

Land to the East of Leeds Road and Land at Heybeck Lane,  
Chidswell, Dewsbury – M62 J28 Cumulative Assessment

Pell Frischmann



C.C. Projects

# Land to the East of Leeds Road and Land at Heybeck Lane, Chidswell, Dewsbury

M62 Junction 28 Junction Cumulative Assessment

Final Report

A13398/VAA

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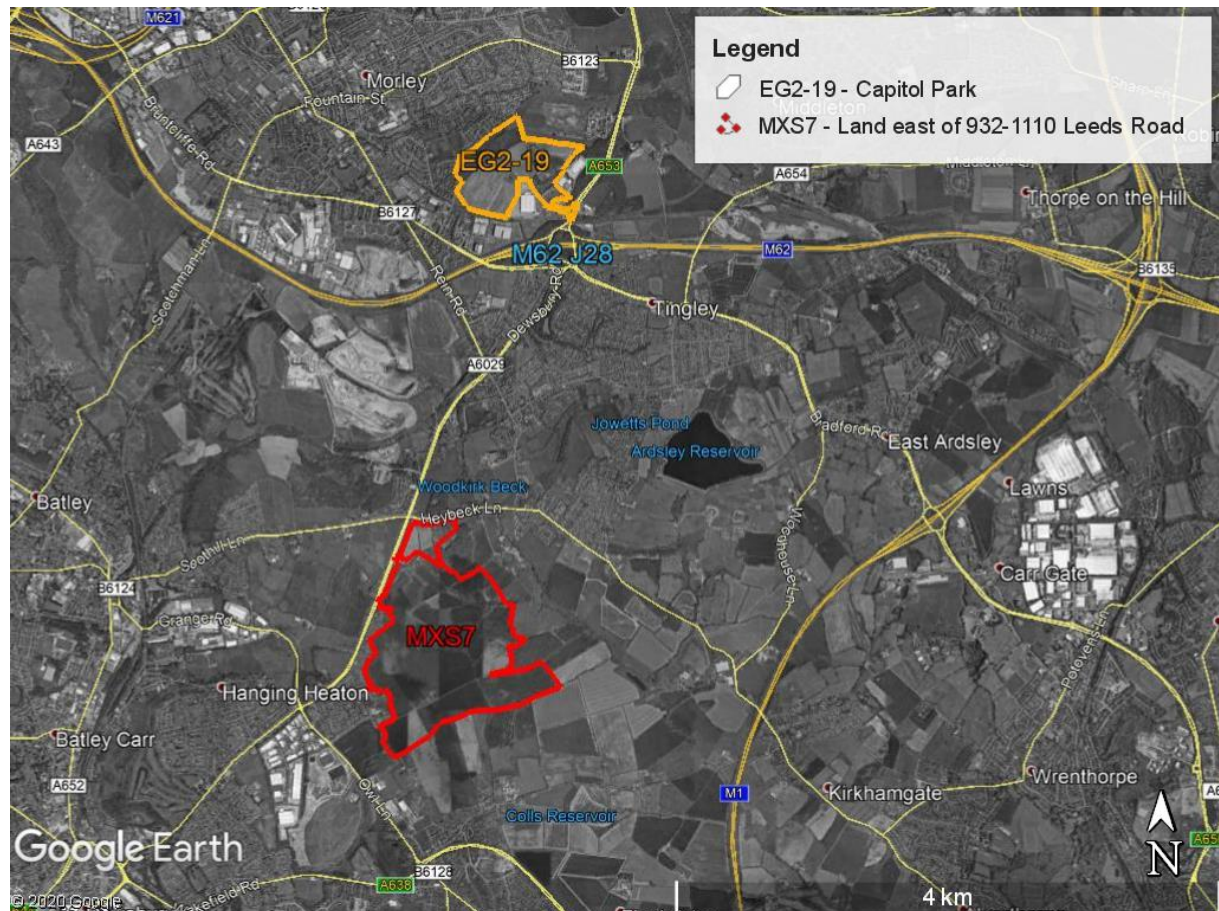
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# 1 Introduction

- 1.1 Pell Frischmann is commissioned by C.C. Projects (the 'Applicant') to provide transport planning and highways consultancy services in connection with the Proposed Development of Land to the East of Leeds Road and Land at Heybeck Lane, Chidswell, Dewsbury (Kirklees Local Plan site ID: MXS7; shown in **Figure 1.1**).
- 1.2 The Applicant's Proposed Development is split into two development parcels, referred to as 'Land at Heybeck Lane' (Site A) and 'Land to the East of Leeds Road' (Site B) respectively. Site A and Site B are the subject of separate outline planning applications that have been submitted in parallel to Kirklees Council (KC) in their position as the Local Planning Authority (LPA) with planning references 2020/60/92350/E and 2020/60/92331/E, respectively.
- 1.3 Highways England (HE) have previously raised issues with regards the future capability of the Strategic Road Network (SRN), specifically M62 Junction 28 (Tingley Interchange; herein 'J28'), to accommodate the cumulative effects of the Applicant's Proposed Development, the proposed development at the Capitol Park site located to the immediate north of the junction (Leeds Planning Ref: 20/08521/OT; also shown in **Figure 1.1**), and other cumulative developments across the wider Kirklees and Leeds areas (including, for example, 'Land at Owl Lane' being promoted by Barratt David Wilson Homes, Kirklees Planning Ref: 2019/92787, Kirklees Local Plan site ID: HS47).
- 1.4 As a part of the planning submissions, a Transport Assessment (TA) and associated documents were prepared to assess the individual and combined impacts of the Proposed Development. Following a series of scoping discussions with key stakeholders including KC, HE, Leeds City Council (LCC), Sterling Capitol (the applicant for the Capitol Park proposed development) and i-Transport (transport consultants on behalf of Sterling Capitol), agreement was reached that an assessment of the impact of all cumulative schemes (including those of the both applicants) would be undertaken to assess the need for mitigation at the junction and identify the scale and apportionment of any costs arising from such potential interventions.

Figure 1.1: Location of Applicant's Proposed Development relative to M62 J28



## Report Structure

1.5 The remainder of this Report is structured as follows:

- **Section 2:** identifies changes in methodology (or other relevant factors) which have been applied since the original Scoping Report.
- **Section 3:** details the scenarios for which modelling will be undertaken.
- **Section 4:** considers which of the sites identified by the relevant stakeholders will be included (or excluded) from consideration as committed developments for the purposes of this assessment.
- **Section 5:** presents the methodology and summary of background traffic growth factor determination.
- **Section 6:** iterates through the committed developments defined in Section 4 and presents summaries of their quantum, trip generation, mode share and trip distributions.
- **Section 7:** presents summaries of the quantum, trip generation, mode share and trip distributions of each of the applicants' proposed developments.
- **Section 8:** presents traffic modelling of M62 J28 using the scenarios defined in the previous sections.
- **Section 9:** concludes.

1.6 This report is also supported by a series of technical appendices (A to O).

## 2 Scoping Responses and Associated Changes

- 2.1 A Scoping Report<sup>1</sup> was prepared by Pell Frischmann (Ref: A13398/VAA July 2020 F1) setting out key assumptions, a proposed process for the required assessment of M62 Junction 28, and a summary of information and agreements required from the various stakeholders. The Scoping Report was issued on 29<sup>th</sup> July 2020 and is enclosed at **Appendix A**. It was issued to KC, LCC, HE, and the other relevant applicant stakeholders.
- 2.2 The Scoping Report detailed:
- the scenarios to be used in the subsequent analysis and their rationale
  - the process and assumptions relating to background growth forecasts
  - the processes and assumptions relating to cumulative developments in the KC and LCC local planning authority areas
  - the data sources for the applicants' proposed developments
- 2.3 In addition, the Scoping Report summarised a number of further items requiring agreement from the various stakeholders.
- 2.4 In the weeks that followed, a formal scoping response was received from KC (the 'KC Response'; dated 1<sup>st</sup> September; received 3<sup>rd</sup> September 2020; included at **Appendix B**). A response to this was produced by PF and was issued on the 16<sup>th</sup> September 2020 (included at **Appendix C**).
- 2.5 A formal scoping response was received from HE (Ref: STWY001-TM002 Final V1; the 'HE Response'; received 29<sup>th</sup> September 2020; included at **Appendix D**). A response to this was produced by PF and was issued on the 13<sup>th</sup> November 2020 (included at **Appendix E**).
- 2.6 In both the cases of KC and HE, the responses/comments received were broadly in agreement with the proposed approach, with the PF responses being mostly aimed at clarification of matters that were considered unclear in the original Scoping Report. The limited exceptions to this are noted later in this section, as is how they are addressed in the assessment that follows.
- 2.7 Informal discussions with i-Transport (on behalf of Sterling Capitol, applicant for Capitol Park) indicated that the Scoping as produced by PF was generally agreeable, subject to comparison with a parallel exercise to be undertaken by i-Transport.
- 2.8 Commentary or a response/review of the Scoping Report has not been received from LCC. In the absence of such, and in light of the broadly supportive responses received from KC and LCC on the defined scope of work, it is assumed that LCC found the scope proposed to be acceptable.

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<sup>1</sup> This scoping process was undertaken independently of the scoping process for the TA and FTP for the outline planning submissions relating to MXS7 by the Applicant. That scoping process was undertaken through 2018 and 2019, and in advance of the planning submissions.

## Outstanding Items and Changes from Scoping

### Additional Scenario

- 2.9 The KC Response requested an additional scenario be included to isolate the effect of the Proposed Development in line with traditional impact assessment. Though this assessment is concerned primarily with the proportion of impact attributable to the Proposed Development, this additional scenario was included at KC's request.

### TEMPRO Alternative Planning Assumptions

- 2.10 The KC Response indicated that the proposed use of TEMPRO 'alternative planning assumptions' (to discount applicants' and cumulative development growth from TEMPRO-derived factors) was potentially overcomplicated.
- 2.11 As summarised in the PF response to KC, the proposed methodology was essentially an application of the methodology specified in WebTAG Unit M4 paragraph 7.3.7, so as to avoid double-counting those trips accounted for specifically by the cumulative developments included in this assessment. The PF response to KC indicated that whilst the potential for simplification was welcomed, that a decision would be held in abeyance until responses had been received from the other stakeholders.
- 2.12 The HE Response, subsequently received, considered the proposed methodology to be acceptable.
- 2.13 On balance, considering that: the junction is a SRN junction outside the KC local highway authority area, and that the potential issue at hand is not an inherent rejection of the methodology but an issue of complexity, the methodology as proposed in the Scoping Report is retained in this assessment.

### 3 Scenarios

3.1 This section details the scenarios for which traffic flows will be determined, and against which junction mitigation measures (if required) will be assessed.

#### Base Year

3.2 Base year traffic flows are the scenario from which all subsequent scenarios are derived. The base year should be based on actual and representative surveyed data. Through the Scoping process it was agreed that the HE surveys undertaken of J28 on the 7<sup>th</sup> November 2019 were considered representative and should form the baseline.

3.3 Flows are available for the AM (**Table 3.1**) and PM (**Table 3.2**) peak periods. A review of the overall flow in the surveyed area captures a peak AM hour of 0730 to 0830 and a peak PM hour of 1630 to 1730 within those periods. Though determined independently, this coincides with the identified peak hours in the Applicant's TA, determined from surveys undertaken across the wider study area in March 2019.

**Table 3.1: J28 AM peak flow summary, 2019 survey base (pcu)**

		A	B	C	D	E	F	G	Total
M62 (E)	A	0	46	278	2	432	64	797	1619
A650 (SE)	B	34	0	73	252	536	23	452	1371
A653 (S)	C	477	28	0	206	159	21	822	1712
M62 (W)	D	3	201	135	0	38	42	219	638
A650 (W)	E	469	449	74	50	0	29	183	1253
Topcliffe Lane	F	8	7	3	6	4	0	13	40
A653 (N)	G	318	114	224	114	198	26	0	993
Total		1308	845	786	629	1365	205	2487	7626

**Table 3.2: J28 PM peak flow summary, 2019 survey base (pcu)**

		A	B	C	D	E	F	G	Total
M62 (E)	A	3	48	319	12	409	7	393	1190
A650 (SE)	B	17	0	83	157	446	5	222	929
A653 (S)	C	260	26	0	162	91	6	341	886
M62 (W)	D	5	338	230	0	15	7	157	752
A650 (W)	E	433	538	82	99	1	4	145	1302
Topcliffe Lane	F	60	14	39	40	15	0	37	206
A653 (N)	G	729	279	777	129	227	5	0	2146
Total		1507	1243	1530	599	1204	34	1296	7411

#### Future Year

3.4 Through the Scoping process, a future forecast year of 2032 was agreed. This relates to the key stakeholders as follows:

- KC Local Plan was adopted in 2019 and covers the period 2013 through 2031.

- LCC Local Plan was adopted in 2014 and updated in 2019. It covers policy through 2028 and following the 2019 update, housing allocations for the period 2017 through 2033.
- The applicants' proposed developments are both local plan allocations and as such are expected to be delivered in line with their respective local plan timescales.
  - The Applicant's Proposed Development applications for allocation MXS7 is supported by a TA which considers a future forecast year of 2030 (in line with the KC Local Plan), in which the entirety of the Proposed Development is expected to be complete and operational.
  - Sterling Capitol's proposed development application at Capitol Park for allocation EG2-19 is supported by a TA which considers a future forecast year of 2033 (in line with the LCC Local Plan), in which their proposed development is expected to be complete and operational.
- HE confirmed through the Scoping process that any proposed works to J28 are considered to be outside of their Road Investment Strategy (RIS) programme process with timescales instead driven by local plan outturn.

3.5 The full extent of both the KC and LCC Local Plan allocations will be assumed to have been delivered by the 2032 future year scenario to ensure a robust assessment.

