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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix TR-002-00005

Traffic and transport

MA05: Risley to Bamfurlong

Transport Assessment Part 2

M281

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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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10.1.1 The study area for traffic and transport includes the settlements of Warrington (including the suburb of Birchwood), Risley, Croft, Culcheth, Wigshaw, Lowtown, Golborne, Pennington (a suburb of Leigh), Ashton-in-Makerfield, Ince-in-Makerfield, Bamfurlong, Abram, Platt Bridge and Wigan, together with the railway stations of Birchwood, Newton-le-Willows, Bryn, Ince, Hindley, Wigan Wallgate and Wigan North Western.

10.1.2 Strategic roads potentially affected by the route of the Proposed Scheme in the MA05 area include the M6 (junctions 21a to 25), the M60 (junctions 13 and 14) and the M62 (junction 11).

10.1.3 Local roads in the MA05 area potentially affected by the route of the Proposed Scheme include the A574 Birchwood Way/Birchwood Park Avenue/Warrington Road, the A580 East Lancashire Road, the A572 Newton Road/Worsley Brow/Worsley Road/Leigh Road, the A573 Warrington Road/Aye Bridge Road/Wigan Road/Church Street/High Street/Bridge Street/Warrington Road, the A49 Warrington Road/Lodge Lane (also known locally as Roman Road)/Bryn Street, the A579 Atherleigh Way, the A58 Liverpool Road/Gerard Street/Bolton Road/Lily Lane, the A575 Walkden Road, the B5212 Holcroft Lane, the B5207 Wilton Lane/Kenyon Lane/Church Lane, the B5232 Newearth Road, the B5211 Barton Road, Silver Lane, Moss Gate, Daten Avenue, New Hall Lane, Glaziers Lane, Wigshaw Lane, Kenyon Lane, Lodge Lane, Newton Lane, Higher Green Lane, Chaddock lane, Ellenbrook Road, Slag Lane, Sandy Lane and Byrom Lane.

10.1.4 There are a number of passenger and freight lines that run through the MA05 area:

- Liverpool to Manchester Line (via Warrington Central);
- Liverpool to Manchester Line (Chat Moss); and
- West Coast Main Line (WCML).

10.1.5 In considering the future baseline, there were no major committed changes to the transport networks at the time of the assessment.

10.1.6 For ease of reference, the existing and future baseline conditions are considered together, for each transport topic.

10.2 Local land uses

10.2.1 The MA05 area comprises both urban and rural land uses, including metropolitan areas, towns, villages and hamlets, including Warrington (including the suburb of Birchwood),

Risley, Croft, Culcheth, Wigshaw, Lowtown, Golborne, Pennington (a suburb of Leigh), Ashton-in-Makerfield, Ince-in-Makerfield, Bamfurlong, Abram, Platt Bridge and Wigan.

10.2.2 The following sources have been analysed in order to determine the impact of future land uses upon future traffic and transport conditions:

- Local Plan documents (Adopted Wigan Local Plan Core Strategy 2011-2026 (2013)[1]; Saved policies of the adopted Wigan Replacement Unitary Development Plan (2006)[2]; Adopted Warrington Local Plan Core Strategy 2012-2027 (2014)[3]; Adopted St Helens Borough Council Local Plan Core Strategy (2012)[4]; Saved Policies of the adopted St Helens Borough Council Unitary Development Plan (1998)[5]; Greater Manchester Transport Strategy 2040 (2017)[6]; Warrington Local Transport Plan 4 (2019)[7]; and Liverpool City Region Combine Authority: A Transport Plan for Growth (2015)[8], Greater Manchester Transport Strategy 2040: Our Five Year Transport Delivery Plan (2021)[9]);
- local planning authority planning portals (to obtain details of recently consented, committed development that is not included in the sources above). This allows the impact of these committed developments to be considered at a very local level (i.e. at roads and junctions in proximity to the committed sites); and
- the Warrington Western Link Model (WWLM) developed by Warrington Borough Council and the Greater Manchester Strategic Model (GMSM)[10] developed by Transport for

[1] Wigan Metropolitan Borough Council (2013), *Adopted Local Plan Core Strategy 2013*. Available online at: https://www.wigan.gov.uk/Docs/PDF/Council/Strategies-Plans-and-Policies/Planning/Adopted-Core-Strategy.pdf.

[2] Wigan Metropolitan Borough Council (2006), *Wigan Replacement Unitary Development Plan (Adopted April 2006)*. Available online at: https://www.wigan.gov.uk/Docs/PDF/Council/Strategies-Plans-and-Policies/Planning/Latest-Remaining-Policies-UDP-April-2006.pdf.

[3] Warrington Borough Council (2014), *Local Plan Core Strategy 2012-2027 (Adopted 2014)*. Available online at: https://www.warrington.gov.uk/sites/default/files/2020-09/Local_Plan_Core_Strategy_Feb_2015.pdf.

[4] St Helens Council (2012), *Local Plan Core Strategy (October 2012).* Available online at: https://www.sthelens.gov.uk/media/3385/sthelens-local-plan-core-strategy-october-2012.pdf.

[5] St Helens Council (2013), *St. Helens Borough Council Unitary Development Plan (Adopted 2007)*. Available online at: https://www.sthelens.gov.uk/media/3391/sthelens-unitary-development-plan-saved-policies-2013-addendum.pdf.

[6] Manchester City Council (2017), *Greater Manchester Transport Strategy 2040*. Available online at: https://tfgm.com/2040-transport-strategy.

[7] Warrington Borough Council (2019), *Warrington Local Transport Plan 4 (2019)*. Available online at: https://www.warrington.gov.uk/LTP4.

[8] Liverpool City Region Combine Authority (2019), *A Transport Plan for Growth* Available online at: https://www.liverpoolcityregion-ca.gov.uk/wp-content/uploads/Item_5a_Transport_Plan_for_Growth_App1.pdf.

[9] Greater Manchester (2021), *Transport Strategy 2040: Our Five Year Transport Delivery Plan (2021-2026)*. Available online at: https://downloads.ctfassets.net/nv7y93idf4jq/5Y95swfmf42WVZozNA4fE/84092928376473c507ec000098b18c35/Delivery_Plan_2021-2026_Jan_2021_Final.pdf.

[10] GMSM model reference: GMVDM04A.

Greater Manchester which are based on agreed committed developments in the MA05 area.

10.2.3 The committed developments identified through this review have been taken into account in the development of the future baseline.

10.3 Baseline surveys

10.3.1 Surveys were undertaken to understand the use of highways and public rights of way (PRoW) within the MA05 area. The survey types and locations are in Background Information and Data (BID): Transport Assessment policy and data (BID TR-004-00001)[11].

Traffic surveys

10.3.2 Traffic surveys, comprising junction turning counts (JTC), manual classified counts (MCC), queue length surveys (QLS) and automatic traffic counts (ATC), were undertaken in June, July and November 2017 and June and July 2018. These data have been supplemented by existing traffic data from other sources, including from Warrington Borough Council (WBC), Wigan Metropolitan Borough Council (WMBC), St Helens Borough Council (SHBC), Transport for Greater Manchester (TfGM) and Highways England. Where possible, ATC data were gathered for a two-week period. In total 85 traffic surveys have been undertaken in the MA05 area.

Non-motorised user surveys

10.3.3 Non-motorised user surveys were undertaken on various routes used by pedestrians, cyclists and equestrians in August and September 2017 to establish their nature and usage. The surveys included PRoW and roads that are crossed by the route of the Proposed Scheme and any additional PRoW and roads that may be affected by the route of the Proposed Scheme. The majority of the PRoW surveys were undertaken during the weekend, at times when recreational use is expected to be highest, but where routes are likely to be used for non-leisure uses such as commuting, surveys were undertaken on a weekday.

10.3.4 The baseline survey report in Transport Assessment policy and data (see BID TR-004-00001) provides a summary of non-motorised user survey data within the MA05 area. For ease of reference the data have been presented for each parish within the area, from south to north.

10.3.5 The surveys indicated that the majority of PRoW crossing the route of the Proposed Scheme are used by pedestrians and cyclists for recreational purposes.

[11] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Background Information and Data.* Available online at: https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement.

10.3.6 Compared to the existing baseline, no changes are assumed to non-motorised user provision in the future baseline.

Accident data

10.3.7 Accident[12] data have been sourced from official Department of Transport (DfT) STATS19 statistics[13]. Data for the three-year period from July 2016 to June 2019 have been assessed.

10.4 Highway network

Strategic and primary 'A' road network

10.4.1 Three motorways and three primary 'A' roads run through the study area: the M6, the M60, the M62 and the A580.

10.4.2 The M6 extends on a north to south alignment along the western side of MA05 and connects Wigan in the north and Birchwood in the south. The M6 is managed by Highways England and comprises a three-lane motorway with a hard shoulder in each direction. The national speed limit applies. There are five grade-separated junctions on the M6 within the MA05 area:

- M6 junction 21A - M62 (locally known as 'Croft Interchange');
- M6 junction 22 - Winwick;
- M6 junction 23 - Haydock;
- M6 junction 24 - Ashton-in-Makerfield; and
- M6 junction 25 - Bryn.

10.4.3 The M60 forms part of the Manchester Outer Ring Road and intersects the MA05 area in the east. The M60 is managed by Highways England and comprises a three-lane motorway with a hard shoulder in each direction. The national speed limit applies. There are three grade-separated junctions on the M60 within the MA05 area:

- M60 junction 12 - Eccles Interchange;
- M60 junction 13 - Worsley Interchange; and
- M60 junction 14 - Worsley Braided Interchange.

10.4.4 The M62 extends on a west to east alignment between Warrington to the west and Manchester to the east and intersects MA05 to the north of Birchwood. The M62 is managed by Highways England and comprises 'all lane running' smart motorway with four lanes in

[12] The term accident in this report refers to injury related collisions reported to/recorded by the police. This data, known as STATS19, relate only to personal injury accidents on public roads that are reported to the police, and subsequently recorded, using the STATS19 accident reporting form.

[13] Department for Transport (2021), *STATS19 Road Safety Data July 2016 - June 2019*. Available online at: https://www.gov.uk/government/collections/road-accidents-and-safety-statistics.

each direction between junction 10 and 12. The national speed limit applies. There are three grade-separated junctions on the M62 within the MA05 area:

- M62 junction 9 - North Warrington;
- M62 junction 10 - M6 (also known as M6 junction 21a); and
- M62 junction 11 - South Culcheth (Birchwood Interchange).

10.4.5 The route of the Proposed Scheme intersects the M62 approximately 1km east of M62 junction 11.

10.4.6 The A580 East Lancashire Road is a dual carriageway which has a west to east alignment through the centre of MA05, connecting Haydock in the west and Leigh in the east. Traffic is subject to a speed limit of 60mph. Within the study area, the A580 East Lancashire Road is managed by the local highway authorities SHBC and WDC. A section of the A580 East Lancashire Road, in the vicinity of its junction with the M6 junction 23, is managed by Highways England. The Proposed Scheme intersects the A580 East Lancashire Road to the east of Golborne.

Local road network

10.4.7 The key local roads in the MA05 area, including roads likely to be affected by the route of the Proposed Scheme, are:

- A574 Birchwood Way/Birchwood Park Avenue/Warrington Road, which follows a south-west to north-east alignment and connects the settlements of Warrington in the south-west and Leigh in the north-east. The A574 Birchwood Way/Birchwood Park Avenue/Warrington Road is a single carriageway road with a 40mph speed limit with reduced speeds in built up areas. The road crosses the route of the Proposed Scheme approximately 400m south of Culcheth;
- A573 Warrington Road/Aye Bridge Road/Wigan Road/Church Street/High Street/Bridge Street/Warrington Road, which follows a south to north alignment and connects the settlements of Winwick in the south and Wigan in the north. The A573 Bridge Street/High Street/Church Street/Wigan Road/Aye Bridge Road/Warrington Road is a single carriageway road with a 40mph speed limit with reduced speeds in built up areas. The road crosses the route of the Proposed Scheme approximately 1.3km north of Golborne;
- A49 Warrington Road/Lodge Lane (also known locally as Roman Road)/Bryn Street, which follows a south to north alignment and connects the settlements of Haydock in the south and Ashton-in-Makerfield in the north. The A49 Lodge Lane/Warrington Road is a single carriageway road with a 40mph speed limit with reduced speeds in built up areas. The road does not cross the route of the Proposed Scheme;
- A572 Newton Road/Worsley Brow/Worsley Road/Leigh Road, which follows a west to east alignment and connects the settlements of Newton-Le-Willows in the west and Leigh in the east. The A572 Newton Road/Worsley Brow/Worsley Road/Leigh Road is a single carriageway road with a 30mph speed limit. The road crosses the route of the Proposed Scheme approximately 700m east of Golborne;

- A58 Liverpool Road/Gerard Street/Bolton Road/Lily Lane, which follows a south-west to north-east alignment and connects the settlements of Ashton-in-Makerfield in the south-west and Abram in the north-east. The A58 Liverpool Road/Gerard Street/Bolton Road/Lily Lane is a single carriageway road with a 30mph speed limit. The road does not cross the route of the Proposed Scheme; and
- B5207 Wilton Lane/Kenyon Lane/Church Lane, which follows a north-west to south-east alignment and connects the settlements of Bryn and Downall Green in the north-west and Culcheth in the south-east. The B5207 Wilton Lane/Kenyon Lane/Church Lane is a single carriageway road with a 40mph speed limit with reduced speeds in built up areas. The road crosses the route of the Proposed Scheme approximately 1.6km north-west of Culcheth.

10.4.8 There are a number of other roads which cross the route of or may be affected by the route of the Proposed Scheme, these are:

- Daten Avenue, between the A574 Birchwood Way and the A574 Warrington Road;
- New Hall Lane, to the east of the A574 Warrington Road;
- Glaziers Lane, between the A574 Warrington Road and Wigshaw Lane;
- Wigshaw Lane, between Mustard Lane and the B5207 Kenyon Lane;
- Kenyon Lane, between Main Lane and the B5207 Wilton Lane;
- Slag Lane, between the B5207 Church Lane and Plank Lane;
- Sandy Lane/Byrom Lane, between the A572 Newton Road and Slag Lane;
- A575 Walken Road, between the A580 East Lancashire Road and the A572 Worsley Brow/Leigh Road;
- B5212 Holcroft Lane (southern section); and
- B5211 Barton Road, between the A572 Worsley Brow / Worsley Road and Farm Lane.

Growth in traffic

10.4.9 In considering the future baseline, traffic will vary across MA05. The use of strategic transport models[14], TEMPro and local traffic models, with further adjustment for known developments, means that forecast traffic growth is not uniform on all links and at junctions. Notwithstanding this, it is possible to produce an overall average growth factor for links within MA05 calculated using the total link flows for each future year. These illustrative overall growth factors are summarised in Table 10-1.

Table 10-1: MA05 traffic growth summary

Period years	AM peak hour	PM peak hour
2018-2030	10%	10%
2018-2038	16%	16%

[14] WWLM and GMSM.

Period years	AM peak hour	PM peak hour
2018-2046	23%	22%

Baseline traffic flows

10.4.10 The 2018 baseline traffic flows for strategic, primary 'A' roads and local roads for the MA05 area are summarised in Table 10-2 for the weekday AM peak hour (08:00–09:00) and PM peak hour (17:00–18:00) and in Table 10-3 for Annual Average Daily Traffic (AADT). Due to the simplified way in which the road network is represented in the strategic models, the use of some local roads may not be precisely reflected in the baseline traffic flows, however, this is not expected to change the conclusions of the assessment.

Table 10-2: MA05 strategic and local road network 2018 AM and PM peak hour baseline flows (vehicles)

Location	Direction*	2018 baseline AM peak hour (08:00–09:00) - All vehicles	2018 baseline AM peak hour (08:00–09:00) - HGV	2018 baseline PM peak hour (17:00–18:00) - All vehicles	2018 baseline PM peak hour (17:00–18:00) - HGV
A574 Birchwood Way (between A547 Birchwood Park Avenue and Faraday Street)	EB	957	30	649	12
	WB	524	26	605	5
A574 Birchwood Park Avenue (between A574 Birchwood Way and Garrett Field)	NB	1,182	9	644	6
	SB	956	16	1,055	7
A574 Birchwood Park Avenue (between Garrett Field and Glover Road (north))	NB	1,182	9	644	6
	SB	956	16	1,055	7
A574 Birchwood Way (between Daten Avenue and Faraday Street)	NB	512	20	788	9
	SB	726	22	300	6
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	1,062	15	289	6
	WB	414	12	946	7
A574 Birchwood Park Avenue (between Glover Road and A574 Warrington Road)	EB	1,182	9	644	6
	WB	956	16	1,055	7
Daten Avenue (between Risley Road and A574 Birchwood Way)	NB	805	33	298	26
	SB	442	43	775	20
Daten Avenue (between Faraday Street and Risley Road)	EB	442	43	775	20
	WB	805	33	298	26
A574 Birchwood Way (between M62 Junction 11 and Daten Avenue)	EB	1,091	61	1,685	25
	WB	1,321	46	711	32
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	365	13	1,084	10
	SB	1,295	21	419	7
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	329	11	792	9
	SB	958	19	390	6

Location	Direction*	2018 baseline AM peak hour (08:00–09:00) - All vehicles	2018 baseline AM peak hour (08:00–09:00) - HGV	2018 baseline PM peak hour (17:00–18:00) - All vehicles	2018 baseline PM peak hour (17:00–18:00) - HGV
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	295	10	785	6
	SB	931	13	336	4
A574 Warrington Road (between Glaziers Lane and New Hall Lane)	NB	275	9	724	7
	SB	998	19	445	7
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	295	10	785	6
	SB	931	13	336	4
Wigshaw Lane/Mustard Lane (between Lady Lane and Glaziers Lane)	EB	679	6	566	2
	WB	430	6	612	2
B5207 Wilton Lane (between B5207 Broseley Lane and B5207 Kenyon Lane)	EB	843	12	664	7
	WB	611	15	851	4
B5207 Kenyon Lane (between A572 Newton Road and B5207 Wilton Lane)	EB	527	9	187	2
	WB	221	9	345	2
B5207 Church Lane (between A572 Newton Road and A580 East Lancashire Road)	NB	47	1	49	0
	SB	45	1	75	1
A572 Newton Road (between B5207 Church Lane and A580 East Lancashire Road)	NB	554	37	633	23
	SB	737	61	670	21
A580 East Lancashire Road (between A573 Warrington Road and Stone Cross Lane South)	EB	1,390	127	1,501	74
	WB	1,152	90	1,399	60
A580 East Lancashire Road (between A572 Newton Road and A579 Atherleigh Way)	EB	1,576	141	1,578	74
	WB	1,148	118	1,610	65
A573 Warrington Road (between A580 East Lancashire Road and Park Road)	NB	389	17	682	15
	SB	575	27	591	13
A580 East Lancashire Road (between A573 Warrington Road and M6 junction 23 (Haydock Island))	EB	1,463	141	2,095	91
	WB	1,537	105	1,523	71
B5207 Church Lane (between A580 East Lancashire Road and Slag Lane)	EB	340	15	271	10
	WB	204	16	457	10
A572 Newton Road (between A580 East Lancashire Road and Sandy Lane)	EB	405	24	684	22
	WB	622	51	506	16
A573 Bridge Street/High Street (between Park Road and Heath Street)	NB	372	19	500	11
	SB	450	19	735	19
A580 East Lancashire Road (between A574 Warrington Road and A579 Atherleigh Way)	EB	1,580	120	1,337	72
	WB	918	99	1,641	61
A573 High Street/Church Street (between Heath Street and B5207 Lowton Road)	NB	355	13	518	16
	SB	415	19	383	12

Location	Direction*	2018 baseline AM peak hour (08:00–09:00) - All vehicles	2018 baseline AM peak hour (08:00–09:00) - HGV	2018 baseline PM peak hour (17:00–18:00) - All vehicles	2018 baseline PM peak hour (17:00–18:00) - HGV
Slag Lane (between B5207 Church Lane and Byrom Lane)	NB	366	5	790	1
	SB	615	9	458	3
Byrom Lane/Sandy Lane (between A572 Newton Road and Slag Lane)	NB	150	4	247	2
	SB	272	5	166	4
A49 Lodge Lane/Warrington Road (between A58 Liverpool Road and A599 Penny Lane)	NB	264	27	535	9
	SB	416	31	328	8
A573 Ashton Road (between B5207 Ashton Road and B5207 Lowton Road)	NB	558	16	803	15
	SB	660	24	604	9
A58 Liverpool Road (between M6 Junction 24 and A49 Warrington Road)	EB	288	30	393	29
	WB	250	32	262	14
A58 Gerard Street (between A49 Bryn Street and A5062 Wigan Road)	NB	316	40	514	15
	SB	383	43	392	14
A580 East Lancashire Road (between Higher Green Lane and A574 Warrington Road)	EB	1,180	134	1,422	46
	WB	1,117	115	1,117	43
A58 Bolton Road (between A5062 Wigan Road and Bryn Road South)	NB	552	38	770	17
	SB	575	46	580	20
A573 Wigan Road (between B5207 Ashton Road and A573 Aye Bridge Road)	NB	341	16	790	16
	SB	938	31	379	11
A58 Bolton Road (between Bryn Road South and B5207 Bryn Road)	EB	417	21	647	14
	WB	1,071	59	988	22
A58 Bolton Road (between B5207 Bryn Road and B5207 Golborne Road)	EB	986	34	1,174	15
	WB	966	46	918	18
A58 Bolton Road (between B5207 Golborne Road and Riding Lane)	NB	511	24	706	9
	SB	569	32	526	9
A580 East Lancashire Road (between A572 Chaddock Lane and Higher Green Lane)	EB	1,304	125	1,266	46
	WB	918	93	1,333	47
A580 East Lancashire Road (between A577 Mosley Common Road and A572 Chaddock Lane)	EB	1,529	91	1,334	46
	WB	805	74	1,412	44
A580 East Lancashire Road (between B5232 Newearth Road and A577 Mosley Common Road)	EB	1,545	78	1,256	47
	WB	863	76	1,673	50
A575 Walkden Road (between Greenleach Lane and A572 Leigh Road (M60 junction 13))	NB	618	38	670	51
	SB	864	34	788	7
A573 Wigan Road/Warrington Road (between B5207 Ashton Road and A58 Lily Lane)	NB	365	13	1,084	10
	SB	1,295	21	419	7

