



TECHNICAL NOTE

DATE:	28 March 2020	CONFIDENTIALITY:	Public
SUBJECT:	Technical Response (March 2020)		
PROJECT:	Omega Zone 8, M62 J8	AUTHOR:	ML
CHECKED:	JP	APPROVED:	NM

1. INTRODUCTION

Omega St Helens Ltd / T. J. Morris Limited have submitted a hybrid planning application to St Helens Metropolitan Borough Council (SHMBC) for the development of circa. 205,500m² B2/B8 industrial land uses on Omega Zone 8, located in the borough of St Helens. The TA supporting this application has been produced by Developer's Consultant, working as the developer's consultant.

The full application is for a circa 82,000m² for B8 industrial development located in the north of the site, while the outline application is for the remaining B2/B8 industrial uses located to the south of the site.

Highways England has been consulted by SHMBC, and have subsequently commissioned WSP Manchester, working on behalf of Highways England on the Spatial Planning Framework, to review the Transport Assessment (TA) supporting the hybrid planning application produced by WSP Scotland, Developer's Consultant, to ensure an appropriate assessment of the development traffic impacts on the Strategic Road Network is undertaken, with particular attention to M62 J8. The potential for conflict of interest has been raised with Highways England and WSP; a 'Chinese wall' approach separating the different teams within WSP has been taken and agreed to manage any conflict that could have occurred.

This note summarises the findings of a review of the post application Technical Note, Omega Zone 8, dated March 2020 with reference 11191042-01 provided in support of the proposed development, comprising of 205,500m² B2/B8 industrial land uses on Omega Zone 8. Whilst the latest information submitted by Developer's Consultant has been reviewed and is the focus of this note, due cognisance will be paid to the previous responses and matters raised by WSP in the original TA and FTP.

1.1 BACKGROUND

WSP Manchester issued a response to the TA and FTP in February 2020 that identified numerous outstanding issues to be addressed by Developer's Consultant to demonstrate fully the impact that the proposed development is likely to have on the operation and safety of the Strategic Road Network, in particular M62 Junction 8. It was concluded at the time that the issues prevented Highways England from making a conclusive recommendation on the proposed development. Following a meeting between Highways England, the developer and their respective consultants during which the application and transport work submitted to date was discussed, it was recommended that Developer's Consultant address the concerns raised by Highways England.

The Developer's Consultant have subsequently provided a Technical Note to try to address the points raised in WSP's initial review. As such, this review seeks to address whether the previous comments have been addressed to enable Highways England to fully assess the potential traffic impact of the proposed development on the SRN, particularly at M62 J8, and subsequently whether the impacts have been correctly assessed to enable removal of the holding recommendation.

2. OUTSTANDING MATTERS

This section sets out the outstanding matters, which are covered within Developer's Consultant's Technical Note (March 2020) and concludes with WSP's remaining comments.

Highways England point 1 – The Circular, paragraph 22

Previous comment:



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“The majority of the proposed development site falls within the boundary of “Site 1EA – Omega South Western Extension – Land North of Finches Plantation,” which has a site area of around 31hectares, proposing B2/B8 land use. However, WSP also note that the St Helens Local Plan which includes this site allocation has not yet been adopted, and as such the planning application remains on unallocated greenbelt land. The consultant should review paragraph 22 of the circular and seek to directly demonstrate that their assessment is consistent with this.”

Developer’s Consultant Response:

The Transport Assessment for Omega Zone 8 has been prepared in accordance with a scope agreed with St Helens Metropolitan Borough Council, Warrington Borough Council and Highways England, taking due consideration of relevant committed developments as agreed with the relevant highway authorities.

WSP Comment:

It is understood that assessments were undertaken with due consideration of relevant committed developments as agreed with the relevant highway authorities.

However, Highways England’s point above is highlighting what is essentially a *planning* matter due to the site’s present status as an unallocated greenbelt site, which therefore requires the assessments to show compliance with paragraph 22 of the circular.

As such, WSP were hoping that the developer’s consultant would confirm that the relevant *planning* authorities have been consulted to agree what committed developments would need to be included in order for the assessments to comply with paragraph 22 of the circular.

Highways England points 2 & 6 – Mountpark 2 & Zone 1-2 B2/B8 Developments

Previous comments:

“Two additional developments (referred to as Mountpark 2 & Zone 1-2 B2/B8 Development) are included in the assessment scenarios, but have not been referenced in the TA, WSP request further information regarding the Mountpark 2 & Zone 1-2 B2/B8 developments, including trip generation & distribution assumptions.”

“Mountpark 2 and Zone 1-2 B8 Developments are included in the traffic assumptions, but these are not referenced within the TA report. More information should be provided regarding the trip generation and distribution assumed for these sites within the TA.”

Developer’s Consultant Response:

These two comments are essentially requesting the same information, which is the trip generation and distribution assumptions for the site located within Omega South previously known as Zones 1-2 (now known as Mountpark 2).

The site was previously consented for the following:

- B1 Land Use – 59,458m² GFA;
- B2 Land Use – 20,903m² GFA; and
- B8 Land Use – 48,774m² GFA.



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The recent reserved matters application for the Zone 1-2 Site (Planning No. 2019/35646) has been approved (November 2019), which reduces the B2/B8 land uses to 20,567m² and 47,990m² respectively, and removes the B1 land uses proposals in order to free up the land for residential use (Phase 4-7).