## Proposed Scenarios

3.6 The following traffic flow scenarios will be assessed for the AM and PM peak hours:

- 2019 base year: Based upon neutral weekday survey flows (and signal operation data) collected by HE for J28 on 7th November 2019.
- An additional series of theoretical 2019 scenarios to illustrate the relative impact of the various contributory datasets, in the absence of potentially obfuscatory TEMPRO growth:
  - 2019 base year plus committed development: base year flows with defined Local Plan committed development flows added (see Section 6; excluding the applicants' proposed developments)
  - 2019 base year plus Capitol Park: future year base flows with Capitol Park's proposed development flows (see Section 7) exclusively added.
  - 2019 base year plus MXS7: future year base flows with the Applicant's Proposed Development flows (see Section 7) exclusively added.
  - 2019 base year plus committed development plus Capitol Park
  - 2019 base year plus committed development plus MXS7
  - 2019 base year plus committed development plus Capitol Park plus MXS7
- 2032 future year base: base year flows with TEMPRO-derived growth factors applied (see Section 5). 'Alternative planning assumptions' will be used with TEMPRO to exclude those committed developments being specifically considered in this exercise.
- 2032 future year plus committed development: future year base flows with defined Local Plan committed development flows added (see Section 6; excluding the applicants' proposed developments)
- 2032 future year plus Capitol Park: future year base flows with Capitol Park's proposed development flows (see Section 7) exclusively added.
- 2032 future year plus MXS7: future year base flows with the Applicant's Proposed Development flows (see Section 7) exclusively added.
- 2032 future year plus committed development plus Capitol Park

- 2032 future year plus committed development plus MXS7
- 2032 future year plus committed development plus Capitol Park plus MXS7

- 3.7 The traffic flow scenarios build upon on one another. This build-up is alternatively summarised in **Table 3.3**.
- 3.8 The list of scenarios is extended from those listed in the Scoping Report. Additional scenarios have been included to isolate the impact of the Applicant's Proposed Development (MXS7) at KC's request, and by extension, equivalently for Capitol Park.

**Table 3.3: Build-up of traffic flow scenarios**

Scenario	Base year data	Future background growth factors applied to base year data	Committed development trip generation including: KC sites and LCC sites, excluding the applicants' sites	Trip generation: MXS7 (Applicant's Proposed Development)	Trip Generation: Capitol Park East (Sterling Capitol's proposed development)
2019 base year	✓				
2019 base year plus committed development	✓		✓		
2019 base year plus Capitol Park East	✓				✓
2019 base year plus MXS7	✓			✓	
2019 base year plus committed development plus Capitol Park East	✓		✓		✓
2019 base year plus committed development plus MXS7	✓		✓	✓	
2019 base year plus committed development plus Capitol Park East plus MXS7	✓		✓	✓	✓
2032 future year base	✓	✓			
2032 future year plus committed development	✓	✓	✓		
2032 future year plus Capitol Park East	✓	✓			✓
2032 future year plus MXS7	✓	✓		✓	
2032 future year plus committed development plus Capitol Park East	✓	✓	✓		✓
2032 future year plus committed development plus MXS7	✓	✓	✓	✓	
2032 future year plus committed development plus Capitol Park East plus MXS7	✓	✓	✓	✓	✓

## 4 Committed Developments

- 4.1 Potential committed development sites are limited to those in the Kirklees Council (KC) and Leeds City Council (LCC) local authority areas. This was agreed through the Scoping Process.

### Kirklees

#### Collation of Sites

- 4.2 As summarised within i-Transport’s July 2019 technical note (included at **Appendix F**), a review of the KC Local Plan for policy wording relating to the potential for impact on the SRN resulted in the identification of the sites detailed in **Table 4.1**.

**Table 4.1: Sites identified by i-Transport from the KC Local Plan**

Local Plan Site Reference	Site Name	Notes
MXS7	‘Land east of 932-1110 Leeds Road, Shaw Cross/Woodkirk, Dewsbury’	Allocated in the KC Local Plan for 1,535 dwellings and 122,500m <sup>2</sup> of employment space. The Applicant’s site, currently in planning with KC Planning References: 2020/60/92350/E and 2020/60/92331/E.
HS47	‘Land east of Leeds Road, Chidswell’	Allocated in the KC Local Plan for 280 dwellings, this site belongs to Barratt David Wilson Homes’ and is in planning with KC (Planning Ref: 2019/92787) for 252 homes.
HS52	‘Land south west of Dewsbury Rams RLFC, Owl Lane, Shaw Cross’	Allocated in the KC Local Plan for 206 dwellings, this is now referred to as Amberwood Chase (KC Planning Ref: 2014/90780)

- 4.3 A replication of this exercise completed by Pell Frischmann identified the sites in **Table 4.2** by the same methodology<sup>2</sup>.

<sup>2</sup> All sites in the KC Local Plan – Allocations and Designations (February 2019) with a ‘Site Specific Consideration’ of “Development of this site has the potential for a significant impact on the Strategic Road Network” are listed, excluding HS11 and HS96 which are located in Huddersfield and Cleckheaton respectively, and whilst near to the SRN, are remote from J28.

**Table 4.2: Sites identified by Pell Frischmann from the KC Local Plan**

Local Plan Site Reference	Site Name	Notes
MXS7	'Land east of 932-1110 Leeds Road, Shaw Cross/Woodkirk, Dewsbury'	Allocated in the KC Local Plan for 1,535 dwellings and 122,500m <sup>2</sup> of employment space. The Applicant's site, currently in planning with KC Planning References: 2020/60/92350/E and 2020/60/92331/E.
HS47	'Land east of Leeds Road, Chidswell'	Allocated in the KC Local Plan for 280 dwellings, this site belongs to Barratt David Wilson Homes' and is in planning with KC (Planning Ref: 2019/92787) for 252 homes (since revised to 280).
HS61	'Land to the south of, Ravensthorpe Road / Lees Hall Road, Dewsbury'	Commonly referred to as 'Dewsbury Riverside', site is allocated for 1,869 dwellings with potential for a further 2,131 dwellings beyond the Local Plan period.

- 4.4 The email attached at **Appendix G** from March 2020 summarises KC's requirements for the inclusion of cumulative development sites in the KC local authority area. These are summarised in **Table 4.3**.

**Table 4.3: Sites identified by KC through email correspondence**

Local Plan Site Reference	Site Name	Notes
MXS7	'Land east of 932-1110 Leeds Road, Shaw Cross/Woodkirk, Dewsbury'	Allocated in the KC Local Plan for 1,535 dwellings and 122,500m <sup>2</sup> of employment space. The Applicant's site, currently in planning with KC Planning References: 2020/60/92350/E and 2020/60/92331/E.
HS47	'Land east of Leeds Road, Chidswell'	Allocated in the KC Local Plan for 280 dwellings, this site belongs to Barratt David Wilson Homes' and is in planning with KC (Planning Ref: 2019/92787) for 252 homes (since revised to 280).
HS61	'Land to the south of, Ravensthorpe Road / Lees Hall Road, Dewsbury'	Commonly referred to as 'Dewsbury Riverside', site is allocated for 1,869 dwellings with potential for a further 2,131 dwellings beyond the Local Plan period.

- 4.5 **Appendix G** also notes that site HS52, identified by i-Transport, "is now largely built out and nearing completion. [HS52] was not identified as having a material impact on the Strategic Road Network". It is therefore not included on KC's list of sites with a potential impact on the SRN. Aerial photography shows that the site's construction was mostly complete or in progress in early 2019, so it is reasonable to assume that by late 2019, the site would have been essentially complete and operational.

- 4.6 HS47, also known as ‘Land at Owl Lane’ and adjacent to the Applicant’s site, was subject to a Highways England (HE) holding objection in October 2019 (**Appendix H**) as “*Highways England recommend[ed] that planning consent should not be granted until this work has been satisfactorily undertaken and the impact of the development on the M62 J28...*”. This was superseded by a ‘no objection’ recommendation in January 2020 (also in **Appendix H**) however it is understood that no impact assessment of J28 has been undertaken in the interim.

#### Inclusion/Exclusion Grounds

- 4.7 On the basis of the aggregated sites identified across the various stakeholders’ methodologies, **Table 4.4** considers each in turn.

**Table 4.4: Summary of inclusion/exclusion grounds for sites in the KC area**

Local Plan Site Reference	Site Name	Notes
MXS7	‘Land east of 932-1110 Leeds Road, Shaw Cross/Woodkirk, Dewsbury’	The Applicant’s site. This will therefore be <b>included</b> as an intrinsic part of the assessment process.
HS47	‘Land east of Leeds Road, Chidswell’	Identified in the KC Local Plan as having the potential to impact the SRN. HS47 is also included on the list of sites considered necessary by KC. HS47 is therefore <b>included</b> in the relevant committed developments.
HS52	‘Land south west of Dewsbury Rams RLFC, Owl Lane, Shaw Cross’	Identified by i-Transport for potential inclusion but noted by KC that it is largely built-out and that no SRN impacts are expected. Near completion is verifiable from early-2019 aerial photography so near-practical completion by late 2019 can be reasonably assumed. HS52 is therefore <b>excluded</b> from the relevant committed developments.
HS61	‘Land to the south of, Ravensthorpe Road / Lees Hall Road, Dewsbury’	Identified in the KC Local Plan as having the potential to impact the SRN. HS61 is also included on the list of sites considered necessary by KC. HS61 is <b>included</b> in the relevant committed developments.

## Leeds

#### Collation of Sites

- 4.8 As summarised within i-Transport’s July 2019 technical note (attached at **Appendix F**), a review of the LCC Local Plan for policy wording relating to the potential for impact on the SRN resulted in the identification of the sites detailed in **Table 4.5**.

**Table 4.5: Sites identified by i-Transport from the LCC Local Plan**

Local Plan Site Reference	Site Name	Notes
EG2-19	'Capitol Park'	This site is promoted by Sterling Capitol, is allocated in the LCC Local Plan, and is proposed for 96,573m <sup>2</sup> of industrial space and 2,323m <sup>2</sup> of employment space. This site is located to the immediate northwest of J28.
HG2-158	'Tingley Mills, Tingley Common, Morley'	This site is allocated in the LCC Local Plan for 100 dwellings.
HG2-167	'Old Thorpe Lane (land off), Tingley'	This site is allocated in the LCC Local Plan for 207 dwellings.
HG2-168	'Haigh Wood, Ardsley (North)'	This site is allocated in the LCC Local Plan for 108 dwellings.
HG2-169	'Haigh Wood, Ardsley (South)'	This site is allocated in the LCC Local Plan for 262 dwellings.

4.9 A replication of this exercise completed by PF identified the sites in **Table 4.6** by the same methodology<sup>3</sup>.

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<sup>3</sup> All sites in the LCC Site Allocations Plan (July 2019) with a 'Local Highway Network Site Requirement' referencing either (or both of) the M62 Junction 28 or the A653 (which runs through J28) are listed. The Site Allocations are subdivided into 11 'Housing Market Characteristic Areas'. These were all reviewed for this exercise, but all identified sites are found within the 'Outer South West' area only (as is J28).

**Table 4.6: Sites identified by PF from the LCC Local Plan**

Local Plan Site Reference	Site Name	Notes
EG2-19	'Capitol Park'	LCC Local Plan Site Requirements note that: <i>"There is a direct impact upon M62 Junction 28 Tingley roundabout from this development. [...] The proposed development is also likely to impact on congested parts of the A653 including within the district of Kirklees."</i>
HG2-158	'Tingley Mills, Tingley Common, Morley'	LCC Local Plan Site Requirements note that: <i>"It is also likely to have a cumulative impact at M62 Junction 28 Tingley."</i>
HG2-167	'Old Thorpe Lane (land off), Tingley'	LCC Local Plan Site Requirements note that: <i>"The proposed development is also likely to impact on congested parts of the A653 including within the district of Kirklees."</i>
HG2-168	'Haigh Wood, Ardsley (North)'	LCC Local Plan Site Requirements note that: <i>"The proposed development is also likely to impact on congested parts of the A653 including within the district of Kirklees."</i>
HG2-169	'Haigh Wood, Ardsley (South)'	LCC Local Plan Site Requirements note that: <i>"The proposed development is also likely to impact on congested parts of the A653 including within the district of Kirklees."</i>

- 4.10 This exercise demonstrates no change from the exercise previously undertaken by i-Transport.
- 4.11 A High Court judgement<sup>4</sup>, decided in June 2020, found in favour of a legal challenge against LCC's Site Allocation Plan (SAP) due to a large number of Green Belt site allocations that were considered by LCC to be required to enable substantial housing growth. Legal remedy has been determined as the removal of the Green Belt housing sites and the SAP being subject to a new Examination focusing on housing supply. The result of this review, combined with a reduction in the level of housing growth expected in LCC over the SAP period, means that the number and location of cumulative sites expected to be within the LCC Local Plan area is now likely to be substantially changed and reduced. For the purpose of this assessment, it will be assumed that the sites identified will be unaffected by the outcome of

<sup>4</sup> <http://www.landmarkchambers.co.uk/wp-content/uploads/2020/06/Airborough-Approved-Judgment.pdf>

this judgement, though it is noted that a significant proportion of the ‘Outer South West’ housing allocation<sup>5</sup> is on Green Belt land.

- 4.12 The email attached at **Appendix I** from March/April 2020 stemmed from i-Transport’s proposed cumulative site list. The relevant outcomes are summarised in **Table 4.7**.

**Table 4.7: Sites identified by LCC through email correspondence**

Local Plan Site Reference	Site Name	Notes
EG2-19	‘Capitol Park’	The site promoted by Sterling Capitol
HG2-158	‘Tingley Mills, Tingley Common, Morley’	Per email of 2 <sup>nd</sup> April 2020: “ <i>the Tingley Mills site has outline planning consent for the undeveloped part of the allocation for 22 dwellings ([LCC Planning Reference:] 17/01825/OT) so this will not be able to provide a contribution.</i> ”
HG2-167	‘Old Thorpe Lane (land off), Tingley’	Per email of 2 <sup>nd</sup> April 2020: “ <i>Allocation HG2-167 for [207] units had an outline application in ([LCC Planning Reference:] 16/02584/OT) albeit withdrawn, [Transport Assessment] for 170 dwellings.</i> ”
HG2-168	‘Haigh Wood, Ardsley (North)’	Two adjacent sites combined referred to as ‘Haigh Moor Road’.
HG2-169	‘Haigh Wood, Ardsley (South)’	Per email of 2 <sup>nd</sup> April 2020, “ <i>Allocation 370 dwellings, existing application [LCC Planning Reference: 17/08262/OT] for 299, remaining allocation = 71 dwellings [...] suggest [trip information in the existing application] is pro-rated for the additional 71 dwellings</i> ”

#### Inclusion/Exclusion Grounds

- 4.13 On the basis of the aggregated sites identified across the various stakeholders’ methodologies, **Table 4.8** considers each in turn.

