BETTER SOLUTIONS, INTELLIGENTLY ENGINEERED

TRANSPORT AND INFRASTRUCTURE PLANNING

LAND OFF MOORTHORPE WAY

APPLICATION REF. 19/03143/FUL

PROOF OF EVIDENCE ON HIGHWAYS AND TRANSPORT

REF CD4.12.1

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1. INTRODUCTION AND PRINCIPAL ISSUES

Appointment

1.1 I am Matthew Addison, the author of this proof of evidence. I am a Transport Planner and Associate Director at BWB Consulting Limited (BWB), an integrated engineering and environmental consultancy that delivers multi-disciplinary engineering solutions to the property, development and construction industry.

1.2 BWB was first appointed by Avant Homes (England) Ltd in February 2019 to advise upon transport matters in relation to a proposed residential development on the appeal site. The appeal site is located to the west of Moorthorpe Gate in Owlthorpe, Sheffield. With regards to this planning appeal I will be providing evidence in relation to transport on behalf of the appellant, Avant Homes (England) Ltd.

1.3 My proof (Ref. CD4.12.1) is supplemented by a standalone summary report (Ref. CD4.12.2) with all appendices referenced contained in a standalone Appendices report (Ref. CD4.12.3).

Qualifications and Relevant Experience

1.4 I hold an Honours Degree in Environment and Transport Planning from the University of Leeds. I am a member of the Chartered Institute of Highways and Transportation (MCIHT).

1.5 I have over 10 years' of professional experience in the planning and design of transport infrastructure and highway schemes in the context of supporting development. I have worked at BWB Consulting Limited for four years and I am responsible for providing traffic engineering, transport planning, sustainable transport, and preliminary highway design advice to a wide range of Clients. These include housebuilders, commercial property developers, landowners, retail developers, private individuals and public authorities.

1.6 Prior to working at BWB, I worked at JMP Consultants Ltd as a Senior Transport Consultant and I led reviews into development proposals on behalf of Highways England (HE) as part of their North East and Yorkshire & Humber Spatial Planning Framework. I have a sound understanding of policy and protocols relating to the assessment of development impacts on the local and strategic road networks.

1.7 My experience has been focused on assessing the traffic and transport impacts of development schemes, relevant to the matters being discussed at this site. I will review the merits of the proposals and provide my expert opinion on transport matters related to the site. I have not elaborated further on matters which are contained within the Statement of Common Ground between DLP Planning and Sheffield City Council (as the relevant highways authority). The Statement of Common Ground agreed with SCC as part of this Proof of Evidence is Core Document CD4.2.

1.8 I am well acquainted with the Appeal Site and the surrounding highway network, having visited the site and reviewed video footage from the traffic surveys.

1.9 The evidence which I have prepared and provided for the inquiry is in accordance with the guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions, irrespective of by whom I am instructed.

Proposed Development Overview

1.10 The appeal site is in the Owlthorpe area of Sheffield, within Sheffield City Council's remit (SCC), which is both the local planning and highways authority.

1.11 The appeal proposal is for a residential development of 72 dwellings ranging from two to five-bed in size. The planning application sought approval for 74 units. The minor amendment to the scheme is unrelated to highways matters. Vehicle access continues to be proposed from the existing three-arm roundabout, which serves Owlthorpe Medical Centre, off Moorthorpe Gate.

1.12 The amendment to the site plan does not affect the results of my assessment as the revised scheme proposes a reduced number of dwellings.

History of the Scheme from a Planning Perspective

1.13 The planning application (LPA reference 19/03143/FUL) was submitted on 27th August 2019 and validated on the same date. The potential impacts of the development in highways terms were assessed within a Transport Assessment (TA) and a Travel Plan (TP), which I prepared. The TA and related documentation highlighted that traffic flow volumes related to the development can be accommodated on the existing highway network without the need for physical mitigation measures. A copy of the Transport Assessment and Travel Plan submitted with the application are included as Core Documents CD2.15 and CD2.20 respectively.

1.14 The planning application was presented to the LPA's Planning and Highways Committee on 5th June 2020 with an officers' recommendation for approval, subject to conditions. This included reference to advice given by Highways Officers agreeing to the outcomes of my TA report. A copy of the Committee Report is provided as Core Document CD2.38.

1.15 Notwithstanding the above, at the meeting the Committee resolved to refuse planning permission with the following reason for refusal:

"This standalone proposal relating to the site known as "Owlthorpe site E" is prejudicial to the proper planning of the wider area, contrary to paragraph 3.2.6 of the "Housing Sites (C, D, E), Moorthorpe Way, Owlthorpe Planning and Design Brief" (July 2014; Updated November 2017), which supports a comprehensive scheme for the application site together with neighbouring sites C and D. The proposal does not respond sufficiently to the area's prevailing character of abundant green infrastructure and open space, contrary to paragraphs 122 and 127 of the National Planning Policy Framework. In addition the proposal fails to make efficient use of land due to the low housing density proposed and fails to adequately integrate the affordable housing into the proposed layout, contrary to paragraphs 8, 122 and 123 of the National Planning Policy Framework, Core Strategy Policies CS26 and CS40 as well as policy GAH5 of the CIL and

Planning Obligations Supplementary Planning Document and is not considered to be sustainable development."

Highways Items Addressed

1.16 There is no highways-related reason for refusal of the planning application. The main issues identified by the Inspector at the Pre-Inquiry meeting did not raise highways as a main issue. The purpose of my proof is to respond to the issues raised by local residents during the planning application and appeal process.

1.17 The following table provides a summary of the key transport topics covered in my proof and chapter references.

Table 1: Summary of Highways Items to be Addressed

Traffic and Transport Topic and Items Raised		Reference in this Document
1	Scope of Transport Assessment - Type of Traffic Assessment - Study Area Junctions - Assessment of Saturday Peak	See Chapter 2
2	Operation and Impact on Off-site Junctions - Operation of existing junctions - Cumulative Traffic Impacts - Road Safety - On-street Parking for Donetsk Way Tram Stop	See Chapter 3
3	Public Transport - Existing Public Transport Services - Multi-model Trip Generation - Public Transport Accessibility - Public Transport Capacity	See Chapter 4

4	Comprehensive Development - Link Road - Cumulative Traffic Impacts - Secondary Vehicular Access - Walkable Local Amenities	See Chapter 5

1.18 This Proof of Evidence presents my professional opinion that from a transport perspective the Appellant's site is one which is suitable and sustainable for the scale of the development proposed.

2. ITEM 1: SCOPE OF TRANSPORT ASSESSMENT

Item Overview

2.1 This chapter responds to comments from local residents and The Owlthorpe Fields Action Group specifically in relation to the scope of the TA. There are comments questioning both the period and extent of assessment.

Type of Traffic Assessment

2.2 Paragraph 111 of the National Planning Policy Frameworks states that "all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed." It does not provide any thresholds based on type of scale of development and the appropriate assessment.

2.3 Therefore, as a starting point, it is generally considered that residential developments of less than 50 dwellings require no traffic assessment, developments between 50 and up to 80 dwellings require a Transport Statement (no junction capacity analysis) and developments comprising 80 or more dwellings require a detailed Transport Assessment (with junction capacity analysis) and a Travel Plan. These thresholds for traffic assessment of new development extend from the Department for Transport's (DfT) Guidance on Transport Assessment (March 2007), specifically paragraph 2.11 and Appendix B. Whilst this was withdrawn on 22nd October 2014, it is still widely adopted as an appropriate yard-stick for traffic assessment scoping and forms part of The Brief for Owlthorpe, which at paragraph 5.2.11 states that "applications for residential developments exceeding 80 dwellings require a Transport Assessment. Proposals below this figure are required to submit a Transport Statement".

2.4 Based on the thresholds and the 72 dwellings proposed on the appeal site, ordinarily a Transport Statement (no junction capacity assessment) would be appropriate. This is because developments of less than 80 dwellings do not typically generate significant movements during the weekday peak hours, that would be sufficient to cause detrimental harm to a highway network.

2.5 Notwithstanding the above, at the time of scoping an 82-dwelling scheme was proposed and therefore it was agreed with SCC that a TA with off-site junction assessment would be undertaken, details of this scoping correspondence are provided in the following paragraphs of my proof.

Scoping Study Area Junctions

2.6 I first contacted SCC Highways (Howard Smith and Helen Johnson) by email on 7th February 2019 to scope the level of assessment they considered necessary to adequately assess the impact of the proposed development on the local highway network. In my scoping email, I acknowledged the Owlthorpe Planning and Design Brief in respect to assessing the traffic impact and attached two spreadsheets, one contained average weekday trip rate calculations from the Trip Rate Information

Computer System (TRICS) and the other, our trip distribution calculations based on 2011 Census Origin-Destination data for all travel to work trips from Sheffield 061 Mid-layer Super Output Area (MSOA). These are the two key parameters we look to agree at the scoping stage in order to define the study area.

2.7 In my email, I confirmed that, (based on the original plans for 82 dwellings) the trip distribution calculations suggested that the proposed development is likely to have an impact of 30 or more two-way vehicle trips on the Donestsk Way/Moorthorpe Gate signalised junction and the Donetsk Roundabout. As noted in paragraph 2.2 of my proof, this 30 two-way trip threshold is often referred to as a 'yard-stick' for scoping discussions and originates from the thresholds outline in Appendix B the now withdrawn Guidance on Transport Assessment (DfT, 2007). In my scoping email, I posed the question "From your experience do you think we need to assess the capacity of these junctions or are there other you would like us to consider?".