Location	Direction*	2018 baseline AM peak hour (08:00–09:00) - All vehicles	2018 baseline AM peak hour (08:00–09:00) - HGV	2018 baseline PM peak hour (17:00–18:00) - All vehicles	2018 baseline PM peak hour (17:00–18:00) - HGV
A58 Bolton Road/Lily Lane (between Riding Lane and A573 Warrington Road)	NB	610	21	669	8
	SB	455	22	547	8
A580 East Lancashire Road (between B5232 Newearth Road and A575 Walkden Road)	EB	1,536	83	991	51
	WB	761	81	1,694	54
A575 Walkden Road (between A580 East Lancashire Road and Greenleach Lane)	NB	654	41	738	42
	SB	980	37	791	10
B5232 Newearth Road (between Guided Busway and Shawbrook Avenue)	NB	594	5	926	2
	SB	389	4	404	2
A580 East Lancashire Road (between A575 Walkden Road and Old Clough Lane)	EB	1,933	108	1,276	64
	WB	880	76	1,728	64
B5232 Bridgewater Road (between A6 High Street and B5232 Westminster Road)	SB	95	2	254	2

* *NB = northbound; SB = southbound; EB = eastbound; and WB = westbound*

Table 10-3: MA05 strategic and local road network 2018 AADT baseline flows (vehicles)

Location	Direction	Annual Average Daily Traffic (AADT) - all vehicles	Annual Average Daily Traffic (AADT) - HGV
A574 Birchwood Way (between A547 Birchwood Park Avenue and Faraday Street)	EB	9,026	234
	WB	6,340	169
A574 Birchwood Park Avenue (between A574 Birchwood Way and Garrett Field)	NB	10,264	82
	SB	11,291	124
A574 Birchwood Park Avenue (between Garrett Field and Glover Road (north))	NB	10,264	82
	SB	11,291	124
A574 Birchwood Way (between Daten Avenue and Faraday Street)	NB	7,294	158
	SB	5,769	158
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	7,603	115
	WB	7,631	104
A574 Birchwood Park Avenue (between Glover Road and A574 Warrington Road)	EB	10,264	82
	WB	11,291	124
Daten Avenue (between Risley Road and A574 Birchwood Way)	NB	6,204	332
	SB	6,828	352
Daten Avenue (between Faraday Street and Risley Road)	EB	6,828	352
	WB	6,204	332
	EB	15,580	481

Location	Direction	Annual Average Daily Traffic (AADT) - all vehicles	Annual Average Daily Traffic (AADT) - HGV
A574 Birchwood Way (between M62 Junction 11 and Daten Avenue)	WB	11,421	441
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	8,126	127
	SB	9,643	158
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	6,290	112
	SB	7,582	138
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	6,059	90
	SB	7,124	93
A574 Warrington Road (between Glaziers Lane and New Hall Lane)	NB	5,598	87
	SB	8,114	141
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	6,059	90
	SB	7,124	93
Wigshaw Lane / Mustard Lane (between Lady Lane and Glaziers Lane)	EB	6,993	45
	WB	5,845	40
B5207 Wilton Lane (between B5207 Broseley Lane and B5207 Kenyon Lane)	EB	8,463	104
	WB	8,204	104
B5207 Kenyon Lane (between A572 Newton Road and B5207 Wilton Lane)	EB	3,724	54
	WB	3,163	51
B5207 Church Lane (between A572 Newton Road and A580 East Lancashire Road)	NB	523	2
	SB	674	11
A572 Newton Road (between B5207 Church Lane and A580 East Lancashire Road)	NB	6,536	321
	SB	7,663	428
A580 East Lancashire Road (between A573 Warrington Road and Stone Cross Lane South)	EB	16,233	1,125
	WB	14,090	804
A580 East Lancashire Road (between A572 Newton Road and A579 Atherleigh Way)	EB	17,262	1,144
	WB	15,336	978
A573 Warrington Road (between A580 East Lancashire Road and Park Road)	NB	6,013	172
	SB	6,389	209
A580 East Lancashire Road (between A573 Warrington Road and M6 junction 23 (Haydock Island))	EB	19,969	1,306
	WB	17,182	990
B5207 Church Lane (between A580 East Lancashire Road and Slag Lane)	EB	3,305	129
	WB	3,751	134
A572 Newton Road (between A580 East Lancashire Road and Sandy Lane)	EB	6,107	248
	WB	6,111	345
A573 Bridge Street/High Street (between Park Road and Heath Street)	NB	4,840	160
	SB	6,637	208
	EB	16,390	1,081

Location	Direction	Annual Average Daily Traffic (AADT) - all vehicles	Annual Average Daily Traffic (AADT) - HGV
A580 East Lancashire Road (between A574 Warrington Road and A579 Atherleigh Way)	WB	14,358	894
A573 High Street/Church Street (between Heath Street and B5207 Lowton Road)	NB	4,864	160
	SB	4,351	166
Slag Lane (between B5207 Church Lane and Byrom Lane)	NB	6,553	28
	SB	5,783	63
Byrom Lane/Sandy Lane (between A572 Newton Road and Slag Lane)	NB	2,226	34
	SB	2,340	44
A49 Lodge Lane/Warrington Road (between A58 Liverpool Road and A599 Penny Lane)	NB	4,480	200
	SB	4,182	214
A573 Ashton Road (between B5207 Ashton Road and B5207 Lowton Road)	NB	7,636	171
	SB	7,100	186
A58 Liverpool Road (between M6 Junction 24 and A49 Warrington Road)	EB	3,824	332
	WB	2,875	259
A58 Gerard Street (between A49 Bryn Street and A5062 Wigan Road)	NB	4,654	307
	SB	4,350	321
A580 East Lancashire Road (between Higher Green Lane and A574 Warrington Road)	EB	17,137	1,185
	WB	14,705	1,034
A58 Bolton Road (between A5062 Wigan Road and Bryn Road South)	NB	7,346	290
	SB	6,322	342
A573 Wigan Road (between B5207 Ashton Road and A573 Aye Bridge Road)	NB	6,342	181
	SB	7,409	239
A58 Bolton Road (between Bryn Road South and B5207 Bryn Road)	EB	5,943	188
	WB	11,222	422
A58 Bolton Road (between B5207 Bryn Road and B5207 Golborne Road)	EB	12,130	273
	WB	10,583	355
A58 Bolton Road (between B5207 Golborne Road and Riding Lane)	NB	6,764	173
	SB	5,966	212
A580 East Lancashire Road (between A572 Chaddock Lane and Higher Green Lane)	EB	16,914	1,122
	WB	14,832	920
A580 East Lancashire Road (between A577 Mosley Common Road and A572 Chaddock Lane)	EB	18,842	896
	WB	14,615	779
A580 East Lancashire Road (between B5232 Newearth Road and A577 Mosley Common Road)	EB	18,429	819
	WB	16,721	830
A575 Walkden Road (between Greenleach Lane and A572 Leigh Road (M60 junction 13))	NB	8,479	583
	SB	10,869	268
	NB	8,126	127

Location	Direction	Annual Average Daily Traffic (AADT) - all vehicles	Annual Average Daily Traffic (AADT) - HGV
A573 Wigan Road/Warrington Road (between B5207 Ashton Road and A58 Lily Lane)	SB	9,643	158
A58 Bolton Road/Lily Lane (between Riding Lane and A573 Warrington Road)	NB	7,031	150
	SB	5,529	154
A580 East Lancashire Road (between B5232 Newearth Road and A575 Walkden Road)	EB	16,618	880
	WB	16,192	889
A575 Walkden Road (between A580 East Lancashire Road and Greenleach Lane)	NB	9,166	545
	SB	11,649	307
B5232 Newearth Road (between Guided Busway and Shawbrook Avenue)	NB	10,018	45
	SB	5,221	42
A580 East Lancashire Road (between A575 Walkden Road and Old Clough Lane)	EB	21,103	1,136
	WB	17,199	918
B5232 Bridgewater Road (between A6 High Street and B5232 Westminster Road)	SB	2,297	25

10.4.11 Table 10-4, Table 10-5 and Table 10-6 summarise the 2030, 2038 and 2046 future baseline traffic flows for the AM (08:00–09:00), PM (17:00–18:00) and AADT respectively. Flows are presented for strategic and local roads where it is considered that there is the potential for a substantial impact either during construction or through the operation of the Proposed Scheme. Due to the simplified way in which the road network is represented in the strategic models, the use of some local roads may not be precisely reflected in the future baseline traffic flows, however, this is not expected to change the conclusions of the assessment.

Table 10-4: MA05 strategic and local road network future baseline flows AM peak hour 08:00–09:00

Location	Direction	AM peak hour 2030 all vehicles	AM peak hour 2030 HGV	AM peak hour 2038 all vehicles	AM peak hour 2038 HGV	AM peak hour 2046 all vehicles	AM peak hour 2046 HGV
A574 Birchwood Way (between A547 Birchwood Park Avenue and Faraday Street)	EB	1,077	30	1,142	30	1,203	31
	WB	590	26	627	26	661	27
A574 Birchwood Park Avenue (between A574 Birchwood Way and Garrett Field)	NB	1,333	9	1,414	9	1,490	9
	SB	1,077	16	1,142	16	1,204	16
A574 Birchwood Park Avenue (between Garrett Field and Glover Road (north)	NB	1,333	9	1,414	9	1,490	9
	SB	1,077	16	1,142	16	1,204	16
A574 Birchwood Way (between Daten Avenue and Faraday Street)	NB	576	20	612	20	645	20
	SB	817	22	868	23	915	23
	EB	1,197	15	1,270	15	1,339	16

Location	Direction	AM peak hour 2030 all vehicles	AM peak hour 2030 HGV	AM peak hour 2038 all vehicles	AM peak hour 2038 HGV	AM peak hour 2046 all vehicles	AM peak hour 2046 HGV
Daten Avenue (between A574 Warrington Road and Faraday Street)	WB	467	12	496	12	523	12
A574 Birchwood Park Avenue (between Glover Road and A574 Warrington Road)	EB	1,333	9	1,414	9	1,490	9
	WB	1,077	16	1,142	16	1,204	16
Daten Avenue (between Risley Road and A574 Birchwood Way)	NB	905	34	959	34	1,011	34
	SB	496	44	527	44	557	45
Daten Avenue (between Faraday Street and Risley Road)	EB	496	44	527	44	557	45
	WB	905	34	959	34	1,011	34
A574 Birchwood Way (between M62 Junction 11 and Daten Avenue)	EB	1,228	62	1,305	63	1,377	63
	WB	1,486	47	1,576	47	1,661	48
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	411	13	437	13	461	13
	SB	1,459	21	1,547	21	1,631	22
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	371	11	394	11	417	11
	SB	1,079	19	1,144	19	1,206	19
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	333	10	353	10	373	10
	SB	1,049	13	1,112	13	1,172	13
A574 Warrington Road (between Glaziers Lane and New Hall Lane)	NB	310	9	329	9	347	9
	SB	1,124	19	1,193	19	1,258	19
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	333	10	353	10	373	10
	SB	1,049	13	1,112	13	1,172	13
Wigshaw Lane / Mustard Lane (between Lady Lane and Glaziers Lane)	EB	767	6	814	6	860	7
	WB	485	6	516	6	545	6
B5207 Wilton Lane (between B5207 Broseley Lane and B5207 Kenyon Lane)	EB	950	12	1,009	12	1,065	12
	WB	689	15	732	15	773	15
B5207 Kenyon Lane (between A572 Newton Road and B5207 Wilton Lane)	EB	594	9	630	9	665	9
	WB	249	9	264	9	278	9
B5207 Church Lane (between A572 Newton Road and A580 East Lancashire Road)	NB	53	1	56	1	59	1
	SB	51	1	54	1	57	1
A572 Newton Road (between B5207 Church Lane and A580 East Lancashire Road)	NB	623	38	661	38	697	38
	SB	827	62	877	63	925	63
	EB	1,559	129	1,654	130	1,745	132

Location	Direction	AM peak hour 2030 all vehicles	AM peak hour 2030 HGV	AM peak hour 2038 all vehicles	AM peak hour 2038 HGV	AM peak hour 2046 all vehicles	AM peak hour 2046 HGV
A580 East Lancashire Road (between A573 Warrington Road and Stone Cross Lane South)	WB	1,294	91	1,374	92	1,450	93
A580 East Lancashire Road (between A572 Newton Road and A579 Atherleigh Way)	EB	1,770	143	1,878	145	1,982	147
	WB	1,288	120	1,367	122	1,443	123
A573 Warrington Road (between A580 East Lancashire Road and Park Road)	NB	438	17	464	17	490	17
	SB	647	27	688	27	726	28
A580 East Lancashire Road (between A573 Warrington Road and M6 junction 23 (Haydock Island))	EB	1,640	144	1,739	145	1,834	147
	WB	1,727	107	1,833	108	1,934	109
B5207 Church Lane (between A580 East Lancashire Road and Slag Lane)	EB	383	15	407	15	430	15
	WB	229	16	243	16	257	16
A572 Newton Road (between A580 East Lancashire Road and Sandy Lane)	EB	456	24	484	24	511	24
	WB	697	52	739	52	779	53
A573 Bridge Street/High Street (between Park Road and Heath Street)	NB	421	19	450	19	478	19
	SB	512	19	550	19	586	20
A580 East Lancashire Road (between A574 Warrington Road and A579 Atherleigh Way)	EB	1,776	122	1,886	124	1,991	125
	WB	1,030	100	1,093	101	1,154	102
A573 High Street/Church Street (between Heath Street and B5207 Lowton Road)	NB	400	13	424	13	447	13
	SB	467	19	496	19	524	20
Slag Lane (between B5207 Church Lane and Byrom Lane)	NB	414	5	440	5	465	5
	SB	694	9	737	9	778	9
Byrom Lane/Sandy Lane (between A572 Newton Road and Slag Lane)	NB	171	4	183	4	195	4
	SB	310	5	334	5	357	5
A49 Lodge Lane/Warrington Road (between A58 Liverpool Road and A599 Penny Lane)	NB	295	27	312	27	329	27
	SB	467	31	495	31	522	31
A573 Ashton Road (between B5207 Ashton Road and B5207 Lowton Road)	NB	628	16	667	16	704	16
	SB	744	24	791	25	836	25
A58 Liverpool Road (between M6 Junction 24 and A49 Warrington Road)	EB	321	31	338	31	355	31
	WB	278	33	293	33	307	33
A58 Gerard Street (between A49 Bryn Street and A5062 Wigan Road)	NB	352	40	372	40	392	41
	SB	428	44	453	44	477	44
	EB	1,356	150	1,421	158	1,441	155

Location	Direction	AM peak hour 2030 all vehicles	AM peak hour 2030 HGV	AM peak hour 2038 all vehicles	AM peak hour 2038 HGV	AM peak hour 2046 all vehicles	AM peak hour 2046 HGV
A580 East Lancashire Road (between Higher Green Lane and A574 Warrington Road)	WB	1,418	122	1,447	132	1,468	136
A58 Bolton Road (between A5062 Wigan Road and Bryn Road South)	NB	619	39	655	39	690	39
	SB	644	46	682	46	719	47
A573 Wigan Road (between B5207 Ashton Road and A573 Aye Bridge Road)	NB	387	16	415	16	442	16
	SB	1,070	32	1,149	32	1,226	33
A58 Bolton Road (between Bryn Road South and B5207 Bryn Road)	EB	469	21	497	21	524	22
	WB	1,204	59	1,277	60	1,347	60
A58 Bolton Road (between B5207 Bryn Road and B5207 Golborne Road)	EB	1,111	35	1,180	35	1,245	35
	WB	1,086	46	1,152	46	1,214	46
A58 Bolton Road (between B5207 Golborne Road and Riding Lane)	NB	575	24	611	25	645	25
	SB	639	32	678	33	715	33
A580 East Lancashire Road (between A572 Chaddock Lane and Higher Green Lane)	EB	1,458	139	1,496	147	1,513	143
	WB	1,176	99	1,161	106	1,163	108
A580 East Lancashire Road (between A577 Mosley Common Road and A572 Chaddock Lane)	EB	1,704	112	1,753	119	1,779	122
	WB	1,034	87	1,029	93	1,051	96
A580 East Lancashire Road (between B5232 Newearth Road and A577 Mosley Common Road)	EB	1,660	104	1,689	112	1,706	114
	WB	1,096	84	1,100	89	1,129	95
A575 Walkden Road (between Greenleach Lane and A572 Leigh Road (M60 junction 13))	NB	671	44	668	41	685	46
	SB	868	40	825	40	833	42
A573 Wigan Road/Warrington Road (between B5207 Ashton Road and A58 Lily Lane)	NB	411	13	437	13	461	13
	SB	1,459	21	1,547	21	1,631	22
A58 Bolton Road/Lily Lane (between Riding Lane and A573 Warrington Road)	NB	687	21	729	21	769	21
	SB	512	22	543	22	573	23
A580 East Lancashire Road (between B5232 Newearth Road and A575 Walkden Road)	EB	1,780	102	1,793	110	1,862	112
	WB	924	91	936	99	961	101
A575 Walkden Road (between A580 East Lancashire Road and Greenleach Lane)	NB	700	48	710	45	722	49
	SB	1,009	43	956	43	972	45
B5232 Newearth Road (between Guided Busway and Shawbrook Avenue)	NB	651	11	705	11	764	12
	SB	677	12	660	13	748	14
	EB	2,241	129	2,257	134	2,311	135

Location	Direction	AM peak hour 2030 all vehicles	AM peak hour 2030 HGV	AM peak hour 2038 all vehicles	AM peak hour 2038 HGV	AM peak hour 2046 all vehicles	AM peak hour 2046 HGV
A580 East Lancashire Road (between A575 Walkden Road and Old Clough Lane)	WB	1,018	85	1,005	91	1,021	91
B5232 Bridgewater Road (between A6 High Street and B5232 Westminster Road)	SB	231	7	221	7	262	13

Table 10-5: MA05 strategic and local road network future baseline flows PM peak hour 17:00–18:00

Location	Direction	PM peak hour 2030 all vehicles	PM peak hour 2030 HGV	PM peak hour 2038 all vehicles	PM peak hour 2038 HGV	PM peak hour 2046 all vehicles	PM peak hour 2046 HGV
A574 Birchwood Way (between A547 Birchwood Park Avenue and Faraday Street)	EB	729	12	772	12	812	13
	WB	680	5	721	5	759	5
A574 Birchwood Park Avenue (between A574 Birchwood Way and Garrett Field)	NB	723	6	765	6	805	6
	SB	1,184	7	1,253	7	1,317	7
A574 Birchwood Park Avenue (between Garrett Field and Glover Road (north))	NB	723	6	765	6	805	6
	SB	1,184	7	1,253	7	1,317	7
A574 Birchwood Way (between Daten Avenue and Faraday Street)	NB	884	9	936	9	984	9
	SB	337	6	357	6	376	6
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	325	6	344	6	361	6
	WB	1,063	7	1,125	7	1,183	7
A574 Birchwood Park Avenue (between Glover Road and A574 Warrington Road)	EB	723	6	765	6	805	6
	WB	1,184	7	1,253	7	1,317	7
Daten Avenue (between Risley Road and A574 Birchwood Way)	NB	334	26	353	27	371	27
	SB	869	20	919	20	966	20
Daten Avenue (between Faraday Street and Risley Road)	EB	869	20	919	20	966	20
	WB	334	26	353	27	371	27
A574 Birchwood Way (between M62 Junction 11 and Daten Avenue)	EB	1,890	25	2,000	25	2,102	26
	WB	798	33	845	33	889	34
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	1,218	10	1,289	10	1,355	10
	SB	471	7	499	7	525	7
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	890	9	942	9	991	9
	SB	438	6	463	6	487	6
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	882	6	934	6	982	6
	SB	377	4	399	4	420	4

