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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix TR-002-00006_Report 2

Traffic and transport

MA06: Hulseheath to Manchester Airport/
MA07: Davenport Green to Ardwick/
MA08: Manchester Piccadilly Station
Transport Assessment Part 2 - Report 2 of 3

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Department for Transport

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11.4.26 The operation of the key junctions that are likely to be directly affected by the Proposed Scheme or are on the main access routes from the strategic road network (SRN) through the study area to the construction sites, or are otherwise affected by the construction or operation of the scheme, have been assessed using the existing and future baseline traffic flows.

11.4.27 SATURN software has been used to calculate the existing capacity of the majority of priority-controlled junctions, roundabouts and signal-controlled junctions within the MA06, MA07 and MA08 areas. Where junctions are not included in the strategic models, Junctions 9 software has been used to calculate the existing capacity of priority-controlled junctions and roundabouts within the MA06, MA07 and MA08 areas and LinSig software has been used to calculate the existing capacity of signal-controlled junctions.

11.4.28 The results for the MA06, MA07 and MA08 areas are presented from south to north, firstly for junctions on the SRN, followed by junctions on other roads.

11.4.29 Where a junction will be affected by construction of the Proposed Scheme, future baseline results are included for 2030. Where a junction will be affected by the operation of the Proposed Scheme, which is primarily due to changes in traffic as a result of infrastructure changes or changes in demand associated with the Proposed Scheme, results are included for 2038 and 2046. Junctions affected by both construction and operation include results for all three assessment years.

MA06

M56 junction 6

Existing layout

11.4.30 The M56 junction 6/A538 Wilmslow Road/Runger Lane/Hale Road network incorporates a signal controlled roundabout on the eastern side of the junction and a priority-controlled (give way) roundabout on the western side of the junction. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using LinSig software. A summary of performance for the main approaches is show in Table 11-17, while the results for each lane of the western and eastern sides of the junction are included in Table 11-18 and Table 11-19.

Table 11-17: 2017 baseline performance of key approaches at M56 junction 6

Junction	Approach	Total flow, PCU*/hr	Max DoS**	Total queue, PCU
		2017 AM peak hour (08:00–09:00) baseline results		
West	A538 Hale Road	976	96%	17
	Hotel Access	81	16%	0
	A538 Wilmslow Road	1,489	87%	31
	M56 off-slip	1,049	82%	13
East	Runger Lane	484	45%	11
	A538 Wilmslow Road (east)	1,091	84%	24
	M56 off-slip	1,306	76%	26
	A538 Wilmslow Road (west)	1,424	77%	33
		2017 PM peak hour (17:00–18:00) baseline results		
West	A538 Hale Road	845	78%	4
	Hotel Access	160	28%	0
	A538 Wilmslow Road	1,322	80%	18
	M56 off-slip	876	70%	7
East	Runger Lane	770	72%	20
	A538 Wilmslow Road (east)	1,111	68%	20
	M56 off-slip	1,208	67%	23
	A538 Wilmslow Road (west)	1,403	75%	32

**PCU = Passenger Car Flows*

***DoS = Degree of Saturation*

11.4.31 The western junction operates close to capacity in the 2017 baseline with a maximum DoS of 96% on the A538 Hale Road approach in the AM peak hour with an associated queue length of 17 PCU. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2017 baseline with a maximum DoS of 78% on the A538 Hale Road approach with an associated queue length of four PCU.

11.4.32 The eastern junction operates within capacity in the 2017 baseline with a maximum DoS of 84% on the A538 Wilmslow Road (east) approach in the AM peak hour with an associated queue length of 24 PCU. In the PM peak hour, the maximum DoS of 75% is on the A538 Wilmslow Road (west) approach with an associated queue length of 32 PCU.

Table 11-18: 2017 baseline performance at M56 junction 6 (west)

Approach	Flow, PCU/hr	DoS	Queue, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A538 Hale Road (left and ahead)	976	96%	17
Hotel Access (left and ahead)	81	16%	0
A538 Wilmslow Road (nearside) (left and ahead)	866	87%	23
A538 Wilmslow Road (offside) (ahead)	623	62%	8
M56 off-slip (nearside) (left and ahead)	580	66%	4

Approach	Flow, PCU/hr	DoS	Queue, PCU
M56 off-slip (offside) (ahead)	469	82%	9
	2017 PM peak hour (17:00–18:00) baseline results		
A538 Hale Road (left and ahead)	845	78%	4
Hotel Access (left and ahead)	160	28%	0
A538 Wilmslow Road (nearside) (left and ahead)	847	80%	14
A538 Wilmslow Road (offside) (ahead)	475	45%	4
M56 off-slip (nearside) (left and ahead)	508	70%	5
M56 off-slip (offside) (ahead)	368	51%	2

Table 11-19: 2017 baseline performance at M56 junction 6 (east)

Approach	Flow, PCU/hr	DoS	Queue, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Runger Lane (nearside) (ahead and left)	233	41%	5
Runger Lane (offside) (ahead)	251	45%	5
A538 Wilmslow Road (east) (nearside and centre 1) (left and ahead)	423	55%	7
A538 Wilmslow Road (east) (centre 2) (through, ahead)	608	84%	16
A538 Wilmslow Road (east) (offside) (through, ahead)	60	8%	1
M56 off-slip (nearside) (left)	209	26%	3
M56 off-slip (centre) (ahead and left)	624	76%	14
M56 off-slip (offside) (ahead)	473	58%	9
A538 Wilmslow road (west) (nearside) (left and ahead)	528	77%	13
A538 Wilmslow road (west) (offside) (ahead)	184	28%	4
A538 Wilmslow road (west) (nearside) (through, ahead)	242	35%	5
A538 Wilmslow road (west) (offside) (through, ahead)	470	68%	11
A538 Wilmslow Road eastbound internal link (nearside) (ahead)	513	50%	7
A538 Wilmslow Road eastbound internal link (offside) (ahead)	672	65%	7
A538 Wilmslow Road westbound internal link (nearside and centre) (ahead)	672	77%	3
A538 Wilmslow Road westbound internal link (offside) (ahead)	239	28%	6
	2017 PM peak hour (17:00–18:00) baseline results		
Runger Lane (nearside) (ahead and left)	414	72%	11
Runger Lane (offside) (ahead)	356	64%	9
A538 Wilmslow Road (east) (nearside and centre 1) (left and ahead)	571	68%	10
A538 Wilmslow Road (east) (centre 2) (through, ahead)	367	48%	7
A538 Wilmslow Road (east) (offside) (through, ahead)	173	22%	3
M56 off-slip (nearside) (left)	347	45%	6
M56 off-slip (centre) (ahead and left)	343	44%	6
M56 off-slip (offside) (ahead)	518	67%	11

Approach	Flow, PCU/hr	DoS	Queue, PCU
A538 Wilmslow road (west) (nearside) (left and ahead)	551	75%	13
A538 Wilmslow road (west) (offside) (ahead)	85	12%	2
A538 Wilmslow road (west) (nearside) (through, ahead)	326	44%	7
A538 Wilmslow road (west) (offside) (through, ahead)	441	60%	10
A538 Wilmslow Road eastbound internal link (nearside) (ahead)	598	58%	13
A538 Wilmslow Road eastbound internal link (offside) (ahead)	687	66%	8
A538 Wilmslow Road westbound internal link (nearside and centre) (ahead)	500	55%	11
A538 Wilmslow Road westbound internal link (offside) (ahead)	230	26%	4

Manchester Airport Rainbow Works

11.4.33 As part of the Manchester Airport Rainbow Works scheme, which is due to open in 2025, the existing junction will be upgraded, this element of the upgrade is known as the Blue Works. The M56 junction 6 (east)/A538 Wilmslow Road/Runger Lane junction will be upgraded from a signal controlled roundabout to a signal controlled crossroads with additional lanes on all approaches. The A538 Wilmslow Road between the western and eastern sides of the M56 junction 6 will be modified from two lanes in each direction to three lanes in each direction. These changes have been accounted for in the future baseline.

11.4.34 The M56 junction 6 (west)/A538 Wilmslow Road/A538 Hale Road junction will be upgraded from a priority-controlled roundabout to a signal controlled crossroads with additional lanes on all approaches, apart from the Hotel Access.

11.4.35 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-20. This summarises performance for the main approaches, while the results for each lane of the western and eastern parts of the junction are included in Table 11-21 and Table 11-22. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-20: Future baseline performance of key approaches at M56 junction 6

Junction/approach		Total flow, PCU/hr	Max DoS	Total queue, PCU	Total flow, PCU/hr	Max DoS	Total queue, PCU	Total flow, PCU/hr	Max DoS	Total queue, PCU
		2030 AM peak hour (08:00–09:00)			2038 AM peak hour (08:00–09:00)			2038 AM peak hour (08:00–09:00)		
West	A538 Hale Road	1,214	90%	30	1,394	108%	95	1,635	147%	255
	Hotel Access	74	83%	6	73	92%	7	74	94%	7
	A538 Wilmslow Road	1,062	64%	22	1,120	56%	24	1,192	59%	25
	M56 off-slip	894	89%	20	1,078	105%	44	1,142	142%	155
East	Runger Lane	1,530	69%	14	1,174	65%	11	1,150	65%	12
	A538 Wilmslow Road (east)	1,057	93%	26	1,088	100%	37	1,179	102%	44
	M56 off-slip	1,483	88%	25	1,735	98%	45	1,825	99%	55
	A538 Wilmslow Road (west)	1,437	82%	34	1,744	94%	50	2,085	95%	57
		2030 PM peak hour (17:00–18:00)			2038 PM peak hour (17:00–18:00)			2046 PM peak hour (17:00–18:00)		
West	A538 Hale Road	922	80%	19	978	82%	18	991	93%	26
	Hotel Access	148	71%	8	149	83%	10	147	87%	10
	A538 Wilmslow Road	1,119	67%	18	1,264	72%	20	1,554	90%	29
	M56 off-slip	776	81%	17	850	78%	19	1,042	92%	26
East	Runger Lane	1,784	92%	24	2,150	103%	42	2,846	108%	70
	A538 Wilmslow Road (east)	1,260	94%	28	1,275	104%	55	1,322	128%	166
	M56 off-slip	1,190	89%	22	1,397	100%	42	1,485	99%	49
	A538 Wilmslow Road (west)	1,013	85%	26	1,166	96%	37	1,437	91%	42

11.4.36 In the 2030 future baseline, the assessment shows that the western junction operates close to capacity in the AM peak hour with a maximum DoS of 90% on the A538 Hale Road approach with an associated queue length of 30 PCU. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2030 future baseline with a maximum DoS of 81% on the M56 off-slip approach with an associated queue length of 17 PCU.

11.4.37 In the 2030 future baseline, the assessment shows that the eastern junction operates close to capacity in the AM peak hour with a maximum DoS of 93% on the A538 Wilmslow Road (east) approach with an associated queue length of 26 PCU. In the PM peak hour, the maximum DoS of 94% is on the A538 Wilmslow road (east) approach with a queue length of 28 PCU.

11.4.38 In the 2038 future baseline, the western junction operates over capacity in the AM peak hour with a maximum DoS of 108% on the A538 Hale Road with an associated queue length of 95 PCU. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2038 future baseline with a maximum DoS of 83% on the Hotel Access approach with an associated queue length of 10 PCU.

11.4.39 In the 2038 future baseline, the eastern junction operates over capacity in the AM peak hour with a maximum DoS of 100% on the A538 Wilmslow Road (east) approach with an associated queue length of 37 PCU. In the PM peak hour, the maximum DoS of 104% is on the A538 Wilmslow Road (east) approach with a queue length of 55 PCU.

11.4.40 In the 2046 future baseline, the western junction operates over capacity in the AM peak hour with a maximum DoS of 147% on the A538 Hale Road with an associated queue length of 255 PCU. In the PM peak hour, the assessment shows that the junction operates close to capacity in the 2046 future baseline with a maximum DoS of 93% on the A538 Hale Road approach with an associated queue length of 26 PCU.

11.4.41 In the 2046 future baseline, the eastern junction operates over capacity in the AM peak hour with a maximum DoS of 102% on the A538 Wilmslow Road (east) approach with an associated queue length of 44 PCU. In the PM peak hour, the maximum DoS of 128% is on the A538 Wilmslow Road (east) approach with a queue length of 166 PCU.

Table 11-21: Future baseline performance at M56 junction 6 (west)

Approach	Flow, PCU/ hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/ hr	DoS	Queue, PCU
	2030 AM peak hour (08:00–09:00)			2038 AM peak hour (08:00–09:00)			2046 AM peak hour (08:00–09:00)		
A538 Hale Road (nearside) (left)	18	5%	0	18	4%	0	11	2%	0
A538 Hale Road (centre 1 and 2) (ahead)	568	88%	13	732	108%	55	998	147%	217

Approach	Flow, PCU/ hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/ hr	DoS	Queue, PCU
A538 Hale Road (centre 3 and offside) (right)	628	90%	16	644	105%	39	626	106%	38
Hotel Access (left, ahead and right)	74	83%	6	73	92%	7	74	94%	7
A538 Wilmslow Road (nearside and centre 1) (left)	460	53%	12	516	53%	15	547	55%	15
A538 Wilmslow Road (centre 2 and 3) (ahead)	552	64%	8	549	56%	7	584	59%	8
A538 Wilmslow Road (offside) (right)	50	12%	1	55	16%	2	61	19%	2
M56 off-slip (left)	69	11%	0	112	18%	1	99	16%	1
M56 off-slip (nearside) (ahead and right)	447	89%	15	519	105%	36	698	142%	149
M56 off-slip (centre and offside) (right)	378	46%	5	447	64%	7	345	47%	5
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
A538 Hale Road (nearside) (left)	23	6%	1	25	7%	1	26	8%	1
A538 Hale Road (centre 1 and 2) (ahead)	301	54%	5	331	54%	4	411	77%	9
A538 Hale Road (centre 3 and offside) (right)	598	80%	13	622	82%	13	554	93%	17
Hotel Access (left, ahead and right)	148	71%	8	149	83%	10	147	87%	10
A538 Wilmslow Road (nearside and centre 1) (left)	511	61%	10	619	71%	10	788	84%	14
A538 Wilmslow Road (centre 2 and 3) (ahead)	564	67%	7	601	72%	9	720	90%	14
A538 Wilmslow Road (offside) (right)	44	9%	1	44	9%	1	46	14%	1
M56 off-slip (left)	104	17%	1	119	20%	1	127	22%	1
M56 off-slip (nearside) (ahead and right)	216	60%	7	282	76%	9	537	92%	19
M56 off-slip (centre and offside) (right)	456	81%	10	449	78%	9	378	48%	6

Table 11-22: Future baseline performance at M56 junction 6 (east)