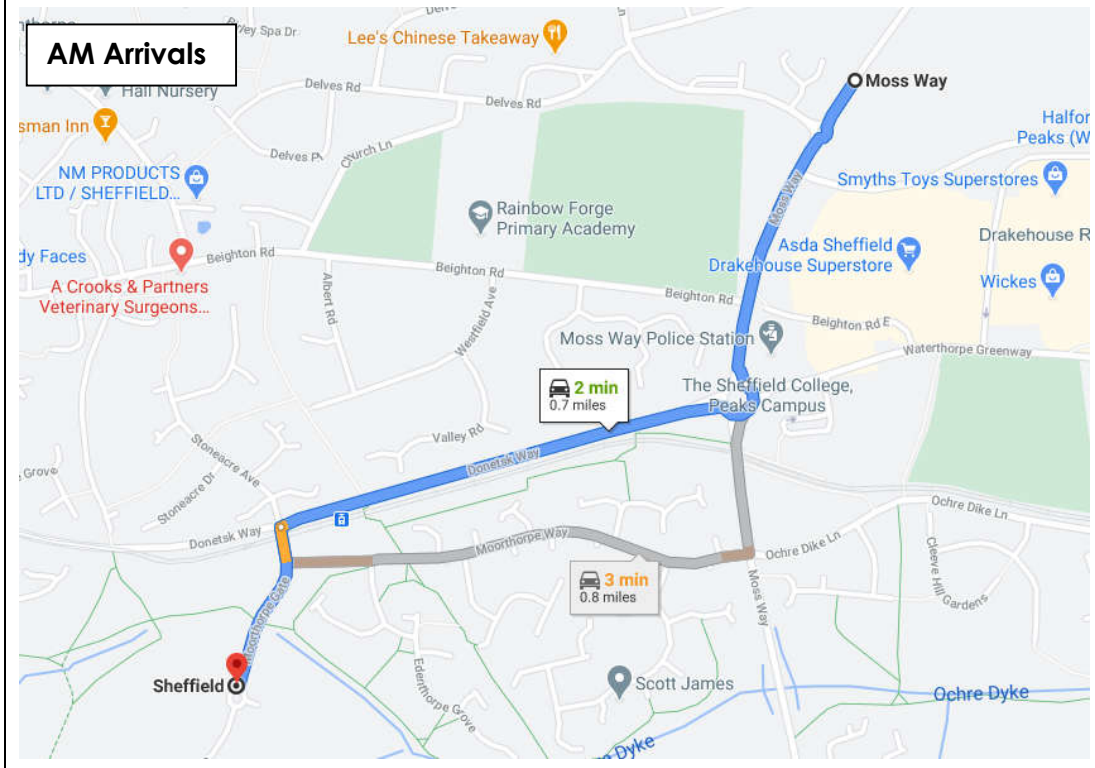
2.8 On 1st March 2019, I received an email response from Helen Johnson at SCC Highways confirming that a TA would be required and advising that the proposed junctions should undergo capacity assessments, but that it was not necessary to assess the impact at further junctions.

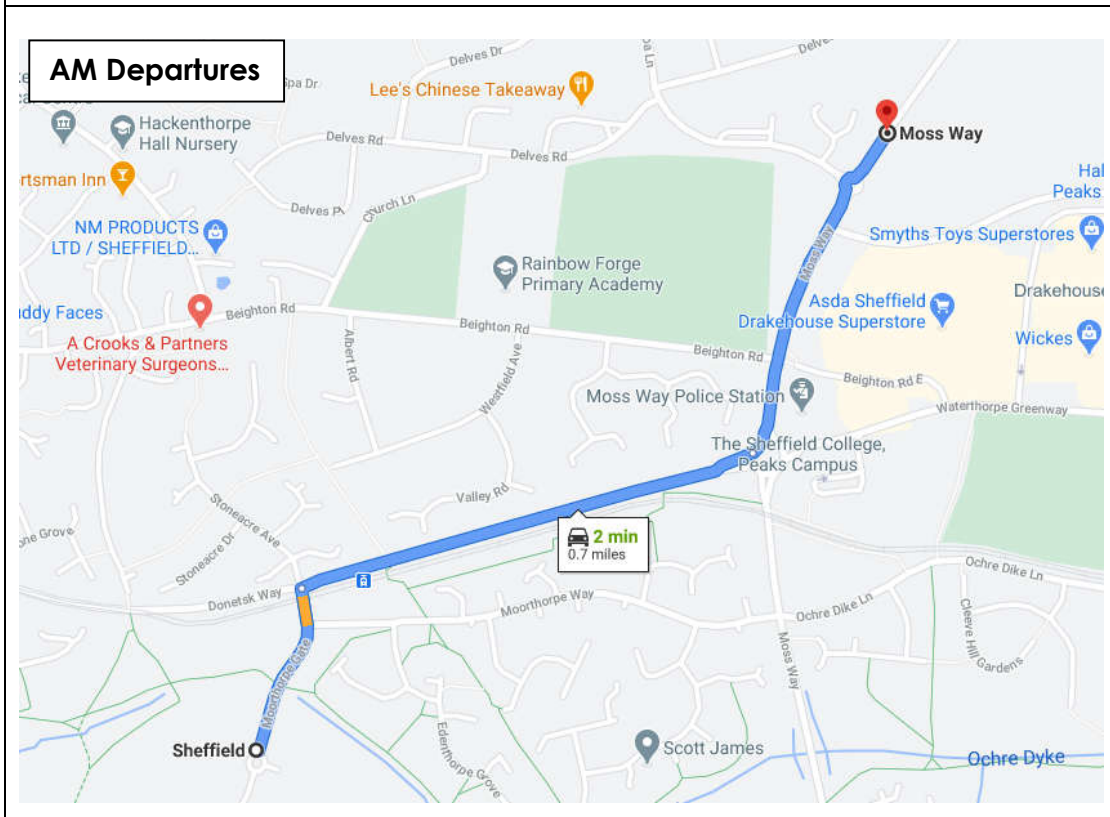
2.9 This demonstrates that our traffic assessment was formally agreed with SCC Highways prior to commencement. I have included a copy of my scoping correspondence with SCC as **Appendix 1** to my proof.

Was the study area correct? – No Assessment of Moss Way/Moorthorpe Way Junction

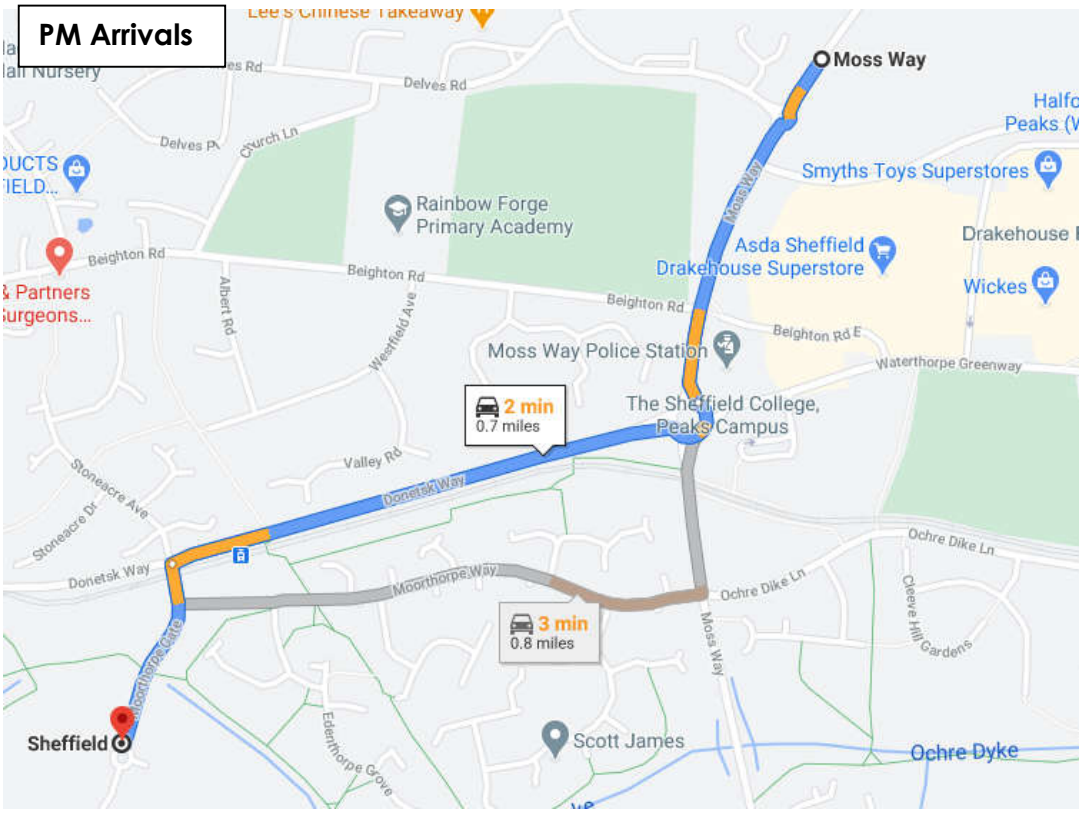
2.10 As part of the distribution calculations, Google Maps routing software is used to sense check the fastest and most convenient route drivers would take to get between the origin (appeal site) and destination (place of work) and vice-versa for trips arriving to the site. This analysis shows that, for access to/from the A57 it is faster for drivers to route via the Donetsk Way/Moorthorpe Gate signals junction than it is to route via Moorthorpe Way and the junction with Moss Way. This is illustrated in **Figure 1** below for the weekday peak hours for the route between Moorthorpe Gate and Moss Way (North).

