

Lindum Homes

Proposed Residential Development Nettleham Road, Scothern Transport Statement

April 2024

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Client C	ommission		
Client:	Lindum Homes	Date Commissioned:	November 2023

LTP Quali	ity Control							
Job No:	LTP/23/57	726 File	Ref:	Nettleha	m Road S	cothern TS	Draft Issue (9.04.2024
Issue	Revision	Descript	ion			Author	Checked	Date
DRAFT	-	Draft iss	ue for	client com	nment	KM	KN/SW	09/04/2024
						م ما در ما	d for Issue:	SW

LTP PROJECT TEAM

As part of our commitment to quality the following team of transport professionals was assembled specifically for the delivery of this project. Relevant qualifications are shown and CVs are available upon request to demonstrate our experience and credentials.

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Document Control



PROPOSED RESIDENTIAL DEVELOPMENT NETTLEHAM ROAD, SCOTHERN TRANSPORT ASSESSMENT

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I. INTRODUCTION

I.I Background

- 1.1.1 Local Transport Projects Ltd (LTP) has been commissioned to produce a Transport Statement (TS) in support of a planning application for a residential development on land to the east of Nettleham Road in Scothern, Lincolnshire. This TS provides an appraisal of the expected transport impact of the proposals. A plan of the proposed site layout is attached as Appendix 1.
- 1.1.2 The local planning authority for the site is West Lindsey District Council (WLDC) and the local highway authority is Lincolnshire County Council (LCC).
- 1.1.3 LTP has also been commissioned to prepare a Travel Plan (TP) (LTP, 2024) for the proposed development, which outlines the approach to encouraging travel by sustainable modes at the site. Although the TP has been prepared as a standalone document, both the TS and TP are linked and should be read in conjunction with each other.

I.2 Scope

1.2.1 The scope of the report has been agreed with LCC Highways (ref: John Clifton) and is also written in accordance with the Government's 'National Planning Policy Framework' (DLUHC, 2023) and 'Planning Practice Guidance' (DLUHC, 2014), with the scope outlined below:

• Introduction & Description of Proposals:

- Description of the development site, including location and existing access arrangements;
- Summary of relevant planning and allocation history for the site;
- Description of the proposed development including site layout, pedestrian/cycle facilities and proposed access arrangements.

• Site Assessment:

- Site assessments to determine existing traffic conditions, such as posted speed limits, road restrictions, highway geometry, on-street parking restrictions and any other relevant features of the local area;
- Assessment of the sustainable transport infrastructure (pedestrian, cycle and public transport) local to the site.
- Road Casualty Appraisal: Examination of road collision records (5-year study period)
 and assessment of the road safety impact of the proposed development on the local
 highway network.

• Traffic Impact:

- Calculation of the projected trip generation for the proposed development;
- Assessment of the likely traffic impact of the proposed development on the operation of the local highway network.



- Access, Parking & Internal Layout: Consideration of the proposed access arrangements and internal layout of the site, including consideration of the servicing arrangements, proposed parking provision, and access design.
- **Conclusions:** Conclusions summarising the outcomes of the TS including a commentary on the suitability of the proposals in terms of sustainable travel, traffic impact and road safety.
- 1.2.2 This TS report has been prepared in accordance with the above scope and reference has been made to the following documents where appropriate:
 - Central Lincolnshire Local Plan (CLJSPC, 2023);
 - National Planning Policy Framework (DLUHC, 2023);
 - Lincolnshire County Council Local Transport Plan 5 (LCC, 2022);
 - Planning Practice Guidance (DLUHC, 2014);
 - Manual for Streets 2: Wider Application of the Principles (CIHT, 2010);
 - Guidance for Transport Assessment (DfT, 2007a);
 - Manual for Streets (DfT, 2007b).



2. SITE BACKGROUND

2.1 Site Location & Existing Use

2.1.1 The proposed development site is located on land to the east of Nettleham Road in Scothern, Lincolnshire and currently forms open grassland. The site is bound by residential dwellings accessed by Nettleham Road/Church Street to the north, dwellings accessed by The Alders/Sudbrooke Road to the east, commercial developments and agricultural land to the south, with Nettleham Road forming the site's western boundary. There is an existing public footpath along the eastern boundary of the site, as discussed in Section 3.2. The approximate boundary of the proposed development site is shown in red in Figure 1.



Figure 1: Site Location

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2.2 Allocation Status & Planning History

2.2.1 The proposed development site forms part of land allocated for residential development within the adopted 'Central Lincolnshire Local Plan' (CLJSPC, 2023) (Policy: S2). The full allocation site, known as 'WL/SC/004a', has an indicative capacity of 41 dwellings, with the boundary shown below in Figure 2.



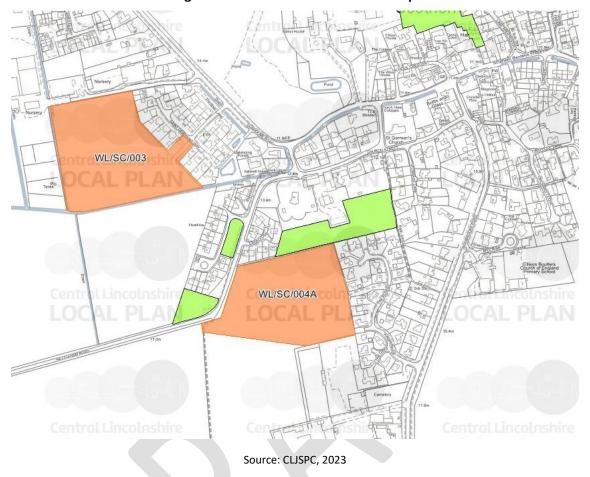


Figure 2: CLJSPC Local Plan Policies Map

- 2.2.2 A full planning application (ref: 133190) was submitted in June 2015 and was subsequently refused in February 2016 for a 'residential development of 38no. dwellings', although the cited reasons for refusal were not highways related.
- 2.2.3 LCC Highways did not raise any objections to the planning application, subject to the following conditions listed below:
 - "A revised detailed development layout showing the development and the drainage elements combined on plan
 - Proposals of roof water disposal
 - Discharge and adoption agreements
 - A plan showing minimum visibility splays at the proposed access (2.4 x 43m)
 - Confirmation of what the dotted line on the shared surface is. A soft service margin of 1.8m along the edge of the shared surface would also be desirable."
- 2.2.4 After the refusal of the original application (ref: 134295) at the site, an appeal was made in January 2017, and was subsequently dismissed in March 2017.
- 2.2.5 A pre-application enquiry (dated: 12/06/2023) was submitted to LCC Highways (ref: John Clifton) with the response reproduced below:



"We do no permit vertical deflections in the carriageway (speed bumps). It's not clear whether these are being shown.