Approach	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
Runger Lane (nearside and centre 1) (left and ahead)	465	69%	7	332	65%	5	282	65%	5
Runger Lane (centre 2) (ahead)	163	50%	4	162	50%	4	171	53%	5
Runger Lane (centre 3 and offside) (right)	137	36%	2	93	29%	2	122	37%	3
A538 Wilmslow Road (east) (right)	219	51%	5	246	50%	6	252	49%	6
A538 Wilmslow Road (east) (nearside and centre) (left and ahead)	636	93%	16	749	100 %	29	816	102 %	36
A538 Wilmslow Road (east) (offside) (ahead)	202	42%	5	93	17%	2	111	19%	2
M56 off-slip (nearside and centre 1) (left and ahead)	549	63%	8	738	92%	19	780	99%	28
M56 off-slip (centre 2) (ahead)	194	43%	5	241	58%	6	267	62%	7
M56 off-slip (centre 3 and offside) (right)	740	88%	12	756	98%	19	778	98%	20
A538 Wilmslow Road (west) left-turn slip to Runger Lane	247	28%	1	334	37%	2	461	39%	2
A538 Wilmslow Road (west) (nearside) (left)	249	61%	6	333	83%	10	459	93%	14
A538 Wilmslow Road (west) (centre 1) (left)	249	62%	6	333	85%	10	459	95%	15
A538 Wilmslow Road (west) (centre 2) (ahead)	273	82%	9	290	94%	12	298	95%	12
A538 Wilmslow Road (west) (centre 3) (ahead)	273	82%	9	290	94%	12	297	95%	12
A538 Wilmslow Road (west) (offside) (right)	146	43%	3	164	52%	4	111	34%	2
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
Runger Lane (nearside and centre 1) (left and ahead)	440	92%	12	537	103 %	27	639	108 %	46

Approach	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU
Runger Lane (centre 2) (ahead)	238	74%	7	296	78%	9	367	78%	11
Runger Lane (centre 3 and offside) (right)	214	54%	4	242	63%	5	417	87%	12
A538 Wilmslow Road (east) (right)	801	94%	17	915	104 %	47	1,016	128 %	159
A538 Wilmslow Road (east) (nearside and centre) (left and ahead)	212	39%	5	103	18%	2	126	27%	3
A538 Wilmslow Road (east) (offside) (ahead)	247	51%	6	257	51%	6	180	44%	4
M56 off-slip (nearside and centre 1) (left and ahead)	411	55%	7	604	92%	18	646	98%	26
M56 off-slip (centre 2) (ahead)	89	21%	2	107	29%	3	95	24%	2
M56 off-slip (centre 3 and offside) (right)	690	89%	13	686	100 %	21	744	99%	21
A538 Wilmslow Road (west) left-turn slip to Runger Lane	117	12%	0	165	17%	0	279	31%	1
A538 Wilmslow Road (west) (nearside) (left)	115	30%	2	165	46%	4	280	83%	9
A538 Wilmslow Road (west) (centre 1) (left)	115	30%	2	165	47%	4	280	85%	9
A538 Wilmslow Road (west) (centre 2) (ahead)	265	85%	9	265	96%	13	230	91%	10
A538 Wilmslow Road (west) (centre 3) (ahead)	264	85%	9	264	95%	12	231	91%	10
A538 Wilmslow Road (west) (offside) (right)	137	43%	3	142	50%	4	137	52%	4

Enterprise Way/Outwood Lane West/World Way

11.4.42 This junction is a four-arm priority controlled (give way) grade separated roundabout with no controlled pedestrian crossing facilities. Although the junction was upgraded in late 2017 as part of the Airport City Manchester infrastructure works, the revised layout is not included within the baseline strategic traffic model. The junction has therefore been modelled in the baseline based on its layout prior to the upgrade, when it comprised a three-arm priority controlled (give way) grade separated roundabout. The Enterprise Way approach did not exist at this time and so is not reported. The operation of the junction has been assessed for

the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-23.

Table 11-23: 2018 baseline performance at Enterprise Way/Outwood Lane West/World Way junction

Approach	Flow, PCU/hr	VoC*	Queue, PCU
2018 AM peak hour (08:00–09:00) baseline results			
Enterprise Way	-	-	-
Outwood Lane West	469	53%	1
World Way	474	24%	0
A555 Airport Spur eastbound off-slip	1,351	67%	0
2018 PM peak hour (17:00–18:00) baseline results			
Enterprise Way	-	-	-
Outwood Lane West	451	46%	0
World Way	535	27%	0
A555 Airport Spur eastbound off-slip	1,052	51%	0

**VoC = Volume over Capacity*

11.4.43 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.44 The future baseline takes account of the changes to the Enterprise Way/Outwood Lane West/World Way junction made as part of the Airport City Manchester infrastructure works. This includes the addition of a northern approach to the junction from Enterprise Way and changes to the Outwood Lane West approach so that it is no longer a through-route from the A555 Airport Spur and instead only serves as access to the Airport car parks. The Outwood Lane West approach is therefore a minor arm in the future baseline and is not included within the SATURN model.

11.4.45 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-24. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-24: Future baseline performance at Enterprise Way/Outwood Lane West/World Way junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
Enterprise Way	332	41%	0	478	50%	1	618	57%	1
Outwood Lane West	-	-	-	-	-	-	-	-	-
World Way	953	44%	0	1,100	57%	0	1,385	78%	1
A555 Airport Spur eastbound off-slip	1,861	108%	7	1,788	114%	8	1,452	118%	9

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 PM peak hour (17:00–18:00)			2038 PM peak hour (17:00–18:00)			2046 PM peak hour (17:00–18:00)		
Enterprise Way	616	100%	8	543	105%	8	522	118%	7
Outwood Lane West	-	-	-	-	-	-	-	-	-
World Way	997	61%	1	1,486	83%	2	1,783	95%	4
A555 Airport Spur eastbound off-slip	1,831	97%	2	1,788	104%	7	1,750	109%	8

11.4.46 In the 2030 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 108% on the A555 Airport Spur eastbound off-slip approach with an associated queue length of seven PCU. In the PM peak hour, the maximum VoC of 100% is on the Enterprise Way approach with a queue length of eight PCU.

11.4.47 In the 2038 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 114% on the A555 Airport Spur eastbound off-slip approach with an associated queue length of eight PCU. In the PM peak hour, the maximum VoC of 105% is on the Enterprise Way approach with a queue length of eight PCU.

11.4.48 In the 2046 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 118% on the A555 Airport Spur eastbound off-slip approach with an associated queue length of nine PCU. In the PM peak hour, the maximum VoC of 118% is on the Enterprise Way approach with a queue length of seven PCU.

A56 Dunham Road/A556/A556 Chester Road/A56 Lymm Road (Bowdon Roundabout)

11.4.49 The A56 Dunham Road/A556/A556 Chester Road/A56 Lymm Road junction comprises of two roundabouts. The A56 Dunham Road/A556/A556 Chester Road/A56 Lymm Road (Bowdon Roundabout) is a five-arm signal controlled roundabout with no controlled pedestrian crossing facilities. The M56 on-slip is a one-way exit arm from the junction and is therefore not included in the results. The M56/A556/A556/Yarwoodheath Lane junction is a four-arm signal controlled roundabout with controlled pedestrian crossing facilities, located to the south of the Bowdon Roundabout. The A556 westbound on-slip is a one-way exit arm from the junction and is therefore not included in the results. The operation of M56/A556/A556 junction is reported with Bowdon Roundabout as these two junctions operate as one. The operation of these two junctions has been assessed for the 2020 existing baseline AM and PM peak hours using LinSig software and is shown in Table 11-25.

Table 11-25: 2020 baseline performance at A56 Dunham Road/A556/A556 Chester Road/A56 Lymm Road (Bowdon Roundabout) junction

Approach	Flow, PCU/hr	DoS	Queue, PCU
	2020 AM peak hour (08:00–09:00) baseline results		
A56 Durham Road (nearside) (left and ahead)	628	55%	5

Approach	Flow, PCU/hr	DoS	Queue, PCU
A56 Durham Road (offside) (ahead and right)	643	56%	5
A556 (internal northbound) (nearside)	454	61%	1
A556 (internal northbound) (offside)	434	60%	1
A556 Chester Road (nearside and centre) (left and ahead)	599	59%	4
A556 Chester Road (offside) (ahead)	11	2%	0
A56 Lymm Road (left and ahead)	565	61%	3
A556 (internal southbound) (nearside)	511	65%	5
A556 (internal southbound) (offside)	512	65%	5
M56 westbound off-slip (nearside)	465	66%	6
M56 westbound off-slip (offside)	462	66%	6
Yarwoodheath Lane (left, ahead and right)	0	0%	0
	2020 PM peak hour (17:00–18:00) baseline results		
A56 Durham Road (nearside) (left and ahead)	837	67%	9
A56 Durham Road (offside) (ahead and right)	853	68%	9
A556 (internal northbound) (nearside)	429	54%	1
A556 (internal northbound) (offside)	487	63%	1
A556 Chester Road (nearside and centre) (left and ahead)	699	64%	5
A556 Chester Road (offside) (ahead)	18	3%	0
A56 Lymm Road (left and ahead)	341	42%	1
A556 (internal southbound) (nearside)	646	75%	9
A556 (internal southbound) (offside)	647	75%	9
M56 westbound off-slip (nearside)	498	73%	8
M56 westbound off-slip (offside)	495	73%	8
Yarwoodheath Lane (left, ahead and right)	7	1%	0

11.4.50 The assessment shows that in the AM peak hour this junction operates well within capacity in the 2020 baseline. In the PM peak hour, this junction operates within capacity in the 2020 baseline with a maximum DoS of 75% on the nearside and offside lanes of the A556 (internal southbound) approach to the southern roundabout with an associated queue length of nine PCU in each lane.

11.4.51 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-26. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-26: Future baseline performance at A56 Dunham Road/A556/A556 Chester Road/A56 Lymm Road (Bowdon Roundabout) junction

Approach	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
A56 Durham Road (nearside) (left and ahead)	673	59%	6	727	64%	7	776	68%	8
A56 Durham Road (offside) (ahead and right)	689	60%	6	737	64%	7	788	68%	8
A556 (internal northbound) (nearside)	452	61%	1	464	59%	1	512	65%	1
A556 (internal northbound) (offside)	432	60%	1	450	59%	1	496	65%	1
A556 Chester Road (nearside and centre) (left and ahead)	622	61%	4	607	65%	4	563	61%	4
A556 Chester Road (offside) (ahead)	12	2%	0	11	2%	0	11	2%	0
A56 Lymm Road (left and ahead)	588	67%	3	597	63%	3	596	64%	3
A556 (internal southbound) (nearside)	543	69%	7	597	72%	7	642	77%	9
A556 (internal southbound) (offside)	544	69%	7	602	73%	7	648	78%	9
M56 westbound off-slip (nearside)	463	66%	6	477	73%	7	528	80%	8
M56 westbound off-slip (offside)	461	66%	6	476	73%	7	528	81%	8
Yarwoodheath Lane (left, ahead and right)	0	0%	0	0	0%	0	0	0%	0
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
A56 Durham Road (nearside) (left and ahead)	876	71%	9	966	78%	11	1,016	82%	13
A56 Durham Road (offside) (ahead and right)	890	71%	9	977	78%	12	1,032	82%	13
A556 (internal northbound) (nearside)	449	57%	1	467	62%	1	489	65%	1
A556 (internal northbound) (offside)	508	66%	1	454	62%	1	475	65%	1
A556 Chester Road (nearside and centre) (left and ahead)	753	69%	6	768	66%	6	777	66%	6
A556 Chester Road (offside) (ahead)	22	4%	0	24	4%	0	24	4%	0

Approach	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU
A56 Lymm Road (left and ahead)	409	50%	2	445	53%	2	455	57%	2
A556 (internal southbound) (nearside)	658	76%	10	748	80%	11	781	84%	12
A556 (internal southbound) (offside)	662	77%	10	748	80%	11	781	84%	12
M56 westbound off-slip (nearside)	521	76%	8	502	83%	9	524	86%	10
M56 westbound off-slip (offside)	518	76%	8	499	82%	9	522	86%	10
Yarwoodheath Lane (left, ahead and right)	0	0%	0	0	0%	0	0	0%	0

11.4.52 In the 2030 future baseline, the assessment shows that this junction operates well within capacity in the AM peak hour. In the PM peak hour, the assessment shows this junction operates within capacity in the 2030 future baseline with a maximum DoS of 77% on the offside lane of the A556 (internal southbound) approach to the southern roundabout with a queue length of 10 PCU.

11.4.53 In the 2038 future baseline, the assessment shows that this junction operates well within capacity in the AM peak hour. In the PM peak hour, the assessment shows this junction operates within capacity in the 2038 future baseline with a maximum DoS of 83% on the nearside lane of the M56 westbound off-slip approach with a queue length of nine PCU.

11.4.54 In the 2046 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum DoS of 81% on the offside lane of the M56 westbound off-slip approach with an associated queue length of eight PCU. In the PM peak hour, the assessment shows this junction operates close to capacity in the 2046 future baseline with a maximum DoS of 86% on both the nearside and offside lanes of the M56 westbound off-slip approaches to the southern roundabout with a queue length of 10 PCU in each lane.

Enterprise Way/Thorley Lane/Bailey Lane

11.4.55 This junction network is comprised of two adjacent junctions. Enterprise Way/Thorley Lane is a three-arm signal controlled crossroads with signal controlled pedestrian crossing facilities. Enterprise Way/Bailey Lane is a three-arm priority controlled (give way) T-junction with no pedestrian crossing facilities. This junction was upgraded in 2017 to accommodate a new road, Enterprise Way, as part of the Airport City Manchester infrastructure works. The former arrangement comprised of a single junction at Thorley Lane/Bailey Lane. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-27.

Table 11-27: 2018 baseline performance at Enterprise Way/Thorley Lane/Bailey Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Bailey Lane	431	63%	2
Thorley Lane (east)	666	102%	3
Thorley Lane (west)	583	30%	0
	2018 PM peak hour (17:00–18:00) baseline results		
Bailey Lane	430	69%	3
Thorley Lane (east)	573	101%	3
Thorley Lane (west)	976	52%	0

11.4.56 In the AM peak hour, this junction operates over capacity in the 2018 baseline with a maximum VoC of 102% on the Thorley Lane (east) approach with an associated queue length of three PCU. In the PM peak hour, the maximum VoC of 101% is on the Thorley Lane (east) approach with a queue length of three PCU.

11.4.57 The former junction was upgraded in 2017 to accommodate a new road, Enterprise Way. The improvements altered the layout of the Thorley Lane/Bailey Lane junction to provide a three-arm signal controlled junction at Enterprise Way/Thorley Lane and a new two-arm priority controlled (give-way) junction at Enterprise Way/Bailey Lane. The assessment takes into account the completed changes in the future baseline.

