



# Scoping Note

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**PROJECT:** A079758 – Land at Chidswell, Dewsbury

**DATE:** 21 April 2016

**SUBJECT:** Interim Transport Assessment (TA) Scoping Note

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## 1.0 Introduction

- 1.1.1 WYG is retained by The Church Commissioners for England (the 'Commissioners') to provide transport planning and highways consultancy advice in connection with proposals for a new major strategic mixed-use residential and employment masterplan development at land situated to the north-east of Chidswell, near Dewsbury, West Yorkshire (hereafter referred to as 'Land at Chidswell', the 'site').
- 1.1.2 In 2013 WYG prepared a 'Transport Feasibility Study and Sustainable Transport Strategy' report presenting the outcomes of a comprehensive study, identifying the existing transport characteristics of the Chidswell site and demonstrating that it is highly suitable for future development from a transport and accessibility perspective. This work followed on from previous technical work undertaken by Northern Transport Planning (NTP) in October 2012, which included initial junction capacity testing.
- 1.1.3 More recently, WYG produced an 'Accessibility and Connectivity Review' technical note that was submitted to Officers at Kirklees Council (KC) in January 2016, to support the site's allocation as a strategic development site, in the emerging Local Plan, as well as developing various site access options.
- 1.1.4 Following recent discussions between WYG Planning colleagues and KC Officers, also in January 2016, it is understood that KC have reviewed the abovementioned Accessibility and Connectivity Review technical note (as part of the Client's written representations to the Council) and have requested further information.
- 1.1.5 As a result, the Council has recommended that WYG undertake an 'Interim Transport Assessment' ('Interim TA'), on behalf of the Commissioners, to further support the site's allocation and to provide KC Officers with sufficient technical evidence to support the proposed site allocation at an Examination in Public (EIP), expected to take place later in 2016.
- 1.1.6 This Scoping Note sets out the proposed scope of the Interim TA. WYG would welcome the opportunity to further discuss and agree the content of this Scoping Note and the proposed scope of the Interim TA, through further engagement with KC Highways Officers, at the earliest opportunity. WYG would also welcome the opportunity to enter into further discussions with KC Highways Officers and their consultants, AECOM, with regards to



accessing and using the Kirklees SATURN strategic traffic model, to inform junction capacity assessments.

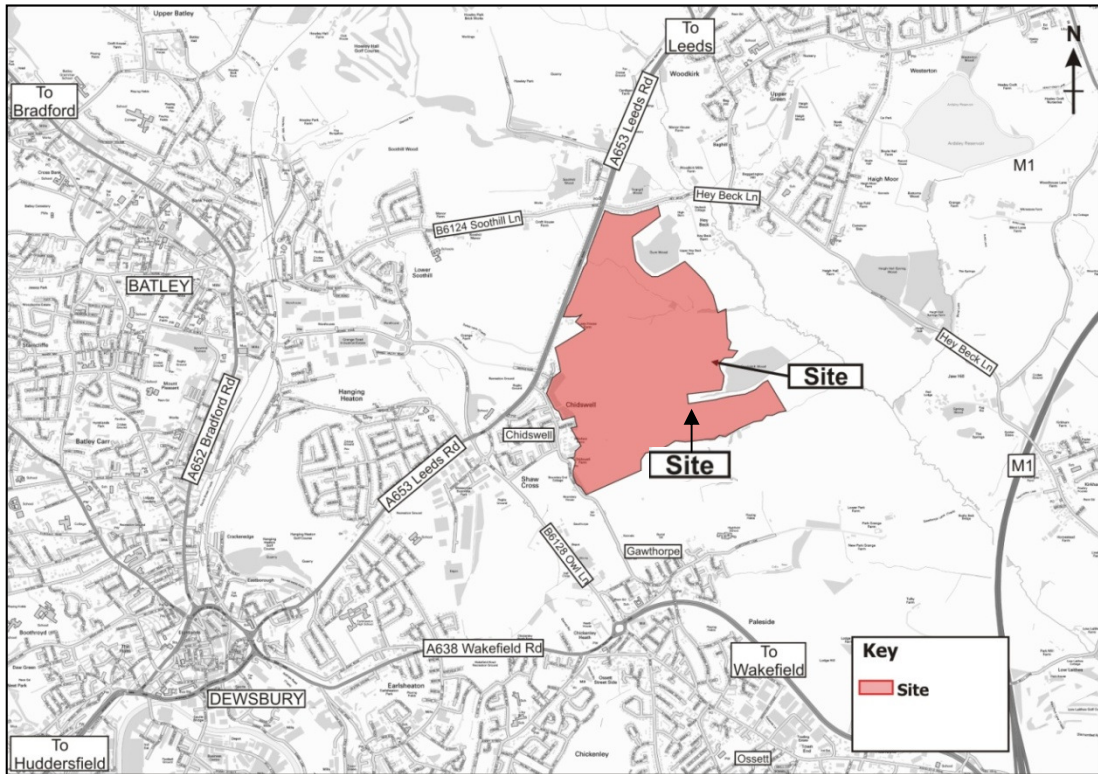
- 1.1.7 Taking account of the recent 'Accessibility and Connectivity Review' technical note that included up-to-date information with regards to baseline transport conditions, it is proposed that the Interim TA focuses on the following key areas, some of which have not as yet been considered in detail in the context of the current (2015) Concept Masterplan.
- 1.1.8 The remainder of this Scoping Note is structured as follows, which is consistent with the proposed structure of the Interim TA:
- Site Location and Description;
  - Development Proposals;
  - Trip Generation Assessment;
  - Traffic Assignment and Distribution;
  - Traffic Modelling;
  - Off-Site Highways Mitigation; and
  - Sustainable Transport Strategy.