<sup>5</sup> See Table 1 of Section 2 (Retail, Housing, Employment and Greenspace overview) of the LCC Site Allocations Plan. Green Belt land represents 37% of new allocations up to 2028 in the Outer South West area

**Table 4.8: Summary of inclusion/exclusion grounds for sites in the LCC area**

Local Plan Site Reference	Site Name	Notes
EG2-19	'Capitol Park'	This is Sterling Capitol's site. As a key stakeholder in the J28 assessment process, this will therefore be <b>included</b> as an intrinsic part of the assessment process.
HG2-158	'Tingley Mills, Tingley Common, Morley'	This site is identified in the LCC Local Plan as being likely to have an impact on J28. Whilst LCC's note that the remaining allocation is too small to be required to make a contribution, the impact should be quantified. This 22 unit allocation is now in planning (LCC Planning Ref: 19/04616/FU) and so the remaining part of the HG2-158 allocation is therefore <b>included</b> from the relevant committed developments.
HG2-167	'Old Thorpe Lane (land off), Tingley'	This site is identified in the LCC Local Plan as being likely to have an impact on the A653 (for which J28 is a key junction). HG2-167 is identified for inclusion in the cumulative impact assessment by LCC. HG2-167 is therefore <b>included</b> in the relevant committed developments.
HG2-168 / HG2-169	'Haigh Wood, Ardsley' (North and South)	These sites are identified in the LCC Local Plan as having the potential to impact on the A653 (for which J28 is a key junction). As adjacent allocations, these sites have been treated together and they are identified for inclusion in the cumulative impact assessment by LCC on a combined basis. HG2-168 and HG2-169 are therefore <b>included</b> in the relevant committed developments.

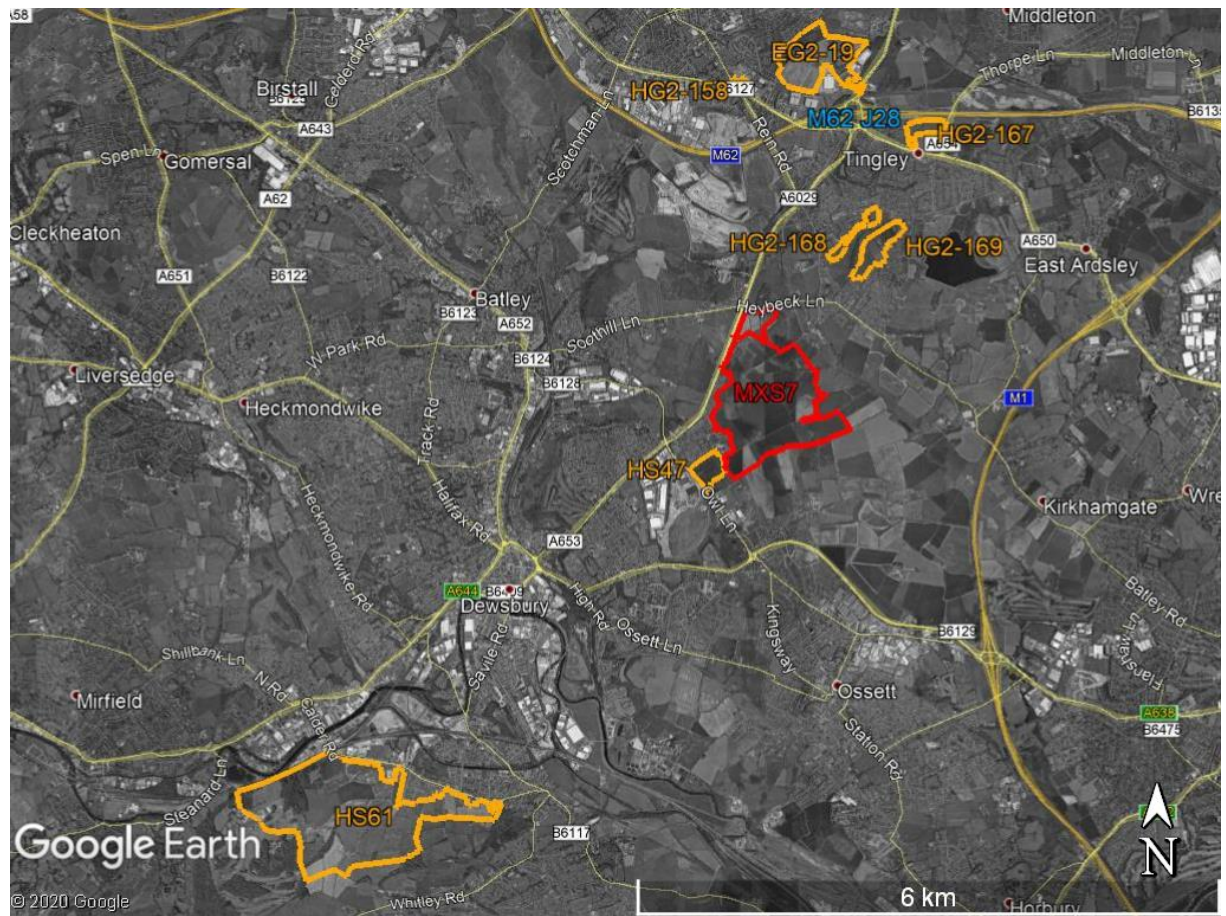
## Summary

- 4.14 This section presents a summary of the potential sites in the KC and LCC local authority areas which were identified by the various stakeholders to have the potential for a significant contributory impact to future changes in traffic flows on M62 Junction 28.
- 4.15 Each stakeholder's inputs were reviewed with the ultimate decision on inclusion or exclusion being determined by the relevant highway authority. **Table 4.9** summarises all the sites that will be included in the subsequent cumulative impact analysis.

**Table 4.9: Summary of sites to be included in the J28 cumulative impact analysis**

Local Plan Site Reference	Site Name	Notes
MXS7	'Land east of 932-1110 Leeds Road, Shaw Cross/Woodkirk, Dewsbury' Kirklees	Allocated in the KC Local Plan for 1,535 dwellings and 122,500m <sup>2</sup> of employment space. The Applicant's site, currently in planning with KC Planning References: 2020/60/92350/E and 2020/60/92331/E.
HS47	'Land east of Leeds Road, Chidswell' Kirklees	Allocated in the KC Local Plan for 280 dwellings, this site belongs to Barratt David Wilson Homes' and is in planning with KC (Planning Ref: 2019/92787) for 252 homes (since revised to 280).
HS61	'Land to the south of, Ravensthorpe Road / Lees Hall Road, Dewsbury' Kirklees	Commonly referred to as 'Dewsbury Riverside', site is allocated for 1,869 dwellings with potential for a further 2,131 dwellings beyond the Local Plan period.
EG2-19	'Capitol Park' Leeds	This site is promoted by Sterling Capitol, is allocated in the LCC Local Plan, and is proposed for 96,573m <sup>2</sup> of industrial space and 2,323m <sup>2</sup> of employment space. This site is located to the immediate northwest of J28.
HG2-158	'Tingley Mills, Tingley Common, Morley' Leeds	This site is allocated in the LCC Local Plan and partially delivered, with a remaining allocation of 22 dwellings having outline consent as yet undelivered (LCC Planning Reference: 17/01825/OT and 19/04616/FU).
HG2-167	'Old Thorpe Lane (land off), Tingley' Leeds	This site is allocated in the LCC Local Plan for 207 dwellings and had a (now withdrawn) outline application for 170 dwellings (LCC Planning Reference: 16/02584/OT).
HG2-168 / HG2-169	'Haigh Wood, Ardsley' Leeds	These sites are allocated in the LCC Local Plan for 370 dwellings and have an existing application (LCC Planning Reference: 17/08262/OT) for 299 dwellings.

Figure 4.1: Location and approximate extent of cumulative development site allocations



## 5 Background Traffic Growth

- 5.1 Background traffic growth between a base and future year generally includes: the increase in traffic due to new/cumulative development both locally and more widely; and for changing propensity to travel due to changes in demographics and other factors. The central Department for Transport assumption for this future growth in demand is accounted for in the TEMPRO/NTEM (National Trip End Model) forecasts.
- 5.2 The growth attributable to committed developments and the applicants' proposed developments is considered in subsequent sections.

### Alternative Assumption Adjustment

- 5.3 As the major cumulative developments in the KC and LCC areas are to be accounted for specifically through this assessment process (See Section 4), the future TEMPRO growth forecast will need to exclude them. This is achieved by applying 'alternative planning assumptions' to the future trip end growth forecasts produced by TEMPRO to remove the influence of the defined cumulative developments from the NTEM on the basis of forecast household and job numbers (see Department for Transport, Transport Appraisal Guidance Unit M4: para 7.3.7 and Box 2). Future trips due to those excluded developments are then assigned to the junction manually in line with the local planning distribution assumptions (i.e. the process identified in Section 6).

### Quantification of Households and Jobs

- 5.4 The basis of the TEMPRO dataset, and consequently the alternative assumptions to be applied, is a quantum of households and of jobs for each local planning authority area. For each committed development and the applicants' proposed developments, the following quantum/assumptions have been applied and summarised in **Table 4.9**.

**Table 5.1: Summary of sites to be included in the J28 cumulative impact analysis**

Local Plan Site Reference	Site Name	Households	Jobs
MXS7	'Land east of 932-1110 Leeds Road, Shaw Cross/Woodkirk, Dewsbury' Kirklees	Per planning submissions (KC Ref: 2020/60/92350/E and 2020/60/92331/E): 1 535 households	3 090 (see <b>Table 5.4</b> )
HS47	'Land east of Leeds Road, Chidswell' Kirklees	Per planning submission (KC Ref: 2019/92787 Transport Assessment): 275 households <sup>6</sup>	0
HS61	'Land to the south of, Ravensthorpe Road / Lees Hall Road, Dewsbury' Kirklees	Per KC Local Plan: 1 869 households <sup>7</sup>	0
Total in KC area		3 679	3 090
EG2-19	'Capitol Park' Leeds	0	1 170 <sup>8</sup> (see <b>Table 5.4</b> )
HG2-158	'Tingley Mills, Tingley Common, Morley' Leeds	Per LCC Local Plan outstanding allocation (LCC Ref: 17/01825/OT): 22	0
HG2-167	'Old Thorpe Lane (land off), Tingley' Leeds	Per LCC Local Plan: 207 households	0
HG2-168 / HG2-169	'Haigh Wood, Ardsley' Leeds	Per LCC Local Plan: 370 households	0
Total in LCC area		599	2 705
Grand Total		4 278	5 795

<sup>6</sup> The assessment of transport impacts in this site's Transport Assessment is on the basis of 275 dwellings to allow for variation in outturn housing types, though the then proposed quantum of development was for 252 residential dwellings. An update to the planning application in late October 2020 revised the Schedule of Accommodation to a total of 280 units, however updated transport information was not submitted, so it is assumed that the assessment originally presented in the TA (regards a nominal 275 dwellings) remains valid.

<sup>7</sup> The KC Local Plan Allocation states "1,869 dwellings with potential for a further 2,131". This reflects an allocation of 1869 dwellings in the KC Local Plan period, and the additional 2131 on the same site in a Local Plan period post-2031.

<sup>8</sup> Per Scenario B of Table 6.1 of the TA for the proposed Capitol Park development. This is in line with the scenario instructed by i-Transport for PF's use in this assessment, and as the lower job quantum of

- 5.5 Both the applicants' proposed developments will provide for significant levels of employment, however transport planning matters for employment uses are primarily based on gross external area (GEA) floorspace allocations. To arrive at a quantification of jobs, a conversion is required.
- 5.6 The Homes & Communities Agency (HCA) Employment Density Guide 2015 3<sup>rd</sup> Edition (the 'EDG') has been used to convert floorspace figures to employment densities. The EDG presents floor space allocations relevant for the uses at hand as summarised in **Table 5.2**. These are presented in a mix of GEA, gross internal area (GIA) and net internal area (NIA).

**Table 5.2: HCA Employment Density Guide floorspace assumptions**

Use Class	Use Type	Assumption	Note
B1(a)	Office	12m <sup>2</sup> per job (NIA)	A breakdown for B1(a) is provided in the EDG based on the sub-user type, however the occupants are unknown at time of writing and so the combined 2010 density has been used in these calculations. This is equivalent to the density assumption for professional services and public sector uses in the 2015 breakdown, a lower density than 'finance & insurance' (10 m <sup>2</sup> NIA per job), but a higher density than 'corporate use' (13m <sup>2</sup> NIA per job). The assumed density is therefore considered reasonable.
B1(c)	Light Industrial	47m <sup>2</sup> per job (NIA)	As EDG.
B2	Industrial and Manufacturing	36m <sup>2</sup> per job (GIA)	As EDG.
B8	Storage and Distribution	73.5m <sup>2</sup> per job (GEA)	A breakdown for B8 is provided in the EDG based on the sub-user type. Given the Proposed Development's location, the use of 'national distribution centre' (95m <sup>2</sup> GEA per job) is considered less likely so an average of the (higher) densities for 'regional distribution centre' (77m <sup>2</sup> GEA per job) and 'final mile distribution centre' (70m <sup>2</sup> GEA per job) have been used as a reasonable estimation of job density for the Proposed Development's B8 uses.

- 5.7 In order to apply the assumptions derived from the EDG, densities have been converted to GEA (where necessary) using assumptions from the EDG. The calculations are summarised in **Table 5.3** and described below.

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the two scenarios, ensures a higher TEMPRO factor from the alternative planning assumption adjustment, and therefore a more robust assessment.

- 5.8 To convert between net internal and gross internal areas (NIA and GIA), the assumption in EDG paragraph 2.10 has been adopted, which states that “*For office space, the gross figure is typically 15-20% higher than the net internal*”. A reasonable mid-point assumption of 17.5% has therefore been applied. As EDG paragraph 2.10 goes on to note, for multi-tenanted buildings and for non-office uses, the range can be greater, but it is considered here that in the absence of known occupiers, that +17.5% represents a reasonable assumption for increase in area from net to gross floor area for B1(a) use. The same assumption has been applied to B1(c) use which is also given in the EDG in NIA.
- 5.9 To convert between gross internal and external areas (GIA and GEA), the assumption in paragraph 2.12 of the EDG has been applied which states that “*To convert [GEA] to a GIA, the general benchmark is a reduction of 5%.*” This assumption has been applied in the cases of B1(a), B1(c) and B2 uses, which are all given in the EDG in either NIA or GIA.
- 5.10 B8 type use is given in the EDG in GEA, so no conversion has been applied.

