Document

5.22.1A

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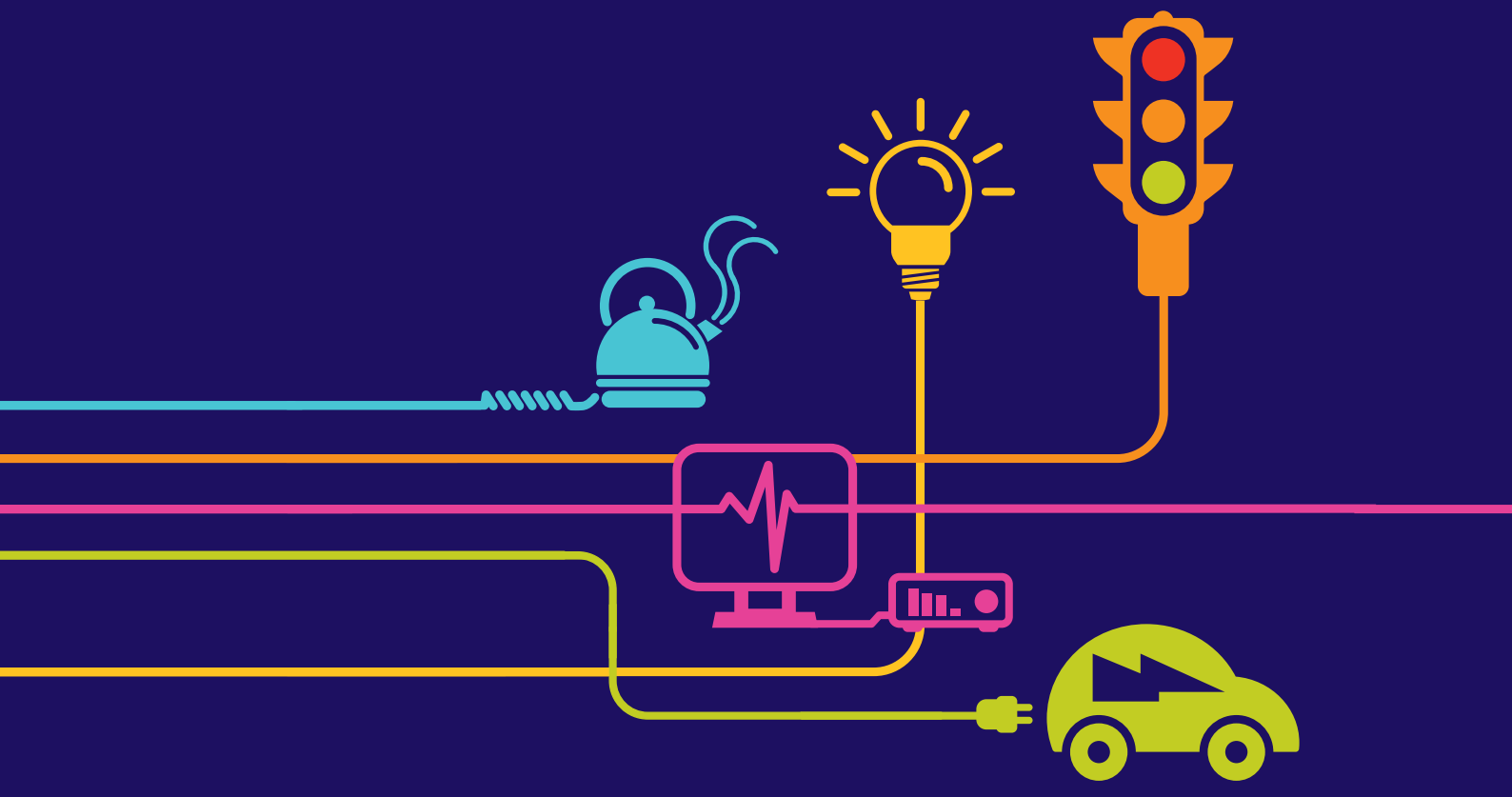
Environmental Statement Transport Assessment (Update to Section 12)

Hinkley Point C Connection Project

Regulation 5(2)(q) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



Application Reference EN020001

February 2015

12 HIGHWAY IMPACT

12.1 Introduction

12.1.1 This section of the TA presents the results from the junction capacity assessments undertaken for the 47 junctions identified for analysis in **Table 8.1**.

12.1.2 The capacity assessment methodologies and years of assessment which have been agreed with the LPAs are:

- baseline (observed) – 2013 / 2014;
- future baseline (observed traffic data plus traffic growth to assessment year with traffic growth, plus committed development); and
- future baseline plus Proposed Development.

12.1.3 Three sensitivity tests have been conducted to assess the potential impacts of:

- local quarries which may provide stone and aggregate from the Mendips;
- Seabank Power Station; and
- A39 Access roundabout junction.

12.1.4 For the purposes of the assessment it is considered that where junction capacity is lower than the agreed thresholds of 0.85 RFC and 90% DoS, no capacity issues are present.

12.1.5 Queues have been assessed on a site by site basis with issues in terms of blocking back addressed where appropriate.

12.1.6 The tables contained within this section provide a summary of the modelling results, full outputs and observed queue data can be found in **Volume 5.22.2, Appendix 22H**.

12.2 Baseline Capacity Assessment Results

Junction 1 – M5 Junction 23

12.2.1 **Table 12.1** provides the 2014 Baseline capacity assessment results for Junction 23 of the M5.

Table 12.1 Junction 1 – M5 Junction 23

Arm	AM Obs 2014			PM Obs 2014		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
M5 S/B Off slip	0.75	2.66	0.39	0.84	3.64	0.44
A39 (east)	1.45	4.79	0.58	0.78	3.27	0.43
M5 N/B off slip	0.57	3.56	0.57	0.66	2.86	0.39
A39 (west)	0.49	2.19	0.49	1.37	3.82	0.57

Capacity

12.2.2 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the M5 Junction 23 junction and that there is significant residual capacity available.

Queues

12.2.3 The 2014 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. On site queue observations were taken against which the above model has been validated.

Junction 2 – A39/Puriton Hill

12.2.4 **Table 12.2** provides the 2013 Baseline capacity assessment results for the A39/Puriton Hill priority junction.

Table 12.2 Junction 2 - A39/Puriton Hill

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Puriton Hill	A39	0.11	10.57	0.10	0.02	7.99	0.02
A39 (S)	A39 (N) & Puriton Hill	0.01	5.39	0.01	0.01	4.25	0.01

Capacity

12.2.5 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the A39/Puriton Hill junction and that there is significant residual capacity available.

Queues

12.2.6 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 3 – Hillside/A39 Puriton Hill

12.2.7 **Table 12.3** provides the 2013 Baseline capacity assessment results for the Hillside/Puriton Hill junction.

Table 12.3 Junction 3 - A39/Puriton Hill

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Southern Arm	A39 & Hillside	0.00	0.00	0.00	0.00	0.00	0.00
A39 (E)	Southern Arm, A39 (W) & Hillside	0.03	6.29	0.03	0.07	7.05	0.06
Hillside	A39 & Southern Arm	0.18	11.38	0.15	0.16	10.23	0.14
A39 (W)	A39 (E), Southern Arm & Hillside	0.01	4.62	0.01	0.00	4.09	0.00

Capacity

12.2.8 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Hillside/A39 Puriton Hill junction and there is significant residual capacity available.

Queues

12.2.9 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 4 – A39 Puriton Hill/Bath Road

12.2.10 **Table 12.4** below provides the 2014 Baseline capacity assessment results for the A39 Puriton Hill/Bath Road junction.

Table12.4 Junction 4 – A39 Puriton Hill/Bath Road

Item	Lane Description	AM Obs 2013			PM Obs 2013		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	Puriton Hill Ahead	48	5	2	60	7	3
1/2	Puriton Hill Right	75	5	3	71	5	3
2/1	A39 (E) Left	31	2	1	22	2	0
2/2	A39 (E) Ahead	85	12	6	76	9	4
3/1	A39 (S) Right Left	84	11	5	75	9	4

Capacity

12.2.11 The 2014 Baseline capacity assessment results indicate that the A39 Puriton Hill/Bath Road junction currently operates within capacity, however the A39 (E) ahead movement operates at practical capacity with an 85% Degree of Saturation (DoS) being during the AM peak period.

Queues

12.2.12 The 2014 Baseline capacity assessment indicates that the highest mean maximum queue (MMQ) at the junction is 12 pcus which is shown on the A39 (East) Ahead movement during the AM peak period. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 5 – A39 Bath Road/Bawdrip Lane

12.2.13 **Table 12.5** below provides the 2013 Baseline capacity assessment results for the A39 Bath Road/Bawdrip Lane junction.

Table 12.5 Junction 5 – A39 Bath Road/Bawdrip Lane

Arm		AM Obs 2013			PM Obs 2013		
From	**To**	**Queue (Vehs)**	**Delays (s)**	**RFC**	**Queue (Vehs)**	**Delays (s)**	**RFC**
Bawdrip Lane	A39 (W) & Northern Arm	0.02	8.11	0.02	0.01	7.66	0.01
Bawdrip Lane	A39 (E) & Northern Arm	0.06	16.21	0.06	0.05	16.49	0.05
A39 (E)	Bawdrip Lane, A39 (W) & Northern Arm	0.00	0.00	0.00	0.00	0.00	0.00
Northern Arm	A39 (E), Bawdrip Lane & A39 (W)	0.00	0.00	0.00	0.00	0.00	0.00
A39 (W)	A39 (E), Bawdrip Lane & Northern Arm	0.04	5.42	0.03	0.03	4.01	0.02

Capacity

12.2.14 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the A39 Bath Road/Bawdrip Lane junction and there is significant residual capacity available.

Queues

12.2.15 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 6 – A39 Bath Road/Woolavington Hill

12.2.16 **Table 12.6** below provides the 2013 Baseline capacity assessment results for the A39 Bath Road/Woolavington Hill junction.

Table 12.6 Junction 6 – A39 Bath Road/Woolavington Hill

Arm		AM Obs 2013			PM Obs 2013		
From	**To**	**Queue (Vehs)**	**Delays (s)**	**RFC**	**Queue (Vehs)**	**Delays (s)**	**RFC**
Woolavington Hill	A39 (W)	0.27	9.01	0.22	0.18	8.40	0.15
Woolavington Hill	A39 (E)	0.93	25.13	0.49	0.83	27.18	0.46
A39 (W)	A39 (E) & Woolavington Hill	0.35	4.38	0.14	1.17	6.00	0.35

Capacity

12.2.17 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the A39 Bath Road/Bawdrip lane junction. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.18 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 7 – Old Mill Road/B3141 Woolavington Hill

12.2.19 **Table 12.7** below provides the 2013 Baseline capacity assessment results for the Old Mill Road/B3141/Woolavington Hill junction.

Table 12.7 Junction 7 - Old Mill Road/B3141 Woolavington Hill

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Old Mill Road	B3141 (N)	0.06	7.11	0.05	0.03	6.59	0.03
Old Mill Road	B3141 (S)	0.21	9.97	0.17	0.19	10.44	0.16
B3141 (N)	B3141 (S) & Old Mill Road	0.03	5.86	0.02	0.12	6.18	0.07

Capacity

12.2.20 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Old Mill Road/B3141 Woolavington Hill junction. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.21 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 8 – Woolavington Hill/Higher Road/Vicarage Road

12.2.22 **Table 12.8** below provides the 2013 Baseline capacity assessment results for the Old Mill Woolavington Hill/Higher Road/Vicarage Road junction.

Table 12.8 Junction 8 – Woolavington Hill/Higher Road/Vicarage Road

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Vicarage Road	B3141 (N), B3141 (S) & Higher Road	0.07	7.94	0.07	0.07	7.79	0.06
B3141 (N)	Vicarage Road, B3141 (S) & Higher Road	0.06	5.86	0.04	0.09	6.52	0.06
Higher Road	B3141 (N), Vicarage Road & B3141 (S)	0.22	9.37	0.18	0.60	12.24	0.38
A3141 (S)	B3141 (N), Vicarage Road & Higher Road	0.01	5.33	0.01	0.03	5.53	0.02

Capacity

12.2.23 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Woolavington Hill/Higher Road/Vicarage Road junction. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.24 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 9 – M5 (Junction 22)/A38 Bristol Road/B3140

12.2.25 **Table 12.9** below provides the 2014 Baseline capacity assessment results for the M5 (Junction22)/A38 Bristol Road and the B3140.

Table 12.9 Junction 9 – M5 (Junction 22)/A38 Bristol Road/B3140

Arm	AM Obs 2014			PM Obs 2014		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
M5	1.18	3.70	0.52	3.17	7.60	0.76
A38 Bristol Road south	0.87	4.46	0.44	1.89	9.90	0.65
B3140	5.38	22.23	0.85	1.26	8.26	0.56
A38 Bristol Road north	2.51	6.68	0.71	1.69	4.57	0.62

Capacity

12.2.26 The 2014 Baseline capacity assessment indicates that the M5 (junction 22)/A38 Bristol Road/B3140 junction is operating within capacity. The 2014 Baseline capacity assessment results indicate that during the AM peak period the B3140 has an RFC values of 0.85 and during the PM peak period the M5 has an RFC value of 0.76.

Queues

12.2.27 The 2014 Baseline capacity assessment indicates a maximum queue of 6 vehicles on the B3140 during the AM peak period. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 10 – A38 Bristol Road/Harp Road/Brent Street

12.2.28 **Table 12.10** below provides the 2013 Baseline capacity assessment results for the A38 Bristol Road/Harp Road/Brent Street junction.

Table 12.10 Junction 10 – A38 Bristol Road/Harp Road/Brent Street

Arm		AM Obs 2013			PM Obs 2013		
From	**To**	**Queue (Vehs)**	**Delays (s)**	**RFC**	**Queue (Vehs)**	**Delays (s)**	**RFC**
Harp Road	A38 (N), A38 (S) & Brent Street	0.76	14.32	0.43	0.56	13.70	0.36
A38 (N)	Harp Road, A38 (S) & Brent Street	0.00	0.00	0.00	0.00	0.00	0.00
Brent Street	A38 (N) & Harp Road	0.18	12.00	0.15	0.18	13.79	0.15
Brent Street	Harp Road & A38 (S)	0.57	26.58	0.37	0.35	29.23	0.26
A38 (S)	A38 (N), Harp Road & Brent Street	0.17	8.41	0.15	0.43	11.53	0.30

Capacity

12.2.29 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the A38 Bristol Road/Harp Road/Brent Street junction The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.30 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 11 – A38 Bristol Road/Bridgwater Road

12.2.31 **Table 12.11** below provides the 2014 Baseline capacity assessment results for the A38 Bristol Road/Bridgwater Road junction.

Table 12.11 Junction 11 – A38 Bristol Road/Bridgwater Road

Arm	AM Obs 2013			PM Obs 2013		
	Queue (Vehs)	**Delays (s)**	**RFC**	**Queue (Vehs)**	**Delays (s)**	**RFC**
A38 Bristol Road north	0.65	3.15	0.37	0.58	2.94	0.36
A38 Bristol Road south	0.85	2.48	0.44	0.29	1.67	0.22
Bridgewater Road	0.66	3.72	0.39	0.53	2.76	0.34

Capacity

12.2.32 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the A38 Bristol Road/Harp Road/Brent Street junction. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.33 The 2014 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 12 – A38 Bristol Road/Rooksbridge Road

12.2.34 **Table 12.12** below provides the 2014 Baseline capacity assessment results for the A38 Bristol Road/Rooksbridge Road junction.

Table 12.12 Junction 12 – A38 Bristol Road/Bridgwater Road

Arm	AM Obs 2013			PM Obs 2013		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Pill Road	0.02	9.91	0.02	0.02	9.69	0.02
A38 Bristol Road east	1.01	5.04	0.29	0.38	4.76	0.14
Rooksbridge Road	0.22	10.32	0.18	0.27	10.44	0.21
A38 Bristol Road west	0.02	4.37	0.01	0.01	4.22	0.01

Capacity

12.2.35 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the A38 Bristol Road/Rooksbridge Road junction that there is significant residual capacity available.

Queues

12.2.36 The 2014 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 13 – Dunball Roundabout (Existing Layout)

12.2.37 **Table 12.13** below provides the 2013 Baseline capacity assessment results for the Dunball Roundabout junction.

Table 12.13 Junction 13 – Dunball Roundabout

Arm	AM Dev 2013			PM Dev 2013		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
A39	0.17	2.57	0.13	0.14	2.31	0.10
A38 Bristol Road south	0.71	2.57	0.40	1.59	3.75	0.61
Industrial Estate	0.00	0.00	0.00	0.00	0.00	0.00
A38 Bristol Road north	5.10	12.77	0.83	1.38	4.99	0.57

Capacity

12.2.38 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Dunball Roundabout junction though the A38 Bristol Road north is observed to be approaching practical capacity during the AM peak period. The

highest RFC value predicted at the junction is 0.83 on the A38 Bristol Road North during the AM peak period.

Queues

12.2.39 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 14 – Bristol Road/The Drove (Existing Layout)

12.2.40 **Table 12.14** below provides the 2013 Baseline capacity assessment results for the Bristol Road/The Drove junction.

Table 12.14 Junction 14 – Bristol Road/The Drove

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1+1 /2	A38 Ahead Right	51 : 51	7	3	50 : 55	6	3
2/1	Bristol Road Left Ahead	60	12	3	66	14	4
3/1+3 /2	The Drove Right Left	58 : 58	5	4	65 : 62	8	5
J2: Union Street							
4/1	Union Street Left	5	0	0	4	0	0
6/1	A38 (S) Ahead Right	36	0	0	40	0	0

Capacity

12.2.41 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Bristol Road/The Drove junction that there is significant residual capacity available. ***Queues***

12.2.42 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 15 – Bristol Road/Wylds Road (Existing Layout)

12.2.43 **Table 12.15** below provides the 2013 Baseline capacity assessment results for the Bristol Road/Wylds Road junction.

Table 12.15 Junction 15 – Bristol Road/Wylds Road

Arm	AM Obs 2013			PM Obs 2013		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Wylds Road	29.39	185.53	1.07	9.91	92.65	0.95
A38 Bristol Road	5.13	38.69	0.86	1.28	16.47	0.56

Capacity

12.2.44 The 2013 Baseline capacity assessment results indicate the Bristol Road/Wylds Road junction is operating over capacity during both the AM and PM peak periods. The highest RFC value observed at the junction is 1.07 on Wylds Road during the AM peak period, with a value of 0.95 recorded during the PM peak period.

Queues

12.2.45 The 2013 Baseline capacity assessment indicates a maximum queue of 30 vehicles on Wylds Road. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 16 – Wylds Road/The Drove (Existing Layout)

12.2.46 **Table 12.16** below provides the 2013 Baseline capacity assessment results for the Wylds Road/The Drove junction.

Table 12.16 Junction 14 – Wylds Road/The Drove

Item	Lane Description	AM Obs 2013			PM Obs 2013		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1+1/2	Wylds Road Left Ahead Right	79.8 : 79.8	11	6.8	83.5 : 83.5	8	6.1
2/1	The Drove Left Ahead Right	38.0	6	1.9	48.6	9	2.7
3/1+3/2	E Quay Right Left Ahead	55.1 : 55.1	7	3.0	87.9 : 87.9	16	8.1
4/1	Western Way Ahead Right Left	82.3 : 82.3	19	7.2	90.8 : 90.8	23	10.7

Capacity

12.2.47 The 2013 Baseline capacity assessment results indicate that Bristol Road/The Drove junction is operating above the practical level of DoS. The highest DoS value predicted at the junction is 90.8% on Western Way Ahead Right Left during the PM peak period.

Queues

12.2.48 The 2013 Baseline capacity assessment indicates a maximum queue of 23 PCUs on Western Way Ahead Right Left.

Junction 17 – Quantock Road/Hombery Way

12.2.49 **Table 12.17** below provides the 2014 Baseline capacity assessment results for the Quantock Road/Hombery Way junction.

Table 12.17 Junction 17 – Quantock Road/Hombery Way

Arm	AM Obs 2014			PM Obs 2014		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Quantock Road	0.77	4.55	0.43	1.13	5.42	0.53
A39	0.80	3.76	0.43	0.72	3.64	0.42
Quantock Meadow	0.04	5.27	0.04	0.02	5.25	0.02
Homeberg Way	0.83	4.07	0.44	0.55	3.28	0.35

Capacity

12.2.50 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the Quantock Road/Hombery Way junction that there is significant residual capacity available. ***Queues***

12.2.51 The 2014 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 18 – A39/Main Road

12.2.52 **Table 12.18** below provides the 2013 Baseline capacity assessment results for the A39/Main Road junction.

Table 12.18 Junction 18 – A39/Main Road

Arm	AM Obs 2013			PM Obs 2013		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Main Road south	0.61	3.12	0.36	0.66	3.13	0.39
A39	0.31	3.06	0.22	0.22	2.75	0.17
Main Road north	1.16	9.27	0.53	1.40	9.60	0.58

Capacity

12.2.53 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the A39/Main Road junction that there is significant residual capacity available.

Queues

12.2.54 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. The maximum queue comprises 2 vehicles on Main Road north during the PM peak period. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 19 – A39/High Street

12.2.55 **Table 12.19** below provides the 2013 Baseline capacity assessment results for the A39/High Street junction.

Table 12.19 Junction 19 – A39/High Street

Arm	AM Obs 2013			PM Obs 2013		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
High Street	0.08	2.90	0.07	0.06	2.51	0.05
A39 south	0.22	3.04	0.16	0.27	2.93	0.21
A39 west	0.30	2.58	0.22	0.20	2.28	0.16

Capacity

12.2.56 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the A39/High Street junction that there is significant residual capacity available.

Queues

12.2.57 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with only a single vehicle on any arm of the junction throughout both peak periods. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 20 – High Street/Fore Street/Rodway

12.2.58 **Table 12.20** and **Table 12.21** below provide the 2013 Baseline capacity assessment results for the High Street/Fore Street/Rodway, east and west respectively.

Table 12.20 High Street/Fore Street/Rodway (east)

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Rodway	High Street	0.79	10.38	0.43	1.78	15.41	0.64
Fore Street	Rodway	1.35	12.39	0.55	0.68	8.44	0.38

Table 12.21 High Street/Fore Street/Rodway (west)

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
High Street	Rodway south	0.10	7.55	0.09	0.00	0.00	0.00
Rodway north	High Street	0.23	6.09	0.12	0.39	5.50	0.17

Capacity

12.2.59 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the High Street/Fore Street/Rodway junctions. The junction results indicate that there is residual capacity available.

Queues

12.2.60 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with a maximum queue of 2 vehicles on Rodway

during the PM peak. A validation exercise has been undertaken from queue data recorded at the junctions.

Junction 21 – M5 Junction 21

12.2.61 At the time of assessment and upgrade scheme was being implemented at Junction 21 of the M5 corridor so it was not possible to undertake a traffic count in this location.

12.2.62 This junction has however been modelled for the future year assessments based on the upgraded layout using data supplied by the LPA.

Junction 22 – A370/Cowslip Lane

12.2.63 **Table 12.22** below provides the 2013 Baseline capacity assessment results for the A370/Cowslip Lane.