Location	Direction	PM peak hour 2030 all vehicles	PM peak hour 2030 HGV	PM peak hour 2038 all vehicles	PM peak hour 2038 HGV	PM peak hour 2046 all vehicles	PM peak hour 2046 HGV
A574 Warrington Road (between Glaziers Lane and New Hall Lane)	NB	813	7	861	7	906	7
	SB	500	7	529	7	557	7
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	882	6	934	6	982	6
	SB	377	4	399	4	420	4
Wigshaw Lane / Mustard Lane (between Lady Lane and Glaziers Lane)	EB	637	2	676	2	712	2
	WB	688	2	729	2	767	2
B5207 Wilton Lane (between B5207 Broseley Lane and B5207 Kenyon Lane)	EB	747	7	792	7	834	7
	WB	956	4	1,014	4	1,067	4
B5207 Kenyon Lane (between A572 Newton Road and B5207 Wilton Lane)	EB	210	2	222	2	234	2
	WB	388	2	412	2	434	2
B5207 Church Lane (between A572 Newton Road and A580 East Lancashire Road)	NB	55	0	58	0	61	0
	SB	84	1	89	1	94	1
A572 Newton Road (between B5207 Church Lane and A580 East Lancashire Road)	NB	711	23	754	24	794	24
	SB	752	21	797	22	838	22
A580 East Lancashire Road (between A573 Warrington Road and Stone Cross Lane South)	EB	1,684	75	1,784	76	1,877	77
	WB	1,569	61	1,662	62	1,749	62
A580 East Lancashire Road (between A572 Newton Road and A579 Atherleigh Way)	EB	1,769	76	1,873	77	1,970	77
	WB	1,805	67	1,912	67	2,011	68
A573 Warrington Road (between A580 East Lancashire Road and Park Road)	NB	766	15	813	15	857	16
	SB	664	13	704	13	742	13
A580 East Lancashire Road (between A573 Warrington Road and M6 junction 23 (Haydock Island))	EB	2,351	93	2,493	94	2,625	95
	WB	1,708	72	1,810	73	1,906	74
B5207 Church Lane (between A580 East Lancashire Road and Slag Lane)	EB	304	10	321	10	338	10
	WB	514	10	545	10	574	10
A572 Newton Road (between A580 East Lancashire Road and Sandy Lane)	EB	768	22	815	22	858	23
	WB	568	16	601	16	632	16
A573 Bridge Street/High Street (between Park Road and Heath Street)	NB	567	12	605	12	642	12
	SB	837	19	898	20	957	20
A580 East Lancashire Road (between A574 Warrington Road and A579 Atherleigh Way)	EB	1,500	73	1,590	74	1,674	75
	WB	1,842	62	1,953	62	2,056	63
	NB	583	16	620	16	654	16

Location	Direction	PM peak hour 2030 all vehicles	PM peak hour 2030 HGV	PM peak hour 2038 all vehicles	PM peak hour 2038 HGV	PM peak hour 2046 all vehicles	PM peak hour 2046 HGV
A573 High Street/Church Street (between Heath Street and B5207 Lowton Road)	SB	430	12	456	12	480	12
Slag Lane (between B5207 Church Lane and Byrom Lane)	NB	890	1	944	1	995	1
	SB	515	3	546	3	576	3
Byrom Lane/Sandy Lane (between A572 Newton Road and Slag Lane)	NB	281	2	302	2	321	2
	SB	190	4	204	4	218	4
A49 Lodge Lane/Warrington Road (between A58 Liverpool Road and A599 Penny Lane)	NB	602	9	639	9	673	9
	SB	369	8	391	8	411	8
A573 Ashton Road (between B5207 Ashton Road and B5207 Lowton Road)	NB	904	15	961	15	1,014	15
	SB	679	9	720	9	758	9
A58 Liverpool Road (between M6 Junction 24 and A49 Warrington Road)	EB	438	30	462	30	484	30
	WB	292	14	308	14	323	15
A58 Gerard Street (between A49 Bryn Street and A5062 Wigan Road)	NB	577	15	612	15	645	15
	SB	440	14	466	14	491	14
A580 East Lancashire Road (between Higher Green Lane and A574 Warrington Road)	EB	1,629	52	1,736	61	1,838	84
	WB	1,368	48	1,388	46	1,398	46
A58 Bolton Road (between A5062 Wigan Road and Bryn Road South)	NB	866	17	918	17	968	17
	SB	651	20	689	20	725	20
A573 Wigan Road (between B5207 Ashton Road and A573 Aye Bridge Road)	NB	903	17	974	17	1,043	17
	SB	430	11	460	11	489	11
A58 Bolton Road (between Bryn Road South and B5207 Bryn Road)	EB	728	14	773	14	815	14
	WB	1,109	22	1,176	22	1,237	23
A58 Bolton Road (between B5207 Bryn Road and B5207 Golborne Road)	EB	1,321	15	1,403	15	1,478	15
	WB	1,032	18	1,094	18	1,152	18
A58 Bolton Road (between B5207 Golborne Road and Riding Lane)	NB	795	9	845	9	891	9
	SB	591	9	627	9	661	9
A580 East Lancashire Road (between A572 Chaddock Lane and Higher Green Lane)	EB	1,470	51	1,559	61	1,651	82
	WB	1,519	52	1,520	50	1,520	50
A580 East Lancashire Road (between A577 Mosley Common Road and A572 Chaddock Lane)	EB	1,464	54	1,516	62	1,591	83
	WB	1,603	50	1,594	47	1,602	49
A580 East Lancashire Road (between B5232 Newearth Road and A577 Mosley Common Road)	EB	1,318	55	1,325	63	1,374	83
	WB	1,858	55	1,840	53	1,832	55
	NB	640	54	641	53	657	36

Location	Direction	PM peak hour 2030 all vehicles	PM peak hour 2030 HGV	PM peak hour 2038 all vehicles	PM peak hour 2038 HGV	PM peak hour 2046 all vehicles	PM peak hour 2046 HGV
A575 Walkden Road (between Greenleach Lane and A572 Leigh Road (M60 junction 13))	SB	842	7	876	8	778	8
A573 Wigan Road/Warrington Road (between B5207 Ashton Road and A58 Lily Lane)	NB	1,218	10	1,289	10	1,355	10
	SB	471	7	499	7	525	7
A58 Bolton Road/Lily Lane (between Riding Lane and A573 Warrington Road)	NB	753	8	799	8	842	8
	SB	614	8	651	8	685	8
A580 East Lancashire Road (between B5232 Newearth Road and A575 Walkden Road)	EB	1,095	58	1,230	65	1,389	86
	WB	1,879	64	1,901	61	1,909	63
A575 Walkden Road (between A580 East Lancashire Road and Greenleach Lane)	NB	724	57	727	56	761	39
	SB	844	9	888	10	792	10
B5232 Newearth Road (between Guided Busway and Shawbrook Avenue)	NB	933	4	905	4	880	5
A580 East Lancashire Road (between A575 Walkden Road and Old Clough Lane)	EB	1,461	90	1,487	92	1,564	95
	WB	1,918	75	1,941	71	1,937	73
B5232 Bridgewater Road (between A6 High Street and B5232 Westminster Road)	SB	409	4	463	4	491	4

Table 10-6: MA05 strategic and local road network future baseline flows AADT

Location	Direction	AADT 2030	AADT 2038	AADT 2046
A574 Birchwood Way (between A547 Birchwood Park Avenue and Faraday Street)	EB	10,147	10,754	11,324
	WB	7,132	7,565	7,973
A574 Birchwood Park Avenue (between A574 Birchwood Way and Garrett Field)	NB	11,555	12,249	12,901
	SB	12,695	13,449	14,154
A574 Birchwood Park Avenue (between Garrett Field and Glover Road (north))	NB	11,555	12,249	12,901
	SB	12,695	13,449	14,154
A574 Birchwood Way (between Daten Avenue and Faraday Street)	NB	8,197	8,685	9,142
	SB	6,492	6,886	7,259
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	8,562	9,081	9,570
	WB	8,578	9,090	9,567
A574 Birchwood Park Avenue (between Glover Road and A574 Warrington Road)	EB	11,555	12,249	12,901
	WB	12,695	13,449	14,154
Daten Avenue (between Risley Road and A574 Birchwood Way)	NB	6,966	7,381	7,775
	SB	7,660	8,116	8,544

Location	Direction	AADT 2030	AADT 2038	AADT 2046
Daten Avenue (between Faraday Street and Risley Road)	EB	7,660	8,116	8,544
	WB	6,966	7,381	7,775
A574 Birchwood Way (between M62 Junction 11 and Daten Avenue)	EB	17,503	18,548	19,528
	WB	12,837	13,609	14,338
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	9,132	9,676	10,184
	SB	10,855	11,510	12,127
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	7,072	7,496	7,893
	SB	8,530	9,041	9,522
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	6,812	7,220	7,601
	SB	8,020	8,502	8,957
A574 Warrington Road (between Glaziers Lane and New Hall Lane)	NB	6,295	6,673	7,027
	SB	9,133	9,683	10,202
A574 Warrington Road (between Glaziers Lane and B5207 Common Lane)	NB	6,812	7,220	7,601
	SB	8,020	8,502	8,957
Wigshaw Lane / Mustard Lane (between Lady Lane and Glaziers Lane)	EB	7,884	8,371	8,830
	WB	6,585	6,989	7,368
B5207 Wilton Lane (between B5207 Broseley Lane and B5207 Kenyon Lane)	EB	9,533	10,116	10,664
	WB	9,236	9,798	10,326
B5207 Kenyon Lane (between A572 Newton Road and B5207 Wilton Lane)	EB	4,195	4,450	4,690
	WB	3,559	3,775	3,977
B5207 Church Lane (between A572 Newton Road and A580 East Lancashire Road)	NB	589	625	658
	SB	757	803	846
A572 Newton Road (between B5207 Church Lane and A580 East Lancashire Road)	NB	7,342	7,787	8,207
	SB	8,601	9,118	9,605
A580 East Lancashire Road (between A573 Warrington Road and Stone Cross Lane South)	EB	18,208	19,303	20,338
	WB	15,812	16,763	17,659
A580 East Lancashire Road (between A572 Newton Road and A579 Atherleigh Way)	EB	19,361	20,523	21,618
	WB	17,199	18,228	19,198
A573 Warrington Road (between A580 East Lancashire Road and Park Road)	NB	6,762	7,174	7,561
	SB	7,186	7,626	8,039
A580 East Lancashire Road (between A573 Warrington Road and M6 junction 23 (Haydock Island))	EB	22,403	23,752	25,026
	WB	19,293	20,460	21,564
B5207 Church Lane (between A580 East Lancashire Road and Slag Lane)	EB	3,715	3,940	4,153
	WB	4,215	4,471	4,711
A572 Newton Road (between A580 East Lancashire Road and Sandy Lane)	EB	6,862	7,278	7,670
	WB	6,854	7,260	7,643
A573 Bridge Street/High Street (between Park Road and Heath Street)	NB	5,482	5,857	6,216
	SB	7,554	8,106	8,641
	EB	18,404	19,525	20,588

Location	Direction	AADT 2030	AADT 2038	AADT 2046
A580 East Lancashire Road (between A574 Warrington Road and A579 Atherleigh Way)	WB	16,114	17,090	18,012
A573 High Street/Church Street (between Heath Street and B5207 Lowton Road)	NB	5,475	5,815	6,135
	SB	4,891	5,188	5,468
Slag Lane (between B5207 Church Lane and Byrom Lane)	NB	7,385	7,841	8,268
	SB	6,518	6,921	7,300
Byrom Lane/Sandy Lane (between A572 Newton Road and Slag Lane)	NB	2,533	2,716	2,893
	SB	2,674	2,877	3,075
A49 Lodge Lane/Warrington Road (between A58 Liverpool Road and A599 Penny Lane)	NB	5,031	5,335	5,620
	SB	4,695	4,978	5,244
A573 Ashton Road (between B5207 Ashton Road and B5207 Lowton Road)	NB	8,603	9,139	9,644
	SB	7,994	8,487	8,951
A58 Liverpool Road (between M6 Junction 24 and A49 Warrington Road)	EB	4,261	4,492	4,706
	WB	3,203	3,376	3,538
A58 Gerard Street (between A49 Bryn Street and A5062 Wigan Road)	NB	5,215	5,524	5,815
	SB	4,873	5,163	5,435
A580 East Lancashire Road (between Higher Green Lane and A574 Warrington Road)	EB	19,663	20,788	21,596
	WB	18,342	18,665	18,863
A58 Bolton Road (between A5062 Wigan Road and Bryn Road South)	NB	8,253	8,751	9,219
	SB	7,089	7,509	7,903
A573 Wigan Road (between B5207 Ashton Road and A573 Aye Bridge Road)	NB	7,240	7,790	8,327
	SB	8,433	9,047	9,644
A58 Bolton Road (between Bryn Road South and B5207 Bryn Road)	EB	6,685	7,094	7,480
	WB	12,609	13,368	14,082
A58 Bolton Road (between B5207 Bryn Road and B5207 Golborne Road)	EB	13,658	14,499	15,292
	WB	11,897	12,616	13,293
A58 Bolton Road (between B5207 Golborne Road and Riding Lane)	NB	7,616	8,087	8,531
	SB	6,708	7,116	7,500
A580 East Lancashire Road (between A572 Chaddock Lane and Higher Green Lane)	EB	19,277	20,115	20,833
	WB	17,748	17,664	17,678
A580 East Lancashire Road (between A577 Mosley Common Road and A572 Chaddock Lane)	EB	20,848	21,512	22,180
	WB	17,377	17,282	17,479
A580 East Lancashire Road (between B5232 Newearth Road and A577 Mosley Common Road)	EB	19,600	19,831	20,273
	WB	19,469	19,379	19,516
A575 Walkden Road (between Greenleach Lane and A572 Leigh Road (M60 junction 13))	NB	8,632	8,616	8,834
	SB	11,252	11,200	10,601
A573 Wigan Road/Warrington Road (between B5207 Ashton Road and A58 Lily Lane)	NB	9,132	9,676	10,184
	SB	10,855	11,510	12,127
	NB	7,915	8,399	8,855

Location	Direction	AADT 2030	AADT 2038	AADT 2046
A58 Bolton Road/Lily Lane (between Riding Lane and A573 Warrington Road)	SB	6,217	6,592	6,945
A580 East Lancashire Road (between B5232 Newearth Road and A575 Walkden Road)	EB	18,901	19,887	21,386
	WB	18,479	18,708	18,923
A575 Walkden Road (between A580 East Lancashire Road and Greenleach Lane)	NB	9,376	9,460	9,770
	SB	12,194	12,137	11,606
B5232 Newearth Road (between Guided Busway and Shawbrook Avenue)	NB	10,438	10,608	10,826
	SB	7,073	6,927	8,639
A580 East Lancashire Road (between A575 Walkden Road and Old Clough Lane)	EB	24,353	24,626	25,489
	WB	19,355	19,421	19,500
B5232 Bridgewater Road (between A6 High Street and B5232 Westminster Road)	SB	4,217	4,507	4,966

Junction operation

10.4.12 The operation of the key junctions that are likely to be directly affected by the route of 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. The GMSM, Junctions 9 and LinSig software have been used to calculate the existing capacity of all junctions within the study area. The results for the MA05 area are presented from south to north, firstly for junctions on the strategic road network, followed by junctions on other roads.

10.4.13 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.

M62 junction 11/A574 Birchwood Way/Silver Lane (Birchwood Interchange)

10.4.14 This junction is a four-arm priority controlled grade-separated roundabout 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 10-7.

Table 10-7: 2017 baseline performance at M62 junction 11/A574 Birchwood Way/Silver Lane (Birchwood Interchange) junction

Approach	Flow, PCU*/hr	RFC**	Q***, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Birchwood Way (north)	3	0.00	0
M62 (east)	971	0.48	1
Silver Lane	3	0.00	0
A574 Birchwood Way (south)	1,315	0.47	1
M62 (west)	343	0.24	0
	2017 PM peak hour (17:00–18:00) baseline results		
Birchwood Way (north)	7	0.00	0
M62 (east)	527	0.26	0
Silver Lane	3	0.00	0
A574 Birchwood Way (south)	1,809	0.65	2
M62 (west)	287	0.18	0

**PCU = Passenger Car Unit* ***RFC = Ratio of Flow to Capacity* ***Q = Queue

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

10.4.16 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-8. 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 10-8: Future baseline performance at M62 junction 11/A574 Birchwood Way/Silver Lane (Birchwood Interchange) junction

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, 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)**		
Birchwood Way (north)	3	0.00	0	3	0.00	0	3	0.00	0
M62 off-slip (east)	1,078	0.55	1	1,138	0.58	1	1,205	0.63	2
Silver Lane	3	0.00	0	3	0.00	0	3	0.00	0
Birchwood Way (south)	1,461	0.52	1	1,541	0.55	1	1,632	0.58	2
M62 off-slip (west)	382	0.29	0	402	0.32	1	426	0.36	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)**		
Birchwood Way (north)	7	0.00	0	7	0.00	0	7	0.01	0
M62 off-slip (east)	584	0.29	0	615	0.31	0	651	0.33	1
Silver Lane	3	0.00	0	3	0.00	0	3	0.00	0
Birchwood Way (south)	2,007	0.73	3	2,116	0.77	3	2,238	0.81	4
M62 off-slip (west)	320	0.21	0	337	0.23	0	355	0.25	0

10.4.17 The assessment shows that this junction operates within capacity in the 2030, 2038 and 2046 future baseline. In addition, HS2 Ltd is aware of proposals for a new motorway service area at junction 11 of the M62 motorway. These proposals include improvements to junction 11, however, as this is not a committed development, at the time of assessment, this development has not been considered within the local junction modelling.

M6 junction 23/A580 East Lancashire Road (Haydock Island)

10.4.18 This junction is a seven-arm signal controlled grade-separated roundabout with controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using LinSig software and is shown in Table 10-9.

Table 10-9: 2017 baseline performance at M6 junction 23/A580 East Lancashire Road (Haydock Island) junction

Approach	Flow, PCU/hr	DoS*	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
M6 (north) off-slip (nearside and centre) (left and ahead)	649	99%	23
M6 (north) off-slip (offside) (ahead)	32	7%	1
A49 Lodge Lane (north) (nearside) (ahead)	161	29%	3
A49 Lodge Lane (north) (centre) (ahead)	259	48%	6
A49 Lodge Lane (north) (offside) (ahead)	22	4%	0
A580 East Lancashire Road (east) (nearside) (left)	172	24%	3
A580 East Lancashire Road (east) (offside) (left)	74	10%	1
A580 East Lancashire Road (east) (nearside) (ahead)	734	98%	29
A580 East Lancashire Road (east) (offside) (ahead)	733	98%	29
M6 (south) off-slip (nearside and centre) (left and ahead)	826	109%	52
M6 (south) off-slip (offside) (ahead)	220	57%	6
A49 Lodge Lane (south) (nearside) (ahead)	95	19%	2
A49 Lodge Lane (south) (centre) (ahead)	272	55%	7
A49 Lodge Lane (south) (offside) (ahead)	101	20%	2
A580 East Lancashire Rd (west) (nearside) (left and ahead)	84	12%	2
A580 East Lancashire Rd (west) (centre) (ahead)	752	111%	67
A580 East Lancashire Rd (west) (offside) (ahead)	756	111%	67
Shell Garage exit (left and ahead)	105	16%	1
	2017 PM peak hour (17:00–18:00) baseline results		
M6 (north) off-slip (nearside and centre) (left and ahead)	1,026	111%	87
M6 (north) off-slip (offside) (ahead)	87	12%	2
A49 Lodge Lane (north) (nearside) (ahead)	167	43%	4
A49 Lodge Lane (north) (centre) (ahead)	249	66%	7
A49 Lodge Lane (north) (offside) (ahead)	51	14%	1
A580 East Lancashire Road (east) (nearside) (left)	123	20%	2
A580 East Lancashire Road (east) (offside) (left)	53	8%	1
A580 East Lancashire Road (east) (nearside) (ahead)	738	114%	75
A580 East Lancashire Road (east) (offside) (ahead)	736	114%	75
M6 (south) off-slip (nearside and centre) (left and ahead)	1,242	109%	82
M6 (south) off-slip (offside) (ahead)	373	64%	9
A49 Lodge Lane (south) (nearside) (ahead)	210	48%	5
A49 Lodge Lane (south) (centre) (ahead)	233	55%	6
A49 Lodge Lane (south) (offside) (ahead)	118	27%	3
A580 East Lancashire Rd (west) (nearside) (left and ahead)	146	27%	3
A580 East Lancashire Rd (west) (centre) (ahead)	601	110%	51
A580 East Lancashire Rd (west) (offside) (ahead)	606	110%	53

Approach	Flow, PCU/hr	DoS*	Q, PCU
Shell Garage exit (left and ahead)	78	12%	0

**DoS = Degree of Saturation*

10.4.19 This junction operates over capacity in the 2017 baseline with a maximum DoS of 111% on the centre and offside lanes of the A580 East Lancashire Road (west) approach in the AM peak hour with an associated queue length of 67 PCU. In the PM peak hour, the maximum DoS of 114% is on the nearside and offside lanes of the A580 East Lancashire Road (east) (ahead) approach with a queue length of 75 PCU.