The pedestrian link to The Alders would appear to pass through a private drive arrangement. It would be better to extend the adoptable area here, to provide an adoptable footway link straight through to the adjacent estate.

An Internal link road will need to be incorporated into the layout, serving Juniper Way.

Upgrades to the existing Public Rights of Way that border the site will be required."

2.3 Development Proposals

- 2.3.1 This report is based upon the proposals outlined on the site layout plan attached as Appendix 1. The proposals involve the development of 49 residential dwellings, comprising a mix of dwelling type and size.
- 2.3.2 Vehicular access to the proposed development will be provided via Nettleham Road to the west of the site via a new simple priority T-junction connecting with Nettleham Road on the western site boundary as shown on the preliminary access design attached as Appendix 2. Since the proposals are to develop only 49 dwellings it is considered that a single vehicular access point would be sufficient to serve the site and therefore a second vehicular access via Juniper Drive will not be included as part of the proposals.
- 2.3.3 There are currently two key documents that provide guidance relating to visibility splay requirements; 'Design Manual for Roads and Bridges' (DMRB) (NH, 2021), which is generally more applicable to predominantly trunk road, higher speed environments, and 'Manual for Streets' (MfS) (DfT, 2007b), which is generally more applicable to low-speed residential urban environments. MfS is also complemented by further guidance 'Manual for Streets 2' (MfS2) (CIHT, 2010) for the application of the MfS principles on additional road types, such as busier streets, rural routes, and non-trunk roads.
- 2.3.4 As part of the previous application (ref: 133190) at the site, LCC Highways requested that visibility splays of 2.4m x 43m be shown at the proposed site access with Nettleham Road, in line with MfS requirements for a 30mph design speed.
- 2.3.5 As part of the Transport Statement submitted in support of the previous application (ADC, 2016), ATC (Automatic Traffic Count) data was captured along Nettleham Road and recorded 85th percentile speeds of 35.1mph for northbound and 32.0mph for southbound vehicles. This results in required visibility splays of 2.4m x 54m to the right and 2.4m x 47m to the left of the site access when based on MfS guidance.
- 2.3.6 The visibility assessment attached as Appendix 3 demonstrates that the required visibility splays of 2.4m x 54m to the right and 2.4m x 47m to the left appear to be achievable from the proposed site access shown in Appendix 1, without the need for third party land. It should be noted that this is in excess of the required 2.4m x 43m requested by LCC Highways.



- 2.3.7 It should be noted that there is a ditch running along the western boundary of the site restricting space along the site frontage to provide a new footway along the eastern side of Nettleham Road. Therefore, a dropped kerb and tactile crossing point is to be provided within the vicinity of the site access junction to provide a pedestrian route across to the existing footway on the western side of Nettleham Road.
- 2.3.8 Cyclists are expected to access the site via the Nettleham Road access on-carriageway, in line with the principles outlined within 'Manual for Streets' (MfS), which advises that "cyclists should generally be accommodated on the carriageway. In areas with low traffic volumes and speeds, there should not be any need for dedicated cycle lanes on the street" (DfT, 2007b).
- 2.3.9 Car parking standards are outlined within the 'Central Lincolnshire Local Plan' (CLJSPC, 2023). The document outlines that for 1-bed dwellings, 1 car parking space is required, 2-bed dwellings require 2 car parking spaces, and 3+ bed dwellings require 3 car parking spaces. The proposed car parking provision is expected to be provided in line with the local requirements.
- 2.3.10 It is understood that the access arrangements and internal highway network of the site have been designed to ensure that refuse vehicles can utilise the highway alignment and turning heads to enter and exit the site in a forward gear.



3. SITE ASSESSMENT

3.1 Local Highway Network

3.1.1 As previously outlined, the proposed development site is to be accessed by a new simple priority T-junction connecting with Nettleham Road on the western site boundary. Nettleham Road is a two-way single carriageway which measures approximately 7.3m in width and is subject to a 30mph speed limit along the site frontage, with this becoming a derestricted 60mph speed limit approximately 120m to the west of the proposed site access. Nettleham Road runs between the Dunholme Road/Main Street junction to the north-east and provides a route to/from Nettleham and Lincoln to the south-west. There are not any existing waiting/parking restrictions on Nettleham Road within the vicinity of the site.



Photo 1: Nettleham Road

- 3.1.2 Dunholme Road is a two-way single carriageway which measures approximately 5.8m in width and is subject to a 30mph speed limit, although this does increase to a derestricted (60mph) speed limit approximately 400m to the north of the Main Street/Nettleham Road junction. Approximately 1.8km to the north, Dunholme Road provides access to the A46 and Scothern Lane at a staggered crossroads junction towards the southern extents of the village of Dunholme.
- 3.1.3 Main Street is a two-way single carriageway which measures approximately 7.5m in width and is subject to a 30mph speed limit. The road runs between the Dunholme Road/Nettleham Road junction and the Northing Lane/Langworth Road junction located approximately 770m to the east.



3.2 Pedestrian Provision

3.2.1 Guidance from the Chartered Institution of Highways & Transportation (CIHT) suggests a preferred maximum walking distance of 2km for a number of trips, including commuting and school trips (IHT, 2000). The proposed development site is located within a 2km walking distance of the built-up areas of Scothern and northern Sudbrooke, as shown below in Figure 3.

Scothern

Figure 3: 2km Walking Isochrone

- Source: ORS, 2024
- 3.2.2 The site is located within a reasonable walking distance (up to 2km) of a number of retail, health, leisure, and education facilities located within Scothern and Sudbrooke to the south of the site. These include a village store, Scothern Village Hall, Ellison Boulters Academy (closest primary school), Sudbrooke pre-school group, in addition to other amenities.
- 3.2.3 A footway measuring approximately 1.5m in width is provided on the western side of Nettleham Road within the vicinity of the site. As previously mentioned, a dropped kerb and tactile crossing point is to be provided within the vicinity of the site access to provide a pedestrian connection to the existing footway on the western side of Nettleham Road. This will create a continuous pedestrian route to the centre of Scothern approximately 700m to the north-east of the site.







3.2.4 Figure 4 shows the existing Public Rights of Way (PRoW) within the vicinity of the site (site indicated by blue star) with public footpaths highlighted in purple.



