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Tel: 0300 470 4620  
29 September 2021

Dear Sir/ Madam,

### **Bristol Airport Planning Inquiry**

We write regarding the Planning Inquiry for proposed expansion of Bristol Airport, and specifically responding to your questions regarding the recommended planning condition (50) relating to improvements at the A38 Edithmead Roundabout.

Having reviewed the Inquiry recording from the afternoon of 31st August, and in light of subsequent comments received on 9th September, we understand that the Inquiry is seeking the following information, with regard to matters related to National Highways and the condition relating to the Strategic Road Network:

- *An analysis of the current performance of the junction*
- *An understanding of the specific impact of the proposed Bristol Airport 12mppa application at this location, and the identification of a significant impact.*
- *An understanding of wider impacts associated with the Sedgemoor Local Plan.*
- *Narrative on the form of mitigation required for M5 Junction 22/ Edithmead roundabout, including why it is proposed that the whole junction is signalised, and the opportunity for alternative improvements.*

The condition (reproduced in its entirety in Annex A) was recommended to mitigate against traffic flow increases associated with Airport expansion, and the consequential safety impact of queues on the M5 Junction 22 northbound off-slip and M5 mainline.

Based on current traffic conditions at A38 Edithmead / M5 J22 and modelling undertaken to assess the individual and cumulative impacts of development set out in the Sedgemoor District Council Local Plan, we recognise that the junction will require improvement to safely accommodate planned growth. The need for improvements is reflected in the Sedgemoor Local Plan (Policy BH7). At National Highways, we are committed to improving access to all ports and airports and connections to our Strategic Road Network

and the Major Road Network. With the expected increase in traffic flow from the proposed airport expansion, alongside planned growth in the region, we have worked with North Somerset Council and Bristol Airport Limited (BAL) to reach a reasonable interim position such that the airport expansion could commence should planning permission be granted.

To assist the Inquiry, within Annex A of this letter we have set out in detail the position of National Highways in respect of:


- A. Existing traffic conditions at M5 Junction 22.
- B. Impact of the Airport expansion on road safety.
- C. Cumulative Transport Impacts.
- D. Requirements for Capacity Enhancement.

We have also attached, as appendices, the relevant documents and information referred to in Annex A.

We trust that this information is helpful. If it would further assist the Inquiry National Highways would be happy to attend in person to discuss our position.

For, and on behalf of National Highways

Yours sincerely



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## Annex A

### Planning condition (50)

*'The passenger throughput at Bristol Airport, as defined by the development hereby approved, in combination with the extant consent reference 09/P/1020/OT2, shall not exceed 11 million passengers in any 12 month period (to be taken from 1 January to 31 December unless a different 12 month start and end date is agreed) unless either:*

*a. Improvement works at M5 junction 22/A38 Edithmead roundabout, comprising the full signalisation of the A38 Edithmead roundabout, have been implemented in full and are open to traffic; or*

*b. An alternative scheme is proposed by the applicant and implemented in full to ensure that the predicted traffic effects at M5 junction 22 caused by the development are mitigated to at least the same extent as (a). This alternative scheme is to be agreed in writing by the Planning Authority in consultation with Highways England, Somerset County Council and Sedgemoor District Council'*

### A) Existing traffic conditions at M5 Junction 22

In evaluating the potential impact of Airport expansion on the SRN, National Highways assessed the capacity and safety of the existing junction. M5 Junction 22 is located less than 400 metres east of the A38 Edithmead Roundabout, with a short weaving section connecting the M5 slip roads and the busy roundabout approach. At the time of recommending the condition, there was evidence of queuing issues on the northbound off-slip, demonstrating that the network (A38/M5) was operating at and on occasion over the designed safe capacity level.

Traffic surveys at M5 Junction 22 commissioned by National Highways were undertaken on Thursday 15th November 2018 (pre-Covid but most appropriate proxy). The surveys included observations of slip road queue lengths conducted by video camera mounted on the M5 overbridge. During the evening period, extensive queues were recorded on the M5 northbound off-slip. Section 2.2 of the accompanying survey report states that, *"it can be seen that queueing does indeed go as far back as the off-slip however due to poor visibility there is no clear understanding of the back of the queue from these videos"*. We have appended the survey report to this letter (Appendix A) for your information.

National Highways have access to camera footage from the 2018 queue length survey, and this can be provided to the Inquiry if desirable. The footage was subsequently reviewed to determine whether queues extended on to the M5 mainline at any point during the evening period. As the surveys were undertaken in Winter, with vehicle headlights lit, it was difficult to accurately determine the exact location of the back of

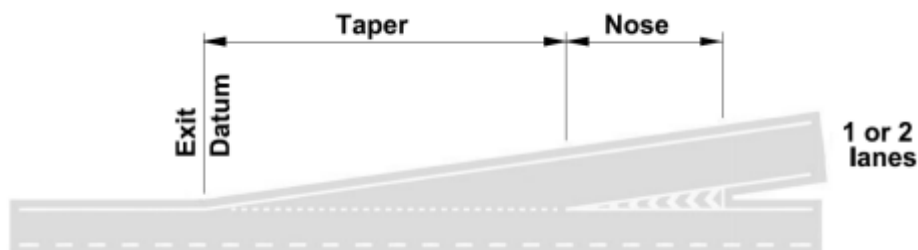
queue, as the headlights of vehicles approaching the northbound off-slip merge into a continuous line of light. Nevertheless, it was evident that queuing vehicles extended beyond the physical 'nose' of the slip road (where the slip road begins to diverge from the mainline), and that queues ran alongside the mainline carriageway for some distance. This in itself represents a safety concern given the high-speed differential of vehicles queuing on the slip road and those using the M5 mainline.

In response to observations of queuing extending beyond the nose of the slip road National Highways introduced temporary warning signs on the approach to the northbound off-slip during 2018/2019. The signs warned approaching motorists of 'Queues likely ahead'. These signs were removed during the Covid 19 pandemic restrictions, but it is expected they will be required again as traffic flows return to normal.

On the basis of survey information and observations, National Highways were of the view that at the time of providing its formal recommendation to North Somerset Council, the northbound off-slip was operating at, and on occasion over capacity.

## **B) Impact of the Airport Expansion on Road Safety**

Slip roads at grade separated junctions such as M5 Junction 22 are intended to allow vehicles to maintain the design speed up to the 'nose' of the slip road (the point at which the slip road separates from the mainline - as shown in the following image from CD122 'Geometric Design of Grade Separated Junctions' of the Design Manual for Roads and Bridges (DMRB)).



Beyond the 'nose' of the slip road, vehicles are then intended to reduce their speed as they approach the end of the slip road. The uphill gradient on slip roads diverging from the mainline is also intended to help vehicles reduce their speeds. While queuing traffic at the end of slip roads should be expected, longer queues that extend towards the mainline can dictate that vehicle braking has to start on the mainline.

As the back of a queue extends further beyond the 'nose' of the diverging slip road, and slow moving or stationary vehicles sit next to free running traffic lanes (as is evidenced by video camera footage for the northbound off-slip) or extend onto the mainline, additional traffic would increase the potential risk and severity of collisions.

As previously advised in our earlier submission to the Planning Appeal (dated 2<sup>nd</sup> September 2021), paragraphs 9 and 10 of the DfT Circular 02/2013 set out the approach

that National Highways follows in relation to development proposals. I have appended the Circular to this letter (Appendix B) for your reference.

Paragraph 9 of the Circular states that *“Development proposals are likely to be acceptable if they can be accommodated within the existing capacity of a section (link or junction) of the strategic road network, or they do not increase demand for use of a section that is already operating at over-capacity levels...”*. Paragraph 10 of the Circular states that: *“However, even where proposals would not result in capacity issues, the Highways England’s prime consideration will be the continued safe operation of its network.”*

The proposed Airport expansion will increase demand for use of a section of the SRN that, by virtue of observed slip road queuing issues, is already operating on occasion at over-capacity levels. Due to the grade-separated nature of Junction 22, and the high speed differential between vehicles queuing for the slip road and vehicles using the M5 mainline, increased traffic movements via the northbound off-slip are considered to represent a safety concern.

In line with paragraph 110 of the National Planning Policy Framework (NPPF), it should be ensured that, *“any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree”*.

Whilst National Highways has worked with North Somerset Council and the BAL to reach a reasonable interim position such that the airport expansion could commence should planning permission be granted, National Highways has concluded that works are required to mitigate unacceptable impacts on highway safety, in line with paragraph 110 of NPPF.

The 30-vehicle threshold (and associated 11 million passengers) was based on the appellant’s analysis of increasing passenger demands set out in Technical Note TN23, included within Appendix C of this letter. The trip threshold was not derived through specific traffic modelling of the airport, but was based on a pragmatic approach to limiting passenger numbers ahead of mitigation works. Whilst not detailed in TN23, it is reasonable to assume that it will take a number of years for passenger numbers to increase to the 11 million passengers per annum referred to in the recommended condition.

### **C) Cumulative Transport Impacts**

Traffic flow increases associated with the Airport expansion need to be considered cumulatively along with traffic flow increases associated with Sedgemoor’s adopted Local Plan and those of neighbouring authorities, in addition to committed development sites. Whilst it is accepted that the Airport expansion would not lead to a significant percentage increase in traffic on the M5 northbound off-slip, this does not account for cumulative traffic flow increases, or the existing safety issues associated with queues exceeding the slip road. Furthermore, as slip road queues principally result from congestion at the A38

Edithmead roundabout, wider increases in demand at the roundabout itself (whether due to Airport expansion or Local Plan development) also need to be borne in mind.

As set out in the Statement of Common Ground between Bristol Airport Limited and National Highways (paragraph 6), “...the adopted Sedgemoor Local Plan includes Policy BH7 Transport, which sets out the need for improvement works at M5 junction 22/A38 Edithmead roundabout to ensure the impact of the future planned growth on the SRN is not severe and that the economic sustainability of development across the Plan area can be supported. The proposed Airport development is ‘over and above’ the development set out within the Plan...”.

The need for capacity enhancements to accommodate Local Plan traffic was identified following traffic modelling work undertaken on behalf of National Highways. The CH2M (now Jacobs) ‘Sedgemoor District Council Local Plan – Strategic Road Network Traffic Assessment’ dated 20<sup>th</sup> March 2018, modelled the traffic impacts of forecast Local Plan demand in a 2032 future year scenario (representing the end of the Local Plan period). We have appended the document to this letter (Appendix D) for your information. Modelling of the Local Plan scenario led to the following finding in respect of Junction 22 and the Edithmead Roundabout, as reported under section 5.1.3 of the document: “During the PM peak a queue forms at the eastern arm of Edithmead roundabout and extends back onto the northbound off-slip at junction 22. The queue eventually extends back on to the main carriageway of the M5, causing stationary vehicles to appear on the mainline”. Indicative capacity enhancements for the A38 Edithmead Roundabout (comprising full signalisation and the alternative provision of a free-flow left-turn lane from the M5 approach to the A38 southern arm) were assessed within the traffic model and were shown to provide sufficient capacity for the SRN to safely accommodate traffic demands associated with Local Plan development. Section 5.2.1 of the report notes that “Both options remove the queue on the northbound off-slip in the PM period”.

Prior to, and alongside, consideration of the Airport expansion, selected applications for residential development in the Burnham and Highbridge area were assessed in the National Highways traffic model that includes M5 Junction 22 and the A38 Edithmead Roundabout. The model is an updated version of the model used by CH2M (now Jacobs) to assess Local Plan development impacts. Where modelling demonstrated a small increase in forecast mainline queuing, National Highways considered it unlikely that an objection could be sustained, but strongly advised Sedgemoor Council that proportionate developer contributions should be sought towards improvements at the A38 Edithmead Roundabout. Where modelled impacts were greater, as in the case of the Isleport Lane site (application reference 11/19/00003) – which is allocated for development under policy BH2 of the Sedgemoor Local Plan - then National Highways recommended a condition limiting the scale of development ahead of improvements at the A38 Edithmead Roundabout. I have appended our final response (dated 24<sup>th</sup> September 2021) and recommended condition for the Isleport Lane development at Appendix E of this letter. For the purposes of comparison to the Airport expansion, the Isleport Lane development was estimated to add approximately 10 vehicles to the M5 northbound off-slip in the evening peak hour. Whilst an allocated site, you will note from our appended planning



response that traffic increases associated with the development were demonstrated to have a notable impact on mainline queuing and safety.

#### **D) Requirements for Capacity Enhancement**

Whilst no traffic modelling of the impact of airport expansion on the A38 Edithmead Roundabout was undertaken as part of the application, National Highways considered that the impact on road safety was sufficient to justify capacity enhancement. This judgement was made in light of modelling results for residential development, the Local Plan as a whole, and in light of existing queuing issues on the slip road.

The draft condition agreed with the Appellant requires delivery of an improvement scheme, either comprising full signalisation of the A38 Edithmead Roundabout, or an alternative scheme that has an equivalent effect in terms of mitigating development traffic impacts. Therefore, a form of improvement that mitigates against increases in slip road traffic but does not fully signalise the A38 Edithmead Roundabout could be acceptable to National Highways.

Whilst our earlier submission to the Planning Appeal (dated 2<sup>nd</sup> September 2021) indicated that Stantec had submitted mitigation proposals for the junction, we understand this was not the case. We are not aware that an alternative scheme has been explored by the appellant, but a limited number of improvement options have been modelled by National Highways and Somerset County Council. Nevertheless, we consider that the approach taken by National Highways is in line with paragraph 110 of the National Planning Policy Framework, which seeks to ensure that any significant impacts on highway safety are cost effectively mitigated to an acceptable degree.

Furthermore, we consider the recommended condition to meet the 6 tests outlined in paragraph 56 of the Framework. Improvement works are necessary to mitigate against significant impacts on highway safety, relevant to the Airport expansion proposal in that the improvement is directly linked to increased passenger numbers, enforceable, precise, and reasonable in all other respects. It is accepted that the full signalisation scheme is a large and costly improvement scheme, as such the recommended condition allows a lesser scheme to be delivered, ensuring there is a reasonable prospect of an improvement being achievable.

National Highways continues to work with Sedgemoor District Council, Somerset County Council and North Somerset Council to explore a feasible funding and delivery strategy to secure the necessary improvements at the A38 Edithmead Roundabout, as identified in Local Plan Policy BH7. We understand that North Somerset Council and Somerset County Council are preparing a funding bid to DfT for improvements along the A38 corridor which would include a full signalisation scheme at the A38 Edithmead Roundabout. To this end we understand that Somerset County Council are undertaking traffic modelling of the emerging scheme proposals. Nevertheless, the wording of the draft condition as proposed would allow the appellant to put forward for consideration an

alternative/ smaller-scale improvement to mitigate the impacts of Airport expansion on Junction 22 of the M5.



## Appendix A – M5 Junction 22 and Junction 23 Survey Report

# **Highways England Spatial Planning Framework (South West)**

**Traffic Survey Report – M5 J22 J23 Transport Model**

## Revision History

Issue	Author	Date	Description
0.1	Marton Juhasz	08/01/2019	Draft
0.2	Marton Juhasz	10/01/2019	Draft
0.3	David Treadgold	18/01/2019	Draft

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## 1. Summary

On behalf of Jacobs SYSTRA has appointed Nationwide Data Collection (NDC) to undertake traffic surveys at and around junctions 22 and 23 of the M5 motorway.

Five different types of data collection were requested:

- Classified Junction Counts (CJCs);
- Queue Length Surveys;
- Journey Time Surveys;
- Automatic Traffic Counts (ATCs);
- A “Conditions” Survey.

CJCs, Queue Length Observations and Journey Times Surveys were carried out on Thursday 15 November 2018 between 7.00am-10.00am and 4.00pm-7.00pm; while the ATCs and the Conditions Survey began on Tuesday 13 November.

There were no issues reported on during the capturing of this data and an overview of the footage indicates that there were no issues with the camera equipment at any of the sites.

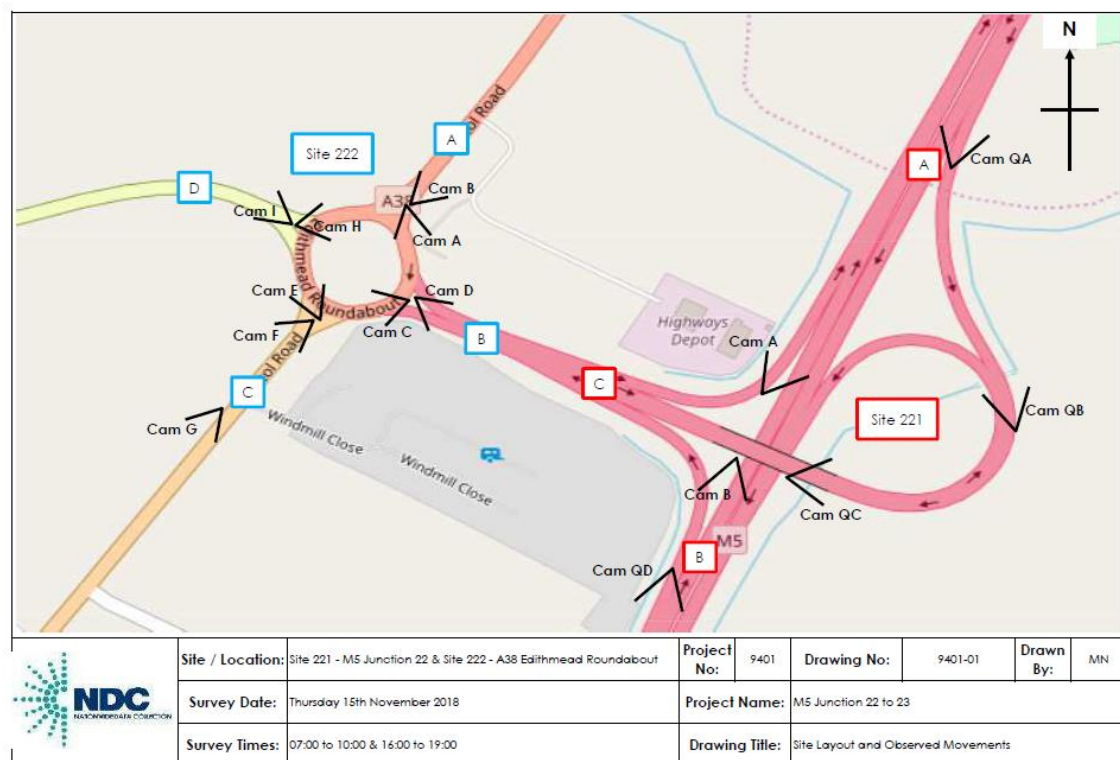
An overview of the surveys completed and the results is provided in Section 2 of this report.

## 2. Overview of Survey Results

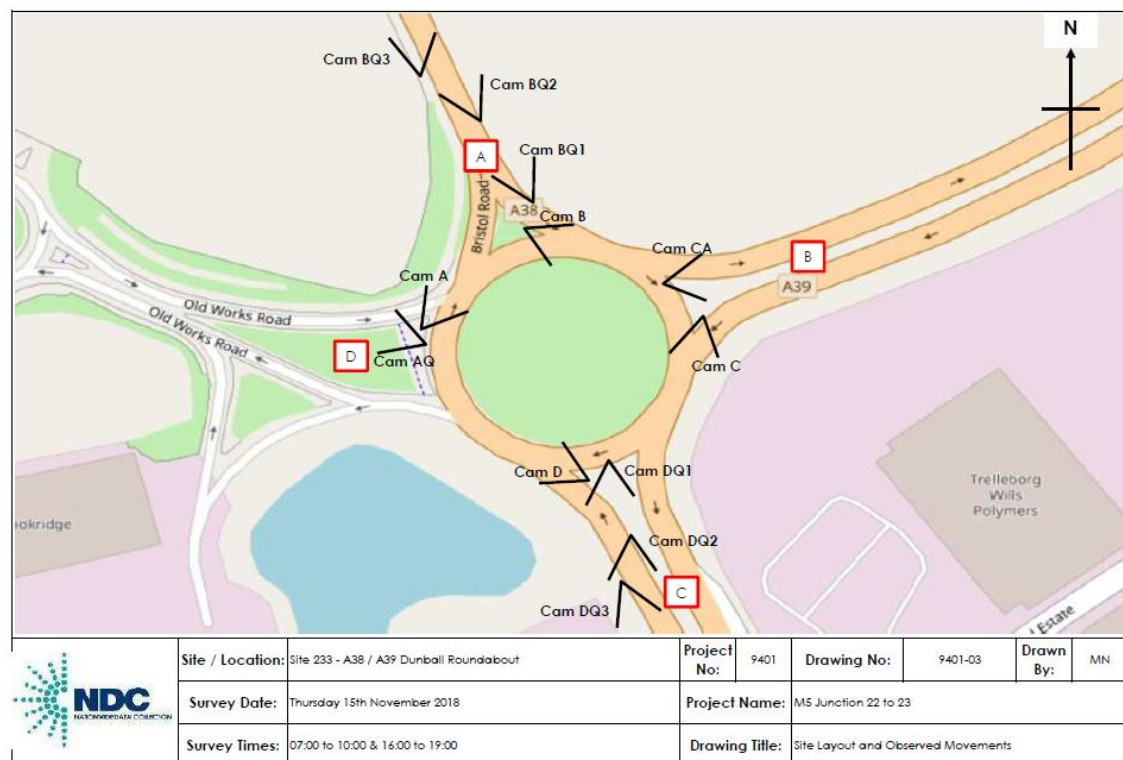
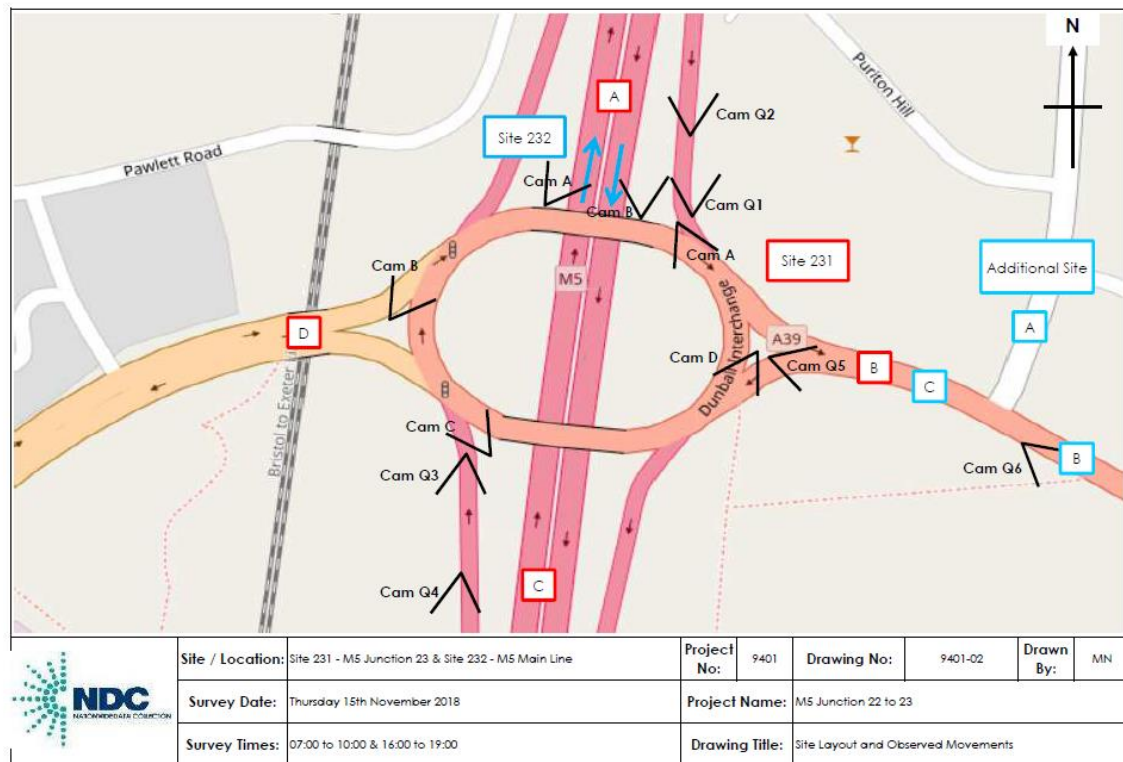
### 2.1. Classified Junction Counts (CJCs)

NDC recorded camera footage on Thursday 15 November 2018, between 7.00am-10am and 4pm-7pm, enabling them to provide Classified Junction Counts (CJCs) for these periods, at 5 minute intervals. Counts were classified as CAR, LGV, HGV, PSV and MCL.

