



# Gatwick Airport Northern Runway Project

Environmental Statement

Appendix 12.9.1 Highway Flows and Driver Delay Review

**Book 5**

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# 1 Introduction

- 1.1.1 This appendix provides the highway flows for links upon which the assessments contained in the Traffic and Transport chapter are based on. The flows are provided for links which meet Rules 1 and 2, as set out in Institute of Environmental Management and Assessment (IEMA, 1993) Guidelines for the Environmental Assessment of Road Traffic.
- 1.1.2 It also contains a review of individual strategic modelling nodes which are identified to have medium or high magnitudes of impact. The location of each node has been examined together with total traffic flows and airport-related traffic flows for each peak period.





Highway Flows 2029

2029 Future Baseline

Table with 14 columns: ID, Highway Link, AM1, AM2, IP, PM, and 16 columns for flow percentages (V, H, T, B, C, L, R, A, S, U, P, D, A, S, U, P, D). Rows include various highway links like A23, A26, and A27.

2029 With Project

Table with 14 columns: ID, Highway Link, AM1, AM2, IP, PM, and 16 columns for flow percentages. Rows include various highway links like A23, A26, and A27.

Net Change

Table with 14 columns: ID, Highway Link, AM1, AM2, IP, PM, and 16 columns for flow percentages. Rows include various highway links like A23, A26, and A27.

Percent Change

Table with 14 columns: ID, Highway Link, AM1, AM2, IP, PM, and 16 columns for percent change values. Rows include various highway links like A23, A26, and A27.















Cumulative Development Flows 2047

2047 With Project

ID	Highway/Link	AM1	AM2	PM	AM1	AM2	PM	AM1	AM2	PM	AM1	AM2	PM
001	A3 London Road, North Terminal	1191	54	991	61	41	1201	57	61	1054	57	61	
002	A3 London Road, North Terminal	2391	67	379	83	131	2381	141	61	3020	50	71	
003	A3 London Road, North Terminal	1191	54	991	61	41	1201	57	61	1054	57	61	
004	A3 London Road, North Terminal	2391	67	379	83	131	2381	141	61	3020	50	71	
005	A3 London Road, North Terminal	1191	54	991	61	41	1201	57	61	1054	57	61	
006	A3 London Road, North Terminal	2391	67	379	83	131	2381	141	61	3020	50	71	
007	A3 London Road, North Terminal	1191	54	991	61	41	1201	57	61	1054	57	61	
008	A3 London Road, North Terminal	2391	67	379	83	131	2381	141	61	3020	50	71	
009	A3 London Road, North Terminal	1191	54	991	61	41	1201	57	61	1054	57	61	
010	A3 London Road, North Terminal	2391	67	379	83	131	2381	141	61	3020	50	71	

Cumulative Development 2047 With Project

ID	AM1	AM2	PM	AM1	AM2	PM	AM1	AM2	PM	AM1	AM2	PM
001	1221	94	1310	70	100	60	1210	60	60	1161	71	131
002	2391	67	379	83	131	2381	141	61	3020	50	71	131
003	1221	94	1310	70	100	60	1210	60	60	1161	71	131
004	2391	67	379	83	131	2381	141	61	3020	50	71	131
005	1221	94	1310	70	100	60	1210	60	60	1161	71	131
006	2391	67	379	83	131	2381	141	61	3020	50	71	131
007	1221	94	1310	70	100	60	1210	60	60	1161	71	131
008	2391	67	379	83	131	2381	141	61	3020	50	71	131
009	1221	94	1310	70	100	60	1210	60	60	1161	71	131
010	2391	67	379	83	131	2381	141	61	3020	50	71	131

Net Change

ID	AM1	AM2	PM	AM1	AM2	PM	AM1	AM2	PM	AM1	AM2	PM
001	100	0	0	100	0	0	100	0	0	100	0	0
002	0	0	0	0	0	0	0	0	0	0	0	0
003	100	0	0	100	0	0	100	0	0	100	0	0
004	0	0	0	0	0	0	0	0	0	0	0	0
005	100	0	0	100	0	0	100	0	0	100	0	0
006	0	0	0	0	0	0	0	0	0	0	0	0
007	100	0	0	100	0	0	100	0	0	100	0	0
008	0	0	0	0	0	0	0	0	0	0	0	0
009	100	0	0	100	0	0	100	0	0	100	0	0
010	0	0	0	0	0	0	0	0	0	0	0	0

Percent Change

ID	AM1	AM2	PM	AM1	AM2	PM	AM1	AM2	PM	AM1	AM2	PM
001	8%	0%	0%	15%	3%	1%	2%	1%	0%	2%	0%	0%
002	0%	0%	0%	15%	-20%	-1%	-1%	-1%	0%	2%	4%	0%
003	8%	0%	0%	15%	3%	1%	2%	1%	0%	2%	0%	0%
004	0%	0%	0%	15%	-20%	-1%	-1%	-1%	0%	2%	4%	0%
005	8%	0%	0%	15%	3%	1%	2%	1%	0%	2%	0%	0%
006	0%	0%	0%	15%	-20%	-1%	-1%	-1%	0%	2%	4%	0%
007	8%	0%	0%	15%	3%	1%	2%	1%	0%	2%	0%	0%
008	0%	0%	0%	15%	-20%	-1%	-1%	-1%	0%	2%	4%	0%
009	8%	0%	0%	15%	3%	1%	2%	1%	0%	2%	0%	0%
010	0%	0%	0%	15%	-20%	-1%	-1%	-1%	0%	2%	4%	0%

# Highway Junction Review

# Introduction

- This document provides a review of all nodes in the strategic model which have been identified to have ‘medium’ or ‘high’ magnitude of impact (see Table 1). This is based on Volume to Capacity (V/C) ratio.
- This review includes the location of each node and the traffic flows (total and airport traffic) for all peak periods.
- It should be noted that not all nodes are reflecting a junction. Some have been identified as a node for modelling purposes and does not reflect a real junction.

**Table 1: Magnitude of Impact Matrix for Nodes**

Criteria	Magnitude of impacts			
	Negligible	Minor	Moderate	Major
<b>V/C ratio With Project</b>	<b>80-85%</b>	<b>85 -90%</b>	<b>90 - 95%</b>	<b>95% or more</b>
<2 percentage point change in V/C ratio	Negligible	Negligible	Negligible	Negligible
2-5 percentage point change in V/C ratio	Low	Low	Low	Medium
Between 5-10 percentage point change in V/C ratio	Low	Low	Medium	High
>10 percentage point change in V/C ratio	Low	Medium	High	High

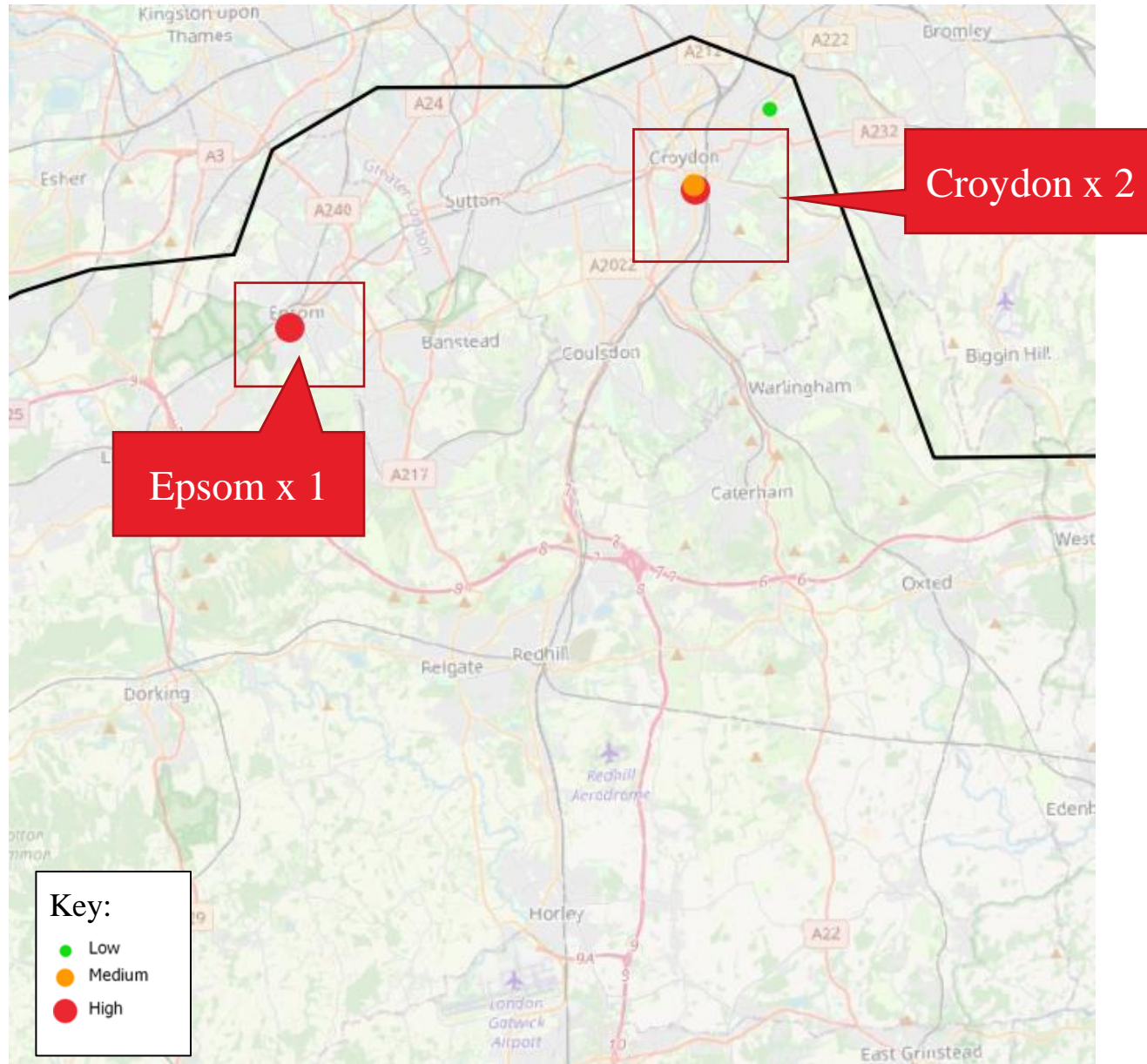
# Model noise

- In developing the strategic model, every effort has been made to ensure the model networks reflect the expected future network state, with the coding of junctions being appropriate and traffic loading from zones being reasonable. However, where high levels of congestion are predicted within such models, a localised effect known as ‘model noise’ can occur. This results in traffic demand switching between routes in successive iterations (of a model run), and when compared against a corresponding scenario, may indicate effects that do not appear logical in the context of the test. This can indicate lower levels of model convergence in specific localised areas, which can make the model results subject to higher levels of uncertainty.
- Within the Gatwick model, some localised model noise has been identified in two particular areas – Croydon and Steyning. These locations have been reviewed in detail and it is clear that airport traffic represents a very small proportion of traffic in these areas (less than 1%). The large changes in traffic flows between Future baseline and With Project scenarios in these areas, and the associated impacts, are due to background traffic switching between routes with very similar journey times within the model. In practice this is unlikely to happen, for instance because the alternative route is unsuitable or is not the signed route on the ground, and in such cases the assessment includes professional judgement on the likelihood of such impacts actually occurring.
- For some junctions, the impact is due to model noise and the associated reassignment of background traffic. Model noise is identified by reviewing changes in traffic volumes and the amount of airport related traffic at each node location. Where the additional trips are identified as the result of an unexpected large reassignment of background traffic on the network (rather than additional airport trips), particularly if this does not occur consistently or is at some distance from the Airport, the impacts are considered to be due to model noise.

# 2029 Airfield Construction

Future baseline 2029 vs Future baseline 2029 with Airfield Construction





**3 Junctions**  
(Medium & High impacts)

# Croydon

## South Croydon / Bartlett Street (Node: 55025)



<https://goo.gl/maps/Dx79RAU5xAFB6B9u7>

### Assessment

This impact is identified in the AM2 peak where there is a reduction in traffic (-118 vehicles) but an increase in V/C ratio (from 17% to 109%). From reviewing the model, this appears to be the result of model noise and localised reassignment of background traffic from the adjacent junction to the west (V/C ratio increases from 61% to 76%), which results in queuing that affects the operation of this junction. The proportion of airport traffic at this junction is very small (1%) and the number of additional airport trips as a result of the Project is negligible (no more than a change of two vehicles across the peak periods). For the other peak periods the junction operates with ample capacity (V/C ratio around 17% with Project).

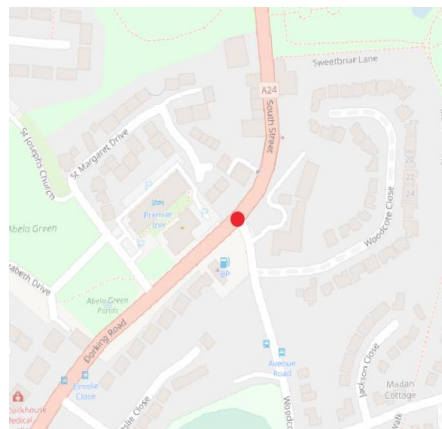
### Mitigation

No mitigation is required.

