National Highways

M5 Junction 13

Stroud District Local Plan Capacity Assessment

SW 41 24/25WSP
June 2025

Public

National Highways

M5 Junction 13

Stroud District Local Plan Capacity Assessment

Type of document (version) Public

Project no. UK0037257.6726

Our Ref. No. SW 41 24/25WSP

Date: June 2025

WSP

Kings Orchard
1 Queen Street
Bristol
BS2 0HQ

Phone: +44 117 930 6200

WSP.com

Quality control

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Draft	Final		
Date	10/06/25	26/06/25		
Prepared by	David Barnfield	David Barnfield		
Signature				
Checked by	Iain McNeill	Iain McNeill		
Signature				
Authorised by	Stephen Bailey	Stephen Bailey		
Signature				
Project number	UK0037257.6726	UK0037257.6726		
Report number	…	…		
File reference	…	…		

Contents

1	**Introduction**	**1**
1.1	**Background**	**1**
2	**Emerging Stroud District Local Plan**	**2**
2.1	**Local Plan Review Status**	**2**
2.2	**SDLPR Mitigation at M5 J13**	**2**
3	**Proposed Development impacting M5 J13**	**4**
3.1	**Development impacting on M5 J13**	**4**
3.2	**SDLPR Draft Allocations impacting at M5 Junction 13**	**4**
	PS20 Eco Park M5 J13	5
	PS19a Stonehouse North West	7
	PS24 Cam North West	7
	PS36 Sharpness New Settlement	7
	PS37 Wisloe New Settlement	8
3.3	**Other Notable SDLP Allocations impacting M5 J13**	**8**
3.4	**Other Development impacting M5 J13**	**8**
	Grove Lane North and South	8
	Nupend Lane, Stonehouse	10
4	**National Highways M5 Junction 13 Traffic Model**	**11**
4.1	**The Traffic Model**	**11**
4.2	**Assumed Junction Improvements and Mitigation**	**11**
4.3	**Development Turning Movements at M5 J13**	**11**
	Stroud District Local Plan Allocations	11

Grove Lane Developments 12
4.4 Cumulative and Background Traffic Growth at M5 J13 14
5 Traffic Modelling Results 18
5.1 Introduction 18
5.2 Forecast Operation at M5 J13 18
5.3 Local Road Network 21
5.4 Traffic Demand in 2040 23
6 Housing Supply Delivery before IDP improvements at M5 Junctions 12 and 14 24
6.1 Background 24
6.2 Traffic Modelling for Appendix 2 AC6 24
7 Summary 26

Tables

Table 4-1 –Traffic Growth from 2023 to 2040 at M5 J13 (excluding the motorway mainline) 14

Table 5-1 – Comparisons between the demand and actual Peak Hour traffic flows at M5 J13 in 2040 Trigger Test 3. 23

Figures

Figure 1-1 - Form of M5 J13 Stroudwater Interchange 1
Figure 2-1 - Anticipated SDLP Improvement at M5 J13 3
Figure 3-1 - Proposed Development impacting M5 J13 4
Figure 3-2 - M5 J13 Eco Park Illustrative Masterplan 6
Figure 3-3 - Grove Lane North and South Combined Masterplan 9
Figure 4-1 - Grove Lane North and South Turning Movements at M5 J13 13

Figure 4-2 – Cumulative Traffic Growth by Year at M5 J13, AM and PM Peak Hour 16
Figure 4-3 – Cumulative House Occupations by Year affecting M5 J13 17
Figure 5-1 - Maximum queue lengths on the M5 J13 Southbound Off-slip 19
Figure 5-2 - Maximum queue lengths on the M5 J13 Northbound Off-slip 20
Figure 5-3 – Screenshots of M5 J13 and the A38/A419 Roundabout, 2040 AM Peak 22

Appendices

Appendix A

SDLP Housing Delivery Assumptions

Appendix B

Turning Movements at M5 J13

Appendix C

Housing Supply Delivery before improvements at M5 J12 and J14 (Appendix 2 AC6)

1 Introduction

1.1 Background

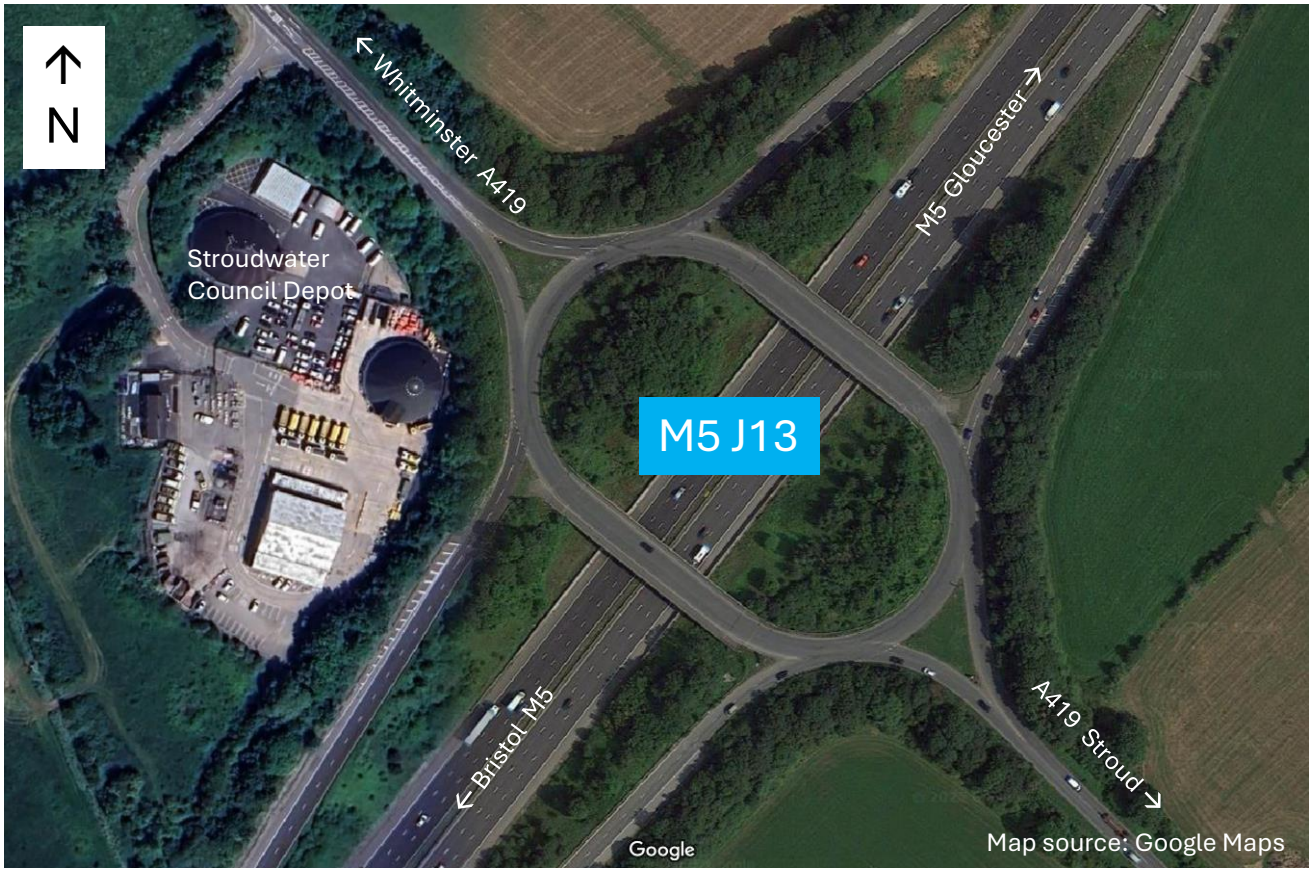
This report has been prepared to detail the effective capacity of M5 Junction 13 (M5 J13) Stroudwater Interchange.

M5 J13 is located 8 miles / 13km south of Gloucester and 1 mile / 1.6km west of Stonehouse in the Stroud District Council administrative area of Gloucestershire. The junction connects the M5 motorway with the A38 and provides access to Stonehouse and Stroud via the A419.

There are currently no operational capacity or safety concerns at the junction.

The motorway junction comprises an all-movement, grade separated roundabout with the motorway passing beneath the two overbridges forming the roundabout. The form of the junction is shown in Figure 1-1.

Figure 1-1 - Form of M5 J13 Stroudwater Interchange



2 Emerging Stroud District Local Plan

2.1 Local Plan Review Status

The current Stroud District Local Plan was adopted in 2015 and provides the local policy guidance through to 2031.

The Stroud District Local Plan Review Pre-submission Draft Plan (Regulation 19 Consultation) May 2021 (SDLPR) will take that time horizon forward to 2040 and was proposed to include 12,600 new dwellings. The Plan was presented at an Examination in Public (EIP) in summer 2024. The Plan included proposed development allocations that would have a traffic impact at M5 J12. However, the Examination was delayed due to concerns regarding the transport evidence base, which included concerns raised by National Highways, in order to allow Stroud time to submit updated evidence.

On 7 February 2025 the Inspectors (in id-018) directed withdrawal of the SDLPR from Examination principally based on the lack of clarity of how M5 J12 and J14 schemes would be funded and delivered (both junctions had been identified for improvement to provide an all-movement grade separated roundabout junction similar to M5 J13). Without funding and delivery of capacity schemes, the inspectors concluded "…that a significant proportion of the Plan's allocated sites do not have a realistic or reasonable prospect of being delivered during the plan period."

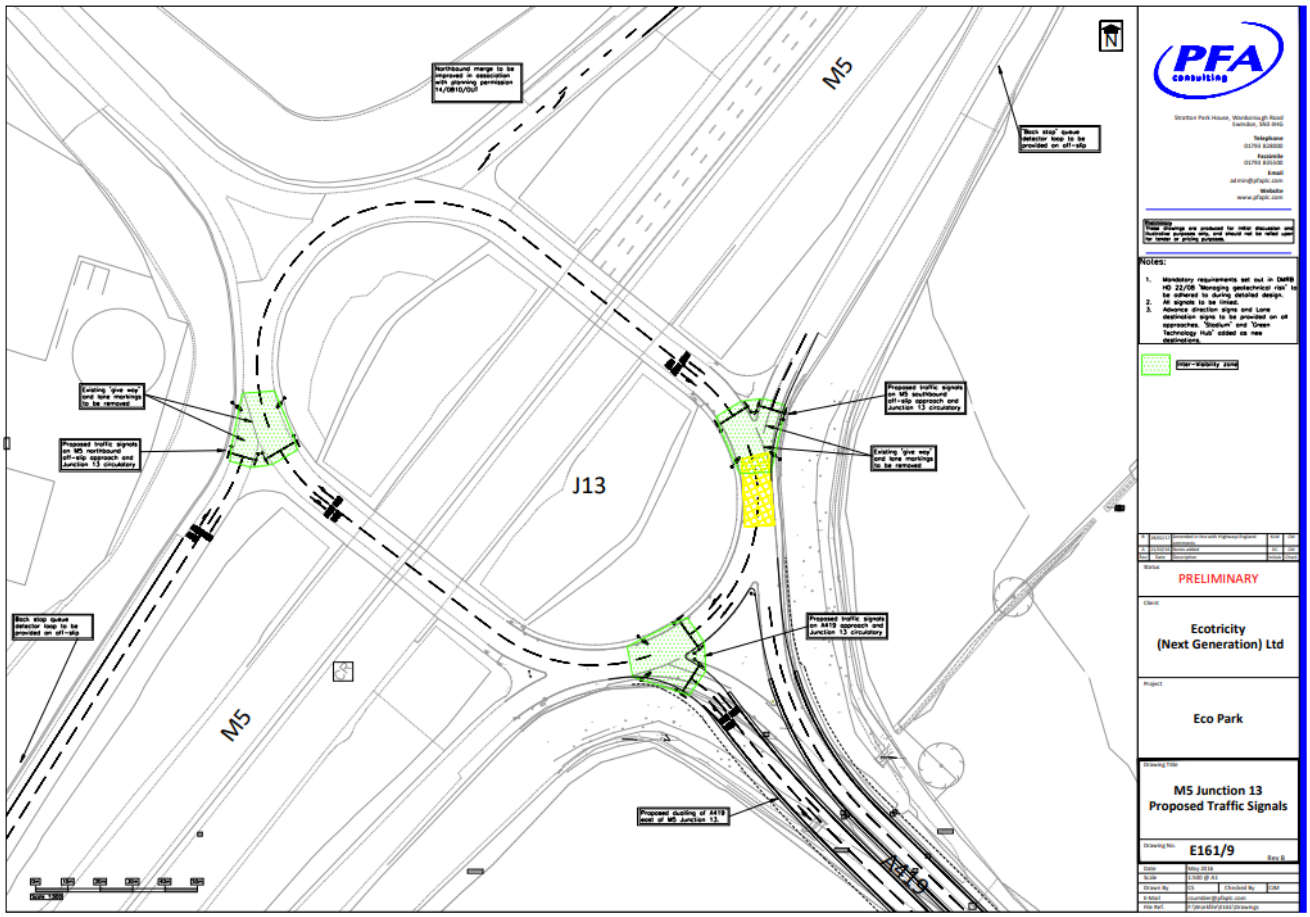
The Council wrote to the Inspectors on 3 March 2025 asking them to reconsider their decision. The Inspectors on replied 9 April 2025 stating that they still considered that "…withdrawal of the Stroud District Local Plan Review from Examination is the most appropriate way forward."

Despite the request to withdraw the SDLPR, National Highways has continued with traffic modelling to inform the operation of M5 J12 with the SDLPR housing delivery. This modelling has been prepared with the support and cooperation of Stroud District Council (SDC).

2.2 SDLPR Mitigation at M5 J13

The SDLPR Infrastructure Delivery Plan (IDP, EIP Document Library Ref.110, p.3) proposed an upgrade to M5 J13 with traffic signal control and widening of the A419 eastbound exit to enable and support delivery of the SDLPR draft allocations. The scheme is shown in Figure 2-1.

Figure 2-1 - Anticipated SDLP Improvement at M5 J13



Source: Planning Application S.22/0206/OUT

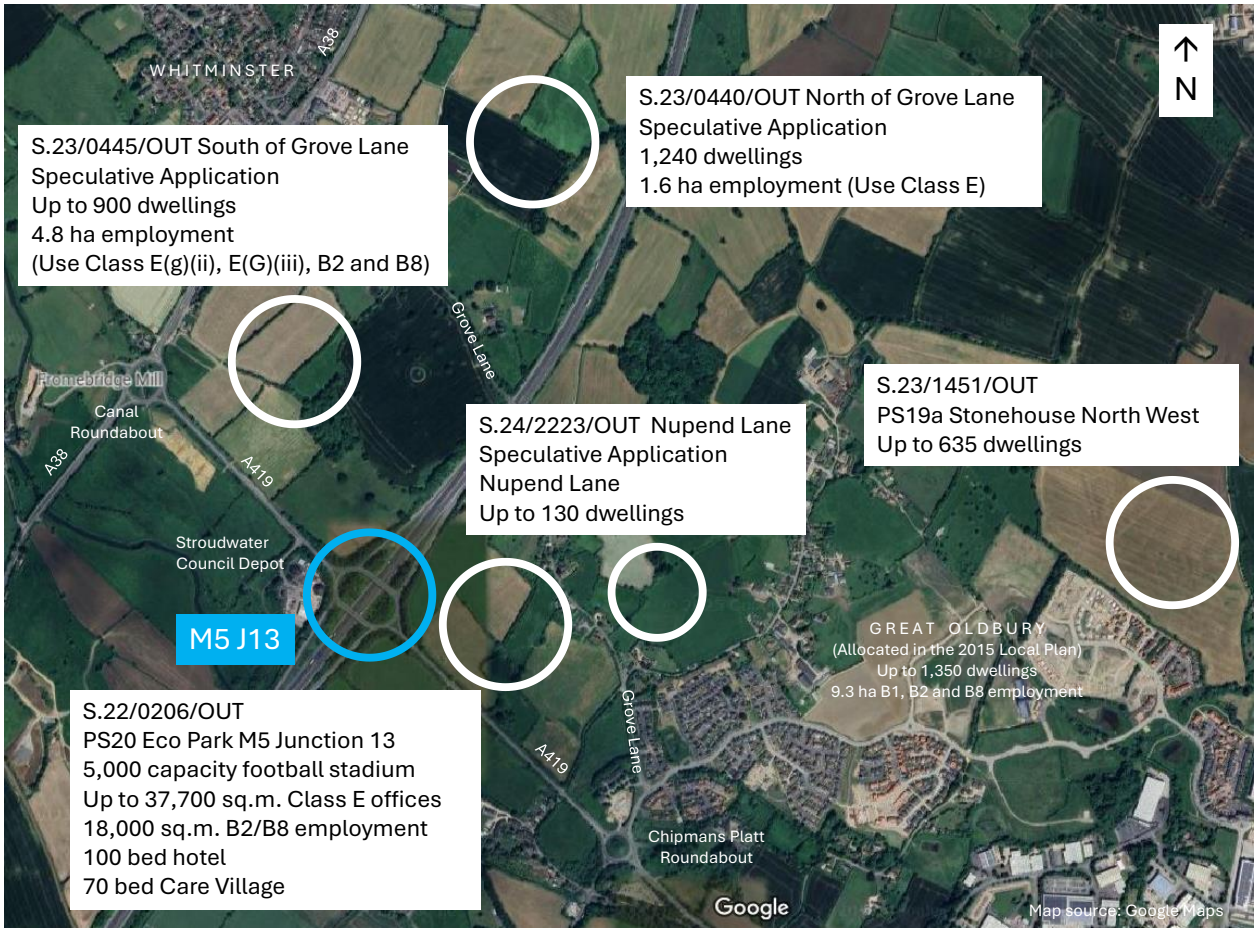
3 Proposed Development impacting M5 J13

3.1 Development impacting on M5 J13

Those developments with current planning applications or consents most closely located to M5 J13 are shown in Figure 3-1 below.