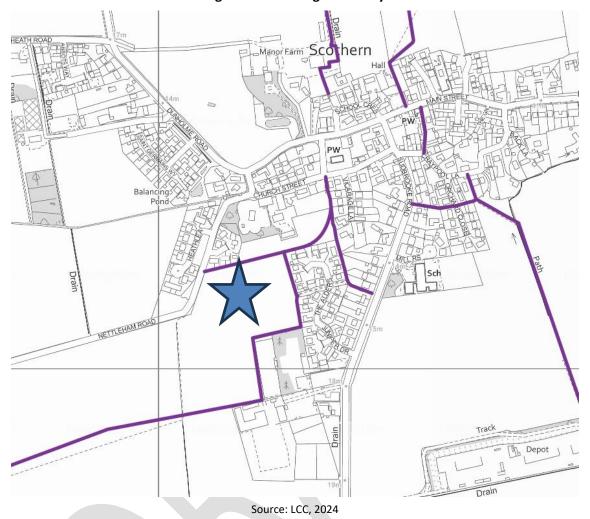


Figure 4: Public Rights of Way

3.2.5 Figure 4 shows that there are several public footpaths within the vicinity of the site, including the Scth/852/1 footpath which runs along the northern boundary of the site, between Nettleham Road and Church Street. The Scth/149/2 footpath runs along the eastern and southern boundaries of the site, providing a pedestrian route to Nettleham to the south-west and connecting to footpath Scth/153/2 to the east of the site, which runs between Church Street and Sudbrooke Road, providing a pedestrian route to Ellison Boulter Academy.





Photo 3: Footpath on the Northern Boundary (Scth/852/1)

- 3.2.6 The pedestrian infrastructure within the vicinity of the site appears to generally be sufficient to facilitate the movements of mobility and visually impaired people, with the provision of dropped kerbs and tactile paving at local junctions. The footways are generally of sufficient width and surface quality to accommodate the passage of wheelchair users and walkers (DfT, 2021).
- 3.2.7 A number of measures to promote walking trips to and from the site are outlined within the accompanying TP (LTP, 2024).

3.3 Cycling Provision

- 3.3.1 Cycling is a low cost and healthy alternative to car use, which can substitute for short car trips, or can form part of a longer journey by public transport. The Department for Transport (DfT) state that journeys up to five miles (circa 8km) are "an achievable distance to cycle for most people" (DfT, 2020).
- 3.3.2 The proposed site is located within a reasonable cycle ride, up to 8km (approximately 25 minutes at the average cycling speed of 12mph), of the built-up areas of Scothern, Nettleham, Sudbrooke, Welton, Dunholme and the northern and eastern extents of Lincoln, and a range of further settlements as shown below in Figure 5.

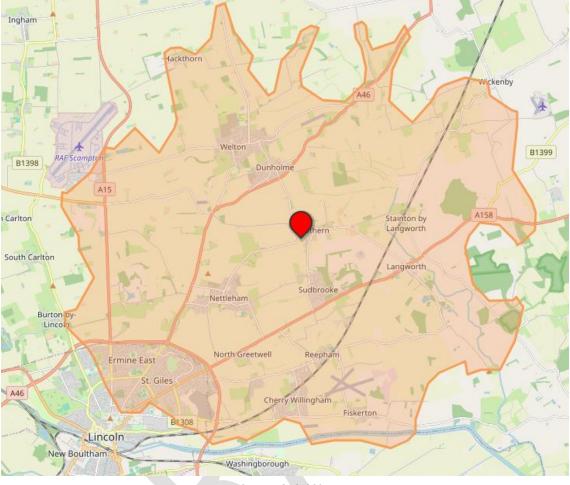


Figure 5: 8km Cycle Isochrone

Source: ORS, 2024

3.3.3 An extract of the OpenCycleMap is provided below in Figure 6 and shows the available cycle facilities within the vicinity of the proposed site, with National Cycle Network (NCN) routes shown in red, local cycle routes highlighted in blue and the proposed site highlighted by the yellow star.

EU121

Figure 6: Local Cycle Routes

Source: OCM, 2024

- 3.3.4 As demonstrated in Figure 6, NCN route 1 can be accessed immediately to the west of the site access via Nettleham Road. NCN Route 1 is a long-distance leisure route that runs between the highlands of Scotland and Dover, and also makes up part of the North Sea Cycle Route (Euro Velo 12) which runs between the highlands of Scotland and the western coast of Norway.
- 3.3.5 A number of measures to promote cycling trips to and from the site are outlined within the accompanying TP (LTP, 2024).

3.4 Public Transport Provision

- 3.4.1 Advice within 'Guidelines for Public Transport in Development' (IHT, 1999) states that the generally acceptable maximum distance that a bus stop should be located from a development site is 400m, although it is acknowledged that actual walking distances can be notably longer.
- 3.4.2 The nearest bus stops to the site are located on Nettleham Road approximately 100m to the north of the proposed site access, providing travel in both directions. There are two services available from the bus stops on Nettleham Road, the #958 which connects the site to Cherry Willingham and Wragby with one service per day in both directions, and the #11A which connects the site to Lincoln with one service per day in both directions.



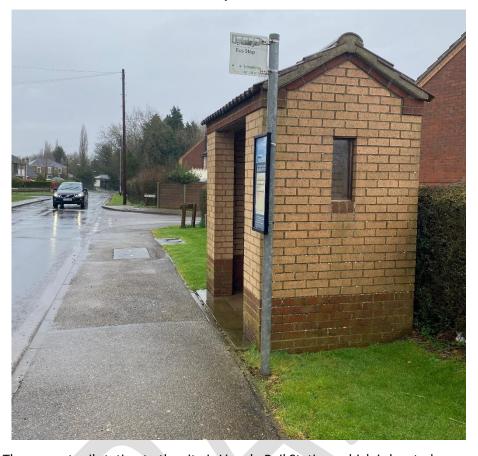


Photo 4: Bus Stop on Nettleham Road

- 3.4.3 The nearest rail station to the site is Lincoln Rail Station, which is located approximately 9.9km to the west to the site. It should be noted that the #11A bus service stops at Lincoln Central Bus Station, which is located to the immediate north of Lincoln Rail Station. Services at Lincoln Rail Station are operated by East Midlands Rail, providing access to local, regional, and national destinations, including Leeds, Sheffield, Peterborough, Sleaford, Grimsby, Leicester, Nottingham, Loughborough, and London King's Cross. Facilities available at the station include cycle parking, a car park and stepfree access.
- 3.4.4 A number of measures to encourage trips to and from the site via public transport are outlined within the accompanying TP (LTP, 2024).