**Table 5.3: Employment density floorspace conversions**

Use Class:	B1(a) Office	B1(c) Light Industrial	B2 Industrial & Manufacturing	B8 Storage & Distribution
NIA (m <sup>2</sup> ):	12.0	47.0		
NIA to GIA conversion factor:	× 1.175			
GIA (m <sup>2</sup> ):	14.1	55.2	36.0	
GIA to GEA conversion factor:	× 1.0526 (i.e. GIA ÷ 0.95)			
GEA (m <sup>2</sup> ):	14.8	58.1	37.9	73.5

- 5.11 Applying the calculated employment densities to the proposed floorspaces for the Applicant’s Proposed Development, the job numbers summarised in **Table 5.4** are derived. This is supplemented with employment forecasts (also included in **Table 5.4**) based on the planning submission by the applicant for Capitol Park (EG2-19, TA Scenario B, Table 6.1). Both applicants’ proposed developments are the only relevant allocations which include employment floorspace.

**Table 5.4: Employment calculations for considered proposed developments**

Use Class:	B1(a) Office	B1(c) Light Industrial	B2 Industrial & Manufacturing	B8 Storage & Distribution
<b>'Land east of 932-1110 Leeds Road, Shaw Cross/Woodkirk, Dewsbury', (MXS7)</b>				
Proposed/ Assumed GEA (m <sup>2</sup> )	18 375	12 250	30 625	61 250
Computed Jobs	1 238	211	808	833
Total Jobs	3 090			
<b>'Capitol Park', (EG2-19)</b>				
Proposed/ Assumed GEA (m <sup>2</sup> )				95 574 plus 7 316 ('parcel distro.')
Computed Jobs (per submitted TA for Capitol Park, Scenario B)				1 057 plus 113 ('parcel distro.')
Total Jobs	1 170			
<b>Grand Total Jobs</b>	<b>4 260</b>			

#### Adjustments to TEMPRO households and jobs

- 5.12 To determine TEMPRO growth rates with the considered developments excluded, the underlying parameters of the NTEM zones which are used to produce TEMPRO factors can be adjusted. By reducing the future forecast numbers of households and jobs by the same amount as those for the included committed developments, the TEMPRO factors can exclude their effect. This allows the specific effect of developments to be added manually, rather than as a part of background growth. **Table 5.5** summarises the standard and alternative assumptions relevant to this assessment.

**Table 5.5: Summary of TEMPRO alternative planning assumptions**

Local Authority:	Kirklees (Authority)	Leeds (Authority)
<b>Standard Assumptions (TEMPRO v7.2b)</b>		
Base households (2019)	183 775	343 042
Base jobs (2019)	184 946	447 676
Future households (2032)	200 623	380 411
Future jobs (2032)	191 480	462 895
<b>Alternative Assumptions</b>		
Household adjustment	-3 679	-599
Jobs adjustment	-3 090	-1 170
Future households (2032)	196 944	379 812
Future jobs (2032)	188 390	461 725

## TEMPRO Growth Rates

- 5.13 Using the current version (v7.2b) of TEMPRO, growth rates were determined for the Kirklees and Leeds local authority areas. It was proposed in the Scoping Report to use a blended KC/LCC TEMPRO-derived growth factor. However, as of the current version of TEMPRO (v7.2b, as of January 2021) it is not possible to make the necessary NTEM adjustment for a combined study area, and only possible to make this adjustment on the basis of the defined geographical areas in the TEMPRO dataset. Consequently, the higher of the two authority's rates (in this case LCC) will be used to ensure a robust assessment. For reference, both authority's rates are presented.
- 5.14 Origin/destination car driver trip end growth rates are determined for each authority for the weekday AM and PM peak periods for the period 2019 to 2032 using the current dataset (version 72) for all purposes. NTM adjustment, to derive local growth figures, is made using the 'RTF [Road Traffic Forecast] 2018 Scenario 1 – Reference' dataset for 'all' road types and for the 'region' area.
- 5.15 Outputs from TEMPRO are summarised in **Table 5.6**, both without and with the alternative assumptions applied.

**Table 5.6: Summary of TEMPRO growth rates**

Local Authority:	Kirklees (Authority)		Leeds (Authority)	
	AM	PM	AM	PM
<b>Standard Assumptions</b>				
Origin car driver trip end growth rate	1.0907	1.0977	1.1355	1.1320
Destination car driver trip end growth rate	1.0979	1.0927	1.1337	1.1333
Average car driver trip end growth rate	1.0943	1.0952	1.1346	1.1327
NTM-adjusted local growth figure	1.1098	1.1107	1.1506	1.1487
<b>Alternative Assumptions</b>				
Origin car driver trip end growth rate	1.0712	1.0793	1.1336	1.1294
Destination car driver trip end growth rate	1.0799	1.0734	1.1310	1.1312
Average car driver trip end growth rate	1.0756	1.0764	1.1323	1.1303
NTM-adjusted local growth figure	1.0908	1.0916	<b>1.1483</b>	<b>1.1463</b>

- 5.16 The AM and PM adjusted growth rates (1.1483 and 1.1463 respectively) are used to derive the relevant future scenarios where TEMPRO rates are required.

## Scenarios

- 5.17 Application of the NTM-adjusted TEMPRO growth rates determined above yields the future year base scenarios for 2032. The AM (**Table 5.7**) and PM (**Table 5.8**) peak summaries are presented below.

**Table 5.7: J28 AM peak flow summary, 2032 future year base (pcu)**

		A	B	C	D	E	F	G	Total
M62 (E)	A	0	53	319	2	496	73	916	1859
A650 (SE)	B	39	0	84	289	615	27	519	1574
A653 (S)	C	548	32	0	237	182	24	944	1966
M62 (W)	D	3	231	155	0	44	48	251	733
A650 (W)	E	538	516	84	57	0	33	210	1439
Topcliffe Lane	F	9	7	3	6	4	0	15	45
A653 (N)	G	365	130	257	131	227	30	0	1140
Total		1502	970	903	722	1568	236	2855	8756

**Table 5.8: J28 PM peak flow summary, 2032 future year base (pcu)**

		A	B	C	D	E	F	G	Total
M62 (E)	A	3	55	365	13	469	8	450	1364
A650 (SE)	B	19	0	95	180	512	6	255	1065
A653 (S)	C	298	30	0	185	105	7	391	1016
M62 (W)	D	6	388	264	0	17	8	180	862
A650 (W)	E	496	617	94	114	1	5	166	1492
Topcliffe Lane	F	69	16	45	46	17	0	43	236
A653 (N)	G	836	319	891	148	260	6	0	2460
Total		1727	1425	1753	686	1380	38	1485	8495

## 6 Cumulative Developments

- 6.1 This section considers each of the committed developments identified in Section 4, and for each identifies: the quantum of development which will be accounted for in this assessment, the trip generation expected to be associated with this, the mode share of that trip generation that relates to road traffic, and the distribution of that traffic.
- 6.2 Each site's flow matrix for J28 is shown for information, and the section is summarised with the combined matrices for all the cumulative developments considered.

### Kirklees: HS47: 'Land east of Leeds Road, Chidswell'

#### Site Information

- 6.3 Site HS47 is located to the northeast of Owl Lane, in Shaw Cross (**Figure 6.1**). It is currently in planning (KC Planning Reference 2019/92787), pending determination.

**Figure 6.1: HS47 site location**



- 6.4 The proposed scheme is exclusively residential with a proposed 280 dwellings (as at end October 2020). As noted above, the original planning application was for 252 dwellings but an update to the planning application in late October 2020 revised the Schedule of Accommodation to a new total of 280 units.
- 6.5 Updated transport information was not submitted, so it is assumed that the assessment originally presented in the TA remains valid. The proposal's Transport Assessment was completed on the basis of 275 dwellings so as to ensure a robust case which would

accommodate any changes in outturn mix. Given the increase in dwellings was achieved through the inclusion of flats (and a reduction in houses) in the scheme, and flats would be expected to have a lower trip rate than an equivalent number of houses, this is likely to remain a reasonable assumption for a robust case.

- 6.6 The assessed quantum is therefore 275 dwellings, consistent with the quantum of dwellings considered in the TA.

#### Trip Generation and Mode Share

- 6.7 Trip generation rates were explicitly defined in the TA for HS47 (paragraph 5.2.1) as being the same as those agreed for MXS7 (the Applicant’s Proposed Development) and are replicated in **Table 6.1**. Those rates were TRICS-derived in line with usual practice during the preparation of the KC Local Plan. It is noted that separate discussions have taken place to-date between Pell Frischmann (on behalf of the Applicant for site MXS7) and Via Solutions, the transport consultant for Barratt David Wilson Homes (the applicant for site HS47), where information such as initial trip generation assumptions have been shared in a collaborative manner.
- 6.8 Although some non-residential uses’ trip rates agreed for MXS7 subsequently changed through negotiation with planning stakeholders, the trip rates for residential uses have also been assessed by the various stakeholders as a part of the TA review for the MXS7 planning submissions and have been found to be acceptable. The trip rates presented in the TA for HS47 are therefore considered to be appropriate for this assessment.
- 6.9 Mode shares for HS47 are also defined in that TA as being the same as those agreed for MXS7. At time of writing of the TA for HS47, those mode shares were derived from the ward-level (Dewsbury East Ward) 2011 Census Journey to Work data covering that site, which was a mode share of 65% for car/van drivers.
- 6.10 Through the process of engagement with planning stakeholders, the mode share methodology for MXS7 has subsequently changed (MXS7 mode shares are now based on 2011 Census JtW Kirklees 014 MSOA mode shares). However MSX7 is located to the north of HS47 and has a mix of uses which does not apply to HS47. The mode share used in the TA for HS47 has therefore been retained for this assessment.

**Table 6.1: HS47 trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trip rates (per dwelling)	0.233	0.818	0.605	0.390
Person trips	64	225	166	107
Two-way person trips	294		278	
Car/van driver mode share	65%			
Vehicle trip rates (per dwelling)	0.154	0.540	0.399	0.257
Vehicle trips	42	149	110	71
Two-way vehicle flows	191		180	

- 6.11 The resulting vehicle trip rates for HS47 are summarised in **Table 6.1**.

### Trip Distribution

- 6.12 Trip distribution in the TA for HS47 has been determined based on assigning trips to origin/destination pairs between HS47 and the “population centroid” for surrounding local authorities and MSOAs (Appendix D to that TA). Google Maps routing for these pairs was established to determine routing through that TA’s study area.
- 6.13 For the purpose of this assessment, the information in that TA has been reviewed to extract those routes (and therefore those trips) which traverse M62 J28. Trips between HS47 and Calderdale and Bradford local authority areas, and between HS47 and Leeds 093 MSOA are assigned through M62 J28 in that TA. This corresponds to 13.4% of vehicle trips due to HS47. The same routes are assumed for both inbound and outbound trips, with appropriate internal routing for the Tingley Interchange roundabout itself.
- 6.14 Extracted information has been summarised in **Table 6.2** and **Table 6.3**.

**Table 6.2: HS47 AM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A								
A650 (SE)	B								
A653 (S)	C				10			10	20
M62 (W)	D			3					3
A650 (W)	E								
Topcliffe Lane	F								
A653 (N)	G			3					3
Total				6	10			10	26

**Table 6.3: HS47 PM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A								
A650 (SE)	B								
A653 (S)	C				5			5	10
M62 (W)	D			7					7
A650 (W)	E								
Topcliffe Lane	F								
A653 (N)	G			7					7
Total				14	5			5	24

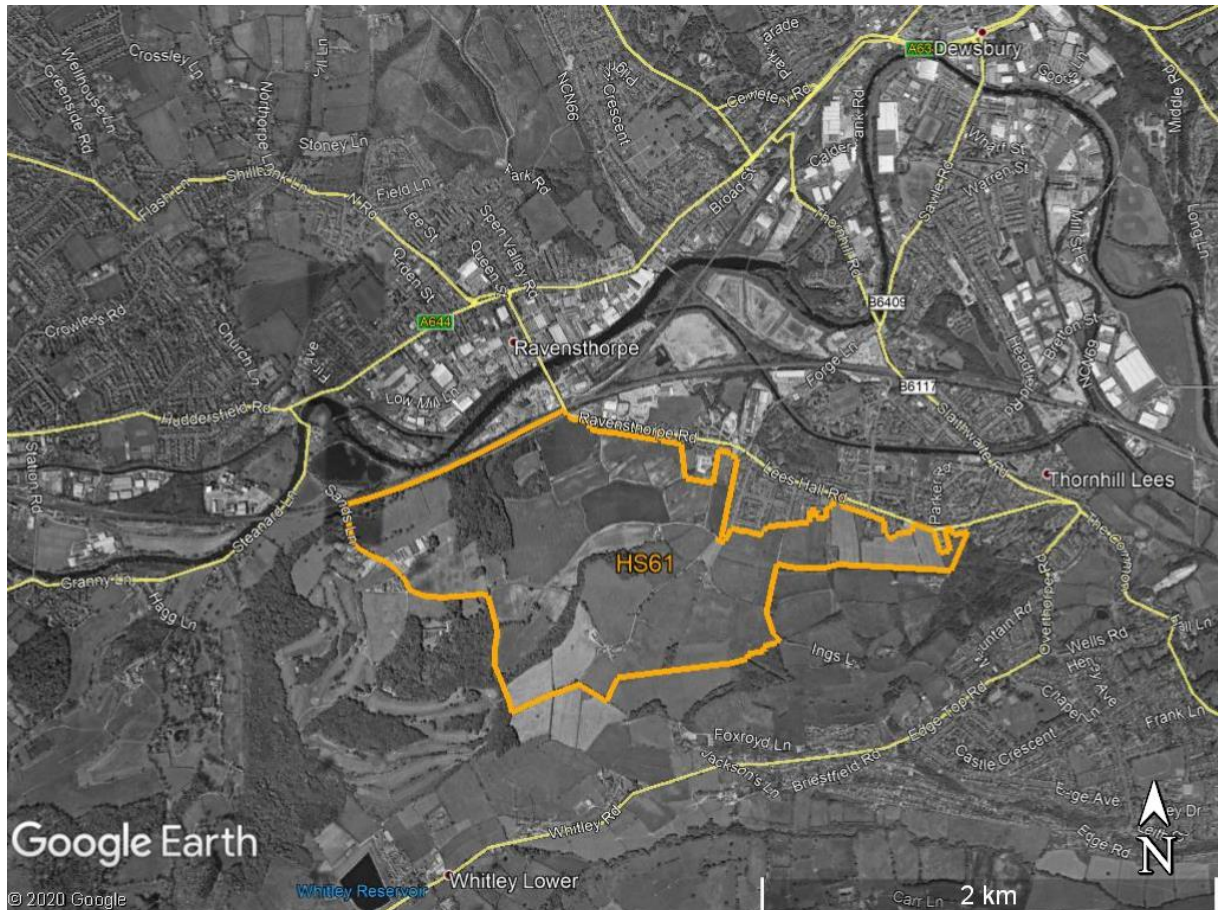
## Kirklees: HS61: ‘Land to the south of, Ravensthorpe Road / Lees Hall Road, Dewsbury’

### Site Information

- 6.15 Site HS61 is located to the south of Ravensthorpe (**Figure 6.2**). It is currently allocated in the KC Local Plan “for 1,869 dwellings with potential for a further 2,131 dwellings beyond the Local Plan period.”