Stroud District Council has provided traffic data from its strategic traffic modelling for these sites and other draft allocations and current planning applications that are considered to have an identifiable traffic impact at the junction. These developments are outlined below.

Figure 3-1 - Proposed Development impacting M5 J13



3.2 SDLPR Draft Allocations impacting at M5 Junction 13

The draft allocations in the SDLPR most significantly impacting M5 J13 are those clustered around the junction, notably:

- PS19a Stonehouse North West (SDLPR p.108-110 and forming an extension of the Great Oldbury development allocated in 2015) and which has a planning application for the residential element of the allocation submitted as S.23/1451/OUT for up to 635 dwellings.

- PS20 Eco Park M5 Junction 13 (SDLP pp.112-115) which has a planning application submitted as S.22/0206/OUT for a 5,000 seat football stadium, up to 37,700 sq.m Class E offices, 18,000 sqm. B2/B8 employment, a100-bed hotel and a 70-bed Care Village.

The SDLPR EB135 Appendix 1 details housing delivery assumptions for the draft allocations and is contained in Appendix A to this report. This housing trajectory was not supported by any traffic modelling at EIP. National Highways identified the need for traffic modelling to identify the amount of reserve capacity prior to any mitigation being required at each of M5 J12, J13 and J14. In the absence of SDLPR modelling, National Highways has now agreed to undertake this modelling and this report provides this information for M5 J13.

PS20 Eco Park M5 J13

An Eco Park is allocated in the SDLPR (Policy PS20) on land to the east of M5 J13 and both sides of the A419. A planning application was submitted in 2022 (S.22/026/OUT) and National Highways has been working with the developers to agree the impact of the development. The site masterplan is shown in Figure 3-2.

The application seeks outline consent (all matters reserved except access) for a 49.5ha mixed-use Eco Park development located adjacent to the eastern, western boundaries of M5 Junction 13 (J13). The application comprises the following land uses:

- a 5,000 capacity football stadium
- indoor and outdoor playing pitches
- a football Academy building
- up to 37,700 sqm of Class E offices
- 18,000 sqm of B2/B8 employment floorspace
- up to 2,750 sqm of ancillary Class E food/retail/creche
- a hotel with up to 100 beds
- a Care Village including a 70 bed Care Home
- 1,200 parking spaces shared across all land uses
- associated access, drainage, landscaping and other ancillary works.

The outline application seeks permission for access comprising:

- A new traffic signal junction on to the A419 east of M5 J13
- A secondary left in/left out vehicle access from the A419 to the southern development parcel
- A new bus and emergency access off Grove Lane
- Emergency access from the A419 to northern development parcel

- A signal controlled pedestrian and cycle crossing of the A419
- The provision of a combined footway/cycleway on the south side of the A419 which will link to National Cycle Route 45 at Grove Lane, which itself connects eastwards towards Stroud.

Figure 3-2 - M5 J13 Eco Park Illustrative Masterplan

The 5,000 seat stadium is being provided as a new home for Forest Green Rovers FC, which would relocate from its current ground in Nailsworth.

The site is subject to extensive planning history. In January 2016 an outline application was submitted for a 5,000 capacity football stadium, 41,300 sqm of B1 floorspace, 22,800sqm of B2/B8 floorspace, indoor football playing pitch and ancillary uses (S.16/0043/OUT). This application was refused by Stroud District Council in June 2019. A subsequent appeal was withdrawn upon the granting of a smaller application (S.19/1418/OUT) in August 2020 for a 5,000-capacity football stadium and other ancillary uses, one full-sized grass pitch and one full-sized all weather pitch and a goal practice area, car parking and improvements to the A419 including a signalised site junction and combined cycle/footway. Stroud District Council have confirmed that the permission remains extant even though it has not been

implemented. In March 2025 the current EcoPark application was still awaiting a decision by Stroud District Council.

The SDLPR IDP has identified that the mitigation shown at M5 J13 in Figure 2-1 will be required to deliver the EcoPark as set out in Policy PS20. Given the status of the planning application, this trigger point testing has assumed that the mitigation has been constructed and is open to traffic.

PS19a Stonehouse North West

Draft allocation PS19a Stonehouse North West comprises a residential mixed-use development of 700 units, eight plots for travelling showpeople, 5 ha of employment, a primary school, strategic landscaping and green infrastructure, and associated infrastructure. The site is located approximately 350m to the north-west of Stonehouse and to the north of Great Oldbury development (outline approval S.14/0810/OUT for 1,350 dwellings and 9.3 ha of employment for classes B1, B2 and B8). The application site is proposed to be accessed through the Great Oldbury development via Great Oldbury Drive.

The draft policy PS19a identifies the requirement for development to contribute towards infrastructure identified in the draft Infrastructure Delivery Plan (IDP), which includes improvements at M5 J13.

PS24 Cam North West

The site promoters for Cam North West submitted a planning application in 2021 (S.21/1875/OUT) and have been in discussion with National Highways since July 2024, seeking to agree the site impact. The developers have proposed mitigation for this 900-home development at M5 J14 but not at M5 J13. This may be because the SDLPR IDP had identified that the M5 J13 mitigation would be delivered by the EcoPark under policy PS20.

In June 2025 the planning application was still awaiting a decision.

PS36 Sharpness New Settlement

The Policy PS36 draft allocation is for up to 2,400 dwellings by 2040 (which is expected to increase to 5,000 dwellings by 2050 as part of the next review of the Local Plan) and 10 hectares of employment land under use classes B1, B2 and B8 and ancillary land uses.

National Highways has been in discussion with the applicant for Sharpness New Settlement since July 2022, looking to agree the input parameters to determine development traffic impact and the required modelling.

In August 2024, the applicant presented modelling results to support proposed mitigation at M5 J14 for an initial development of 1,000 dwellings and 15,385m^2 of employment, which has been accepted by National Highways based on a slightly different scheme and modelling undertaken by National Highways. The development impact has not, to date, been tested at M5 J13.

In February 2025 a planning application (S.25/0417/OUT) was submitted to Stroud District Council for Sharpness New Community, referred to as Land at Sanigar Lane. The application is for up to 2,750 dwellings, a 10 ha, business park, a primary and a secondary school, a local centre and ancillary land uses. The application includes proposed mitigation for the development impact of an initial phase of 1,000 new dwellings at M5 J14. No mitigation is proposed for the development impact at the M5 J13.

PS37 Wisloe New Settlement

The PS37 Land at Wisloe draft allocation is located approximately 3.5 miles/5.5 km south of M5 J13, accessed from the A38. The draft allocation is for approximately 1,500 dwellings and five hectares of B1, B2 and B8 employment.

To date, no discussions have been held with National Highways regarding the proposed development.

3.3 Other Notable SDLP Allocations impacting M5 J13

Stroud District Council has provided traffic data for two other draft allocation proposed in the SDLPR that result in some traffic at M5 J13. These are:

- PS25 Cam North East extension (180 dwellings); and
- PS34 Sharpness Docks (up to 300 dwellings).

3.4 Other Development impacting M5 J13

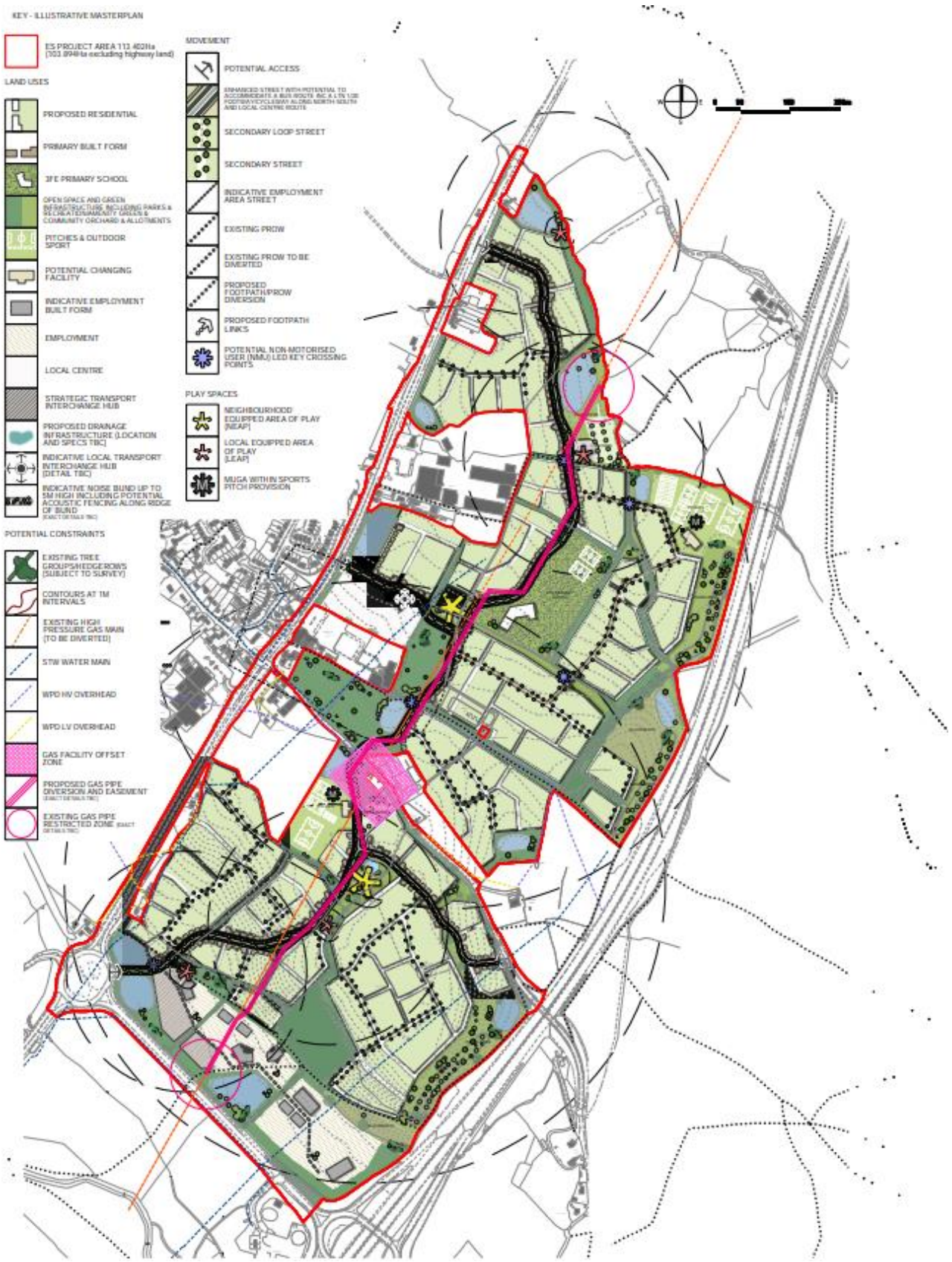
Grove Lane North and South

There are two planning applications on land to the north-west of M5 J13 and shown on Figure 3-1 for Land to the North (S.23/0440/OUT) and South (S.23/0445/OUT) of Grove Lane. These applications are for up to 1,240 dwellings on the northern site and up to 900 dwellings on the southern site cumulatively providing up to 2,140 dwellings, as well as 4.8 ha of employment land, primary schools, local centres and other ancillary land uses. The employment land is proposed to deliver up to 20,000 sq m of employment use classes E(g)(ii), E(g)(iii), B2 and B8, and a strategic transport interchange hub.

The Masterplan for the proposed Grove Lane developments is shown in Figure 3-3 below. The application sites are located between the A38 and the northbound carriageway of the M5, and north of the A419. Grove Lane runs west from the A38 between the two sites and over the M5, where it is the northern boundary to the EcoPark application site.

The applications are considered speculative in that they are not allocated in the adopted Local Plan, nor are they a draft allocation in the pre-submission SDLPR. However due to their location they will have a significant impact on the M5 J13, and given the Government's revised housing targets for Stroud District they are considered relevant to this study.

Figure 3-3 - Grove Lane North and South Combined Masterplan



Nupend Lane, Stonehouse

Nupend Lane, Stonehouse (S.24/2223/OUT) proposes up to 130 dwellings on a greenfield site on the western edge of Stonehouse within 600m of the M5 mainline carriageway and 1.6 km, by road, from M5 J13. The application site is to the west of and adjacent to the Great Oldbury development and PS19a Stonehouse North West, and north of the draft PS20 Eco Park allocations. This is also considered to be a speculative application as the site is not allocated in the adopted or emerging Local Plan, but again it will have an identifiable impact on M5 J13.

4 National Highways M5 Junction 13 Traffic Model

4.1 The Traffic Model

National Highways has developed a Vissim microsimulation model to support the understanding of network performance of M5 J13, and to enable future assessment of planned development and infrastructure improvements. The model utilises VISSIM 2024 as the micro-simulation package and is validated for a 2023 AM and PM Base Year.

4.2 Assumed Junction Improvements and Mitigation

National Highways has undertaken microsimulation modelling assuming the SDLPR mitigation scheme shown in Figure 2-1. No other amendments have been made to this scheme as part of the cumulative modelling results detailed in this report.

4.3 Development Turning Movements at M5 J13

Stroud District Local Plan Allocations

Stroud District Council has provided development turning matrices at M5 J13 for all of the proposed allocations listed in the SDLPR. These matrices are included in Appendix B.

The turning matrices of particular interest at M5 J13 are:

- PS19a Stonehouse North West;
- PS20 Eco Park M5 Junction 13 ;
- PS24 Cam North West ;
- PS25 Cam North East;
- PS34 Sharpness Docks ; and
- PS36 Sharpness New Settlement .

M5 J13 Matrices are also provided for background traffic and ‘Local Site Allocations and Small Windfall’ sites.

The matrices show traffic at M5 J13 for each local plan allocation, cumulatively for all other Local Plan allocations in a single ‘Local Site Allocations and Small Windfall’ matrix, and of background growth in the period 2023-2040.

WSP applied the housing trajectory in Appendix A to derive a demand matrix at M5 J13 for the SDLPR and other traffic growth impacts for every year in the period 2023 to 2040.

The matrices were then used in the model to test the point when the IDP M5 J13 layout ‘failed’. The primary consideration was to determine when the M5 J13 sliproad queues extended onto the motorway mainline, which is considered to be a safety and operational hazard caused by mixing stationary and fast-moving traffic.

The timing of any mitigation being required to be open to traffic is determined as the first interim year when any queue on either motorway off slip extends onto the motorway mainline carriageway.