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Airfield Construction	Difference	Future baseline	With Airfield Construction	Difference	Future baseline	With Airfield Construction	Difference
AM1	Negligible	497	563	+67	4	3	-1	14.7	17.8	+3
AM2	High	579	461	-118	8	6	-2	17.0	109.3	+92
IP	Flow Filtered	479	480	+1	2	2	0	14.7	14.8	+0
PM	Flow Filtered	510	509	-0	3	2	-1	14.8	14.8	-0

# Epsom

## South Street / Woodcote Road / Dorking Road (Node: 53192)



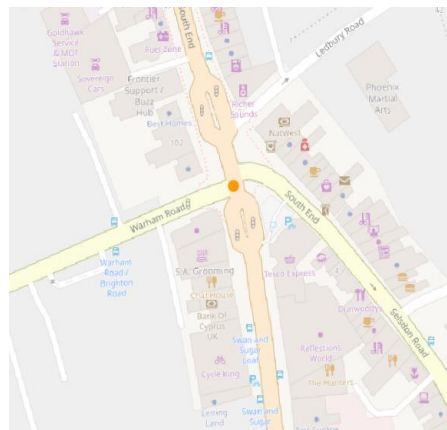
<https://goo.gl/maps/Cxek9G61zzAduaQu7>

Assessment	Mitigation
<p>This impact is identified in the AM1 peak where there is an increase in traffic of 159 vehicles but no similar change in any other peak period, although total flows are similar in all peak periods. This appears to be the result of model noise and reassignment of background traffic. The proportion of airport traffic at this junction is very small (less than 1%) and the number of additional airport trips as a result of the Project is negligible (no more than one vehicle across the peak periods). The junction is operating at capacity, with V/C ratio at AM1 peak with Project (97%) being lower than PM peak without Project (99%).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Airfield Construction	Difference	Future baseline	With Airfield Construction	Difference	Future baseline	With Airfield Construction	Difference
AM1	High	2139	2298	+159	6	7	+1	91.2	97.2	+6
AM2	Flow Filtered	2270	2269	-1	13	13	0	95.7	95.8	+0
IP	Flow Filtered	2044	2043	-1	5	5	0	85.7	85.9	+0
PM	Flow Filtered	2409	2412	+2	14	15	0	99.4	99.5	+0

# Croydon

## Brighton Road / Warham Road / South End (Node: 55022)



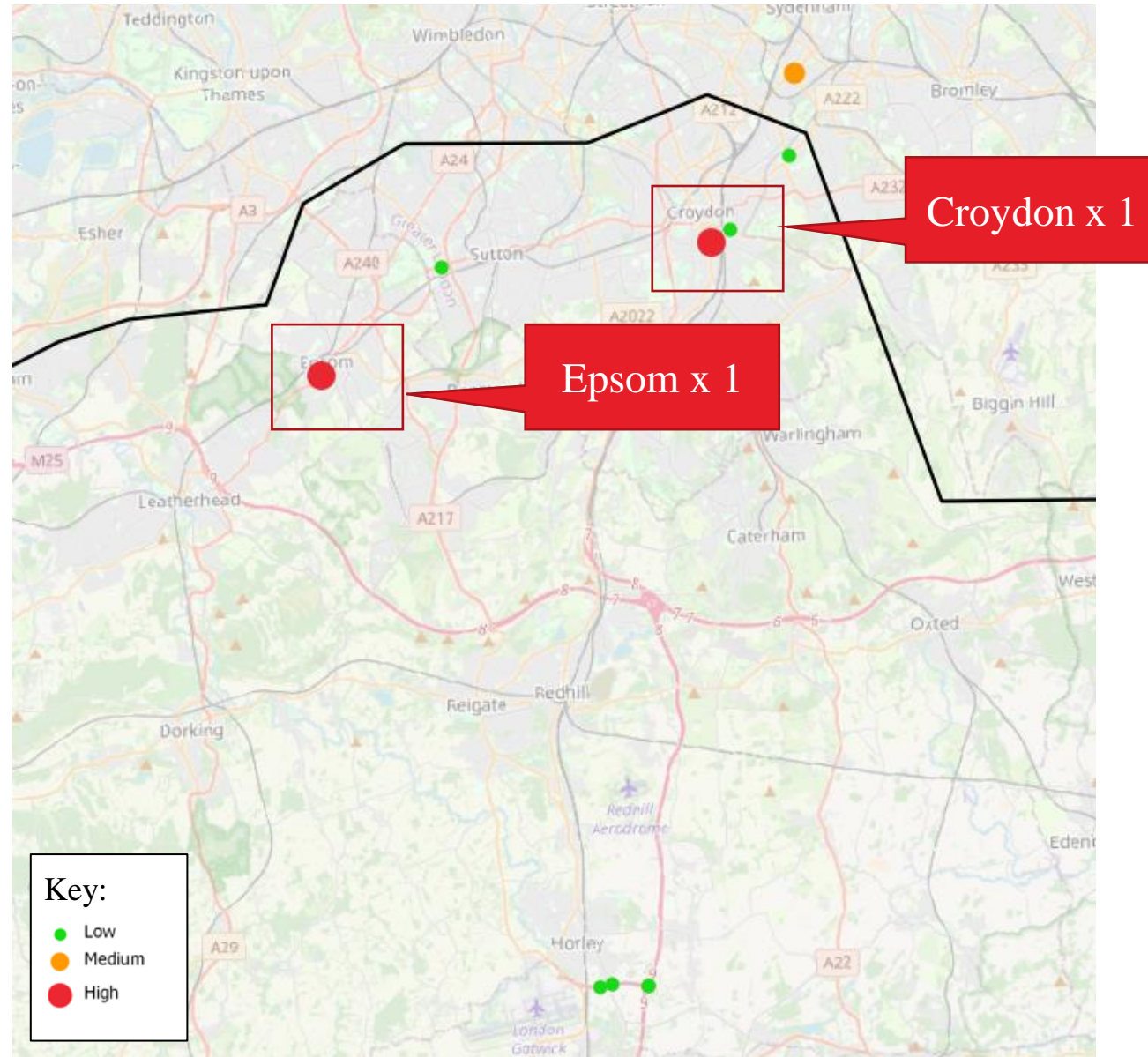
Assessment	Mitigation
<p>This impact is identified in the AM1 peak where there is an increase in traffic of 209 vehicles, although there is a reduction of 270 vehicles in the following peak hour despite similar total levels of flow. This appears to be the result of model noise and reassignment of background traffic. The proportion of airport traffic at this junction is very small (around 1%) and the number of additional airport trips as a result of the Project is negligible (a change of between 1 and 6 vehicles across the peak periods). The junction continues to operate within capacity (V/C ratio up to 85% with Project).</p>	<p>No mitigation is required.</p>

<https://goo.gl/maps/Uf3RGL5zmtDBpzVJ6>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Airfield Construction	Difference	Future baseline	With Airfield Construction	Difference	Future baseline	With Airfield Construction	Difference
AM1	Medium	2092	2302	+209	26	21	-5	61.1	85.0	+24
AM2	Negligible	2296	2026	-270	35	29	-6	69.6	84.7	+15
IP	Flow Filtered	1925	1912	-13	15	15	0	55.1	54.8	0
PM	Flow Filtered	2452	2449	-4	27	28	+1	62.2	62.2	0

2029

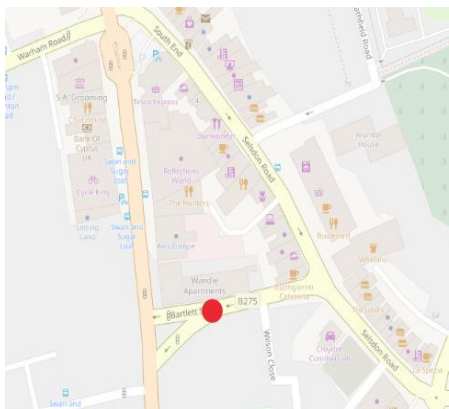
Future baseline 2029 vs Future baseline 2029 With Project



**2 Junctions**  
(Medium & High impacts)

# Croydon

## South Croydon / Bartlett Street (Node: 55025)



<https://goo.gl/maps/Dx79RAU5xAFB6B9u7>

### Assessment

This junction is shown to be operating well within capacity in the Future baseline. The impact from the Project is identified in the AM2 peak where there is a reduction in traffic (-96 vehicles) but an increase in V/C ratio (from 17% to 109%). From reviewing the model, this appears to be due to model noise and localised reassignment of background traffic from the adjacent junction to the west (V/C ratio increases from 61% in Future baseline to 76% with the Project at that junction), which results in queuing that affects the operation of this junction. The proportion of airport traffic at this junction is very small (around 1%) and the number of additional airport trips at this junction as a result of the Project is negligible (-3 to +2 vehicles across the peak periods). For the other peak periods the junction operates with ample capacity (V/C ratio around 15% with Project).

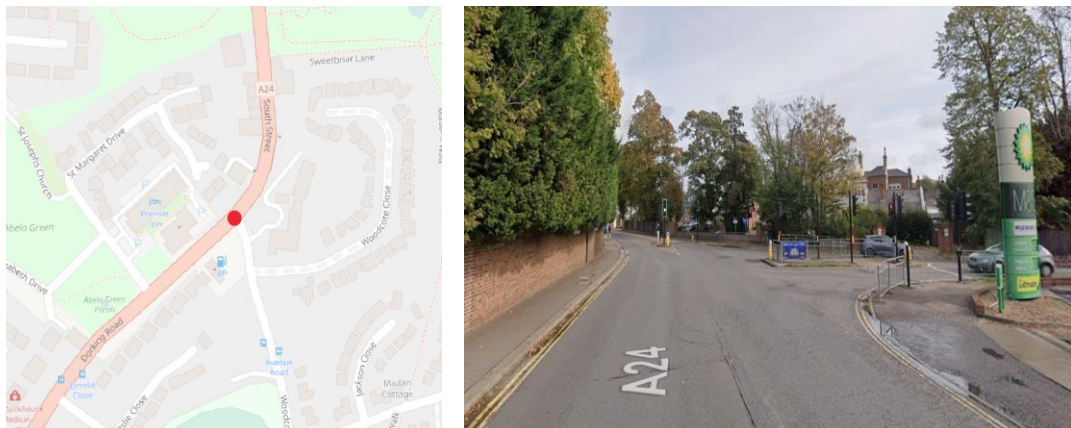
### Mitigation

No mitigation is required.

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Negligible	497	515	+18	4	6	+2	14.7	15.2	+1
AM2	High	579	483	-96	8	5	-3	17.0	108.8	+92
IP	Flow Filtered	479	482	+3	2	2	0	14.7	14.8	0
PM	Flow Filtered	510	514	+4	3	2	0	14.8	14.9	0

# Epsom

## South Street / Woodcote Road / Dorking Road (Node: 53192)



<https://goo.gl/maps/Cxek9G61zzAduaQu7>

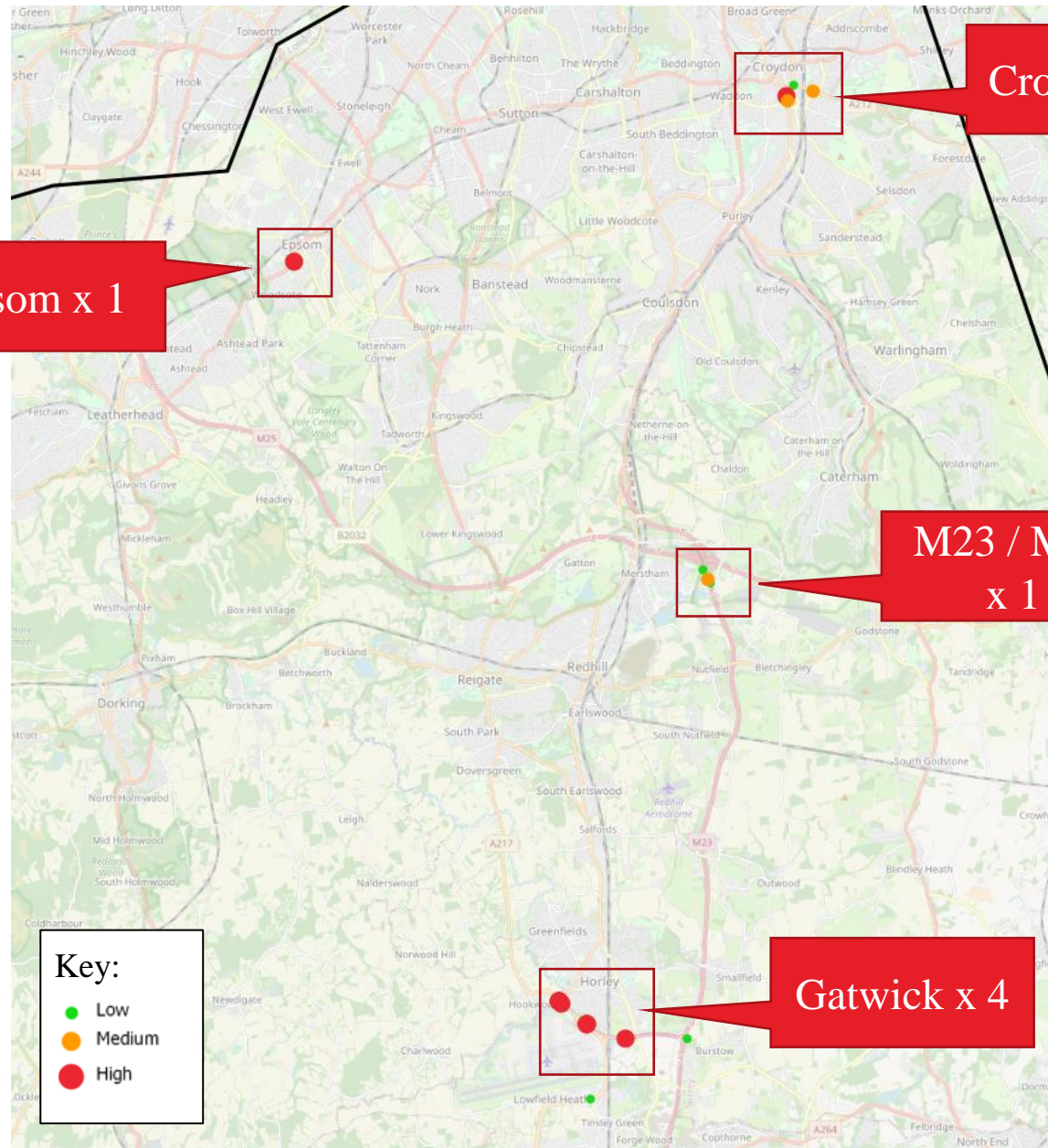
Assessment	Mitigation
<p>This junction is shown to be operating close to capacity in the Future baseline, in the morning and evening peak periods (V/C ratio ranging from 91% to 99%). The impact from the Project is identified in the AM1 peak where there is an increase in traffic of 159 vehicles. This is due to model noise and reassignment of background traffic, and there is no similar increase in the other time periods. The junction is operating near to capacity with the Project, with V/C ratio at AM1 peak With Project (97%). This is lower than PM peak for the Future baseline without Project (99%). The proportion of airport traffic at this junction is very small (less than 1%) and the number of additional airport trips as a result of the Project is negligible (-3 to +2 vehicles across the peak periods).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	High	2139	2297	+159	4	6	+2	91.2	97.2	+6
AM2	Flow Filtered	2270	2270	0	8	5	-3	95.7	95.8	+0
IP	Flow Filtered	2044	2045	+1	2	2	0	85.7	85.7	+0
PM	Flow Filtered	2409	2406	-3	3	2	0	99.4	99.3	+0