Figure 1: Vehicle Routing between Site and Moss Way (North) toward A57

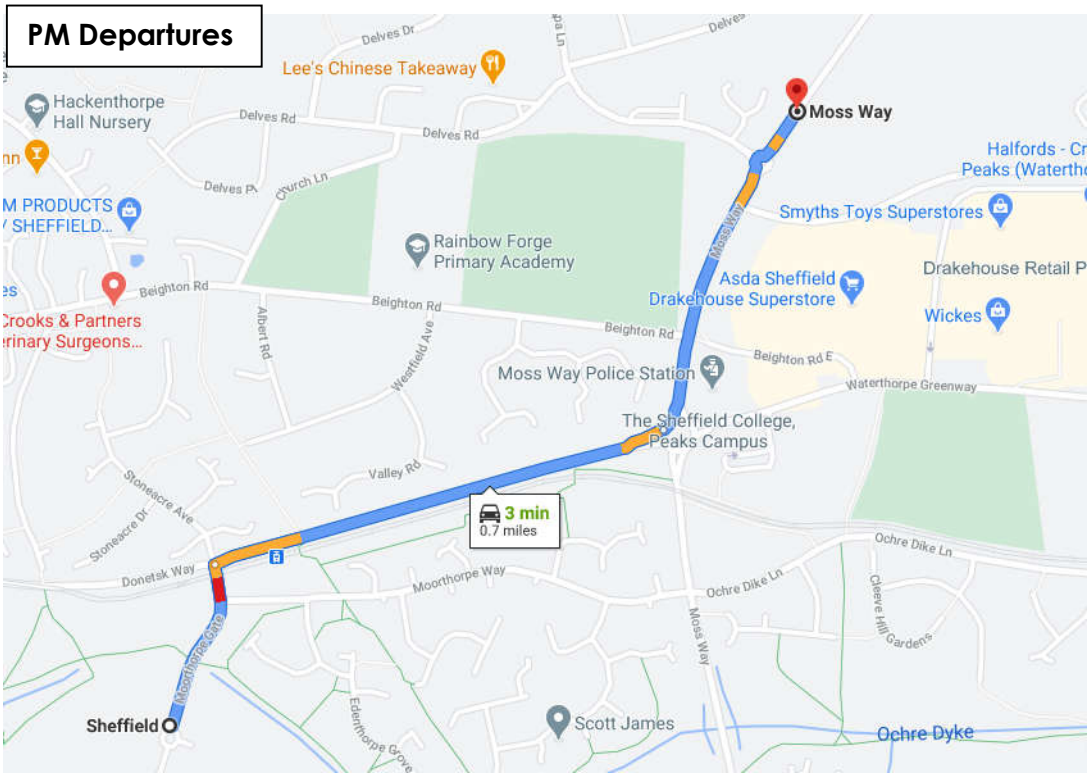




PM Arrivals



PM Departures



2.11 The above driver behaviour was also observed from the video footage from the traffic survey. Between 08:00 and 09:00 on the weekday survey, the video footage shows that 54 out of 70 vehicles turned right onto the Donetsk Way via the signals rather than right onto Moorthorpe Way. This equates to 77% of all right-turning movements and corroborates with the vehicle routing presented above.

2.12 The distribution calculations showed that only trips towards Moss Way (southbound) are expected to route via this junction. This is 14% of the total development traffic, which equates to 7, 6 and 4 two-way vehicle trips during the weekday morning, evening and Saturday peak hours. This equates to a maximum impact of one additional vehicle through the junction approximately every 8.5 minutes during the weekday morning peak hour. It is significantly less than the 30 two-way trip threshold cited in Appendix B of Guidance on Transport Assessment (DfT, 2007) and therefore unlikely to have any noticeable impact on the operation of the junction.

2.13 In summary, I consider the scope of our TA assessment is robust and that there was no substantive reason to assess the impact on the Moss Way/Moorthorpe Way junction as few development trips are expected to route via this junction. This conclusion is supported by the Council in the SoCG, when it is stated at paragraph 7.56 that:

"*The highways impact of the development has been appropriately assessed based on a scope of works and methodology agreed in advance with highways officers and implemented through traffic surveys and the Transport Assessment*".

Was the study area correct? – No Saturday Assessment

2.14 The initial version of our TA report focused on the impact of the proposed development during the weekday peak hours of the local highway network. This is the standard methodology for assessing the traffic impact of residential developments because they are the periods when baseline traffic flows are typically highest and residential development trip generation is highest, with residents commuting two and from work.

2.15 It was not until November 2019 we were informed by the Appellant of the need to undertake a Saturday assessment of traffic impact owing to the proximity of the site to the Crystal Peaks retail park in order to address residents' concerns. For the reasons set out in paragraph 2.13 above, a Saturday assessment was not requested during scoping discussions with SCC Highways.

2.16 In response to resident concerns, we commissioned new traffic surveys on Saturday 23rd November and these flows were used for the Saturday assessment, the results of which were presented in the updated TA report. As expected, the proposed development impact during this period was found to be lower than the weekday evening peak hour. The operation of the study area junctions is detailed in the following chapter of my evidence.

3. ITEM 2: OPERATION AND IMPACT ON OFF-SITE JUNCTIONS

Item Overview

3.1 The Transport Assessment (TA) I prepared to support the planning application submission included detailed junction capacity assessments for the signalised junction of Donetsk Way/Moorthorpe Gate/Stoneacre Avenue and the priority-controlled roundabout known as Donetsk Roundabout.

3.2 The scope of the TA and subsequent outcomes of the assessment have been agreed with SCC Highways Development Control and this is confirmed both in the Officer's Committee Report and the Statement of Common Ground at paragraph 7.53 onwards. Indeed, at paragraph 7.58, it is stated that:

"The outcomes of the Transport Assessment demonstrate that junctions around the site can operate within capacity and accommodate the traffic from all three sites now and in the future, allowing for background traffic growth, committed development and proposed development traffic".

3.3 Despite this evidence, there are comments from local residents regarding the alleged development impact on the operation of off-site junctions. This chapter seeks to address these concerns.

Operation of Existing Junctions

3.4 The existing operational capacity of the study area junctions is detailed in Chapter 6.0 'Highway Impact Assessment' of the TA report (Core Document CD2.15). The volume and classification of vehicle movements at both study area junctions was informed by traffic surveys undertaken on Tuesday 5th March 2019 and Saturday 23rd November 2019 representing the weekday and Saturday peak periods. The timing of the surveys corresponds with the 'neutral' traffic survey periods set out in paragraphs 3.3.6 and 3.3.7 of the Department for Transport's 'Transport Analysis Guidance (TAG) Unit M1.2 Data Sources and Surveys'.

3.5 Queue length surveys were undertaken at the same time as the traffic surveys at Moorthorpe Gate/Donetsk Way/Stoneacre Avenue signalised junction. These were used to check the validation of the base (i.e. survey year) LinSig traffic model. The queue lengths reported in the base model were similar to those recorded by the survey company during the survey indicating that the model is robust and reflective of real conditions.

3.6 Signal controller specifications and stage logs were obtained from SCC's Intelligent Transport Systems Department, which along with observations of the video footage enabled us to develop a robust traffic model that is representative of traffic conditions during the surveys.

3.7 The results from LinSig models are expressed in Practical Reserve Capacity (PRC), which is calculated based on a maximum Degree of Saturation (DoS) on each signalised approach and is a measure of how much additional traffic could pass through a

junction whilst maintaining a maximum DoS of 90% on all links/streams. Therefore, if the worst link's DoS is 90%, the PRC then would be 0%. Negative numbers indicate that the junction would experience longer delays and overloading.

3.8 The DoS is a function of Demand vs Capacity and the results are interpreted using the following bands:

- 0%-90% - The junction operates within capacity, traffic clears the junction every cycle of the signals.
- 90%-100% - Traffic will experience some delay, it is unlikely as to whether ever queued vehicle at the start of the green phase will clear the junction within the same cycle, an arm experiencing a DoS above 90% is failing.
- 100%+ - The arm is significantly over capacity, queues may exponentially increase as traffic struggles to clear the junction.

3.9 The LinSig modelling results show that on the day of the surveys, the Donetsk Way/Moorthorpe Gate signalised junction operates with a PRC of 25%, 31% and 29% during the weekday morning, evening, and Saturday peak hours respectively. The results demonstrate that the junction currently operates within operational capacity during the network peak hours.

3.10 The operational capacity of Donetsk Roundabout has been assessed using Transport Research Laboratory's (TRL) modelling software Junctions 9 (ARCADY), which is the industry-standard for assessing standalone priority roundabouts. Paragraph 6.18 of the TA report clearly defines thresholds for determining the operation of a junction based on the maximum Ration of Flow to Capacity (RFC) values on any modelled run. RFC values between 0.00 and 0.85 indicate satisfactory operating conditions.

3.11 The Junctions 9 modelling results show that on the day of the surveys, the Donetsk Roundabout operates with maximum RFC values of 0.44, 0.74 and 0.62 during the weekday morning, evening, and Saturday peak hours respectively. These values are well below the 0.85 threshold demonstrating that the junction currently operates within operational capacity during the network peak hours.

