evidence as to the acceptability of the draft allocation at SHF018b and SHF018d with the intention of supporting the proposal through the Local Plan review.

## 1.3 Report Structure

1.3.1 Following this introduction, this report is structured as follows:

- **Chapter 2** describes the existing situation, including a thorough review of accessibility by all modes and to local facilities and amenities;
- **Chapter 3** provides a review of local infrastructure proposals relevant to the site;
- **Chapter 4** offers details of the sustainable access strategy proposed at the site;
- **Chapter 5** provides details of the vehicular access strategy proposed at the site;
- **Chapter 6** considers the potential traffic generation of the proposals, its subsequent distribution onto the surrounding highway network and reviews the findings of preliminary capacity assessments undertaken at key junctions to determine the impact of development traffic and how it may be addressed as part of a planning application; and,
- **Chapter 7** summarises and concludes the findings of report.

## 2 Existing Conditions

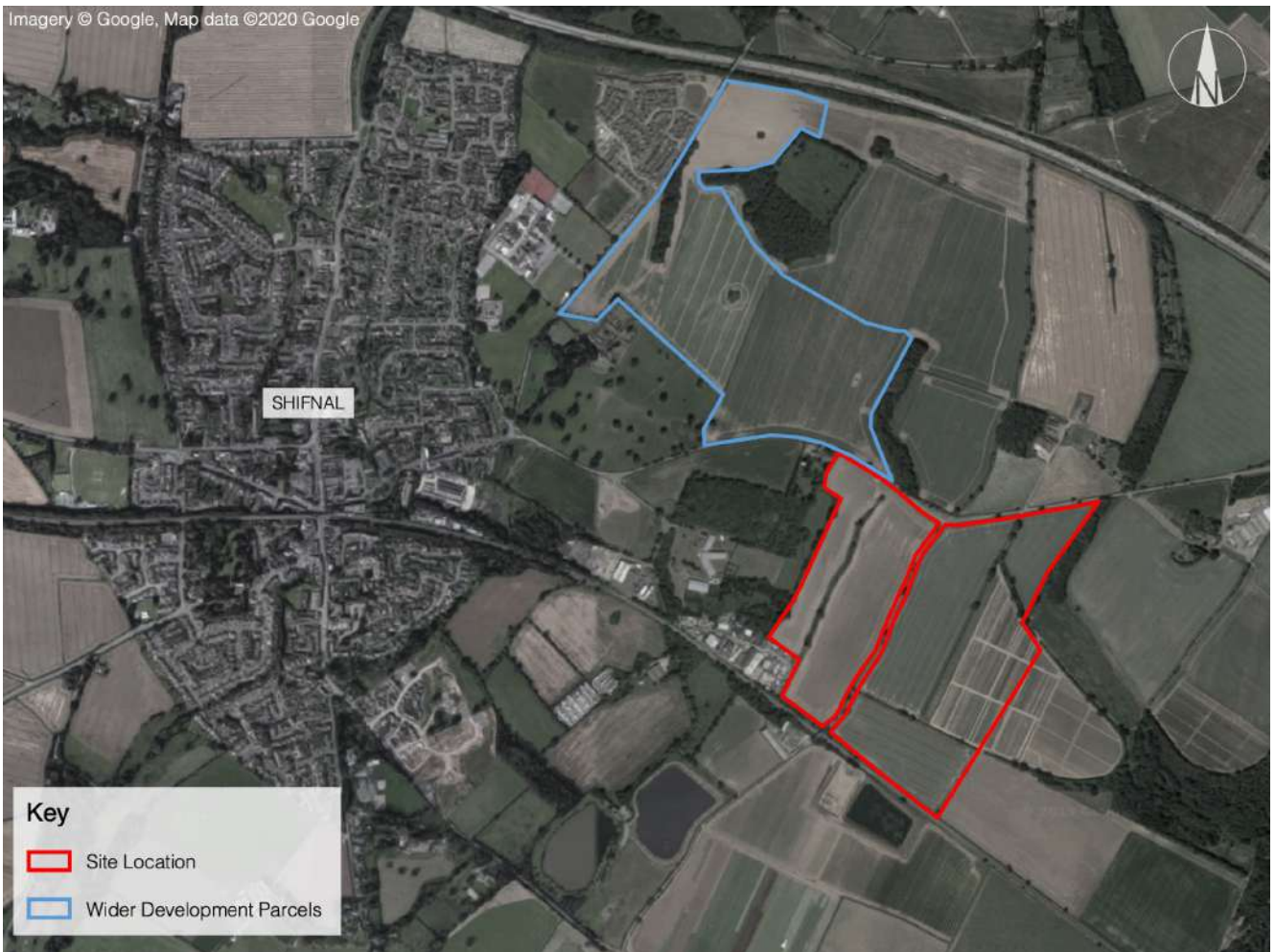
### 2.1 Overview

2.1.1 This chapter describes the existing site and local transport network for all modes of transport in order to determine the current accessibility of the site.

### 2.2 Site Description

2.2.1 The site is located to the east of Shifnal approximately 5km east of Telford, in Shropshire. The site is bordered by Stanton Road to the north with Upton Lane running through the site. A railway line runs along the southern boundary of the site whilst an area of agricultural land is located to the east. The location of the employment site in relation to the nearby land parcels that form the overall site are shown in **Figure 2.1**.

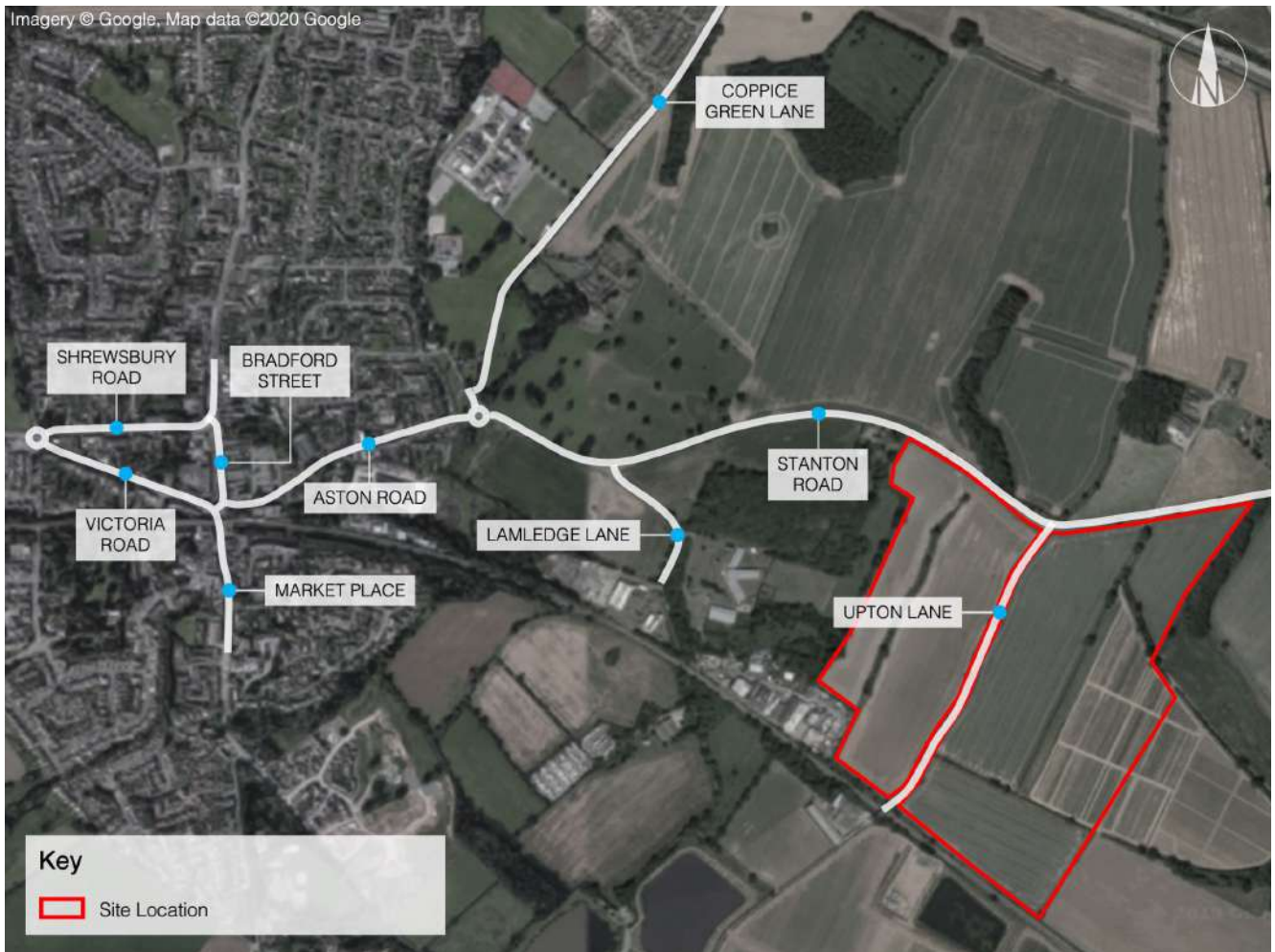
Figure 2.1: Site Location Context



## 2.3 Local Highway Network

2.3.1 The site is bordered by Stanton Road to the north and dissected by Upton Lane, from which the site land parcel can be accessed via hedge openings, as shown within this review. A plan of the roads considered in this review is shown in **Figure 2.2**.

Figure 2.2: Local Highway Network



### Stanton Road

2.3.2 Stanton Road runs along the northern boundary of the site, and bears east from a recently constructed roundabout with Coppice Green Lane and Aston Road, connecting Shifnal with Newport Road north of the M54. Stanton Road is a rural lane with verges and hedgerows along most of its length in proximity of the site. There are also sections of wall alongside the carriageway in areas. In proximity of the roundabout with Aston Road, a 30mph speed limit applies; as the road bears east the national speed limit applies, this includes the section of road along the site frontage on Stanton Road.

2.3.3 The road is typically between 6 and 7.5m wide and has centreline markings along most of its length between the roundabout and Upton Lane. The road is covered by street lighting between Aston Road and Lamledge Lane.



2.3.4 There is a footpath adjacent to the consented care home, situated behind the hedgerow on the Southern side of Stanton Road linking to the Stanton Road/Lamledge Lane roundabout.

### Upton Lane

2.3.5 Upton Lane dissects the site and bears south from Stanton Road and crosses over the Birmingham to Shrewsbury Railway Line before meeting the A646. The lane is rural in nature with a narrow carriageway and no road markings; passing places are evident in areas allowing two vehicles to pass. In areas there are narrow grass verges in front of hedgerows, in other areas the hedgerows abut the carriageway, limiting visibility.

2.3.6 Where the site straddles Upton Lane the national speed limit is in place; although the nature of the lane would significantly influence and reduce traffic speeds. Due to the nature of the road, no footways or street lighting are in place.

2.3.7 The development site can be accessed via an opening in the hedge as shown in **Figure 2.5**.

Figure 2.5: Site Access east of Upton Lane



### Coppice Green Lane

2.3.8 Coppice Green Lane bears north-east from Curriers Lane, north of Aston Road and connects to rural lanes north-east of Shifnal and north of the M54 motorway. The road has centreline markings between Curriers Lane and the bridge over the M54 motorway. The road has recently been upgraded following



delivery of a residential development on land to the west of Coppice Green Lane. The road has centreline markings along the entire site frontage on Coppice Green Lane and a 30mph speed limit in place. This reverts to the national speed limit in proximity of the northern extent of the site boundary on Coppice Green Lane.

2.3.9 The road has a footway along the western side of the carriageway where the recent residential development has been delivered. This continues south along the western side of the carriageway before linking with a footpath connecting west with Curriers Lane.

### **Aston Road**

2.3.10 Aston Road bears west from the recently constructed roundabout with Stanton Road and connects Stanton Road with Bradford Street, Victoria Road and Shifnal Town Centre.

2.3.11 The road has centreline markings along its extents and is subject to a 30-mph speed limit. Frontage access is provided to residential properties along either side of the road. As the road approaches Shifnal Railway Station, vehicles can currently park on-street on either side of the carriageway east of the Railway Station, this can effectively narrow the road to one lane, with give and take between oncoming vehicles. This parking is likely to be generated by demand from rail users, along with visitors to the Town Centre.

2.3.12 The road has footways along either side of the carriageway from the roundabout; as the road approaches Shifnal Railway Station, the footways narrow to a nominal c. 0.7m to 1.0m width alongside the railway viaduct on the northern side of the carriageway. The service strip along the southern side of the carriageway is unsuitable for use by pedestrians.

2.3.13 It is understood that SC received a S106 contribution from application 13/03055/FUL to deliver a pedestrian crossing on Aston Road as well as to hard surface the existing track linking Spring Hill and Aston Road to allow for terraced houses fronting Aston Road to park to the rear.

### **Bradford Street**

2.3.14 Bradford Street connects Aston Road with Shrewsbury Road to the north and Victoria Road to the south. The short link road also acts as part of Shifnal's High Street, with Cheapside to the west of Bradford Street providing an area for on-street parking.

2.3.15 The road forms part of the High Street which is made up of Bradford Street and parts of Market Place and Shropshire Road. On-street parking is permitted along Cheapside, a service road west of Bradford Street. Footways are provided alongside both sides of the carriageway, with a zebra crossing facility across Bradford Street approximately 50m north of the junction with Aston Street.

## **2.4 Walking and Cycling**

2.4.1 A desktop review of existing walking and cycling routes in vicinity of the site has been undertaken. The primary desire lines from the development site will lead towards Shifnal Town Centre and Shifnal Railway Station, as shown in **Figure 2.6**.