# 2029 Highway Construction

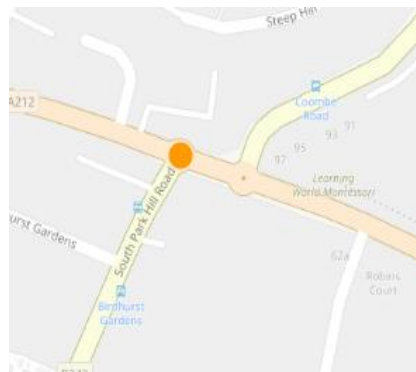
Future baseline 2029 vs Future baseline 2029 With Project and Highway Construction (HCON)



**9 Junctions**  
(Medium & High impacts)

# Croydon

## Coombe Rd / South Park Hill Rd (Node: 54710)



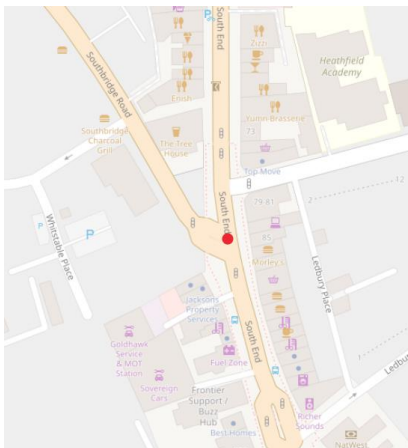
<https://goo.gl/maps/SsKZmgyFWicK598JA>

Assessment	Mitigation
<p>This junction is shown to be operating close to capacity in the morning peak periods and within capacity at other time periods in the Future baseline (maximum V/C ratios of 99% in the AM1 period). With the Project and highway construction activity the model shows increases in traffic in the AM2 period, which are not reflected in other time periods. This is considered to be due to model noise and reassignment of background traffic. The proportion of airport traffic at this junction is very small (less than 1%) and the number of additional airport trips as a result of the highway construction works is negligible (-1 to +1 vehicle across the peak periods). With the Project and highway construction activity the junction would continue to operate within or close to capacity, with a maximum V/C ratio of 98% in the AM1 time period.</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference
AM1	Reduction	2446	2407	-39	8	8	-1	98.9	98.1	-1
AM2	Medium	2325	2401	+76	13	13	0	93.7	96.7	+3
IP	Flow Filtered	2213	2211	-2	18	18	0	87.1	87.0	-0
PM	Flow Filtered	2280	2325	+45	10	11	1	86.2	88.3	+2

# Croydon

## Southbridge Road / South End (Node: 55021)



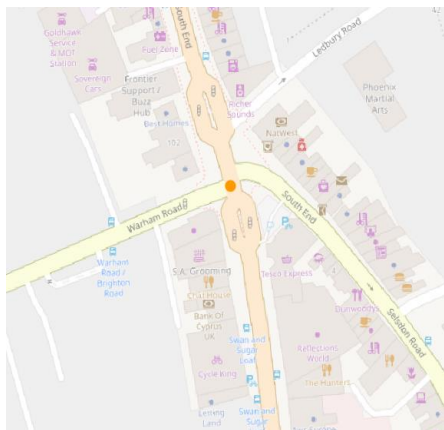
Assessment	Mitigation
<p>This impact is identified in the AM1 peak where there is an increase in traffic of 255 vehicles, but without a similar increase in the following AM2 period despite a similar total volume of traffic passing through the junction. This is considered to be due to model noise and reassignment of background traffic. The proportion of airport traffic at this junction is very small (around 1%) and the change in airport-related trips as a result of the Project is negligible (reducing by up to 6 vehicles across the peak periods). The junction continues to operate within capacity (V/C of 91% in the AM1 period with the Project and highway construction)</p>	<p>No mitigation is required.</p>

<https://goo.gl/maps/bXghe68MdzNxxCLk6>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference
AM1	High	1461	1715	+255	25	19	-6	64.9	91.0	+26
AM2	Reduction	1629	1438	-191	32	32	-1	71.2	66.3	-5
IP	Flow Filtered	1422	1421	-1	4	4	0	68.5	68.5	-0
PM	Flow Filtered	1822	1822	+0	26	26	0	83.4	83.4	+0

# Croydon

## Brighton Road / Warham Road / South End (Node: 55022)



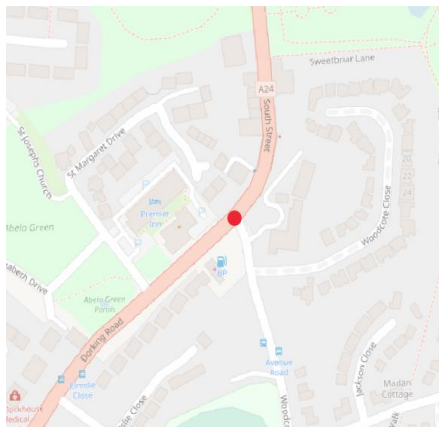
<https://goo.gl/maps/Uf3RGL5zmtDBpzVJ6>

Assessment	Mitigation
<p>This impact is identified in the AM1 peak where there is an increase in traffic of 243 vehicles but without similar increases in other peak periods, despite a similar total volume of traffic passing through the junction. This is considered to be due to model noise and reassignment of background traffic. The proportion of airport traffic at this junction is very small (around 1%) and the change in airport-related trips as a result of the Project is negligible (a reduction of up to 7 vehicles across the peak periods). The junction continues to operate within capacity (V/C ratio up to 85.4% with the Project and highway construction).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference
AM1	Medium	2092	2336	<b>+243</b>	26	19	<b>-7</b>	61.1	85.4	<b>+24</b>
AM2	Reduction	2296	2284	<b>-12</b>	35	36	<b>0</b>	69.6	69.4	<b>-0</b>
IP	Flow Filtered	1925	1924	<b>-1</b>	15	16	<b>0</b>	55.1	55.1	<b>-0</b>
PM	Flow Filtered	2452	2456	<b>+3</b>	27	27	<b>0</b>	62.2	62.3	<b>+0</b>

# Epsom

## South Street / Woodcote Road / Dorking Road (Node: 53192)



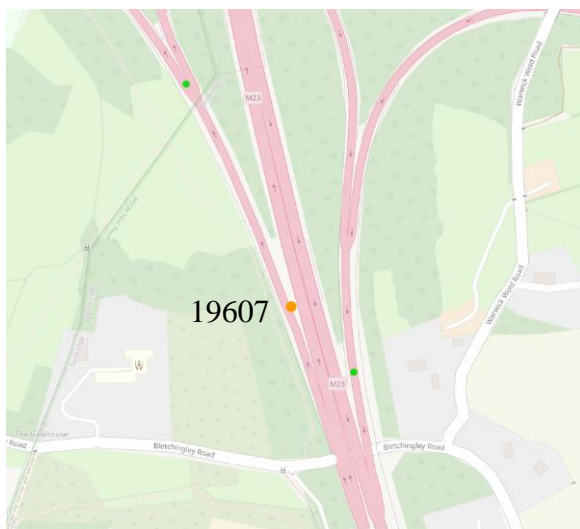
Assessment	Mitigation
<p>This impact is identified in the AM1 peak where there is an increase in traffic of around 160 vehicles, but without similar increases in other periods despite similar total volumes of traffic passing through the junction. This is considered to be due to model noise and reassignment of background traffic. There is no change in airport-related traffic associated with the Project and highway construction. The junction is operating at capacity ( V/C ratio of 97% in the AM1 peak with Project and highway construction).</p>	<p>No mitigation is required.</p>

<https://goo.gl/maps/Cxek9G61zzAduaQu7>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference
AM1	High	2139	2298	+159	6	6	0	91.2	97.2	+6
AM2	Flow filtered	2270	2274	+4	13	14	+1	95.7	96.0	+0
IP	Flow Filtered	2044	2044	+0	5	5	0	85.7	85.6	-0
PM	Flow Filtered	2409	2400	-9	14	14	0	99.4	99.1	-0

# M23 / M25

## Southern diverge (Node: 19607)



<https://goo.gl/maps/11fX9zCpK7BoFr7AA>

Assessment	Mitigation
The impact is identified in the AM1 peak, where the V/C increases by 2% from 93.7% to 95.8%. The node continues to operate within capacity.	No mitigation is required.

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference
AM1	Medium	5285	5404	+119	1278	1376	+98	93.7	95.8	+2
AM2	Flow filtered	4778	4759	-20	1521	1547	+26	87.4	87.1	-0
IP	Negligible	3897	3940	+43	1185	1263	+79	72.6	73.4	+1
PM	Flow Filtered	5122	5119	-3	1199	1217	+18	89.8	89.7	-0

# Gatwick

## South Terminal - Airport Way Roundabout East / A23 (Node: 15084)



<https://goo.gl/maps/KUwyNkJUhqpbG5q86>

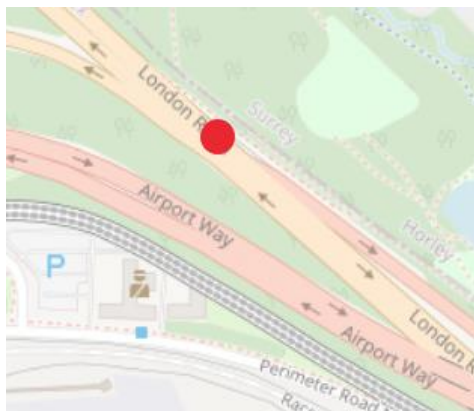
Assessment	Mitigation
<p>This junction is indicated to be operating within capacity in the Future baseline. It is part of the South Terminal Roundabout, which would be affected by the traffic management required for the highway construction works and would also experience some increase in traffic while the works are being undertaken. The impacts from the Project are identified in the AM1 and AM2 peak periods. AM1 is shown with a reduction of overall traffic (-7 vehicles) in the and an increase in Project airport traffic (+159 vehicles). AM2 is shown with an overall increase in vehicles (+99 vehicles) and an increase in Project airport traffic (11 vehicles). The model nevertheless indicates that the junction would continue to operate with V/C ratios of less than 100% in all time periods, and the impact of the Project shown by the modelling would be temporary (lasting around six months, based on the indicative programme) while the highway works are being undertaken.</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference
AM1	High	3431	3424	-7	2624	2783	159	82.7	97.8	+15
AM2	High	3233	3331	+99	2480	2492	11	83.3	95.3	+12
IP	Negligible	2748	2769	+22	2117	2169	52	64.2	81.5	+17
PM	Flow Filtered	2726	2788	+63	2010	2075	65	61.6	79.6	+18



# Gatwick

## London Rd / Airport Way (Node: 15083)



Assessment	Mitigation
The model generally indicates that these locations would operate within capacity in the Future baseline, but during highway construction they would be affected by the traffic management required for the highway construction, leading to a reduction in the number of lanes (and associated saturation flows) This would result in higher V/C ratios, approaching 100%, for a temporary period (lasting around six months, based on the indicative programme) while the highway works are being undertaken.	No mitigation is required.