Table 12.22 Junction 22 – A370/Cowslip Lane

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Cowslip Lane	A370 south	0.02	10.27	0.02	0.05	8.01	0.04
Cowslip Lane	A370 north	0.00	0.00	0.00	0.04	16.18	0.04
A370 south	Cowslip Lane	0.03	7.62	0.03	0.02	6.31	0.02

Capacity

12.2.64 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the A370/Cowslip Lane. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.65 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 23 – A370/Maysgreen Lane

12.2.66 **Table 12.23** below provides the 2013 Baseline capacity assessment results for the A370/Maysgreen Lane.

Table 12.23 Junction 23 – A370/Maysgreen Lane

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Maysgreen Lane	A370 south	0.00	0.00	0.00	0.00	0.00	0.00
Maysgreen Lane	A370 North	0.00	0.00	0.00	0.00	0.00	0.00
A370 south	Maysgreen Lane	0.00	0.00	0.00	0.01	7.88	0.01

Capacity

12.2.67 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the A370/Maysgreen Lane. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.68 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 24 – M5 Junction 20

12.2.69 **Table 12.24** below provides the 2014 Baseline capacity assessment results for the M5 Junction 20.

Table 12.24 Junction 24 – M5 Junction 20

Arm	AM Obs 2014			PM Obs 2014		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
M5 southbound off slip	0.46	3.13	0.31	1.46	5.56	0.59
M5 northbound off slip	1.17	4.35	0.53	0.99	5.15	0.49
Ettlingen Way	1.40	3.08	0.58	1.02	2.59	0.50

Capacity

12.2.70 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with Junction 20 of the M5. The capacity assessment results indicate that there is residual capacity available.

Queues

12.2.71 The 2014 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 25 – M5 Junction 20/Central Way/Northern Way/Moor Lane

12.2.72 **Table 12.25** below provides the 2014 Baseline capacity assessment results for the M5 Junction 20.

Table 12.25 Junction 25 - M5 Junction 20/Central Way/Northern Way/Moor Lane

Arm	AM Obs 2014			PM Obs 2014		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
B3133	2.27	5.65	0.69	5.87	12.67	0.86
Central Way	4.16	12.62	0.81	1.65	6.40	0.62
Moor Lane	1.92	13.48	0.66	1.25	8.24	0.56
Northern Way	1.96	7.53	0.66	2.36	8.13	0.70

Capacity

12.2.73 The 2014 Baseline capacity assessment results indicate that the highest RFC value at the junction is 0.86 which is shown on the B3133 arm of the junction during the PM peak period. This is over the desirable practical 0.85 capacity. The results also indicate that the Central Way arm of the junction has a RFC of 0.81 in the AM peak period.

Queues

12.2.74 The 2014 Baseline capacity assessment indicates that the highest number of queuing vehicles is shown on B3133 arm of the junction with a total of 6 vehicles queuing in the PM peak period. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 26 – Central Way/Kenn Moore Drive

12.2.75 **Table 12.26** below provides the 2013 Baseline capacity assessment results for the Central Way/Kenn Moore Drive.

Table 12.16 Junction 26 – Central Way/Kenn Moore Drive

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Kenn Moor Drive	Central Way south	0.06	6.44	0.06	0.03	7.01	0.03
Kenn Moor Drive	Central Way north	0.60	13.58	0.38	0.31	13.07	0.24
Central way south	Ken Moor Drive	0.02	7.27	0.01	0.06	8.09	0.05

Capacity

12.2.76 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Central Way/Kenn Moore Drive. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.77 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 27 – Central Way/Tutton Way

12.2.78 **Table 12.27** below provides the 2013 Baseline capacity assessment results for the A370/Maysgreen Lane.

Table 12.27 Junction 27 – Central Way/Tutton Way

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Tutton Way	Central Way south	0.41	12.15	0.29	0.42	16.69	0.29
Central Way south	Tutton Way	0.11	8.27	0.10	0.15	9.64	0.13

Capacity

12.2.79 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Central Way/Kenn Moore Drive. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.80 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 28 – Central Way/B3133/Southern Way

12.2.81 **Table 12.28** below provides the 2014 Baseline capacity assessment results for the Central Way/B3133/Southern Way.

Table 12.28 Junction 28 – Central Way/B3133/Southern Way

Arm	AM Obs 2014			PM Obs 2014		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Central Way	1.68	7.47	0.62	4.69	16.74	0.83
B3133 south	0.91	4.95	0.47	2.11	9.24	0.68
Southern Way	2.72	10.69	0.73	1.47	7.95	0.60
B3133 north	8.43	43.14	0.91	3.11	17.26	0.76

Capacity

12.2.82 The 2014 Baseline capacity assessment results indicate that the B3133 (north) has an RFC value of 0.91 during the AM peak period. This is over the practical capacity of 0.85.

Queues

12.2.83 The 2014 Baseline capacity assessment indicates that the highest queues are 9 vehicles on the B3133 (north) during the AM peak period. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 29 – B3133/Tutton Way

12.2.84 **Table 12.29** below provides the 2013 Baseline capacity assessment results for the B3133/Tutton Way.

Table 12.29 Junction 29 – B3133/Tutton Way

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Tutton Way	B3133 south	0.07	8.65	0.06	0.09	8.31	0.09
Tutton Way	B3133 north	0.20	16.98	0.17	0.22	22.40	0.18
B3133 south	Tutton Way	0.11	4.55	0.06	0.62	4.27	0.19

Capacity

12.2.85 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the B3133/Tutton Way junction. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.86 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 30 – B3133/Davis Lane

12.2.87 **Table 12.30** below provides the 2013 Baseline capacity assessment results for the B3133/Davis Way junction.

Table 12.30 Junction 30 – B3133/Davis Lane

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Davis Lane	B3133 south	0.07	8.13	0.07	0.04	9.15	0.04
Davis Lane	B3133 north	0.21	17.33	0.17	0.52	25.45	0.35
B3133 south	Davis Lane	0.15	4.54	0.08	0.37	4.21	0.14

Capacity

12.2.88 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the B3133/Davis Way junction. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.2.89 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 31 – Northern Way/B3130 Tickenham Road

12.2.90 **Table 12.31** below provides the 2014 Baseline capacity assessment results for the Northern Way/B3130 Tickenham Road junction.

Table 12.31 Junction 31 – Northern Way/B3130 Tickenham Road

Arm	AM Obs 2014			PM Obs 2014		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Tickenham Road east	2.36	10.85	0.70	3.21	13.17	0.77
Northern Way	8.36	27.15	0.90	2.01	8.29	0.67
Tickenham Road west	5.77	25.63	0.86	2.21	11.27	0.69

Capacity

12.2.91 The 2014 Baseline capacity assessment results indicate both Northern Way and Tickenham Road west are operating with an RFC over the 0.85 desirable capacity value during the AM peak period.

Queues

12.2.92 The 2014 Baseline capacity assessment indicates that there is a highest queue of 4 vehicles in the AM peak on Northern Way and Tickenham Road west. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 32 – B3128/Clevedon Road

12.2.93 **Table 12.32** below provides the 2014 Baseline capacity assessment results for the B3128/Clevedon Road.

Table 12.32 Junction 32 – B3128/Clevedon Road

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
B3128	Clevedon Road east	0.71	17.26	0.42	1.15	31.92	0.55
B3128	Clevedon Road west	2.26	41.25	0.70	4.80	58.93	0.85
Clevedon Road east	B3128	3.05	18.38	0.68	1.09	8.01	0.41

Capacity

12.2.94 The 2014 Baseline capacity assessment results indicates that during the PM peak period the B3128 (to Clevedon Road west) is operating at practical capacity with an RFC value of 0.85. During the AM peak period the highest RFC value observed is 0.70 also on the B3128 (to Clevedon Road west). The junction is therefore operating within capacity during the AM peak period, and is at practical capacity during the PM peak period.

Queues

12.2.95 The 2014 Baseline capacity assessment indicates that during the PM peak period when the B3128 operates with a RFC of 0.85 the maximum predicted queue length is 5

vehicles for the movement to Clevedon Road (west). A validation exercise has been undertaken from queue data recorded at the junction.

Junction 33 – M5 Junction 19

12.2.96 **Table 12.33** below provides the 2014 Baseline capacity assessment results for the M5 Junction 19.

Table 12.33 Junction 33 – M5 Junction 19

Item	Lane Description (Controller 1)	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHer)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	M5 N/B Off-slip Left	48%	4	2	31%	2	1
1/2	M5 N/B Off-slip Left Ahead	48%	4	2	31%	2	1
1/3	M5 N/B Off-slip Ahead	42%	7	2	45%	8	2
2/1	The Portbury Hundred Left Ahead	68%	12	4	32%	4	2
2/2	The Portbury Hundred Ahead	69%	13	5	33%	5	2
2/3	The Portbury Hundred Ahead	54%	9	3	54%	9	3
3/1	Royal Portbury Dock Road Left Ahead	64%	3	1	86%	6	3
3/2	Royal Portbury Dock Road Ahead	18%	1	0	48%	2	1
7/1	South Circ Ahead	31%	1	0	21%	1	0
7/2	South Circ Ahead Right	71%	18	3	74%	22	2
7/3	South Circ Right	46%	4	1	30%	3	1
8/1	West Circ Ahead Right	74%	16	4	23%	3	1
8/2	West Circ Right	75%	9	3	55%	4	2
8/3	West Circ Right	37%	1	1	41%	1	1
Item	**Lane Description (Controller 2)**	**AM Base 2014**			**PM Base 2014**		
		DoS (%)	**MMQ (pcu)**	**Delay (pcuHr)**	**DoS (%)**	**MMQ (pcu)**	**Delay (pcuHr)**
1/1	North Circ Left	18%	3	1	17%	3	1
1/2	North Circ Ahead	85%	19	6	89%	23	9
1/3	North Circ Right	14%	1	1	29%	3	1
2/1	M5 S/B Off-slip U-Turn	7%	0	0	4%	0	0
2/2	M5 S/B Off-slip Ahead Left	86%	22	8	91%	25	10
2/3	M5 S/B Off-slip Ahead	57%	11	3	82%	20	7
3/1	East Circ Ahead	56%	8	2	48%	7	2
3/2	East Circ Right	64%	14	2	69%	2	1
3/3	East Circ Right	10%	1	0	7%	1	0
5/1	Service Station Exit Left	18%	1	0	20%	1	0
5/2	Service Station Exit Ahead	71%	4	2	76%	6	2
7/1	Martcombe Road Left	58%	11	3	64%	10	4
7/2	Martcombe Road Ahead	46%	8	2	48%	7	3
7/3	Martcombe Road Ahead	58%	11	3	53%	8	3

Capacity

12.2.97 The 2014 future baseline capacity assessment results indicate that Junction 19 of the M5 is forecast to operate over capacity during the PM peak period. The maximum DoS value is 91% for the M5 southbound off slip ahead and left movement during the PM peak period.

Queues

12.2.98 The 2014 future baseline capacity assessment results indicate that Junction 19 of the M5 is forecast to experience a maximum queue of 25 vehicles for the southbound off slip during the PM peak period. A review of the existing layout confirms that this queue, and all other forecast queues on the M5 slip roads could be accommodated without blocking back onto the M5 corridor.

Junction 34 – Royal Portbury Dock Road/Gordano Way/Portbury Way

12.2.99 **Table 12.34** below provides the 2013 Baseline capacity assessment results for the Royal Portbury Dock Road/Gordano Way/Portbury Way junction.

Table 12.34 Royal Portbury Dock Road/Gordano Way/Portbury Way

Arm	AM Obs 2013			PM Obs 2013		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Gordano Way	0.10	2.62	0.08	0.18	2.75	0.14
Royal Portbury Dock Road south	0.41	2.45	0.26	0.14	2.34	0.09
Bradley Road	0.15	4.18	0.09	0.06	2.50	0.05
Portbury Way	0.04	2.93	0.03	0.06	2.13	0.05
Royal Portbury Dock Road north	0.12	4.07	0.07	0.18	3.02	0.13

Capacity

12.2.100 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Royal Portbury Dock Road/Gordano Way/Portbury Way junction that there is significant residual capacity available. ***Queues***

12.2.101 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with very limited queuing on all arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 35 – The Portbury Hundred/Station Road

12.2.102 **Table 12.35** below provides the 2013 Baseline capacity assessment results for the Portbury Hundred/Station Road junction.

Table 12.35 The Portbury Hundred/Station Road

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Station Road	The Portbury Hundred (E)	0.20	14.15	0.15	0.07	9.73	0.05
Station Road	The Portbury Hundred (W)	0.00	0.00	0.00	0.00	0.00	0.00
The Portbury Hundred (E)	The Portbury Hundred (W) & Station Road	0.10	14.76	0.08	0.13	9.98	0.11

Capacity

12.2.103 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Portbury Hundred/Station Road junction that there is significant residual capacity available.

Queues

12.2.104 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with no queues recorded. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 38 – Severn Road/Chittening Road

12.2.105 **Table 12.36** below provides the 2013 Baseline capacity assessment results for the Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue junction.

Table 12.36 Severn Road/Chittening Road

Arm		AM Obs 2013			PM Obs 2013		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Severn Road east	Chittening Road	0.17	8.30	0.12	0.06	6.73	0.05
Severn Road east	Severn Road north	0.36	12.06	0.24	0.23	10.38	0.18
Chittening Road	Severn Road east	0.21	11.28	0.14	0.36	9.37	0.25

Capacity

12.2.106 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Severn Road/Chittening Road junction and that there is significant residual capacity available. ***Queues***

12.2.107 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction, with very limited queuing on all arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 39 – A403 Smoke Lane/Poplar Way West

12.2.108 **Table 12.37** below provides the 2013 baseline capacity assessment results for the A403 Smoke Lane/Poplar Way West junction.

Table 12.37 A403 Smoke Lane/Poplar Way West

Arm	AM Obs 2013			PM Obs 2013		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Poplar Way west	0.19	4.28	0.13	0.20	3.68	0.16
A403 Smoke Lane south	0.61	3.81	0.34	0.67	3.95	0.37
A403 Smoke Lane north	0.89	4.98	0.44	0.58	4.07	0.34

Capacity

12.2.109 The 2013 baseline capacity assessment results indicate that there are no capacity issues associated with the A403 Smoke Lane/Poplar Way West junction and that there is significant residual capacity available.

Queues

12.2.110 The 2013 baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction, with minimal queues on all arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 40 – Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue

12.2.111 **Table 12.38** below provides the 2013 Baseline capacity assessment results for the Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue junction.

Table 12.38 Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue

Arm	AM Obs 2013			PM Obs 2013		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Poplar way east	0.12	3.44	0.08	0.22	3.09	0.17
Merebank Road	0.27	2.64	0.20	0.14	2.70	0.10
Poplar way west	0.12	2.54	0.09	0.12	2.39	0.10
Moorend Farm Avenue	0.04	3.07	0.03	0.09	2.52	0.07
Poplar way east	0.12	3.44	0.08	0.22	3.09	0.17

Capacity

12.2.112 The 2013 Baseline capacity assessment results indicate that there are no capacity issues associated with the Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue junction and that there is significant residual capacity available.

Queues

12.2.113 The 2013 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 41 – A403 St. Andrew's Road/Kings Weston Lane

12.2.114 **Table 12.39** below provides the 2014 Baseline capacity assessment results for the A403 St. Andrew's Road/Kings Weston Lane junction.

Table 12.39 A403 St. Andrew's Road/Kings Weston Lane

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	St Andrews Road (N) Left Ahead	67%	12	4	71%	13	5
2/1	Kings Weston Lane Left Right	66%	6	3	69%	9	4
3/1	St Andrews Road (S) Ahead	54%	10	2	38%	6	2
3/2	St Andrews Road (S) Right	66%	8	4	66%	5	3

Capacity

12.2.115 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the A403 St. Andrew's Road/Kings Weston Lane junction. The junction results indicate that there is residual capacity available.

Queues

12.2.116 The 2014 Baseline capacity assessment indicates a peak queue of 13 PUCs on St. Andrews Road (N) Left Ahead during the PM peak period. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 42 – A403 St. Andrew's Road/St. George's Industrial Estate

12.2.117 **Table 12.40** below provides the 2014 Baseline capacity assessment results for the A403 St. Andrew's Road/St. George's Industrial Estate junction.

Table 12.40 – A403 St. Andrew's Road/St. George's Industrial Estate

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	St Andrews Road (N) Left Ahead	68%	19	3	53%	12	2
1/2	St Andrews Road (N) Right	10%	0	0	17%	1	0
2/1	Distribution Centre Left	0%	0	0	0%	0	0
2/2	Distribution Centre Ahead Right	0%	0	0	0%	0	0
3/1	St Andrews Road (S) Left Ahead	45%	10	1	61%	17	2
3/2	St Andrews Road (S) Right	0%	0	0	0%	0	0
4/1	St Georges Industrial Estate Left	18%	1	0	9%	0	0

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
4/2	St Georges Industrial Estate Ahead Right	28%	1	1	12%	1	0

Capacity

12.2.118 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the A403 St. Andrew's Road/St. George's Industrial Estate junction. The junction results indicate that there is significant residual capacity available.

Queues

12.2.119 The 2014 Baseline capacity assessment indicates that a maximum queue of 19 PCUs is predicted on St. Andrews Road (N) Left and Ahead. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 43 – A403 St. Andrew's Road/King Road Avenue/Crowley Way

12.2.120 **Table 12.41** below provides the 2014 Baseline capacity assessment results for the A403 St. Andrew's Road/King Road Avenue/Crowley Way junction.

Table 12.41 A403 St. Andrew's Road/King Road Avenue/Crowley Way

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	A403 St. Andrew's Road Left	30%	4	1	44%	7	2
1/2	A403 St. Andrew's Road Left	31%	5	1	46%	8	2
1/3	A403 St. Andrew's Road Ahead	10%	2	0	6%	1	0
2/1	Crowley Way Left Ahead	18%	2	1	6%	1	0
2/2	Crowley Way Ahead	48%	9	2	24%	4	1
2/3	Crowley Way Ahead	46%	8	2	23%	4	1
3/1	McLaren Road Left Ahead	47%	4	2	46%	3	2
4/1	King Road Avenue Ahead Left	46%	2	1	43%	3	1
4/2	King Road Avenue Ahead	45%	2	1	41%	3	1
8/1	North Circ Ahead	23%	2	1	24%	2	1
8/2	North Circ Right	11%	0	0	14%	0	0
9/1	East Circ Ahead	9%	2	1	13%	2	1
9/2	East Circ Right	8%	1	1	1%	0	0
10/1	South Circ Ahead	13%	2	0	1%	0	0
10/2	South Circ Right	35%	1	1	18%	1	0
10/3	South Circ Right	34%	1	0	17%	1	0
11/1	West Circ Ahead	15%	1	0	6%	0	0
11/2	West Circ Ahead	21%	1	0	14%	1	0
11/3	West Circ Right Ahead	32%	1	0	19%	1	0

Capacity

12.2.121 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the A403 St. Andrew's Road/King Road Avenue/Crowley Way junction and that significant residual capacity is available.

Queues

12.2.122 The 2014 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with a maximum queue of 9 PCUs associated with the Crowley Way Ahead movement during the AM peak period. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 44 – M5/A4/Avonmouth Way

12.2.123 **Table 12.42** below provides the 2014 Baseline capacity assessment results for the M5/A4/Avonmouth Way roundabout.

Table 12.42 M5/A4/Avonmouth Way

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	Avonmouth Way Left	55%	3	2	64%	9	4
1/2	Avonmouth Way Ahead Left	59%	4	2	66%	10	4
1/3	Avonmouth Way Ahead	39%	2	1	9%	1	0
2/1	M5 Ahead Left	63%	10	4	30%	3	1
2/2	M5 Ahead	63%	10	4	30%	3	1
2/3	M5 Ahead	65%	11	4	34%	4	2
2/4	M5 Ahead	21%	3	1	24%	3	1
3/1	Bristow Broadway Left	19%	2	1	18%	1	1
3/2	Bristow Broadway Ahead Left	21%	2	1	21%	2	1
3/3	Bristow Broadway Ahead	65%	9	4	66%	7	3
4/1	Crowley Road Ahead Left	24%	3	1	63%	7	3
4/2	Crowley Road Ahead	27%	4	1	66%	8	4
4/3	Crowley Road Ahead	26%	4	1	65%	8	4
4/4	Crowley Road Ahead	15%	2	1	32%	4	2
4/5	Crowley Road Ahead	17%	2	1	33%	4	2
5/1	North Circ Ahead	8%	0	0	27%	1	1
5/2	North Circ Ahead	12%	0	0	31%	1	1
5/3	North Circ Ahead	17%	1	0	32%	2	1
5/4	North Circ Right	7%	0	0	13%	0	0
5/5	North Circ Right	7%	0	0	14%	0	0
6/1	East Circ Ahead	11%	3	1	18%	4	1
6/2	East Circ Right Ahead	14%	3	1	24%	4	1
6/3	East Circ Right	7%	0	0	4%	0	0
7/1	Ahead	33%	1	1	10%	0	0
7/2	Ahead	37%	9	1	11%	2	0
7/3	Right Ahead	46%	9	1	17%	3	0
7/4	Right	12%	1	0	9%	1	0

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
8/1	West Circ Ahead	61%	2	1	17%	0	0
8/2	West Circ Right Ahead	40%	4	1	24%	3	1
8/3	West Circ Right	8%	0	0	6%	0	0
9/1	W/B Exit Ahead	32%	1	0	13%	0	0
9/2	W/B Exit Ahead	35%	1	0	14%	0	0
9/3	W/B Exit Ahead	10%	0	0	9%	0	0

Capacity

12.2.124 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the M5/A4/Avonmouth Way roundabout. The junction results indicate that there is significant resideual capacity available.

Queues

12.2.125 The 2014 Baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with a maximum queue of 11 PCUs recorded on the M5 ahead arm during the AM peak. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 45 – A4 Bristol Broadway/Avonmouth Road/Portway/M5

12.2.126 **Table 12.43** below provides the 2014 Baseline capacity assessment results for the A4 Bristol Broadway/Avonmouth Road/Portway/M5 roundabout.

Table 12.43 A4 Bristol Broadway/Avonmouth Road/Portway/M5

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	M5 Left	65	6	3	61	5	2
1/2	M5 Ahead	72	6	3	55	4	2
1/3	M5 Ahead	72	8	3	51	4	2
1/4	M5 Ahead	20	1	1	24	1	1
2/1	B4054 Left	10	1	0	6	0	0
2/2	B4054 Ahead	27	2	1	17	1	1
2/3	B4054 Ahead	62	5	2	50	4	2
3/1	Portway (S) Ahead	44	4	1	18	1	0
3/2	Portway (S) Ahead	34	3	1	44	5	1
3/3	Portway (S) Ahead	34	3	1	44	5	1
3/4	Portway (S) Ahead	19	2	1	20	2	1
4/1	Portway (N) U-Turn Left	37	3	1	69	6	3
4/2	Portway (N) Left	15	1	0	49	4	2
6/1	Ahead	47	1	1	39	1	0
6/2	Ahead	48	1	1	47	0	0
7/1	Ahead	25	4	1	18	3	1
7/2	Ahead	27	1	1	14	1	0
9/1	East Circ Ahead	56	3	1	50	4	1
9/2	East Circ Ahead	68	4	2	70	6	2
9/3	East Circ Right	11	0	0	13	0	0

10/1	South Circ Right	46	4	1	45	2	1
10/2	South Circ Right	62	1	1	62	1	1
11/1	West Circ Ahead	57	4	2	63	4	2
11/2	West Circ Ahead	57	4	2	63	4	2
11/3	West Circ Right	21	1	0	22	1	0
12/1	North Circ Ahead	48	3	1	66	4	2
12/2	North Circ Right	26	1	0	30	1	0
12/3	North Circ Right	18	0	0	46	1	1

Capacity

12.2.127 The 2014 baseline capacity assessment results indicate that there are no capacity issues associated with the M5/A4/Avonmouth Way roundabout and that residual capacity is available.