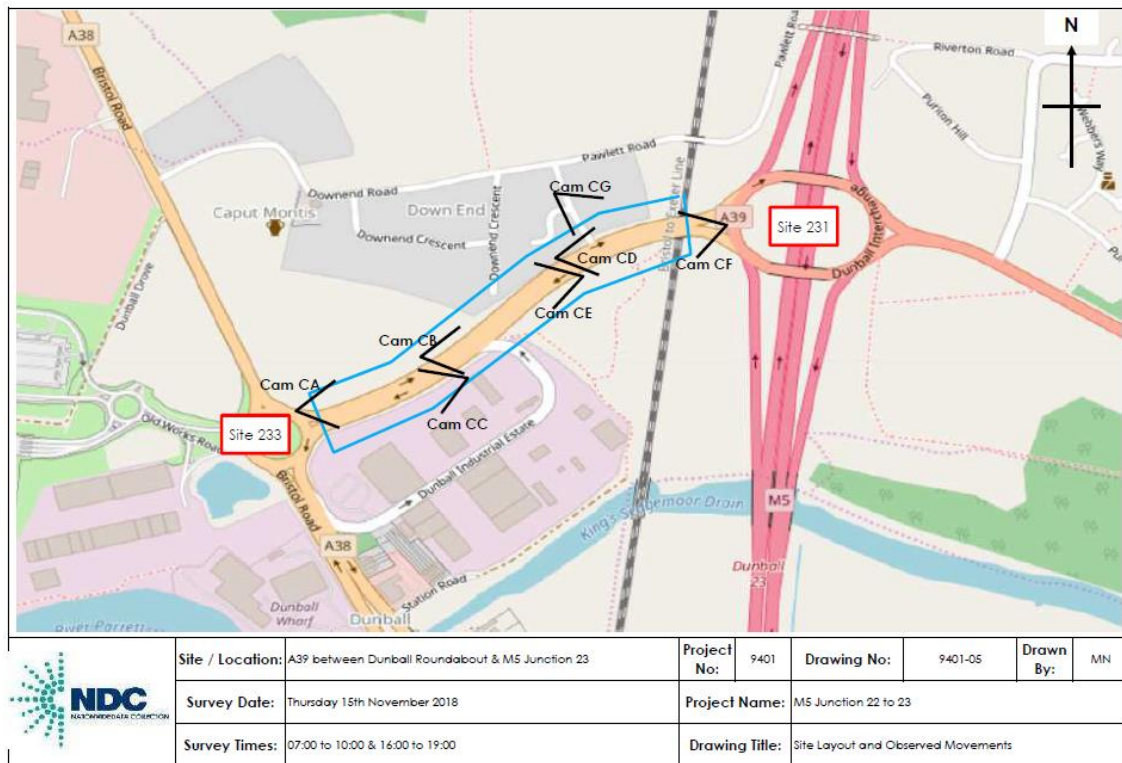
The following three diagrams provided by NDC show all CJC sites and their approaches, as well as the camera locations:



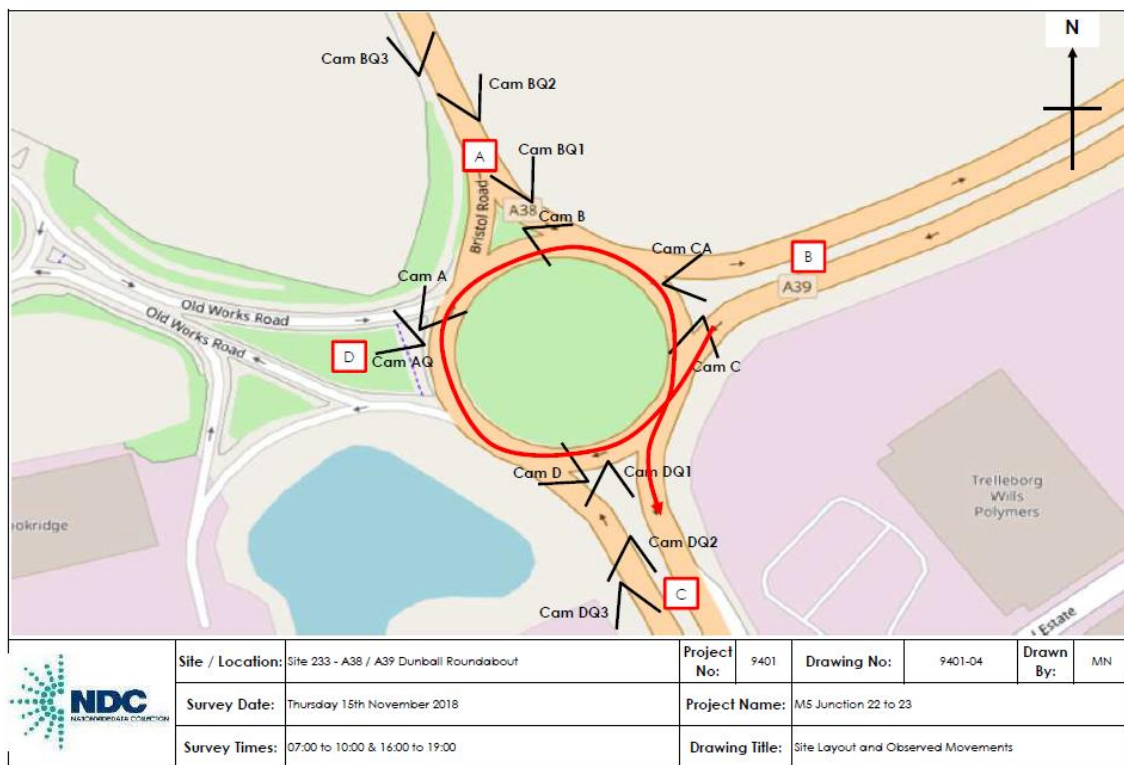




Additionally, cameras set up for the Conditions Survey (see Section 2.5) may also have been made use of when producing the CJC's; these cameras are depicted on the following diagram:



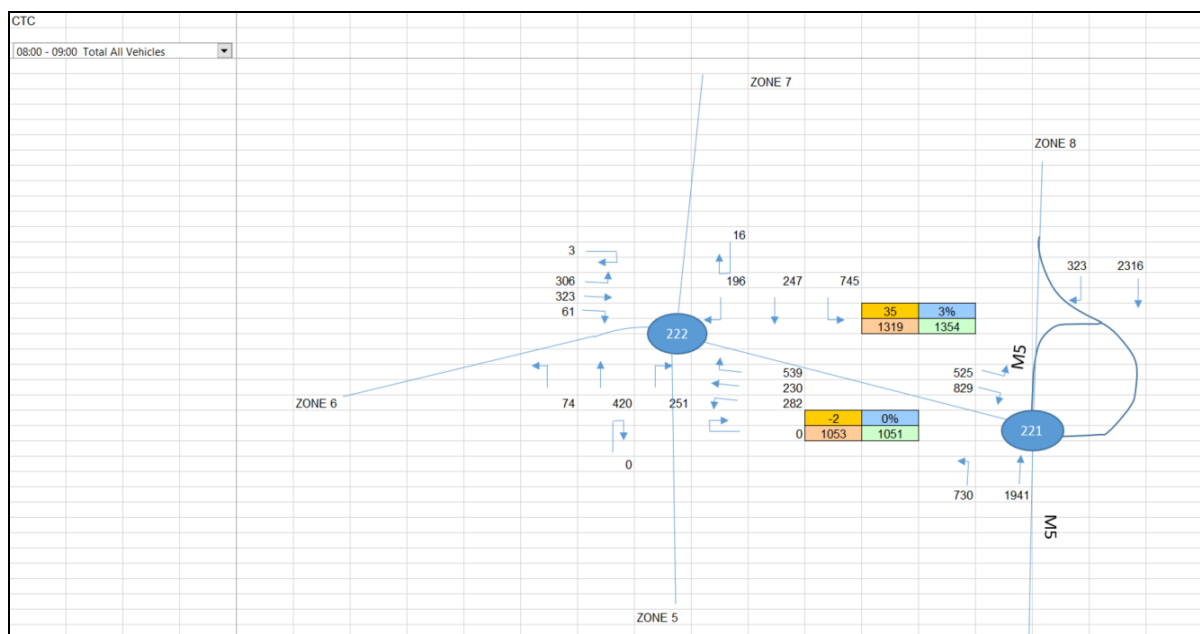
NDC also observed an alternative movement from Arm B to Arm C at Site 233 between 7.30am-9.00am and provided counts for this:

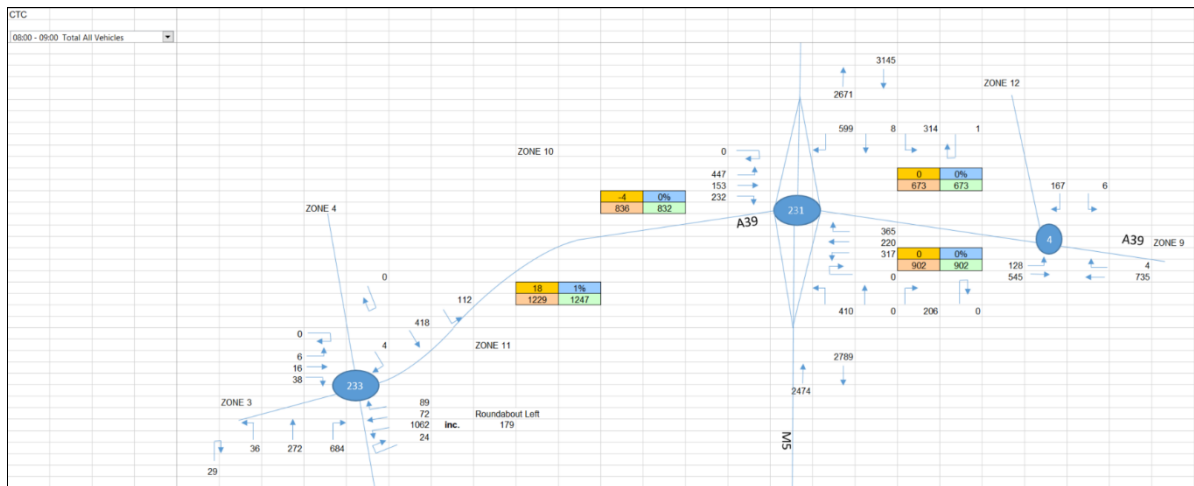


A summary comparison was also provided for links counted at two separate sites, as well as between CTCs and their relevant ATC counterparts, where applicable.

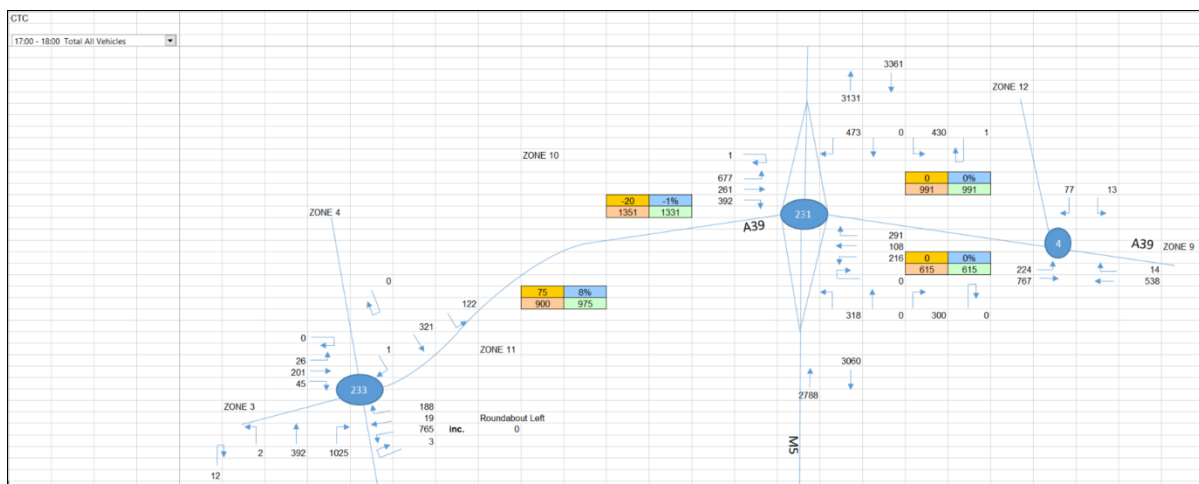
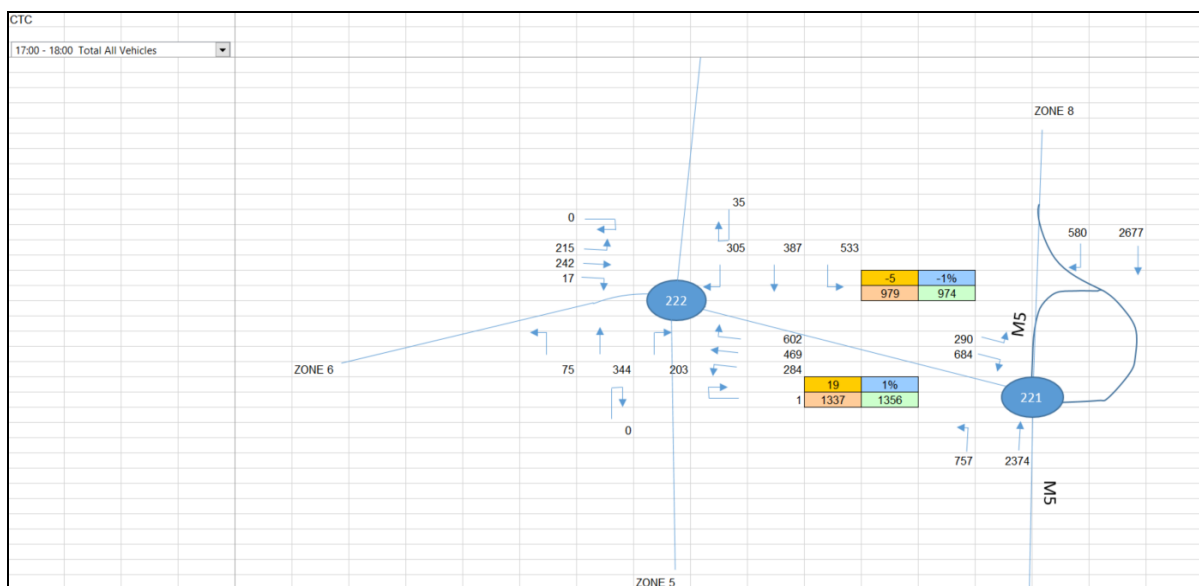
Supplied are diagrams highlighting adjacent counts and any potential discrepancies between sites. The counts displayed are peak hour totals for each peak hour.

AM peak hour (08:00-09:00):





PM peak hour (17:00-18:00):



From these diagrams it can be seen that between each site surveyed there is less than 3% difference between adjacent sites with the exception of counts between Site 231 and 233. A minor discrepancy can be seen here and this is due to a non-surveyed junction between

these sites servicing a small residential road, Pawlett Road. This side arm can account for the small count discrepancy and overall the ATC data shows no significant differences.

## **2.2. Queue Length Surveys**

NDC provided queue lengths measurements for Thursday 15 November 2018 between 7.00am-10.00am and 4.00pm-7.00pm, based on the same camera footage that was utilised for providing the CTCs (see Section 2.1). Queue lengths measurements were recorded for Sites 222, 231 and 233, at 5 minute intervals and separately for each lane.

Rolling queues were recorded in Lane 1 of Arm A at Site 222 between 7.45am-8.45am as well as between 4.00pm-6.00pm (35 vehicles). Rolling queues were also recorded between 5.20pm-5.50pm in Lane 1 of Arm B, aka Queue “2B” (50 vehicles; however no long / rolling queues were recorded / are visible on the video footage in Lane 2, aka Queue “2A”).

Moreover, rolling queues were also recorded at Site 333: between 8:00am-8:45am in Lane 2 of Arm A (90 vehicles); between 7.55am-8.20am in Lane 1 of Arm B (88 vehicles); and between 5.15pm-5.25pm in Lane 2 of Arm C (55 vehicles).

Two specific occurrences were investigated to ensure the queue lengths accurately measure queues that back up to junctions 22 and 23. The specific instances in question are as follows:

- Westbound queue from Dunball to Junction 23 in AM period.
- Westbound queue at Edithmead blocks back to the M5 in the PM period.

The queue length data for Dunball indicates that rolling queues of 528m occur extending to M5 J23. From inspecting the video footage at J23 and the footage of the queueing beyond the signals at J23 it can be seen that the queues go back as far as the signals and there is queueing seen after the signals. It is noted that the queueing at this junction is not significantly different from regular queueing as a result of the signals. Overall the extent of the queue stemming from the Dunball Roundabout at this time is captured and will be reflected in the resulting model.

