

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix TR-003-00005

Traffic and transport

MA05: Rislely to Bamfurlong

Transport Assessment Part 3

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Transport Assessment Part 3



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.

High Speed Two (HS2) Limited
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

Telephone: 08081 434 434

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.hs2.org.uk

A report prepared for High Speed Two (HS2) Limited:

ARUP+ ERM | FOSTER + PARTNERS | JACOBS
RAMBOLL | TYPESA | COSTAIN

MWJV

Mott MacDonald | WSP

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17 Risley to Bamfurlong (MA05)

17.1 Description of the Proposed Scheme

- 17.1.1 The Proposed Scheme through the Risley to Bamfurlong area (MA05) comprises a 12.7km section of the HS2 West Coast Main Line (WCML) connection. The route will extend from the boundary with the Broomedge to Glazebrook area (MA04) and will continue north where it will connect with the WCML near Bamfurlong.
- 17.1.2 The route of the Proposed Scheme will comprise the following features in the MA05 area:
- viaducts for a total length of 1.1km (M62 West viaduct, Slag Lane viaduct and A573 Wigan Road viaduct including the WCML junction box structure);
 - cuttings for a total length of 4km (Culcheth cutting and Lowton cutting); and
 - embankments for a total length of 7.6km (Culcheth South embankment, Culcheth North embankment and Lowton South embankment).
- 17.1.3 The key transport issues within MA05 are related to the construction and operation of the Proposed Scheme, including construction traffic, temporary and permanent changes to highways and public rights of way (PRoW), and modifications to the WCML south and west of Wigan to enable the connection of the route of the Proposed Scheme to the WCML. In addition, in order to construct the Proposed Scheme, there will be a number of construction compounds within the MA05 area.
- 17.1.4 The following changes to the existing road network will be required to accommodate the Proposed Scheme in the area:
- temporary and permanent road realignments, including widening the M62, the A574 Warrington Road, Wigshaw Lane, Glaziers Lane, the B5027 Wilton Lane, Slag Lane and the A573 Wigan Road;
 - permanent diversion of New Hall Lane and Lightshaw Lane;
 - construction of a new highway link road, the Culcheth Link Road; and
 - permanent closure and realignment of Wigshaw Lane and Glaziers Lane where they cross the route of the Proposed Scheme.
- 17.1.5 Buses use a number of routes which will be affected by the Proposed Scheme in the area and these will be diverted as necessary onto alternate routes.
- 17.1.6 The temporary and permanent closure, diversion and realignment of PRoW will also be required, notably Footpath Ashton-in-Makerfield 22/30, Footpath Golborne 30/10, Footpath Golborne 39/10, Footpath Croft 19, Footpath Croft 15, Footpath Croft 17 and Footpath Croft 13.

17.1.7 A full description of the assessment methodology is set out in Transport Assessment Part 1 (see Volume 5: Appendix TR-001-00000), Section 3, with specific details and exceptions outlined in the following sections.

17.2 Proposed Scheme construction description

Introduction

- 17.2.1 This section provides an overview of the construction traffic and transport impacts for the section of the Proposed Scheme that will pass through the MA05 area.
- 17.2.2 Construction of the Proposed Scheme is expected to commence in 2025 with construction activity continuing to 2038 (although activity in 2038 will be limited to testing and commissioning). Construction activities have been assessed against 2030 baseline traffic flows, irrespective of when they occur during the construction period.

Construction activities and phasing

- 17.2.3 Details of the main construction works and the time periods when each compound is operational are summarised in the indicative construction programme. For the construction programme refer to Volume 2, Community Area (CA) report: Risley to Bamfurlong area (MA05), Section 2.
- 17.2.4 A complete description of the works associated with the Proposed Scheme in the MA05 area is provided in Volume 2, Section 2. The construction works will be carried out throughout the site for the majority of the construction period. The overall programme has been outlined on a year by year basis. The key construction activities, along with their start dates, are provided in Table 17-1.

Table 17-1: Key highway construction activities in the MA05 area

Activity	Community Area (CA)	Start date
Area Advance Works	MA05	2025 Q2
A573 Wigan Road realignment	MA05	2027 Q2
Lightshaw Lane diversion	MA05	2027 Q2
Glaziers Lane realignment	MA05	2027 Q2
Wigshaw Lane overbridge and realignment	MA05	2027 Q2
A574 Warrington Road overbridge and realignment	MA05	2027 Q2
B5207 Wilton Lane overbridge and realignment	MA05	2027 Q2
A580 East Lancashire Road overbridge	MA05	2027 Q2
Culcheth North (Railway) viaduct	MA05	2027 Q2
A572 Newton Road overbridge	MA05	2027 Q2
M62 West viaduct	MA05	2027 Q4
Culcheth Link Road	MA05	2028 Q1

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Activity	Community Area (CA)	Start date
Slag Lane realignment	MA05	2028 Q1
Risley East accommodation underbridge	MA05	2028 Q1

Compounds and construction sites

- 17.2.5 The Proposed Scheme will be constructed from compounds. This will include main compounds that manage and coordinate the work from satellite compounds. Where material is required to be transferred from site haul movements to highway movements, this will be undertaken through transfer nodes.
- 17.2.6 Table 17-2 summarises the expected average and peak workforce (site workers plus staff) at each construction compound in the MA05 area. The location of the construction compounds and the associated access routes are shown in Volume 5, Traffic and transport Map Book, Map Series TR-08.

Table 17-2: Assumed workforce at construction sites in the MA05 area

Compound type	Compound name	Number of site workers (peak)	Number of staff (peak)	Total workforce (site plus staff)	
				Average	Peak
Satellite	M62 West viaduct south satellite compound	155	83	135	230
Satellite	M62 West viaduct north satellite compound	150	60	116	210
Satellite	A574 Warrington Road satellite compound	85	45	107	130
Satellite	Liverpool to Manchester Railway south satellite compound	65	45	63	110
Satellite	Liverpool to Manchester Railway north satellite compound	80	45	89	125
Satellite	B5027 Wilton Lane satellite compound	60	45	85	105
Satellite	A580 East Lancashire Road satellite compound	130	90	151	220
Main	A580 East Lancashire Road main compound	70	45	94	115
Satellite	A527 Newton Road satellite compound	130	60	131	190
Satellite	Slag Lane satellite compound	170	105	191	275
Satellite	A573 Wigan Road satellite compound	220	90	163	295
Satellite	Bamfurlong satellite compound	50	15	42	65
Rail Systems	Golborne satellite compound	50	15	42	65
Rail Systems	Winstanley Road satellite compound	155	83	135	230

- 17.2.7 Table 17-3 provides details of the compound set up date and the duration of active use. The duration of active use excludes any period where there are no substantial workforce trips or movement of materials to and from the compound.

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17.2.8 Table 17-3 also provides a summary of the heavy good vehicle (HGV) and car/light goods vehicle (LGV) access trips at each compound in the peak month of activity and during the busy period. For each compound, the peak month of activity is the month within which HGV traffic is at its highest for that compound. The busy period is the period during which HGV traffic serving that compound will be greater than 50% of the HGV traffic in the peak month. The average daily combined two-way vehicle trips¹ for the busy period is the lower end of the range shown in Table 17-3 and the average daily combined two-way vehicle trips for the peak month is the upper end of the range shown. The estimated duration of busy period is also provided.

Table 17-3: Typical vehicle trip generation for construction site compounds in the MA05 area

Compound type	Compound name	Indicative start/set up date (years/quarter)	Estimated duration of active use (years/months)	Average daily combined two-way car/LGV trips during busy period and within peak month of activity	Average daily combined two-way HGV trips during busy period and within peak month of activity	Estimated duration of busy period (months)
Satellite	M62 West Viaduct South satellite compound	2027 Q2	4 years and 3 months	244-320	435-502	12
Satellite	M62 West Viaduct North satellite compound	2027 Q4	4 years and 9 months	308-440	454-496	6
Satellite	A574 Warrington Road satellite compound	2027 Q2	3 years and 9 months	175-276	104-142	14
Satellite	Liverpool to Manchester Railway south satellite compound	2027 Q2	2 years and 6 months	191-222	53-76	9
Satellite	Liverpool to Manchester Railway north satellite compound	2027 Q2	3 years and 9 months	178-238	37-46	4
Satellite	B5207 Wilton Lane satellite compound	2027 Q2	4 years	155-218	70-102	6
Satellite	A580 East Lancashire Road satellite compound	2027 Q2	3 years and 3 months	150-184	50-78	4
Main	A580 East Lancashire Road main compound	2027 Q2	4 years and 9 months	262-378	86-110	8

¹ Two-way trips refer to the total number of vehicle movements in both directions (i.e. with 200 westbound (or arriving) vehicles and 100 eastbound (or departing), there would be 300 two-way trips).

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Compound type	Compound name	Indicative start/set up date (years/quarter)	Estimated duration of active use (years/months)	Average daily combined two-way car/LGV trips during busy period and within peak month of activity	Average daily combined two-way HGV trips during busy period and within peak month of activity	Estimated duration of busy period (months)
Satellite	A572 Newton Road satellite compound	2027 Q2	3 years and 6 months	163-198	58-72	2
Satellite	Slag Lane satellite compound	2027 Q4	3 years and 9 months	240-334	129-182	9
Satellite	A573 Wigan Road satellite compound	2027 Q2	4 years and 6 months	253-352	358-472	8
Satellite	Bamfurlong satellite compound	2027 Q2	6 years	294-412	125-176	3
Rail Systems	Golborne satellite compound	2029 Q1	2 years and 6 months	122-122	4-4	10
Rail Systems	Winstanley Road satellite compound	2029 Q1	2 years and 6 months	122-122	4-4	10

17.2.9 The indicative construction programme in Volume 2, Section 2 illustrates how the phasing of activities at different compounds will generally be staggered and that construction activities at individual compounds may not occur over the whole duration presented in Table 17-3.

Construction HGV routes

17.2.10 Construction vehicle movements required to construct the Proposed Scheme will include the delivery of plant and materials, movement of excavated materials and site workforce trips. Works will include utilities diversions, earthworks, and the construction of underpasses, viaducts, bridges and highways.

17.2.11 HGV have been routed, where reasonably practicable, along the strategic or primary road network, although some access locations will be via secondary roads. Where reasonably practicable, the use of the local road network has been limited to site set up, access for environmental surveys and ongoing servicing (including refuse collection and general deliveries).

17.2.12 The location of the compounds and the associated construction HGV routes are shown on the Volume 5, Traffic and transport Map Book, Map Series TR-08. Table 17-4 summarises the construction HGV routes to and from each compound to the main road network. For some compounds, Table 17-4 includes multiple construction HGV routes. This is either because the construction HGV route varies depending on the origin/destination of the trip or because the construction HGV route varies over time to account for changes to the highway network through the construction period.

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17.2.13 The average daily combined two-way HGV trips reported in Table 17-3 represent the total number of HGV movements to and from each compound during the busy period and in the peak month of activity on all of the available construction HGV routes combined. Where multiple construction HGV routes are shown in Table 17-4, the split of construction traffic between the available construction HGV routes will vary based on the point in the construction programme and the origin/destination of the construction HGV traffic.

Table 17-4: Construction HGV routes for construction compounds in the MA05 area

Compound name(s)	Access routes to/from compound(s) to main road network
M62 West Viaduct South satellite compound	On-site construction traffic route, Silver Lane and M62 junction 11
M62 West Viaduct North satellite compound	On-site construction traffic route and M62 junction 11
A574 Warrington Road satellite compound	A574 Warrington Road, Daten Avenue and A574 Birchwood Way A574 Warrington Road, Birchwood Park Avenue and A574 Birchwood Way
Liverpool to Manchester Railway south satellite compound	On-site construction traffic route, Kenyon Lane, B5207 Kenyon Lane, B5207 Church Lane and A580 East Lancashire Road
Liverpool to Manchester Railway north satellite compound B5207 Wilton Lane satellite compound	B5207 Wilton Lane, B5207 Kenyon Lane, B5207 Church Lane and A580 East Lancashire Road
A580 East Lancashire Road satellite compound A580 East Lancashire Road main compound	A580 East Lancashire Road
A572 Newton Road satellite compound	A572 Newton Road and A580 East Lancashire Road
Slag Lane satellite compound	Slag Lane, B5207 Church Lane and A580 East Lancashire Road Byrom Lane, Sandy Lane, A572 Newton Road and A580 East Lancashire Road
A573 Wigan Road satellite compound	A573 Wigan Road/Ashton Road/Church Street/High Street/Bridge Street and A580 East Lancashire Road
Bamfurlong satellite compound	A58 Lily Lane, A58 Bolton Road and A58 Liverpool Road A58 Lily Lane, A58 Bolton Road and A49 Warrington Road A58 Lily Lane, A573 Warrington Road/Wigan Road/Ashton Road/Church Street/High Street/Bridge Street and A580 East Lancashire Road
Golborne satellite compound	A573 Wigan Road/Ashton Road/Church Street/High Street/Bridge Street and A580 East Lancashire Road
Winstanley Road satellite compound	Winstanley Road, A58 Lily Lane, A58 Bolton Road and A58 Liverpool Road Winstanley Road, A58 Lily Lane, A58 Bolton Road and A49 Warrington Road Winstanley Road, A58 Lily Lane, A573 Warrington Road/Wigan Road/Ashton Road/Church Street/High Street/Bridge Street and A580 East Lancashire Road

17.2.14 Table 17-5 summarises the peak daily construction traffic flows associated with the Proposed Scheme, both in HGV and total vehicles, on roads within the MA05 area that form part of construction HGV routes. In the MA05 area, the main construction HGV routes from

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the Strategic Road Network (SRN) are: the M62 (including junction 11); the M6 (including junctions 23 and 24); the M60 (including junction 13 and 14); the A574 Birchwood Way/Birchwood Park Avenue/Warrington Road; the A580 East Lancashire Road; the A572 Newton Road; the A573 Bridge Street/High Street/Church Street/Ashton Road/Wigan Road/Warrington Road/Aye Bridge Road; the A49 Warrington Road/Lodge Lane; the A58 Liverpool Road/Gerard Street/Bolton Road/Lily Lane; B5212 Holcroft Lane; B5207 Wilton Lane/Kenyon Lane/Church Lane; Daten Avenue; Slag Lane; Sandy Lane and Byrom Lane.

Table 17-5: MA05 peak daily construction traffic flow

Location	Direction*	Daily peak HGV vehicles	Daily peak all vehicles
A574 Birchwood Way (between A547 Birchwood Park Avenue and Faraday Street)	EB	22	42
	WB	22	120
A574 Birchwood Park Avenue (between A574 Birchwood Way and Garrett Field)	NB	22	75
	SB	22	51
A574 Birchwood Park Avenue (between Garrett Field and Glover Road (north))	NB	22	76
	SB	22	51
A574 Birchwood Way (between Daten Avenue and Faraday Street)	NB	22	35
	SB	22	46
A574 Birchwood Way (between M62 Junction 11 and Daten Avenue)	EB	103	144
	WB	103	152
Daten Avenue (between Risley Road and A574 Birchwood Way)	NB	81	110
	SB	81	109
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	81	180
	WB	81	120
A574 Birchwood Park Avenue (between Glover Road and A574 Warrington Road)	EB	22	87
	WB	22	60
Daten Avenue (between Faraday Street and Risley Road)	EB	81	109
	WB	81	110
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	103	204
	SB	103	225
A574 Warrington Road (between A574 Warrington Road realignment and Cross Lane)	NB	103	195
	SB	103	222
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	103	195
	SB	103	222
A574 Warrington Road Realignment (between A574 Warrington Road and Newchurch Lane)	EB	64	104
	WB	64	161
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	103	113
	SB	103	113
A574 Birchwood Way (between A547 Birchwood Park Avenue and Faraday Street)	EB	22	42
	WB	22	120
	NB	22	75

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Location	Direction*	Daily peak HGV vehicles	Daily peak all vehicles
A574 Birchwood Park Avenue (between A574 Birchwood Way and Garrett Field)	SB	22	51
A574 Birchwood Park Avenue (between Garrett Field and Glover Road (north))	NB	22	76
	SB	22	51
A574 Birchwood Way (between Daten Avenue and Faraday Street)	NB	22	35
	SB	22	46
A574 Birchwood Way (between M62 Junction 11 and Daten Avenue)	EB	103	144
	WB	103	152
Daten Avenue (between Risley Road and A574 Birchwood Way)	NB	81	110
	SB	81	109
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	81	180
	WB	81	120
A574 Birchwood Park Avenue (between Glover Road and A574 Warrington Road)	EB	22	87
	WB	22	60
Daten Avenue (between Faraday Street and Risley Road)	EB	81	109
	WB	81	110
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	103	204
	SB	103	225
A574 Warrington Road (between A574 Warrington Road realignment and Cross Lane)	NB	103	195
	SB	103	222
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	103	195
	SB	103	222
A574 Warrington Road Realignment (between A574 Warrington Road and Newchurch Lane)	EB	64	104
	WB	64	161
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	103	113
	SB	103	113
A574 Birchwood Way (between A547 Birchwood Park Avenue and Faraday Street)	EB	22	42
	WB	22	120
A574 Birchwood Park Avenue (between A574 Birchwood Way and Garrett Field)	NB	22	75
	SB	22	51
A574 Birchwood Park Avenue (between Garrett Field and Glover Road (north))	NB	22	76
	SB	22	51
A574 Birchwood Way (between Daten Avenue and Faraday Street)	NB	22	35
	SB	22	46
A574 Birchwood Way (between M62 Junction 11 and Daten Avenue)	EB	103	144
	WB	103	152
Daten Avenue (between Risley Road and A574 Birchwood Way)	NB	81	110
	SB	81	109
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	81	180

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Location	Direction*	Daily peak HGV vehicles	Daily peak all vehicles
	WB	81	120
A574 Birchwood Park Avenue (between Glover Road and A574 Warrington Road)	EB	22	87
	WB	22	60
Daten Avenue (between Faraday Street and Risley Road)	EB	81	109
	WB	81	110
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	103	204
	SB	103	225
A574 Warrington Road (between A574 Warrington Road realignment and Cross Lane)	NB	103	195
	SB	103	222
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	103	195
	SB	103	222
A574 Warrington Road Realignment (between A574 Warrington Road and Newchurch Lane)	EB	64	104
	WB	64	161
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	103	113
	SB	103	113
A574 Birchwood Way (between A547 Birchwood Park Avenue and Faraday Street)	EB	22	42
	WB	22	120
A574 Birchwood Park Avenue (between A574 Birchwood Way and Garrett Field)	NB	22	75
	SB	22	51
A574 Birchwood Park Avenue (between Garrett Field and Glover Road (north))	NB	22	76
	SB	22	51
A574 Birchwood Way (between Daten Avenue and Faraday Street)	NB	22	35
	SB	22	46
A574 Birchwood Way (between M62 Junction 11 and Daten Avenue)	EB	103	144
	WB	103	152
Daten Avenue (between Risley Road and A574 Birchwood Way)	NB	81	110
	SB	81	109
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	81	180
	WB	81	120
A574 Birchwood Park Avenue (between Glover Road and A574 Warrington Road)	EB	22	87
	WB	22	60
Daten Avenue (between Faraday Street and Risley Road)	EB	81	109
	WB	81	110
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	103	204
	SB	103	225
A574 Warrington Road (between A574 Warrington Road realignment and Cross Lane)	NB	103	195
	SB	103	222
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	103	195
	SB	103	222

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Location	Direction*	Daily peak HGV vehicles	Daily peak all vehicles
A574 Warrington Road Realignment (between A574 Warrington Road and Newchurch Lane)	EB	64	104
	WB	64	161
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	103	113
	SB	103	113

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

Traffic management, road closures and diversions

- 17.2.15 The construction of the Proposed Scheme has been planned to limit disruption to travellers due to traffic management, road closures or diversions. Nonetheless, the construction of the Proposed Scheme will require the temporary closure or restriction of and/or diversion of some existing highways as well as traffic management. Where temporary closures are necessary and no temporary alternative route is provided, the general approach is to undertake the closures for short discrete periods to ensure that the impact on users is reduced, insofar as reasonably practicable. TA Part 1 (TR-001-00000), Section 4 sets out the general approach to mitigation for construction which includes constructing new roads prior to the closure of any existing roads where reasonably practicable.
- 17.2.16 Where site haul routes, created adjacent to the route of the Proposed Scheme, cross the existing road network, traffic control measures will be implemented and could include the provision of temporary signals or roundabouts, which will be removed on completion of the works. These traffic control measures are not expected to have a substantial impact on traffic flows and delays for vehicle occupants and non-motorised road users.
- 17.2.17 Utility works have been assessed in detail where they are major and where the traffic and transport impacts from the works separately, or in combination with other works, will be greater than other construction activities arising within the area. Minor utility works are expected to result in only localised traffic and pedestrian diversions, which will often be of short-term duration. No additional substantial impacts from these works are expected. Similarly, other minor works will involve a low level of use of local roads. Such use is not expected to give rise to substantial construction traffic impacts.
- 17.2.18 Permanent road closures are addressed in the operational assessment.