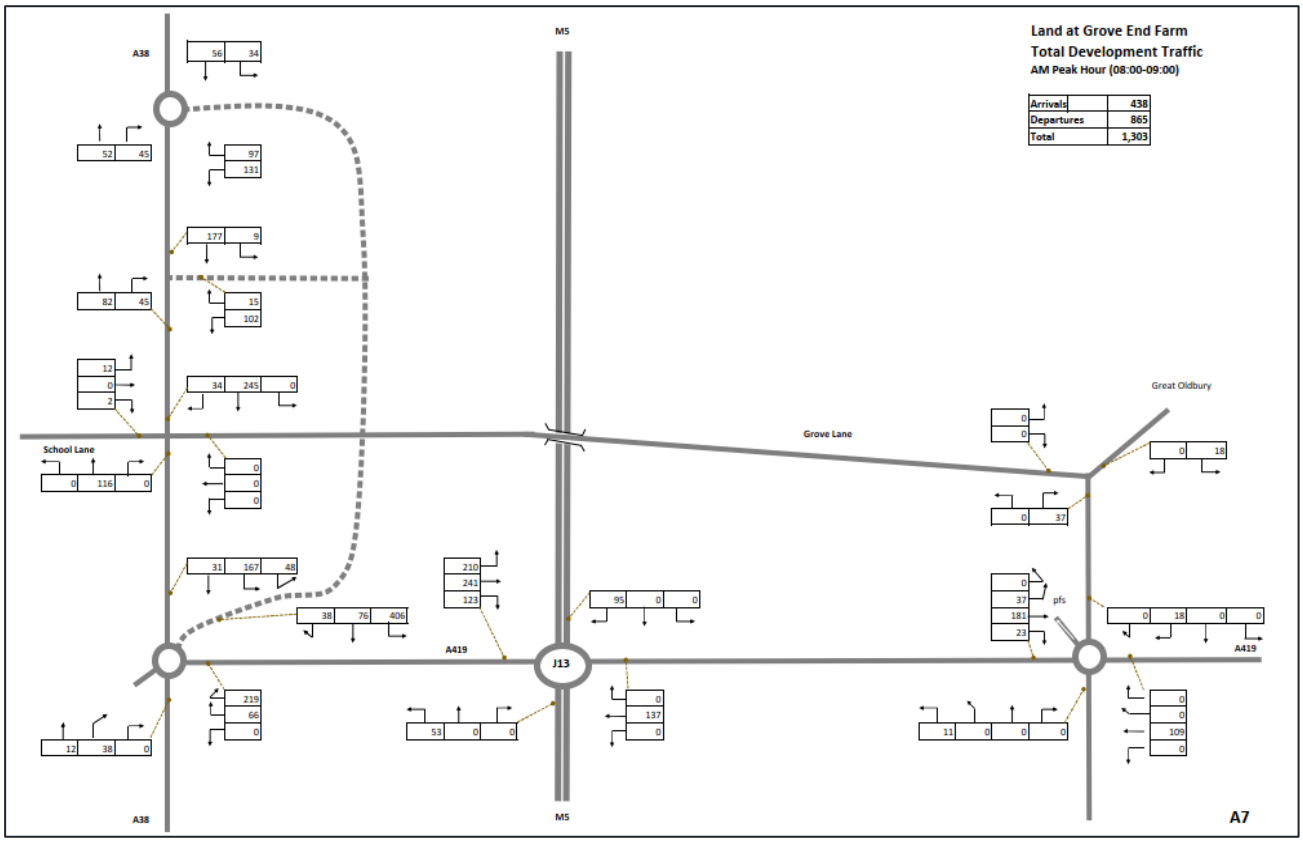
It should be noted that no consideration has been given to the operation of the local highway network other than to ensure that it does not affect the robustness of the assessment of M5 J13.

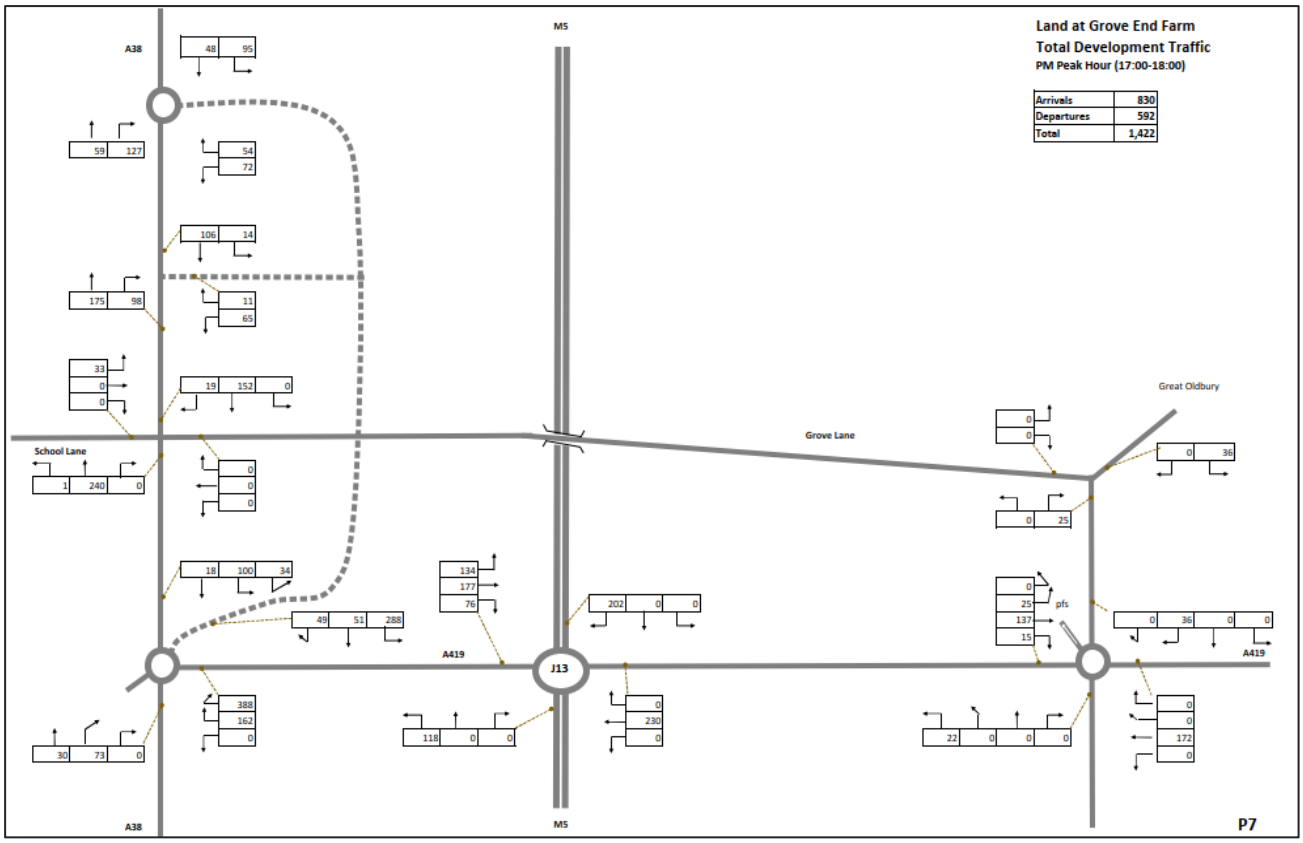
Grove Lane Developments

The turning movements for the Grove Lane developments have been included in the modelling assessment. This does not infer any status to these developments by National Highways, but it does ensure a robust assessment of the junction.

Traffic turning data at M5 J13 has been sourced from the respective transport assessments, either included as part of their planning application or discussed with National Highways. The turning movements at M5 J13 and the A419/A38 Bristol Road roundabout to the west of M5 J13 are included in Figure 4-1 for the morning peak hour (08:00-09:00) and evening peak hour (17:00-18:00).

Figure 4-1 - Grove Lane North and South Turning Movements at M5 J13





4.4 Cumulative and Background Traffic Growth at M5 J13

Table 4-1 shows the growth in traffic at M5 J13 from the 2023 base year to 2040, assuming the full build out of all Local Plan policy sites:

- Direct traffic totals are for those sites listed in Section 4.2 (PS19a, PS20, PS24, PS25, PS34, PS36, PS37, and also Grove La N&S);
- Indirect traffic totals are for all other Local Plan policy sites included in Appendix B (G1, G2, PS30, PS32, PS43, PS47);
- Local Site Allocations and Small Windfall sites; and
- Background traffic growth.

Table 4-1 –Traffic Growth from 2023 to 2040 at M5 J13 (excluding the motorway mainline)

Data	AM Peak Hour	PM Peak Hour
2023	**3,964**	**4,408**
Direct Development traffic (PS19a, PS20, PS24, PS25, PS34, PS36, PS37, Grove La N&S)	1,921	1,978
Indirect Development traffic (G1, G2, PS30, PS32, PS43, PS47)	70	122
Local Site Allocations and Small Windfall traffic	33	38
Total Development Traffic in 2040	**2,024**	**2,138**
Cumulative 2023 + Development Traffic in 2040	**6,040**	**6,546**
Change from 2023	***+52%***	***+49%***
Background traffic growth 2023-2040	499	374
Total in 2040 including background traffic	**6,389**	**6,920**
Change from 2023	***+61%***	***+57%***

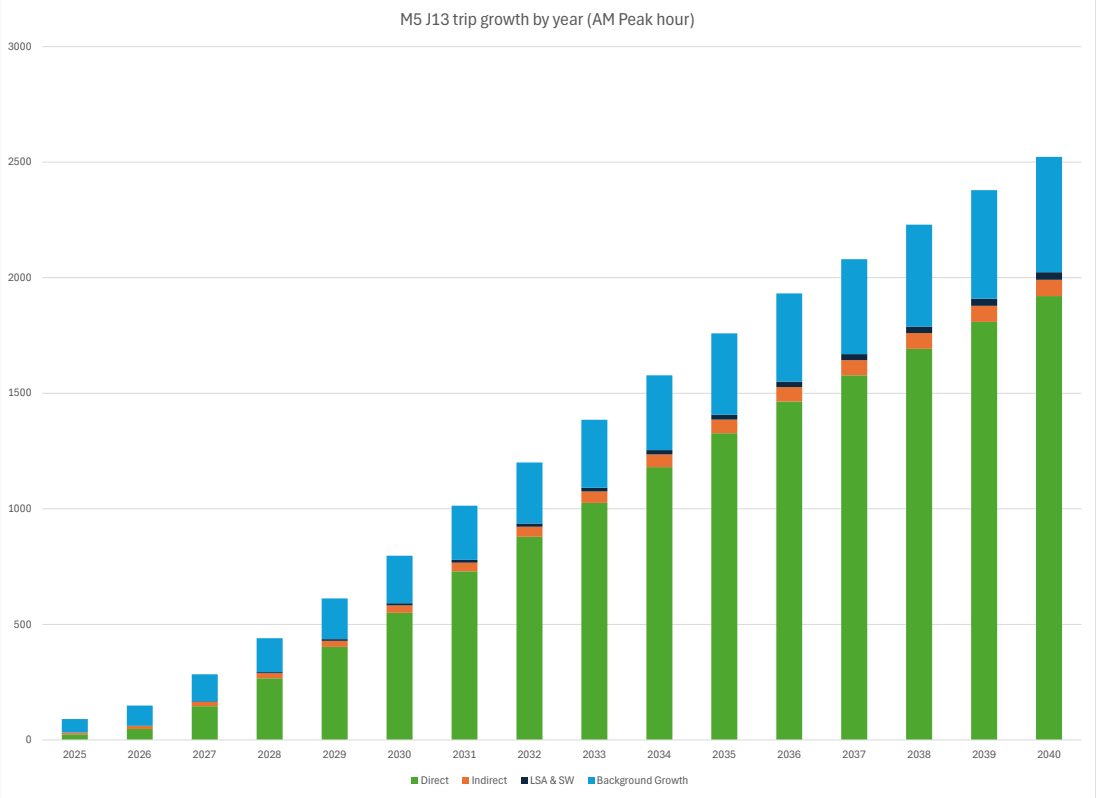
Table 4-1 shows traffic growth in the period 2023 to 2040 of 61% in the AM peak hour and 57% in the PM peak. If background growth is excluded, the data shows the SDLPR to increase traffic at M5 J13 by 52% and 49% respectively when compared with traffic volumes in 2023.

Figure 4-2 indicates traffic growth at M5 J13 by year from 2025. This has been derived using the development delivery profiles provided in Appendix A and working back from the 2040 turning movements at M5 J13 included in Appendix B for each of the Local Plan policy sites and background traffic:

The graph shows that SDLPR would start to impact M5 J13 from 2025 if adopted and developments had secured planning permission and started to build out. As expected, it shows that the occupations of housing closest to the junction have the greater traffic impact by volume at M5 J13. Cumulatively, approximately 1,000 vehicles are additionally using the junction in both peak periods by 2031, and 2,000 vehicles by 2037. By 2040 around 2,500 additional vehicles could be using M5 J13 during weekday peak periods.

Based on the profile shown in Appendix A, Figure 4-3 shows the cumulative housing numbers from the SDLPR with traffic impacting M5 J13 by year. In the absence of any development status at the Grove Lane development, it is assumed the delivery profile for this development follows the same profile as that for PS36 Sharpness New Settlement as they are of a similar size (2,140 at Grove Lane vs. 2,400 at Sharpness).

Figure 4-2 – Cumulative Traffic Growth by Year at M5 J13, AM and PM Peak Hour



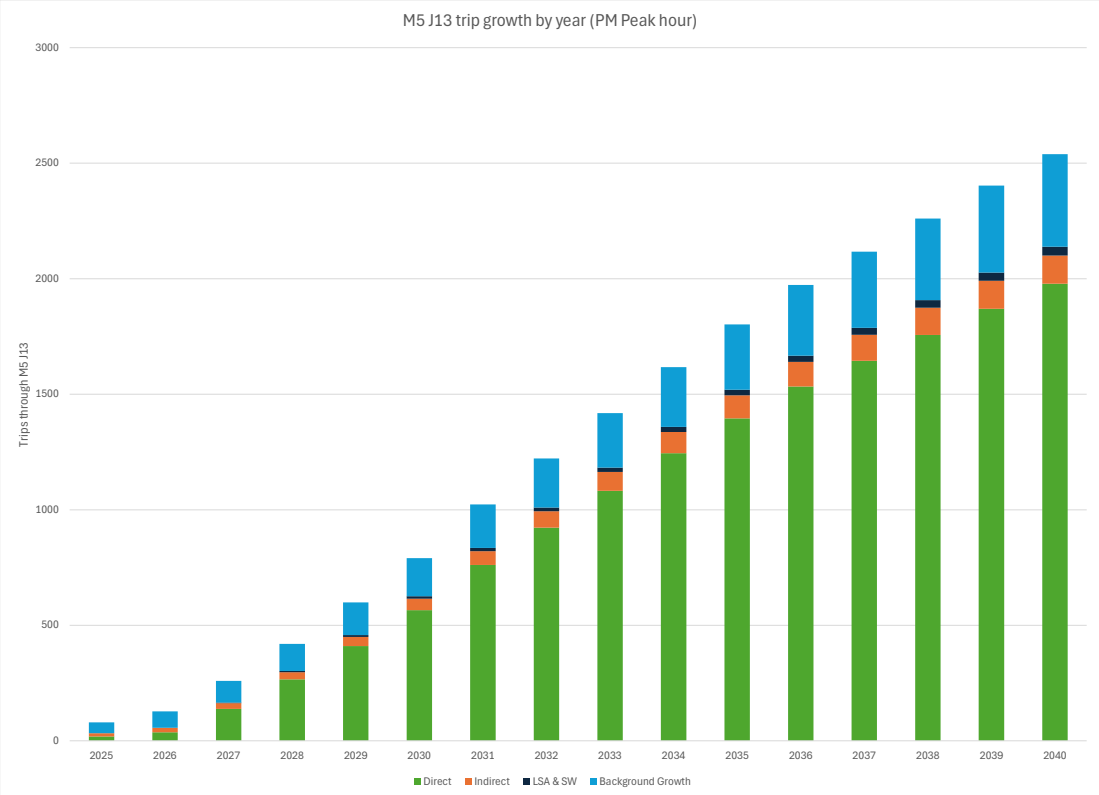
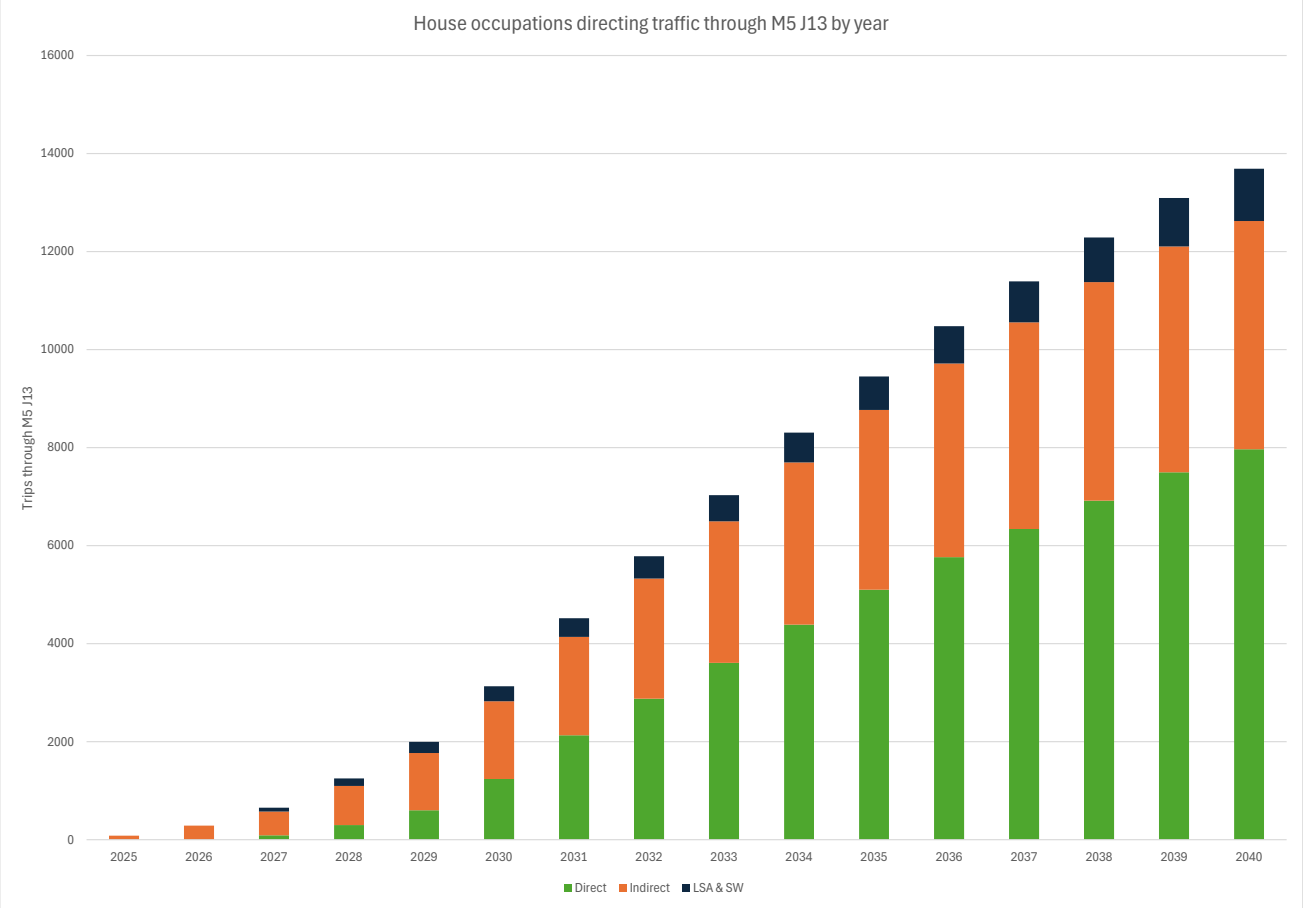