Queues

12.2.128 The 2014 baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with a maximum queue of 8 PCUs recorded on the M5 Ahead during the AM peak. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 46 – A4 Portbury/West Town Road

12.2.129 **Table 12.44** below provides the 2014 Baseline capacity assessment results for the A4 Portbury/West Town Road junction.

Table 12.44 A4 Portbury/West Town Road

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/2+1 /1	A4 Portway (E) Left Ahead	52 : 52%	8	2	42 : 42%	7	2
1/3	A4 Portway (E) Ahead	49%	8	2	41%	6	1
2/1	W Town Road Left	31%	3	1	56%	5	3
3/1	A4 Potway (W) Ahead	69%	1	1	63%	1	1
3/2	A4 Portway (W) Right	45%	3	2	10%	1	0
3/3	A4 Portway (W) Right	44%	3	2	9%	1	0

Capacity

12.2.130 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the A4 Portbury/West Town Road junction that there is significant residual capacity available. ***Queues***

12.2.131 The 2014 Baseline capacity assessment indicates a maximum queue of 8 vehicles on the A4 Portway (E) arm of the junction for the Left Ahead movement. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 49 – Clevedon Road/Stock Way North

12.2.132 **Table 12.45** below provides the 2014 Baseline capacity assessment results for the Clevedon Road/Stock Way North junction.

Table 12.45 Junction 49 – Clevedon Road/Stock Way North

Item	Lane Description	AM Obs 2014			PM Obs 2014		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1+1 /2	Clevedon Road Left Right	62 : 62%	6	3	57 : 57%	4	3
2/1+2 /2	Stock Way (East) Ahead Right	49 : 49%	5	2	59 : 59%	6	3
3/1	Stock Way (West) Ahead Left	59%	6	3	38%	4	2

Capacity

12.2.133 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the junction between Clevedon Road and Stock Way North. The junction results indicate that there is significant residual capacity available.

Queues

12.2.134 The 2014 Baseline capacity assessment indicates that there are no issues resulting from queuing on any arm of the junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 50 – Stock Way North/Stock Way South

12.2.135 **Table 12.46** below provides the 2014 Baseline capacity assessment results for the Stock Way North/Stock Way South junction.

Table 12.46 Stock Way North/Stock Way South

Arm	AM Obs 2014			PM Obs 2014		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Stock Way North	0.52	7.32	0.33	1.12	9.93	0.53
Stock Way South	0.49	7.51	0.32	0.44	7.93	0.30
Silver Street	0.17	3.26	0.14	0.11	2.92	0.10

Capacity

12.2.136 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the Stock Way North/Stock Way South junction during the peak periods. The results indicate that significant residual capacity is available.

Queues

12.2.137 The 2014 Baseline capacity assessment indicates a maximum queue of 2 vehicles on Stock Way north during the PM peak period. This indicates that there are no queuing issues associated with the Stock Way North/Stock Way South junction. A validation exercise has been undertaken from queue data recorded at the junction.

Junction 51 – Stock Way South/Mizzymead Road

12.2.138 **Table 12.47** below provides the 2014 Baseline capacity assessment results for the Stock Way South/Mizzymead junction.

Table 12.47 Stock Way South/Mizzymead Road

Arm	AM Obs 2014			PM Obs 2014		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Mizzymead Road North	0.19	4.52	0.16	0.93	7.49	0.48
Mizzymead Road South	1.44	9.69	0.59	0.73	7.19	0.42
Stock Way South	0.56	8.91	0.35	0.56	8.02	0.35

Capacity

12.2.139 The 2014 Baseline capacity assessment results indicate that there are no capacity issues associated with the Stock Way South/Mizzymead Road junction during the peak periods. The junction results indicate that there is significant residual capacity available.

Queues

12.2.140 The 2014 Baseline capacity assessment indicates a maximum queue of 2 vehicles on Mizzymead Road South during the AM peak period. This indicates that there are no queuing issues associated with the Stock Way South/Mizzymead Road junction. A validation exercise has been undertaken from queue data recorded at the junction.

12.3 Future Baseline Capacity Assessment Results

Junction 1 – M5 Junction 23

12.3.1 **Table 12.48** below provides the 2016 future baseline capacity assessment results for the M5 Junction 23.

Table 12.48 Junction 1 – M5 Junction 23

Item	Lane Description	AM Base 2016			PM Base 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	M5 S/B Off-slip Left	67%	16	5	94%	25	13
1/2	M5 S/B Off-slip Ahead	89%	27	11	69%	14	6
2/1	A39 (E) Left	76%	8	2	82%	14	3
2/2	A39 (E) Ahead	59%	6	1	82%	10	3
2/3	A39 (E) Ahead	82%	15	3	82%	16	3
3/1	M5 N/B Off-slip Left	62%	11	5	36%	7	2
3/2	M5 N/B Off-slip Ahead	79%	17	7	71%	20	6
4/1	A39 (W) Left	56%	13	4	67%	18	5
4/2	A39 (W) Ahead	82%	24	9	90%	34	11
10/1	South Circ (Signals) Ahead	63%	7	2	68%	7	3
10/2	South Circ (Signals) Ahead Right	66%	13	3	65%	15	4
11/1	East Circ (Signals) Ahead	37%	5	1	44%	13	5
11/2	East Circ (Signals) Ahead Right	56%	2	1	87%	9	6
12/1	North Circ Ahead	89%	23	8	95%	28	12
12/2	North Circ Right	24%	5	0	37%	17	3

Capacity

12.3.2 The 2016 future baseline capacity assessment results indicate that the M5 Junction 23 would be close to capacity with a highest DoS of 95% expected on the northern circulatory. This is above the practical capacity of 90% and indicates that this section of the junction would operate insufficiently.

Queues

12.3.3 The 2016 future baseline capacity assessment indicates a maximum queue of 34 PCUs on the A39 (W) ahead. The MMQ on the M5 southbound off slip peaks at 27 PCUs during the AM peak and 25 PCUs during the PM peak period. These queues could be accommodated on the southbound slip road without blocking back onto the M5 corridor.

The MMQ on the northbound M5 off slip peaks at 17 PCUs during the AM peak and 20 PCUs during the PM peak. This level of queuing could be accommodated on the M5 northbound off slip without causing blocking on the M5 corridor.

Junction 2 – A39/Puriton Hill

12.3.4 **Table 12.49** below provides the 2016 future baseline capacity assessment results for the A39/Puriton Hill priority junction.

Table 12.49 Junction 2 - A39/Puriton Hill

Arm		AM Base 2016			PM Base 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Puriton Hill	A39	3.91	346.43	1.00	0.17	59.11	0.15
A39 (S)	A39 (N) & Puriton Hill	0.01	4.62	0.01	0.01	3.60	0.01

Capacity

12.3.5 The 2016 future baseline capacity assessment results indicate that Puriton Hill is projected to reach capacity during the AM peak period with a predicted RFC value of 1.00. Significant residual capacity is anticipated to be available on the A39 during both AM and PM peak periods however.

Queues

12.3.6 The 2016 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 3 – Hillside/A39 Puriton Hill

12.3.7 **Table 12.50** below provides the 2016 future baseline capacity assessment results for the Hillside/Puriton Hill junction.

Table 12.50 Junction 3 - A39/Puriton Hill

Arm		AM Base 2016			PM Base 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Southern Arm	A39 & Hillside	0.00	0.00	0.00	0.00	0.00	0.00
A39 (E)	Southern Arm, A39 (W) & Hillside	0.03	6.51	0.03	0.08	8.01	0.07
Hillside	A39 & Southern Arm	0.22	13.14	0.18	0.20	12.77	0.17
A39 (W)	A39 (E), Southern Arm & Hillside	0.01	4.61	0.01	0.00	3.81	0.00

Capacity

12.3.8 The 2016 future baseline capacity assessment results indicate that no capacity issues associated with the Hillside/A39 Puriton Hill junction are anticipated, and that there would be significant residual capacity available.

Queues

12.3.9 The 2016 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 4 – A39 Puriton Hill/Bath Road

12.3.10 **Table 12.51** below provides the 2016 future baseline capacity assessment results for the A39 Puriton Hill/Bath Road junction.

Table 12.51 Junction 4 – A39 Puriton Hill/Bath Road

Item	Lane Description	AM Base 2016			PM Base 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	Puriton Hill Ahead	50%	6	2	77%	11	4
1/2	Puriton Hill Right	80%	6	4	75%	6	3
2/1	A39 (E) Left	32%	2	1	22%	2	0
2/2	A39 (E) Ahead	92%	17	9	78%	10	4
3/1	A39 (S) Right Left	95%	16	10	81%	11	5

Capacity

12.3.11 The 2016 future baseline capacity assessment results indicate that the A39 Puriton Hill/Bath Road junction is forecast to operate with a highest Degree of Saturation (DoS) of 95% during the AM peak on the A39 (S) Right Left arm of the junction. This is above the practical capacity of 90% DoS.

Queues

12.3.12 The 2016 future baseline capacity assessment indicates that the highest predicted mean maximum queue (MMQ) at the junction is 17 pcus which is shown on the A39 (E) Ahead during the AM peak.

Junction 5 – A39 Bath Road/Bawdrip Lane

12.3.13 **Table 12.52** below provides the 2016 future baseline capacity assessment results for the A39 Bath Road/Bawdrip Lane junction.

Table 12.52 Junction 5 – A39 Bath Road/Bawdrip Lane

Arm		AM Base 2016			PM Base 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Bawdrip Lane	A39 (W) & Northern Arm	0.02	8.80	0.02	0.01	7.92	0.01
Bawdrip Lane	A39 (E) & Northern Arm	0.08	20.11	0.07	0.07	20.83	0.07
A39 (E)	Bawdrip Lane, A39 (W) & Northern Arm	0.00	0.00	0.00	0.00	0.00	0.00
Northern Arm	A39 (E), Bawdrip Lane & A39 (W)	0.00	0.00	0.00	0.00	0.00	0.00
A39 (W)	A39 (E), Bawdrip Lane & Northern Arm	0.04	5.34	0.03	0.03	3.74	0.02

Capacity

12.3.14 The 2016 future baseline capacity assessment results indicate that there are no capacity issues anticipated at the A39 Bath Road/Bawdrip lane junction and that significant residual capacity would be available.

Queues

12.3.15 The 2016 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 6 – A39 Bath Road/Woolavington Hill

12.3.16 **Table 12.53** below provides the 2016 future baseline capacity assessment results for the A39 Bath Road/Woolavington Hill junction.

Table 12.53 Junction 6 – A39 Bath Road/Woolavington Hill

Arm		AM Base 2016			PM Base 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Woolavington Hill	A39 (W)	0.30	9.82	0.23	0.20	9.40	0.17
Woolavington Hill	A39 (E)	1.35	36.23	0.59	1.20	38.61	0.56
A39 (W)	A39 (E) & Woolavington Hill	0.50	4.20	0.17	1.43	6.43	0.39

Capacity

12.3.17 The 2016 future baseline capacity assessment results indicate that there are no capacity issues forecast at the A39 Bath Road/Bawdrip lane junction. The highest resulting RFC value is 0.59 which is shown on the Woolavington Hill to The A39 (E) movement during the AM peak period. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.18 The 2016 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 7 – Old Mill Road/B3141 Woolavington Hill

12.3.19 **Table 12.54** below provides the 2016 future baseline capacity assessment results for the Old Mill Road/B3141/Woolavington Hill junction.

Table 12.54 Junction 7 - Old Mill Road/B3141 Woolavington Hill

Arm		AM Base 2016			PM Base 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Old Mill Road	B3141 (N)	0.06	7.13	0.06	0.03	6.60	0.03
Old Mill Road	B3141 (S)	0.21	10.02	0.18	0.19	10.51	0.16
B3141 (N)	B3141 (S) & Old Mill Road	0.03	5.85	0.02	0.12	6.19	0.08

Capacity

12.3.20 The 2016 future baseline capacity assessment results indicate that no capacity issues are forecast at the Old Mill Road/B3141 Woolavington Hill junction. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.3.21 The 2016 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 8 – Woolavington Hill/Higher Road/Vicarage Road

12.3.22 **Table 12.55** below provides the 2016 future baseline capacity assessment results for the Old Mill Woolavington Hill/Higher Road/Vicarage Road junction.

Table 12.55 Junction 8 – Woolavington Hill/Higher Road/Vicarage Road

Arm		AM Base 2016			PM Base 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Vicarage Road	B3141 (N), B3141 (S) & Higher Road	0.07	7.97	0.07	0.07	7.82	0.06
B3141 (N)	Vicarage Road, B3141 (S) & Higher Road	0.07	5.86	0.04	0.10	6.52	0.06
Higher Road	B3141 (N), Vicarage Road & B3141 (S)	0.23	9.46	0.19	0.63	12.57	0.39
A3141 (S)	B3141 (N), Vicarage Road & Higher Road	0.01	5.33	0.01	0.03	5.51	0.02

Capacity

12.3.23 The 2016 future baseline capacity assessment results indicate that there are no capacity issues anticipated at the Woolavington Hill/Higher Road/Vicarage Road junction. The highest RFC value at the junction is 0.39 which is shown on the Higher Road to B3141 (N) movement in the PM peak period. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.24 The 2016 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 9 – M5 (Junction 22)/A38 Bristol Road/B3140

12.3.25 **Table 12.56** below provides the 2016 future baseline capacity assessment results for the M5 (Junction22)/A38 Bristol Road and the B3140.

Table 12.56 Junction 9 – M5 (Junction 22)/A38 Bristol Road/B3140

Arm	AM Base 2016			PM Base 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
M5	1.38	4.09	0.56	5.00	11.38	0.83
A38 Bristol Road south	1.04	5.08	0.49	3.35	16.76	0.77
B3140	13.93	54.33	0.96	1.81	11.18	0.64
A38 Bristol Road north	3.36	8.49	0.77	2.13	5.41	0.68

Capacity

12.3.26 The 2016 future baseline capacity assessment indicates a maximum RFC value of 0.96 forecast on the B3140 during the AM peak period which is above the practical capacity of 0.85.

Queues

12.3.27 The 2016 future baseline capacity assessment indicates that there are significant queues occurring on the A38 Bristol Road south with a queue of 14 vehicles predicted on the B3140 during the AM peak period. This level of queuing can be accommodated on the B3140. The maximum queue recorded on the M5 is 5 vehicles during the PM peak period. This level of queuing can be accommodated on the M5 off slip without blocking back onto the M5 corridor.

Junction 10 – A38 Bristol Road/Harp Road/Brent Street

12.3.28 **Table 12.57** below provides the 2016 future baseline capacity assessment results for the A38 Bristol Road/Harp Road/Brent Street junction.

Table 12.57 Junction 10 – A38 Bristol Road/Harp Road/Brent Street

Arm		AM Base 2016			PM Base 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Harp Road	A38 (N), A38 (S) & Brent Street	0.91	16.19	0.48	0.69	15.73	0.41
A38 (N)	Harp Road, A38 (S) & Brent Street	0.00	0.00	0.00	0.00	0.00	0.00
Brent Street	A38 (N) & Harp Road	0.24	14.47	0.19	0.26	18.28	0.21
Brent Street	Harp Road & A38 (S)	0.86	38.99	0.47	0.57	47.33	0.37
A38 (S)	A38 (N), Harp Road & Brent Street	0.19	8.90	0.16	0.52	13.04	0.34

Capacity

12.3.29 The 2016 future baseline capacity assessment results indicate that there are no capacity issues forecast for the A38 Bristol Road/Harp Road/Brent Street junction. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.30 The 2016 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 11 – A38 Bristol Road/Bridgwater Road

12.3.31 **Table 12.58** below provides the 2018 future baseline capacity assessment results for the A38 Bristol Road/Bridgwater Road junction.

Table 12.58 Junction 11 – A38 Bristol Road/Bridgwater Road

Arm	AM Base 2016			PM Base 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
A38 Bristol Road north	0.72	3.29	0.40	0.66	3.11	0.39
A38 Bristol Road south	0.95	2.62	0.47	0.76	2.28	0.42
Bridgewater Road	0.75	3.97	0.42	0.80	3.90	0.44

Capacity

12.3.32 The 2018 future baseline capacity assessment results indicate that there are no capacity issues forecast at the A38 Bristol Road/Harp Road/Brent Street junction. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.33 The 2018 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 12 – A38 Bristol Road/Rooksbridge Road

12.3.34 **Table 12.59** below provides the 2016 future baseline capacity assessment results for the A38 Bristol Road/Rooksbridge Road junction.

Table 12.59 Junction 11 – A38 Bristol Road/Bridgwater Road

Arm	AM Base 2016			PM Base 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Pill Road	0.02	10.21	0.02	0.02	10.08	0.02
A38 Bristol Road east	1.18	5.20	0.32	0.47	4.73	0.16
Rooksbridge Road	0.24	10.70	0.19	0.29	10.87	0.23
A38 Bristol Road west	0.02	4.32	0.02	0.01	4.18	0.01

Capacity

12.3.35 The 2016 future baseline capacity assessment results indicate that there are no capacity issues forecast at the A39 Bristol Road/Rooksbridge Road junction. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.36 The 2018 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 13 – Dunball Roundabout (Existing Layout)

12.3.37 **Table 12.60** below provides the 2016 future baseline capacity assessment results for the Dunball Roundabout.

Table 12.60 Junction 13 – Dunball Roundabout

Arm	AM Dev 2016			PM Dev 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
A39	0.32	2.84	0.23	0.40	2.60	0.27
A38 Bristol Road south	1.15	3.19	0.51	2.62	5.31	0.72
Industrial Estate	0.00	0.00	0.00	0.00	0.00	0.00
A38 Bristol Road north	16.28	39.39	0.96	1.88	6.45	0.65

Capacity

12.3.38 The 2016 plus development capacity assessment results indicate that there are capacity issues associated with the Dunball Roundabout junction and that there is minimal practical capacity available. The highest RFC value predicted at the junction is 0.96 on the A38 Bristol Road north during the AM peak period.

Queues

12.3.39 The 2016 plus development capacity assessment indicates that highest queue predicted is 17 vehicles on both the A38 Bristol Road north during the AM peak period.

Junction 13 – Dunball Roundabout (HPC DCO Layout)

12.3.40 **Table 12.61** below provides the 2016 future baseline capacity assessment results for the Dunball Roundabout (HPC DCO Layout)

Table 12.61 Junction 13 – Dunball Roundabout (HPC DCO Layout)

Arm	AM Dev 2016			PM Dev 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
A39	0.35	3.03	0.24	0.40	2.63	0.27
A38 Bristol Road south	1.14	3.19	0.51	2.62	5.32	0.72
Industrial Estate	0.00	0.00	0.00	0.00	0.00	0.00
A38 Bristol Road north	16.21	39.23	0.96	1.88	6.45	0.65

Capacity

12.3.41 The 2016 plus development capacity assessment results indicate that there are capacity issues forecast at the Dunball Roundabout junction (HPC DCO Layout). The highest RFC value predicted at the junction is 0.96 on the A38 Bristol Road north during the AM peak period. This is above the practical capacity of 0.85.

Queues

12.3.42 The 2016 plus development capacity assessment indicates that highest queue predicted is 17 vehicles on the A38 Bristol Road north during the AM peak period.

Junction 14 – Bristol Road/The Drove (Existing Layout)

12.3.43 **Table 12.62** below provides the 2016 future baseline capacity assessment results for the Bristol Road/The Drove junction layout.

Table 12.62 Junction 14 – Bristol Road/The Drove

Item	Lane Description	AM Base 2016			PM Base 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
J1: The Drove/Bristol Road Signals							
1/1+1/2	A38 Ahead Right	65 : 65	9	5	93 : 93	19	12
2/1	Bristol Road Left Ahead	71	15	5	81	19	7

3/1+3 /2	The Drove Right Left	71 : 71	10	6	84 : 89	15	9
J2: Union Street							
4/1	Union Street Left	5	0	0	4	0	0
6/1	A38 (S) Ahead Right	37	0	0	41	0	0

Capacity

12.3.44 The 2016 future baseline capacity assessment results indicate that there are capacity issues associated with the Bristol Road/The Drove junction. The highest DoS value predicted at the junction is 93% on the A38 during the PM peak period which is above the practical capacity of 90%.

Queues

12.3.45 The 2016 future baseline capacity assessment indicates that highest queue predicted is 19 vehicles on the A38 and Bristol Road arms during the PM peak period.

Junction 14 – Bristol Road/The Drove (HPC DCO Layout)

12.3.46 **Table 12.63** below provides the 2016 future baseline capacity assessment results for the Bristol Road/The Drove (HPC DCO Layout) junction.

Table 12.63 Junction 14 – Bristol Road/The Drove (HPC DCO Layout)

Item	Lane Description	AM Base 2016			PM Base 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
J1: The Drove/Bristol Road Signals							
1/1+1 /2	A38 Ahead Right	62 : 65%	9	5	89 : 89%	17	9
2/1	Bristol Road Left Ahead	71%	15	5	89%	22	9
3/1+3 /2	The Drove Right Left	71 : 71%	10	6	75 : 89%	13	7
J2: Union Street							
4/1	Union Street Left	5%	0	0	4%	0	0
6/1	A38 (S) Ahead Right	37%	0	0	41%	0	0

Capacity

12.3.47 The 2016 future baseline capacity assessment results indicate that there are capacity issues associated with the Bristol Road/The Drove (HPC DCO Layout junction. The highest DoS value predicted at the junction is 89% on the A38, Bristol Road and The Drove during the PM peak period which is approaching its practical capacity of 90% DoS.

Queues

12.3.48 The 2016 future baseline capacity assessment indicates that highest queue predicted is 22 vehicles on Bristol Road during the PM peak period.

Junction 15 – Bristol Road/Wylds Road (Existing Layout)

12.3.49 **Table 12.64** below provides the 2016 future baseline capacity assessment results for the existing Bristol Road/Wylds Road junction layout.

Table 12.64 Junction 15 – Bristol Road/Wylds Road

Arm		AM Base 2016			PM Base 2016		
From	**To**	**Queue (Vehs)**	**Delays (s)**	**RFC**	**Queue (Vehs)**	**Delays (s)**	**RFC**
Wylds Road	Bristol Road north	71.27	521.69	1.28	32.78	269.85	1.14
Bristol Road north	Wylds Road	23.83	339.24	1.50	2.04	25.75	0.68

Capacity

12.3.50 The 2016 future baseline capacity assessment results indicate that the Bristol Road/Wylds Road junction is predicted to operate over capacity during both AM and PM peak periods. The 2016 future baseline capacity assessment results indicate that in the AM peak period Bristol Road north would have a predicted maximum RFC value of 1.50 with Wylds Road predicted to have an RFC value of 1.28. During the PM peak period Wylds Road is forecast to experience and RFC value of 1.14.