## 2.0 Site Location and Description

- 2.1.1 The site is located to the east of the A653 Leeds Road dual carriageway which is a strategic corridor between Dewsbury and Leeds. In the immediate vicinity of the site, Leeds Road runs in the north-south direction adjoining the A638 Wakefield Road in the south and Junction 28 (the Tingley Interchange) of the M62 Motorway to the north. In addition, the A638 Wakefield Road links with the M1 Motorway Junction 40 to the east of the site.
- 2.1.2 The site extends to Hey Beck Lane to the north and Chidswell Lane to the south. Chidswell Lane provides access back onto Leeds Road to the south-west of the site and to the B6128 Owl Lane, via Windsor Road, to the south. Owl Lane in turn connects to the A638 Wakefield Road to the east, which connects to the M1 Junction 40, and heads towards Ossett to the west.
- 2.1.3 To the east of the site there is land predominantly in agricultural uses.
- 2.1.4 A site location plan is provided in **Figure 2.1**.



**Figure 2.1 Site Location Plan**



### 3.0 Development Proposals

3.1.1 This Scoping Note has been written in the context of a Concept Masterplan for a mix of residential and employment development, which was presented informally to KC Officers in June 2015. It is noted that the previous three masterplan options, developed in 2012/2013, are no longer current, nor is the KC Local Plan, referred to in the 2013 WYG 'Transport Feasibility Study and Sustainable Transport Strategy' report, of which a replacement Local Plan is currently being produced.

3.1.2 The current development parameters comprise the following, set out in **Table 3.1**.

**Table 3.1 Concept Masterplan**

Density (Dwellings per Hectare)	Proposed Residential Land (Hectare)	Approximate No. of Dwellings	Proposed Employment Land Area (Hectare)	Proposed Employment Floor Area (m <sup>2</sup> )
35	43.37	1,535	35	122,500



- 3.1.3 With regards to the employment land use, it is expected that this will comprise a mix of different Use Classes, such as Office (B1a), Light Industry (B1c), General Industry (B2) and Storage and Distribution (B8). For the purpose of the Interim TA, it is proposed to assess a single employment scenario, whereby the employment land use is split evenly between the four abovementioned employment Use Classes. The proposed split between B1a, B1c, B2 and B8 Use Classes is set out in **Table 3.2**.