- 6.16 No scheme is currently in planning (nor has previously been) so the allocation for the current local plan of 1869 residential dwellings will be assumed in this assessment.

Figure 6.2: HS61 site location



### Trip Generation and Mode Share

- 6.17 Trip generation rates for MXS7 (and by extension HS47) have been applied and agreed as acceptable for both MXS7 and HS47. These rates have therefore been assumed to be similarly applicable to HS61 and will be assumed for this assessment (**Table 6.5**). In line with the methodology agreed through the Scoping Process, mode shares will be assumed based on 2011 Census Journey to Work data.
- 6.18 HS61 is a large undeveloped site and overlaps a number of existing MSOAs: Kirklees 023 (Ravensthorpe), Kirklees 024 (Dewsbury Savile Town & Thornhill Lees), Kirklees 026 (Mirfield Central & Hopton) and Kirklees 028 (Thornhill). These are shown in **Figure 6.3**.



**Table 6.4: HS61-adjacent MSOA 2011 Census Journey to Work summary**

Mode Choice	Kirklees 023	Kirklees 024	Kirklees 026	Kirklees 028
Underground, metro, light rail, tram	0.0%	0.2%	0.1%	0.1%
Train	3.0%	4.1%	6.9%	2.3%
Bus, minibus or coach	10.1%	6.5%	4.8%	9.4%
Taxi	2.3%	2.2%	0.7%	0.9%
Motorcycle, scooter or moped	0.4%	0.4%	0.7%	0.9%
Driving a car or van	58.6%	63.4%	71.1%	70.2%
Passenger in a car or van	9.2%	7.4%	5.5%	7.7%
Bicycle	0.8%	1.0%	1.6%	0.8%
On foot	14.8%	14.0%	8.1%	7.0%
Other method of travel to work	0.8%	0.9%	0.5%	0.6%

**Table 6.5: HS61 trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trip rates (per dwelling)	0.233	0.818	0.605	0.390
Person trips	435	1529	1131	729
Two-way person trips	1964		1860	
Car/van driver mode share	58.6%			
Vehicle trip rates (per dwelling)	0.137	0.480	0.355	0.229
Vehicle trips	255	897	665	428
Two-way vehicle flows	1152		1091	

6.22 **Table 6.5** summarises the trip generation forecast for the HS61 allocation and applies mode share to determine vehicle trip generation.

#### Trip Distribution

6.23 In line with the methodology established in the Scoping Process for ‘sites not already in the planning system’, traffic is routed (using Google Maps) through a distribution exercise. Vehicle trips are assigned to routes in equivalent proportions to 2011 Census Journey to Work pairs (for residents of Kirklees 023) and for those routes which are likely to interact with J28 and to the centroid of a given MSOA.

6.24 A full detailing of assignment per MSOA is included at **Appendix J**. Proportions assigned to routes through the junction are routed from and to the relevant arms for arrival trips towards the site and departure trips away from the site. These proportions are then applied to vehicular trip generation and has been summarised in **Table 6.6** and **Table 6.7**. This corresponds to 4.0% of vehicle trips generated by HS61.

**Table 6.6: HS61 AM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A								
A650 (SE)	B			0					0
A653 (S)	C		1					35	36
M62 (W)	D								
A650 (W)	E								
Topcliffe Lane	F								
A653 (N)	G			10					10
Total			1	10				35	46

**Table 6.7: HS61 PM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A								
A650 (SE)	B			1					1
A653 (S)	C		0					17	17
M62 (W)	D								
A650 (W)	E								
Topcliffe Lane	F								
A653 (N)	G			26					26
Total			0	27				17	44

## Leeds: HG2-158: ‘Tingley Mills, Tingley Common, Morley’

### Site Information

- 6.25 Site HG2-158 is located in the south of Morley to the immediate north of the junction of Britannia Road x Bridge Street x Tingley Common x Rein Road (**Figure 6.4**). It is allocated in the Leeds Local Plan for 100 dwellings which have outline planning approval (Leeds Planning Reference: 17/01825/OT) and which have been partially delivered and therefore already form a part of the base scenario flows. 22 dwellings remain undelivered and this is the quantum that will be assessed as a future cumulative development.
- 6.26 A full planning application for the remaining 22 units has come forward concurrently with this assessment process (LCC Ref: 19/04616/FU), in the latter part of 2020. This new application has not yet been reviewed and consequently the assessment that follows is on the basis of the remaining part of the original outline application. Given the small allocation in question, it is not anticipated that any mismatch between the 2017 outline and 2020 full applications is likely to be substantive or of a non-trivial impact.



### Trip Distribution

- 6.29 In line with the methodology established in the Scoping Process for ‘sites in the planning system’ but for those parts of the analysis where the data in planning is of insufficient detail, the process below follows the same process defined for ‘sites not already in the planning system’.
- 6.30 Vehicle traffic is routed (using Google Maps) in equivalent proportions to 2011 Census Journey to Work pairs (for residents of Leeds 104 MSOA ‘Morley Central’) and for those routes which are likely to interact with J28 and to the centroid of a given MSOA.
- 6.31 A full detailing of assignment per MSOA is included at **Appendix K**. Proportions assigned to routes through the junction are routed from and to the relevant arms for arrival trips towards the site and departure trips away from the site. These proportions are then applied to vehicular trip generation and has been summarised in **Table 6.9** and **Table 6.10**. This corresponds to 69.6% of vehicle trips generated by HG2-158.

**Table 6.9: HG2-158 AM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A					1			1
A650 (SE)	B					1			1
A653 (S)	C								
M62 (W)	D					0			0
A650 (W)	E	2	0		1			3	6
Topcliffe Lane	F								
A653 (N)	G					1			1
Total		2	0		1	3		3	9

**Table 6.10: HG2-158 PM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A					1			1
A650 (SE)	B					0			0
A653 (S)	C								
M62 (W)	D					1			1
A650 (W)	E	1	0		0			1	2
Topcliffe Lane	F								
A653 (N)	G					2			2
Total		1	0		0	4		1	6

## Leeds: HG2-167: ‘Old Thorpe Lane (land off), Tingley’

### Site Information

- 6.32 Site HG2-167 is located in the northern part of Tingley between the A650 and M62 and in the land around Spink Well Lane (**Figure 6.5**). The land is allocated for 207 residential units. A planning application for 150 dwellings was subsequently withdrawn (Leeds Planning Reference: 16/02584/OT) but will be used as the basis of the following assessment in line with the process defined through Scoping. The full allocation of 207 units will be assessed.

**Figure 6.5: HG2-167 site location**



### Trip Generation and Mode Share

- 6.33 Trip generation rates were defined in the Transport Assessment for the previously submitted planning application (16/02584/OT) for HG2-167 on the basis of a conventional TRICS-based determination. TRICS was used to determine total person trip rates and direct vehicle trip rates. Though computed through a separate TRICS determination therein (not verified as a part of this analysis), these agree closely with the total person trip rates used for the sites in Kirklees and so are considered to remain acceptable for use in this assessment.

**Table 6.11: HG2-167 trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trip rates (per dwelling)	0.246	0.835	0.631	0.386
Person trips (207 dwellings)	51	173	131	80
Two-way person trips	224		211	
Vehicle trip rates (per dwelling)	0.152	0.420	0.396	0.232
Vehicle trips (207 dwellings)	31	87	82	48
Two-way vehicle flows	118		130	
Car/van driver mode share (effective)	53%		62%	

### Trip Distribution

- 6.34 Trip distributions) in the (withdrawn) HG2-167 TA are sub-divided by journey purpose with proportions being defined based on 2011 Census Journey to Work (45% of trips), Education trips (23% of trips), and 'other' trips (the remaining 32% of trips). This was completed using National Transport Survey data (2006-2010) provided by the Department for Transport and allowed different distributions to be applied for each journey type.

**Table 6.12: HG2-167 journey type distribution (see HG2-167 TA Section 6)**

Peak Period:	AM Peak
Journey to work	45%
Journey to education	23%
Other journeys	32%

- 6.35 Appendix M through R of the HG2-167 TA and Tables 6.3, 6.4 and 6.5 of that document detail distribution from which trips using J28 can be isolated for each journey type. Proportions for each are replicated in **Table 6.13**, **Table 6.14** and **Table 6.15**. In the following, arrival proportions are assumed the inverse direction of departure proportions shown (e.g. departing trips from Arm A to Arm B arrive to Arm A from Arm B).
- 6.36 Journeys to work are distributed in equivalent proportions to 2011 Census Journey to Work pairs (for residents of Morley South ward) and for those routes which are likely to interact with J28 and to a given MSOA (**Table 6.13**). The distribution in that TA includes distribution across the various arms of J28.

**Table 6.13: HG2-167 Departure trip proportions (Census Journey to Work, 2011 Morley South)**

		A	B	C	D	E	F	G	Total
M62 (E)	A								
A650 (SE)	B	0.01	0.00	0.00	0.11	0.21	0.00	0.39	0.72
A653 (S)	C								
M62 (W)	D								
A650 (W)	E								
Topcliffe Lane	F								
A653 (N)	G								
Total		0.01	0.00	0.00	0.11	0.21	0.00	0.39	0.72

- 6.37 Journeys to education have been distributed to specific local schools (Blackgates Primary and Woodkirk Academy) on the basis of reasonable routing and shares for education trips from the 2011 school Census data. Blackgates Primary school is located adjacent to the site so none of these trips route through J28. All vehicle trips to Woodkirk Academy (82% of education trips) are routed to J28 (**Table 6.14**) in the HG2-167 TA. The routing across J28 has been assumed in this assessment as it is the most reasonable route for accessing the Academy if J28 is used.

**Table 6.14: HG2-167 Departure trip proportions (Journey to Education/Woodkirk Academy)**

		A	B	C	D	E	F	G	Total
M62 (E)	A								
A650 (SE)	B			0.82					0.82
A653 (S)	C								
M62 (W)	D								
A650 (W)	E								
Topcliffe Lane	F								
A653 (N)	G								
Total				0.82					0.82

- 6.38 'Other journeys' have been assumed in the HG2-167 TA to be to local facilities in one of either Tingley (50%), Morley (25%) or Middleton (25%). Only Morley is accessed through J28 and the HG2-167 TA directs these trips to J28. The TA does not distribute these trips further however and so for this assessment these trips will be assigned in equal proportions across the two routes which lead to Morley from Tingley (**Table 6.15**).

**Table 6.15: HG2-167 Departure trip proportions ('Other Journeys' to Morley)**

		A	B	C	D	E	F	G	Total
M62 (E)	A								
A650 (SE)	B					0.125		0.125	0.25
A653 (S)	C								
M62 (W)	D								
A650 (W)	E								
Topcliffe Lane	F								
A653 (N)	G								
Total						0.125		0.125	0.25

- 6.39 Arrival and departure turning proportions (**Table 6.13**, **Table 6.14** and **Table 6.15**) are applied to those proportion of vehicle trips assigned to each journey type (**Table 6.12**) and summed for each movement to yield overall turning flows (**Table 6.16** and **Table 6.17**) for each peak.

**Table 6.16: HG2-167 AM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A		0						0
A650 (SE)	B	0		16	4	12		19	52
A653 (S)	C		6						6
M62 (W)	D		2						2
A650 (W)	E		4						4
Topcliffe Lane	F								
A653 (N)	G		7						7
Total		0	19	16	4	12		19	70

**Table 6.17: HG2-167 PM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A		0						0
A650 (SE)	B	0		1	2	8		12	23
A653 (S)	C		1						1
M62 (W)	D		4						4
A650 (W)	E		13						13
Topcliffe Lane	F								
A653 (N)	G		20						20
Total		0	38	1	2	8		12	63

## Leeds: HG2-168/169: 'Haigh Wood, Ardsley (North and South)'

### Site Information

- 6.40 Site HG2-168 and HG2-169 are located adjacent to one another in Ardsley in the greenspace enclosed by Westerton Road, Baghill Road, Batley Road and Haigh Moor Road (**Figure 6.6**). The two sites represent the northern and southern parts of the area allocated respectively. As noted above, the two allocations allow for a total of 370 residential dwellings. An existing approved (but undelivered) application is in place (Leeds Planning Reference: 17/08262/OT) for a total of 299 dwellings.
- 6.41 In line with the process agreed at Scoping, that applications planning information will be used as the basis for this assessment, but the assessment will be completed on the basis of the full allocation of 370 dwellings.

Figure 6.6: HG2-168/169 site location



### Trip Generation and Mode Share

6.42 The trip generation for the Proposed Development was determined on the basis of a local survey of a comparable residential area located adjacent to the proposed location of the development. Whilst unusual, this is likely to provide a much more locally specific determination of vehicle trip generation for a development in this area. Trip rates are detailed in Table 6.1 of the 17/08262/OT application’s TA and are replicated in **Table 6.18**.

Table 6.18: HG2-168/169 trip generation summary

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Vehicle trip rates (per dwelling)	0.240	0.470	0.420	0.230
Vehicle trips (370 dwellings)	89	174	155	85
Two-way vehicle flows	263		241	

### Trip Distribution

6.43 Vehicle traffic is stated as being routed in the 17/08262/OT application’s TA in equivalent proportions to 2011 Census Journey to Work pairs (for residents of Leeds 108 MSOA ‘Tingley West & West Ardsley’) and assigned to the most reasonable site access. Appendices BGH19 and BGH20 of the 17/08262/OT application’s TA summarise this information. This information was reviewed to determine the proportion of traffic that would come to the site(s) from A653

Dewsbury Road (e.g. via Syke Road) and the remainder that would come to the site(s) from the A650 Bradford Road; 89.7% and 10.3% respectively.