Queues

12.3.51 The 2016 future baseline capacity assessment indicates that significant queues are predicted to occur on Wylds Road during the AM peak period with a maximum queue of 72 vehicles. The PM peak predicts a maximum queue of 33 vehicles also on Wylds Road.

Junction 15 – Bristol Road/Wylds Road (HPC DCO Layout)

12.3.52 **Table 12.65** below provides the 2016 future baseline capacity assessment results for the M5 Junction 23 roundabout.

Table 12.65 Junction 15 – Bristol Road/Wylds Road (HPC DCO Layout)

Arm		AM Base 2016			PM Base 2016		
From	**To**	**Queue (Vehs)**	**Delays (s)**	**RFC**	**Queue (Vehs)**	**Delays (s)**	**RFC**
Wylds Road	Bristol Road north	50.22	311.82	1.17	18.16	155.13	1.03
Bristol Road north	Wylds Road	8.93	76.93	1.01	1.51	18.90	0.60

Capacity

12.3.53 The 2016 future baseline capacity assessment results indicate that the A38 Bristol Road/Wylds Road junction is predicted to operate over capacity during both AM and PM peak periods. The 2016 future baseline capacity assessment results indicate that in the AM peak period Wylds Road would have a predicted maximum RFC value of 1.17 and during the PM peak a predicted maximum of 1.03. Bristol Road north is predicted to have a maximum RFC value of 1.01 during the AM peak period.

Queues

12.3.54 The 2016 future baseline capacity assessment indicates that significant queues are predicted to occur on Wylds Road during the AM peak period with a maximum queue of 51 vehicles. The PM peak predicts a maximum queue of 19 vehicles on Wylds Road.

Junction 16 – Wylds Road/The Drove (Existing Layout)

12.3.55 **Table 12.66** below provides the 2016 future baseline capacity assessment results for the existing Wylds Road/The Drove junction layout.

Table 12.66 Junction 16 – Wylds Road/The Drove

Item	Lane Description	AM Base 2016			PM Base 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1+1 /2	Wylds Road Left Ahead Right	93.5 : 104.5	23	19.0	99.5 : 99.5	17	14.3
2/1	The Drove Left Ahead Right	49.1	9	2.7	73 .1	16	5.1
3/2+3 /1	E Quay Right Left Ahead	66.2 : 66.2	8	3.7	107.4 : 107.4	39	31.4
4/1+4 /2	Western Way	102.9 : 102.9	59	35.2	105.8 : 105.8	69	48.1

Capacity

12.3.56 The 2016 future baseline capacity assessment results indicate that the Wylds Road/The Drove junction is predicted to operate over capacity during both AM and PM peak periods. The 2016 future baseline capacity assessment results indicate a predicted maximum DoS value of 107.4% during the PM peak on East Quay and a predicted maximum of 105.8% on Western Way during the PM peak period.

Queues

12.3.57 The 2016 future baseline capacity assessment indicates that significant queues are predicted to occur on Western Way during the PM peak period with a maximum queue of 69 PCUs. The AM peak predicts a maximum queue of 59 PCUs also on Western Way.

Junction 16 – Wylds Road/The Drove (HPC DCO Layout)

12.3.58 **Table 12.67** below provides the 2016 future baseline capacity assessment results for the Wylds Road/The Drove (HPC DCO Layout).

Table 12.67 Junction 16 – Wylds Road/The Drove (HPC DCO Layout)

Item	Lane Description	AM Base 2016			PM Base 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	The Drove Ahead Right Left	55%	10	3	77%	21	6
2/2+2 /1	East Quay Left Ahead Right	87 : 87%	10	6	125 : 125%	81	74
3/1	Western Way Left	17%	2	1	19%	3	1
3/2+3 /3	Western Way Left Right Ahead	103 : 103%	53	36	125 : 125%	129	114
4/1+4 /2	Wylds Road Right Ahead Left	74 : 99%	9	7	85 : 85%	8	6
9/2+9 /1	Left Ahead	88 : 88%	27	10	87 : 87%	31	10

Capacity

12.3.59 The 2016 future baseline capacity assessment results indicate that the Wylds Road/The Drove (HPC DCO Layout) junction is predicted to operate over capacity during both AM and PM peak periods. The 2016 future baseline capacity assessment results indicate a predicted maximum DoS value of 103% during the AM peak on Western Way and a predicted maximum of 125% on East Quay and Western Road during the PM peak period.

Queues

12.3.60 The 2016 future baseline capacity assessment indicates that significant queues are predicted to occur on Western Way during the AM peak period with a maximum queue of 53 PCUs. The PM peak predicts a maximum queue of 129 PCUs also on Western Way.

Junction 17 – Quantock Road/Homberg Way

12.3.61 **Table 12.68** below provides the 2016 future baseline capacity assessment results for the Quantock Road/Hombery Way junction.

Table 12.68 Junction 17 – Quantock Road/Hombery Way

Arm	AM Base 2016			PM Base 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Quantock Road	0.93	5.14	0.47	1.55	6.75	0.60
A39	1.00	4.24	0.48	1.21	4.85	0.53
Quantock Meadow	0.05	5.68	0.04	0.03	6.26	0.03
Homeberg Way	1.04	4.67	0.50	0.72	3.84	0.41

Capacity

12.3.62 The 2016 future baseline capacity assessment results indicate that there are no capacity issues forecast for the Quantock Road/Hombery Way junction. The highest

RFC value predicted at the junction is 0.60 on Quantock Road during the PM peak period.

Queues

12.3.63 The 2016 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 18 – A39/Main Road

12.3.64 **Table 12.69** below provides the 2016 future baseline capacity assessment results for the A39/Main Road junction.

Table 12.69 Junction 18 – A39/Main Road

Arm	AM Base 2016			PM Base 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Main Road south	0.77	3.51	0.41	0.93	3.76	0.46
A39	0.41	3.46	0.27	0.46	3.65	0.28
Main Road north	1.34	10.52	0.57	2.00	13.52	0.67

Capacity

12.3.65 The 2016 future baseline capacity assessment results indicate that no capacity issues are forecast for the A39/Main Road junction and that significant residual capacity would be available.

Queues

12.3.66 The 2016 future baseline capacity assessment indicates that there are no issues forecast as a result of queuing on any arms of the junction. The maximum queue comprises 2 vehicles on Main Road north during both AM and PM peak periods.

Junction 19 – A39/High Street

12.3.67 **Table 12.70** below provides the 2016 future baseline capacity assessment results for the A39/High Street junction.

Table 12.70 Junction 19 – A39/High Street

Arm	AM Base 2016			PM Base 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
High Street	0.16	3.54	0.11	0.24	3.83	0.14
A39 south	0.32	3.53	0.21	0.47	3.69	0.29
A39 west	0.31	2.68	0.23	0.21	2.41	0.17

Capacity

12.3.68 The 2016 future baseline capacity assessment results indicate that there are no capacity issues forecast for with the A39/High Street junction and that significant residual capacity would be available.

Queues

12.3.69 The 2016 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with minor queues on all arms of the junction throughout both peak periods.

Junction 20 – High Street/Fore Street/Rodway

12.3.70 **Table 12.71** and **Table 12.72** below provides the 2016 future baseline capacity assessment results for the High Street/Fore Street/Rodway, east and west respectively.

Table 12.71 High Street/Fore Street/Rodway (east)

Arm		AM Base 2016			PM Base 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Rodway	High Street	0.85	10.92	0.45	2.06	17.35	0.67
Fore Street	Rodway	1.62	14.26	0.59	0.78	9.21	0.41

Table 12.72 High Street/Fore Street/Rodway (west)

Arm		AM Base 2016			PM Base 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
High Street	Rodway south	0.39	11.78	0.21	0.46	14.53	0.19
Rodway north	High Street	0.67	8.57	0.27	2.10	11.24	0.53

Capacity

12.3.71 The 2016 future baseline capacity assessment results indicate that the High Street/Fore Street/Rodway (east) junction is predicted to operate within capacity during both AM and PM peak periods. There are also no capacity issues associated with the High Street/Fore Street/Rodway (west) junctions with significant residual capacity forecast for the junction.

Queues

12.3.72 The 2016 future baseline capacity assessment indicates that there is a predicted queue of 1 vehicles on Rodway during the AM peak. There are no issues as a result of queuing on any arms of the western junction with a maximum queue of 3 vehicles on Rodway north during the PM peak.

Junction 21 – M5 Junction 21 (Future Layout)

12.3.73 **Table 12.73** below provides the 2018 future baseline capacity assessment results for Junction 21 of the M5

Table 12.73 Junction 21 – M5 Junction 21

Item	Lane Description	AM Base 2018			PM Base 2018		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
J2: M5 Junction 21 (Controller 1)							
1/1	M5 N/B Off-slip Left	47	4	2	66	6	3
1/2	M5 N/B Off-slip Left Ahead	50	5	2	68	6	3
2/2	A370 (W) Ahead	87	14	4	91	14	5
5/1	South Circ Ahead	54	8	1	73	27	4
5/2	South Circ Ahead	52	5	1	65	8	2
5/3	South Circ Ahead Right	49	5	1	65	8	2
J2: M5 Junction 21 (Controller 2)							
1/1	North Circ Ahead	54	9	3	75	12	5
1/2	North Circ Ahead Right	57	10	3	77	12	5
2/1	M5 S/B Off-slip Left Ahead	9	1	0	13	2	0
2/2	M5 S/B Off-slip Ahead	54	11	3	77	20	5
2/3	M5 S/B Off-slip Ahead	57	11	3	85	25	7
4/1	East Circ Ahead	32	8	3	24	7	2
4/2	East Circ Right	60	2	1	80	3	2
4/3	East Circ Right	62	2	1	87	4	3
5/1	A370 Left	15	2	1	15	2	1
5/2	A370 Ahead	56	10	3	73	12	5

Capacity

12.3.74 The 2018 future baseline capacity assessment results indicate that the M5 Junction 21 junction is predicted to operate over the practical capacity of 90% during the PM peak period. The 2018 future baseline capacity assessment results indicate a predicted maximum DoS value of 91% during the PM peak on the A370 (W) Ahead.

Queues

12.3.75 The 2018 future baseline capacity assessment indicates that significant queues are predicted to occur within the junction on the Southern Circulatory Ahead during the PM peak period with a maximum queue of 27 vehicles.

Junction 22 – A370/Cowslip Lane

12.3.76 **Table 12.74** below provides the 2018 future baseline capacity assessment results for the A370/Cowslip Lane.

Table 12.74 Junction 22 – A370/Cowslip Lane

Arm		AM Base 2018			PM Base 2018		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Cowslip Lane	A370 south	0.02	10.44	0.02	0.05	8.20	0.05
Cowslip Lane	A370 north	0.00	0.00	0.00	0.05	18.08	0.04
A370 south	Cowslip Lane	0.04	7.80	0.03	0.02	6.47	0.02

Capacity

12.3.77 The 2018 future baseline capacity assessment results indicate that there are no capacity issues forecast at the A370/Cowslip Lane junction. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.78 The 2018 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 23 – A370/Maysgreen Lane

12.3.79 **Table 12.75** below provides the 2018 future baseline capacity assessment results for the A370/Maysgreen Lane.

Table 12.75 Junction 23 – A370/Maysgreen Lane

Arm		AM Base 2018			PM Base 2018		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Maysgreen Lane	A370 south	0.00	0.00	0.00	0.00	0.00	0.00
Maysgreen Lane	A370 North	0.00	0.00	0.00	0.00	0.00	0.00
A370 south	Maysgreen Lane	0.00	0.00	0.00	0.01	8.07	0.01

Capacity

12.3.80 The 2018 future baseline capacity assessment results indicate that there are no capacity issues forecast at the A370/Maysgreen Lane junction. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.81 The 2018 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction.

Junction 24 – M5 Junction 20

12.3.82 **Table 12.76** below provides the 2019 future baseline capacity assessment results for the M5 Junction 20.

Table 12.76 Junction 24 – M5 Junction 20

Arm	AM Base 2019			PM Base 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
M5 southbound off slip	0.55	3.45	0.35	2.11	7.34	0.68
M5 northbound off slip	1.53	5.19	0.60	1.32	6.32	0.57
Ettlingen Way	1.76	3.53	0.63	1.20	2.80	0.54

Capacity

12.3.83 The 2019 future baseline capacity assessment results indicate that there are no capacity issues forecast at Junction 20 of the M5. The capacity assessment results indicate that there would be residual capacity available.

Queues

12.3.84 The 2019 future baseline capacity assessment forecasts that there would be no issues as a result of queuing on any arms of the junction. The maximum queue predicted on the M5 southbound off slip is 3 vehicles during the PM peak period. This queue can be accommodated on the M5 southbound off slip without blocking onto the M5 corridor. The highest queue predicted on the M5 northbound off slip is 2 vehicles during the AM peak period which could be accommodated on the northbound off slip without blocking back onto the M5 corridor.

Junction 25 – M5 Junction 20/Central Way/Northern Way/Moor Lane

12.3.85 **Table 12.77** below provides the 2019 future baseline capacity assessment results for the M5 Junction 20.

Table 12.77 Junction 25 – M5 Junction 20/Central Way/Northern Way/Moor Lane

Arm	AM Base 2019			PM Base 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
B3133	3.23	7.41	0.76	16.45	33.08	0.96
Central Way	10.17	29.28	0.92	2.47	8.83	0.71
Moor Lane	3.82	25.24	0.80	1.86	11.26	0.65
Northern Way	2.97	10.58	0.75	3.84	12.33	0.80

Capacity

12.3.86 The 2019 future baseline capacity assessment results indicate that the capacity on Central Way and the B3133 are predicted to exceed the practical RFC value of 0.85. The highest RFC value forecast at the junction is 0.96 which is shown on the B3133 arm of the junction during the PM peak period. The results also indicate that the Central Way arm of the junction would have an RFC of 0.92 during the AM peak period.

Queues

12.3.87 The 2019 future baseline capacity assessment indicates a forecast queue of 17 vehicles on the B3133 during the PM peak period. This level of queuing could be accommodated on the B3133 without blocking back to the M5 Junction 20 roundabout.

Junction 26 – Central Way/Kenn Moore Drive

12.3.88 **Table 12.78** below provides the 2019 future baseline capacity assessment results for the Central Way/Kenn Moore Drive.

Table 12.78 Junction 26 – Central Way/Kenn Moor Drive

Arm		AM Base 2019			PM Base 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Ken Moor Drive	Central Way south	0.07	6.74	0.07	0.04	7.43	0.04
Ken Moor Drive	Central Way north	0.78	16.05	0.44	0.39	15.32	0.28
Central way south	Ken Moor Drive	0.02	7.37	0.01	0.06	8.49	0.06

Capacity

12.3.89 The 2019 future baseline capacity assessment results indicate that there are no capacity issues forecast at the Central Way/Kenn Moore Drive junction. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.90 The 2019 future baseline capacity assessment indicates that there are no issues forecast as a result of queuing on any arms of the junction.

Junction 27 – Central Way/Tutton Way

12.3.91 **Table 12.79** below provides the 2019 future baseline capacity assessment results for the A370/Maysgreen Lane.

Table 12.79 Junction 27 – Central Way/Tutton Way

Arm		AM Base 2019			PM Base 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Tutton Way	Central Way south	0.57	15.34	0.36	0.70	26.09	0.41
Central Way south	Tutton Way	0.13	8.67	0.11	0.18	10.57	0.15

Capacity

12.3.92 The 2019 future baseline capacity assessment results indicate that there are no capacity issues forecast for the Central Way/Tutton Way junction. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.3.93 The 2019 future baseline capacity assessment indicates that there are no issues forecast as a result of queuing on any arms of the junction.

Junction 28 – Central Way/B3133/Southern Way

12.3.94 **Table 12.80** below provides the 2019 future baseline capacity assessment results for the Central Way/B3133/Southern Way.

Table 12.80 Junction 28 – Central Way/B3133/Southern Way

Arm	AM Base 2019			PM Base 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Central Way	2.18	8.96	0.68	11.30	37.68	0.94
B3133 south	1.13	5.63	0.52	3.43	13.90	0.78
Southern Way	4.58	16.77	0.82	2.16	10.73	0.69
B3133 north	36.51	148.20	1.07	6.74	35.33	0.89

Capacity

12.3.95 The 2019 future baseline capacity assessment results indicate that the B3133 north is forecast to exceed the practical capacity of 0.85 during the AM peak period with a forecast RFC value of 1.07. During the PM peak period both Central Way and the B3133 (north) are forecast to exceed the practical capacity of 0.85 with RFC values of 0.94 and 0.89 respectively.

Queues

12.3.96 The 2019 future baseline capacity assessment indicates that the highest queue forecast is 37 vehicles on the B3133 north during the PM peak period. This level of queuing would block back through the junction of the B3133 and beyond Halswell Road to the north.

Junction 29 – B3133/Tutton Way

12.3.97 **Table 12.81** below provides the 2019 future baseline capacity assessment results for the B3133/Tutton Way.

Table 12.81 Junction 29 – B3133/Tutton Way

Arm		AM Base 2019			PM Base 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Tutton Way	B3133 south	0.08	9.13	0.07	0.11	9.03	0.10
Tutton Way	B3133 north	0.26	20.22	0.21	0.31	29.27	0.23
B3133 south	Tutton Way	0.14	4.44	0.07	1.03	4.20	0.24

Capacity

12.3.98 The 2019 future baseline capacity assessment results indicate that no capacity issues are forecast at the B3133/Tutton Way junction. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.99 The 2019 future baseline capacity assessment indicates that there are no issues anticipated as a result of queuing on any arms of the junction.

Junction 30 – B3133/Davis Lane

12.3.100 **Table 12.82** below provides the 2019 future baseline capacity assessment results for the B3133/Davis Way junction.

Table 12.82 Junction 30 – B3133/Davis Lane

Arm		AM Base 2019			PM Base 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Davis Lane	B3133 south	0.08	8.63	0.08	0.05	10.24	0.05
Davis Lane	B3133 north	0.27	20.57	0.21	0.81	36.37	0.46
B3133 south	Davis Lane	0.21	4.39	0.10	0.58	4.13	0.18

Capacity

12.3.101 The 2019 future baseline capacity assessment results indicate that no capacity issues are forecast at the B3133/Davis Way junction. The capacity assessment results indicate that there would be significant residual capacity available.

Queues

12.3.102 The 2019 future baseline capacity assessment indicates that there are no issues anticipated as a result of queuing on any arms of the junction.

Junction 31 – Northern Way/B3130 Tickenham Road

12.3.103 **Table 12.83** below provides the 2019 future baseline capacity assessment results for the Northern Way/B3130 Tickenham Road junction.

Table 12.83 Junction 31 – Northern Way/B3130 Tickenham Road

Arm	AM Base 2019			PM Base 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Tickenham Road east	3.46	14.81	0.78	5.61	21.51	0.86
Northern Way	25.56	71.57	1.00	2.89	10.95	0.75
Tickenham Road west	13.65	55.28	0.96	3.22	15.24	0.77

Capacity

12.3.104 The 2019 future baseline capacity assessment results indicate that the junction is forecast to exceed capacity during both the AM and PM peak periods, with a maximum RFC value of 1.00 on Northern Way during the AM peak period.

Queues

12.3.105 The 2019 future baseline capacity assessment indicates that a maximum queue of 26 vehicles is forecast during the AM peak period on Northern Way. This queue can be accommodated on Northern Way without blocking the access into Sumerlin Drive to the south of the junction.

Junction 32 – B3128/Clevedon Road

12.3.106 **Table 12.84** below provides the 2019 future baseline capacity assessment results for the B3128/Clevedon Road.

Table 12.84 Junction 32 – B3128/Clevedon Road

Arm		AM Base 2019			PM Base 2019		
From	**To**	**Queue (Vehs)**	**Delays (s)**	**RFC**	**Queue (Vehs)**	**Delays (s)**	**RFC**
B3128	Clevedon Road east	1.59	36.26	0.63	7.44	185.27	1.01
B3128	Clevedon Road west	4.16	71.60	0.83	13.27	140.88	1.01
Clevedon Road east	B3128	4.03	22.82	0.74	1.43	8.74	0.47

Capacity

12.3.107 The 2019 future baseline capacity assessment results indicate that the B3128 (both east and west bound)is forecast to have an RFC value of 1.01 during the PM peak period. This is above the maximum value of 1.00 and indicates that the junction is forecast to exceed capacity during the PM peak period.

Queues

12.3.108 The 2019 future baseline capacity assessment indicates that in the PM peak period when the B3128 operates with a RFC of 1.01 the maximum predicted queue length is 14 vehicles on the movement to Clevedon Road (west).

Junction 33 – M5 Junction 19

12.3.109 **Table 12.85** below provides the 2019 future baseline capacity assessment results for the M5 Junction 19.

Table 12.85 Junction 33 – M5 Junction 19

Item	Lane Description (Controller 1)	AM Base 2019			PM Base 2019		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	M5 N/B Off-slip Left	48%	4	2	49%	3	1
1/2	M5 N/B Off-slip Left Ahead	49%	4	2	49%	3	1
1/3	M5 N/B Off-slip Ahead	46%	8	2	34%	5	1
2/1	The Portbury Hundred Left Ahead	71%	13	5	58%	7	3
2/2	The Portbury Hundred Ahead	73%	14	5	60%	8	3
2/3	The Portbury Hundred Ahead	54%	9	3	92%	17	10
3/1	Royal Portbury Dock Road Left Ahead	83%	4	3	93%	12	6
3/2	Royal Portbury Dock Road Ahead	24%	1	0	48%	2	1
7/1	South Circ Ahead	34%	1	0	25%	3	1
7/2	South Circ Ahead Right	75%	19	3	82%	12	3
7/3	South Circ Right	48%	4	1	34%	6	1
8/1	West Circ Ahead Right	76%	17	5	19%	3	1
8/2	West Circ Right	79%	11	4	49%	9	2
8/3	West Circ Right	41%	1	1	30%	1	1
Item	**Lane Description (Controller 2)**	**AM Base 2019**			**PM Base 2019**		
		DoS (%)	**MMQ (pcu)**	**Delay (pcuHr)**	**DoS (%)**	**MMQ (pcu)**	**Delay (pcuHr)**
1/1	North Circ Left	15%	3	1	21%	3	1
1/2	North Circ Ahead	85%	20	7	94%	24	10
1/3	North Circ Right	18%	1	0	35%	6	1
2/1	M5 S/B Off-slip U-Turn	8%	0	0	5%	0	0
2/2	M5 S/B Off-slip Ahead Left	86%	21	8	92%	27	11
2/3	M5 S/B Off-slip Ahead	66%	13	4	85%	22	8
3/1	East Circ Ahead	55%	8	3	52%	11	5
3/2	East Circ Right	68%	2	1	86%	3	3
3/3	East Circ Right	8%	1	0	9%	2	1
5/1	Service Station Exit Left	19%	1	0	27%	1	0
5/2	Service Station Exit Ahead	63%	3	1	70%	5	2
7/1	Martcombe Road Left	62%	11	4	65%	12	4
7/2	Martcombe Road Ahead	47%	8	3	48%	8	3
7/3	Martcombe Road Ahead	67%	13	4	51%	9	3

Capacity

12.3.110 The 2019 future baseline capacity assessment results indicate that Junction 19 of the M5 is forecast to operate overcapacity during the AM and PM peak periods. The maximum DoS value is 94% for the North Circulatory Ahead movement during the PM peak period with e M5 S?B Off-slip reaching a DoS of 92% also during the PM peak period.