4. ROAD CASUALTY APPRAISAL

4.1 Collision Record

- 4.1.1 Personal Injury Collision (PIC) data for the highway network local to the site for the most recent available five-year study period (01/01/2018 to 31/12/2022), was obtained via a search of the Department for Transport's (DfT) road safety data (DfT, 2023).
- 4.1.2 A total of four collisions occurred within the study area, which includes sections of Nettleham Road, Church Street, Main Street and a number of local junctions. The study area extents and the locations of the collisions are indicated on the plan attached as Appendix 4. Table 1 below outlines the collision history of the study area:

Factor	Collision Data				
Data	30 th October 2018	17 th May 2019	16 th January 2020	21 st May 2020	
Date	(Tuesday)	(Friday)	(Thursday)	(Thursday)	
Time	05:50	12:52	13:02	14:30	
Lighting	Darkness	Daylight	Daylight	Daylight	
Weather	Fine	Fine	Raining	Fine	
Road	Wet or Damp	Dry	Wet or Damp	Dry	
Surface	Wet of Bamp		Wet of Bump	DIY.	
	1 SLIGHT casualty -	1 SERIOUS casualty	1 SLIGHT casualty -	1 SLIGHT casualty -	
Casualty	car driver 21-25 yrs.	- car driver 65 +	car driver 26-45 yrs.	cyclist 46-65 yrs.	
		yrs.			
Landina	Church Street/Main	Nettleham Road	Church Street/Main	Church Street/Main	
Location	Street	(not at junction)	Street	Street	

Table 1: Collision Summary

4.2 Road Safety Impact

- 4.2.1 A total of four collisions, resulting in four casualties, have occurred within the study area during the five-year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements of the proposed residential development. Therefore, it is considered that there are no existing road safety issues pertinent to the development of the site.
- 4.2.2 If the proposed site access junction and internal roads are designed with due consideration to road safety, with appropriate highway design features incorporated into the detailed design, then the proposals should not have a detrimental road safety impact on the local highway network and should not adversely affect the safety of other road users.



5. TRAFFIC IMPACT

5.1 Proposed Traffic Generation

- 5.1.1 The TRICS database is an industry-standard collection of traffic counts and trip generation statistics for calculating trip rates at development sites. The TRICS database has been interrogated to find suitable data to assist in projecting the trip generation of the proposed residential development.
- 5.1.2 In order to derive reflective trip rates, vehicle trip generation statistics within the 'Houses Privately Owned' category (03-A) of the TRICS database have been interrogated. To ensure that only trip generation statistics for comparable sites were used in calculations, the TRICS sites were filtered to the following criteria:

• Database version: v7.10.4;

• Survey type: Multi-modal sites;

• Size: 40 to 70 dwellings;

TRICS location type: 'Edge of Town';

Regions: UK (excluding Greater London and Ireland sites);

- Weekday survey data only (exclusion of Saturday and Sunday surveys);
- Recent survey data only (exclusion of surveys undertaken prior to 01/01/2015); and
- Exclusion of surveys undertaken during the Covid-19 pandemic.
- 5.1.3 As there were less than 20 comparable sites in the database after filtering (12 survey sites), mean trip rates (as weighted and calculated by the TRICS software) have been used to project the vehicle trip generation of the proposed development, in accordance with good practice guidelines (TCL, 2023). Details of the site selection and trip rates taken from the TRICS database are attached in full within Appendix 5, with the projected vehicle trip rates and generation shown in Table 2:

Table 2: Projected Vehicle Trip Generation

	AM (08:00)	Peak -09:00)		Peak -18:00)
Residential Development (03-A)	Arrivals	Departures	Arrivals	Departures
Vehicle Trip Rates (per dwelling)	0.201	0.373	0.362	0.217
Vehicle Trips (49 dwellings)	10	18	18	11

5.1.4 The trip generation projections indicate that the residential development could be expected to generate up to 28 two-way vehicle trips during the typical AM network peak hour (08:00-09:00) and 29 during the typical PM network peak hour (17:00-18:00).



5.2 Modal Split & Person Trip Generation

5.2.1 The TRICS sites utilised to predict the traffic generation of the development (see Section 5.1) contain multi-modal information, therefore the modal split of the development has been predicted based on travel pattern information from the comparable residential development sites in the TRICS database, with the number of trips generated by each mode projected utilising the total person trip generation for the site, as summarised in Table 3.

Person Trips	Modal Split	12 Hour (07:00-19:00) Two-Way Trips
Vehicle Drivers	63.2%	262
Vehicle Passengers	21.2%	88
Vehicle Occupants	84.4%	350
Pedestrians	12.0%	49
Cyclists	1.6%	6
Public Transport Users	2.1%	8
TOTAL	100%	414

Table 3: Projected Modal Trip Generation

- 5.2.2 These modal split predictions indicate that above one third (36.8%) of person trips generated by the development would be expected to be made by sustainable modes (car sharing, walking, cycling or public transport).
- 5.2.3 It is noted that journey to work data from the 2021 National Census could be utilised to predict the modal split of trips generated by the site, however this dataset only represents commuting trips and does not account for journey purposes associated with other trips generated by residential sites, with varying modal splits across different journey purposes and time periods. It is therefore considered to be more representative to base the modal split projections for the proposed residential development on recorded trip generation data from comparable sites within the TRICS database.
- 5.2.4 A Travel Plan (LTP, 2024) has been produced in conjunction with this TA to help promote and encourage sustainable travel to/from the proposed development. In order to ensure that this assessment robustly analyses a 'worst-case scenario', the potential vehicle trip reducing benefits of the site Travel Plan have not been within the trip generation projections. However, it is worth noting that the Travel Plan would be expected to increase the number of trips generated by sustainable modes and reduce the number of single occupancy car trips.

5.3 Impact on the Local Highway Network

5.3.1 The DfT has previously issued guidance that transport assessment of development impacts could be based on a threshold of "30 two-way peak hour vehicle trips" (DfT, 2007a). This guidance acknowledged that this threshold was not to be applied rigidly, but rather that it provided "a useful point of reference from which to commence discussions".

^{*} The total may not represent the sum of its parts due to rounding.



- 5.3.2 This national DfT guidance has now been superseded and replaced with the 'National Planning Policy Framework' (NPPF) (DLUHC, 2023) and its accompanying 'Planning Practice Guidance' (PPG) (DLUHC, 2014). NPPF and PPG require that transport assessment is undertaken for "developments that generate significant amounts of movement", although this is not defined. It is therefore acknowledged that there is no set threshold for assessment within the current national planning policy.
- 5.3.3 As detailed in Section 5.1, the development proposals are expected to generate a maximum of 28 two-way vehicle movements during the typical network AM peak hour (08:00-09:00) and 29 two-way vehicle movements during the typical network PM peak hour (17:00-18:00).
- 5.3.4 It should be noted that the traffic impact of a similar scheme for 38 dwellings at the proposed site was approved by LCC Highways (ref: 134295) without the requirement for any off-site highway improvements.
- 5.3.5 Based upon the assessments of this TS, it is considered that the proposed development will not have a significant impact on the operation of the local highway network. Therefore, the proposals are considered to be in accordance with the 'National Planning Policy Framework', which states that "development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe" (DLUHC, 2023).