**Table 3.2 Proposed Employment Split**

Proposed Land Use (Use Class)	Proposed Employment Land Area (Hectare)	Proposed Employment Floor Area (m <sup>2</sup> )	Proposed Employment Land Coverage
Office (B1a)	8.75	30,625	25%
Light Industry (B1c)	8.75	30,625	25%
General Industry (B2)	8.75	30,625	25%
Storage and Distribution (B8)	8.75	30,625	25%
<b>Total</b>	<b>35.00</b>	<b>122,500</b>	<b>100%</b>

## 4.0 Trip Generation Assessment

### Overview

- 4.1.1 As part of the Interim TA, WYG will undertake a trip generation assessment using trip rates derived from the industry-standard TRICS trip rate database. Modal splits will be derived from Office for National Statistics (ONS) Census data for the local area (at ward level). Following this, and given the scale of the concept masterplan, an allowance will be made for trip internalisation (i.e. those trips which start and end within the masterplan site and therefore will not impact on the transport networks external to the site), which is to be agreed with KC Highways Officers.
- 4.1.2 For the purpose of the TRICS assessment, and the concept masterplan, it is assumed that the residential dwelling land use will comprise a mix of privately-owned and affordable residential dwellings. It is assumed for the purpose of the Interim TA that the mix of housing will comprise 80% privately owned (open market) dwellings and 20% affordable dwellings, although will need to be agreed at a later stage of the process.
- 4.1.3 Different trip rates and mode splits have been extracted for the private and affordable residential land uses.

### Proposed Trip Rates

- 4.1.4 An initial TRICS assessment has been undertaken in order to obtain trip rates for the various proposed land uses. For the purpose of this assessment, multi-modal surveys were interrogated within the TRICS database so that total person trips rates (by all modes) could be extracted. The total person trips for the residential land uses is derived by multiplying the



relevant trip rate by the number of dwellings proposed; and for the employment land uses will be derived by multiplying the relevant trip rate (per 100 square metres (m<sup>2</sup>)) by an assumed floor area.

4.1.5 For the private and affordable residential trip rates, the following rules were applied during the TRICS selection process:

- Survey sites located in East Midlands, West Midlands, Yorkshire & North Lincolnshire and the North West regions only.
- Weekday (Monday – Friday) surveys only;
- Private residential survey sites ranging from 100 to 432 houses only;
- Affordable residential survey sites ranging from 15 to 280 houses only;
- Population within 1 mile restricted to 25,000 or less;
- Population within 5 miles restricted to 125,000 or less; and
- Edge of Town and Suburban Area sites only.

4.1.6 For the employment land uses, the following rules were applied during the TRICS selection process:

- Survey sites located in East Anglia, East Midlands, West Midlands, Yorkshire & North Lincolnshire, North West and the North regions only.
- Weekday (Monday – Friday) surveys only;
- B1 (a) Office sites ranging from 975 to 77,513m<sup>2</sup> only;
- B1c/B2 General & Light industry sites ranging from 1,758 to 102,000m<sup>2</sup> only;
- B8 Storage and Distribution sites ranging from 2,950 to 80,066m<sup>2</sup> only;
- Population within 1 mile restricted to 25,000 or less;
- Population within 5 miles restricted to 125,000 or less; and
- Edge of Town and Suburban Area sites only.

4.1.7 Individual total person trip rates and trips for privately-owned and affordable dwellings, for the AM and PM peak periods are set out in **Table 4.1** and **Table 4.2**.

**Table 4.1 Total Person Trip Rates and Person Trips (All Modes) – Residential (Privately Owned)**

Time Period	Arrivals	Departures	Total (Two-Way)
AM Peak Period (08:00-09:00)	0.20	0.64	0.83
PM Peak Period (17:00-18:00)	0.49	0.32	0.81
Trips (1,228 Units)	246	786	1,019
(80% of 1,535 Units)	602	393	995

*Note: Arithmetic errors due to rounding.*



**Table 4.2 Total Person Trip Rates and Person Trips (All Modes) – Residential (Affordable)**

Time Period	Arrivals	Departures	Total (Two-Way)
AM Peak Period (08:00-09:00)	0.18	0.57	0.75
PM Peak Period (17:00-18:00)	0.39	0.31	0.70
Trips (307 Units) (20% of 1,535 Units)	55	175	230
	120	95	215

*Note: Arithmetic errors due to rounding.*

- 4.1.8 For the proposed employment land use, it is proposed that this could comprise a potential mixture of four different employment uses. Therefore, the total person trip rates and trips for the land uses; Office (B1a), Light Industry (B1c), General Industry (B2) and Storage and Distribution (B8), are provided in **Table 4.3**. Agreement is sought from KC Highways Officers on the acceptability of this.