Cumulative Traffic Impacts

3.12 The TA report considered the cumulative traffic impact at the study area junctions. The analysis in the TA used the 2019 surveyed traffic flows as the baseline, accounted for background traffic growth up to 2024 using TEMPro growth factors and thereafter accounted for committed and proposed development traffic on to top of this. This is considered a very robust assessment as it includes both traffic growth projections and traffic projects for Sites C and D.

3.13 The results presented in Table 11 of the TA demonstrate that the Donetsk Way/Moorthorpe Gate signalised junction will operate with PRC of 8%, 13% and 23% in 2024 with background traffic growth and committed development only during the weekday morning, evening and Saturday peak hours respectively. Thereafter, with the

inclusion of proposed development traffic on top, the junction will continue to operate with positive PRCs of 3%, 8% and 22% respectively, demonstrating that the cumulative traffic at this junction can be accommodated without the need for any physical mitigation.

3.14 The results presented in Table 12 of the TA demonstrate that the Donetsk Roundabout will operate with maximum RFCs of 0.52, 0.82 and 0.67 in 2024 with background traffic growth and committed development only during the weekday morning, evening and Saturday peak hours respectively. Thereafter, with the inclusion of proposed development traffic on top, the junction with continue to operate satisfactorily with maximum RFCs of 0.54, 0.83 and 0.67 respectively, demonstrating that the cumulative traffic at this junction can be accommodated without the need for any physical mitigation.

3.15 In summary, it is clear from my evidence and the results presented in the TA report that the proposed development traffic can be accommodated on the local highway network during weekday and Saturday peak hours.

Road Safety – parking adjacent to Donetsk Way Tram Stop

3.16 There are comments on road safety on the local highway network in respect to parked cars along Moorthorpe Way in the vicinity of the Donetsk Way Tram Stop.

3.17 I have observed the extent of cars parked along Moorthrope Way adjacent to the tram stop on weekdays, which is a result of the attractiveness of the tram network both in terms of frequency and coverage. However, I disagree that this a risk to highway safety and certainly disagree it is a situation that will be exacerbated by the proposed development. The tram stop is located within 800 metres of the site, which is considered walkable for most people, this is considered in further detail in paragraph 4.13 onwards of my proof. Furthermore, a very small proportion of vehicles (10%) are expected to route via Moorthorpe Way with the Moorthorpe Gate/Donetsk route providing a more direct route for most journeys.

3.18 There is no evidence of any personal injury collisions being recorded on this section of carriageway based on the data presented in the TA report which covers the 5-year period 2014 to 2018 inclusive obtained from South Yorkshire LTP Partnership. I have also reviewed 2019 data that has been released since the TA was prepared using the crashmap.co.uk online database and again there have been no collisions reported on this section of the highway network. Crashmap is considered a suitably reliable database as it is derived directly from Department for Transport (DfT) statistics.

3.19 There is a traffic regulation order in place at the Moorthorpe Gate/Moorthorpe Way T-junction in the form of double-yellow-lining, which prohibits parking at all times. Whilst parking is unrestricted outside of this area, this is neither considered dangerous or obstructive because there is adequate width within the carriageway.

3.20 In summary, I disagree with objector claims that the parking along Moorthorpe Way adjacent to Donetsk Way Tram Stop is a significant hazard that would be exacerbated by the proposed development.

Road Safety – Moss Way/Moorthorpe Way junction

3.21 This section of my proof has been written in response to local resident objections in relation to road safety, principally concerning the Moss Way/Moorthorpe Way staggered priority junction.

3.22 The TA report includes a review of Personal Injury Collision (PIC) data for the most recently available 5-year period 2014-2018 inclusive. This concentrates on reviewing the TA study area junctions, including Donetsk Roundabout and the Donetsk Way/Moorthorpe Gate/Stoneacre Avenue signalised junction. There were no PICs reported at the signalised junction and five 'slight' PICs at Donetsk Roundabout.

3.23 I have also undertaken an additional updated review of PICs for 2019 using the Crashmap.co.uk database, which confirms that there have been no reported PICs within the study area during this time period.

3.24 No road safety assessment was undertaken for the Moss Way junction because as part of scoping discussions with SCC, it was considered that the majority of development traffic would route via the Donetsk Way signalised junction. Only 14% of development traffic would route through the Moss Way junction equating to 7, 6 and 4 two-way vehicles during the weekday morning, evening and Saturday peak hours respectively. This is a maximum of approximately one vehicle every 8 ½ minutes, which would be immaterial.

3.25 Notwithstanding this, I have undertaken a detailed review using the same PIC data referenced above, which was obtained from SCC. There has been a total of 8 PICs reported at the Moss Way/Moorthorpe Way junction during the 5-year study period (Jan 2014 to December 2018).

3.26 I have provided a chronological summary table of the 8 PICs in **Appendix 2** of my proof, which I summarise as follows:

3.27 3 Collisions reported in 2014, all recorded as slight collisions:

- 1 collision overtaking manoeuvre unsuccessful on approach to junction and driver pulled back in, vehicle behind collided with rear. Contribution Factors recorded as Inexperienced driver and careless, reckless or in a hurry.

- 1 collision where a vehicle overtakes a cyclist and clips the rear wheel of the cycle, driver failed to stop. Contribution Factors recorded as careless, reckless or in a hurry.

- 1 collision where a vehicle collided with stationary vehicle waiting behind another vehicle waiting to turn. Contributory Factors recorded as failed to look, failed to judge space, sudden braking and illness or disability. mental or physical

3.28 There were no collisions reported at the junction in 2015.

3.29 1 Collision reported in 2016, which was also recorded as a slight:

- Stationary vehicle waiting to turn and V2 hits rear and driver of V2 fails to stop.

3.30 2 Collisions occurred in 2017, both recorded as serious:

- 1 Collision occurred when a stolen vehicle V3 hits another vehicle V1 waiting to turn and V1 collides with V2. Driver of V3 leaves the scene. Contributing factors recorded as stolen vehicle, vehicle in course of crime and aggressive driving.

- 1 Collision occurred when a pedestrian stepped out into the path of a vehicle. Contributory factor recorded for pedestrian as careless, reckless or in a hurry

3.31 2 Collisions occurred in 2018, both recorded as serious:

- 1 Collision occurred when vehicle pulls out of Ochre Dike Lane into path of oncoming vehicle. Contribution Factors recorded as Failed to signal, failed to judge other persons path or speed, Junction restart (moving off junction) and poor turn or manoeuvre.

- 1 Collision occurred when a vehicle V2 following another V1 collided with rear offside. Contributory factor recorded as failed to judge other persons path or speed.

3.32 In summary, I conclude that there is no common pattern with the above that would suggest the junction is unsafe and the development would be unlikely to alter this.

3.33 This is agreed with the Council in the SoCG. It is stated at paragraph 7.59 that:

"The development will not result in an unacceptable impact on highway safety, or a residual cumulative impact on the road network that could be classified as severe in the context of paragraph 109 of the Framework".

4. ITEM 3: PUBLIC TRANSPORT

Item Overview

4.1 This chapter responds to comments relating to public transport accessibility of the site and in particular the comments made by residents querying the travel mode split of resident trips during the peak hours, as well as accessibility to the appeal site by public transport and the capacity of the exiting public transport network to accommodate trips associated with the proposals.

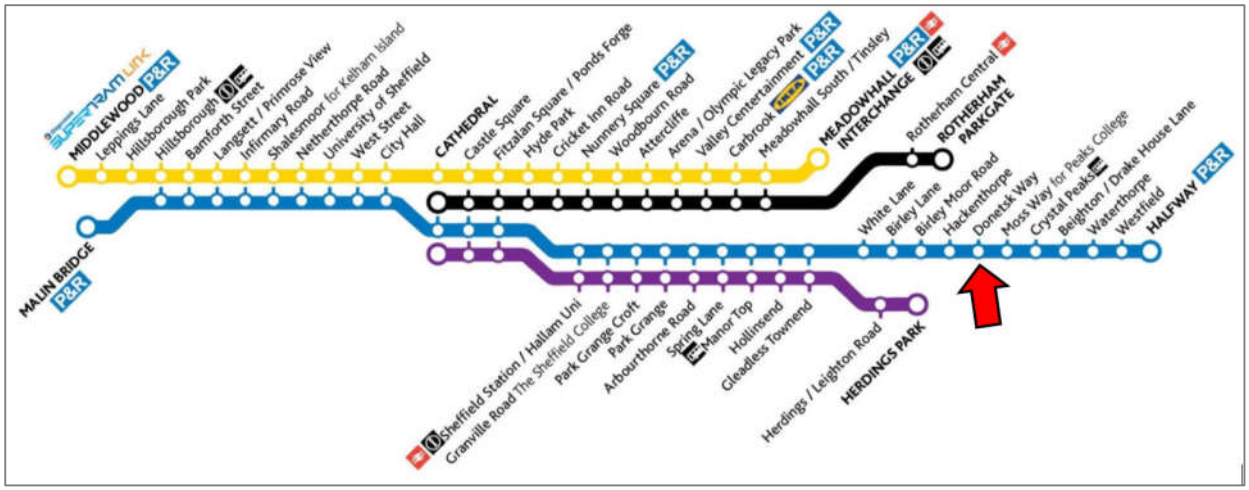
4.2 In the first instance I provide a review of the existing tram and bus services available in the local area. This does not cover accessibility or walk distances, which are covered later in this chapter of my proof.