Queues

12.3.111 The 2019 future baseline capacity assessment results indicate that Junction 19 of the M5 is forecast to experience a maximum queue of 27 vehicles for the southbound off slip during the PM peak period. This queue, and all other forecast queues on the M5 slip roads could be accommodated without blocking back onto the M5 corridor.

Junction 34 – Royal Portbury Dock Road/Gordano Way/Portbury Way

12.3.112 **Table 12.86** below provides the 2019 future baseline capacity assessment results for the Royal Portbury Dock Road/Gordano Way/Portbury Way junction.

Table 12.86 Royal Portbury Dock Road/Gordano Way/Portbury Way

Arm	AM Base 2019			PM Base 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Gordano Way	0.11	2.63	0.09	0.18	2.75	0.14
Royal Portbury Dock Road south	0.46	2.51	0.29	0.14	2.34	0.09
Bradley Road	0.17	4.26	0.10	0.06	2.50	0.05
Portbury Way	0.04	2.94	0.03	0.06	2.13	0.05
Royal Portbury Dock Road north	0.13	4.11	0.07	0.18	3.02	0.13

Capacity

12.3.113 The 2019 future baseline capacity assessment results indicate that there are no forecast capacity issues associated with the Royal Portbury Dock Road/Gordano Way/Portbury Way junction. The junction results indicate that significant residual capacity would be available.

Queues

12.3.114 The 2019 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with no queues on any arms of the junction.

Junction 35 – The Portbury Hundred/Station Road

12.3.115 **Table 12.87** below provides the 2019 future baseline capacity assessment results for the Portbury Hundred/Station Road junction.

Table 12.87 The Portbury Hundred/Station Road

Arm		AM Base 2019			PM Base 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Station Road	The Portbury Hundred (E)	0.35	24.01	0.24	0.10	14.14	0.08
Station Road	The Portbury Hundred (W)	0.00	0.00	0.00	0.00	0.00	0.00
The Portbury Hundred (E)	The Portbury Hundred (W) & Station Road	0.12	17.04	0.09	0.15	10.86	0.12

Capacity

12.3.116 The 2019 future baseline capacity assessment results indicate that there are no forecast capacity issues associated with the Portbury Hundred/Station Road junction and that there is significant residual capacity available.

Queues

12.3.117 The 2019 future baseline capacity assessment indicates that there are no issues as a result of the forecasted queuing on any arms of the junction.

Junction 38 – Severn Road/Chittening Road

12.3.118 **Table 12.88** below provides the 2017 future baseline capacity assessment results for the Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue junction.

Table 12.88 Severn Road/Chittening Road

Arm		AM Base 2017			PM Base 2017		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Severn Road east	Chittening Road	0.35	9.87	0.21	0.10	7.41	0.08
Severn Road east	Severn Road north	0.44	13.97	0.28	0.30	12.79	0.23
Chittening Road	Severn Road east	0.37	12.90	0.21	0.80	12.06	0.39

Capacity

The 2017 future baseline capacity assessment results indicate that there are no capacity issues forecast at the Severn Road/Chittening Road junction and that there would be significant residual capacity available.

Queues

12.3.119 The 2017 future baseline capacity assessment indicates that there are no issues as a result of forecasted queuing on any arms of the junction.

Junction 39 – A403 Smoke Lane/Poplar Way West

12.3.120 **Table 12.89** below provides the 2017 future baseline capacity assessment results for the A403 Smoke Lane/Poplar Way West junction.

Table 12.89 A403 Smoke Lane/Poplar Way West

Arm	AM Base 2017			PM Base 2017		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Smoke Lane	0.91	5.11	0.44	0.56	4.08	0.33
Poplar Way West	0.18	4.16	0.13	0.21	3.71	0.16
St Andrew's Road	0.62	3.82	0.34	0.65	3.93	0.36
Access	0.03	3.91	0.03	0.05	3.70	0.05

Capacity

12.3.121 The 2017 future baseline capacity assessment results indicate that there are no capacity issues associated with the A403 Smoke Lane/Poplar Way West junction. The junction results indicate that significant residual capacity would be available.

Queues

12.3.122 The 2017 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction, with minimal queues on all arms of the junction.

Junction 40 – Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue

12.3.123 **Table 12.90** below provides the 2017 future baseline capacity assessment results for the Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue junction.

Table 12.90 Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue

Arm	AM Base 2017			PM Base 2017		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Poplar way east	0.12	3.43	0.08	0.24	3.13	0.18
Merebank Road	0.30	2.69	0.22	0.14	2.69	0.11
Poplar way west	0.13	2.55	0.10	0.14	2.39	0.11
Moorend Farm Avenue	0.04	3.08	0.03	0.09	2.55	0.08
Poplar way east	0.12	3.43	0.08	0.24	3.13	0.18

Capacity

12.3.124 The 2017 future baseline capacity assessment results indicate that there are no capacity issues forecast at the Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue junction. The junction results indicate that significant residual capacity would be available.

Queues

12.3.125 The 2013 Baseline capacity assessment indicates that there are no issues as a result of forecasted queuing on any arms of the junction, with only a single queuing vehicle present on all arms of the junction.

Junction 41 – A403 St. Andrew's Road/Kings Weston Lane

12.3.126 **Table 12.91** below provides the 2017 future baseline capacity assessment results for the A403 St. Andrew's Road/Kings Weston Lane junction.

Table 12.91 A403 St. Andrew's Road/Kings Weston Lane

Item	Lane Description	AM Base 2017			PM Base 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	St Andrews Road (N) Left Ahead	92%	20	10	95%	22	12
2/1	Kings Weston Lane Left Right	89%	12	7	94%	21	11
3/1	St Andrews Road (S) Ahead	63%	13	3	47%	8	2
3/2	St Andrews Road (S) Right	93%	18	10	92%	10	7

Capacity

12.3.127 The 2017 future baseline capacity assessment results indicate that there are no forecast capacity issues associated with the A403 St. Andrew's Road/Kings Weston Lane junction. The highest Degree of saturation (DoS) forecasted was 95% on St. Andrews Road (N) Left Ahead during the PM peak period. This is above the desirable maximum of 90% and indicates that this arm of the junction is predicted to operate insufficiently. Kings Weston Lane and St. Andrew's Road (S) Right are also forecast to exceed 90% and operate insufficiently in 2017.

Queues

12.3.128 The 2017 future baseline capacity assessment indicates an anticipated peak queue of 22 PUCs on St. Andrews Road during the PM peak period. This level of queuing could be accommodated on St. Andrews Lane without blocking any local site access points.

Junction 42 – A403 St. Andrew's Road/St. George's Industrial Estate

12.3.129 **Table 12.92** below provides the 2017 future baseline capacity assessment results for the A403 St. Andrew's Road/St. George's Industrial Estate junction.

Table 12.92 A403 St. Andrew's Road/St. George's Industrial Estate

Item	Lane Description	AM Base 2017			PM Base 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	St Andrews Road (N) Left Ahead	82%	29	6	73%	22	4
1/2	St Andrews Road (N) Right	11%	1	0	11%	1	0
2/1	Distribution Centre Left	8%	0	0	6%	0	0
2/2	Distribution Centre Ahead Right	13%	1	0	9%	0	0
3/1	St Andrews Road (S) Left Ahead	62%	18	2	69%	22	3
3/2	St Andrews Road (S) Right	65%	4	2	22%	1	1
4/1	St Georges Industrial Estate Left	19%	1	0	10%	0	0
4/2	St Georges Industrial Estate Ahead Right	31%	2	1	13%	1	0

Capacity

12.3.130 The 2017 future baseline capacity assessment results indicate that there are no forecast capacity issues at the A403 St. Andrew's Road/St. George's Industrial Estate. The junction results indicate that residual capacity would be available at the junction.

Queues

12.3.131 The 2017 future baseline capacity assessment indicates that a maximum forecast queue of 29 PCUs are predicted on St. Andrews Road (N) Left Ahead.

Junction 43 – A403 St. Andrew's Road/King Road Avenue/Crowley Way

12.3.132 **Table 12.93** below provides the 2017 Baseline capacity assessment results for the A403 St. Andrew's Road/King Road Avenue/Crowley Way junction.

Table 12.93 A403 St. Andrew's Road/King Road Avenue/Crowley Way

Item	Lane Description	AM Base 2017			PM Base 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	St Andrews Road (N) Left Ahead	37%	6	2	55%	10	2
1/1	A403 St. Andrew's Road Left	39%	7	2	57%	11	3
1/2	A403 St. Andrew's Road Left	11%	2	0	6%	1	0
1/3	A403 St. Andrew's Road Ahead	18%	3	1	6%	1	0
2/1	Crowley Way Left Ahead	61%	13	3	28%	4	1
2/2	Crowley Way Ahead	59%	12	3	26%	4	1
2/3	Crowley Way Ahead	58%	5	2	55%	3	2
3/1	McLaren Road Left Ahead	47%	2	1	54%	3	2
4/1	King Road Avenue Ahead Left	47%	3	1	54%	3	2
4/2	King Road Avenue Ahead	25%	2	1	27%	2	1
8/1	North Circ Ahead	12%	0	0	18%	0	0
8/2	North Circ Right	11%	2	1	15%	2	1
9/1	East Circ Ahead	9%	2	1	1%	0	0
9/2	East Circ Right	13%	2	0	1%	0	0
10/1	South Circ Ahead	46%	1	1	21%	1	0
10/2	South Circ Right	44%	1	1	19%	1	0
10/3	South Circ Right	21%	1	0	8%	0	0
11/1	West Circ Ahead	26%	1	0	16%	1	0
11/2	West Circ Ahead	42%	2	1	22%	1	0
11/3	West Circ Right Ahead	37%	6	2	55%	10	2

Capacity

12.3.133 The 2017 Baseline capacity assessment results indicate that the A403 St. Andrew's Road/King Road Avenue/Crowley Way junction is forecast to operate within capacity with significant residual capacity available.

Queues

12.3.134 The 2017 Baseline capacity assessment indicates a forecast maximum queue of 13 PCUs associated with the Crowley Way Left Ahead during the AM peak period. This level of queuing could be accommodated on Crowley Way but it could restrict access out from Evelyn Lane.

Junction 44 – M5/A4/Avonmouth Way

12.3.135 **Table 12.94** below provides the 2017 Baseline capacity assessment results for the M5/A4/Avonmouth Way roundabout.

Table 12.94 M5/A4/Avonmouth Way

Item	Lane Description	AM Base 2017			PM Base 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	Avonmouth Way Left	55%	3	2	64%	9	4
1/2	Avonmouth Way Ahead Left	59%	4	2	66%	10	4
1/3	Avonmouth Way Ahead	39%	2	1	9%	1	0
2/1	M5 Ahead Left	63%	10	4	30%	3	1
2/2	M5 Ahead	63%	10	4	30%	3	1
2/3	M5 Ahead	65%	11	4	34%	4	2
2/4	M5 Ahead	21%	3	1	24%	3	1
3/1	Bristow Broadway Left	19%	2	1	18%	1	1
3/2	Bristow Broadway Ahead Left	21%	2	1	21%	2	1
3/3	Bristow Broadway Ahead	65%	9	4	66%	7	3
4/1	Crowley Road Ahead Left	24%	3	1	63%	7	3
4/2	Crowley Road Ahead	27%	4	1	66%	8	4
4/3	Crowley Road Ahead	26%	4	1	65%	8	4
4/4	Crowley Road Ahead	15%	2	1	32%	4	2
4/5	Crowley Road Ahead	17%	2	1	33%	4	2
5/1	North Circ Ahead	8%	0	0	27%	1	1
5/2	North Circ Ahead	12%	0	0	31%	1	1
5/3	North Circ Ahead	17%	1	0	32%	2	1
5/4	North Circ Right	7%	0	0	13%	0	0
5/5	North Circ Right	7%	0	0	14%	0	0
6/1	East Circ Ahead	11%	3	1	18%	4	1
6/2	East Circ Right Ahead	14%	3	1	24%	4	1
6/3	East Circ Right	7%	0	0	4%	0	0
7/1	Ahead	33%	1	1	10%	0	0
7/2	Ahead	37%	9	1	11%	2	0
7/3	Right Ahead	46%	9	1	17%	3	0
7/4	Right	12%	1	0	9%	1	0
8/1	West Circ Ahead	61%	2	1	17%	0	0
8/2	West Circ Right Ahead	40%	4	1	24%	3	1
8/3	West Circ Right	8%	0	0	6%	0	0
9/1	W/B Exit Ahead	32%	1	0	13%	0	0
9/2	W/B Exit Ahead	35%	1	0	14%	0	0
9/3	W/B Exit Ahead	10%	0	0	9%	0	0

Capacity

12.3.136 The 2017 future baseline capacity assessment results indicate that there are no forecast capacity issues associated with the M5/A4/Avonmouth Way roundabout with significant residual capacity available.

Queues

12.3.137 The 2017 future baseline capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with a maximum queue of 11 PCUs recorded on the M5 during the AM peak.

Junction 45 – A4 Bristol Broadway/Avonmouth Road/Portway/M5

12.3.138 **Table 12.95** below provides the 2017 future baseline capacity assessment results for the A4 Bristol Broadway/Avonmouth Road/Portway/M5 roundabout.

Table 12.95 A4 Bristol Broadway/Avonmouth Road/Portway/M5

Item	Lane Description	AM Base 2017			PM Base 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	M5 Left	69%	7	3	61%	6	2
1/2	M5 Ahead	77%	7	3	57%	4	2
1/3	M5 Ahead	76%	9	4	49%	4	2
1/4	M5 Ahead	21%	1	1	24%	1	1
2/1	B4054 Left	10%	1	0	6%	0	0
2/2	B4054 Ahead	29%	2	1	20%	1	1
2/3	B4054 Ahead	66%	6	3	57%	5	2
3/1	Portway (S) Ahead	70%	9	3	31%	3	1
3/2	Portway (S) Ahead	35%	3	1	55%	6	2
3/3	Portway (S) Ahead	35%	3	1	55%	6	2
3/4	Portway (S) Ahead	19%	2	1	25%	2	1
4/1	Portway (N) U-Turn Left	54%	4	2	77%	8	4
4/2	Portway (N) Left	29%	2	1	53%	5	2
6/1	Ahead	56%	1	1	54%	1	1
6/2	Ahead	56%	1	1	57%	1	1
7/1	Ahead	36%	5	1	19%	2	1
7/2	Ahead	38%	2	1	20%	0	0
9/1	East Circ Ahead	68%	5	2	68%	6	3
9/2	East Circ Ahead	79%	6	4	80%	8	4
9/3	East Circ Right	12%	0	0	13%	0	0
10/1	South Circ Right	52%	2	1	37%	2	1
10/2	South Circ Right	71%	2	2	51%	1	1
11/1	West Circ Ahead	58%	4	2	80%	6	3
11/2	West Circ Ahead	58%	4	2	80%	6	3
11/3	West Circ Right	22%	1	0	28%	1	1
12/1	North Circ Ahead	51%	4	2	75%	6	3
12/2	North Circ Right	41%	1	1	61%	1	1
12/3	North Circ Right	32%	1	1	69%	2	2

Capacity

12.3.139 The 2017 future baseline capacity assessment results indicate that there are no forecast capacity issues associated with the M5/A4/Avonmouth Way roundabout with residual capacity available at the junction.

Queues

12.3.140 The 2017 future baseline capacity assessment indicates that there are no issues as a result of forecast queuing on any arms of the junction with a maximum queue of 9 PCUs forecast on the M5 Ahead and Portway (S) ahead arm during the AM peak.

Junction 46 – A4 Portbury/West Town Road

12.3.141 **Table 12.96** below provides the 2017 future baseline capacity assessment results for the A4 Portbury/West Town Road junction.

Table 12.96 A4 Portbury/West Town Road

Item	Lane Description	AM Base 2017			PM Base 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/2+1 /1	A4 Portway (E) Left Ahead	64 : 64%	12	3	42 : 42%	7	2
1/3	A4 Portway (E) Ahead	62%	12	3	41%	7	2
2/1	W Town Road Left	35%	3	1	56%	6	3
3/1	A4 Potway (W) Ahead	80%	2	2	78%	2	2
3/2	A4 Portway (W) Right	51%	3	2	9%	1	0
3/3	A4 Portway (W) Right	51%	3	2	9%	1	0

Capacity

12.3.142 The 2017 future baseline capacity assessment results indicate that there are no capacity issues associated with the A4 Portbury/West Town Road junction that residual capacity would be available. .

Queues

12.3.143 The 2017 future baseline capacity assessment indicates a maximum forecast queue of 12 vehicles on the A4 Portway (E) arm of the junction for the Left Ahead movement during the AM peak period.

Junction 49 – Clevedon Road/Stock Way North

12.3.144 **Table 12.97** below provides the 2019 future baseline capacity assessment results for the Clevedon Road/Stock Way North junction.

Table 12.97 Clevedon Road/Stock Way North

Item	Lane Description	AM Base 2019			PM Base 2019		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1+1 /2	Clevedon Road Left Right	67 : 67%	7	4	62 : 62%	5	3
2/1+2 /2	Stock Way (East) Ahead Right	53 : 53%	5	3	65 : 65%	7	3
3/1	Stock Way (West) Ahead Left	64%	7	3	41%	4	2

Capacity

12.3.145 The 2019 future baseline capacity assessment results forecast no capacity issues at the Clevedon Road/Stock Way North junction significant residual capacity available.

Queues

12.3.146 The 2019 future baseline capacity assessment indicates a maximum forecast queue of 7 vehicles on Clevedon Road during the AM peak period and Stock way during both the AM and PM peak periods. Therefore no forecast issues arise as a result of queuing on any arms of the junction.

Junction 50 Stock Way North/Stock Way South

12.3.147 **Table 12.98** below provides the 2019 future baseline capacity assessment results for the Stock Way North/Stock Way South junction.

Table 12.98 Stock Way North/Stock Way South

Arm	AM Base 2019			PM Base 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Stock Way North	0.59	7.70	0.36	1.38	11.21	0.58
Stock Way South	0.56	7.88	0.35	0.51	8.45	0.33
Silver Street	0.19	3.38	0.16	0.12	2.99	0.11

Capacity

12.3.148 The 2019 future baseline capacity assessment results indicate that no capacity issues are forecast at the junction of Stock Way North/Stock Way South. The junction results forecast that significant residual capacity would be available.

Queues

12.3.149 The 2019 future baseline capacity assessment indicates that no issues are forecast as a result of queuing at the junctions of Stock Way North/Stock Way South, with a maximum predicted queue of 2 vehicles on Stock Way North during the PM peak.

Junction 51 Stock Way South/Mizzymead Road

12.3.150 **Table 12.99** below provides the 2019 future baseline capacity assessment results for the Stock Way South/Mizzymead Road junction.

Table 12.99 Stock Way South/Mizzymead Road

Arm	AM Base 2019			PM Base 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Mizzymead Road North	0.22	4.64	0.18	1.15	8.44	0.54
Mizzymead Road South	1.83	11.28	0.64	0.87	7.83	0.46
Stock Way South	0.67	9.89	0.39	0.66	8.70	0.39

Capacity

12.3.151 The 2019 future baseline capacity assessment results indicate that no capacity issues are forecast at the junction of Stock Way South/Mizzymead Road during either the AM or PM peak periods. The junction results forecast that significant residual capacity would be available.

Queues

12.3.152 The 2019 future baseline capacity assessment indicates that no issues are forecast as a result of queuing on any arms of the Stock Way South/Mizzymead Road junction as the maximum forecast queue is 2 vehicles on Mizzymead Road North and South.

Summary

12.3.153 The results of the future year baseline modelling identify a total of six junctions which are predicted to operate at, or exceed their theoretical maximum RFC/DoS of 1.00/100%. These junctions are listed below:

- Junction 2 - A39/Puriton Hill;
- Junction 15 - Bristol Road/Wylds Road (HPC DCO Layout);
- Junction 16 - Wylds Road/The Drove (HPC DCO Layout);
- Junction 28 - Central Way/B3133/Southern Way;
- Junction 31 – Northern Way/B3130 Tickenham Road; and
- Junction 32 – B3128/Clevedon Road.

12.3.154 The results of the future baseline modelling highlight a number of congestion points on the highway network which has been assessed. The first surrounds Junction 23 of the M5 corridor with the A38 and A39 corridors to the east and west of the M5 reaching capacity during their respective future baseline scenarios.

12.3.155 The second area of congestion is adjacent to Junction 20 of the M5 corridor, located close to Clevedon and Nailsea. Central Way/Southern Way/B3133 is a roundabout junction and is predicted to exceed an RFC of 1.00 on the B3133 North during the 2019 AM peak period. The junction of Northern Way and Tickenham Road is a roundabout junction which is predicted to reach capacity for the Northern Way movement during the

2019 AM assessment. The B3128/Clevedon Road junction is a priority junction which is predicted to exceed capacity on the B3128 during the PM peak period.

12.4 Future Baseline plus Development Capacity Assessment Results

Junction 1 – M5 Junction 23

12.4.1 **Table 12.100** below provides the 2016 plus development capacity assessment results for the M5 Junction 23.

Table 12.100 Junction1 – M5 Junction 23

Item	Lane Description	AM Dev 2016			PM Dev 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	M5 S/B Off-slip Left	76%	19	7	95%	26	13
1/2	M5 S/B Off-slip Ahead	97%	37	18	71%	15	6
2/1	A39 (E) Left	77%	9	2	95%	27	8
2/2	A39 (E) Ahead	62%	8	1	94%	25	7
2/3	A39 (E) Ahead	87%	18	5	92%	22	6
3/1	M5 N/B Off-slip Left	67%	14	5	35%	7	2
3/2	M5 N/B Off-slip Ahead	81%	19	8	69%	19	6
4/1	A39 (W) Left	57%	13	4	69%	20	5
4/2	A39 (W) Ahead	83%	24	9	90%	37	11
10/1	South Circ (Signals) Ahead	72%	9	3	76%	9	3
10/2	South Circ (Signals) Ahead Right	74%	17	4	73%	19	5
11/1	East Circ (Signals) Ahead	43%	7	3	70%	18	8
11/2	East Circ (Signals) Ahead Right	59%	2	1	90%	9	7
12/1	North Circ Ahead	99%	36	20	96%	27	13
12/2	North Circ Right	25%	5	0	44%	20	4

Capacity

12.4.2 The 2016 plus development capacity assessment results indicate that Junction 23 of the M5 is predicted to exceed the practical maximum DoS of 90% during the AM peak period with a predicted DoS value of 99% on the North Circ Ahead movement.