- 6.44 M62 J28 was outside the study area and a full MSOA breakdown (to allow user here for routeing at J28) was not included in that TA, so in line with the agreed process through Scoping, a traffic routeing exercise was undertaken.
- 6.45 Vehicle traffic is routed (using Google Maps) in equivalent proportions to 2011 Census Journey to Work pairs (for residents of Leeds 108 MSOA 'Tingley West & West Ardsley') and for those routes which are likely to interact with J28 and to the centroid of a given MSOA.
- 6.46 A full detailing of assignment per MSOA is included at **Appendix L**. Proportions assigned to routes through the junction are routed from and to the relevant arms for arrival trips towards the site and departure trips away from the site. These proportions are then applied to vehicular trip generation and has been summarised in **Table 6.19** and **Table 6.20**. This corresponds to 58.3% of vehicle trips generated by HG2-168/169.

**Table 6.19: HG2-168/169 AM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A		2	14					15
A650 (SE)	B								
A653 (S)	C	30			15			57	101
M62 (W)	D		1	7					8
A650 (W)	E								
Topcliffe Lane	F								
A653 (N)	G		3	26					29
Total		30	6	50	15			57	153

**Table 6.20: HG2-168/169 PM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A		3	24					27
A650 (SE)	B								
A653 (S)	C	15			7			28	50
M62 (W)	D		1	12					13
A650 (W)	E								
Topcliffe Lane	F								
A653 (N)	G		5	45					50
Total		15	9	81	7			28	140

## Total Committed Development at J28

- 6.47 The forgoing included developments are finally summed for the AM (**Table 6.21**) and PM (**Table 6.22**) peak periods to yield 'committed development' trips (excluding the applicants' proposed developments) for incorporation in the relevant scenarios (see **Table 3.3**).

**Table 6.21: Total committed development (excl. applicants) AM peak trip J28 summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A	0	2	14	0	1	0	0	16
A650 (SE)	B	0	0	17	4	12	0	19	52
A653 (S)	C	30	7	0	25	0	0	102	163
M62 (W)	D	0	2	10	0	0	0	0	12
A650 (W)	E	2	5	0	1	0	0	3	10
Topcliffe Lane	F	0	0	0	0	0	0	0	0
A653 (N)	G	0	10	39	0	1	0	0	50
Total		32	25	79	30	14	0	123	304

**Table 6.22: Total committed development (excl. applicants) PM peak trip J28 summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A	0	3	24	0	1	0	0	29
A650 (SE)	B	0	0	1	2	8	0	12	24
A653 (S)	C	15	2	0	12	0	0	49	78
M62 (W)	D	0	6	20	0	1	0	0	26
A650 (W)	E	1	13	0	0	0	0	1	16
Topcliffe Lane	F	0	0	0	0	0	0	0	0
A653 (N)	G	0	25	79	0	2	0	0	107
Total		16	49	124	15	13	0	62	278

## 7 Proposed Developments

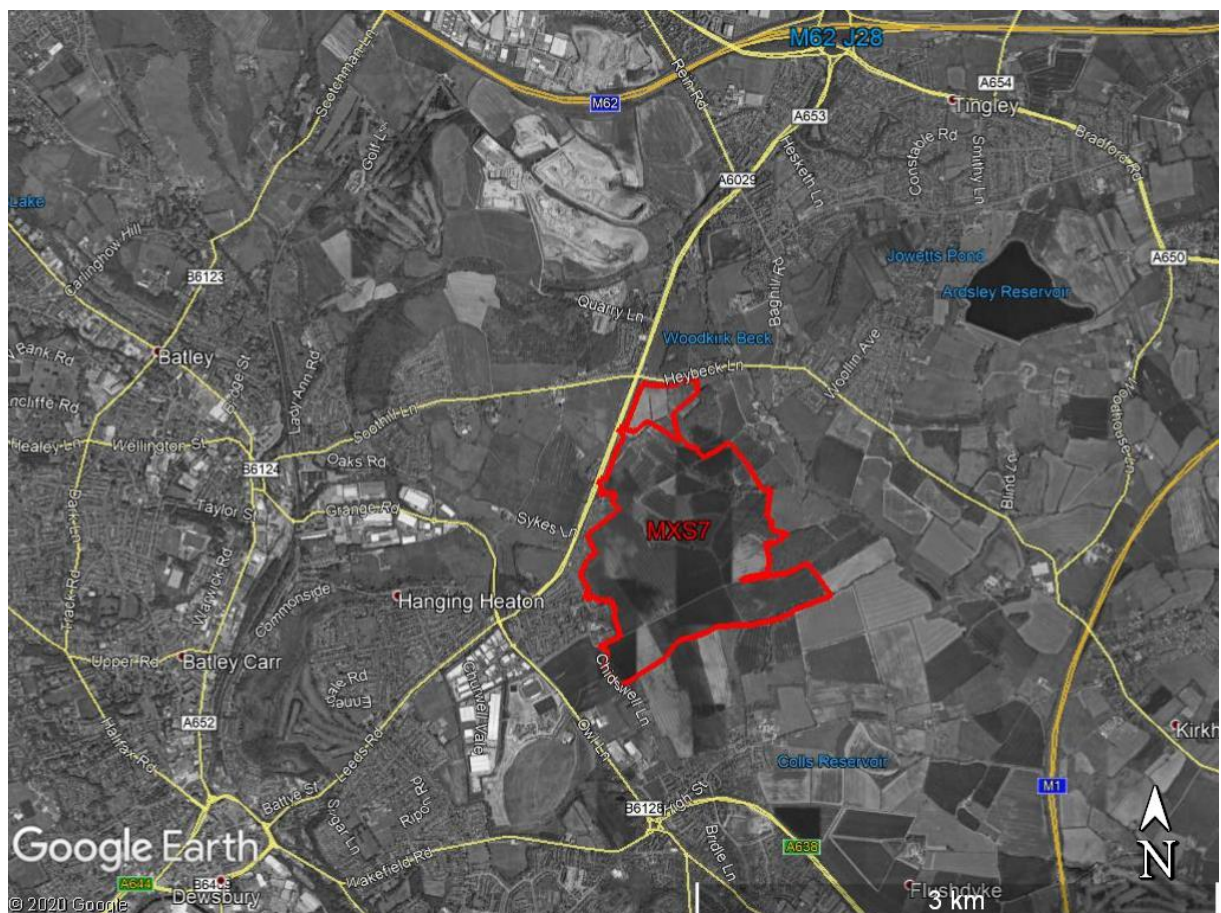
- 7.1 This section presents summaries of the applicants' proposed developments. It summarises the quantum of each development, and the relevant trip generation and mode share parameters. Summary matrices of trip distributions are also included.
- 7.2 It should be noted that it is not the purpose of this document to provide rationale for the methodologies of the Transport Assessments of each of the applicants' applications. These are in the process of being assessed by the various stakeholders through the planning process. The information in this section is presented as a specification of the inputs to this assessment exercise.

### Kirklees: MXS7: 'Land east of 932-1110 Leeds Road, Shaw Cross/Woodkirk, Dewsbury'

#### Site Information

- 7.3 Site MXS7, the Applicant's Proposed Development, is situated to the east of the A653 Leeds Road between Shaw Cross, Kirklees and West Ardsley, Leeds (**Figure 7.1**). The Site extends to Heybeck Lane to the north and Chidswell Lane to the south.

**Figure 7.1: MXS7 site location**



- 7.4 The Site is allocated in the KC Local Plan for 1,535 residential dwellings and 122,500m<sup>2</sup> of employment space. The Applicant currently has two parallel outline planning applications in

planning and pending determination (KC Planning References: 2020/60/92350/E and 2020/60/92331/E) for the two parts of the Site:

- Site A is proposed to comprise up to 181 residential dwellings with associated access and landscaping; and
- Site B is proposed to comprise, up to 35 hectares (ha) (equal to up to 122,500 square metres [m<sup>2</sup>]) of employment space (mixed B1(a) / B1(c) / B2 / B8 Use Classes); up to 1,354 residential dwellings (C3 use class); a new two-form entry (2FE) primary school; a new local centre (including community facilities); and associated accesses and landscaping.

7.5 Both applications are supported by an overarching Transport Assessment (and Framework Travel Plan) that both together and separately assesses the impacts of the two outline planning application schemes, and which will be used as the basis for the assessment in this document, per the methodology agreed in the Scoping Process. In that TA, the following quantum of development is considered:

- Residential trips for a total of 1535 units across Site A (181 units) and Site B (1354 units) and split between 90% 'private' ownership trip generation rate, and 10% 'affordable' ownership rate.
- Employment trips for 122500m<sup>2</sup> (split in line with the Illustrative Masterplan proportions<sup>9</sup>) comprising:
  - B1(a) Office Use: 18375m<sup>2</sup> (GEA; 15%);
  - B1(c) Light Industrial Use: 12250m<sup>2</sup> (GEA; 10%);
  - B2 General Industrial Use: 30625m<sup>2</sup> (GEA; 25%); and
  - B8 Warehousing: 61250m<sup>2</sup> (GEA; 50%).

7.6 The remaining items in the applications – e.g. the primary school – are not considered to have a substantive off-site and/or non-local impact and are not considered further in this assessment.

### Trip Generation and Mode Share

7.7 Trip generation rates were defined in the TA (Section 5 therein) for the Applicant's Proposed Development on the basis of a conventional TRICS-based determination (Appendix B of that TA) and through an extensive scoping process with the various stakeholders prior to submission. Person trip rates were agreed for each of the residential tenure types, and for each of the employment land use categories. Employment uses B1(c) (Light Industry) and B2 (General Industry)

7.8 Mode shares (**Table 7.1**) were applied to total person trips to yield vehicle flows on the basis of 2011 Census Journey to Work information for the Kirklees 014 MSOA in which the southern part of the Site is located, and which was agreed through the scoping process for the applications as being appropriate and applicable to the Applicant's Proposed Development.

7.9 Residential trips are assigned to modes on the basis of 2011 Census Journey to Work for those persons resident in Kirklees 014 and working in any MSOA. Employment trips are

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<sup>9</sup> These represent a flexible sub-division of uses within the employment use type with the exception of the B1(a) Office use which represents a maximum, to ensure a robust 'worst case' assessment in transport terms.

assigned to modes on the basis of those persons employed in Kirklees 014 and resident in any MSOA.

**Table 7.1: MXS7 MSOA 2011 Census Journey to Work summary**

Mode Choice	Resident of Kirklees 014	Employed in Kirklees 014
Underground, metro, light rail, tram	0%	0%
Train	2%	1%
Bus, minibus or coach	7%	4%
Taxi	1%	1%
Motorcycle, scooter or moped	1%	2%
Driving a car or van	70%	71%
Passenger in a car or van	8%	10%
Bicycle	1%	2%
On foot	9%	9%
Other method of travel to work	1%	0%

7.10 The following summary information (**Table 7.2** through **Table 7.9** inclusive) is presented in the same format as the other developments in this assessment for information and to allow comparison. The TA should be referred to for definitive data used in the analysis.

**Table 7.2: MXS7 residential (private ownership) trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trip rates (per dwelling)	0.233	0.818	0.605	0.390
Person trips	322	1130	836	539
Two-way person trips	1452		1375	

**Table 7.3: MXS7 residential (affordable ownership) trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trip rates (per dwelling)	0.211	0.669	0.477	0.373
Person trips	32	102	73	57
Two-way person trips	135		130	

**Table 7.4: MXS7 combined residential trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trips	354	1233	909	596
Two-way person trips	1587		1505	
Car/van driver mode share	69.7%			
Vehicle trips	247	859	634	415
Two-way vehicle flows	1106		1049	

**Table 7.5: MXS7 employment (B1(a) Office) trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trip rates (per 100m <sup>2</sup> )	1.970	0.268	0.218	1.627
Person trips	362	49	40	299
Two-way person trips	411		339	

**Table 7.6: MXS7 employment (B1(c) Light Industry) trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trip rates (per 100m <sup>2</sup> )	0.747	0.263	0.321	0.869
Person trips	92	32	39	106
Two-way person trips	124		146	

**Table 7.7: MXS7 employment (B2 General Industry) trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trip rates (per 100m <sup>2</sup> )	0.747	0.263	0.321	0.869
Person trips	229	81	98	266
Two-way person trips	309		364	

**Table 7.8: MXS7 employment (B8 Storage and Warehousing) trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trip rates (per 100m <sup>2</sup> )	0.483	0.085	0.022	0.389
Person trips	296	52	13	238
Two-way person trips	348		252	

**Table 7.9: MXS7 combined employment trip generation summary**

Peak Period:	AM Peak		PM Peak	
Direction:	Arrivals	Departures	Arrival	Departures
Person trips	978	214	191	910
Two-way person trips	1192		1101	
Car/van driver mode share	71.0%			
Vehicle trips	695	152	136	646
Two-way vehicle flows	847		782	

### Trip Distribution

- 7.11 In line with the methodology agreed through the scoping process for the Applicant's Proposed Development planning applications, and in common with the methodology applied in this assessment, traffic is routed to/from the Proposed Development through a distribution exercise where Google Maps was used to determine reasonable routes between the Proposed Development and other MSOAs. This is detailed for the whole of the TA's study area in Appendix E (Document Reference: CA13398T555-G) of that TA and is not replicated

here. Traffic assigned to those routes traversing J28 (Routes 1, 2, 3, 22 and 23 therein) provide turning counts for use in this assessment exercise (**Table 7.10** and **Table 7.11**).

**Table 7.10: MXS7 AM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A	0	0	84	0	0		0	84
A650 (SE)	B	0	0	14	0	0		0	14
A653 (S)	C	60	6	0	104	0		132	301
M62 (W)	D	0	0	110	0	0		0	110
A650 (W)	E	0	0	0	0	0		0	0
Topcliffe Lane	F								0
A653 (N)	G	0	0	84	0	0		0	84
Total		60	6	292	104	0	0	132	593

**Table 7.11: MXS7 PM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A	0	0	46	0	0		0	46
A650 (SE)	B	0	0	5	0	0		0	5
A653 (S)	C	88	14	0	120	0		104	326
M62 (W)	D	0	0	79	0	0		0	79
A650 (W)	E	0	0	0	0	0		0	0
Topcliffe Lane	F								0
A653 (N)	G	0	0	99	0	0		0	99
Total		88	14	230	120	0	0	104	556

## Leeds: EG2-19: 'Capitol Park'

### Site Information

- 7.12 Site EG2-19, the site promoted by Sterling Capitol, is situated to the northwest of M62 J28 (**Figure 7.2**) and is allocated for employment uses. Sterling Capitol have made a recent planning submission (Leeds Planning Ref: 20/08521/OT) for the site. The site is accessed from Topcliffe Lane which meets A653 Dewsbury Road at a signal junction to the immediate north of M28 J28.