Figure 4-3 – Cumulative House Occupations by Year affecting M5 J13



5 Traffic Modelling Results

5.1 Introduction

It is important to note that the findings of this report are based on the traffic scenario provided by Stroud District Council for the SDLPR, which is derived from the traffic evidence presented at EIP. Changes in the rate of development delivery (Appendix A) and effective traffic management and active travel plans singularly and cumulatively may result in a different outcome.

The M5 J13 operational test, modelled for 2040, included background growth from the strategic model and local plan sites.

National Highways' main concern is whether junction queues extend beyond the motorway slip roads and onto the motorway mainline, causing safety issues by mixing slow-moving and stationary traffic with high-speed traffic.

Three tests were carried out:

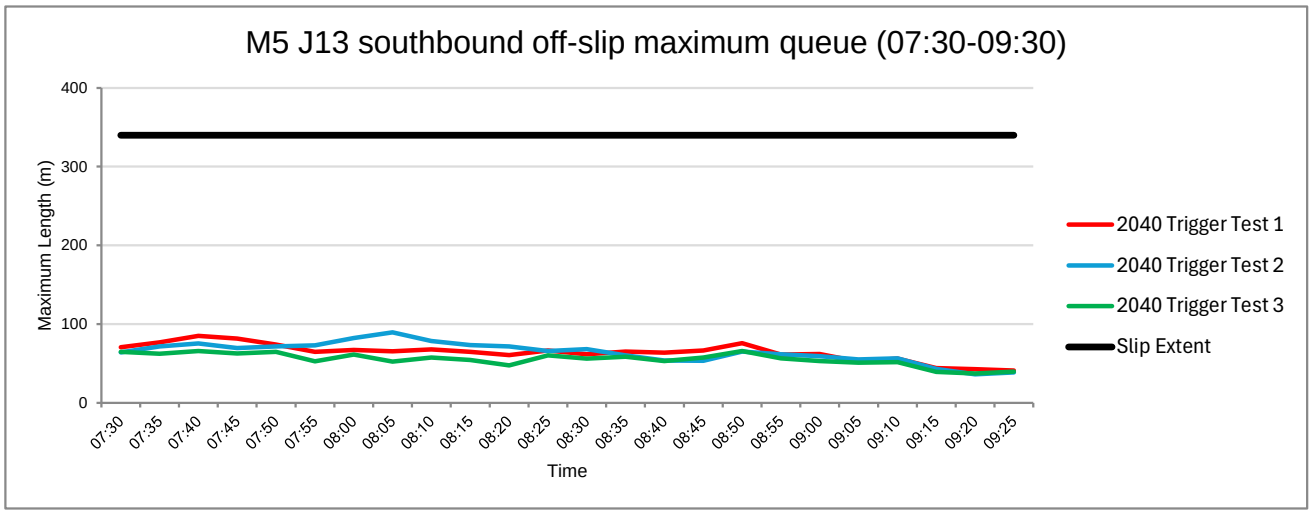
- Test 1 was included all developments and committed mitigations.
- Test 2 was for a scenario where the M5 J13 Eco Park and the dualling of the A419 between the M5 J13 and Chipmans Platt roundabout was not delivered.
- Test 3 was the same as Test 1 but included dualling the A419 between M5 J13 and the A38. This was following an earlier test to reduce the impact of traffic queueing at the A419/A38 junction, most notably in the PM peak, where Test 1 showed it traffic could block back to the M5 J13 and interfere with the effective operation of the off-slip roads.

5.2 Forecast Operation at M5 J13

Figure 5-1 shows modelled queue lengths on the M5 J13 southbound off-slip, and Figure 5-2 queue lengths on the northbound off-slip in 2040. The results show that the average maximum queues extending beyond the length of the slip road only occurs the PM peak in Test 1 (Figure 5-1 for the southbound off-slip). This is due to blocking back from the A38/A419 junction into the M5 J13 roundabout, which restricts the westbound exit flow from the M5 J13. This is resolved by either the Eco Park site not being built (Test 2), or by the dualling of the A419 between the A38 and M5 J13 (Test 3). It is therefore advised that the dualling of the A419 between M5 J13 and the A38 is included in the IDP as part of the Local Plan, or made a condition for planning approval of the Grove Lane development.

The modelling therefore suggests that - as far as the M5 slip roads are concerned - traffic growth can be accommodated at M5 J13 in the period to 2040, assuming the A419 is dualled between the A38 and M5 J13.

Figure 5-1 - Maximum queue lengths on the M5 J13 Southbound Off-slip



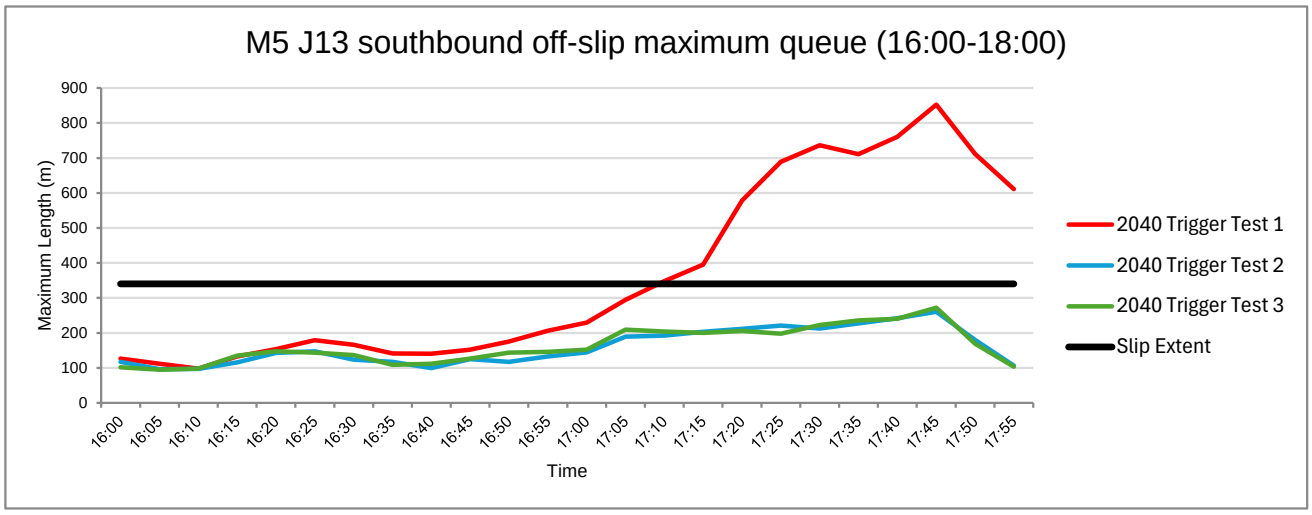
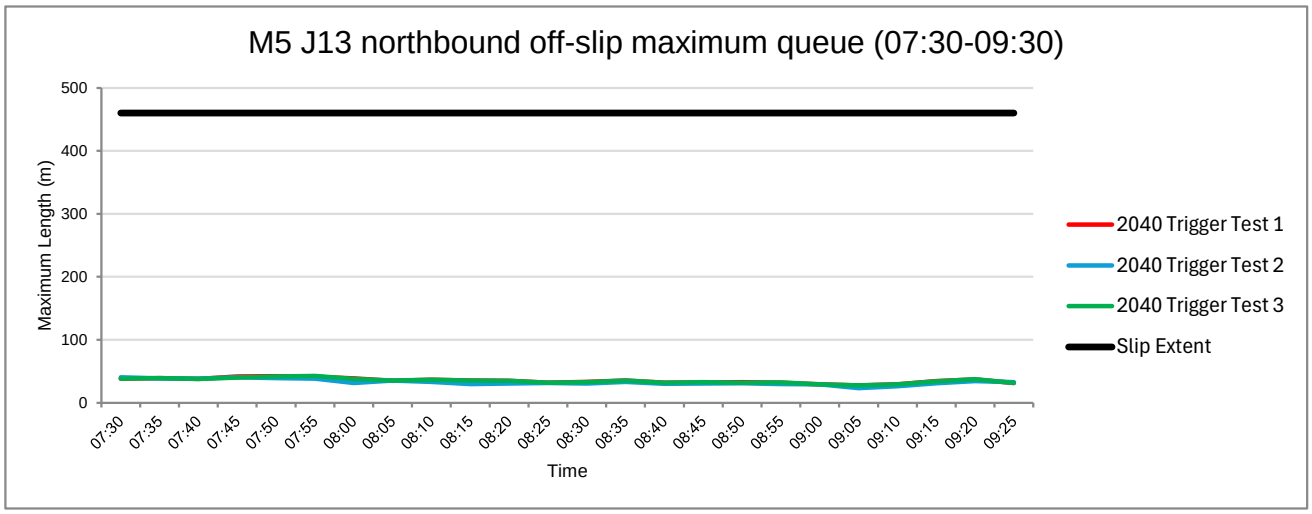
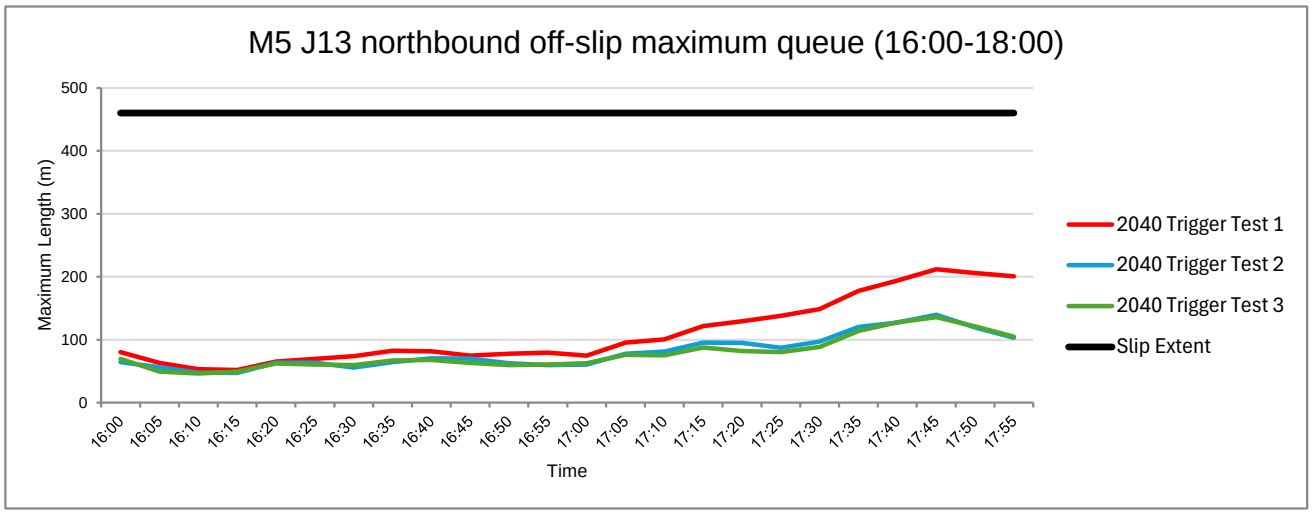


Figure 5-2 - Maximum queue lengths on the M5 J13 Northbound Off-slip





5.3 Local Road Network

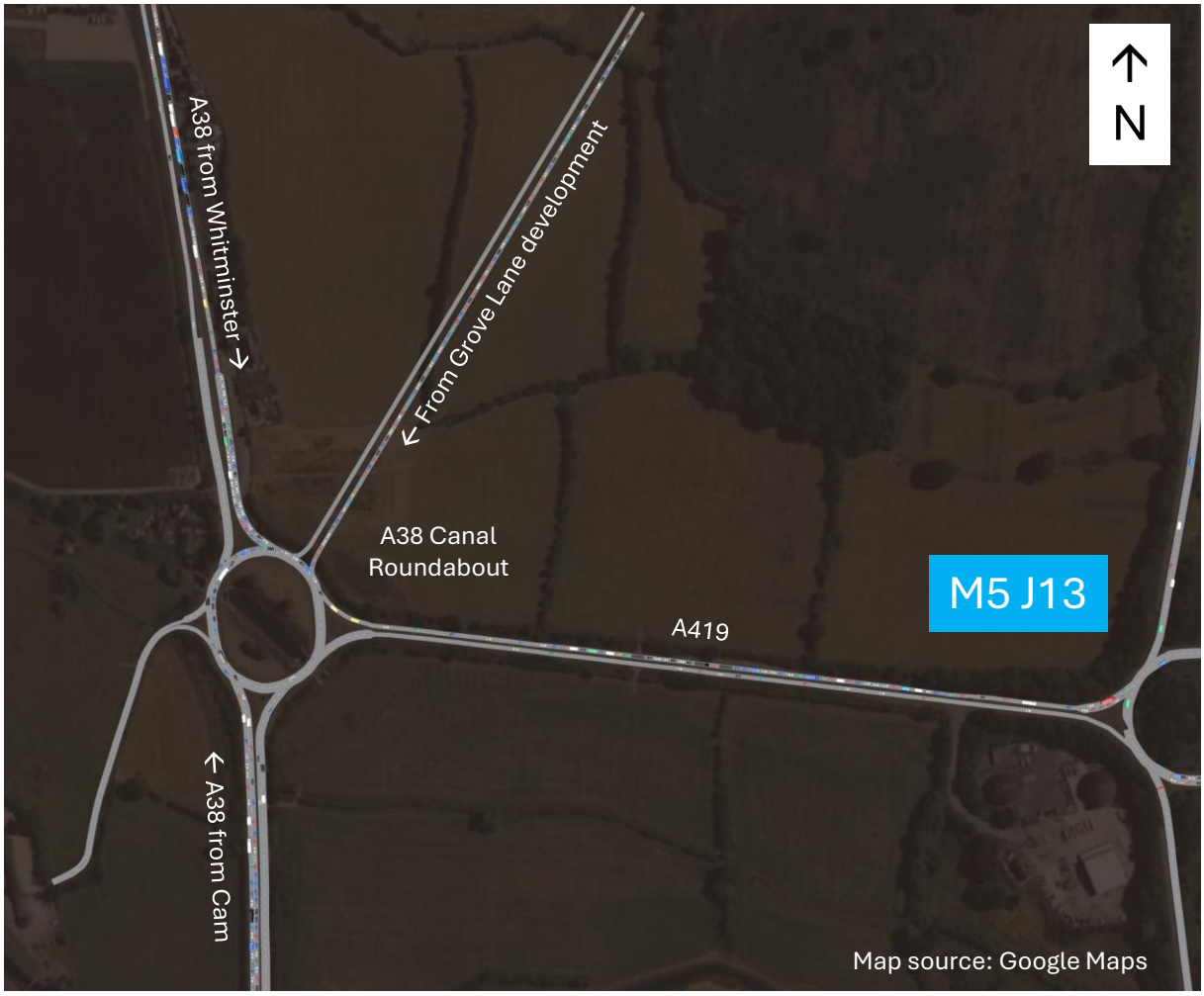
Traffic issues are observed with the operation of the local road network. Significant congestion is noted on the local highway network to the west of M5 J13 and on the A419 eastbound approach to the motorway junction.