<https://goo.gl/maps/AkEE7xiEyF25ekZL9>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference
AM1	High	1992	1761	-231	331	233	-99	57.0	93.9	+37
AM2	High	2244	1887	-357	319	191	-129	62.8	100.6	+38
IP	Negligible	1725	1498	-227	255	173	-82	49.9	81.0	+31
PM	High	2108	1767	-341	432	171	-261	58.6	93.0	+34

# Gatwick

## Longbridge Roundabout (Node: 14801)



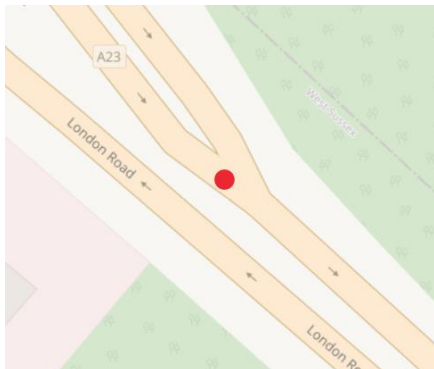
Assessment	Mitigation
<p>During highway construction, traffic management associated with the works leads to a reduction in the number of lanes in the vicinity of these junctions (also affecting saturation flows) which results in a higher V/C in the With Project scenario with highway construction, compared to the 2029 Future baseline. These locations would operate at or close to capacity (V/C ratio of up to 100%)</p>	<p>No junction mitigation is required. The impact is temporary whilst the highway works are taking place to improve capacity and traffic management arrangements will be developed as part of the Construction Transport Management Plan in conjunction with the highway authorities.</p>

<https://goo.gl/maps/CUTSxVS7X2pnQFm39>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference
AM1	High	2188	1847	<b>-341</b>	576	456	<b>-120</b>	54.2	91.6	<b>+37</b>
AM2	High	2108	1896	<b>-212</b>	413	309	<b>-104</b>	52.2	93.7	<b>+41</b>
IP	High	2193	1806	<b>-387</b>	410	293	<b>-117</b>	55.5	92.2	<b>+37</b>
PM	High	2805	2172	<b>-633</b>	597	318	<b>-280</b>	67.8	98.7	<b>+31</b>

# Gatwick

## London Rd / A23 (Node: 16768)



### Assessment

During highway construction, traffic management associated with the works leads to a reduction in the number of lanes in the vicinity of these junctions (also affecting saturation flows) which results in a higher V/C in the With Project scenario with highway construction, compared to the 2029 Future baseline. These locations would operate at or close to capacity (V/C ratio of up to 100%)

### Mitigation

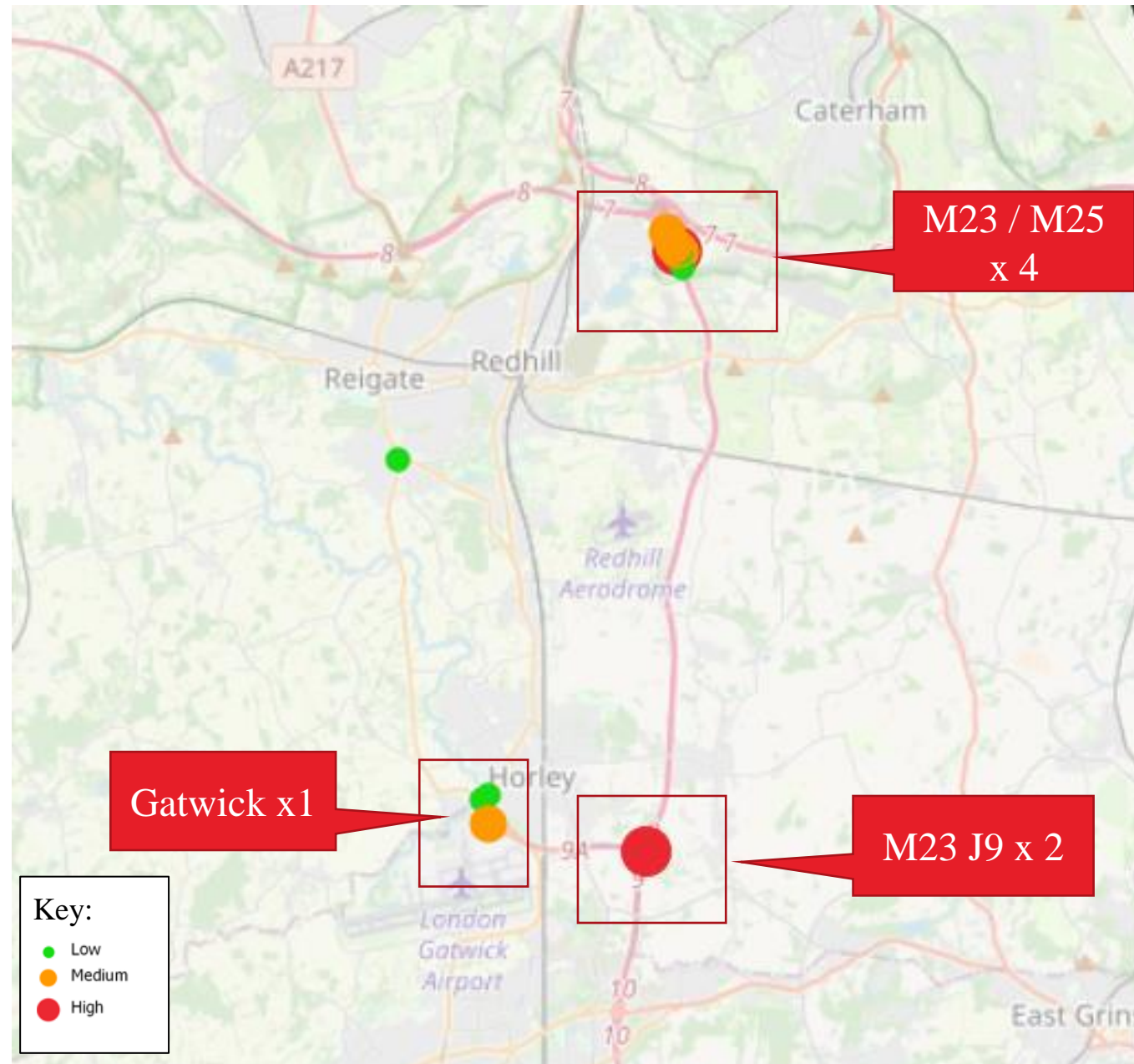
No junction mitigation is required. The impact is temporary whilst the highway works are taking place to improve capacity and traffic management arrangements will be developed as part of the Construction Transport Management Plan in conjunction with the highway authorities.

<https://goo.gl/maps/1eKxxKMUmhVnK8Bx5>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference	Future baseline	With Project and Highway Construction	Difference
AM1	Negligible	1992	1761	-231	331	233	-98	53.6	82.7	+29
AM2	High	2243	1887	-357	322	191	-131	59.8	92.5	+33
IP	Negligible	1726	1498	-227	255	173	-82	47.0	65.3	+18
PM	Negligible	2109	1768	-341	426	168	-258	55.2	84.2	+29

2032

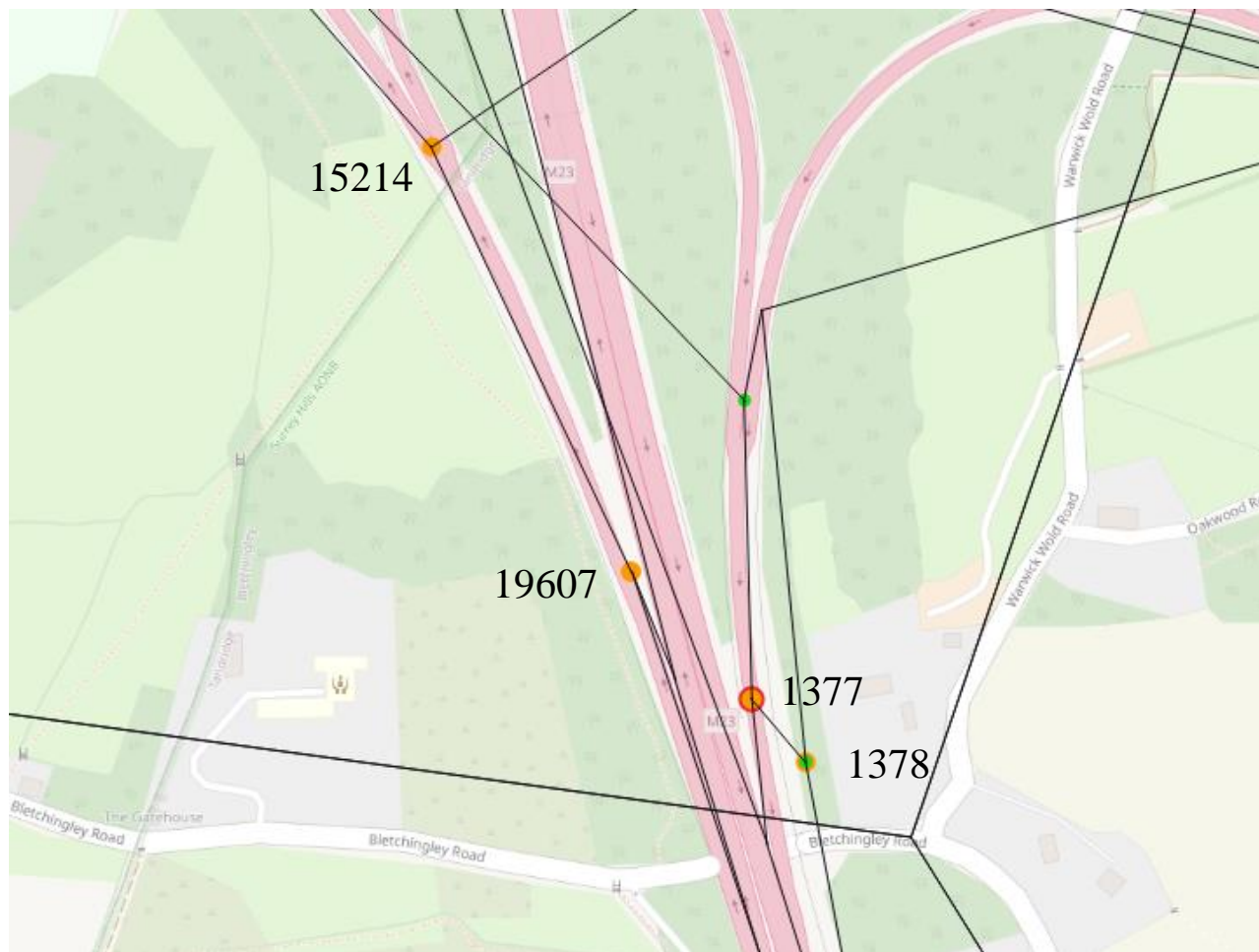
Future baseline 2032 vs Future baseline 2032 With Project



**7 Junctions**  
(Medium & High impacts)

# M23 / M25

## Southern merge and diverges (Nodes: 15214, 19607, 1377 & 1378)



### Assessment

This complex of merges and diverges is shown to be operating within capacity in the Future baseline, with V/C ratios varying from 63% in the inter-peak period to 100% in the AM1 time period. A separate more detailed review of the whole junction has been undertaken against DMRB criteria, to consider the performance of the merges and diverges at this junction. No capacity issues are expected in the With Project scenario, which shows V/C ratios increasing by just two to three percentage points. Further consideration for this junction is undertaken under the 2047 assessment year.

### Mitigation

No mitigation is required.

Note: The black lines illustrate the SATURN model links

# M23 / M25

**Node:  
15214**

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	5457	5644	<b>+188</b>	1338	1701	<b>363</b>	94.1	97.2	<b>+3</b>
AM2	Low	4985	5115	<b>+130</b>	1589	1860	<b>271</b>	88.7	90.8	<b>+2</b>
IP	Negligible	4063	4198	<b>+134</b>	1202	1398	<b>197</b>	73.5	75.9	<b>+2</b>
PM	Low	5285	5459	<b>+174</b>	1204	1438	<b>234</b>	89.9	92.9	<b>+3</b>

**Node:  
19607**

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	5457	5656	<b>+199</b>	1338	1704	<b>+366</b>	96.8	100.2	<b>+3</b>
AM2	Low	4985	5103	<b>+119</b>	1588	1856	<b>+267</b>	91.3	93.4	<b>+2</b>
IP	Negligible	4063	4198	<b>+134</b>	1202	1398	<b>+197</b>	75.6	78.0	<b>+2</b>
PM	Medium	5285	5459	<b>+174</b>	1204	1438	<b>+234</b>	92.6	95.7	<b>+3</b>

# M23 / M25

Node:  
1377

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	3216	3460	+245	1146	1403	+257	83.6	90.3	+7
AM2	High	3476	3701	+225	1237	1454	+217	90.1	96.5	+6
IP	Negligible	2321	2488	+166	735	841	+105	63.4	67.7	+4
PM	Low	3214	3321	+107	649	769	+120	82.8	85.7	+3

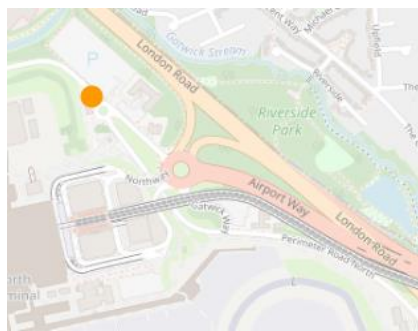
Node:  
1378

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Low	3143	3328	+186	1033	1257	+225	87.3	91.8	+4
AM2	Medium	3358	3568	+210	1075	1249	+174	91.7	96.7	+5
IP	Negligible	2668	2736	+68	737	842	+106	76.4	78.6	+2
PM	Negligible	3198	3262	+63	627	739	+112	86.9	88.5	+2



# Perimeter Road North

## Longbridge Way / Perimeter Road North (Node: 73465)



### Assessment

This is an internal junction within the GAL road network, which is shown to be operating within capacity in the Future baseline. The junction is expected to experience an increase in traffic with the Project. The medium impact from the Project is identified for the AM1 peak where the junction would still be operating within capacity with the Project (V/C ratio of 86%).