Public rights of way, closures and diversions

- 17.2.19 The construction of the Proposed Scheme will require the temporary closure of and/or diversion of some existing footpaths and roadside footways as well as some bridleways. The impact on footpaths (including roadside footways), cycle ways and bridleway links along the route of the Proposed Scheme has been reduced, insofar as reasonably practicable, through the design process. TA Part 1, (TR-001-00000) Section 4 sets out the general approach to mitigation for construction which includes constructing new PRow and roadside footways

prior to the closure of any existing PRow or roadside footways, where reasonably practicable.

- 17.2.20 As with highways, where site haul routes, created adjacent to the route of the Proposed Scheme, cross the existing PRow network, active control measures will be implemented to manage the safety of PRow users and could include staffed crossings and the provision of temporary gates or signals, which will be removed on completion of the works. These control measures are not expected to have a substantial impact on delays for pedestrian, cyclist or equestrian users of the network.

17.3 Proposed Scheme assessment of construction impacts

Key construction transport issues

- 17.3.1 The construction assessment takes account of all of the impacts of the Proposed Scheme in the MA05 area. The temporary traffic and transport impacts in this area will include:
- construction and workforce vehicle movements to and from the various construction compounds;
 - road closures, realignments and diversions;
 - alternative routes for PRow and roadside footways; and
 - possessions and blockades on the conventional rail network.
- 17.3.2 The construction assessment has also considered any impacts in this area that arise from construction of the Proposed Scheme in the adjoining CA.

Highway network

Highway diversions, realignments and closures

- 17.3.3 Temporary road or lane closures and associated diversions will be required in a number of locations including:
- M62 - the construction of the M62 West viaduct will require six temporary full closures of the motorway (two off peak weekend closures and four shorter off-peak or night-time closures), between junction 11 and junction 12 over a period of two months. Traffic management will be necessary to narrow the existing traffic lanes to achieve enough working space and an access route for construction traffic. One of the Smart Motorway 'all running' lanes will be temporarily closed in each direction, with three 'live' traffic lanes retained in each direction. During the short duration closures, traffic will be diverted via the M6, the M56, the A5103 Princess Parkway and the M60, increasing the journey length by up to 28.5km;

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- New Hall Lane and A574 Warrington Road - the permanent New Hall Lane diversion and the A574 Warrington Road realignment will be constructed in phases. The initial phase will comprise the construction of the northern section of the A574 Warrington Road realignment. During this period, all traffic to and from Taylor Business Park will be required to use New Hall Lane (southern access), which will be modified to facilitate two-way traffic. Following the completion of the northern section of the A574 Warrington Road and modification to the northern access to Taylor Business Park, all traffic will be temporarily diverted along the A574 Warrington Road realignment in order to connect with the existing A574 Warrington Road to the north of the business park. New Hall Lane (southern access) will then be permanently closed and the southern section of the A574 Warrington Road realignment will be completed. The temporary diversion will be required for two years, increasing travel journey length for some users by 432m;
- A580 East Lancashire Road - temporary realignment of the A580 East Lancashire Road, 80m to the south of the existing alignment, to enable the construction of the A580 East Lancashire Road overbridge. The temporary realignment will be required for two years and six months, resulting in a negligible change in journey length;
- A572 Newton Road - temporary realignment of the A572 Newton Road, 20m to the south-east of the existing alignment, to enable the construction of the A572 Newton Road overbridge. The temporary realignment will be required for two years, resulting in a change in journey length of less than 100m. On completion of construction, the road will be permanently reinstated along its existing alignment;
- Slag Lane - temporary traffic management measures on Slag Lane which will remain open during the construction of the permanent realignment of Slag Lane, to be constructed offline. This will take three years to complete and will not result in an increase in journey length. On completion of construction, temporary road restrictions and traffic management measures will be implemented for two months to enable connection between the realigned section and the existing road; and
- A573 Wigan Road - during construction of the A573 Wigan Road realignment, which will take three years and three months to complete, the existing road will remain open with temporary traffic management measures and will not result in an increase in journey length. On completion of construction, traffic management measures will be implemented for three months to enable connection between the realigned section of road and the existing road.

17.3.4 These may involve lane closures and partial lane closures under traffic control for the tie-in of the new alignments, intermittent lane restrictions and temporary road closures. Closures and diversions will be restricted to short-term overnight and/or weekend closures where reasonably practicable.

17.3.5 Permanent realignments, diversions and closures are considered under the operational assessment.

Strategic and local road network traffic flows

- 17.3.6 During the construction period a number of roads will be affected by the construction of the Proposed Scheme. An assessment of the impact of construction related vehicle movements and temporary diversions has been undertaken and is detailed below. The construction traffic flows outlined in the following sections represent the average daily number of construction vehicle movements in the peak month on each section of the road across the whole construction period. These peak traffic flows will not necessarily occur concurrently, on all reported roads, as impacts on different parts of the network will occur at different times.
- 17.3.7 Traffic flows during construction of the Proposed Scheme have been derived by overlaying forecasts of construction traffic flows on the 2030 future baseline traffic flows.
- 17.3.8 Table 17-6 and Table 17-7 set out the traffic flows for the 2030 future baseline and the Proposed Scheme on the roads most affected by construction of the Proposed Scheme for the AM and PM peak hour. In both time periods, the percentage changes in HGV flows are generally higher than the percentage changes in all traffic flows as a result of the relatively low number of HGV movements in the future baseline. 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 forecast traffic flows during construction of the Proposed Scheme, however, this is not expected to change the conclusions of the assessment.
- 17.3.9 Traffic flows on all other roads are either unaffected from the future baseline or there are only small changes in traffic flows (HGV or all vehicles of less than 10%) compared to the future baseline daily flow.
- 17.3.10 It should be noted that, unless identified in the next section of this report relating to junction impacts, these increases in traffic will not result in material increases in congestion or delay.

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Table 17-6: 2030 future baseline and Proposed Scheme construction traffic (vehicles), AM peak hour (08:00–09:00)

Location	Direction	2030 baseline flows		Proposed Scheme flows ²		Proposed Scheme - actual flow change from 2030 baseline		Proposed Scheme - % change from 2030 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	1,197	15	1,244	23	47	8	4%	53%
	WB	467	12	490	20	23	8	5%	67%
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	411	13	450	23	39	10	9%	77%
	SB	1,459	21	1,506	32	47	11	3%	52%
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	371	11	406	21	35	10	9%	91%
	SB	1,079	19	1,126	29	47	10	4%	53%
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	318	9	11	10	-307	1	-97%	11%
	SB	1,247	19	11	10	-1,236	-9	-99%	-47%
B5207 Kenyon Lane (between A572 Newton Road and B5207 Wilton Lane)	EB	594	9	731	22	137	13	23%	144%
	WB	249	9	267	22	18	13	7%	144%
B5207 Church Lane (between A572 Newton Road and A580 East Lancashire Road)	NB	53	1	60	7	7	6	13%	600%
	SB	51	1	62	11	11	10	22%	1000%
A573 Warrington Road (between A580 East Lancashire Road and Park Road)	NB	438	17	611	63	173	46	39%	271%
	SB	647	27	696	73	49	46	8%	170%
A573 Bridge Street/High Street (between Park Road and Heath Street)	NB	421	19	594	65	173	46	41%	242%
	SB	512	19	561	65	49	46	10%	242%

² For all tables that reference the Proposed Scheme flows these are the baseline flows plus the equivalent Proposed Scheme flows.

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Location	Direction	2030 baseline flows		Proposed Scheme flows ²		Proposed Scheme - actual flow change from 2030 baseline		Proposed Scheme - % change from 2030 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
A573 High Street/Church Street (between Heath Street and B5207 Lowton Road)	NB	400	13	573	59	173	46	43%	354%
	SB	467	19	516	65	49	46	10%	242%
Slag Lane (between B5207 Church Lane and Byrom Lane)	NB	414	5	423	12	9	7	2%	140%
	SB	694	9	702	17	8	8	1%	89%
A573 Ashton Road (between B5207 Ashton Road and B5207 Lowton Road)	NB	628	16	867	62	239	46	38%	288%
	SB	744	24	807	70	63	46	8%	192%
A573 Wigan Road realignment (between B5207 Ashton Road and A573 Aye Bridge Road)	EB	387	16	411	37	24	21	6%	131%
	WB	1,070	32	1,116	53	46	21	4%	66%
B5232 Newearth Road (between Guided Busway and Shawbrook Avenue)	NB	651	11	661	16	10	5	2%	45%
	SB	677	12	698	23	21	11	3%	92%
B5232 Bridgewater Road (between A6 High Street and B5232 Westminster Road)	SB	231	7	246	17	15	10	6%	143%

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Table 17-7: Future baseline and with the Proposed Scheme construction traffic (vehicles), PM peak hour (17:00–18:00)

Location	Direction	2030 baseline flows		Proposed Scheme flows ³		Proposed Scheme - actual flow change from 2030 baseline		Proposed Scheme - % change from 2030 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Daten Avenue (between A574 Warrington Road and Faraday Street)	EB	325	6	344	14	19	8	6%	133%
	WB	1,063	7	1,072	15	9	8	1%	114%
A574 Warrington Road (between Cross Lane and A574 Birchwood Park Avenue)	NB	1,218	10	1,247	20	29	10	2%	100%
	SB	471	7	510	17	39	10	8%	143%
A574 Warrington Road (between Cross Lane and Glaziers Lane)	NB	890	9	919	19	29	10	3%	111%
	SB	438	6	475	16	37	10	8%	167%
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	890	7	11	10	-879	3	-99%	43%
	SB	452	7	11	10	-441	3	-98%	43%
B5207 Kenyon Lane (between A572 Newton Road and B5207 Wilton Lane)	EB	210	2	225	15	15	13	7%	650%
	WB	388	2	566	15	178	13	46%	650%
B5207 Church Lane (between A572 Newton Road and A580 East Lancashire Road)	NB	55	0	62	7	7	7	13%	0%
	SB	84	1	95	11	11	10	13%	1000%
A573 Warrington Road (between A580 East Lancashire Road and Park Road)	NB	766	15	814	61	48	46	6%	307%
	SB	664	13	833	59	169	46	25%	354%
A573 Bridge Street/High Street (between Park Road and Heath Street)	NB	567	12	615	58	48	46	8%	383%
	SB	837	19	1,005	65	168	46	20%	242%

³ For all tables that reference the Proposed Scheme flows these are the baseline flows plus the equivalent Proposed Scheme flows.

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Location	Direction	2030 baseline flows		Proposed Scheme flows ³		Proposed Scheme - actual flow change from 2030 baseline		Proposed Scheme - % change from 2030 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
A573 High Street/Church Street (between Heath Street and B5207 Lowton Road)	NB	583	16	631	62	48	46	8%	288%
	SB	430	12	599	58	169	46	39%	383%
Slag Lane (between B5207 Church Lane and Byrom Lane)	NB	890	1	898	9	8	8	1%	800%
	SB	515	3	524	11	9	8	2%	267%
A573 Ashton Road (between B5207 Ashton Road and B5207 Lowton Road)	NB	904	15	956	61	52	46	6%	307%
	SB	679	9	922	55	243	46	36%	511%
A573 Wigan Road realignment (between B5207 Ashton Road and A573 Aye Bridge Road)	EB	903	17	938	38	35	21	4%	124%
	WB	430	11	454	32	24	21	6%	191%
B5232 Newearth Road (between Guided Busway and Shawbrook Avenue)	NB	933	4	935	5	2	1	0%	25%
	SB	399	4	426	4	27	0	7%	0%
B5232 Bridgewater Road (between A6 High Street and B5232 Westminster Road)	SB	409	4	425	4	16	0	4%	0%

Junction performance

- 17.3.11 Junction capacity analysis has been undertaken for the AM and PM peak hours comparing junction operation in the 2030 future baseline scenario with the Proposed Scheme.
- 17.3.12 The following tables and commentary set out the performance at junctions where there is the potential for the Proposed Scheme to have substantial impacts, including new temporary junctions and those junctions where temporary changes are proposed.
- 17.3.13 Junctions which experience an impact as a result of the Proposed Scheme, but where the layout is not changed are generally identified using the following criteria:
- the Ratio of Flow to Capacity (RFC), Degree of Saturation (DoS) or Volume over Capacity (VoC) for an approach arm increases to over 87% during the construction of the Proposed Scheme; and
 - the RFC, DoS or VoC for an approach arm increases by 2% or more from the baseline.
- 17.3.14 Similarly, junctions which experience a beneficial impact as a result of the Proposed Scheme, but where the layout is not changed are generally identified using the following criteria:
- the RFC, DoS or VoC for an approach arm is over 87% during the baseline; and
 - the RFC, DoS or VoC for an approach arm decreases by 2% or more during the construction of the Proposed Scheme.
- 17.3.15 The results are presented from south to north through the MA05 area, firstly for junctions on the strategic road network, followed by junctions on other roads. The 2030 future baseline results are included for comparison. The models developed to assess the existing and future baseline have been used, except where otherwise stated.
- 17.3.16 It should be noted that the assessments consider the peak level of construction traffic in each location and these conditions will not be present across the whole construction period.

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

- 17.3.17 M62 junction 11/A574 Birchwood Way/Silver Lane (Birchwood Interchange) will be a modified four-arm priority controlled grade-separated roundabout as a result of the Proposed Scheme. The M62 off-slip (east) approach to the junction will be signalised to accommodate the new construction access which is proposed where Silver Lane is located. Both the new construction access and gyratory will also be signalised as part of the Proposed Scheme. Table 17-8 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-8: M62 junction 11/A574 Birchwood Way/Silver Lane (Birchwood Interchange) junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU*/hr	DoS	Q**, PCU
08:00–09:00	With Proposed Scheme		
Birchwood Way (ahead)	1	3%	0
M62 off-slip (east) (left)	589	74%	10
M62 off-slip (east) (ahead and left)	594	74%	11
Construction Access (south) (ahead)	89	36%	2
A574 Birchwood Way (south) (left)	369	25%	0
A574 Birchwood Way (south) (ahead)	1,106	74%	2
M62 off-slip (west) (ahead and left)	263	37%	0
M62 off-slip (west) (ahead)	293	41%	0
17:00–18:00	With Proposed Scheme		
Birchwood Way (ahead)	82	9%	0
M62 off-slip (east) (left)	297	46%	4
M62 off-slip (east) (ahead and left)	300	46%	4
Construction Access (south) (ahead)	176	62%	3
A574 Birchwood Way (south) (left)	1,134	78%	5
A574 Birchwood Way (south) (ahead)	880	61%	2
M62 off-slip (west) (ahead and left)	199	24%	0
M62 off-slip (west) (ahead)	219	26%	0

*PCU = Passenger Car Unit

**Q = Queue

- 17.3.18 The assessment shows that in the AM peak hour the junction operates well within capacity with the Proposed Scheme. In the PM peak hour, the assessment shows that this junction operates within capacity with the Proposed Scheme with a maximum DoS of 78% on the A574 Birchwood Way (south) (left) approach with an associated queue length of five PCU.

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

- 17.3.19 Table 17-9 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-9: M6 junction 23/A580 East Lancashire Road (Haydock Island) junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00-09:00	2030 future baseline			With Proposed Scheme		
M6 (north) off-slip (nearside and centre) (left and ahead)	722	107%	47	832	121%	108
M6 (north) off-slip (offside) (ahead)	36	8%	1	36	8%	1
A49 Lodge Lane (north) (nearside) (ahead)	179	34%	4	189	36%	4
A49 Lodge Lane (north) (centre) (ahead)	287	56%	7	295	57%	7
A49 Lodge Lane (north) (offside) (ahead)	26	5%	1	38	7%	1
A580 East Lancashire Road (east) (nearside) (left)	191	27%	4	236	33%	5
A580 East Lancashire Road (east) (offside) (left)	82	11%	1	82	11%	1
A580 East Lancashire Road (east) (nearside) (ahead)	816	109%	66	816	109%	66
A580 East Lancashire Road (east) (offside) (ahead)	814	109%	66	814	109%	66
M6 (south) off-slip (nearside and centre) (left and ahead)	917	121%	101	919	121%	102
M6 (south) off-slip (offside) (ahead)	245	63%	6	294	76%	8
A49 Lodge Lane (south) (nearside) (ahead)	105	22%	2	105	22%	2
A49 Lodge Lane (south) (centre) (ahead)	300	64%	8	300	64%	8
A49 Lodge Lane (south) (offside) (ahead)	112	23%	2	112	23%	2
A580 East Lancashire Rd (west) (nearside) (left and ahead)	93	13%	2	93	13%	2
A580 East Lancashire Rd (west) (centre) (ahead)	836	119%	104	930	132%	162
A580 East Lancashire Rd (west) (offside) (ahead)	841	119%	105	935	133%	163
Shell Garage exit (left and ahead)	116	17%	1	116	17%	1
17:00-18:00	2030 future baseline			With Proposed Scheme		
M6 (north) off-slip (nearside and centre) (left and ahead)	1,138	122%	155	1,150	123%	160
M6 (north) off-slip (offside) (ahead)	95	13%	2	95	13%	2
A49 Lodge Lane (north) (nearside) (ahead)	185	49%	5	185	49%	5
A49 Lodge Lane (north) (centre) (ahead)	276	76%	8	278	76%	8
A49 Lodge Lane (north) (offside) (ahead)	56	15%	1	68	19%	2
A580 East Lancashire Road (east) (nearside) (left)	136	22%	3	183	29%	4
A580 East Lancashire Road (east) (offside) (left)	58	9%	1	58	9%	1
A580 East Lancashire Road (east) (nearside) (ahead)	817	124%	117	913	138%	177
A580 East Lancashire Road (east) (offside) (ahead)	816	124%	118	915	139%	177

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
M6 (south) off-slip (nearside and centre) (left and ahead)	1,379	119%	150	1,396	121%	160
M6 (south) off-slip (offside) (ahead)	415	70%	10	470	80%	13
A49 Lodge Lane (south) (nearside) (ahead)	233	57%	6	353	86%	11
A49 Lodge Lane (south) (centre) (ahead)	257	63%	7	257	63%	7
A49 Lodge Lane (south) (offside) (ahead)	131	32%	3	131	32%	3
A580 East Lancashire Rd (west) (nearside) (left and ahead)	162	29%	3	162	29%	3
A580 East Lancashire Rd (west) (centre) (ahead)	668	119%	85	668	119%	85
A580 East Lancashire Rd (west) (offside) (ahead)	672	120%	85	672	120%	85
Shell Garage exit (left and ahead)	86	13%	0	86	13%	0

- 17.3.20 The assessment shows that in the AM and PM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.21 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the nearside and centre lanes of the M6 (north) off-Slip approach from 107% in the future baseline to 121% in the AM peak hour, with a corresponding change in queue length from 47 PCU in the future baseline to 108 PCU. The change in traffic due to construction of the Proposed Scheme will also increase the DoS on the offside lane of the A580 East Lancashire Road (west) approach from 119% in the future baseline to 133% in the AM peak hour, with a corresponding change in queue length from 105 PCU in the future baseline to 163 PCU.
- 17.3.22 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the offside lane of the A580 East Lancashire Road (east) approach from 124% in the future baseline to 139% in the PM peak hour, with a corresponding change in queue length from 118 PCU in the future baseline to 177 PCU.

M6 junction 24/A58 Liverpool Road

- 17.3.23 Table 17-10 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-10: M6 junction 24/A58 Liverpool Road junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00-09:00	2030 future baseline			With Proposed Scheme		
M6 off-slip (nearside) (left)	166	21%	2	176	22%	2
M6 off-slip (offside) (right)	477	66%	6	477	66%	6
A58 Liverpool Road (east) (ahead)	851	115%	73	853	115%	74
A58 Liverpool Road (west) (ahead and left)	1,106	60%	1	1,106	60%	1
17:00-18:00	2030 future baseline			With Proposed Scheme		
M6 off-slip (nearside) (left)	343	38%	3	345	39%	3

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
M6 off-slip (offside) (right)	825	100%	26	825	100%	26
A58 Liverpool Road (east) (ahead)	523	84%	9	529	85%	9
A58 Liverpool Road (west) (ahead and left)	753	41%	0	753	41%	0

17.3.24 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.

17.3.25 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as DoS and queue lengths at this junction.