Figure 2.6: Primary Walking and Cycling Desire Lines



- 2.4.2 A review of SC’s cycle map shows that National Cycle Network (NCN) Route 81 runs through Shifnal. NCN Route 81 connects Aberystwyth and Wolverhampton via Shrewsbury and Telford. More locally Route 81 provides a connection between Shifnal and Telford, and of relevance to the site, provides an on-road connection to Shifnal High Street via Curriers Lane.
- 2.4.3 The section of the NCN through Shifnal is all on-road, with no markings or formal provision for cyclists along Stanton Road; the route is therefore advisory in nature. NCN Route 81 in context of the site and desire lines is shown in **Figure 2.7**.
- 2.4.4 Additionally, NCN Route 81 connects with NCN Route 55 just over 5km from the site, east of Telford in proximity of Telford Way and north of Hollinswood Interchange. This provides a further connection into Telford Town Centre.

Figure 2.7: NCN Cycle Routes



2.4.5 There is no footway provision along the site frontage on Stanton Road; however, there is a Public Right of Way (PRoW) (ref: 0141/5/1), connecting Lamledge Lane, in proximity of site SHF018a, with Springhill.

## 2.5 Bus Services

2.5.1 The Chartered Institution of Highways & Transportation (CIHT) Buses in Urban Developments Guidance<sup>1</sup> summarises the recommended maximum walking distances for core bus corridors, high-frequency bus routes and less frequent routes, with the respective recommended maximum walking distances being 500m, 400m and 300m.

2.5.2 A number of bus services operate within Shifnal; however, the current bus provisions are mainly concentrated within Shifnal Centre, with only the 891 bus service operating along Stanton Road. The closest existing bus stops to the site on Stanton Road are located east and west of the Stanton Road

<sup>1</sup> Chartered Institute of Highways and Transportation, [Buses in Urban Developments](#) (2018) [modetransport.co.uk](http://modetransport.co.uk) | September 2020



junction with Lamledge Lane (c.900 metres from the main site access). From these stops the 891 bus service can be boarded, which provides an hourly service between Wolverhampton and Telford via Shifnal in both directions.

2.5.3 The location of the existing bus stops on Stanton Road and in Shifnal Town Centre are shown in **Figure 2.8**. The typical daytime frequencies (during the Covid-19 period) of the bus services is summarised in **Table 2.1**.

Figure 2.8: Local Bus Stops



Table 2.1 Summary of Local Bus Services

Service No.	Route	Weekday Frequency	Weekend Frequency	Days of Operation
14 / 14A	Telford - Priorslee - (Stafford Park) – Shifnal	2 per hour	1 per hour (Sat. only)	6 days (Mon. – Sat.)
891	Wolverhampton - Albrighton - Shifnal - Telford	1 per hour	5 per day (Sat. only)	6 days (Mon. – Sat.)
113	Telford – Shifnal – Norton – Bridgnorth	2 - 3 a day	1 per day (Sat. only)	6 days (Mon. – Sat.)
114	Telford – Shifnal – Worfield – Bridgnorth	3 – 5 a day	1 per day (Sat. only)	6 days (Mon. – Sat.)
115	Weston Heath – Shifnal – Norton – Bridgnorth	No service	1 per day (Sat. only)	1 day (Sat. only)
116	Weston Heath – Shifnal – Worfield - Bridgnorth	No service	1 per day (Sat. only)	1 day (Sat. only)

## 2.6 Rail Services

2.6.1 The nearest station is Shifnal Railway Station, located south of Aston Road. The station is located on the Birmingham to Shrewsbury line, with services operating hourly. Shifnal Railway Station is located c. 1.5km west of the main site access and can be accessed within a c.20-minute walk or a 6-minute cycle. The typical frequency of train services (during the Covid-19 period) that serve Shifnal Railway station is summarised in **Table 2.2**.

Table 2.2 Summary of Local Rail Services to/from Shifnal (direct services only)

Destination	Fastest Journey Time	Typical Frequency
Wolverhampton	21 minutes	every 60 minutes
Shrewsbury	26 minutes	every 60 minutes
Telford Central	5 minutes	every 60 minutes
Sandwell & Dudley	33 minutes	every 60 minutes
Birmingham New Street	41 minutes	every 60 minutes

2.6.2 Car parking is available at the station with capacity for up to 80 vehicles, additionally, the car park north of Aston Street provides an additional 101 spaces and is free. Cycle parking is also provided at the station with capacity for up to 12 bicycles, which is covered by CCTV.

## 2.7 Local Facilities

2.7.1 A review of the accessibility of the site in relation to local facilities and amenities has been undertaken as shown in **Figure 2.9**.



Figure 2.9: Local Facilities



2.7.2 Many of the facilities are located in Shifnal Town Centre and can be accessed within a c. 5-minute cycle or 20-minute walk from the main site access, providing an excellent opportunity for future employees to access local amenities on-foot or by bike.

## 2.8 Mode Share

2.8.1 To establish the anticipated mode share of the future employees, 2011 Census data relating to the 'Method of Travel to Work' for people who currently live or work in the Mid Layer Super Output Area (MSOA) E02006008 (Shropshire 025) in which the site is located, was reviewed. This established the proportion of trips by each mode, based on the 2011 Census, as summarised in **Table 2.3**.

Table 2.3 Modal Share - Method of Travelling to Work (MSOA: E02006008 – Shropshire 025)

Method of travel of work	Mode Split
Driving a car or van	73%
Passenger in a car or van	8%
On foot	14%
Train	1%
Bicycle	1%
Bus, minibus or coach	1%
Taxi	1%
Motorcycle	0%
Total	100%

2.8.2 **Table 2.3** shows that based on the 2011 Census data, approximately 81% of employees who work in the Shropshire 025 MSOA travel to work by car (c. 65% to 71% single occupancy), whereas 14% walk to work and 1% use the train, cycle to work or use the bus, respectively. This demonstrates that by improving walking and cycling facilities to connect the site with the railway station and Shifnal Centre, there is an excellent opportunity to shift travel behaviours towards more sustainable modes of travel, and reduce reliance on the car, particularly single occupancy car trips.

## 2.9 Highway Safety

2.9.1 Personal Injury Accident (PIA) Data has been obtained for Crashmap Pro covering the most recent five-year period from 01/07/2014 to 01/07/2019, with a search extent running to the Stanton Road / A41 junction to the east, and extending in towards Shifnal along Stanton Road to the west taking into account the Aston Road / Curriers Lane / Stanton Road junction, following Aston Road and Aston Street, to the Aston Street / Bradford Street and Market Place / Bradford Street junctions. An overview of the recorded collisions in the study area is provided in **Figure 2.10** below.

Figure 2.10: PIA Data Extent



2.9.2 The analysis shows that there have been 17 collisions in the search area, 4 of which were recorded as ‘serious’ in severity and the remaining 13 as ‘slight’ in severity. A summary of these collisions is provided below.

2.9.3 One serious accident and two slight accidents were recorded to have taken place along Stanton Road, from the site and to the Stanton Road / A41 junction at its eastern extent. The one serious accident took place c.750 metres to the east of Upton Lane in January 2017, and involved a single vehicle (motorcycle) accident. Given the factors given within the accident report, it is likely that this accident was caused as a result of the road conditions, as it occurred in darkness, with no street lighting and in wet / damp conditions. Of the two slight accidents, one was caused in June 2016 as a car turned right onto Stanton Road from Neachley Lane. A motorcyclist attempted to pass the vehicle on its offside as it was undertaking the turn and collided with the offside of the car. This accident can be attributed to driver error / a poor manoeuvre and not as a result of the layout of the road network. The same causation factors can be attributed to the other slight accident, occurring in July 2014 and involving a bus / coach and 3 other vehicles, c. 650 metres west of the A41 / Stanton Road junction.

2.9.4 At the A41 / Stanton Road junction, a total of 10 accidents were recorded to have taken place in the search period; 3 of which were recorded as serious in severity and the remaining 7 as slight. Each of the serious accidents, occurring in February 2015, April 2017 and May 2019 were caused as a car

turned right out of Stanton Road onto the A41, causing a collision with a vehicle proceeding along the A41. Of the slight accidents, 4 more involved a collision in the A41 carriageway as a vehicle was in the act of turning right, two with goods vehicles (3.5 tonnes and under) turning (July 2015 and February 2016) and the other 2 with cars turning (July 2015 and February 2016). A further 2 accidents involved rear shunts as vehicles have slowed on Stanton Road in the approach to the junction with the A41. In one case, a good vehicle (7.5 tonnes and over) has slowed (December 2014) and in the other case a car was slowing (November 2016). The remaining accident at the junction was caused in March 2019 and involved 4 cars, as a car was carrying out a poor overtaking manoeuvre. Although there is a cluster of accidents at this junction which may have been caused as a result of the layout of the road network it is important to note that the junction has already been established by Shropshire Council to be improved, which should address the highway safety issues (further details are found in **Chapter 3**).

- 2.9.5 To the west of the site, one slight accident was recorded at the Stanton Road / Upton Lane junction in October 2015. Again, the incident was recorded as a single vehicle accident, with a car proceeding westbound along Stanton Road. Given the road conditions recorded within the accident report, it appears that the wet / damp road surface and dark conditions, with no street lighting, were a contributory factor to the car colliding with a lamp post on its nearside.
- 2.9.6 One slight accident was recorded to have taken place at the Aston Road / Curriers Lane / Stanton Road junction, taking place in November 2017. A car collided with a pedestrian crossing in the carriageway (not using crossing facilities) whilst in the act of turning right, causing the pedestrian a slight injury. The fact the accident was recorded to have taken place in darkness, with street lights present but unlit, may be a contributory factor, however it is more likely to be as a result pedestrian or driver errors, and therefore not as a result of the layout of the road network.
- 2.9.7 One slight accident was recorded to have taken place on Aston Road, occurring in May 2019, c.200 metres to the west of the Aston Road / Curriers Lane / Stanton Road junction, with a collision between two cars. One car was recorded to have been slowing down or stopping in the carriageway and the car to the rear has failed to stop in time, causing a rear shunt. This accident can be attributed to driver error and not as a result of the layout of the road network.
- 2.9.8 The final slight accident was recorded to have taken place at the Bradford Street / Aston Road junction, occurring in May 2017 with a collision between a van or goods vehicle (3.5 tonnes and under) and a car. In the process of using the junction, the car has collided on its frontside with the nearside of the van / goods vehicle. The details given within this accident report suggest that the accident was caused by driver error and not as a result of the layout of the road network.
- 2.9.9 Given the low number of accidents at each of the junctions / links within the search period and the planned junction improvements at the Stanton Road / A41 junction, there are not deemed to be any areas of concern on the road network in terms of road safety that would be exacerbated by any increased trips associated with the development site.



## 3 Emerging Infrastructure Proposals

### 3.1 Overview

- 3.1.1 This chapter identifies the committed and emerging infrastructure and enhancement proposals within Shifnal.
- 3.1.2 A wider transport strategy was developed for Shifnal following consultation on Shropshire Council's (SC's) Site Allocation and Management of Development (SAMDev) Plan. This was done to consider the cumulative impact of proposed developments in Shifnal up to 2026, the end of the Local Plan period at the time.
- 3.1.3 The transport strategy for Shifnal was developed with a view to providing a joined-up approach to delivering highway improvements in Shifnal, delivered in a staged approach in-line with implementation of the various developments at thresholds of construction and occupation.
- 3.1.4 These emerging infrastructure proposals are contained in the Shifnal Transport Strategy Exhibition Information<sup>2</sup>. This includes any transport related infrastructure, comprising new and improved walking and cycling routes, improvements to bus and rail services and highway schemes.

### 3.2 Transport Proposals

#### Town Centre Enhancements

- 3.2.1 Through consultation with local residents in relation to the transport strategy for Shifnal, no strong opinion was demonstrated in relation to any of the options presented. However, there was significant local interest in relation to a town centre enhancement scheme, this at the time comprised the proposals shown in **Table 3.1** and illustrated in **Figure 3.1**. Further details and illustrations of the proposed schemes can be found in the exhibition document.

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<sup>2</sup> Shropshire Council, Shifnal Transport Strategy - [Shifnal Exhibition Information](https://www.modetransport.co.uk)  
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Table 3.1: Shifnal Transport Proposals

Location	Proposal
Aston Street / Bradford Street / Market Place	Junction improvements and improvements to public realm to discourage through traffic and improve safety & pedestrian accessibility.
Parking provision within Shifnal	Review of on / off street parking throughout Shifnal town centre to rationalise provision and make best use of space available. Proposals to limit on-street parking on key routes towards the town centre.
Pedestrian accessibility within Shifnal	Review of pedestrian facilities within Shifnal town centre to promote safe accessibility and sustainable travel choices. Improvements to routes and crossings to be delivered in 2019/20.
Five Ways junction	Potential improvements – junction operation to be monitored and scheme to be determined at later date.
Victoria Road / Shrewsbury Road / Broadway	Potential to include improvements throughout these streets as additional phase to the town centre enhancement works.
School Travel Plan	Enhancements to Curriers Lane, Park Lane & potentially adjacent streets to promote sustainable transport choices and calm vehicle speeds
Haughton Lane	Review of vehicle flow and potential traffic calming – to be determined in line with traffic calming measures along Haughton Road and Five Ways Junction
Haughton Village (west of Haughton Lane)	Review of vehicle flow and potential traffic calming including possible restrictions to one-way eastbound, depending on future monitoring of vehicle movements

Figure 3.1: Illustrative Town Centre Enhancements



3.2.2 The purpose of the enhancements works is to provide improvements to Shifnal’s town centre based on the following aims:

- Create an enhanced sense of place;
- Reflect the towns heritage;
- Promote more sustainable types of movement (public transport, walking & cycling);
- Accommodate the forecast growth in traffic associated with new developments;
- Enhance pedestrian wayfinding throughout the town;
- Improve pedestrian safety; and,
- Reduced through traffic within Shifnal.