The trip generation rates for the B2/B8 land uses associated with Zones 1 & 2 have been extracted from the Omega South - Zones 1 & 2 TA (WSP, May 2017). As agreed at the scoping stage, the same trip rates have been applied to the revised Mountpark 2 proposals. The trip rates and resultant trips for the Zones 1-2 B2/B8 and Mountpark 2 developments are indicated in Table 2-1.

Table 2-1 – Zone 1-2 and Mountpark 2 Development Vehicle Trip Rates and Resultant Trips

Scenario	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrivals	Departures	Arrivals	Departures
B2 Car Trip Rate (per 100m ² GFA)	0.442	0.203	0.111	0.385
B8 Car Trip Rate (per 100m ² GFA)	0.033	0.009	0.009	0.031
B2 HGV Trip Rate (per 100m ² GFA)	0.017	0.009	0.007	0.010
B8 HGV Trip Rate (per 100m ² GFA)	0.015	0.018	0.015	0.013
Zone 1-2 B2 Total PCU (20,903m ²)	101	52	27	85
Zone 1-2 B8 Total PCU (48,774m ²)	33	20	21	30
Zone 1-2 B2/ B8 Total PCU	133	77	48	115
Mountpark 2 B2 Total PCU (20,567m ²)	99	51	26	84
Mountpark 2 B8 Total PCU (47,990m ²)	32	24	21	29
Mountpark 2 B2/ B8 Total PCU	131	75	47	113

Table 2-1 indicates that due to the slight reduction in GFA, the trips associated with the site have decreased slightly with the most recent planning consent.

The distribution and assignment have been undertaken using the process outlined in Chapter 7 of the TA (2017 Postcode Distribution for general vehicles and turning proportions for HGV's). This has been done to ensure consistency in distribution for similar developments within Omega South.

WSP Comment:

WSP have reviewed the above information and are satisfied that traffic flows associated with the Mountpark 2 & Zone 1-2 developments have been included appropriately in the assessments.



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Highways England point 3 – Flows outside peak hours

Previous comments:

“The development trips generation and background traffic should be presented over a longer period to take into account shift change times at B2/B8 units and how this will change flow.”

Developer’s Consultant Response:

In order to understand whether we have truly captured the peak periods with both the development and background traffic taken into consideration, we have undertaken an exercise where we have combined the 2019 surveyed flows at the M62 J8 with the Zone 8 development flows. This has been done for the hours that we have survey data for (05:00 to 10:00 and 16:00 to 19:00), to determine if the identified peaks are correct. Committed development flows have not been included as we do not have trip generation values outside the peaks. Table 2-2 below indicates the result of this test.

Table 2-2 – Peak Hour Check

Hour	M62 J8 2019 Total Flows	Zone 8 Total Development Flows	Total
0500-0600	1685	861	2547
0600-0700	2487	864	3351
0700-0800	3563	455	4019
0745-0845	3895	498	4393
0900-1000	2614	506	3120
1600-1700	3903	561	4464
1645-1745	4379	599	4978
1800-1900	3462	449	3910

Table 2-2 indicates that the peak hours that have been used in the assessment contained within the TA represent the worst-case time periods and therefore confirm that our assessment is robust.

WSP Comment:

Traffic data for M62 J8 is only provided for the surveyed periods, between 05:00-10:00 & 16:00-19:00, and as such the consultant has not been able to provide a full comparison of cumulative development & network traffic flows during the interpeak periods. Notwithstanding, WSP accept that based on the available data, the peak hours used in the assessments reflect the time periods where cumulative network and development traffic flows are highest, and the assessment is therefore considered to be appropriate in this regard.

Highways England point 4 – 2029 TEMPRO Growth Factor

Previous comments:

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“Background TEMPro growth factors are not included in the report for the 2029 scenario. The growth factors should be provided to allow a review.”

Developer’s Consultant Response:

The Department for Transport’s TempPro V7.2 has been used identify a factor which can be used to growth the surveyed flows to the sensitivity year (2029). In terms of settings, the area type was set to rural, the road type was set to principal / motorway and the areas shown in Table 2-3 were selected, as they surround and include Omega South. Average growth factors were then extracted for the two road types.

Table 2-3 – Growth Factor (2019 to 2029)

Level	Area	Principal Local Growth Factor	Motorway Local Growth Factor
E02002592	Warrington 003	1.093	1.114
E02002595	Warrington 006	1.108	1.129
E02002598	Warrington 009	1.080	1.100
E02002599	Warrington 010	1.079	1.099
E02002602	Warrington 013	1.114	1.135
E02002604	Warrington 015	1.079	1.099
E02002605	Warrington 016	1.075	1.096
E02002607	Warrington 018	1.103	1.124
E02002608	Warrington 019	1.092	1.113
E02001427	St. Helens 022	1.085	1.106
Average		1.091	1.111

Growth factors of 1.091 (All roads except motorway) and 1.111 (motorway only) have been applied to the 2019 AM and PM surveyed flows to produce AM and PM 2029 Base traffic flows.

WSP Comment:

The 2029 future year growth factor has now been provided, along with clarification of the methodology used to derive the factor. WSP therefore consider that this point has been addressed.

Highways England point 5 – Burtonwood Services Traffic Flows

Previous comments:

“How traffic associated with the committed Burtonwood Road services development has been accounted for should be clarified.”