This is illustrated in Figure 5-3 which shows microsimulation model screenshots looking east from the A38 roundabout towards M5 J13 in the 2040 AM peak period. Queued and slow-moving traffic is shown on the A38 Canal Roundabout approaches from the A38 north- and southbound, and from the Grove Lane development (which is currently proposed to form fifth arm of the A38 roundabout, as shown in Figure 3-3).

The eastbound entry to the M5 J13 roundabout is not proposed for traffic signal control in the SDLP mitigation scheme. As a result, A419 eastbound traffic can access the junction only during traffic signal intergreen periods. This then causes the platooning of traffic and a slow-moving queue towards the motorway along the 630m A419 section between the A38 and M5 J13.

In addition to this effect, the A419 eastbound queue blocks back into the A38 Canal Roundabout junction; this in turn is then indicated to cause congestion on the A38 and Grove Lane entries to the roundabout. This is somewhat reduced by the dualling of the A419 between the A38 and M5 J13 (Test 3).

Figure 5-3 – Screenshots of M5 J13 and the A38/A419 Roundabout, 2040 AM Peak



5.4 Traffic Demand in 2040

Traffic congestion on the local road network is indicated in the 2040 traffic models. Looking only at *peak hour traffic* in 2040, Table 5-1 provides a comparison of the forecast traffic (the 'demand' flow) at M5 J13 and the flow noted as passing through the junction in the traffic model (the 'actual' flow) in the AM and PM peak hours. The data is presented for Test 3, which is the option that includes dualling of the A419 between M5 J13 and the A38, and between M5 J13 and Chipmans Platt Roundabout. The actual flow shown in the model (Table 5-1) is lower than the demand flow (Table 4-1) because of congestion caused by the lack of capacity on the local road network.

Table 5-1 – Comparisons between the demand and actual Peak Hour traffic flows at M5 J13 in 2040 Trigger Test 3.

Junction arm	AM Peak, pcus/hr		PM Peak, pcus/hr	
	Demand flow	Actual flow	Demand flow	Actual flow
M5 southbound	575	572	687	672
A419 westbound	632	231	881	373
M5 northbound	271	266	282	279
A419 eastbound	1,045	633	689	381
Total	**2,523**	**1,702**	**2,539**	**1,704**

The comparison shows that actual and demand flows are comparable on the M5 sliproads, whereas actual flows on the A419 are lower; the westbound demand flow towards the motorway is constrained by the lack of capacity at the A419 Chipmans Platt Roundabout (e.g. in the AM peak hour the demand flow is 632 pcus/hr but only 231 can pass through the junction during the peak hour), and the eastbound flow towards J13 is restricted by the A38 Canal Roundabout and by queues at M5 J13.

6 Housing Supply Delivery before IDP improvements at M5 Junctions 12 and 14

6.1 Background

The Stroud District Local Plan Review (SDLPR) Pre-submission Draft Plan (Regulation 19 Consultation), published in May 2021, outlines the allocation of 12,600 new dwellings by 2040.

In response to post-hearing action points (EIP Ref. SLP-AP-002), Stroud District Council submitted Appendix 2 AC6 (see Appendix C) in May 2023, estimating that 8,632 dwellings—approximately 70% of the total housing need—could be delivered without triggering the need for mitigation at M5 Junctions 12 and 14. However, this estimate lacked supporting traffic modelling. The sites excluded were those developments which had been identified in the IDP to fund the respective SRN improvement:

- At M5 J12, the excluded developments are G1 South of Hardwicke, G2 Land at Whaddon, and PS30 Hunts Grove Extension.
- At M5 J14, the excluded developments are PS34 Sharpness Docks, PS36 New Settlement at Sharpness and PS37 New Settlement at Wisloe.

National Highways raised concerns in June 2023 regarding the methodology and assumptions behind the Council's submission. In October 2023, the Inspectors requested further evidence to demonstrate that the proposed developments would not adversely impact the Strategic Road Network (SRN). Stroud District Council responded with a Technical Note and supplementary information, maintaining that the developments would not materially affect the SRN.

Despite this, National Highways concluded in November 2023 that the rationale remained unsubstantiated given that no new modelling had been conducted to assess the cumulative impact of non-IDP site allocations. National Highways committed to undertake this modelling as an extension of this study.

6.2 Traffic Modelling for Appendix 2 AC6

Given that modelling at M5 J13 shows full SDLP development (i.e. 12,600 dwellings) can be accommodated in 2040 with the IDP improvement, no tests of Appendix 2 AC6 were required or completed at M5 J13. A similar conclusion was made for M5 J14.

National Highways did complete its own assessment at M5 Junction 12 in line with Appendix 2 AC6 (i.e. excluding SDLPR allocations G1, G2 and PS30). In this scenario, the modelling showed that traffic queues with the existing junction are retained within the 400m-length of each sliproad in 2040 indicating no disruption to the motorway mainline traffic flow.

On this basis it can be concluded that the quantum of development included in Appendix 2 AC6 can be accommodated at M5 Junctions 12, 13 and 14 if SDLP Policy Allocations G1

South of Hardwicke, G2 Land at Whaddon, and PS30 Hunts Grove Extension are not permitted to build out before a grade separated roundabout at M5 J12 is open to traffic.

This conclusion also requires the IDP improvement at M5 J13 and an interim scheme at M5 J14 are open to traffic.

7 Summary

This report has been prepared to identify the effective reserve capacity (if any) at M5 Junction 13 (M5 J13) Stroudwater Interchange in the period to 2040.

Currently, there is no capacity or safety concern at the M5 J13.

The Stroud District Local Plan Review (SDLPR) would provide 12,600 new homes in the period to 2040. The SDLPR includes several large housing and housing led mixed-use allocations that would have a material traffic impact at M5 J13.

National Highways' microsimulation model of M5 J13 was used to test the operation of the junction for the 2040 AM and PM peak periods.

The modelling included background growth from the strategic model, traffic demands for the SDLPR draft allocations and for three major 'speculative' applications in the vicinity of the junction. This results in significant traffic growth on all arms, with total traffic through the junction for the period 2023-2040 increasing by around 60% in both the AM and PM peak periods.

National Highways' main concern is whether the modelling of M5 J13 indicates sliproad queues would extend onto the motorway mainline at any time over the assessment period. Queues extending onto the motorway mainline would result in an unacceptable safety impact arising from conflict between slow and-moving (i.e. queueing) and high-speed traffic.

The SDLPR Infrastructure Delivery Plan (IDP) proposed an upgrade to M5 J13 in the form of traffic signal control to enable and support delivery of the draft SDLPR allocations. The report assumes that the IDP mitigation is implemented and open to traffic. In addition, given its advanced stage in the planning process, this report also assumes that the current EcoPark application is consented and the proposed improvements constructed and open to traffic. This includes dualling of the A419 between M5 J13 and the A419 Chipmans Platt Roundabout.

The results show that, generally, the average maximum queues on the M5 J13 off-sliproads are contained well within the 450m-length of each slip road, extending no more than 200m in the AM or PM peak period. The exception is the scenario including traffic from the EcoPark and Grove Lane developments and without dualling of the A419 between M5 J13 and the A38 (Test 1); this impact is mitigated if the A419 is dualled between these junctions. The modelling therefore suggests that traffic growth can be accommodated on the SRN at M5 J13 with the proposed SDLPR mitigation. It is therefore advised that the dualling of the A419 between M5 J13 and the A38 is included in the IDP as part of the Local Plan, or made a condition for planning approval of the Grove Lane development.

The modelling therefore indicates that the IDP Scheme at M5 J13 could accommodate traffic growth to 2040 with effective development policy controls (e.g. vision and validate and monitor and management policies).

It is also concluded that the quantum of development included in Appendix 2 AC6 (8,632 dwellings—approximately 70% of the total SDLPR housing need) could be delivered with the IDP Scheme at M5 J13 implemented and open to traffic.

Considerable congestion is indicated on the local road network by 2040.

It will be a requirement of National Highways that the operation of M5 J13 is considered in every planning application where a significant proportion of its traffic will use the junction. Where necessary this will require use of its M5 J13 traffic model and reported in any supporting transport assessment or similar supporting document.

Appendix A

SDLP Housing Delivery Assumptions

Supply Completions and commitments	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38/39	39/40	40/41	41/42	Not likely to be built	Total built
Completions 01/04/2020 - 31/03/2023	**745**	**771**	**632**																					2,148
Large site commitments/S106 at ***01/10/2023***				469	514	591	641	240	154	120	40	40	16	0	0	0	0	0	0	0				2,825
Small site commitments at ***01/10/2023 (Discounted by 22%)***				112	112	112																		336
Strategic Site Allocations																								
PS19a Stonehouse North West - Robert Hitchins	0	0	0	0	0	0	0	30	75	75	75	75	75	75	75	80								635
PS19a Stonehouse North West - GCC	0	0	0	0	0	0	0	0	0	0	65													65
PS24 Cam North West (W. of Draycott) - Robert Hitchins	0	0	0	0	0	0	35	50	50	50	50													235
PS24 Cam North West (W. of Draycott) - Persimmon	0	0	0	0	0	0	27	80	80	80	80	80	80	80	80									667
PS25 Cam North East Extension (E. of River Cam)	0	0	0	0	0	0	0	0	0	0	50	50	50	30										180
PS30 Hunts Grove Extension - Crest	0	0	0	0	0			50	50	100	100	120	120	80										620
PS30 Hunts Grove Extension - CFL														20	40	40	30							130
G1 South of Hardwicke	0	0	0	0	0	0	0	60	120	120	120	120	120	120	120	120	120	120	90					1,350
PS34 Sharpness Docks									45	35	30	30	30	30	30	30	20	20						300
PS36 Sharpness new settlement	0	0	0	0	0	0	0	0	0	155	220	220	220	220	220	248	248	248	248	153				2,400
PS37 Wisloe new settlement	0	0	0	0	0	0	25	50	50	85	121	92	74	144	106	108	102	110	130	130	148	25		1,500
Local Site Allocations																								
PS01 Brimscombe Mill	0	0	0	0	0	0	0	0	0	0	40													40
PS02 Brimscombe Port	0	0	0	0	0	0	50	50	50															150
PS05 East of Tobacconist Road, Minchinhampton	0	0	0	0	0	30	50																	80
PS06 The New Lawn, Nailsworth	0	0	0	0	0	0	0	0	40	50														90
PS10 Cheapside, Stroud	0	0	0	0	0	0	0	0	35	40														75
PS11 Merrywalks Arches, Stroud	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25									25
PS12 Police Station/Magistrates Court, Stroud	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45				45
STR065 Land at Beeches Green, Stroud	0	0	0	0	0	0	0	0	10	10														20
PS16 South of Leonard Stanley Primary School	0	0	0	0	0	10	15																	25
PS42 Land off Dozule Close, Leonard Stanley	0	0	0	0	0	13																		13
PS17 Magpies site, Oldends Lane, Stonehouse	0	0	0	0	0	0	0	0	0	0	10													10
PS28 Land off Prospect Place, Dursley	0	0	0	0	0	0	0	10																10
HAR017 Land at Sellars Road, Hardwicke	0	0	0	0	0	10																		10
BER016/ 017 Land at Lynch Road, Berkeley	0	0	0	0	0	30	30																	60
PS35 Land at Focus School, Wanswell	0	0	0	0	0	0	0	50	20															70
PS44 Northwest of Whitminster Lane, Frampton	0	0	0	0	0	0	0	20	10															30
PS45 Land west of Upton's Gardens, Whitminster	0	0	0	0	11																			11
PS46 Land west of School Lane, Whitminster	0	0	0	0	0	45																		45
PS38 South of Wickwar Road, Kingswood	0	0	0	0	0	0	14	39																53
PS41 Washwell Fields, Painswick	0	0	0	0	0	0	0	0	0	0	20													20
Small sites windfall	0	0	0	0	0	0	76	76	76	76	76	76	76	76	76	76	76	76	76	76				1,064
TOTAL	**745**	**771**	**632**	**581**	**637**	**841**	**963**	**805**	**865**	**996**	**1097**	**903**	**861**	**875**	**772**	**702**	**596**	**574**	**544**	**404**	**148**	**25**	**0**	**15,337**
	Plan Period 2020 - 2040																							
						Five year period from adoption																		

Appendix B

Turning Movements at M5 J13

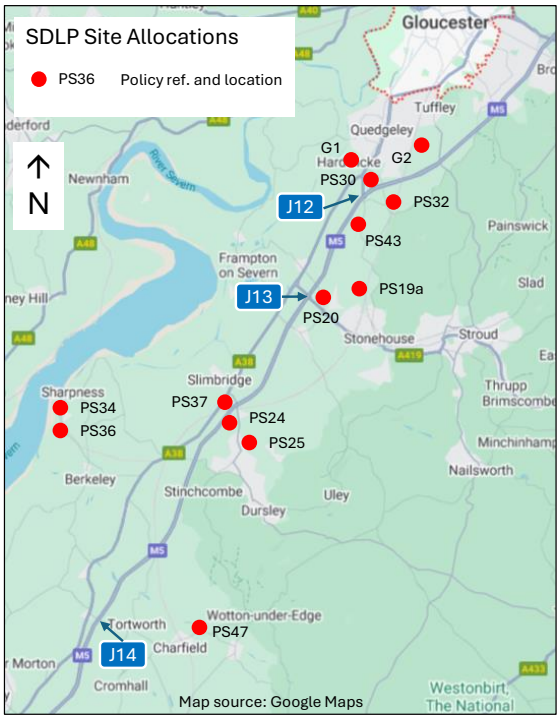
Turning Movements at M5 J13

The following turning movements were provided by Stroud District Council. All were derived from its Stroud District Local Plan Do Something model for 2040.

The turning movements are from a network assuming the existing grade separated roundabout with traffic signals at M5 J13.

All data is PCUs/hr.

Site allocation references are those in the Stroud District Local Plan.