11.4.58 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-28 and Table 11-29. As these junctions are only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-28: Future baseline performance at Enterprise Way/Thorley Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
Enterprise Way (north)	470	22%	3	629	30%	4
Enterprise Way (south)	1,061	44%	9	1,110	46%	10
Thorley Lane	767	91%	15	772	92%	16
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
Enterprise Way (north)	914	60%	11	1,179	75%	14
Enterprise Way (south)	630	49%	10	477	38%	8
Thorley Lane	784	33%	10	695	30%	9

Table 11-29: Future baseline performance at Enterprise Way/Bailey Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
Bailey Lane	247	119%	4	189	140%	4
Enterprise Way (south)	1,440	39%	0	1,562	41%	0
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
Bailey Lane	85	27%	0	107	28%	0
Enterprise Way (south)	1,196	33%	0	1,179	30%	0

11.4.59 In the 2038 future baseline, the assessment shows that Enterprise Way/Thorley Lane junction operates close to capacity with a maximum VoC of 91% on the Thorley Lane approach in the AM peak hour with an associated queue length of 15 PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity. The Enterprise Way/Bailey Lane junction operates over capacity in the 2038 future baseline with a maximum VoC of 119% on the Bailey Lane approach in the AM peak hour with an associated queue length of four PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity.

11.4.60 In the 2046 future baseline, the assessment shows that Enterprise Way/Thorley Lane junction operates close to capacity with a maximum VoC of 92% on the Thorley Lane approach in the AM peak hour with an associated queue length of 16 PCU. In the PM peak

hour, the assessment shows that this junction operates within capacity with a maximum VoC of 75% on the Enterprise Way (north) approach with an associated queue length of 14 PCU. The Enterprise Way/Bailey Lane junction operates over capacity in 2046 future baseline with a maximum VoC of 140% on the Bailey Lane approach in the AM peak hour with an associated queue length of four PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity.

B5086 Knutsford Road/B5085 Brook Lane/Russet Way/B5085 Knutsford Road

11.4.61 This junction is a four-arm priority controlled (give way) roundabout with no controlled pedestrian crossing facilities. The Russet Way approach is a minor arm that is not included within the SATURN model. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-30.

Table 11-30: 2018 baseline performance at B5086 Knutsford Road/B5085 Brook Lane/Russet Way/B5085 Knutsford Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
B5086 Knutsford Road (north)	60	6%	0
B5085 Brook Lane	733	72%	0
Russet Way	-	-	-
B5085 Knutsford Road (west)	227	32%	0
	2018 PM peak hour (17:00–18:00) baseline results		
B5086 Knutsford Road (north)	63	7%	0
B5085 Brook Lane	82	8%	0
Russet Way	-	-	-
B5085 Knutsford Road (west)	438	41%	0

11.4.62 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.63 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-31. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-31: Future baseline performance at B5086 Knutsford Road/B5085 Brook Lane/Russet Way/B5085 Knutsford Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
B5086 Knutsford Road (north)	185	18%	0	239	24%	0
B5085 Brook Lane	908	89%	0	997	98%	1
Russet Way	-	-	-	-	-	-

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
B5085 Knutsford Road (west)	250	43%	0	313	59%	1
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
B5086 Knutsford Road (north)	47	5%	0	88	10%	0
B5085 Brook Lane	113	11%	0	211	20%	0
Russet Way	-	-	-	-	-	-
B5085 Knutsford Road (west)	404	38%	0	451	45%	0

11.4.64 In the 2038 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 89% on the B5085 Brook Lane approach with no queue. In the PM peak hour, the junction operates well within capacity in the 2038 future baseline.

11.4.65 In the 2046 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 98% on the B5085 Brook Lane approach with an associated queue length of one PCU. In the PM peak hour, the junction operates well within capacity in the 2046 future baseline.

B5086 Alderley Road/B5086 Knutsford Road/Alderley Road/Alderley Lodge/Bedells Lane (B5086 Fulshaw Cross Roundabout)

11.4.66 This junction is a four-arm priority controlled (give way) roundabout with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-32.

Table 11-32: 2018 baseline performance at B5086 Alderley Road/B5086 Knutsford Road/Alderley Road/Alderley Lodge/Bedells Lane (B5086 Fulshaw Cross Roundabout) junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
B5086 Alderley Road	727	95%	6
Alderley Road	161	105%	5
B5086 Knutsford Road	661	67%	1
Bedells Lane	658	95%	5
	2018 PM peak hour (17:00–18:00) baseline results		
B5086 Alderley Road	685	63%	1
Alderley Road	576	92%	3
B5086 Knutsford Road	153	20%	0
Bedells Lane	612	55%	0

11.4.67 The assessment shows that this junction operates over capacity in the 2018 baseline with a maximum VoC of 105% on the Alderley Road approach in the AM peak hour with an associated queue length of five PCU. In the PM peak hour, the assessment shows that this

junction operates close to capacity in the 2018 baseline with a maximum VoC of 92% on the Alderley Road with an associated queue length of three PCU.

11.4.68 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-33. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-33: Future baseline performance at B5086 Alderley Road/B5086 Knutsford Road/Alderley Road/Alderley Lodge/Bedells Lane (B5086 Fulshaw Cross Roundabout) junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
B5086 Alderley Road	679	108%	8	724	105%	11	725	98%	8
Alderley Road	162	110%	5	155	111%	5	142	111%	5
B5086 Knutsford Road	706	66%	1	831	77%	1	966	88%	2
Bedells Lane	814	95%	5	678	101%	8	540	101%	8
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
B5086 Alderley Road	806	80%	2	829	83%	2	845	91%	3
Alderley Road	547	101%	9	523	103%	9	461	104%	8
B5086 Knutsford Road	118	15%	0	119	15%	0	205	24%	0
Bedells Lane	710	65%	1	728	66%	1	803	73%	1

11.4.69 In the 2030 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 110% on the Alderley Road approach with an associated queue length of five PCU. In the PM peak hour, the maximum VoC of 101% is on the Alderley Road approach with a queue length of nine PCU.

11.4.70 In the 2038 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 111% on the Alderley Road approach with an associated queue length of five PCU. In the PM peak hour, the maximum VoC of 103% is on the Alderley Road approach with a queue length of nine PCU.

11.4.71 In the 2046 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 111% on the Alderley Road approach with an associated queue length of five PCU. In the PM peak hour, the maximum VoC of 104% is on the Alderley Road approach with a queue length of eight PCU.

A538 Water Lane/A538 Alderley Road/B5086 Alderley Road

11.4.72 This junction is a three-arm signal controlled T-junction with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-34.

Table 11-34: 2018 baseline performance at A538 Water Lane/A538 Alderley Road/B5086 Alderley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A538 Alderley Road	1,233	74%	17
B5086 Alderley Road	748	57%	14
A538 Water Lane	367	50%	9
	2018 PM peak hour (17:00–18:00) baseline results		
A538 Alderley Road	1,084	77%	17
B5086 Alderley Road	578	47%	12
A538 Water Lane	429	45%	10

11.4.73 In the AM peak hour, the assessment shows that this junction operates well within capacity in the 2018 baseline. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2018 baseline with a maximum VoC of 77% on the A538 Alderley Road approach with an associated queue length of 17 PCU.

11.4.74 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-35. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-35: Future baseline performance at A538 Water Lane/A538 Alderley Road/B5086 Alderley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
A538 Alderley Road	1,194	76%	16	1,233	78%	17	1,233	77%	17
B5086 Alderley Road	613	46%	12	780	59%	15	883	67%	17
A538 Water Lane	375	51%	9	371	51%	9	371	51%	9
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
A538 Alderley Road	1,161	85%	18	1,184	87%	19	1,201	88%	19
B5086 Alderley Road	637	51%	13	639	51%	13	639	52%	13
A538 Water Lane	390	41%	9	421	44%	10	445	47%	10

11.4.75 In the 2030 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 76% on the A538 Alderley Road approach with an associated queue length of 16 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 85% on the A538 Alderley Road approach with an associated queue length of 18 PCU.

11.4.76 In the 2038 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 78% on the A538 Alderley Road approach with an associated queue length of 17 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2038 future baseline with a maximum VoC of 87% on the A538 Alderley Road approach with an associated queue length of 19 PCU.

11.4.77 In the 2046 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 77% on the A538 Alderley Road approach with an associated queue length of 17 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2046 future baseline with a maximum VoC of 88% on the A538 Alderley Road approach with an associated queue length of 19 PCU.

A538 Manchester Road/Station Road/A538 Alderley Road

11.4.78 This junction is a four-arm signal controlled junction with a left-turn priority controlled (give way) slip on the Station Road approach and controlled pedestrian crossing facilities on three-arms. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-36.

Table 11-36: 2018 baseline performance at A538 Manchester Road/Station Road/A538 Alderley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A538 Manchester Road	927	75%	15
Station Road	267	42%	5
Station Road (left slip)	259	106%	5
A538 Alderley Road	840	68%	12
Swan Street	83	17%	2
	2018 PM peak hour (17:00–18:00) baseline results		
A538 Manchester Road	796	63%	13
Station Road	6	1%	0
Station Road (left slip)	286	85%	2
A538 Alderley Road	1,006	73%	13
Swan Street	2	1%	0

11.4.79 In the 2018 baseline the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 106% on the Station Road (left slip) approach with an associated queue length of five PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 85% on the Station Road (left slip) approach with an associated queue length of two PCU.

11.4.80 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-37. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-37: 2030 future baseline performance at A538 Manchester Road/Station Road/A538 Alderley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A538 Manchester Road	883	79%	14
Station Road	2	0%	0
Station Road (left slip)	262	95%	4
A538 Alderley Road	972	77%	14
Swan Street	51	10%	1
	2030 PM peak hour (17:00–18:00)		
A538 Manchester Road	869	74%	14
Station Road	2	0%	0
Station Road (left slip)	291	96%	4
A538 Alderley Road	1,019	74%	13
Swan Street	2	1%	0

11.4.81 The assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 95% on the Station Road (left slip) approach in the AM peak hour with an associated queue length of four PCU. In the PM peak hour, the maximum VoC of 96% is on the Station Road (left slip) approach with a queue length of four PCU.

A34 MacLean Way/A34 Birrell Way/A538 Bollin Valley Link (A34 Bollin Valley Roundabout)

11.4.82 This junction is a three-arm priority controlled (give way) roundabout with no pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-38.

Table 11-38: 2018 baseline performance at A34 MacLean Way/A34 Birrell Way/A538 Bollin Valley Link (A34 Bollin Valley Roundabout) junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A34 MacLean Way	1,969	101%	8
A34 Birrell Way	686	62%	1
A538 Bollin Valley Link	925	38%	0

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 PM peak hour (17:00–18:00) baseline results		
A34 MacLean Way	1,661	87%	1
A34 Birrell Way	683	56%	1
A538 Bollin Valley Link	1,537	65%	0

11.4.83 In the AM peak hour, this junction operates over capacity in the 2018 baseline with a maximum VoC of 101% on the A34 MacLean Way approach with an associated queue length of eight PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 87% on the A34 MacLean Way approach with an associated queue length of one PCU.

11.4.84 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-39. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-39: Future baseline performance at A34 MacLean Way/A34 Birrell Way/A538 Bollin Valley Link (A34 Bollin Valley Roundabout) junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
A34 MacLean Way	2,114	101%	6	2,089	101%	7
A34 Birrell Way	1,242	94%	4	1,322	99%	8
A538 Bollin Valley Link	1,201	55%	0	1,285	59%	0
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
A34 MacLean Way	1,709	80%	0	1,780	86%	1
A34 Birrell Way	966	78%	1	1,035	89%	3
A538 Bollin Valley Link	1,556	75%	1	1,572	77%	1

11.4.85 In the 2038 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 101% on the A34 MacLean Way approach with an associated queue length of six PCU. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2038 future baseline with a maximum VoC of 80% on the A34 MacLean Way approach with no queue.

11.4.86 In the 2046 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 101% on the A34 MacLean Way approach with an associated queue length of seven PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2046 future baseline with a maximum VoC of 89% on the A34 Birrell Way approach with an associated queue length of three PCU.

A538 Altrincham Road/Mobberley Road

11.4.87 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-40.

Table 11-40: 2018 baseline performance at A538 Altrincham Road/Mobberley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A538 Altrincham Road (north)	902	46%	0
A538 Altrincham Road (south)	976	50%	0
Mobberley Road	369	96%	4
	2018 PM peak hour (17:00–18:00) baseline results		
A538 Altrincham Road (north)	1,001	53%	0
A538 Altrincham Road (south)	786	40%	0
Mobberley Road	246	68%	1

11.4.88 In the AM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 96% on the Mobberley Road approach with an associated queue length of four PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.89 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-41. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-41: Future baseline performance at A538 Altrincham Road/Mobberley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A538 Altrincham Road (north)	951	48%	0
A538 Altrincham Road (south)	810	41%	0
Mobberley Road	413	96%	3
	2030 PM peak hour (17:00–18:00)		
A538 Altrincham Road (north)	1,003	51%	0
A538 Altrincham Road (south)	693	35%	0
Mobberley Road	213	66%	1

11.4.90 In the 2030 future baseline the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 96% on the Mobberley Road approach with an associated queue length of three PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2030 future baseline.

Morley Green Road/Mobberley Road

11.4.91 This junction is a four-arm priority controlled (give way) crossroads junction with no controlled pedestrian crossing facilities. There is an unnamed approach used for access which is a minor arm that is not included within the SATURN model. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-42.

Table 11-42: 2018 baseline performance at Morley Green Road/Mobberley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Morley Green Road	243	60%	0
Mobberley Road (east)	59	3%	0
Unnamed road	-	-	-
Mobberley Road (west)	630	33%	0
	2018 PM peak hour (17:00–18:00) baseline results		
Morley Green Road	359	78%	1
Mobberley Road (east)	47	2%	0
Unnamed road	-	-	-
Mobberley Road (west)	629	33%	0

11.4.92 In the 2018 baseline the assessment shows that this junction operates well within capacity in the AM peak. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2018 baseline with a maximum VoC of 78% on the Morley Green Road approach with an associated queue length of one PCU.

11.4.93 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-43. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-43: Future baseline performance at Morley Green Road/Mobberley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
Morley Green Road	290	76%	1
Mobberley Road (east)	58	3%	0
Unnamed road	-	-	-
Mobberley Road (west)	723	37%	0
	2030 PM peak hour (17:00–18:00)		
Morley Green Road	417	86%	1
Mobberley Road (east)	24	1%	0
Unnamed road	-	-	-
Mobberley Road (west)	658	34%	0

11.4.94 In the 2030 future baseline the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 76% on the Morley Green Road approach with an associated queue length of one PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 86% on the Morley Green Road approach with an associated queue length of one PCU.