Queues

12.4.3 The 2016 plus development capacity assessment indicates a forecast MMQ of 37 PCUs on the M5 Southbound off-slip Ahead movement during the AM peak period and on the A39 (W) Ahead movement during the PM peak period. The maximum forecast queue on the M5 slip roads is therefore forecast on the southbound off slip during the AM peak period. This queue of 37 PCUs can be safely accommodated on the slip road without blocking back onto the M5 corridor.

Junction 2 – A39/Puriton Hill

12.4.4 **Table 12.101** below provides the 2016 plus development capacity assessment results for the A39/Puriton Hill priority junction.

Table 12.101 Junction 2 - A39/Puriton Hill

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Puriton Hill	A39	16.20	6839.76	5.50	0.70	266.03	0.47
A39 (S)	A39 (N) & Puriton Hill	0.01	4.64	0.01	0.01	3.51	0.01

Capacity

12.4.5 The 2016 plus development capacity assessment results forecast that the A39/Puriton Hill junction will exceed capacity with a peak RFC of 5.50 during the AM peak period of Puriton Hill.

Queues

12.4.6 The 2016 plus development capacity assessment indicates that the highest predicted queuing figure is 17 at the Puriton Hill junction during the AM peak period.

Junction 3 – Hillside/A39 Puriton Hill

12.4.7 **Table 12.102** below provides the 2016 plus development capacity assessment results for the Hillside/Puriton Hill junction.

Table 12.102 Junction 3 - A39/Puriton Hill

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Southern Arm	A39 & Hillside	0.00	0.00	0.00	0.00	0.00	0.00
A39 (E)	Southern Arm, A39 (W) & Hillside	0.03	6.84	0.03	0.08	8.03	0.07
Hillside	A39 & Southern Arm	0.24	14.77	0.20	0.21	13.48	0.17
A39 (W)	A39 (E), Southern Arm & Hillside	0.01	4.41	0.01	0.00	3.85	0.00

Capacity

12.4.8 The 2016 plus development capacity assessment results forecast no capacity issues associated with the Hillside/A39 Puriton Hill junction and that significant residual capacity would be available

Queues

12.4.9 The 2016 plus development capacity assessment indicates that there would be no issues as a result of queuing on any arms of the junction.

Junction 4 – A39 Puriton Hill/Bath Road

12.4.10 **Table 12.103** below provides the 2016 plus development capacity assessment results for the A39 Puriton Hill/Bath Road junction.

Table 12.103 Junction 4 – A39 Puriton Hill/Bath Road

Item	Lane Description	AM Dev 2016			PM Dev 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	Puriton Hill Ahead	56	7	2	77	11	4
1/2	Puriton Hill Right	98	13	10	88	8	5
2/1	A39 (E) Left	33	3	1	22	2	0
2/2	A39 (E) Ahead	93	18	9	91	14	8
3/1	A39 (S) Right Left	101	24	18	93	16	9

Capacity

12.4.11 The 2016 plus development capacity assessment results forecast that the A39 Puriton Hill/Bath Road junction will exceed capacity with the highest Degree of Saturation (DoS) being 101% during the AM peak on the A39 (S) Right Left arm of the junction.

Queues

12.4.12 The 2016 plus development capacity assessment indicates that the highest mean maximum queue (MMQ) forecast at the junction is 24 PCUs which is shown on the A39 (S) Right Left during the AM peak.

Junction 5 – A39 Bath Road/Bawdrip Lane

12.4.13 **Table 12.104** below provides the 2016 plus development capacity assessment results for the A39 Bath Road/Bawdrip Lane junction.

Table 12.104 Junction 5 – A39 Bath Road/Bawdrip Lane

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Bawdrip Lane	A39 (W) & Northern Arm	0.02	8.89	0.02	0.02	8.35	0.02
Bawdrip Lane	A39 (E) & Northern Arm	0.09	22.37	0.08	0.08	24.26	0.08
A39 (E)	Bawdrip Lane, A39 (W) & Northern Arm	0.00	0.00	0.00	0.00	0.00	0.00
Northern Arm	A39 (E), Bawdrip Lane & A39 (W)	0.00	0.00	0.00	0.00	0.00	0.00
A39 (W)	A39 (E), Bawdrip Lane & Northern Arm	0.05	5.05	0.04	0.03	3.79	0.03

Capacity

12.4.14 The 2016 plus development assessment results forecast no capacity issues associated with the A39 Bath Road/Bawdrip lane junction during either the AM or PM peak periods. The results forecast that significant residual capacity would be available.

Queues

12.4.15 The 2016 plus development capacity assessment indicates that there are no forecast issues as a result of queuing on any arms of the junction.

Junction 6 – A39 Bath Road/Woolavington Hill

12.4.16 **Table 12.105** below provides the 2016 plus development capacity assessment results for the A39 bath Road/Woolavington Hill junction.

Table 12.105 Junction 6 – A39 Bath Road/Woolavington Hill

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Woolavington Hill	A39 (W)	0.32	10.29	0.24	0.24	11.05	0.19
Woolavington Hill	A39 (E)	1.66	43.80	0.64	9.70	174.00	1.00
A39 (W)	A39 (E) & Woolavington Hill	0.55	4.26	0.18	1.44	6.45	0.39

Capacity

12.4.17 The 2013 plus development capacity assessment results indicate that the Woolavington Hill to A39 (east) junction is predicted to reach capacity with an RFC of 1.00 during the PM peak period.

Queues

12.4.18 The 2016 plus development capacity assessment indicates the highest predicted queuing figure is 10 during the PM peak period on the Woolavington Hill to A39(east) junction.

Junction 7 – Old Mill Road/B3141 Woolavington Hill

12.4.19 **Table 12.106** below provides the 2016 plus development capacity assessment results for the Old Mill Road/B3141/Woolavington Hill junction.

Table 12.106 Junction 7 - Old Mill Road/B3141 Woolavington Hill

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Old Mill Road	B3141 (N)	0.06	7.45	0.06	0.03	6.65	0.03
Old Mill Road	B3141 (S)	0.23	10.68	0.19	0.20	11.04	0.17
B3141 (N)	B3141 (S) & Old Mill Road	0.03	5.95	0.02	0.15	5.81	0.08

Capacity

12.4.20 The 2016 plus development capacity assessment results indicate that there are no capacity issues forecast at the Old Mill Road/B3141 Woolavington Hill junction. The results indicate that significant residual capacity would be available.

Queues

12.4.21 The 2016 plus development capacity assessment indicates that there are no issues forecast as a result of queuing on any arms of the junction.

Junction 8 – Woolavington Hill/Higher Road/Vicarage Road

12.4.22 **Table 12.107** below provides the 2016 plus development capacity assessment results for the Old Mill Woolavington Hill/Higher Road/Vicarage Road junction.

Table 12.107 Junction 8 – Woolavington Hill/Higher Road/Vicarage Road

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Vicarage Road	B3141 (N), B3141 (S) & Higher Road	0.07	8.20	0.07	0.07	8.23	0.07
B3141 (N)	Vicarage Road, B3141 (S) & Higher Road	0.07	6.05	0.05	0.12	6.09	0.07
Higher Road	B3141 (N), Vicarage Road & B3141 (S)	0.23	9.96	0.19	0.66	13.19	0.40
A3141 (S)	B3141 (N), Vicarage Road & Higher Road	0.01	5.04	0.01	0.03	5.63	0.03

Capacity

12.4.23 The 2016 plus development capacity assessment results indicate that there are no capacity issues forecast at the Woolavington Hill/Higher Road/Vicarage Road junction. The junctions results forecast that significant residual capacity would be available.

Queues

12.4.24 The 2016 plus development capacity assessment indicates that there no issues are forecast as a result of queuing on any arms of the junction.

Junction 9 – M5 (Junction 22)/A38 Bristol Road/B3140

12.4.25 **Table 12.108** below provides the 2018 plus development capacity assessment results for the M5 (Junction22)/A38 Bristol Road and the B3140.

Table 12.108 Junction 9 – M5 (Junction 22)/A38 Bristol Road/B3140

Arm	AM Dev 2018			PM Dev 2018		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
M5	2.15	5.44	0.65	10.30	21.97	0.92
A38 Bristol Road south	1.41	6.89	0.56	10.55	52.50	0.94
B3140	69.64	229.72	1.15	3.05	19.27	0.76
A38 Bristol Road north	5.00	11.46	0.82	3.68	8.28	0.78

Capacity

12.4.26 The 2018 plus development capacity assessment indicates that the M5 (junction 22)/A38 Bristol Road/B3140 junction is predicted to exceed capacity during the AM peak period. The maximum RFC value forecast is 1.15 on the B3140 during the AM peak period.

Queues

12.4.27 The 2018 plus development capacity assessment indicates that there are significant queues forecast on the B3140 during the AM peak of 70 vehicles. Queuing on the M5 slip roads is predicted to reach 11 vehicles during the PM peak. These queues can be accommodated without causing blocking onto the M5 corridor.

Junction 10 – A38 Bristol Road/Harp Road/Brent Street

12.4.28 **Table 12.109** below provides the 2018 Baseline capacity assessment results for the A38 Bristol Road/Harp Road/Brent Street junction.

Table 12.109 Junction 10 – A38 Bristol Road/Harp Road/Brent Street

Arm		AM Dev 2018			PM Dev 2018		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Harp Road	A38 (N), A38 (S) & Brent Street	1.11	20.01	0.53	0.89	20.44	0.48
A38 (N)	Harp Road, A38 (S) & Brent Street	0.00	0.00	0.00	0.00	0.00	0.00
Brent Street	A38 (N) & Harp Road	0.57	31.37	0.37	1.38	85.52	0.61
Brent Street	Harp Road & A38 (S)	3.46	176.96	0.86	4.17	383.07	1.06
A38 (S)	A38 (N), Harp Road & Brent Street	0.22	10.11	0.18	0.65	16.52	0.40

Capacity

12.4.29 The 2018 plus development capacity assessment results indicate that the A38 Bristol Road/Harp Road/Brent Street junction is forecast to exceed capacity during the AM and PM peak period. The highest RFC value forecast at the junction is 1.06 which is shown on the Brent Street arm of the junction during the PM peak period.

Queues

12.4.30 The 2018 plus development capacity assessment indicates a maximum forecast queue of 5 vehicles on Brent Street during the PM peak period. This can be accommodated on Brent Street.

Junction 11 – A38 Bristol Road/Bridgwater Road

12.4.31 **Table 12.110** below provides the 2018 plus development capacity assessment results for the A38 Bristol Road/Bridgwater Road junction.

Table 12.110 Junction 11 – A38 Bristol Road/Bridgwater Road

Arm	AM Dev 2018			PM Dev 2018		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
A38 Bristol Road north	1.09	4.15	0.48	1.06	4.03	0.49
A38 Bristol Road south	1.33	3.18	0.54	1.01	2.68	0.48
Bridgewater Road	0.87	4.60	0.45	0.90	4.39	0.47

Capacity

12.4.32 The 2018 plus development capacity assessment results indicate that there are no forecast capacity issues associated with the A38 Bristol Road/Bridgewater Road junction. The junction results illustrate that significant residual capacity would be available.

Queues

12.4.33 The 2018 plus development capacity assessment indicates that there are no issues forecast as a result of queuing on any arms of the junction.

Junction 12 – A39 Bristol Road/Rooksbridge Road

12.4.34 **Table 12.111** below provides the 2018 plus development assessment results for the A39 Bristol Road/Rooksbridge Road junction.

Table 12.111 Junction 14 – A39 Bristol Road/Rooksbridge Road

Arm	AM Dev 2016			PM Dev 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Pill Road	0.03	12.50	0.03	0.03	12.44	0.03
A38 Bristol Road east	2.17	6.04	0.42	0.80	4.71	0.21
Rooksbridge Road	0.28	12.52	0.22	0.34	12.47	0.25
A38 Bristol Road west	0.02	4.29	0.02	0.01	4.25	0.01

Capacity

12.4.35 The 2018 plus development capacity assessment results indicate that there are no capacity issues forecast at the A39 Bristol Road/Rooksbridge Road junction. The junction results illustrate that significant residual capacity would be available

Queues

12.4.36 The 2016 future baseline capacity assessment indicates that highest queue predicted is 3 vehicles on the A38 Bristol Road east during the AM peak period. This can be safely accommodated on this link.

Junction 13 – Dunball Roundabout (Existing Layout)

12.4.37 **Table 12.112** below provides the 2016 future baseline capacity assessment results for the Dunball Roundabout junction.

Table 12.112 Junction 13 – Dunball Roundabout

Arm	AM Dev 2016			PM Dev 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
A39	0.46	3.22	0.29	0.42	2.68	0.28
A38 Bristol Road south	1.17	3.24	0.52	3.18	6.13	0.76
Industrial Estate	0.00	0.00	0.00	0.00	0.00	0.00
A38 Bristol Road north	17.04	41.14	0.96	2.04	7.03	0.66

Capacity

12.4.38 The 2016 plus development capacity assessment results indicate that there are capacity issues associated with the Dunball Roundabout junction and that there is minimal residual capacity available. The highest RFC value predicted at the junction is 0.96 on the A38 Bristol Road north during the PM peak period which is higher than the maximum practical RFC of 0.85.

Queues

12.4.39 The 2016 plus development capacity assessment indicates that highest queue predicted is 18 vehicles on the A38 Bristol Road north during the AM peak period.

Junction 13 – Dunball Roundabout (HPC DCO Layout)

12.4.40 **Table 12.113** below provides the 2016 future baseline capacity assessment results for the Dunball Roundabout junction.

Table 12.113 Junction 13 – Dunball Roundabout (HPC DCO Layout)

Arm	AM Dev 2016			PM Dev 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
A39	0.46	3.22	0.29	0.42	2.69	0.28
A38 Bristol Road south	0.97	2.94	0.47	3.18	6.14	0.76
Industrial Estate	0.00	0.00	0.00	0.00	0.00	0.00
A38 Bristol Road north	16.97	40.98	0.96	2.04	7.03	0.66

Capacity

12.4.41 The 2016 plus development capacity assessment results indicate that there are capacity issues forecast with the Dunball Roundabout (HPC DCO Layout) junction and that there is minimal residual capacity available. The highest RFC value predicted at

the junction is 0.96 on the A38 Bristol Road north during the PM peak period which is above the maximum practical RFC of 0.85.

Queues

12.4.42 The 2016 plus development capacity assessment indicates that highest queue predicted is 17 vehicles on the A38 Bristol Road north during the AM peak period.

Junction 14 – Bristol Road/The Drove (Existing Layout)

12.4.43 **Table 12.114** below provides the 2016 plus development capacity assessment results for the Bristol Road/The Drove junction.

Table 12.114 Junction 14 – Bristol Road/The Drove

Item	Lane Description	AM Dev 2016			PM Dev 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
J1: The Drove/Bristol Road Signals							
1/1+1/2	A38 Ahead Right	76 : 76%	12	6	96 : 96%	21	14
2/1	Bristol Road Left Ahead	76%	16	6	85%	20	8
3/1+3/2	The Drove Right Left	66 : 74%	10	6	93 : 93%	20	12
J2: Union Street							
4/1	Union Street Left	5%	0	0	4%	0	0
6/1	A38 (S) Ahead Right	37%	0	0	41%	0	0

Capacity

12.4.44 The 2016 future baseline capacity assessment results indicate that there are capacity issues associated with the Bristol Road/The Drove junction that there is minimal residual capacity available. The highest DoS value predicted at the junction is 96% on the A38 during the PM peak period which is above the maximum practical DoS of 90%

Queues

12.4.45 The 2016 future baseline capacity assessment indicates that highest queue predicted is 21 PCUs on the A38 during the PM peak period.

Junction 14 – Bristol Road/The Drove (HPC DCO Layout)

12.4.46 **Table 12.115** below provides the 2016 plus development capacity assessment results for the Bristol Road/The Drove (HPC DCO Layout) junction.

Table 12.115 Junction 14 – Bristol Road/The Drove (HPC DCO Layout)

Item	Lane Description	AM Dev 2016			PM Dev 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
J1: The Drove/Bristol Road Signals							
1/1+1/2	A38 Ahead Right	76 : 76%	12	6	91 : 91%	18	10
2/1	Bristol Road Left Ahead	76%	16	6	89%	22	9
3/1+3/2	The Drove Right Left	66 : 74%	10	6	88 : 89%	18	10
J2: Union Street							
4/1	Union Street Left	5%	0	0	4%	0	0
6/1	A38 (S) Ahead Right	37%	0	0	41%	0	0

Capacity

12.4.47 The 2016 future baseline capacity assessment results indicate that there are capacity forecast at the Bristol Road/The Drove (HPC DCO Layout) junction. The highest DoS value predicted at the junction is 91% on the A38 during the PM peak period which is above the maximum practical DoS of 90%.

Queues

12.4.48 The 2016 future baseline capacity assessment indicates that highest queue predicted is 22 PCUs on Bristol Road during the PM peak period.

Junction 15 – Bristol Road/Wylds Road (Existing Layout)

12.4.49 **Table 12.116** below provides the 2016 plus development capacity assessment results for the M5 Junction 23 roundabout.

Table 12.116 Junction 15 – Bristol Road/Wylds Road

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Wylds Road	Bristol Road north	73.37	542.46	1.29	43.87	365.32	1.22
Bristol Road north	Wylds Road	27.40	385.41	1.57	2.52	31.92	0.72

Capacity

12.4.50 The 2016 plus development capacity assessment results indicate that the Bristol Road/Wylds Road junction is predicted to exceed capacity during both AM and PM peak periods. The 2016 plus development capacity assessment results indicate that in the AM peak period Bristol Road has a predicted maximum RFC value of 1.57.

Queues

12.4.51 The 2016 plus development capacity assessment indicates that significant queues are predicted to occur on Wylds Road during the AM peak period with a maximum queue of 74 vehicles. The PM peak predicts a maximum queue of 44 vehicles on Wylds Road.

Junction 15 – Bristol Road/Wylds Road (HPC DCO Layout)

12.4.52 **Table 12.117** below provides the 2016 plus development capacity assessment results for the M5 Junction 23 roundabout.

Table 12.117 Junction 15 – Bristol Road/Wylds Road (HPC DCO Layout)

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Wylds Road	Bristol Road north	52.09	328.46	1.18	26.79	221.13	1.10
Bristol Road north	Wylds Road	9.67	88.29	1.04	1.76	22.21	0.64

Capacity

12.4.53 The 2016 plus development capacity assessment results indicate that the Bristol Road/Wylds Road junction is predicted to operate over capacity during both AM and PM peak periods. The 2016 plus development capacity assessment results indicate that in the AM peak period Wylds Road has a predicted maximum RFC value of 1.18 and during the PM peak a predicted maximum of 1.10.

Queues

12.4.54 The 2016 plus development capacity assessment indicates that significant queues are predicted to occur on Wylds Road during the AM peak period with a maximum queue of 53 vehicles. The PM peak predicts a maximum queue of 27 vehicles on Wylds Road.

Junction 16 – Wylds Road/The Drove (Existing Layout)

12.4.55 **Table 12.118** below provides the 2016 plus development capacity assessment results for the Wylds Road/The Drove junction.

Table 12.118 Junction 14 – Wylds Road/The Drove

Item	Lane Description	AM Dev 2016			PM Dev 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1+1/2	Wylds Road Left Ahead Right	93.5 : 104.5	23	19.0	100.9 : 100.9	18	15.9
2/1	The Drove Left Ahead Right	57.4	12	3.4	72.7	16	5.0
3/1+3/2	E Quay Right Left Ahead	66.2 : 66.2	8	3.7	111.7 : 111.7	48	40.4
4/1	Western Way Ahead Right Left	104.0 : 104.0	64	40.5	113.1 : 113.1	109	86.9

Capacity

12.4.56 The 2016 plus development capacity assessment results indicate that Bristol Road/The Drove junction is operating above the desirable maximum level of DoS. The highest DoS value predicted at the junction is 113.1% on Western Way Ahead Right Left during the PM peak period.

Queues

12.4.57 The 2016 plus development capacity assessment indicates a maximum queue of 109 PCUs on Western Way Ahead Right Left during the PM peak period.

Junction 16 – Wylds Road/The Drove (HPC DCO Layout)

12.4.58 **Table 12.119** below provides the 2016 plus development capacity assessment results for the Wylds Road/The Drove.

Table 12.119 Junction 16 – Wylds Road/The Drove

Item	Lane Description	AM Dev 2016			PM Dev 2016		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	The Drove Ahead Right Left	64	13	4	78	18	6
2/2+2 /1	East Quay Left Ahead Right	87 : 87	10	6	128 : 128	89	79
3/1	Western Road Left	19	3	1	18	3	1
3/2+3 /3	Western Road Left Right Ahead	103 : 103	50	33	109 : 125	100	83
4/1+4 /2	Wylds Road Right Ahead Left	74 : 99	9	7	85 : 85	11	7
9/2+9 /1	Left Ahead	88 : 88	28	10	92 : 9	33	13

Capacity

12.4.59 The 2016 future baseline capacity assessment results indicate that the Wylds Road/The Drove junction is predicted to operate over capacity during both AM and PM peak periods. The 2016 future baseline capacity assessment results indicate a predicted maximum DoS value of 103% during the AM peak on Western Road and a predicted maximum of 128% on East Quay during the PM peak period.

Queues

12.4.60 The 2016 future baseline capacity assessment indicates that significant queues are predicted to occur on Western Road during the AM peak period with a maximum queue of 50 vehicles. The PM peak predicts a maximum queue of 100 vehicles.

Junction 17 – Quantock Road/Hombery Way

12.4.61 **Table 12.120** below provides the 2016 plus development capacity assessment results for the Quantock Road/Hombery Way junction.

Table 12.120 Junction 17 – Quantock Road/Hombery Way

Arm	AM Dev 2016			PM Dev 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Quantock Road	1.02	5.62	0.49	1.57	6.86	0.60
A39	1.04	4.34	0.49	1.52	5.50	0.58
Quantock Meadow	0.05	5.75	0.05	0.03	6.95	0.03
Homeberg Way	1.33	5.34	0.56	0.75	3.94	0.41

Capacity

12.4.62 The 2016 plus development capacity assessment results indicate that there are no capacity issues forecast at the Quantock Road/Hombery Way junction. The junction results illustrate that significant residual capacity would be available.

12.4.63 ***Queues***

12.4.64 The 2016 plus development capacity assessment indicates that there are no forecast issues as a result of queuing on any arms of the junction.

Junction 18 – A39/Main Road

12.4.65 **Table 12.121** below provides the 2016 plus development capacity assessment results for the A39/Main Road junction.

Table 12.121 Junction 18 – A39/Main Road

Arm	AM Dev 2016			PM Dev 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Main Road south	0.94	3.82	0.46	0.96	3.82	0.47
A39	0.44	3.56	0.28	0.59	3.88	0.34
Main Road north	1.37	10.76	0.57	2.49	16.92	0.72

Capacity

12.4.66 The 2016 plus development forecast capacity assessment results indicate that there are no capacity issues associated with the A39/Main Road junction that there would be significant residual capacity available. The junction results illustrate that significant residual capacity would be available.