Existing Public Transport Services

Tram Services

4.3 The tram network can be accessed at Donetsk Way tram stop and is located on the Sheffield Blue Route. The location of Donetsk Way tram stop in relation to the wider tram network is shown in **Figure 2** below.

Figure 2: Donetsk Way Tram Stop as Part of Network



Source: https://tiscon-maps-stagecoachbus.s3.amazonaws.com/RouteMaps/Yorkshire/Supertram%20Linear%20Map%20June%202019.pdf

4.4 The above network map demonstrates that Blue Route tram and wider network can be used to access a number of key destinations across the city, all accessible from Donetsk Way tram stop. Sheffield Station / Hallam Uni tram stop is a 28-minute travel time from Donetsk Way tram stop according to the www.stagecoachbus.com website[1].

[1] https://www.stagecoachbus.com/plan-a-journey

4.5 **Table 2** provides a summary of the timing and frequency of tram services available from Donetsk Way tram stop. This is taken from the 'Current Tram Timetables' page of the www.stagecoachbus.com website[2], a full printout of the latest published timetable for the Blue Route is provided in **Appendix 3**.

Table 2: Tram Services to/from Donetsk Way (from 17 November 2020)

Route	Time of Operation & Frequency		
	Weekdays	Saturdays	Sundays
Halfway – **Donetsk Way** – Sheffield – Malin Bridge	05:53-00:28 (every 15 minutes during daytime)	05:53-00:28 (every 15 minutes during daytime)	08:07-23:59 (every 20 minutes)
Malin Bridge – Sheffield – **Donetsk Way** – Halfway	05:34-00:08 (every 15 minutes during daytime)	05:34-00:09 (every 15 minutes during daytime)	07:49-23:41 (every 20 minutes)
Source: https://wwwstagecoachbus.com/			

4.6 As shown, the trams currently operate with a headway of four trams per hour in either direction on weekdays, equal to a frequency of one tram every 15 minutes. This is currently a reduced service owing to the effects of Covid-19 and associated staff shortages. Travelline, the public transport information provider, has confirmed that the service typically operates with a 12-minute headway on weekdays, equal to a frequency of 5 trams per hour in each direction.

Bus Services

4.7 The closest bus service can be accessed at the bus stop located on Broadlands Avenue, a summary of this service is provided in **Table 3** below.

Table 3: Summary of Bus Service 8a (Broadlands Avenue)

Service	Route	Time of Operation & Frequency		
		Weekday	Saturday	Sundays
8a	Crystal Peaks – Birley – Sheffield – Ecclesfield	10:11-16:11 (hourly)	09:31-16:33 (hourly)	No Service
	Ecclesfield – Sheffield – Birley – Crystal Peaks	09:31-17:34 (hourly)	09:47-17:48 (hourly)	No Service
Source: bustimes.org				

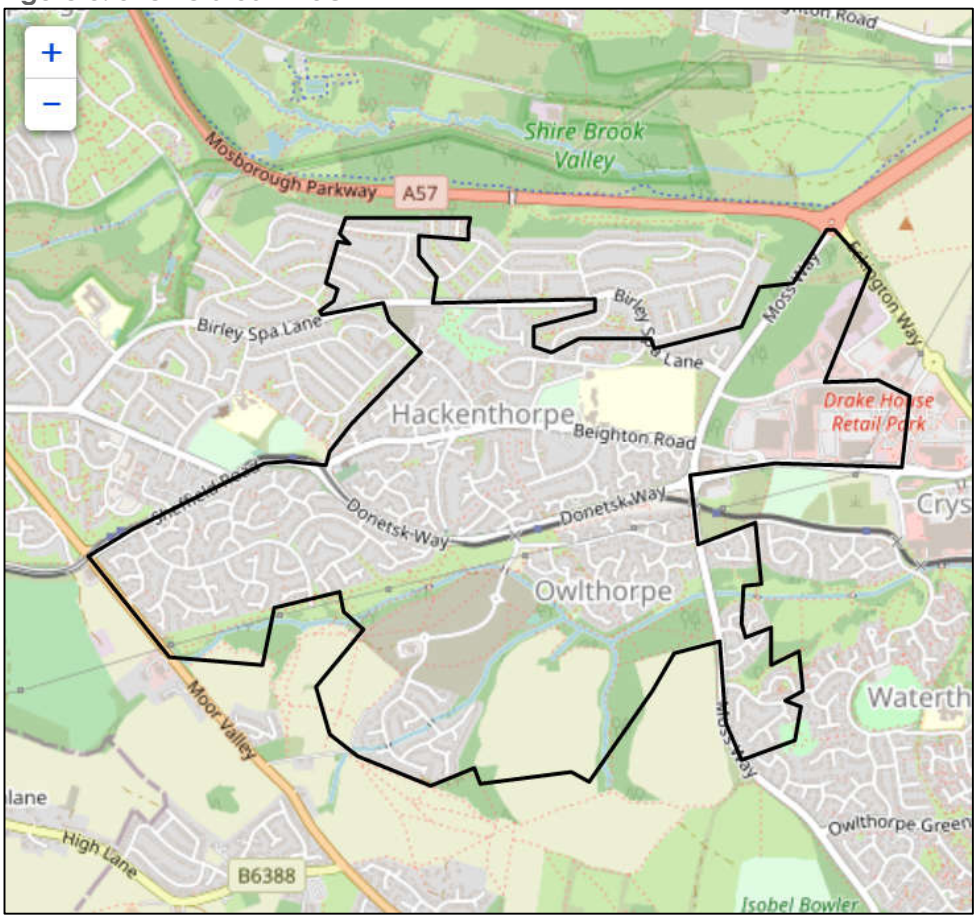
4.8 The 8a bus service is operated by First South Yorkshire. It routes between Crystal Peaks to the east and Ecclesfield to the north. A copy of the 8a bus timetable is provided in **Appendix 4** to my proof and is taken from bustimes.org[3]. The 8a service operates Monday to Saturday only.

[2] https://www.stagecoachbus.com/news/yorkshire/2020/june/st-current-timetables, accessed 30th November 2020.
[3] https://bustimes.org/services/8a-ecclesfield-crystal-peaks, accessed 30th November 2020.

Multi-modal Trip Generation

4.9 The majority of trips generated by residential development during the peak hours are associated with journeys to work and therefore the TA utilises the most recently available Census data (2011) to establish how future residents are likely to travel. The TA report provides a breakdown of the travel modes used by residents in 'Sheffield 061' Mid-layer Super Output Area (MSOA), which includes the proposed development site and wider Owlthorpe and Hackenthorpe residential areas as shown in **Figure 3** below. I consider this to be a robust data source upon which to base the assessment of multi-modal trip generation.

Figure 3: Sheffield 061 MSOA



4.10 Since the original TA, the Census data in Nomis has been updated. Excluding the 'car driver' and 'car passenger' travel modes (equating to 75%) the local travel to work mode split is shown in **Table 4** along with the resultant trip generations based on total person trip rates per dwelling presented in Table 6 of the TA report.

4.11 As shown, around 19% of trips are anticipated to be by public transport and 5% by active travel modes including walking and cycling.

Table 4: Method of Travel to Work (Non-Car Modes) and Trip Generation (72 dwellings)

Method of Travel to Work	Mode Share	AM Peak Hour			PM Peak Hour		
		Arrive	Depart	2-Way	Arrive	Depart	2-Way
Light rail or tram	10%	2	6	8	5	2	7
Train	1%	0	1	1	1	0	1
Bus, minibus or coach	8%	1	5	6	3	1	4
Bicycle	1%	0	0	0	0	0	0
On foot	4%	1	2	3	2	1	3
Total	**25%**	**4**	**14**	**18**	**11**	**4**	**15**

Note: Excludes 'car driver' and 'car passenger' modes, which equate to 75% mode share.

Public Transport Accessibility

4.12 There are comments from objectors questioning the accessibility of the site by public transport. It is agreed with the Council that "the site is sufficiently served by public transport (see para. 7.54 SoCG). Therefore, this part of my proof provides evidence demonstrating that the appeal site is accessible by public transport.

Policy and Literature Review

4.13 In terms of policy and guidance relating to planning, there has long been a debate over what is considered an 'acceptable' walk distance to access public transport.

4.14 The Government introduced advice on walking distances in the 2001 revision to Planning Policy 13: Transport (PPG13) (DETR, 2001, paragraph 75) which advised that "Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly those under two kilometres". This advice was retained in the 2011 revision of PPG13 (DCLG, 2011), but no further rationale or evidence was published to support it, neither did it provide advice on walking distances to bus stops or railway stations.

4.15 In 2012, PPG13 was withdrawn and replaced by the National Planning Policy Framework (NPPF) (DCLG, 2012). Yet again, this does not provide any guidance on walk distances or appropriate distances to access public transport. Planning Policy Guidance on Transport Assessment (DCLG, 2014) also gives no guidance on acceptable distances, leaving Local Authorities and practitioners to devise their own estimates.

4.16 Planning for Public Transport in New Development (IHT, 1999, paragraph 5.21) advises that, "New developments should be located so that public transport trips involving a walking distance of less than 400m from the nearest bus stop **or** 800m from the nearest railway station". It also advises that "these standards should be treated as guidance, to be achieved where possible by services that operate at regular frequencies and along direct routes. **It is more important to provide services that are easy for passengers to understand and attractive to use than to achieve slavish adherence to some arbitrary criteria for walking distance**" (IHT, 1999, paragraph 5.17).