A538 Altrincham Road/Morley Green Road

11.4.95 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-44.

Table 11-44: 2018 baseline performance at A538 Altrincham Road/Morley Green Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A538 Altrincham Road (east)	1,240	63%	0
Morley Green Road	261	106%	5
A538 Altrincham Road (west)	1,151	52%	5
	2018 PM peak hour (17:00–18:00) baseline results		
A538 Altrincham Road (east)	927	47%	0
Morley Green Road	383	105%	5
A538 Altrincham Road (west)	1,375	59%	5

11.4.96 This junction operates over capacity in the 2018 baseline with a maximum VoC of 106% on the Morley Green Road approach in the AM peak hour with an associated queue length of five PCU. In the PM peak hour, the maximum VoC of 105% is on the Morley Green Road approach with a queue length of five PCU.

11.4.97 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-45. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-45: Future baseline performance at A538 Altrincham Road/Morley Green Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A538 Altrincham Road (east)	1,111	57%	0
Morley Green Road	310	105%	5
A538 Altrincham Road (west)	1,243	55%	5
	2030 PM peak hour (17:00–18:00)		
A538 Altrincham Road (east)	775	39%	0
Morley Green Road	444	105%	5
A538 Altrincham Road (west)	1,421	60%	5

11.4.98 This junction operates over capacity in the 2030 future baseline with a maximum VoC of 105% on the Morley Green Road approach in the AM peak hour with an associated queue length of five PCU. In the PM peak hour, the maximum VoC of 105% is on the Morley Green Road approach with a queue length of five PCU.

A5034 Mereside Road/A5034 Chester Road/B5569 Chester Road

11.4.99 This junction is a three-arm priority controlled (give way) T-junction with signalised pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 11-46.

Table 11-46: 2017 baseline performance A5034 Mereside Road/B5569 Chester Road/ A5034 Chester Road junction

Approach	Flow, PCU/hr	RFC*	Queue, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A5034 Chester Road (ahead and right)	661	0.14	0
A5034 Mereside Road (left and ahead)	162	0.07	0
B5569 Chester Road (left)	33	0.07	0
B5569 Chester Road (right)	67	0.16	0
	2017 PM peak hour (17:00–18:00) baseline results		
A5034 Chester Road (ahead and right)	339	0.08	0
A5034 Mereside Road (left and ahead)	138	0.06	0
B5569 Chester Road (left)	50	0.09	0
B5569 Chester Road (right)	51	0.12	0

**RFC = Ratio of Flow to Capacity*

11.4.100 The assessment shows that this junction operates well within capacity in the 2017 baseline.

11.4.101 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-47. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-47: Future baseline performance at A5034 Mereside Road/B5569 Chester Road/Bucklow Hill Lane/Chapel Lane/A5034 Chester Road junction

Approach	Flow, PCU/hr	RFC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A5034 Chester Road (ahead and right)	679	0.18	0
A5034 Mereside Road (left and ahead)	172	0.08	0
B5569 Chester Road (left)	42	0.08	0
B5569 Chester Road (right)	63	0.16	0
	2030 PM peak hour (17:00–18:00)		
A5034 Chester Road (ahead and right)	252	0.08	0
A5034 Mereside Road (left and ahead)	155	0.07	0
B5569 Chester Road (left)	62	0.11	0

Approach	Flow, PCU/hr	RFC	Queue, PCU
B5569 Chester Road (right)	48	0.12	0

11.4.102 The assessment shows that this junction operates well within capacity in the 2030 future baseline.

B5358 Wilmslow Road/B5358 Station Road

11.4.103 This junction is a four-arm signal controlled junction with controlled pedestrian crossing facilities. The Bulkeley Road approach is a minor arm that is not included within the SATURN model. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-48.

Table 11-48: 2018 baseline performance at B5358 Wilmslow Road/B5358 Station Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
B5358 Wilmslow Road	171	27%	4
B5358 Station Road	225	17%	5
Wilmslow Road	44	17%	1
Bulkeley Road	-	-	-
	2018 PM peak hour (17:00–18:00) baseline results		
B5358 Wilmslow Road	116	18%	3
B5358 Station Road	249	19%	5
Wilmslow Road	92	35%	3
Bulkeley Road	-	-	-

11.4.104 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.105 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-49. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-49: Future baseline performance at B5358 Wilmslow Road/B5358 Station Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
B5358 Wilmslow Road	543	85%	13
B5358 Station Road	478	36%	10
Wilmslow Road	68	26%	2
Bulkeley Road	-	-	-
	2030 PM peak hour (17:00–18:00)		
B5358 Wilmslow Road	569	89%	13
B5358 Station Road	543	41%	11
Wilmslow Road	124	47%	4
Bulkeley Road	-	-	-

11.4.106 The assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 85% on the B5358 Wilmslow Road approach in the AM peak hour with an associated queue length of 13 PCU. In the PM peak hour, the maximum VoC of 89% is on the B5358 Wilmslow Road approach with a queue length of 13 PCU.

A538 Wilmslow Road/Mill Lane

11.4.107 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 11-50.

Table 11-50: 2017 baseline performance at A538 Wilmslow Road/Mill Lane junction

Approach	Flow, PCU/hr	RFC	Queue, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A538 Wilmslow Road (north) (ahead and right)	1,207	0.23	0
A538 Wilmslow Road (south) (ahead and left)	1,221	0.00	0
Mill Lane (left)	102	0.76	2
Mill Lane (right)	118	0.87	4
	2017 PM peak hour (17:00–18:00) baseline results		
A538 Wilmslow Road (north) (ahead and right)	1,103	0.36	1
A538 Wilmslow Road (south) (ahead and left)	1,373	0.00	0
Mill Lane (left)	67	0.26	0
Mill Lane (right)	90	0.70	2

11.4.108 The assessment shows that this junction operates close to capacity in the 2017 baseline with a maximum RFC of 0.87 on the Mill Lane (right) approach in the AM peak hour with an associated queue length of four PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2017 baseline.

11.4.109 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-51. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-51: Future baseline performance at A538 Wilmslow Road/Mill Lane junction

Approach	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
A538 Wilmslow Road (north) (ahead and right)	866	0.17	0	790	0.20	0
A538 Wilmslow Road (south) (ahead and left)	1,140	-	-	1,272	-	-
Mill Lane (left)	120	1.00	7	124	1.09	10
Mill Lane (right)	221	1.00	10	225	1.08	16

Approach	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU
	2038 PM peak hour (17:00–18:00)			2046 PM peak hour (17:00–18:00)		
A538 Wilmslow Road (north) (ahead and right)	977	0.33	1	1,004	0.35	1
A538 Wilmslow Road (south) (ahead and left)	1,312	-	-	1,334	-	-
Mill Lane (left)	86	0.96	5	83	1.03	6
Mill Lane (right)	173	0.97	8	176	1.03	11

11.4.110 In the 2038 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum RFC of 1.00 on both the Mill Lane (left) and Mill Lane (right) approach with an associated queue length of seven PCU and 10 PCU respectively. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2038 future baseline with a maximum RFC of 0.97 on the Mill Lane (right) approach with a queue length of eight PCU.

11.4.111 In the 2046 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum RFC of 1.09 on the Mill Lane (left) approach with an associated queue length of 10 PCU. In the PM peak hour, the maximum RFC of 1.03 is on both the Mill Lane (left) and Mill Lane (right) approach with a queue length of six PCU and 11 PCU respectively.

A556 southbound off-slip/B5569 Chester Road/Chester Road

11.4.112 This junction is a three-arm priority controlled (give way) roundabout with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2019 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 11-52.

Table 11-52: 2019 baseline performance at A556 southbound off-slip/B5569 Chester Road/Chester Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2019 AM peak hour (08:00–09:00) baseline results		
A556 SB Slip Road	689	0.58	1
Chester Road	8	0.01	0
B5569 Chester Road	25	0.02	0
	2019 PM peak hour (17:00–18:00) baseline results		
A556 SB Slip Road	385	0.32	1
Chester Road	13	0.01	0
B5569 Chester Road	19	0.01	0

11.4.113 The assessment shows that the A556 southbound off-slip arm junction operates well within capacity in the 2019 baseline.

11.4.114 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-53. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-53: Future baseline performance at A556 southbound off-slip/B5569 Chester Road/Chester Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A556 SB Slip Road	750	0.63	2
Chester Road	9	0.01	0
B5569 Chester Road	27	0.02	0
	2030 PM peak hour (17:00–18:00)		
A556 SB Slip Road	419	0.35	1
Chester Road	14	0.01	0
B5569 Chester Road	22	0.01	0

11.4.115 The assessment shows that this junction operates well within capacity in the 2030 future baseline.

Castle Mill Lane/Back Lane

11.4.116 This junction is a three-arm priority controlled T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 11-54.

Table 11-54: 2018 baseline performance at Castle Mill Lane/Back Lane junction

Approach	Flow, PCU/hr	RFC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Castle Mill Lane (west) (ahead and right)	173	0.01	0
Castle Mill Lane (east) (ahead and left)	135	-	-
Back Lane (left and right)	12	0.02	0
	2018 PM peak hour (17:00–18:00) baseline results		
Castle Mill Lane (west) (ahead and right)	124	0.00	0
Castle Mill Lane (east) (ahead and left)	225	-	-
Back Lane (left and right)	5	0.01	0

11.4.117 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.118 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-55. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-55: Future baseline performance at Castle Mill Lane/Back Lane junction

Approach	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
Castle Mill Lane (west) (ahead and right)	279	0.01	0	328	0.01	0	338	0.01	0
Castle Mill Lane (east) (ahead and left)	214	-	-	228	-	-	290	-	-
Back Lane (left and right)	12	0.03	0	12	0.03	0	12	0.03	0
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
Castle Mill Lane (west) (ahead and right)	241	0.00	0	232	0.00	0	232	0.00	0
Castle Mill Lane (east) (ahead and left)	302	-	-	325	-	-	363	-	-
Back Lane (left and right)	5	0.01	0	5	0.01	0	5	0.01	0

11.4.119 The assessment shows that this junction operates well within capacity in the 2030, 2038 and 2046 future baseline.

Ashley Road/Back Lane/Mobberley Road/Cow Lane

11.4.120 This junction is a four-arm priority controlled (give way) cross roads junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 11-56.

Table 11-56: 2017 baseline performance at Ashley Road/Back Lane/Mobberley Road/Cow Lane junction

Approach	Flow, PCU/hr	RFC	Queue, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Cow Lane (ahead, left and right)	427	0.23	0
Back Lane (left and ahead)	61	0.14	0
Back Lane (right and ahead)	17	0.04	0
Mobberley Road (ahead, left and right)	467	0.23	0
Ashley Road (ahead, left and right)	337	0.89	6
	2017 PM peak hour (17:00–18:00) baseline results		
Cow Lane (ahead, left and right)	332	0.17	0
Back Lane (left and ahead)	64	0.19	0
Back Lane (right and ahead)	61	0.10	0
Mobberley Road (ahead, left and right)	358	0.10	0
Ashley Road (ahead, left and right)	210	0.46	1

11.4.121 The assessment shows that this junction operates close to capacity in the 2017 baseline with a maximum RFC of 0.89 on the Ashley Road (ahead, left and right) approach in the AM peak hour with an associated queue length of six PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.122 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-57. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-57: Future baseline performance at Ashley Road/Back Lane/Mobberley Road/Cow Lane junction

Approach	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
Cow Lane (ahead, left and right)	451	0.26	0	487	0.29	0	452	0.31	1
Back Lane (left and ahead)	64	0.15	0	76	0.19	0	121	0.32	1
Back Lane (right and ahead)	19	0.04	0	23	0.05	0	46	0.13	0
Mobberley Road (ahead, left and right)	460	0.30	0	460	0.32	1	473	0.34	1
Ashley Road (ahead, left and right)	433	1.20	48	448	1.29	63	520	1.50	124
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
Cow Lane (ahead, left and right)	319	0.20	0	327	0.25	0	320	0.27	0
Back Lane (left and ahead)	77	0.26	0	103	0.43	1	113	0.54	1
Back Lane (right and ahead)	90	0.15	0	159	0.27	0	197	0.36	1
Mobberley Road (ahead, left and right)	409	0.11	0	431	0.11	0	474	0.13	0
Ashley Road (ahead, left and right)	240	0.54	1	262	0.61	2	272	0.65	2

11.4.123 In the 2030 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum RFC of 1.20 on the Ashley Road (ahead, left and right) approach with an associated queue length of 48 PCU. In the PM peak hour, this junction operates well within capacity in the 2030 future baseline.

11.4.124 In the 2038 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum RFC of 1.29 on the Ashley Road (ahead, left and right) approach with an associated queue length of 63 PCU. In the PM peak hour, this junction operates well within capacity in the 2038 future baseline.

11.4.125 In the 2046 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum RFC of 1.50 on the Ashley Road (ahead, left and right) approach with an associated queue length of 124 PCU. In the PM peak hour, this junction operates well within capacity in the 2046 future baseline.

A538 Wilmslow Road/Sunbank Lane

11.4.126 This junction is a four-arm signal controlled staggered crossroads with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using LinSig software and is shown in Table 11-58.