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

17.3.26 Table 17-11 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-11: M60 junction 13/A572 Worsley Brow/A572 Worsley Road/B5211 Barton Road/A572 Leigh Road/A575 Walkden Road 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
M60 southbound off-slip	131	25%	0	83	16%	0
A572 Worsley Road	458	105%	7	482	102%	7
B5211 Barton Road	412	100%	7	310	105%	5
M60 southbound on-slip	-	-	-	-	-	-
M60 northbound off-slip	1,091	56%	0	1,114	55%	0
A572 Leigh Road	1,251	97%	5	1,256	95%	4
A575 Walkden Road	959	103%	9	953	103%	9
A572 Worsley Brow (internal westbound)	420	23%	0	331	18%	0
A572 Worsley Brow (internal eastbound)	2,184	102%	2	2,173	101%	2
17:00–18:00	2030 future baseline			With Proposed Scheme		
M60 southbound off-slip	434	68%	1	375	62%	1
A572 Worsley Road	647	95%	5	647	94%	5
B5211 Barton Road	586	104%	8	608	103%	8
M60 southbound on-slip	-	-	-	-	-	-
M60 northbound off-slip	1,625	109%	9	1,657	108%	9
A572 Leigh Road	781	69%	1	806	73%	1
A575 Walkden Road	978	86%	2	968	89%	3
A572 Worsley Brow (internal westbound)	886	48%	0	833	45%	0
A572 Worsley Brow (internal eastbound)	1,909	90%	0	1,964	93%	0

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- 17.3.27 The assessment shows that in the AM and PM peak hours the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.28 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the B5211 Barton Road approach from 100% in the future baseline to 105% in the AM peak hour, with a corresponding change in queue length from seven PCU in the future baseline to five PCU.
- 17.3.29 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the A572 Worsley Brow (internal eastbound) approach from 90% in the future baseline to 93%, with no change in corresponding queue length.
- 17.3.30 The change in traffic due to construction of the Proposed Scheme in the PM peak hour will increase the DoS on the A575 Walkden Road approach from 86% in the future baseline to 89%, with a corresponding change in queue length from two PCU in the future baseline to three PCU.

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

- 17.3.31 Table 17-12 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-12: A574 Birchwood Way/A574 Birchwood Park Avenue/Oakwood Gate (George Duckworth Roundabout) 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
Birchwood Park Avenue (nearside) (left and ahead)	641	85%	8	644	85%	8
Birchwood Park Avenue (offside) (ahead)	430	99%	16	430	99%	16
A574 Birchwood Way (east) (nearside) (left and ahead)	307	108%	22	326	115%	30
A574 Birchwood Way (east) (offside) (ahead)	308	109%	22	326	115%	30
Oakwood Gate (nearside) (left)	536	29%	0	536	29%	0
Oakwood Gate (centre and offside) (ahead)	393	28%	0	393	28%	0
A574 Birchwood Way (west) (nearside) (left)	995	86%	15	1,000	86%	16
A574 Birchwood Way (west) (centre and offside) (ahead)	1,847	96%	21	1,848	96%	21
Circulatory link (internal past Birchwood Park Avenue entry) (nearside)	892	45%	0	893	45%	0
Circulatory link (internal past Birchwood Park Avenue entry) (offside)	1,080	55%	1	1,080	55%	1
Circulatory link (internal past Birchwood Way (east) entry) (nearside)	1,516	119%	156	1,516	119%	156

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
Circulatory link (internal past Birchwood Way (east) entry) (offside)	430	35%	3	430	35%	3
Circulatory link (internal past Oakwood Gate entry) (nearside)	88	4%	0	107	5%	0
Circulatory link (internal past Oakwood Gate entry) (offside)	738	35%	0	756	35%	0
Circulatory link (internal past Birchwood Way (west) entry) (nearside)	312	78%	6	315	78%	6
Circulatory link (internal past Birchwood Way (west) entry) (offside)	125	30%	2	125	30%	2
17:00-18:00	2030 future baseline			With Proposed Scheme		
Birchwood Park Avenue (nearside) (left and ahead)	781	70%	3	737	64%	2
Birchwood Park Avenue (offside) (ahead)	560	84%	7	615	92%	12
A574 Birchwood Way (east) (nearside) (left and ahead)	311	92%	9	316	84%	7
A574 Birchwood Way (east) (offside) (ahead)	316	92%	9	318	83%	7
Oakwood Gate (nearside) (left)	641	34%	0	644	34%	0
Oakwood Gate (centre and offside) (ahead)	554	40%	1	554	39%	1
A574 Birchwood Way (west) (nearside) (left)	397	41%	4	412	49%	5
A574 Birchwood Way (west) (centre and offside) (ahead)	876	56%	6	876	63%	7
Circulatory link (internal past Birchwood Park Avenue entry) (nearside)	353	18%	0	353	18%	0
Circulatory link (internal past Birchwood Park Avenue entry) (offside)	738	37%	0	738	37%	0
Circulatory link (internal past Birchwood Way (east) entry) (nearside)	1,088	92%	19	1,041	91%	12
Circulatory link (internal past Birchwood Way (east) entry) (offside)	560	48%	5	615	54%	7
Circulatory link (internal past Oakwood Gate entry) (nearside)	461	23%	0	413	21%	0
Circulatory link (internal past Oakwood Gate entry) (offside)	876	43%	0	933	46%	0
Circulatory link (internal past Birchwood Way (west) entry) (nearside)	365	64%	5	368	54%	5
Circulatory link (internal past Birchwood Way (west) entry) (offside)	215	36%	3	215	31%	2

17.3.32 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates close to capacity in both the future baseline and with the Proposed Scheme.

17.3.33 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the nearside lane of the A574 Birchwood Way (east) approach from 108% in the future

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baseline to 115% in the AM peak hour, with a corresponding change in queue length from 22 PCU in the future baseline to 30 PCU.

- 17.3.34 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the offside lane of the Birchwood Park Avenue approach from 84% in the future baseline to 92%, with a corresponding change in queue length from seven PCU in the future baseline to 12 PCU.

A574 Birchwood Way/Moss Gate/Daten Avenue

- 17.3.35 Table 17-13 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-13: A574 Birchwood Way/Moss Gate/Daten Avenue 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
	2030 future baseline			With Proposed Scheme		
08:00–09:00						
A574 Birchwood Way (north) (nearside and centre 1) (ahead and left)	760	65%	12	763	65%	12
A574 Birchwood Way (north) (centre 2 and offside) (right)	719	72%	12	736	74%	12
Moss Gate (left, ahead and right)	496	73%	10	496	73%	10
A574 Birchwood Way (south) (nearside) (left and ahead)	314	70%	11	321	71%	11
A574 Birchwood Way (south) (centre and offside) (ahead and right)	349	72%	12	348	71%	12
Daten Avenue (nearside and centre) (left)	526	61%	8	542	63%	9
Daten Avenue (offside) (right and ahead)	63	15%	2	63	15%	2
	2030 future baseline			With Proposed Scheme		
17:00–18:00						
A574 Birchwood Way (north) (nearside and centre 1) (ahead and left)	488	40%	6	497	41%	7
A574 Birchwood Way (north) (centre 2 and offside) (right)	309	29%	4	322	30%	4
Moss Gate (left, ahead and right)	379	89%	13	379	90%	13
A574 Birchwood Way (south) (nearside) (left and ahead)	469	87%	19	472	91%	20
A574 Birchwood Way (south) (centre and offside) (ahead and right)	508	88%	19	508	91%	20
Daten Avenue (nearside and centre) (left)	831	90%	23	847	89%	23
Daten Avenue (offside) (right and ahead)	55	17%	2	55	17%	2

- 17.3.36 The assessment shows that in the AM peak hour the junction operates well within capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates close to capacity in both the future baseline and with the Proposed Scheme.

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- 17.3.37 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as DoS and queue lengths in the AM peak hour.
- 17.3.38 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the nearside lane of the A574 Birchwood Way (south) approach from 87% in the future baseline to 91%, with a corresponding change in queue length from 19 PCU in the future baseline to 20 PCU.

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

- 17.3.39 Table 17-14 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-14: A574 Warrington Road/A574 Birchwood Park Avenue/Daten Avenue/Warrington Road junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
Warrington Road (north)	1,485	0.87	0	1,521	0.89	8
Daten Avenue	450	0.28	0	472	0.30	0
Warrington Road (south)	20	0.02	0	20	0.02	0
Birchwood Park Avenue	888	0.37	1	904	0.38	1
17:00–18:00	2030 future baseline			With Proposed Scheme		
Warrington Road (north)	482	0.23	0	519	0.24	0
Daten Avenue	1,013	0.45	1	1,020	0.46	1
Warrington Road (south)	345	0.53	1	345	0.55	1
Birchwood Park Avenue	740	0.50	1	758	0.51	1

- 17.3.40 The assessment shows that in the AM peak hour the junction operates close to capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in both the future baseline and with the Proposed Scheme.
- 17.3.41 The change in traffic due to construction of the Proposed Scheme will increase the RFC on the Warrington Road (north) approach from 0.87 in the future baseline to 0.89 in the AM peak hour, with a corresponding change in queue length from no queue in the future baseline to eight PCU.
- 17.3.42 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths.

A574 Warrington Road/Cross Lane/Silver Lane

- 17.3.43 Table 17-15 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-15: A574 Warrington Road/Cross Lane/Silver Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north) (left, ahead and right)	1,161	0.04	0	1,196	0.04	0
Silver Lane (left, ahead and right)	8	0.02	0	8	0.02	0
A574 Warrington Road (south) (left, ahead and right)	444	0.01	0	479	0.01	0
Cross Lane (left, ahead and right)	378	1.67	107	378	1.78	143
17:00–18:00	2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north) (left, ahead and right)	480	0.14	0	514	0.15	0
Silver Lane (left, ahead and right)	12	0.03	0	12	0.03	0
A574 Warrington Road (south) (left, ahead and right)	1,312	0.05	0	1,337	0.06	0
Cross Lane (left, ahead and right)	38	0.20	0	40	0.23	0

- 17.3.44 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in both the future baseline and with the Proposed Scheme.
- 17.3.45 The change in traffic due to construction of the Proposed Scheme will increase the RFC on the Cross Lane (left, ahead and right) approach from 1.67 in the future baseline to 1.78 in the AM peak hour, with a corresponding change in queue length from 107 PCU in the future baseline to 143 PCU.
- 17.3.46 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths.

Local network changes in the Culcheth area

- 17.3.47 There are a number of temporary and permanent changes to the local road network in the Culcheth area as part of the Proposed Scheme. Details of the permanent changes are presented in the operational assessment at Section 17.5. Where the new or modified junctions are proposed during the construction phase, the operational performance of both the existing and new junction layouts are presented.

A574 Warrington Road/A574 Warrington Road realignment

- 17.3.48 The A574 Warrington Road/A574 Warrington Road realignment will be a new three-arm priority controlled (give way) T-junction as part of the Proposed Scheme. The new junction will be implemented during construction of the Proposed Scheme and has therefore been assessed for 2030 AM and PM peak hours using Junctions 9 software.

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17.3.49 Table 17-16 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-16: A574 Warrington Road/A574 Warrington Road realignment junction 2030 with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU
08:00-09:00	With Proposed Scheme (proposed layout)		
A574 Warrington Road (north) (left)	11	0.02	0
A574 Warrington Road (north) (right)	11	0.04	0
A574 Warrington Road realignment (east) (ahead and right)	1,263	0.10	0
A574 Warrington Road realignment (west) (south) (ahead and left)	407	-	-
17:00-18:00	With Proposed Scheme (proposed layout)		
A574 Warrington Road (north) (left)	11	0.03	0
A574 Warrington Road (north) (right)	11	0.05	0
A574 Warrington Road realignment (east) (ahead and right)	463	0.05	0
A574 Warrington Road realignment (west) (south) (ahead and left)	1,065	-	-

17.3.50 The assessment shows that this junction operates well within capacity with the Proposed Scheme.

A574 Warrington Road/New Hall Lane (southern junction)

17.3.51 Table 17-17 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-17: A574 Warrington Road/New Hall Lane (southern junction) 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00-09:00	2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north) (ahead and left)	1,412	-	-	1,439	-	-
A574 Warrington Road (south) (ahead and right)	340	0.33	1	371	0.39	1
17:00-18:00	2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north) (ahead and left)	424	-	-	441	-	-
A574 Warrington Road (south) (ahead and right)	1,098	0.19	1	1,123	0.25	1

17.3.52 The assessment shows that in the AM peak hour the junction operates well within capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in both the future baseline and with the Proposed Scheme.

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17.3.53 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths at this junction.

A574 Warrington Road/Glaziers Lane

17.3.54 Table 17-18 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-18: A574 Warrington Road/Glaziers Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north) (ahead and right)	1,330	0.23	1	1,354	0.52	1
A574 Warrington Road (south) (left)	16	0.00	0	16	0.00	0
A574 Warrington Road (south) (ahead)	291	0.00	0	314	0.00	0
Glaziers Lane (left)	7	0.09	0	8	0.97	1
Glaziers Lane (right)	172	0.87	5	175	0.93	7
17:00–18:00	2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north) (ahead and right)	451	0.18	1	478	0.19	1
A574 Warrington Road (south) (left)	120	0.00	0	123	0.00	0
A574 Warrington Road (south) (ahead)	955	0.00	0	969	0.00	0
Glaziers Lane (left)	19	0.05	0	19	0.05	0
Glaziers Lane (right)	34	0.21	0	34	0.23	1

17.3.55 The assessment shows that in the AM peak hour the junction operates close to capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in both the future baseline and with the Proposed Scheme.

17.3.56 The change in traffic due to construction of the Proposed Scheme will increase the RFC on the Glaziers Lane (left) approach from 0.09 in the future baseline to 0.97 in the AM peak hour, with a corresponding change in queue length from zero PCU in the future baseline to one PCU.

17.3.57 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths.

A574 Warrington Road/New Hall Lane (northern junction)

17.3.58 Table 17-19 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-19: A574 Warrington Road/New Hall Lane (northern junction) 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00-09:00	2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north) (ahead and left)	1,250	-	-	1,288	-	-
New Hall Lane (left)	37	0.12	0	37	0.13	0
New Hall Lane (right)	7	0.05	0	7	0.05	0
A574 Warrington Road (south) (ahead and right)	250	0.00	0	274	0.09	0
17:00-18:00	2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north) (ahead and left)	359	-	-	365	-	-
New Hall Lane (left)	116	0.23	0	138	0.27	0
New Hall Lane (right)	57	0.21	0	57	0.21	0
A574 Warrington Road (south) (ahead and right)	864	0.00	0	878	0.00	0

17.3.59 The assessment shows that in the AM peak hour the junction operates well within capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in both the future baseline and with the Proposed Scheme.

17.3.60 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths at this junction.

A574 Warrington Road realignment/New Hall Lane diversion

17.3.61 The A574 Warrington Road realignment/New Hall Lane diversion will be a new three-arm priority controlled (give way) T-junction as part of the Proposed Scheme. The new junction will be implemented during construction of the Proposed Scheme and has therefore been assessed for 2030 AM and PM peak hours using Junctions 9 software. Table 17-20 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-20: A574 Warrington Road realignment/New Hall Lane Diversion junction 2030 with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU
08:00-09:00	With Proposed Scheme (proposed layout)		
A574 Warrington Lane realignment (north) (left)	102	0.00	0
A574 Warrington Lane realignment (north) (ahead)	1,195	0.00	0
New Hall Lane diversion (left)	38	0.10	0
New Hall Lane diversion (right)	7	0.04	0
A574 Warrington Lane realignment (south) (ahead and right)	75	0.32	1
A574 Warrington Lane realignment (south) (ahead)	306	0.00	0

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Approach	Flow, PCU/hr	RFC	Q, PCU
17:00–18:00			
With Proposed Scheme (proposed layout)			
A574 Warrington Lane realignment (north) (left)	15	0.00	0
A574 Warrington Lane realignment (north) (ahead)	321	0.00	0
New Hall Lane diversion (left)	116	0.18	0
New Hall Lane diversion (right)	49	0.16	0
A574 Warrington Lane realignment (south) (ahead and right)	25	0.12	0
A574 Warrington Lane realignment (south) (ahead)	1,010	0.00	0

17.3.62 The assessment shows that this junction operates well within capacity with the Proposed Scheme.

A574 Warrington Road/A574 Warrington Road realignment/Culcheth Link Road

17.3.63 The A574 Warrington Road/A574 Warrington Road realignment/Culcheth Link Road junction will be a new three-arm priority controlled (give way) T-junction as part of the Proposed Scheme. Table 17-21 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-21: A574 Warrington Road/A574 Warrington Road realignment/Culcheth Link Road junction with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00			
With Proposed Scheme (proposed layout)			
Warrington Road (north) (ahead and right)	24	0.17	1
Warrington Road (north) (ahead)	1,170	0.00	0
Warrington Road (south) (left)	19	0.00	0
Warrington Road (south) (ahead)	305	0.00	0
Culcheth Link Road (left)	2	0.00	0
Culcheth Link Road (right)	122	0.50	1
17:00–18:00			
With Proposed Scheme (proposed layout)			
Warrington Road (north) (ahead and right)	67	0.25	1
Warrington Road (north) (ahead)	313	0.00	0
Warrington Road (south) (left)	117	0.00	0
Warrington Road (south) (ahead)	946	0.00	0
Culcheth Link Road (left)	4	0.01	0
Culcheth Link Road (right)	33	0.17	0

17.3.64 The assessment shows that this junction operates well within capacity with the Proposed Scheme.

Wigshaw Lane/Glaziers Lane

17.3.65 Table 17-22 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-22: Wigshaw Lane/Glaziers Lane 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU	
08:00–09:00		2030 future baseline			With Proposed Scheme		
Wigshaw Lane (north) (ahead)	280	0.00	0	280	0.00	0	
Wigshaw Lane (north) (left)	70	0.00	0	72	0.00	0	
Glaziers Lane (left and right)	25	0.05	0	25	0.05	0	
Wigshaw Lane (west) (ahead and right)	258	0.13	0	260	0.13	0	
17:00–18:00		2030 future baseline			With Proposed Scheme		
Wigshaw Lane (north) (ahead)	243	0.00	0	247	0.00	0	
Wigshaw Lane (north) (left)	23	0.00	0	23	0.00	0	
Glaziers Lane (left and right)	172	0.35	1	176	0.34	0	
Wigshaw Lane (west) (ahead and right)	260	0.03	0	260	0.03	0	

17.3.66 The assessment shows that in the AM peak hour the junction operates well within capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in both the future baseline and with the Proposed Scheme.

17.3.67 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths at this junction.

Wigshaw Lane/Wigshaw Lane realignment/Culcheth Link Road

17.3.68 The Wigshaw Lane/Wigshaw Lane realignment/Culcheth Link Road junction will be a new four-arm priority controlled (give way) roundabout as part of the Proposed Scheme. The new junction will be implemented during construction of the Proposed Scheme and has therefore been assessed for 2030 AM and PM peak hours using Junctions 9 software. Table 17-23 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-23: Wigshaw Lane/Wigshaw Lane realignment/Culcheth Link Road junction 2030 with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00			
With Proposed Scheme (proposed layout)			
Wigshaw Lane (north)	101	0.09	0
Culcheth Link Road	40	0.04	0
Wigshaw Lane (south)	6	0.0	0
Wigshaw Lane realignment	260	0.26	0

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Approach	Flow, PCU/hr	RFC	Q, PCU
17:00–18:00	With Proposed Scheme (proposed layout)		
Wigshaw Lane (north)	272	0.24	0
Culcheth Link Road	188	0.19	0
Wigshaw Lane (south)	2	0.00	0
Wigshaw Lane realignment	262	0.27	0

17.3.69 The assessment shows that this junction operates well within capacity with the Proposed Scheme.

A574 Warrington Road/B5207 Common Lane

17.3.70 Table 17-24 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-24: A574 Warrington Road/B5207 Common Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Queue, PCU	Flow, PCU/hr	RFC	Queue, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
B5207 Common Lane	725	1.33	121	727	1.33	125
A574 Warrington Road (east)	909	0.75	3	1,010	0.82	4
A574 Warrington Road (west)	333	0.53	1	349	0.57	1
17:00–18:00	2030 future baseline			With Proposed Scheme		
B5207 Common Lane	494	1.05	25	509	1.09	35
A574 Warrington Road (east)	646	0.50	1	673	0.52	1
A574 Warrington Road (west)	745	1.43	158	796	1.54	212

17.3.71 The assessment shows that in the AM and PM peak hours the junction operates over capacity in both the future baseline and with the Proposed Scheme.

17.3.72 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths in the AM peak hour.

17.3.73 The change in traffic due to construction of the Proposed Scheme in the PM peak hour will increase the RFC on the A574 Warrington Road (west) (left and ahead) approach from 1.43 in the future baseline to 1.54, with a corresponding change in queue length from 158 PCU in the future baseline to 212 PCU.

A580/A572/B5207 Lane Head network

17.3.74 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

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- A580 East Lancashire Road/A572 Newton Road.