4.17 Planning for Walking (CIHT 2015, p.30) advises that, "The power of a destination determines how far people will walk to get to it. For bus stops in residential areas, 400m

has been traditionally regarded as a cut-off point, in town centres, 200m. People will walk up to 800m to get to a railway station, which reflects the greater perceived quality or importance of rail services". Again, no evidence is provided to support the advice it gives.

4.18 The Masterplanning Check List (TfQL, 2008) reports a 2003 study by Kuzmyak et al. (2003a) which found that walking was the dominant mode of station access for home to station distances of up to 0.5 miles (or 805 metres), 0.652 miles (or 1,050 metres) and 0.75 miles (1,207 metres), for three different railways in San Francisco. This supports the notion that people are willing to walk between 800m and 1,200m to access rail services.

4.19 More recently, a study into 'How far do people walk?' (WYG, 2015) was published and includes a detailed review of mean and 85th Percentile walk distances using National Travel Survey (NTS) data for trips between 'home to bus stop' and 'work to bus stop' for the decade covering 2002 to 2012. Table 3.3 of the study presents mean and 85th Percentile walk distances to bus stops by region and reports that for 'all regions (excl. London)' people travel a mean distance of 580 metres to bus stops with an 85th Percentile distance of 800 metres. The study concludes that average walking distances to a bus stop exceed the 400m which has been the distance recommended for use in IHT (1999) for some time.

4.20 Using the same NTS data source, WYG also reviewed walk distances for trips where "walking was the 1st stage/ mode of travel and rail was the 2nd stage/ mode of travel. This is the walking distance from, for example, home to the railway station or work to the railway station". Table 3.5 of the study presents mean and 85th Percentile walk distances to railway stations by region and reports that for 'all regions (excl. London)' people travel a mean distance of 1,010 metres to rail stations with an 85th Percentile distance of 1,610 metres. The study concludes that "the average walking distance to a railway station outside London is notably longer than the 800m recommended in IHT (1999) and CHT (2015), but is similar to that noted in the Kuzmyak et al. 2003a study (cited in TfQL, 2008)."

4.21 The WYG report culminates in a table (5.1) specifying recommended walking distances to a bus stop and to a railway station. This table is extracted in **Figure 4** of my evidence below and has been used to determine the accessibility of the appeal site.

Figure 4: Recommended Walking Distances

	Mean (m)	85th Percentile (m)
Walk – As main mode of travel		
UK (Excluding London)	**1,150**	**1,950**
London	**1,000**	**1,600**
Walk to a Bus Stop		
UK (Excluding London)	**580**	**800**
London	**490**	**800**
Walk to a Railway Station		
UK (Excluding London)	**1,010**	**1,610**
London	**740**	**1,290**

Source: WYG Report 'How far do people walk?' (July 2015)

Tram Accessibility

4.22 The Brief for Owlthorpe states at paragraph 5.2.9 that "the whole site is in an accessible location within easy reach of high frequency bus and tram facilities". This is also confirmed in the SoCG with SCC at paragraph 7.54.

4.23 The centre of the appeal site is located 662 metres from the Donetsk Way tram stop. This measurement has been taken in AutoCAD drafting software based on Ordnance Survey (OS) base. The measurement has been taken from the raised platform edge at the tram stop - where it is possible to board the tram, to the centre point of the appeal site. The measurement is aligned along the safe and convenient pedestrian routes, including footways and crossing points. Drawing **OWL-BWB-GEN-XX-DR-TR-500-S2-P1** shows this measurement and the route taken.

4.24 For robustness, I have also measured the distance between the tram stop and the doorway to Plot 40, which is located furthest away as shown on the proposed site plan. Plot 40 and is located 821 metres from the tram stop. This distance is also shown in Drawing **OWL-BWB-GEN-XX-DR-TR-500-S2-P1** provided in **Appendix 5** to my proof.

4.25 In summary, the drawings show that the majority of the appeal site is within 800 metres of the Donetsk Way tram stop, with approximately 5 dwellings falling marginally outside of this arbitrary threshold. Owing to the frequency and coverage of the Blue Route tram services they are considered akin to the attractiveness of a railway station. The WYG study reports that people outside London walk on average 1,110 metres to a railway station and therefore this distance is considered accessible for residents of the proposed development. This conclusion is also consistent with the key passage from the IHT guidance, which states that "it is more important to provide services that are easy for passengers to understand and attractive to use than to achieve slavish adherence to some arbitrary criteria for walking distance".

4.26 Furthermore, the walk route is to the tram stop considered attractive for pedestrians as the footways are wide, well surfaced and street lighting is present to assist during hours of darkness.

4.27 Again, my review is consistent with the Brief for Owlthorpe and SoCG with SCC, which agree that the site is well placed for accessibility by public transport.

Bus Accessibility

4.28 Currently, the nearest bus stop is located on Broadlands Avenue, at a distance of approximately 711 metres from the centre of the appeal site. This distance is also shown on Drawing **OWL-BWB-GEN-XX-DR-TR-500-S2-P1** provided in **Appendix 5** of my proof. Additional and more frequent bus services are available from the Moss Way / Ochre Dike Lane approximately 1km from the site, including bus routes 8, 55 and 120.

4.29 The above service is unlikely to be used regularly by residents because the service does not operate during the weekday morning peak hour and only covers a portion of the

evening peak hour. Furthermore, the walk distance is outside of the IHT's 400m recommended maximum walk distance and the 580m mean walk distance identified in the WYG study of NTS data.

4.30 However, subject to demand, SYPTE has confirmed that they "accept the principle that the bus route could be diverted at a future date" into the wider site as far as the appeal site access roundabout adjacent to the Owlthorpe Medical Centre once the wider Owlthorpe site has been built out. The Council also agree that "the existing road infrastructure is agreed to be capable of taking buses as far as the medical centre and allows turning at the roundabout next to the medical centre" (see para. 7.62 SoCG). The swept path drawing showing the bus circulating the roundabout is provided as **Appendix 6** to my proof.

4.31 In the short to medium term, the site already benefits from being accessible by the frequent tram service and therefore the proposed development is not reliant on this bus route diversion to make it sustainable.

Public Transport Accessibility Summary

4.32 I have demonstrated that the appeal site is accessible by public transport. It is within 800m of the Donetsk Way tram stop, which provides frequent services to Sheffield City Centre. All but five of the dwellings are within this 800m walk distance threshold. The tram is considered to be an attractive method of travel as a result of frequent services with good coverage. There is a high quality and well-lit walk route between the site and tram stop. The tram stop is located well within the 1,010m mean walking distance reported in the WYG study and therefore is considered accessible on foot by future residents and their visitors.

4.33 Moreover, the existing Moorthorpe Gate carriageway is of sufficient width to accommodate a bus service in the future as required. The bus would be able to turn at the roundabout adjacent to the Medical Centre as shown on Drawing **OWL-BWB-GEN-XX-DR-TR-113_S2_P1** provided as **Appendix 6** to my proof.

Tram Capacity and Impact

4.34 Based on the results of the mode share of non-car modes presented in Table 4 of my proof, it is estimated that the proposals would generate demand for 2 arrivals and 6 departures by tram during the weekday morning peak hour and 5 arrivals and 2 departures during the weekday evening peak hour.

4.35 The tram service from Donetsk Way tram stop is served by the Sheffield Tram Blue Route, which runs between Halfway and Malin Bridge via Sheffield City Centre. The service usually operates with a headway of 12 minutes in each direction, equating to 5 trams per hour in each direction. Based on demand for the tram identified above (6 departures in the weekday morning peak hour and 5 arrivals in the evening peak hour) and assuming all are heading in the direction of Sheffield City Centre, there would be a maximum average demand for approximately one additional passenger per tram during the peak hours. This is expected to have a limited impact of the capacity of the existing tram network.

4.36 As a worst case, I have summed the total demand the 'light rail or tram', train and 'bus, minibus or coach' modes of travel as shown in Table 4 of my proof and assumed all would use the tram. These combined equates to maximum demand of 12 departures in the AM peak hour and 9 arrivals in the PM peak hour. Based on the higher morning peak hour demand, this would equate to an average of 2.4 additional passengers per tram. Again, this is considered an immaterial and unlikely to have a noticeable impact on the capacity of the existing tram network.

4.37 It is clear from the above that the proposed development would be unlikely to have a detrimental impact on tram capacity or the amenity of the existing users of the tram. Furthermore, Avant are making a contribution to SYPTE through the S106 Agreement. Andrew Fosbueary of SYPTE has confirmed to me that this contribution will be put towards upgrading passenger facilities (e.g. increase shelter sizes, seating and real-time information) at the Donetsk Way tram stop.

4.38 In summary, it is considered that the proposed development would not have a detrimental impact on existing tram capacity.

5. ITEM 4: COMPREHENSIVE DEVELOPMENT

Item Overview

5.1 This chapter considers the potential effects of the development on the comprehensive development of the wider Owlthorpe Housing Sites, from a highways perspective. As noted in the introduction to my proof, there is no highway reason for refusal and neither is there anything highway-related disputed in the SoCG with SCC. However, I have considered this for completeness.

5.2 In terms of traffic impact, I make reference to the results of the TA report, which includes consideration of the cumulative traffic impacts at off-site junctions associated with Owlthorpe Housing Sites C and D allocations coming forward in the future.