6. **CONCLUSIONS**

- 6.1.1 This TS provides an appraisal of the expected transport impacts associated with proposed residential development on land to the east of Nettleham Road in Scothern, Lincolnshire. This TS provides an appraisal of the expected transport impact of the proposals.
- 6.1.2 A Travel Plan (TP) (LTP, 2024) that provides a strategy for encouraging sustainable travel at the proposed development has been produced in conjunction with this TS as a separate document.
- 6.1.3 The proposals involve a residential development of 49 dwellings comprising a mix of dwelling types and sizes. Vehicular access to the proposed development will be provided via Nettleham Road to the west of the site via a new simple priority T-junction connecting with Nettleham Road on the eastern site boundary. The visibility assessment attached as Appendix 3 demonstrates that the required visibility splays of 2.4m x 54m to the right and 2.4m x 47m to the left appear to be achievable from the proposed site access, without the need for third party land. It should be noted that this is in excess of the required 2.4m x 43m requested by LCC Highways.
- 6.1.4 The site is located within 2km walking distance of the majority of the built-up areas of Scothern and northern Sudbrooke with pedestrian routes to local amenities. The proposed site is located within a reasonable cycle ride (8km) of a number of settlements and employment areas including the entire built-up areas of Scothern, Nettleham, Sudbrooke, Welton, Dunholme and the eastern and northern extents of Lincoln. There are bus stops on Nettleham Road, an approximately 100m walk west of the site access, with rail services at Lincoln Rail Station, approximately 9.9km away.
- 6.1.5 A road casualty study showed that four PICs (Personal Injury Collisions) occurred within the study area around the proposed development site during the five-year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements generated by the proposed development, therefore it is considered that there are no existing road safety issues pertinent to the development of the site. If the proposed access and internal roads of the proposed development are designed with due consideration to road safety, then the proposals should not have a detrimental road safety impact on the local transport network and should not adversely affect the safety of other road users.
- 6.1.6 The vehicle and person trip generation of the proposed development has been projected using the industry-standard TRICS database. The proposals are expected to generate a maximum of 28 two-way vehicle trips during the AM peak hour (08:00-09:00) and 29 during the PM peak hour (17:00-18:00). It should be noted that the traffic impact of a similar scheme for 38 dwellings at the proposed site was approved by LCC Highways (ref: 134295) without the requirement for any off-site highway improvements.



- 6.1.7 Based on the assessments of this TS, it is considered that the proposed residential development would not be expected to have a significant impact on the operation of the local highway network. The proposals are therefore considered to be in accordance with the 'National Planning Policy Framework' (NPPF) which states that "development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe" (DULHC, 2023).
- 6.1.8 It is concluded from the assessments within this TS that the proposed development would not be expected to have a severe impact in terms of sustainable travel, traffic impact and road safety.





7. REFERENCES

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Appendix I – Site Layout Plan