### Mitigation

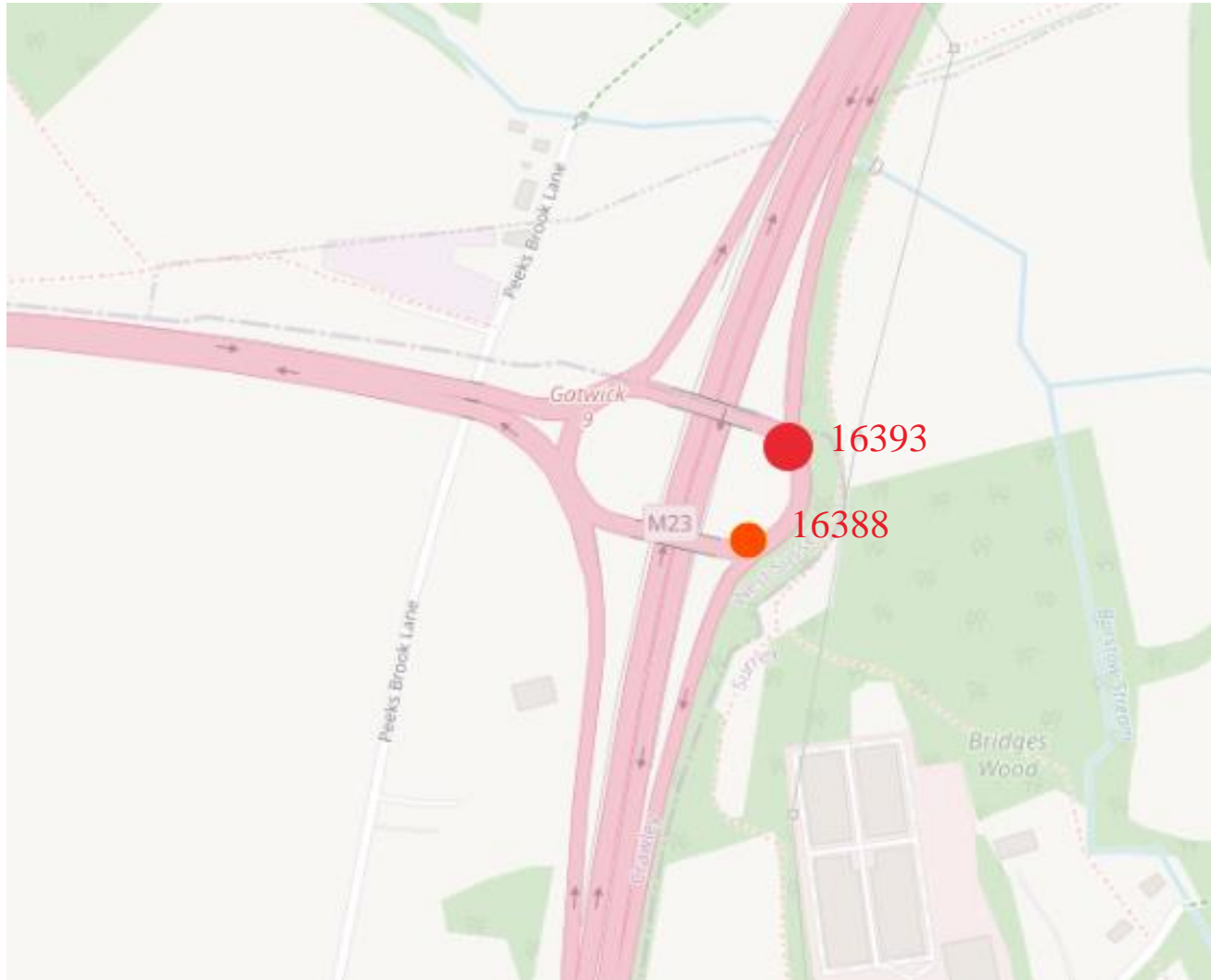
No mitigation is required.

<https://goo.gl/maps/ssUwRNW4XS9AkKfZ7>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	744	871	+127	726	853	+127	71.5	85.7	+14
AM2	Negligible	606	694	+88	587	674	+87	57.8	68.3	+10
IP	Negligible	616	721	+106	604	710	+106	63.1	75.9	+13
PM	Negligible	378	431	+53	366	419	+53	34.6	40.4	+6

# Gatwick M23 Junction 9

Gatwick Interchange / M23 (Nodes: 16393 & 16388)



## Assessment

This junction is within the VISSIM microsimulation model and its operation has been considered in more detail through the use of that model. This shows some reductions in speeds with the Project, compared to the Future baseline, but no significant capacity issues have been identified (see next slides).

## Mitigation

No mitigation is required.

# Gatwick M23

## Gatwick/Interchange/M23

### Node: 16393

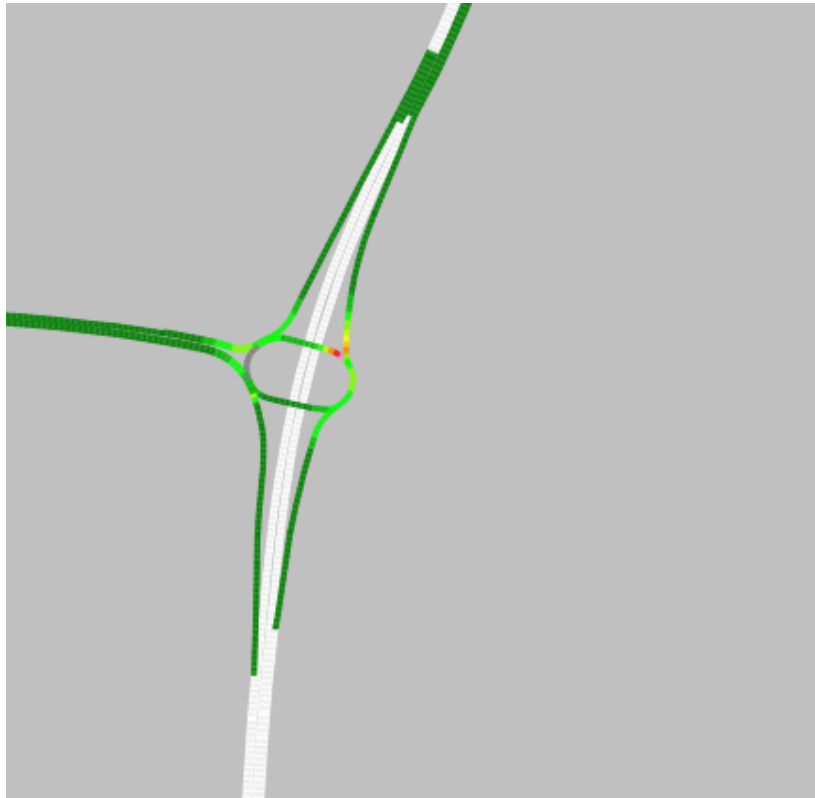
Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	High	2727	3245	+517	2080	2494	+414	83.8	99.8	+16
AM2	High	2779	3339	+561	2127	2483	+356	85.4	102.6	+17
IP	Negligible	2075	2345	+271	1598	1836	+238	64.8	73.2	+8
PM	Negligible	2042	2326	+284	1413	1717	+304	61.5	70.1	+9

### Node: 16388

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	2727	3256	+528	2080	2494	+414	74.5	88.6	+14
AM2	Medium	2778	3256	+478	2127	2483	+356	76.0	88.9	+13
IP	Negligible	2076	2339	+263	1598	1836	+238	57.8	65.0	+7
PM	Negligible	1987	2247	+260	1413	1717	+304	53.4	60.4	+7

# M23 Junction 9

## Gatwick Interchange / M23



Future baseline 2032



With Project 2032

This junction is part of the more detailed assessment undertaken in VISSIM (as set out in the Transport Assessment).

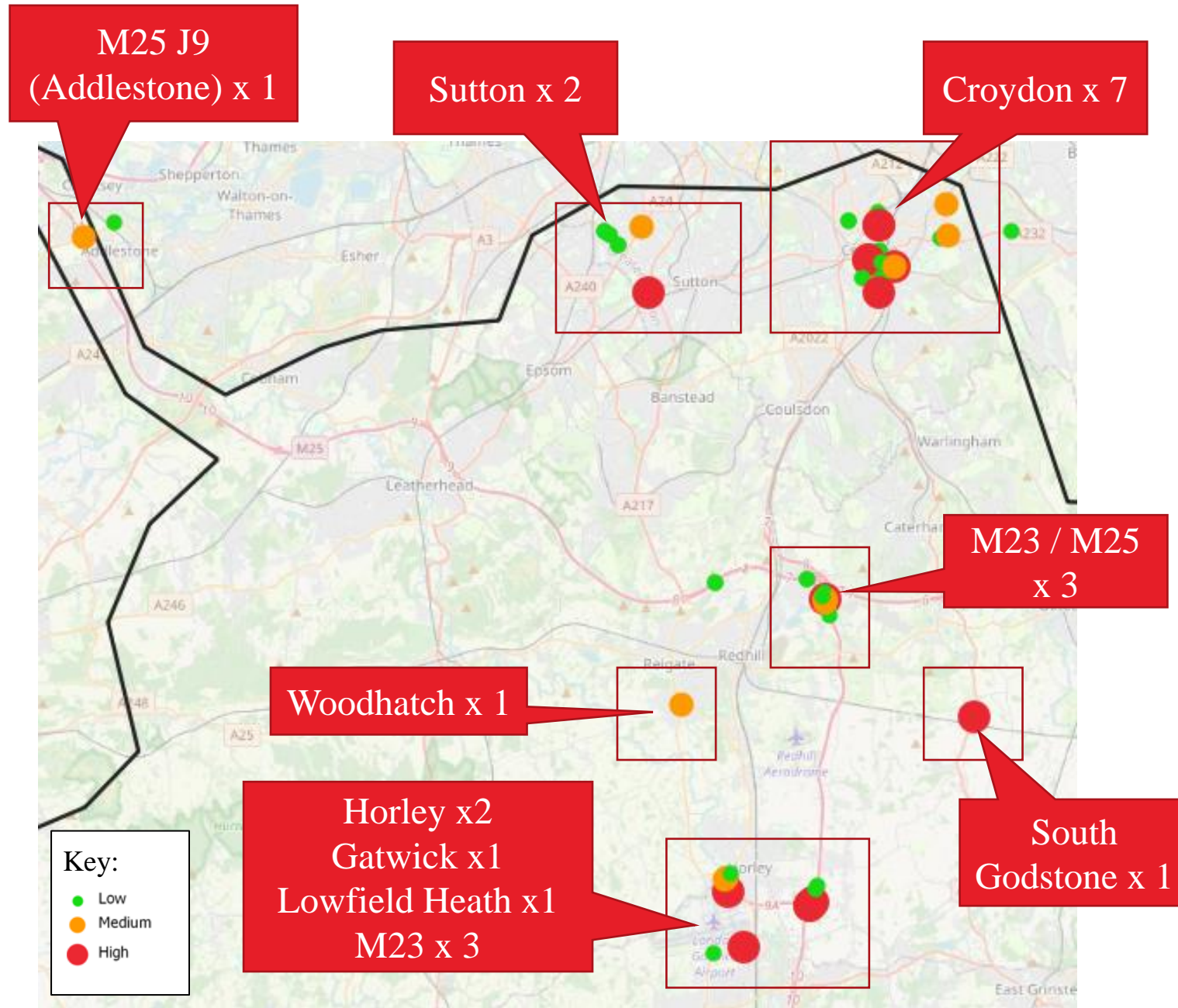
With adaptive signal control on the M23 southbound slip and the Smart Motorways configuration implemented on the slip approaches, this junction operates consistently in all scenarios.

In the Future baseline configuration, the westbound M23 Spur sees slower traffic speeds in the AM and PM peaks than in the With Project configuration. This does not impede the operation of Junction 9 in any of the modelled scenarios.