Developer’s Consultant Response:

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TRIP RATES

Figure 2-1 below is an excerpt from the 2007 Transport Assessment, produced by Scott Wilson, which indicates the trip generation characteristics of the Burtonwood Road Services Development.

Figure 2-1 - Burtonwood Road 2007 TA Trip Generation

Table 3: TRICS Interrogation

Land use	Site area (m ²)	GFA (m ²)	Weekday trip rates (85th percentile)				Number of weekday trips			
			AM PEAK		PM PEAK		AM PEAK		PM PEAK	
			IN	OUT	IN	OUT	IN	OUT	IN	OUT
B1 business offices	20,355	10,917	1.88	0.17	0.15	1.43	205	19	16	156
C1 hotel	7,689	7,689	0.54	0.70	0.79	0.40	42	54	61	31
B2 General industry	27,114	10,127	0.92	0.19	0.18	0.74	93	19	18	75
B8 Storage distribution	27,114	10,127	0.23	0.23	0.22	0.45	23	23	22	46
B8 Self storage	4,532	2,323	0.16	0.07	0.08	0.16	4	2	2	4
TOTAL	86,804	41,183					367	117	119	311

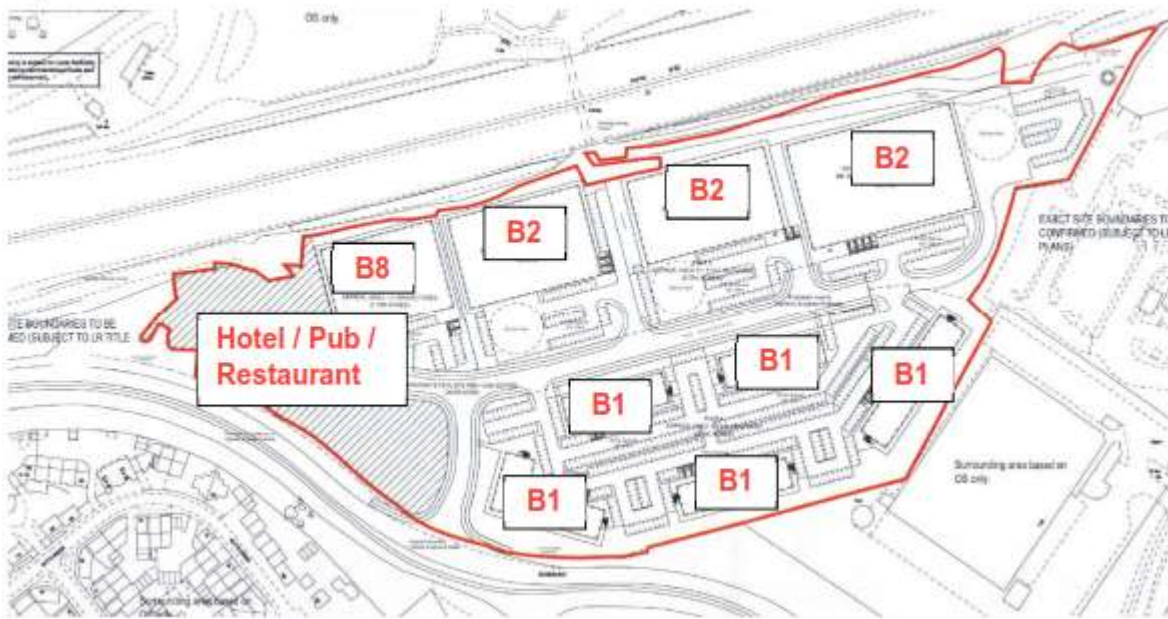
Trip Rates for B1, C1 and A3 are per 100 metres²
 Assume a 50/50 mix of B2 General industry and B8 Storage distribution

Figure 2-2 below indicates the plan of the consented site (as of 2007) and the associated consented land uses.

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Figure 2-2 - Burtonwood Road Services Plan



Our assessment has used the trip rates as set out in Figure 2-1 above, as instructed by Warrington Borough Council, and we have assumed that that only the hotel / pub / restaurant has been constructed. We believe that this is a robust assessment as a number of restaurants and a health facility have been built on land allocated for B1 uses, with limited land available for the previously consented land uses. Table 2-4 below indicates the trip generation figures used in our analysis, while Figure 2-3 highlights the current build out of the site.

Table 2-4 – Burtonwood Services Vehicle Trip Rates and Resultant Trips

Scenario	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrivals	Departures	Arrivals	Departures
B1 Business Trip Rate	1.88	0.17	0.15	1.43
B2 General Industry Trip Rate	0.92	0.19	0.18	0.74
B8 Self Storage Trip Rate	0.16	0.07	0.08	0.16
B8 Storage Distribution Trip Rate	0.23	0.23	0.22	0.45
B1 Business Trips (10,917m ²)	205	19	16	156
B2 Gen. Industry Trips (10,127m ²)	93	19	18	75
B8 Self Storage Trips (2,323m ²)	4	2	2	4
B8 Storage Dist. Trips (10,127m ²)	23	23	22	46
Total Trips	325	63	59	280

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Figure 2-3 - Burtonwood Road Services Current Build Out



TRIP DISTRIBUTION

Figure 2-4 below is an excerpt from the 2007 Transport Assessment, produced by Scott Wilson, which indicates the trip distribution characteristics of the Burtonwood Road Services Development.