10.4.20 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-10. As the junction is affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-10: Future baseline performance at M6 junction 23/A580 East Lancashire Road (Haydock Island) junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
M6 (north) off-slip (nearside and centre) (left and ahead)	722	107%	47
M6 (north) off-slip (offside) (ahead)	36	8%	1
A49 Lodge Lane (north) (nearside) (ahead)	179	34%	4
A49 Lodge Lane (north) (centre) (ahead)	287	56%	7
A49 Lodge Lane (north) (offside) (ahead)	26	5%	1
A580 East Lancashire Road (east) (nearside) (left)	191	27%	4
A580 East Lancashire Road (east) (offside) (left)	82	11%	1
A580 East Lancashire Road (east) (nearside) (ahead)	816	109%	66
A580 East Lancashire Road (east) (offside) (ahead)	814	109%	66
M6 (south) off-slip (nearside and centre) (left and ahead)	917	121%	101
M6 (south) off-slip (offside) (ahead)	245	63%	6
A49 Lodge Lane (south) (nearside) (ahead)	105	22%	2
A49 Lodge Lane (south) (centre) (ahead)	300	64%	8
A49 Lodge Lane (south) (offside) (ahead)	112	23%	2
A580 East Lancashire Rd (west) (nearside) (left and ahead)	93	13%	2
A580 East Lancashire Rd (west) (centre) (ahead)	836	119%	104
A580 East Lancashire Rd (west) (offside) (ahead)	841	119%	105
Shell Garage exit (left and ahead)	116	17%	1
	2030 PM peak hour (17:00–18:00)		
M6 (north) off-slip (nearside and centre) (left and ahead)	1,138	122%	155
M6 (north) off-slip (offside) (ahead)	95	13%	2
A49 Lodge Lane (north) (nearside) (ahead)	185	49%	5
A49 Lodge Lane (north) (centre) (ahead)	276	76%	8
A49 Lodge Lane (north) (offside) (ahead)	56	15%	1
A580 East Lancashire Road (east) (nearside) (left)	136	22%	3

Approach	Flow, PCU/hr	DoS	Q, PCU
A580 East Lancashire Road (east) (offside) (left)	58	9%	1
A580 East Lancashire Road (east) (nearside) (ahead)	817	124%	117
A580 East Lancashire Road (east) (offside) (ahead)	816	124%	118
M6 (south) off-slip (nearside and centre) (left and ahead)	1,379	119%	150
M6 (south) off-slip (offside) (ahead)	415	70%	10
A49 Lodge Lane (south) (nearside) (ahead)	233	57%	6
A49 Lodge Lane (south) (centre) (ahead)	257	63%	7
A49 Lodge Lane (south) (offside) (ahead)	131	32%	3
A580 East Lancashire Rd (west) (nearside) (left and ahead)	162	29%	3
A580 East Lancashire Rd (west) (centre) (ahead)	668	119%	85
A580 East Lancashire Rd (west) (offside) (ahead)	672	120%	85
Shell Garage exit (left and ahead)	86	13%	0

10.4.21 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 121% on the nearside and centre lanes of the M6 (south) off-slip approach in the AM peak hour with an associated queue length of 101 PCU. In the PM peak hour, the maximum DoS of 124% is on the nearside and offside lanes of the A580 East Lancashire Road (ahead) approach with a queue length of 155 PCU.

10.4.22 The junction analysis indicates that the junction will be operating above its capacity in the 2030 future baseline. 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.

M6 junction 24/A58 Liverpool Road

10.4.23 This junction is a grade separated junction comprising one priority-controlled T-junction and one signal controlled T-junction with no controlled pedestrian crossing facilities. The priority-controlled T-junction comprises a ghost-island right turn facility and serves as the entry-only to the M6 northbound on-slip. The signal controlled T-junction serves traffic from the M6 southbound off-slip. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using LinSig software and is shown in Table 10-11.

Table 10-11: 2017 baseline performance at M6 junction 24/A58 Liverpool Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
M6 Off Slip (nearside) (left)	149	25%	2
M6 Off Slip (offside) (right)	430	78%	7
A58 Liverpool Road (east) (ahead)	766	82%	11
A58 Liverpool Road (west) (ahead and left)	996	54%	1
	2017 PM peak hour (17:00–18:00) baseline results		
M6 Off Slip (nearside) (left)	310	33%	3
M6 Off Slip (offside) (right)	745	87%	12

Approach	Flow, PCU/hr	DoS	Q, PCU
A58 Liverpool Road (east) (ahead)	471	81%	8
A58 Liverpool Road (west) (ahead and left)	680	37%	0

10.4.24 In the 2017 baseline the assessment shows that this junction is nearing capacity in the AM peak hour with a maximum DoS of 82% on the A58 Liverpool Road (east) (ahead) approach with an associated queue length of 11 PCU. In the PM peak hour, the assessment shows that this junction is at capacity with a maximum DoS of 87% on the M6 Off Slip (offside) (right) approach with an associated queue length of 12 PCU.

10.4.25 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-12. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-12: Future baseline performance at M6 junction 24/A58 Liverpool Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
M6 off-slip (nearside) (left)	166	21%	2
M6 off-slip (offside) (right)	477	66%	6
A58 Liverpool Road (east) (ahead)	851	115%	73
A58 Liverpool Road (west) (ahead and left)	1,106	60%	1
	2030 PM peak hour (17:00–18:00)		
M6 off-slip (nearside) (left)	343	38%	3
M6 off-slip (offside) (right)	825	100%	26
A58 Liverpool Road (east) (ahead)	523	84%	9
A58 Liverpool Road (west) (ahead and left)	753	41%	0

10.4.26 The assessment shows that this junction operates over capacity in the 2030 future baseline with a maximum DoS of 115% on the A58 Liverpool Road (east) (ahead) approach in the AM peak hour with an associated queue length of 73 PCU. In the PM peak hour, the maximum DoS of 100% is on the M6 Off Slip (offside) (right) approach with a queue length of 26 PCU.

M60 junction 13/A572 Worsley Brow/A572 Worsley Road/B5211 Barton Road/A572 Leigh Road/A575 Walkden Road

10.4.27 The M60 junction 13/A572 Worsley Brow/A572 Worsley Road/B5211 Barton Road-A572 Leigh Road/A575 Walkden Road is a seven-arm grade separated junction with no controlled pedestrian crossing facilities, comprising two dumbbell roundabouts:

- M60 junction 13/A572 Worsley Brow/A572 Worsley Road/B5211 Barton Road; and
- M60 junction 13/A572 Worsley Brow/A572 Leigh Road/A572 Walkden Road.

10.4.28 The M60 southbound on-slip arm is an exit arm only and is therefore not reported in the results. 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 10-13.

Table 10-13: 2018 baseline performance at M60 junction 13/A572 Worsley Brow/A572 Worsley Road/B5211 Barton Road/A572 Leigh Road/A575 Walkden Road junction

Approach	Flow, PCU/hr	VoC	Q, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
M60 southbound off-slip	210	39%	0
A572 Worsley Road	442	105%	7
B5211 Barton Road	420	89%	3
M60 southbound on-slip	-	-	-
M60 northbound off-slip	1,032	56%	0
A572 Leigh Road	1,090	85%	2
A575 Walkden Road	1,024	100%	9
A572 Worsley Brow (internal westbound)	484	26%	0
A572 Worsley Brow (internal eastbound)	2,113	99%	0
	2018 PM peak hour (17:00–18:00) baseline results		
M60 southbound off-slip	388	52%	1
A572 Worsley Road	631	79%	2
B5211 Barton Road	670	102%	9
M60 southbound on-slip	-	-	-
M60 northbound off-slip	1,527	106%	9
A572 Leigh Road	652	58%	1
A575 Walkden Road	902	74%	1
A572 Worsley Brow (internal westbound)	957	51%	0
A572 Worsley Brow (internal eastbound)	1,746	83%	0

10.4.29 This junction operates over capacity in the 2018 baseline with a maximum VoC of 105% on the A572 Worsley Road approach in the AM peak hour with an associated queue length of seven PCU. In the PM peak hour, the maximum VoC of 106% is on the M60 northbound off-slip approach with a queue length of nine PCU.

10.4.30 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-14. As the junction is affected by the construction of the Proposed Scheme, future baseline results are presented for 2030, 2038 and 2036.

Table 10-14: Future baseline performance at M60 junction 13/A572 Worsley Brow/A572 Worsley Road/B5211 Barton Road/A572 Leigh Road/A575 Walkden Road junction

Approach	Flow, PCU/hr	VoC	Q, PCU	Flow, PCU/hr	VoC	Q, PCU	Flow, PCU/hr	VoC	Q, 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)**		
M60 southbound off-slip	131	25%	0	103	20%	0	101	19%	0

Approach	Flow, PCU/hr	VoC	Q, PCU	Flow, PCU/hr	VoC	Q, PCU	Flow, PCU/hr	VoC	Q, PCU
A572 Worsley Road	458	105%	7	531	103%	8	493	103%	7
B5211 Barton Road	412	100%	7	318	106%	5	326	107%	5
M60 southbound on-slip	-	-	-	-	-	-	-	-	-
M60 northbound off-slip	1,091	56%	0	1,170	58%	0	1,204	58%	0
A572 Leigh Road	1,251	97%	5	1,290	100%	9	1,317	102%	9
A575 Walkden Road	959	103%	9	922	104%	9	933	107%	9
A572 Worsley Brow (internal westbound)	420	23%	0	330	18%	0	302	16%	0
A572 Worsley Brow (internal eastbound)	2,184	102%	2	2,177	102%	2	2,181	102%	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)**		
M60 southbound off-slip	434	68%	1	397	67%	1	371	66%	1
A572 Worsley Road	647	95%	5	637	100%	8	626	101%	8
B5211 Barton Road	586	104%	8	572	105%	8	593	106%	8
M60 southbound on-slip	-	-	-	-	-	-	-	-	-
M60 northbound off-slip	1,625	109%	9	1,701	109%	9	1,743	109%	9
A572 Leigh Road	781	69%	1	851	73%	1	1,020	87%	2
A575 Walkden Road	978	86%	2	1,024	93%	4	940	96%	5
A572 Worsley Brow (internal westbound)	886	48%	0	812	45%	0	779	43%	0
A572 Worsley Brow (internal eastbound)	1,909	90%	0	1,984	94%	0	2,033	96%	0

10.4.31 In the 2030 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 105% on the A572 Worsley Road approach with an associated queue length of seven PCU. In the PM peak hour, the maximum VoC of 109% is on the M60 northbound off-slip approach with a queue length of nine PCU.

10.4.32 In the 2038 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 106% on the B5211 Barton Road approach with an associated queue length of five PCU. In the PM peak hour, the maximum VoC of 109% is on the M60 northbound off-slip approach with a queue length of nine PCU.

10.4.33 In the 2046 future baseline, this junction operates over capacity in the AM peak hour with a maximum VoC of 107% on both the B5211 Barton Road and A575 Walkden Road approaches with an associated queue length of five PCU and nine PCU respectively. In the PM peak hour, the maximum VoC of 109% is on the M60 northbound off-slip approach with a queue length of nine PCU.

A574 Birchwood Way/A574 Birchwood Park Avenue/Oakwood Gate (George Duckworth Roundabout)

10.4.34 This junction is a six-arm partially signal controlled roundabout 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 10-15.

Table 10-15: 2017 baseline performance at A574 Birchwood Way/A574 Birchwood Park Avenue/Oakwood Gate (George Duckworth Roundabout) junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Birchwood Park Avenue (nearside) (left and ahead)	577	72%	5
Birchwood Park Avenue (offside) (ahead)	387	80%	7
A574 Birchwood Way (east) (nearside) (left and ahead)	277	98%	11
A574 Birchwood Way (east) (offside) (ahead)	277	98%	11
Oakwood Gate (nearside) (left)	483	26%	0
Oakwood Gate (centre and offside) (ahead)	354	25%	0
A574 Birchwood Way (west) (nearside) (left)	896	75%	11
A574 Birchwood Way (west) (centre and offside) (ahead)	1,663	86%	12
Circulatory link (internal past Birchwood Park Avenue entry) (nearside)	803	40%	0
Circulatory link (internal past Birchwood Park Avenue entry) (offside)	973	49%	1
Circulatory link (internal past Birchwood Way (east) entry) (nearside)	1,365	107%	76
Circulatory link (internal past Birchwood Way (east) entry) (offside)	387	31%	4
Circulatory link (internal past Oakwood Gate entry) (nearside)	79	4%	0
Circulatory link (internal past Oakwood Gate entry) (offside)	664	33%	0
Circulatory link (internal past Birchwood Way (west) entry) (nearside)	280	77%	6
Circulatory link (internal past Birchwood Way (west) entry) (offside)	113	30%	2
	2017 PM peak hour (17:00–18:00) baseline results		
Birchwood Park Avenue (nearside) (left and ahead)	700	61%	2
Birchwood Park Avenue (offside) (ahead)	510	73%	5
A574 Birchwood Way (east) (nearside) (left and ahead)	280	83%	6
A574 Birchwood Way (east) (offside) (ahead)	285	83%	6
Oakwood Gate (nearside) (left)	578	31%	0
Oakwood Gate (centre and offside) (ahead)	500	35%	1
A574 Birchwood Way (west) (nearside) (left)	358	37%	3
A574 Birchwood Way (west) (centre and offside) (ahead)	790	51%	5
Circulatory link (internal past Birchwood Park Avenue entry) (nearside)	319	16%	0
Circulatory link (internal past Birchwood Park Avenue entry) (offside)	665	33%	0
Circulatory link (internal past Birchwood Way (east) entry) (nearside)	976	83%	8

Approach	Flow, PCU/hr	DoS	Q, PCU
Circulatory link (internal past Birchwood Way (east) entry) (offside)	510	44%	4
Circulatory link (internal past Oakwood Gate entry) (nearside)	411	21%	0
Circulatory link (internal past Oakwood Gate entry) (offside)	795	39%	0
Circulatory link (internal past Birchwood Way (west) entry) (nearside)	330	58%	5
Circulatory link (internal past Birchwood Way (west) entry) (offside)	194	33%	2

10.4.35 This junction operates over capacity in the 2017 baseline with a maximum DoS of 107% on the nearside lane of the Circulatory link (internal past Birchwood Way (east) entry) approach in the AM peak hour with an associated queue length of 76 PCU. In the PM peak hour, the assessment shows that this junction is nearing capacity in the 2017 baseline with a maximum DoS of 83% on both the nearside and offside lanes of the A574 Birchwood Way (east) and on the nearside lane of the Circulatory link (internal past Birchwood Way (east) entry) approach with an associated queue length of six PCU and eight PCU respectively.

10.4.36 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-16. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-16: Future baseline performance at A574 Birchwood Way/A574 Birchwood Park Avenue/Oakwood Gate (George Duckworth Roundabout) junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
Birchwood Park Avenue (nearside) (left and ahead)	641	85%	8
Birchwood Park Avenue (offside) (ahead)	430	99%	16
A574 Birchwood Way (east) (nearside) (left and ahead)	307	108%	22
A574 Birchwood Way (east) (offside) (ahead)	308	109%	22
Oakwood Gate (nearside) (left)	536	29%	0
Oakwood Gate (centre and offside) (ahead)	393	28%	0
A574 Birchwood Way (west) (nearside) (left)	995	86%	15
A574 Birchwood Way (west) (centre and offside) (ahead)	1,847	96%	21
Circulatory link (internal past Birchwood Park Avenue entry) (nearside)	892	45%	0
Circulatory link (internal past Birchwood Park Avenue entry) (offside)	1,080	55%	1
Circulatory link (internal past Birchwood Way (east) entry) (nearside)	1,516	119%	156
Circulatory link (internal past Birchwood Way (east) entry) (offside)	430	35%	3
Circulatory link (internal past Oakwood Gate entry) (nearside)	88	4%	0
Circulatory link (internal past Oakwood Gate entry) (offside)	738	35%	0
Circulatory link (internal past Birchwood Way (west) entry) (nearside)	312	78%	6
Circulatory link (internal past Birchwood Way (west) entry) (offside)	125	30%	2
	2030 PM peak hour (17:00–18:00)		
Birchwood Park Avenue (nearside) (left and ahead)	781	70%	3
Birchwood Park Avenue (offside) (ahead)	560	84%	7

Approach	Flow, PCU/hr	DoS	Q, PCU
A574 Birchwood Way (east) (nearside) (left and ahead)	311	92%	9
A574 Birchwood Way (east) (offside) (ahead)	316	92%	9
Oakwood Gate (nearside) (left)	641	34%	0
Oakwood Gate (centre and offside) (ahead)	554	40%	1
A574 Birchwood Way (west) (nearside) (left)	397	41%	4
A574 Birchwood Way (west) (centre and offside) (ahead)	876	56%	6
Circulatory link (internal past Birchwood Park Avenue entry) (nearside)	353	18%	0
Circulatory link (internal past Birchwood Park Avenue entry) (offside)	738	37%	0
Circulatory link (internal past Birchwood Way (east) entry) (nearside)	1,088	92%	19
Circulatory link (internal past Birchwood Way (east) entry) (offside)	560	48%	5
Circulatory link (internal past Oakwood Gate entry) (nearside)	461	23%	0
Circulatory link (internal past Oakwood Gate entry) (offside)	876	43%	0
Circulatory link (internal past Birchwood Way (west) entry) (nearside)	365	64%	5
Circulatory link (internal past Birchwood Way (west) entry) (offside)	215	36%	3

10.4.37 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 119% on the nearside lane of the Circulatory link (internal past Birchwood Way (east) entry) approach in the AM peak hour with an associated queue length of 156 PCU. In the PM peak hour, the assessment shows that this junction is at capacity in the 2030 future baseline with a maximum DoS of 92% on both the nearside and offside lanes of the A574 Birchwood Way (east) approach and on the nearside lane of the Circulatory link (internal past Birchwood Way (east) entry) approach with an associated queue length of nine PCU and 19 PCU respectively.

A574 Birchwood Way/Moss Gate/Daten Avenue

10.4.38 This junction is a four-arm signal controlled crossroads with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using LinSig software and is shown in Table 10-17.

Table 10-17: 2017 baseline performance at A574 Birchwood Way/Moss Gate/Daten Avenue junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A574 Birchwood Way (north) (nearside and centre 1) (ahead and left)	684	58%	10
A574 Birchwood Way (north) (centre 2 and offside) (right)	648	65%	10
Moss Gate (left, ahead and right)	446	66%	9
A574 Birchwood Way (south) (nearside) (left and ahead)	282	63%	10
A574 Birchwood Way (south) (centre and offside) (ahead and right)	315	65%	10
Daten Avenue (nearside and centre) (left)	474	55%	7

Approach	Flow, PCU/hr	DoS	Q, PCU
Daten Avenue (offside) (right and ahead)	56	13%	2
	2017 PM peak hour (17:00–18:00) baseline results		
A574 Birchwood Way (north) (nearside and centre 1) (ahead and left)	440	36%	6
A574 Birchwood Way (north) (centre 2 and offside) (right)	279	27%	4
Moss Gate (left, ahead and right)	341	80%	10
A574 Birchwood Way (south) (nearside) (left and ahead)	423	78%	15
A574 Birchwood Way (south) (centre and offside) (ahead and right)	458	80%	16
Daten Avenue (nearside and centre) (left)	749	81%	17
Daten Avenue (offside) (right and ahead)	50	15%	2

10.4.39 In the 2017 baseline the assessment shows that this junction operates within capacity in the AM peak hour. In the PM peak hour, the assessment shows that this junction is nearing capacity with a maximum DoS of 81% on the Daten Avenue (nearside and centre) (left) approach with an associated queue length of 17 PCU.

10.4.40 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-18. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-18: Future baseline performance at A574 Birchwood Way/Moss Gate/Daten Avenue junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A574 Birchwood Way (north) (nearside and centre 1) (ahead and left)	760	65%	12
A574 Birchwood Way (north) (centre 2 and offside) (right)	719	72%	12
Moss Gate (left, ahead and right)	496	73%	10
A574 Birchwood Way (south) (nearside) (left and ahead)	314	70%	11
A574 Birchwood Way (south) (centre and offside) (ahead and right)	349	72%	12
Daten Avenue (nearside and centre) (left)	526	61%	8
Daten Avenue (offside) (right and ahead)	63	15%	2
	2030 PM peak hour (17:00–18:00)		
A574 Birchwood Way (north) (nearside and centre 1) (ahead and left)	488	40%	6
A574 Birchwood Way (north) (centre 2 and offside) (right)	309	29%	4
Moss Gate (left, ahead and right)	379	89%	13

Approach	Flow, PCU/hr	DoS	Q, PCU
A574 Birchwood Way (south) (nearside) (left and ahead)	469	87%	19
A574 Birchwood Way (south) (centre and offside) (ahead and right)	508	88%	19
Daten Avenue (nearside and centre) (left)	831	90%	23
Daten Avenue (offside) (right and ahead)	55	17%	2

10.4.41 In the 2030 future baseline the assessment shows that this junction operates within capacity in the AM peak hour. In the PM peak hour, the assessment shows that this junction is at capacity with a maximum DoS of 90% on the Daten Avenue (nearside and centre) (left) approach with an associated queue length of 23 PCU.

A574 Warrington Road/A574 Birchwood Park Avenue/Daten Avenue/Warrington Road

10.4.42 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 2017 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 10-19.

Table 10-19: 2017 baseline performance at A574 Warrington Road/A574 Birchwood Park Avenue/Daten Avenue/Warrington Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Warrington Road (north)	1,337	0.75	3
Daten Avenue	405	0.24	0
Warrington Road (south)	20	0.02	0
Birchwood Park Avenue	799	0.33	1
	2017 PM peak hour (17:00–18:00) baseline results		
Warrington Road (north)	435	0.20	0
Daten Avenue	914	0.40	1
Warrington Road (south)	312	0.40	1
Birchwood Park Avenue	668	0.42	1

10.4.43 The assessment shows that this junction is nearing capacity in the 2017 baseline with a maximum RFC of 0.75 on the Warrington Road (north) approach in the AM peak hour with an associated queue length of three PCU. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2017 baseline.