2047

Future baseline 2047 vs Future baseline 2047 With Project

**22 Junctions**  
(Medium & High impacts)



# South Godstone

## A22 / Harcourt Way (Node: 10137)



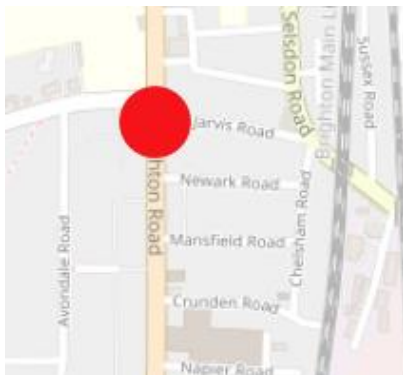
Assessment	Mitigation
This node in the model does not represent an actual junction, but is a zone connector, which is a location at which all the traffic from the existing residential area is assumed to be loaded onto the network in one location.	No mitigation is required.

<https://goo.gl/maps/5cP9zyX5ygPQNUSE8>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Negligible	2495	2532	<b>+37</b>	30	33	<b>2</b>	100.1	101.8	<b>+2</b>
AM2	<b>High</b>	2791	2869	<b>+78</b>	24	31	<b>7</b>	123.4	128.8	<b>+5</b>
IP	Flow Filtered	1894	1907	<b>+13</b>	25	25	<b>0</b>	66.2	66.6	<b>+0</b>
PM	Flow Filtered	2266	2276	<b>+11</b>	21	21	<b>0</b>	79.5	79.7	<b>+0</b>

# Croydon

## Brighton Road / Jarvis Road (Node: 55049)



<https://goo.gl/maps/ALmYzLrXrstNBmi19>

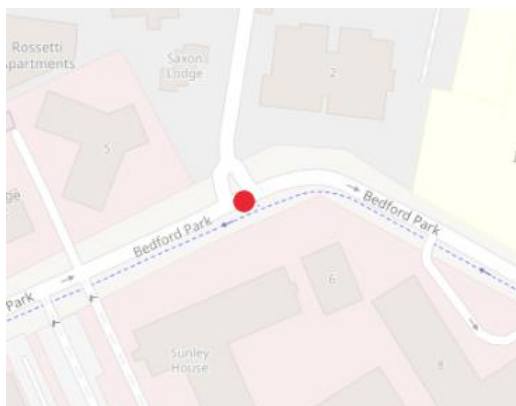
Assessment	Mitigation
<p>This junction is shown to be operating close to capacity in the morning and evening peak periods in the Future baseline, with V/C ratios of between 88% and 97%. The impact from the Project is identified in the AM2 peak where there is an increase in traffic of around 200 trips, which appears to be due to model noise and reassignment of background traffic as a similar increase does not appear in other time periods. The proportion of airport traffic at this junction is very small (less than 1%) and the number of additional airport trips as a result of the Project is negligible (up to 6 vehicles an hour). The junction would continue to operate at capacity with the Project, with the V/C ration in the AM2 peak with the Project (96.7%) being very similar to performance in the AM1 peak in Future baseline (96.2%).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Negligible	2617	2576	-40	43	46	+4	96.2	98.2	+2
AM2	High	2355	2559	+204	43	48	+6	88.4	96.7	+8
IP	Flow Filtered	2334	2328	-5	32	37	+5	90.0	89.7	-0
PM	Flow Filtered	2504	2503	-2	44	46	+2	92.8	92.7	-0



# Croydon

## Bedford Park / Tavistock Road (Node: 54438)



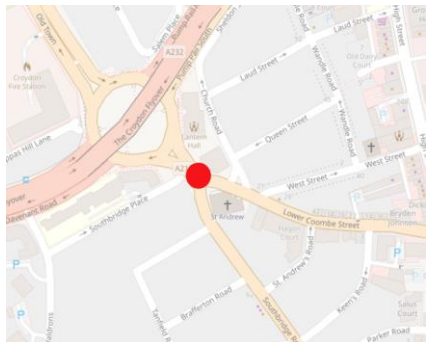
<https://goo.gl/maps/vHDPcYwNRiNKLdpU9>

Assessment	Mitigation
<p>This junction is shown to be operating within capacity in all time periods in the Future baseline, with V/C ratios of between 63% and 88%. The models show an increase in traffic with the Project in the AM1 and AM2 periods, which appears to be due to model noise and reassignment of background traffic. The consequence of the increase in traffic with the Project is that the model indicates it would operate over capacity in the AM1 and AM2 peak periods with the Project (V/C increases from around 86% to 105%). The proportion of airport traffic at this junction is very small (around 0.5% which can be considered to be within daily variation in traffic) and the number of additional airport trips as a result of the Project is negligible (up to 3 vehicles an hour).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	High	648	771	+123	0	4	+3	88.2	105.2	+17
AM2	High	635	740	+105	0	1	+1	86.1	105.5	+19
IP	Flow Filtered	459	463	+ 5	1	1	0	62.7	63.4	+ 1
PM	Flow Filtered	614	615	+ 1	0	0	0	82.8	82.8	+ 0

# Croydon

## Lower Coombe Street / Southbridge Road (Node: 54708)



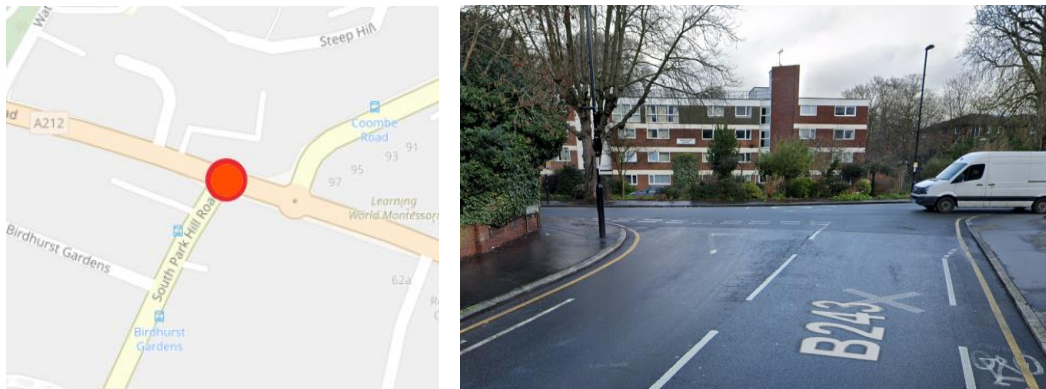
<https://goo.gl/maps/XV6a75GZqaeEXgwt7>

Assessment	Mitigation
<p>This junction is shown to be operating within capacity in all time periods in the Future baseline. An increase in traffic is shown in the AM1 and AM2 time periods with the Project, amounting to between 542 and 813 trips. However, this is considered to be the result of model noise and reassignment of background traffic, given that the proportion of airport traffic at this junction is very small (less than 1%) and the number of additional airport trips as a result of the Project is negligible (up to 10 vehicles an hour). With the Project, the model indicates that the junction would still operate within capacity (V/C ratio of 95%).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	High	2153	2695	+542	14	19	+ 5	68.0	94.5	+26
AM2	High	1929	2742	+813	7	17	+ 10	59.7	94.3	+35
IP	Flow Filtered	2677	2694	+ 17	4	5	+ 1	88.1	88.9	+ 1
PM	Flow Filtered	2725	2715	- 10	32	27	- 5	87.7	86.9	- 1

# Croydon

## Coombe Road / South Park Hill Road (Node: 54710)



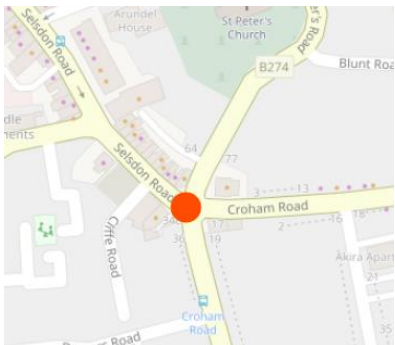
<https://goo.gl/maps/HXGMxBdAT4X6Z6Fz6>

Assessment	Mitigation
<p>This junction is shown to be operating within capacity in the morning peak period and close to capacity in the interpeak and evening peak period in the Future baseline. The model shows increases in traffic in the morning time periods with the Project which appear to be due to model noise and reassignment of background traffic, given that the proportion of airport traffic at this junction is very small (less than 1%) and the number of additional airport trips as a result of the Project is negligible (up to 8 vehicles an hour). The junction would continue to operate within but close to capacity with the Project (maximum V/C ratio of 99% in any time period).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	2153	2257	+104	12	16	+ 4	81.7	91.2	+9
AM2	High	2036	2424	+389	9	17	+ 8	75.3	98.5	+23
IP	Negligible	2321	2350	+ 30	17	19	+ 2	91.9	93.5	+ 2
PM	Medium	2384	2420	+ 37	11	14	+ 3	92.8	95.4	+ 3

# Croydon

## Selsdon Road / St Peter's Road / Croham Road (Node: 54778)



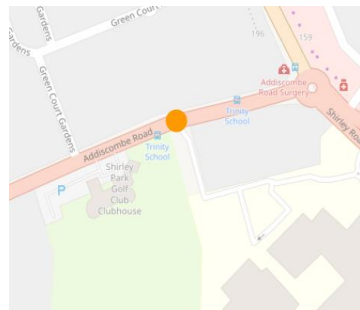
<https://goo.gl/maps/U4uP9A7pjRnLP5J86>

Assessment	Mitigation
<p>This junction is shown to be operating within capacity in the morning and interpeak time periods, and at capacity in the evening time period (V/C of 99%) in the Future baseline. The impact from the Project is identified in the AM1 peak where there is a small increase in traffic (+59 trips). The proportion of airport traffic at this junction is very small (less than 1%) and the number of additional airport trips as a result of the Project is negligible (up to 4 vehicles an hour). With the Project, the junction would operate closer to capacity in the AM1 peak (V/C of 91%) than it would in the Future baseline, but the performance in the evening peak period would not be affected (V/C of 98% with Project compared to 99% in the Future baseline)</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	2214	2273	+59	15	19	+4	84.7	90.6	+6
AM2	Low	2151	2182	+31	11	14	+3	81.9	85.1	+3
IP	Flow Filtered	1835	1822	-12	25	27	+2	70.1	69.5	-1
PM	Flow Filtered	2383	2376	-7	9	11	+2	98.6	98.2	0

# Croydon

## Addiscombe Road / Trinity School Access (Node: 54135)



<https://goo.gl/maps/pbUvjTnSDvMTXRPUA>

### Assessment

This node is a pedestrian crossing and is shown to be operating within capacity in the Future baseline in the morning and interpeak periods, and close to capacity (V/C ratio of 97%) in the evening peak period. The impact from the Project is identified in the AM1 peak where an increase of around 110 trips is considered to be due to model noise and reassignment of background traffic. The proportion of airport traffic at this junction is very small (less than 1%) and the number of additional airport trips as a result of the Project is negligible (-1 to +2 vehicles across the peak periods). With the Project the junction would operate close to capacity in the AM1 peak (V/C of 94%), although that would be slightly better than equivalent performance in the PM peak in the Future baseline (V/C of 97%).

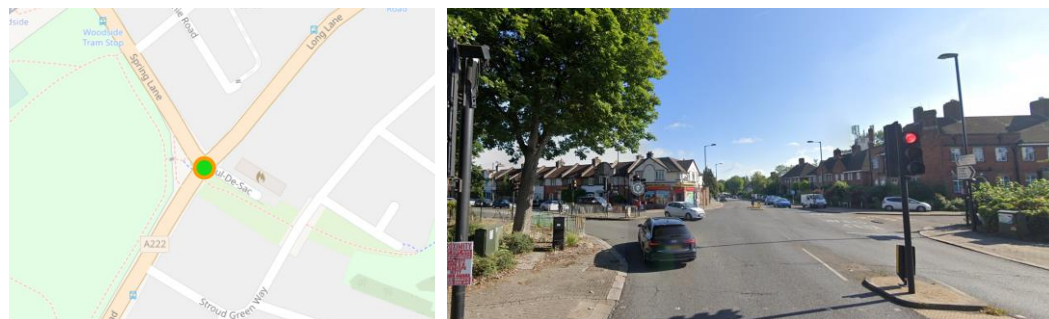
### Mitigation

No mitigation is required.