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Figure 2-4 - Burtonwood Road 2007 TA Trip Distribution

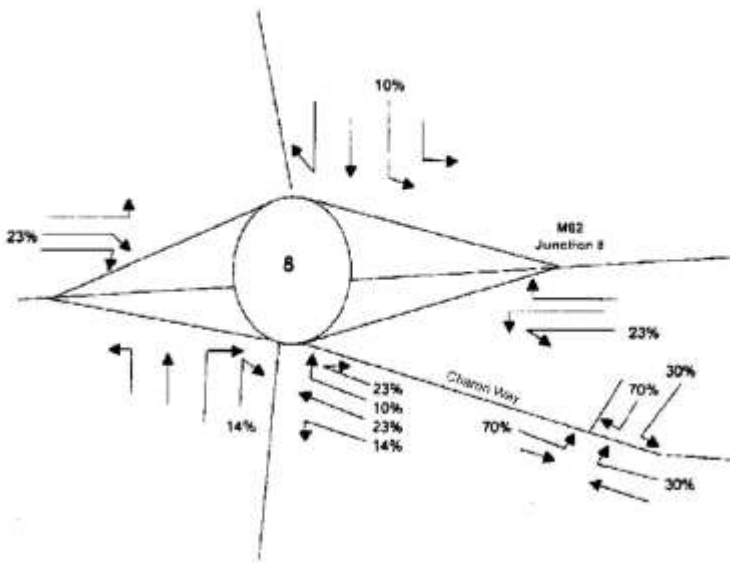
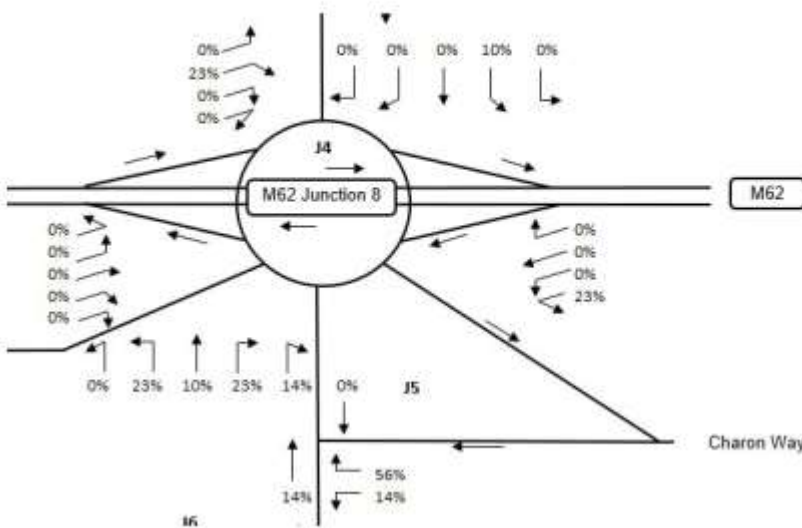


Figure 2-5 below is the distribution that has been used in our analysis.

Figure 2-5 - Burtonwood Road Services Distribution from TA Analysis



With the exception of a change in road layout for Charon Way since the 2007 TA was produced, the distributions are identical.

WSP Comment:



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The Developer's Consultant has provided the trip rates and information regarding build-out to date, and remaining committed development still to be built out at Burtonwood Services. WSP have checked this information in addition to the trip distribution, and are satisfied that the committed development has been accounted for appropriately in the assessment flows.

Highways England point 7 – Scenario build-up clarification

Previous comments:

“The build-up of development traffic is complex and there is some variation on terminology between committed developments and development consideration. We therefore request a clear explanation of the exact make up of each scenario.”

Developer's Consultant Response:

The Omega Zone 8 TA includes the assessment of two primary scenarios known as Scenario 2 and Scenario 5.

SCENARIO 2 – 2021 BASE + COMMITTED

Scenario 2 comprises the following:

- 2021 Base traffic flows (factored from 2019 surveys using TEMPRO growth factors);
- Currently Committed – Mountpark B2/B8 Land Uses;
- Currently Committed – Zone 1-2 B1/B2/B8 Land Uses;
- Currently Committed – Zone 3-6 Residential / Discount Foodstore / Hotel Pub and Restaurant and Care Home Land Uses;
- Currently Committed – Lingley Mere Business Park Residential; and
- Currently Committed – Burtonwood Services Land Uses.

SCENARIO 5 – 2021 BASE + COMMITTED + DEVELOPMENT

Scenario 5 comprises the following:

- 2021 Base traffic flows (factored from 2019 surveys using TEMPRO growth factors);
- Currently Committed – Mountpark B2/B8 Land Uses;
- Currently Committed – Zone 3-6 Residential / Discount Foodstore / Hotel Pub and Restaurant and Care Home Land Uses;
- Currently Committed – Lingley Mere Business Park Residential;
- Currently Committed – Burtonwood Services Land Uses;
- Replacement Development – Mountpark 2 B2 / B8 Land Uses (Replaces Zone 1-2 B2/B8 Development);
- Replacement Development – Phase 4-7 Residential Land Use (300-unit net increase over already consented residential units and replaces the Zone 1-2 B1 Land Use); and
- Proposed Development – Omega Zone 8 B2/B8 Land Uses.



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WSP Comment:

A clear explanation of the build-up of the assessment scenarios has now been provided, and therefore WSP consider that this point has been addressed.