Table 11-58: 2018 baseline performance at A538 Wilmslow Road/Sunbank Lane junction

Approach	Flow, PCU/hr	DoS	Queue, PCU
	2018 AM peak hour (08:00–09:00)		
A538 Wilmslow Road (north) (nearside) (left and ahead)	694	64%	13
A538 Wilmslow Road (north) (centre and offside) (ahead)	843	67%	14
Sunbank Lane (east) (left and right)	25	10%	1
A538 Wilmslow Road (south) (nearside) (left and ahead)	659	50%	10
A538 Wilmslow Road (south) (offside) (ahead)	681	52%	10
Sunbank Lane (west) (nearside and centre) (left)	57	9%	1
Sunbank Lane (west) (offside) (right)	8	4%	0
A538 Wilmslow Road (internal southbound) (nearside) (ahead)	666	54%	1
A538 Wilmslow Road (internal southbound) (centre) (ahead)	758	57%	7
A538 Wilmslow Road (internal southbound) (offside) (right)	88	38%	2
A538 Wilmslow Road (internal northbound) (nearside) (ahead)	676	43%	11
A538 Wilmslow Road (internal northbound) (offside) (ahead and right)	721	43%	12
	2018 PM peak hour (17:00–18:00)		
A538 Wilmslow Road (north) (nearside) (left and ahead)	684	63%	13
A538 Wilmslow Road (north) (centre and offside) (ahead)	907	68%	14
Sunbank Lane (east) (left and right)	55	23%	1
A538 Wilmslow Road (south) (nearside) (left and ahead)	660	50%	10
A538 Wilmslow Road (south) (offside) (ahead)	686	52%	10
Sunbank Lane (west) (nearside and centre) (left)	190	25%	2
Sunbank Lane (west) (offside) (right)	5	3%	0
A538 Wilmslow Road (internal southbound) (nearside) (ahead)	660	53%	1
A538 Wilmslow Road (internal southbound) (centre) (ahead)	754	57%	6
A538 Wilmslow Road (internal southbound) (offside) (right)	157	67%	5
A538 Wilmslow Road (internal northbound) (nearside) (ahead)	745	48%	12
A538 Wilmslow Road (internal northbound) (offside) (ahead and right)	791	47%	12

11.4.127 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.128 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-59. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-59: Future baseline performance at A538 Wilmslow Road/Sunbank Lane junction

Approach	Flow, PCU/hr	DoS	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A538 Wilmslow Road (north) (nearside) (left and ahead)	598	55%	10
A538 Wilmslow Road (north) (centre and offside) (ahead)	941	63%	12
Sunbank Lane (east) (left and right)	29	13%	1
A538 Wilmslow Road (south) (nearside) (left and ahead)	565	52%	10
A538 Wilmslow Road (south) (offside) (ahead)	566	52%	10
Sunbank Lane (west) (nearside and centre) (left)	135	17%	2
Sunbank Lane (west) (offside) (right)	7	4%	0
A538 Wilmslow Road (internal southbound) (nearside) (ahead)	562	46%	1
A538 Wilmslow Road (internal southbound) (centre) (ahead)	675	51%	4
A538 Wilmslow Road (internal southbound) (offside) (right)	269	61%	7
A538 Wilmslow Road (internal northbound) (nearside) (ahead)	580	37%	11
A538 Wilmslow Road (internal northbound) (offside) (ahead and right)	686	41%	11
	2030 PM peak hour (17:00–18:00)		
A538 Wilmslow Road (north) (nearside) (left and ahead)	589	54%	10
A538 Wilmslow Road (north) (centre and offside) (ahead)	849	61%	12
Sunbank Lane (east) (left and right)	60	25%	1
A538 Wilmslow Road (south) (nearside) (left and ahead)	542	51%	10
A538 Wilmslow Road (south) (offside) (ahead)	542	51%	10
Sunbank Lane (west) (nearside and centre) (left)	579	60%	7
Sunbank Lane (west) (offside) (right)	17	9%	0
A538 Wilmslow Road (internal southbound) (nearside) (ahead)	559	45%	1
A538 Wilmslow Road (internal southbound) (centre) (ahead)	668	51%	3
A538 Wilmslow Road (internal southbound) (offside) (right)	190	41%	4
A538 Wilmslow Road (internal northbound) (nearside) (ahead)	777	50%	12
A538 Wilmslow Road (internal northbound) (offside) (ahead and right)	886	53%	12

11.4.129 The assessment shows that this junction operates well within capacity in the 2030 future baseline.

A34 Handforth Bypass/B5094 Stanley Road

11.4.130 This junction is a four-arm signal controlled roundabout with no signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-60.

Table 11-60: 2018 baseline performance at A34 Handforth Bypass/B5094 Stanley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A34 Handforth Bypass (north)	1,549	73%	6
B5094 Stanley Road (east)	1,302	90%	6
A34 Handforth Bypass (south)	1,792	99%	13
B5094 Stanley Road (west)	213	66%	1
	2018 PM peak hour (17:00–18:00) baseline results		
A34 Handforth Bypass (north)	1,781	99%	8
B5094 Stanley Road (east)	642	53%	1
A34 Handforth Bypass (south)	1,729	73%	1
B5094 Stanley Road (west)	377	88%	3

11.4.131 The assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 99% on the A34 Handforth Bypass (south) approach with an associated queue length of 13 PCU. In the PM peak hour, the maximum VoC of 99% is on the A34 Handforth Bypass (north) approach with a queue length of eight PCU.

11.4.132 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-61. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-61: 2030 future baseline performance at A34 Handforth Bypass/B5094 Stanley Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A34 Handforth Bypass (north)	2,249	67%	19
B5094 Stanley Road (east)	1,731	83%	21
A34 Handforth Bypass (south)	2,689	79%	22
B5094 Stanley Road (west)	179	22%	3
	2030 PM peak hour (17:00–18:00)		
A34 Handforth Bypass (north)	2,164	93%	25
B5094 Stanley Road (east)	964	41%	11
A34 Handforth Bypass (south)	2,138	92%	25
B5094 Stanley Road (west)	382	25%	4

11.4.133 In the AM peak hour, the assessment shows that this junction operates within capacity in the 2030 future baseline with a maximum VoC of 83% on the B5094 Stanley Road (east) approach with an associated queue length of 21 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 93% on the A34 Handforth Bypass (north) approach with an associated queue length of 25 PCU.

A538 Hale Road/Hasty Lane

11.4.134 This junction is a three-arm priority controlled T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 11-62.

Table 11-62: 2017 baseline performance at A538 Hale Road/Hasty Lane junction

Approach	Flow, PCU/hr	RFC	Queue, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A538 Hale Road (north) (ahead and left)	1,043	-	-
Hasty Lane (left)	6	0.01	0
Hasty Lane (right)	1	0.01	0
A538 Hale Road (south) (ahead and right)	750	0.03	0
	2017 PM peak hour (17:00–18:00) baseline results		
A538 Hale Road (north) (ahead and left)	839	-	-
Hasty Lane (left)	5	0.01	0
Hasty Lane (right)	2	0.01	0
A538 Hale Road (south) (ahead and right)	789	0.01	0

11.4.135 The assessment shows that this junction operates well within capacity in the 2017 baseline.

11.4.136 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-63. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-63: Future baseline performance at A538 Hale Road/Hasty Lane junction

Approach	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
A538 Hale Road (north) (ahead and left)	1,308	-	-	1,541	-	-	1,808	-	-
Hasty Lane (left)	6	0.02	0	6	0.02	0	6	0.03	0
Hasty Lane (right)	1	0.01	0	1	0.02	0	1	0.13	0
A538 Hale Road (south) (ahead and right)	546	0.03	0	576	0.04	0	545	0.05	0
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
A538 Hale Road (north) (ahead and left)	908	-	-	965	-	-	986	-	-
Hasty Lane (left)	5	0.01	0	5	0.01	0	5	0.01	0
Hasty Lane (right)	2	0.01	0	2	0.01	0	2	0.01	0

Approach	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU
A538 Hale Road (south) (ahead and right)	648	0.01	0	699	0.01	0	775	0.01	0

11.4.137 The assessment shows that this junction operates well within capacity in the 2030 future baseline.

Chicago Avenue/Malaga Avenue

11.4.138 This junction is a five-arm priority controlled (give way) roundabout with no controlled pedestrian crossing facilities. The Drop off and Radisson Hotel approaches are one way and as such are not included within the SATURN model. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-64.

Table 11-64: 2018 baseline performance at Chicago Avenue/Malaga Avenue junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Car Park Access Road	123	14%	0
Malaga Avenue	77	9%	0
Chicago Avenue	288	30%	0
	2018 PM peak hour (17:00–18:00) baseline results		
Car Park Access Road	167	19%	0
Malaga Avenue	72	9%	0
Chicago Avenue	230	24%	0

11.4.139 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.140 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-65. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-65: Future baseline performance at Chicago Avenue/Malaga Avenue junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00**		
Car Park Access Road	266	27%	0	294	30%	0
Malaga Avenue	738	109%	7	792	123%	8
Chicago Avenue	199	26%	0	157	21%	0
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
Car Park Access Road	278	32%	0	302	39%	0
Malaga Avenue	665	97%	4	703	106%	7
Chicago Avenue	312	34%	0	400	43%	0

11.4.141 In the 2038 future baseline the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 109% on the Malaga Avenue approach with an associated queue length of seven PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2038 future baseline with a maximum VoC of 97% on the Malaga Avenue approach with an associated queue length of four PCU.

11.4.142 This junction operates over capacity in the 2046 future baseline with a maximum VoC of 123% on the Malaga Avenue approach in the AM peak hour with an associated queue length of eight PCU. In the PM peak hour, the maximum VoC of 106% is on the Malaga Avenue approach with a queue length of seven PCU.

World Way/Chicago Avenue/Palma Avenue

11.4.143 This junction is a five-arm roundabout with no controlled pedestrian crossing facilities. Palma Avenue (south) and Atlanta Avenue approaches are one way and as such are not included within the SATURN model. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-66.

Table 11-66: 2018 baseline performance at World Way/Chicago Avenue/Palma Avenue junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
World Way	797	41%	0
Chicago Avenue	144	20%	0
Palma Avenue (north west)	390	21%	0
	2018 PM peak hour (17:00–18:00) baseline results		
World Way	688	36%	0
Chicago Avenue	181	25%	0
Palma Avenue (north west)	451	25%	0

11.4.144 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.145 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-67. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-67: Future baseline performance at World Way/Chicago Avenue/Palma Avenue junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
World Way	182	10%	0	92	5%	0	43	3%	0
Chicago Avenue	841	86%	0	758	81%	0	737	80%	0
Palma Avenue (north west)	795	47%	0	987	60%	0	1,323	80%	1

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
World Way	316	16%	0	266	14%	0	251	14%	0
Chicago Avenue	828	87%	0	866	90%	0	885	91%	0
Palma Avenue (north west)	773	45%	0	1,186	76%	1	1,447	100%	8

11.4.146 In the 2030 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 86% on the Chicago Avenue approach in the AM peak hour with no queue. In the PM peak hour, the maximum VoC of 87% is on the Chicago Avenue approach with no queue.

11.4.147 In the 2038 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 81% on the Chicago Avenue approach with no queue. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2038 future baseline with a maximum VoC of 90% on the Chicago Avenue approach with no queue.

11.4.148 In the 2046 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 80% on the Chicago Avenue approach with no queue and the Palma Avenue (north west) approach with an associated queue length of one PCU. In the PM peak hour, the assessment shows that this junction operates over capacity in the 2046 future baseline with a maximum VoC of 100% on the Palma Avenue (north west) approach with an associated queue length of eight PCU.

Tithebarn Road/High Elm Road/Chapel Road

11.4.149 This junction is a four-arm priority controlled (give way) staggered crossroads with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-68.

Table 11-68: 2018 baseline performance at Tithebarn Road/High Elm Road/Chapel Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Tithebarn Road (north)	186	9%	0
High Elm Road	50	14%	0
Chapel Lane (south)	559	39%	0
Chapel Lane (west)	65	18%	0
	2018 PM peak hour (17:00–18:00) baseline results		
Tithebarn Road (north)	140	7%	0
High Elm Road	66	14%	0
Chapel Lane (south)	274	14%	0

Approach	Flow, PCU/hr	VoC	Queue, PCU
Chapel Lane (west)	135	34%	0

11.4.150 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.151 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-69. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-69: Future baseline performance at Tithebarn Road/High Elm Road/Chapel Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			2046 AM peak hour (08:00–09:00)		
Tithebarn Road (north)	154	8%	0	145	7%	0
High Elm Road	25	5%	0	27	12%	0
Chapel Lane (south)	744	100%	3	826	95%	1
Chapel Lane (west)	64	28%	0	71	31%	0
	2038 PM peak hour (17:00–18:00)			2046 PM peak hour (17:00–18:00)		
Tithebarn Road (north)	164	8%	0	167	8%	0
High Elm Road	75	17%	0	88	20%	0
Chapel Lane (south)	283	14%	0	286	14%	0
Chapel Lane (west)	194	49%	0	217	54%	0

11.4.152 In the 2038 future baseline the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 100% on the Chapel Lane (south) approach with an associated queue length of three PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2038 future baseline.

11.4.153 In the 2046 future baseline the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 95% on the Chapel Lane (south) approach with an associated queue length of one PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2046 future baseline.

A538 Hale Road/Elmridge Drive

11.4.154 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-70.

Table 11-70: 2018 baseline performance at A538 Hale Road/Elmridge Drive junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A538 Hale Road (east)	388	19%	0
Elmridge Drive	133	20%	0
A538 Hale Road (west)	573	29%	0
	2018 PM peak hour (17:00–18:00) baseline results		
A538 Hale Road (east)	546	27%	0
Elmridge Drive	17	3%	0
A538 Hale Road (west)	607	31%	0

11.4.155 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.156 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-71. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-71: Future baseline performance at A538 Hale Road/Elmridge Drive junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
A538 Hale Road (east)	835	45%	0	1,110	55%	0
Elmridge Drive	602	99%	8	504	85%	5
A538 Hale Road (west)	443	22%	0	398	20%	0
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
A538 Hale Road (east)	621	31%	0	608	30%	0
Elmridge Drive	65	10%	0	88	14%	1
A538 Hale Road (west)	552	28%	0	598	31%	0

11.4.157 In the 2038 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 99% on the Elmridge Drive approach with an associated queue length of eight PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2038 future baseline.

11.4.158 In the 2046 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 85% on the Elmridge Drive approach with an associated queue length of five PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2046 future baseline.

A538 Hale Road/Tithebarn Road

11.4.159 This junction is a three-arm priority (give-way) controlled T-junction with no signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018

existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-72.

Table 11-72: 2018 baseline performance at A538 Hale Road/Tithebarn Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A538 Hale Road (north)	574	64%	0
A538 Hale Road (south)	584	29%	0
Tithebarn Road	358	91%	2
	2018 PM peak hour (17:00–18:00) baseline results		
A538 Hale Road (north)	686	59%	0
A538 Hale Road (south)	542	27%	0
Tithebarn Road	246	60%	1

11.4.160 In the AM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 91% on the Tithebarn Road approach with an associated queue length of two PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.161 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-73. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-73: 2030 future baseline performance at A538 Hale Road/Tithebarn Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A538 Hale Road (north)	767	65%	0
A538 Hale Road (south)	392	20%	0
Tithebarn Road	425	88%	2
	2030 PM peak hour (17:00–18:00)		
A538 Hale Road (north)	748	64%	0
A538 Hale Road (south)	501	25%	0
Tithebarn Road	256	60%	1

11.4.162 In the AM peak hour, the assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 88% on the Tithebarn Road approach with an associated queue length of two PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2030 future baseline.

A538 Hale Road/Shay Lane

11.4.163 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-74.