Queues

12.4.67 The 2016 plus development capacity forecast assessment indicates that there are no issues as a result of queuing on any arms of the junction. The maximum queue comprises 3 vehicles on Main Road north during the PM peak period.

Junction 19 – A39/High Street

12.4.68 **Table 12.122** below provides the 2016 plus development capacity assessment results for the A39/High Street junction.

Table 12.122 Junction 19 – A39/High Street

Arm	AM Dev 2016			PM Dev 2016		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
High Street	0.18	3.67	0.12	0.33	3.73	0.20
A39 south	0.44	3.69	0.27	0.49	3.78	0.30
A39 west	0.33	2.81	0.24	0.22	2.43	0.17

Capacity

12.4.69 The 2016 plus development capacity assessment results indicate that there are no capacity issues predicted at the A39/High Street junction. The junction results illustrate that significant residual capacity would be available.

Queues

12.4.70 The 2016 plus development capacity forecast assessment indicates that there are no issues as a result of queuing on any arms of the junction with minimal queues on all arms of the junction throughout both peak periods.

Junction 20 – High Street/Fore Street/Rodway

12.4.71 **Table 12.123** and **Table 12.124** below provides the 2016 plus development capacity assessment results for the High Street/Fore Street/Rodway, east and west respectively.

Table 12.123 High Street/Fore Street/Rodway (east)

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Rodway	High Street	0.88	11.21	0.46	1.85	15.99	0.65
Fore Street	Rodway	1.78	15.60	0.61	0.75	8.90	0.40

Table 12.124 High Street/Fore Street/Rodway (west)

Arm		AM Dev 2016			PM Dev 2016		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
High Street	Rodway south	0.75	12.74	0.38	0.52	14.92	0.21
Rodway north	High Street	0.79	9.14	0.30	5.21	21.83	0.77

Capacity

12.4.72 The 2016 plus development capacity assessment results indicate that there are no forecasted capacity issues associated with the High Street/Fore Street/Rodway junctions. The junction results illustrate that residual capacity would be available

Queues

12.4.73 The 2016 plus development capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with a maximum queue of 6 vehicles on Rodway north during the PM peak.

Junction 21 – M5 Junction 21

12.4.74 **Table 12.125** below provides the 2018 plus development capacity assessment results for the Wylds Road/The Drove.

Table 12.125 Junction 21 – M5 Junction 21

Item	Lane Description	AM Dev 2018			PM Dev 2018		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
J2: M5 Junction 21 (Controller 1)							
1/1	M5 N/B Off-slip Left	54%	6	3	67%	6	3
1/2	M5 N/B Off-slip Left Ahead	56%	7	3	70%	7	4
2/2	A370 (W) Ahead	92%	19	6	96%	24	8
5/1	South Circ Ahead	55%	10	1	75%	27	4
5/2	South Circ Ahead	54%	5	1	68%	9	2
5/3	South Circ Ahead Right	54%	5	1	67%	8	2
J2: M5 Junction 21 (Controller 2)							
1/1	North Circ Ahead	51%	10	3	76%	12	5
1/2	North Circ Ahead Right	55%	10	3	78%	13	5
2/1	M5 S/B Off-slip Left Ahead	24%	4	1	14%	2	1
2/2	M5 S/B Off-slip Ahead	62%	12	4	77%	20	5
2/3	M5 S/B Off-slip Ahead	68%	14	5	85%	25	7
4/1	East Circ Ahead	31%	8	3	24%	7	2
4/2	East Circ Right	57%	1	1	81%	4	3
4/3	East Circ Right	62%	1	1	88%	5	4
5/1	A370 Left	17%	2	1	34%	4	2
5/2	A370 Ahead	58%	10	4	80%	14	6

Capacity

12.4.75 The 2018 plus development capacity assessment results indicate that the M5 Junction 21 junction is predicted to exceed practical capacity during both AM and PM peak periods. The 2018 plus development capacity assessment results indicate a predicted maximum DoS value of 92% during the AM peak on the A370 (W) and a predicted maximum of 96% on the S370 (W) during the PM peak period.

Queues

12.4.76 The 2016 future baseline capacity assessment indicates that the maximum queues are predicted to occur on the south circulatory during the AM peak period with a maximum queue of 27 vehicles. Queues on the M5 slip roads peak at 25 on the southbound off slip but can safely be accommodated without blocking the M5 corridor.

Junction 22 – A370/Cowslip Lane

12.4.77 **Table 12.126** below provides the 2018 plus development capacity assessment results for the A370/Cowslip Lane.

Table 12.126 Junction 22 – A370/Cowslip Lane

Arm		AM Dev 2018			PM Dev 2018		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Cowslip Lane	A370 south	0.02	10.53	0.02	0.06	9.13	0.05
Cowslip Lane	A370 north	0.00	0.00	0.00	0.06	22.26	0.05
A370 south	Cowslip Lane	0.04	7.86	0.03	0.02	7.17	0.02

Capacity

12.4.78 The 2018 plus development capacity assessment results indicate that there are no capacity issues forecast at the A370/Cowslip Lane junction. The junction results illustrate that significant residual capacity would be available

Queues

12.4.79 The 2018 plus development capacity assessment indicates that there would be no issues as a result of queuing on any arms of the junction.

Junction 23 – A370/Maysgreen Lane

12.4.80 **Table 12.127** below provides the 2018 plus development capacity assessment results for the A370/Maysgreen Lane.

Table 12.127 Junction 23 – A370/Maysgreen Lane

Arm		AM Dev 2018			PM Dev 2018		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Maysgreen Lane	A370 south	0.00	0.00	0.00	0.00	0.00	0.00
Maysgreen Lane	A370 North	0.00	0.00	0.00	0.00	0.00	0.00
A370 south	Maysgreen Lane	0.00	0.00	0.00	0.01	8.76	0.01

Capacity

12.4.81 The 2018 plus development capacity assessment forecast results indicate that there would be no capacity issues associated with the A370/Maysgreen Lane. The junction results illustrate that significant residual capacity would be available

Queues

12.4.82 The 2018 plus development capacity assessment indicates that there are no predicted issues as a result of queuing on any arms of the junction.

Junction 24 – M5 Junction 20

12.4.83 **Table 12.128** below provides the 2019 plus development capacity assessment results for the M5 Junction 20.

Table 12.128 Junction 24 – M5 Junction 20

Arm	AM Dev 2019			PM Dev 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
M5 southbound off slip	0.78	4.04	0.42	3.15	10.82	0.76
M5 northbound off slip	2.42	7.50	0.70	1.60	7.31	0.61
Ettlingen Way	1.95	3.80	0.65	1.90	3.73	0.65

Capacity

12.4.84 The 2019 plus development capacity assessment results indicate that there are no capacity issues forecast at Junction 20 of the M5. The junction results illustrate that residual capacity would be available.

Queues

12.4.85 The 2019 plus development capacity assessment indicates that there would be no issues as a result of queuing on any arms of the junction. Queues on the M5 off slips can be accommodated on the existing off slips without blocking back onto the M5 corridor.

Junction 25 – M5 Junction 20/Central Way/Northern Way/Moor Lane

12.4.86 **Table 12.129** below provides the 2019 plus development capacity assessment results for the M5 Junction 20.

Table 12.129 Junction 25 – M5 Junction 20/Central Way/Northern Way/Moor Lane

Arm	AM Dev 2019			PM Dev 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
B3133	4.50	9.69	0.82	21.67	41.91	0.98
Central Way	13.49	38.62	0.95	3.52	11.70	0.78
Moor Lane	4.55	30.35	0.83	2.22	13.52	0.69
Northern Way	3.33	11.61	0.77	6.13	19.19	0.87

Capacity

12.4.87 The 2019 plus development capacity assessment results indicate that the forecast capacity on two of the arms will exceed the practical capacity threshold for existing junctions. The highest RFC value at the junction is 0.98 which is shown on the B3133 arm of the junction during the PM peak period. The results also indicate that the Central Way arm of the junction would have an RFC value of 0.95 during the AM peak period.

Queues

12.4.88 The 2019 plus development capacity assessment indicates that the highest number of queuing vehicles predicted would occur on the B3133 arm of the junction with a total of 22 vehicles queuing during the PM peak period.

Junction 26 – Central Way/Kenn Moore Drive

12.4.89 **Table 12.130** below provides the 2019 plus development capacity assessment results for the Central Way/Kenn Moore Drive.

Table 12.130 Junction 26 – Central Way/Kenn Moore Drive

Arm		AM Dev 2019			PM Dev 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Ken Moor Drive	Central Way south	0.07	6.90	0.07	0.04	7.46	0.04
Ken Moor Drive	Central Way north	0.82	16.94	0.45	0.41	16.08	0.29
Central way south	Ken Moor Drive	0.02	7.50	0.01	0.06	8.49	0.06

Capacity

12.4.90 The 2019 plus development capacity assessment results indicate that there are no capacity issues forecast at the Central Way/Kenn Moore Drive junction. The capacity assessment results indicate that there is significant residual capacity available.

Queues

12.4.91 The 2019 plus development capacity assessment indicates that there are no issues predicted as a result of queuing on any arms of the junction.

Junction 27 – Central Way/Tutton Way

12.4.92 **Table 12.131** below provides the 2019 plus development capacity assessment results for the A370/Maysgreen Lane.

Table 12.131 Junction 27 – Central Way/Tutton Way

Arm		AM Dev 2019			PM Dev 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Tutton Way	Central Way south	0.64	17.34	0.39	0.87	32.45	0.47
Central Way south	Tutton Way	0.13	8.98	0.11	0.18	10.59	0.15

Capacity

12.4.93 The 2019 plus development capacity assessment results indicate that there are no capacity issues predicted at the Central Way/Tutton Way junction. The junction results illustrate that significant residual capacity would be available.

Queues

12.4.94 The 2019 plus development capacity assessment indicates that there are no issues predicted as a result of queuing on any arms of the junction.

Junction 28 – Central Way/B3133/Southern Way

12.4.95 **Table 12.132** below provides the 2019 plus development capacity assessment results for the Central Way/B3133/Southern Way.

Table 12.132 Junction 27 – Central Way/Tutton Way

Arm	AM Dev 2019			PM Dev 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Central Way	2.68	10.35	0.72	11.34	37.69	0.94
B3133 south	1.15	5.70	0.53	5.48	20.59	0.85
Southern Way	4.65	17.04	0.83	2.57	12.82	0.72
B3133 north	37.78	152.89	1.07	11.08	57.77	0.95

Capacity

12.4.96 The 2019 plus development capacity assessment results indicate that the B3133 (north) is predicted to operate over capacity during the AM and PM peak periods. The highest RFC value predicted is 1.07 on the B3133 north during the AM peak.

Queues

12.4.97 The 2019 plus development capacity assessment indicates that the highest queue predicted is 38 vehicles on B3133 (north) during the AM peak period.

Junction 29 – B3133/Tutton Way

12.4.98 **Table 12.133** below provides the 2019 plus development capacity assessment results for the B3133/Tutton Way.

Table 12.133 Junction 29 – B3133/Tutton Way

Arm		AM Dev 2019			PM Dev 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Tutton Way	B3133 south	0.09	9.50	0.08	0.12	9.24	0.10
Tutton Way	B3133 north	0.29	22.09	0.23	0.36	34.41	0.26
B3133 south	Tutton Way	0.16	4.47	0.08	1.31	4.11	0.27

Capacity

12.4.99 The 2019 plus development capacity assessment results indicate that there are no capacity issues forecast for the B3133/Tutton Way junction. junction results illustrate that significant residual capacity would be available.

Queues

12.4.100 The 2019 plus development capacity assessment indicates that there are no forecast issues as a result of queuing on any arms of the junction.

Junction 30 – B3133/Davis Lane

12.4.101 **Table 12.134** below provides the 2019 plus development capacity assessment results for the B3133/Davis Way junction.

Table 12.134 Junction 30 – B3133/Davis Lane

Arm		AM Dev 2019			PM Dev 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Davis Lane	B3133 south	0.09	9.15	0.08	0.07	14.88	0.07
Davis Lane	B3133 north	0.33	23.92	0.24	1.98	68.00	0.69
B3133 south	Davis Lane	0.23	4.45	0.10	0.73	3.99	0.20

Capacity

12.4.102 The 2019 plus development capacity assessment results indicate that there are no capacity issues predicted at the B3133/Davis Way junction. The junction results illustrate that significant residual capacity would be available. ***Queues***

12.4.103 The 2019 plus development capacity assessment indicates that there are no issues predicted as a result of queuing on any arms of the junction.

Junction 31 – Northern Way/B3130 Tickenham Road

12.4.104 **Table 12.135** below provides the 2019 plus development capacity assessment results for the Northern Way/B3130 Tickenham Road junction.

Table 12.135 Junction 31 – Northern Way/B3130 Tickenham Road

Arm	AM Dev 2019			PM Dev 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Tickenham Road east	4.00	16.70	0.80	8.25	30.45	0.90
Northern Way	42.82	107.74	1.04	3.27	12.08	0.77
Tickenham Road west	16.71	66.51	0.98	3.41	16.18	0.78

Capacity

12.4.105 The 2019 plus development capacity assessment results forecast that the junction of Northern Way and the B3130 Tickenham Road would exceed capacity during the AM peak period. The highest RFC value forecast is 1.04 on Northern Way during the AM Peak period.

Queues

12.4.106 The 2019 plus development capacity assessment indicates that there is a highest predicted queue of 43 vehicles during the AM peak on Northern Way.

Junction 32 – B3128/Clevedon Road

12.4.107 **Table 12.136** below provides the 2019 plus development capacity assessment results for the B3128/Clevedon Road.

Table 12.136 Junction 32 – B3128/Clevedon Road

Arm		AM Dev 2019			PM Dev 2019		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
B3128	Clevedon Road east	3.57	81.37	0.84	8.97	222.81	1.05
B3128	Clevedon Road west	5.80	99.86	0.90	17.26	178.35	1.05
Clevedon Road east	B3128	5.00	26.55	0.78	1.68	8.96	0.50

Capacity

12.4.108 The 2019 plus development capacity assessment results forecast that in the PM peak period the B3128 to Clevedon Road (east and west) shows a RFC values of 1.05, whilst Clevedon Road (west) operates with a RFC of 1.05 also during the PM peak period. These results therefore forecast the junction to exceed capacity during the 2019 plus development scenario.

Queues

12.4.109 The 2019 plus development capacity assessment indicates the maximum predicted queue length is 18 vehicles on the B3128 to Clevedon Road (west) during the PM peak period.

Junction 33 – M5 Junction 19

12.4.110 **Table 12.137** below provides the 2019 future baseline capacity assessment results for the M5 Junction 19.

Table 12.137 Junction 33 – M5 Junction 19

Item	Lane Description (Controller 1)	AM Dev 2019			PM Dev 2019		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	M5 N/B Off-slip Left	48	4	2	49	3	1
1/2	M5 N/B Off-slip Left Ahead	49	4	2	49	3	1
1/3	M5 N/B Off-slip Ahead	46	8	2	34	5	1
2/1	The Portbury Hundred Left Ahead	71	13	5	58	7	3
2/2	The Portbury Hundred Ahead	73	14	5	60	8	3
2/3	The Portbury Hundred Ahead	54	9	3	92	17	10
3/1	Royal Portbury Dock Road Left Ahead	83	4	3	93	12	6
3/2	Royal Portbury Dock Road Ahead	24	1	0	48	2	1
7/1	South Circ Ahead	34	1	0	25	3	1
7/2	South Circ Ahead Right	75	19	3	82	12	3
7/3	South Circ Right	48	4	1	34	6	1
8/1	West Circ Ahead Right	76	17	5	19	3	1
8/2	West Circ Right	79	11	4	49	9	2
8/3	West Circ Right	41	1	1	30	1	1
Item	**Lane Description (Controller 2)**	**AM Dev 2019**			**PM Dev 2019**		
		DoS (%)	**MMQ (pcu)**	**Delay (pcuHr)**	**DoS (%)**	**MMQ (pcu)**	**Delay (pcuHr)**
1/1	North Circ Left	15	3	1	21	3	1
1/2	North Circ Ahead	85	20	7	94	24	10
1/3	North Circ Right	18	1	0	35	6	1
2/1	M5 S/B Off-slip U-Turn	8	0	0	5	0	0
2/2	M5 S/B Off-slip Ahead Left	86	21	8	92	27	11
2/3	M5 S/B Off-slip Ahead	66	13	4	8	22	8
3/1	East Circ Ahead	55	8	3	52	11	5
3/2	East Circ Right	68	2	1	86	3	3
3/3	East Circ Right	8	1	0	9	2	1
5/1	Service Station Exit Left	19	1	0	27	1	0
5/2	Service Station Exit Ahead	63	3	1	70	5	2
7/1	Martcombe Road Left	62	11	4	65	12	4
7/2	Martcombe Road Ahead	47	8	3	48	8	3
7/3	Martcombe Road Ahead	67	13	4	51	9	3

Capacity

12.4.111 The 2019 future baseline capacity assessment results indicate that Junction 19 of the M5 is predicted to operate close to capacity during the AM and PM peak periods. The maximum DoS value forecast is 94% for the north circulatory during the PM peak period which is above the practical capacity of 90%.

Queues

12.4.112 The 2019 future baseline capacity assessment results indicate that Junction 19 of the M5 experiences a maximum queue of 27 vehicles for the southbound off slip during the PM peak period. This queue could be accommodated on the slip road without blocking back onto the M5 corridor.

Junction 34 – Royal Portbury Dock Road/Gordano Way/Portbury Way

12.4.113 **Table 12.138** below provides the 2019 plus development capacity assessment results for the Royal Portbury Dock Road/Gordano Way/Portbury Way junction.

Table 12.138 Royal Portbury Dock Road/Gordano Way/Portbury Way

Arm	AM Dev 2019			PM Dev 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Gordano Way	0.11	2.63	0.09	0.20	2.85	0.16
Royal Portbury Dock Road south	0.46	2.52	0.29	0.15	2.35	0.10
Bradley Road	0.16	4.25	0.10	0.07	2.53	0.06
Portbury Way	0.05	2.97	0.03	0.07	2.17	0.06
Royal Portbury Dock Road north	0.13	4.11	0.07	0.20	3.07	0.15

Capacity

12.4.114 The 2019 plus development capacity assessment results predicts that there are no capacity issues associated with the Royal Portbury Dock Road/Gordano Way/Portbury Way junction. The junction results illustrate that significant residual capacity would be available. .

Queues

12.4.115 The 2019 plus development capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with minimal queues forecast on any arms of the junction.

Junction 35 – The Portbury Hundred/Station Road

12.4.116 **Table 12.139** below provides the 2019 plus development capacity assessment results for the Portbury Hundred/Station Road junction.

Table 12.139 The Portbury Hundred/Station Road

Arm	AM Dev 2019	PM Dev 2019

From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Station Road	The Portbury Hundred (E)	0.40	25.26	0.26	0.25	15.09	0.18
Station Road	The Portbury Hundred (W)	0.00	0.00	0.00	0.00	0.00	0.00
The Portbury Hundred (E)	The Portbury Hundred (W) & Station Road	0.30	18.38	0.22	0.17	11.56	0.13

Capacity

12.4.117 The 2019 plus development capacity assessment results indicate that there are no capacity issues predicted at the Portbury Hundred/Station Road junction. The junction results illustrate that significant residual capacity would be available.

Queues

12.4.118 The 2019 plus development capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with minimal queues predicted.

Junction 38 – Severn Road/Chittening Road

12.4.119 **Table 12.140** below provides the 2017 plus development capacity assessment results for the Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue junction.

Table 12.140 Severn Road/Chittening Road

Arm		AM Dev 2017			PM Dev 2017		
From	To	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Severn Road east	Chittening Road	0.34	9.26	0.20	0.15	7.29	0.11
Severn Road east	Severn Road north	0.44	14.09	0.28	0.32	13.60	0.24
Chittening Road	Severn Road east	0.44	11.84	0.25	0.83	12.29	0.40

Capacity

12.4.120 The 2017 plus development capacity assessment results indicate that there are no capacity issues predicted at the Severn Road/Chittening Road junction. The junction results illustrate that significant residual capacity would be available.

Queues

12.4.121 The 2017 plus development capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction, with minimal queues forecast on any arms of the junction.

Junction 39 – A403 Smoke Lane/Poplar Way West

12.4.122 **Table 12.141** below provides the 2017 plus development capacity assessment results for the A403 Smoke Lane/Poplar Way West junction.

Table 12.141 A403 Smoke Lane/Poplar Way West

Arm	AM Dev 2017			PM Dev 2017		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Smoke Lane	0.95	5.33	0.45	0.60	4.17	0.35
Poplar Way West	0.18	4.19	0.13	0.28	3.93	0.21
St Andrew's Road	0.77	4.12	0.40	0.66	3.97	0.36
Access	0.03	3.55	0.03	0.05	3.70	0.05

Capacity

12.4.123 The 2017 plus development capacity assessment results indicate that there are no capacity issues forecast at the A403 Smoke Lane/Poplar Way West junction. The junction results illustrate that significant residual capacity would be available.

Queues

12.4.124 The 2017 plus development capacity assessment indicates that there are no issues as a result of predicted queuing on any arms of the junction, with minimal queues on any arms of the junction.

Junction 40 – Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue

Table 12.142 below provides the 2017 plus development capacity assessment results for the Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue junction.

Table 12.142 Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue

Arm	AM Dev 2017			PM Dev 2017		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Poplar way east	0.13	3.46	0.08	0.30	3.26	0.22
Merebank Road	0.30	2.69	0.22	0.15	2.74	0.11
Poplar way west	0.16	2.56	0.13	0.14	2.41	0.11
Moorend Farm Avenue	0.04	3.13	0.03	0.09	2.55	0.08

Capacity

12.4.125 The 2017 plus development capacity assessment results indicate that there are no capacity issues forecast for the Poplar Way West/Poplar Way East/Merebank Road/Moorend Farm Avenue junction. The junction results illustrate that significant residual capacity would be available.

Queues

12.4.126 The 2017 plus development capacity assessment indicates that there are no predicted issues as a result of queuing on any arms of the junction, with only a single queuing vehicle present on any arm.

Junction 41 – A403 St. Andrew's Road/Kings Weston Lane

12.4.127 **Table 12.143** below provides the 2017 plus development capacity assessment results for the A403 St. Andrew's Road/Kings Weston Lane junction.

Table 12.143 A403 St. Andrew's Road/Kings Weston Lane

Item	Lane Description	AM Dev 2017			PM Dev 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	St Andrews Road (N) Left Ahead	93	21	11	98	29	16
2/1	Kings Weston Lane Left Right	89	12	7	100	29	18
3/1	St Andrews Road (S) Ahead	70	16	4	46	8	2
3/2	St Andrews Road (S) Right	93	18	10	92	10	7

Capacity

12.4.128 The 2017 plus development capacity assessment results indicate that junction is predicted to reach capacity during the PM peak period with a forecast DoS of 100% on Kings Weston Lane.

Queues

12.4.129 The 2017 plus development capacity assessment indicates a forecast peak queue of 29 PCUs on St. Andrews Road and Kings Weston Lane during the PM peak period.