3.2.3 The design of the scheme has been developed with a focus on creating a pedestrian-friendly environment that encourages sustainable movement and supports local vitality. Key aspects of the design in terms of movement include:

- New flexible public spaces to promote social activities and reclaim the streets of Shifnal for its residents, visitors and businesses;

- Slow speed environment with traffic calming features to improve safety for all users and encourage reduced vehicle speeds; and,
- Frequent crossing points, new bus stops and reconfiguration of parking spaces to improve accessibility for all to the town centre.

3.2.4 The schemes listed in **Table 3.1** will provide existing and future local employees with significant improvements, particularly to encourage walking and cycling trips within Shifnal, and as part of multi-modal trips to wider destinations such as Telford and Wolverhampton.

3.2.5 It is understood that the majority of the proposals are to be funded through Section 106 Developer Contributions, albeit funding for the town centre enhancements requires support from the local community before it can be secured.

3.2.6 It is understood that work on the Shifnal Transport Strategy is still in progress with various options for the town centre enhancements still under development <sup>3</sup>. It is also understood that there is a shortfall in funding for the town centre enhancements <sup>4</sup>.

3.2.7 In terms of securing monies from developers towards the Shifnal Transport Strategy a number of sites have been identified as providing a contribution towards the development and implementation of these schemes (e.g. 13/02989/OUT and 14/00062/OUT) by way of mitigation specifically in relation to identified capacity constraints in the town.

3.2.8 Furthermore, road safety and capacity improvement works have recently been completed at the priority junction formed between the A41 and Stanton Road to the east of the sites. The works comprise a right turn filter lane, carriageway re-alignment, surfacing, signs and lines plus street lighting and were delivered as part of the council's transport capital budget.

3.2.9 Given the anticipated growth in Shifnal over the plan period up to 2038, new and improved infrastructure is likely to be required in order to suitably protect and enhance the constrained town centre for local residents, and to provide suitable capacity for future traffic travelling between surrounding settlements through Shifnal. This is likely to be achieved via a further iteration of the Shifnal Transport Strategy. The forecast impacts of the development proposals at SHF018b and SHF018d on key junctions in Shifnal are considered in **Chapters 6** and **7** of this report.

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<sup>3</sup> <https://www.shropshirestar.com/news/transport/2020/01/22/traffic-lights-could-be-removed-from-notorious-shifnal-junction-under-multi-million-pound-transport-scheme/>

<sup>4</sup> [https://www.shifnaltowncouncil.gov.uk/STC/meetings\\_final.asp?id=242](https://www.shifnaltowncouncil.gov.uk/STC/meetings_final.asp?id=242)

<sup>5</sup> <https://www.shropshirestar.com/news/transport/2019/07/13/major-roadworks-planned-on-15-shropshire-routes/modetransport.co.uk> | September 2020

## 4 Sustainable Transport Proposals

### 4.1 Overview

- 4.1.1 This chapter sets out the high-level sustainable transport strategy for the proposals. Promoting sustainable transport for new sites is a key policy test within the NPPF. An outline strategy has been developed with a view to identifying the opportunities to promote sustainable travel at the site.
- 4.1.2 The sustainable transport strategy for the development proposals is predicated upon the following key items:
- Development of a network of pedestrian and cycle routes in the site, linking the various land parcels with existing infrastructure to provide connections to the Town Centre;
  - Provision of a new bus stop on Stanton Road in proximity of the main site access, providing access to bus services in closer proximity of the employment sites; and
  - Development of a comprehensive Framework Travel Plan to promote sustainable modes of transport from initial occupation.
- 4.1.3 A 'Movement Strategy' will be established to inform the development of the design. The main aims of the movement strategy will be to:

Provide safe and convenient surroundings for the movement of people, including those with restricted mobility and cyclists

Create safe routes for pedestrian, cycling and vehicular movement

Keep vehicle flows and traffic speeds low in the vicinity of homes, and minimise the danger and nuisance created by non-access traffic

Ensure that reasonable, and where possible direct, vehicular access to dwellings is available, and enable easy access for public transport and emergency vehicles

Minimise the danger and inconvenience caused by indiscriminate on-street parking

Allow for a diversity of spatial, architectural, and landscape elements appropriate to the unique character of the site and its surroundings

- 4.1.4 Layout designs should ensure that the convenience of access for pedestrians, cyclists and public transport operators is given priority over the need to accommodate the car. An overview of the opportunities presented by the site is provided in the following paragraphs.

### 4.2 Public Transport

- 4.2.1 The site is located in a location suitable to allow for access by public transport. The number 891 bus already passes the site on Stanton Road and opportunities are therefore available to provide additional bus stops on the site frontage, or alternatively divert the bus into the site to a dedicated stop.
- 4.2.2 The number 891 bus operates at an hourly frequency on weekdays on Stanton Road passing the site frontage with a more limited service offered on Saturdays. The proposals provide opportunity to explore

increased operating hours or frequency of this service to the benefit of not only the development but also existing users.

4.2.3 It is noted that the draft local plan review identifies that the potential for provision of a dedicated Park and Ride should be explored in relation to the site. A Park and Ride is not considered to be a necessity to make the proposals sustainable as this could be adequately addressed through a more traditional bus offer as detailed above.

4.2.4 The feasibility of a Park and Ride on the approach to a settlement is typically informed by review of passing traffic volumes on the arterial routes entering a settlement to give an indication of the potential for capture of vehicles at the periphery. The viability of a service is then related to its operating costs relative to users (i.e. vehicles captured). Forecast 2026 inbound passing traffic volumes on Stanton Road equate to c.200-300 vehicles per hour in the peaks providing a limited potential passenger pool for a Park and Ride service and on this basis it is considered that a traditional service is sufficient to serve the proposals.

### 4.3 Walking and Cycling

4.3.1 The site is in a good location, on the eastern edge of Shifnal with excellent opportunities for further residents and employees to travel to the Town Centre on-foot or by bicycle. In terms of walking and cycling routes, the site will be developed with a focus on prioritising pedestrian activity and cycle movements within the site to encourage non-car modes. In accordance with MfS (1 and 2), the internal layout will be designed by:

Promoting an inclusive environment that recognises the needs of all people of all ages and abilities;

Creating a network of streets that provide permeability and connectivity to main destinations and choice of routes;

Designing to keep vehicle speeds below 20mph on residential streets unless there are overriding reasons for accepting higher speeds; and,

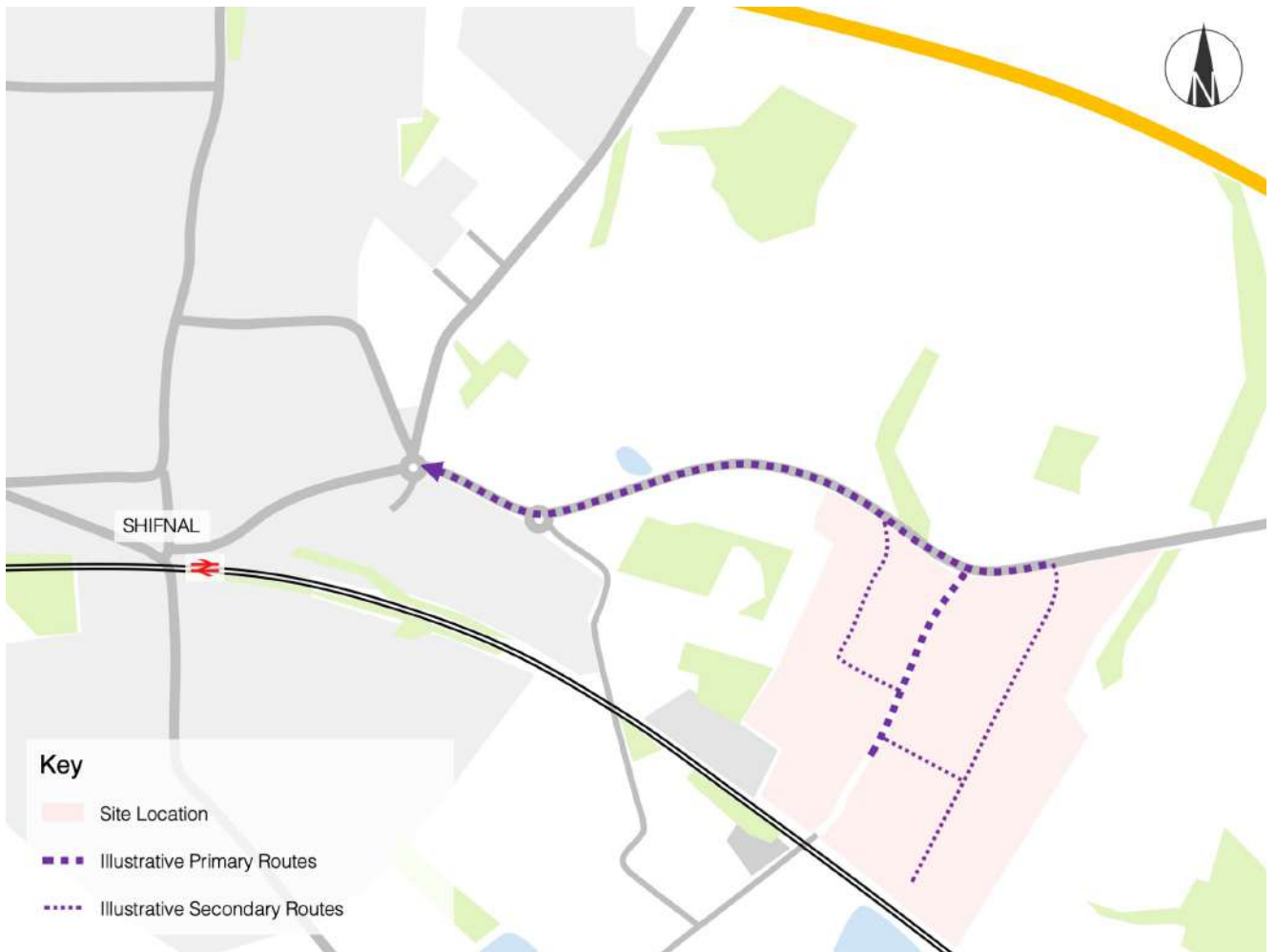
Using the minimum number of highway design features necessary to make streets work properly.

4.3.2 Potential links to wider routes will be explored to link proposed internal pedestrian and cycle routes with proposed off-site routes along Stanton Road. The principal desire line is to the west towards the Town Centre where local facilities can be reached, and public transport can be accessed.

4.3.3 **Figure 4.1** illustrates the potential future sustainable access strategy for the site.



Figure 4.1: Illustrative Sustainable Access Strategy



- Explore opportunities to provide improvements to pedestrian and cycle facilities on Stanton Road between the site access and existing provision heading towards the town centre. The appropriate infrastructure package will be explored with SC as part of a planning application but is likely to comprise a combination of on and off-carriageway provision alongside complementary measures such as enhanced signage and speed restriction measures;
- Proposed secondary routes providing added permeability and catering for secondary desire lines linking to the primary route; and
- Potential to improve cycle parking facilities within the Town Centre and at Shifnal Railway Station.

4.3.4 It is noted that the draft plan review identifies provision of linkages between the existing Lamledge Industrial Estate and the draft allocation site for pedestrians and cyclists. The standard of pedestrian and cycle infrastructure in Lamledge Industrial Estate and on its access via Lamledge Lane is poor and accordingly this will diminish the attractiveness and hence effectiveness of any linkage provided. Whilst exploration of the principle of such access can be explored as part of a planning application this should not comprise a precursor to development given the opportunities for pedestrian and cycle access via Stanton Road and Upton Lane.

## 4.4 Electric Vehicles

- 4.4.1 Whilst sustainable travel, particularly public transport, will be promoted for trips to and from the site. It is also recognised that there will be a continuing need for some employees to have use of private cars. However, this presents an excellent opportunity to promote and incentivise these car users to use of eco-friendly or Electric Vehicles (EV), in-line with future aspirations of national government.
- 4.4.2 On the employment site, EV charging points will be provided in the car parking areas in prominent locations in order to promote use of EV's amongst businesses and employees.

## 4.5 Travel Plan

- 4.5.1 The travel planning strategy for the site will seek to ensure that the long-term management of the promotion and delivery of sustainable transport initiatives will be secured and managed at the employment site by a dedicated TPC. A site-specific Travel Plan will be developed in consultation with SC's Travel Planning team, as is a requirement for all new developments, as stated within Shropshire Local Transport Plan (2011-2026). This will seek to establish a number of SMART targets and actions which will include measures that will be achievable, measurable, realistic and time-specific.
- 4.5.2 The Travel Plans will be provided to assist in the site's consideration for allocation and to support central government and local policies to actively manage patterns of growth in order to maximise the use of public transport, walking and cycling where possible. This will also assist in the aspirations set out in the Shifnal Transport Strategy, to limit unnecessary car usage through the town centre.
- 4.5.3 As detailed within the 2002 Department for Transport (DfT) document 'Making Travel Plans Work'<sup>6</sup>, *“even the most basic of travel plans can achieve 3-5% reductions in the number of employees travelling to work alone by car. Plans with large discounts on public transport and restrictions or charging for car parking can achieve 15-30% reductions, and some even more, over a period of – typically – two to four years”*. The document is based on data recorded from 20 UK organisations (including hospitals, councils, a shopping centre and a university) that have implemented travel planning measures. Through the implementation of a Travel Plan, the organisations found that at least 14 fewer cars arriving per 100 staff, representing a reduction of 18% or more in the proportion of commuter journeys being made as a car driver.