**Table 4.3 Total Person Trips Rates (All Modes) – Employment Land Uses**

Employment Land Use (Use Class)	Time Period	Arrivals	Departures	Total (Two-Way)
Office (B1a)	AM Peak Period (08:00-09:00)	1.97	0.27	2.24
	PM Peak Period (17:00-18:00)	0.22	1.63	1.85
Trips (30,625m <sup>2</sup> )		441	83	686
		67	499	567
Light Industry (B1c) / General Industry (B2)	AM Peak Period (08:00-09:00)	0.41	0.22	0.63
	PM Peak Period (17:00-18:00)	0.13	0.34	0.47
Trips (30,625m <sup>2</sup> )		125	67	192
		40	104	144
Storage and Distribution (B8)	AM Peak Period (08:00-09:00)	0.05	0.02	0.07
	PM Peak Period (17:00-18:00)	0.02	0.05	0.07
Trips (30,625m <sup>2</sup> )		15	6	21
		6	15	21

*Note: Arithmetic errors due to rounding.*



### Proposed Modal Splits

4.1.9 The modal split for the site is to be extracted from Census data, for the Dewsbury East Ward (E05001398). The total person trips are to be applied to the modal split percentages to determine the number of vehicle trips and other modes trips. It is proposed that different modal splits will be applied to the residential and employment total person trips, based on ONS Census 'Method of Travel to Work' resident and daytime population data respectively.

4.1.10 The residential census modal split is shown below in **Table 4.4**.

**Table 4.4 Census Modal Split - Residential**

Mode	Census Modal Split
Driving a car or van	66%
Passenger in a car or van	8%
Public Transport	11%
Bicycle	12%
On foot	1%
Taxi/Other	2%

4.1.11 For the employment modal split, Census data was extracted for the Kirklees 014 'Middle Layer Super Output Area' (E02002284). Kirklees 014 was selected as the 'Place of work' and the surrounding districts of Kirklees, Bradford, Leeds, Sheffield and Wakefield were selected as the 'Usual Residence'. The resulting employment modal split is shown in **Table 4.5** below.

**Table 4.5 Census Modal Split - Employment**

Mode	Census Modal Split
Driving a car or van	70%
Passenger in a car or van	10%
Public Transport	6%
Bicycle	2%
On foot	10%
Taxi/Other	2%

### Residential Vehicle Trips

4.1.12 Based on the modal split shown above, the private and affordable residential elements of the site are estimated to generate the following vehicle trips, as shown in **Table 4.6**.

**Table 4.6 Residential Vehicle Trips**

Residential Type	Time Period	Arrivals	Departures	Total (2-way)
Privately Owned (1,228 Units)	AM Peak Period (08:00-09:00)	162	519	681
	PM Peak Period (17:00-18:00)	397	259	656
Affordable (307 Units)	AM Peak Period (08:00-09:00)	36	116	152
	PM Peak Period (17:00-18:00)	79	63	142
<b>Total (1,535 Units)</b>	<b>AM Peak Period (08:00-09:00)</b>	<b>198</b>	<b>635</b>	<b>833</b>
	<b>PM Peak Period (17:00-18:00)</b>	<b>476</b>	<b>322</b>	<b>798</b>

4.1.13 The privately owned residential element of the site is expected to generate 681 two-way vehicles trips in the AM Peak and 656 two-way vehicle trips in the PM Peak. For the affordable residential element of the site, this is expected to generate 152 two-way vehicle trips in the AM Peak and 142 two-way vehicle trips in the PM Peak.

4.1.14 As a result, the overall residential element is expected to generate a total 833 two-way vehicle trips in the AM Peak and 798 two-way vehicle trips in the PM Peak.

#### **Employment Vehicle Trips**

4.1.15 Based on the modal split shown above, the employment elements of the site are estimated to generate the following vehicle trips (assuming the land uses are evenly split), as shown in **Table 4.7**.