Junction 42 – A403 St. Andrew's Road/St. George's Industrial Estate

12.4.130 **Table 12.144** below provides the 2017 capacity assessment results for the A403 St. Andrew's Road/St. George's Industrial Estate junction.

Table 12.144 A403 St. Andrew's Road/St. George's Industrial Estate

Item	Lane Description	AM Dev 2017			PM Dev 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	St Andrews Road (N) Left Ahead	83%	29	6	78%	25	5
1/2	St Andrews Road (N) Right	11%	1	0	19%	1	1
2/1	Distribution Centre Left	8%	0	0	6%	0	0
2/2	Distribution Centre Ahead Right	13%	1	0	9%	0	0
3/1	St Andrews Road (S) Left Ahead	67%	21	3	69%	23	3
3/2	St Andrews Road (S) Right	65%	4	2	22%	1	1
4/1	St Georges Industrial Estate Left	19%	1	0	10%	0	0
4/2	St Georges Industrial Estate Ahead Right	31%	2	1	13%	1	0

Capacity

12.4.131 The 2017 plus development capacity assessment results indicates that the A403 St. Andrew's Road/St. George's Industrial Estate junction is approaching capacity. The highest forecast DoS is 83% during the AM peak on St. Andrew's Road (N) Left Ahead.

Queues

12.4.132 The 2017 plus development capacity assessment indicates that a maximum queue of 29 PCUs is forecast on St. Andrew's Road (N) Left Ahead during the AM peak period.

Junction 43 – A403 St. Andrew's Road/King Road Avenue/Crowley Way

12.4.133 **Table 12.145** below provides the 2017 plus development capacity assessment results for the A403 St. Andrew's Road/King Road Avenue/Crowley Way junction.

Table 12.245 A403 St. Andrew's Road/King Road Avenue/Crowley Way

Item	Lane Description	AM Dev 2017			PM Dev 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	St Andrews Road (N) Left Ahead	37	6	1	58	11	3
1/1	A403 St. Andrew's Road Left	38	6	2	60	12	3
1/2	A403 St. Andrew's Road Left	10	2	0	6	1	0
1/3	A403 St. Andrew's Road Ahead	18	2	1	6	1	0
2/1	Crowley Way Left Ahead	64	14	4	28	5	1
2/2	Crowley Way Ahead	62	13	3	26	4	1
2/3	Crowley Way Ahead	62	5	3	55	3	2
3/1	McLaren Road Left Ahead	47	2	1	54	3	2
4/1	King Road Avenue Ahead Left	47	3	1	54	3	2
4/2	King Road Avenue Ahead	26	2	1	27	2	1
8/1	North Circ Ahead	13	0	0	18	0	0
8/2	North Circ Right	11	2	1	15	2	1
9/1	East Circ Ahead	9	2	1	1	0	0
9/2	East Circ Right	13	2	0	1	0	0
10/1	South Circ Ahead	48	2	1	21	1	0
10/2	South Circ Right	46	2	1	20	1	0
10/3	South Circ Right	23	1	0	8	0	0
11/1	West Circ Ahead	27	1	0	16	1	0
11/2	West Circ Ahead	44	2	1	22	1	0
11/3	West Circ Right Ahead	37	6	1	58	11	3

Capacity

12.4.134 The 2017 plus development capacity assessment results indicate that no capacity issues are forecast at the junction of the A403 St. Andrew's Road / King Road Avenue / Crowley Way . The junction results illustrate that significant residual capacity would be available.

Queues

12.4.135 The 2017 plus development capacity assessment indicates a maximum queue of 14 PCUs associated with the Crowley Way arm of the junction during the AM peak period.

Junction 44 – M5/A4/Avonmouth Way

12.4.136 **Table 12.146** below provides the 2017 plus development capacity assessment results for the M5/A4/Avonmouth Way roundabout.

Table 12.346 M5/A4/Avonmouth Way

Item	Lane Description	AM Dev 2017			PM Dev 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	Avonmouth Way Left	62	5	2	72	10	4
1/2	Avonmouth Way Ahead Left	64	5	3	74	11	5
1/3	Avonmouth Way Ahead	2	1	1	10	1	0
2/1	M5 Ahead Left	63	9	4	33	3	1
2/2	M5 Ahead	63	9	4	34	4	2
2/3	M5 Ahead	65	10	4	37	4	2
2/4	M5 Ahead	44	6	2	26	3	1
3/1	Bristow Broadway Left	54	7	3	27	2	1
3/2	Bristow Broadway Ahead Left	56	7	3	30	3	1
3/3	Bristow Broadway Ahead	65	9	4	72	8	4
4/1	Crowley Road Ahead Left	24	3	1	73	9	4
4/2	Crowley Road Ahead	28	4	1	75	10	5
4/3	Crowley Road Ahead	27	3	1	74	10	5
4/4	Crowley Road Ahead	32	4	2	63	8	4
4/5	Crowley Road Ahead	33	4	2	64	8	4
5/1	North Circ Ahead	7	0	0	31	1	1
5/2	North Circ Ahead	11	0	0	34	2	1
5/3	North Circ Ahead	17	1	0	36	2	1
5/4	North Circ Right	13	0	0	25	0	0
5/5	North Circ Right	14	0	0	26	0	0
6/1	East Circ Ahead	20	5	1	32	8	1
6/2	East Circ Right Ahead	25	6	1	36	9	1
6/3	East Circ Right	5	0	0	4	0	0
7/1	Ahead	29	1	0	11	0	0
7/2	Ahead	34	8	1	13	3	0
7/3	Right Ahead	40	8	1	18	3	0
7/4	Right	24	5	0	10	1	0
8/1	West Circ Ahead	49	2	1	20	0	0
8/2	West Circ Right Ahead	49	13	2	26	3	1
8/3	West Circ Right	8	0	0	7	0	0
9/1	W/B Exit Ahead	41	0	0	16	0	0
9/2	W/B Exit Ahead	43	0	0	18	0	0
9/3	W/B Exit Ahead	12	1	0	10	0	0

Capacity

12.4.137 The 2017 plus development capacity assessment results indicate that there are no capacity issues forecast for the M5/A4/Avonmouth Way roundabout with the junction results illustrating that residual capacity would be available.

Queues

12.4.138 The 2017 plus development capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with a maximum queue of 13 PCUs predicted on the West Circulatory Right Ahead movement during the AM peak.

Junction 45 – A4 Bristol Broadway/Avonmouth Road/Portway/M5

12.4.139 **Table 12.147** below provides the 2017 plus development capacity assessment results for the A4 Bristol Broadway/Avonmouth Road/Portway/M5 roundabout.

Table 12.147 A4 Bristol Broadway/Avonmouth Road/Portway/M5

Item	Lane Description	AM Dev 2017			PM Dev 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1	M5 Left	69	7	3	61	6	2
1/2	M5 Ahead	78	7	3	59	4	2
1/3	M5 Ahead	77	9	4	48	4	2
1/4	M5 Ahead	40	3	1	27	2	1
2/1	B4054 Left	10	1	0	6	0	0
2/2	B4054 Ahead	29	2	1	20	1	1
2/3	B4054 Ahead	66	6	3	57	5	2
3/1	Portway (S) Ahead	73	9	3	34	3	1
3/2	Portway (S) Ahead	37	4	1	58	6	2
3/3	Portway (S) Ahead	37	4	1	58	6	2
3/4	Portway (S) Ahead	20	2	1	26	2	1
4/1	Portway (N) U-Turn Left	55	4	2	82	10	5
4/2	Portway (N) Left	29	2	1	52	5	2
6/1	Ahead	57	5	1	54	1	1
6/2	Ahead	57	5	1	57	1	1
7/1	Ahead	36	2	1	20	2	1
7/2	Ahead	47	0	0	21	0	0
9/1	East Circ Ahead	69	6	3	67	6	3
9/2	East Circ Ahead	81	7	4	81	8	4
9/3	East Circ Right	23	1	0	15	0	0
10/1	South Circ Right	66	4	2	37	2	1
10/2	South Circ Right	66	2	1	48	1	1
11/1	West Circ Ahead	61	4	2	85	6	4
11/2	West Circ Ahead	61	4	2	85	6	4
11/3	West Circ Right	23	1	0	29	1	1
12/1	North Circ Ahead	51	4	2	75	7	3
12/2	North Circ Right	42	1	1	58	1	1
12/3	North Circ Right	33	1	0	72	2	2

Capacity

12.4.140 The 2017 plus development capacity assessment results indicate that there are no capacity issues forecast for the M5/A4/Avonmouth Way roundabout. The junction results illustrate that residual capacity would be available.

Queues

12.4.141 The 2017 plus development capacity assessment indicates that there are no issues as a result of queuing on any arms of the junction with a maximum queue of 10 PCUs predicted on Portway (North) for the U-turn and left movement during the PM peak. The forecast queues on the M5 peak at 9 PCUs which can be accommodated without blocking to mainline M5 corridor.

Junction 46 – A4 Portbury/West Town Road

12.4.142 **Table 12.148** below provides the 2017 plus development capacity assessment results for the A4 Portbury/West Town Road junction.

Table 12.148 A4 Portbury/West Town Road

Item	Lane Description	AM Dev 2017			PM Dev 2017		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/2+1/1	A4 Portway (E) Left Ahead	64 : 64%	12	3	48 : 48%	8	2
1/3	A4 Portway (E) Ahead	62%	12	3	47%	8	2
2/1	W Town Road Left	35%	3	1	60%	6	3
3/1	A4 Potway (W) Ahead	81%	2	2	79%	2	2
3/2	A4 Portway (W) Right	51%	4	2	10%	1	0
3/3	A4 Portway (W) Right	51%	4	2	10%	1	0

Capacity

12.4.143 The 2017 future baseline capacity assessment results indicate that there are no capacity issues associated with the A4 Portbury/West Town Road junction that there is residual capacity available.

Queues

12.4.144 The 2017 future baseline capacity assessment indicates a maximum forecast queue of 12 vehicles on the A4 Portway (E) arm of the junction for the Left and Ahead movements during the AM peak period.

Junction 49 – Clevedon Road/Stock Way North

12.4.145 **Table 12.149** below provides the 2019 plus development capacity assessment results for the Clevedon Road North junction.

Table 12.149 Clevedon Road/Stock Way North

Item	Lane Description	AM Dev 2019			PM Dev 2019		
		DoS (%)	MMQ (pcu)	Delay (pcuHr)	DoS (%)	MMQ (pcu)	Delay (pcuHr)
1/1+1 /2	Clevedon Road Left Right	70 : 70%	7	4	68 : 68%	5	4
2/1+2 /2	Stock Way (East) Ahead Right	58 : 58%	6	3	67 : 67%	7	4
3/1	Stock Way (West) Ahead Left	72%	8	4	49%	5	2

Capacity

12.4.146 The 2019 plus development capacity assessment results indicate that no capacity issues are forecast at the junction of Clevedon Road/Stock Way North. The junction results illustrate that residual capacity would be available.

Queues

12.4.147 The 2019 plus development capacity assessment indicates no forecast queuing issues at the junction of Clevedon Road/Stock Way North. The highest queue forecast is 8 PCUs on Stock Way (West) during the AM peak. This queue can be accommodated on Stock Way.

Junction 50 Stock Way North/Stock Way South

12.4.148 **Table 12.150** below provides the 2019 plus development capacity assessment results for the Stock Way North/Stock Way South junction.

Table 12.150 Stock Way North/Stock Way South

Arm	AM Dev 2019			PM Dev 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Stock Way North	0.88	10.03	0.45	1.52	12.00	0.60
Stock Way South	0.68	9.04	0.38	0.69	9.66	0.39
Silver Street	0.34	3.82	0.25	0.13	3.10	0.11

Capacity

12.4.149 The 2019 plus development capacity assessment results indicate that no capacity issues are forecast at the junction of Stock Way North/Stock Way South. The junction results illustrate that significant residual capacity would be available. ***Queues***

12.4.150 The 2019 plus development capacity assessment indicates a forecast maximum queue of 2 vehicles on Stock Way North during the PM peak period.

Junction 51 Stock Way/Mizzymead Road

12.4.151 **Table 12.151** below provides the 2019 plus development capacity assessment results for the Stock Way South/Mizzymead Road junction.

Table 12.151 Stock Way South/Mizzymead Road

Arm	AM Dev 2019			PM Dev 2019		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
Mizzymead Road North	0.23	4.80	0.18	1.17	8.62	0.54
Mizzymead Road South	2.10	12.45	0.67	1.07	8.77	0.51
Stock Way South	0.91	11.45	0.46	0.75	9.39	0.41

Capacity

12.4.152 The 2019 plus development capacity assessment results indicate that no capacity issues are forecast at the junction of Stock Way South/Mizzymead. The junction results illustrate that significant residual capacity would be available.

Queues

12.4.153 The 2019 plus development capacity assessment indicates a maximum forecast queue of 3 vehicles on Mizzymead Road South during the AM peak period. This queue can be accommodated on Mizzymead Road without blocking any local roads.

Summary

12.4.154 The results of the future design year modelling identify a total of 11 junctions which are predicted to operate at, or exceed their theoretical maximum RFC/DoS of 1.00/100%. These junctions are listed below:

- Junction 2 – A39/Puriton Hill;
- Junction 4 – Puriton Hill/Bath Road;
- Junction 6 – A39 Bath Road/Woolavington Hill;
- Junction 9 – M5 Junction 22/A38 Bristol Road/B3140;
- Junction 10 – Bristol Road/Harp Road;
- Junction 15 - Bristol Road/Wylds Road (Existing and HPC DCO Layout);
- Junction 16 – Wylds Road/The Drove (HPC DCO Layout);
- Junction 28 – Central Way/B3133 Southern Way;
- Junction 31 – Northern Way/Tickenham Road;
- Junction 32 – Clevedon Road/Tickenham Hill; and
- Junction 41 – A403 St. Andrew's Road/Kings Weston Lane.

12.4.155 The results of the future baseline modelling highlight a number of congestion points on the highway network which has been assessed. The first surrounds Junction 23 of the M5 corridor with the A38 and A39 corridors to the east and west of the M5 reaching capacity during their respective future design year scenarios.

12.4.156 The second area of congestion is at Junction 22 of the M5 where the slips roads join the A38 Bristol Road corridor. This junction is predicted to reach capacity during the 2016 assessment.

12.4.157 The third area of congestion includes junction at and surrounding Junction 20 of the M5 corridor. These junctions are predicted to exceed capacity during the 2019 future design year scenario.

12.4.158 The final junction predicted to exceed capacity during the future design year scenario is on the A403 St. Andrew's Road at the junction with Kings Weston Lane. This junction is located in Bristol, north of Junction 18 of the M5 corridor.

12.5 Sensitivity Testing

12.5.1 Three sensitivity tests have been undertaken as part of this assessment. The first assesses the potential for aggregate for the development to arrive from quarries located in the Mendips to the east of the development. The second reviews the impact the proposed SSE Seabank power station may have in regards to the volume of traffic using the local highway network to access the site during construction. The third provides a capacity assessment of the proposed A39 Access roundabout proposed as part of the Huntspill Energy Park infrastructure upgrades.

Mendip Quarry Sensitivity Tests

12.5.2 The potential for quarries to deliver stone to the development from the Mendip Hills is discussed in Section 7. The quarries identified as potentially being able to supply aggregate to the development are all located close to the SRN.

12.5.3 National Grid has indicated that up to 20% of aggregate deliveries could arrive from these quarries.

12.5.4 This would result in changes to a number of junction models. The overall volume of traffic travelling to the Proposed Development would remain the same, however, the directional flow and distribution would differ based on an alternative vehicle origin and destination.

12.5.5 Of the junctions modelled those in **Table 12.152** below have been revisited as part of the Mendip quarry sensitivity test.

Table 12.152 Mendip Quarry Sensitivity Test Locations

Junction	Junction Reference
A39 Bath Road/Woolavington Hill;	6
A39 Bath Road/Bawdrip Lane;	5
A39 Puriton Hill/Bath Road;	4
A39 Puriton Hill/Hillside;	3
A39/Puriton Hill;	2
M5 Junction 23;	1
A38 Bristol Road/Harp Road;	10
A38 Bristol Road/A370 Bridgwater Road;	11
A38/Rooksbridge Road;	12
M5 Junction 22/A38 Bristol Road/B3140;	9
A370/Cowslip Lane;	22

A370/Maysgreen Lane; and	23
M5 Junction 21.	21

Summary of Results

12.5.6 **Table 12.153** below provides a summary of the highest RFC value or DoS value forecast for each junction during the plus development assessment against the highest RFC or DoS value forecast during the Mendip Quarry Sensitivity test. These results represent the value for a single arm.

12.5.7 Full results of the sensitivity tests can be found in **Volume 5.22.2, Appendix 22I**.

Table 12.153 Mendip Quarry Sensitivity Test Summary Results

Junction Reference	Plus Development Peak RFC/DoS	Mendip Quarry Sensitivity Peak RFC/DoS
6	1.00	1.01
5	0.08	0.08
4	101%	102%
3	0.20	0.20
2	5.50	6.92
1	99%	98%
10	1.06	0.92
11	0.54	0.53
12	0.42	0.41
9	1.15	1.14
22	0.05	0.05
23	0.01	0.01
21	96%	96%

12.5.8 The above results summary indicates that as a result of the Mendip Quarry Sensitivity Tests, a total of three junctions are predicted to experience an increase in RFC or DoS value. The largest increase is demonstrated through Junction 2 with an increase from 5.50 to 6.92. However as this junction is already forecast to be significantly over capacity, it is not considered that this forecast increase is realistic due to the unreliability of the model once it exceeds a value of 1.0.

12.5.9 A total of five junctions are predicted to experience a drop in peak RFC or DoS as a result of the Mendip Quarry Sensitivity Test. The remaining five junctions are predicted to retain the existing highest RFC or DoS value. The largest increase in capacity is forecast at Junction 10 where the RFC value is forecast to drop from 1.06 to 0.92. This effectively takes the junction from exceeding capacity to operating within capacity.

12.5.10 The remaining five junctions are forecast to remain with the same peak RFC or DoS value as the plus development scenario.

Seabank Power Station Sensitivity Tests

12.5.11 Traffic generation and distribution has been provided by URS for the proposed Seabank power Station Development in Bristol, Avon.

12.5.12 As no application for a DCO has yet been made in respect of the Seabank Power Station the development has been assessed as a sensitivity test rather than a committed development.

12.5.13 The junctions in Table 12.154 below would be affected if the development were to go ahead.

Table 12.154 Seabank Sensitivity Test Locations

Junction	Junction Reference
A403 Chittening Road/Severn Road	38
A403 Smoke Lane/Poplar Way West	39
A403 St Andrews Road/King Western Lane	41
A403 St Andrews Road/St Georges Industrial Estate	42
A403 St Andrews Road/King Road Avenue/Crowley Way	43
M5 J18/A4/Avonmouth Way	44
Bristol Broadway / Avonmouth Road / Portway / M5	45
A4 Portway / West Town Road	46

Summary of Results

12.5.14 **Table 12.155** below provides a summary of the highest RFC value or DoS value forecast for each junction during the plus development assessment against the highest RFC or DoS value forecast during the Seabank power station Sensitivity test. These results represent the value for a single arm.

12.5.15 Full results of the sensitivity tests can be found in **Volume 5.22.2, Appendix 22I**.

Table 12.155 Seabank Sensitivity Test Summary Results

Junction Reference	Plus Development Peak RFC/DoS	Seabank Sensitivity Peak RFC/DoS
38	0.31	0.39
39	0.45	0.48
41	100%	100%
42	83%	85%
43	64%	65%
44	75%	76%
45	85%	85%
46	81%	82%

12.5.16 The above results demonstrate that all junctions assessed as part of the Seabank Sensitivity Test show a forecast decrease in capacity with the peak RFC or DoS figures increasing for all junctions.

12.5.17 Junctions 38, 39, 42, 43, 44 45 and 46 all remain within capacity during the Seabank Sensitivity Tests despite the increase in traffic flows resulting from the Seabank development.

12.5.18 Junction 41 is first forecast to exceed capacity during the 2017 future baseline assessment case and as a result, any increase in vehicle flows would likely exacerbate capacity problems at the junction.

A39 Access Roundabout Sensitivity Test

12.5.19 As part of the proposed Huntspill Energy Park development a number of infrastructure upgrades are proposed to the local highway network to serve the site and the potential traffic generation associated with it. As the A39 Access roundabout would form part of one of the approve construction routes, it has been agreed that this should be modelled to review the impact of the proposed development through the new roundabout.

12.5.20 The junction has been modelled using geometry and traffic flows from the TAR submitted with the planning application for the Huntspill Energy Park.

12.5.21 As the A39 Access roundabout is not currently in place, only two capacity assessment methodologies have been undertaken – Future Baseline and Future Baseline Plus Development.

12.5.22 The traffic flows extracted from the Huntspill Energy Park TAR represent 2018 traffic flows. The peak assessment year for the proposed development in that location is 2016. Therefore both the 2016 committed development traffic and the peak construction flows have been added to the 2018 flows in order to provide a robust assessment case.

12.5.23 **Table 12.156** below provide a summary of the 2018 Future Baseline model results.

Table 12.156 A39 Access roundabout

Arm	AM Base 2018			PM Base 2018		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
A39 Access	0.78	3.68	0.42	1.07	4.78	0.49
A39 Puriton Hill east	0.52	3.25	0.32	0.80	3.76	0.42
A39 Puriton Hill west	0.92	3.62	0.46	1.50	4.67	0.58
Puriton Hill	0.02	4.92	0.01	0.00	0.00	0.00

Capacity

12.5.24 The 2018 Future Baseline capacity assessment results indicate that there are no capacity issues predicted at the junction with a maximum RFC value of 0.58 predicted on the A39 Puriton Hill west arm of the junction.

Queues

12.5.25 The 2018 Future Baseline capacity assessment indicates a maximum queue of 2 vehicles on the A39 Puriton Hill west. This could be accommodated on the A39 Puriton Hill west arm without causing any blocking back to local junctions.

12.5.26 **Table 12.157** below provide a summary of the 2018 Future Baseline Plus Development model results.

Table 12.157 A39 Access roundabout

Arm	AM Dev 2018			PM Dev 2018		
	Queue (Vehs)	Delays (s)	RFC	Queue (Vehs)	Delays (s)	RFC
A39 Access	0.82	3.88	0.43	1.07	4.79	0.49
A39 Puriton Hill east	0.52	3.26	0.32	0.98	4.12	0.47
A39 Puriton Hill west	1.10	3.94	0.50	1.51	4.68	0.58
Puriton Hill	0.02	5.21	0.02	0.00	0.00	0.00

Capacity

12.5.27 The 2018 Future Baseline Plus Development capacity assessment results indicate that there are no capacity issues predicted at the junction with a maximum RFC value of 0.58 predicted on the A39 Puriton Hill west arm of the junction.

Queues

12.5.28 The 2018 Future Baseline Plus Development capacity assessment indicates a maximum queue of 2 vehicles on the A39 Puriton Hill west. This could be accommodated on the A39 Puriton Hill west arm without causing any blocking back to local junctions.

12.5.29 Full modelling outputs of the above junction can be found in **Volume 5.22.2, Appendix 22H.**