## 4.6 Future Technology and the Post-Covid-19 World

- 4.6.1 It is important that a flexible approach is applied to the various transport projects/initiatives going forward. The sustainable transport offer is in a continuous state of evolution with new technologies in various stages of development and legal status for example:
- Autonomous vehicles;
  - Electric Scooters;
  - Electric/Hydrogen powered buses; and,

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<sup>6</sup> <https://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/sustainable/travelplans/work/ngtravelplansworklessons5783.pdf>

- Autonomous vehicles.

4.6.2 Whilst the projects identified focus on increasing sustainable transport uptake using traditional modes, they should also consider how the technological and legal framework is changing over time for new modes of transport and where appropriate how these can be incorporated into Shifnal's offer. For example, the Department for Transport (DfT) is in the process of fast-tracking and expanding trials of rental e-scooters, with the introduction of legal changes on 4<sup>th</sup> July 2020 which allow the trials to proceed. The amendment to existing regulations allows rental e-scooters to be legally ridden on roads and in cycle lanes, which will be limited to 15.5mph, with riders recommended to wear helmets. Throughout the 12-month trial period, e-scooters will continue to be classed as motor vehicles, meaning that the rider must be 16 or over, with a provisional car, motorcycle or moped licence. Previously all usage was illegal on roads, cycle lanes and pavements, meaning these trials represent a major development for the use of e-scooters in the UK. Given the compact nature of Shifnal e-scooters provide a potential alternative form of sustainable transport that may warrant consideration.

4.6.3 Another important consideration is the Covid-19 crisis and how this has changed travel habits, attitudes to travel and lifestyle habits, such as remote working and online shopping.

4.6.4 Looking at national and local statistics, travel patterns during the crisis can be summarised as follows:

- Reduction in overall transport usage – according to DfT statistics for the period from February (pre-lockdown) to the start of May 2020, overall transport use was down at least 55% for all transport types across the UK.
- Reduction in car usage – around 25% of normal usage at its lowest in mid-May, according to DfT statistics;
- Reduction in public transport usage – rail usage down by over 95% at its lowest during lockdown, according to DfT statistics;
- Increased levels of walking and cycling, particularly for leisure/exercise purposes;
- Significant increase in working from home; and,
- Significant increase in online shopping.

4.6.5 With some recent relaxation of lockdown measures, which we hope will continue and Covid controlled, vehicle movement statistics are showing signs of returning towards pre-Covid levels with more people reverting to previous working and shopping habits albeit Covid has acted as a catalyst for changes in travel behaviours particularly with respect to commuting and business travel.

4.6.6 At this time concerns remain as to safe use of public transport, given social distancing, and accordingly a return to pre-Covid levels of public transport use is likely to be a slower recovery indicating that the focus on sustainable transport post-Covid should encapsulate as many modes as possible to maximise the success rate.

## 5 Vehicular Access Strategy

### 5.1 Overview

- 5.1.1 The development site will be accessed via three access points from Stanton Road, with a main roundabout junction formed with Upton Lane, and secondary accesses located c.160m to the east and c.150m to the west of the main junction.
- 5.1.2 The accesses will be designed in accordance with local and national policy. SC have recently been developing a new Design Guide, expected to be adopted later this year. In the meantime, the access junctions have been considered against the following guidance:
- LTN 2/08 Cycle Infrastructure Design;
  - Design Manual for Roads and Bridges;
  - LTN 1/11 Shared Space;
  - LTN 1/12 Shared Use Routes for Pedestrians and Cyclists;
  - Manual for Streets; and,
  - Manual for Streets 2.
- 5.1.3 The site will be designed to provide safe and suitable accesses to serve the development. The form and scale of the access junctions will be determined by capacity analysis as the scheme evolves, however, given the available frontage and existing junctions and infrastructure surrounding the site, there is flexibility to the access design and scale.
- 5.1.4 Upton Lane is currently a rural country lane and varies in width and standard along its length. During a site visit the road surface was observed to be in very poor condition in places, with the carriageway being narrow and limited passing places. As there are development parcels site either side of Upton Lane, the site offers the opportunity to improve/upgrade Upton Lane north of the railway line.
- 5.1.5 Additionally, this eastern area of the wider development site would define the future eastern boundary of Shifnal. Therefore, delivery of the sites north and south of Stanton Road would offer an opportunity to reinforce the edge of the settlement, through the introduction of a roundabout. This would provide capacity to reduce conflict with HGV movements at the entrances to the employment sites, but also act as a natural traffic calming feature allowing for the 30mph speed limit to be extended and creating a lower speed and safer environment more suited to promote sustainable travel within Shifnal.
- 5.1.6 **Figure 5.1** illustrates the potential future vehicular access strategy for the development site.

Figure 5.1: Illustrative Isolated Vehicular Access Strategy



- 5.1.7 An illustrative preliminary drawing of the vehicular access strategy is shown in Drawing **J32-4331-PS-001 (inset C)**, attached at **Appendix A**, with more detailed proposals of the Upton Lane section illustrated on drawing SHF-LE-GEN-XX-DR-CE-100 Rev C, also included in **Appendix A**.
- 5.1.8 The proposed roundabout access arrangement is shifted to the west of the position shown on drawing **J32-4331-PS-001** in response to a high-pressure gas pipeline easement.
- 5.1.9 These drawings also show the section of Upton Lane bridge that is intended to be stopped up via a revision to the traffic regulation order to maintain the carriageway as public highway but with access restricted to only pedestrian and cycle movements. A turning head suitable for HGV use is illustrated at the southern extent of the site in tandem with this. This turning head could be redesigned in the future if improvements to the southern extent of Upton Lane are brought forward.
- 5.1.10 The capacity of the main proposed site access roundabout is considered in the following chapter and has been tested in a robust case of the end of the plan period (2038) assuming all development traffic uses it. The indicative masterplan illustrates additional priority junction arrangements that will in reality split development traffic across a number of points.



5.1.11 The final form of the access strategy will be established as part of the technical assessments submitted as part of a planning application; however, the assessment completed in **Chapter 6** indicates that a single suitably designed access roundabout is capable of accommodating the development demands.

## 6 Traffic Impact

### 6.1 Overview

6.1.1 This Chapter provides an overview of the travel impact associated with the development. It considers the forecast vehicular traffic generation and additional levels of traffic at local junctions based on forecast traffic distribution patterns using 2011 Census data.

### 6.2 Traffic Surveys

6.2.1 In order to establish the baseline traffic flows, peak hour Manual Classified Counts (MCCs) were undertaken on Wednesday 1<sup>st</sup> May 2019, between 07:00 and 10:00, and 16:00-19:00. The MCCs were carried out the following locations on the surrounding highway network:

- **MCCs**

- 1) Curriers Lane / Coppice Green Lane
- 2) Aston Road / Curriers Lane / Stanton Road
- 3) Broadway / Curriers Lane
- 4) Stanton Road / Upton Lane
- 5) A464 / Upton Lane
- 6) Newport Road / Stanton Road
- 7a) Market Place / Bradford Street
- 7b) Aston Street / Bradford Street
- 8) Priorslee Road / Shrewsbury Road / Victoria Road (Five Ways)

6.2.2 7-Day Auto Automated Traffic Counts (ATCs) were also undertaken at the following locations to determine the current traffic levels and to validate data obtained from the MCCs:

- **ATCs**

- A) Coppice Green Lane
- B) Stanton Road
- C) Upton Lane

### 6.3 Traffic Growth

6.3.1 The traffic impact of the development has been considered in relation to two forecast years, namely 2026 and 2038. The first represents a forecast five years post submission of a planning application (assumed to be in 2021) with the second representing a horizon year at the end of the plan period (2038). The mitigation requirements of the development will be relative to the difference in junction performance when the 2026 scenario is considered.

- 6.3.2 The rationale behind this methodology is consistent with other applications that have been submitted in the area and is also consistent with the methodology for the assessment of development traffic impacts as set out in DfT circular 02/2013.<sup>7</sup>
- 6.3.3 TEMPro (v7.2b) has therefore been used to forecast traffic growth between surveyed conditions in 2019 to 2026 and 2038 respectively.
- 6.3.4 For the interrogation of the TEMPro database the growth rates for 'car drivers only' were selected with the trip end type being defined as 'origin / destination'. Growth rates were obtained for the weekday AM and PM peak periods for the Middle Super Output Area (MSOA) Shropshire 025. Once the growth rates had been calculated, an NTM growth calculation for 'Rural – Minor Roads' was weighted to the TEMPro growth rates. A summary of the resulting growth rates used to forecast traffic growth from 2019 to 2026 and 2038 assessment years is presented in **Table 6.1**.

Table 6.1: TEMPRO Growth Factors

Year	Weekday AM Peak	Weekday PM Peak
2019 – 2026	1.0615	1.062
2019 - 2038	1.1495	1.1503

## 6.4 Baseline Scenario Network Operation

- 6.4.1 The operation of the surrounding highway network has been assessed using Junctions 9 with the resultant forecasts in the 2026 and 2038 baseline scenarios summarised in **Tables 6.2** and **6.3**. The tables summarise the worst-case operating arm for each junction with a traffic light system employed in the presentation of the results as follows:
- Junctions within capacity – RFC 0.85 or less – Green;
  - Junctions nearing capacity – RFC 0.86-0.99 – Amber; and,
  - Junctions exceeding capacity – RFC 1.00 or more – Red.

<sup>7</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/237412/dft-circular-strategic-road.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/237412/dft-circular-strategic-road.pdf)  
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Table 6.2 Summary of Network Operation – 2026 Baseline

Junction Ref	Name	AM Peak	PM Peak
1	Coppice Green Lane / Curriers Lane	0.41	0.18
2	Aston Road / Curriers Lane / Stanton Road	0.59	0.31
3	Curriers Lane / Broadway	0.34	0.44
4	Upton Lane / Stanton Road	0.04	0.03
5	A464 / Upton Lane	0.05	0.04
6	Newport Road / Stanton Road	0.68	0.53
7a	Market Place / Bradford Street	0.91	1.12
7b	Aston Road / Bradford Street	0.96	0.65
8	Priorslee Road / Shrewsbury Road (Five Ways)	0.82	0.85

Table 6.3 Summary of Network Operation – 2038 Baseline

Junction Ref	Name	AM Peak	PM Peak
1	Coppice Green Lane / Curriers Lane	0.45	0.19
2	Aston Road / Curriers Lane / Stanton Road	0.64	0.34
3	Curriers Lane / Broadway	0.38	0.50
4	Upton Lane / Stanton Road	0.04	0.03
5	A464 / Upton Lane	0.05	0.05
6	Newport Road / Stanton Road	0.82	0.64
7a	Market Place / Bradford Street	1.08	1.28
7b	Aston Road / Bradford Street	1.05	0.72
8	Priorslee Road / Shrewsbury Road (Five Ways)	0.91	0.95

6.4.2 The capacity assessments results indicate that improvement schemes are likely to be required at some of the junctions in the study are irrespective of whether the development comes forward, the locations identified are concurrent with those identified by SC in their draft local plan review.

6.4.3 The following sections consider the potential traffic generation and distribution for the draft allocation to determine the level of likely impact in key off-site locations.

## 6.5 Traffic Generation

6.5.1 Trip rates for the employment land uses have been derived from the TRICS database (v 7.7.2). Sites have been obtained for the Employment / Industrial Estate (02 / D) land use category from sites of similar scale and geographic characteristics. Sites of over 50,000sqm in edge of town/freestanding locations have been selected. A single site was excluded from the dataset as it was dominated by B8 use. The full TRICS search output is included as **Appendix B**.

6.5.2 The resultant survey sites include a range of 'B' use classes, which is considered to be representative of the findings of the employment study prepared to support the allocation. Previous assessments had considered a B1a office weighted land use; however, given the findings of the employment study this assumption is unlikely to be realised in practice, hence the revised approach to trip generation.

6.5.3 For the purposes of this assessment all development traffic has been calculated using the Industrial Estate land use.

6.5.4 It is also worth noting that none of the survey sites included a Travel Plan and therefore for the purposes of this assessment the resultant trip rates are considered to be robust.

6.5.5 Through discussions with SC in their capacity as Local Highway Authority (LHA), it was agreed that all HGV traffic generated from the employment site would be conditioned to a strict routing agreement to/from Newport Road, east of Shifnal (i.e. avoiding the centre of Shifnal).

6.5.6 A summary of the trip rates and resultant trip generation associated with the development is given in **Table 6.2**.

Table 6.2: Trip Rates – Industrial Estate (02 / D) – All Vehicles

	Total Vehicle Trip Rates				HGV Trip Rates			
	AM Peak (0800 - 0900 hours)		PM Peak (1700 – 1800 hours)		AM Peak (0800 - 0900 hours)		PM Peak (1700 – 1800 hours)	
	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
Trip Rate (per 100 sqm)	0.282	0.074	0.058	0.320	0.013	0.014	0.012	0.010
Trip Generation (156,000 sqm)	440	115	90	499	20	22	19	16

6.5.7 **Table 6.2** demonstrates that the development is forecast to generate a total of 555 and 589 two-way vehicle trips during the AM and PM peak hours, respectively, of which 42 and 35 are HGV trips in the AM and PM peaks.



## 6.6 Traffic Distribution

- 6.6.1 To understand where car/van development traffic is likely to route from the site, traffic was distributed across the local highway network using 2011 Census data relating to the locations of employees who work in the local MSOA, E02006008 (Shropshire 025) and travel by car.
- 6.6.2 The local highway network was analysed and the main routes/areas surrounding the site were assigned to a zone. The zone plan is shown in **Figure 6.1** and the percentage of traffic travelling to and from each zone is summarised in **Table 6.3**.