Highways England point 8 – B8 trip rate calculation

Previous comments:

“WSP have reviewed the proposed trip rate calculations undertaken based on the surveys and established an error in regard to the B8 trip rates. On review, it appears that the B8 trip rates have been calculated using the weighting which should have been applied for the B2 units instead of the B8. WSP request that the developer’s consultant revisits the calculations undertaken to derive the B8 trip rates.”

Developer’s Consultant Response:

We acknowledge that there an error in the formulas as set out above and we have therefore updated the spreadsheet, correcting this error. Table 2-5 below indicates the impact of the error correction.

Table 2-5 – Correction Comparison

Type	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)	
	Arrivals	Departures	Arrivals	Departures
Pre-Correction				
B2+B8 General Vehicle Trips (PCU)	198	42	120	219
B2+B8 HGV Vehicle Trips (PCU)	92	123	123	86
B2+B8 Total Vehicle Trips (PCU)	290	165	243	305
Post-Correction				
B2+B8 General Vehicle Trips (PCU)	230	52	132	251
B2+B8 HGV Vehicle Trips (PCU)	106	109	123	92
B2+B8 Total Vehicle Trips (PCU)	337	161	256	343
Difference (Post – Pre)				
B2+B8 General Vehicle Trips (PCU)	33	10	12	32
B2+B8 HGV Vehicle Trips (PCU)	14	-14	0	6
B2+B8 Total Vehicle Trips (PCU)	47	-4	12	38



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Table 2-5 above indicates that there will be a net increase of 43 and 50 PCU's in the AM and PM Peak periods respectively. Given the level of this increase, we have re-run the analysis of the M62 J8 Model. This is included in Chapter 3 and takes into consideration all changes as a result of the Highways England comments.

WSP Comment:

WSP are satisfied that the error in the B8 trip rate calculation has been rectified, and subsequently applied to the assessment flows.

Highways England point 9 – 2019 TRANSYT model validation

Previous comments:

“A 2019 survey TRANSYT scenario should be modelled and DOS and/or queue values compared with observed conditions to establish the model appropriately reflects reality.”

Developer's Consultant Response:

Queue surveys, which recorded the maximum queue over 5-minute intervals on each lane, were undertaken during the junction turning count survey on Tuesday 11 June 2019. As stated in the TA, the AM and PM peak hours of network operations were:

- 07:45 to 08:45; and
- 16:45 to 17:45.

A '2019 Existing Scenario' model was developed at the beginning of this study, which in turn was used as a foundation for the development of the 2021 Base Model and subsequent Scenarios. Average 5-minute max queuing on the approaches were referred to during the development of the '2019 Existing Scenario' model to ensure that these broadly matched. It should be noted that, as Junction 8 currently operates under MOVA control, reflecting the queues accurately in a fixed time scenario is challenging and should be approached with the appropriate level of caution.

Nevertheless, WSP has undertaken a comparison of the AM and PM hour average 5-minute max queuing collected during the survey versus the MMQ predicted within the model. The results are shown in Table 2-6.

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Table 2-6: 2019 Existing Scenario: Modelled Queueing vs Observed Queueing

Approach	Direction	Movement	AM PEAK			PM PEAK		
			Modelled Queue	Surveyed Queue	Diff (Modelled - Survey)	Modelled Queue	Surveyed Queue	Diff (Modelled - Survey)
Burtonwood Rd N (SB)	Left	2a	3	4	-1	3	3	0
	Left Ahead	2b	8	8	0	5	6	-1
	Right	2c	5	6	-1	3	4	-1
East Circulatory	Ahead	2d	11	9	2	7	7	0
	Right	2e	2	7	-5	3	5	-2
M62 WB Off Slip	Left	2f	3	3	0	2	2	0
	Ahead	2g	2	2	0	5	5	0
	Ahead	2h	2	2	0	5	4	1
	Ahead	2i	11	7	4	7	5	2
	Ahead	2j	2	4	-2	4	4	0
South Circulatory	Ahead	2k	11	8	3	1	6	-5
	Ahead	2l	1	2	-1	7	1	6
	Ahead	2m	0	4	-4	2	5	-3
Burtonwood Rd S (NB)	Ahead Left	2n	7	7	0	6	10	-4
	Ahead	2o	7	6	1	6	8	-2
	Ahead	2p	7	6	1	6	8	-2
South West Circulatory	Ahead	2q	5	3	2	5	2	3
	Ahead	2r	3	4	-1	7	5	2
	Right	2s	0	1	-1	2	1	1
Skyline Dr Exit	Ahead	2t	3	0	3	2	0	2
	Ahead	2u	3	0	3	2	0	2
Skyline Dr	Left	2v	1	2	-1	2	2	0
	Ahead	2w	2	4	-2	3	4	-1
	Ahead	2x	2	4	-2	4	4	0
West Circulatory	Ahead	2y	4	4	0	11	7	4
	Ahead	2z	1	5	-4	2	4	-2
	Right	2aa	2	5	-3	7	5	2
M62 WB On-Slip	Ahead	2ab	2	0	2	5	0	5
	Ahead	2ac	1	0	1	2	0	2
M62 EB Off-Slip	Left	2ad	2	2	0	2	3	-1
	Ahead	2ae	3	6	-3	5	6	-1
	Ahead	2af	3	3	0	1	3	-2
North Circulatory	Ahead	2ag	2	3	-1	0	4	-4
	Ahead	2ah	7	6	1	6	7	-1
	Right	2ai	3	4	-1	2	3	-1

As shown in Table 2.6, the majority of queuing between the observed dataset and the modelled dataset is within a tolerance of 3 PCUs on most lanes on the approaches of the roundabout. The following observations have been noted in each peak period:

AM Peak

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- Where queueing discrepancies greater than 3PCUs have been noted, these occur on the circulatory carriageway. Only three lanes are shown to have lower queues than those observed. 2 of these are 4PCUS below what was observed and 1 is 5 below what was observed.
- The southern circulatory queueing discrepancy is a result of 3 more PCUs being allocated to the offside lane that the nearside. As these lanes are fed from the same upstream link and subject to the same green phase. As such, it is not considered necessary to adjust the circulatory flows.
- The remaining two queue discrepancies occur on the east and west circulatory lanes over the M62. The queue discrepancy is not considered to have an impact on the operation of the junction and could be a result of lane weaving on these long links, which is not permitted within the model.