**Table 4.7 Employment Vehicle Trips**

Residential Type	Time Period	Arrivals	Departures	Total (2-way)
Office (B1a)	AM Peak Period (08:00-09:00)	308	58	366
	PM Peak Period (17:00-18:00)	47	349	396
Light Industry (B1c) / General Industry (B2)	AM Peak Period (08:00-09:00)	88	47	135
	PM Peak Period (17:00-18:00)	28	73	101





Storage and Distribution (B8)	AM Peak Period (08:00-09:00)	11	4	15
	PM Peak Period (17:00-18:00)	4	11	15
<b>Total (122,500m<sup>2</sup>)</b>	<b>AM Peak Period (08:00-09:00)</b>	<b>407</b>	<b>109</b>	<b>516</b>
	<b>PM Peak Period (17:00-18:00)</b>	<b>79</b>	<b>433</b>	<b>512</b>

- 4.1.16 The total employment element of the site has the potential to generate up to 516 two-way vehicle trips in the AM Peak and 512 two-way vehicle trips in the PM Peak.
- 4.1.17 Thus, the total number of vehicle trips for the whole development has the potential to be up to 1,349 two-way vehicle trips in the AM Peak and 1,310 two-way vehicle trips in the PM Peak.

## 5.0 Traffic Assignment and Distribution

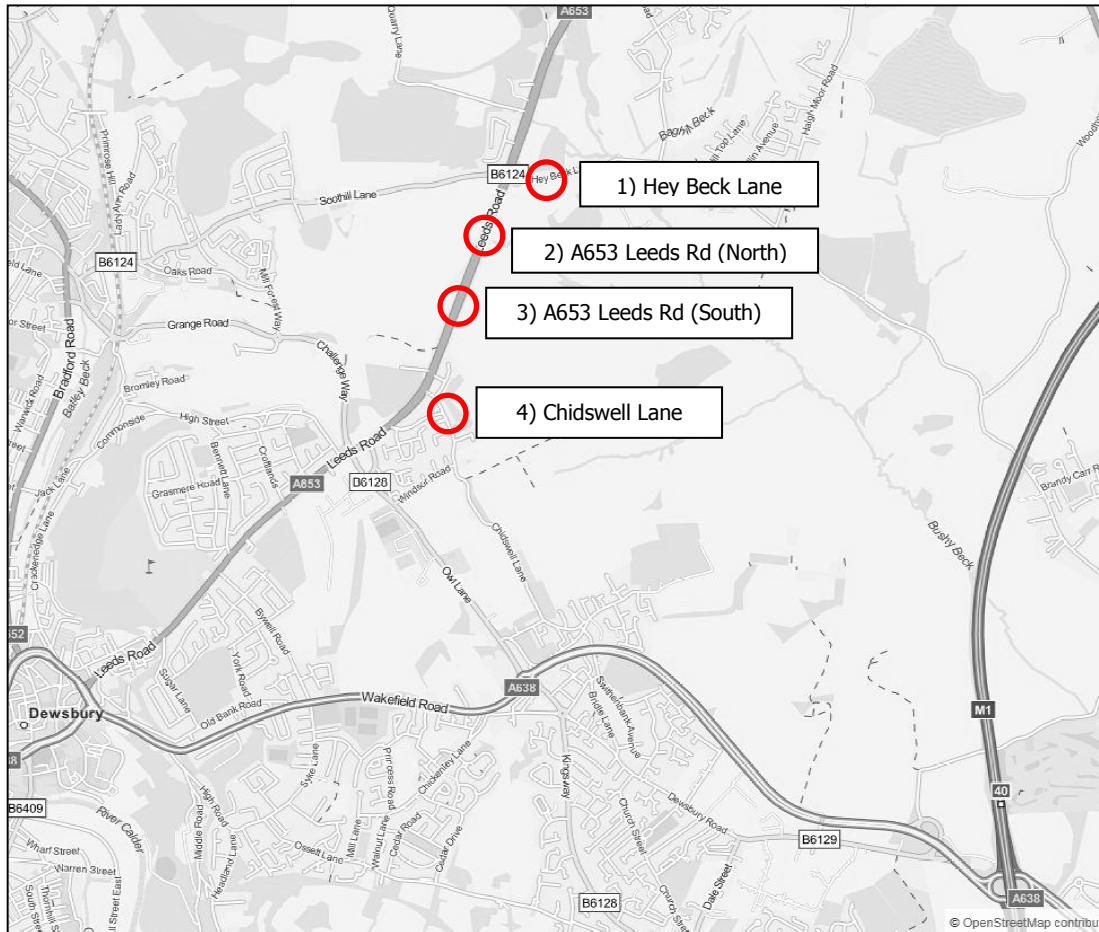
- 5.1.1 Following determination of the trip generation (including vehicular and non-vehicular trips) for the proposed development, a traffic assignment and distribution exercise will be carried out. Further to recent discussions with KC Highways Officers between January and March 2016, it is proposed that, where possible, the Kirklees SATURN base model will be used to determine the traffic assignment and distribution for the proposed development, based on existing origin-destination information contained in the model for the immediate surrounding areas. If necessary, ONS Census 'Method of Travel to Work' origin-destination data will be used to supplement this. Different traffic distributors will be applied to residential and employment trips based on resident and daytime population data respectively.
- 5.1.2 Traffic will be distributed onto the local and strategic highway networks via the proposed points of access. It is proposed that the masterplan development will be accessed by four points of access. The amount of traffic using each access will be determined by the expected size of the junction and anticipated number of dwellings and/or quantum of employment land use accessible via that access.