Figure 7.2: EG2-19 (Capitol Park) site location



### Trip Generation and Mode Share

- 7.13 Trip generation and mode share assumptions have been undertaken by i-Transport (on behalf of Sterling Capitol). These are included in the TA for the applicant's proposed development (submitted for planning at end 2020, Leeds Planning Ref: 20/08521/OT) and are not replicated here. They are however inherently incorporated in the trip distribution which has been provided to PF and which is summarised below.
- 7.14 The trip generation and distribution information was provided to PF in August 2020 – substantially in advance of planning submission – and this assessment has been prepared on the basis of that information as the assessment was substantially complete prior to its publication. However, a brief review of the now publicly available TA, indicates that the proposed trip generation and distribution has not materially changed since the information previously provided to PF, and its ongoing use is considered to remain appropriate.

### Trip Distribution

- 7.15 Trip distribution for J28 for traffic generated by the proposed development at Capitol Park was provided to PF in spreadsheet form on 25<sup>th</sup> September 2020. As instructed by i-Transport, 'Scenario B' flows were used in this assessment exercise. The informing calculations have not been verified.

**Table 7.12: EG2-19 AM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A	0	0	0	0	0	58	0	58
A650 (SE)	B	0	0	0	0	0	12	0	12
A653 (S)	C	0	0	0	0	0	21	0	21
M62 (W)	D	0	0	0	0	0	61	0	61
A650 (W)	E	0	0	0	0	0	7	0	7
Topcliffe Lane	F	56	7	14	54	4	0	21	156
A653 (N)	G	0	0	0	0	0	34	0	34
Total		56	7	14	54	4	194	21	349

**Table 7.13: EG2-19 PM peak trip distribution summary**

		A	B	C	D	E	F	G	Total
M62 (E)	A	0	0	0	0	0	48	0	48
A650 (SE)	B	0	0	0	0	0	7	0	7
A653 (S)	C	0	0	0	0	0	13	0	13
M62 (W)	D	0	0	0	0	0	48	0	48
A650 (W)	E	0	0	0	0	0	4	0	4
Topcliffe Lane	F	58	13	22	60	7	0	35	195
A653 (N)	G	0	0	0	0	0	20	0	20
Total		58	13	22	60	7	140	35	335

## 8 Junction 28 Capacity Modelling

### Introduction

- 8.1 The previous sections of this report present the basis for the scenarios that will be used in the assessment of M62 Junction 28. Summary diagrams for all scenarios are attached at **Appendix L**.
- 8.2 HE instructed Jacobs to develop a TRANSYT 16 traffic and signal operation model of J28 and provided a copy of the base 2019 version of model to Pell Frischmann. PF reviewed the model and have deemed it fit for purpose to test the proposed scenarios.
- 8.3 This section applies the computed scenarios as specified in Section 3, and as combined with the relevant flows defined in Sections 5, 6 and 7, to the TRANSYT 16 traffic model of the junction.

### Basis of Capacity Determination

- 8.4 Junction capacity assessment results are presented for signal-controlled junctions, in terms of 'Degrees of Saturation' ('DoS'), expressed as a percentage (%).
- 8.5 A DoS of less than 90% indicates that the junction is operating within its theoretical capacity; a DoS of equal to or greater than 90% but less than 100% indicates that the junction is approaching its capacity (but remains within capacity); and a DoS of equal to or greater than 100% indicates that it has either reached or exceeded its theoretical capacity. Once beyond 100% DoS, queues and delays increase disproportionately with increasing demand flow, therefore rendering any results where a DoS is greater than 100% unreliable. In particular, where the DoS exceeds 100%, queues would begin to not be able to discharge fully within each cycle and delays increase as a result.

### Comparison of Traffic Volumes

- 8.6 **Table 8.1** presents the total traffic flow through the M62 J28 during each peak period for each of the scenarios. The purpose of this is to help identify the percentage impact on the roundabout of each of the scenarios.

**Table 8.1: Percentage Impact based on Volume of Traffic Flow**

Scenario Number	Scenario Name	Peak period	Total Flow	Flow Increase	% increase from relevant base	% impact
1	2019 Base Year	AM	7626		-	-
		PM	7411		-	-
2	2032 Future Year	AM	8756	1130	14.8%	47.5%
		PM	8495	1084	14.6%	48.1%
3	2032 + Committed Development	AM	9060	304	3.5%	12.8%
		PM	8773	278	3.3%	12.3%
4	2032 + Capitol Park	AM	9106	350	4.0%	14.7%
		PM	8830	335	3.9%	14.9%
5	2032 + Proposed Development	AM	9349	593	6.8%	24.9%
		PM	9051	556	6.5%	24.7%
	<b>Subtotal</b>	<b>AM</b>		<b>2377</b>	<b>31.2%</b>	<b>100%</b>
		<b>PM</b>		<b>2253</b>	<b>30.4%</b>	<b>100%</b>
6	2032 + Committed Development + Capitol Park	AM	9410	654	7.5%	
		PM	9108	613	7.2%	
7	2032 + Committed Development + Proposed Development	AM	9653	897	10.2%	
		PM	9329	834	9.8%	
8	2032 + Committed Development + Capitol Park + Proposed Development	AM	10003	1247	14.2%	
		PM	9664	1169	13.8%	

8.7 **Table 8.1** demonstrates that, the percentage increase in traffic flow between the base 2019 and 2032 is approximately 15% during both peak periods. The subsequent percentage increases are based on the increase from the base 2032 scenario. **Table 8.1** also demonstrated that between scenarios 3, 4 and 5 the Proposed Development, scenario 5 has the largest percentage increase.

8.8 The percentage impact shows the distributed impact between scenarios 2-5; i.e. the impact from the Future Year, Committed Development, Capitol Park and the Proposed Development traffic flows. The increase from the base 2019 to future 2032 has the largest impact of 47.5% and 48.1% during the AM and PM peak periods respectively, followed by the Proposed Development traffic of 24.9% and 24.7% during the AM and PM peak periods respectively.

## Traffic Modelling Result

8.9 The TRANSYT 16 modelling has initially been carried out on the above 8 scenarios in order to determine the level of impact. The only change which has been made to the model for each scenario is the demand flows. The AM peak model operates a 120s cycle time and the PM peak operates a 60s cycle time. **Table 8.2** presents the highest DoS for each scenario and where this occurs. The full table of results and outputs are provided in **Appendix N**.

**Table 8.2: Summary of Modelling Results**

Scenario Number	Scenario Name	Peak period	PI (pcu/hr)	Highest DoS	Arm
1	2019 Base Year	AM	2591	99%	Dewsbury Rd NB (flare) o/s
		PM	2312	92%	M62 WB off slip (flare) middle
2	2032 Future Year	AM	15035	115%	Dewsbury Road NB n/s
		PM	7905	125%	Bradford Road EB o/s
3	2032 + Committed Development	AM	18042	131%	Dewsbury Road NB n/s
		PM	13076	133%	Bradford Road EB o/s
4	2032 + Capitol Park	AM	13540	118%	Dewsbury Road NB n/s
		PM	8695	128%	Bradford Road EB o/s
5	2032 + Proposed Development	AM	18083	146%	Dewsbury Road NB n/s
		PM	15760	118%	Dewsbury Road SB o/s
6	2032 + Committed Development + Capitol Park	AM	17890	134%	Dewsbury Road NB n/s
		PM	13793	137%	Bradford Road EB o/s
7	2032 + Committed Development + Proposed Development	AM	19914	151%	Dewsbury Road NB n/s
		PM	18088	127%	Dewsbury Road SB o/s
8	2032 + Committed Development + Capitol Park + Proposed Development	AM	20334	154%	Dewsbury Road NB n/s
		PM	19042	130%	Dewsbury Road SB o/s

#### Scenario 1: 2019 Base Year

- 8.10 **Table 8.2** demonstrates that in the 2019 base model the junction overall operates with spare capacity during the AM and PM peak periods. However, during the AM peak period a number of links operate above 90% DoS, these include Bradford Road WB (middle lane), Dewsbury Road NB (middle and offside lane) and Bradford Road EB (middle lane). During the PM peak period only the M62 WB off slip (middle lanes) operates over 90%.

#### Scenario 2: 2032 Future Year

- 8.11 During the 2032 model, **Table 8.2** demonstrates that the junction operates over capacity during the AM peak period with several links operating over 100%; particularly, Dewsbury Road NB, Bradford Road EB (n/s lane) and M62 EB off slip (o/s lane). During the PM peak

period the junction is operating over capacity with a some of links operating at/over 100%, particularly on Bradford Road EB.

#### Scenario 3: 2032 + Committed Development

- 8.12 In the 2032 with committed development model, **Table 8.2** demonstrates that the junction operates over capacity during the AM peak period with a number of links operating over 100%; particularly, Dewsbury Road NB and Bradford Road EB (n/s lane) as was the case in the 2032 model. During the PM peak period the junction operates over capacity with a number of links operating at/over 100%, particularly on Bradford Road EB as was in the 2032 model. With the committed development added, M62 EB off slip (o/s lane) and Dewsbury Road SB (o/s) also operate over 100%.

#### Scenario 4: 2032 + Capitol Park

- 8.13 **Table 8.2** demonstrates that in the 2032 with Capitol Park development traffic model the junction operates over capacity during the AM peak period with a number of links operating over 100%; particularly, Dewsbury Road NB and Bradford Road EB (n/s lane) as was in the 2032 model. During the PM peak period the junction operates over capacity with a number of links operating at/over 100%, particularly on Bradford Road EB as was the case in the 2032 model.

#### Scenario 5: 2032 + Proposed Development

- 8.14 **Table 8.2** demonstrates that in the 2032 with Proposed Development model the junction operates over capacity during the AM peak period with a number of links operating over 100%; particularly, Dewsbury Road NB and Bradford Road EB (n/s lane) as was in the 2032 model. During the PM peak period the junction operates over capacity with a number of links operating at/over 100%, particularly on Bradford Road EB as was in the 2032 model and with the proposed development added Bradford Road WB (n/s), Dewsbury Road NB and Dewsbury Road SB (o/s) also operate over 100%.

#### Scenario 6: 2032 + Committed Development + Capitol Park

- 8.15 In the 2032 with committed and Capitol Park development traffic model, **Table 8.2** demonstrates the junction operates over capacity during the AM peak period with a number of links operating over 100%; particularly, Dewsbury Road NB and Bradford Road EB (n/s lane) as was in the 2032 model. During the PM peak period the junction operates over capacity with a number of links operating at/over 100%, particularly on Bradford Road EB as was in the 2032 model and with the committed and proposed development added Bradford Road WB (n/s), M62 EB off slip (o/s) and Dewsbury Road SB (o/s) also operate over 100%.

#### Scenario 7: 2032 + Committed Development + Proposed Development

- 8.16 In the 2032 with committed and Proposed Development model, **Table 8.2** demonstrates the junction operates over capacity during the AM peak period with a number of links operating over 100%; particularly, Dewsbury Road NB and Bradford Road EB (n/s lane) as was in the 2032 model. During the PM peak period the junction operates over capacity with a number of links operating at/over 100%, particularly on Bradford Road EB as was in the 2032 model and with the proposed development added Dewsbury Road NB and Dewsbury Road SB (o/s) also operate over 100%.

#### Scenario 8: 2032 + Committed Development + Capitol Park + Proposed Development

- 8.17 **Table 8.2** demonstrates that in the 2032 with committed, Capitol Park and Proposed Development traffic model the junction operates over capacity during the AM peak period with a number of links operating over 100%; particularly, Dewsbury Road NB and Bradford Road EB (n/s lane) as was in the 2032 model. During the PM peak period the junction operates over capacity with a number of links operating at/over 100%, particularly on Bradford Road EB as was in the 2032 model and with the committed and proposed development added Dewsbury Road NB and Dewsbury Road SB (o/s) also operate over 100%.

#### Summary

- 8.18 **Table 8.2** summarises that, based on the current layout and signal timings, the roundabout is currently operating close to capacity and in the future year model will operate over capacity during both peak periods. Any additional traffic will exacerbate the capacity issues at the roundabout. Full outputs from the TRANSYT model are included at **Appendix N**.

### Optimised Traffic Modelling Results

- 8.19 The TRANSYT model was optimised in order to obtain the optimum signal timings at the roundabout, with the existing cycle times. However, this had minimal practical impact on the operation of the roundabout.

### Mitigation and Traffic Modelling Results

- 8.20 In order to improve the overall junction performance to accommodate the proposed development traffic a number of mitigation options have been tested. Scenarios 2, 5 and 8 have been tested as these are the three scenarios where the largest impacts occur. For comparison the mitigation options have also been tested with 2019 flows for scenarios 2, 5 and 8 in order to determine what impact each element is having.

#### Do Minimum

- 8.21 Due to the increase in traffic flow, the routes which vehicles would take are changed to make full use of the road space and therefore road markings/link connectors in the model have been similarly updated. To ensure that traffic does not block within the circulatory arms of the roundabout causing 'grid lock', stop and delay weighting have been added along with queue penalties.
- 8.22 **Table 8.3** details the highest DoS for scenarios 8 only and where this occurs. The full table of results and outputs are provided in **Appendix N**.

**Table 8.3: Summary of Do Minimum Mitigation Modelling Results**

Scenario Number	Scenario Name	Peak period	PI (pcu/hr)	Highest DoS	Arm
8a	2019 + Committed development + Capitol Park + Proposed Development	AM	9915	123%	Dewsbury Road NB n/s
		PM	9355	124%	Dewsbury Road SB o/s
8	2032 + Committed development + Capitol Park + Proposed Development	AM	24548	148%	Dewsbury Road NB n/s
		PM	340757	410%	Dewsbury Road SB o/s

8.23 **Table 8.3** demonstrates that in the Do Minimum mitigation option is not viable with high degree of saturations.

#### Do Something

8.24 Alongside the do-minimum modifications, the following mitigations have been tested:

- **DS Option A:** Widening of internal lanes to the southern section of the roundabout and a lane increase on the approach on Dewsbury Road NB.
- **DS Option A+B:** Option A plus providing a cut-through for traffic travelling from M62 WB off-slip to Dewsbury Road NB exit.
- **DS Option A+C:** Option A plus providing a cut-through for traffic travelling from Bradford Road WB, Dewsbury Road NB, Bradford Road EB to M62 EB on slip.
- **DS Option A+D:** Option A plus a two lane exit onto the M62 EB on slip. (**Appendix O**)

8.25 **Table 8.4** details the highest DoS for Scenarios 2, 5 and 8 and where this occurs for each of the three proposed mitigations. The full table of results and outputs are provided in **Appendix N**.