Table 11-74: 2018 baseline performance at A538 Hale Road/Shay Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A538 Hale Road (north)	551	28%	0
Shay Lane	206	73%	1
A538 Hale Road (south)	943	77%	0
	2018 PM peak hour (17:00–18:00) baseline results		
A538 Hale Road (north)	644	33%	0
Shay Lane	213	85%	2
A538 Hale Road (south)	788	64%	0

11.4.164 The assessment shows that this junction operates within capacity in the 2018 baseline with a maximum VoC of 77% on the A538 Hale Road (south) approach in the AM peak hour with no queue. The assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 85% on the Shay Lane approach with an associated queue length of two PCU.

11.4.165 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-75. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-75: Future baseline performance at A538 Hale Road/Shay Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
A538 Hale Road (north)	649	33%	0	801	40%	0	1,076	54%	0
Shay Lane	217	94%	3	210	101%	6	187	107%	5
A538 Hale Road (south)	819	61%	0	879	80%	0	726	97%	1
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
A538 Hale Road (north)	603	30%	0	638	32%	0	609	31%	0
Shay Lane	237	84%	2	238	91%	3	255	91%	3
A538 Hale Road (south)	759	63%	0	740	59%	0	777	63%	0

11.4.166 In the 2030 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 94% on the Shay Lane approach with an associated queue length of three PCU. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2030 future baseline with a maximum VoC of 84% on the Shay Lane approach with an associated queue length of two PCU.

11.4.167 In the 2038 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 101% on the Shay Lane approach with an associated queue length of six PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2038 future baseline with a maximum VoC of 91% on the Shay Lane approach with an associated queue length of three PCU.

11.4.168 In the 2046 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 107% on the Shay Lane approach with an associated queue length of five PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2046 future baseline with a maximum VoC of 91% on the Shay Lane approach with an associated queue length of three PCU.

Runger Lane/Thorley Lane

11.4.169 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 11-76.

Table 11-76: 2017 baseline performance at Runger Lane/Thorley Lane junction

Approach	Flow, PCU/hr	RFC	Queue, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Thorley Lane (east) (ahead and right)	638	0.56	2
Runger Lane (ahead and left)	457	0.00	0
Thorley Lane (west) (left)	294	0.82	4
Thorley Lane (west) (right)	176	0.83	4
	2017 PM peak hour (17:00–18:00) baseline results		
Thorley Lane (east) (ahead and right)	373	0.70	3
Runger Lane (ahead and left)	733	0.00	0
Thorley Lane (west) (left)	174	0.95	6
Thorley Lane (west) (right)	172	0.92	6

11.4.170 The assessment shows that this junction operates within capacity in the 2017 baseline with a maximum RFC of 0.83 on the Thorley Lane (west) (right) approach in the AM peak hour with an associated queue length of four PCU. In the PM peak hour, this junction operates close to capacity in the 2017 baseline with a maximum RFC of 0.95 is on the Thorley Lane (west) (left) approach with a queue length of six PCU.

11.4.171 The Runger Lane/Thorley Lane Junction will be a modified three-arm signal controlled T-junction as part of the 'Rainbow Works' highway improvements package associated with the expansion of Manchester Airport. The Thorley Lane (east) approach from this junction will have a new lane to accommodate ahead and right traffic. The Runger Lane approach will have a new lane to accommodate left and ahead traffic. These changes have been accounted for in the future baseline. The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-77. As the junction is affected by both

construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-77: Future baseline performance at Runger Lane/Thorley Lane junction

Approach	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU	Flow, PCU/hr	DoS	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
Thorley Lane (east) (ahead)	119	11%	1	129	12%	1	139	13%	2
Thorley Lane (east) (ahead and right)	325	44%	3	353	51%	4	382	59%	5
Runger Lane (left and ahead)	612	66%	9	665	72%	11	718	77%	12
Runger Lane (ahead)	456	54%	8	496	59%	9	536	64%	10
Thorley Lane (west) (left)	184	25%	1	200	28%	2	216	31%	2
Thorley Lane (west) (right)	35	9%	0	38	9%	0	42	10%	1
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
Thorley Lane (east) (ahead)	223	21%	3	243	23%	3	262	25%	3
Thorley Lane (east) (ahead and right)	459	40%	4	498	45%	4	537	50%	5
Runger Lane (left and ahead)	531	51%	5	577	56%	5	623	60%	6
Runger Lane (ahead)	297	35%	4	323	38%	5	349	41%	5
Thorley Lane (west) (left)	129	15%	0	141	17%	1	152	19%	1
Thorley Lane (west) (right)	65	16%	1	70	17%	1	76	19%	1

11.4.172 In the 2030 future baseline, the assessment shows that this junction operates well within capacity.

11.4.173 In the 2038 future baseline, the assessment shows that this junction operates well within capacity.

11.4.174 In the 2046 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum DoS of 77% on the Runger Lane (left and ahead) approach with an associated queue length of 12 PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2046 future baseline.

A5144 Delahays Road/A538 Hale Road/B5162 Park Road

11.4.175 This junction is a four-arm signal-controlled junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-78.

Table 11-78: 2018 baseline performance at A5144 Delahays Road/A538 Hale Road/B5162 Park Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A5144 Delahays Road	696	72%	15
A538 Hale Road (south)	829	62%	14
B5162 Park Road	453	38%	8
A538 Hale Road (north)	299	45%	6
	2018 PM peak hour (17:00–18:00) baseline results		
A5144 Delahays Road	600	54%	10
A538 Hale Road (south)	725	73%	11
B5162 Park Road	485	35%	6
A538 Hale Road (north)	358	82%	7

11.4.176 The assessment shows that this junction operates well within capacity in the 2018 baseline in the AM peak hour. The assessment shows that this junction operates within capacity in the 2018 baseline with a maximum VoC of 82% on the A538 Hale Road (north) approach in the PM peak hour with a queue length of seven PCU.

11.4.177 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-79. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-79: Future baseline performance at A5144 Delahays Road/A538 Hale Road/B5162 Park Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:000–9:00)**		
A5144 Delahays Road	868	91%	19	939	99%	21	961	105%	20
A538 Hale Road (south)	792	60%	13	785	62%	13	714	60%	12
B5162 Park Road	414	35%	7	460	40%	8	587	51%	10
A538 Hale Road (north)	313	43%	7	379	52%	8	474	61%	10
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
A5144 Delahays Road	726	66%	11	787	76%	12	792	83%	13
A538 Hale Road (south)	684	69%	10	683	69%	10	708	72%	11
B5162 Park Road	534	39%	7	629	46%	8	736	55%	9
A538 Hale Road (north)	368	86%	7	368	86%	7	365	87%	7

11.4.178 In the 2030 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 91% on the A5144 Delahays Road approach with an associated queue length of 19 PCU. In the PM peak hour, the maximum VoC of 86% is on the A538 Hale Road (north) approach with a queue length of seven PCU.

11.4.179 In the 2038 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 99% on the A5144 Delahays Road approach with an associated queue length of 21 PCU. In the PM peak hour, the maximum VoC of 86% is on the A538 Hale Road (north) approach with a queue length of seven PCU.

11.4.180 In the 2046 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 105% on the A5144 Delahays Road approach with an associated queue length of 20 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2046 future baseline with a maximum VoC of 87% on the A538 Hale Road (north) approach with an associated queue length of seven PCU.

11.4.181 The junction analysis indicates that the junction will be operating over its capacity in the 2046 future baseline, in the PM peak hour. However, as the signals timings are determined by the baseline traffic flow, it is possible that the delays could to a degree be reduced by signal optimisation.

A538 Hale Road/Westminster Road

11.4.182 This junction is a three-arm priority (give-way) controlled T-junction with no signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-80.

Table 11-80: 2018 baseline performance at A538 Hale Road/Westminster Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Westminster Road	235	88%	2
A538 Hale Road (east)	713	63%	0
A538 Hale Road (west)	457	25%	0
	2018 PM peak hour (17:00–18:00) baseline results		
Westminster Road	328	91%	2
A538 Hale Road (east)	404	44%	0
A538 Hale Road (west)	576	31%	0

11.4.183 The assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 88% on the Westminster Road approach in the AM peak hour with an associated queue length of two PCU. In the PM peak hour, the maximum VoC of 91% is on the Westminster Road approach with a queue length of two PCU.

11.4.184 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-81. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-81: Future baseline performance at A538 Hale Road/Westminster Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
Westminster Road	283	89%	2	327	90%	2	337	100%	5
A538 Hale Road (east)	806	70%	0	875	74%	0	862	78%	0
A538 Hale Road (west)	437	24%	0	459	25%	0	561	31%	0
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
Westminster Road	435	96%	2	418	97%	3	378	98%	4
A538 Hale Road (east)	474	47%	0	505	46%	0	499	50%	0
A538 Hale Road (west)	404	23%	0	397	22%	0	413	22%	0

11.4.185 In the 2030 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 89% on the Westminster Road approach with an associated queue length of two PCU. In the PM peak hour, the maximum VoC of 96% is on the Westminster Road approach with a queue length of two PCU.

11.4.186 In the 2038 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 90% on the Westminster Road approach with an associated queue length of two PCU. In the PM peak hour, the maximum VoC of 97% is on the Westminster Road approach with a queue length of three PCU.

11.4.187 In the 2046 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 100% on the Westminster Road approach with an associated queue length of five PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2046 future baseline with a maximum VoC of 98% on the Westminster Road approach with an associated queue length of four PCU.

A5154 Delahays Road/Grove Lane

11.4.188 This junction is a four-arm signal controlled crossroads with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-82.

Table 11-82: 2018 baseline performance at A5154 Delahays Road/Grove Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A5154 Delahays Road (north)	656	40%	6
Grove Lane (east)	242	33%	4
A5154 Delahays Road (south)	697	59%	9
Grove Lane (west)	303	39%	5
	2018 PM peak hour (17:00–18:00) baseline results		
A5154 Delahays Road (north)	589	35%	6
Grove Lane (east)	232	41%	4
A5154 Delahays Road (south)	517	41%	7
Grove Lane (west)	732	95%	11

11.4.189 In the AM peak hour, the assessment shows that this junction operates well within capacity in the 2018 baseline. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 95% on the Grove Lane (west) approach with an associated queue length of 11 PCU.

11.4.190 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-83. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-83: Future baseline performance at A5154 Delahays Road/Grove Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
A5154 Delahays Road (north)	667	43%	6	733	48%	7
Grove Lane (east)	359	56%	6	341	54%	5
A5154 Delahays Road (south)	819	74%	11	885	83%	12
Grove Lane (west)	394	59%	6	409	60%	6
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
A5154 Delahays Road (north)	628	39%	6	624	40%	6
Grove Lane (east)	406	72%	6	407	72%	6
A5154 Delahays Road (south)	651	55%	9	755	64%	10
Grove Lane (west)	596	97%	9	604	98%	9

11.4.191 In the 2038 future baseline, the assessment shows that this junction operates well within capacity in the AM peak hour. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2038 future baseline with a maximum VoC of 97% on the Grove Lane (west) approach with an associated queue length of nine PCU.

11.4.192 In the 2046 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 83% on the A5154 Delahays Road (south) approach with an associated queue length of 12 PCU. In the PM peak hour, the

assessment shows that this junction operates close to capacity in the 2046 future baseline with a maximum VoC of 98% on the Grove Lane (west) approach with an associated queue length of nine PCU.

A56 Dunham Road/B5160 Park Road/B5160 Charcoal Road

11.4.193 This junction is a four-arm signal controlled crossroads with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-84.

Table 11-84: 2018 baseline performance at A56 Dunham Road/B5160 Park Road/B5160 Charcoal Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A56 Dunham Road (north)	887	47%	14
B5160 Park Road	532	45%	9
A56 Dunham Road (south)	1,196	64%	18
B5160 Charcoal Road	514	103%	11
	2018 PM peak hour (17:00–18:00) baseline results		
A56 Dunham Road (north)	1,088	57%	17
B5160 Park Road	762	65%	12
A56 Dunham Road (south)	1,269	68%	19
B5160 Charcoal Road	495	102%	11

11.4.194 The assessment shows that this junction operates over capacity in the 2018 baseline with a maximum VoC of 103% on the B5160 Charcoal Road approach in the AM peak hour with an associated queue length of 11 PCU. In the PM peak hour, the maximum VoC of 102% is on the B5160 Charcoal Road approach with a queue length of 11 PCU.

11.4.195 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-85. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-85: Future baseline performance at A56 Dunham Road/B5160 Park Road/B5160 Charcoal Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
A56 Dunham Road (north)	983	52%	16	1,022	54%	16	1,078	57%	17
B5160 Park Road	730	65%	12	745	65%	12	795	70%	13
A56 Dunham Road (south)	1,195	65%	18	1,225	66%	18	1,284	70%	19
B5160 Charcoal Road	513	109%	10	527	111%	11	530	112%	10

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 PM peak hour (17:00–18:00)			2038 PM peak hour (17:00–18:00)			2046 PM peak hour (17:00–18:00)		
A56 Dunham Road (north)	965	51%	15	947	50%	15	904	48%	14
B5160 Park Road	868	76%	14	855	75%	14	845	74%	14
A56 Dunham Road (south)	1,450	79%	22	1,565	85%	24	1,685	91%	26
B5160 Charcoal Road	499	105%	11	502	106%	11	505	106%	11

11.4.196 In the 2030 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 109% on the B5160 Charcoal Road approach in the AM peak hour with an associated queue length of 10 PCU. In the PM peak hour, the maximum VoC of 105% is on the B5160 Charcoal Road approach with a queue length of 11 PCU.

11.4.197 In the 2038 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 111% on the B5160 Charcoal Road approach with an associated queue length of 11 PCU. In the PM peak hour, the maximum VoC of 106% is on the B5160 Charcoal Road approach with a queue length of 11 PCU.

11.4.198 In the 2046 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 112% on the B5160 Charcoal Road approach with an associated queue length of 10 PCU. In the PM peak hour, the maximum VoC of 106% is on the B5160 Charcoal Road approach with a queue length of 11 PCU.

A538 Hale Road/Ashfield Road/Victoria Road

11.4.199 This junction is a four-arm priority controlled (give way) staggered crossroads with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-86.

Table 11-86: 2018 baseline performance at A538 Hale Road/Ashfield Road/Victoria Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Ashfield Road	188	85%	2
A538 Hale Road (east)	658	33%	0
Victoria Road	4	1%	0
A538 Hale Road (west)	410	21%	0
	2018 PM peak hour (17:00–18:00) baseline results		
Ashfield Road	188	96%	4
A538 Hale Road (east)	375	19%	0
Victoria Road	1	0%	0

Approach	Flow, PCU/hr	VoC	Queue, PCU
A538 Hale Road (west)	805	55%	0

11.4.200 The assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 85% on the Ashfield Road approach in the AM peak hour with an associated queue length of two PCU. In the PM peak hour, the maximum VoC of 96% is on the Ashfield Road approach with a queue length of four PCU.