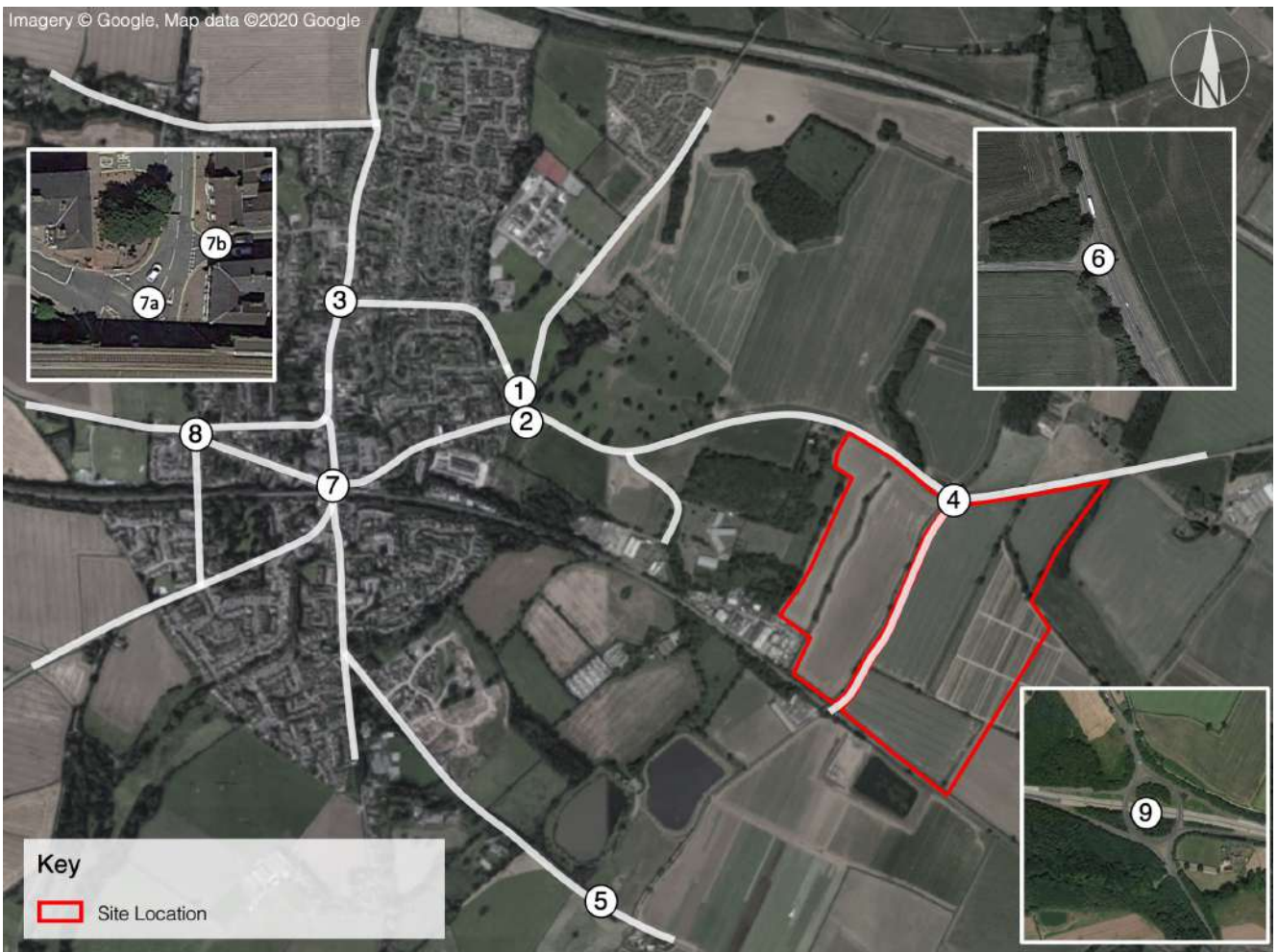
Figure 6.1: Distribution Zones (Car/van trips only)



- 6.6.3 For the purposes of this assessment consideration of development traffic volumes that may affect M54, Junction 3 have also been considered. All development traffic forecast to arrive/depart the study area via zone CS has been assumed to route through M54, Junction 3. In support of this, it is envisaged that HGV traffic will be conditioned via a routing agreement to arrive to and depart from the proposed sites via the A41 Newport Road, east of Shifnal. Therefore, all HGV traffic has been distributed to the Stanton Road / Newport Road junction, and onto directly onto the M54 at Junction 3 via distribution zone CS to avoid HVGs running through Shifnal town centre.

- 6.6.4 It is also worth noting that Shifnal experiences a very small proportion of travel to/from work between internal zones with most traffic forecast to in commute from external areas. The inverse is recorded in terms of journey patterns for residents of Shifnal commuting by car to work with c.95% leaving Shifnal. This pattern is potentially related to the imbalance of employment opportunities relative to residential land uses in Shifnal that the draft local plan review seeks to redress.
- 6.6.5 The distribution pattern, as calculated draws approximately 26% of traffic to the east of the site, with the remainder drawn from the west through the town centre.
- 6.6.6 As above, HGV traffic has all been assigned to the network bearing east towards the A41 Newport Road and to the M54 at junction 3. Car and van trips have been assigned to the road network based on the shortest journey time to the respective zones. This has been used to determine the level of development traffic expected to be generated at key off-site junctions in the AM and PM peak hours, as shown in **Figure 6.2**.

Figure 6.2: Key Junctions



- 6.6.7 The users of the development will predominantly be staff who will therefore over time become familiar with the potential routes for their journey to work and typically traffic conditions at the times of day that they are travelling. If a route becomes congested and an alternative is available, drivers will in all likelihood use the alternative. Modern satnav technology supports this assertion as many systems now dynamically direct drivers as a function of journey time responding to live traffic conditions. It is therefore

reasonable to assume that in a real-world situation that development traffic would reroute to avoid the town centre congested areas.

- 6.6.8 This propensity for rerouting is usually addressed via microsimulation modelling; in such a situation traffic will use certain routes as a cost function of delay and can dynamically respond to modelled traffic conditions on the network (i.e. traffic will seek to reroute to alternatives in the eventuality that travelling through certain sections of the network will result in delay).
- 6.6.9 For example, based upon typical travel times using Google Maps route planner, a journey from the site access location to a point on the M54 west of junction 4 through the town centre, whilst being approximately half the distance of a route to the same destination travelling via the M54 junction 3 can take a comparable amount of time and is therefore the longer route (in distance terms) becomes
- 6.6.10 Whilst we have been unable to obtain access to the Shifnal S-PARAMICS model the distribution seeks to understand the implications of dynamic reassignment of traffic relative to development traffic impacts. It is envisaged that this methodology would be refined as part of a planning application, utilising the County's S-PARAMICS traffic model.
- 6.6.11 In considering the potential to draw traffic away from the town centre area traffic previously calculated as routing via zones G & H (i.e. westbound from Shifnal) and via zone D (i.e. south-east bound from Shifnal via the A464) has been reassigned to head east of the site via the A41/M54. The resultant distribution pattern is summarised in **Table 6.3**. The HGV distribution pattern previously calculated is unaffected by the revised assumptions.

**Table 6.3: Summary of Revised Forecast Car/Van Traffic Distribution**

Zone	Description	Employees in Shifnal travelling to/from work by car %
A	B4379 Newport Road	3.6%
B	Coppice Green Lane	0.0%
CN	A41 Newport Road (north)	14.4%
CS	A41 Newport Road (south)	58.7%
D	A464 Lower Upton	0%
E	Park Lane	3.2%
F	Church Street / A4169	14.2%
G	Priorslee Road	0.0%
H	Haughton Road	0.0%
I	Internal (north of Bradford Street)	3.2%
J	Internal (south of Bradford Street)	2.6%
Total		100%

- 6.6.12 As such it is anticipated that c.73% traffic heads east from the site, away from the town centre area leaving a residual 27% or c.150 trips routing via the town centre area. Whilst the trips heading towards the town centre area will require addressing as part of a planning application the level of residual traffic equates to a little over 2 vehicular trips per minute.



6.6.13 It is also worth noting that there is potential for some more localised rerouting within the town centre area which could draw traffic away from the Market Place / Bradford Street and Aston Road / Bradford Street junctions thereby balancing impacts across the area. Again, the use of microsimulation would allow this to be evidenced as part of a planning application.

6.6.14 Noting that SC's emerging scheme for the town centre area focusses on encouraging pedestrian and cycle use and is not intended to draw traffic towards the town centre area the revised distribution strategy dovetails with the council's emerging aspirations.

## 6.7 Traffic Impact

6.7.1 Junction capacity assessments of the key junctions have been completed for the following scenarios:

- 2038 AM and PM Base; and,
- 2038 AM and PM Base + Development.

6.7.2 The assessment assumes the alternative distribution pattern for development traffic and also assumes delivery of the site access roundabout illustrated on SHF-LE-GEN-XX-DR-CE-100 Rev C as well as assignment of all development traffic through it or robustness.

6.7.3 Preliminary work identified a requirement for a mitigation scheme to address development traffic impacts at junction 6 (A41/Stanton Road) to the east of the site and a preliminary mitigation arrangement is illustrated on **drawing J32-4331-PS003**, included in **Appendix C**, and has been assessed in the 2038 + Development scenarios in order to demonstrate its acceptability.

6.7.4 An assessment of development traffic impacts on the M54 is also addressed separately below.

6.7.5 **Tables 6.5** and **6.6** summarise the operational capacity of junctions 1 to 8 when the 2038 assessment scenarios are compared. The tables summarise the worst-case operating arm for each junction with a traffic light system employed in the presentation of the results as follows:

- Junctions within capacity – RFC 0.85 or less – Green;
- Junctions nearing capacity – RFC 0.86-0.99 – Amber; and,
- Junctions exceeding capacity – RFC 1.00 or more – Red.

Table 6.5 Summary of Operation – 2038 Baseline vs. 2038 Baseline + Development (AM Peak)

Junction Ref	Name	2038 Base	2038 Base + Dev
1	Coppice Green Lane / Curriers Lane	0.45	0.45
2	Aston Road / Curriers Lane / Stanton Road	0.64	0.77
3	Curriers Lane / Broadway	0.38	0.4
4	Upton Lane / Stanton Road	0.04	0.35
5	A464 / Upton Lane	0.05	0.06
6	Newport Road / Stanton Road	0.82	0.8
7a	Market Place / Bradford Street	1.08	1.19
7b	Aston Road / Bradford Street	1.05	1.24
8	Priorslee Road / Shrewsbury Road (Five Ways)	0.91	0.91

Table 6.7 Summary of Operation – 2038 Baseline vs. 2038 Baseline + Development (PM Peak)

Junction Ref	Name	2038 Base	2038 Base + Dev
1	Coppice Green Lane / Curriers Lane	0.19	0.2
2	Aston Road / Curriers Lane / Stanton Road	0.34	0.46
3	Curriers Lane / Broadway	0.5	0.51
4	Upton Lane / Stanton Road	0.03	0.43
5	A464 / Upton Lane	0.05	0.05
6	Newport Road / Stanton Road	0.64	0.81
7a	Market Place / Bradford Street	1.28	1.55
7b	Aston Road / Bradford Street	0.72	1.03
8	Priorslee Road / Shrewsbury Road (Five Ways)	0.95	0.95



- 6.7.6 The capacity assessment work that has been undertaken indicates that the majority of the junctions in the area operate well within capacity with the introduction of development traffic.
- 6.7.7 The site access junction is able to accommodate 100% development traffic indicating that the proposals are not reliant upon provision of further access points from a capacity perspective, albeit they could be provided from a masterplanning perspective.
- 6.7.8 The mitigation proposals at junction 6 (A41/Stanton Road) are forecast to operate within acceptable capacity parameters indicating that the revised distribution pattern which pushes traffic away from the town centre can be accommodated on the highway network.
- 6.7.9 The results indicate that improvement schemes will be required at the Market Place / Bradford Street and Aston Road / Bradford Street junctions. It is worth noting that a potential mitigation scheme is already in place at these junctions, which are designed to address the existing capacity issues. At this stage, the details of the scheme are not clear and therefore it is proposed that the draft allocation will commit to and provide a fair and reasonable contribution towards the resultant scheme to enable SCC to complete the works.
- 6.7.10 The capacity assessments results indicate that improvement schemes are likely to be required at some of the junctions in the study area. Nonetheless, it is important to note that there are other potential opportunities to mitigate the traffic impact of the development site. The operation at the key town centre junctions in the AM and PM peak periods is forecast to result in RFCs based on background traffic growth, without new development. However, increased capacity improvements within the town centre, could prejudice the council's ability to implement the town centre transport strategy, which is focused upon the delivery of improved public realm and not encouraging additional capacity for vehicles.
- 6.7.11 An important consideration as the proposals progress will be to ensure that the development does not result in a severe impact upon operation at the town centre junctions, Therefore, the development and associated transport infrastructure will need to be designed in order to promote and to encourage the use of public transport and walking/cycling travel over private vehicle trips. Transport improvements should also be considered that include initiatives to promote the use of low carbon vehicles, improve efficiency of freight movements, and importantly, reduce the need to travel. This aligns with the aims of the town centre enhancement scheme, particularly to promote more sustainable types of movement.
- 6.7.12 As the improvement schemes are designed to bring about a significant shift in travel behaviours and increase the number of local trips made by sustainable modes, it is recommended that an area-based Travel Plan is considered, covering the whole of Shifnal, developed in association with local residents, businesses and Shropshire Council. This would allow input from local stakeholders and allow for community champions to be tasked with developing, delivering and refining the Travel Plan to bring about a modal shift in community travel behaviours, away from single occupancy car use.
- 6.7.13 A comprehensive Travel Plan will also be produced to accompany the development. The site offers an excellent opportunity to improve and promote sustainable travel within Shifnal, for future employees. with potential to reduce reliance on the private car through delivery of an area-based Travel Plan. As set out in **Section 4.4**, this will primarily focus on improving pedestrian and cycle connections with the railway station, and services in the town centre.
- 6.7.14 Through behaviour change initiatives and investment in sustainable travel opportunities; such as the comprehensive town centre enhancement scheme (**Table 3.1**), there is likely to be a degree of mode

shift away from single occupancy vehicle trips. In this case, it is envisaged that junction operations observed within each of the development scenarios above represent a worst-case scenario, which in 'real terms' is unlikely to occur.