**Table 8.4: Summary of Modelling Results**

Scenario Number	Scenario Name	Peak period	PI (pcu/hr)	Highest DoS	Arm
Do Something Option A					
2a	2019 Base	AM	1509	97%	M62 EB off slip middle
		PM	1401	98%	M62 EB off slip middle
2	2032 Base	AM	6457	113%	Dewsbury Road NB o/s
		PM	10948	117%	Dewsbury Road SB n/s

Scenario Number	Scenario Name	Peak period	PI (pcu/hr)	Highest DoS	Arm
5a	2019 + Proposed Development	AM	2848	110%	Dewsbury Road NB o/s
		PM	3442	100%	Bradford Road WB n/s
5	2032 + Proposed Development	AM	79648	122%	Bradford Road EB n/s
		PM	10530	106%	Dewsbury Road SB n/s
8a	2019 + Committed development + Capitol Park + Proposed Development	AM	18404	102%	Dewsbury Road NB o/s
		PM	6684	102%	M62 WB off slip
8	2032 + Committed development + Capitol Park + Proposed Development	AM	62435	119%	Dewsbury Road NB o/s
		PM	95564	118%	Bradford Road EB o/s
<b>Do Something Option A+B</b>					
8a	2019 + Committed development + Capitol Park + Proposed Development	AM	540135	1081%	Dewsbury Road NB n/s
		PM	5666	100%	M62 EB off slip & Bradford Road WB
8	2032 + Committed development + Capitol Park + Proposed Development	AM	567214	371%	Dewsbury Road NB n/s
		PM	201589	111%	Dewsbury Road SB n/s
<b>Do Something Option A+C</b>					
8a	2019 + Committed development + Capitol Park + Proposed Development	AM	10497	312%	Dewsbury Road SB n/s
		PM	14687	250%	Dewsbury Road SB n/s
8	2032 + Committed development + Capitol Park + Proposed Development	AM	17231	166%	Dewsbury Road SB n/s
		PM	18956	461%	Dewsbury Road SB n/s
<b>Do Something Option A+D</b>					
2a	2019 Base	AM	10103	100%	M62 WB off slip
		PM	1366	97%	Bradford Road WB middle
2	2032 Base	AM	7722	101%	Dewsbury Road NB o/s
		PM	172502	108%	Bradford Road EB o/s

Scenario Number	Scenario Name	Peak period	PI (pcu/hr)	Highest DoS	Arm
5a	2019 + Proposed Development	AM	1497	92%	M62 EB off slip
		PM	1642	93%	M62 WB off slip
5	2032 + Proposed Development	AM	10013	105%	Dewsbury Road NB o/s
		PM	82180	114%	Bradford Road EB o/s
8a	2019 + Committed development + Capitol Park + Proposed Development	AM	8039	100%	M62 WB off slip, Bradford Road WB & M62 EB off slip
		PM	5900	100%	Bradford Road WB & M62 EB off slip
8	2032 + Committed development + Capitol Park + Proposed Development	AM	47598	141%	Dewsbury Road SB o/s
		PM	100180	108%	Dewsbury Road SB o/s

- 8.26 **Table 8.4** demonstrates that the capacity of the roundabout is improved with the introduction of the improvements associated with Option A.
- 8.27 The proposals for Option A+B together show that the overall capacity at the roundabout is reduced and therefore this option will not be taken forward. Likewise, with Option A+C the capacity at the roundabout reduced and again this option will not be taken forward.
- 8.28 **Table 8.4** also demonstrates that the proposals for Option A+D together improve the capacity at the roundabout. Scenario 5a (2019 + Proposed Development) show that this option would mitigate the isolated impact from the Proposed Development.
- 8.29 The proposals for Options A+D could also mitigate the majority of the impact from background growth expected to 2032. However, the proposals are unable to mitigate the combined effect of background growth to 2032 and the Proposed Development at MXS7, proposed development at Capitol Park (EG2-19) or committed developments.

## 9 Conclusion

### Summary

- 9.1 Pell Frischmann is commissioned by C.C. Projects (the 'Applicant') to provide transport planning and highways consultancy services in connection with the Proposed Development of Land to the East of Leeds Road and Land at Heybeck Lane, Chidswell, Dewsbury (Kirklees Local Plan site ID: MXS7), which is the subject of separate outline planning applications that have been submitted in parallel to Kirklees Council (KC) in their position as the Local Planning Authority (LPA) with planning references 2020/60/92350/E and 2020/60/92331/E, respectively.
- 9.2 Highways England (HE) have previously raised issues with regards the future capability of the Strategic Road Network (SRN), specifically M62 Junction 28 (Tingley Interchange; herein 'J28'), to accommodate the cumulative effects of the Applicant's Proposed Development, the proposed development at the Capitol Park site located to the immediate north of the junction (Leeds Planning Ref: 20/08521/OT), and other cumulative developments across the wider Kirklees and Leeds areas (including, for example, 'Land at Owl Lane' being promoted by Barratt David Wilson Homes, Kirklees Planning Ref: 2019/92787, Kirklees Local Plan site ID: HS47).
- 9.3 Following a series of scoping discussions with key stakeholders including KC, HE, Leeds City Council (LCC), Sterling Capitol (the applicant for the Capitol Park proposed development) and i Transport (transport consultants on behalf of Sterling Capitol), agreement was reached that an assessment of the impact of all cumulative schemes (including those of the both applicants) would be undertaken to assess the need for mitigation at the junction and identify the scale and apportionment of any costs arising from such potential interventions.
- 9.4 A Scoping Report was produced by PF in July 2020 setting out key assumptions, a proposed process for the required assessment of M62 Junction 28, and a summary of information and agreements required from the various stakeholders. Responses were received from a number of the stakeholders and changes to the proposed methodology were incorporated as appropriate (as set out in Section 2).
- 9.5 This report presents the assessment resulting from that agreed methodology. First, scenarios are defined (as set out in Section 3) based on an underlying baseline of 2019 survey-derived traffic flows. Secondly, each of the potential committed developments is considered in light of Local Plan requirements, stakeholder input and available data to establish those committed developments which will be included in (or excluded from) the relevant scenarios (see Section 4).
- 9.6 Background traffic growth in the future (as set out in Section 5) is determined on the basis of TEMPRO-derived growth with alternative planning assumption adjustments to account for the committed and applicants' developments which are being explicitly assigned in this assessment. Background traffic growth excluding these items is forecast to be approximately 15% from the 2019 base year through to an agreed 2032 forecast future assessment year.
- 9.7 Each committed development is considered in turn (as set out in Section 6) to establish: the quantum of development which should be included in the assessment; the trip generation that can be expected to result from this quantum; the share of those trips that would be expected to be undertaken by motorised modes; and the distribution of those trips which would be expected to use J28. The same exercise is then undertaken for the applicants' proposed developments (as set out in Section 7).

- 9.8 With those scenario components determined, and the appropriate scenario matrices built up, this report presents the outcomes of the TRANSYT modelling exercise undertaken to determine the capacity of the junction under the various flow scenarios (as set out in Section 8). Proportional contribution to the uplift of traffic at the junction differs from AM to PM, but background growth comprises approximately half of the forecast increase in traffic from 2019 to 2032, committed development a further 12-13%, proposed development at Capitol Park approximately 15% and Proposed Development at MXS7 the remaining 25%.
- 9.9 Combined flow uplift to 2032 is forecast to be approximately 30% higher than current flow levels, however modelling (and surveyed observation) shows that, in the 2019 base year, the junction already does not currently operate with substantive spare capacity. The surveyed base year data (2019) is inclusive of a recent Highways England (HE) congestion relief scheme completed in summer 2019, however degrees of saturation (DoS) in the 2019 base year are still modelled to be 99% in the AM peak and 92% in the PM peak. Signal junctions ideally operate with a DoS below 100%, so this indicates the junction is already approaching its theoretical capacity and is under capacity pressure.
- 9.10 It is apparent that, even with a moderate increase in traffic at the junction, existing capacity issues would likely be exacerbated in the AM and PM peak periods. This would likely apply even if the predicted uplift in traffic were significantly lower than the scale of which is expected, noting that approximately half of the forecast increase in traffic to 2032 is background traffic. In all future scenarios, DoS are significantly over 100% and this significant capacity shortfall would manifest in significant delays for users, extended queueing and the spread of the extent of the peak at the junction.

## Mitigation

- 9.11 A number of practical and deliverable mitigation schemes of an appropriate scale were tested. These involved various permutations of circulatory carriageway, entry and exit arm lane additions, and of additional at-grade 'cut-throughs' (similar to the current eastbound circulatory 'cut-through' on the A650). None of the tested cut-throughs were found to improve the junction operation.
- 9.12 The combined mitigation options of circulatory carriageway widening on the southern side of the roundabout (with associated entry width increase on A653 Dewsbury Road (S)), with an additional widening of the M62 eastbound entry slip to two lanes, was found to be the most effective. This provides the capacity for the majority of the forecast background traffic growth increase (approx. 50% of forecast uplift), or for the sum of the explicitly-considered committed developments and the applicants' proposed developments (the remaining 50%). Notwithstanding, it is noted that this proposed mitigation option fully mitigates the impact of the Land to the East of Leeds Road and Land at Heybeck Lane, Chidswell, Dewsbury (MXS7) Proposed Development in the 2032 forecast future assessment year.
- 9.13 The proposed mitigation represents, in PF's opinion, the practical limit of capacity uplift at the junction in its current form. It is noted that the recently submitted TA for the proposed development at Capitol Park comes (independently) to a similar conclusion and the proposed mitigation items are similar, as are their limitations.
- 9.14 It is therefore considered clear that on the basis of the forecast demand increase, and presuming that increase both manifests and it is determined that it is desired to provide capacity for it, that there is a potential need for a step-change in capacity at the junction. However, any such step-change would go beyond the realms of what a single applicant or indeed a collection of applicants could realistically or indeed reasonably deliver on their own

and could not be justified in planning policy terms as any such step-change improvement, beyond the scale that has already been identified in this assessment, would not be directly related to the impact of even all the named committed developments; noting that approximately half of the impact in the 2032 forecast future assessment year comes from TEMPro-derived background traffic growth.

- 9.15 If such a scheme were desired, a better use of the applicants' contributions is likely to be towards the preparation of an appropriate scheme proposal and business case against which an application to strategic-scale infrastructure funding schemes can be made.

## Uncertainty

- 9.16 Future flow forecasts assume similar patterns in the future as those observed currently, however it should be noted that West Yorkshire Combined Authority (WYCA) and other stakeholders are in the early stages of promoting the 'Leeds City Region Mass Transit' scheme<sup>10</sup>. This scheme could potentially see new tram (or similar) services connect Dewsbury, Leeds and Bradford, as well as the surrounding area<sup>11</sup>. Though still a matter in early consideration, early potential routes which have been published indicate the potential for a route which would extend from Leeds as far as a new Park & Ride site near the M62 J28<sup>12</sup>. This would be expected to have a profound structural effect on public transport use in the area, and additionally flow patterns around J28, though it is appreciated that this may not manifest until after 2032.
- 9.17 Additionally, and a very relevant point to consider, the impact of COVID-19 on future traffic patterns, levels and timings is yet to emerge. It is potentially the case that future commuter flows will reduce as a result of increased home working. Both the proposals at Capitol Park and at MXS7 are anticipated to be delivered over a number of years up to 2030, and so commitment to a specific pre-emptive scheme in 2021 may not be appropriate. It would therefore be recommended that any contributions were hypothecated for an appropriate use later, rather than tied to a specific scheme in hand.

## Conclusion

- 9.18 This assessment presents the impacts of growth, the committed developments in the area, the proposed development at Capitol Park and the Applicant's Proposed Development (MSX7) at Chidswell. It shows that the junction is able to cope with current traffic demands but that there is no real scope to accommodate any future increase, whatever the source. A simple apportionment of the uplift is presented in **Table 8.1** and this shows that the majority of the impact arises from background growth and the other committed developments which are not directly involved in this assessment process.
- 9.19 Mitigations of future increased demand are explored and a combined proposal that mitigates approximately half of the forecast uplift is arrived at. This is similar to the proposals for mitigation identified by i-Transport on behalf of Sterling Capitol (applicant for Capitol Park).

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<sup>10</sup> <https://westyorkshire.moderngov.co.uk/documents/s14791/Item%2011%20-%20Leeds%20City%20Region%20Mass%20Transit.pdf>

<sup>11</sup> <https://www.leeds-live.co.uk/news/leeds-news/fresh-hope-leeds-new-mass-17543629>

<sup>12</sup> <https://westleedsdispatch.com/mass-transit-system-to-be-discussed-by-transport-chiefs/>

Such a scheme would go some way towards mitigating future impacts at the junction, but would not remedy them entirely.

- 9.20 Proposals to fully mitigate the impact of growth at the junction, and indeed to be able to accommodate any further local or regional growth post-2032, are likely to require a step-change in capacity provision at the junction. The costs associated are likely to be an order(s) of magnitude greater than that which can be realistically or reasonably associated with the sites. A more appropriate use of contributions from the applicants may be that they be of a similar scale to the identified 'smaller' schemes, but be directed towards the optioneering, development and business case formation of such a larger scheme. Such a project would also operate on a timescale more appropriate to observing and reacting to any long-term changes which may be expected as a result of COVID-19 or local park-and-ride/transit provision.

## Appendix A: PF Scoping Report (July 2020)

## Appendix B: KC Response to PF Scoping Report (September 2020)

## Appendix C: PF Response to KC Scoping Response (September 2020)

## Appendix D: HE Response to PF Scoping Report (September 2020)

## Appendix E: PF Response to HE Scoping Response (November 2020)

## Appendix F: i-Transport Technical Note July 2019

## Appendix G: Email from Kirklees Council

## Appendix H: HE Planning Responses regards KC Site HS47

## Appendix I: Emails from Leeds City Council

## Appendix J: MSOA Trip Distribution Breakdown (KC Site HS61)

## Appendix K: MSOA Trip Distribution Breakdown (LCC Site HG2-158)

## Appendix L: MSOA Trip Distribution Breakdown (LCC Sites HG2-168/169)

## Appendix M: Turning Count Diagrams

## Appendix N: TRANSYT Output Reports

## Appendix O: Mitigation Drawing: Option A+D