11.4.201 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-87. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-87: Future baseline performance at A538 Hale Road/Ashfield Road/Victoria Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
Ashfield Road	204	88%	3	189	91%	3	208	95%	4
A538 Hale Road (east)	631	32%	0	652	33%	0	699	35%	0
Victoria Road	59	17%	0	67	20%	0	79	24%	0
A538 Hale Road (west)	401	26%	0	431	27%	0	495	31%	0
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
Ashfield Road	192	97%	4	174	97%	5	170	98%	5
A538 Hale Road (east)	398	20%	0	438	22%	0	458	23%	0
Victoria Road	54	12%	0	76	18%	0	89	21%	0
A538 Hale Road (west)	765	74%	0	772	78%	0	784	82%	0

11.4.202 In the 2030 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 88% on the Ashfield Road approach with an associated queue length of three PCU. In the PM peak hour, the maximum VoC of 97% is on the Ashfield Road approach with a queue length of four PCU.

11.4.203 In the 2038 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 91% on the Ashfield Road approach with an associated queue length of three PCU. In the PM peak hour, the maximum VoC of 97% is on the Ashfield Road approach with a queue length of five PCU.

11.4.204 In the 2046 future baseline the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 95% on the Ashfield Road approach

with an associated queue length of four PCU. In the PM peak hour, the maximum VoC of 98% is on the Ashfield Road approach with a queue length of five PCU.

Whitecarr Lane/Roaring Gate Lane

11.4.205 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-88.

Table 11-88: 2018 baseline performance at Whitecarr Lane/Roaring Gate Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Whitecarr Lane (east)	809	41%	0
Roaring Gate Lane	302	60%	1
Whitecarr Lane (west)	557	80%	1
	2018 PM peak hour (17:00–18:00) baseline results		
Whitecarr Lane (east)	729	37%	0
Roaring Gate Lane	307	60%	2
Whitecarr Lane (west)	714	85%	1

11.4.206 The assessment shows that this junction operates within capacity in the 2018 baseline with a maximum VoC of 80% on the Whitecarr Lane (west) approach in the AM peak hour with an associated queue length of one PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 85% on the Whitecarr Lane (west) approach with an associated queue length of one PCU.

11.4.207 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-89. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-89: Future baseline performance at Whitecarr Lane/Roaring Gate Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
Whitecarr Lane (east)	918	47%	0
Roaring Gate Lane	358	82%	5
Whitecarr Lane (west)	599	79%	0
	2030 PM peak hour (17:00–18:00)		
Whitecarr Lane (east)	783	40%	0
Roaring Gate Lane	358	76%	4
Whitecarr Lane (west)	706	84%	1

11.4.208 The assessment shows that this junction operates within capacity in the 2030 future baseline with a maximum VoC of 82% on the Roaring Gate Lane approach in the AM peak hour with

an associated queue length of five PCU. In the PM peak hour, the maximum VoC of 84% is on the Whitecarr Lane (west) approach with a queue length of one PCU.

A5144 Thorley Lane/Clay Lane/Wood Lane

11.4.209 This junction is a four-arm priority (give-way) controlled roundabout with no signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-90.

Table 11-90: 2018 baseline performance at A5144 Thorley Lane/Clay Lane/Wood Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A5144 Thorley Lane (north)	910	100%	4
Clay Lane	731	98%	4
A5144 Thorley Lane (south)	390	58%	0
Wood Lane	295	46%	0
	2018 PM peak hour (17:00–18:00) baseline results		
A5144 Thorley Lane (north)	699	77%	0
Clay Lane	709	88%	1
A5144 Thorley Lane (south)	640	89%	2
Wood Lane	245	46%	0

11.4.210 In the AM peak hour, this junction operates over capacity in the 2018 baseline with a maximum VoC of 100% on the A5144 Thorley Lane (north) approach with an associated queue length of four PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 89% on the A5144 Thorley Lane (south) approach with an associated queue length of two PCU.

11.4.211 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-91. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-91: Future baseline performance at A5144 Thorley Lane/Clay Lane/Wood Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
A5144 Thorley Lane (north)	893	100%	4	918	101%	4	908	101%	4
Clay Lane	763	101%	6	766	101%	6	734	102%	6
A5144 Thorley Lane (south)	500	76%	1	534	81%	1	574	85%	1
Wood Lane	320	55%	0	279	50%	0	319	59%	1

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
A5144 Thorley Lane (north)	862	94%	1	907	99%	3	932	101%	3
Clay Lane	746	100%	5	739	101%	6	750	102%	6
A5144 Thorley Lane (south)	665	100%	6	677	100%	6	681	101%	6
Wood Lane	257	56%	1	264	59%	1	253	57%	1

11.4.212 In the 2030 future baseline, this junction operates over capacity with a maximum VoC of 101% on the Clay Lane approach in the AM peak hour with an associated queue length of six PCU. In the PM peak hour, the maximum VoC of 100% is on both the Clay Lane and A5144 Thorley Lane (south) approaches with an associated queue length of five PCU and six PCU respectively.

11.4.213 In the 2038 future baseline, this junction operates over capacity with a maximum VoC of 101% on both the Clay Lane and A5144 Thorley Lane (north) approaches in the AM peak hour with an associated queue length of six PCU and four PCU respectively. In the PM peak hour, the maximum VoC of 101% is on the Clay Lane approach with a queue length of six PCU.

11.4.214 In the 2046 future baseline, this junction operates over capacity with a maximum VoC of 102% on the Clay Lane approach in the AM peak hour with an associated queue length of six PCU. In the PM peak hour, the maximum VoC of 102% is on the Clay Lane approach with a queue length of six PCU.

A56 Old Market Place/Kingsway

11.4.215 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-92.

Table 11-92: 2018 baseline performance at A56 Old Market Place/Kingsway junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A56 Old Market Place (north)	565	28%	0
Kingsway	229	38%	1
A56 Old Market Place (west)	497	25%	0
	2018 PM peak hour (17:00–18:00) baseline results		
A56 Old Market Place (north)	513	26%	0
Kingsway	594	78%	2
A56 Old Market Place (west)	620	31%	0

11.4.216 In the AM peak hour, the assessment shows that this junction operates well within capacity in the 2018 baseline. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2018 baseline with a maximum VoC of 78% on the Kingsway approach with an associated queue length of two PCU.

11.4.217 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-93. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-93: Future baseline performance at A56 Old Market Place/Kingsway junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
A56 Old Market Place (north)	824	41%	0	938	47%	0
Kingsway	237	56%	1	220	60%	2
A56 Old Market Place (west)	519	26%	0	464	23%	0
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
A56 Old Market Place (north)	573	29%	0	566	28%	0
Kingsway	604	87%	4	623	90%	6
A56 Old Market Place (west)	782	39%	0	805	40%	0

11.4.218 In the 2038 future baseline, the assessment shows that this junction operates well within capacity in the AM peak hour. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2038 future baseline with a maximum VoC of 87% on the Kingsway approach with an associated queue length of four PCU.

11.4.219 In the 2046 future baseline, the assessment shows that this junction operates well within capacity in the AM peak hour. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2046 future baseline with a maximum VoC of 90% on the Kingsway approach with an associated queue length of six PCU.

A560 Woodlands Road/B5164 Barrington Road

11.4.220 This junction is a four-arm signal controlled junction with controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-94.

Table 11-94: 2018 baseline performance at A560 Woodlands Road/B5164 Barrington Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
B5164 Barrington Road (south)	668	76%	12
A560 Woodlands Road (west)	663	60%	13
B5164 Barrington Road (north)	628	82%	14

Approach	Flow, PCU/hr	VoC	Queue, PCU
A560 Woodlands Road (east)	1,061	44%	16
	2018 PM peak hour (17:00–18:00) baseline results		
B5164 Barrington Road (south)	1,070	86%	18
A560 Woodlands Road (west)	664	71%	14
B5164 Barrington Road (north)	299	35%	6
A560 Woodlands Road (east)	790	38%	13

11.4.221 The assessment shows that this junction operates within capacity in the 2018 baseline with a maximum VoC of 82% on the B5164 Barrington Road (north) approach in the AM peak hour with an associated queue length of 14 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 86% on the B5164 Barrington Road (south) approach with a queue length of 18 PCU.

11.4.222 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-95. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-95: Future baseline performance at A560 Woodlands Road/B5164 Barrington Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
B5164 Barrington Road (south)	685	86%	13
A560 Woodlands Road (west)	728	63%	15
B5164 Barrington Road (north)	576	86%	13
A560 Woodlands Road (east)	1,278	56%	19
	2030 PM peak hour (17:00–18:00)		
B5164 Barrington Road (south)	1,034	93%	20
A560 Woodlands Road (west)	818	85%	18
B5164 Barrington Road (north)	194	47%	5
A560 Woodlands Road (east)	821	41%	15

11.4.223 The assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 86% on both the B5164 Barrington Road (south) and B5164 Barrington Road (north) approaches in the AM peak hour, with an associated queue length of 13 PCU on each approach. In the PM peak hour, the maximum VoC of 93% is on the B5164 Barrington Road (south) approach with a queue length of 20 PCU.

A560 Stockport Road/A538 Stockport Road/A560 Woodlands Road/Woodlands Parkway

11.4.224 This junction is a three-arm signal controlled T-junction with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-96.

Table 11-96: 2018 baseline performance at A560 Stockport Road/A538 Stockport Road/A560 Woodlands Road/Woodlands Parkway junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Woodlands Parkway	322	88%	7
A560 Stockport Road (east)	1,068	56%	19
A560 Stockport Road (west)	1,106	49%	6
	2018 PM peak hour (17:00–18:00) baseline results		
Woodlands Parkway	145	37%	3
A560 Stockport Road (east)	898	47%	15
A560 Stockport Road (west)	1,486	71%	8

11.4.225 In the AM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 88% on the Woodlands Parkway approach with an associated queue length of seven PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.226 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-97. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-97: Future baseline performance at A560 Stockport Road/A538 Stockport Road/A560 Woodlands Road/Woodlands Parkway junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
Woodlands Parkway	199	89%	3
A560 Stockport Road (east)	1,241	53%	16
A560 Stockport Road (west)	1,048	42%	8
	2030 PM peak hour (17:00–18:00)		
Woodlands Parkway	125	57%	2
A560 Stockport Road (east)	892	38%	11
A560 Stockport Road (west)	1,544	63%	12

11.4.227 In the 2030 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 89% on the Woodlands Parkway approach with an associated queue length of three PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2030 future baseline.

Oldfield Road/Gorsey Lane

11.4.228 This junction is a three-arm priority (give-way) controlled mini-roundabout with no signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-98.

Table 11-98: 2018 baseline performance at Oldfield Road/Gorsey Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Oldfield Road (east)	414	48%	0
Gorsley Lane	680	72%	0
Oldfield Road (west)	306	46%	0
	2018 PM peak hour (17:00–18:00) baseline results		
Oldfield Road (east)	519	55%	0
Gorsley Lane	436	46%	0
Oldfield Road (west)	173	22%	0

11.4.229 The assessment shows that this junction operates within capacity in the 2018 baseline.

11.4.230 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-99. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-99: Future baseline performance at Oldfield Road/Gorsey Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
Oldfield Road (east)	349	40%	0	326	37%	0	324	36%	0
Gorsley Lane	746	80%	0	778	84%	0	814	89%	1
Oldfield Road (west)	331	52%	0	320	52%	0	326	56%	0
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
Oldfield Road (east)	562	60%	0	579	62%	0	596	64%	0
Gorsley Lane	493	54%	0	506	57%	0	547	61%	0
Oldfield Road (west)	209	27%	0	216	28%	0	229	30%	0

11.4.231 In the 2030 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 80% on the Gorsley Lane approach with no queue. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2030 future baseline.

11.4.232 In the 2038 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 84% on the Gorsley Lane approach with no queue. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2038 future baseline.

11.4.233 In the 2046 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 89% on the Gorsley Lane approach

with an associated queue length of one PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2046 future baseline.

A560 Shaftesbury Avenue/A560 Stockport Road/Moss Lane/Wood Lane

11.4.234 The A560 Shaftesbury Avenue/A560 Stockport Road/Moss Lane/Wood Lane network consists of two signal controlled junctions located in proximity. The network comprises:

- A560 Shaftesbury Avenue/A560 Stockport Road/B5165 Stockport Road junction; and
- A560 Stockport Road/Wood Lane/Moss Lane junction.

11.4.235 The network has been modelled as a single five-arm signal controlled junction with controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-100.

Table 11-100: 2018 baseline performance at A560 Shaftesbury Avenue/A560 Stockport Road/Moss Lane/Wood Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Moss Lane	305	51%	4
B5165 Stockport Road	180	44%	2
A560 Stockport Road (east)	445	55%	6
Wood Lane	384	77%	5
A560 Stockport Road (west)	748	100%	9
A560 Shaftesbury Avenue (internal westbound)	626	16%	0
A560 Stockport Road (internal westbound)	626	34%	7
A560 Stockport Road (internal eastbound)	675	18%	0
A560 Shaftesbury Avenue (internal eastbound)	504	26%	4
	2018 PM peak hour (17:00–18:00) baseline results		
Moss Lane	407	89%	5
B5165 Stockport Road	166	45%	2
A560 Stockport Road (east)	443	52%	5
Wood Lane	337	66%	4
A560 Stockport Road (west)	898	106%	10
A560 Shaftesbury Avenue (internal westbound)	609	15%	0
A560 Stockport Road (internal westbound)	609	31%	6
A560 Stockport Road (internal eastbound)	947	25%	0
A560 Shaftesbury Avenue (internal eastbound)	496	24%	4

11.4.236 This junction operates over capacity in the 2018 baseline with a maximum VoC of 100% on the A560 Stockport Road (west) approach in the AM peak hour with an associated queue

length of nine PCU. In the PM peak hour, the maximum VoC of 106% is on the A560 Stockport Road (west) approach with a queue length of 10 PCU.

11.4.237 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-101. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-101: Future baseline performance at A560 Shaftesbury Avenue/A560 Stockport Road/Moss Lane/Wood Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
Moss Lane	358	60%	4	388	74%	5
B5165 Stockport Road	221	54%	3	231	56%	3
A560 Stockport Road (east)	644	83%	8	713	94%	9
Wood Lane	396	82%	5	414	93%	5
A560 Stockport Road (west)	743	100%	9	743	100%	9
A560 Shaftesbury Avenue (internal westbound)	865	22%	0	944	24%	0
A560 Stockport Road (internal westbound)	865	47%	9	944	52%	10
A560 Stockport Road (internal eastbound)	712	18%	0	679	18%	0
A560 Shaftesbury Avenue (internal eastbound)	545	28%	4	540	27%	4
	2038 PM peak hour (17:00–18:00)			**2046 AM peak hour (08:00–09:00)**		
Moss Lane	419	96%	5	421	99%	5
B5165 Stockport Road	186	51%	2	214	58%	3
A560 Stockport Road (east)	457	54%	6	486	58%	6
Wood Lane	373	75%	4	372	73%	4
A560 Stockport Road (west)	909	107%	10	918	108%	10
A560 Shaftesbury Avenue (internal westbound)	643	16%	0	701	18%	0
A560 Stockport Road (internal westbound)	643	33%	6	701	36%	7
A560 Stockport Road (internal eastbound)	985	26%	0	1,029	28%	0
A560 Shaftesbury Avenue (internal eastbound)	500	24%	4	525	26%	4

11.4.238 In the 2038 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 100% on the A560 Stockport Road (west) approach in the AM peak hour with an associated queue length of nine PCU. In the PM peak hour, the maximum VoC of 107% is on the A560 Stockport Road (west) approach with a queue length of 10 PCU.