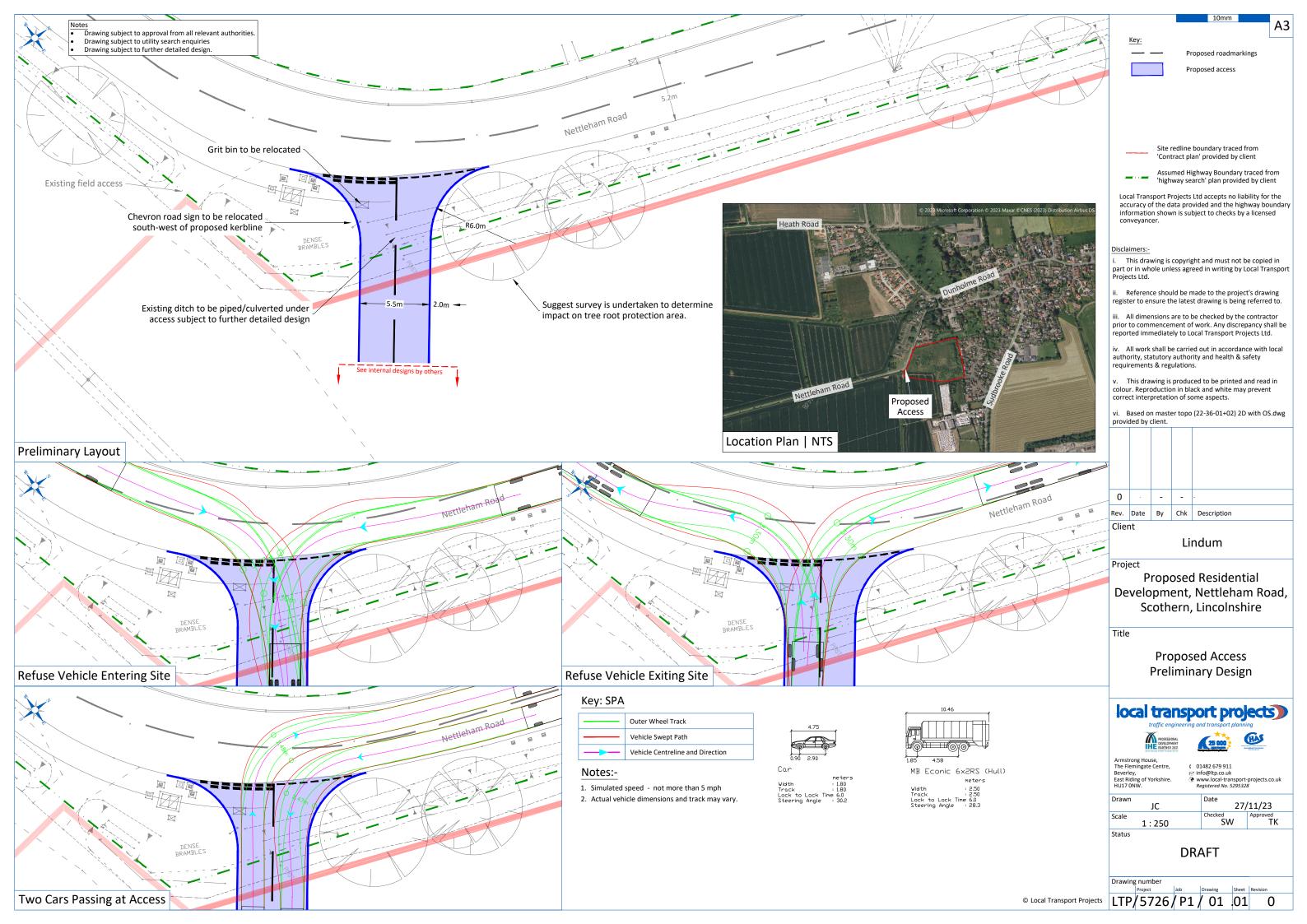




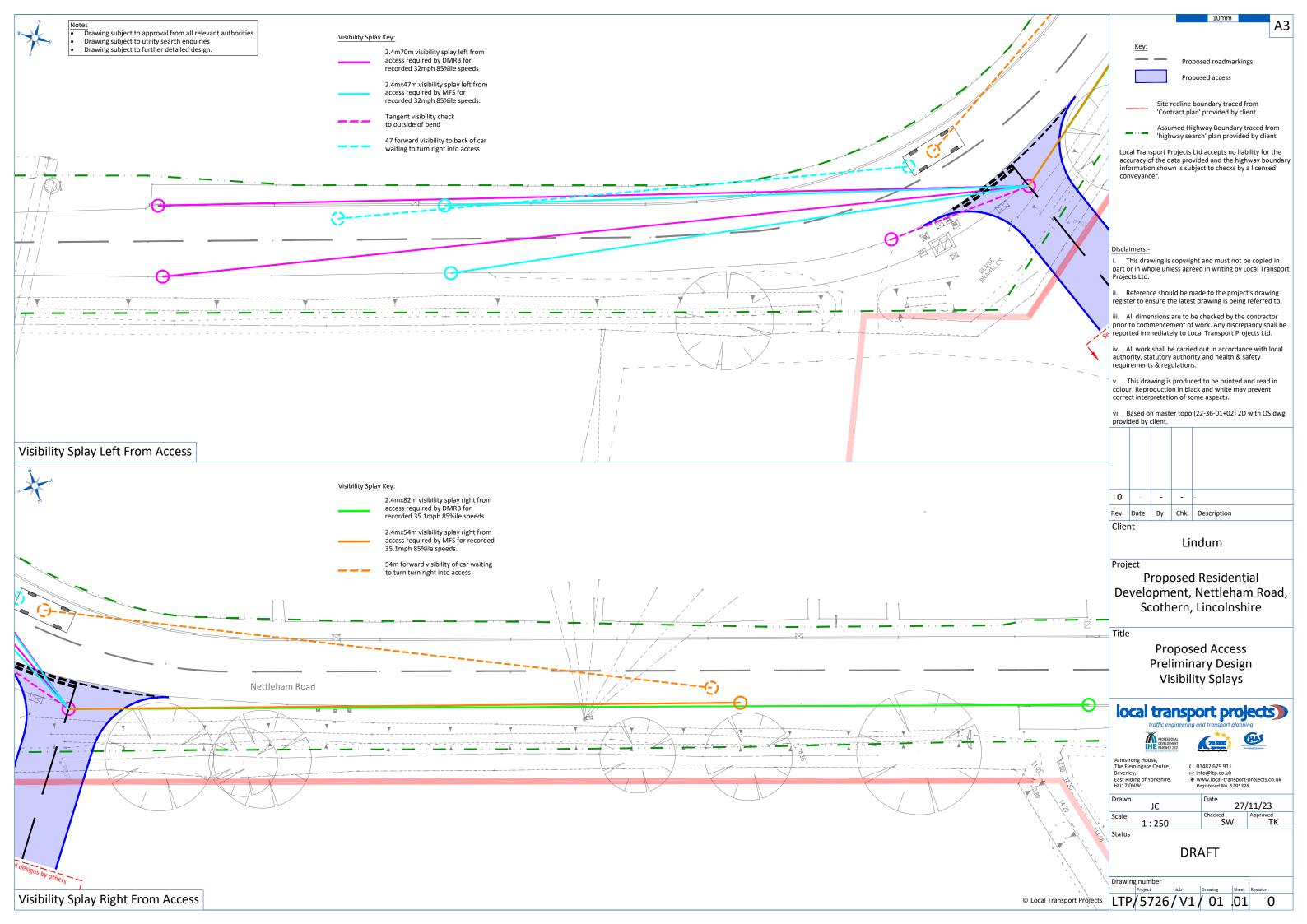
Rev	Revision no	te		Date	Drawn by
		PROPOSED RESID AT LAND OFF NET SCOTHERN	ENTIAL DEVELOPMENT TLEHAM ROAD		
		Drawn by HU	Issue PRELIMINARY	Date JAN 2024	Scale 1:500 at A1
Framework Architects		PROPOSED SITE PLAN		Dwg No J2342 00103	Rev

Appendix 2 – Proposed Site Access Plan



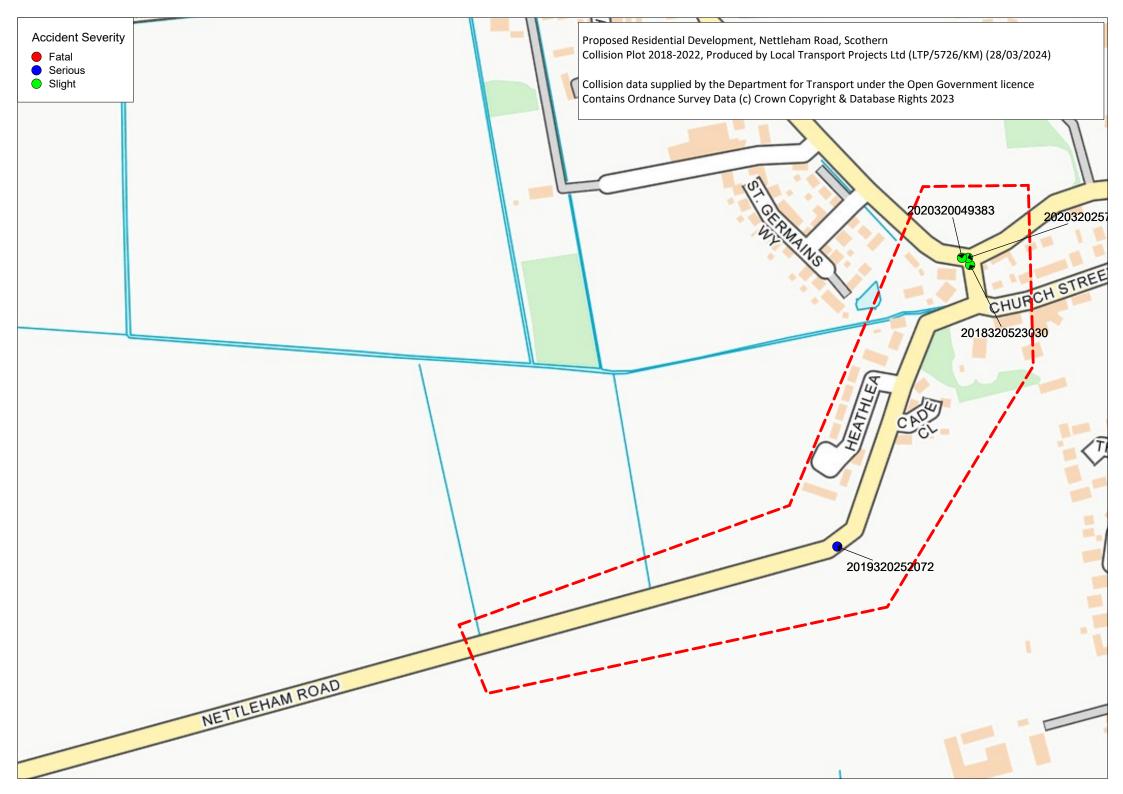


Appendix 3 – Visibility Splays



Appendix 4 – Collision Plot







Appendix 5 – Projected Trip Generation



Projected Vehicle Trip Generation

49 dwellings

Projected Person Trip Generation

Vehicle Trip Rates (per dwelling)