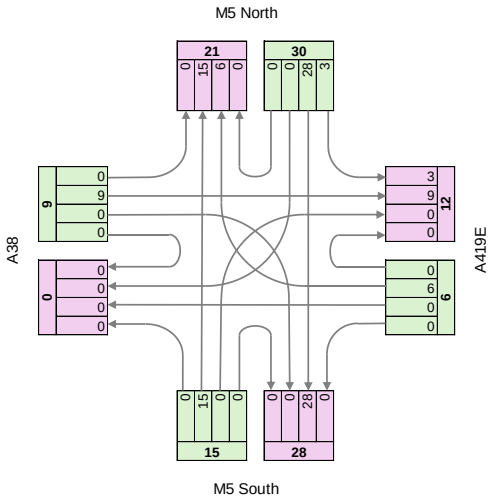


G1 South of Hardwicke

M5 J13 Turning Matrix
G1 South of Hardwicke
AM Peak
PCUs

Arriving flow
Exiting flow

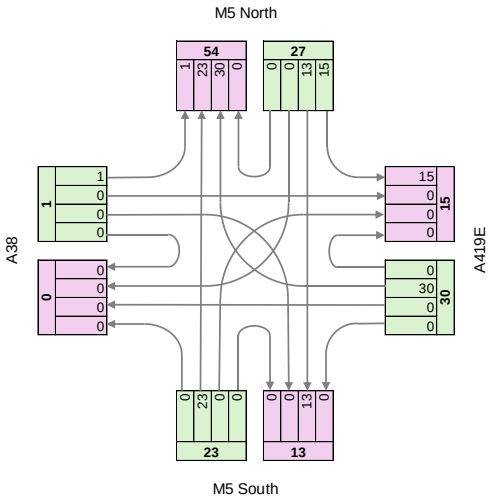
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	3	28	0	**30**
A419E	6	0	0	0	**6**
M5 South	15	0	0	0	**15**
A38	0	9	0	0	**9**
Total	**21**	**12**	**28**	**0**	60



M5 J13 Turning Matrix
G1 South of Hardwicke
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	15	13	0	**27**
A419E	30	0	0	0	**30**
M5 South	23	0	0	0	**23**
A38	1	0	0	0	**1**
Total	**54**	**15**	**13**	**0**	81

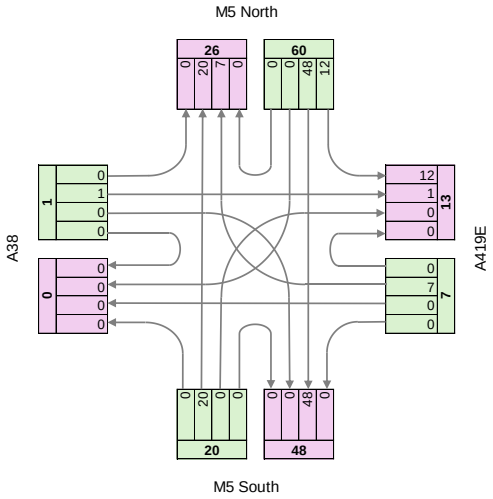


G2 Land at Whaddon

M5 J13 Turning Matrix
G2 Land at Whaddon
AM Peak
PCUs

Arriving flow
Exiting flow

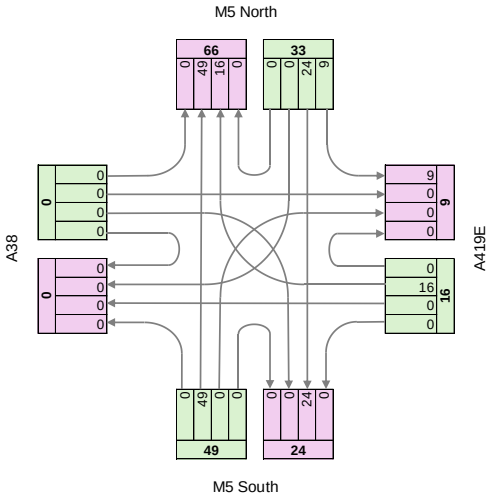
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	12	48	0	**60**
A419E	7	0	0	0	**7**
M5 South	20	0	0	0	**20**
A38	0	1	0	0	**1**
Total	**26**	**13**	**48**	**0**	87



M5 J13 Turning Matrix
G2 Land at Whaddon
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	9	24	0	**33**
A419E	16	0	0	0	**16**
M5 South	49	0	0	0	**49**
A38	0	0	0	0	**0**
Total	**66**	**9**	**24**	**0**	99

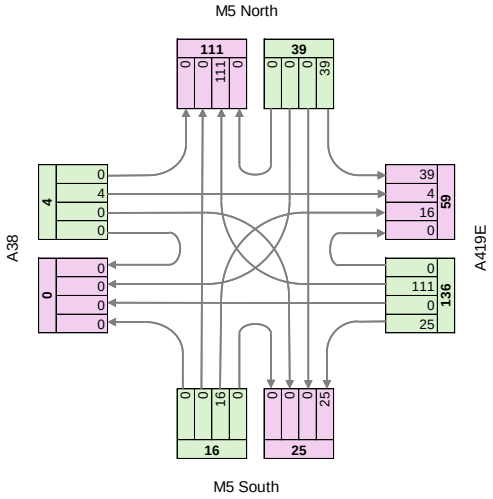


PS19a Land Northwest of Stonehouse

M5 J13 Turning Matrix
PS19a Land Northwest of Stonehouse
AM Peak
PCUs

Arriving flow
Exiting flow

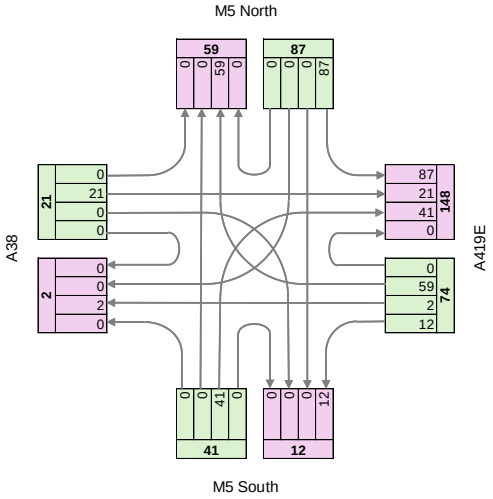
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	39	0	0	**39**
A419E	111	0	25	0	**136**
M5 South	0	16	0	0	**16**
A38	0	4	0	0	**4**
Total	**111**	**59**	**25**	**0**	195



M5 J13 Turning Matrix
PS19a Land Northwest of Stonehouse
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	87	0	0	**87**
A419E	59	0	12	2	**74**
M5 South	0	41	0	0	**41**
A38	0	21	0	0	**21**
Total	**59**	**148**	**12**	**2**	222

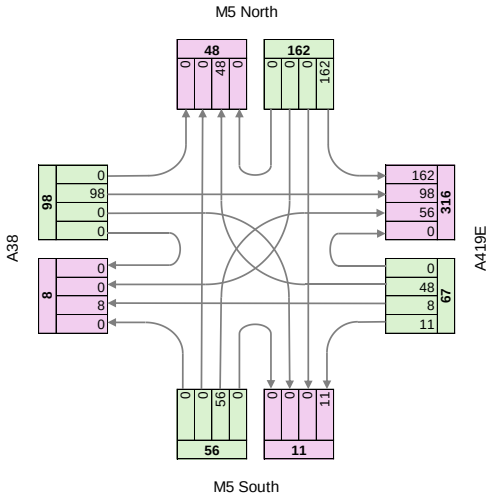


PS20 M5 J13 Eco Park

M5 J13 Turning Matrix
PS20 M5 J13 Eco Park
AM Peak
PCUs

Arriving flow
Exiting flow

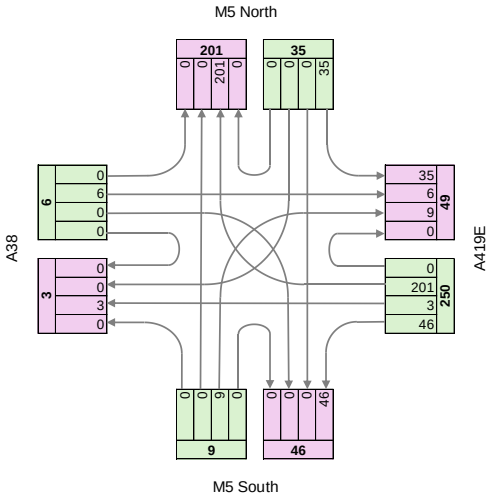
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	162	0	0	**162**
A419E	48	0	11	8	**67**
M5 South	0	56	0	0	**56**
A38	0	98	0	0	**98**
Total	**48**	**316**	**11**	**8**	**382**



M5 J13 Turning Matrix
PS20 M5 J13 Eco Park
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	35	0	0	**35**
A419E	201	0	46	3	**250**
M5 South	0	9	0	0	**9**
A38	0	6	0	0	**6**
Total	**201**	**49**	**46**	**3**	**299**

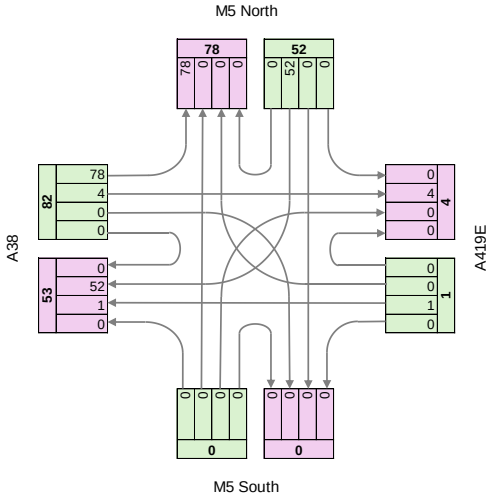


PS24 Cam North West (West of Draycott)

M5 J13 Turning Matrix
PS24 Cam North West (W. of Draycott)
AM Peak
PCUs

Arriving flow
Exiting flow

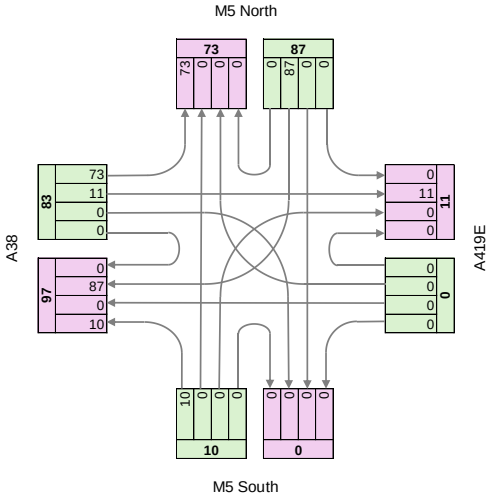
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	52	**52**
A419E	0	0	0	1	**1**
M5 South	0	0	0	0	**0**
A38	78	4	0	0	**82**
Total	**78**	**4**	**0**	**53**	**136**



M5 J13 Turning Matrix
PS24 Cam North West (W. of Draycott)
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	87	**87**
A419E	0	0	0	0	**0**
M5 South	0	0	0	10	**10**
A38	73	11	0	0	**83**
Total	**73**	**11**	**0**	**97**	**181**

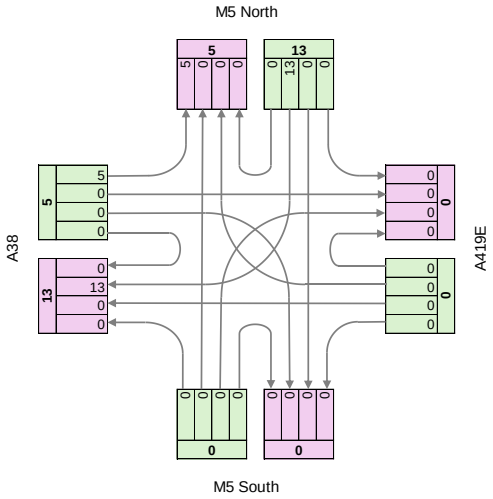


PS25 Cam North East Extension (East of River Cam)

M5 J13 Turning Matrix
PS25 Cam North East Extension (E. of River Cam)
AM Peak
PCUs

Arriving flow
Exiting flow

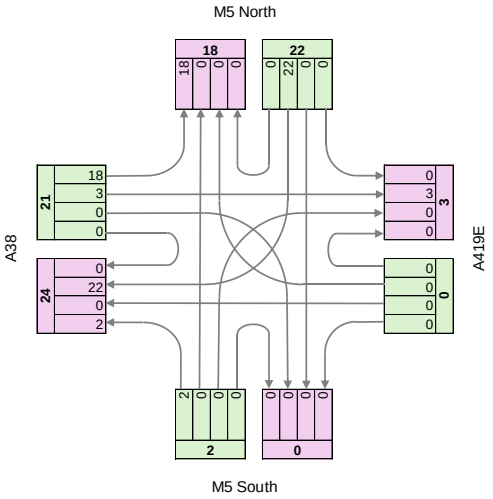
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	13	**13**
A419E	0	0	0	0	**0**
M5 South	0	0	0	0	**0**
A38	5	0	0	0	**5**
Total	**5**	**0**	**0**	**13**	19



M5 J13 Turning Matrix
PS25 Cam North East Extension (E. of River Cam)
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	22	**22**
A419E	0	0	0	0	**0**
M5 South	0	0	0	2	**2**
A38	18	3	0	0	**21**
Total	**18**	**3**	**0**	**24**	45

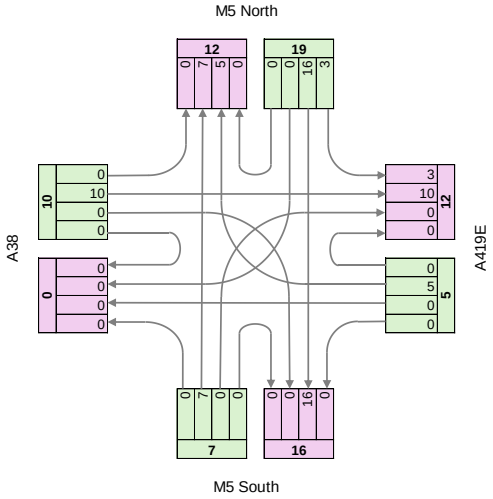


PS30 Hunts Grove Extension

M5 J13 Turning Matrix
PS30 Hunts Grove Extension
AM Peak
PCUs

Arriving flow
Exiting flow

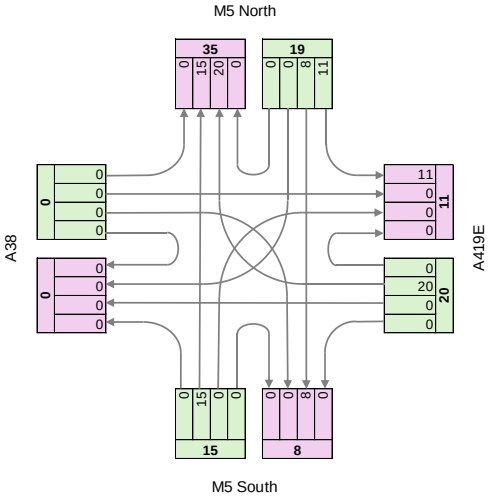
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	3	16	0	**19**
A419E	5	0	0	0	**5**
M5 South	7	0	0	0	**7**
A38	0	10	0	0	**10**
Total	**12**	**12**	**16**	**0**	41



M5 J13 Turning Matrix
PS30 Hunts Grove Extension
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	11	8	0	**19**
A419E	20	0	0	0	**20**
M5 South	15	0	0	0	**15**
A38	0	0	0	0	**0**
Total	**35**	**11**	**8**	**0**	54

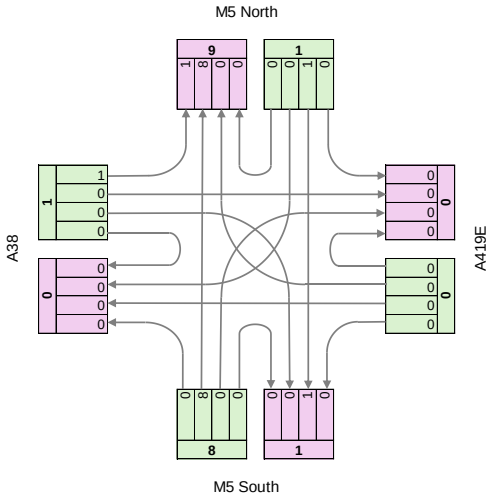


PS32 Quedgeley East Extension

M5 J13 Turning Matrix
PS32 Quedgeley East Extension
AM Peak
PCUs

Arriving flow
Exiting flow

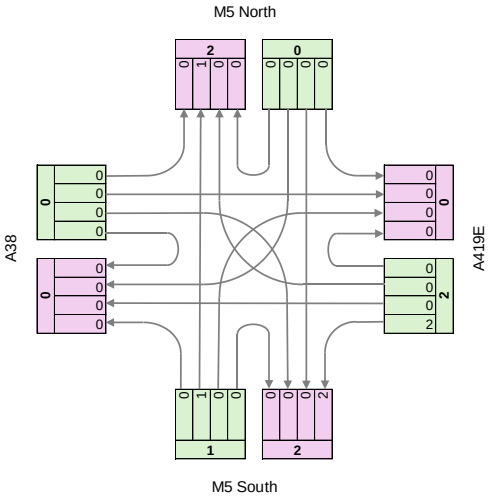
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	1	0	**1**
A419E	0	0	0	0	**0**
M5 South	8	0	0	0	**8**
A38	1	0	0	0	**1**
Total	**9**	**0**	**1**	**0**	10