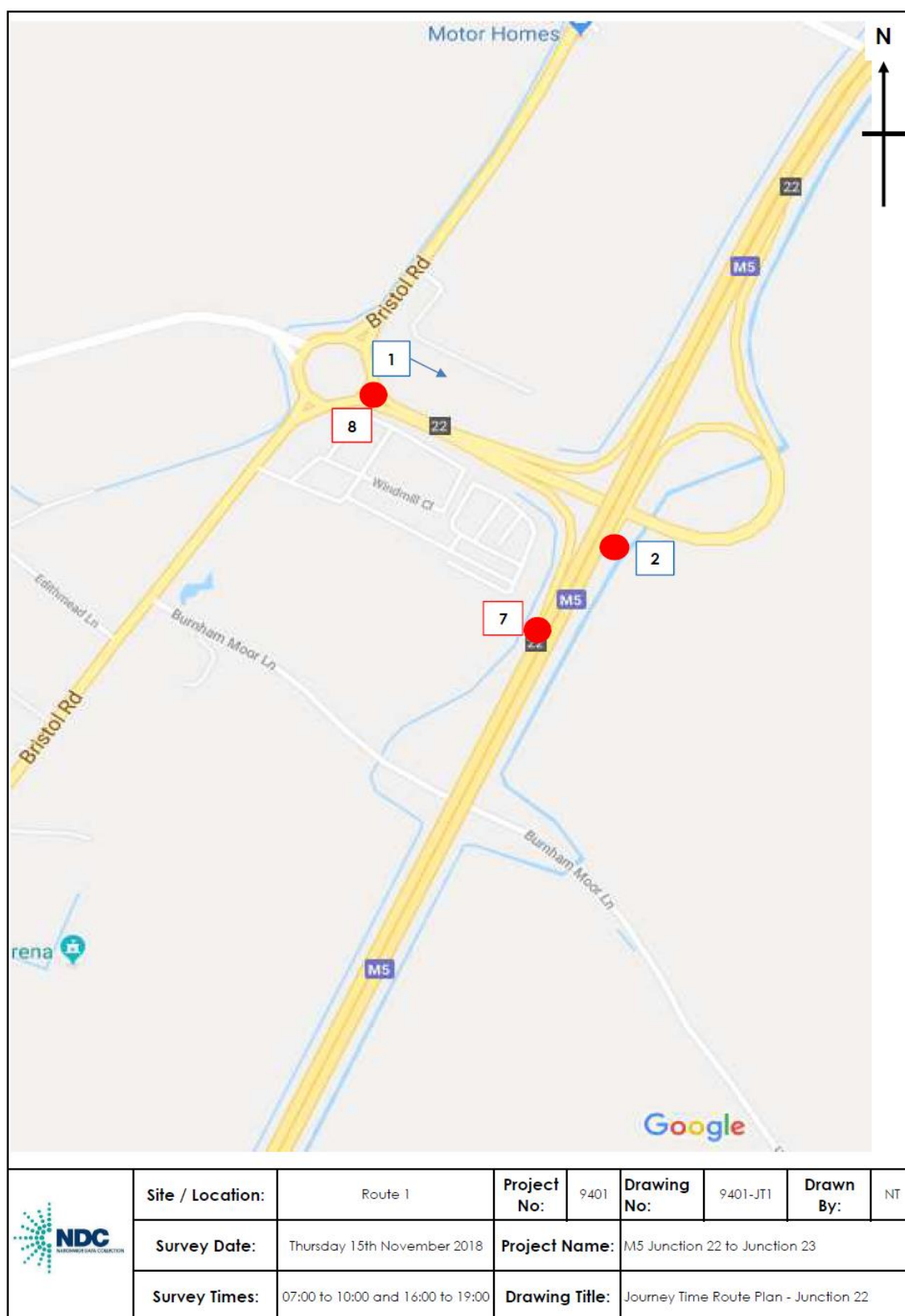
The queue length data for Edithmead indicates that rolling queues of 300m which extends to the off-slip from the M5 at J22. Inspecting the video footage of the queue surveys it can be seen that queueing does indeed go as far back as the off-slip however due to poor visibility there is no clear understanding of the back of the queue from these videos. Inspecting the Journey time survey videos the back of the queue as the surveyors approach that section of the route can be seen. Whilst this is not indicative of the entire section of time where the queues roll back to J22 it shows that queueing only comes as far back as the offslip and does not propagate back onto the main carriageway itself.

## **2.3. Journey Time Surveys**

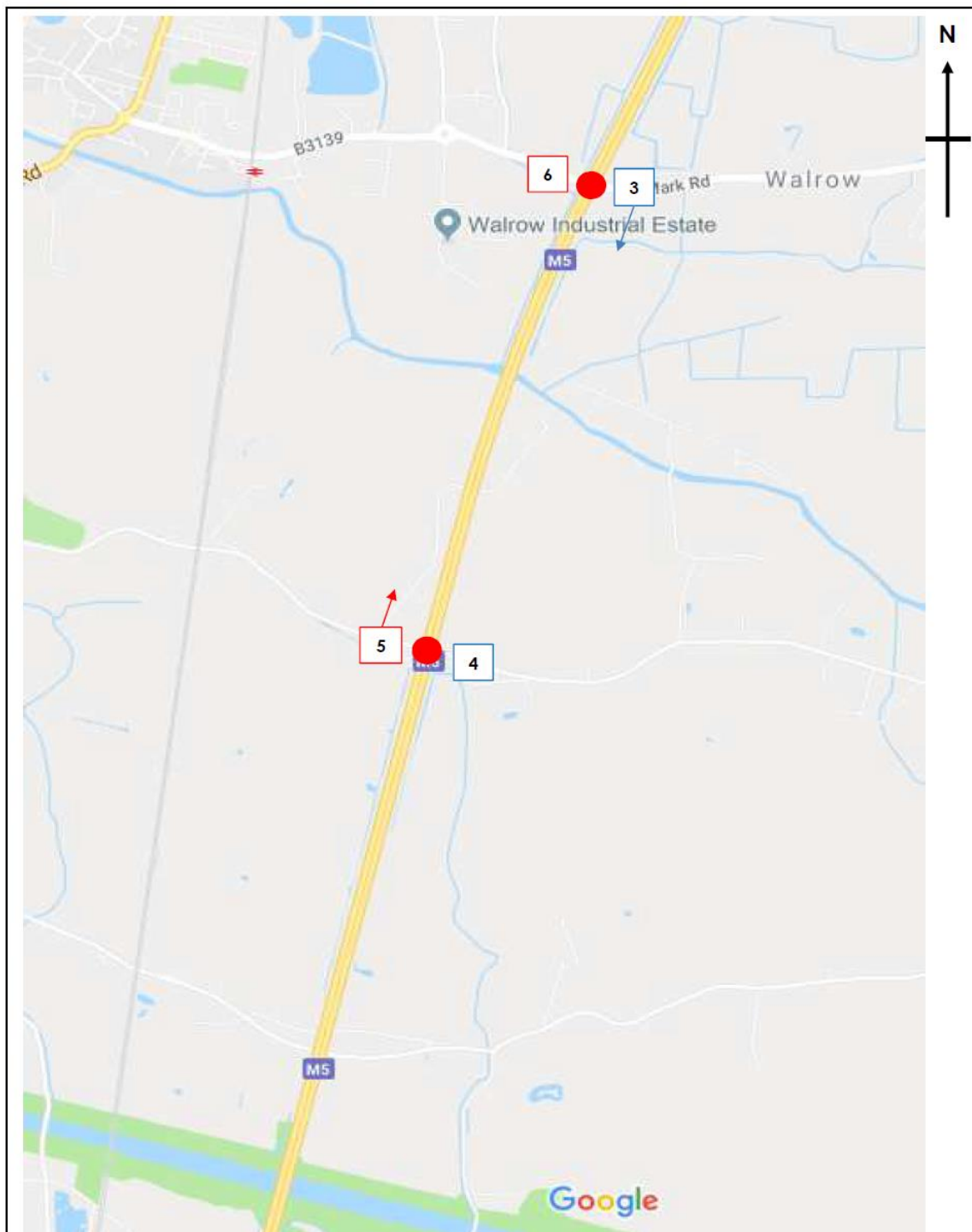
NDC carried out moving observer surveys on Thursday 15 November 2018, between 7.00am-10.00am (17 runs) and 4.00pm-7.00pm (18 runs).

The following diagrams and tables were provided to describe the route taken and the timing points recorded:

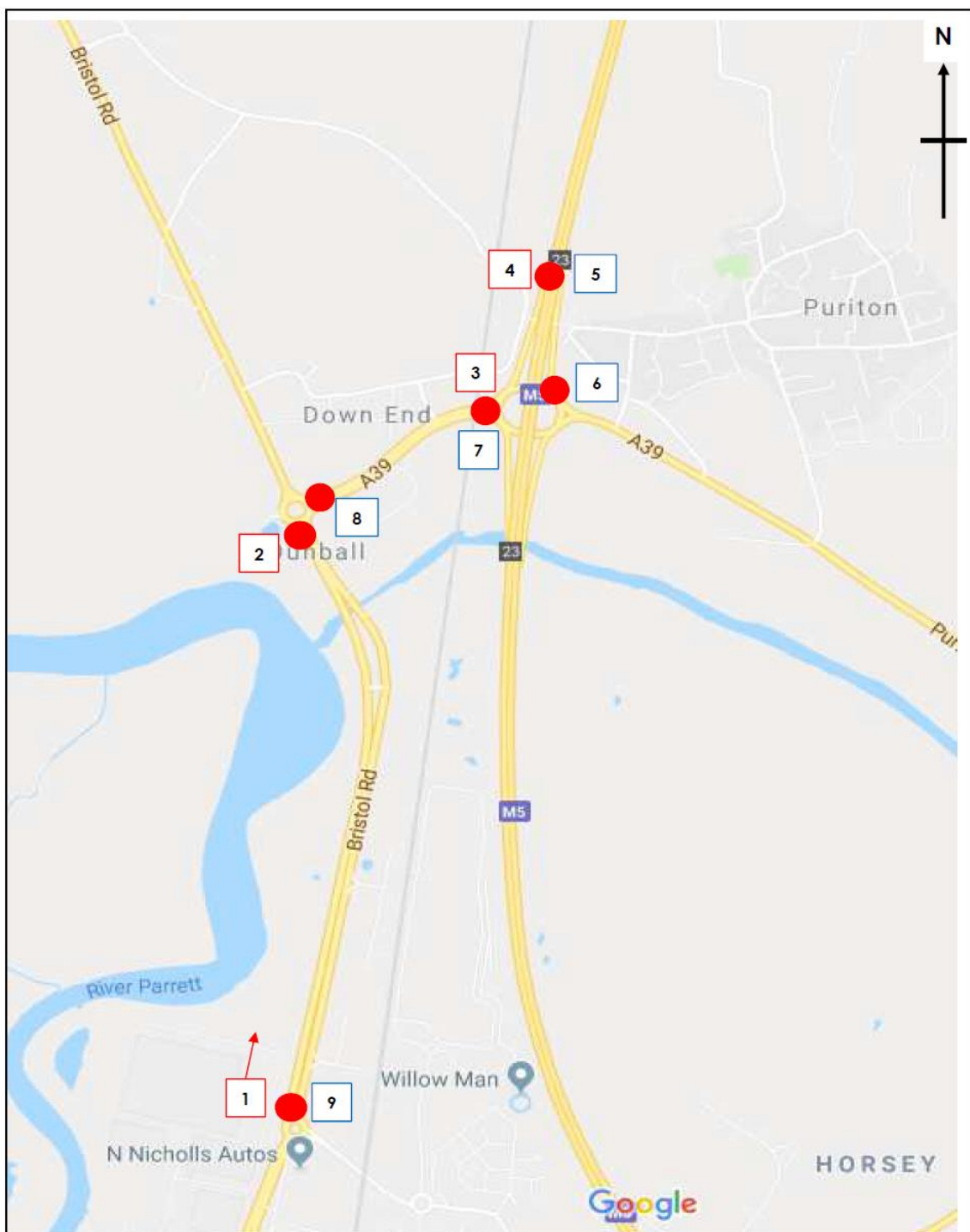








	Site / Location:	Route 1	Project No:	9401	Drawing No:	9401-JT2	Drawn By:	NT
	Survey Date:	Thursday 15th November 2018	Project Name:	M5 Junction 22 to Junction 23				
	Survey Times:	07:00 to 10:00 and 16:00 to 19:00	Drawing Title:	Journey Time Route Plan - M5				



	Site / Location:	Route 1	Project No:	9401	Drawing No:	9401-JT3	Drawn By:	NT
	Survey Date:	Thursday 15th November 2018	Project Name:	M5 Junction 22 to Junction 23				
	Survey Times:	07:00 to 10:00 and 16:00 to 19:00	Drawing Title:	Journey Time Route Plan - Junction 23				

Journey Times

Table 1 – Journey Time Routes

Direction	Start - Junction Points	End - Junction Points	Start		End	
			Longitude	Latitude	Longitude	Latitude
Northbound	A38 / Express Park roundabout	M5 j22 entry to A38 roundabout	-2.99107	51.14698	-2.95142	51.23723
Southbound	M5 j22 exit from A38 roundabout	A38 / Express Park roundabout	-2.95112	51.23753	-2.99056	51.14702

ROUTE: 1

DESCRIPTION: M5 junction 22 / A38 roundabout to A38 / Kings Drive via M5 junction 23

**Northbound**

Timing Point	Description	Longitude	Latitude
1	A38 / Express Park roundabout	-2.99107	51.14698
2	A38 / Dunball Roundabout	-2.9894	51.1644
3	A39 entry to M5 j23 roundabout	-2.98193	51.16745
4	M5 j23 end of northbound sliproad	-2.98028	51.17011
5	M5 northbound at Withy Road	-2.96969	51.19731
6	M5 northbound at B3139	-2.96017	51.2181
7	M5 j22 northbound off slip	-2.94787	51.23441
8	M5 j22 entry to A38 roundabout	-2.95142	51.23723

**Southbound**

Timing Point	Description	Longitude	Latitude
1	M5 j22 exit from A38 roundabout	-2.95112	51.23753
2	M5 j22 end of southbound sliproad	-2.94731	51.23466
3	M5 southbound at B3139	-2.95991	51.21803
4	M5 southbound at Withy Road	-2.96945	51.19722
5	M5 start of j23 southbound off sliproad	-2.97994	51.16999
6	M5 entry to A39 roundabout	-2.98	51.16741
7	M5 exit from A39 roundabout	-2.98193	51.16681
8	A38 / Dunball roundabout	-2.98867	51.16462
9	A38 / Express Park roundabout	-2.99056	51.14702

The southern start/end of the route was instructed to be the first roundabout south of Dunball Roundabout; this is also shown on the map diagram provided by NDC (above). However, the text and coordinate descriptions provided (above) as well as the video recordings show the southern start/end of the route to be the second roundabout south of Dunball Roundabout, "Express Park" roundabout.

The guidelines for robust journey times as outlined by WebTAG are as follows:

*“In the case of journey times for all vehicles combined, sufficient MCO runs should be undertaken so that the 95% confidence level of the mean of the observations is  $\pm 10\%$  or less over a route as a whole... If a satisfactory level of consistency has not been achieved after 12 runs, the results should be accepted and a special note made in the survey documentation”*

For the routes captured there are 18 runs Northbound and 17 Southbound. Checking each run against the mean they do not satisfy the 95% confidence level for (+/-)10% however since the number of runs exceed the specified 12 runs the data can be considered acceptable.

## **2.4. Automatic Traffic Counts (ATCs)**

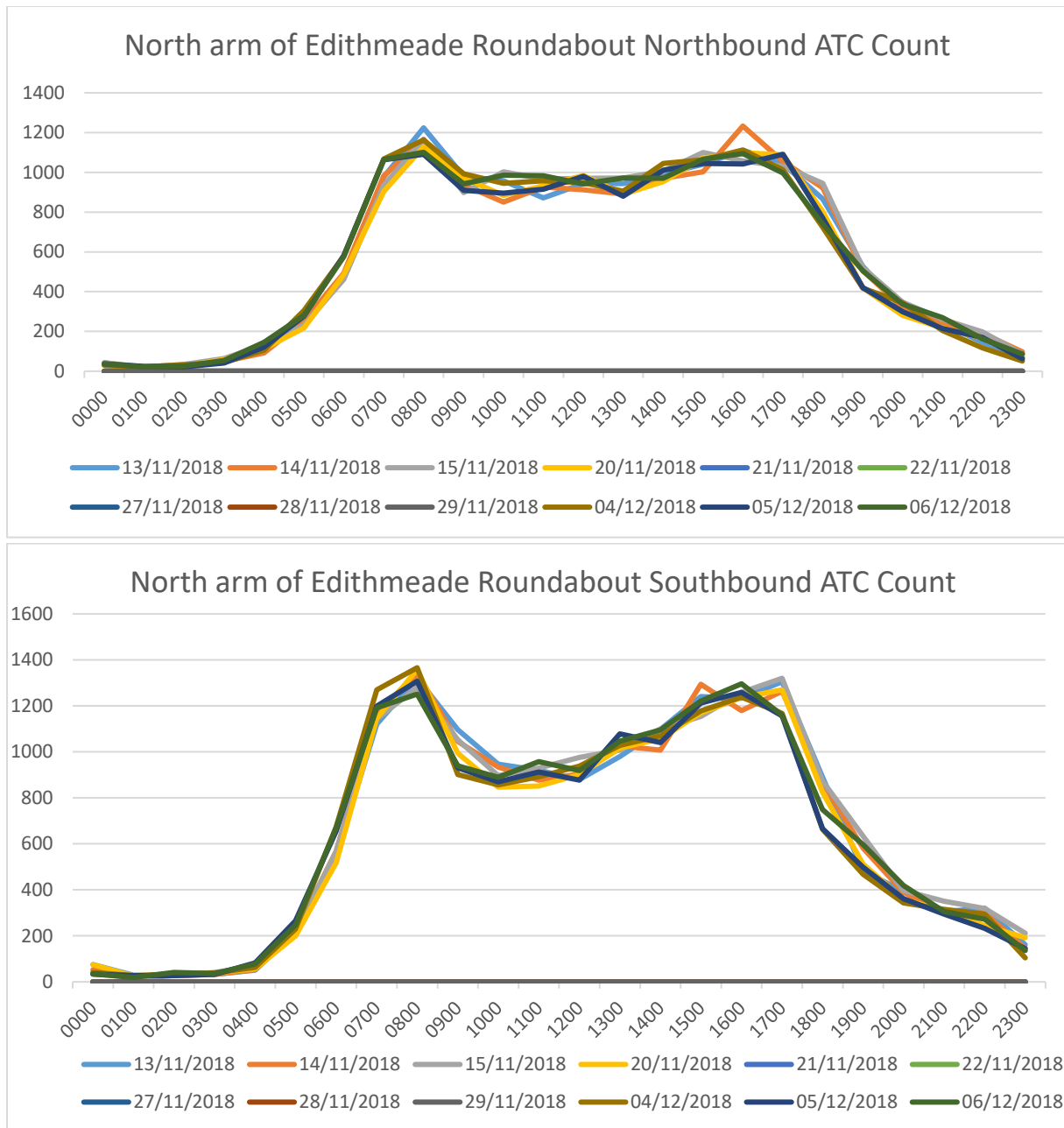
NDC installed Metrocount 5600 series automatic traffic counters, attached to pneumatic tubes, at the following 14 locations as instructed:

- ATC 1 – A38 Bristol Road North
- ATC 2 – East to M5 J22
- ATC 3 – East from M55 J22
- ATC 4 – A38 Bristol Road South
- ATC 5 – B3410 (West)
- ATC 6 – M5 Southbound Slips
- ATC 7 – A38 Bristol Road Northbound
- ATC 8 – A39 Eastbound (Exit)
- ATC 9 – A39 Westbound (Entry)
- ATC 10 – A38 Bristol Road Southbound
- ATC 11 – Bridgwater Business Park (West)
- ATC 12 – M5 Northbound Off Slip
- ATC 13 – M5 Southbound Off Slip
- ATC 14 – A39 East of M5 J23 (East of Puriton Hill Junction)

Data was collected for two weeks and provided in hourly format, also broken down by vehicle classification and observed speed.

At the majority of the ATC sites collection occurred for two consecutive weeks between Tuesday 13 November and Monday 26 November. However, data for Site 1 was collected between 13-20 November and between 30 November and 6 December; and Site 13 was only observed between 13-22 November.

Hour by hour comparisons of each midweek day, Tuesday-Thursday, were conducted for each site to ensure no outliers or errors in ATC data. The following figures highlight the consistency between the days recorded for Site 1 in each direction.



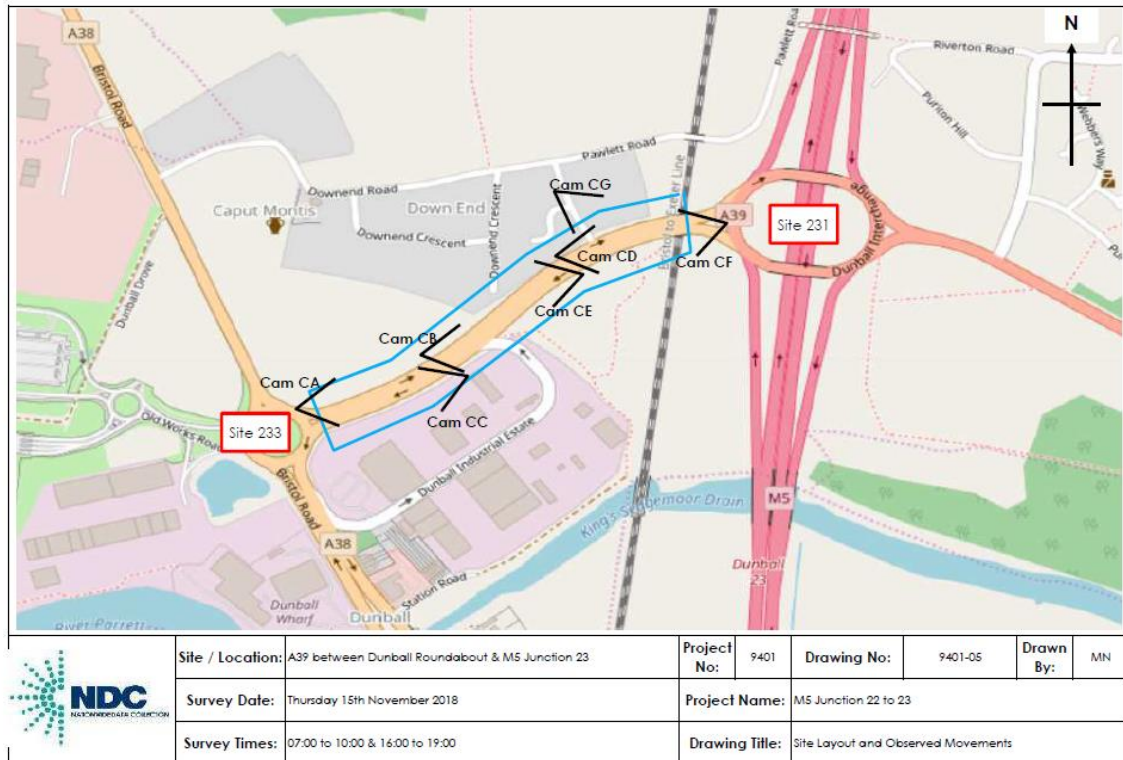
These figures show no outlying counts and a high degree of regularity indicative of a robust dataset. Similar such figures can be found for each site in the supporting spreadsheet 'ATC Data Comparison.xlsx'.