Time	IN	OUT	TOTAL
07:00-08:00	0.100	0.299	0.399
08:00-09:00	0.201	0.373	0.574
09:00-10:00	0.156	0.213	0.369
10:00-11:00	0.143	0.183	0.326
11:00-12:00	0.168	0.179	0.347
12:00-13:00	0.208	0.219	0.427
13:00-14:00	0.188	0.158	0.346
14:00-15:00	0.183	0.229	0.412
15:00-16:00	0.330	0.213	0.543
16:00-17:00	0.324	0.226	0.550
17:00-18:00	0.362	0.217	0.579
18:00-19:00	0.289	0.181	0.470

Vehicle Trips

IN	OUT	TOTAL
5	15	20
10	18	28
8	10	18
7	9	16
8	9	17
10	11	21
9	8	17
9	11	20
16	10	26
16	11	27
18	11	29
14	9	23

Person Trip Rates (per dwelling)

Time	IN	OUT	TOTAL
07:00-08:00	0.142	0.487	0.629
08:00-09:00	0.276	0.754	1.030
09:00-10:00	0.233	0.306	0.539
10:00-11:00	0.217	0.296	0.513
11:00-12:00	0.244	0.254	0.498
12:00-13:00	0.308	0.323	0.631
13:00-14:00	0.271	0.231	0.502
14:00-15:00	0.258	0.339	0.597
15:00-16:00	0.602	0.333	0.935
16:00-17:00	0.557	0.351	0.908
17:00-18:00	0.539	0.349	0.888
18:00-19:00	0.480	0.303	0.783
TOTAL	4 127	1 226	0 452

Person Trips

Time	IN	OUT	TOTAL
07:00-08:00	7	24	31
08:00-09:00	14	37	51
09:00-10:00	11	15	26
10:00-11:00	11	15	26
11:00-12:00	12	12	24
12:00-13:00	15	16	31
13:00-14:00	13	11	24
14:00-15:00	13	17	30
15:00-16:00	29	16	45
16:00-17:00	27	17	44
17:00-18:00	26	17	43
18:00-19:00	24	15	39
TOTAL	202	212	414

Projected Modal Split

Proportion of Vehicle Trips

Time	IN	OUT	TOTAL
07:00-08:00	70.4%	61.4%	63.4%
08:00-09:00	72.8%	49.5%	55.7%
09:00-10:00	67.0%	69.6%	68.5%
10:00-11:00	65.9%	61.8%	63.5%
11:00-12:00	68.9%	70.5%	69.7%
12:00-13:00	67.5%	67.8%	67.7%
13:00-14:00	69.4%	68.4%	68.9%
14:00-15:00	70.9%	67.6%	69.0%
15:00-16:00	54.8%	64.0%	58.1%
16:00-17:00	58.2%	64.4%	60.6%
17:00-18:00	67.2%	62.2%	65.2%
18:00-19:00	60.2%	59.7%	60.0%

ΤΟΤΔΙ	64.3%	62.2%	63.2%

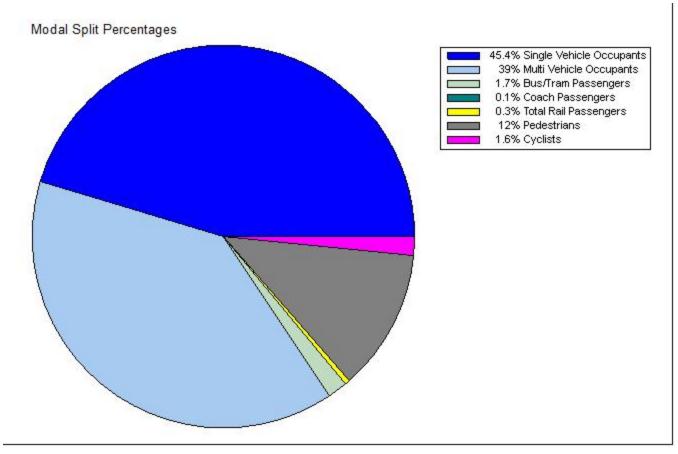
TOTAL 2.652 2.690 5.342 130 132 262 TOTAL 4.127 4.326 8.453 TRICS v7.10.4 - MM, Mean 03-A, range- 40-70, England/Scotland/Wales excl. GL and Ireland, "Edge of town' & "Suburban area' only, exc. Sat/Sun, 2015+, exc. COVID-19 (12 sites)

Projected Modal Trip Generation

		12-H	9:00)	
Mode	Split	IN	OUT	TOTAL
Vehicle Drivers	63.2%	128	134	262
Vehicle Passengers	21.2%	43	45	88
Vehicle Occupants Sub-Total	84.4%	171	179	350
				•
Pedestrian	12.0%	24	25	49
Pedal-cycle	1.6%	3	3	6
Public Transport	2.1%	4	4	8
	15.7%	32	33	65
Total Person Trips	100%	202	212	414

Page 1

Local Transport Projects Beverley East Yorkshire Licence No: 342901



<u>Time Range/Peak Period Selection</u> Direction: Totals / Use All Times

Page 1

Local Transport Projects Beverley East Yorkshire Licence No: 342901

Calculation Reference: AUDIT-342901-240320-0305

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL

Category : A - HOUSES PRIVATELY OWNED MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

SOUTH EAST	
CT CENTRAL BEDFORDSHIRE	1 days
ES EAST SUSSEX	1 days
HC HAMPSHIRE	2 days
SC SURREY	1 days
SOUTH WEST	
DC DORSET	1 days
EAST ANGLIA	
NF NORFOLK	3 days
WEST MIDLANDS	
WK WARWICKSHIRE	1 days
YORKSHIRE & NORTH LINCOLNSHIRE	
NY NORTH YORKSHIRE	1 days
NORTH	
DH DURHAM	1 days
	CT CENTRAL BEDFORDSHIRE ES EAST SUSSEX HC HAMPSHIRE SC SURREY SOUTH WEST DC DORSET EAST ANGLIA NF NORFOLK WEST MI DLANDS WK WARWICKSHIRE YORKSHIRE & NORTH LI NCOLNSHIRE NY NORTH YORKSHIRE

This section displays the number of survey days per TRICS® sub-region in the selected set

TRICS 7.10.4 290124 B22.024292480 Database right of TRICS Consortium Ltd, 2024. All rights reserved Wednesday 20/03/24

Page 2

Local Transport Projects Beverley East Yorkshire Licence No: 342901

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings Actual Range: 40 to 57 (units:) Range Selected by User: 40 to 70 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/15 to 13/03/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

 Monday
 1 days

 Tuesday
 2 days

 Wednesday
 4 days

 Thursday
 1 days

 Friday
 4 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count 12 days
Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town 12

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone 11 No Sub Category 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included 4 days - Selected Servicing vehicles Excluded 8 days - Selected

Secondary Filtering selection:

Use Class:

23 12 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Page 3 Licence No: 342901

Local Transport Projects Beverley East Yorkshire

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	4 days
10,001 to 15,000	5 days
15,001 to 20,000	1 days
20,001 to 25,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	2 days
50,001 to 75,000	2 days
75,001 to 100,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	3 days
250,001 to 500,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	9 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	8 days
No	4 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present 12 days

This data displays the number of selected surveys with PTAL Ratings.