M5 J13 Turning Matrix
PS32 Quedgeley East Extension
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	0	**0**
A419E	0	0	2	0	**2**
M5 South	1	0	0	0	**1**
A38	0	0	0	0	**0**
Total	**2**	**0**	**2**	**0**	4

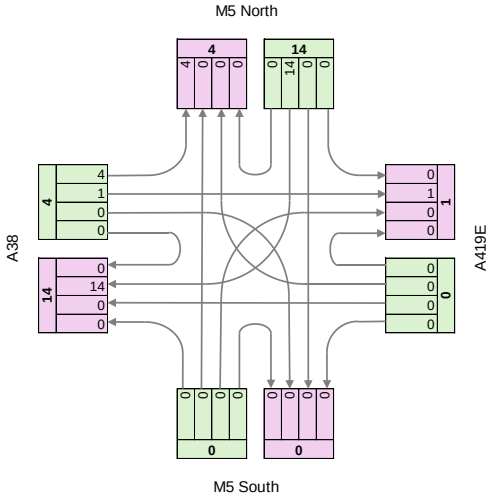


PS34 Sharpness Docks

M5 J13 Turning Matrix
PS34 Sharpness Docks
AM Peak
PCUs

Arriving flow
Exiting flow

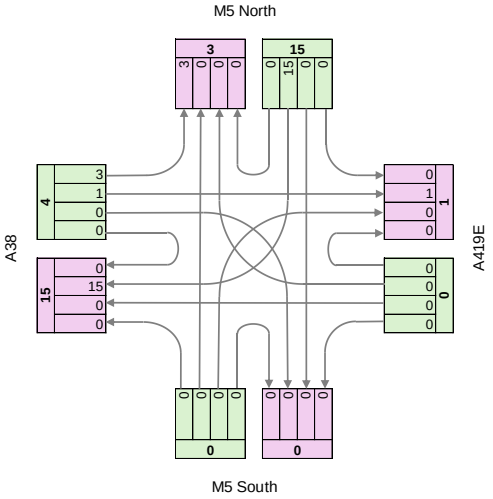
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	14	**14**
A419E	0	0	0	0	**0**
M5 South	0	0	0	0	**0**
A38	4	1	0	0	**4**
Total	**4**	**1**	**0**	**14**	19



M5 J13 Turning Matrix
PS34 Sharpness Docks
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	15	**15**
A419E	0	0	0	0	**0**
M5 South	0	0	0	0	**0**
A38	3	1	0	0	**4**
Total	**3**	**1**	**0**	**15**	19

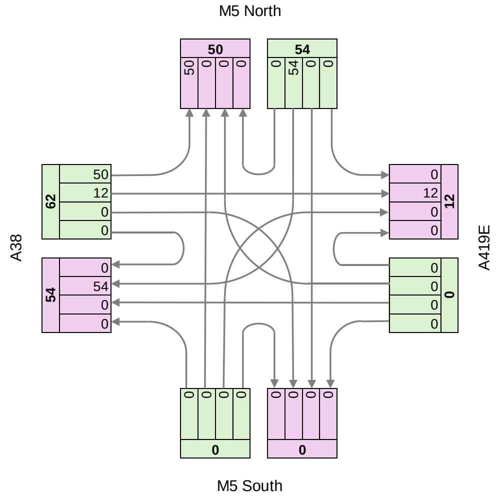


PS36 New Settlement at Sharpness

M5 J13 Turning Matrix
PS36 New settlement at Sharpness
AM Peak
PCUs

Arriving flow
Exiting flow

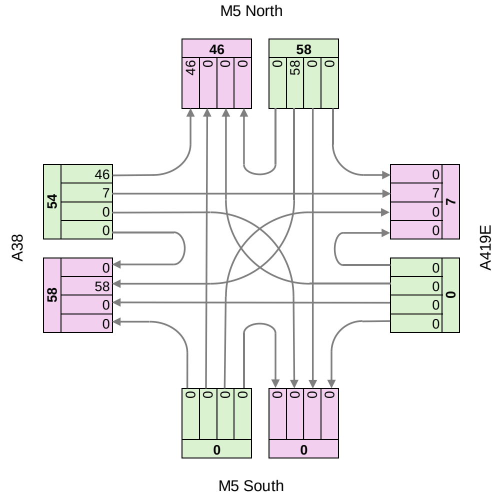
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	54	**54**
A419E	0	0	0	0	**0**
M5 South	0	0	0	0	**0**
A38	50	12	0	0	**62**
Total	**50**	**12**	**0**	**54**	**116**



M5 J13 Turning Matrix
PS36 New settlement at Sharpness
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	58	**58**
A419E	0	0	0	0	**0**
M5 South	0	0	0	0	**0**
A38	46	7	0	0	**54**
Total	**46**	**7**	**0**	**58**	**111**

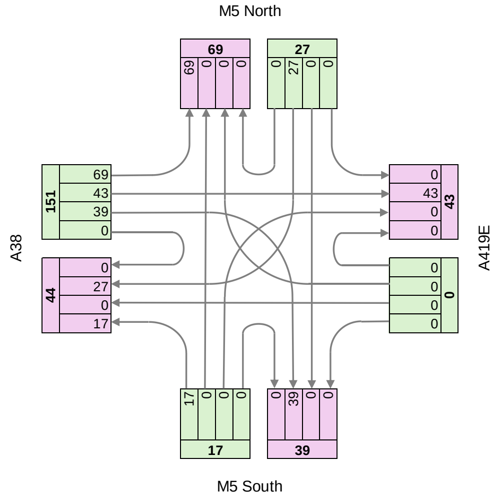


PS37 New Settlement at Wisloe

M5 J13 Turning Matrix
PS37 New settlement at Wisloe
AM Peak
PCUs

Arriving flow
Exiting flow

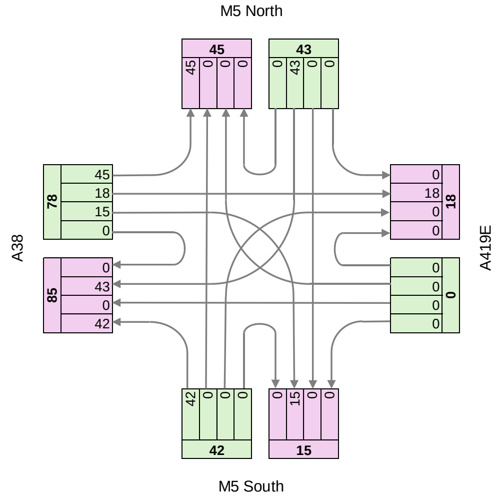
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	27	**27**
A419E	0	0	0	0	**0**
M5 South	0	0	0	17	**17**
A38	69	43	39	0	**151**
Total	**69**	**43**	**39**	**44**	**196**



M5 J13 Turning Matrix
PS37 New settlement at Wisloe
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	43	**43**
A419E	0	0	0	0	**0**
M5 South	0	0	0	42	**42**
A38	45	18	15	0	**78**
Total	**45**	**18**	**15**	**85**	**163**

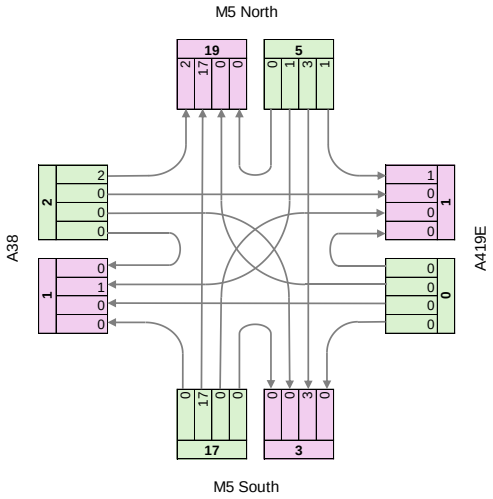


PS43 Javelin Park

M5 J13 Turning Matrix
PS43 Javelin Park
AM Peak
PCUs

Arriving flow
Exiting flow

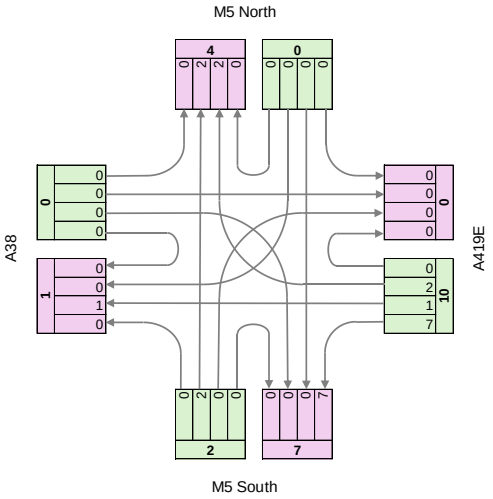
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	1	3	1	**5**
A419E	0	0	0	0	**0**
M5 South	17	0	0	0	**17**
A38	2	0	0	0	**2**
Total	**19**	**1**	**3**	**1**	23



M5 J13 Turning Matrix
PS43 Javelin Park
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	0	0	**0**
A419E	2	0	7	1	**10**
M5 South	2	0	0	0	**2**
A38	0	0	0	0	**0**
Total	**4**	**0**	**7**	**1**	13

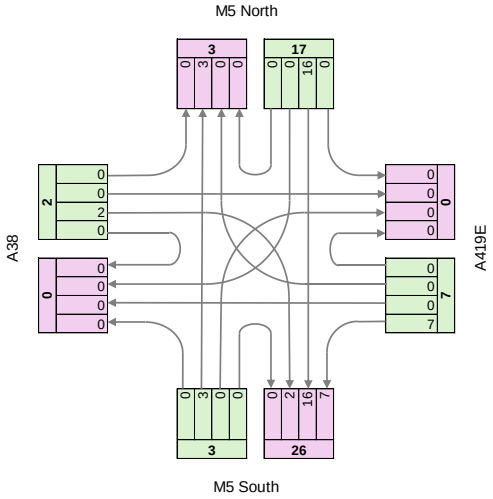


PS47 Renishaw New Mills

M5 J13 Turning Matrix
PS47 Renishaw New Mills
AM Peak
PCUs

Arriving flow
Exiting flow

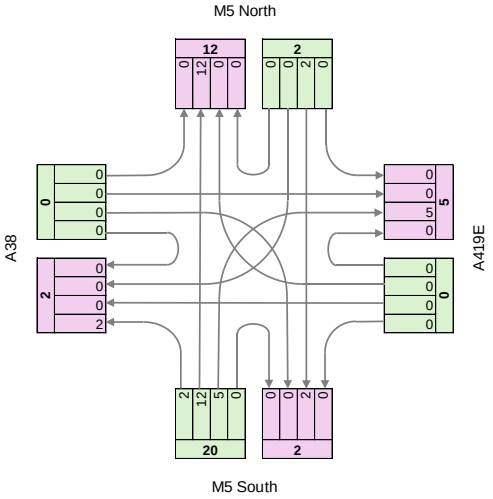
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	16	0	**17**
A419E	0	0	7	0	**7**
M5 South	3	0	0	0	**3**
A38	0	0	2	0	**2**
Total	**3**	**0**	**26**	**0**	30



M5 J13 Turning Matrix
PS47 Renishaw New Mills
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	0	2	0	**2**
A419E	0	0	0	0	**0**
M5 South	12	5	0	2	**20**
A38	0	0	0	0	**0**
Total	**12**	**5**	**2**	**2**	22

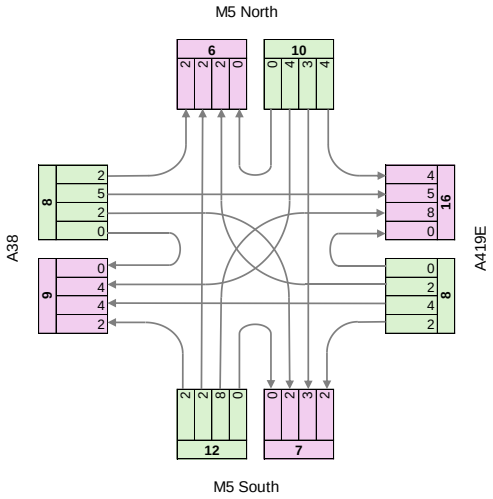


Local Site Allocations and Small Windfall

Local Site Allocations and Small Windfall
Local Site Allocations and Small Windfall
AM Peak
PCUs

Arriving flow
Exiting flow

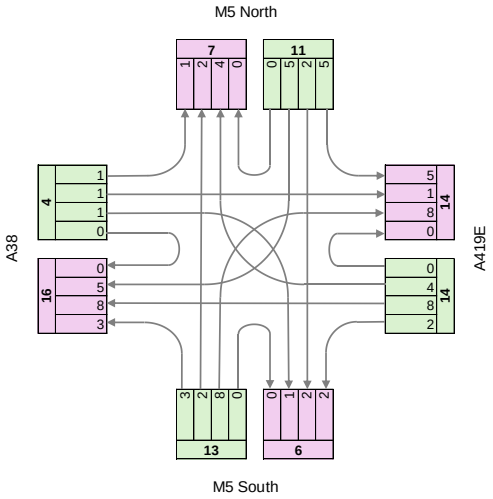
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	4	3	4	**10**
A419E	2	0	2	4	**8**
M5 South	2	8	0	2	**12**
A38	2	5	2	0	**8**
Total	**6**	**16**	**7**	**9**	38



Local Site Allocations and Small Windfall
Local Site Allocations and Small Windfall
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	5	2	5	**11**
A419E	4	0	2	8	**14**
M5 South	2	8	0	3	**13**
A38	1	1	1	0	**4**
Total	**7**	**14**	**6**	**16**	42

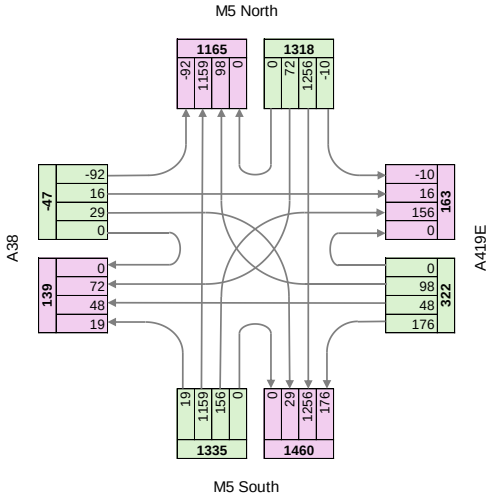


Background Growth

M5 J13 Turning Matrix
Background Growth
AM Peak
PCUs

Arriving flow
Exiting flow

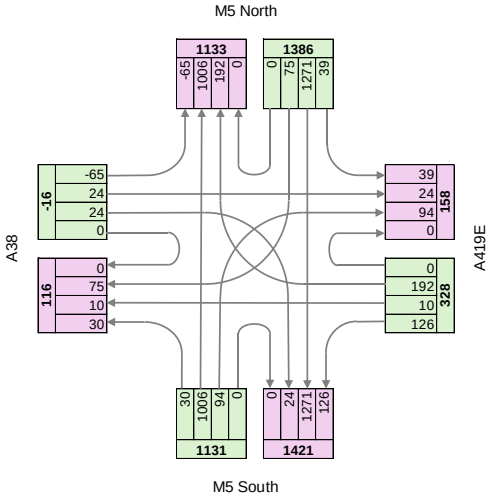
AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	-10	1256	72	**1318**
A419E	98	0	176	48	**322**
M5 South	1159	156	0	19	**1335**
A38	-92	16	29	0	**-47**
Total	**1165**	**163**	**1460**	**139**	2928



M5 J13 Turning Matrix
Background Growth
PM Peak
PCUs

Arriving flow
Exiting flow

AM Peak	M5N	A419E	M5S	A38	Total
M5 North	0	39	1271	75	**1386**
A419E	192	0	126	10	**328**
M5 South	1006	94	0	30	**1131**
A38	-65	24	24	0	**-16**
Total	**1133**	**158**	**1421**	**116**	2828



Appendix C

Housing Supply Delivery before improvements at M5 J12 and J14 (Appendix 2 AC6)

12th May 2023

Note on housing supply which could be delivered before impacts on M5 J12 and J14 would require mitigation

Introduction

At the Stroud District Local Plan Hearing Session held on 23 March 2023, the Inspector asked the District Council to prepare a short note setting out the expected housing supply which could be delivered before the highway capacity constraints currently existing at the M5 motorway junctions 12 and 14 would require mitigation to be delivered. The note should also set out which sites in the housing trajectory would impact and where.