PM Peak

- Where queueing discrepancies greater than 3PCUs have been noted, these occur on the circulatory carriageway. Only three lanes are shown to have lower queues than those observed.
- The southern circulatory queueing discrepancy is a result of 5 more PCUs being allocated to the offside lane that the nearside. As these lanes are fed from the same upstream link and subject to the same green phase. With the same combined queueing over the two links as that observed, it is not considered necessary to adjust the circulatory flows.
- The Burtonwood Rd S (NB) approach shows a discrepancy of 4PCUs on the offside lane (Movement 2n).

WSP Comment:

The Developer's Consultant have now presented results of their 2019 TRANSYT Model in comparison to observed queue data. The majority of lanes in the model are shown to be within three PCU's of the observed queue and DOS values are below practical capacity, which is consistent with site observations of the junction. It is therefore considered a suitable base from which to assess the proposed scenarios.

Highways England point 10 – TRANSYT model setup data

Previous comments:

"The source of intergreens, signal timings and cycle time in the TRANSYT model should be clarified."

Developer's Consultant Response:

Traffic signal detailed design drawings and signal specification forms for the existing signalised junctions have been provided by WBC and have been input into the modelling to reflect the existing scenario, where available.

Stage timings have been derived using TRANSYT, with the resultant queuing on each approach observed to ensure the level of queuing, and ergo the signal timings, reflected on-site conditions. This was considered the best approach due to the variable green times each cycle that can result as part of the MOVA signal control.

Outside the proposed works, the general configuration, phasing and staging of each junction has been assumed to remain largely unchanged. Therefore, we have used the existing signal specification data and have utilised, where applicable, existing phasing, staging and intergreen data to inform the proposed layout model and these have been revised as necessary.



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WSP Comment:

Thank you for providing the signal controller information to allow this to be reviewed. All appears ok except the B-A intergreen on stream 4 is set to 5 seconds in the model when the controller specification indicates 6. If the model is to be re-run to address any other comments we would suggest this is adjusted.

Highways England point 11 – TRANSYT model, manual lane balancing

Previous comments:

“Modifications to the distribution of traffic between lanes in the TRANSYT model have been made manually and these should be explained.”

Developer’s Consultant Response:

Routing of traffic within the network is initially decided based on the ‘lane balancing’ allocation mode within TRANSYT. This mode allocates traffic flow to TRANSYT paths, for a given OD pair, in such a way as to ‘balance’ the flow-to-saturation-flow ratio (Y values) on the first downstream signalled part of each path that connects that OD pair. However, after reviewing the allocation of flows, some adjustments to flows were undertaken based on logical routing and lane occupancy within the model at downstream links. Much of the adjustments made were to account for no internal weaving on the circulatory carriageway within the models.

WSP Comment:

Below is a quote from the TRANSYT user guide regarding lane balancing traffic assignment as applied in the model.

“... This mode is useful for modelling single junctions (e.g. crossroads, staggers and roundabouts). It takes account of the saturation flow of each traffic stream (max flow for give-ways), while it is NOT influenced by the travel time through the junction – which reflects reasonably well the nature of decision making required by drivers who are travelling through a single junction and choosing the most appropriate path through it.”

This therefore suggests drivers choose their lane through the junction based on the first stop line they reach and this is why lane balancing traffic distribution is applied. It continues:

“The flow allocation modes provided simply ‘aid’ the process of establishing suitable traffic flows throughout the network. Inevitably there will be some situations where the allocation of flows by these methods will not be suitable and in such situations users have the freedom to specify flows in a more direct manner.”

The distribution as modified is assuming traffic from Burtonwood Road south to M62 E will join a longer queue initially, which is contrary to the assignment of lane balancing, drivers will typically join the lane with the shortest queue to their destination. To understand the implications, we have removed the manual adjustment in a copy of the model supplied by the developer’s consultant. This had a significant impact on results with max DOS values initially increasing to 132% in the AM and 119% in the PM. We have subsequently re-optimised signal timings and max DOS values are 99% in the AM and 105% in the PM. We would therefore suggest that should the developer’s consultant wish to retain adjustments to routing, which vary between modelled time periods and scenarios, these should be justified through, for example, observations of the existing traffic distribution between lanes on the Burtonwood S approach, appropriate sections of the circulatory or exits if survey videos are available. Or other amendments to the modelling if appropriate.



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Highways England point 12 – Differences between ‘with / without mitigation models’

Previous comments:

“Differences are present between the with and without mitigation models that do not appear to be connected to the mitigation, such as an additional phase delay. we would suggest model changes from the existing are noted for information and to ensure a fair / appropriate comparison.”