5.3 As for the highway layout provisions, this chapter of my proof demonstrates that a link road is not required to support the development and the proposed highway layout would be sufficient to accommodate potential bus and emergency service vehicle access. I make reference to the *Housing Sites (C,D,E), Moorthorpe Way, Owlthorpe: Planning Design Brief'* (July 2014, updated 2017).

5.4 This section of my proof also addresses 'walkable local amenities', which was raised as an issued in paragraphs 3.3 and 5.7 of Owlthorpe Action Group's Statement of Case.

Cumulative Traffic Impacts

5.5 Paragraph 6.7 onwards in the TA report details the committed developments that have been accounted for in the assessment of off-site highway impacts. Paragraph 6.10 of the same document specifically references the inclusion of Housing Sites C & D and confirms that these have been assessed assuming the delivery of 94 and 71 dwellings respectively, which is in accordance with the Strategic Housing Land Availability Assessment (SHLAA) assumptions shown in Fig. 8 on Page 13 of The Brief. Therefore, I conclude that a comprehensive approach to the delivery of the wider Owlthorpe site has been taken in relation to the consideration of off-site junction capacity assessment. The results of which conclude that the study area junctions would continue to operate within capacity at the 2024 opening year with the inclusion of background traffic growth, committed developments and the proposed development.

Potential Link Road

5.6 Paragraph 5.25 of 2014 version of The Brief made reference to the potential link road through the wider site and confirmed that "**the link road connection is not essential in enabling the development of the allocated sites**". It was referred to as "desirable in accessibility terms", but also "would result in the loss of part of an area of ancient woodland to the north of Site E". This statement was subsequently removed from the 2017 update to The Brief, which instead references (at paragraph 5.2.6 on page 55) a 2013 highways feasibility study by Arup, which "explores options for achieving a second access, investigate junction capacities and trip generation". But then goes onto warn potential Developers that "the Arup report is already over 4 years old and was restricted

in its remit so additional highway assessment will likely be required". In light of this, I consider our 2019 assessment to be more relevant and up-to-date.

5.7 Chapter 4 of my proof shows that the site will be accessible by public transport, without the link road.

5.8 Further to the above, the TA has demonstrated that the cumulative traffic generation from Owlthorpe Housing Sites C, D and E can be accommodated on the local highway network without the provision of the link road. This is agreed with SCC Highways and is referred to on Page 65 of the Officer's Committee Report and also at paragraph 7.60 of the SoCG, where it is stated that: "In terms of accessibility, the link road is not required in highway capacity terms". The Highways officer's advice to the case officer goes further and suggests that "if the link road were provided there is a likelihood that traffic would divert to this route" and "in addition to the negative amenity impacts of through traffic routing through housing areas it would also be likely to create capacity problems when traffic re-joins the main route".

5.9 In summary, I conclude that a link road through the wider Owlthorpe site is not a necessary piece of infrastructure required to facilitate development on the appeal site.

Secondary/Emergency Access

5.10 Page 68 of the Committee Report quotes The Brief (November 2017 update), which states that "it is essential that a second access is provided; however this could be a route used for vehicular access only in emergencies or when access is restricted due to works within the highways. It is not desirable or good practice for so many homes to be served by only one adopted vehicular route". It goes onto conclude that "whilst the lack of a second point of access is a negative aspect of the proposal and the most obvious solution would be via a new link road or bus loop it is considered on balance that it is not a severe highway impact justifying refusal of planning permission".

5.11 Firstly, it is important to note that the reference in The Brief to the second access refers to the wider site coming forward and not Site E (the application site) in isolation. The existing Moorthorpe Gate/Moorthorpe Rise access road serves the Woodland Heights Estates (Sites A & B), which comprises approximately 166 dwellings. The proposed development comprises 74 dwellings and therefore 240 dwellings would be served off a 400m section of Moorthorpe Gate (between the proposed development site access roundabout and junction with Moorthorpe Way). There is no evidence to suggest that this number of dwellings cannot be served off a single route.

5.12 There is no threshold for the number of dwellings that can be served from a single route in the South Yorkshire Residential Design Guide (2011), which is Best Practice Guidance adopted by SCC. The width of Moorthorpe Gate carriageway between the proposed development site access roundabout and junction with Moorthorpe Way is more than 6.0 metres. Therefore, in the event a vehicle breaks down in the carriageway or road works are required, there is more than sufficient width for vehicles to pass.

5.13 This is agreed with the Council in paragraph 7.61 of the SoCG, where it is stated:

"A second access for emergencies is not essential for the development of Site E but the internal site layout of the appeal scheme does allow for a loop to be completed as part of the development of Site D, if feasible. The provision of a second access for emergencies is desirable but not essential for highway safety reasons and therefore the planning permission could not be resisted on this basis."

5.14 In summary, I conclude that the proposed access arrangements are suitable for the level of development proposed and do not compromise the future development on the wider Owlthorpe site.

Bus Route Provision

5.15 The existing highway layout of Moorthorpe Gate/Moorthorpe Rise has the potential to accommodate bus access. The existing roundabout adjacent to Owlthorpe Medical Centre can accommodate a single deck bus turning as shown on Drawing **OWL-BWB-GEN-XX-DR-TR-113_S2_P1** provided as **Appendix 6** to my proof. SYPTE has confirmed to me that they "accept the principle that the bus route could be diverted at a future date". This is also agreed at paragraph 7.62 of the SoCG.

Walkable Local Amenities

5.16 In Owlthorpe Action Group's Statement of Case, they argue at paragraph 3.3 that "the appeal scheme will exacerbate the problem of residential parcels being developed in the area without the walkable local amenities which were originally envisaged for the site when it was allocated, thereby increasing car dependence and running contrary to Core Strategy Policy CS39, and NPPF para 91".

5.17 Paragraph 3.10 of the TA identifies the key local amenities within 2.0km walking distance of the site, which is the suggested 'preferred maximum' walking distance for pedestrians without a mobility impairment taken from Table 3.2 of CIHT's publication 'Guidelines for Providing for Journeys on Foot' (2000). These include Owlthorpe Surgery (immediately adjacent to the site, Rainbow Forge Primary Academy (approximately 1,000m from the centre of the site), ASDA Sheffield Drakehouse Superstore (~1,300m), St John Fisher Catholic Primary School (~1,400m), Birley Spa Primary Academy (~1,700m) and Crystal Peaks Shopping Mall and Retail Park (~1,900m). Based on an average walk speed of 1.4 metres per second taken from paragraph 3.30 of the above CIHT publication, all of the above are accessible is less than 24 minutes walking travel time.

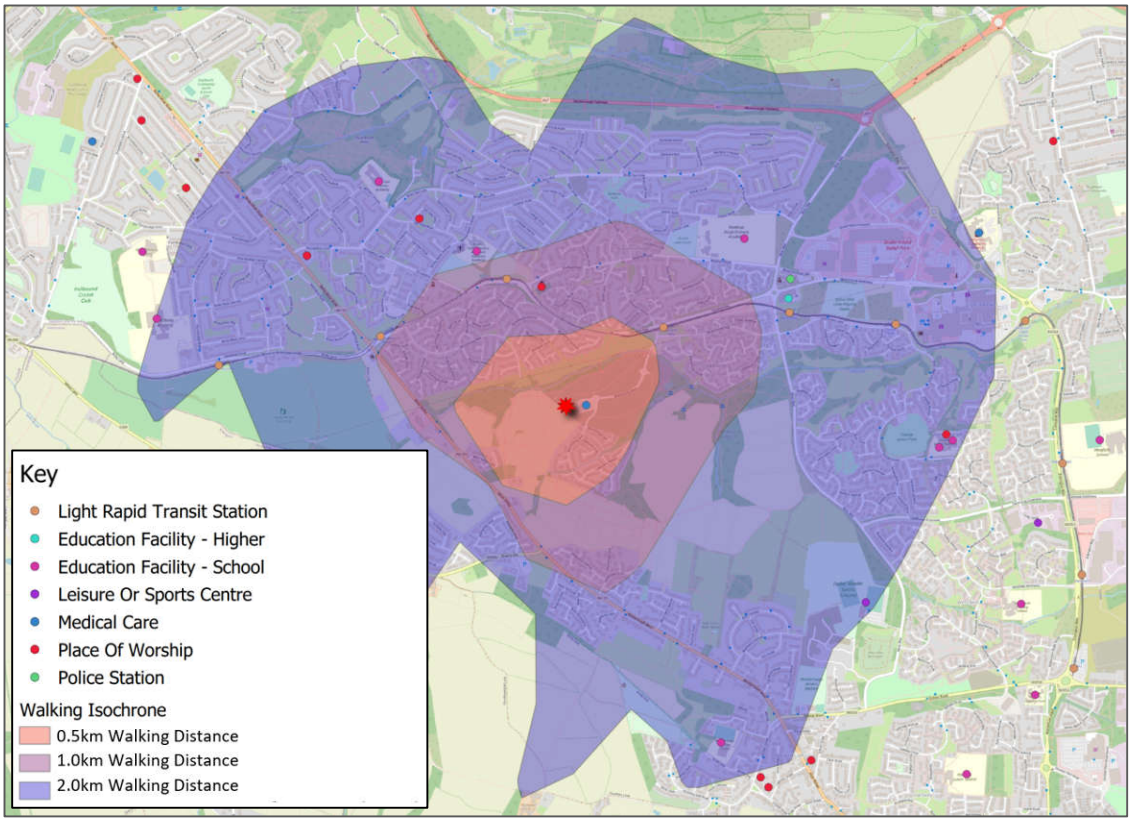
5.18 The concept of walkable neighbourhoods is promoted in Manual for Streets (DfT, 2007) and these a typically characterised as having a range of facilities within 10 minutes; walking distance (about 800m) of residential areas. However, the Manual goes onto advise that 800m "is not an upper limit" and refers back to the 2km advice in Planning Policy Guidance 13 (PPG13), which is referenced in the CIHT guidance above.