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

A572 Newton Road/B5207 Church Lane/B5207 Kenyon Lane

17.3.76 Table 17-25 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-25: A572 Newton Road/B5207 Church Lane/B5207 Kenyon Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A572 Newton Road (north) (left, ahead and right)	926	107%	71	948	114%	100
Kenyon Lane (left, ahead and right)	156	104%	13	198	110%	20
Newton Road (south) (left, ahead and right)	706	127%	62	739	105%	29
B5207 Church Lane (left, ahead and right)	582	109%	50	605	113%	62
17:00–18:00	2030 future baseline			With Proposed Scheme		
A572 Newton Road (north) (left, ahead and right)	646	68%	17	661	75%	20
Kenyon Lane (left, ahead and right)	379	91%	16	414	95%	20
Newton Road (south) (left, ahead and right)	859	91%	31	865	99%	40
B5207 Church Lane (left, ahead and right)	193	92%	10	247	98%	15

17.3.77 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates close to capacity in both the future baseline and with the Proposed Scheme.

17.3.78 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the A572 Newton Road (north) approach from 107% in the future baseline to 114% in the AM peak hour, with a corresponding change in queue length from 71 PCU in the future baseline to 100 PCU.

17.3.79 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the Newton Road (south) approach from 91% in the future baseline to 99%, with a corresponding change in queue length from 31 PCU in the future baseline to 40 PCU.

A580 East Lancashire Road/B5207 Church Lane

17.3.80 Table 17-26 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-26: A580 East Lancashire Road/B5207 Church Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
B5207 Church Lane (north) (left, ahead and right)	351	120%	47	372	127%	59
A580 (east) (nearside) (left and ahead)	696	62%	11	1,030	87%	18
A580 (east) (centre) (ahead)	893	73%	19	618	48%	8
A580 (east) (offside) (right)	111	63%	4	123	67%	4
B5207 Church Lane (south) (left, ahead and right)	308	107%	29	430	156%	91
A580 (west) (nearside) (left and ahead)	876	82%	26	908	86%	29
A580 (west) (centre and offside) (ahead and right)	1,093	110%	35	1,281	114%	63
17:00–18:00	2030 future baseline			With Proposed Scheme		
B5207 Church Lane (north) (left, ahead and right)	274	91%	13	324	108%	29
A580 (east) (nearside) (left and ahead)	907	75%	12	1,232	98%	27
A580 (east) (centre) (ahead)	1,010	77%	19	746	54%	14
A580 (east) (offside) (right)	214	96%	12	222	95%	11
B5207 Church Lane (south) (left, ahead and right)	379	178%	44	427	128%	61
A580 (west) (nearside) (left and ahead)	1,043	104%	67	1,040	104%	66
A580 (west) (centre and offside) (ahead and right)	1,116	98%	46	1,238	108%	98

- 17.3.81 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.82 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the B5207 Church Lane (south) approach from 107% in the future baseline to 156% in the AM peak hour, with a corresponding change in queue length from 29 PCU in the future baseline to 91 PCU. In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the nearside lane of the A580 (east) approach from 75% in the future baseline to 98%, with a corresponding change in queue length from 12 PCU in the future baseline to 27 PCU.

A580 East Lancashire Road/A572 Newton Road

- 17.3.83 Table 17-27 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-27: A580 East Lancashire Road/A572 Newton Road junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A572 Newton Road (north) (left, ahead and right)	926	121%	123	934	125%	135
A580 (east) (nearside) (left and ahead)	13	9%	1	27	17%	1
A580 (east) (centre and offside) (ahead and right)	143	66%	4	244	87%	8
A572 Newton Road (south) (nearside) (ahead and left)	630	119%	77	651	123%	87
A572 Newton Road (south) (offside) (right)	76	15%	2	81	16%	2
A580 (west) (nearside and centre) (left and ahead)	187	117%	23	221	123%	31
A580 (west) (offside) (ahead)	185	118%	24	215	123%	32
17:00–18:00	2030 future baseline			With Proposed Scheme		
A572 Newton Road (north) (left, ahead and right)	646	116%	75	693	120%	90
A580 (east) (nearside) (left and ahead)	51	33%	2	56	33%	2
A580 (east) (centre and offside) (ahead and right)	328	110%	22	377	123%	48
A572 Newton Road (south) (nearside) (ahead and left)	828	115%	91	836	122%	110
A572 Newton Road (south) (offside) (right)	31	4%	1	40	6%	1
A580 (west) (nearside and centre) (left and ahead)	65	33%	2	95	45%	3
A580 (west) (offside) (ahead)	48	28%	2	81	42%	3

- 17.3.84 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.85 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the A572 Newton Road (north) approach from 121% in the future baseline to 125% in the AM peak hour, with a corresponding change in queue length from 123 PCU in the future baseline to 135 PCU. The change in traffic due to construction of the Proposed Scheme will also increase the DoS on the A572 Newton Road (south) approach from 119% in the future baseline to 123% in the AM peak hour, with a corresponding change in queue length from 77 PCU in the future baseline to 87 PCU.
- 17.3.86 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the centre and offside lanes of the A580 (east) approach from 110% in the future baseline to 123% in the PM peak hour, with a corresponding change in queue length from 22 PCU in the future baseline to 48 PCU. The change in traffic due to construction of the Proposed Scheme will also increase the DoS on the nearside lane of the A572 Newton Road (south) approach

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from 115% in the future baseline to 122% in the PM peak hour, with a corresponding change in queue length from 91 PCU in the future baseline to 110 PCU.

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

17.3.87 Table 17-28 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-28: A580 East Lancashire Road/Stone Cross Lane North/Stone Cross Lane South junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
Stone Cross Lane North (left and right)	968	130%	152	971	128%	144
A580 East Lancashire Road (east) (nearside and centre) (left and ahead)	626	103%	38	684	116%	77
A580 East Lancashire Road (east) (offside) (ahead)	616	103%	39	631	109%	54
Stone Cross Lane South (left and right)	209	41%	4	255	50%	6
A580 East Lancashire Road (west) (nearside and centre) (left and ahead)	1,188	131%	245	1,136	127%	221
A580 East Lancashire Road (west) (offside) (ahead)	482	55%	13	788	91%	29
17:00–18:00	2030 future baseline			With Proposed Scheme		
Stone Cross Lane North (left and right)	546	94%	16	723	113%	67
A580 East Lancashire Road (east) (nearside and centre) (left and ahead)	742	96%	31	795	114%	84
A580 East Lancashire Road (east) (offside) (ahead)	771	96%	32	814	113%	82
Stone Cross Lane South (left and right)	446	97%	21	446	82%	15
A580 East Lancashire Road (west) (nearside and centre) (left and ahead)	977	85%	24	1,073	98%	41
A580 East Lancashire Road (west) (offside) (ahead)	817	78%	24	850	84%	27

17.3.88 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates close to capacity in the future baseline and over capacity with the Proposed Scheme.

17.3.89 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the offside lane of the A580 East Lancashire Road (west) approach from 55% in the future baseline to 91% in the AM peak hour, with a corresponding change in queue length from 13 PCU to 29 PCU. In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the Stone Cross Lane North approach from 94%

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in the future baseline to 113%, with a corresponding change in queue length from 16 PCU to 67 PCU.

A580 East Lancashire Road/A573 Warrington Road

17.3.90 Table 17-29 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-29: A580 East Lancashire Road/A573 Warrington Road junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00			2030 future baseline		With Proposed Scheme	
A573 Warrington Road (north)	651	1.85	196	748	1.79	288
A580 East Lancashire Road (east)	1,645	0.92	11	1,705	0.96	17
A573 Warrington Road (south)	254	1.10	19	275	1.41	44
A580 East Lancashire Road (west)	2,186	1.02	46	2,433	1.15	184
17:00–18:00			2030 future baseline		With Proposed Scheme	
A573 Warrington Road (north)	673	1.49	138	834	1.77	280
A580 East Lancashire Road (east)	2,016	1.05	68	2,190	1.14	166
A573 Warrington Road (south)	318	2.19	127	126	2.42	187
A580 East Lancashire Road (west)	2,160	1.04	61	2,191	1.06	83

17.3.91 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.

17.3.92 The change in traffic due to construction of the Proposed Scheme will increase the RFC on the A573 Warrington Road (south) approach from 1.10 in the future baseline to 1.41 in the AM peak hour, with a corresponding change in queue length from 19 PCU in the future baseline to 44 PCU.

17.3.93 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the RFC on the A573 Warrington Road (north) approach from 1.49 in the future baseline to 1.77, with a corresponding change in queue length from 138 PCU in the future baseline to 280 PCU.

A580 East Lancashire Road/Sandy Lane

17.3.94 Table 17-30 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-30: A580 East Lancashire Road/Sandy Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
Sandy Lane (left)	265	0.79	3	265	0.91	7
East Lancashire Road (east)	-	-	-	-	-	-
East Lancashire Road (west) (left)	45	0.00	0	45	0.00	0
East Lancashire Road (west) (ahead)	1,866	0.00	0	2,113	0.00	0
17:00–18:00	2030 future baseline			With Proposed Scheme		
Sandy Lane (left)	24	0.08	0	24	0.08	0
East Lancashire Road (east)	-	-	-	-	-	-
East Lancashire Road (west) (left)	237	0.00	0	237	0.00	0
East Lancashire Road (west) (ahead)	2,029	0.00	0	2,060	0.00	0

- 17.3.95 The assessment shows that in the AM peak hour the junction operates within capacity in the future baseline and close to capacity with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in both the future baseline and with the Proposed Scheme.
- 17.3.96 The change in traffic due to construction of the proposed scheme will increase the RFC on the Sandy Lane (left) approach from 0.79 in the future baseline to 0.91 in the AM peak hour with a corresponding change in queue length from three PCU in the future baseline to seven PCU.
- 17.3.97 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths.

A580 East Lancashire Road/A579 Atherleigh Way

- 17.3.98 Table 17-31 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-31: A580 East Lancashire Road/A579 Atherleigh Way junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A579 Atherleigh Way (nearside and centre) (left and right)	1,145	112%	98	1,160	113%	106
A579 Atherleigh Way (offside) (right)	343	77%	11	347	82%	11
A580 East Lancashire Road (east) (nearside) (ahead)	619	47%	9	704	53%	11
A580 East Lancashire Road (east) (centre) (ahead)	402	29%	5	462	33%	6
A580 East Lancashire Road (east) (offside) (right)	217	72%	7	243	76%	8

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
A580 East Lancashire Road (west) (nearside) (left)	587	41%	7	587	41%	7
A580 East Lancashire Road (west) (centre) (ahead)	425	50%	9	454	53%	10
A580 East Lancashire Road (west) (offside) (ahead)	1,011	112%	88	1,041	115%	104
17:00–18:00	2030 future baseline			With Proposed Scheme		
A579 Atherleigh Way (nearside and centre) (left and right)	686	119%	73	748	107%	44
A579 Atherleigh Way (offside) (right)	356	118%	43	356	105%	25
A580 East Lancashire Road (east) (nearside) (ahead)	1,012	69%	17	752	53%	11
A580 East Lancashire Road (east) (centre) (ahead)	432	28%	5	751	50%	10
A580 East Lancashire Road (east) (offside) (right)	580	120%	70	582	105%	38
A580 East Lancashire Road (west) (nearside) (left)	679	55%	12	682	59%	13
A580 East Lancashire Road (west) (centre) (ahead)	336	42%	7	704	104%	42
A580 East Lancashire Road (west) (offside) (ahead)	1,014	120%	120	758	105%	47

17.3.99 The assessment shows that in the AM and PM peak hours the junction operates over capacity in both the future baseline and with the Proposed Scheme.

17.3.100 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the offside lane of the A580 East Lancashire Road (west) approach from 112% in the future baseline to 115% in the AM peak hour, with a corresponding change in queue length from 88 PCU in the future baseline to 104 PCU. In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the centre lane of the A580 East Lancashire Road (west) approach from 42% in the future baseline to 104%, with a corresponding change in queue length from seven PCU in the future baseline to 42 PCU.

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

17.3.101 Table 17-32 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-32: B5207 Church Lane/B5207 Golborne Road/Stone Cross Lane/Slag Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
Slag Lane (left, ahead and right)	840	121%	108	858	124%	119

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
Church Lane (right, left and ahead)	310	60%	8	329	62%	9
Stone Cross Lane North (ahead, right and left)	242	122%	33	242	122%	33
Golborne Road (left, ahead and right)	461	119%	59	468	121%	63
17:00-18:00	2030 future baseline			With Proposed Scheme		
Slag Lane (left, ahead and right)	510	118%	60	528	123%	71
Church Lane (right, left and ahead)	538	122%	62	678	122%	83
Stone Cross Lane North (ahead, right and left)	564	119%	70	564	123%	78
Golborne Road (left, ahead and right)	411	119%	53	412	119%	53

- 17.3.102 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.103 The change in traffic due to construction of the Proposed Scheme in the AM peak hour will increase the DoS on the Slag Lane Entry approach from 121% in the future baseline to 124%, with a corresponding change in queue length from 108 PCU in the future baseline to 119 PCU.
- 17.3.104 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the Slag Lane approach from 118% in the future baseline to 123%, with a corresponding change in queue length from 60 PCU in the future baseline to 71 PCU.

A573 High Street/Heath Street

- 17.3.105 Table 17-33 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-33: A573 High Street/Heath Street junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00-09:00	2030 future baseline			With Proposed Scheme		
A573 High Street (north) (ahead and right)	588	0.25	1	656	0.29	1
A573 High Street (south) (ahead and left)	560	0.35	1	721	0.42	1
Heath Street (left and right)	271	0.88	6	171	1.05	16
17:00-18:00	2030 future baseline			With Proposed Scheme		
A573 High Street (north) (ahead and right)	612	0.29	1	742	0.35	1
A573 High Street (south) (ahead and left)	841	0.55	1	912	0.53	1
Heath Street (left and right)	233	0.89	6	233	1.04	14

- 17.3.106 The assessment shows that in the AM peak hour the junction operates close to capacity in the future baseline and over capacity with the Proposed Scheme. In the PM peak hour, the junction operates close to capacity in the future baseline and over capacity with the Proposed Scheme.

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- 17.3.107 The change in traffic due to construction of the Proposed Scheme will increase the RFC on the Heath Street approach from 0.88 in the future baseline to 1.05 in the AM peak hour, with a corresponding change in queue length from six PCU in the future baseline to 16 PCU.
- 17.3.108 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the RFC on the Heath Street approach from 0.89 in the future baseline to 1.04, with a corresponding change in queue length from six PCU in the future baseline to 14 PCU.

A580 East Lancashire Road/A574 Warrington Road

- 17.3.109 Table 17-34 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-34: A580 East Lancashire Road/A574 Warrington Road junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU	
08:00–09:00		2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north)	628	1.48	112	646	1.79	156	
A580 East Lancashire Road (east)	1,553	0.65	2	1,751	0.72	3	
A574 Warrington Road (south)	384	0.33	1	384	0.37	1	
A580 East Lancashire Road (west)	2,136	0.88	7	2,219	0.91	9	
17:00–18:00		2030 future baseline			With Proposed Scheme		
A574 Warrington Road (north)	748	0.97	15	748	1.18	69	
A580 East Lancashire Road (east)	1,882	0.76	3	1,942	0.76	3	
A574 Warrington Road (south)	927	1.45	161	977	1.59	207	
A580 East Lancashire Road (west)	1,642	0.77	4	1,827	0.85	6	

- 17.3.110 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.111 The change in traffic due to construction of the Proposed Scheme will increase the RFC on the A574 Warrington Road (north) approach from 1.48 in the future baseline to 1.79 in the AM peak hour, with a corresponding change in queue length from 112 PCU in the future baseline to 156 PCU.
- 17.3.112 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the RFC on the A574 Warrington Road (north) approach from 0.97 in the future baseline to 1.18, with a corresponding change in queue length from 15 PCU in the future baseline to 69 PCU.

A573 Ashton Road/A573 Church Street/B5207 Lowton Road

- 17.3.113 Table 17-35 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-35: A573 Ashton Road/A573 Church Street/B5207 Lowton Road 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A573 Ashton Road	861	0.92	9	939	1.00	22
B5207 Lowton Road	290	0.57	1	298	0.62	2
A573 Church Street	384	0.66	2	546	0.95	11
17:00–18:00	2030 future baseline			With Proposed Scheme		
A573 Ashton Road	688	0.73	3	827	0.87	6
B5207 Lowton Road	378	0.65	2	386	0.77	3
A573 Church Street	601	1.13	46	670	1.27	89

- 17.3.114 The assessment shows that in the AM peak hour the junction operates close to capacity in the future baseline and over capacity with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.115 The change in traffic due to construction of the Proposed Scheme will increase the RFC on the A573 Ashton Road approach from 0.92 in the future baseline to 1.00 in the AM peak hour, with a corresponding change in queue length from 9 PCU in the future baseline to 22 PCU.
- 17.3.116 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the RFC on the A573 Church Street approach from 1.13 in the future baseline to 1.27, with a corresponding change in queue length from 46 PCU in the future baseline to 89 PCU.

A573 Wigan Road/B5207 Ashton Road

- 17.3.117 Table 17-36 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-36: A573 Wigan Road/B5207 Ashton Road junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A573 Wigan Road (ahead and right)	791	0.26	0	869	0.29	1
A573 Ashton Road (ahead and left)	610	-	-	779	-	-
B5207 Ashton Road (left)	31	0.13	0	34	1.04	3
B5207 Ashton Road (right)	236	0.78	4	238	1.03	13
17:00–18:00	2030 future baseline			With Proposed Scheme		
A573 Wigan Road (ahead and right)	446	0.21	0	588	0.23	0
A573 Ashton Road (ahead and left)	924	-	-	1,001	-	-
B5207 Ashton Road (left)	92	1.05	7	92	1.28	13

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Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
B5207 Ashton Road (right)	316	1.04	17	316	1.26	41

- 17.3.118 The assessment shows that in the AM peak hour the junction operates within capacity in the future baseline and over capacity with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.119 The change in traffic due to construction of the Proposed Scheme will increase the RFC on the B5207 Ashton Road (left) approach from 0.13 in the future baseline to 1.04 in the AM peak hour, with a corresponding change in queue length from no queue in the future baseline to three PCU.
- 17.3.120 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the RFC on the B5207 Ashton Road (left) approach from 1.05 in the future baseline to 1.28, with a corresponding change in queue length from seven PCU in the future baseline to 13 PCU.

Slag Lane/Byrom Lane

- 17.3.121 Initially, the Slag Lane/Byrom Lane junction will remain in its existing form. However, later in the construction period the junction will be permanently relocated, to accommodate the Slag Lane realignment, as part of the Proposed Scheme The modified junction layout will be implemented during construction of the Proposed Scheme and has therefore been assessed for 2030 AM and PM peak hours using Junctions 9 software.
- 17.3.122 Table 17-37 summarises the results of the changes to the performance of the existing junction as a result of the Proposed Scheme, before the opening of the permanent junction layout.

Table 17-37: Slag Lane/Byrom Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results (existing layout)

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme (existing layout)		
Slag Lane (north) (ahead and left)	498	-	-	510	-	-
Byrom Lane (left)	121	0.23	0	155	0.31	0
Byrom Lane (right)	32	0.13	0	32	0.14	0
Slag Lane (south) (ahead and right)	494	0.60	2	512	0.65	3
17:00–18:00	2030 future baseline			With Proposed Scheme (existing layout)		
Slag Lane (north) (ahead and left)	357	-	-	357	-	-
Byrom Lane (left)	223	0.42	1	241	0.46	1
Byrom Lane (right)	67	0.25	0	67	0.26	0
Slag Lane (south) (ahead and right)	512	0.36	1	530	0.41	1

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- 17.3.123 The assessment shows that in the AM peak hour the junction operates well within capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in both the future baseline and with the Proposed Scheme.
- 17.3.124 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths at this junction.
- 17.3.125 Table 17-38 summarises the results of the changes to the performance of the modified junction as a result of the Proposed Scheme, after the opening of the permanent junction layout.

Table 17-38: Slag Lane realignment/Byrom Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme (proposed layout)		
Slag Lane realignment (north) (ahead and left)	498	-	-	506	-	-
Byrom Lane (left)	121	0.23	0	129	0.26	0
Byrom Lane (right)	32	0.13	0	32	0.13	0
Slag Lane realignment (south) (ahead and right)	494	0.60	2	221	0.56	2
17:00–18:00	2030 future baseline			With Proposed Scheme (proposed layout)		
Slag Lane realignment (north) (ahead and left)	357	-	-	357	-	-
Byrom Lane (left)	223	0.42	1	67	0.45	1
Byrom Lane (right)	67	0.25	0	223	0.25	0
Slag Lane realignment (south) (ahead and right)	512	0.36	1	132	0.34	1

- 17.3.126 The assessment shows that in the AM peak hour the junction operates well within capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in both the future baseline and with the Proposed Scheme.
- 17.3.127 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as RFC and queue lengths at this junction.