The CTC, queue length and journey time surveys were conducted on the 15<sup>th</sup> of November. From the ATC surveys we can see that the 15<sup>th</sup> did not display any irregularities and represents a normal midweek day.

## 2.5. Conditions Survey

Traffic conditions on the A39 between Dunball Roundabout and M5 J23 were recorded between 7.00am-10.00am and 4.00pm-7.00pm on Tuesdays, Wednesdays and Thursdays 13-15 November and 20-22 November.

The following cameras were used for this survey:



Rolling queues (88 vehicles) were recorded Westbound 8.05am-9.05am on 14 November, between 7.55am-8.20am on 15 November, between 8.25am-9.05am on 20 November, between 7.50am-8.15am and 8.20am-8.55am on 21 November, and between 8.00am-9.15am on 22 November. No rolling queues were observed Eastbound.



## **Appendix B - Department for Transport Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development'**

# DEPARTMENT FOR TRANSPORT

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*DfT Circular 02/2013*

**Department for Transport**

**Great Minster House, 33 Horseferry Road, London SW1P 4DR**

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*10 September 2013*

## THE STRATEGIC ROAD NETWORK AND THE DELIVERY OF SUSTAINABLE DEVELOPMENT

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## INTRODUCTION

1. The Highways Agency is an executive agency of the Department for Transport and is responsible for operating, maintaining and improving the strategic road network in England on behalf of the Secretary of State for Transport, guided by its core principles of 'safe roads, reliable journeys, informed travellers'.
2. The Highways Agency undertakes this role in the context of wider Government policies and objectives. Operating an effective and efficient strategic road network makes a significant contribution to the delivery of sustainable economic growth, helping to create the conditions that support the realisation of the aspirations of businesses and communities, and is a key deliverable for the Highways Agency in meeting its remit of delivery partner to national economic growth.
3. This document sets out the way in which the Highways Agency will engage with communities and the development industry to deliver sustainable development and, thus, economic growth, whilst safeguarding the primary function and purpose of the strategic road network. It replaces the policy set out in Department for Transport (DfT) Circular 02/2007 Planning and the Strategic Road Network and DfT Circular 01/2008 Policy on Service Areas and other Roadside Facilities on Motorways and All-purpose Trunk Roads in England. Annex A provides additional policy specific to certain types of development, whilst Annex B sets out the requirements for roadside facilities that are eligible for permanent signing from the strategic road network.
4. This policy should be read by local authorities, developers, enterprise partnerships, community groups and others involved in any development proposal which may result in any traffic or other impact on the strategic road network. It should be read in conjunction with the Highways Agency's planning protocol documents<sup>1</sup> which provide advice on working with the Highways Agency, within the parameters of national policy and this policy, to progress their planning proposals in an effective and positive manner.
5. The provisions set out in this document may be updated when appropriate to do so and readers are encouraged to check that they have the latest and true version by reference to the published version on the Department for Transport website.<sup>2</sup> Further, from time to time the Highways Agency will issue advice that seeks to address matters arising from the planning process that have the potential to impact on the strategic road network but which may require some particular consideration. Developers are encouraged to check the Highways Agency website or to contact the Highways Agency for further advice.<sup>3</sup>
6. This Circular is applicable to the whole strategic road network in England, including those roads managed by the Design, Build, Finance and Operate (DBFO) Companies.

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<sup>1</sup> <http://www.highways.gov.uk/publications/planning-protocols-for-planning-and-development/>

<sup>2</sup> <https://www.gov.uk/government/organisations/department-for-transport>

<sup>3</sup> [www.highways.gov.uk](http://www.highways.gov.uk); Highways Agency Information Line (HAIL) [ha\\_info@highways.gsi.gov.uk](mailto:ha_info@highways.gsi.gov.uk), 0300 123 5000; [planningqueries@highways.gsi.gov.uk](mailto:planningqueries@highways.gsi.gov.uk); [roadside\\_facilities@highways.gsi.gov.uk](mailto:roadside_facilities@highways.gsi.gov.uk)

## **POLICY AIMS AND APPLICATION**

### **The strategic road network and economic growth**

7. As operator, the Highways Agency supports the economy through the provision of a safe and reliable strategic road network, which allows for the efficient movement of people and goods. Such a network can play a key part in enabling and sustaining economic prosperity and productivity, while also helping support environmental and social aims by contributing to wider sustainability objectives and improved accessibility to key economic and social services.
8. A well-functioning strategic road network enables growth by providing for safe and reliable journeys. This can help reduce business costs by providing certainty, improving access to markets, enabling competition, improving labour mobility, enabling economies of scale, and helping attract inward investment.
9. Development proposals are likely to be acceptable if they can be accommodated within the existing capacity of a section (link or junction) of the strategic road network, or they do not increase demand for use of a section that is already operating at over-capacity levels, taking account of any travel plan, traffic management and/or capacity enhancement measures that may be agreed. However, development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.
10. However, even where proposals would not result in capacity issues, the Highways Agency's prime consideration will be the continued safe operation of its network.
11. Local authorities and developers will be required to ensure that their proposals comply in all respects with design standards. Where there would be physical changes to the network, schemes must be submitted to road safety, environmental, and non-motorised user audit<sup>4</sup> procedures, as well as any other assessment appropriate to the proposed development. The Design Manual for Roads and Bridges<sup>5</sup> sets out details of the Secretary of State's requirements for access, design, and audit, with which proposals must conform.

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<sup>4</sup> Non-motorised user audit will consider the needs of pedestrians, cyclists and horse riders, and should give particular consideration to the needs of disabled people.

<sup>5</sup> <http://www.dft.gov.uk/ha/standards/>

## **PLAN MAKING**

### **Interaction with the strategic road network**

12. The preparation and delivery of Local Plans<sup>6</sup> provides an opportunity to identify and support a pattern of development that minimises trip generation at source and encourages the use of sustainable modes of transport, minimises journey lengths for employment, shopping, leisure, education and other activities, and promotes accessibility for all. This can contribute to environmental objectives and also reduce the cost to the economy arising from the environmental, business and social impacts associated with traffic generation and congestion.
13. To make most efficient use of the limited available capacity on the strategic road network, and because additional physical capacity is difficult, costly and takes time to provide, the Highways Agency will engage in the Local Plan process to reduce the potential for creating congestion on the strategic road network.

### **Location of development**

14. In framing its contribution to the development of Local Plans, the Highways Agency's aim will be to influence the scale and patterns of development so that it is planned in a manner which will not compromise the fulfilment of the primary purpose of the strategic road network.
15. In order to develop a robust transport evidence base, the Agency will work with the local authority to understand the transport implications of development options. This will include assessing the cumulative and individual impacts of the Local Plan proposals upon the ability of the road links and junctions affected to accommodate the forecast traffic flows in terms of capacity and safety. Such assessments should be carried out in line with current Department for Transport guidance or on a basis otherwise agreed with the Highways Agency.

### **Promoting sustainable transport solutions through Local Plans**

16. Through the production of Local Plans, development should be promoted at locations that are or can be made sustainable, that allow for uptake of sustainable transport modes and support wider social and health objectives, and which support existing business sectors as well as enabling new growth.
17. The Highways Agency will work with local authorities and developers to identify opportunities to introduce travel plan and demand management measures through the Local Plan. These will be based on existing and proposed patterns of development in a manner that will support sustainable transport choice and retain capacity within the transport network so as to provide for further development in future Plan periods.

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<sup>6</sup> Each Planning Authority is required to produce a Local Plan in accordance with the provisions of the Town & Country Planning Act 1990 (as amended) taking account of the guidance set out in the National Planning Policy Framework.



## **Capacity enhancement**

18. Capacity enhancements and infrastructure required to deliver strategic growth should be identified at the Local Plan stage, which provides the best opportunity to consider development aspirations alongside the associated strategic infrastructure needs. Enhancements should not normally be considered as fresh proposals at the planning application stage. The Highways Agency will work with strategic delivery bodies to identify infrastructure and access needs at the earliest possible opportunity in order to assess suitability, viability and deliverability of such proposals, including the identification of potential funding arrangements.
19. Where a potential capacity need is identified, this will be considered and weighed alongside environmental and deliverability considerations. Additional capacity may be considered in the context of the Highways Agency's forward programme of works, balancing the needs of motorists and other road users with wider impact on the environment and the local/regional community.

## **Development Orders and Neighbourhood Planning**

20. The Highways Agency will seek to engage with Local Enterprise Partnerships, communities and neighbourhoods in the development of their proposals, applying the principles outlined above.

## **DEVELOPMENT MANAGEMENT**

### **General principles**

21. Where development proposals are consistent with an adopted Local Plan, the Highways Agency does not anticipate the need for engagement in a full assessment process at the planning application stage. In such circumstances, considerations will normally be limited to the agreement of the details of the transport solution, including any necessary mitigation measures, and to ensuring that the transport impacts are included in the overall environmental assessment provided to the local planning authority, rather than the principle of the development itself.
22. However, where proposals are not consistent with the adopted Local Plan then a full assessment of their impact will be necessary, which will be based on the performance and character of the strategic road network as determined by the presumption that the Plan proposals will be fully implemented.
23. The Highways Agency will provide the local planning authority or other relevant consenting body with its assessment of the transport impact, as generally derived from a Transport Assessment or Transport Statement incorporating a Travel Plan as required in the National Planning Policy Framework, produced by the promoter of the development concerned in line with current Department for Transport guidance or on a basis otherwise agreed with the Highways Agency.
24. Where appropriate, conditions may be agreed to offset any unacceptable impacts that may be identified through the assessment process.

## Assessment of development impact

25. The overall forecast demand<sup>7</sup> should be compared to the ability of the existing network to accommodate traffic over a period up to ten years after the date of registration of a planning application or the end of the relevant Local Plan whichever is the greater. This is known as the review period.<sup>8</sup>
26. The Highways Agency expects the promoters of development to put forward initiatives that manage down the traffic impact of proposals to support the promotion of sustainable transport and the development of accessible sites. This is particularly necessary where the potential impact is on sections of the strategic road network that could experience capacity problems in the short or medium term.
27. Where the overall forecast demand at the time of opening of the development<sup>9</sup> can be accommodated by the existing infrastructure, further capacity mitigation will not be sought.

## Travel Plans

28. The preparation and implementation of a robust travel plan that promotes use of sustainable transport modes such as walking, cycling and public transport is an effective means of managing the impact of development on the road network, and reducing the need for major transport infrastructure.
29. The Highways Agency will work with local authorities and developers to identify opportunities to introduce travel plan measures for individual developments and groups of development that will support sustainable transport choice. Such measures contribute to the ongoing effectiveness of the strategic road network in ensuring efficient national and regional connectivity, whilst retaining capacity within the strategic road network so facilitating provision for further development in future Plan periods.
30. By the inclusion of existing development within the provisions of a travel plan associated with new development, it may be possible to free up additional capacity within the road network so that the demand generated by a proposed new development, which would otherwise be unacceptable, can be accommodated.

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<sup>7</sup> The overall forecast demand will be the existing flow plus traffic likely to be generated by development already committed, plus traffic likely to be generated by the development under consideration, less any reduction arising from any travel plan or demand management measures that are being proposed.

<sup>8</sup> The length of the review period, at the discretion of the Secretary of State for Transport, can be amended for individual cases, where there is a wider political and economic imperative or, for example, where proposals will take a long time to develop fully. This would only be in exceptional circumstance.

<sup>9</sup> The opening of the development shall be taken to be the date at which the development first becomes available for occupation, unless agreed otherwise.

## **Demand management**

31. Demand management involves a range of techniques that can be implemented to minimise traffic generation. There may be circumstances where the implementation of travel plan measures alone would not be sufficient to reduce the traffic demand of an individual development or group of developments to acceptable levels.
32. In such instances the Highways Agency will work with local planning authorities and local highway authorities to determine whether the implementation of traffic management measures could effectively regulate and manage traffic flows so as to make the most effective use of the available capacity on the strategic road network.

## **Capacity enhancement**

33. Only after travel plan and demand management measures have been fully explored and applied will capacity enhancement measures be considered. While capacity enhancements should normally be addressed at the plan-making stage, such measures may be considered at the time when individual planning applications are submitted, subject to the over-riding principle that delivery of the adopted Local Plan proposals should not be compromised.
34. Where insufficient capacity exists to provide for overall forecast demand at the time of opening, the impact of the development will be mitigated to ensure that at that time, the strategic road network is able to accommodate existing and development generated traffic. Any associated mitigation works should be appropriate to the overall connectivity and capacity of any affected part of the strategic road network.
35. These improvements will normally be delivered by means of a funding agreement with the Secretary of State for Transport.
36. Where a development will be brought forward in phases, any mitigation needs will be assessed based on the opening of the final phase. However it may be necessary to implement some mitigation measures in line with the opening of certain phases of development according to the impacts that they generate.

## **ACCESS TO THE STRATEGIC ROAD NETWORK**

37. The creation of new accesses to the strategic road network can impact on its ability to fulfil the function of facilitating the safe and effective movement of goods and people in support of economic growth by compromising traffic movement and flow.
38. In delivering economic growth at local level, it is essential that the wider economic needs of the country are not compromised. New accesses to busy high speed strategic roads lead to more weaving and turning manoeuvres, which in turn create additional risk to safety and reduce the reliability of journeys, resulting in a negative impact on overall national economic activity and performance.

39. Where appropriate, proposals for the creation of new junctions or direct means of access may be identified and developed at the Plan-making stage in circumstances where it can be established that such new infrastructure is essential for the delivery of strategic planned growth.
40. Where the strategic growth test cannot be met there will be no additional junctions with, or direct means of access to, motorways and other routes of near motorway standard<sup>10</sup> other than for the provision of signed roadside facilities for road users (see Annex B), maintenance compounds and, exceptionally, major transport interchanges.
41. Where access is agreed for such development, the Highways Agency will be unable to support any subsequent change in permitted land use that retained the agreed access. Further through access to other developments will not be permitted.
42. Access to motorways and routes of near motorway standard for other types of development will be limited to the use of existing junctions with all-purpose roads. Modifications to existing junctions will be agreed where these do not have an adverse impact on traffic flows and safety. In line with the standards contained in the Design Manual for Roads and Bridges, for safety and operational reasons, direct connections to slip roads and/or connector roads will not be permitted.
43. The Highways Agency will adopt a graduated and less restrictive approach to the formation or intensification of use of access to the remainder of the strategic road network. However, the preference will always be that new development should make use of existing junctions. Where a new junction or direct means of access is agreed, the promoter will be expected to secure all necessary consents, and to fund all related design and construction works.
44. On a trunk road that is not a motorway or a route of near motorway standard, any proposal to change the use of an existing roadside facility for road users will be considered against local conditions and the merits of the individual case.

## **ENVIRONMENTAL IMPACT**

45. In consultation with relevant infrastructure providers, statutory environmental advisors and consenting authorities, developers must ensure all environmental implications associated with their proposals, are adequately assessed and reported so as to ensure that the mitigation of any impact is compliant with prevailing policies and standards. This requirement applies in respect of the environmental impacts arising from the temporary construction works and the permanent transport solution associated with the development, as well as the environmental impact of the existing trunk road upon the development itself.

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<sup>10</sup> Routes of near motorway standard will normally be grade-separated dual carriageway routes benefitting from restricted direct access.

46. Where a likely negative impact on the environment resulting from the proposals occurs outside of a highway boundary as a result of the proposals (for example air quality, visual impacts, artificial light or noise impacts at new housing affected by a road), any required mitigation measures must be located outside of the strategic road network's highway boundary.
47. Developers must ensure adequate environmental information is provided at all stages of the planning process to satisfy the local planning authority and any other consenting authorities that the environmental impacts have been appropriately considered, that measures have been included within the proposals as required by relevant policies or otherwise, as fully as is reasonably possible, and to enable all residual impacts to be taken into account by the local planning authority in the development consent process.
48. Transport assessment undertaken by the promoter of the development should be comprehensive enough to establish the likely environmental impacts, including air quality, light pollution and noise, and to identify the measures to mitigate these impacts.<sup>11</sup> This will enable local authorities to fulfil their remit of considering appropriate environmental impact assessment of development.

## **PHYSICAL IMPACT OF DEVELOPMENT ON THE STRATEGIC ROAD NETWORK**

49. There may be development proposals that, whilst not within the statutory requirement for a local planning authority to consult the Highways Agency, have the potential for direct or indirect physical impact on the strategic road network or its amenities, or to put users of the road at risk (such as fire hazard; stability of embankments and cuttings; integrity of structures; water run-off; air quality; visibility of traffic signs; etc.). Developers and local authorities are encouraged to identify such potential risks and discuss with the Highways Agency at the earliest opportunity to avoid the possibility of delaying or putting the delivery of their proposals at risk.
50. In order to ensure the integrity of the highway drainage systems, no water run off that may arise due to any change of use will be accepted into the highway drainage systems, and there shall be no new connections into those systems from third party development and drainage systems. Where there is already an existing third party connection the right for connection may be allowed to continue provided that the input of the contributing catchment to the connection remains unaltered.

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<sup>11</sup> Advice and standards for environmental assessment of development affecting trunk roads can be found in the Design Manual for Roads and Bridges at <http://www.dft.gov.uk/ha/standards/dmr/vol11/>

# **ANNEX A: SPECIAL TYPES OF DEVELOPMENT**

## **NOISE FENCES, SCREEN FENCES, ETC**

- A1. For reasons of safety, liability and maintenance, with the sole exception of fences owned and provided by the Highways Agency at its own cost, all noise fences, screening and other structures must be erected on the developers land, and far enough within the developers land to enable maintenance to take place without encroachment onto highway land.

## **ADVERTISEMENTS**

- A2. The Highways Agency will not object to proposals for advertising consent for displays outside of the highway boundary of the strategic road network unless it has specific reason to consider that a hazard to road safety would be a direct consequence of the development. This would include advertisements that are located where particular attention should be given to the driving task, or where they unlawfully incorporate elements of traffic sign design, such as directional arrows. Advertisements within the highway boundary are not permitted. The Highways Agency will remove any unauthorised adverts placed within the highway boundary.

## **GATEWAY STRUCTURES AND PUBLIC ART**

- A3. The siting of gateway structures and public art within the highway boundary of the strategic road network will not be permitted for legal, safety and operational reasons. However, the siting of such features near the strategic road network may be seen as desirable to local authorities and developers. The Highways Agency is keen to support delivery of such proposals where no additional risk to road users is presented.
- A4. Due to the wide variety of design and form that such structures may take, and therefore the scope for the potential impact on safety and operation of the strategic road network, it is not practical to address all possible considerations in this policy. The Highways Agency encourages any promoter of such a proposal that may be near to or impact on the road network to discuss design and delivery proposals at the earliest opportunity.

## **TELECOMMUNICATIONS EQUIPMENT**

- A5. Mobile Network Operators have the right under the Telecommunications Act 1984 to install equipment within the boundary of a highway that is not a protected street (as defined by section 61 of the New Roads and Street Works Act 1991) once they have obtained planning permission where required.
- A6. Such installations must not cause a safety or environmental hazard to any road users, workers, or any third party and it must not interfere in our ability to carry out either routine or structural maintenance. Neither should any harm be caused to the long-term integrity of the highway including pavement, earthworks, structures, drainage works and ancillary equipment. Traffic signs must not be obscured. These factors should be discussed with the relevant Highways Agency's Area Manager prior to any works being undertaken.

- A7. All operations must be carried out without interference to traffic flows.
- To these ends, the Highways Agency requires Mobile Network Operators to obtain technical approval for their installation, and provide a full road safety audit, which must consider the installation of the equipment and its maintenance as well as any static hazard presented. Full details of the registration procedure can be found in the DMRB at [http://www.dft.gov.uk/ha/standards/tech\\_info/](http://www.dft.gov.uk/ha/standards/tech_info/)

## **WIND TUBINES**

### **Location**

- A8. In order to mitigate the risks to the safety of road users arising from structural or mechanical failure, the Highways Agency will seek a minimum setback from the highway boundary of height + 50 metres or height x 1.5, whichever is the lesser.<sup>12</sup>
- A9. The Highways Agency recognises that, in certain circumstances, variation to the above set-back may be considered appropriate, subject to the findings of a site-specific assessment. In particular this may apply where there is a significant difference in elevation between the highway and the proposed turbine location. The proposer would be expected to demonstrate that any relaxation on the suggested set-back distance poses no unacceptable risk. The burden of proof will lie with the proposer.

### **‘Icing’**

- A10. Most modern wind turbines will have vibration and/or climate sensitive technology that will shut down the turbine if there is the potential for icing. Where this technology is present there should be no need to consider this issue further. Evidence of this technology on the proposed turbines should be provided.

### **Visual distraction**

- A11. Any potential for visual distraction should be minimised by the provision of a clear, continuous view of the wind turbine(s) that develops over the maximum possible length of approach carriageway.
- A12. Wind turbines should not be located where motorists need to pay particular attention to the driving task, such as the immediate vicinity of road junctions, sharp bends, and crossings for pedestrians, cyclists and horse riders.
- A13. The existing road accident record nearing the vicinity of the proposed wind turbine(s) should be analysed with particular attention being given to accident types. Locations with a history of rear end shunt accidents should be treated with particular caution.

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<sup>12</sup> Subject to over-riding provisions contained in legislation elsewhere, for example those relating to permitted development.

## **Dazzle**

- A14. Most turbines will be constructed with materials that eliminate dazzle, and this should be easy to establish and eliminate as a concern. Evidence of this technology on the proposed turbines should be provided.