5.19 The 'How far do people walk?' (WYG, 2015) study referenced at paragraph 4.19 of my proof in relation to public transport accessibility, also reviews walking distances as the main mode of travel from a planning perspective. At para 4.2, based on the NTS data reviewed, they "suggest that for planning purposes the 85th percentile distance should be used to establish the walking catchment for sites outside London". This equates to a

distance of 1,950m, which corresponds with the 2km value used in the TA taken from PPG13 and also referenced in the CIHT guidance.

5.20 Based on the above guidance and WYG study, I have mapped the local amenities available within a 2km walking distance of the site and this is presented in **Figure 5** below. The original drawing is provided in **Appendix 7** for ease of reference.

Figure 5: Walking Accessibility Isochrones and Local Amenities



5.21 The walking accessibility isochrones presented above differ from those presented in Figure 2 of the TA. The above has been modelled in QGIS software using the Open Route Service (ORS) Tools plugin and includes the use of footpath routes in addition to footways alongside adopted roads. It is therefore considered more accurate than the plan presented in the TA report. It is still based on an average walk speed of 1.4 metres per second.

5.22 Figure 5 demonstrates that there are a number of local amenities within walking distance of the site and therefore the proposals at the appeal site enable and support healthy lifestyles and are consistent with paragraph 91 of the NPPF. The site is also within walking distance of the Donetsk Way tram stop providing access to amenities afield. This is agreed at paragraphs 3.16 and 7.55 of the SoCG. It is stated at 7.55 that:

"As confirmed at paragraph 3.16 of this document, the site is within cycling and walking distance of a number of local amenities and residents will be encouraged to use sustainable means of travel through improvements proposed to existing local footpaths and cycleways".

6. CONCLUSION

6.1 There is no highways-related reason for refusal of the planning application and all key highway-related items have been agreed with Sheffield City Council (the local highways and planning authority), as part of the Statement of Common Ground. The main issues identified by the Inspector at the Pre-Inquiry meeting did not raise highways as a main issue. The purpose of my proof is to respond to the issues raised by local residents during the planning application and appeal process.

6.2 The appeal proposal is for a residential development of 72 dwellings ranging from two to five-bed in size. The planning application sought approval for 74 units. The minor amendment to the scheme is unrelated to highways matters. Vehicle access continues to be proposed from the existing three-arm roundabout, which serves Owlthorpe Medical Centre, off Moorthorpe Gate. The amendment to the site plan does not affect the results of my assessment as the revised scheme proposes a reduced number of dwellings.

6.3 In Chapter 2 of this proof, I explain the reasoning underpinning the scope of the Transport Assessment (TA) and confirm that this was scoped with highways officers at SCC. As part of the scoping exercise, we agreed the methodology used to calculate the trip generation and distribution used to inform the TA study area junctions. I explain the reasoning why the Moss Way/Moorthorpe Way junction was not included in the study area, on the basis only 7, 6 and 4 two-way vehicles are expected to route via this junction in the weekday morning peak hour, the highest period for trip generation. I also clarify the reason why the Saturday assessment was not included in the original scope of the TA and confirm that this was subsequently undertaken in response to local resident concerns.

6.4 In Chapter 3 of this proof, I address the resident concerns relating to the operation of local highway network junctions. I identify the data upon which the traffic models were based and explain that base models were developed and validated against actual conditions using queue length survey information and video footage from the surveys. The methodology applied is considered very robust. I go onto explain that the modelled flows are also very robust. They include background traffic growth projections on the local highway network, which were applied using local growth factors from the National Trip End Model (NTEM) modified in the Trip End Model Presentation Programme (TEMPro). In addition to this, the opening year modelled flows also include the traffic projections for Housing Sites C and D demonstrating that the assessment is again very robust.

6.5 I go onto explain the results of the off-site junction modelling assessments, explaining the thresholds used for the LinSig and Junctions 9 modelling software. These were used to assess the impact at the Donetsk Way/Moorthorpe Gate signalised junction and Donetsk Roundabout respectively. The results demonstrate that the junctions will be able to accommodate the forecast traffic flows in the future year accounting for the cumulative increases in traffic associated with background traffic growth, committed developments and proposed development traffic.

6.6 The results of these assessments with the inclusion of traffic flows on top, demonstrate that the junctions would be able to accommodate the forecast cumulative demand at the opening year with some reserve operational capacity.

6.7 In Chapter 3, I also address the perceived road safety issues associated with parking along Moorthorpe Way adjacent to the Donetsk Way Tram Stop. I explain that the appeal site is located within walking distance of the tram stop and that only 10% of the proposed development is expected to route via Moorthorpe Way. I also show that there are no existing records of collisions being reported in the vicinity of the parking along Moorthorpe Way, suggesting there is no existing road safety issue on this section of the network. There is also double yellow lining present at the Moorthorpe Gate/Moorthorpe Way junction prohibiting parking that might prevent the safe movement of traffic.

6.8 In the same chapter, I go onto review the collision records at the Moss Way/Moorthorpe Way junction, which was omitted from the TA study area for reasons outlined above. The records show that between January 2014 and December 2018 a total of 8 personal injury collisions were reported at the junction including three in 2014, none in 2015, one in 2016, two in 2017 and two in 2018. On review of the records, I conclude that there is no common pattern with the collisions that would suggest the junction is unsafe with the contributory factors pointing to driver error. Furthermore, the proposed development is not expected to add a material number of trips to the junction.

6.9 In Chapter 4 of this proof, I demonstrate that the appeal site is accessible by public transport with a high-quality walk route to the Donestsk Way Tram Stop, which is located on the Stagecoah Supertram Blue Route. This route typically provides high frequency (5 trams per hour in each direction) services between Halfway and Malin Bridge with key employment opportunities and services accessible in Sheffield City Centre in approximately 28 minutes. I quantify the non-car trip generation of the development and show that a maximum demand of 12 departing trips on the tram during the morning peak hour is likely to be generated. I explain that this equates to an average of 2.4 additional passengers per tram assuming all travel in the direct of the city centre. I conclude that this is unlikely to have a noticeable impact on the capacity of the existing tram network. The Appellant is also making a financial contribution to South Yorkshire Public Transport Executive (SYPTE) for improvements to facilities at Donetsk Way Trams Stop via the Section 106 Agreement.

6.10 In Chapter 4, I also include a detailed review of published policy and guidance in respect to walk distances to public transport stops. I use this to demonstrate that local bus and tram stops are within a walkable distance of the site. My conclusions are consistent with paragraph 5.2.9 of *the 'Housing Sites (C, D, E), Moorthorpe Way, Owlthorpe Planning and Design Brief' (July 2014; Updated November 2017)* and paragraph 7.54 of the SoCG, both of which consider the site is within reach of high frequency bus and tram services.

6.11 In Chapter 5 of this proof, I consider the comprehensive development of the wider site from a transport perspective. I reiterate that there is no highway reason for refusal in this regard or anything disputed in the SoCG with SCC and that this review has been undertaken for completeness. In response to the consideration of the cumulative traffic impacts associated with Housing Sites C & D, I reiterate that the TA has accounted for

the traffic impacts of these sites in the modelling assessments at opening year. The modelling assessments presented in the TA demonstrate that the cumulative traffic of all three sites coming forward can be accommodated on the local highway network without the need for mitigation.

6.12 Thereafter in Chapter 5, I explain why a link road through the site is not a necessary piece of infrastructure. As above, the TA demonstrates that the cumulative traffic of all three sites coming forward can be accommodated on the local highway network without the link road. I also refer to page 65 of the Committee Report and paragraph 7.60 of the SoCG, which confirms that "the link road is not required and highways capacity terms" and goes further to suggest that "if the link road were provided there is a likelihood that traffic would divert to this route" and "in addition to the negative amenity impacts of through traffic routing through housing areas it would also be likely to create capacity problems when traffic re-joins the main route". I confirm that the lack of a secondary access point to the wider site is not a material concern and that there is no policy or guidance requiring this based on the number of dwellings proposed. I also provide evidence that the design of Moorthorpe Gate and the roundabout adjacent to the site is sufficient to accommodate bus access into the site. Subject to demand, SYPTE has also confirmed that they "accept the principle that the bus route could be diverted at a future date".

6.13 Finally, in Chapter 5, I provide evidence showing that there are walkable amenities located within two kilometres of the appeal site. This is consistent with the Planning Policy Guidance 13, which is also referenced in 'Guidelines for Providing for Journeys on Foot' (CIHT, 2000) and has been corroborated by WYG in their paper 'How far do people walk?' (2015) based on National Travel Survey (NTS) data. I therefore conclude that the location of the appeal site would support healthy lifestyles and are consistent with paragraph 91 of the NPPF.

6.14 In conclusion, my evidence reaffirms that there are no grounds for highways-related reasons for refusal, which is consistent with original recommendation of the case officer and has been agreed in the SoCG.

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