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	1315	1426	+111	4	6	+2	87.1	93.8	+7
AM2	Reduction	1320	1292	-29	4	3	-1	87.1	85.6	-2
IP	Flow Filtered	1328	1315	-13	6	5	-1	89.1	88.3	-1
PM	Flow Filtered	1632	1641	+9	3	4	+1	97.2	97.7	+1

# Croydon

## Lower Addiscombe Road / Spring Lane (Node: 54840)



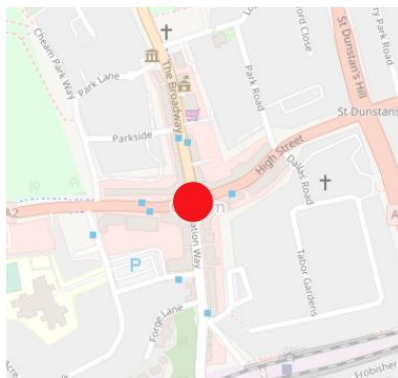
<https://goo.gl/maps/TXkhp7g85k5vM6tM8>

Assessment	Mitigation
<p>This junction is identified as operating within capacity in the Future baseline, with V/C ratio of 86% or less. The impact is identified in the AM2 peak. With the Project there is a reduction in traffic but an increase in V/C, which is due to differences in the flows approaching the junction from different directions. The proportion of airport traffic at this junction is very small (less than 1%) and the number of additional airport trips as a result of the Project is negligible (up to +2 vehicles an hour) The junction would continue to operate within capacity with the Project (maximum V/C of 91%).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Low	2075	2099	+24	4	7	+2	85.6	90.3	+5
AM2	Medium	1963	1886	-78	5	6	+1	82.4	90.5	+8
IP	Flow Filtered	2054	2055	+0	6	7	+1	80.7	81.5	+1
PM	Negligible	2073	2099	+25	5	5	+1	72.8	73.2	+0

# Cheam

## Ewell Road / High Street / The Broadway / Station Way (Node: 53948)



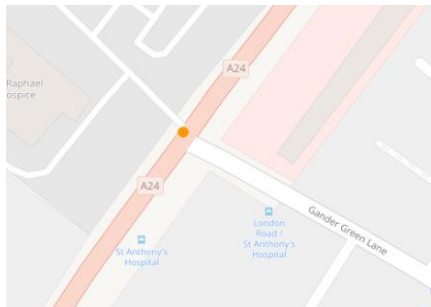
<https://goo.gl/maps/EEhwYimMtcvE8PKN8>

Assessment	Mitigation
<p>This junction is shown to be operating above capacity in the AM1 and PM time periods in the Future baseline (V/C ratios of 104% to 105%) and close to capacity in the AM2 period (V/C of 96%). The impact from the Project is identified in the AM2 peak where there is an increase in traffic that appears to be due to model noise and reassignment of background traffic. With the Project, the junction is showing as operating over capacity in the AM2 peak (V/C increases from 96% to 102%) but also to experience slightly improved conditions in the AM1 peak (V/C reduces from 104% to 100%) as a result of an unexpected decrease in traffic, which tends to support the conclusion that changes shown in this location are the result of model noise. The proportion of airport traffic at this junction is very small (less than 0.5%) and the number of additional airport trips as a result of the Project is negligible (up to +2 vehicles an hour).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Reduction	2535	2264	- 271	6	7	+ 1	104.3	99.5	-5
AM2	High	2162	2361	+ 199	5	7	+ 2	95.5	102.1	+7
IP	Flow Filtered	2037	2045	+ 8	7	8	+ 1	73.4	73.8	+0
PM	Flow Filtered	2441	2458	+ 16	4	5	0	104.9	105.0	+0

# Sutton

## London Road / Gander Green Lane / Spire St Anthony's Hospital Access (node: 53906)



<https://goo.gl/maps/D2HyqqeL3U9bvnCv5>

Assessment	Mitigation
<p>This junction is shown as operating close to capacity in the morning time periods in the Future baseline (V/C ratios of 97%) in the Future baseline. The impact from the Project is identified in the AM1 peak, where there is a very small increase in trips (+41 vehicles) but the V/C ratio changes by more than two percentage points. The proportion of airport traffic at this junction is very small (less than 0.5%) and the number of additional airport trips as a result of the Project is negligible (up to +2 vehicles an hour). The junction would continue to operate close to capacity with the Project (V/C of 99%).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	2221	2262	+41	7	8	+ 2	96.5	98.8	+2
AM2	Reduction	2224	2187	-37	7	10	+ 2	97.2	96.9	0
IP	Flow Filtered	2075	2068	-7	4	4	+ 1	67.6	67.4	0
PM	Flow Filtered	2535	2546	+11	6	7	+ 1	84.5	84.8	0



# M25 J9

## M25 J9 (Addlestone) (Node: 12722)



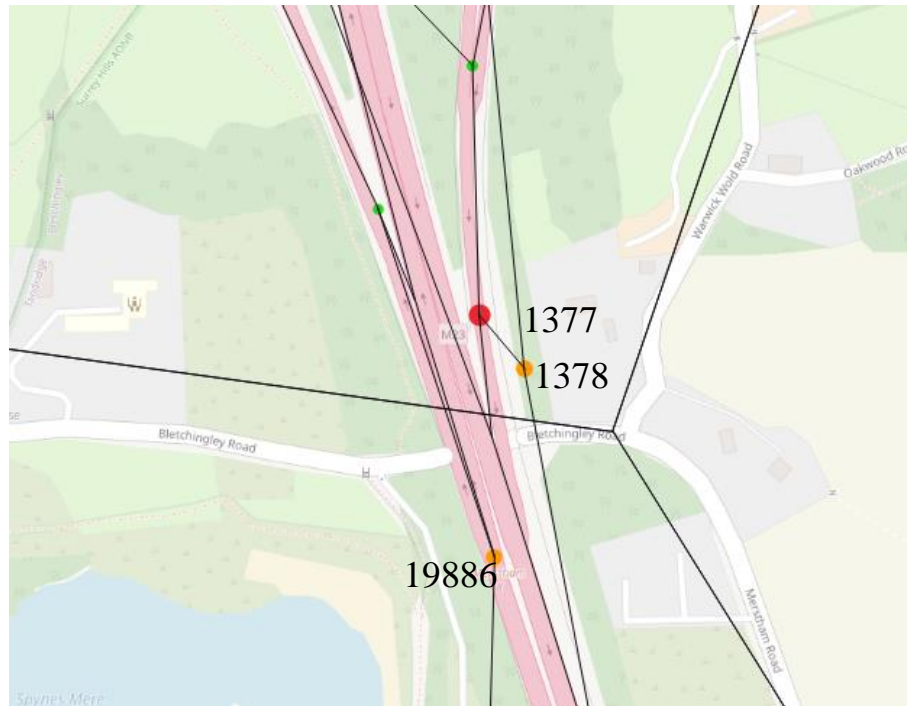
<https://goo.gl/maps/fhQ8YCLAoiQvxJht8>

Assessment	Mitigation
<p>In the Future baseline this junction, which is one entry to a signalised roundabout, is shown to operate close to capacity in the morning time periods (V/C ratios of between 96% and 98%) and at capacity in the PM peak period (V/C of 101%). The impact from the Project is identified for the AM1 peak where there is a small increase in traffic (+32 vehicles, of which +21 is the result of the Project) leading to more than a two percentage point increase in V/C ratio. The proportion of airport traffic at this junction is very small (less than 1% which can be considered to be within daily variation in traffic). With the Project the junction would continue to operate close to capacity in the morning peak periods (V/C ratios of 96% to 98%) and at capacity in the evening peak period (V/C of 101%, unchanged from the Future baseline). The junction is operating close to capacity and there is very low airport traffic at this junction.</p>	<p>No mitigation is required</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	2069	2101	+32	104	125	+ 21	95.7	97.8	+2
AM2	Reduction	2131	2084	-48	108	124	+ 16	97.6	95.6	-2
IP	Flow Filtered	1619	1603	-16	58	71	+ 12	79.2	78.5	-1
PM	Flow Filtered	2231	2226	-5	51	57	+ 6	101.0	100.7	-0

# M23 / M25

## Southern merge and diverges (Nodes: 1377, 1378, 19886)



Note: The black lines illustrate the SATURN model links

### Assessment

This complex of merges and diverges is shown to be operating within capacity in the Future baseline, with V/C ratios varying from 70% in the inter-peak period to 98% in the AM1 time period. The With Project scenario shows V/C ratios increasing by up to six percentage points, reaching maximum values of 104% in certain locations. However, a separate more detailed review of the whole junction has been undertaken against DMRB criteria, to consider the performance of the merges and diverges at this junction, which suggests that although the merge / diverge complex will perform close to capacity, no additional issues are expected compared to the Future baseline.

The merges and diverges are expected to be operating increasingly close to capacity over time in the Future baseline, and conditions would worsen slightly with the Project. Each location would operate at capacity in only one of the modelled time periods. In practice, the Project will not result in a material change in performance. This is illustrated by the journey time assessments for the M23 (northbound and eastbound) and M25 (eastbound and westbound) routes (see next page). These show that for 2047, the Project results in either no change or one minute increase on each of the four routes, when considering the four time periods assessed.

Merge and diverge capacity can only be increased in steps, rather than in small increments, and the degree of impact at the location resulting from the Project does not merit a large step-change in capacity and the associated scale of highway works. The impact of this junction has been presented to National Highways and they recognise that *“it would appear disproportionate to expect the developer of Gatwick NRP to redesign the entire interchange to cope with a relatively small increase in traffic figures over those which would naturally occur”*. Further consultation with National Highways is ongoing.

### Mitigation

No mitigation is proposed.

# M23 / M25

## Node: 1377

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	High	3492	3691	+200	1216	1451	+ 235	91.2	96.4	+5
AM2	Medium	3747	3863	+116	1283	1502	+ 219	97.7	100.6	+3
IP	Negligible	2672	2858	+186	813	943	+ 130	72.7	76.9	+4
PM	Flow Filtered	3561	3586	+25	706	794	+ 87	91.9	92.6	+1

## Node: 1378

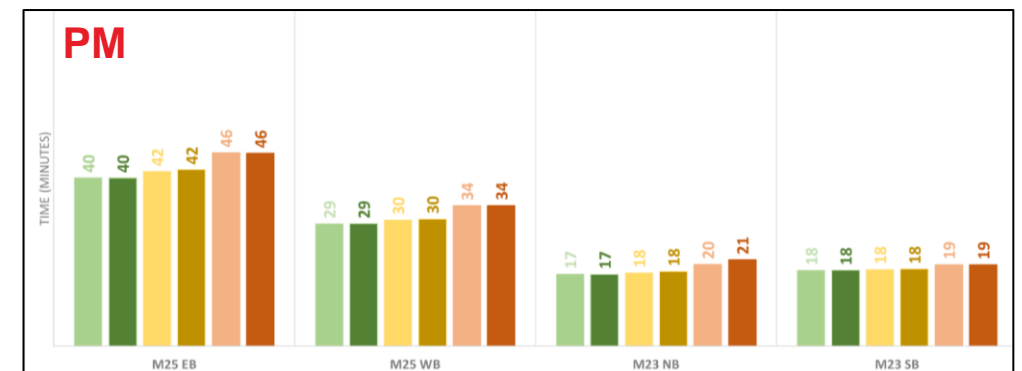
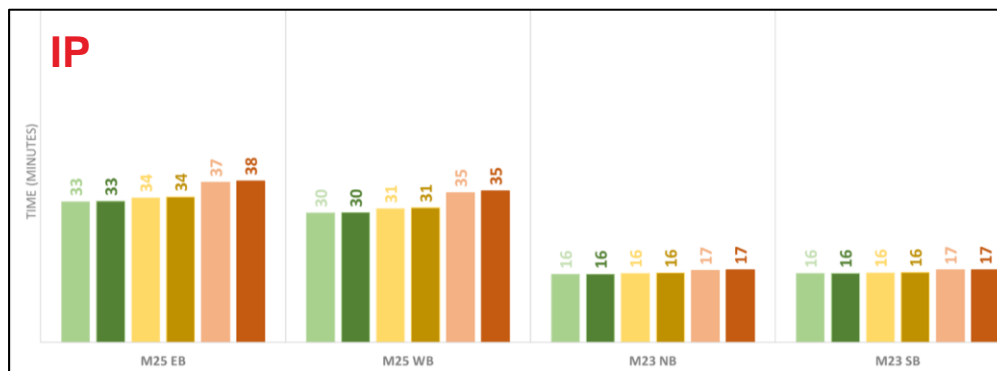
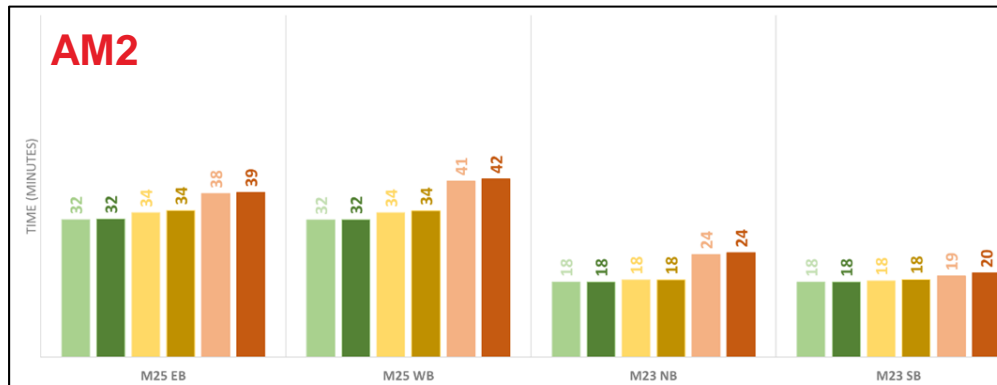
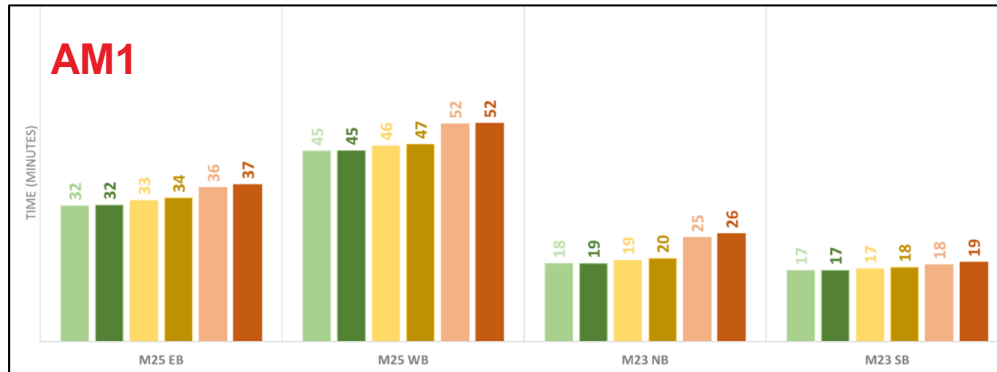
Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	3340	3504	+164	1100	1292	+ 192	92.4	96.4	+4
AM2	Medium	3594	3702	+109	1123	1311	+ 188	97.5	100.4	+3
IP	Negligible	2810	2898	+88	779	901	+ 122	81.2	83.4	+2
PM	Negligible	3440	3476	+35	663	755	+ 92	92.8	93.6	+1