## 6.0 Traffic Modelling

### Site Access Junctions

- 6.1.1 As noted above, it is proposed that there will be four points of access to the masterplan site, including one point of access on Hey Beck Lane, two points of access on the A653 Leeds Road, and one point of access on Chidswell Lane. WYG will undertake a junction capacity assessment exercise to test the capacity of each access. The proposed site access junctions are indicatively shown in **Figure 6.1**.

**Figure 6.1 Proposed Site Access Junction Locations**



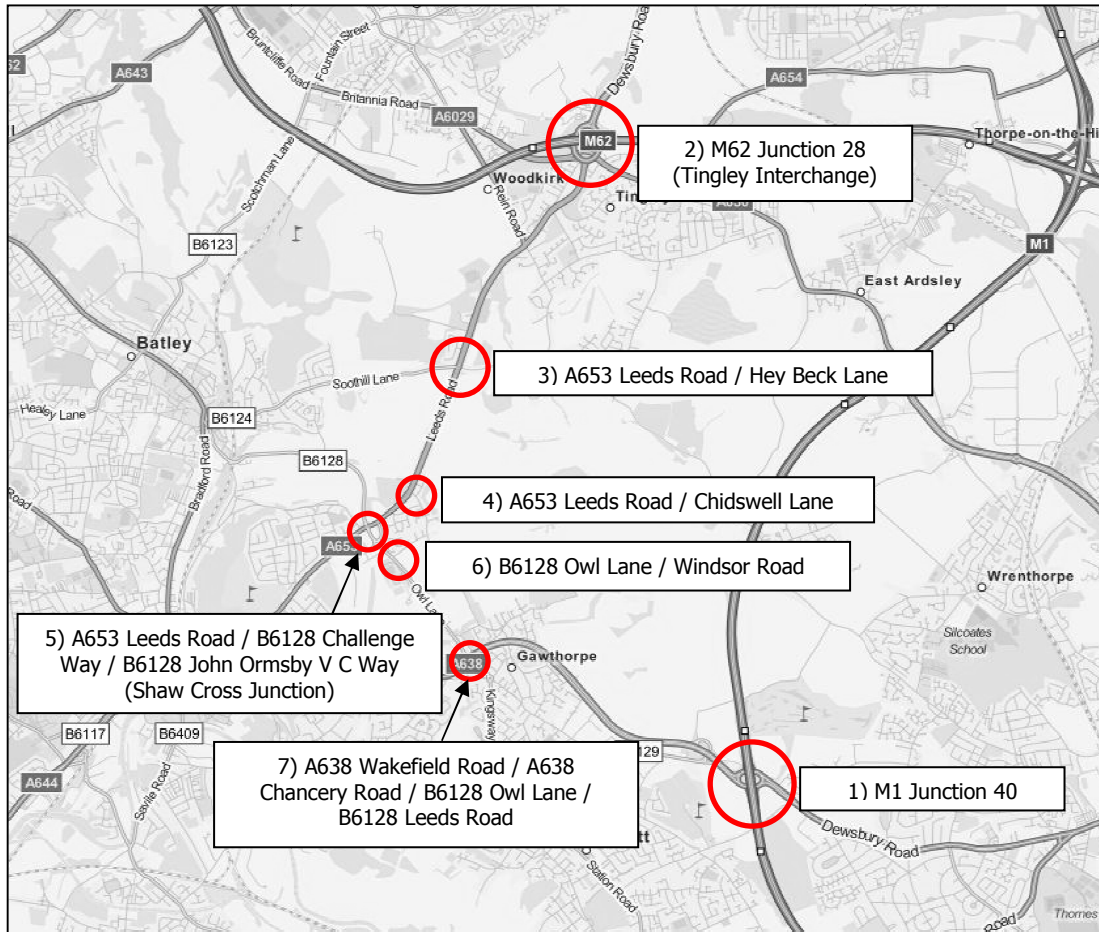
*Note: Locations shown are indicative.*

### Off-Site Junctions

6.1.2 In addition to testing the capacity of the proposed site access junctions, WYG, as part of the Interim TA, will also undertake a traffic modelling exercise to test the impact of the masterplan development on a number of key surrounding junctions. Following recent discussions with KC Highways, it is proposed that the following seven off-site junctions are assessed, as also shown in **Figure 6.2**.

1. M1 Junction 40 – signal controlled junction;
2. M62 Junction 28 (Tingley Interchange) – signal controlled junction;
3. A653 Leeds Road / Hey Beck Lane – signal controlled junction;
4. A653 Leeds Road / Chidswell Lane – priority T-junction;
5. A653 Leeds Road / B6128 Challenge Way / B6128 John Ormsby V C Way (Shaw Cross Junction) – signal controlled junction;
6. B6128 Owl Lane / Windsor Road – priority T-junction; and
7. A638 Wakefield Road / A638 Chancery Road / B6128 Owl Lane / B6128 Leeds Road – priority roundabout.