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

- 17.3.128 Table 17-39 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-39: A58 Liverpool Road/A58 Gerard Street/A49 Warrington Road/A49 Bryn Street junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A58 Liverpool Road (east)	808	87%	27	816	84%	26

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
A49 Warrington Road	280	104%	22	286	112%	30
A58 Liverpool (west)	398	140%	76	408	118%	49
A49 Bryn Street	304	104%	22	304	115%	34
17:00–18:00	2030 future baseline			With Proposed Scheme		
A58 Liverpool Road (east)	476	88%	18	524	97%	26
A49 Warrington Road	603	97%	28	609	98%	29
A58 Liverpool (west)	426	110%	40	428	122%	58
A49 Bryn Street	245	98%	15	245	98%	15

- 17.3.129 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.130 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the A49 Bryn Street approach from 104% in the future baseline to 115% in the AM peak hour, with a corresponding change in queue length from 22 PCU in the future baseline to 34 PCU.
- 17.3.131 The change in traffic due to construction of the Proposed Scheme in the PM peak hour will increase the DoS on the A58 Liverpool (west) approach from 110% in the future baseline to 122%, with a corresponding change in queue length from 40 PCU in the future baseline to 58 PCU.

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

- 17.3.132 Table 17-40 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-40: A58 Gerard Street/A58 Bolton Road/A5062 Wigan Road/Princess Road junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A58 Bolton Road (left, ahead and right)	796	100%	39	803	101%	42
Princess Road (ahead, left and right)	317	99%	19	317	99%	19
A58 Gerard Street (left, ahead and right)	429	60%	12	444	62%	12
Wigan Road (left, ahead and right)	283	96%	14	283	96%	14
17:00–18:00	2030 future baseline			With Proposed Scheme		
A58 Bolton Road (left, ahead and right)	673	121%	87	721	130%	115
Princess Road (ahead, left and right)	323	101%	21	323	101%	21
A58 Gerard Street (left, ahead and right)	615	94%	24	622	98%	28
Wigan Road (left, ahead and right)	359	103%	23	359	103%	23

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- 17.3.133 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.134 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as DoS and queue lengths in the AM peak hour. In PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the RFC on the A58 Bolton Road (left, ahead and right) approach from 121% in the future baseline to 130%, with a corresponding change in queue length from 87 PCU in the future baseline to 115 PCU.

A58 Bolton Road/B5207 Bryn Road

- 17.3.135 Table 17-41 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-41: A58 Bolton Road/B5207 Bryn Road 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A58 Bolton Road (north) (ahead and right)	1,166	70%	17	1,179	71%	18
A58 Bolton Road (south) (ahead and left)	514	66%	15	541	69%	16
B5207 Bryn Road (nearside) (left)	657	68%	16	662	68%	16
B5207 Bryn Road (offside) (right)	109	68%	5	109	68%	5
17:00–18:00	2030 future baseline			With Proposed Scheme		
A58 Bolton Road (north) (ahead and right)	1,081	68%	16	1,136	71%	18
A58 Bolton Road (south) (ahead and left)	681	74%	19	694	76%	20
B5207 Bryn Road (nearside) (left)	630	74%	17	630	73%	17
B5207 Bryn Road (offside) (right)	144	68%	6	144	68%	6

- 17.3.136 The assessment shows that in the AM peak hour the junction operates well within capacity in both the future baseline with the Proposed Scheme. In the PM peak hour, the junction operates well within capacity in the future baseline and within capacity with the Proposed Scheme.
- 17.3.137 The change in traffic due to construction of the Proposed Scheme will not result in substantial changes in capacity indicators such as DoS and queue lengths at this junction.

A58 Bolton Road/B5207 Golborne Road

- 17.3.138 Table 17-42 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-42: A58 Bolton Rd/B5207 Golborne Road 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A58 Bolton Road (north) (ahead and left)	696	0.00	0	709	0.00	0
B5207 Golborne Road (left)	467	1.33	53	487	1.40	76
B5207 Golborne Road (right)	9	N/A*	4	9	N/A*	5
A58 Bolton Road (south) (ahead and right)	1,187	1.21	128	1,219	1.23	140
17:00–18:00	2030 future baseline			With Proposed Scheme		
A58 Bolton Road (north) (ahead and left)	629	0.00	0	680	0.00	0
B5207 Golborne Road (left)	475	1.29	47	479	1.34	61
B5207 Golborne Road (right)	16	2.03	3	16	N/A*	6
A58 Bolton Road (south) (ahead and right)	1,280	1.10	80	1,293	1.13	98

**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.*

- 17.3.139 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates over capacity in both the future baseline and with the Proposed Scheme.
- 17.3.140 The change in traffic due to construction of the Proposed Scheme will increase the RFC on the B5207 Golborne Road (left) approach from 1.33 in the future baseline to 1.40 in the AM peak hour, with a corresponding change in queue length from 53 PCU in the future baseline to 76 PCU. In both the future baseline and with the Proposed Scheme, the high opposing traffic flows on the A58 Bolton Road mean 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. As a result, the RFC exceeds the upper limit of the software and is not reported.
- 17.3.141 In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the RFC on the B5207 Golborne Road (right) approach from 2.03 in the future baseline to in excess of the upper limit of the software with the Proposed Scheme in 2038 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. The change in traffic due to construction of the Proposed Scheme will also increase the RFC on the B5207 Golborne Road (left) approach from 1.29 in the future baseline to 1.34, with a corresponding change in queue length from 47 PCU in the future baseline to 61 PCU.

A580 East Lancashire Road/Higher Green Lane

- 17.3.142 Table 17-43 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-43: A580 East Lancashire Road/Higher Green Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
Higher Green Lane (north) (left, ahead and right)	656	109%	51	665	110%	56
A580 East Lancashire Road (east) (nearside) (left and ahead)	575	68%	14	656	77%	18
A580 East Lancashire Road (east) (centre and offside) (ahead and right)	652	70%	16	747	81%	20
Higher Green Lane (south) (left, ahead and right)	131	24%	3	144	26%	3
A580 East Lancashire Road (west) (nearside) (left and ahead)	885	109%	70	911	112%	83
A580 East Lancashire Road (west) (centre and offside) (ahead and right)	966	110%	79	999	113%	96
17:00–18:00	2030 future baseline			With Proposed Scheme		
Higher Green Lane (north) (left, ahead and right)	329	91%	13	329	96%	16
A580 East Lancashire Road (east) (nearside) (left and ahead)	867	80%	21	893	80%	22
A580 East Lancashire Road (east) (centre and offside) (ahead and right)	996	91%	23	1,032	91%	25
Higher Green Lane (south) (left, ahead and right)	181	56%	5	181	59%	5
A580 East Lancashire Road (west) (nearside) (left and ahead)	884	91%	27	978	98%	39
A580 East Lancashire Road (west) (centre and offside) (ahead and right)	968	91%	29	1,072	99%	43

- 17.3.143 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates close to capacity in both the future baseline and with the Proposed Scheme.
- 17.3.144 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the centre and offside lanes of the A580 East Lancashire Road (west) approach from 110% in the future baseline to 113% in the AM peak hour, with a corresponding change in queue length from 79 PCU in the future baseline to 96 PCU. In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the centre and offside lanes of the A580 East Lancashire Road (west) approach from 91% in the future baseline to 99%, with a corresponding change in queue length from 29 PCU in the future baseline to 43 PCU.

A573 Aye Bridge Road/A573 Wigan Road realignment

17.3.145 The A573 Aye Bridge Road/A573 Wigan Road realignment junction will be a new junction as part of the Proposed Scheme. It will be a three-arm priority controlled (give way) T-junction. Details of the permanent changes are presented in the operational assessment at Section 17.5. The junction will be implemented during construction of the Proposed Scheme and has therefore been assessed for AM and PM peak hours using Junctions 9 software. Table 17-44 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-44: A573 Aye Bridge Road/A573 Wigan Road realignment junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00			
With Proposed Scheme (proposed layout)			
A573 Wigan Road realignment (north) (ahead)	851	0.00	0
A573 Wigan Road realignment (north) (left)	6	0.00	0
A573 Aye Bridge Road (left)	6	0.01	0
A573 Aye Bridge Road (right)	6	0.02	0
A573 Wigan Road realignment (south) (ahead and right)	401	0.02	0
17:00–18:00			
With Proposed Scheme (proposed layout)			
A573 Wigan Road realignment (north) (ahead)	453	0.00	0
A573 Wigan Road realignment (north) (left)	6	0.00	0
A573 Aye Bridge Road (left)	6	0.01	0
A573 Aye Bridge Road (right)	6	0.02	0
A573 Wigan Road realignment (south) (ahead and right)	755	0.02	0

17.3.146 The assessment shows that the junction operates well within capacity with the Proposed Scheme.

A580 East Lancashire Road/A572 Chaddock Lane

17.3.147 Table 17-45 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-45: A580 East Lancashire Road/A572 Chaddock Lane junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00				With Proposed Scheme		
2030 future baseline						
A572 Chaddock Lane (north) (give-way) (left)	705	57%	1	705	60%	1
A580 East Lancashire Road (east) (nearside) (left and ahead)	1,284	87%	16	1,292	87%	16

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
A580 East Lancashire Road (east) (offside) (ahead)	454	41%	8	593	52%	11
A572 Chaddock Lane (south) (left)	691	53%	1	691	53%	1
A580 East Lancashire Road (west) (nearside) (left and ahead)	1,098	93%	29	1,033	85%	21
A580 East Lancashire Road (west) (offside) (ahead)	572	51%	11	697	61%	14
A572 Chaddock Lane (internal past A580 East Lancashire Road (east) entry) (nearside) (left)	31	5%	1	31	5%	1
A572 Chaddock Lane (internal past A580 East Lancashire Road (east) entry) (centre) (ahead)	333	57%	8	333	59%	9
A572 Chaddock Lane (internal past A580 East Lancashire Road (east) entry) (offside) (right)	341	62%	8	341	70%	10
A572 Chaddock Lane (internal past A580 East Lancashire Road (west) entry) (nearside) (left)	7	1%	0	7	1%	0
A572 Chaddock Lane (internal past A580 East Lancashire Road (west) entry) (centre) (ahead)	217	36%	5	217	37%	5
A572 Chaddock Lane (internal past A580 East Lancashire Road (west) entry) (offside) (right)	497	92%	18	497	95%	20
A580 East Lancashire Road (internal eastbound) (nearside) (ahead)	855	74%	1	790	67%	1
A580 East Lancashire Road (internal eastbound link) (offside) (ahead)	1,069	88%	32	1,194	97%	43
A580 East Lancashire Road (internal westbound) (nearside) (ahead)	658	57%	1	666	56%	1
A580 East Lancashire Road (internal westbound) (offside) (ahead)	766	63%	19	934	75%	25
17:00-18:00	2030 future baseline			With Proposed Scheme		
A572 Chaddock Lane (north) (give-way) (left)	596	52%	1	596	52%	1
A580 East Lancashire Road (east) (nearside) (left and ahead)	1,351	93%	27	1,353	92%	25
A580 East Lancashire Road (east) (offside) (ahead)	700	59%	14	757	62%	15
A572 Chaddock Lane (south) (left)	742	59%	13	742	60%	13
A580 East Lancashire Road (west) (nearside) (left and ahead)	1,301	95%	33	1,329	95%	32
A580 East Lancashire Road (west) (offside) (ahead)	696	58%	13	853	70%	18
A572 Chaddock Lane (internal past A580 East Lancashire Road (east) entry) (nearside) (left)	21	4%	1	21	4%	1
A572 Chaddock Lane (internal past A580 East Lancashire Road (east) entry) (centre) (ahead)	249	48%	6	249	50%	7
A572 Chaddock Lane (internal past A580 East Lancashire Road (east) entry) (offside) (right)	326	72%	10	326	76%	10

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
A572 Chaddock Lane (internal past A580 East Lancashire Road (west) entry) (nearside) (left)	21	4%	0	21	4%	0
A572 Chaddock Lane (internal past A580 East Lancashire Road (west) entry) (centre) (ahead)	342	65%	10	342	67%	10
A572 Chaddock Lane (internal past A580 East Lancashire Road (west) entry) (offside) (right)	450	95%	18	450	98%	21
A580 East Lancashire Road (internal eastbound) (nearside) (ahead)	864	70%	1	862	69%	1
A580 East Lancashire Road (internal eastbound link) (offside) (ahead)	1,146	89%	35	1,303	99%	52
A580 East Lancashire Road (internal westbound) (nearside) (ahead)	771	62%	1	773	62%	1
A580 East Lancashire Road (internal westbound) (offside) (ahead)	1,023	79%	27	1,083	82%	30

17.3.148 The assessment shows that in the AM and PM peak hours the junction operates close to capacity in both the future baseline and with the Proposed Scheme.

17.3.149 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the offside lane of the A580 East Lancashire Road (internal eastbound) approach from 88% in the future baseline to 97% in the AM peak hour, with a corresponding change in queue length from 32 PCU in the future baseline to 43 PCU. In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the offside lane of the A580 East Lancashire Road (internal eastbound) approach from 89% in the future baseline to 99%, with a corresponding change in queue length from 35 PCU in the future baseline to 52 PCU.

A580 East Lancashire Road/A577 Mosley Common Road

17.3.150 Table 17-46 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-46: A580 East Lancashire Road/A577 Mosley Common Road junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A577 Mosley Common Road (north) (left, ahead and right)	406	113%	43	414	116%	49
A580 East Lancashire Road (east) (nearside) (left and ahead)	434	42%	9	501	49%	11
A580 East Lancashire Road (east) (centre and offside) (ahead and right)	558	53%	10	632	53%	12
A577 Mosley Common Road (south) (left, ahead and right)	368	62%	11	368	62%	11

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
A580 East Lancashire Road (west) (nearside) (left and ahead)	992	117%	113	1,021	120%	128
A580 East Lancashire Road (west) (offside) (ahead)	1,079	117%	122	1,110	120%	139
17:00–18:00	2030 future baseline			With Proposed Scheme		
A577 Mosley Common Road (north) (left, ahead and right)	513	113%	53	513	113%	54
A580 East Lancashire Road (east) (nearside) (left and ahead)	861	92%	31	891	95%	35
A580 East Lancashire Road (east) (centre and offside) (ahead and right)	1,115	109%	42	1,144	118%	57
A577 Mosley Common Road (south) (left, ahead and right)	363	53%	10	365	53%	10
A580 East Lancashire Road (west) (nearside) (left and ahead)	742	112%	71	816	120%	102
A580 East Lancashire Road (west) (offside) (ahead)	822	112%	78	903	120%	113

17.3.151 The assessment shows that in the AM and PM peak hours the junction operates over capacity in both the future baseline and with the Proposed Scheme.

17.3.152 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the nearside and offside lanes of the A580 East Lancashire Road (west) approach from 117% in the future baseline to 120% in the AM peak hour, with a corresponding change in queue length from 122 PCU in the future baseline to 139 PCU. In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the centre and offside lanes of the A580 East Lancashire Road (east) approach from 109% in the future baseline to 118%, with a corresponding change in queue length from 42 PCU in the future baseline to 57 PCU.

A580 East Lancashire Road/B5232 Newearth Road/Ellenbrook Road

17.3.153 Table 17-47 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-47: A580 East Lancashire Road/B5232 Newearth Road/Ellenbrook Road junction 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
B5232 Newearth Road (nearside) (left)	544	71%	15	544	72%	16
B5232 Newearth Road (centre and offside) (ahead and right)	479	63%	8	208	65%	9

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Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
A580 East Lancashire Road (east) (nearside and centre 1) (left and ahead)	371	43%	9	442	50%	11
A580 East Lancashire Road (east) (centre 2 and offside) (ahead and right)	419	45%	9	481	51%	11
Ellenbrook Road (left, ahead and right)	237	101%	16	237	112%	25
A580 East Lancashire Road (west) (nearside and centre 1) (left and ahead)	1,020	108%	80	1,019	106%	71
A580 East Lancashire Road (west) (centre 2 and offside) (ahead and right)	1,089	108%	83	1,150	113%	110
17:00-18:00	2030 future baseline			With Proposed Scheme		
B5232 Newearth Road (nearside) (left)	240	30%	5	490	30%	5
B5232 Newearth Road (centre and offside) (ahead and right)	421	59%	8	431	59%	8
A580 East Lancashire Road (east) (nearside and centre 1) (left and ahead)	1,000	107%	75	332	108%	82
A580 East Lancashire Road (east) (centre 2 and offside) (ahead and right)	1,061	107%	73	380	101%	95
Ellenbrook Road (left, ahead and right)	345	107%	29	212	107%	29
A580 East Lancashire Road (west) (nearside and centre 1) (left and ahead)	765	78%	20	904	87%	25
A580 East Lancashire Road (west) (centre 2 and offside) (ahead and right)	711	76%	20	995	84%	24

17.3.154 The assessment shows that in the AM and PM peak hours the junction operates over capacity in both the future baseline and with the Proposed Scheme.

17.3.155 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the Ellenbrook Road (left, ahead and right) approach from 101% to 112%, with a corresponding change in queue length from 16 PCU in the future baseline to 25 PCU. In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the nearside and centre 1 lanes of the A580 East Lancashire Road (west) approach from 78% in the future baseline to 87%, with a corresponding change in queue length from 20 PCU in the future baseline to 25 PCU.

A580 East Lancashire Road/A575 Walkden Road

17.3.156 Table 17-48 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

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Table 17-48: A580 East Lancashire Road/A575 Walkden Road 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00-09:00	2030 future baseline			With Proposed Scheme		
A575 Walkden Road (north) (nearside and centre) (left and ahead)	580	92%	30	1,148	129%	258
A575 Walkden Road (north) (offside) (right)	43	36%	2	55	21%	1
A580 East Lancashire Rd (east) (nearside and centre 1) (ahead and left)	265	43%	10	271	49%	11
A580 East Lancashire Rd (east) (centre 2) (ahead)	234	40%	9	251	46%	10
A580 East Lancashire Rd (east) (centre 3 and offside) (ahead and right)	471	90%	13	560	123%	40
A575 Walkden Rd (south) (nearside) (left and ahead)	508	78%	23	660	58%	20
A575 Walkden Rd (south) (offside) (right)	134	22%	5	96	9%	2
A580 East Lancashire Rd (west) (nearside and centre 1) (left and ahead)	905	92%	43	618	126%	101
A580 East Lancashire Rd (west) (centre 2) (ahead)	896	91%	42	608	125%	96
A580 East Lancashire Rd (west) (centre 3 and offside) (ahead and right)	460	75%	20	717	126%	114
17:00-18:00	2030 future baseline			With Proposed Scheme		
A575 Walkden Road (north) (nearside and centre) (left and ahead)	661	86%	28	1,163	103%	76
A575 Walkden Road (north) (offside) (right)	68	48%	2	91	34%	2
A580 East Lancashire Rd (east) (nearside and centre 1) (ahead and left)	575	73%	22	533	98%	32
A580 East Lancashire Rd (east) (centre 2) (ahead)	546	70%	20	504	95%	27
A580 East Lancashire Rd (east) (centre 3 and offside) (ahead and right)	916	86%	25	781	103%	45
A575 Walkden Rd (south) (nearside) (left and ahead)	616	78%	24	668	58%	19
A575 Walkden Rd (south) (offside) (right)	89	12%	3	98	9%	2
A580 East Lancashire Rd (west) (nearside and centre 1) (left and ahead)	412	66%	15	412	100%	27
A580 East Lancashire Rd (west) (centre 2) (ahead)	385	62%	15	396	97%	24
A580 East Lancashire Rd (west) (centre 3 and offside) (ahead and right)	615	84%	16	478	103%	32

- 17.3.157 The assessment shows that in the AM peak hour the junction operates close to capacity in the future baseline and over capacity with the Proposed Scheme. In the PM peak hour, the junction operates close to capacity in the future baseline and over capacity with the Proposed Scheme.
- 17.3.158 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the centre 3 and offside lanes of the A580 East Lancashire Road (west) approach from 75% in the future baseline to 126% in the AM peak hour, with a corresponding change in queue length from 20 PCU in the future baseline to 114 PCU.

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17.3.159 The change in traffic due to construction of the Proposed Scheme in the PM peak hour will increase the DoS on the nearside and centre lanes of the A580 East Lancashire Road (east) approach from 73% in the future baseline to 98%, with a corresponding change in queue length from 22 PCU in the future baseline to 32 PCU.

A58 Warrington Road/A573 Warrington Road/A58 Lily Lane

17.3.160 Table 17-49 summarises the results of the changes to the performance of the junction as a result of the Proposed Scheme.