## Node: 19886

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Flow filtered	6716	6779	+63	1555	2007	+ 451	97.7	103.6	+6
AM2	Medium	6196	6095	-101	1764	2115	+ 351	92.7	97.4	+5
IP	Negligible	5304	5503	+199	1436	1714	+ 278	70.1	72.6	+3
PM	Negligible	6582	6791	+208	1518	1725	+ 207	81.9	84.6	+3

# M23 / M25

## Journey time assessment



# Woodhatch

## Woodhatch Road / Dovers Green Road / Cockshot Hill (Node: 14812)



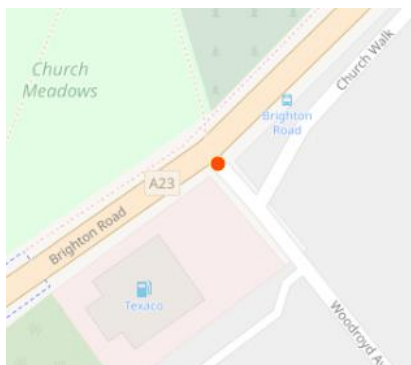
<https://goo.gl/maps/wh9MFpaYTVy7cZCj7>

Assessment	Mitigation
<p>This junction is shown as operating close to capacity in the AM1 and PM periods (V/C ratios of 96% to 99%) and at capacity in the AM2 time period (V/C ratio of 106%). The impact from the Project is identified in the PM peak, where the increase in vehicles is 96. The proportion of airport traffic at this junction is very small (less than 1% which can be considered to be within daily variation in traffic) and the number of additional airport trips as a result of the Project is negligible (up to +11 vehicles an hour). The change in V/C ratio in the PM peak would be around four percentage points, reaching a ratio of 100%, but with reduced V/C ratios occurring in other time periods with the Project.</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Reduction	2350	2300	-50	183	154	- 29	98.9	97.2	-2
AM2	Reduction	2464	2436	-28	75	82	+ 7	106.1	104.7	-1
IP	Flow Filtered	1979	1961	-19	100	84	- 16	81.2	80.3	-1
PM	Medium	2221	2317	+96	58	69	+ 11	95.9	99.7	+4

# Horley

## Woodroyd Avenue / Brighton Road (Node: 76209)



Assessment	Mitigation
<p>This junction is indicated as operating within or approaching capacity in the Future baseline (maximum V/C ratio of 91% in the PM peak). The traffic flows and operation of this junction are affected by the highway improvement scheme which forms part of the Project. With the Project, the junction would continue to operate within capacity (maximum V/C of 93% with Project).</p>	<p>No mitigation is required.</p>

<https://goo.gl/maps/MEQDW7BFs9RbHoqE9>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Negligible	2740	2899	<b>+159</b>	332	395	<b>+63</b>	78.2	82.3	<b>+4</b>
AM2	Medium	2977	3189	<b>+212</b>	290	322	<b>+32</b>	84.9	91.2	<b>+6</b>
IP	Reduction	2993	2906	<b>-87</b>	251	246	<b>- 5</b>	86.0	83.9	<b>-2</b>
PM	Negligible	3242	3313	<b>+70</b>	294	300	<b>+6</b>	91.1	93.1	<b>+2</b>

# Longbridge Roundabout

Brighton Road / London Road (Node: 16769)



<https://goo.gl/maps/xU9Ujk5hrRjQEx6SA>

Assessment	Mitigation
<p>This junction is identified as operating within capacity in the Future baseline (maximum V/C ratio of 90% in the PM peak). The traffic flows and operation of this junction are affected by the highway improvement scheme which forms part of the Project. With the Project, the junction would continue to operate within capacity (maximum V/C of 92% with Project).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Negligible	2740	2899	<b>+159</b>	332	395	<b>+ 63</b>	77.8	82.0	<b>+4</b>
AM2	Medium	2977	3189	<b>+212</b>	290	322	<b>+ 32</b>	84.6	90.8	<b>+6</b>
IP	Reduction	2993	2906	<b>-87</b>	251	246	<b>- 5</b>	85.6	83.5	<b>-2</b>
PM	Negligible	3240	3310	<b>+70</b>	294	300	<b>+ 6</b>	90.5	92.4	<b>+2</b>

# Gatwick

## Perimeter Road North / Longbridge Way / Northgate Road (Node: 73465)



Assessment	Mitigation
This node in the model does not represent an actual junction, but is a zone connector, which is a location at which all the traffic from the surrounding area is assumed to be loaded onto the network in one location.	No mitigation is required.

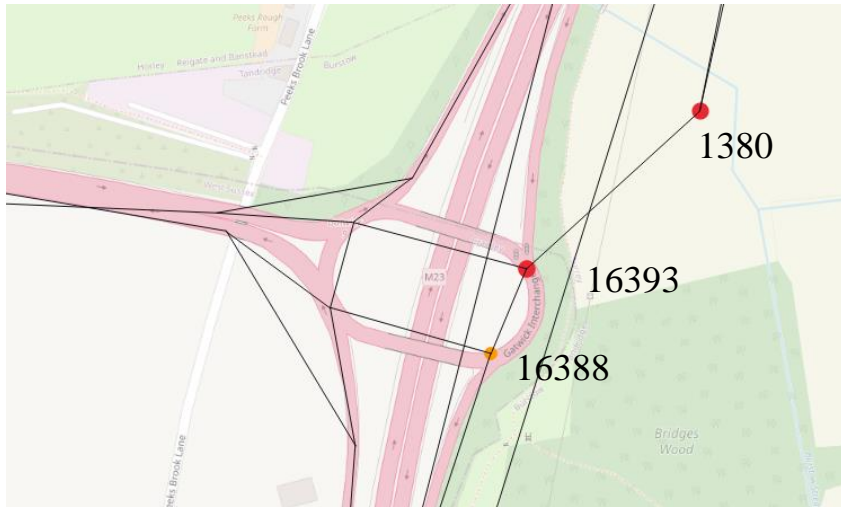
<https://goo.gl/maps/yhr2q4T5ftXz4qV7A>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	High	835	931	+96	818	913	+95	81.5	92.6	+11
AM2	Negligible	689	740	+51	669	720	+51	67.1	73.8	+7
IP	Negligible	708	785	+76	697	773	+76	73.5	83.4	+10
PM	Negligible	410	456	+46	398	444	+46	38.0	43.2	+5



# M23 Junction 9

Gatwick Interchange / M23 (Nodes: 16388, 16393 & 1380)



<https://goo.gl/maps/YEKp3zTa29BDm78F7>

Note: The black lines illustrate the SATURN model links

## Assessment

This junction is within the VISSIM micro-simulation model and its operation has been considered in more detail through the use of that model. This shows some reductions in speeds with the Project, compared to the Future baseline, but no significant capacity issues have been identified (see next slides).

## Mitigation

No mitigation is required.

# M23 Junction 9

Node: 16388

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Medium	2808	3265	+457	2171	2524	+354	77.1	88.8	+12
AM2	Medium	2765	3246	+481	2176	2446	+271	76.3	88.8	+13
IP	Negligible	2145	2468	+323	1679	1918	+239	60.0	68.5	+9
PM	Negligible	2075	2293	+219	1425	1683	+258	55.9	61.8	+6

Node: 16393

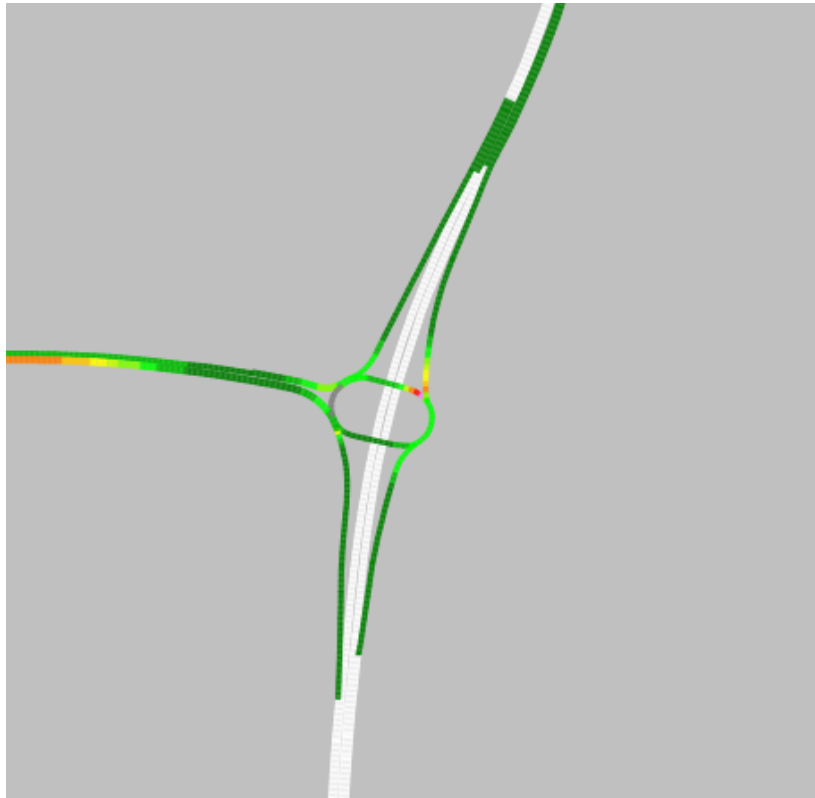
Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	High	2804	3320	+516	2159	2553	+394	86.8	102.6	+16
AM2	High	2775	3255	+480	2180	2450	+270	86.1	102.9	+17
IP	Negligible	2155	2497	+343	1676	1934	+257	67.6	77.9	+10
PM	Negligible	2138	2390	+253	1463	1748	+285	64.6	77.2	+8

Node: 1380

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	High	2249	2756	+507	1876	2221	+345	61.6	75.3	+14
AM2	High	2207	2786	+578	1891	2199	+309	60.7	103.0	+42
IP	Negligible	1596	1908	+312	1365	1546	+181	44.3	52.9	+9
PM	Negligible	1487	1703	+217	1154	1298	+144	40.2	46.1	+6

# M23 Junction 9

## Gatwick Interchange / M23



Future baseline 2047



With Project 2047

This junction is part of the more detailed assessment undertaken in VISSIM (assessment contained in the TA).

With adaptive signal control on the M23 southbound slip and the Smart Motorways configuration implemented on the slip approaches, this junction operates consistently in all scenarios.

In the Future baseline configuration, the westbound M23 Spur sees slower traffic speeds in the AM and PM peaks than in the With Project configuration. This does not impede the operation of Junction 9 in any of the modelled scenarios.

# Lowfield Heath

## A23 / Gatwick Road / Perimeter Road East (Node: 15080)



<https://goo.gl/maps/DLeBPETyvHRpK79Q9>

Assessment	Mitigation
<p>This junction is shown as operating close to capacity in the Future baseline, with V/C ratios of around 98% in all time periods. The impact from the Project is identified for the PM peak, where the increase in traffic results in the junction operating over capacity (V/C changing from 97% in the Future baseline to 103% with the Project). This junction is part of the VISSIM model and performance has been assessed using that model. VISSIM provides more detail on network performance and average speed plots are used to indicate congestion. This shows some reduction in average speeds with the Project, compared to the Future baseline, but no significant capacity issues (see next slide).</p>	<p>No mitigation is required.</p>

Time	Impact	Junction Approach Flows			Airport Flows			Volume over Capacity (V/C)		
		Future baseline	With Project	Difference	Future baseline	With Project	Difference	Future baseline	With Project	Difference
AM1	Reduction	3564	3468	-96	1352	1404	+ 52	98.7	88.8	-10
AM2	Reduction	3563	3434	-129	1077	1162	+ 85	97.8	87.2	-11
IP	Reduction	3583	3420	-163	1190	1339	+ 148	98.6	93.6	-5
PM	High	3849	3993	+144	953	1020	+ 67	97.2	102.9	+6

# Lowfield Heath – Further Assessment

## A23 / Gatwick Road / Perimeter Road East



Future baseline 2047



With Project 2047

This junction is part of the more detailed assessment undertaken in VISSIM (assessment contained in the TA).

The junction itself continues to operate as in the earlier scenarios. Increases in PM peak traffic volumes merging on the A23 northbound carriageway to the north of the junction with Beehive Ring Road result in much slower moving traffic back through the Gatwick Road roundabout, at times extending to Lowfield Heath roundabout.

In the “With Project” scenario, this is much reduced, with higher average speeds and traffic not reaching Lowfield Heath roundabout.