Developer’s Consultant Response:

The phase delay relates to controller stream 2 at the Southwest portion of the junction. However, the discrepancies related to Scenario 2 AM and PM in the proposed mitigation model vs the without mitigation model. This scenario is not relevant to our assessment as the mitigation only relates to Scenario 5 and is what the without mitigation option should be compared to.

WSP Comment:

Differences in phase delays are present between Scenario 2 without mitigation and Scenario 5 with mitigation models and therefore these are the models relevant to assessment. It would not appear an entirely fair comparison to optimise the interstage in one scenario but not another when there is no change to the staging arrangement. However, the impact is not considered likely to significantly alter the outcome of the assessments therefore the results have been considered as presented.

Highways England point 13 – Scenario 5 flow discrepancy & reassessment

Previous comments:

“There appears to be a minor flow discrepancy between the flows provided in the report and within the model in Scenario 5 at M62 J8.”

Developer’s Consultant Response:

In response to the spreadsheet error which was addressed in Comment 8, we have updated the M62 Junction 8 modelling. In addressing this error, we also noticed that the HGV flows for the Mountpark and Zones 1-2 (original consent) developments had not been converted to PCUs. This has also been included within the revised modelling. This updated modelling also means that any flow discrepancies have been addressed.

The operation of the existing M62 Junction 8 signalised gyratory has been assessed using TRANSYT and the results of the assessment are shown in Tables 2-7 to 2-8. Where a traffic stream is indicated to operate over capacity (greater than 90% DoS for signalised junction and 85% for priority junctions), this is highlighted in red.



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Table 2-7 – M62 Junction 8 (Existing Layout) TRANSYT results

Arm	Traffic Stream	Scenario 2 2021 AM (Base)		Scenario 2 2021 PM (Base)		Scenario 5 2021 AM + Phase 4-7 + Omega Zone 8		Scenario 5 2021 PM + Phase 4-7 + Omega Zone 8	
		DoS (%)	MMQ (PCU)	DoS (%)	MMQ (PCU)	DoS (%)	MMQ (PCU)	DoS (%)	MMQ (PCU)
J62 Junction 8									
15	1	17	0	57	13	17	0	47	4
	2	17	0	57	13	17	0	66	4
16	1	84	11	68	9	65	8	58	3
	2	87	11	86	11	90	12	78	10
	3	42	5	28	3	33	3	26	1
17	1	4	0	31	2	7	0	29	3
18	1	78	13	45	10	87	14	29	3
19	1	65	4	40	2	48	4	93	12
	2	54	4	60	4	72	5	80	6
20	1	79	9	64	4	61	5	89	11
	2	85	9	90	11	69	4	35	0
	3	40	2	22	1	24	1	58	0
21	1	47	5	24	2	29	3	66	6
	2	26	2	24	2	29	3	10	2
22	1	0	0	0	0	0	0	0	0
23	1	21	2	89	13	53	5	68	14
24	1	26	2	60	4	40	2	54	8
25	1	43	5	89	11	52	5	66	12
26	1	27	0	65	4	22	0	32	3
27	1	36	0	103	72	37	0	71	4
28	1	65	5	71	5	59	2	48	5
	2	9	1	12	2	6	1	33	2
29	1	0	0	0	0	0	0	49	0
30	1	32	2	64	7	40	4	47	5
	2	59	5	65	11	70	6	88	15
	3	44	2	70	15	58	9	13	0
31	1	81	9	28	2	48	5	54	4
32	1	60	3	75	4	48	3	84	8
33	1	35	3	48	5	33	3	52	4
34	1	24	1	37	2	19	1	26	0
35	1	26	0	49	0	28	0	0	0
36	1	59	10	57	4	63	11	75	1
	2	73	11	89	20	83	16	0	0



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	3	37	4	10	2	30	3	90	15
37	1	74	7	57	4	58	5	38	5
38	1	88	10	88	8	80	9	100	24
39	1	35	3	58	4	32	3	56	0
40	1	33	2	26	0	32	0	68	7
41	1	0	0	0	0	0	0	24	2
42	1	66	2	75	10	70	1	68	7
43	1	0	0	0	0	0	0	32	0
44	1	92	17	87	14	89	15	100	40
45	2	74	7	30	4	59	4	41	3
46	1	387	445	104	35	231	281	0	0
47	1	30	0	53	0	31	0	56	0
48	1	26	2	82	9	29	2	86	10
49	1	49	4	30	2	51	4	30	2
	2	26	2	82	9	29	2	86	10
50	1	22	0	31	0	23	0	32	0
51	1	100	35	100	38	100	37	76	8
	2	6	1	50	4	11	1	76	8
52	1	0	0	0	0	0	0	0	0

The operation of the proposed M62 Junction 8 signalised gyratory has been assessed using TRANSYT and the results of the assessment are shown in Table 2-8.