Table 17-49: A58 Warrington Road/A573 Warrington Road/A58 Lily Lane 2030 future baseline and with the Proposed Scheme junction capacity assessment results

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2030 future baseline			With Proposed Scheme		
A58 Warrington Road (north) (ahead and right)	1,109	101%	27	1,154	101%	28
A573 Warrington Road (south) (ahead and left)	1,004	102%	47	1,059	105%	62
A58 Lily Lane (left)	547	99%	24	547	102%	29
A58 Lily Lane (right)	252	97%	12	254	105%	18
17:00–18:00	2030 future baseline			With Proposed Scheme		
A58 Warrington Road (north) (ahead and right)	1,118	95%	16	1,136	100%	26
A573 Warrington Road (south) (ahead and left)	951	99%	37	997	102%	46
A58 Lily Lane (left)	508	89%	16	508	92%	17
A58 Lily Lane (right)	233	96%	11	235	97%	12

17.3.161 The assessment shows that in the AM peak hour the junction operates over capacity in both the future baseline and with the Proposed Scheme. In the PM peak hour, the junction operates close to capacity in the future baseline and over capacity with the Proposed Scheme.

17.3.162 The change in traffic due to construction of the Proposed Scheme will increase the DoS on the A58 Lily Lane (right) approach from 97% in the future baseline to 105% in the AM peak hour, with a corresponding change in queue length from 12 PCU in the future baseline to 18 PCU. In the PM peak hour, the change in traffic due to construction of the Proposed Scheme will increase the DoS on the A573 Warrington Road (ahead and right) approach from 95% in the future baseline to 100%, with a corresponding change in queue length from 16 PCU in the future baseline to 26 PCU.

Accidents and safety

- 17.3.163 There are no locations with existing safety concerns are likely to experience substantial increases in traffic during construction and, consequently, no unacceptable impacts on accident and safety risks are expected. Although there will be increases in construction traffic on other links and junctions, none have been identified in the baseline assessment as the location of a known or likely safety concern.

Parking and loading

- 17.3.164 There will be a temporary loss of off-street parking at three locations in the MA05 area. These are:
- the temporary loss of 84 out of 174 off-street parking spaces at Taylor Business Park, located off the A574 Warrington Road south of Culcheth, for a period of one year and six months;
 - the temporary loss of four out of 41 off-street parking spaces at Gymetc, located off the A572 Newton Road in Lowton, for a period of four years and six months; and
 - the temporary loss of two out of 30 off-street parking spaces at Lowton Riding Centre, located off Slag Lane in Lowton, for a period of three years and zero months.

Public transport

Local bus network

- 17.3.165 Local bus services will be affected where they cross the route of the Proposed Scheme and where the Proposed Scheme results in changes to the route taken or where construction traffic or general traffic diversions affect bus services.
- 17.3.166 The temporary realignment of the A580 East Lancashire Road will affect four bus services for a period of two years and nine months: 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); and route 664 (Atherton - Winstanley College). This will result in an increase in journey length of less than 100m.
- 17.3.167 The temporary realignment of the A572 Newton Road will affect ten bus services for a period of four years: 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); 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); and route 281 (Newton-le-Willows - Culcheth High School). This will result in an increase in journey length of less than 100m.

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- 17.3.168 The temporary traffic management implemented along Slag Lane will affect four bus services for a period of three years: route 588 (Leigh - Lowton); route 590 (Leigh - Pennington - Lowton); route 988 (Hope Academy - Lowton Church) and route 591 (Leigh - Lowton High School). On completion of construction, temporary road restrictions and traffic management measures will be implemented for two months. This will not cause a change in journey length.
- 17.3.169 The temporary traffic measures implemented during construction of the A573 Wigan Road realignment will affect three bus services for a period of three years and three months: route 22a (Warrington - Earlestown - Newton-le-Willows - Wigan); route 360 (Warrington - Newton-le-Willows - Golborne - Abram - Wigan) and route 742 (Platt Bridge - Haydock - Carmel College). On completion of construction, traffic management measures will be implemented for three months to enable connection between the realigned section of road and the existing road. This will not cause a change in journey length.
- 17.3.170 The construction of the Proposed Scheme will not result in disruption to coach services due to temporary closure or diversions. However, increases in traffic on the highway network may result in increases in delay for coach services.

Rail network

- 17.3.171 There are interfaces with the existing rail network in this area, in particular on the operation of the WCML and the Liverpool to Manchester Line (Chat Moss) and their passengers and rail freight services. However, the majority of the rail possessions will have little or no impact on the operation of rail services as they will be relatively minor localised works, such as work on and adjacent to track when not in use. In addition, where rail possessions do have the potential to disrupt services, interventions will be combined where practicable to reduce the frequency of potential disruption. Since the WCML will be affected by possessions in this and other CAs the impacts and effects of these are reported in Transport Assessment Part 4 (see Volume 5: Appendix TR-005-00000), Section 20.
- 17.3.172 HS2 Ltd will work with Network Rail and the train operating companies and freight operating companies to ensure that disruption to passengers and freight is minimised as far as reasonably practicable and that any need for additional possessions can be reduced with good planning and communication (including appropriate advance notice). This includes measures such as:
- careful programming of works to coincide with possessions that are planned for the general maintenance of the existing railway;
 - planning works so that they will be undertaken in short, overnight stages when passenger services will not be disrupted; and
 - programming longer closures at weekends or bank holidays to reduce the number of passengers affected.

Public transport interchanges

17.3.173 There are no major public transport interchanges in MA05 and therefore no consequential construction activity impacts on public transport interchange facilities in MA05.

Pedestrians, cyclists and equestrians

17.3.174 The works required to construct the Proposed Scheme will affect routes used by pedestrians, cyclists and equestrians, primarily where construction results in changes to the affected routes. In most cases this will enable the construction of temporary diversions or permanent diversions and over and under-bridges, which will carry the permanent diversions of these PRoW and roadside footways. In some circumstances access to PRoW will need to be managed by way of banksmen and very local realignments. Pedestrians and other non-motorised users may also be affected by changes in traffic levels due, particularly, to construction traffic associated with the Proposed Scheme. Roads with substantial changes in traffic levels are listed above.

17.3.175 Locations where routes used by pedestrians, cyclists and equestrians will be temporarily diverted, realigned or closed are shown below. Table 17-50 summarises the temporary diversions, realignments and extensions to PRoW and roadside footways required to accommodate the construction of the Proposed Scheme.

Table 17-50: MA05 construction changes on public rights of way and roadside footways for non-motorised users

PRoW name	Surveyed daily usage	Temporary diversion	Change in distance	Duration
Footpath Croft 13	13 users	Managed use of the existing alignment until the completion of the Footpath Croft 13 accommodation underbridge.	No change	One year and six months
Footpath Croft 17	57 users	Temporary diversion up to 50m north of its existing alignment around the northern side of the A574 Warrington Road satellite compound to the A574 Warrington Road.	Increase of 77m	Four years
Footpath Croft 15 (also known as New Hall Lane Path)	57 users	Temporary closure of Footpath Croft 15. Users will be diverted via the existing New Hall Lane to the realigned A574 Warrington Road to its junction with the existing A574 Warrington Road alignment.	Increase of 467m	Three years
New Hall Lane (southern section)	57 users	Closure of a section of New Hall Lane. During construction, users will be diverted via the existing northern section of New Hall Lane, the A574 Warrington Road realignment and the existing A574 Warrington Road.	Increase of 429m	Five years

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PRoW name	Surveyed daily usage	Temporary diversion	Change in distance	Duration
Footpath Croft 19	Not available	Managed use of the existing alignment until the completion of the A574 Warrington Road realignment.	No change	Six months
Footpath Croft 8	Not available	Temporary diversion via the existing Wigshaw Lane until the permanent road realignment is complete.	Increase of 107m	One year and nine months
Footpath Croft 8a	67 users	Managed use of the existing alignment until the completion of the Footpath Croft 8a and Footpath Croft 108 accommodation overbridge.	No change	Two years
Footpath Croft 108	154 users	Managed use of the existing alignment until the completion of the Footpath Croft 8a and Footpath Croft 108 accommodation overbridge.	No change	Two years
Footpath Golborne 77/10	Not available	Temporary diversion of Footpath Golborne 77/10. Users will be diverted for 185m around the perimeter of the land required for construction of the Proposed Scheme, 140m to the west to link with the realigned Footpath Golborne 79/10 and Footpath Golborne 80/10.		Four years and nine months
Footpath Golborne 79/10	Not available	Temporary diversion during construction of the Proposed Scheme. Users will be diverted to the western extent of the A580 East Lancashire Road works and across the A580 East Lancashire Road to connect with Footpath Golborne 77/10.	Increase of 225m	Three years and nine months
Footpath Golborne 78/10	Not available	Temporary closure of Footpath Golborne 78/10. Users will be diverted along Footpath Golborne 77/10, 230m to the west, increasing journey length by 507m.	Increase of 507m	Four years and nine months
Footpath Golborne 78/10 and Footpath Golborne 80/10	Not available	Temporary diversion during construction of the Proposed Scheme. From Footpath Golborne 80/10 users will be diverted west to connect with the Footpath Golborne 79/10 diversion.	Increase of 507m	Three years and nine months
Footpath Golborne 70/10 and Footpath Golborne 72	Not available	Temporary diversion during construction of the Proposed Scheme. Users will be diverted around the perimeter of the A580 East Lancashire Road realignment	Increase of 583m	Three years and nine months

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PRoW name	Surveyed daily usage	Temporary diversion	Change in distance	Duration
		300m east to link with the realigned Footpath Golborne 72/10.		
Footpath Golborne 63/10	0 users	Managed use of the existing alignment until completion of the Footpath Golborne 63/10 underbridge and Small Brook culvert.	No change	Two years and three months
Footpath Golborne 39/10	Not available	Temporary diversion during construction of the Slag Lane realignment. Users will be diverted via Sandy Lane, Byrom Lane and the existing Slag Lane.	Increase of 605m	Two years and six months
Footpath Golborne 37/10	Not available	Temporary diversion during construction of the Slag Lane realignment. Users will be diverted south along a temporary section of PRoW to connect with Footpath Golborne 63/10.	Increase of 534m	Two years and six months
Footpath Golborne 33/10	252 users	Temporary diversion of Footpath Golborne 33/10 to the south of its existing alignment during construction.	Increase of 56m	Two years
Footpath Golborne 31/10	38 users	Temporary realignment of Footpath Golborne 31/10 to the south of its existing alignment during construction.	Increase of 151m	Two years and three months
Footpath Golborne 30/10	38 users	Temporary diversion of Footpath Golborne 30/10 via Footpath Golborne 27/10 on Lightshaw Lane and a temporary footpath to the south-west of the Proposed Scheme.	Increase of 671m	Three years and nine months
Footpath Golborne 27/10	38 users	Managed use of existing alignment until completion of Windy Bank South Culvert and Lightshaw Lane realignment.	No change	Three years and nine months
Footpath Ashton-in-Makerfield 24/10	Not available	Temporary diversion during construction of the A573 Wigan Road realignment. Users will be diverted along Footpath Ashton-in-Makerfield 25/20 to the existing A573 Wigan Road.	Increase of 409m	Two years and three months
Footpath Ashton-in-Makerfield 22/30	Not available	Temporary closure during construction of the Footpath Ashton-in-Makerfield 22/30 accommodation underbridge. Users will be diverted along Footpath Ashton-in-Makerfield 22/10, Footpath Abram 01/10, the A58 Lily	Increase of 2.3km	One year

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PRoW name	Surveyed daily usage	Temporary diversion	Change in distance	Duration
		Lane and the Leeds and Liverpool Canal tow path.		
Footpath Abram 02/10	Not available	Temporary closure closed during construction of WCML tie-in works. Users will be diverted along the A58 Lily Lane and the Leeds and Liverpool Canal tow path.	Increase of 262m	Three years and nine months

- 17.3.176 The busiest routes affected will be the Footpath Golborne 33/10 (252 users), the Footpath Croft 108 (154 users) and the Footpath Croft 8a (67 users).
- 17.3.177 Eight of the PRoW routes affected experience little, or no change in length. A further three changes result in diversions which increase PRoW route length up to 250m. Eleven other routes experience larger changes in length of diversion of between 262m and 2.3km, with the largest increase associated with the Footpath Ashton-in-Makerfield 22/30.
- 17.3.178 Other longer diversions include Footpath Golborne 30/10 and Footpath Golborne 39/10 with increases in route length of up to 671m and 605m respectively. Of these longer diversions, Footpath Golborne 30/10 had the most users (38 users) when surveyed. Most of the others had no users per day when surveyed, or no survey was undertaken.
- 17.3.179 Permanently diverted PRoW and roadside footways are reported under the operational assessment, although these could also be subject to temporary closure, diversion or realignment during construction.

Waterways and canals

- 17.3.180 The construction of the Proposed Scheme will not impact upon navigable waterways or canals in the MA05 area.

17.4 Proposed Scheme operation description

- 17.4.1 The route of the Proposed Scheme through the MA05 area comprises a 12.7km section of the HS2 WCML connection. The route of the Proposed Scheme will extend north-west from the boundary with the Broomedge to Glazebrook area (MA04), crossing the M62 and passing to the west of Culcheth. The route will continue through Lowton and before passing to the north of the town of Golborne. The route will connect with the WCML to the south of Bamfurlong.

17.5 Proposed Scheme assessment of operation assessments

- 17.5.1 This section provides an overview of the impacts resulting from the operation of the Proposed Scheme. HS2 Phase Two services are expected to commence in 2038. Operation of

the Proposed Scheme will not have any cumulative impacts resulting from the operation of the Proposed Scheme with HS2 Phase 2a.

Key operation transport issues

- 17.5.2 The operational assessment takes account of all of the impacts of the Proposed Scheme in the MA05 area. The main potential operational impacts relate to the diversion, realignment of roads and implementation of new junctions in order to accommodate the route of the Proposed Scheme, together with changes to PRoW and roadside footways.
- 17.5.3 The maintenance of the Proposed Scheme will generate a limited number of vehicular trips associated with servicing and maintenance, and there will be some minor local reassignment of traffic due to road diversions, but these impacts will not be substantial.

Highway network

Highway diversions, realignments and closures

- 17.5.4 Table 17-51 summarises the permanent road diversions, realignments and extensions and any new or altered junctions required to accommodate the Proposed Scheme. New or altered junctions are assessed under junction performance.

Table 17-51: MA05 permanent highway diversion/closure/amendment

Highway name/junction	Description	Change/alteration
M62	Realignment of a section of the M62 to the east of junction 11 for 623m. The works will comprise the widening of the central reservation by 5m to accommodate a pier for the M62 West viaduct.	The realignment of the M62 will result in no change in journey length.
A574 Warrington Road	Realignment of a section of the A574 Warrington Road, up to 160m east of its existing alignment on an embankment 1km long and up to 6m in height. The A574 Warrington Road realignment will be crossed by the route of the Proposed Scheme on A574 Warrington Road overbridge. The existing A574 Warrington Road will be closed where it crosses the route of the Proposed Scheme. Access will be retained to private properties and Glaziers Lane from the south of the Proposed Scheme via a new three-arm priority-controlled (give-way) T-junction. Access to Newchurch Old Refectory will also be retained to the north of the proposed scheme via a new three-arm priority-controlled (give-way) T-junction.	For users travelling on the A574 Warrington Road realignment between Risley to Culcheth will result in a change in journey length of less than 100m.
New Hall Lane	Closure of two sections of New Hall Lane where they are crossed by the route of the Proposed	The closure of the southern section of New Hall Lane and reconfiguration of the access

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Highway name/junction	Description	Change/alteration
	<p>Scheme. The southern section of New Hall Lane, which currently serves as the access to Taylor Business Park will be stopped-up, with access retained to properties on the southern side of the route of the Proposed Scheme.</p> <p>A section of New Hall Lane within Taylor Business Park will be diverted to maintain internal circulation. Access to and egress from Taylor Business Park will be retained by provision of a new priority-controlled (give-way) T-junction on the realigned A574 Warrington Road.</p>	<p>arrangements will result in an increase in journey length for some users of up to 218m.</p>
Glaziers Lane	<p>Closure of Glaziers Lane, where it will be crossed by the route of the Proposed Scheme with access retained to the Partridge Lakes Fishery along a realigned section.</p>	<p>The longest diversion will be for users of Partridge Lakes Fishery and south along Wigshaw Lane via the Glaziers Lane realignment, the A574 Warrington Road realignment, Culcheth Link Road, and the Wigshaw Lane realignment, increasing journey length by 2.6km.</p>
Culcheth Link Road	<p>A new highway, up to 600m in length will run parallel to the south of Culcheth Linear Park to connect the A574 Warrington Road at a three-arm priority-controlled (give-way) T-junction at the southern extent of link road to Wigshaw Lane at a four-arm priority-controlled roundabout at the northern extent.</p>	<p>N/A</p>
Wigshaw Lane	<p>Realignment of a section of Wigshaw Lane, up to 180m north-west of its existing alignment on an embankment 670m in length and up to 6m in height, crossed by the route of the Proposed Scheme on Wigshaw Lane overbridge. The Wigshaw Lane realignment will reconnect with the existing Wigshaw Lane at a four-arm priority-controlled roundabout with Culcheth Link Road. Access to private properties on Wigshaw Lane and Robins Lane will be retained via the southern arm of the junction.</p>	<p>The realignment of Wigshaw Lane will result in a change in journey length of less than 100m for the majority of users.</p>
B5207 Wilton Lane	<p>Realignment of a section of B5207 Wilton Lane, up to 70m north of its existing alignment for 713m. The realigned B5207 Wilton Lane crosses the route of the Proposed Scheme on B5207 Wilton Lane overbridge. The existing B5207 Wilton Lane will be closed where it crosses the route of the Proposed Scheme.</p>	<p>The realignment of B5207 Wilton Lane will result in a change in journey length of less than 100m for users travelling between Lane Head and Culcheth.</p>
Slag Lane	<p>Realignment of a section of Slag Lane, up to 80m south-east of its existing alignment for 752m, crossing the route of the Proposed Scheme under the Slag Lane viaduct. Access to properties to the north of the Proposed Scheme will be retained via a three-arm priority-controlled (give-way) T-junction.</p>	<p>The realignment of Slag Lane will result in a change in journey length of less than 100m.</p>

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Highway name/junction	Description	Change/alteration
Lightshaw Lane	Diversion of a section of Lightshaw Lane up to 250m north-west of its existing alignment for 370m to provide access to Lightshaw Hall Farm from the existing A573 Wigan Road. The existing Lightshaw Lane will be closed where it crosses the route of the Proposed Scheme.	The diversion of Lightshaw Lane and the realignment of the A573 Wigan Road will result in an increase in journey length of 2km for users between Lightshaw Lane and Golbrone.
A573 Wigan Road	Realignment of a section of the A573 Wigan Road, up to 630m west of its existing alignment for 1.9km, crossing the route of the Proposed Scheme under A573 Wigan Road viaducts. The existing A573 Wigan Road will be closed where it will be crossed by the route of the Proposed Scheme with access retained for Aye Bridge Farm, Lightshaw Hall, Balmer's Farm, Windy Bank Farm and Wigan Road Farm via a new three-arm priority-controlled (give-way) T-junction. A new three-arm priority-controlled (give-way) T-junction will also be formed at the northern extent of the A573 Wigan Road realignment with the existing A573 Wigan Road.	The realignment of A573 Wigan Road will result in an increase in journey length of 186m for users between Abram and Golborne.

Network traffic flows

- 17.5.5 The highway changes set out above together with changes in traffic flows arising from the operation of the Proposed Scheme will result in changes to travel patterns in the area.

Strategic and local road network traffic flows

- 17.5.6 Traffic flows during operation of the Proposed Scheme have been derived by overlaying forecasts of operational traffic flows on the future baseline traffic flows in 2038 and 2046. Table 17-52 and Table 17-53 set out the traffic flows on highway links affected by operation of the Proposed Scheme for the weekday AM peak hour (08:00–09:00) for 2038 and 2046 respectively.
- 17.5.7 Table 17-54 and Table 17-55 cover the weekday PM peak hour (17:00–18:00) for 2038 and 2046 respectively. 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 forecast traffic flows during operation of the Proposed Scheme, however, this is not expected to change the conclusions of the assessment.
- 17.5.8 Traffic flows on all other links are either unaffected from the future baseline or result in only small changes.

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Table 17-52: MA05 impacted links, 2038 AM peak

Location	Direction	2038 baseline flows		2038 Proposed Scheme flows		Proposed Scheme - actual flow change from 2038 baseline		Proposed Scheme - % change from 2038 baseline	
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	338	9	0	0	-338	-9	-100%	-100%
	SB	1,323	19	0	0	-1,323	-19	-100%	-100%
A574 Warrington Road realignment (between Culcheth Link Road and A574 Warrington Road (south))	NB	353	10	353	10	0	0	0%	0%
	SB	1,112	13	1,112	13	0	0	0%	0%
Culcheth Link Road (between A574 Warrington Road and Wigshaw Lane)	EB	-	-	162	1	-	-	-	-
	WB	-	-	47	2	-	-	-	-
A573 Wigan Road/Aye Bridge Road (between B5207 Ashton Road and Leeds and Liverpool Canal bridge)	NB	415	16	415	16	0	0	0%	0%
	SB	1,149	32	1,149	32	0	0	0%	0%

Table 17-53: MA05 impacted links, 2046 AM peak

Location	Direction	2046 baseline flows		2046 Proposed Scheme flows		Proposed Scheme - actual flow change from 2046 baseline		Proposed Scheme - % change from 2046 baseline	
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	357	9	0	0	-357	-9	-100%	-100%
	SB	1,395	19	0	0	-1,395	-19	-100%	-100%
A574 Warrington Road realignment (between Culcheth Link Road and A574 Warrington Road (south))	NB	373	10	373	10	0	0	0%	0%
	SB	1,172	13	1,172	13	0	0	0%	0%
Culcheth Link Road (between A574 Warrington Road and Wigshaw Lane)	EB	-	-	171	1	-	-	-	-
	WB	-	-	50	2	-	-	-	-
	NB	442	16	442	16	0	0	0%	0%

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Location	Direction	2046 baseline flows		2046 Proposed Scheme flows		Proposed Scheme - actual flow change from 2046 baseline		Proposed Scheme - % change from 2046 baseline	
A573 Wigan Road/Aye Bridge Road (between B5207 Ashton Road and Leeds and Liverpool Canal bridge)	SB	1,226	33	1,226	33	0	0	0%	0%

Table 17-54: MA05 impacted links, 2038 PM peak

Location	Direction	2038 baseline flows		2038 Proposed Scheme flows		Proposed Scheme - actual flow change from 2038 baseline		Proposed Scheme - % change from 2038 baseline	
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	943	7	0	0	-943	-7	-100%	-100%
	SB	479	7	0	0	-479	-7	-100%	-100%
A574 Warrington Road realignment (between Culcheth Link Road and A574 Warrington Road (south))	NB	934	6	934	6	0	0	0%	0%
	SB	399	4	399	4	0	0	0%	0%
Culcheth Link Road (between A574 Warrington Road and Wigshaw Lane)	EB	-	-	50	1	-	-	-	-
	WB	-	-	156	2	-	-	-	-
A573 Wigan Road/Aye Bridge Road (between B5207 Ashton Road and Leeds and Liverpool Canal bridge)	NB	974	17	974	17	0	0	0%	0%
	SB	460	11	460	11	0	0	0%	0%

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Table 17-55: MA05 impacted links, 2046 PM peak

Location	Direction	2046 baseline flows		2046 Proposed Scheme flows		Proposed Scheme - actual flow change from 2046 baseline		Proposed Scheme - % change from 2046 baseline	
A574 Warrington Road (between Glaziers Lane and A574 Warrington Road realignment)	NB	991	7	0	0	-991	-7	-100%	-100%
	SB	503	7	0	0	-503	-7	-100%	-100%
A574 Warrington Road realignment (between Culcheth Link Road and A574 Warrington Road (south))	NB	982	6	982	6	0	0	0%	0%
	SB	420	4	420	4	0	0	0%	0%
Culcheth Link Road (between A574 Warrington Road and Wigshaw Lane)	EB	-	-	53	1	-	-	-	-
	WB	-	-	164	2	-	-	-	-
A573 Wigan Road/Aye Bridge Road (between B5207 Ashton Road and Leeds and Liverpool Canal bridge)	NB	1,043	17	1,043	17	0	0	0%	0%
	SB	489	11	489	11	0	0	0%	0%

Junction performance

- 17.5.9 Junction capacity analysis has been undertaken for the weekday AM and PM peak hours comparing junction operation in the 2038 and 2046 future baseline with 2038 and 2046 with HS2.
- 17.5.10 The following tables and commentary set out the performance at junctions where there is the potential for the Proposed Scheme to have substantial impacts, including new junctions and those where changes are proposed.
- 17.5.11 The results are presented from south to north through the MA05 area, firstly for junctions on the strategic road network, followed by junctions on other roads. The 2038 and 2046 future baseline results are included for comparison. The models developed to assess the existing and future baseline have been used, except where otherwise stated.
- 17.5.12 The junctions assessed in the following section are:
- M60 junction 13/A572 Worsley Brow/A572 Worsley Road/B5211 Barton Road/A572 Leigh Road/A575 Walkden Road;
 - A574 Warrington Road/A574 Warrington Road realignment;
 - A574 Warrington Road realignment/New Hall Lane diversion;
 - A574 Warrington Road/A574 Warrington Road realignment/Culcheth Link Road;
 - Wigshaw Lane/Wigshaw Lane realignment/Culcheth Link Road;
 - Slag Lane realignment/Byrom Lane; and
 - A573 Aye Bridge Road/A573 Wigan Road realignment.

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

- 17.5.13 Table 17-56 summarises the performance of the junction as a result of the Proposed Scheme in both 2038 and 2046.

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Table 17-56: M60 junction 13/A572 Worsley Brow/A572 Worsley Road/B5211 Barton Road/A572 Leigh Road/A575 Walkden Road junction 2038 and 2046 future baseline and Proposed Scheme junction capacity assessment

Approach	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU	Flow, PCU/hr	DoS	Q, PCU
08:00–09:00	2038 future baseline			2038 with the Proposed Scheme			2046 future baseline			2046 with the Proposed Scheme		
M60 southbound off-slip	103	20%	0	97	19%	0	101	19%	0	99	19%	0
A572 Worsley Road	531	103%	8	499	102%	7	493	103%	7	483	104%	7
B5211 Barton Road	318	106%	5	320	106%	5	326	107%	5	327	107%	5
M60 southbound on-slip	-	-	-	-	-	-	-	-	-	-	-	-
M60 northbound off-slip	1,170	58%	0	1,157	57%	0	1,204	58%	0	1,193	58%	0
A572 Leigh Road	1,290	100%	9	1,289	99%	7	1,317	102%	9	1,325	102%	9
A575 Walkden Road	922	104%	9	925	104%	9	933	107%	9	932	107%	9
A572 Worsley Brow (internal westbound)	330	18%	0	314	17%	0	302	16%	0	299	16%	0
A572 Worsley Brow (internal eastbound)	2,177	102%	2	2,175	101%	2	2,181	102%	2	2,181	102%	2
17:00–18:00	2038 future baseline			2038 with the Proposed Scheme			2046 future baseline			2046 with the Proposed Scheme		
M60 southbound off-slip	397	67%	1	405	67%	1	371	66%	1	374	66%	1
A572 Worsley Road	637	100%	8	642	100%	8	626	101%	8	629	101%	8
B5211 Barton Road	572	105%	8	576	105%	8	593	106%	8	595	106%	8
M60 southbound on-slip	-	-	-	-	-	-	-	-	-	-	-	-
M60 northbound off-slip	1,701	109%	9	1,688	109%	9	1,743	109%	9	1,738	109%	9
A572 Leigh Road	851	73%	1	849	73%	1	1,020	87%	2	1,003	86%	2
A575 Walkden Road	1,024	93%	4	1,010	92%	3	940	96%	5	945	95%	5
A572 Worsley Brow (internal westbound)	812	45%	0	824	45%	0	779	43%	0	785	44%	0
A572 Worsley Brow (internal eastbound)	1,984	94%	0	1,970	93%	0	2,033	96%	0	2,025	96%	0

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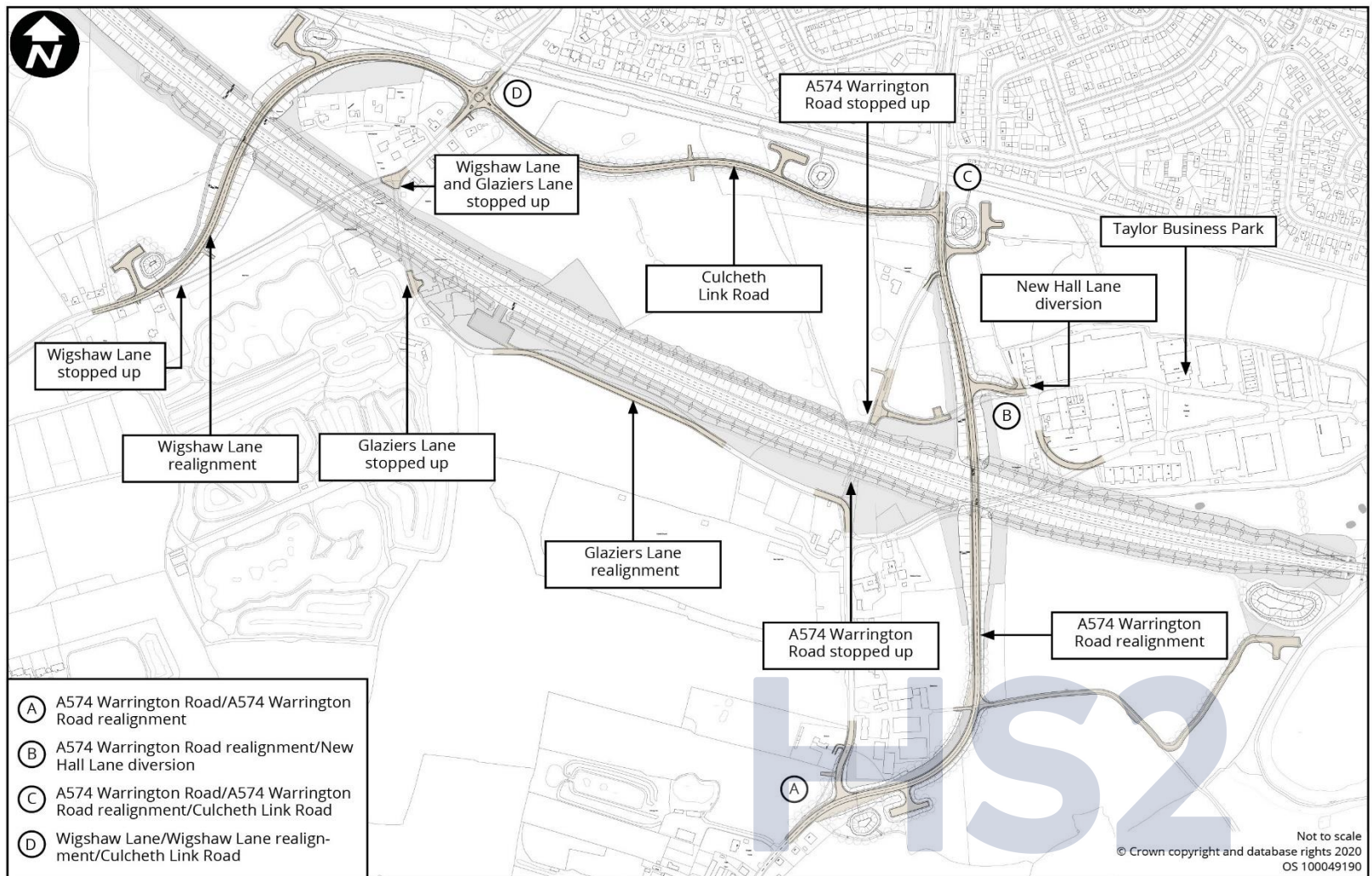
- 17.5.14 The model shows that for this junction, the change in traffic due to operation in 2038 and 2046 of the Proposed Scheme will not result in substantial changes in DoS and queue lengths in the AM or PM peak hours. The assessment shows that in the AM and PM peak hours the junction operates over capacity in both the future baseline and with the Proposed Scheme. The traffic flow will have a negligible impact on the operation of the junction.

Local network changes in the Culcheth area

- 17.5.15 There are a number of changes to the local road network as part of the Proposed Scheme. Figure 17-1 shows the local network changes introduced as part of the Proposed Scheme in the Culcheth area.

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Figure 17-1: Junction layout diagram (local network changes in the Culcheth area)



A574 Warrington Road/A574 Warrington Road realignment

17.5.16 The A574 Warrington Road/A574 Warrington Road realignment will be a new three-arm priority controlled (give way) T-junction as part of the Proposed Scheme. Figure 17-1 shows the junction layout introduced as part of the Proposed Scheme. Table 17-57 summarises the performance of the junction as a result of the Proposed Scheme in both 2038 and 2046.

Table 17-57: A574 Warrington Road/A574 Warrington Road realignment junction 2038 and 2046 with the Proposed Scheme junction capacity assessment

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2038 with the Proposed Scheme (proposed layout)			2046 with the Proposed Scheme (proposed layout)		
A574 Warrington Road (north) (left)	12	0.02	0	12	0.02	0
A574 Warrington Road (north) (right)	12	0.05	0	12	0.05	0
A574 Warrington Road realignment (east) (ahead and right)	12	0.11	0	12	0.15	0
A574 Warrington Road realignment (west) (south) (ahead and left)	400	-	-	422	-	-
17:00–18:00	2038 with the Proposed Scheme (proposed layout)			2046 with the Proposed Scheme (proposed layout)		
A574 Warrington Road (north) (left)	12	0.03	0	12	0.03	0
A574 Warrington Road (north) (right)	12	0.06	0	12	0.07	0
A574 Warrington Road realignment (east) (ahead and right)	12	0.05	0	12	0.06	0
A574 Warrington Road realignment (west) (south) (ahead and left)	1,090	-	-	1,153	-	-

17.5.17 The assessment shows that this junction operates well within capacity in 2038 and 2046 with the Proposed Scheme.

A574 Warrington Road realignment/New Hall Lane diversion

17.5.18 The A574 Warrington Road realignment/New Hall Lane Diversion will be a new three-arm priority controlled (give way) T-junction as part of the Proposed Scheme. Figure 17-1 shows the junction layout introduced as part of the Proposed Scheme. Table 17-58 summarises the performance of the junction as a result of the Proposed Scheme in both 2038 and 2046.

Table 17-58: A574 Warrington Road realignment/New Hall Lane diversion junction 2038 and 2046 with the Proposed Scheme junction capacity assessment

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00– 09:00	2038 with the Proposed Scheme			2046 with the Proposed Scheme		
A574 Warrington Lane realignment (north) (left)	100	0.00	0	106	0.00	0
A574 Warrington Lane realignment (north) (ahead)	1,233	0.00	0	1,305	0.00	0

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Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
New Hall Lane diversion (left)	41	0.11	0	43	0.13	0
New Hall Lane diversion (right)	7	0.05	0	7	0.06	0
A574 Warrington Lane realignment (south) (ahead and right)	67	0.29	1	70	0.34	1
A574 Warrington Lane realignment (south) (ahead)	321	0.00	0	340	0.00	0
17:00–18:00	2038 with the Proposed Scheme			2046 with the Proposed Scheme		
A574 Warrington Lane realignment (north) (left)	16	0.00	0	28	0.00	0
A574 Warrington Lane realignment (north) (ahead)	333	0.00	0	1,113	0.00	0
New Hall Lane diversion (left)	110	0.18	0	117	0.19	0
New Hall Lane diversion (right)	52	0.17	0	55	0.19	0
A574 Warrington Lane realignment (south) (ahead and right)	27	0.14	0	16	0.17	1
A574 Warrington Lane realignment (south) (ahead)	1,052	0.00	0	352	0.00	0

17.5.19 The assessment shows that this junction operates well within capacity in both 2038 and 2046 with the Proposed Scheme.

A574 Warrington Road/A574 Warrington Road realignment/Culcheth Link Road

17.5.20 The A574 Warrington Road/A574 Warrington Road realignment/Culcheth Link Road junction will be a new three-arm priority controlled (give way) T-junction as part of the Proposed Scheme. Figure 17-1 shows the junction layout introduced as part of the Proposed Scheme. Table 17-59 summarises the results of the changes to the junction as a result of the Proposed Scheme in both 2038 and 2046.

Table 17-59: A574 Warrington Road/A574 Warrington Road realignment/Culcheth Link Road junction 2038 and 2046 with the Proposed Scheme junction capacity assessment

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2038 with the Proposed Scheme (proposed layout)			2046 with the Proposed Scheme (proposed layout)		
Warrington Road (north) (ahead and right)	26	0.20	1	27	0.25	1
Warrington Road (north) (ahead)	1,204	0.00	0	1,275	0.00	0
Warrington Road (south) (left)	17	0.00	0	18	0.00	0
Warrington Road (south) (ahead)	311	0.00	0	329	0.00	0
Culcheth Link Road (left)	2	0.01	0	2	0.01	0
Culcheth Link Road (right)	129	0.55	1	136	0.62	2

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Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
17:00–18:00	2038 with the Proposed Scheme (proposed layout)			2046 with the Proposed Scheme (proposed layout)		
Warrington Road (north) (ahead and right)	71	0.27	1	75	0.31	1
Warrington Road (north) (ahead)	317	0.00	0	335	0.00	0
Warrington Road (south) (left)	123	0.00	0	130	0.00	0
Warrington Road (south) (ahead)	981	0.00	0	1,037	0.00	0
Culcheth Link Road (left)	5	0.01	0	5	0.10	0
Culcheth Link Road (right)	32	0.18	0	34	0.21	0

17.5.21 The assessment shows that this junction operates well within capacity in both 2038 and 2046 with the Proposed Scheme.

Wigshaw Lane/Wigshaw Lane realignment/Culcheth Link Road

17.5.22 The Wigshaw Lane/Wigshaw Lane realignment/Culcheth Link Road junction will be a new four-arm priority controlled (give way) roundabout as part of the Proposed Scheme. Figure 17-1 shows the junction layout introduced as part of the Proposed Scheme. Table 17-60 summarises the results of the changes to the junction as a result of the Proposed Scheme in both 2038 and 2046.

Table 17-60: Wigshaw Lane/Wigshaw Lane realignment/Culcheth Link Road junction 2038 and 2046 future baseline and Proposed Scheme junction capacity assessment

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2038 with the Proposed Scheme (proposed layout)			2046 with the Proposed Scheme (proposed layout)		
Wigshaw Lane (north)	371	0.34	1	392	0.36	1
Culcheth Link Road	42	0.04	0	47	0.05	0
Wigshaw Lane (south)	6	0.01	0	6	0.01	0
Wigshaw Lane realignment	273	0.27	0	289	0.28	0
17:00–18:00	2038 with the Proposed Scheme (proposed layout)			2046 with the Proposed Scheme (proposed layout)		
Wigshaw Lane (north)	282	0.25	0	298	0.27	0
Culcheth Link Road	194	0.20	0	204	0.21	0
Wigshaw Lane (south)	2	0.00	0	2	0.00	0
Wigshaw Lane realignment	276	0.28	0	292	0.30	0

17.5.23 The assessment shows that this junction operates well within capacity in both 2038 and 2046 with the Proposed Scheme.