### M42, Junction 3

6.7.15 Development traffic has also been distributed onto zone CS, as shown in **Figure 6.1**, to the south of the Stanton Road / A41 junction towards junction 3 of the M54, in order to demonstrate its impact on the wider strategic road network. This two-way development traffic has been compared to the average peak hour traffic flows along the M54, which have been extracted using Highways England's WebTris database. The average peak hourly flows have been extracted from weekdays of Tuesday 7<sup>th</sup> May 2019 to Friday 10<sup>th</sup> May 2019, utilising data from sites M54/3269A (westbound) and 7503/1 (eastbound) on the M54. The development flows and average peak hour flows along the M54 have then been compared with a percentage impact determined to demonstrate the impact on the wider strategic road network, as shown in **Table 6.10**.

Table 6.10: Development Traffic Impact on M54

	Zone CS Two-way Development Traffic	M54 Two-Way Traffic Count	% Increase
AM Peak (0800 – 0900)	368	4,203	+8.7%
PM Peak (1700 – 1800)	381	4,078	+9.3%

6.7.16 As is demonstrated above, the development traffic is forecast to have an impact of less than 10%. The IEMA Guidelines for the Environmental Assessment of Road Traffic typically suggest that detailed assessment of specific environmental impacts is carried out where flows are forecast to change by 10% or more, and even then only on links with sensitive receptors, typically the threshold is a 30% change.

6.7.17 Impacts are therefore potentially muted given the nature of the road; nonetheless a detailed assessment of the operation of M54 Junction 3 could be considered as part of any planning application.

## 7 Conclusions

### 7.1 Summary

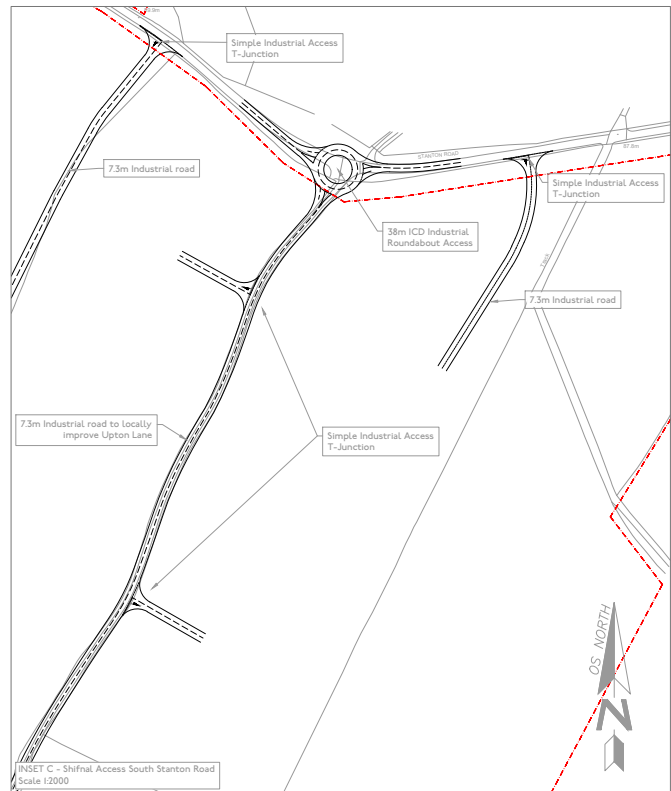
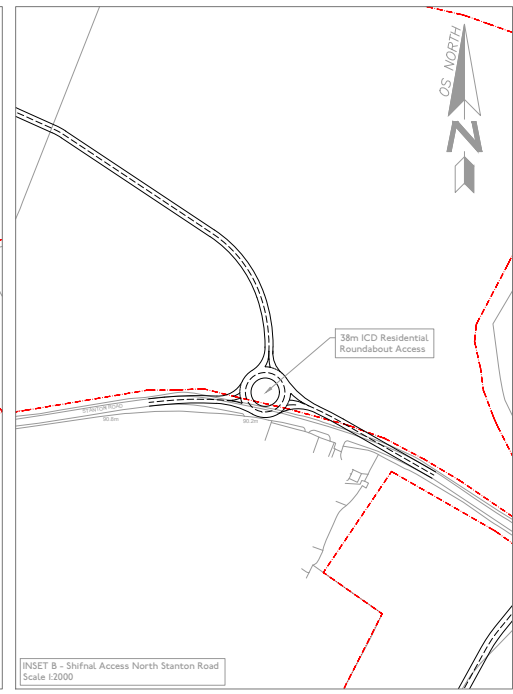
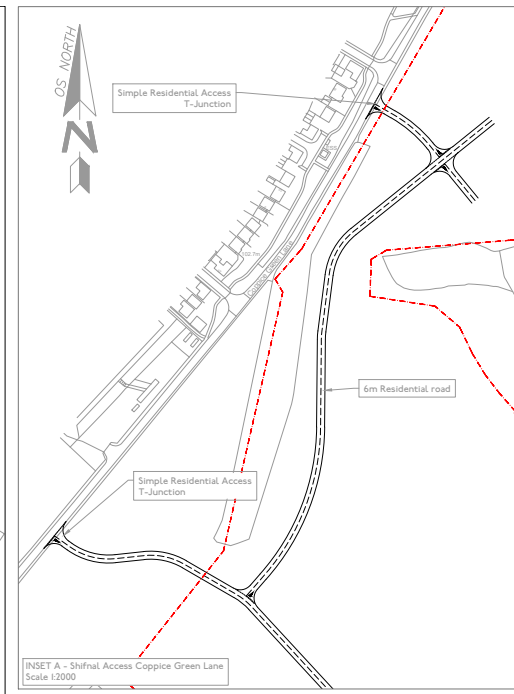
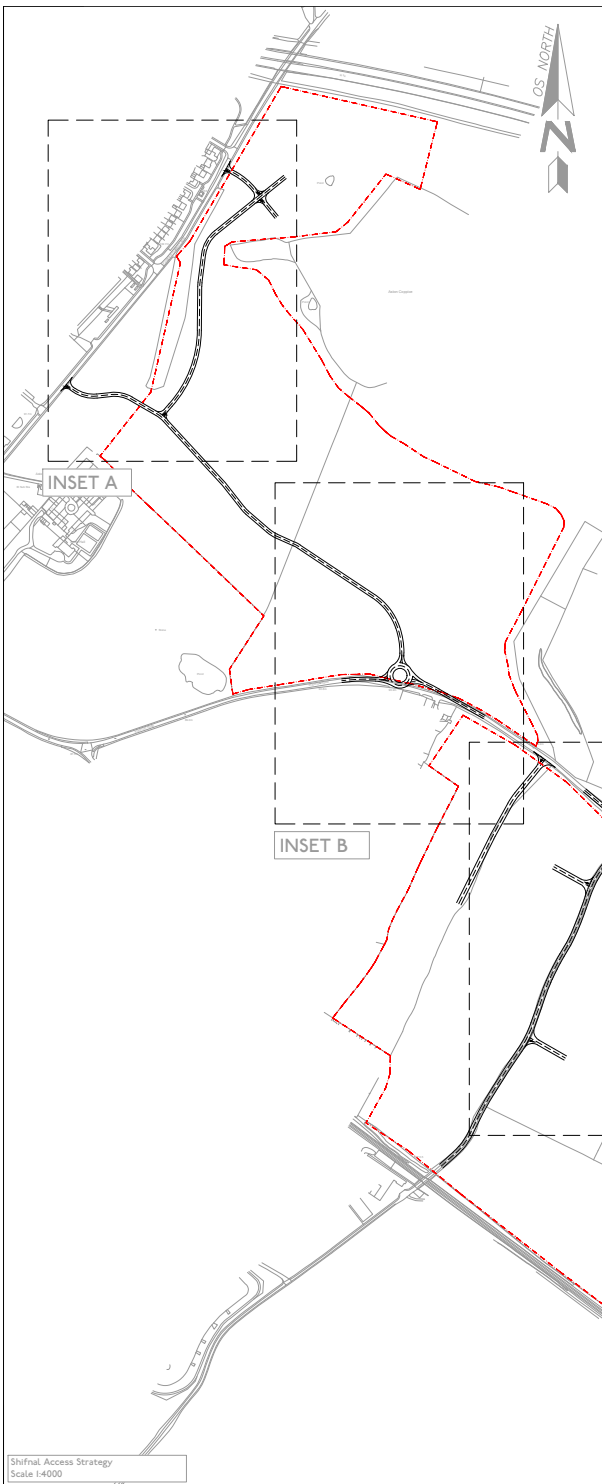
- 7.1.1 mode transport planning (mode) has been commissioned by Harrow Estates to prepare a Highways and Transport Strategy for an employment site as part of a number of wider potential development sites located to the east of Shifnal, in Shropshire.
- 7.1.2 This report has been prepared to consider the transport opportunities provided by the proposed development in this location, including access by sustainable modes. It also determines the level of traffic expected to be generated by the proposed development during the typical AM and PM peak hours and considers this in relation to network capacity.
- 7.1.3 In 2014, Shropshire Council developed the Shifnal Transport Strategy, which is a series of transport improvements set to be delivered over the coming years. This identified a number of improvements to be made to local walking and cycling route in the town, in order to promote walking and cycling for short trips within the town. This also explored how parking in the town centre could be rationalised, in order to make the best use of space and deter people from driving to the town centre in order to improve the local street scene and reduce unnecessary car trips. The Shifnal Transport Strategy also identified key junctions where capacity improvement schemes have been designed.
- 7.1.4 A specific employment Travel Plan will also be developed and promoted at the development. This will seek to ensure that the long-term management of the promotion and delivery of sustainable transport initiatives will be secured and managed at the site by a dedicated Travel Plan Coordinator.
- 7.1.5 The development site will be accessed via three access points from Stanton Road, with a main roundabout junction formed with Upton Lane, and secondary accesses located c.160m to the east and c.150m to the west of the main junction. These accesses will be designed in accordance with local and national policy.
- 7.1.6 Development traffic has been calculated using the TRICS database and a distribution pattern factoring in potential driver behaviour has been derived to a weighted balance of development traffic to the east of the site.
- 7.1.7 A capacity assessment of the site access (Upton Lane / Stanton Road) has been undertaken, along with the traffic impact of the proposed development at the key junctions in Shifnal, with respect of the Ratio of Flow to Capacity (RFC). Baseline traffic flows have been determined by factoring up MCC Data from 2019 to 2026 and 2038 Baseline scenarios using TEMPro factors for the Shropshire 025 MSOA. The following assessment scenarios were assessed:
- 2038 AM and PM Base; and,
  - 2038 AM and PM Base + Development.
- 7.1.8 The assessment showed that the proposed site access junction is forecast to operate with significant reserve capacity, along with a minor impact at the majority of junctions, other than the two junctions of Market Place / Bradford Street and Aston Road / Bradford Street, where a potential mitigation scheme is already in place. It is proposed that the scheme will commit to and provide a fair and reasonable contribution towards the resultant scheme to enable SCC to complete the works.

- 7.1.9 The strategy has identified a requirement for a mitigation scheme to address development traffic impacts at junction 6 (A41/Stanton Road) to the east of the site. This is forecast to operate within acceptable capacity parameters indicating that the revised distribution pattern which pushes traffic away from the town centre can be accommodated on the highway network.
- 7.1.10 The traffic impact has been derived using the assumptions set out in **Chapter 6** and does not take account of any Travel Plan measures, or potential shift away from the private car that will be targeted through the promotion of sustainable travel. Additionally, no adjustment has been applied to the background traffic growth to take account of the allocations, therefore there has been an element of double counting. This therefore presents a very robust assessment of the future operation of the local highway network.
- 7.1.11 It is therefore concluded that the proposed development will not have a significant adverse impact on the operation of the surrounding highway network. Where impacts are foreseen, contributions will be provided towards the wider Shifnal mitigation package.

# APPENDICES



# APPENDIX A – Drawings



This drawing has been produced by mode transport planning.  
 No responsibility will be accepted for the use of this drawing in any other project.  
 DO NOT SCALE OFF THIS DRAWING.  
 Dimensions shown are in metres unless stated otherwise.  
 Road markings & traffic signs are to be in accordance with 'The Traffic Signs Regulations and General Directions 2016'.  
 Tactile paving is to be in accordance with 'Guidance on the use of tactile paving surfaces 2007'.  
 Visibility Splays shown are taken from 'DMRB'.