10.4.44 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-20. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-20: Future baseline performance at A574 Warrington Road/A574 Birchwood Park Avenue/Daten Avenue/Warrington Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00) baseline results		
Warrington Road (north)	1,485	0.87	0
Daten Avenue	450	0.28	0
Warrington Road (south)	20	0.02	0
Birchwood Park Avenue	888	0.37	1
	2030 PM peak hour (17:00–18:00) baseline results		
Warrington Road (north)	482	0.23	0
Daten Avenue	1,013	0.45	1
Warrington Road (south)	345	0.53	1
Birchwood Park Avenue	740	0.50	1

10.4.45 In the AM peak hour, the assessment shows that this junction operates at capacity in the 2030 future baseline maximum RFC of 0.87 on the Warrington Road (north) approach with no queue. In the PM peak hour, the assessment shows that this junction operations within capacity in the 2030 future baseline.

A574 Warrington Road/Cross Lane/Silver Lane

10.4.46 This junction is a four-arm priority controlled (give-way) crossroads 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 10-21.

Table 10-21: 2017 baseline performance at A574 Warrington Road/Cross Lane/Silver Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A574 Warrington Road (north) (left, ahead and right)	1,044	0.03	0
Silver Lane (left, ahead and right)	7	0.02	0
A574 Warrington Road (south) (left, ahead and right)	399	0.01	0
Cross Lane (left, ahead and right)	341	1.33	54
	2017 PM peak hour (17:00–18:00) baseline results		
A574 Warrington Road (north) (left, ahead and right)	433	0.11	0
Silver Lane (left, ahead and right)	11	0.03	0
A574 Warrington Road (south) (left, ahead and right)	1,183	0.04	0
Cross Lane (left, ahead and right)	34	0.15	0

10.4.47 This junction operates over capacity in the 2017 baseline with a maximum RFC of 1.33 on the Cross Lane (left, ahead and right) approach in the AM peak hour with an associated queue

length of 54 PCU. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2017 baseline.

10.4.48 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-22. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-22: Future baseline performance at A574 Warrington Road/Cross Lane/Silver Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A574 Warrington Road (north) (left, ahead and right)	1,161	0.04	0
Silver Lane (left, ahead and right)	8	0.02	0
A574 Warrington Road (south) (left, ahead and right)	444	0.01	0
Cross Lane (left, ahead and right)	378	1.67	107
	2030 PM peak hour (17:00–18:00)		
A574 Warrington Road (north) (left, ahead and right)	480	0.14	0
Silver Lane (left, ahead and right)	12	0.03	0
A574 Warrington Road (south) (left, ahead and right)	1,312	0.05	0
Cross Lane (left, ahead and right)	38	0.20	0

10.4.49 This junction operates over capacity in the 2030 future baseline with a maximum RFC of 1.67 on the Cross Lane (left, ahead and right) approach in the AM peak hour with an associated queue length of 107 PCU. In the PM peak hour, the assessment shows that this junction operates within capacity in the 2017 baseline.

A574 Warrington Road/New Hall Lane (southern junction)

10.4.50 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The junction serves as an entry-only into the Taylor Business Park. 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 10-23.

Table 10-23: 2017 baseline performance at A574 Warrington Road/New Hall Lane southern junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A574 Warrington Road (north) (ahead and left)	1271	-	-
A574 Warrington Road (south) (ahead and right)	306	0.26	1
	2017 PM peak hour (17:00–18:00) baseline results		
A574 Warrington Road (north) (ahead and left)	382	-	-
A574 Warrington Road (south) (ahead and right)	990	0.14	0

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

10.4.52 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-24. As the junction is only affected by construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-24: Future baseline performance at A574 Warrington Road/New Hall Lane southern junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A574 Warrington Road (north) (ahead and left)	1,412	-	-
A574 Warrington Road (south) (ahead and right)	340	0.33	1
	2030 PM peak hour (17:00–18:00)		
A574 Warrington Road (north) (ahead and left)	424	-	-
A574 Warrington Road (south) (ahead and right)	1,098	0.19	1

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

A574 Warrington Road/Glaziers Lane

10.4.54 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 10-25.

Table 10-25: 2017 baseline performance at A574 Warrington Road/Glaziers Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A574 Warrington Road (north) (ahead and right)	1,197	0.15	0
A574 Warrington Road (south) (left)	15	0.00	0
A574 Warrington Road (south) (ahead)	262	0.00	0
Glaziers Lane (left)	7	0.02	0
Glaziers Lane (right)	155	0.69	2
	2017 PM peak hour (17:00–18:00) baseline results		
A574 Warrington Road (north) (ahead and right)	406	0.14	0
A574 Warrington Road (south) (left)	108	0.00	0
A574 Warrington Road (south) (ahead)	861	0.00	0
Glaziers Lane (left)	18	0.04	0
Glaziers Lane (right)	31	0.16	0

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

10.4.56 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-26. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-26: Future baseline performance at A574 Warrington Road/Glaziers junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A574 Warrington Road (north) (ahead and right)	1,330	0.23	1
A574 Warrington Road (south) (left)	16	0.00	0
A574 Warrington Road (south) (ahead)	291	0.00	0
Glaziers Lane (left)	7	0.09	0
Glaziers Lane (right)	172	0.87	5
	2030 PM peak hour (17:00–18:00)		
A574 Warrington Road (north) (ahead and right)	451	0.18	1
A574 Warrington Road (south) (left)	120	0.00	0
A574 Warrington Road (south) (ahead)	955	0.00	0
Glaziers Lane (left)	19	0.05	0
Glaziers Lane (right)	34	0.21	0

10.4.57 The assessment shows that this junction is at capacity in the 2030 future baseline with a maximum RFC of 0.87 on the Glaziers Lane (right) 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 within capacity in the 2030 future baseline.

A574 Warrington Road/New Hall Lane (northern junction)

10.4.58 This junction is a three-arm priority controlled (give way) T-junction with no controlled pedestrian crossing facilities. The junction serves as an exit-only from the Taylor Business Park. 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 10-27.

Table 10-27: 2017 baseline performance at A574 Warrington Road/New Hall Lane northern junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A574 Warrington Road (north) (ahead and left)	1,126	-	-
New Hall Lane (left)	33	0.10	0
New Hall Lane (right)	6	0.03	0
A574 Warrington Road (south) (ahead and right)	225	0.00	0
	2017 PM peak hour (17:00–18:00) baseline results		
A574 Warrington Road (north) (ahead and left)	324	-	-

Approach	Flow, PCU/hr	RFC	Q, PCU
New Hall Lane (left)	104	0.20	0
New Hall Lane (right)	51	0.17	0
A574 Warrington Road (south) (ahead and right)	779	0.00	0

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

10.4.60 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-28. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-28: Future baseline performance at A574 Warrington Road/New Hall Lane northern junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A574 Warrington Road (north) (ahead and left)	1,250	-	-
New Hall Lane (left)	37	0.12	0
New Hall Lane (right)	7	0.05	0
A574 Warrington Road (south) (ahead and right)	0	0.00	0
	2030 PM peak hour (17:00–18:00)		
A574 Warrington Road (north) (ahead and left)	359	-	-
New Hall Lane (left)	116	0.23	0
New Hall Lane (right)	57	0.21	0
A574 Warrington Road (south) (ahead and right)	864	0.00	0

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

Wigshaw Lane/Glaziers Lane

10.4.62 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 Junctions 9 software and is shown in Table 10-29.

Table 10-29: 2017 baseline performance at Wigshaw Lane/Glaziers Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
Wigshaw Lane (north) (ahead)	252	0.00	0
Wigshaw Lane (north) (left)	63	0.00	0
Glaziers Lane (left and right)	22	0.04	0

Approach	Flow, PCU/hr	RFC	Q, PCU
Wigshaw Lane (west) (ahead and right)	233	0.11	0
	2018 PM peak hour (17:00–18:00) baseline results		
Wigshaw Lane (north) (ahead)	219	0.00	0
Wigshaw Lane (north) (left)	21	0.00	0
Glaziers Lane (left and right)	155	0.29	0
Wigshaw Lane (west) (ahead and right)	235	0.03	0

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

10.4.64 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-30. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-30: Future baseline performance at Wigshaw Lane/Glaziers Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
Wigshaw Lane (north) (ahead)	280	0.00	0
Wigshaw Lane (north) (left)	70	0.00	0
Glaziers Lane (left and right)	25	0.05	0
Wigshaw Lane (west) (ahead and right)	258	0.13	0
	2030 PM peak hour (17:00–18:00)		
Wigshaw Lane (north) (ahead)	243	0.00	0
Wigshaw Lane (north) (left)	23	0.00	0
Glaziers Lane (left and right)	172	0.35	1
Wigshaw Lane (west) (ahead and right)	260	0.03	0

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

A574 Warrington Road/B5207 Common Lane

10.4.66 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 2018 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 10-31.

Table 10-31: 2018 baseline performance at A574 Warrington Road/B5207 Common Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2018 AM peak hour (08:00–09:00) baseline results		
B5207 Common Lane	653	1.16	60
A574 Warrington Road (east)	818	0.68	2
A574 Warrington Road (west)	299	0.47	1

Approach	Flow, PCU/hr	RFC	Q, PCU
	2018 PM peak hour (17:00–18:00) baseline results		
B5207 Common Lane	446	0.97	12
A574 Warrington Road (east)	583	0.45	1
A574 Warrington Road (west)	672	1.24	80

10.4.67 This junction operates over capacity in the 2018 baseline with a maximum RFC of 1.16 on the B5207 Common Lane (left and right) approach in the AM peak hour with an associated queue length of 60 PCU. In the PM peak hour, the maximum RFC of 1.24 is on the A574 Warrington Road (west) (left and ahead) approach with a queue length of 80 PCU.

10.4.68 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-32. As the junction is affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-32: Future baseline performance at A574 Warrington Road/B5207 Common Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
B5207 Common Lane	725	1.33	121
A574 Warrington Road (east)	909	0.75	3
A574 Warrington Road (west)	333	0.53	1
	2030 PM peak hour (17:00–18:00)		
B5207 Common Lane	494	1.05	25
A574 Warrington Road (east)	646	0.50	1
A574 Warrington Road (west)	745	1.43	158

10.4.69 This junction operates over capacity in the 2030 future baseline with a maximum RFC of 1.33 on the B5207 Common Lane (left and right) approach in the AM peak hour with an associated queue length of 121 PCU. In the PM peak hour, the maximum RFC of 1.43 is on the A574 Warrington Road (west) (left and ahead) approach with a queue length of 158 PCU.

A580/A572/B5207 Lane Head Network

10.4.70 The A580/A572/B5207 Lane Head network incorporates three signal controlled junctions located in proximity. The network comprises:

- A572 Newton Road/B5207 Church Lane/B5207 Kenyon Lane;
- A580 East Lancashire Road/B5207 Church Lane; and
- A580 East Lancashire Road/A572 Newton Road.

10.4.71 The three junctions have been assessed as a single network and are reported separately below.

A572 Newton Road/B5207 Church Lane/B5207 Kenyon Lane

10.4.72 This junction is a four-arm signal controlled staggered 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 LinSig software and is shown in Table 10-33.

Table 10-33: 2018 baseline performance at A572 Newton Road/B5207 Church Lane/B5207 Kenyon Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A572 Newton Road (north) (left, ahead and right)	833	96%	35
Kenyon Lane (left, ahead and right)	140	93%	9
Newton Road (south) (left, ahead and right)	635	113%	32
B5207 Church Lane (left, ahead and right)	523	98%	26
	2017 PM peak hour (17:00–18:00) baseline results		
A572 Newton Road (north) (left, ahead and right)	582	60%	15
Kenyon Lane (left, ahead and right)	341	84%	13
Newton Road (south) (left, ahead and right)	775	81%	24
B5207 Church Lane (left, ahead and right)	174	83%	8

10.4.73 In the 2017 baseline the assessment shows that this junction operates over capacity in the AM peak hour with a maximum DoS of 113% on the Newton Road (south) approach with an associated queue length of 32 PCU. In the PM peak hour, the assessment shows that this junction is nearing capacity in the 2017 baseline with a maximum DoS of 84% on the Kenyon Lane approach with an associated queue length of 13 PCU.

10.4.74 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-34. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-34: Future baseline performance at A572 Newton Road/B5207 Church Lane/B5207 Kenyon Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A572 Newton Road (north) (left, ahead and right)	926	107%	71
Kenyon Lane (left, ahead and right)	156	104%	13
Newton Road (south) (left, ahead and right)	706	127%	62
B5207 Church Lane (left, ahead and right)	582	109%	50
	2030 PM peak hour (17:00–18:00)		
A572 Newton Road (north) (left, ahead and right)	646	68%	17
Kenyon Lane (left, ahead and right)	379	91%	16

Approach	Flow, PCU/hr	DoS	Q, PCU
Newton Road (south) (left, ahead and right)	859	91%	31
B5207 Church Lane (left, ahead and right)	193	92%	10

10.4.75 In the 2030 future baseline the assessment shows that this junction operates over capacity in the AM peak hour with a maximum DoS of 127% on the Newton Road (south) approach with an associated queue length of 62 PCU. In the PM peak hour, the assessment shows that this junction is at capacity in the 2030 future baseline with a maximum DoS of 92% on the B5207 Church Lane approach with an associated queue length of 10 PCU.

10.4.76 The junction analysis indicates that the junction will be operating above its capacity in the 2030 future baseline. 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.

A580 East Lancashire Road/B5207 Church Lane

10.4.77 This junction is a four-arm signal controlled crossroads junction with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using LinSig software and is shown in Table 10-35.

Table 10-35: 2017 baseline performance at A580 East Lancashire Road/B5207 Church Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
B5207 Church Lane (north) (left, ahead and right)	317	108%	29
A580 (east) (nearside) (left and ahead)	693	68%	13
A580 (east) (centre) (ahead)	737	68%	18
A580 (east) (offside) (right)	100	63%	4
B5207 Church Lane (south) (left, ahead and right)	234	79%	9
A580 (west) (nearside) (left and ahead)	768	72%	21
A580 (west) (centre and offside) (ahead and right)	1,005	98%	20
	2017 PM peak hour (17:00–18:00) baseline results		
B5207 Church Lane (north) (left, ahead and right)	248	82%	10
A580 (east) (nearside) (left and ahead)	819	74%	12
A580 (east) (centre) (ahead)	909	76%	19
A580 (east) (offside) (right)	192	95%	11
B5207 Church Lane (south) (left, ahead and right)	324	105%	24
A580 (west) (nearside) (left and ahead)	959	96%	39
A580 (west) (centre and offside) (ahead and right)	988	87%	29

10.4.78 The assessment shows that this junction operates over capacity in the AM peak hour with a maximum DoS of 108% on the B5207 Church Lane (north) approach with an associated queue length of 29 PCU. In the PM peak hour, the maximum DoS of 105% is on the B5207 Church Lane (south) approach with a queue length of 24 PCU.

10.4.79 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-36. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-36: Future baseline performance at A580 East Lancashire Road/B5207 Church Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00) baseline results		
B5207 Church Lane (north) (left, ahead and right)	351	120%	47
A580 (east) (nearside) (left and ahead)	696	62%	11
A580 (east) (centre) (ahead)	893	73%	19
A580 (east) (offside) (right)	111	63%	4
B5207 Church Lane (south) (left, ahead and right)	308	107%	29
A580 (west) (nearside) (left and ahead)	876	82%	26
A580 (west) (centre and offside) (ahead and right)	1,093	110%	35
	2030 PM peak hour (17:00–18:00) baseline results		
B5207 Church Lane (north) (left, ahead and right)	274	91%	13
A580 (east) (nearside) (left and ahead)	907	75%	12
A580 (east) (centre) (ahead)	1,010	77%	19
A580 (east) (offside) (right)	214	96%	12
B5207 Church Lane (south) (left, ahead and right)	379	178%	44
A580 (west) (nearside) (left and ahead)	1,043	104%	67
A580 (west) (centre and offside) (ahead and right)	1,116	98%	46

10.4.80 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 120% on the B5207 Church Lane (north) approach with an associated queue length of 47 PCU. In the PM peak hour, the maximum DoS of 178% is on B5207 Church Lane (south) approach with a queue length of 44 PCU.

A580 East Lancashire Road/A572 Newton Road

10.4.81 This junction is a four-arm signal controlled crossroads junction with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using LinSig software and is shown in Table 10-37.

Table 10-37: 2017 baseline performance at A580 East Lancashire Road/A572 Newton Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A572 Newton Road (north) (left, ahead and right)	833	109%	73
A580 (east) (nearside) (left and ahead)	12	9%	0
A580 (east) (centre and offside) (ahead and right)	128	59%	4
A572 Newton Road (south) (nearside) (ahead and left)	567	107%	44
A572 Newton Road (south) (offside) (right)	68	13%	2
A580 (west) (nearside and centre) (left and ahead)	168	105%	14

Approach	Flow, PCU/hr	DoS	Q, PCU
A580 (west) (offside) (ahead)	166	106%	15
	2017 PM peak hour (17:00–18:00) baseline results		
A572 Newton Road (north) (left, ahead and right)	580	104%	40
A580 (east) (nearside) (left and ahead)	46	30%	2
A580 (east) (centre and offside) (ahead and right)	295	99%	9
A572 Newton Road (south) (nearside) (ahead and left)	747	104%	48
A572 Newton Road (south) (offside) (right)	28	4%	1
A580 (west) (nearside and centre) (left and ahead)	59	30%	2
A580 (west) (offside) (ahead)	43	25%	2

10.4.82 The assessment shows that this junction operates over capacity in the AM peak hour with a maximum DoS of 109% on the A572 Newton Road (north) approach with an associated queue length of 73 PCU. In the PM peak hour, the maximum DoS of 104% is on both the A572 Newton Road (north) and the nearside lane of the A572 Newton Road (south) approaches with a queue length of 40 PCU and 48 PCU respectively.

10.4.83 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-38. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-38: Future baseline performance at A580 East Lancashire Road/A572 Newton Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A572 Newton Road (north) (left, ahead and right)	926	121%	123
A580 (east) (nearside) (left and ahead)	13	9%	1
A580 (east) (centre and offside) (ahead and right)	143	66%	4
A572 Newton Road (south) (nearside) (ahead and left)	630	119%	77
A572 Newton Road (south) (offside) (right)	76	15%	2
A580 (west) (nearside and centre) (left and ahead)	187	117%	23
A580 (west) (offside) (ahead)	185	118%	24
	2030 PM peak hour (17:00–18:00)		
A572 Newton Road (north) (left, ahead and right)	646	116%	75
A580 (east) (nearside) (left and ahead)	51	33%	2
A580 (east) (centre and offside) (ahead and right)	328	110%	22
A572 Newton Road (south) (nearside) (ahead and left)	828	115%	91
A572 Newton Road (south) (offside) (right)	31	4%	1
A580 (west) (nearside and centre) (left and ahead)	65	33%	2
A580 (west) (offside) (ahead)	48	28%	2

10.4.84 The assessment shows that this junction operates over capacity in the AM peak hour with a maximum DoS of 121% on the A572 Newton Road (north) approach with an associated

queue length of 123 PCU. In the PM peak hour, the maximum DoS of 116% is on the A572 Newton Road (north) approach with a queue length of 75 PCU.

10.4.85 The junction analysis indicates that the junction will be operating above its capacity in the 2030 future baseline. 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.

A580 East Lancashire Road/Stone Cross Lane North/Stone Cross Lane South

10.4.86 This junction is a four-arm signal controlled staggered junction with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using LinSig software and is shown in Table 10-39.

Table 10-39: 2017 baseline performance at A580 East Lancashire Road/Stone Cross Lane North/Stone Cross Lane South junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Stone Cross Lane North (left and right)	871	108%	67
A580 East Lancashire Road (east) (nearside and centre) (left and ahead)	565	107%	44
A580 East Lancashire Road (east) (offside) (ahead)	553	109%	47
Stone Cross Lane South (left and right)	189	33%	3
A580 East Lancashire Road (west) (nearside and centre) (left and ahead)	879	104%	55
A580 East Lancashire Road (west) (offside) (ahead)	624	78%	20
	2017 PM peak hour (17:00–18:00) baseline results		
Stone Cross Lane North (left and right)	492	85%	12
A580 East Lancashire Road (east) (nearside and centre) (left and ahead)	669	86%	23
A580 East Lancashire Road (east) (offside) (ahead)	695	86%	24
Stone Cross Lane South (left and right)	403	88%	14
A580 East Lancashire Road (west) (nearside and centre) (left and ahead)	894	78%	19
A580 East Lancashire Road (west) (offside) (ahead)	724	69%	20

10.4.87 The assessment shows that this junction operates over capacity in the AM peak hour with a maximum DoS of 109% on the offside lane of the A580 East Lancashire Road (east) approach with an associated queue length of 47 PCU. In the PM peak hour, the assessment shows that this junction is at capacity in the 2017 baseline with a maximum DoS of 88% on the Stone Cross Lane South (left and right) approach with an associated queue length of 14 PCU.