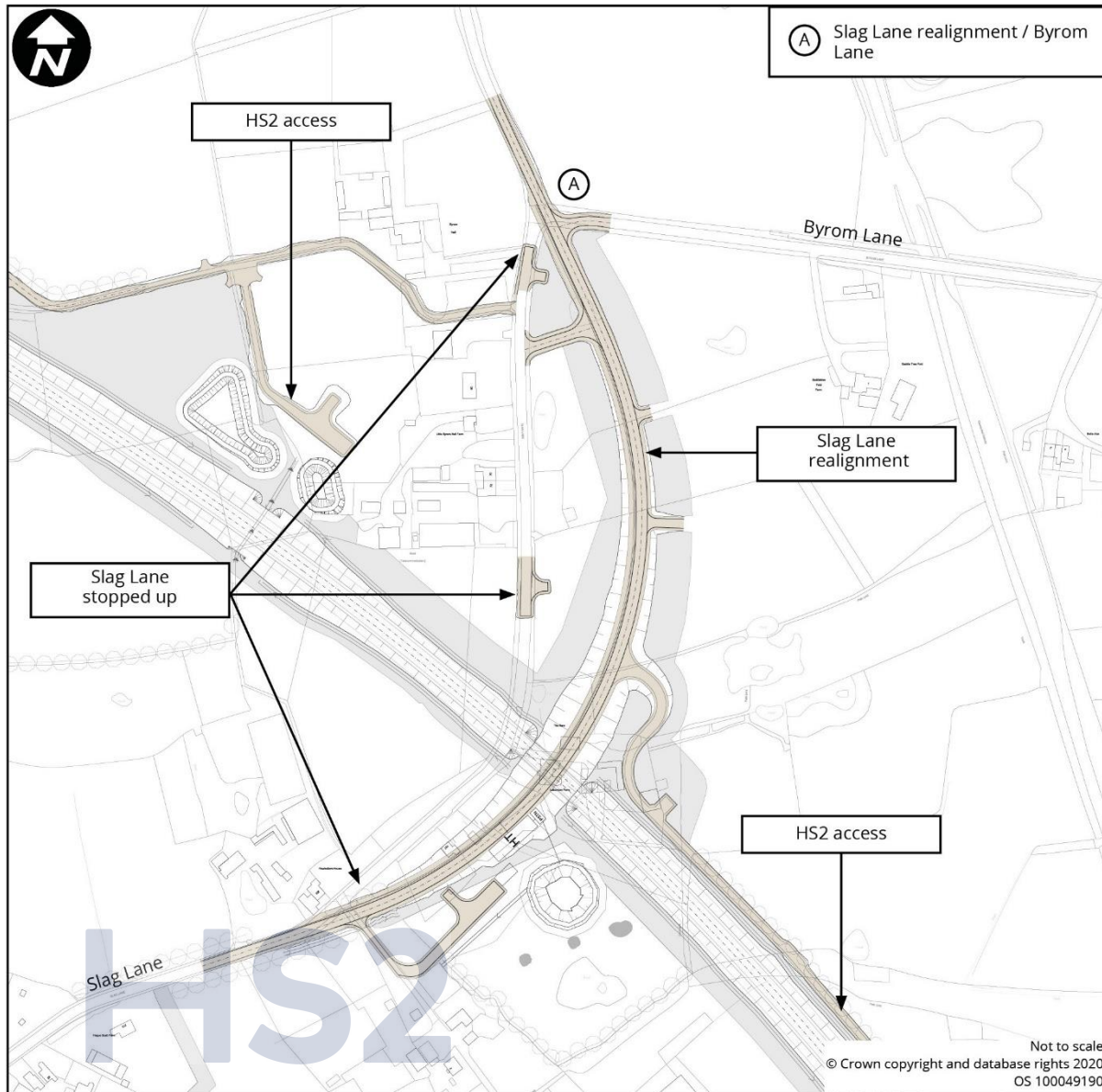
Slag Lane realignment/Byrom Lane

17.5.24 Slag Lane realignment/Byrom Lane will be a modified junction as part of the Proposed Scheme. Figure 17-2 shows the junction layout introduced as part of the Proposed Scheme.

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Table 17-61 summarises the results of the changes to the junction as a result of the Proposed Scheme in both 2038 and 2046.

Figure 17-2: Junction layout diagram (Slag Lane realignment/Byrom Lane)



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Table 17-61: Slag Lane realignment/Byrom Lane junction 2038 and 2046 future baseline and Proposed Scheme junction capacity assessment

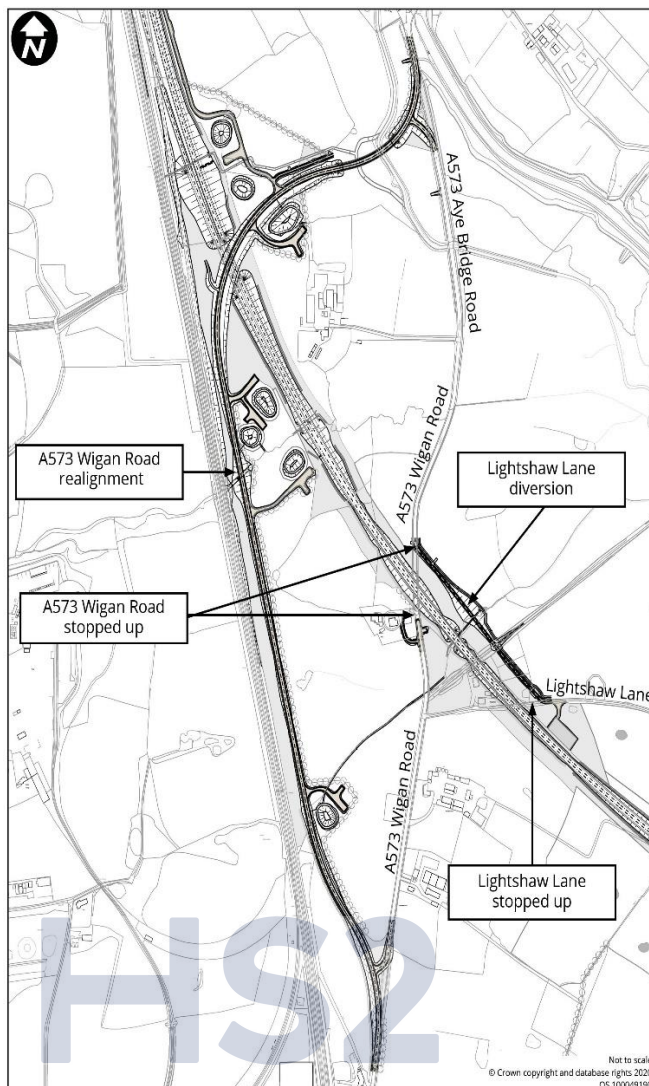
Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00-09:00	2038 future baseline (existing layout)			2038 with the Proposed Scheme (proposed layout)			2046 future baseline (existing layout)			2046 with the Proposed Scheme (proposed layout)		
Slag Lane (north) (ahead and left)	525	-	-		-	-	556	-	-		-	-
Byrom Lane (left)	127	0.25	0	127	0.26	0	135	0.27	0	135	0.28	0
Byrom Lane (right)	34	0.15	0	34	0.16	0	36	0.16	0	36	0.17	0
Slag Lane (south) (ahead and right)	521	0.65	3	521	0.60	2	551	0.70	3	551	0.65	2
17:00-18:00	2038 future baseline (existing layout)			2038 with the Proposed Scheme (proposed layout)			2046 future baseline (existing layout)			2046 with the Proposed Scheme (proposed layout)		
Slag Lane (north) (ahead and left)	377	-	-		-	-	399	-	-		-	-
Byrom Lane (left)	235	0.45	1	235	0.48	1	249	0.49	1	249	0.52	1
Byrom Lane (right)	70	0.27	0	70	0.28	0	74	0.31	0	74	0.31	1
Slag Lane (south) (ahead and right)	540	0.39	1	540	0.36	1	571	0.43	1	571	0.40	1

17.5.25 The model shows that for this junction, the change in traffic due to operation in 2038 and 2046 of the Proposed Scheme will not result in substantial changes in RFC and queue lengths in the AM or PM peak hours. The assessment shows that in the AM and PM peak hour the junction operates well within capacity in both the 2038 and 2046 future baseline and with the Proposed Scheme. The traffic flow will have a negligible impact on the operation of the junction.

A573 Aye Bridge Road/A573 Wigan Road realignment

17.5.26 The A573 Aye Bridge Road/A573 Wigan Road realignment will be a new three arm priority T-junction associated with the realignment of the A573 Wigan Road. The new T-junction is located approximately 941m north of the existing A573 Wigan Road/Lightshaw Lane junction. Figure 17-3 shows the junction layout introduced as part of the Proposed Scheme. The operation of the junction has been assessed for the 2038 and 2046 AM and PM peak hours with the Proposed Scheme and is shown in Table 17-62.

Figure 17-3: Junction layout diagram (A573 Aye Bridge Road/A573 Wigan Road realignment)



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Table 17-62: A573 Aye Bridge Road/A573 Wigan Road realignment junction 2038 and 2046 future baseline and Proposed Scheme junction capacity assessment

Approach	Flow, PCU/hr	RFC	Q, PCU	Flow, PCU/hr	RFC	Q, PCU
08:00–09:00	2038 with the Proposed Scheme (proposed layout)			2046 with the Proposed Scheme (proposed layout)		
A573 Wigan Road realignment (north) (ahead)	834	0.00	0	883	0.00	0
A573 Wigan Road realignment (north) (left)	5	0.00	0	5	0.00	0
A573 Aye Bridge Road (left)	5	0.01	0	5	0.01	0
A573 Aye Bridge Road (right)	5	0.02	0	5	0.02	0
A573 Wigan Road realignment (south) (ahead and right)	321	0.02	0	340	0.02	0
17:00–18:00	2038 with the Proposed Scheme (proposed layout)			2046 with the Proposed Scheme (proposed layout)		
A573 Wigan Road realignment (north) (ahead)	397	0.00	0	420	0.00	0
A573 Wigan Road realignment (north) (left)	5	0.00	0	5	0.00	0
A573 Aye Bridge Road (left)	5	0.01	0	5	0.01	0
A573 Aye Bridge Road (right)	5	0.02	0	5	0.02	0
A573 Wigan Road realignment (south) (ahead and right)	731	0.02	0	773	0.02	0

17.5.27 The assessment shows that the junction operates well within capacity in both 2038 and 2046 with the Proposed Scheme.

Accidents and safety

- 17.5.28 The baseline safety analysis identified four locations which had experienced an accident cluster over a three-year period.
- 17.5.29 In the MA05 area, there are no locations where there are substantial forecast increases in traffic flows due to the operation of the Proposed Scheme and, consequently, no unacceptable impacts on accident and safety risks are expected.
- 17.5.30 New highway links and junctions will be constructed to current standards and/or in keeping with the existing infrastructure. The Proposed Scheme is unlikely to create any new safety concerns.

Parking and loading

- 17.5.31 There will be a no permanent loss of off-street car parking along the route of the Proposed Scheme in the MA05 area.

Public transport

Local bus network

- 17.5.32 Local bus services will be affected where the road corridors used cross the route of the Proposed Scheme and where the Proposed Scheme results in changes to the route.
- 17.5.33 Of the 17 roads with bus services identified in the existing baseline only four roads are affected by the Proposed Scheme. These are:
- A574 Warrington Road will be realigned, affecting 19 journeys per day on route 28, two journeys per day on route 28A and three journeys per day on route 281;
 - Wigshaw Lane will be realigned, affecting 29 journeys per day on route 19 and four journeys per day on route 281;
 - Slag Lane will be realigned, affecting 14 journeys per day on route 588, 11 journeys per day on route 590, two journeys per day on route 988 and one journey per day on route 591; and
 - A573 Wigan Road will be realigned, affecting 10 journeys per day on route 22a, 52 journeys per day on route 360 and one journey per day on route 742.
- 17.5.34 The diversions identified above result in small changes in journey lengths, but will not have an impact on the bus service operations.

Rail network

- 17.5.35 There are no local changes to the rail network or operations in this CA as a result of the Proposed Scheme.

Public transport interchanges

17.5.36 There are no substantial impacts on public transport interchange facilities in the MA05 area and no committed proposals for public transport interchange facilities in this area.

Pedestrians, cyclists and equestrians

17.5.37 The operational scheme will affect PRoW and roadside footways used by pedestrians, cyclists and equestrians that cross the route of the Proposed Scheme or where the operation of the Proposed Scheme results in changes to PRoW or roadside footways.

17.5.38 Locations where roads used by pedestrians, cyclists and equestrians are permanently diverted, realigned or reinstated are shown in Table 17-63 and Table 17-64 below. The tables summarise the permanent diversions, realignments and extensions required to PRoW and roads to accommodate the Proposed Scheme.

Table 17-63: MA05 permanent changes to PRoW for non-motorised users

PRoW name	Change in length	Comments
Footpath Croft 13	Realignment, up to 352m south-west of its current alignment for 1.5km, crossing the route of the Proposed Scheme through the Footpath Croft 13 accommodation underbridge, increasing journey length by up to 884m.	New underbridge
Footpath Croft 28	Diversion, up to 140m south-east of its current alignment for 630m, crossing the route of the Proposed Scheme through the Footpath Croft 13 accommodation underbridge, decreasing journey length by 213m.	New underbridge
Footpath Croft 27	Closure of Footpath Croft 27, which currently provides access to Silver Lane Ponds only (no-through route).	None
New PRoW	New PRoW route crossing the route of the Proposed Scheme via the Holcroft Lane Brook culvert and pedestrian underbridge, connecting Footpath Croft 14 with Footpath Croft 15 east of Taylor Business Park, decreasing journey length by 795m.	New underbridge
Footpath Croft 17	Realignment of Footpath Croft 17 where it crosses a maintenance access for a balancing pond and realigned to the A574 Warrington Road realignment, increasing journey length by up to 54m.	Realigned PRoW via HS2 maintenance access
Footpath Croft 15	Diversion of a section of Footpath Croft 15 (also known as New Hall Lane Path) up to 158m west of its current alignment for 235m to connect with the realigned A574 Warrington Road crossing the route of the Proposed Scheme on the A574 Warrington Road overbridge. This will increase the length of the journey by 729m.	New overbridge
Footpath Croft 18	Closure of Footpath Croft 18 where it crosses a maintenance access for a balancing pond. Users will be diverted along Footpath Croft 17 realignment, increasing journey length by 22m.	None
Footpath Croft 19	Diversion up to 87m west of its current alignment crossing the route of the Proposed Scheme on the A574 accommodation overbridge, increasing travel distance by up to 862m, increasing the length of journey by 861m.	New overbridge

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PRoW name	Change in length	Comments
Footpath Croft 8	Closure of Footpath Croft 8. Users will be diverted along Wigshaw Lane realignment increasing the length of the journey by 448m.	New overbridge
Footpath Croft 8a	Realignment, up to 160m north-east of its existing alignment for 380m, crossing the route of the Proposed Scheme on the Footpath Croft 8a and Footpath Croft 108 accommodation overbridge, increasing travel distance by up to 300m.	New overbridge
Footpath Croft 108 and Culcheth and Glazebury 108	Diversion of a section of Footpath Croft 108 and Culcheth and Glazebury 108, up to 320m south of its existing alignment for 1km, along the western side of Culcheth North embankment, crossing the route of Proposed Scheme on Footpath Croft 8a and 108 accommodation overbridge, increasing journey length by 591m.	New overbridge
Footpath Golborne 80/10	Realignment of Footpath Golborne 80/10, up to 10m west of its existing alignment, decreasing journey length by 28m.	None
Footpath Golborne 63/10	Realignment of Footpath Golborne 63/10, up to 75m south-east of its existing alignment for 469m, crossing the route of the Proposed Scheme through the Footpath Golborne 63/10 underbridge, increasing journey length by 124m.	New underbridge
Footpath Golborne 39/10	Diversion of a section of Footpath Golborne 39/10, up to 315m north-west of its current alignment for 270m, crossing the route of the Proposed Scheme on Slag Lane viaduct, increasing the length of journey by 123m.	Viaduct
Footpath Golborne 38/10	Closure of Footpath Golborne 38/10 where it crosses the route of the Proposed Scheme. East-west connectivity will be maintained via the Footpath Golborne 63/10 accommodation underbridge and connectivity to the north maintained via the Slag Lane realignment. Travel distance will increase by up to 423m.	New underbridge
Footpath Golborne 37/10	Diversion of a section of Footpath Golborne 37/10 where it crosses the route of the Proposed Scheme. The footpath will connect with Footpath Golborne 39/10 diversion and the realigned Slag Lane, increasing journey length by 325m.	Viaduct
Footpath Golborne 40/10	Diversion of a section of Footpath Golborne 40/10, up to 55m to the east of its current alignment. The footpath will connect with the realigned Slag Lane, resulting in a change in journey length of less than 10m.	None
Footpath Golborne 34/10	Closure of Footpath Golborne 34/10 where it crosses the realigned Slag Lane. Users will be diverted along the realigned Slag Lane increasing the length of the journey by 435m.	Viaduct
Footpath Golborne 33/10	Realignment of a section of Footpath Golborne 33/10, up to 50m to the north-west of its existing alignment for 330m crossing under the route of the Proposed Scheme through Footpath Golborne 33/10 accommodation underbridge, resulting in a change in journey length of less than 10m.	New underbridge
Footpath Golborne 31/10	Realignment of a section of Footpath Golborne 31/10, up to 19m north-west of its existing alignment for 482m, crossing the route of the Proposed Scheme through the Golborne 31/10 accommodation underbridge, increasing travel distance by up to 102m.	New underbridge
Footpath Golborne 30/10	Diversion of a section of Footpath Golborne 30/10 where it crosses the route of the Proposed Scheme. Users will be diverted 760m north-west to connect with Footpath Golborne 27/10, increasing travel distance by up to 1.1km.	New underbridge

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PRoW name	Change in length	Comments
Footpath Golborne 27/10	Diversion of a section of Footpath Golborne 27/10 up to 145m north-west of its existing alignment. Users will cross the route of the Proposed Scheme through the Footpath Golborne 27/10 accommodation underbridge, increasing travel distance by up to 160m.	New underbridge
Footpath Ashton-in-Makerfield 24/10	Realignment of Footpath Ashton-in-Makerfield 24/10, up to 56m east of its current alignment for 120m. Users will be diverted under the Hey Brook offline overbridge, increasing journey length by up to 30m.	New underbridge
Footpath Ashton-in-Makerfield 22/30	Realignment of Footpath Ashton-in-Makerfield 22/30, 1m north of its existing alignment for 254m, crossing the route of the Proposed Scheme through the Footpath Ashton-in-Makerfield 22/30 accommodation underbridge, resulting in a change in journey length of less than 10m.	New underbridge
Footpath Abram 02/10	Diversion of Footpath Abram 02/10, 206m east of its existing alignment for 1km, crossing the route of the Proposed Scheme through the Footpath Ashton-in-Makerfield accommodation underbridge, increasing journey length by up to 331m.	New underbridge

Table 17-64: MA05 permanent changes to roads for non-motorised users

PRoW name	Change in length	Comments
New Hall Lane	Permanent diversion of New Hall Lane where it crosses the route of the Proposed Scheme with access to properties retained on both the southern and northern sides of the route. Users will be diverted along the realigned A574 Warrington Road, increasing journey length by up to 702m.	New overbridge
A574 Warrington Road	Permanent realignment of A574 Warrington Lane up to 160m east of its existing alignment, crossing the route of the Proposed Scheme on the A574 Warrington Road overbridge. The existing A574 Warrington Road will be closed where it crosses the route of the Proposed Scheme with access retained for Newchurch Old Refectory (also known as Rectory), Bates Farm, Yew Tree Farm and Taylor Business Park. Users will be diverted along the realigned A574 Warrington Road and the realigned Footpath Croft 15, increasing journey length by up to 777m.	New overbridge
Glaziers Lane	Permanent closure of Glaziers Lane where Glaziers Lane crosses the route of the Proposed Scheme. Users will be diverted along the existing Glaziers Lane, the realigned Footpath Croft 15, the realigned A574 Warrington Road, the Culcheth Link Road and the existing Wigshaw Lane, increasing journey length by up to 2.4km.	New overbridge
Wigshaw Lane	Realignment of Wigshaw Lane, up to 10m north-west of its existing alignment, crossing the route of the Proposed Scheme on the Wigshaw Lane overbridge, increasing journey length by up to 94m.	New overbridge
B5207 Wilton Lane	Realignment of B5207 Wilton Lane, 70m north of its existing alignment crossing the route of the Proposed Scheme on the B5207 Wilton Lane overbridge. The existing B5207 Wilton Lane will be closed where it crosses the route of the Proposed Scheme, decreasing journey length by up to 16m.	New overbridge
Slag Lane	Realignment of Slag Lane, up to 80m south-east of its current alignment for 752m, crossing the route of the Proposed Scheme	Viaduct

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PRow name	Change in length	Comments
	under the Slag Lane viaduct, increasing journey length by up to 410m.	
A573 Wigan Road	Permanent closure of A573 Wigan Road where it crosses the route of the Proposed Scheme. Users will be diverted via the Footpath Golborne 27/10, the realigned Lightshaw Lane and the existing A573 Wigan Road, increasing journey length by up to 200m.	New overbridge

- 17.5.39 Within these diversions and reinstatements, 11 of the routes affected experience change in length of less than 100m, or the routes become shorter. A further 18 changes result in diversions which increase route length up to 1km on footpaths.
- 17.5.40 Two routes experience larger changes in length of diversion, including Footpath Golborne 30/10 and Glaziers Lane, up to 2.4km.
- 17.5.41 In the case of the A573 Wigan Road, local access for some users will be retained, avoiding lengthy highways diversion by using the footpath route between the retained section of the A573 Wigan Road to the south of the route of the Proposed Scheme and the Lightshaw Lane realignment under the Footpath Golborne 27/10 underbridge. This results in a reduced diversion route length of 385m. This compares to the longer diversion which cyclists and equestrians will have to follow, using the on-road route via the existing A573 Wigan Road and the A573 Wigan Road realignment, resulting in additional distance of around 2km to these less distance-sensitive users.

Waterways and canals

- 17.5.42 The operation of the Proposed Scheme will not impact upon navigable waterways or canals in the MA05 area.

High Speed Two (HS2) Limited

Two Snowhill

Snow Hill Queensway

Birmingham B4 6GA

Freephone: 08081 434 434

Minicom: 08081 456 472

Email: HS2enquiries@hs2.org.uk