## **Access**

- A15. The promoter of a wind farm should prepare a report covering the construction, operation and de-commissioning stages of the development. From this, the acceptability of the proposal should be determined and any mitigating measures should be identified.
- A16. Access to the site for construction, maintenance and de-commissioning should be obtained via the local road network and, normally, there should be no direct connection to the strategic road network.
- A17. Swept path analyses should be provided by the developer for the abnormal load deliveries to the site.



# ANNEX B: ROADSIDE FACILITIES FOR ROAD USERS ON MOTORWAYS AND ALL-PURPOSE TRUNK ROADS IN ENGLAND

## INTRODUCTION

- B1. This annex sets out policy on the provision, standards and eligibility for signing of roadside facilities on the strategic road network, to enable compliance with the Traffic Signs Regulation and General Directions 2002.<sup>13</sup> It replaces Department for Transport (DfT) Circular 1/2008 Policy on Service Areas and other Roadside Facilities on Motorways and All-purpose Trunk Roads in England.
- B2. All such proposals will be considered in the context of the National Planning Policy Framework and, in particular, the statement that it includes regarding the primary function of roadside facilities being to support the safety and welfare of the road user.

## APPLICATION OF POLICY

- B3. This policy applies to all existing signed roadside facilities, and to all proposed signed roadside facilities. It should be noted that the operation of all signed roadside facilities will be the subject of a legal agreement between the Secretary of State and the operator.

## SPACING

- B4. Motorway service areas and other roadside facilities perform an important road safety function by providing opportunities for the travelling public to stop and take a break in the course of their journey. Government advice is that motorists should stop and take a break of at least 15 minutes every two hours. Drivers of many commercial and public service vehicles are subject to a regime of statutory breaks and other working time restrictions and these facilities assist in compliance with such requirements.
- B5. The network of service areas on the strategic road network has been developed on the premise that opportunities to stop are provided at intervals of approximately half an hour. However the timing is not prescriptive as at peak hours, on congested parts of the network, travel between service areas may take longer.

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<sup>13</sup> Or any subsequent replacement. To be lawfully placed on the highway all signs (whether permanent or temporary) must either be prescribed by legislation or be specially authorised on behalf of the Secretary of State.

- B6. The Highways Agency therefore recommends that the maximum distance between motorway service areas should be no more than 28 miles. The distance between services can be shorter, but to protect the safety and operation of the network, the access/egress arrangements of facilities must comply with the requirements of the Design Manual for Roads and Bridges<sup>14</sup> including its provisions in respect of junction separation.
- B7. Speed limits on the strategic road network vary and therefore, applying the same principles, the maximum distance between signed services on trunk roads should be the equivalent of 30 minutes driving time. This distance can also be shorter, also subject to compliance with design requirements set out in the Design Manual for Roads and Bridges.
- B8. The distances set out above are considered appropriate for to all parts of the strategic road network and to be in the interests and for the benefit of all road users regardless of traffic flows or route choice. In determining applications for new or improved sites, local planning authorities should not need to consider the merits of the spacing of sites beyond conformity with the maximum and minimum spacing criteria established for safety reasons. Nor should they seek to prevent competition between operators; rather they should determine applications on their specific planning merits.

## **PLANNING AND DEVELOPMENT**

- B9. It is for the private sector to promote and operate service areas that meet the needs of the travelling public. New and existing roadside facilities are subject to the provisions of relevant planning legislation and regulation, which together set the framework within which local planning authorities would consider the planning proposals for such developments.
- B10. As a statutory consultee within the planning system, the Highways Agency continues to have an interest in such proposals and will provide advice to local planning authorities on matters relating to the impact that such proposed developments will have upon the safety and operation of the strategic road network. Local planning authorities and developers are encouraged to discuss with the Highways Agency at the earliest opportunity any proposals to develop new roadside facilities or to alter and/or sign existing sites. All such proposals should be referred to the Highways Agency, Planning & Economic Development, The Cube, 199, Wharfside Street, Birmingham B11RN; [roadside\\_facilities@highways.gsi.gov.uk](mailto:roadside_facilities@highways.gsi.gov.uk)

## **TRIP GENERATION**

- B11. In circumstances where there is potential for these to become destinations in their own right, the Highways Agency will only support proposals for or within service areas and other roadside facilities if it can be shown that there would be no overall increase in trip mileage, and always provided that there would be no significantly adverse impact on the safety and operation of the strategic road network.

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<sup>14</sup> [http://en.wikipedia.org/wiki/Design\\_Manual\\_for\\_Roads\\_and\\_Bridges](http://en.wikipedia.org/wiki/Design_Manual_for_Roads_and_Bridges)

## **IMPACT OF ROADSIDE FACILITIES ON THE STRATEGIC ROAD NETWORK**

- B12. At all roadside facilities, it is particularly important to avoid adverse impacts upon the effective operation of the strategic road network, such as increasing the risk of congestion or of vehicles slowing or stopping on the main carriageway. Proposals for new roadside facilities will be subject to road safety audit procedures to be undertaken in accordance with the requirements of the Design Manual for Roads and Bridges.

## **LOCATION**

- B13. On-line (between junctions) service areas are considered to be more accessible to road users and as a result are more attractive and conducive to encouraging drivers to stop and take a break. They also avoid the creation of any increase in traffic demand at existing junctions.
- B14. Therefore, in circumstances where competing sites are under consideration, on the assumption that all other factors are equal, the Highways Agency has a preference for new facilities at on-line locations.
- B15. However, in circumstances where an on-line service area cannot be delivered due to planning, safety, operational or environmental constraints, a site sharing a common boundary with the highway at a junction with the strategic road network is to be preferred to the continued absence of facilities.
- B16. An exception to these general location criteria are truckstops located within 2 miles of the strategic road network that otherwise meet the minimum requirements for signing. However signing will not be agreed in circumstances where, in order to reach such a truckstop, HGVs would be required to pass through residential areas.

## **MINIMUM REQUIREMENTS FOR SIGNING**

- B17. The following criteria set out the minimum requirements for the various types of roadside facility that may be eligible for signing from the strategic road network. All facilities accessed from the motorway must be signed for safety reasons and as such all existing or future sites must meet the requirements for signing.

**Table B1: Minimum requirements for the various types of roadside facility that may be eligible for signing from the strategic road network**

Minimum requirements to be eligible for signing M= Mandatory P = Permitted	Motorway		APTR service area *	Truckstops on Motorways	Truckstops signed from SRN #	Truckstops on All-Purpose Trunk roads
	Service Area	Rest Area				
Open 24 hrs a day 365 days a year	M	M	N/A	M	N/A	N/A
Open minimum 12 hours per day between 8am and 8pm every day except Christmas Day, Boxing Day and New Year's Day.	N/A	N/A	M	N/A	M	M
Free parking for up to 2 hours minimum for all vehicles permitted to use the road served by the facility.(see schedule 1)	M	M	M	M	M	M
Free toilets/hand washing facilities with no need to make a purchase.	M	M	M	M	M	M
Shower and washing facilities for HGV drivers, including secure lockers in the shower/washing area.	M	P	P	M	M	M
Fuel	M	P	M	M	P	P
Hot drinks and hot food available at all opening hours for consumption on the premises.	M	P	P	M	P	P
Hot drinks and hot food available 8am to 8pm for consumption on the premises.	N/A	P	M	N/A	M	M
Access to a cash operated telephone.	M	M	M	M	M	M
Use as an operating centre for the purposes of the Goods Vehicles (Licensing of Operators) Act 1995 or the Public Passenger Vehicles Act 1981.	Prohibited	Prohibited	Prohibited	Prohibited	P	P

\* Limited to a single or exceptionally 2 adjoining interconnected premises, accessed directly from the trunk road or directly from a junction on the trunk road.

# See note B16 Location

- B18. Further guidance on the design, authorisation, funding, installation and maintenance of signs is available from the Highways Agency.<sup>15</sup>

## **PARKING CHARGES**

- B19. At all types of site, where a charge is to be levied for parking beyond the mandatory two free hours, the charging regime must be clearly displayed within both the parking areas and the amenity building. Drivers must at all times be afforded the opportunity to pay the charge on the site, before leaving and without the necessity to use a mobile phone. Cash payments must be accepted.

## **PICNIC AREAS**

- B20. Picnic areas will be permitted at all of the above types of facility.
- B21. The provision of a minimum of ten tables, each with seating for six, will allow the inclusion of a 'picnic area' symbol as one of the generic symbols/logos shown on the advanced direction sign to that site.

## **ACCESS TO THE STRATEGIC ROAD NETWORK**

- B22. The availability of other connecting access routes at new sites will be considered on a site by site basis by the relevant local planning authority as part of the planning process. The Highways Agency will provide input as a statutory consultee to the planning process.
- B23. In order to avoid the creation of unofficial road junctions there must be no through connection to the associated motorway or all-purpose trunk road. Where subsidiary accesses may be approved their will be restricted to staff, deliveries, parties carrying out duties for and on behalf of the Secretary of State for Transport, the emergency services, and breakdown recovery and assistance.
- B24. Access to other developments through a roadside facility is not permitted.

## **SIGNING**

- B25. All signing of roadside facilities and signing arrangements within sites must comply with the current Traffic Signs Regulations and General Directions and any other guidance as may be issued from time to time by the Department for Transport or the Highways Agency. Approval must be sought from the Highways Agency's signs specialist for the use of all non prescribed signs. Advice and working drawings may be obtained from [traffic.signs@dft.gsi.gov](mailto:traffic.signs@dft.gsi.gov)

## **MANDATORY PARKING PROVISION**

- B26. Where a site is subject to a pre-existing sealed agreement which specifies the levels of parking provision, this shall continue to apply until such time as the scale and/or scope of on-site activities is extended.

---

<sup>15</sup> This will be provided as a guidance note alongside the published circular.

- B27. Where the scale and/or scope of on-site activities is extended, the methodology set out in Schedule 1 shall be used for calculating the numbers of parking spaces by vehicle type that should be provided for the various types of roadside facility. The methodology set out in Schedule 1 will also be used for calculating the levels of parking provision for all new sites promoted after the publication of this policy.
- B28. However, notwithstanding the provisions of the previous two paragraphs, levels of provision may be adjusted to reflect local conditions through a process of site specific negotiation. It will be the responsibility of the site operator to demonstrate that any departure from the requirements of Schedule 1 is appropriate.

## **RETAIL ACTIVITIES**

- B29. The scope and scale of retail activities at roadside facilities is a matter for consideration by the relevant local planning authority in line with the National Planning Policy Framework and local planning policies. However, local planning authorities should have regard to the primary function of roadside facilities which is to support the safety and welfare of the road user.

## **HOTELS, CONFERENCE CENTRES AND BUSINESS CENTRES**

- B30. Such development will be a matter for consideration by the relevant local planning authority in line with the National Planning Policy Framework and local planning policies.
- B31. As a statutory consultee to such proposals, the Highways Agency will not object to the provision of hotels; conference centres; and business centres at the sites of roadside facilities for motorists unless there would be demonstrable adverse impact on the safety and/or operation of the strategic road network such as a net increase in travel.
- B32. Separate parking must be provided to service such developments so as to avoid any reduction in the general parking provision available to other road users.

## **COACH INTERCHANGES, PARK & RIDE, AND PARK & SHARE**

- B33. Such development will be a matter for consideration by the relevant local planning authority in line with the National Planning Policy Framework and local planning policies.
- B34. As a statutory consultee to such proposals, the Highways Agency will take account of the local transport benefits in its response to proposals for coach interchanges; park & rides; and park and share facilities for motorists, and will not object unless there would be demonstrable adverse impact on the safety and/or operation of the strategic road network or the roadside facility in question.. The Highways Agency particularly welcomes proposals that will produce a net reduction of trip mileage.
- B35. Separate parking must be provided to service such activities so as to avoid any reduction in the general parking provision available to other road users.

## **FACILITIES FOR LOW EMISSION VEHICLES**

- B36. Operators of roadside facilities are encouraged to provide refuelling facilities for low emission vehicles, including recharging facilities for plug-in vehicles and other arrangements that meet the needs of emergent low carbon and alternative fuel technologies as appropriate, such as gas refuelling stations. More information can be found at [www.gov.uk/government/organisations/department-for-transport](http://www.gov.uk/government/organisations/department-for-transport).

## **DRIVER AND TOURIST INFORMATION**

- B37. Operators of roadside facilities are encouraged to provide live traffic information services and to make available local, regional and national tourist information.

## **ON-SITE POWER GENERATION AND OTHER SUSTAINABILITY MEASURES**

- B38. Operators are encouraged to introduce measures that reduce the carbon footprint of their sites. However, such measures as may be provided should be compliant with relevant guidance as may be issued from time to time by the Highway's Agency. In this context, operators' attention is drawn to the provisions set out in Annex A regarding wind turbine development.

## **SCHEDULE 1**

Parking requirements for different types of vehicle should be calculated on the basis of the table below, using the most recent complete year data to identify the peak monthly flow, averaging that to find the daily flow and then applying the appropriate formulae:

A = number of cars and light goods vehicles; and

B = number of HGVs and coaches

Advice on obtaining and interpreting traffic flows should be obtained from the Highways Agency

Parking requirements at motorway service areas			
Calculation <sup>16</sup>		Variable	Notes
Traffic flow (Vehicles per day) <sup>17</sup>			
Light vehicle		A	Advice on traffic flows is available from the Highways Agency
HGV and coach		B	
No. of parking spaces required <sup>18</sup>			
Cars	0.5 % of A	C	Dedicated motorcycle bays for securing bikes
HGV	0.5 % of B	D	
Abnormal load	Minimum of 1		
Coach	0.1 % of B	E	
Coach interchange <sup>19</sup>	No. of bays provided	E1	
Caravan/motorhome/vehicle and trailer	0.015 % of A	F	
Motorcycle	0.015% of A (where the percentage falls below 10 a minimum of 10 should be provided)	G	
Additional spaces for lodges	One space per 2 bedrooms		
Spaces for disabled users	5% of C (where the percentage falls below 5 a min. 5 should be provided)		Located adjacent to the front entrance
Spaces for disabled users caravan/motorhome/ vehicle and trailer	5% of F (where the percentage falls below 2 a min.2 should be provided)		
Spaces for disabled lodge users	min. of 2		

## Parking requirements at motorway rest areas

The parking requirements for a motorway rest area are half those required for a motorway service area, rounded up to the higher whole number as necessary.

<sup>16</sup> The Highways Agency's Planning and Economic Development Team can assist with these calculations.

<sup>17</sup> Where the necessary supporting information is available operators may wish to increase the number of parking spaces for particular types of vehicle in recognition of the particular make up of the road users served by the facility.

<sup>18</sup> Parking for disabled travellers should be clearly signed at the entrance to the MSA.

<sup>19</sup> Where such a facility has been permitted.



## Parking requirements at motorway truckstops

The parking requirements for a motorway truckstop are the same as the HGV requirement for a motorway service area. For safety reasons a minimum of 10 parking spaces for cars; 1 space for a car with caravan; and 1 space for a coach should be provided. A minimum of 1 abnormal load space should also be provided.

<b>Parking requirements at trunk road service areas</b>		
	<b>Calculation<sup>20</sup></b>	<b>Notes</b>
<b>No. of parking spaces required<sup>21</sup></b>		
Cars	0.1 % of A	Minimum of 10
HGV	Minimum of 2	
Abnormal load	Minimum of 1	
Coach	Minimum of 1	
Coach interchange <sup>22</sup>	No. of bays provided	
Caravan/motorhome/ vehicle and trailer	Minimum of 2	
Motorcycle	0.015% of A (where the percentage falls below 10 a minimum of 10 should be provided)	Dedicated motorcycle bays for securing bikes
Additional spaces for lodges	One space per 2 bedrooms	
Spaces for disabled users	Minimum of 3	Located adjacent to the front entrance
Spaces for disabled users caravan/motorhome/vehicle and trailer	Minimum of 1	
Spaces for disabled lodge users	Minimum of 2	

<sup>20</sup> The Highways Agency's Planning and Economic Development Team can assist with these calculations.

<sup>21</sup> Parking for disabled travellers should be clearly signed at the entrance to the services.

<sup>22</sup> Where such a facility has been permitted.

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**Appendix C – Phased Assessment of M5 J22, Technical Note 23 (TN023), Stantec,  
28<sup>th</sup> March 2019**

**Job Name:** Development of Bristol Airport to Accommodate 12 mppa

**Job No:** 43321

**Note No:** 43321/TN023

**Date:** 28<sup>th</sup> March 2019

**Prepared By:** S Witchalls

**Subject:** **Phased assessment of M5 J22**

---

## 1. Introduction

- 1.1. Peter Brett Associates LLP (PBA) has been commissioned by Bristol Airport Limited (BAL) to support the planning application to increase the permitted passenger cap from 10 million passengers per annum (mppa) to 12 mppa.
- 1.2. As part of post application discussions, Highways England has requested an additional review of the predicted flows at Junction 22 of the M5 in relation to the increase in traffic associated with the expansion of Bristol Airport.

## 2. Background

- 2.1. The Transport Assessment (TA), submitted to North Somerset Council (NSC) in December 2018, includes calculations of the trip and traffic generation associated with the 2 mppa passenger growth. A revised traffic assignment assessment (primarily affecting trips to/from the west of the airport crossing the M5 such as Weston-Super-Mare, Clevedon, Portishead Nailsea) has been agreed with HE.
- 2.2. The number of additional vehicles predicted to pass through M5 Junction 22 as a result of the Development Proposals is provided in **Table 2.1**.

Table 2.1: Predicted additional vehicles passing through M5 Junction 22 (10 - 12 mppa)

	Outbound	Inbound	Two Way
AM (08:00 – 09:00)	15	25	40
AP (13:00 – 14:00)	66	54	120
PM (17:00 – 18:00)	25	36	61

- 2.3. Highways England has requested that additional information is provided to understand how the incremental passenger growth at Bristol Airport relates to the traffic passing through Junction 22.
- 2.4. A threshold level of an additional 30 two-way vehicles from the airport within either the AM or PM peak has been identified by Highways England before mitigation is required to be in place.
- 2.5. It is possible that some trips from the south could continue beyond Junction 22 and onto Junction 21 to access the airport, but a robust assessment assuming all the traffic from the south on the M5 would access the airport via Junction 22 has been agreed.
- 2.6. This note sets out the passenger throughput at which the traffic passing through Junction 22 is predicted to reach the 30-vehicle threshold identified by Highways England.



## 3. Results

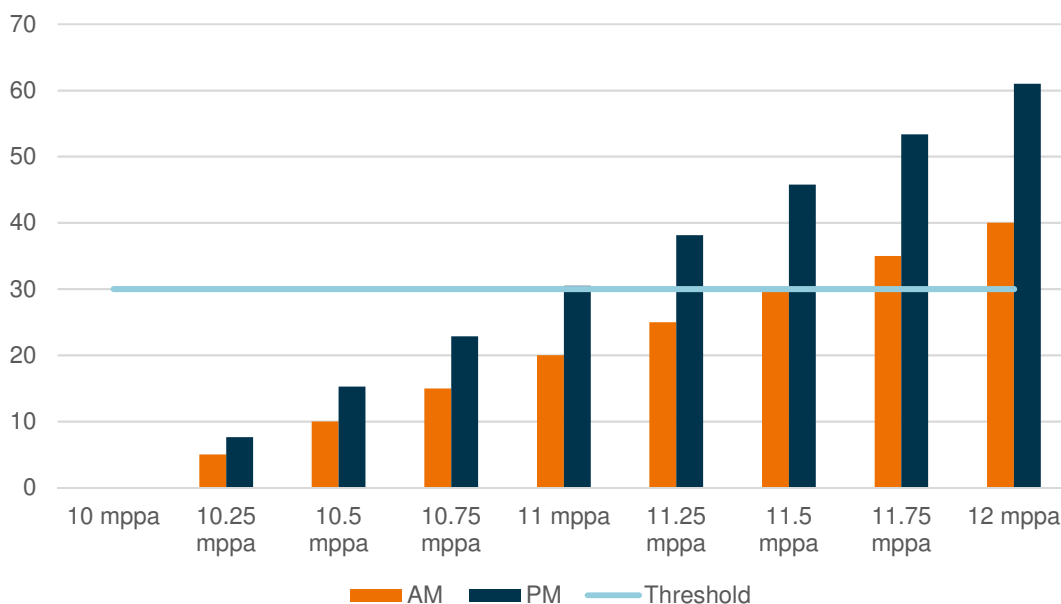
- 3.1. Incremental growth (steps of 250,000 passengers) based on all trips to/from the south on the M5 using J22 is summarised in **Table 3.1**.

Table 3.1: Passenger growth analysis of Junction 22 – Scenario 1

Passengers	AM Peak (08:00 – 09:00)	PM Peak (17:00 – 18:00)
10 mppa	0	0
10.25 mppa	5	8
10.5 mppa	10	15
10.75 mppa	15	23
<b>11 mppa</b>	<b>20</b>	<b>30</b>
11.25 mppa	25	38
11.5 mppa	30	46
11.75 mppa	35	53
12 mppa	40	61

- 3.2. The above analysis is also depicted in **Figure 3.1**.

Figure 3.1: Passenger growth analysis of Junction 22



- 3.3. The 30 two-way vehicle level is reached at 10.984mppa in the PM peak. It is therefore proposed that a threshold level of 11 mppa is set before mitigation is required to be in place at Junction 22.

## **Appendix D – Sedgemoor District Council Local Plan – Strategic Road Network Traffic Assessment, CH2M, 20<sup>th</sup> March 2018**

# Sedgemoor District Council Local Plan – Strategic Road Network Traffic Assessment

PREPARED FOR: Highways England  
PREPARED BY: Iain Arthur  
DATE: 20<sup>th</sup> March 2018  
PROJECT NUMBER: 679475.SP.17.43.06  
APPROVED BY: Graham Stevenson

## 1.0 Background

Sedgemoor District Council (SDC) has submitted the ‘Sedgemoor Proposed Submission Local Plan’ to the Secretary of State at the Ministry of Housing, Communities and Local Government. Highways England is a statutory consultee in the planning process and has a responsibility to ensure that the Strategic Road Network (SRN) operates safely and is managed in the public interest.

With respect to the Sedgemoor Local Plan, Highways England's interest relates to approximately 30km of the M5, this includes the following junctions on the SRN:

- Junction 22 for Highbridge and Burnham-on-sea; and
- Junction 23 for Down End, Puriton and Bridgwater north.

CH2M has been commissioned by Highways England to undertake a traffic and highways assessment of the cumulative impacts of the Sedgemoor Local Plan on the SRN. The assessment will also consider the potential for interaction between the SRN and the local road network, particularly at the Dunball roundabout. The traffic assessment has determined if the cumulative impact of the plan is severe with regard to the SRN.

The purpose of this assessment was:

- Assess the cumulative impact of the proposed Sedgemoor District Local Plan to determine if the new traffic demand can be safely accommodated on the SRN;
- Assess the potential for interaction with the local road network. The focus was to ensure that queues/traffic were not forecast to block back from the local road network onto the SRN; and
- Propose indicative mitigation measures where capacity issues are identified as a result of the cumulative assessment.

This technical note provides a summary of the cumulative impact assessment of the proposed Sedgemoor Local Plan.

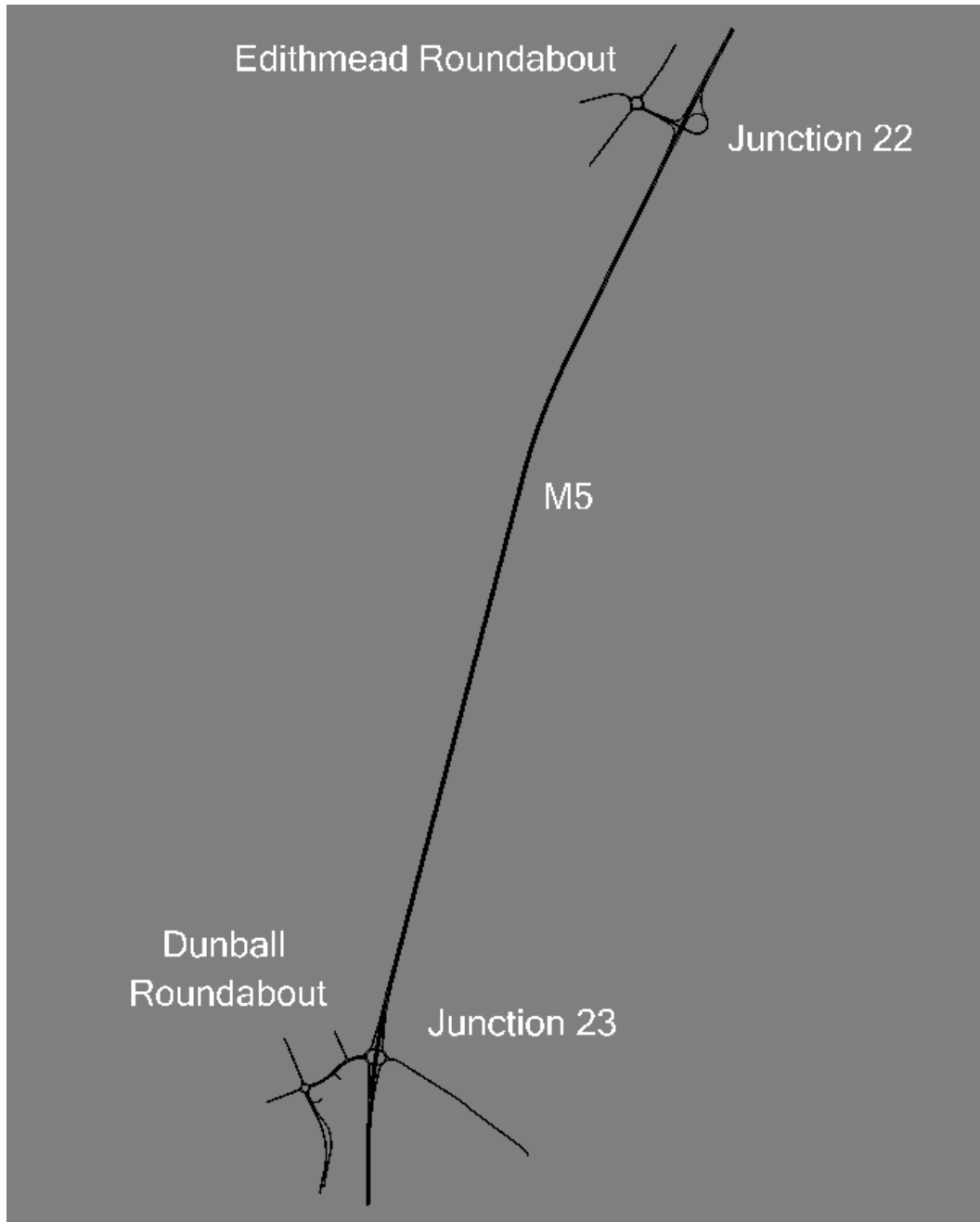
## 2.0 M5 Junction 22 and 23 Traffic Model

CH2M has utilised the existing Paramics Discovery model of Junctions 22 and Junction 23 in order to undertake the assessment of cumulative development traffic.

The 'M5 junction 22 and junction 23' Paramics Discovery microsimulation model was developed by SYSTRA on behalf of Highways England. The model has been calibrated and validated to Design Manual for Roads and Bridges (DMRB) criteria for the AM (07:00-10:00) and PM (16:00-19:00) peak periods. The development of the model is detailed in the 'M5 Junction 22 & Junction 23 Local Model Validation Report' issued by SYSTRA in July 2017.

The network coverage of the model is shown in Figure 1.

Figure 1: M5 Junction 22 and Junction 23 Model Network Coverage





### 3.0 Modelled Scenarios

The model was validated for a base year of 2017. Future year scenarios have been prepared for 2032, as this is the final year of the plan period. In December 2018, SDC provided an uncertainty log (spreadsheet dated 9<sup>th</sup> November 2017) of future development within the council area. This schedule of development was used as an input to the preparation of the future year demands. In order to avoid double counting of future demand, the forecast scenarios have been prepared by considering the number of trips generated by the submission Local Plan, using the number of additional households as the basis for this. Census journey to work and education data was used to distribute the trips.

A Core scenario has been prepared in line with TAG Unit M4 'Forecasting and Uncertainty' guidelines. The core scenario has been based on development that has been marked by SDC as Near Certain (NC) to proceed. In line with WEBTAG guidance, the Core scenario demands have been capped to values from the National Trip End Model (NTEM).

In order to stress test the capacity of the SRN to safely accommodate the LP, two sensitivity scenarios have also been included. The first of these is the inclusion of trips generated by the Huntspill Energy Park in addition to the demand estimated for the LP. Given that HEP is a trip attractor rather than a generator, including HEP as additional trips could lead to double counting of demand in the forecast. However, this is considered appropriate for the purpose of the sensitivity test as the intention is to assess whether the SRN can accommodate a higher level of demand than the core scenario without experiencing adverse effects. Adding HEP as a sensitivity test also means that the core forecast is focussed on the LP development only.

A CorePlus growth LP scenario has also been prepared, this includes proposed development that was marked as More Than Likely (MTL) by SDC, in addition to the Near Certain development. Typically, development marked as More Than Likely to proceed would be included in the core scenario, but in this case it was considered beneficial to understand the impact of the demands on an incremental basis.

Hinkley Point C (HPC) is planned to be operational by the future year assessment scenario of 2032, based on the current construction programme. Travel to and from HPC for employment has the potential to add trips to the area of network within the study. However, there is a lack of clarity about the level of traffic demand associated with the facility. Therefore, trips in the forecast demand scenario have not been redistributed due to HPC.

The following demands scenarios have been assessed:

- 2017 Base;
- 2032 Base + LP Core (Capped to NTEM);
- 2032 Base + LP Core (Capped to NTEM) + HEP; and
- 2032 Base + LP CorePlus + HEP.

The development of the demands for the future year scenarios is detailed in Section 4 of this technical note.

The traffic model covers the following time periods:

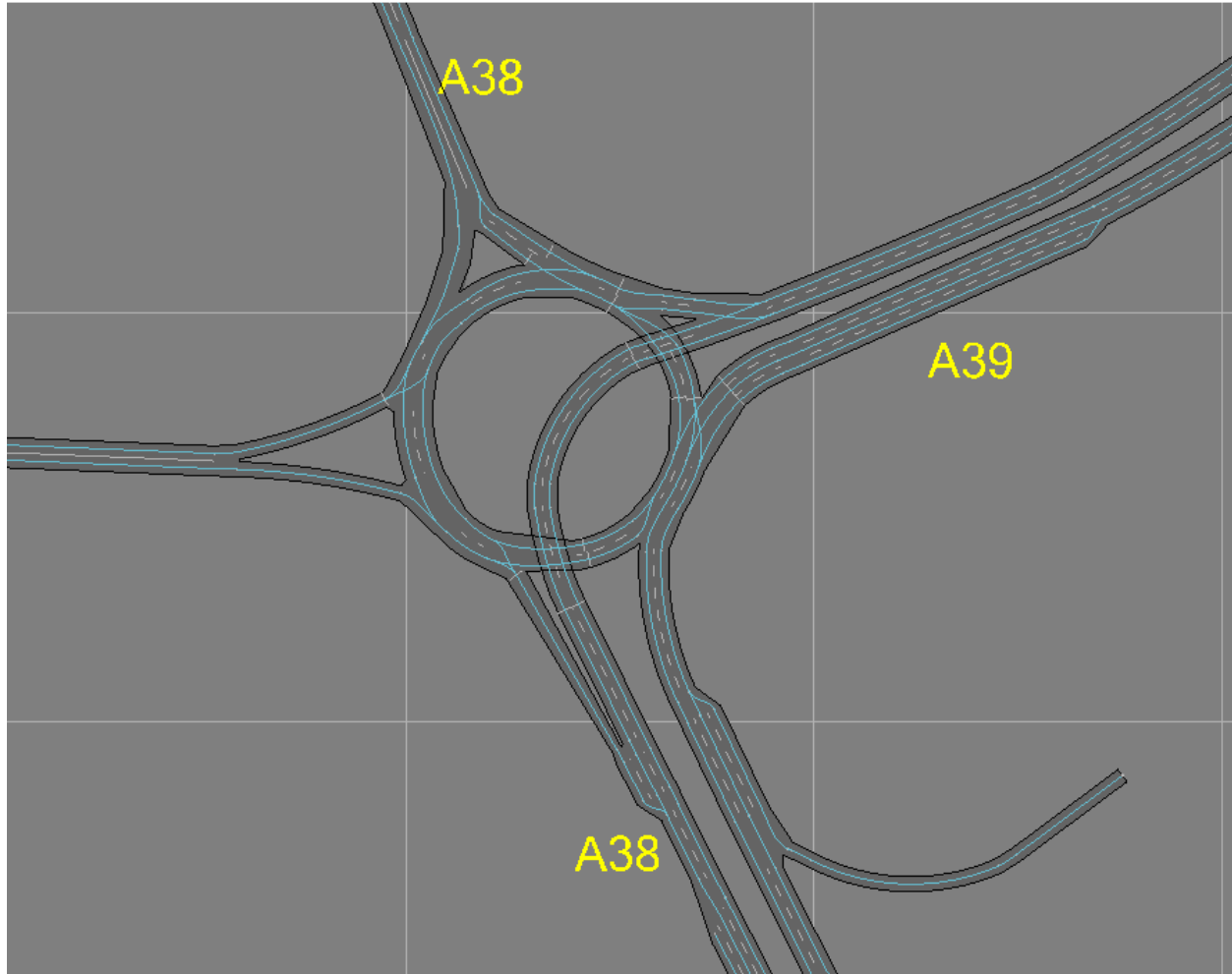
- Weekday AM Peak Period: 07:00-10:00; and
- Weekday PM Peak Period: 16:00-19:00.

The following committed infrastructure has been included in the future year scenarios:

- At grade signal improvements at the Dunball roundabout, including a cut through from the A38 southern arm to the A39 eastern arm. The scheme has been coded with fixed timings on a 60 second cycle; and
- Signalisation of the M5 Junction 23, the signals have been coded with fixed settings.

The layout of the Dunball junction is shown in Figure 2.

**Figure 2: Committed Scheme Layout at Dunball Roundabout**



The Paramics Discovery software is currently unable to simulate MOVA control. Therefore, all signal timings within the model operate with fixed time settings. As such, signalised junctions in the network may operate with a greater level of efficiency than is predicted by the model.

## 4.0 Forecast Traffic Growth

The forecast of demand for the future year scenarios has been based on the best information available to the study.

### 4.1 Local Plan Forecast Demand

The forecast Local Plan demands for the 2032 future year scenario were prepared in three stages:

1. Trip Generation and Modal Split: The number of households within the local plan were identified based on data provided by SDC. TRICS was used to estimate the number of car trips generated by the developments for the three hour peak periods. Student halls of residence were excluded from the trip generation calculation as it was considered unlikely that they would generate significant peak period car demand within the area of model coverage.
2. Trip Distribution: The distribution of trips was undertaken based on census travel to work and education data in table U03EW (Location of usual residence and place of work by method of travel to work (MSOA level)). The distribution of data was undertaken in two steps:
  - Step 1: The proportion of trips to and from the new developments in the Sedgemoor area was established at the Local Authority level. At this geographical level, approximately 55% of trips to work and education were within the Sedgemoor area.
  - Step 2: The distribution of the 55% of trips internal to the Sedgemoor area was then calculated. This was done by establishing the distribution of trips at the Medium Standard Output Area (MSOA) geographical area. This enabled the proportion of trips travelling between the different parts of the Sedgemoor area to be identified.
3. Trip Assignment: The trips were then manually distributed to the network based on professional judgement and a review of google traffic data. For example, trips going to Bristol were assigned to the M5 north and trips to Dorset were assigned to the M5 south.

The number of trips estimated for the LP scenarios is shown in Table 1.

**Table 1: LP Trip Estimate that Enter Paramics Model Network (Number of Vehicles)**

Modelled Scenario	Households <sup>1</sup>	AM (07:00-10:00)	PM (16:00-19:00)
		Number of Vehicle Trips on Modelled Network	
2032 Core LP <sup>2</sup>	6,085	2,244	2,509
2032 CorePlus LP	6,605	3,229	3,020

Note 1: Does not include 200 unit student accommodation block at Bridgwater and Taunton College

Note 2: Demand capped to NTEM

## 4.2 Huntspill Energy Park

The estimate of demand for HEP is based on the Transport Assessment (TA) for the development, issued by PBA and dated 2013. Within the TA for HEP, the junction assessments have been based on the assignment output from a strategic level SATURN model. Actual flows and queues at the end of the modelled period from the SATURN model have been used by PBA as inputs to the junction assessment. This approach accounts for congestion and reflects the number of trips that were able to pass through the SATURN model but does not replicate the underlying 'demand' for travel generated by the development. The assignment from the SATURN model is the most readily available dataset from the TA and has been used to prepare the forecast of HEP trips for this study, despite the potential suppression of demand. The use of actual flows in the trip estimate should be borne in mind during any consideration of results.

The number of trips estimated for the HEP development and included in the model is shown in Table 2.

Table 2: Trip Estimate for HEP (Number of Vehicles)

Trips between HEP and:	Number of Trips	
	AM (07:00-10:00)	PM (16:00-19:00)
M5 North	393	281
M5 South	714	935
Dunball Roundabout	323	386
<b>Total</b>	<b>1,431</b>	<b>1,603</b>

The following assumptions were made during the preparation of the forecast demand:

- The forecast demands have not been adjusted to take account of network capacity outwith the network coverage of the model; and
- Behavioural responses such as trip retiming and modal shift have not been built into the forecast.

The demands for the modelled scenarios is shown in Table 3.

Table 3: Number of Trips by Modelled LP Scenario

Modelled Scenario	AM (07:00-10:00)	PM (16:00-19:00)
2017 Base	29,097	30,248
2032 Base + LP Core (Capped to NTEM)	31,341	32,757
Difference from 2017	2,244	2,509
% Difference from 2017	8%	8%
2032 Base + LP Core (Capped to NTEM) + HEP	32,772	34,360
Difference from 2017	3,675	4,112
% Difference from 2017	13%	14%
2032 Base + LP High + HEP	33,757	34,871
Difference from 2017	4,660	4,623
% Difference from 2017	16%	15%

## 5.0 Model Results

Results are presented for the following modelled scenarios:

- 2032 With LP Development; and
- 2032 With LP Development and Highway Improvements.

The 2032 With LP Development scenario includes committed infrastructure measures at Dunball roundabout and M5 junction 23 (both committed via Hinkley Point C). The operation of the With LP Development scenarios will indicate whether the committed SRN has the capacity to safely accommodate the Sedgemoor LP.

## 5.1 With LP Development Model Operation

Due to the high level of congestion in the With LP Development scenario, quantitative results have not been provided. Instead, a single qualitative description of network performance is provided for all demand scenarios.

The forecast demands lead to a notable increase in demands at the two junctions on the SRN. The increase in traffic demands at the SRN junctions in the AM peak hour are shown in Table 5.

**Table 4: Traffic Demands at SRN Junctions in the AM Peak Hour (08:00-09:00)**

Junction	Arm	Base 2017	2032 Base + LP Core (Capped to NTEM) + HEP	2032 Base + LP CorePlus + HEP
Edithmead Roundabout	Bristol Road North	1,982	2,071	2,119
	B3140 West	1,385	1,381	1,385
	Bristol Road South	1,195	1,400	1,541
	From M5	2,234	2,278	2,312
Junction 23	A39 West	1,421	2,165	2,394
	M5 Southbound Off-Slip	1,734	2,006	2,092
	A39 East	1,791	2,217	2,325
	M5 Northbound Off-Slip	1,041	1,761	1,907

The increase in traffic demands at the SRN junctions in the PM peak hour are shown in Table 5.

**Table 5: Traffic Demands at SRN Junctions in the PM Peak Hour (17:00-18:00)**

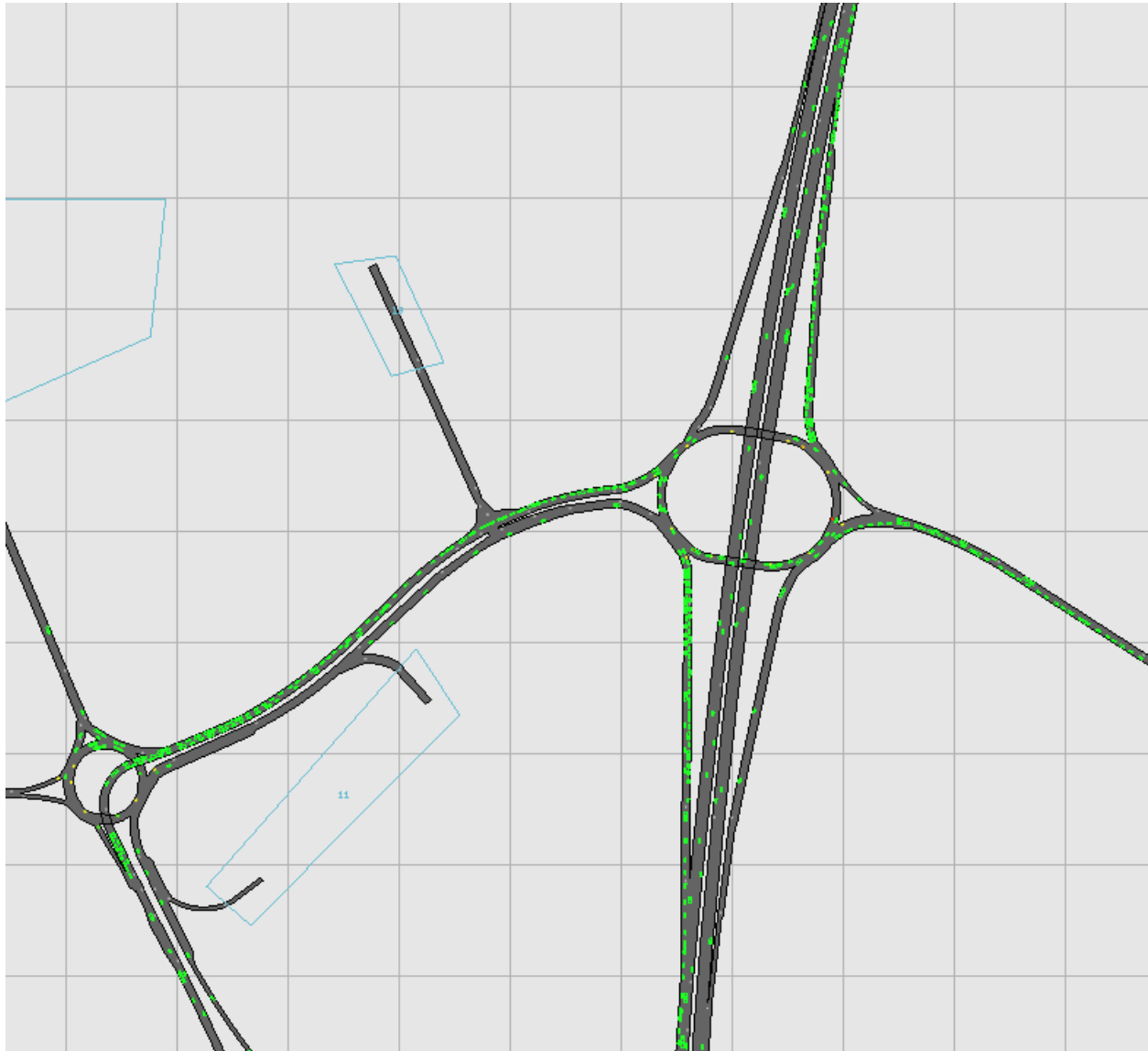
Junction	Arm	Base 2017	2032 Base + LP Core (Capped to NTEM) + HEP	2032 Base + LP CorePlus + HEP
Edithmead Roundabout	Bristol Road North	2,597	2,715	2,747
	B3140 West	1,028	1,029	1,028
	Bristol Road South	1,082	1,307	1,409
	From M5	2,144	2,144	2,145
Junction 23	A39 West	1,898	2,682	2,768
	M5 Southbound Off-Slip	1,503	1,725	1,776
	A39 East	1,332	2,152	2,235
	M5 Northbound Off-Slip	1,051	1,678	1,735

The increase in demand in the network results in a substantial increase in congestion on the With LP Development network.

#### 5.1.1 Junction 23 – With LP Development

The 2032 With LP Development model shows high levels of congestion in both the AM and PM periods. The main source of congestion in the model is junction 23. The signal stoplines do not provide sufficient capacity to accommodate the full set of demand at the station. Figure 3 shows typical queueing during the peak period at junction 23 with the committed network and LP development.

Figure 3: 2032 With LP Development – AM Peak Period (100m gridlines)



The queues that form at Junction 23 in both the AM and PM periods in the With LP Development scenario are sufficient to extend back onto the M5 main carriageway and impede its operation. This includes stationary vehicles being present on the M5 main carriageway.

A queue on the western arm of junction 23 also extends back through the Dunball roundabout and impedes its operation.

It should also be noted that the queue on the eastern arm of junction 23 extends back into the zone. Although this demand is not included within the model, this would mean that the queue length would be sufficient to extend through the priority junctions on the A39 to the east of junction 23 and impede its operation.

### **5.1.2 Junction 22 – With LP Development**

Initially, in the 2032 With LP Development model, extensive queuing does not occur at Edithmead roundabout. However, when the bottleneck at junction 23 is alleviated, the development traffic is able to travel through the network. This leads to the formation of significant queues at Edithmead roundabout, particularly during the PM peak period, as shown in Figure 4. During the PM peak, the queue on the westbound approach to Edithmead roundabout extends back onto the northbound off-slip from the M5 and eventually onto the main carriageway itself. The level of congestion is such that stationary vehicles are found on the M5.

**Figure 4: 2032 With LP Development Plus Mitigation at Junction 23 – PM Peak Period Queue**



### **5.1.3 Summary of With LP Development Network Operation**

The proposed Sedgemoor LP leads to a significant increase in traffic demand on the SRN. The demand generated by the LP cannot be safely accommodated on the committed SRN network. The following areas of the SRN were noted to be over capacity in the With LP Development scenario:

- Junction 22 and Edithmead roundabout: During the PM peak a queue forms at the eastern arm of Edithmead roundabout and extends back onto the northbound off-slip at junction 22. The queue eventually extends back on to the main carriageway of the M5, causing stationary vehicles to appear on the mainline.
- Junction 23: Extensive queuing is experienced on all arms of the junction in the With LP Development scenario. The queues on the off-slips extend back onto the M5, causing stationary vehicles to be present on the main carriageway. Queues on the eastern and western arms of junction 23 would extend far enough to impede the operation of local road junctions, including Dunball roundabout.

## **5.2 With LP Development and Highway Improvements Model Operation**

The do-something network contains a set of mitigation measures designed to accommodate the forecast demand from the LP. Given that quantitative results from the With LP Development model have not been presented for comparison, a qualitative description of the operation of the do-something network is also provided.

A set of indicative mitigation measures has been identified to accommodate the forecast demands from the proposed Sedgemoor LP. The mitigation measures were developed based on iterative testing within the model, aimed at finding the most efficient way of accommodating demand. The aim was also to identify a set of mitigation measures that could be delivered without implementing changes to the structures over the M5 or extensive earthworks. Linsig models of Edithmead roundabout and junction 23 were developed to provide optimised signal timings to go into the Paramics model.

It should be noted that the identified mitigation measures are indicative only and require further development through the development management process.

### **5.2.1 Junction 22 Mitigation**

The main aim of the mitigation process was to reduce the queue on the eastern arm of Edithmead roundabout during the PM peak period and to prevent it blocking back on to the M5.

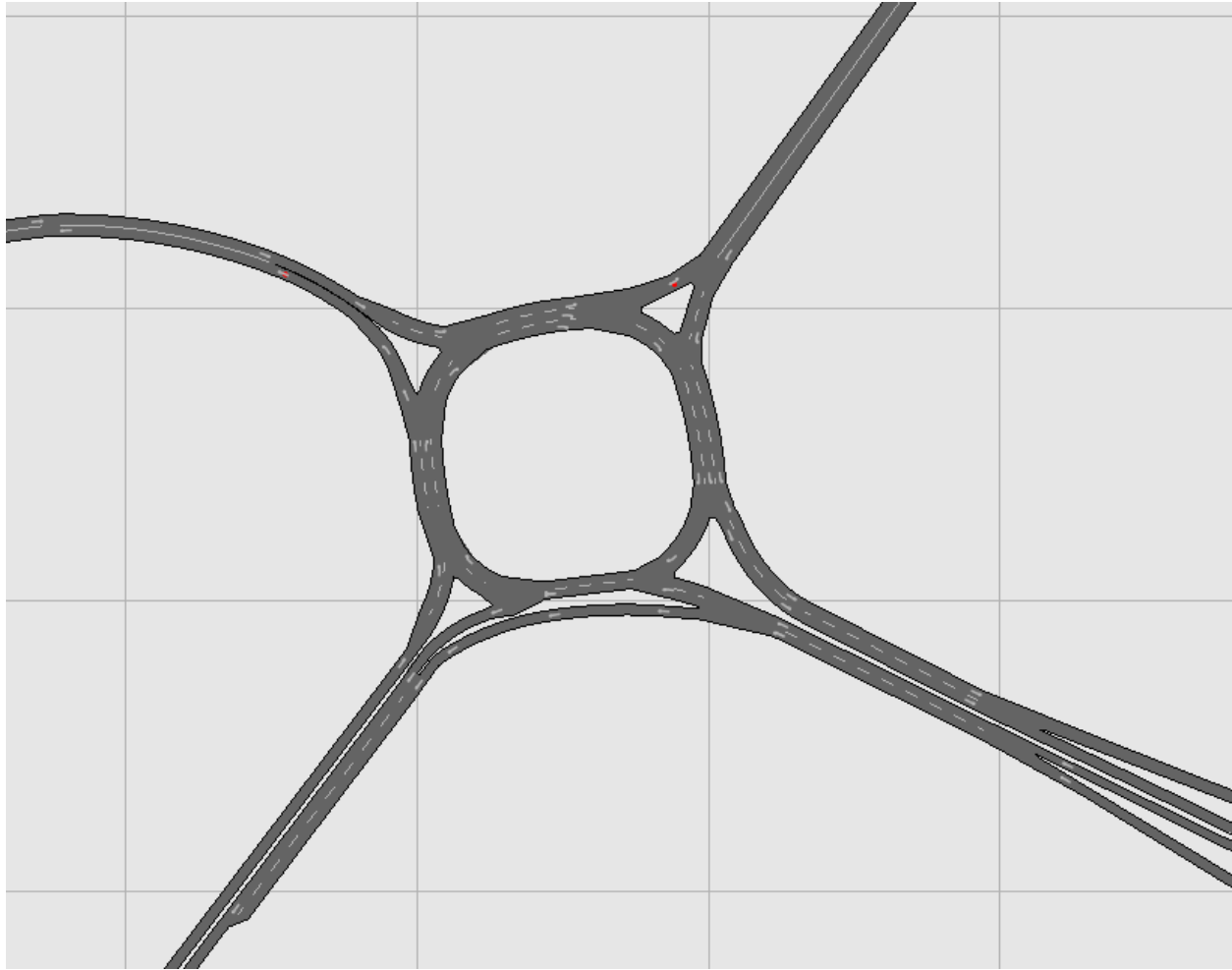
The assessment of potential mitigation has focused on two main options:

- Signalisation of the Edithmead roundabout; and
- Provision of a left turn free flow slip from the M5 approach to the A38 southern arm. This option also includes widening of the A38 southbound exit to two lanes for 100m.

The junction with the left turn slip is shown in Figure 5.



Figure 5: Proposed Indicative Mitigation at Junction 22 (100m gridlines)



Both options remove the queue on the northbound off-slip in the PM period. In general, the options operate without excess delay or queuing. However, within the signal option, the reallocation of priority does cause increased queuing and delay on the local road network. A queue of several hundred metres forms on the A38 northbound approach to the junction.

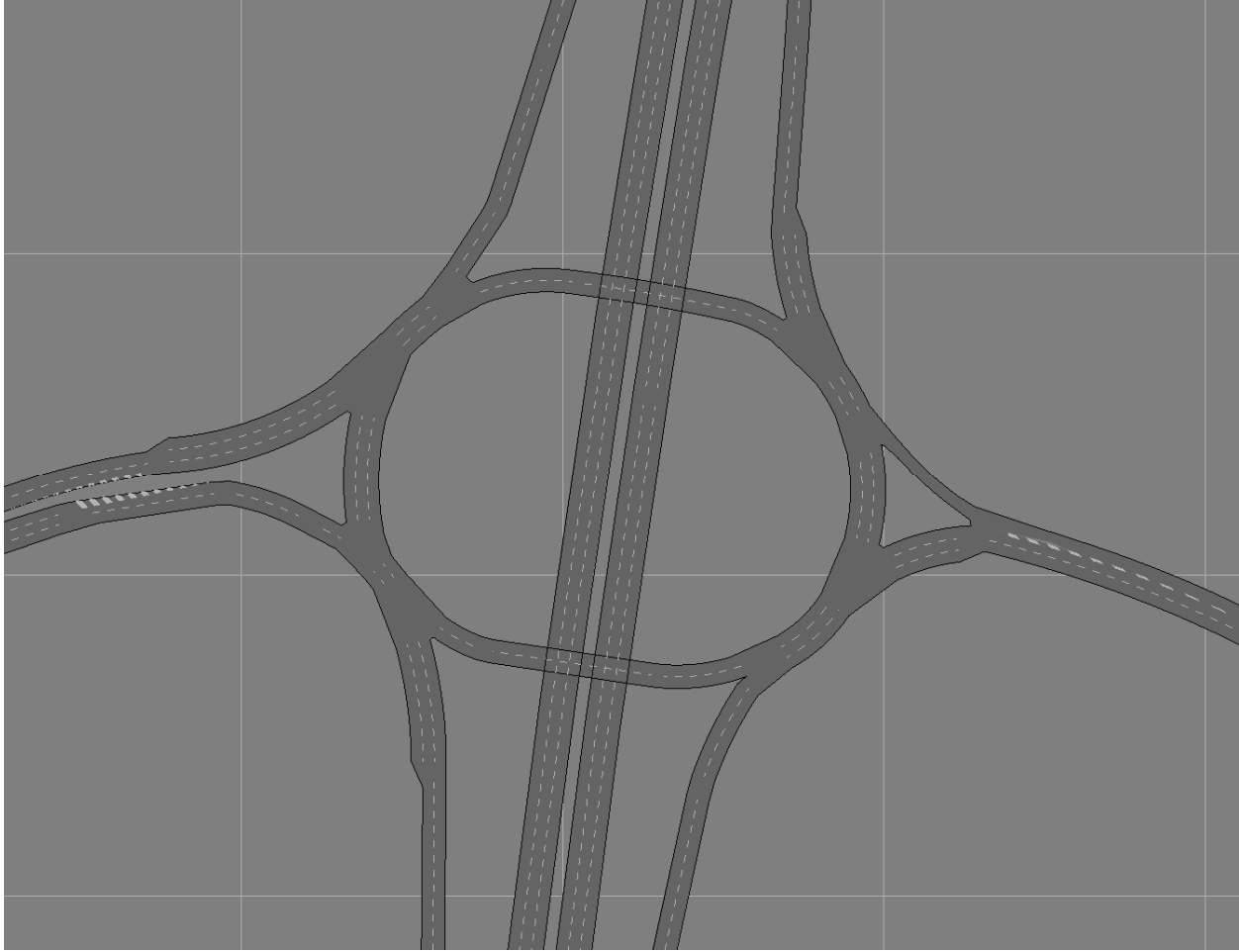
Therefore, both of the indicative options would provide sufficient capacity for the SRN to safely accommodate the LP.

### 5.2.2 Junction 23 Mitigation

The proposed indicative mitigation at junction 23 is shown in Figure 6 and includes the following:

- Short three lane flare added to the A39 west arm;
- Short three lane flare added to the M5 north arm;
- Two lane flare on A39 east arm;
- Reallocation of the lanes on M5 south arm to allow for two left turn lanes;
- Eastern half of circulating carriageway widened to three lanes; and
- Northwestern segment of circulating carriageway widened to three lanes.

Figure 6: Proposed Indicative Mitigation at Junction 23 (100m gridlines)



With the mitigation measures at junction 23 in place, the queues on the slip-roads do not extend back to the M5 mainline. The junction generally operates efficiently, with the majority of queues clearing during the green phase of the signals. The queue on the western arm is no longer of sufficient length to block back to the Dunball roundabout and impede its operation, as it does in the committed highway network.

As can be seen from Figure 6, the model doesn't include side road access points such as at Puriton onto the A39. The operation of these junctions and any interaction with Junction 23 would need to be assessed through the development management process.

### 5.2.3 Summary of With LP Development and Highway Improvements Network Operation

Mitigation measures have been identified at M5 junctions 22 and 23 that would enable the network to operate without excess queues and delays in the future year scenario. With these mitigation measures in place the SRN operates within capacity in the model, without queues blocking back to the M5 main carriageway. It should be noted that only preliminary development and testing has been undertaken for the options. The options at junctions 22 and 23 would require further investigation during the development management process. It is likely that this would include an assessment of cumulative development impact.

The Dunball roundabout operates within capacity when the mitigation measures are in place at Junction 22 and Junction 23.

The following risks should be considered in relation to the output from the

- The demand forecast has been prepared on the assumption that all traffic can get to this part of the network;
- Behavioural responses have not been included within the demand forecast; and
- The Paramics Discovery model does not include the priority junctions on the A39. The development management process will need to include careful consideration of the interaction between Junction 23 and the junctions on the A39.

The development management process would provide an opportunity to mitigate these risks as and when increased detail emerges of the proposed developments and land allocations contained within the Sedgemoor LP.

## 6.0 Summary

The M5 junction 22 and junction 23 Paramics model has been used to assess the potential impact of the submission Sedgemoor LP on the SRN. The proposed LP could lead to an increase in traffic demand of around 15% in the area of network coverage considered within this assessment. The purpose of the assessment was to identify whether the SRN could safely accommodate the demand from the LP.

Increased traffic demand due to the LP causes the committed SRN to operate significantly over capacity at junction 22 and junction 23. At both locations, the model forecasts that queues on the off-slips would extend onto the M5 causing stationary vehicles on the main carriageway.

A set of indicative mitigation measures have been developed that would safely accommodate the forecast traffic demand from the proposed Sedgemoor LP.

- At Junction 22, mitigation would be required at the Edithmead roundabout in order to protect the safe and efficient operation of the M5. This is likely to involve the provision of a dedicated left-turn free flow slip from the M5 approach to the A38 south arm and/or the signalisation of the Edithmead junction.
- At Junction 23, localised widening on the approaches and circulating carriageway would be required in addition to the committed HPC scheme.

Both of the proposed mitigation measures would require further investigation and development through the development management process.

## **Appendix E – National Highways Planning Response for proposed residential development at Isleport Lane, Highbridge (reference 11/19/00003)**



## National Highways Planning Response (NHPR 21-09) Formal Recommendation to an Application for Planning Permission

From: Regional Director, South West Operations Division, National Highways  
planningsw@highwaysengland.co.uk

To: Sedgemoor District Council  
Development Management – FAO Dawn de Vries

CC: [transportplanning@dft.gov.uk](mailto:transportplanning@dft.gov.uk)  
[spatialplanning@highwaysengland.co.uk](mailto:spatialplanning@highwaysengland.co.uk)

Council's Reference: 11/19/00003

Referring to the notification of an outline planning application (all matters reserved except access) dated 9 January 2019 referenced above, for a residential development of up to 248no. dwellings (Use Class C3), community uses/local shop (D1/A1), public open space and green infrastructure, new vehicle access points from Isleport Lane and associated engineering, drainage, landscape and infrastructure works at land to the east of Isleport Lane, Highbridge, Somerset, notice is hereby given that National Highways' formal recommendation is that we:

- ~~a) offer no objection (see reasons at Annex A);~~
- b) recommend that conditions should be attached to any planning permission that may be granted (see Annex A – National Highways recommended Planning Conditions & reasons);
- ~~c) recommend that planning permission not be granted for a specified period (see reasons at Annex A);~~
- ~~d) recommend that the application be refused (see reasons at Annex A)~~

Highways Act 1980 Section 175B is/is not relevant to this application.<sup>1</sup>

This represents National Highways' formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

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<sup>1</sup> Where relevant, further information will be provided within Annex A.

Should the Local Planning Authority not propose to determine the application in accordance with this recommendation they are required to consult the Secretary of State for Transport, as set out in the [Town and Country Planning \(Development Affecting Trunk Roads\) Direction 2018](#), via [transportplanning@dft.gov.uk](mailto:transportplanning@dft.gov.uk) and may not determine the application until the consultation process is complete.

**Signature:** *Sally Parish*

**Date:** 24 September 2021

**Name:** Sally Parish

**Position:** Planning Manager

**National Highways:** Level 1, Ash House, Falcon Road, Sowton Industrial Estate, Exeter EX2 7LB

**Email:**

sally.parish@highwaysengland.co.uk

## **Annex A      National Highways recommended Planning Conditions**

National Highways has been appointed by the Secretary of State for Transport as a strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

Highways England was renamed National Highways in August 2021. Prior to April 2015 the organisation was known as the Highways Agency. National Highways is a government owned company responsible for operating, maintaining and improving the SRN.

### **Statement of Reasons**

This is an outline planning application (all matters reserved except access) for a residential development of up to 248 dwellings, community uses/local shop, public open space and green infrastructure, new vehicle access points from Isleport Lane and associated engineering, drainage, landscape and infrastructure works at land to the east of Isleport Lane, Highbridge, Somerset, to the west of Junction 22 (J22) of the M5. The development is to be accessed by vehicular traffic from the southern end of Isleport Lane, which forms part of the local road network.

### **M5 J22 and A38 Edithmead Roundabout**

National Highways is aware of existing performance issues at M5 J22 and the A38 Edithmead roundabout, with recent surveys undertaken on behalf of our predecessor, Highways England, revealing vehicle queues on the M5 J22 northbound off-slip which extend onto the mainline during the evening peak period. National Highways considers this to be a safety risk.

Paragraph 9 of Circular 02/2013 sets out that development proposals are considered to be unacceptable if they increase demand for use of a section of the strategic network that is already operating over-capacity, or cannot be safely accommodated within the existing infrastructure provision.

NPPF paragraph 108 sets out that in assessing applications for development, it should be ensured that any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree. Development which results in an unacceptable impact on highway safety may be prevented or refused (NPPF paragraph 109).

The need for improvements at the A38 Edithmead roundabout to accommodate planned development is reflected in the adopted Sedgemoor Local Plan. The Isleport Lane application site is allocated for residential development, and the relevant Local Plan policy (Policy BH2 - Land East of Isleport Lane) advises that works to the Edithmead roundabout may be required to mitigate the impact of development. National Highways continues to work with Sedgemoor District Council and Somerset County Council in discussing potential funding opportunities and delivery routes for the necessary improvements at the A38 Edithmead roundabout.

Policy D14 of the Sedgemoor Local Plan sets out that developments which have a significant transport impact should 'ensure that the expected nature and volume of traffic and parked vehicles generated by the development would not compromise the safety and/or function of the local or strategic road networks in terms of both volume and type of traffic generated' and 'Comprehensively address the transport impact of development and appropriately contribute to the delivery of the necessary transport infrastructure'.

Policy D14 therefore seeks to ensure that the delivery of planned development can be managed so that necessary infrastructure is delivered to ensure the impact of development is not severe or unacceptable in safety terms, as set out in NPPF and DfT Circular 02/2013.

## Previous Responses

Our predecessor Highways England previously provided a formal recommendation in respect of this application on 26 July 2019, which recommended that a Grampian-style planning condition be imposed on any permission that may be granted which restricted any occupation of the development until such time as necessary highway improvements at M5 J22/A38 Edithmead roundabout (as identified in policy BH7 of the adopted Local Plan) were complete and open to traffic, to ensure that the development did not result in an unacceptable impact on the safe operation of the SRN. Full details are set out in the Highways England response dated 26 July 2020.

Subsequent to the recommendation dated 26 July, Highways England made recommendations on a number of other residential development applications within the Highbridge and Burnham area that which also increased vehicular demand at M5 J22 and the A38 Edithmead roundabout, including:

- **Land at Lakeside - 11/18/00087**, an outline application for the erection of up to 121 dwellings on Land at Lakeside, Highbridge, Somerset, TA9 4EX.
- **Land at Brue Farm - 52/19/00001**, a Hybrid (full and outline) application for the erection of 171 dwellings together with associated infrastructure, including the erection of a primary school, at Land at Brue Farm, Huntspill Road, Highbridge, Somerset, TA9 3DE. This application shared a red line boundary with part of the site previously granted permission for 550 dwellings under reference 11/11/00107, and therefore this application resulted in an additional 52 dwellings at Brue Farm above those previously consented under the 2011 application.
- **Land at Walrow Road - 11/19/00128**, consisting of a residential development of up to 46 dwellings, formation of access and ancillary works and land to the North of, Walrow, Walrow Road, Highbridge, Somerset, TA9.

The Lakeside application was registered in August 2018 prior to the applications at Isleport Lane and Brue Farm, although Highways England was consulted on it for the first time in November 2019. Highways England tested the development impact at M5 J22 and the Edithmead roundabout, which demonstrated that the proposals added 2 vehicles to the M5 mainline queue during the PM peak. Whilst Highways England considered that this presented an adverse safety impact, it was accepted that they would be unlikely to be able to sustain an objection on the basis of this impact.

Highways England tested the impact of the additional 52 dwellings at Brue Farm on M5 J22 and the Edithmead roundabout, and accepted that whilst there was a slight increase in mainline queuing at M5 J22 during the evening peak period, they were unlikely to be able to sustain an objection to the application in isolation. However, they advised the Council that the cumulative impact of development M5 J22 and the A38 Edithmead roundabout should be taken into account in their consideration of the application.

This was also Highways England's position in respect of the Walrow road application. However, following a meeting with the Council on 5 February 2020 to identify potential funding and delivery mechanisms for the necessary junction improvements, Highways England advised the Council that that proportionate developer contributions/CIL should be sought towards the scheme from developments which impact at the junction.

On the basis of Highways England's responses to the above applications, the Local Planning Authority requested that Highways England review the response to the Isleport Lane proposals



with a view to establishing whether an initial phase of development at the site could be brought forward ahead of the delivery of improvements at J22 M5 J22/A38 Edithmead roundabout.

Based on their assessment of the applications at Lakeside, Brue Farm and Walrow Road, Highways England, in taking a pragmatic approach to facilitating development and delivering the Local Plan, considered that a relatively small quantum of development (circa 50 additional dwellings) could be permitted prior to the implementation of the necessary junction improvement. Therefore, they considered that whilst the occupation of the full quantum of development proposed would have an unacceptable safety impact without mitigation, an early phase of development comprising no more than the occupation of 50 dwellings prior to the implementation of the necessary improvement, could be accepted. On this basis Highways England issued a revised response dated 12 February 2020, recommending that no more than 50 dwellings at the Isleport Lane site be occupied or brought into use prior to the delivery of improvement works at M5 J22/A38 Edithmead roundabout, comprising the full signalisation of the A38 Edithmead roundabout, or and an alternative scheme proposed by the applicant which would mitigate the predicted traffic effects at M5 J22 caused by the development to at least the same extent.

### **Position Update**

Further to the issue of the Highways England response dated 12 February, the applicant's consultants, Vectos, have undertaken further technical assessment regarding the impact of the Isleport Lane development at M5 J22/A38 Edithmead roundabout.

On the basis of the Vectos assessment we are willing to accept an increase in development prior to delivery of the A38 Edithmead roundabout improvements, and as such are recommending a revised condition that limits housing delivery ahead of the necessary highways improvements up to an increased threshold of 100 dwellings. This recommendation therefore supersedes the Highways England response dated 12 February 2020.

We wish to emphasise that any potential variation of the recommended Grampian condition does not alter the need for improvements at the A38 Edithmead roundabout to accommodate planned development and ensure the residual cumulative impact of development on the highway network is not severe or unacceptable in safety terms. We would therefore strongly recommend that Sedgemoor Council prioritise work to secure funding for the required improvements. This will ensure the timely delivery of infrastructure necessary to safely accommodate Local Plan growth and remove the need for restrictions on development build-out.

### **Recommendation**

In light of the above, National Highways recommends the following planning condition be applied to any consent that may be granted:

No more than 100 dwellings of the development hereby permitted shall be occupied or brought into use unless either;

- a) Improvement works at M5 J22/A38 Edithmead roundabout, comprising the full signalisation of the A38 Edithmead roundabout, have been implemented in full and are open to traffic; or
- b) An alternative scheme is proposed by the applicant and implemented in full to ensure that the predicted traffic effects at M5 J22 caused by the development are mitigated to at least the same extent as (a). This alternative scheme is to be agreed in writing by the Planning Authority in consultation with National Highways, Somerset County Council and Sedgemoor District Council.

**Reason:** To ensure the safe and efficient operation of the SRN at M5 J22, by mitigating the traffic impacts of the development which would otherwise cause vehicle queues to extend onto the M5 mainline carriageway.



## Developments Affecting Trunk Roads and Special Roads

### Highways England Planning Response (HEPR 16-01) Formal Recommendation to an Application for Planning Permission

From: Regional Director, South West Operations Division, Highways England  
[REDACTED]

To: Sedgemoor District Council  
FAO Dawn De Vries

CC: transportplanning@dft.gsi.gov.uk  
[REDACTED]

Council's Reference: 11/19/00003

Referring to the notification of an outline planning application (all matters reserved except access) dated 9 January 2019 referenced above, for a residential development of up to 248no. dwellings (Use Class C3), community uses/local shop (D1/A1), public open space and green infrastructure, new vehicle access points from Isleport Lane and associated engineering, drainage, landscape and infrastructure works at land to the east of Isleport Lane, Highbridge, Somerset, notice is hereby given that Highways England's formal recommendation is that we:

- ~~a) offer no objection;~~
- b) recommend that conditions should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions);
- ~~e) recommend that planning permission not be granted for a specified period (see Annex A – non determination);~~
- ~~d) recommend that the application be refused (see Annex A – Reasons for recommending Refusal).~~

Highways Act Section 175B is relevant to this application.<sup>1</sup>

This represents Highways England formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

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<sup>1</sup> Where relevant, further information will be provided within Annex A.

Should you disagree with this recommendation you should consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2018, via [transportplanning@dft.gsi.gov.uk](mailto:transportplanning@dft.gsi.gov.uk).

**Signature:**

[Redacted Signature]

**Date:** 12 February 2020

**Name:** Lisa McCaffrey

**Position:** Planning Manager

**Highways England:** Level 1, Ash House, Falcon Road, Sowton Industrial Estate, Exeter EX2 7LB

**Email:**

[Redacted Email Address]

## **Annex A**      **Highways England recommended planning conditions**

HIGHWAYS ENGLAND (“we”) has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such works to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

This response represents our formal recommendations with regard to planning application 11/19/00003 and has been prepared by Lisa McCaffrey, Planning Manager for the SRN in Somerset.

We have undertaken a review of the relevant documents supporting the planning application to ensure compliance with the current policies of the Secretary of State as set out in DfT Circular 02/2013 “The Strategic Road Network and the Delivery of Sustainable Development” and the MHCLG National Planning Policy Framework (NPPF).

### **Statement of Reasons**

This is an outline planning application (all matters reserved except access) for a residential development of up to 248 dwellings, community uses/local shop, public open space and green infrastructure, new vehicle access points from Isleport Lane and associated engineering, drainage, landscape and infrastructure works at land to the east of Isleport Lane, Highbridge, Somerset, to the west of J22 of the M5. The development is to be accessed by vehicular traffic from the southern end of Isleport Lane, which forms part of the local road network.

### **Previous Response**

Highways England has previously provided a formal recommendation in respect of this application dated 26 July 2019. At that time, we recommended that a Grampian-style planning condition be imposed on any permission that may be granted which restricted any occupation of the development until such time as necessary highway improvements at M5 J22/A38 Edithmead roundabout (as identified in policy BH7 of the adopted Local Plan) were complete and open to traffic, to ensure that the development did not result in an unacceptable impact on the safe operation of the SRN.

This recommendation now supersedes our recommendation dated 26 July 2019.

Following our consideration of this application, Highways England has made recommendations on a number of other residential development applications within the Highbridge and Burnham area that which also increased vehicular demand at M5 J22 and the A38 Edithmead roundabout, including:

- **Land at Lakeside - 11/18/00087**, an outline application for the erection of up to 121 dwellings on Land at Lakeside, Highbridge, Somerset, TA9 4EX.
- **Land at Brue Farm - 52/19/00001**, a Hybrid (full and outline) application for the erection of 171 dwellings together with associated infrastructure, including the erection of a primary school, at Land at Brue Farm, Huntspill Road, Highbridge, Somerset, TA9 3DE. This application shared a red line boundary with part of the site previously granted permission for 550 dwellings under reference 11/11/00107, and therefore this application resulted in an additional 52 dwellings at Brue Farm above those previously consented under the 2011 application.

- **Land at Walrow Road - 11/19/00128**, consisting of a residential development of up to 46 dwellings, formation of access and ancillary works and land to the North of, Walrow, Walrow Road, Highbridge, Somerset, TA9.

The Lakeside application was registered in August 2018 prior to the applications at Isleport Lane and Brue Farm, although Highways England was consulted on it for the first time in November 2019. Highways England tested the development impact at M5 J22 and the Edithmead roundabout, which demonstrated that the proposals added 2 vehicles to the M5 mainline queue during the PM peak. Whilst we considered that this presented an adverse safety impact, we accepted that we would be unlikely to be able to sustain an objection on the basis of this impact.

Highways England tested the impact of the additional 52 dwellings at Brue Farm on M5 J22 and the Edithmead roundabout, and accepted that whilst there was a slight increase in mainline queuing at M5 J22 during the evening peak period, we were unlikely to be able to sustain an objection to the application in isolation. However, we did advise the Council that the cumulative impact of development M5 J22 and the A38 Edithmead roundabout should be taken into account in their consideration of the application.

This was also Highways England's position in respect of the Walrow road application. However, following a meeting with the Council on 5 February 2020 to identify potential funding and delivery mechanisms for the necessary junction improvements, we also advised the Council that that proportionate developer contributions/CIL should be sought towards the scheme from developments which impact at the junction.

On the basis of our responses to the above applications, the Local Planning Authority has requested that we review our response to the Isleport Lane proposals with a view to establishing whether an initial phase of development at the site could be brought forward ahead of the delivery of improvements at J22 M5 J22/A38 Edithmead roundabout.

This HEPR therefore re-considers the full planning application submission, in conjunction with our assessment of subsequent applications which result in an impact on the operation of M5 J22 and A38 Edithmead roundabout. Our primary concern remains the safe operation of M5 J22, and the following comments are made on this basis.

### **M5 J22 and A38 Edithmead Roundabout**

Highways England is aware of existing performance issues at M5 J22 and the A38 Edithmead roundabout, with recent surveys undertaken on behalf of Highways England revealing vehicle queues on the M5 J22 northbound off-slip which extend onto the mainline during the evening peak period. Highways England considers this to be a safety risk.

Paragraph 9 of Circular 02/2013 sets out that development proposals are considered to be unacceptable if they increase demand for use of a section of the strategic network that is already operating over-capacity, or cannot be safely accommodated within the existing infrastructure provision.

NPPF paragraph 108 sets out that in assessing applications for development, it should be ensured that any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree. Development which results in an unacceptable impact on highway safety may be prevented or refused (NPPF paragraph 109).



## Development Impacts

The development proposals comprise a total of 248 dwellings. As part of our previous review of the application, Highways England undertook an assessment of the full development impact at M5 J22 using the Highways England J22 and 23 Paramics Model on behalf of the applicant. This work assessed the opening year of 2023, in line with the opening year development test, and considered a Do Minimum scenario (no development) and Do Something scenario (with Isleport Lane).

The results of our modelling assessment demonstrated that based on full buildout, whilst the development trips do not have a significant impact on the operation of the SRN in the weekday AM peak period, in the 2023 PM peak period the addition of the Isleport Lane development trips leads to a significant increase in queuing and delay on the northbound carriageway of the M5 at J22.

Journey time and queue length results have been extracted from the Paramics model and are presented below for the M5 northbound on the approach to the J22 off-slip during the PM peak period (Figure 1). The model indicates that average journey times increase by several minutes at times during the PM peak period in the 'with Isleport Lane' (do-something) scenario.

Figure 1: M5 Northbound Average Journey Time (2023 Weekday PM Period)

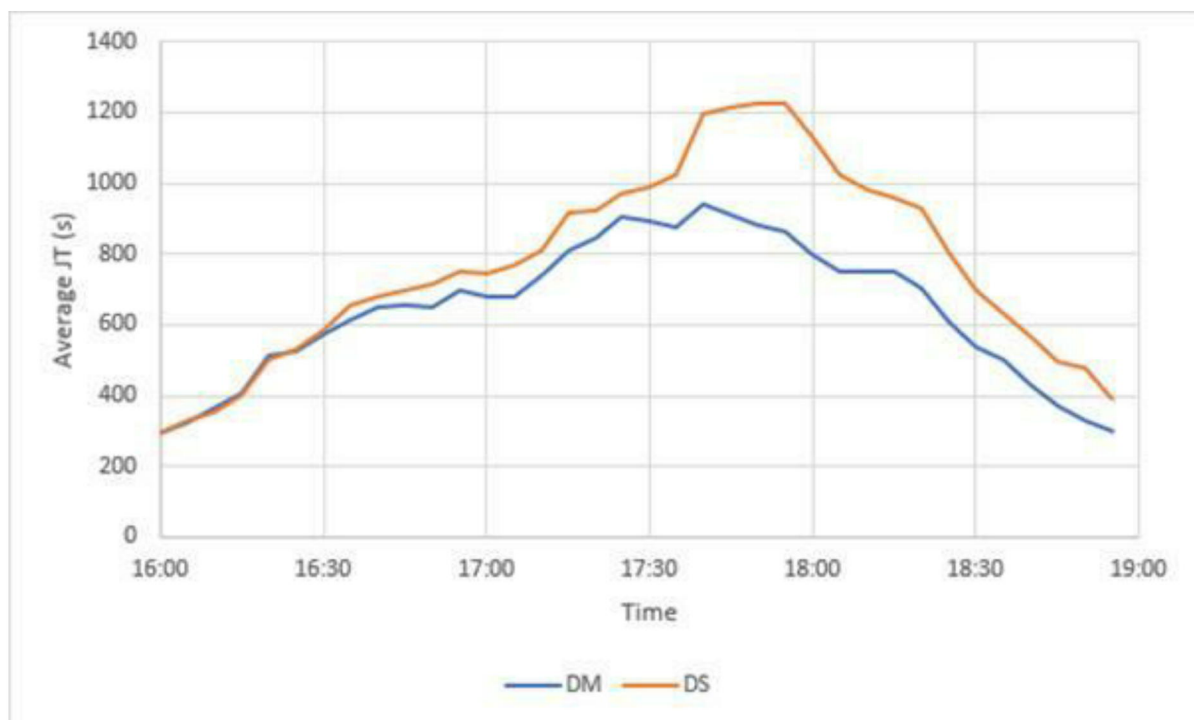
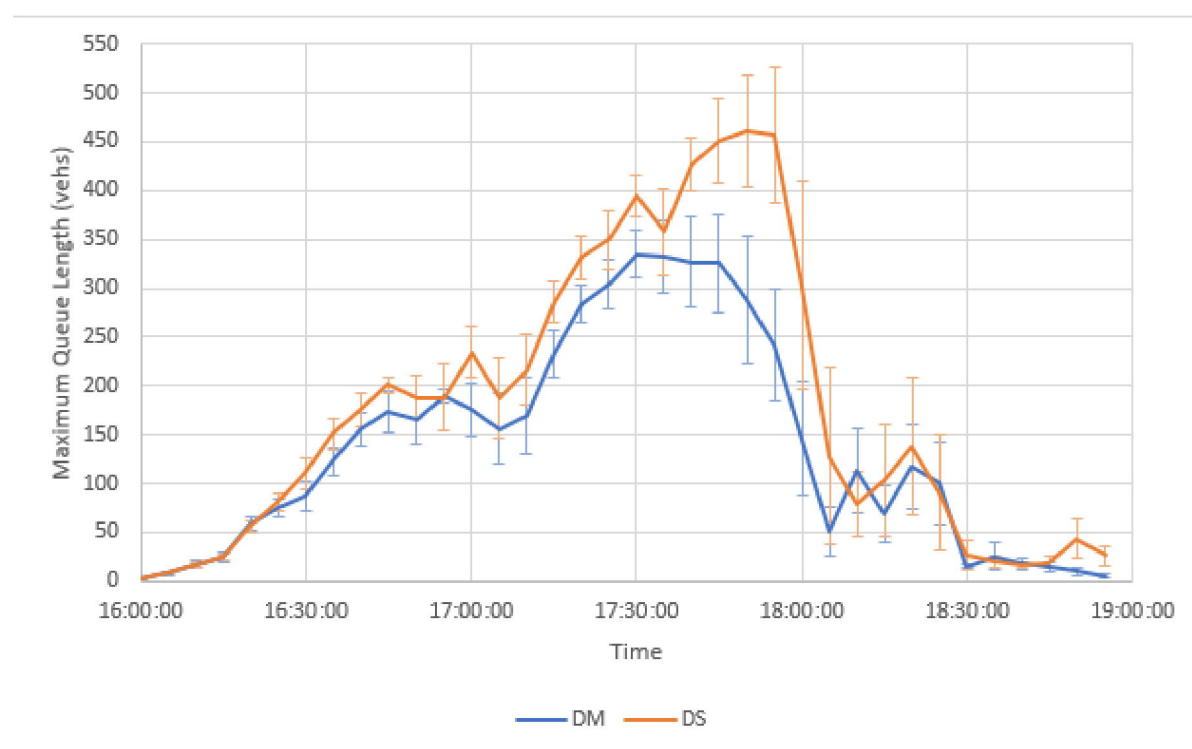


Figure 2 shows modelled queue lengths on the eastern arm of the Edithmead roundabout, where the queue extends onto the M5 northbound carriageway. On the M5 carriageway, the queue is rolling in nature and sporadically blocks through traffic travelling northbound in lane 1. Therefore, the queue length can display high levels of variation. The data in Figure 2 illustrates that modelled queue lengths in the do-something scenario are up to around 100 vehicles longer than in the do-minimum scenario. Therefore, the addition of development trips exacerbates the existing capacity and safety problems on the M5 northbound carriageway at Junction 22.

Figure 2: Maximum Queue Length (with 95% confidence intervals) at the Edithmead Roundabout eastern arm (2023 Weekday PM Period)



The results of the Highways England M5 J22 and J23 Paramics modelling work demonstrated that relatively low increases in flow resulting from development proposals in the vicinity of M5 J22 and the A38 Edithmead roundabout can lead to significant increases in queuing on the northbound off-slip of the M5 J22 during the PM peak period. Therefore, we considered, without mitigation, that the impact of the full quantum of development at Isleport Lane would result in an unacceptable safety impact on the basis that there is an increased potential for vehicular conflict to occur on the high-speed network at M5 J22. As such we recommended a planning condition that restricted the occupation of any dwellings on site until the identified improvement at A38 Edithmead roundabout/J22 of the M5 was implemented and open to traffic.

### Position Update

Based on our recent assessment of the applications at Lakeside, Brue Farm and Walrow Road, Highways England, in taking a pragmatic approach to facilitating development and delivering the Local Plan, considers that a relatively small quantum of development (circa 50 additional dwellings) could be permitted prior to the implementation of the necessary junction improvement. Therefore we are inclined to believe that whilst the occupation of the full quantum of development proposed would have an unacceptable safety impact without mitigation, an early phase of development comprising no more than the occupation of 50 dwellings prior to the implementation of the necessary improvement, could be accepted.

Highways England's revised recommendation reflecting the above is set out below, and should be considered our full and final response to application 11/19/00003.

In line with our responses to other applications within the Sedgemoor Local Plan area, we wish to emphasise the requirement and importance of assessing the cumulative impact of planned growth in order to identify the timescales and development thresholds for necessary



improvements to ensure the residual cumulative impact of development on the highway network is not severe or unacceptable in safety terms.

Policy D14 of the Sedgemoor Local Plan sets out that developments which have a significant transport impact should 'ensure that the expected nature and volume of traffic and parked vehicles generated by the development would not compromise the safety and/or function of the local or strategic road networks in terms of both volume and type of traffic generated' and 'Comprehensively address the transport impact of development and appropriately contribute to the delivery of the necessary transport infrastructure'.

Policy D14 therefore seeks to ensure that the delivery of planned development can be managed so that necessary infrastructure is delivered to ensure the impact of development is not severe or unacceptable in safety terms, as set out in NPPF and DfT Circular 02/2013.

It is strongly advised that Sedgemoor District Council as planning Authority and Somerset County Council as Highway Authority seek CIL or S106 contributions, from all developments that add to the mainline queue which adversely impacts on the safe and efficient operation of the SRN. This will ensure the timely delivery of infrastructure necessary to safely accommodate the Local Plan growth.

### **Recommendation**

In light of the above, Highways England recommends the following planning condition be applied to any consent that may be granted:

No more than 50 dwellings of the development hereby permitted shall be occupied or brought into use unless either;

- Improvement works at M5 J22/A38 Edithmead roundabout, comprising the full signalisation of the A38 Edithmead roundabout, have been implemented in full and are open to traffic; or
- An alternative scheme is proposed by the applicant and implemented in full to ensure that the predicted traffic effects at M5 J22 caused by the development are mitigated to at least the same extent as (a). This alternative scheme is to be agreed in writing by the Planning Authority in consultation with Highways England, Somerset County Council and Sedgemoor District Council.

**Reason:** To ensure the safe and efficient operation of the SRN at M5 J22, by mitigating the traffic impacts of the development which would otherwise cause vehicle queues to extend onto the M5 mainline carriageway.

I trust the above is clear. Please do not hesitate to contact me should you wish to discuss further.