--- Proposed Development Boundary

A	20-10-16	Issued
---	----------	--------

client

Harrow Estates PLC

job title  
Shifnal Transport Study

drawing title  
Proposed Access Strategy

drawing no.  
J32-4331-PS-001

drawn	RCG	checked	BDF
created	Jun 19	scale	Shown @A1

mode transport planning  
 145 Lombard House  
 Lombard House  
 Birmingham  
 B3 3LP

t 0121 794 8390  
 e info@modetransport.co.uk  
 w www.modetransport.co.uk

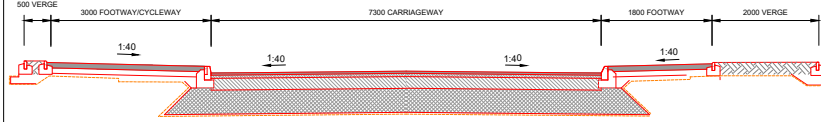




SHF-LE-GEN-XX-DR-CE-100

SHF-LE-GEN-XX-DR-CE-101

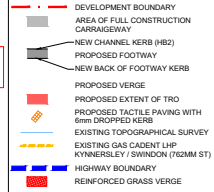
SECTION AA: TYPICAL CROSS-SECTION



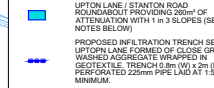
GENERAL NOTES

- 1. THIS DRAWING SHOULD NOT BE REPRODUCED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF LINK ENGINEERING.
2. DO NOT SCALE FROM THIS DRAWING. UNITS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
3. THE CONTRACTOR IS TO CHECK ALL INFORMATION PROVIDED PRIOR TO COMMENCING WORKS AND SEEK CLARIFICATION FROM THE ENGINEER IN RESPECT TO ANY AMBIGUITIES FOUND.
4. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER SCHEME SPECIFIC DRAWINGS.
5. FLOOD AND SURFACE WATER DRAINAGE STRATEGIES, INCLUDING SURFACE WATER ATTENUATION AND WATER QUALITY REQUIREMENTS, SHALL BE DESIGNED IN STRICT ACCORDANCE WITH THE SITE SPECIFIC FLOOD RISK ASSESSMENT RECOMMENDATION.
6. ALL ADAPTABLE DRAINAGE WORKS SHALL BE DESIGNED IN ACCORDANCE WITH 'SEWERS FOR ADDITION' 6th EDITION, THE 'CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY' 6th EDITION AND ANY SUBSEQUENT AMENDMENTS TO THESE DOCUMENTS AS ADVISED.
7. ALL ADAPTABLE DRAINAGE WORKS SHALL BE ADOPTED VIA THE WATER INDUSTRY ACT 1991 BY THE REGIONAL WATER COMPANY.
8. HIGHWAY DRAINS TO BE ADOPTED UNDER SECTION 38 OF THE HIGHWAYS ACT 1980 SHALL COMPLY WITH THE WATER UK GUIDE 'SEWERS FOR ADOPTION' 6TH EDITION.
9. NON-ADOPTED DRAINAGE, TO BUILDING REGULATIONS PART H, (INCLUDING DITCHES AND PONDS) ARE TO REMAIN THE RESPONSIBILITY OF THE DEVELOPER/SITE OWNER UNLESS OTHERWISE TRANSFERRED.
10. PIPE MATERIALS SHALL BE AS FOLLOWS:
DIAMETER
1500 TO 2250 - CLAYWARE CLASS 120 TO BS EN 206
3000 AND ABOVE - CLASS 120 CONCRETE TO BS EN 1916
PLASTIC PIPEWORK MAY BE PROPOSED AND IS SUBJECT TO APPROVAL BY THE DESIGN ENGINEER AS APPROPRIATE.
11. BACKFILL TO TRENCHES MAY BE SUITABLE EXCAVATED MATERIAL IN LANDSCAPED AREAS. GRANULAR MATERIAL BACKFILL IS TO BE USED UNDER HARDSTANDINGS AND ROADS.
12. ALL DRAINAGE UNDER THE PROPOSED ADAPTABLE ROADS MUST BE BACKFILLED WITH AN APPROVED GRADED GRANULAR MATERIAL.
13. ALL MANHOLE COVER AND GULLY TOPS ARE TO COMPLY WITH THE STRENGTH GROUP REQUIREMENTS OF BS EN 124 AND KITE MARKED.
14. COVER LEVELS FOR MANHOLES ARE TO BE ADJUSTED TO MATCH SURROUNDING FINISHED LEVELS ON SITE.
15. ALL TRAPPED GULLIES POTS TO BS 5911 SHALL HAVE A MINIMUM SIZE OF 600mm X 450mm.
16. ALL DRAINAGE LAG WITHIN THE HIGHWAY SHOULD HAVE A MINIMUM COVER OF 0.9m MEASURED FROM THE TOP OF THE PIPE BARREL TO THE FINISHED ROAD SURFACE.
17. WHERE PIPE WORK HAS LESS THAN 12m COVER BENEATH ROADS AND 0.9m COVER BENEATH LANDSCAPING, THE PIPES ARE TO BE SURROUNDED WITH 150mm OF CLASS ST4 CONCRETE WITH FLEXIBILITY OF JOINTS MAINTAINED AS STATED IN CLAUSE 5.2.26 OF THE WATER UK GUIDE.
18. CONCRETE BED AND SURROUND TO PIPE WORK SHALL USE SULPHATE-RESISTING CEMENT UNLESS ADVISED OTHERWISE WITHIN THE SITE INVESTIGATION REPORT.
19. ALL DRAINAGE UNDER PROPOSED ADAPTABLE ROADS AND FOOTWAYS TO BE MINIMUM 150mm DIAMETER. ALL MANHOLES TO BE PRECAST CONCRETE.
20. ALL CONNECTIONS TO HIGHWAY DRAINS MUST BE MADE WITH FACTORY MADE JUNCTIONS.

GENERAL KEY



DRAINAGE KEY



LIGHTING KEY

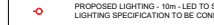
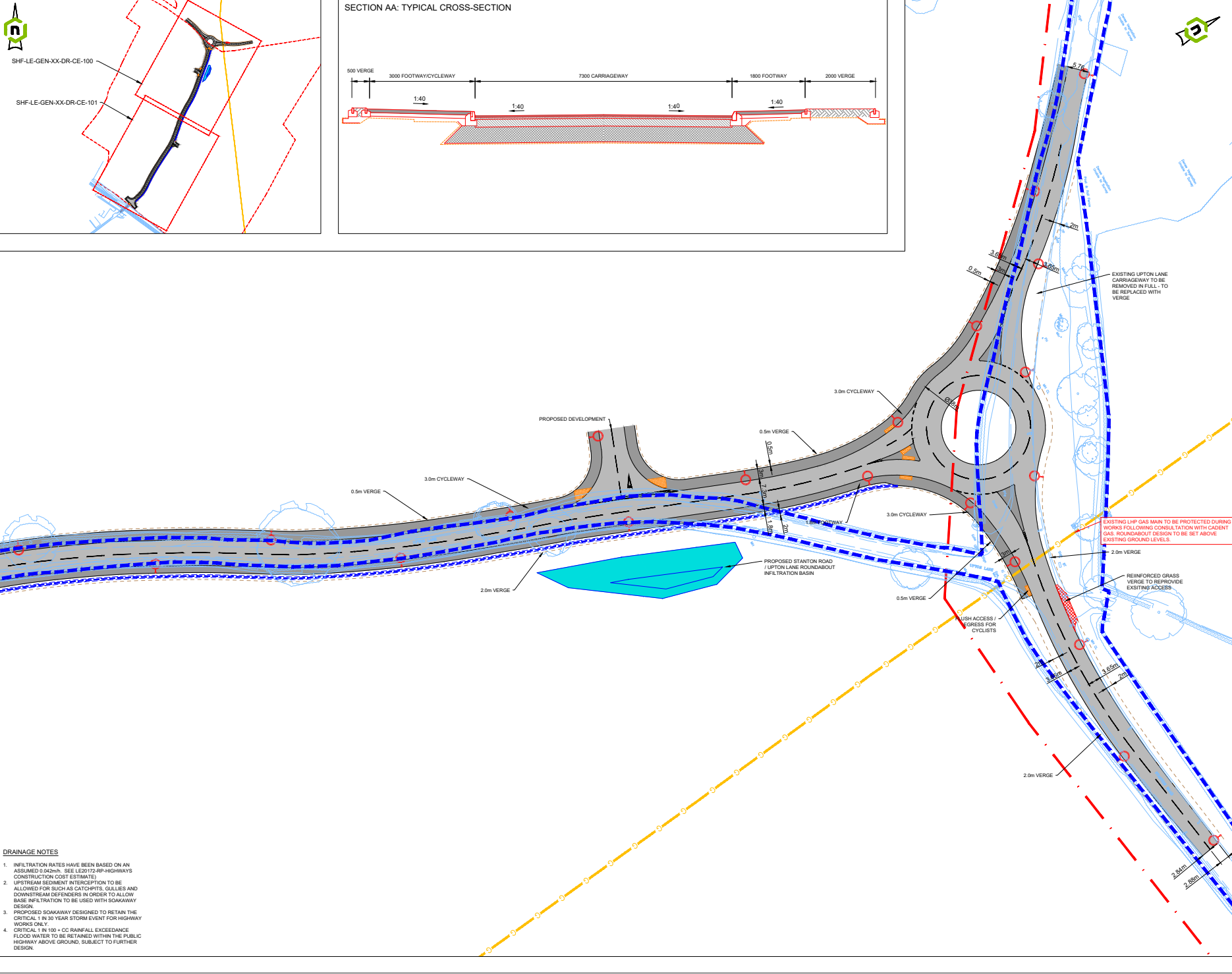


Table with 2 columns: Description and Date. Includes entries for Topographical Survey Added, Highway Boundary Added, Revised Roundabout Location, and Initial Issue.

Client: HARROW ESTATES. Logo: Link Engineering. Project: LE20172 - LAND EAST OF SHIFNAL. Drawing: ENGINEERING LAYOUT - UPTON LANE / STANTON ROAD. Scale @ A1 1:500. Drawn: JWM, Checked: RCC, Rev: C.

- DRAINAGE NOTES
1. INFILTRATION RATES HAVE BEEN BASED ON AN ASSUMED 0.042m/hr. SEE LE20172-RP-HIGHWAYS CONSTRUCTION COST ESTIMATE.
2. UPSTREAM SEDIMENT INTERCEPTION TO BE ALLOWED FOR SUCH AS CATCHPITS, GULLIES AND DOWNSTREAM DEFENDERS IN ORDER TO ALLOW BASE INFILTRATION TO BE USED WITH SOAKAWAY DESIGN.
3. PROPOSED SOAKAWAY DESIGNED TO RETAIN THE CRITICAL 1 IN 30 YEAR STORM EVENT FOR HIGHWAY WORKS ONLY.
4. CRITICAL 1 IN 100 - CC RAINFALL EXCEEDANCE FLOOD WATER TO BE RETAINED WITHIN THE PUBLIC HIGHWAY ABOVE GROUND, SUBJECT TO FURTHER DESIGN.



# APPENDIX B – TRICS Output

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 02 - EMPLOYMENT  
 Category : D - INDUSTRIAL ESTATE

**VEHICLES**Selected regions and areas:

<b>03</b>	<b>SOUTH WEST</b>	
	DC DORSET	1 days
<b>06</b>	<b>WEST MIDLANDS</b>	
	WK WARWICKSHIRE	1 days
	WO WORCESTERSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

**Primary Filtering selection:**

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area  
 Actual Range: 70000 to 150564 (units: sqm)  
 Range Selected by User: 50000 to 974258 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 27/06/18

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	1 days
Wednesday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town	2
Free Standing (PPS6 Out of Town)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	1
Out of Town	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

**Secondary Filtering selection:**Use Class:

Not Known	1 days
B1	1 days
B2	1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.



**Secondary Filtering selection (Cont.):**Population within 1 mile:

5,001 to 10,000	2 days
10,001 to 15,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

1.1 to 1.5	3 days
------------	--------

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	3 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	3 days
-----------------	--------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

- |          |  |  |
|----------|--|--|
| <b>1</b> | <p><b>DC-02-D-20 INDUSTRIAL ESTATE</b><br/>                 OLD BARN FARM ROAD<br/>                 NEAR BOURNEMOUTH<br/>                 THREE LEGGED CROSS<br/>                 Free Standing (PPS6 Out of Town)<br/>                 Out of Town<br/>                 Total Gross floor area: 70000 sqm<br/>                 Survey date: MONDAY 24/03/14</p> | <p><b>DORSET</b></p> <p style="text-align: right;">Survey Type: MANUAL</p>         |
| <b>2</b> | <p><b>WK-02-D-01 INDUSTRIAL ESTATE</b><br/>                 CASTLE MOUND WAY<br/>                 RUGBY</p> <p>Edge of Town<br/>                 Industrial Zone<br/>                 Total Gross floor area: 150564 sqm<br/>                 Survey date: WEDNESDAY 27/06/18</p>  | <p><b>WARWICKSHIRE</b></p> <p style="text-align: right;">Survey Type: MANUAL</p>   |
| <b>3</b> | <p><b>WO-02-D-03 INDUSTRIAL ESTATE</b><br/>                 MILLENNIUM WAY<br/>                 EVESHAM</p> <p>Edge of Town<br/>                 Out of Town<br/>                 Total Gross floor area: 84575 sqm<br/>                 Survey date: TUESDAY 26/06/18</p>   | <p><b>WORCESTERSHIRE</b></p> <p style="text-align: right;">Survey Type: MANUAL</p> |

*This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.*

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
WK-02-D-02	-

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

**VEHICLES**

**Calculation factor: 100 sqm**

**BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	101713	0.238	3	101713	0.057	3	101713	0.295
08:00 - 09:00	<b>3</b>	<b>101713</b>	<b>0.282</b>	3	101713	0.074	3	101713	0.356
09:00 - 10:00	3	101713	0.169	3	101713	0.086	3	101713	0.255
10:00 - 11:00	3	101713	0.133	3	101713	0.083	3	101713	0.216
11:00 - 12:00	3	101713	0.135	3	101713	0.095	3	101713	0.230
12:00 - 13:00	3	101713	0.125	3	101713	0.148	3	101713	0.273
13:00 - 14:00	3	101713	0.183	3	101713	0.161	3	101713	0.344
14:00 - 15:00	3	101713	0.105	3	101713	0.163	3	101713	0.268
15:00 - 16:00	3	101713	0.103	3	101713	0.182	3	101713	0.285
16:00 - 17:00	3	101713	0.120	3	101713	0.179	3	101713	0.299
17:00 - 18:00	3	101713	0.058	<b>3</b>	<b>101713</b>	<b>0.320</b>	<b>3</b>	<b>101713</b>	<b>0.378</b>
18:00 - 19:00	3	101713	0.039	3	101713	0.108	3	101713	0.147
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			1.690			1.656			3.346

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

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#### Parameter summary

Trip rate parameter range selected:	70000 - 150564 (units: sqm)
Survey date date range:	01/01/12 - 27/06/18
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	1

*This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.*

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

**TAXIS**

**Calculation factor: 100 sqm**

**BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
08:00 - 09:00	<b>3</b>	<b>101713</b>	<b>0.001</b>	3	101713	0.000	3	101713	0.001
09:00 - 10:00	3	101713	0.000	<b>3</b>	<b>101713</b>	<b>0.001</b>	3	101713	0.001
10:00 - 11:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
11:00 - 12:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
12:00 - 13:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
13:00 - 14:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
14:00 - 15:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
15:00 - 16:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
16:00 - 17:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
17:00 - 18:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
18:00 - 19:00	3	101713	0.001	3	101713	0.001	<b>3</b>	<b>101713</b>	<b>0.002</b>
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.002			0.002			0.004

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.



TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

**OGVS**

**Calculation factor: 100 sqm**

**BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	101713	0.013	3	101713	0.012	3	101713	0.025
08:00 - 09:00	3	101713	0.013	3	101713	0.014	3	101713	0.027
09:00 - 10:00	3	101713	0.022	3	101713	0.015	3	101713	0.037
10:00 - 11:00	3	101713	0.019	3	101713	0.015	3	101713	0.034
11:00 - 12:00	3	101713	0.017	3	101713	0.015	3	101713	0.032
12:00 - 13:00	<b>3</b>	<b>101713</b>	<b>0.022</b>	3	101713	0.017	<b>3</b>	<b>101713</b>	<b>0.039</b>
13:00 - 14:00	3	101713	0.016	<b>3</b>	<b>101713</b>	<b>0.021</b>	3	101713	0.037
14:00 - 15:00	3	101713	0.015	3	101713	0.014	3	101713	0.029
15:00 - 16:00	3	101713	0.017	3	101713	0.021	3	101713	0.038
16:00 - 17:00	3	101713	0.015	3	101713	0.018	3	101713	0.033
17:00 - 18:00	3	101713	0.012	3	101713	0.010	3	101713	0.022
18:00 - 19:00	3	101713	0.010	3	101713	0.011	3	101713	0.021
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.191			0.183			0.374

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

**PSVS**

**Calculation factor: 100 sqm**

**BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
08:00 - 09:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
09:00 - 10:00	<b>3</b>	<b>101713</b>	<b>0.001</b>	3	101713	0.000	<b>3</b>	<b>101713</b>	<b>0.001</b>
10:00 - 11:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
11:00 - 12:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
12:00 - 13:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
13:00 - 14:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
14:00 - 15:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
15:00 - 16:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
16:00 - 17:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
17:00 - 18:00	3	101713	0.000	<b>3</b>	<b>101713</b>	<b>0.001</b>	3	101713	0.001
18:00 - 19:00	3	101713	0.000	3	101713	0.000	3	101713	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.001			0.001			0.002

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

**CYCLISTS**

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	<b>3</b>	<b>101713</b>	<b>0.006</b>	3	101713	0.000	3	101713	0.006
08:00 - 09:00	3	101713	0.006	3	101713	0.000	3	101713	0.006
09:00 - 10:00	3	101713	0.001	3	101713	0.001	3	101713	0.002
10:00 - 11:00	3	101713	0.001	3	101713	0.000	3	101713	0.001
11:00 - 12:00	3	101713	0.001	3	101713	0.001	3	101713	0.002
12:00 - 13:00	3	101713	0.002	3	101713	0.000	3	101713	0.002
13:00 - 14:00	3	101713	0.002	3	101713	0.002	3	101713	0.004
14:00 - 15:00	3	101713	0.003	3	101713	0.003	3	101713	0.006
15:00 - 16:00	3	101713	0.001	3	101713	0.008	3	101713	0.009
16:00 - 17:00	3	101713	0.001	3	101713	0.002	3	101713	0.003
17:00 - 18:00	3	101713	0.002	<b>3</b>	<b>101713</b>	<b>0.009</b>	<b>3</b>	<b>101713</b>	<b>0.011</b>
18:00 - 19:00	3	101713	0.005	3	101713	0.003	3	101713	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.031			0.029			0.060

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

**CARS**

**Calculation factor: 100 sqm**

**BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	101713	0.150	3	101713	0.019	3	101713	0.169
08:00 - 09:00	<b>3</b>	<b>101713</b>	<b>0.168</b>	3	101713	0.024	3	101713	0.192
09:00 - 10:00	3	101713	0.095	3	101713	0.028	3	101713	0.123
10:00 - 11:00	3	101713	0.067	3	101713	0.034	3	101713	0.101
11:00 - 12:00	3	101713	0.070	3	101713	0.039	3	101713	0.109
12:00 - 13:00	3	101713	0.060	3	101713	0.087	3	101713	0.147
13:00 - 14:00	3	101713	0.109	3	101713	0.086	3	101713	0.195
14:00 - 15:00	3	101713	0.047	3	101713	0.092	3	101713	0.139
15:00 - 16:00	3	101713	0.046	3	101713	0.097	3	101713	0.143
16:00 - 17:00	3	101713	0.028	3	101713	0.108	3	101713	0.136
17:00 - 18:00	3	101713	0.023	<b>3</b>	<b>101713</b>	<b>0.193</b>	<b>3</b>	<b>101713</b>	<b>0.216</b>
18:00 - 19:00	3	101713	0.019	3	101713	0.065	3	101713	0.084
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.882			0.872			1.754

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

**LGVS**

**Calculation factor: 100 sqm**

**BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	101713	0.035	3	101713	0.018	3	101713	0.053
08:00 - 09:00	3	101713	0.032	3	101713	0.026	3	101713	0.058
09:00 - 10:00	3	101713	0.031	3	101713	0.029	3	101713	0.060
10:00 - 11:00	3	101713	0.031	3	101713	0.025	3	101713	0.056
11:00 - 12:00	3	101713	0.029	3	101713	0.025	3	101713	0.054
12:00 - 13:00	3	101713	0.032	3	101713	0.032	3	101713	0.064
13:00 - 14:00	<b>3</b>	<b>101713</b>	<b>0.043</b>	<b>3</b>	<b>101713</b>	<b>0.043</b>	<b>3</b>	<b>101713</b>	<b>0.086</b>
14:00 - 15:00	3	101713	0.030	3	101713	0.032	3	101713	0.062
15:00 - 16:00	3	101713	0.028	3	101713	0.041	3	101713	0.069
16:00 - 17:00	3	101713	0.034	3	101713	0.031	3	101713	0.065
17:00 - 18:00	3	101713	0.013	3	101713	0.026	3	101713	0.039
18:00 - 19:00	3	101713	0.005	3	101713	0.009	3	101713	0.014
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.343			0.337			0.680

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.



TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

**MOTOR CYCLES**

**Calculation factor: 100 sqm**

**BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	101713	0.002	3	101713	0.000	3	101713	0.002
08:00 - 09:00	<b>3</b>	<b>101713</b>	<b>0.005</b>	3	101713	0.000	<b>3</b>	<b>101713</b>	<b>0.005</b>
09:00 - 10:00	3	101713	0.002	3	101713	0.001	3	101713	0.003
10:00 - 11:00	3	101713	0.002	3	101713	0.000	3	101713	0.002
11:00 - 12:00	3	101713	0.001	3	101713	0.001	3	101713	0.002
12:00 - 13:00	3	101713	0.000	3	101713	0.001	3	101713	0.001
13:00 - 14:00	3	101713	0.001	3	101713	0.000	3	101713	0.001
14:00 - 15:00	3	101713	0.001	3	101713	0.001	3	101713	0.002
15:00 - 16:00	3	101713	0.001	3	101713	0.003	3	101713	0.004
16:00 - 17:00	3	101713	0.003	3	101713	0.001	3	101713	0.004
17:00 - 18:00	3	101713	0.001	<b>3</b>	<b>101713</b>	<b>0.004</b>	3	101713	0.005
18:00 - 19:00	3	101713	0.000	3	101713	0.002	3	101713	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.019			0.014			0.033

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

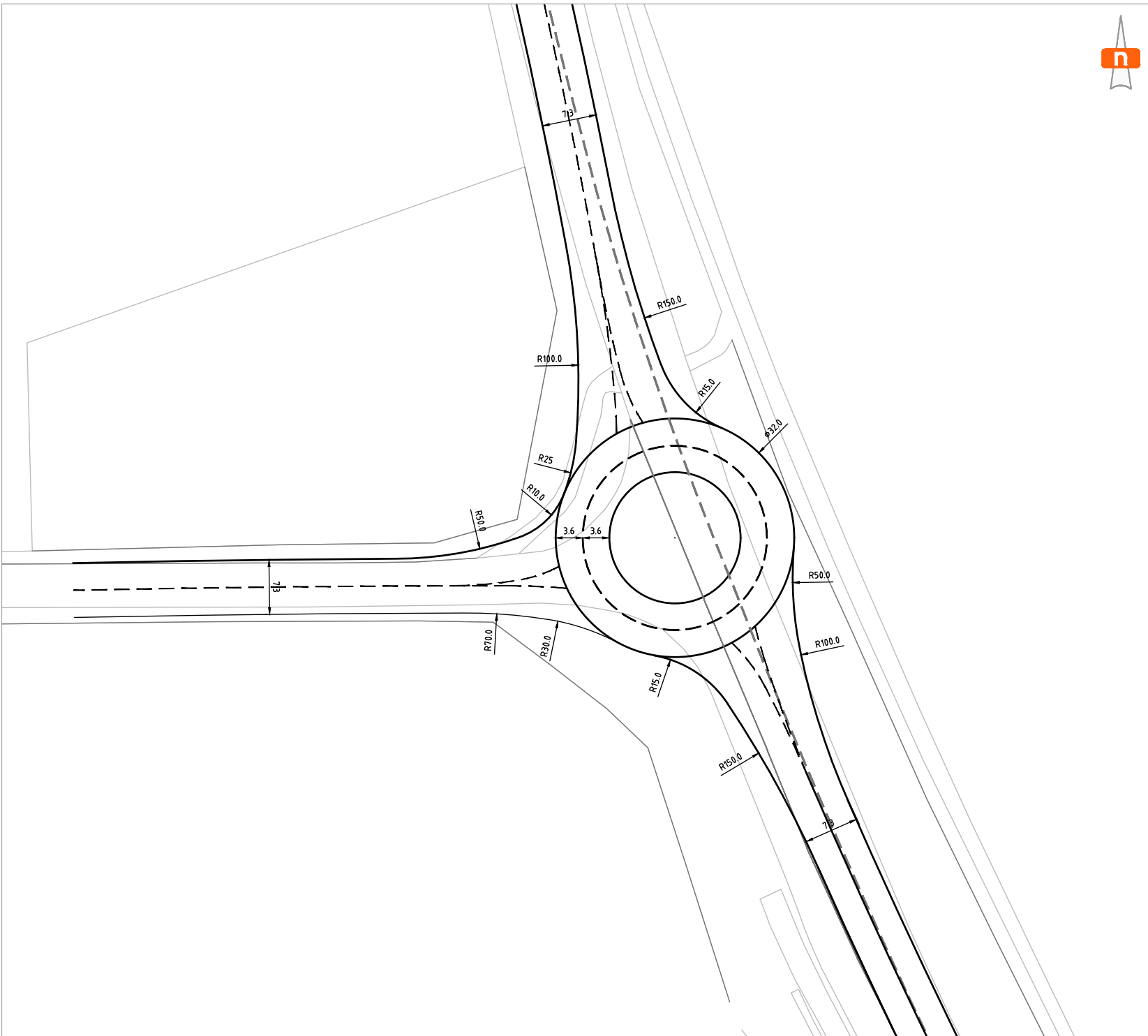
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

# APPENDIX C – Preliminary Mitigation Arrangement



NOTE:

1. THIS DRAWING IS BASED UPON THE ORDNANCE SURVEY'S (1:250) MAP WITH PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE. CROWN COPYRIGHT RESERVED.
2. THIS DRAWING IS INDICATIVE AND SUBJECT TO DISCUSSIONS WITH LOCAL & NATIONAL HIGHWAY AUTHORITIES. THIS DESIGN IS ALSO SUBJECT TO CONFIRMATION OF LAND OWNERSHIP, TOPOGRAPHY, LOCATION OF STATUTORY SERVICES, DETAILED DESIGN AND TRAFFIC MODELLING.
3. ROAD MARKINGS & TRAFFIC SIGNS ARE TO BE IN ACCORDANCE WITH 'THE TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS 2016'
4. DO NOT SCALE FROM THIS DRAWING WORK FROM FIGURED DIMENSIONS ONLY.
5. ALL DIMENSIONS ARE SHOWN IN METRES UNLESS NOTED OTHERWISE.



REV	DATE	REMARKS
-	11.09.2020	INITIAL ISSUE

CLIENT

HARROW ESTATES PLC

JOB TITLE

SHIFNAL TRANSPORT STUDY

DRAWING TITLE

PROPOSED ROUNDABOUT  
(STANTON RD / NEWPORT RD)

DRAWING NO.

J32-4331-PS-004

DRAWN

SEP '20

CHECKED

BDF

CREATED

FA

SCALE

1:500 @A3

mode transport planning  
 LOMBARD HOUSE  
 145 GREAT CHARLES STREET  
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