

Technical Note

Project Number: T24544

Project: Croxley Green

Title: TN2 – Impact on the SRN

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Background

- 1.1 Hub Transport Planning Ltd has been commissioned by Richborough to provide transport advice to support the planning application for a residential-led mixed-use development on land to the north of Little Green Lane, Croxley Green (planning application reference 24/2073/OUT).
- 1.2 Consultation responses have been received from the various highway authorities, including National Highways (NH). NH originally requested that the assignment of traffic should reach the SRN and that the number of traffic movements forecasted at M25 J18 and M5 J1. This data was provided.
- 1.3 The latest NH response requests that a modelling exercise is undertaken at M5 J1 and M25 J18.

Purpose of this Note

- 1.4 Prior to acquiring or collecting traffic counts at either of these junctions, this note considers the impact on the SRN based on available traffic data currently in the public realm.
- 1.5 We maintain that formal capacity analysis should not be required based on the minimal level of impact of the proposed development on the SRN.

M5 J1

Traffic Impact

- 1.6 Two related planning applications, 24/1283/OUTEI and 23/1035/OUTEI, have a traffic turning count at M1 J5 and VISSIM microsimulation modelling and forecasting at the junction related to proposals for up to 45,000 sqm of employment development.
- 1.7 The available traffic count was collected Tuesday 20th June 2023. **Table 1** indicates the forecast impact of Croxley Green development traffic on the 2023 observed traffic levels; this is considered a robust impact assessment given that background traffic levels will have risen in that time period and that the consented employment development is also excluded i.e. the percentage impact would be lower if either/both were included in forecasts.

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Table 1 – Development Traffic Impact at M1 J5

Link	AM 08:00-09:00			PM 17:00-18:00		
	Count	Dev	% Impact	Count	Dev	% Impact
M1(N) Entry to Gyratory	1883	15	0.80%	1368	15	1.10%
M1(S) Entry to Gyratory	1148	27	2.35%	1575	26	1.65%
M1(N) Exit from Gyratory	1207	15	1.24%	1499	15	1.00%
M1(S) Exit from Gyratory	1347	29	2.15%	1084	28	2.58%
Total Entry to Gyratory	6238	42	0.67%	5977	41	0.69%

- Counts and forecast development traffic expressed in PCUs.
- Peak periods of development impact quoted.

- 1.8 The total level of traffic impacting the M1 J5 gyratory is minimal at no more than 0.69% in any peak hour and less than one minute per vehicle in either peak hour. We maintain that such a level of impact should not warrant any detailed consideration.

Traffic Model

- 1.9 The 23/1035/OUTEI application includes VISSIM modelling at M1 J5. The report indicates that the proposed employment development traffic would have a 3.4% impact on overall junction flows in the AM peak and a 4.3% impact in the PM peak with development traffic of 215 and 254 traffic movements in the AM and PM peak hours, respectively. These are considerably higher impacts than those forecast for the residential development proposal at Croxley Green.
- 1.10 The forecasting report considers a 2025 assessment year and indicates queue lengths in metres for various links within the traffic model. We have summarised the forecast queue lengths on the M1 entries to the gyratory in **Table 2**.

Table 2 – Queue Lengths (m) at M1 J5 Gyratory

Link	AM 08:00-09:00				PM 17:00-18:00			
	BS	DN	DM	DS	BS	DN	DM	DS
M1(N) Entry to Gyratory	358	2853	3234	214	169	363	676	273
M1(S) Entry to Gyratory	223	319	415	225	97	130	127	110

BS is 2023 Base, DN is 2025 Base + Comm, DM is 2025 Base + Comm + Dev, DS is 2025 Base + Comm + Dev with Mitigation

- 1.11 The proposed Croxley Green residential development adds only 15 PCU movements to the M1(N) entry to the gyratory in either peak hour; one movement every four minutes.
- 1.12 The proposed Croxley Green residential development adds only 27 or 26 PCU movements to the M1(S) entry to the gyratory in the AM and PM peak hours, respectively; less than one movement every two minutes.
- 1.13 The M1(N) entry (off-slip) stretches about 450m from the signal stopline back to the M1 mainline. About one third of the distance is three lanes wide and the remainder is two lanes wide, i.e. 1050m of stacking is available.

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- 1.14 Assuming no more than a two-minute cycle time at the junction, and that vehicles arriving clear within two signal cycles, it is unlikely that the residential development will add more than one vehicle to the queue on the M1(N) entry to the gyratory in the AM or PM peak hours. This entry has more than ample storage to deal with this potential additional queue in the DS scenario.
- 1.15 The M1(S) entry (off-slip) stretches about 400m from the signal stopline back to the M1 mainline. About one quarter of the distance is three lanes wide and the remainder is two lanes wide, i.e. 900m of stacking is available.
- 1.16 On the basis of the same assumption regarding cycle times, it is unlikely that the residential development will add more than two vehicles to the queue on the M1(S) entry to the gyratory in the AM or PM peak hours.
- 1.17 This entry has more than ample storage to deal with this potential additional queue in the DS scenario.

M25 J18

- 1.18 The application 24/0538/OUT includes traffic data at M25 J18. The transport assessment for that application provide data at the junction for 2019 and 2024 and demonstrates that the 2019 data at the junction is higher than that for 2024. The 2019 flows are utilised in that assessment, and we have provided impact analysis on the basis of those flows.

Table 3 - Development Traffic Impact at M25 J18 (2019 traffic flows)

Link	AM 08:00-09:00			PM 17:00-18:00		
	Count	Dev	% Impact	Count	Dev	% