Horsham District Local Plan Transport Study

Local Plan Transport Assessment – Autumn 2023 Review

November 2023

On behalf of **Horsham District Council**

Project Ref: 332610655 | Rev: P04 | Date: November 2023

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Revision	Date	Description	Prepared	Reviewed	Approved
P01	06/10/2023	Draft for Comment	SA	RD	PG
P02	31/10/2023	WSCC Comment & Response	SA	RD	PG
P03	14/11/2023	HDC Comment & Response	SA	RD	PG
P04	21/11/2023	HDC Comment & Response	SA	RD	PG

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1 Introduction

1.1 Background

1.1.1 In 2019, Stantec (at that point known as Peter Brett Associates) was commissioned by Horsham District Council (HDC) to undertake a Horsham Transport Study to support the Regulation 19 Local Plan. A version of this was initially published in May 2021, based on a development strategy and site allocations that were at the time intended to be presented to the Council in July 2021.

1.1.2 Subsequent revision to the Local Plan strategy and development quanta has led to a further Transport Study Report being issued to HDC by Stantec in December 2022 that included the testing of the new Preferred Strategy scenario. However this was not published as the Local Plan had again been delayed.

1.1.3 The purpose of the Transport Study was to develop a strategic highway model to underpin the assessment of the Local Plan impacts. This model was then used to undertake testing of the Local Plan developments and evaluate the impact of proposed development scenarios on the local highway network up to 2039 within Horsham District. The highway impacts as a result of Local Plan development within Horsham on neighbouring authorities' roads and on the Strategic Road Network managed by National Highways was also assessed as part of that study.

1.1.4 Due to the delay of the Local Plan passage now ending, Horsham are now able to progress to Regulation 19 consultation. In order to do so Stantec have been commissioned to review the Horsham Transport Study (Jan 2023 unpublished version) to ascertain its continued fitness for purpose. There are two elements of the review which are reported within this Technical Note:

- Changes in Dwelling Numbers
- Impacts of COVID and changes in travel demand

1.1.5 It is noted that due to the further delay in Local Plan production, the Plan period has been altered to cover the period 2023 to 2040. Given that the overall Plan period of 17 years remains the same as for previous stages of this study and given also that there is inevitable uncertainty about development quanta and travel behaviour in the later years of the Plan period, the findings of this study are nevertheless still considered to be representative, and the approach proportionate.

1.1.6 Alongside this, West Sussex County Council has requested the preparation of a highways safety study to supplement the Transport Study. This is reported in a separate Technical Note.

2 Update to Planning Assumptions

2.1 Existing Local Plan Submission Assumptions

2.1.1 As part of the Horsham Local Plan Transport Report dated December 2022, a preferred development scenario has been modelled based on development assumptions provided by HDC in August 2022. The planning assumption fed into the 2039 Local Plan preferred scenario model scenario.

2.1.2 The Preferred Scenario strategic development sites modelled are summarised within Table 2-1 and the neighbourhood plan sites summarised within Table 2-2.

Table 2-1: Preferred Scenario Strategic Sites (December 2022 submission)

Development Location	Plan Period (Dwellings)	Overall (Dwellings)	Employment - B1 (Plan Period) (M2)	Employment - B2 & B8 (Plan Period) (M2)
West of Ifield (SA101)	1,600	3,000	2,700	6,300
West of Southwater (SA119)	840	1,200	8,000	16,000
East of Billingshurst (SA118)	650	650	660	1,540
North Horsham densification (SA296)	500	500	11,000	8,500
TOTAL	**3,590**	**5,350**	**22,360**	**32,340**

Table 2-2: Preferred Scenario Settlement Sites (December 2022 submission)

Development Location	Plan Period (Dwellings)	Overall (Dwellings)	Employment - B1 (Plan Period) (M2)	Employment - B2 & B8 (Plan Period) (M2)
Ashington	300	300		
Barns Green	105	105		
Broadbridge Heath	150	150		
Cowfold	105	105		
Henfield	325	325		
Horsham - Forest ward	100	100		
Horsham - Novartis	300	300		
Lower Beeding	57	57		
North Horsham parish	300	300		
Partridge Green	255	255	1,000	8,000
Pulborough	245	245	1,000	6,000
Rudgwick and Bucks Green	66	66		
Rusper	38	38		
Small Dole	40	40		
Southwater (land to north)	0	0	0	3,000
Steyning	265	265		

Development Location	Plan Period (Dwellings)	Overall (Dwellings)	Employment - B1 (Plan Period) (M2)	Employment - B2 & B8 (Plan Period) (M2)
Storrington & Sullington	125	125		
Thakeham	65	65		
Warnham	20	20	0	0
West Chiltington	38	38		
TOTAL	**2,899**	**2,899**	**2,000**	**17,000**

2.2 Changes to Development Assumptions

2.2.1 Further updates to the Local Plan development scenario, based on the latest draft of the Regulation 19 submission, have been provided by HDC in November 2023. The variance of these values and development locations impacted, is shown in Table 2-3.

Table 2-3: Development Quanta Change (newly permitted sites discounted)

Development Location	Regulation 19 Local Plan (current draft) number of new homes	Stantec Report Dec 2022 number of new homes*	Difference	Reason for difference
Barns Green	95	105	-10	20 dwellings have been additionally allocated in the parish on a site distant from the main settlement. 30 dwellings have been granted planning permission therefore the site is no longer proposed for allocation.
Broadbridge Heath	133	150	-17	A planning application has been submitted for 133 dwellings which has led to an update in the allocated site capacity.
Lower Beeding	43	57	-14	6 dwellings have been additionally allocated in the parish on a site distant from the main settlement. 20 dwellings have been granted planning permission therefore the site is no longer proposed for allocation.
Pulborough	25	245	-220	170 dwellings have been granted planning permission on a site

Development Location	Regulation 19 Local Plan (current draft) number of new homes	Stantec Report Dec 2022 number of new homes*	Difference	Reason for difference
				previously estimated as having 150 capacity, therefore the site is no longer proposed for allocation. A site previously proposed for allocation for 70 dwellings has not been taken forward.
Rusper	32	38	-6	6 dwellings have been granted planning permission therefore the site is no longer proposed for allocation.

**the numbers shown in the Dec 2022 Report include 'made' neighbourhood plan allocations which were included in the modelling. To ensure like-for-like comparison, figures shown here do not include 'made' neighbourhood plan allocations.*

2.2.2 In terms of transport modelling, Table 2-3 above does not represent a true picture of changes to the dwelling numbers inputted as variables. This is because baseline commitments will not have included these new permissions, therefore for the purposes of this study, they should still be included in the numbers modelled as allocations. As such, the differences between the Stantec numbers shown in the Dec 2022 Report (i.e. growth levels modelled) and the Regulation 19 allocated growth at settlements is less than Table 2-3 suggests. Table 2-4 shows the 'true' changes once newly permitted sites are added back in.

Table 2-4: Development Quanta Change (newly permitted sites retained as 'allocations')

Development Location	Regulation 19 Local Plan (current draft) number of new homes	Stantec Report Dec 2022 number of new homes*	Difference
Barns Green	125	105	+20
Broadbridge Heath	133	150	-17
Lower Beeding	63	57	+6
Pulborough	195	245	-50
Rusper	38	38	0

2.2.3 It has also been identified that the Southwater strategic site delivery within the 2040 end year Plan period is now 735 dwellings i.e. below the previously assumed delivery of 840 dwellings. As such, the delivery of 840 currently modelled is seen as representing a worst-case scenario for trip generation from the site and in any case will cause a negligible impact within the modelling outputs.

2.2.4 It is also not now expected that an additional 500 dwellings will be delivered at North Horsham within the Plan period (the revised trajectory reduces this to 60), however given the advance stage of already-completed infrastructure provision on this site, and that the full site capacity remains 500 additional, it is prudent that the 500 remains within the forecast model to represent a 'worst-case' scenario.

2.3 Updated Planning Quanta Analysis

2.3.1 Applying the existing development trip rates used within the existing Local Plan modelling, Table 2-5 identifies the total impact the change in quanta would have to the existing traffic flows within the model. As can be seen, with total traffic increases being no greater than 12 vehicles at any one site during the assessed peak hours, it can be concluded that the development quanta change would provide a negligible difference to the existing Local Plan modelled impacts.

2.3.2 The figures in table 2-5 does not account for the allocation changes to Pulborough with 50 fewer dwellings than what was modelled in 2022. This difference is considered to be insignificant in the context of the peak hour vehicle trip generation changes.

Table 2-5: Development change to trips

Development Location	Car & LGV AM Trips (0800-0900)			Car & LGV PM Trips (1700-1800)		
	Arrivals	Depart	Total	Arrivals	Depart	Total
Barns Green	3	8	12	7	3	10
Broadbridge Heath	-3	-7	-10	-6	-3	-9
Lower Beeding	1	2	3	2	1	3
Pulborough	3	8	12	7	3	10

3 Impact of Covid on Traffic Flows

3.1 Introduction

3.1.1 As evidenced through DfT official statistics, the COVID pandemic had a significant influence on travel behaviours with overall traffic volumes for most modes still below pre-pandemic levels. This impact in travel demand is acknowledged in the most recent DfT TAG Guidance Unit M4 (Forecasting and Uncertainty) Appendix B, which provides recommendations on how this should be appropriately represented in any updates to transport analysis and appraisal.

3.1.2 As such, in order to interpret the robustness of existing Horsham Local Plan forecasts and how COVID has impacted upon this, traffic data for pre and post COVID periods is analysed and compared against the existing forecasting assumptions. All reference to existing Horsham Local Plan transport impacts refer to the Horsham Transport Study – Local Plan Transport Assessment submitted in December 2022

3.1.3 To assess the change of predicted Horsham Local Plan forecasts and observed traffic growth, a comparison of neutral month traffic flows for 2019 with those for 2023 is compared against the traffic demand growth included in the Horsham Local Plan Reference Case scenario.

3.1.4 Due to the evidenced national suppression in traffic growth relative to pre-pandemic projections, TAG guidance Unit M4, paragraph B.3.4 outlines several recommended options as how to appropriately provide adjustment to existing pre-pandemic transport model forecasts may be accomplished, with varying degrees of risk and proportionality. Based on the data analysis, we will recommend whether such adjustment is required or whether the existing forecasts are robust.

3.2 Local Count Data

3.2.1 Count data within the Horsham District for May 2019 was compared to recent data obtained in May 2023 and evaluated to determine any changes in travel trends. The analysis was concatenated to the main modelled time periods of the AM and Peak hour (0800-0900 & 1700-1800) and for reference more general changes across the day, inter peak average hour was also collated (1000-1600).

3.2.2 During the analysis of ATC traffic data, any outliers that significantly deviated from the average traffic level and could potentially skew the results were evaluated and excluded to ensure a more robust analysis.

3.2.3 The location of the comparison locations is indicated in Figure 3-1, and Table 3-1 below highlighting the percentage growth change:

Figure 3-1: Local Count Data Locations

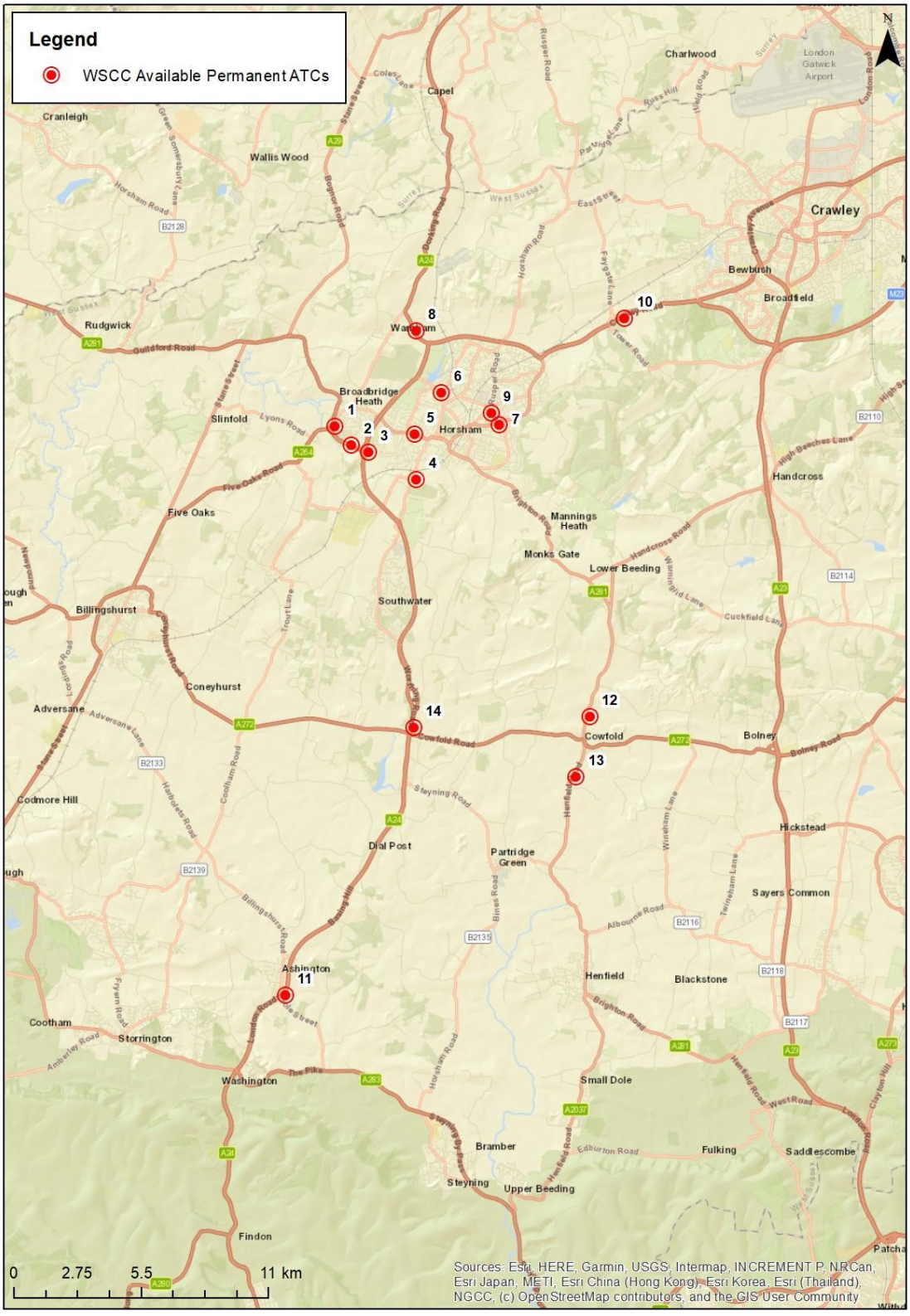


Table 3-1: Count Comparison Percentage Difference

ID	LOCATION	2019 AM Peak	2023 AM Peak	AM % Diff	2019 IP Peak	2023 IP Peak	IP % Diff	2019 PM Peak	2023 PM Peak	PM % Diff
1	A281 BROADBRIDGE HEATH, BILLINGSHURST ROAD	1343	1168	-13%	1005	904	-10%	1305	1344	3%
2	BROADBRIDGE HEATH, A264 BYPASS, E. OF BUCK WAY	2885	2335	-19%	2322	1891	-19%	3244	2789	-14%
3	A24 HORSHAM, BROADBRIDGE HEATH S. OF A281 R'ABT.	1684	1700	1%	1328	1283	-3%	1850	1804	-2%
4	B2237 HORSHAM, WORTHING RD N. OF TOWER HILL	988	799	-19%	977	888	-9%	1400	1182	-16%
5	A281 HORSHAM, GUILFORD RD EAST OF MERRYFIELD DRIVE	985	762	-23%	1028	1000	-3%	1316	1330	1%
6	B2237 HORSHAM, WARNHAM RD N. OF THE DOG & BACON PH	1141	1066	-7%	1150	1074	-7%	1582	1451	-8%
7	B2195 HORSHAM, HARWOOD RD JUST E. OF ELGIN CLOSE	666	573	-14%	744	753	1%	1033	975	-6%
8	WARNHAM, A24 DORKING ROAD, JUST SOUTH OF BELL ROAD	1675	1573	-6%	1190	1142	-4%	1753	1576	-10%
9	HORSHAM, KINGS RD S. OF ST GEORGES GDS.	503	436	-13%	560	555	-1%	714	681	-5%
10	FAYGATE, A264 CRAWLEY RD, BY PARK ROAD	3697	3659	-1%	2568	2552	-1%	3675	3637	-1%
11	ASHINGTON, A24, JUST N. OF LONDON RD OFF SLIP	2948	2165	-27%	2161	1971	-9%	2956	2615	-12%
12	A281 COWFOLD, HORSHAM RD. (Outside of Brook Place)	890	685	-23%	709	633	-11%	792	713	-10%
13	A281 COWFOLD, HENFIELD RD., BY SINGERS FARM	541	356	-34%	461	369	-20%	589	479	-19%
14	A24 BUCKBARN, NORTH OF TRAFFIC LIGHTS	2686	2544	-5%	2036	1988	-2%	2931	2785	-5%
	Total	**22632**	**19821**	**-12%**	**18239**	**17003**	**-7%**	**25140**	**23361**	**-7%**

3.2.4 According to the count data studied, there is a general decrease in traffic on both the strategic and local road networks of 12% in the AM Peak, 7% in the Inter-Peak and 7% in the PM Peak. When summing up all count data to an 18-hr daily total the variance between 2019 and 2023 data is -9%.

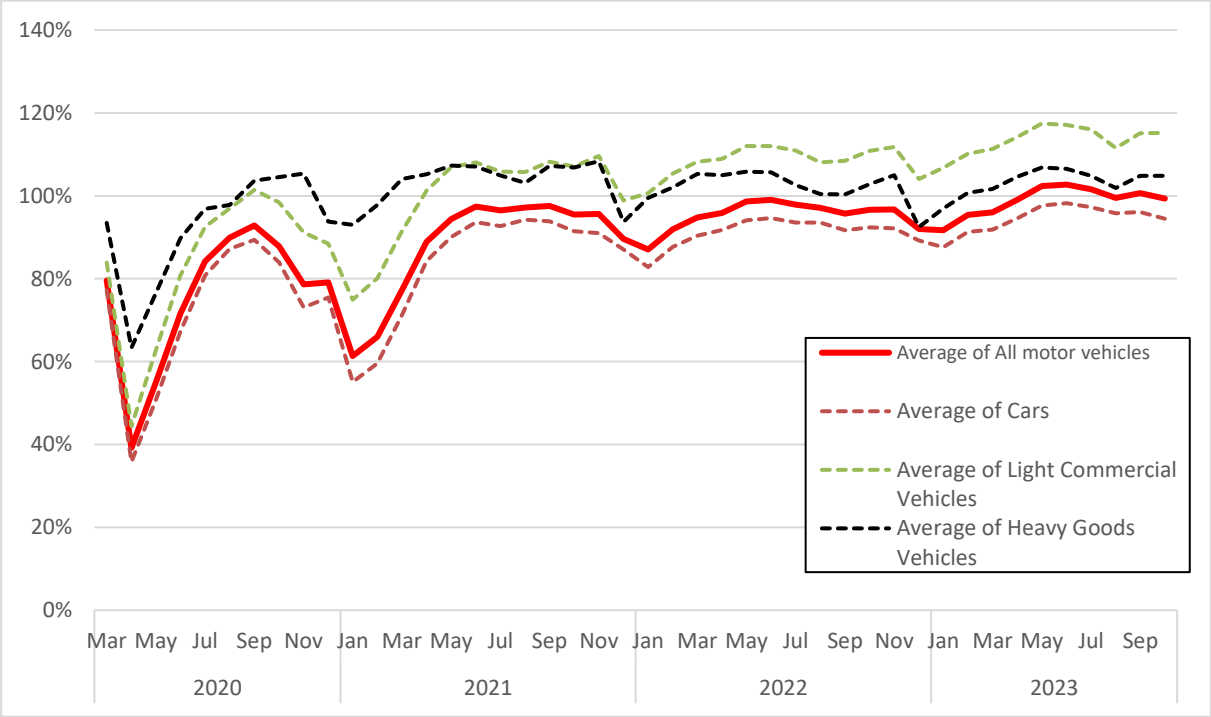
3.3 DfT Travel Statistics

3.3.1 To monitor the use of the transport system during and post the Covid pandemic, DfT has undertaken analysis which compares changes in traffic on a month-by-month basis from February 2020 through to June 2023. The analysis is based on around 275 automatic traffic count sites across Great Britain.

3.3.2 It is important to note that a direct vehicle class comparison could not be conducted with West Sussex permanent count site data, as the vehicle count classification of LGVs was deemed inaccurate. As such, the DfT data provides more insight into changes in trip totals for each main vehicle class used within the Horsham forecast models and the variance of change between each vehicle class. This is because the DfT methodology included direct observation of vehicles whilst the WSCC permanent count site data relies solely on automatic counters which classify vehicles by detectable size and weight but cannot determine the number of side windows to distinguish passenger from light goods vehicles of the same size.

3.3.3 The figure below illustrates the traffic growth trend from DfT statistics since the onset of the Covid-19 pandemic, with February 2020 serving as the baseline for evaluating the percentage increase in post-Covid traffic across weekdays each month.

Figure 3-2: Post Covid Travel Change – From March 2020 Baseline (DfT Statistics)



3.3.4 Compared to the first week of February 2020 (prior to any Covid restrictions introduced) the average weekday traffic changes to May 2023 are highlighted in Table 3-2. This month was chosen as neutral reference point for comparison with the data collected for the validated base model where data was collected in May 2019.

Table 3-2: DfT Statistic Weekday Trip Total Change to Pre Covid (Feb 2020 - May 2023)

Monthly Average (Weekday Only)	Cars	LGVs	HGVs	Total
May-23	-3%	7%	8%	2%

3.3.5 From the % change total in table 3-2 it can be ascertained that the LGV and HGV growth have not been impacted by Covid in the long run nationally, with the increase in LGV trips primarily stemming from the accelerated growth of the e-commerce home delivery market as predicted in existing pre Covid LGV growth forecasts.

3.4 Implications of Post Covid Traffic Forecasts

3.4.1 The impact of Covid on car travel behaviour is evidently resulting in a reduction of traffic demand and trip totals across the surveyed traffic count sites in the Horsham district between 2019 and 2023. Theoretically applying or accounting for these reductions would result in a reduction in traffic volumes within the forecast Horsham Local plan scenario and Reference case forecasts.

3.4.2 Based on the data presented in figure 3-2, it can be inferred that COVID impacts to traffic levels have now levelled off and car trip generation will remain lower than pre-pandemic

levels. As such it can be assumed that the Local Plan forecast scenario would fall by the same level as identified between the pre-post Covid traffic analysis of 12% in the AM Peak and 7% of the PM Peak, potentially impacting the identification of junction hotspots within the Horsham Transport Study - Local Plan Transport Assessment (in relation to the reported Volume over Capacity metric).

3.4.3 Focussing on the 3 junctions proposed for highway mitigation within the Horsham Local Plan Transport Assessment - A24/A283 Washington Roundabout, A24/A272 Buck Barn junction and A24 Hop Oast Roundabout, the effect of a reduction in traffic forecast can be summarised as follows.

- **A24/A283 Washington Roundabout:** With a Reference Case scenario Volume to Capacity ratio of 124% on the northbound approach in the AM Peak, the Post Covid travel reductions would not alter this being flagged as a hotspot. Therefore the mitigation would be assumed as still being warranted. Furthermore, there is significant queued demand within the existing forecasts at this junction.

- **A24/A272 Buck Barn:** Similarly very high volume to capacity ratio in the PM Peak reference case scenario at 115%, therefore reduced traffic level of 7% would not alter the junction being flagged as a congestion hotspot.

- **A24 Hop Oast Roundabout**: The B2237 approach is showing as being marginally over capacity within the PM Peak reference case scenario at 104% and 105% within the Local Plan unmitigated scenario, therefore reducing the junction throughput by 7% could result in the junction no longer being flagged as requiring mitigation.

- **A24 Hop Oast Roundabout with Bus Priority**: Proposed bus priority mitigation reported with the latest Horsham Local Plan Transport Assessment showed the design to be well over 100% DoS (Degree of Saturation) and therefore less viable than the “no bus lane” mitigation arrangement. Re-testing the mitigation by applying a COVID global reduction factor based on the total percentage reduction in table 3-1 of -12% in the AM Peak and -7% in the PM Peak still results in the A24 approaches having DoS significantly over 100% (detailed result shown in Appendix A). Therefore the reduced forecast traffic levels do not result in any significant improvement to the performance of the bus priority option. As noted within the latest TA – Further testing of increased modal shift through the increased public transport infrastructure provision has not been undertaken at this time.

3.5 National Road Traffic Forecasts – LGV and HGV Trips

3.5.1 The LGV and HGV growth factors calculated using the DfT’s National Transport Model (NTM) Road Traffic Projection 2022 (NRTP 2022) are still deemed fit for purpose within the forecast scenarios. Therefore, the existing approach of LGV/HGV forecast is acceptable.

3.6 Strategic Road Network Impacts

3.6.1 As reported within the Horsham Local Plan Transport Assessment, the 2039 Forecast Traffic growth, based upon the NTEM forecasts, predicts relatively high levels of car trip growth between the base year of 2019 and the forecast year of 2039 along the A23 corridor.

3.6.2 Such levels of high traffic growth and the resulting build-up of additional congestion over and above an already congested base year A23 corridor within the model was deemed to influence how trips from Horsham are getting to and using the A23, in particular route choice sensitivity between the Bolney and the Pease Pottage interchange due to the congestion levels at those junctions.

3.6.3 Through the Horsham Local Plan Transport Assessment it was determined that there was no mitigation requirement of the SRN as a result of Local Plan impacts against the Reference Case. As such applying a drop in the projected traffic growth forecasts of 12% in the AM Peak and 7% in the PM peak resultant from post COVID travel trends could potentially impact on route choice between the Bolney and Pease Pottage interchange, but fundamentally this should not change the Local Plan impacts on the SRN.

3.6.4 Further sensitivity testing and discussion with National Highways would be beneficial in order to understand the impacts and changes resultant in a COVID global reduction factor to traffic growth along the SRN.

3.7 Further Recommendations

3.7.1 The reduction estimates evidenced in section 3.4 are used to provide a high-level analysis of impacts for the junctions identified, this does not account for any reassignment impact due to reduced levels of congestion and decreased rat running. As such, in order to fully understand the impacts, a modelled sensitivity test of reduced traffic forecast would provide the most accurate estimate of the changes to the Reference Case and Local Plan scenario impacts.

3.7.2 Paragraph B.3.4 of TAG Guidance Unit M4 outlines Option 3, which provides a proportionate method of applying a global adjustment to existing forecasts. This methodology eliminates the requirements of re-basing the model and adjusting existing forecast trip generation rates per committed development land use type, effectively acting as a suppression to background growth forecasts but also factoring trip rates not currently reflective within TRICS trip data.

3.7.3 Although such forecast methods would provide further accuracy, it should be noted that such changes are unlikely to have a significant impact on the outputs of the work undertaken and reported to date. The high-level update in traffic forecasts outlined in this report indicates that the preferred strategy impacts would show insignificant change.

Appendix A Hop Oast Roundabout Sensitivity Test