Local Transport Projects Beverley East Yorkshire Licence No: 342901

CENTRAL BEDFORDSHIRE

LIST OF SITES relevant to selection parameters

1 CT-03-A-01 MI XED HOUSES

ARLESEY ROAD STOTFOLD

Edge of Town Residential Zone

Total No of Dwellings: 46

Survey date: WEDNESDAY 22/06/22 Survey Type: MANUAL

DC-03-A-09 MI XED HOUSES DORSET

A350

SHAFTESBURY

Edge of Town No Sub Category

Total No of Dwellings: 50

Survey date: FRIDAY 19/11/21 Survey Type: MANUAL

3 DH-03-A-03 SEMI-DETACHED & TERRACED DURHAM

PILGRIMS WAY DURHAM

Edge of Town Residential Zone

Total No of Dwellings: 57

Survey date: FRIDAY 19/10/18 Survey Type: MANUAL

4 ES-03-A-09 DETACHED & SEMI-DETACHED EAST SUSSEX

THE FAIRWAY NEWHAVEN

Edge of Town Residential Zone

Total No of Dwellings: 47

Survey date: MONDAY 13/03/23 Survey Type: MANUAL

5 HC-03-A-22 MI XED HOUSES HAMPSHÎ RÊ

BOW LAKE GARDENS NEAR EASTLEIGH BISHOPSTOKE Edge of Town Residential Zone

Total No of Dwellings: 40

Survey date: WEDNESDAY 31/10/18 Survey Type: MANUAL

6 HC-03-A-31 MI XED HOUSES & FLATS HAMPSHIRE

KILN ROAD LIPHOOK

Edge of Town Residential Zone

Total No of Dwellings: 44

Survey date: FRIDAY 07/10/22 Survey Type: MANUAL

7 NF-03-A-05 MI XED HOUSES NORFOLK

HEATH DRIVE

HOLT

Edge of Town Residential Zone

Total No of Dwellings: 40 Survey date: THURSDAY 19/09.

Survey date: THURSDAY 19/09/19 Survey Type: MANUAL

8 NF-03-A-25 MI XED HOUSES & FLATS NORFOLK

WOODFARM LANE GORLESTON-ON-SEA

> Edge of Town Residential Zone

Total No of Dwellings: 55

Survey date: TUESDAY 21/09/21 Survey Type: MANUAL

Page 5

Local Transport Projects Beverley East Yorkshire Licence No: 342901

LIST OF SITES relevant to selection parameters (Cont.)

9 NF-03-A-37 MI XED HOUSES NORFOLK

GREENFIELDS ROAD

DEREHAM

Edge of Town Residential Zone

Total No of Dwellings: 44

Survey date: TUESDAY 27/09/22 Survey Type: MANUAL NY-03-A-14 DETACHED & BUNGALOWS NORTH YORKSHIRE

PALACE ROAD

RIPON

10

Edge of Town Residential Zone

Total No of Dwellings: 45

Survey date: WEDNESDAY 18/05/22 Survey Type: MANUAL

11 SC-03-A-07 MIXED HOUSES SURREY

FOLLY HILL FARNHAM

Edge of Town Residential Zone

Total No of Dwellings: 41

Survey date: WEDNESDAY 11/05/22 Survey Type: MANUAL

12 WK-03-A-04 DETACHED HOUSES WARWIČKŠHIRE

DALEHOUSE LANE KENILWORTH

Edge of Town Residential Zone

Total No of Dwellings: 49

Survey date: FRIDAY 27/09/19 Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

Licence No: 342901

Local Transport Projects Beverley East Yorkshire

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.58

		ARRIVALS		[DEPARTURES	,		TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	47	0.100	12	47	0.299	12	47	0.399
08:00 - 09:00	12	47	0.201	12	47	0.373	12	47	0.574
09:00 - 10:00	12	47	0.156	12	47	0.213	12	47	0.369
10:00 - 11:00	12	47	0.143	12	47	0.183	12	47	0.326
11:00 - 12:00	12	47	0.168	12	47	0.179	12	47	0.347
12:00 - 13:00	12	47	0.208	12	47	0.219	12	47	0.427
13:00 - 14:00	12	47	0.188	12	47	0.158	12	47	0.346
14:00 - 15:00	12	47	0.183	12	47	0.229	12	47	0.412
15:00 - 16:00	12	47	0.330	12	47	0.213	12	47	0.543
16:00 - 17:00	12	47	0.324	12	47	0.226	12	47	0.550
17:00 - 18:00	12	47	0.362	12	47	0.217	12	47	0.579
18:00 - 19:00	12	47	0.289	12	47	0.181	12	47	0.470
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.652			2.690			5.342

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected: 40 - 57 (units:)
Survey date date range: 01/01/15 - 13/03/23

Number of weekdays (Monday-Friday): 12
Number of Saturdays: 0
Number of Sundays: 0
Surveys automatically removed from selection: 0
Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Page 7 Licence No: 342901

Local Transport Projects Beverley East Yorkshire

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.58

		ARRIVALS		[DEPARTURES	,		TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	47	0.142	12	47	0.487	12	47	0.629
08:00 - 09:00	12	47	0.276	12	47	0.754	12	47	1.030
09:00 - 10:00	12	47	0.233	12	47	0.306	12	47	0.539
10:00 - 11:00	12	47	0.217	12	47	0.296	12	47	0.513
11:00 - 12:00	12	47	0.244	12	47	0.254	12	47	0.498
12:00 - 13:00	12	47	0.308	12	47	0.323	12	47	0.631
13:00 - 14:00	12	47	0.271	12	47	0.231	12	47	0.502
14:00 - 15:00	12	47	0.258	12	47	0.339	12	47	0.597
15:00 - 16:00	12	47	0.602	12	47	0.333	12	47	0.935
16:00 - 17:00	12	47	0.557	12	47	0.351	12	47	0.908
17:00 - 18:00	12	47	0.539	12	47	0.349	12	47	0.888
18:00 - 19:00	12	47	0.480	12	47	0.303	12	47	0.783
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.127			4.326			8.453

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.