Housing sites which will impact on Junctions 12 and 14

The Infrastructure Delivery Plan Addendum EB110) sets out those draft Local Plan allocations which are expected to contribute to mitigation schemes at junctions 12 and 14. These are:

Housing sites affecting Junction 12

G1 - South of Hardwicke

G2 - Land at Whaddon

PS30 - Hunts Grove Expansion

Housing sites affecting Junction 14

PS34 - Sharpness Docks

PS36 - New Settlement at Sharpness

PS37 - New Settlement at Wisloe

Housing trajectory for housing sites affecting Junctions 12 and 14

The following tables set out the projected housing supply to be delivered from the above sites, using data from the housing trajectory compiled in December 2022 and submitted by the Council at the MIQ stage in February 2022 (see District Council Appendix 1 to MIQs).

Site affecting J12	2023 /24	2024 /25	2025 /26	2026 /27	2027 /28	2028 /29	2029 /30	2030 /31	2031 /32	2032 /33	2033 /34	2034 /35	2035 /36	2036 /37	2037 /38	2038 /39	2039 /40
G1 - South of Hardwicke	0	0	120	120	120	120	120	120	120	120	120	120	120	30	0	0	0
G2 - Land at Whaddon	0	80	200	200	200	200	200	200	200	200	200	200	200	200	200	200	120
PS30 - Hunts Grove Expansion	0	110	110	75	75	75	75	75	75	80	0	0	0	0	0	0	0
TOTAL	0	190	430	395	395	395	395	395	395	400	320	320	320	230	200	200	120
Cumulative TOTAL	**0**	**190**	**620**	**1015**	**1410**	**1805**	**2200**	**2595**	**2990**	**3390**	**3710**	**4030**	**4350**	**4580**	**4780**	**4980**	**5100**

Site affecting J14	2023 /24	2024 /25	2025 /26	2026 /27	2027 /28	2028 /29	2029 /30	2030 /31	2031 /32	2032 /33	2033 /34	2034 /35	2035 /36	2036 /37	2037 /38	2038 /39	2039 /40
PS34 - Sharpness Docks	0	0	45	35	30	30	30	30	30	30	20	20	0	0	0	0	0
PS36 - New Settlement at Sharpness	0	0	0	0	0	50	150	150	200	200	250	250	250	250	250	250	150
PS37 - New Settlement at Wisloe	0	0	50	50	50	85	121	92	74	144	106	108	102	110	130	130	148
TOTAL	0	0	95	85	80	165	301	272	304	374	376	378	352	360	380	380	298
Cumulative TOTAL	**0**	**0**	**95**	**180**	**260**	**425**	**726**	**998**	**1302**	**1676**	**2052**	**2430**	**2782**	**3142**	**3522**	**3902**	**4200**

Housing supply which could be delivered without sites impacting upon M5 Junctions 12 or 14

The final table below summarises the projected housing supply from all sources excluding the above sites, as an indication of the housing supply unaffected by the highway constraints at M5 Junctions 12 or 14.

Housing supply	20 /21	21 /22	22 /23	23 /24	24 /25	25 /26	26 /27	27 /28	28 /29	29 /30	30 /31	31 /32	32 /33	33 /34	34 /35	35 /36	36 /37	37 /38	38 /39	39 /40
Total supply	745	771	779	1117	869	963	814	460	395	311	230	230	228	135	165	75	75	75	75	120
Cumulative TOTAL	**745**	**1516**	**2295**	**3412**	**4281**	**5244**	**6058**	**6518**	**6913**	**7224**	**7454**	**7684**	**7912**	**8047**	**8212**	**8287**	**8362**	**8437**	**8512**	**8632**

*The table includes 317 dwellings from commitments unlikely to be built

M5 Junction 12 Network

AM Peak Hour - Two-Way Trips

Do Minimum

Link Name	J12 IDP Sites			J14 IDP Sites					Employment Sites			Other LP Allocations			Misc. Sites	Total Sites
	G1	G2	PS30	PS34	PS36	PS37a	PS37b	PS37c	PS20	PS47	PS43	PS19a	PS24	PS25		
A430 Northbound flow North of M5 J12 (away from M5)	273	0	0	0	0	0	0	0	0	5	48	77	0	0	2710	3113
A430 Southbound flow North of M5 J12 (towards M5)	238	0	0	0	0	0	0	0	0	1	129	0	0	0	2647	3015
B4008 Northbound flow South of M5 J12	38	0	0	0	0	0	0	1	0	0	98	1	1	1	777	917
B4008 Southbound flow towards Cross Keys roundabout	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B4008 Southbound flow South of M5 J12	17	0	0	0	1	0	0	0	0	0	351	3	3	1	895	1271
M5 J12 Northbound offslip	61	0	0	0	1	0	0	0	0	5	44	81	3	1	1356	1552
M5 J12 Northbound onslip	192	0	0	0	0	0	0	0	0	0	43	0	0	0	1616	1851
M5 J12 Southbound offslip	173	0	0	0	0	0	0	0	0	0	177	0	0	0	1515	1865
M5 J12 Southbound onslip	28	0	0	0	0	0	0	1	0	1	7	1	1	1	1069	1109
Average	**113**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**100**	**18**	**1**	**0**	**1398**	**1633**

Do Something

Link Name	J12 IDP Sites			J14 IDP Sites					Employment Sites			Other LP Allocations			Misc. Sites	Total Sites
	G1	G2	PS30	PS34	PS36	PS37a	PS37b	PS37c	PS20	PS47	PS43	PS19a	PS24	PS25		
A430 Northbound flow North of M5 J12 (away from M5)	324	0	49	0	0	0	0	0	19	6	119	100	0	0	2407	3024
A430 Southbound flow North of M5 J12 (towards M5)	470	0	132	0	0	0	0	0	19	13	339	0	0	0	2850	3823
B4008 Northbound flow South of M5 J12	51	60	5	0	1	0	0	0	8	1	262	0	0	0	772	1160
B4008 Southbound flow towards Cross Keys roundabout	0	18	156	3	4	0	2	1	1	0	3	3	3	3	281	477
B4008 Southbound flow South of M5 J12	27	79	2	0	0	0	0	0	2	0	852	5	0	0	1483	2450
M5 J12 Northbound offslip	90	26	13	0	0	0	0	0	22	6	82	106	0	0	1359	1704
M5 J12 Northbound onslip	375	0	113	0	0	0	0	0	0	0	111	0	0	0	1776	2375
M5 J12 Southbound offslip	184	53	33	0	0	0	0	0	0	0	431	0	0	0	1605	2306
M5 J12 Southbound onslip	67	61	19	0	1	0	0	0	26	13	33	0	0	0	902	1122
Average	**176**	**33**	**58**	**0**	**1**	**0**	**0**	**0**	**11**	**4**	**248**	**24**	**0**	**0**	**1493**	**2049**

Difference / Impact

Link Name	J12 IDP Sites			J14 IDP Sites					Employment Sites			Other LP Allocations			Misc. Sites	Total Sites
	G1	G2	PS30	PS34	PS36	PS37a	PS37b	PS37c	PS20	PS47	PS43	PS19a	PS24	PS25		
A430 Northbound flow North of M5 J12 (away from M5)	51	0	49	0	0	0	0	0	19	1	71	23	0	0	-303	-89
A430 Southbound flow North of M5 J12 (towards M5)	232	0	132	0	0	0	0	0	19	12	209	0	0	0	204	808
B4008 Northbound flow South of M5 J12	13	60	5	0	1	0	0	-1	8	1	164	-1	-1	-1	-5	243
B4008 Southbound flow towards Cross Keys roundabout	0	18	156	3	4	0	2	1	1	0	3	3	3	3	281	477
B4008 Southbound flow South of M5 J12	10	79	2	0	-1	0	0	0	2	0	501	2	-3	-1	588	1179
M5 J12 Northbound offslip	29	26	13	0	-1	0	0	0	22	1	39	25	-3	-1	2	152
M5 J12 Northbound onslip	183	0	113	0	0	0	0	0	0	0	68	0	0	0	160	524
M5 J12 Southbound offslip	11	53	33	0	0	0	0	0	0	0	254	0	0	0	90	441
M5 J12 Southbound onslip	39	61	19	0	1	0	0	-1	26	12	26	-1	-1	-1	-167	13
Average	**63**	**33**	**58**	**0**	**0**	**0**	**0**	**0**	**11**	**3**	**148**	**6**	**-1**	**0**	**94**	**416**

Summary

Do Minimum

Link Name	IDP Sites				Employment Sites	Miscellaneous Sites	Total Sites
	G1	G2	PS30	Total			
A430 Northbound flow North of M5 J12 (away from M5)	273	0	0	273	53	2787	3113
A430 Southbound flow North of M5 J12 (towards M5)	238	0	0	238	130	2647	3015
B4008 Northbound flow South of M5 J12	38	0	0	38	98	781	917
B4008 Southbound flow towards Cross Keys roundabout	0	0	0	0	0	0	0
B4008 Southbound flow South of M5 J12	17	0	0	17	351	903	1271
M5 J12 Northbound offslip	61	0	0	61	49	1442	1552
M5 J12 Northbound onslip	192	0	0	192	43	1616	1851
M5 J12 Southbound offslip	173	0	0	173	177	1515	1865
M5 J12 Southbound onslip	28	0	0	28	8	1073	1109
Average	**113**	**0**	**0**	**113**	**101**	**1418**	**1633**

Do Something

Link Name	IDP Sites				Employment Sites	Miscellaneous Sites	Total Sites
	G1	G2	PS30	Total			
A430 Northbound flow North of M5 J12 (away from M5)	324	0	49	373	144	2507	3024
A430 Southbound flow North of M5 J12 (towards M5)	470	0	132	602	371	2850	3823
B4008 Northbound flow South of M5 J12	51	60	5	116	271	773	1160
B4008 Southbound flow towards Cross Keys roundabout	0	18	156	174	4	299	477
B4008 Southbound flow South of M5 J12	27	79	2	108	854	1488	2450
M5 J12 Northbound offslip	90	26	13	129	110	1465	1704
M5 J12 Northbound onslip	375	0	113	488	111	1776	2375
M5 J12 Southbound offslip	184	53	33	270	431	1605	2306
M5 J12 Southbound onslip	67	61	19	147	72	903	1122
Average	**176**	**33**	**58**	**267**	**263**	**1518**	**2049**

Difference / Impact

Link Name	IDP Sites				Employment Sites	Miscellaneous Sites	Total Sites
	G1	G2	PS30	Total			
A430 Northbound flow North of M5 J12 (away from M5)	51	0	49	100	91	-280	-89
A430 Southbound flow North of M5 J12 (towards M5)	232	0	132	364	240	204	808
B4008 Northbound flow South of M5 J12	13	60	5	78	173	-8	243
B4008 Southbound flow towards Cross Keys roundabout	0	18	156	174	4	299	477
B4008 Southbound flow South of M5 J12	10	79	2	91	503	585	1179
M5 J12 Northbound offslip	29	26	13	68	62	22	152
M5 J12 Northbound onslip	183	0	113	296	68	160	524
M5 J12 Southbound offslip	11	53	33	97	254	90	441
M5 J12 Southbound onslip	39	61	19	119	64	-170	13
Average	**63**	**33**	**58**	**154**	**162**	**100**	**416**

Impact Summary

IDP Sites + Employment Sites	316	76%
Miscellaneous Sites	100	24%
Total Sites	**416**	**100%**

M5 Junction 14 Network

AM Peak Hour - Two-Way Trips

Do Minimum

Link Name	J12 IDP Sites			J14 IDP Sites					Employment Sites			Other LP Allocations			Misc. Sites	Total Sites
	G1	G2	PS30	PS34	PS36	PS37a	PS37b	PS37c	PS20	PS47	PS43	PS19a	PS24	PS25		
M5 J14 Northbound offslip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	482	482
M5 J14 Northbound onslip	0	0	0	0	0	0	0	0	0	26	0	0	0	0	882	908
M5 J14 Southbound offslip	8	0	0	0	0	0	0	0	0	0	0	18	0	0	760	786
M5 J14 Southbound onslip	0	0	0	8	66	0	0	8	0	172	0	0	53	14	1328	1648
Average	**2**	**0**	**0**	**2**	**16**	**0**	**0**	**2**	**0**	**50**	**0**	**5**	**13**	**3**	**863**	**956**

Do Something

Link Name	J12 IDP Sites			J14 IDP Sites					Employment Sites			Other LP Allocations			Misc. Sites	Total Sites
	G1	G2	PS30	PS34	PS36	PS37a	PS37b	PS37c	PS20	PS47	PS43	PS19a	PS24	PS25		
M5 J14 Northbound offslip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600	600
M5 J14 Northbound onslip	0	0	0	0	0	0	0	0	0	44	0	0	0	0	860	904
M5 J14 Southbound offslip	18	10	4	0	0	0	0	0	4	0	2	24	0	0	760	822
M5 J14 Southbound onslip	0	0	0	48	388	68	74	0	0	162	0	0	113	29	1242	2124
Average	**5**	**3**	**1**	**12**	**97**	**17**	**19**	**0**	**1**	**52**	**1**	**6**	**28**	**7**	**866**	**1113**

Difference / Impact

Link Name	J12 IDP Sites			J14 IDP Sites					Employment Sites			Other LP Allocations			Misc. Sites	Total Sites
	G1	G2	PS30	PS34	PS36	PS37a	PS37b	PS37c	PS20	PS47	PS43	PS19a	PS24	PS25		
M5 J14 Northbound offslip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	118
M5 J14 Northbound onslip	0	0	0	0	0	0	0	0	0	18	0	0	0	0	-22	-4
M5 J14 Southbound offslip	10	10	4	0	0	0	0	0	4	0	2	6	0	0	0	36
M5 J14 Southbound onslip	0	0	0	40	322	68	74	-8	0	-10	0	0	60	16	-86	476
Average	**3**	**3**	**1**	**10**	**80**	**17**	**19**	**-2**	**1**	**2**	**1**	**2**	**15**	**4**	**3**	**157**

Summary

Do Minimum

Link Name	IDP Sites						Employment Sites	Miscellaneous Sites	Total Sites
	PS34	PS36	PS37a	PS37b	PS37c	Total			
A430 Northbound flow North of M5 J12 (away from M5)	0	0	0	0	0	0	0	482	482
A430 Southbound flow North of M5 J12 (towards M5)	0	0	0	0	0	0	26	882	908
B4008 Northbound flow South of M5 J12	0	0	0	0	0	0	0	786	786
B4008 Southbound flow towards Cross Keys roundabout	8	66	0	0	8	82	172	1394	1648
Average	**2**	**16**	**0**	**0**	**2**	**21**	**50**	**886**	**956**

Do Something

Link Name	IDP Sites						Employment Sites	Miscellaneous Sites	Total Sites
	PS34	PS36	PS37a	PS37b	PS37c	Total			
A430 Northbound flow North of M5 J12 (away from M5)	0	0	0	0	0	0	0	600	600
A430 Southbound flow North of M5 J12 (towards M5)	0	0	0	0	0	0	44	860	904
B4008 Northbound flow South of M5 J12	0	0	0	0	0	0	6	816	822
B4008 Southbound flow towards Cross Keys roundabout	48	388	68	74	0	578	162	1384	2124
Average	**12**	**97**	**17**	**19**	**0**	**145**	**53**	**915**	**1113**

Difference / Impact

Link Name	IDP Sites						Employment Sites	Miscellaneous Sites	Total Sites
	PS34	PS36	PS37a	PS37b	PS37c	Total			
A430 Northbound flow North of M5 J12 (away from M5)	0	0	0	0	0	0	0	118	118
A430 Southbound flow North of M5 J12 (towards M5)	0	0	0	0	0	0	18	-22	-4
B4008 Northbound flow South of M5 J12	0	0	0	0	0	0	6	30	36
B4008 Southbound flow towards Cross Keys roundabout	40	322	68	74	-8	496	-10	-10	476
Average	**10**	**80**	**17**	**19**	**-2**	**124**	**4**	**29**	**157**

Impact Summary

IDP Sites + Employment Sites	128	81%
Miscellaneous Sites	29	19%
Total Sites	**157**	**100%**

Kings Orchard
1 Queen Street
Bristol
BS2 0HQ

wsp.com