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Table 2-8 – M62 Junction 8 (Proposed) TRANSYT results

Arm	Traffic Stream	Scenario 5 2021 AM + Phase 4- 7 + Omega Zone 8		Scenario 5 2021 PM + Phase 4- 7 + Omega Zone 8	
		DoS (%)	MMQ (PCU)	DoS (%)	MMQ (PCU)
J62 Junction 8					
15	1	18	1	52	3
	2	18	1	52	3
16	1	65	8	72	9
	2	90	12	87	11
17	1	29	2	46	2
	2	33	3	39	4
18	1	48	9	30	0
	2	63	11	39	0
19	1	84	6	64	4
	2	80	6	42	4
20	1	51	3	53	4
	2	85	9	86	11
	3	24	1	26	1
21	1	58	7	39	5
	2	44	5	20	2
22	1	0	0	0	0
23	1	53	5	93	12
24	1	40	2	80	6
25	1	52	5	89	11
26	1	22	0	35	0
27	1	37	0	58	0
28	1	51	2	62	5
	2	14	1	17	2
29	1	0	0	0	0
30	1	49	7	69	11
	2	72	13	54	4
	3	58	5	65	5
31	1	48	5	32	3
32	1	46	3	71	4
33	1	33	3	48	5
34	1	19	1	33	2
35	1	32	0	50	0
36	1	63	16	47	6



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	2	83	15	88	16
	3	30	2	13	0
37	1	58	5	54	4
38	1	80	9	84	8
39	1	32	3	52	4
40	1	32	0	26	0
41	1	0	0	0	0
42	1	79	7	75	1
43	1	0	0	0	0
44	1	89	16	81	10
45	2	68	8	34	4
46	1	51	0	50	0
47	1	31	0	56	0
48	1	29	2	82	9
49	1	51	4	29	2
	2	29	2	82	9
50	1	23	0	32	0
51	1	94	13	87	11
	2	94	13	87	11
52	1	0	0	0	0

While the results indicate a DOS increase to above 90% (M62 EB off-slip in the AM / Skyline Drive in the PM), the actual increase in queuing on these arms is 3 PCUs or less, therefore representing a very small change in performance. It is also worth noting that in the AM, Scenario 5 (proposed development and mitigation) provides a substantial reduction in queuing on the M62 EB off-slip arm in comparison to Scenario 2 (currently committed).

In addition to this, our assessment of Scenario 5 assumes that the Burtonwood Road Services site still has the majority of its B1 / B2 / B8 development to be constructed. As is discussed in response to Comment 6, a large amount of the site has already been built on, with far lower trip generators in the AM peak than the original consent, meaning that we have likely overestimated the future impact of this committed development on the road network. The true level of trip generation from this site is likely to represent a reduction in vehicles on the M62 Junction 8 roundabout, enabling the junction to operate within capacity in 2021 with the addition of development traffic.

WSP Comment:

A revised assessment has been undertaken including the amended B8 traffic flows (as outlined above in point 8), as well as amended HGV trips for the Mountpark and Zones 1-2 B2/B8 developments, which had not previously been converted into PCUs.

The Technical Note provided only appears to contain AM peak traffic flows in Appendix A. Please could the PM peak flows also be provided.

The results of the scenario 5 assessment (with mitigation) indicate that generally the junction will operate over practical capacity but within absolute capacity. Three lanes (M62 Eastbound off slip in the AM and Skyline Drive in the PM) exceed a DoS value of 90%. The analysis also indicates that the increase in queueing on these arms is predicted to be three PCUs or less. However, we consider that points 11 and 14 still need to be addressed regarding the manual intervention in traffic assignment between lanes and potential unequal lane usage due to exit merging. As such, the results may be revised.



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Highways England point 14 – Lane utilisation sensitivity test

Previous comments:

“The proposed mitigation scenario promotes using the two lanes available on the Skyline Drive exit. The exit merges from two lanes to one approximately 100m from the junction. Research has shown the presence of exit merges can influence upstream lane choice. We therefore suggest a sensitivity test should be undertaken with a 75/25% nearside / offside split in traffic to the Skyline Drive exit.”

Developer’s Consultant Response:

The proposed mitigation scenario models peak conditions experienced by the roundabout. As a result, it is considered appropriate that all available lanes will be fully utilised by traffic. Furthermore, observed operation of the existing roundabout show that HGVs exiting the roundabout onto Skyline Drive stick to the nearside lane whilst the majority of cars stick to the offside lane in order to pass the slower moving vehicles. It is therefore considered that the current split of traffic appropriately reflects anticipated operation.

WSP Comment:

This was requested to inform Highways England on the potential range of outcomes that may result from variation in lane utilisation. We would therefore recommend that these sensitivity tests are completed.

Highways England point 15 – Framework Travel Plan

Previous comments:

“The TA includes a chapter outlining a Framework Travel Plan (FTP) for the proposed development, which seeks to provide a basis for how a full Travel Plan (TP) might operate upon full occupation of the development. WSP suggest that the consultant could have sought to use data from the existing operational units on the wider Omega site, which would indicate the existing mode share in the area. This would therefore allow the occupier to derive some robust SMART targets for mode shift based on existing local data and implement the appropriate measures to encourage positive travel behaviours early in the new developments operation”

Developer’s Consultant Response:

The FTP sets out a range of measures and incentives which will be adopted at the developments to promote accessibility by sustainable modes. It is considered that the development of the site will build on the excellent sustainable travel initiative, including the bespoke Omega bus service and comprehensive pedestrian and cycle networks that are currently provided within Omega.

WSP Comment:

WSP agree that there is an opportunity for the development of the site to build on existing sustainable travel initiatives such as the Omega bus service. Efforts made by the developer to engage early with the Omega bus service operator to ensure that employees would have access to the service once the development is operational would be supported by Highways England.



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3. CONCLUSION

The majority of points queried have now been addressed. However, it is considered that points 11, 13 and 14 require some additional information or clarification to fully address these remaining points and fully understand the development impact.