

PROPOSED RESIDENTIAL DEVELOPMENT LINCOLNSHIRE LAKES, SCUNTHORPE TRANSPORT NOTE (03/04/2024)

Background

This Transport Note (TN) has been produced by Local Transport Projects Ltd (LTP) to address a comment provided by North Lincolnshire Council (NLC) Highways on a planning application (ref: PA/2023/1124) for the provision of 599 dwellings on part of the wider Lincolnshire Lakes site adjacent to Burringham Road in Scunthorpe.

The application is supported by a Transport Assessment (TA) (LTP, 2023), which provides an assessment of the impact of the development on the local highway network. Comments on the application and associated TA were provided by NLC on 15th March 2024, with one comment requiring a response.

NLC Comment: *“The junction modelling for Burringham Road/Scotter Road roundabout needs to be revisited and compared with the junction modelling included in PA/2023/1585, as there are significant differences in the RFC in the am peak. The differences in the pm peak output are minimal. I would also recommended [sic] that the geometry of this junction is double checked as although it is broadly similar to that modelled in PA/2023/1124, with the exception of the effective flare length for Scotter Road (N). The geometry should also be double checked with that used in PA/2015/1396 and PA/2013/1000 as there are significant differences to the geometry used in all models, yet no physical changes have been implemented at the roundabout since the modelling for those two applications were submitted.”*

LTP Response: The geometries used for this application and the PA/2023/1585 application are broadly similar in terms of how they appear in the order of the tables below, however the arm labels in the PA/2023/1585 results are not clear as Arm 1 is labelled as Scotter Road North but appears to refer to Burringham Road East, with arms 3 and 4 not labelled. Assuming that the arms are labelled incorrectly in the modelling output for the PA/2023/1585 TA and should be labelled in the same order as this application, the geometries used in the two applications are considered to be comparable.

PA/2023/1124 (This Application)

Arms

Arms

Arm	Name	Description
1	Burringham Road (E)	
2	Scotter Road (S)	
3	Burringham Road (W)	
4	Scotter Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Burringham Road (E)	3.80	6.60	10.5	21.8	54.0	19.0	
2 - Scotter Road (S)	4.10	6.50	7.6	18.4	54.0	28.0	
3 - Burringham Road (W)	3.40	7.40	6.7	19.6	54.0	32.0	
4 - Scotter Road (N)	3.90	7.60	3.8	25.0	54.0	20.0	

PA/2023/1585

Arms

Arms

Arm	Name	Description
1	Scotter Road North	
2	Scotter Road South	
3	untitled	
4	untitled	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.80	6.60	10.5	21.8	55.0	19.0	
2	4.10	6.50	7.6	18.4	55.0	28.0	
3	3.40	7.40	6.7	19.6	55.0	32.0	
4	3.90	7.60	4.8	25.0	55.0	20.0	

The geometries used as part of this application were measured using scaled OS (Ordnance Survey) plans and aerial imagery, measured using the tools within Junctions 9. The geometries have been compared to those within the outline TA for the Lincolnshire Lakes development and whilst there are some differences, the geometries within this TA are considered to be more accurate and robust, as they take into account the lane markings and locations of hatching rather than the physical width of the arm from kerb to kerb. The modelling within the outline TA appears to overestimate the capacity of the roundabout, with wider entries widths and longer flare lengths than appear to be present, therefore the results presented as part of this application are more reflective of the actual operation.

In terms of the differences in the RFC (Ratio of Flow to Capacity) values between this application and the PA/2023/1585 TA, there are inevitably some differences as whilst both baseline surveys were undertaken in 2023, they were undertaken on different days (undertaken 7th November 2023 for this application vs 5th September 2023 for application PA/2023/1585). A comparison of the entry movements on the Scotter Road North arm shows 568 AM peak entries in November vs 456 in September, and similarly a total AM peak flow of 1,926 in November vs 1,748 in September, which explains the differences in RFC values when similar geometries were used. Both sets of results can be considered to be suitable, but the results reflect the daily variation in traffic that can be experienced at the roundabout and across the wider highway network. The results presented within this application are particularly robust as they reflect a higher volume of base traffic.

An RFC comparison is provided in the table below for both peaks for completeness. It is noted that the results for the AM peak in the body text of the PA/2023/1585 TA are slightly different to those in the appended modelling output, and so the results from the modelling output have been taken for the purposes of comparison:

Table 1: Peak Hour RFC Comparison

	AM Peak		PM Peak	
	<u>This Application</u>	<u>PA/2023/1585</u>	<u>This Application</u>	<u>PA/2023/1585</u>
Burringham Road (E)	0.36	0.29	0.52	0.50
Scotter Road (S)	0.59	0.50	0.54	0.57
Burringham Road (W)	0.36	0.36	0.77	0.76
Scotter Road (N)	0.46	0.36	0.76	0.77

The differences in the RFC values during the AM peak are relatively minor, and as mentioned reflect the higher traffic flow volume experienced during the November survey. The modelling results presented within the TA for this application are therefore considered to be suitably accurate and robust.

References

LTP (Local Transport Projects), 2023. Proposed Residential Development, Lincolnshire Lakes, Scunthorpe. Transport Assessment.