11.4.239 In the 2046 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 100% on the A560 Stockport Road (west) approach in the AM peak hour with an associated queue length of nine PCU. In the PM peak hour, the maximum VoC of 108% is on the A560 Stockport Road (west) approach with a queue length of 10 PCU.

A56 Manchester Road/A56 Church Street/Oldfield Road

11.4.240 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-102.

Table 11-102: 2018 baseline performance at A56 Manchester Road/A56 Church Street/Oldfield Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A56 Manchester Road	664	101%	4
A56 Church Street	307	17%	0
Oldfield Road	802	92%	2
	2018 PM peak hour (17:00–18:00) baseline results		
A56 Manchester Road	576	93%	2
A56 Church Street	382	21%	0
Oldfield Road	627	78%	2

11.4.241 This junction operates over capacity in the 2018 baseline with a maximum VoC of 101% on the A56 Manchester Road approach in the AM peak hour with an associated queue length of four PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 93% on the A56 Manchester Road approach in the PM peak hour with an associated queue length of two PCU.

11.4.242 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-103. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-103: Future baseline performance at A56 Manchester Road/A56 Church Street/Oldfield Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A56 Manchester Road	842	101%	2
A56 Church Street	328	19%	0
Oldfield Road	842	97%	4
	2030 PM peak hour (17:00–18:00)		
A56 Manchester Road	568	97%	3
A56 Church Street	464	25%	0
Oldfield Road	675	85%	4

11.4.243 In the 2030 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 101% on the A56 Manchester Road approach with an associated queue length of two PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 97% on the A56 Manchester Road approach with an associated queue length of three PCU.

A56 Manchester Road/B5164 Barrington Road

11.4.244 This junction is a four-arm signal controlled junction with no controlled pedestrian crossing facilities. The Altrincham Fire Station approach is a minor arm that is not included within the SATURN model. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-104.

Table 11-104: 2018 baseline performance at A56 Manchester Road/B5164 Barrington Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A56 Manchester Road (north)	949	39%	18
B5164 Barrington Road	462	66%	9
A56 Manchester Road (south)	698	45%	13
Altrincham Fire Station	-	-	-
	2018 PM peak hour (17:00–18:00) baseline results		
A56 Manchester Road (north)	594	25%	12
B5164 Barrington Road	526	70%	10
A56 Manchester Road (south)	760	48%	15
Altrincham Fire Station	-	-	-

11.4.245 The assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.246 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-105. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-105: Future baseline performance at A56 Manchester Road/B5164 Barrington Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
A56 Manchester Road (north)	1,194	49%	23	1,221	50%	23
B5164 Barrington Road	562	80%	11	582	83%	11
A56 Manchester Road (south)	697	48%	13	713	58%	13
Altrincham Fire Station	-	-	-	-	-	-
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
A56 Manchester Road (north)	570	24%	11	575	25%	11

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
B5164 Barrington Road	579	76%	11	642	85%	12
A56 Manchester Road (south)	804	51%	16	811	52%	16
Altrincham Fire Station	-	-	-	-	-	-

11.4.247 In the 2038 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 80% on the B5164 Barrington Road approach in the AM peak hour with an associated queue length of 11 PCU. In the PM peak hour, the maximum VoC of 76% is on the B5164 Barrington Road approach with a queue length of 11 PCU.

11.4.248 In the 2046 future baseline the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 83% on the B5164 Barrington Road approach with an associated queue length of 11 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2046 future baseline with a maximum VoC of 85% on the B5164 Barrington Road approach with an associated queue length of 12 PCU.

A560 Shaftesbury Avenue/Aimson Road East

11.4.249 This junction is a three-arm signal controlled T-junction with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-106.

Table 11-106: 2018 baseline performance at A560 Shaftesbury Avenue/Aimson Road East junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A560 Shaftesbury Avenue (north)	1,086	70%	8
Aimson Road East	14	5%	0
A560 Shaftesbury Avenue (south)	1,274	79%	9
	2018 PM peak hour (17:00–18:00) baseline results		
A560 Shaftesbury Avenue (north)	919	64%	6
Aimson Road East	14	4%	0
A560 Shaftesbury Avenue (south)	1,101	73%	7

11.4.250 In the AM peak hour, the assessment shows that this junction operates within capacity in the 2018 baseline with a maximum VoC of 79% on the A560 Shaftesbury Avenue (south) approach with an associated queue length of nine PCU. In the PM peak hour, the assessment shows that this junction operates well within capacity in the 2018 baseline.

11.4.251 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-107. As the junction is only affected by the operation of the Proposed Scheme and not the construction, future baseline results are presented for 2038 and 2046 only.

Table 11-107: Future baseline performance at A560 Shaftesbury Avenue/Aimson Road East junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2038 AM peak hour (08:00–09:00)			**2046 AM peak hour (08:00–09:00)**		
A560 Shaftesbury Avenue (north)	1,165	75%	8	1,252	81%	9
Aimson Road East	17	6%	1	17	6%	1
A560 Shaftesbury Avenue (south)	1,339	83%	9	1,366	85%	9
	2038 PM peak hour (17:00–18:00)			**2046 PM peak hour (17:00–18:00)**		
A560 Shaftesbury Avenue (north)	1,047	73%	7	1,094	76%	7
Aimson Road East	18	5%	0	27	7%	1
A560 Shaftesbury Avenue (south)	1,160	76%	8	1,187	78%	8

11.4.252 In the 2038 future baseline, the assessment shows that this junction operates within capacity in the AM peak hour with a maximum VoC of 83% on the A560 Shaftesbury Avenue (south) approach with an associated queue length of nine PCU. In the PM peak hour, the maximum VoC of 76% is on the A560 Shaftesbury Avenue (south) approach with a queue length of eight PCU.

11.4.253 In the 2046 future baseline, the assessment shows that this junction operates close to capacity in the AM peak hour with a maximum VoC of 85% on the A560 Shaftesbury Avenue (south) approach with an associated queue length of nine PCU. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2046 future baseline with a maximum VoC of 78% on the A560 Shaftesbury Avenue (south) approach and an associated queue length of eight PCU.

Moss Lane/Grove Lane

11.4.254 This junction is a three-arm priority controlled (give way) T-junction with no signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-108.

Table 11-108: 2018 baseline performance at Moss Lane/Grove Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Moss Lane (north)	548	28%	0
Grove Lane	78	10%	0
Moss Lane (south)	288	44%	0
	2018 PM peak hour (17:00–18:00) baseline results		
Moss Lane (north)	261	13%	0
Grove Lane	80	10%	0

Approach	Flow, PCU/hr	VoC	Queue, PCU
Moss Lane (south)	714	81%	0

11.4.255 In the AM peak hour, the assessment shows that this junction operates well within capacity in the 2018 baseline. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2018 baseline with a maximum VoC of 81% on the Moss Lane (south) approach with no queue.

11.4.256 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-109. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-109: Future baseline performance at Moss Lane/Grove Lane junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
Moss Lane (north)	537	28%	0
Grove Lane	84	11%	0
Moss Lane (south)	265	49%	0
	2030 PM peak hour (17:00–18:00)		
Moss Lane (north)	269	14%	0
Grove Lane	99	13%	0
Moss Lane (south)	729	86%	1

11.4.257 In the 2030 future baseline, the assessment shows that this junction operates well within capacity in the AM peak hour. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 86% on the Moss Lane (south) approach with an associated queue length of one PCU.

A56 Manchester Road/B5165 Park Road/Woodcote Road

11.4.258 This junction is a four-arm signal-controlled junction with controlled pedestrian crossing facilities on two arms. The Woodcote Road approach is a minor arm that is not included within the SATURN model. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-110.

Table 11-110: 2018 baseline performance at A56 Manchester Road/B5165 Park Road/Woodcote Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A56 Manchester Road (north)	1,931	100%	31
B5165 Park Road	423	94%	10
A56 Manchester Road (south)	1,314	89%	18
Woodcote Road	-	-	-

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 PM peak hour (17:00–18:00) baseline results		
A56 Manchester Road (north)	1,623	93%	29
B5165 Park Road	453	92%	11
A56 Manchester Road (south)	1,235	74%	17
Woodcote Road	-	-	-

11.4.259 In the 2018 baseline the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 100% on the A56 Manchester Road (north) approach with an associated queue length of 31 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 93% on the Manchester Road (north) approach with an associated queue length of 29 PCU.

11.4.260 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-111. As the junction is affected by both construction and operation of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2046.

Table 11-111: Future baseline performance at A56 Manchester Road/B5165 Park Road/Woodcote Road junction

Approach	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)			**2038 AM peak hour (08:00–09:00)**			**2046 AM peak hour (08:00–09:00)**		
A56 Manchester Road (north)	1,971	101%	31	1,995	102%	31	2,027	104%	31
B5165 Park Road	435	96%	11	440	97%	11	452	100%	11
A56 Manchester Road (south)	1,340	92%	18	1,352	93%	19	1,369	95%	19
Woodcote Road	-	-	-	-	-	-	-	-	-
	2030 PM peak hour (17:00–18:00)			**2038 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
A56 Manchester Road (north)	1,683	96%	30	1,710	98%	30	1,723	99%	31
B5165 Park Road	480	97%	11	486	99%	11	499	101%	12
A56 Manchester Road (south)	1,356	90%	19	1,398	92%	20	1,454	97%	20
Woodcote Road	-	-	-	-	-	-	-	-	-

11.4.261 In the 2030 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 101% on the A56 Manchester Road (north) approach with an associated queue length of 31 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 97% on the B5165 Park Road approach with an associated queue length of 11 PCU.

11.4.262 In the 2038 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 102% on the A56 Manchester Road (north) approach with an associated queue length of 31 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2038 future baseline with a maximum VoC of 99% on the B5165 Park Road approach with an associated queue length of 11 PCU.

11.4.263 In the 2046 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 104% on the A56 Manchester Road (north) approach with an associated queue length of 31 PCU. In the PM peak hour, the maximum VoC of 101% is on the B5165 Park Road approach with a queue length of 12 PCU.

A56 Washway Road/Woodhouse Lane/Eastway

11.4.264 This junction is a four-arm signal controlled junction with controlled pedestrian crossing facilities. The Eastway approach is a minor arm that is not included within the SATURN model. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-112.

Table 11-112: 2018 baseline performance at A56 Washway Road/Woodhouse Lane/Eastway junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Woodhouse Lane	560	49%	12
A56 Washway Road (north)	1,384	102%	29
Eastway	-	-	-
A56 Washway Road (south)	1,380	104%	29
	2018 PM peak hour (17:00–18:00) baseline results		
Woodhouse Lane	299	26%	7
A56 Washway Road (north)	1,383	81%	27
Eastway	-	-	-
A56 Washway Road (south)	1,372	86%	26

11.4.265 In the 2018 baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 104% on the A56 Washway Road (south) approach with an associated queue length of 29 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 86% on the A56 Washway Road (south) approach with an associated queue length of 26 PCU.

11.4.266 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-113. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-113: Future baseline performance at A56 Washway Road/Woodhouse Lane/Eastway junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
Woodhouse Lane	588	52%	13
A56 Washway Road (north)	1,383	102%	29
Eastway	-	-	-
A56 Washway Road (south)	1,397	105%	29
	2030 PM peak hour (17:00–18:00)		
Woodhouse Lane	315	28%	7
A56 Washway Road (north)	1,427	84%	27
Eastway	-	-	-
A56 Washway Road (south)	1,480	92%	28

11.4.267 In the 2030 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 105% on the A56 Washway Road (south) approach with an associated queue length of 29 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 92% on the A56 Washway Road (south) approach with an associated queue length of 28 PCU.

A56 Washway Road/A6144 Marsland Road/A6144 Harboro Way

11.4.268 This junction is a four-arm signal controlled junction with controlled pedestrian crossing facilities on two-arms. The operation of the junction has been assessed for the 2018 existing baseline AM and PM peak hours using SATURN software and is shown in Table 11-114.

Table 11-114: 2018 baseline performance at A56 Washway Road/A6144 Marsland Road/A6144 Harboro Way junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
A56 Washway Road (north)	1,027	92%	24
A6144 Marsland Road	935	71%	18
A56 Washway Road (south)	1,167	97%	22
A6144 Harboro Way	531	53%	13
	2018 PM peak hour (17:00–18:00) baseline results		
A56 Washway Road (north)	1,291	94%	28
A6144 Marsland Road	766	63%	16
A56 Washway Road (south)	962	80%	18
A6144 Harboro Way	444	51%	11

11.4.269 The assessment shows that this junction operates close to capacity in the 2018 baseline with a maximum VoC of 97% on the A56 Washway Road (south) approach in the AM peak hour

with an associated queue length of 22 PCU. In the PM peak hour, the maximum VoC of 94% is on the A56 Washway Road (north) approach with a queue length of 28 PCU.

11.4.270 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 11-115. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 11-115: Future baseline performance at A56 Washway Road/A6144 Marsland Road/A6144 Harboro Way junction

Approach	Flow, PCU/hr	VoC	Queue, PCU
	2030 AM peak hour (08:00–09:00)		
A56 Washway Road (north)	1,026	94%	24
A6144 Marsland Road	983	75%	19
A56 Washway Road (south)	1,194	101%	22
A6144 Harboro Way	526	55%	12
	2030 PM peak hour (17:00–18:00)		
A56 Washway Road (north)	1,319	98%	29
A6144 Marsland Road	828	70%	17
A56 Washway Road (south)	1,048	88%	19
A6144 Harboro Way	468	57%	11

11.4.271 In the 2030 future baseline, the assessment shows that this junction operates over capacity in the AM peak hour with a maximum VoC of 101% on the A56 Washway Road (south) approach with an associated queue length of 22 PCU. In the PM peak hour, the assessment shows that this junction operates close to capacity in the 2030 future baseline with a maximum VoC of 98% on the A56 Washway Road (north) approach with an associated queue length of 29 PCU.

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