**Figure 6.2 Proposed Off-Site Junction Locations**



### Standalone Junction Models

- 6.1.3 All junction capacity assessment will be by way of standalone junction models (i.e. ARCADY, PICADY and LinSig), and, where possible, will utilise baseline traffic data (which it is assumed includes committed development traffic flows) from the Kirklees SATURN model. If insufficiently robust baseline traffic data is contained within the model, WYG will also need to commission a series of traffic surveys to determine current traffic conditions (potentially including surveys of classified turning counts, queue lengths and saturation flows) and undertake further investigations to determine committed development traffic flows.

### SATURN Traffic Model

- 6.1.4 Following a recent discussion between WYG and AECOM in April 2016, it is confirmed that AECOM is able to provide WYG with a copy of the Kirklees SATURN base model (2014) and two future year models (2020 and 2030). Following this initial discussion, it is understood that the 2014 base model is informed by baseline traffic counts undertaken in 2014 and 2015 (with 2015 traffic flows factored back to 2014 levels), comprising a series of Automatic Traffic Counts (ATCs) and Manual Classified Counts (MCCs) on links. It is understood that counts at junctions were not undertaken, therefore to validate the abovementioned standalone junction



models, WYG may need to commission traffic surveys at the seven off-site junction locations, to obtain queue lengths and saturation flows. A further discussion setting out data requirements is presented further on within this technical note.