10.4.88 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-40. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-40: Future baseline performance at A580 East Lancashire Road/Stone Cross Lane North/Stone Cross Lane South junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
Stone Cross Lane North (left and right)	968	130%	152
A580 East Lancashire Road (east) (nearside and centre) (left and ahead)	626	103%	38
A580 East Lancashire Road (east) (offside) (ahead)	616	103%	39
Stone Cross Lane South (left and right)	209	41%	4
A580 East Lancashire Road (west) (nearside and centre) (left and ahead)	1,188	131%	245
A580 East Lancashire Road (west) (offside) (ahead)	482	55%	13
	2030 PM peak hour (17:00–18:00)		
Stone Cross Lane North (left and right)	546	94%	16
A580 East Lancashire Road (east) (nearside and centre) (left and ahead)	742	96%	31
A580 East Lancashire Road (east) (offside) (ahead)	771	96%	32
Stone Cross Lane South (left and right)	446	97%	21
A580 East Lancashire Road (west) (nearside and centre) (left and ahead)	977	85%	24
A580 East Lancashire Road (west) (offside) (ahead)	817	78%	24

10.4.89 In the 2030 future baseline the assessment shows that this junction operates over capacity in the AM peak hour with a maximum DoS of 131% on the nearside and centre lanes of the A580 East Lancashire Road (west) approach with an associated queue length of 245 PCU. In the PM peak hour, the assessment shows that this junction is at capacity in the 2030 future baseline with a maximum DoS of 97% on the Stone Cross Lane South approach with an associated queue length of 21 PCU.

10.4.90 The junction analysis indicates that the junction will be operating above its capacity in the 2030 future baseline. 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.

A580 East Lancashire Road/A573 Warrington Road

10.4.91 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 2017 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 10-41.

Table 10-41: 2017 baseline performance at A580 East Lancashire Road/A573 Warrington Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A573 Warrington Road (north)	587	1.36	87
A580 East Lancashire Road (east)	1,481	0.84	6
A573 Warrington Road (south)	230	0.79	3
A580 East Lancashire Road (west)	1,968	0.91	10
	2017 PM peak hour (17:00–18:00) baseline results		
A573 Warrington Road (north)	607	1.19	55
A580 East Lancashire Road (east)	1,817	0.96	17
A573 Warrington Road (south)	287	1.55	56
A580 East Lancashire Road (west)	1,947	0.94	14

10.4.92 The assessment shows that this junction operates over capacity in the 2017 baseline with a maximum RFC of 1.36 on the Warrington Road (north) approach in the AM peak hour with an associated queue length of 87 PCU. In the PM peak hour, the maximum RFC of 1.55 is on the Warrington Road (south) approach with a queue length of 56 PCU.

10.4.93 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-42. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-42: Future baseline performance at A580 East Lancashire Road/A573 Warrington Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00) baseline results		
A573 Warrington Road (north)	651	1.85	196
A580 East Lancashire Road (east)	1,645	0.92	11
A573 Warrington Road (south)	254	1.10	19
A580 East Lancashire Road (west)	2,186	1.02	46
	2030 PM peak hour (17:00–18:00) baseline results		
A573 Warrington Road (north)	673	1.49	138
A580 East Lancashire Road (east)	2,016	1.05	68
A573 Warrington Road (south)	318	2.19	127
A580 East Lancashire Road (west)	2,160	1.04	61

10.4.94 The assessment shows that this junction operates over capacity in the 2030 baseline with a maximum RFC of 1.85 on the Warrington Road (north) approach in the AM peak hour with an associated queue length of 196 PCU. In the PM peak hour, the maximum RFC of 2.19 is on the Warrington Road (south) approach with a queue length of 127 PCU.

A580 East Lancashire Road/Sandy Lane

10.4.95 This junction is a three-arm priority controlled (give-way) T-junction with no controlled pedestrian crossing facilities. The A580 East Lancashire Road is one-way eastbound and therefore no results are reported for the A580 East Lancashire Road (east) approach. 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 10-43.

Table 10-43: 2017 baseline performance at A580 East Lancashire Road/Sandy Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Sandy Lane (left)	239	0.65	2
A580 East Lancashire Road (east)	-	-	-
A580 East Lancashire Road (west) (left)	41	0.00	0
A580 East Lancashire Road (west) (ahead)	1,680	0.00	0
	2017 PM peak hour (17:00–18:00) baseline results		
Sandy Lane (left)	22	0.07	0
A580 East Lancashire Road (east)	-	-	-
A580 East Lancashire Road (west) (left)	214	0.00	0
A580 East Lancashire Road (west) (ahead)	1,829	0.00	0

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

10.4.97 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-44. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-44: Future baseline performance at A580 East Lancashire Road/Sandy Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
Sandy Lane (left)	265	0.79	3
East Lancashire Road (east)	-	-	-
East Lancashire Road (west) (left)	45	0.00	0
East Lancashire Road (west) (ahead)	1,866	0.00	0
	2030 PM peak hour (17:00–18:00)		
Sandy Lane (left)	24	0.08	0
East Lancashire Road (east)	-	-	-
East Lancashire Road (west) (left)	237	0.00	0
East Lancashire Road (west) (ahead)	2,029	0.00	0

10.4.98 In the AM peak hour, the assessment shows that this junction operates nearing capacity in the 2030 future baseline with a maximum RFC of 0.79 on the Sandy Lane (left) 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.

A580 East Lancashire Road/A579 Atherleigh Way

10.4.99 This junction is a three-arm signal 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 LinSig software and is shown in Table 10-45.

Table 10-45: 2018 baseline performance at A580 East Lancashire Road/A579 Atherleigh Way junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A579 Atherleigh Way (nearside and centre) (left and right)	1,031	100%	43
A579 Atherleigh Way (offside) (right)	309	67%	9
A580 East Lancashire Road (east) (nearside) (ahead)	557	43%	8
A580 East Lancashire Road (east) (centre) (ahead)	362	26%	5
A580 East Lancashire Road (east) (offside) (right)	195	69%	6
A580 East Lancashire Road (west) (nearside) (left)	529	36%	6
A580 East Lancashire Road (west) (centre) (ahead)	382	45%	8
A580 East Lancashire Road (west) (offside) (ahead)	910	100%	42
	2017 PM peak hour (17:00–18:00) baseline results		
A579 Atherleigh Way (nearside and centre) (left and right)	619	107%	37
A579 Atherleigh Way (offside) (right)	321	106%	25
A580 East Lancashire Road (east) (nearside) (ahead)	912	62%	14
A580 East Lancashire Road (east) (centre) (ahead)	390	25%	4
A580 East Lancashire Road (east) (offside) (right)	523	108%	40
A580 East Lancashire Road (west) (nearside) (left)	612	49%	10
A580 East Lancashire Road (west) (centre) (ahead)	303	38%	7
A580 East Lancashire Road (west) (offside) (ahead)	915	108%	68

10.4.100 This junction operates over capacity in the 2018 baseline with a maximum DoS of 100% on both the offside lane of the A580 East Lancashire Road (west) and the nearside and centre lanes of the A579 Atherleigh Way approaches in the AM peak hour with an associated queue lengths of 42 and 43 PCU respectively. In the PM peak hour, the maximum DoS of 108% is on the offside lane of the A580 East Lancashire Road (west) approach with a queue length of 68 PCU.

10.4.101 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-46. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-46: Future baseline performance at A580 East Lancashire Road/A579 Atherleigh Way junction

Approach	Flow, PCU/hr	DOS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A579 Atherleigh Way (nearside and centre) (left and right)	1,145	112%	98
A579 Atherleigh Way (offside) (right)	343	77%	11
A580 East Lancashire Road (east) (nearside) (ahead)	619	47%	9
A580 East Lancashire Road (east) (centre) (ahead)	402	29%	5
A580 East Lancashire Road (east) (offside) (right)	217	72%	7
A580 East Lancashire Road (west) (nearside) (left)	587	41%	7
A580 East Lancashire Road (west) (centre) (ahead)	425	50%	9
A580 East Lancashire Road (west) (offside) (ahead)	1,011	112%	88
	2030 PM peak hour (17:00–18:00)		
A579 Atherleigh Way (nearside and centre) (left and right)	686	119%	73
A579 Atherleigh Way (offside) (right)	356	118%	43
A580 East Lancashire Road (east) (nearside) (ahead)	1,012	69%	17
A580 East Lancashire Road (east) (centre) (ahead)	432	28%	5
A580 East Lancashire Road (east) (offside) (right)	580	120%	70
A580 East Lancashire Road (west) (nearside) (left)	679	55%	12
A580 East Lancashire Road (west) (centre) (ahead)	336	42%	7
A580 East Lancashire Road (west) (offside) (ahead)	1,014	120%	120

10.4.102 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 112% on both the offside lane of the A580 East Lancashire Road (west) and nearside and centre lanes of the A579 Atherleigh Way approaches in the AM peak hour with associated queue lengths of 88 PCU and 98 PCU respectively. In the PM peak hour, the maximum DoS of 120% is on both the offside lane of the A580 East Lancashire Road (east) and offside lane of the A580 East Lancashire Road (west) (ahead) approaches with a queue length of 70 PCU and 120 PCU respectively.

B5207 Church Lane/B5207 Golborne Road/Stone Cross Lane/Slag Lane

10.4.103 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 LinSig software and is shown in Table 10-47.

Table 10-47: 2018 baseline performance at B5207 Church Lane/B5207 Golborne Road/Stone Cross Lane/Slag Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Slag Lane (left, ahead and right)	757	109%	63
Church Lane (right, left and ahead)	279	54%	7

Approach	Flow, PCU/hr	DoS	Q, PCU
Stone Cross Lane North (ahead, right and left)	217	110%	21
Golborne Road (left, ahead and right)	414	107%	33
	2017 PM peak hour (17:00–18:00) baseline results		
Slag Lane (left, ahead and right)	458	110%	40
Church Lane (right, left and ahead)	486	101%	20
Stone Cross Lane North (ahead, right and left)	508	107%	41
Golborne Road (left, ahead and right)	370	107%	30

10.4.104 This junction operates over capacity in the 2018 baseline with a maximum DoS of 110% on the Stone Cross Lane North approach in the AM peak hour with an associated queue length of 21 PCU. In the PM peak hour, the maximum DoS of 110% is on the Slag Lane approach with a queue length of 40 PCU.

10.4.105 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-48. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-48: Future baseline performance at B5207 Church Lane/B5207 Golborne Road/Stone Cross Lane/Slag Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
Slag Lane (left, ahead and right)	840	121%	108
Church Lane (right, left and ahead)	310	60%	8
Stone Cross Lane North (ahead, right and left)	242	122%	33
Golborne Road (left, ahead and right)	461	119%	59
	2030 PM peak hour (17:00–18:00)		
Slag Lane (left, ahead and right)	510	118%	60
Church Lane (right, left and ahead)	538	122%	62
Stone Cross Lane North (ahead, right and left)	564	119%	70
Golborne Road (left, ahead and right)	411	119%	53

10.4.106 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 122% on the Stone Cross Lane North approach in the AM peak hour with an associated queue length of 33 PCU. In the PM peak hour, the maximum DoS of 122% is on the Church Lane approach with a queue length of 62 PCU.

A573 High Street/Heath Street

10.4.107 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 10-49.

Table 10-49: 2017 baseline performance at A573 High Street/Heath Street junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A573 High Street (north) (ahead and right)	529	0.21	1
A573 High Street (south) (ahead and left)	504	0.31	1
Heath Street (left and right)	245	0.74	3
	2017 PM peak hour (17:00–18:00) baseline results		
A573 High Street (north) (ahead and right)	552	0.24	1
A573 High Street (south) (ahead and left)	758	0.50	1
Heath Street (left and right)	210	0.73	3

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

10.4.109 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-50. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-50: Future baseline performance at A573 High Street/Heath Street junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A573 High Street (north) (ahead and right)	588	0.25	1
A573 High Street (south) (ahead and left)	560	0.35	1
Heath Street (left and right)	271	0.88	6
	2030 PM peak hour (17:00–18:00)		
A573 High Street (north) (ahead and right)	612	0.29	1
A573 High Street (south) (ahead and left)	841	0.55	1
Heath Street (left and right)	233	0.89	6

10.4.110 The assessment shows that this junction operates at capacity in the 2030 future baseline with a maximum RFC of 0.88 on the Heath Street (left and right) approach with an associated queue length of six PCU. In the PM peak hour, the maximum RFC of 0.89 is on the Heath Street (left and right) approach with a queue length of six PCU.

A580 East Lancashire Road/A574 Warrington Road

10.4.111 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 2017 existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 10-51.

Table 10-51: 2017 baseline performance at A580 East Lancashire Road/A574 Warrington Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A574 Warrington Road (north)	565	0.96	12

Approach	Flow, PCU/hr	RFC	Q, PCU
A580 East Lancashire Road (east)	1,398	0.61	2
A574 Warrington Road (south)	346	0.28	0
A580 East Lancashire Road (west)	1,922	0.77	4
	2017 PM peak hour (17:00–18:00) baseline results		
A574 Warrington Road (north)	674	0.80	4
A580 East Lancashire Road (east)	1,698	0.66	2
A574 Warrington Road (south)	835	1.07	41
A580 East Lancashire Road (west)	1,480	0.72	3

10.4.112 This assessment shows that this junction is at capacity in the 2017 baseline with a maximum RFC of 0.96 on the A574 Warrington Road (north) approach in the AM peak hour with an associated queue length of 12 PCU. In the PM peak hour, the assessment shows that this junction operates over capacity in the 2017 baseline with a maximum RFC of 1.07 on the A574 Warrington Road (south) approach with an associated queue length of 41 PCU.

10.4.113 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-52. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-52: Future baseline performance at A580 East Lancashire Road/Newton Lane (north) junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A574 Warrington Road (north)	628	1.48	112
A580 East Lancashire Road (east)	1,553	0.65	2
A574 Warrington Road (south)	384	0.33	1
A580 East Lancashire Road (west)	2,136	0.88	7
	2030 PM peak hour (17:00–18:00)		
A574 Warrington Road (north)	748	0.97	15
A580 East Lancashire Road (east)	1,882	0.76	3
A574 Warrington Road (south)	927	1.45	161
A580 East Lancashire Road (west)	1,642	0.77	4

10.4.114 This junction operates over capacity in the 2030 future baseline with a maximum RFC of 1.48 on the A574 Warrington Road (north) approach in the AM peak hour with an associated queue length of 112 PCU. In the PM peak hour, the maximum RFC of 1.45 is on the A574 Warrington Road (south) approach with a queue length of 161 PCU.

A573 Ashton Road/A573 Church Street/B5207 Lowton Road

10.4.115 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 2017

existing baseline AM and PM peak hours using Junctions 9 software and is shown in Table 10-53.

Table 10-53: 2017 baseline performance at A573 Ashton Road/A573 Church Street/B5207 Lowton Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A573 Ashton Road	776	0.82	5
B5207 Lowton Road	261	0.48	1
A573 Church Street	346	0.58	1
	2017 PM peak hour (17:00–18:00) baseline results		
A573 Ashton Road	621	0.66	2
B5207 Lowton Road	341	0.56	1
A573 Church Street	541	0.98	15

10.4.116 The assessment shows that this junction is nearing capacity in the 2017 baseline with a maximum RFC of 0.82 on the A573 Ashton 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 is at capacity in the 2017 baseline with a maximum RFC of 0.98 on the A573 Church Street approach with a queue length of 15 PCU.

10.4.117 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-54. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-54: Future baseline performance at A573 Ashton Road/A573 Church Street/B5207 Lowton Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A573 Ashton Road	861	0.92	9
B5207 Lowton Road	290	0.57	1
A573 Church Street	384	0.66	2
	2030 PM peak hour (17:00–18:00)		
A573 Ashton Road	688	0.73	3
B5207 Lowton Road	378	0.65	2
A573 Church Street	601	1.13	46

10.4.118 The assessment shows that this junction operates nearing capacity in the 2030 future baseline with a maximum RFC of 0.92 on the A573 Ashton Road approach with an associated queue length of nine PCU. In the PM peak hour, this junction operates over capacity in the 2030 future baseline with a maximum RFC of 1.13 on the A573 Church Street approach with an associated queue length of 46 PCU.

A573 Wigan Road/B5207 Ashton Road

10.4.119 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 10-55.

Table 10-55: 2017 baseline performance at A573 Wigan Road/B5207 Ashton Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A573 Wigan Road (ahead and right)	712	0.23	0
A573 Ashton Road (ahead and left)	550	-	-
B5207 Ashton Road (left)	28	0.07	0
B5207 Ashton Road (right)	213	0.64	2
	2017 PM peak hour (17:00–18:00) baseline results		
A573 Wigan Road (ahead and right)	402	0.17	0
A573 Ashton Road (ahead and left)	834	-	-
B5207 Ashton Road (left)	83	0.41	1
B5207 Ashton Road (right)	285	0.84	5

10.4.120 The assessment shows that in the AM peak hour this junction operates within capacity in the 2017 baseline. In the PM peak hour, the assessment shows that this junction is nearing capacity in the 2017 baseline with a maximum RFC of 0.84 on the B5207 Ashton Road (right) approach with an associated queue length of five PCU.

10.4.121 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-56. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-56: Future baseline performance at A573 Wigan Road/B5207 Ashton Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A573 Wigan Road (ahead and right)	791	0.26	0
A573 Ashton Road (ahead and left)	610	-	-
B5207 Ashton Road (left)	31	0.13	0
B5207 Ashton Road (right)	236	0.78	4
	2030 PM peak hour (17:00–18:00)		
A573 Wigan Road (ahead and right)	446	0.21	0
A573 Ashton Road (ahead and left)	924	-	-
B5207 Ashton Road (left)	92	1.05	7
B5207 Ashton Road (right)	316	1.04	17

10.4.122 The assessment shows that this junction is nearing capacity in the 2030 future baseline with a maximum RFC of 0.78 on the B5207 Ashton Road (right) approach with an associated queue length of four PCU. In the PM peak hour, the assessment shows that this junction

operates over capacity in the 2030 future baseline with a maximum RFC of 1.05 on the B5207 Ashton Road (left) approach with an associated queue length of seven PCU.

Slag Lane/Byrom Lane

10.4.123 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 10-57.

Table 10-57: 2017 baseline performance at Slag Lane/Byrom Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
Slag Lane (north) (ahead and left)	446	-	-
Byrom Lane (left)	109	0.20	0
Byrom Lane (right)	29	0.11	0
Slag Lane (south) (ahead and right)	445	0.51	1
	2017 PM peak hour (17:00–18:00) baseline results		
Slag Lane (north) (ahead and left)	322	-	-
Byrom Lane (left)	201	0.37	1
Byrom Lane (right)	60	0.20	0
Slag Lane (south) (ahead and right)	461	0.31	1

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

10.4.125 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-58. 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 10-58: Future baseline performance at Slag Lane/Byrom Lane junction

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, 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)**		
Slag Lane (north) (ahead and left)	498	-	-	525	-	-	556	-	-
Byrom Lane (left)	121	0.23	0	127	0.25	0	135	0.27	0
Byrom Lane (right)	32	0.13	0	34	0.15	0	36	0.16	0
Slag Lane (south) (ahead and right)	494	0.60	2	521	0.65	3	551	0.70	3
	2030 PM peak hour (17:00–18:00)			**20380 PM peak hour (17:00–18:00)**			**2046 PM peak hour (17:00–18:00)**		
Slag Lane (north) (ahead and left)	357	-	-	377	-	-	399	-	-
Byrom Lane (left)	223	0.42	1	235	0.45	1	249	0.49	1
Byrom Lane (right)	67	0.25	0	70	0.27	0	74	0.31	0

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
Slag Lane (south) (ahead and right)	512	0.36	1	540	0.39	1	571	0.43	1

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

A58 Liverpool Road/A58 Gerard Street/A49 Warrington Road/A49 Bryn Street

10.4.127 This junction is a four-arm signal controlled staggered crossroads 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 LinSig software and is shown in Table 10-59.

Table 10-59: 2017 baseline performance at A58 Liverpool Road/A58 Gerard Street/A49 Warrington Road/A49 Bryn Street junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A58 Liverpool Road (east)	728	79%	22
A49 Warrington Road	253	94%	13
A58 Liverpool (west)	359	93%	17
A49 Bryn Street	274	93%	14
	2017 PM peak hour (17:00–18:00) baseline results		
A58 Liverpool Road (east)	430	80%	15
A49 Warrington Road	545	88%	20
A58 Liverpool (west)	384	89%	16
A49 Bryn Street	221	88%	10

10.4.128 The assessment shows that this junction is at capacity in the 2017 baseline with a maximum DoS of 94% on the A49 Warrington Road approach in the AM peak hour with an associated queue length of 13 PCU. In the PM peak hour, the maximum DoS of 89% is on the A58 Liverpool (west) approach with a queue length of 16 PCU.

10.4.129 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-60. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-60: Future baseline performance at A58 Liverpool Road/A58 Gerard Street/A49 Warrington Road/A49 Bryn Street junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A58 Liverpool Road (east)	808	87%	27
A49 Warrington Road	280	104%	22
A58 Liverpool (west)	398	140%	76

Approach	Flow, PCU/hr	DoS	Q, PCU
A49 Bryn Street	304	104%	22
	2030 PM peak hour (17:00–18:00)		
A58 Liverpool Road (east)	476	88%	18
A49 Warrington Road	603	97%	28
A58 Liverpool (west)	426	110%	40
A49 Bryn Street	245	98%	15

10.4.130 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 140% on the A58 Liverpool (west) approach in the AM peak hour with an associated queue length of 76 PCU. In the PM peak hour, the maximum DoS of 110% is on the A58 Liverpool (west) approach with a queue length of 40 PCU.

A58 Gerard Street/A58 Bolton Road/A5062 Wigan Road/Princess Road

10.4.131 This junction is a four-arm signal controlled staggered crossroad 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 LinSig software and is shown in Table 10-61.

Table 10-61: 2017 baseline performance at A58 Gerard Street/A58 Bolton Road/A5062 Wigan Road/Princess Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A58 Bolton Road (left, ahead and right)	717	90%	26
Princess Road (ahead, left and right)	285	89%	13
A58 Gerard Street (left, ahead and right)	387	54%	10
Wigan Road (left, ahead and right)	253	86%	10
	2017 PM peak hour (17:00–18:00) baseline results		
A58 Bolton Road (left, ahead and right)	607	94%	23
Princess Road (ahead, left and right)	291	91%	13
A58 Gerard Street (left, ahead and right)	555	87%	19
Wigan Road (left, ahead and right)	324	93%	14

10.4.132 The assessment shows that this junction is at capacity in the 2017 baseline with a maximum DoS of 90% on the A58 Bolton Road approach in the AM peak hour with an associated queue length of 26 PCU. In the PM peak hour, the maximum DoS of 94% is on the A58 Bolton Road approach with a queue length of 23 PCU.

10.4.133 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-62. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-62: Future baseline performance at A58 Gerard Street/A58 Bolton Road/A5062 Wigan Road/Princess Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A58 Bolton Road (left, ahead and right)	796	100%	39
Princess Road (ahead, left and right)	317	99%	19
A58 Gerard Street (left, ahead and right)	429	60%	12
Wigan Road (left, ahead and right)	283	96%	14
	2030 PM peak hour (17:00–18:00)		
A58 Bolton Road (left, ahead and right)	673	121%	87
Princess Road (ahead, left and right)	323	101%	21
A58 Gerard Street (left, ahead and right)	615	94%	24
Wigan Road (left, ahead and right)	359	103%	23

10.4.134 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 100% on the A58 Bolton Road approach in the AM peak hour with an associated queue length of 39 PCU. In the PM peak hour, the maximum DoS of 121% is on the A58 Bolton Road approach with a queue length of 87 PCU.

A58 Bolton Road/B5207 Bryn Road

10.4.135 This junction is a three-arm signal controlled (give-way) T-junction with 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 10-63.

Table 10-63: 2017 baseline performance at A58 Bolton Road/B5207 Bryn Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A58 Bolton Road (north) (ahead and right)	1,050	63%	13
A58 Bolton Road (south) (ahead and left)	463	59%	13
B5207 Bryn Road (nearside) (left)	592	61%	14
B5207 Bryn Road (offside) (right)	98	61%	4
	2017 PM peak hour (17:00–18:00) baseline results		
A58 Bolton Road (north) (ahead and right)	975	61%	13
A58 Bolton Road (south) (ahead and left)	614	67%	16
B5207 Bryn Road (nearside) (left)	569	67%	15
B5207 Bryn Road (offside) (right)	130	61%	5

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

10.4.137 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-64. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-64: Future baseline performance at A58 Bolton Road/B5207 Bryn Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A58 Bolton Road (north) (ahead and right)	1,166	70%	17
A58 Bolton Road (south) (ahead and left)	514	66%	15
B5207 Bryn Road (nearside) (left)	657	68%	16
B5207 Bryn Road (offside) (right)	109	68%	5
	2030 PM peak hour (17:00–18:00)		
A58 Bolton Road (north) (ahead and right)	1,081	68%	16
A58 Bolton Road (south) (ahead and left)	681	74%	19
B5207 Bryn Road (nearside) (left)	630	74%	17
B5207 Bryn Road (offside) (right)	144	68%	6

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

A58 Bolton Road/B5207 Golborne Road

10.4.139 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 Junctions 9 software and is shown in Table 10-65.

Table 10-65: 2017 baseline performance at A58 Bolton Road/B5207 Golborne Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A58 Bolton Road (north) (ahead and left)	627	-	-
B5207 Golborne Road (left)	421	0.90	7
B5207 Golborne Road (right)	8	0.14	0
A58 Bolton Road (south) (ahead and right)	1,069	1.05	48
	2017 PM peak hour (17:00–18:00) baseline results		
A58 Bolton Road (north) (ahead and left)	566	-	-
B5207 Golborne Road (left)	428	0.89	6
B5207 Golborne Road (right)	15	0.18	0
A58 Bolton Road (south) (ahead and right)	1,153	0.95	22

10.4.140 This junction operates over capacity in the 2018 baseline with a maximum RFC of 1.05 on the A58 Bolton Road (south) approach in the AM peak hour with an associated queue length of 48 PCU. In the PM peak hour, the assessment shows that this junction is at capacity in the

2018 baseline with a maximum RFC of 0.95 on the A58 Bolton Road (south) approach with an associated queue length of 22 PCU.

10.4.141 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-66. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-66: Future baseline performance at A58 Bolton Road/B5207 Golborne Road junction

Approach	Flow, PCU/hr	RFC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A58 Bolton Road (north) (ahead and left)	696	-	-
B5207 Golborne Road (left)	467	1.33	53
B5207 Golborne Road (right)	9	N/A*	4
A58 Bolton Road (south) (ahead and right)	1,187	1.21	128
	2030 PM peak hour (17:00–18:00)		
A58 Bolton Road (north) (ahead and left)	629	-	-
B5207 Golborne Road (left)	475	1.29	47
B5207 Golborne Road (right)	16	2.03	3
A58 Bolton Road (south) (ahead and right)	1,280	1.10	80

**This RFC is not reported due to the model reaching its upper limit. The reported queue length provides only an indication of the level of queuing likely to be experienced at this junction as in practice some drivers may choose to modify their route or the timing of their journey to avoid the congestion.*

10.4.142 This junction operates over capacity in the 2030 future baseline with a maximum RFC on the B5207 Golborne Road (right) approach in the AM peak hour which is in excess of the upper limit of the software and is not reported. This is due to the high opposing traffic flows on the A58 Bolton Road, which means that the right turn from the B5207 Golborne Road has an effective capacity of zero, although the number of vehicles that are affected is small. In the PM peak hour, the maximum RFC of 2.03 is on the B5207 Golborne Road (right) approach with a queue length of three PCU.

A580 East Lancashire Road/Higher Green Lane

10.4.143 This junction is a four-arm signal controlled crossroads with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using LinSig software and is shown in Table 10-67.

Table 10-67: 2017 baseline performance at A580 East Lancashire Road/Higher Green Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A580 East Lancashire Road (east) (left and ahead)	512	65%	11
A580 East Lancashire Road (east) (ahead and right)	592	68%	13
Higher Green Lane (south) (right, left and ahead)	118	22%	2

Approach	Flow, PCU/hr	DoS	Q, PCU
A580 East Lancashire Road (west) (ahead and left)	796	105%	48
A580 East Lancashire Road (west) (ahead and right)	870	106%	55
Higher Green Lane (north) (left, ahead and right)	592	102%	31
	2017 PM peak hour (17:00–18:00) baseline results		
A580 East Lancashire Road (east) (left and ahead)	762	75%	17
A580 East Lancashire Road (east) (ahead and right)	919	81%	19
Higher Green Lane (south) (right, left and ahead)	163	50%	4
A580 East Lancashire Road (west) (ahead and left)	794	86%	20
A580 East Lancashire Road (west) (ahead and right)	876	87%	22
Higher Green Lane (north) (left, ahead and right)	297	82%	9

10.4.144 This junction operates over capacity in the 2017 baseline with a maximum DoS of 105.7% on the A580 East Lancashire Road (west) (ahead and right) approach in the AM peak hour with an associated queue length of 55 PCU. This junction is at capacity in the 2017 baseline with a maximum DoS of 87% on the A580 East Lancashire Road (west) (ahead and right) approach in the PM peak hour with an associated queue length of 22 PCU.

10.4.145 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-68. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-68: Future baseline performance at A580 East Lancashire Road/Higher Green Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A580 East Lancashire Road (east) (left and ahead)	572	72%	13
A580 East Lancashire Road (east) (ahead and right)	655	76%	15
Higher Green Lane (south) (right, left and ahead)	131	25%	3
A580 East Lancashire Road (west) (ahead and left)	885	117%	93
A580 East Lancashire Road (west) (ahead and right)	966	117%	104
Higher Green Lane (north) (left, ahead and right)	656	113%	60
	2030 PM peak hour (17:00–18:00)		
A580 East Lancashire Road (east) (left and ahead)	856	84%	21
A580 East Lancashire Road (east) (ahead and right)	1,007	89%	24
Higher Green Lane (south) (right, left and ahead)	181	56%	5

Approach	Flow, PCU/hr	DoS	Q, PCU
A580 East Lancashire Road (west) (ahead and left)	885	96%	29
A580 East Lancashire Road (west) (ahead and right)	967	96%	31
Higher Green Lane (north) (left, ahead and right)	329	91%	12

10.4.146 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 1173% on the A580 East Lancashire Road (west) (ahead and right) approach in the AM peak hour with an associated queue length of 104 PCU. This junction is at capacity in the 2030 future baseline with a maximum DoS of 96% on the A580 East Lancashire Road (west) (ahead and right) approach in the PM peak hour with an associated queue length of 31 PCU.

A580 East Lancashire Road/A572 Chaddock Lane

10.4.147 This junction is a four-arm signal controlled through roundabout (also known as 'hamburger' roundabout) 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 LinSig software and is shown in Table 10-69.

Table 10-69: 2017 baseline performance at A580 East Lancashire Road/A572 Chaddock Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A580 East Lancashire Road (east) (left and ahead)	1,186	79%	13
A580 East Lancashire Road (ahead)	378	35%	6
A580 East Lancashire Road (westbound internal link) (ahead)	623	54%	1
A580 East Lancashire Road (westbound internal link) (ahead)	659	54%	14
A580 East Lancashire Road (eastbound internal link) (ahead)	811	70%	1
A580 East Lancashire Road (eastbound internal link) (ahead)	922	76%	23
A580 East Lancashire Road (west) (ahead and left)	1,030	87%	21
A580 East Lancashire Road (west) (ahead)	474	43%	8
Chaddock Lane (south internal link) (left)	6	1%	1
Chaddock Lane (south internal link) (ahead)	195	34%	5
Chaddock Lane (south internal link) (right)	448	86%	14
Chaddock Lane (south priority entry)	622	47%	1
Chaddock Lane (north priority entry)	609	51%	1
Chaddock Lane (north internal link) (left)	28	5%	1
Chaddock Lane (north internal link) (ahead)	300	53%	7

Approach	Flow, PCU/hr	DoS	Q, PCU
Chaddock Lane (north internal link) (right)	281	58%	7
	2017 PM peak hour (17:00–18:00) baseline results		
A580 East Lancashire Road (east) (left and ahead)	1,261	86%	16
A580 East Lancashire Road (ahead)	588	50%	10
A580 East Lancashire Road (westbound internal link) (ahead)	738	60%	1
A580 East Lancashire Road (westbound internal link) (ahead)	879	68%	20
A580 East Lancashire Road (eastbound internal link) (ahead)	826	68%	1
A580 East Lancashire Road (eastbound internal link) (ahead)	987	77%	24
A580 East Lancashire Road (west) (ahead and left)	1,220	89%	22
A580 East Lancashire Road (west) (ahead)	581	50%	10
Chaddock Lane (south internal link) (left)	19	4%	1
Chaddock Lane (south internal link) (ahead)	308	60%	8
Chaddock Lane (south internal link) (right)	406	88%	14
Chaddock Lane (south priority entry)	669	53%	4
Chaddock Lane (north priority entry)	535	46%	1
Chaddock Lane (north internal link) (left)	19	4%	1
Chaddock Lane (north internal link) (ahead)	225	45%	6
Chaddock Lane (north internal link) (right)	291	67%	8

10.4.148 The assessment shows that this junction is at capacity in the 2017 baseline with a maximum DoS of 87% on the A580 East Lancashire Road (west) approach in the AM peak hour with an associated queue length of two PCU. In the PM peak hour, the maximum DoS of 89% is on the A580 East Lancashire Road (west) approach with a queue length of 21 PCU.

10.4.149 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-70. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-70: Future baseline performance at A580 East Lancashire Road/A572 Chaddock Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00) baseline results		
A580 East Lancashire Road (east) (nearside) (left and ahead)	1,284	86%	15
A580 East Lancashire Road (east) (offside) (ahead)	454	42%	8
A580 East Lancashire Road (internal westbound) (nearside) (ahead)	658	58%	1

Approach	Flow, PCU/hr	DoS	Q, PCU
A580 East Lancashire Road (internal westbound) (offside) (ahead)	766	64%	18
A580 East Lancashire Road (internal eastbound) (nearside) (ahead)	855	76%	2
A580 East Lancashire Road (internal eastbound link) (offside) (ahead)	1,069	90%	31
A580 East Lancashire Road (west) (nearside) (left and ahead)	1,098	94%	28
A580 East Lancashire Road (west) (offside) (ahead)	572	53%	11
A572 Chaddock Lane (internal past A580 East Lancashire Road (west) entry) (nearside) (left)	7	1%	1
A572 Chaddock Lane (internal past A580 East Lancashire Road (west) entry) (centre) (ahead)	217	36%	5
A572 Chaddock Lane (internal past A580 East Lancashire Road (west) entry) (offside) (right)	497	92%	17
A572 Chaddock Lane (south) (left)	691	52%	1
Chaddock Lane (north priority entry)	676	56%	1
A572 Chaddock Lane (internal past A580 East Lancashire Road (east) entry) (nearside) (left)	31	5%	1
A572 Chaddock Lane (internal past A580 East Lancashire Road (east) entry) (centre) (ahead)	333	57%	8
Chaddock Lane (north internal link) (right)	312	62%	8
	2017 PM peak hour (17:00–18:00) baseline results		
A580 East Lancashire Road (east) (left and ahead)	1,351	92%	24
A580 East Lancashire Road (ahead)	700	61%	13
A580 East Lancashire Road (westbound internal link) (ahead)	771	64%	1
A580 East Lancashire Road (westbound internal link) (ahead)	1,023	81%	26
A580 East Lancashire Road (eastbound internal link) (ahead)	864	72%	2
A580 East Lancashire Road (eastbound internal link) (ahead)	1,146	91%	33
A580 East Lancashire Road (west) (ahead and left)	1,301	96%	31
A580 East Lancashire Road (west) (ahead)	696	61%	13
Chaddock Lane (south internal link) (left)	21	4%	1
Chaddock Lane (south internal link) (ahead)	342	64%	9
Chaddock Lane (south internal link) (right)	450	94%	17
Chaddock Lane (south priority entry)	742	58%	12
Chaddock Lane (north priority entry)	593	50%	1
Chaddock Lane (north internal link) (left)	21	4%	1

Approach	Flow, PCU/hr	DoS	Q, PCU
Chaddock Lane (north internal link) (ahead)	249	48%	6
Chaddock Lane (north internal link) (right)	323	72%	9

10.4.150 The assessment shows that this junction is at capacity in the 2030 future baseline with a maximum DoS of 94% on the A580 East Lancashire Road (west) approach in the AM peak hour with an associated queue length of 28 PCU. In the PM peak hour, the maximum DoS of 95.7% is on the A580 East Lancashire Road (west) approach with a queue length of 31 PCU.

A580 East Lancashire Road/A577 Mosley Common Road

10.4.151 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 2017 existing baseline AM and PM peak hours using LinSig software and is shown in Table 10-71.

Table 10-71: 2017 baseline performance at A580 East Lancashire Road/A577 Mosley Common Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A577 Mosley Common Road (north) (left, ahead and right)	366	102%	24
A580 East Lancashire Road (east) (nearside) (left and ahead)	389	37%	7
A580 East Lancashire Road (east) (centre and offside) (ahead and right)	504	47%	8
A577 Mosley Common Road (south) (left, ahead and right)	331	59%	10
A580 East Lancashire Road (west) (nearside) (left and ahead)	892	101%	48
A580 East Lancashire Road (west) (offside) (ahead)	973	101%	52
	2017 PM peak hour (17:00–18:00) baseline results		
A577 Mosley Common Road (north) (left, ahead and right)	463	99%	24
A580 East Lancashire Road (east) (nearside) (left and ahead)	766	80%	23
A580 East Lancashire Road (east) (centre and offside) (ahead and right)	1,015	98%	25
A577 Mosley Common Road (south) (left, ahead and right)	328	49%	9
A580 East Lancashire Road (west) (nearside) (left and ahead)	668	98%	32
A580 East Lancashire Road (west) (offside) (ahead)	743	99%	36

10.4.152 In the 2017 baseline the assessment shows that this junction operates over capacity in AM peak hour with a maximum DoS of 102% on the A577 Mosley Common Road (north) (left, ahead and right) approach with an associated queue length of 24 PCU. In the PM peak hour, the assessment shows that this junction is at capacity with a maximum DoS of 99% on both the A580 East Lancashire Road (west) (offside) (ahead) and A577 Mosley Common Road (north) (left, ahead and right) approaches with an associated queue length of 36 PCU and 24 PCU respectively.

10.4.153 The future year baseline performance and the results for the AM and PM peak hours are shown in

10.4.154 Table 10-72. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-72: Future baseline performance at A580 East Lancashire Road/A577 Mosley Common Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A577 Mosley Common Road (north) (left, ahead and right)	406	113%	43
A580 East Lancashire Road (east) (nearside) (left and ahead)	434	42%	9
A580 East Lancashire Road (east) (centre and offside) (ahead and right)	558	53%	10
A577 Mosley Common Road (south) (left, ahead and right)	368	62%	11
A580 East Lancashire Road (west) (nearside) (left and ahead)	992	117%	113
A580 East Lancashire Road (west) (offside) (ahead)	1,079	117%	122
	2030 PM peak hour (17:00–18:00)		
A577 Mosley Common Road (north) (left, ahead and right)	513	113%	53
A580 East Lancashire Road (east) (nearside) (left and ahead)	861	92%	31
A580 East Lancashire Road (east) (centre and offside) (ahead and right)	1,115	109%	42
A577 Mosley Common Road (south) (left, ahead and right)	363	53%	10
A580 East Lancashire Road (west) (nearside) (left and ahead)	742	112%	71
A580 East Lancashire Road (west) (offside) (ahead)	822	112%	78

10.4.155 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 117% on both the A580 East Lancashire Road (west) (nearside) (left and ahead) and the A580 East Lancashire Road (west) (offside) (ahead) approaches in the AM peak hour with an associated queue length of 113 PCU and 122 PCU respectively. In the PM peak hour, the maximum DoS of 113% is on the A557 Mosley Common (north) (left, ahead and right) approach with a queue length of 53 PCU.

A580 East Lancashire Road/B5232 Newearth Road/Ellenbrook Road

10.4.156 This junction is a four-arm signal controlled crossroads with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using LinSig software and is shown in Table 10-73.

Table 10-73: 2017 baseline performance at A580 East Lancashire Road/B5232 Newearth Road/Ellenbrook Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
B5232 Newearth Road (nearside) (left)	490	67%	14
B5232 Newearth Road (centre and offside) (ahead and right)	431	60%	8
A580 East Lancashire Road (east) (nearside and centre 1) (left and ahead)	334	38%	7
A580 East Lancashire Road (east) (centre 2 and offside) (ahead and right)	378	40%	8
Ellenbrook Road (left, ahead and right)	212	93%	10
A580 East Lancashire Road (west) (nearside and centre 1) (left and ahead)	917	93%	33
A580 East Lancashire Road (west) (centre 2 and offside) (ahead and right)	982	94%	33
	2017 PM peak hour (17:00–18:00) baseline results		
B5232 Newearth Road (nearside) (left)	216	27%	5
B5232 Newearth Road (centre and offside) (ahead and right)	380	55%	7
A580 East Lancashire Road (east) (nearside and centre 1) (left and ahead)	889	93%	31
A580 East Lancashire Road (east) (centre 2 and offside) (ahead and right)	969	96%	33
Ellenbrook Road (left, ahead and right)	311	96%	16
A580 East Lancashire Road (west) (nearside and centre 1) (left and ahead)	692	71%	17
A580 East Lancashire Road (west) (centre 2 and offside) (ahead and right)	639	69%	16

10.4.157 The assessment shows that this junction is at capacity in the 2017 baseline with a maximum DoS of 94% on the A580 East Lancashire Road (west) (centre 2 and offside) (ahead and right) approach in the AM peak hour with an associated queue length of 33 PCU. In the PM peak hour, the maximum DoS of 96% is on both the A580 East Lancashire Road (east) (centre 2 and offside) (ahead and right) and Ellenbrook Road (left, ahead and right) approaches with an associated queue length of 33 PCU and 16 PCU respectively.

10.4.158 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-74. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-74: Future baseline performance at A580 East Lancashire Road/ B5232 Newearth Road/Ellenbrook Road junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
B5232 Newearth Road (nearside) (left)	544	71%	15

Approach	Flow, PCU/hr	DoS	Q, PCU
B5232 Newearth Road (centre and offside) (ahead and right)	479	63%	8
A580 East Lancashire Road (east) (nearside and centre 1) (left and ahead)	371	43%	9
A580 East Lancashire Road (east) (centre 2 and offside) (ahead and right)	419	45%	9
Ellenbrook Road (left, ahead and right)	237	101%	16
A580 East Lancashire Road (west) (nearside and centre 1) (left and ahead)	1,020	108%	80
A580 East Lancashire Road (west) (centre 2 and offside) (ahead and right)	1,089	108%	83
	2030 PM peak hour (17:00–18:00)		
B5232 Newearth Road (nearside) (left)	240	30%	5
B5232 Newearth Road (centre and offside) (ahead and right)	421	59%	8
A580 East Lancashire Road (east) (nearside and centre 1) (left and ahead)	1,000	107%	75
A580 East Lancashire Road (east) (centre 2 and offside) (ahead and right)	1,061	107%	73
Ellenbrook Road (left, ahead and right)	345	107%	29
A580 East Lancashire Road (west) (nearside and centre 1) (left and ahead)	765	78%	20
A580 East Lancashire Road (west) (centre 2 and offside) (ahead and right)	711	76%	20

10.4.159 This assessment shows that this junction operates over capacity in the 2030 future baseline with a maximum DoS of 108% on the both the A580 East Lancashire Road (west) (nearside and centre 1) (left and ahead) and A580 East Lancashire Road (west) (centre 2 and offside) (ahead and right) approaches in the AM peak hour with an associated queue length of 80 PCU and 83 PCU respectively. In the PM peak hour, the maximum DoS of 107% is on the A580 East Lancashire Road (east) (nearside and centre 1) (left and ahead), A580 East Lancashire Road (east) (centre 2 and offside) (ahead and right) and the Ellenbrook Road (left, ahead and right) approaches with an associated queue length of 75 PCU, 73 PCU and 29 PCU respectively.

A580 East Lancashire Road/A575 Walkden Road

10.4.160 This junction is a four-arm signal-controlled crossroads with signal controlled pedestrian crossing facilities. The operation of the junction has been assessed for the 2017 existing baseline AM and PM peak hours using SATURN software and is shown in Table 10-75.

Table 10-75: 2017 baseline performance at A580 East Lancashire Road/A575 Walkden Road junction

Approach	Flow, PCU/hr	VoC	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A580 East Lancashire Road (west)	1,632	52%	22
A575 Walkden Road (south)	703	63%	11

Approach	Flow, PCU/hr	VoC	Q, PCU
A575 Walkden Road (north)	1,428	96%	23
A580 East Lancashire Road (east)	965	31%	12
	2017 PM peak hour (17:00–18:00) baseline results		
A580 East Lancashire Road (west)	1,038	33%	14
A575 Walkden Road (south)	781	70%	12
A575 Walkden Road (north)	1,108	84%	18
A580 East Lancashire Road (east)	1,790	57%	24

10.4.161 The assessment shows that this junction is at capacity in the 2017 baseline with a maximum VoC of 96% on the A575 Walkden Road (north) approach in the AM peak hour with an associated queue length of 23 PCU. This junction is nearing capacity in the 2017 baseline with a maximum VoC of 84% on the A575 Walkden Road (north) approach in the PM peak hour with a queue length of 18 PCU.

10.4.162 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-76. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-76: Future baseline performance at A580 East Lancashire Road/A575 Walkden Road

Approach	Flow, PCU/hr	VoC	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A580 East Lancashire Road (west)	1,904	61%	26
A575 Walkden Road (south)	755	68%	12
A575 Walkden Road (north)	1,517	100%	24
A580 East Lancashire Road (earth)	1,118	36%	14
	2030 PM peak hour (17:00–18:00)		
A580 East Lancashire Road (west)	1,157	37%	16
A575 Walkden Road (south)	780	70%	12
A575 Walkden Road (north)	1,285	94%	20
A580 East Lancashire Road (earth)	2,000	64%	27

10.4.163 The assessment shows that this junction is at capacity in the 2030 future baseline with a maximum VoC of 100% on the A575 Walkden Road (north) approach in the AM peak hour with an associated queue length of 24 PCU. This junction is nearing capacity in the 2030 future baseline with a maximum VoC of 94% on the A575 Walkden Road (north) approach in the PM peak hour with an associated queue length of 20 PCU.

A58 Warrington Road/A573 Warrington Road/A58 Lily Lane

10.4.164 This junction is a three-arm signal controlled T-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 LinSig software and is shown in Table 10-77.

Table 10-77: 2017 baseline performance at A58 Warrington Road/A573 Warrington Road/A58 Lily Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2017 AM peak hour (08:00–09:00) baseline results		
A58 Warrington Road (north) (ahead and right)	998	86%	10
A573 Warrington Road (south) (ahead and left)	904	90%	24
A58 Lily Lane (left)	492	92%	17
A58 Lily Lane (right)	227	87%	8
	2017 PM peak hour (17:00–18:00) baseline results		
A58 Warrington Road (north) (ahead and right)	1,008	86%	10
A573 Warrington Road (south) (ahead and left)	858	86%	21
A58 Lily Lane (left)	458	86%	14
A58 Lily Lane (right)	210	81%	7

10.4.165 The assessment shows that this junction is at capacity in the 2017 baseline with a maximum DoS of 92% on the A58 Lily Lane (left) approach in the AM peak hour with an associated queue length of 17 PCU. In the PM peak hour, the maximum DoS of 86% is on the A58 Warrington Road (north), A58 Warrington Road (south) and A58 Lily Lane (left) approaches with a queue length of 10 PCU, 21 PCU and 14 PCU respectively.

10.4.166 The future year baseline performance and the results for the AM and PM peak hours are shown in Table 10-78. As the junction is only affected by the construction of the Proposed Scheme, future baseline results are presented for 2030 only.

Table 10-78: Future baseline performance at A58 Warrington Road/A573 Warrington Road/A58 Lily Lane junction

Approach	Flow, PCU/hr	DoS	Q, PCU
	2030 AM peak hour (08:00–09:00)		
A58 Warrington Road (north) (ahead and right)	1,109	101%	27
A573 Warrington Road (south) (ahead and left)	1,004	102%	47
A58 Lily Lane (left)	547	99%	24
A58 Lily Lane (right)	252	97%	12
	2030 PM peak hour (17:00–18:00)		
A58 Warrington Road (north) (ahead and right)	1,118	95%	16
A573 Warrington Road (south) (ahead and left)	951	99%	37
A58 Lily Lane (left)	508	89%	16
A58 Lily Lane (right)	233	96%	11

10.4.167 This junction operates over capacity in the 2030 future baseline with a maximum DoS of 102% on the A573 Warrington Road (south) approach with an associated queue length of 47 PCU. In the PM peak hour, the assessment shows that this junction is at capacity in the 2030 future baseline with a maximum DoS of 99% on the A573 Warrington Road (south) approach with an associated queue length of 37 PCU.

Accidents and safety

9.4.168 Accident records have been obtained from the information provided by the DfT. Within the MA05 area, a total of 871 accidents occurred over the three-year period July 2016 - June 2019, of which 695 (80%) were recorded as slight, 156 (18%) as serious and 20 (2%) as fatal. There were 244 accidents involving non-motorised users (i.e. pedestrians, cyclists, equestrians or mobility scooters).

9.4.169 The baseline survey report in Transport Assessment policy and data (see BID TR-004-00001) illustrates the location of accidents, including their severity and whether pedestrians or cyclists were involved, recorded in the MA05 area over the three years between July 2016 and June 2019.

9.4.170 There were four accident clusters identified in the MA05 area and these were:

- M6 junction 23/A580 East Lancashire Road (Haydock Island) - in total there were 10 accidents, of which one was classified as serious and nine were classified as slight;
- A579 Atherleigh Way/Kirkhall Lane - in total there were nine accidents, of which one resulted in a fatality and eight were classified as slight;
- A574 Birchwood Way/B5210 Woolston Grange Avenue/Crab Lane - in total there were 12 accidents, all of which were classified as slight; and
- A580 East Lancashire Road/B5232 Newearth Road/Ellenbrook Road - in total there were 10 accidents, of which one was classified as serious and nine were classified as slight.

9.4.171 No issues have been identified for the operation of the future baseline network as a result of changes to the highway network or travel demands, and the accident and safety records for the existing baseline are assumed to provide a relevant basis for assessment.

Parking and loading

9.4.172 Within MA05, there are three off-street parking locations that are expected to be affected by the Proposed Scheme. These are at:

- Gymetc, located off the A572 Newton Road/Pocket Nook Lane;
- Taylor Business Park located off the A574 Warrington Road; and
- Lowton Riding Centre located off Slag Lane.

9.4.173 Compared to the existing baseline, no changes are assumed to parking and loading in the future baseline.

10.5 Public transport

9.5.1 Public transport provision is focused on the local centres of Culcheth, Golborne, Lowton and Ashton-in-Makerfield, as well as providing connections to the neighbouring settlements of Warrington, Leigh and Wigan. Bus routes cross the area along the principal highway

corridors, serving a number of smaller settlements. Local and national rail services can also be accessed from stations with the MA05 area.

9.5.2 Compared to the existing baseline, no changes are assumed to public transport in the future baseline.

Rail network

9.5.3 The MA05 area is intersected by three existing railways; the Liverpool to Manchester Line (via Warrington Central) and the Liverpool to Manchester Line (Chat Moss), which passes through the MA05 area on an east-west alignment and is crossed by the route of the Proposed Scheme; the WCML, which passes through the MA05 area on a south-north alignment and will connect with the Proposed Scheme near Bamfurlong.

9.5.4 National and local rail services are accessible via Wigan North Western Station and local rail services are accessible via Birchwood, Newton-le-Willows, Bryn, Ince, Hindley, and Wigan Wallgate stations in the Risley to Bamfurlong area. Wigan North Western provides access to national services on the WCML including London Euston, Birmingham New Street, Glasgow Central and Edinburgh.

9.5.5 Birchwood Station and Padgate Station are located in the south west of MA05 and provide access to the Liverpool to Manchester Line (via Warrington Central). The Liverpool to Manchester Line (via Warrington Central) carries local services between Liverpool Lime Street and Manchester Airport calling at stops including Manchester Piccadilly, Liverpool South Parkway, Warrington and Irlam. Services are provided by Northern and operate once every two hours throughout the day in each direction.

9.5.6 Newton-le-Willows provides access to local services on the Liverpool to Manchester Line (Chat Moss). The Liverpool to Manchester Line (Chat Moss) carries local services between Liverpool Lime Street and Manchester Piccadilly. Services are provided by Northern and operate once every two hours throughout the day in each direction. Other services also provide connections with national destinations including Chester, Leeds, Crewe and Holyhead.

9.5.7 Compared to the existing baseline, no changes are assumed to the rail network in the future baseline.

Local bus network

9.5.8 Thirty-one bus services operate on 17 roads that may be impacted by the route of the Proposed Scheme in MA05. There are also bus stops primarily located to serve the main built up areas. Where bus services and stops are expected to be affected by either the construction or operation of the Proposed Scheme, these are referred to in the relevant assessment sections. The bus routes that could be affected by the Proposed Scheme include:

- A574 Birchwood Park Avenue: route 28 (Warrington - Padgate - Birchwood - Culcheth – Leigh);
- A574 Birchwood Way: route 28 (Warrington - Padgate - Birchwood - Culcheth – Leigh);
- A574 Warrington Road: route 28 (Warrington - Padgate - Birchwood - Culcheth – Leigh); route 28a (Warrington - Culcheth – Leigh); route 281 (Newton-le-Willows - Culcheth High School);
- Wigshaw Lane: route 19 (Warrington - Winwick - Croft - Culcheth - Leigh); route 281 (Newton-le-Willows - Culcheth High School);
- Kenyon Lane: route 281(Newton-le-Willows - Culcheth High School);
- A580 East Lancashire Road: route 281(Newton-le-Willows - Culcheth High School); route 10 (Leigh - Lowton - Golborne - Ashton-in-Makerfield - Wigan via Old Road); route 663a (Atherton - St John Rigby College); route 664 (Atherton - Winstanley College);
- B5207 Church Lane: route 590 (Leigh - Pennington - Lowton (Circular)); route 10 (Leigh - Lowton - Golborne - Ashton-in-Makerfield - Wigan via Old Road); route 10a (Leigh - Lowton - Golborne - Ashton-in-Makerfield - Wigan via Lane Head); route 34 (Bryn - Leigh - Astley - Worsley - Monton - Pendleton - Manchester); route 34c (Leigh - St Helens); route 663a (Atherton - St John Rigby College); route 664 (Atherton - Winstanley College); route 988 (Hope Academy - Lowton Church);
- A572 Newton Road: route 10 (Leigh - Lowton - Golborne - Ashton-in-Makerfield - Wigan via Old Road); route 10a (Leigh - Lowton - Golborne - Ashton-in-Makerfield - Wigan via Lane Head); route 34 (Bryn - Leigh - Astley - Worsley - Monton - Pendleton - Manchester); route 34c (Leigh - St Helens); route 590 (Leigh - Pennington - Lowton (Circular)); route 933 (Lowton - St Mary's High School); route 988 (Hope Academy - Lowton Church); route P6 (Golborne - Priestley College); route 591 (Leigh - Lowton High School); route 281 (Newton-le-Willows - Culcheth High School);
- Slag Lane: route 588 (Leigh - Lowton (Circular)); route 590 (Leigh - Pennington - Lowton (Circular)); route 988 (Hope Academy - Lowton Church); route 591 (Leigh - Lowton High School);
- A573 Bridge Street/High Street/Church Street: route 22a (Warrington - Earlestown - Newton-le-Willows - Wigan); route 360 (Warrington - Newton-le-Willows - Golborne - Abram - Wigan);
- A573 High Street/Church Street: route 10 (Leigh - Lowton - Golborne - Ashton-in-Makerfield - Wigan via Old Road); route 10a (Leigh - Lowton - Golborne - Ashton-in-Makerfield - Wigan via Lane Head); route 34 (Bryn - Leigh - Astley - Worsley - Monton - Pendleton - Manchester); route 742 (Platt Bridge - Haydock - Carmel College);
- A573 Ashton Road/Wigan Road/Aye Bridge Road/Warrington Road: route 22a (Warrington - Earlestown - Newton-le-Willows - Wigan); route 360 (Warrington - Newton-le-Willows - Golborne - Abram - Wigan); route 742 (Platt Bridge - Haydock - Carmel College);
- A49 Lodge Lane/Warrington Road: route 320 (St Helens - Ashton-in-Makerfield - Platt Bridge - Wigan);

- A58 Liverpool Road: route 602 (Ashton-in-Makerfield - Earlestown - Newton Community Hospital);
- A58 Bolton Road: route 10 (Leigh - Lowton - Golborne - Ashton-in-Makerfield - Wigan via Old Road); route 10a (Leigh - Lowton - Golborne - Ashton-in-Makerfield - Wigan via Lane Head); route 34 (Bryn - Leigh - Astley - Worsley - Monton - Pendleton - Manchester); route 559 (Ashton - Hindley - Westhoughton - Bolton);
- A58 Bolton Road/Lily Lane: route 320 (St Helens - Ashton-in-Makerfield - Platt Bridge - Wigan); route 559 (Ashton - Hindley - Westhoughton - Bolton); and
- A58 Lily Lane: route 650 (Hindley Green - St Edmund Arrowsmiths); route 656 (Bickershaw - St Edmund Arrowsmiths via Hindley); route 657 (Ince Bar - St John Rigby College); route 659 (Abram - Bamfurlong (St Edmund Arrowsmith)); route 920 (Bryrchall High School - Hindley Green); route 961 (Winstanley College - Castle Hill); route Y27 (Hindley Green - Byrchall High School); route Y62 (Abram - Cansfield Specialist Language College); route Y64 (Hindley Green - Byrchall High School).

9.5.9 Buses are operated by Warrington's Own Buses, Hiltons Travel, Stagecoach Wigan, Finches, Arriva, Olympia, Tyrers Coaches, Vision Bus, Maghull Coaches, Huyton Travel and Hattons Travel within the area.

9.5.10 Since it is not possible to forecast how services may change in the future, it has been assumed that bus services for the future years of assessment will be the same as those currently operating.

Public transport interchanges

9.5.11 There are no major public transport interchange facilities in the MA05 area potentially affected by the Proposed Scheme and no committed proposals for public transport interchanges in this area.

9.5.12 Compared to the existing baseline, no changes are assumed to public transport interchanges in the future baseline.

10.6 Pedestrians, cyclists and equestrians

9.6.1 There are pedestrian footways adjacent to many of the roads in the built-up areas of Warrington (including the suburb of Birchwood), Risley, Croft, Culcheth, Wigshaw, Golborne, Pennington (a suburb of Leigh), Ashton-in-Makerfield, Ince-in-Makerfield, Bamfurlong, Abram, Platt Bridge and Wigan. There is a network of advisory cycle routes[15], a National Cycle Network (NCN) national route and a number of PRoW in the vicinity of the Proposed Scheme. The following sections identify the pedestrian, cycle and equestrian facilities in the study area.

[15] Advisory cycle routes are locally promoted routes for use by cyclists that do not generally have any formal cycle infrastructure provision, such as cycle lanes.

Pedestrian facilities

9.6.2 Roadside footways in the built-up areas within MA05 vary in width and condition. Where there is no formal roadside footway provision, non-motorised user numbers are generally low.

9.6.3 The route of the Proposed Scheme will cross six roads with roadside footways within the Risley to Bamfurlong area. These are the A573 Wigan Road, Slag Lane, the A572 Newton Road, the B5207 Wilton Lane, Wigshaw Lane and the A574 Warrington Road.

9.6.4 In addition to the pedestrian facilities on the public roads, there are a number of PRoW in the MA05 area:

- Footpath Croft 13 - between Birchwood Way and Footpath Croft 27;
- Footpath Croft 28 - between Footpath Croft 13 and Footpath Croft 14a;
- Footpath Croft 27 - between Footpath Croft 13 and New Hall Lane;
- Footpath Croft 17 - between Footpath Culcheth and Glazebury 146 and A574 Warrington Road;
- Footpath Croft 15 - between New Hall Lane and Footpath Croft 18/1;
- Footpath Croft 15 - between A574 Warrington Road and New Hall Lane;
- Footpath Croft 18/1 - between New Hall Lane and Footpath Croft 15;
- Footpath Croft 19 - between A574 Warrington Road and Culcheth Linear Park;
- Footpath Croft 8 - between Footpath Croft 9 and Robins Lane;
- Footpath Croft 8a - between Clifton Avenue and Footpath Croft 9;
- Footpath Croft 108 - between Kenyon Lane and Brookfield Road;
- Footpath Golborne 80/10 - between A580 East Lancashire Road and B5207 Kenyon Lane;
- Footpath Golborne 79/10 - between A580 East Lancashire Road and B5207 Kenyon Lane;
- Footpath Golborne 78/10- between Footpath Golborne77/10 and A580 East Lancashire Road;
- Footpath Golborne 72/10 - between A580 East Lancashire Road and Pocket Nook Lane;
- Footpath Golborne 70/10 - between B5207 Wilton Lane and East Lancashire Road;
- Footpath Golborne 63/10 - between Sandy Lane and Footpath Golborne 51/10;
- Footpath Golborne 40/10 - between Footpath Golborne 38/10 and Slag Lane;
- Footpath Golborne 39/10 - between Sandy Lane and Footpath Golborne 37/10;
- Footpath Golborne 38/10 - between Footpath Golborne 37/10 and Footpath Golborne 40/10;
- Footpath Golborne 37/10 - between Footpath Golborne 38/10 and Footpath Golborne 34/10;
- Footpath Golborne 34/10 - between Slag Lane and Footpath Golborne 37/10;
- Footpath Golborne 33/10 - between Apple Dell Avenue and Slag Lane;

- Footpath Golborne 31/10 - between Lowton Road and Footpath Golborne 28/10;
- Footpath Golborne 30/10 - between Ashton Road and Lightshaw Lane;
- Footpath Golborne 27/10 - between A6573 Wigan Road and Footpath Golborne 30/10;
- Footpath Golborne 3/10 - between A6573 Wigan Road and Dam Lane;
- Footpath Ashton-in-Makerfield 24/10 - between Footpath Ashton-in-Makerfield 25/20 and Hey Brook;
- Footpath Ashton-in-Makerfield 22/30 - between Hey Brook and Footpath Ashton-in-Makerfield 23/20; and
- Footpath Abram 02/10 - between Footpath Ashton-in-Makerfield 22/30 and A58 Lily Lane.

9.6.5 There are no known proposals for changes to pedestrian facilities and routes that affect the future baseline.

Cycle facilities

9.6.6 In MA05, there is a network of advisory cycle routes in Leigh. These routes are along a number of roads, including the A572 Atherleigh Way and Bonnywell Road.

9.6.7 In addition, one national route on the NCN passes through the area. This is National Route 55, which runs on an east to west alignment from the west of Wigan to Atherton.

9.6.8 Compared to the existing baseline, no changes are assumed to cycle facilities in the future baseline.

Equestrian facilities

9.6.9 There are no bridleways or Byway Open to All Traffic (BOAT) in the vicinity of the Proposed Scheme in the MA05 area.

9.6.10 There are a network of informal tracks through Byrom Woods that are used by equestrians, which includes Footpath Golborne 33/10.

9.6.11 Compared to the existing baseline, no changes are assumed to equestrian facilities in the future baseline.

10.7 Waterways and canals

10.7.1 The Leeds and Liverpool Canal is the only navigable waterway or canal within MA05. The canal traverses the study area on an east to west alignment and crosses the WCML immediately to the north of Bamfurlong. It is not expected that there will be any effects on the Leeds and Liverpool Canal during construction or operation of the Proposed Scheme. Consequently, this topic has not been considered further in this assessment.

10.7.2 Compared to the existing baseline, no changes are assumed to waterways and canals in the future baseline.

10.8 Air transport

10.8.1 There is no relevant air transport in the MA05 area.

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