### **Modelling Scenarios**

- 6.1.5 Following recent discussions with KC Highways Officers, it proposed that WYG will test a base year scenario, without masterplan development traffic, using baseline traffic data extracted from the Kirklees SATURN model and/or baseline traffic survey data; and two further future assessment year scenarios, with and without the masterplan development traffic. As noted above, it is understood that the existing base year from the SATURN model is 2014. For the purpose of the standalone junction models, and so that observed traffic queues and saturation flows can be used to validate the standalone base models, it is proposed that the base year for the standalone junction models is 2016. Baseline traffic data from 2014, as contained in the SATURN base model, will be factored up to 2016 levels using agreed TEMPRO traffic growth rates.
- 6.1.6 Should standalone junction surveys be required, for example to obtain additional classified turning counts, queue lengths and saturation flows, these would inform the 2016 base year.
- 6.1.7 KC Highways has also requested that the standalone junction models are tested in two future years. It is proposed that, given the SATURN model has future assessment years of 2020 and 2030, these years also to be used for the standalone models. WYG will seek to reach agreement with KC Officers regarding the levels of masterplan development expected to be delivered in the 2020 future assessment year, which is dependent on proposed 'build-out' rates. For the 2030 future assessment year, WYG will test the full 1,535 residential dwellings and 122,500m<sup>2</sup> employment land uses.
- 6.1.8 WYG would welcome the opportunity to reach agreement on the above with KC Highways officers at the earliest opportunity.

### **Data Requirements**

- 6.1.9 In order to carry out and complete the standalone junction modelling, as set out above, WYG will require the following information, some of which, it is assumed, will be made available by KC Highways Officers:
- Kirklees SATURN base model and future year models (assumed to contain junction turning counts and link flows, plus future year committed development flows) – to be supplied by AECOM on behalf of KC Highways;
  - Kirklees SATURN model Local Model Validation Report (LMVR) – already supplied by KC Highways;
  - Signal timing data for the following signal controlled junctions to be assessed:
    - M1 Junction 40 – to be supplied by KC Highways or Highways England (HE);
    - M62 Junction 28 (Tingley Interchange) – to be supplied by KC Highways or HE;
    - A653 Leeds Road / Hey Beck Lane – to be supplied by KC Highways; and
    - A653 Leeds Road / B6128 Challenge Way / B6128 John Ormsby V C Way (Shaw Cross Junction) – to be supplied by KC Highways.



- 'As built' junction layout drawings, where available – otherwise OS base mapping together with on-site observations will be used to build standalone junction models.

## 7.0 Off-Site Highways Mitigation

7.1.1 Following the outcome of the above tasks, WYG will identify any potential off-site highways improvements that will be required to mitigate the impact of the development on the surrounding highway network, at the modelled off-site junctions, for the agreed future year. As this will be informing an Interim TA (rather than a Final TA to accompany a planning application) it is considered that any mitigation identified would be for information only (and not necessarily the final mitigation) and would be to simply demonstrate that the predicted impact of the development *could* be mitigated.

## 8.0 Sustainable Transport Strategy

8.1.1 WYG will develop the 'sustainable transport strategy' included in its original 2013 'Transport Feasibility Study and Sustainable Transport Strategy' report to reflect current public transport, walking and cycling conditions and proposed improvements to transport infrastructure (including proposed improvements to the A653 Leeds Road corridor) in future years, where known. The purpose of this strategy would seek to identify the potential for reducing the number of car-based trips onto the surrounding highway network through transferring trips onto other modes, for example, to reduce the potential impact of the development on the surrounding road networks.

## 9.0 Summary of Key Points

- 9.1.1 WYG is retained by The Church Commissioners for England (the 'Commissioners') to provide transport planning and highways consultancy advice in connection with proposals for a new major strategic mixed-use residential and employment masterplan development at land situated to the north-east of Chidswell, near Dewsbury, West Yorkshire ('Land at Chidswell', the 'site').
- 9.1.2 This Scoping Note sets out the proposed scope of an Interim TA, the purpose of which will be to further inform KC Officers and to ensure they have sufficient technical evidence to support the proposed site allocation at an Examination in Public (EIP), expected to take place later in 2016. WYG would welcome the opportunity to further discuss and agree the content of this Scoping Note and the proposed scope of the Interim TA, through further engagement with KC Highways Officers, at the earliest opportunity.
- 9.1.3 WYG would also welcome the opportunity to continue discussions with KC Highways Officers and their consultants with regards to accessing and using the Kirklees SATURN strategic traffic model, to inform junction capacity assessments.

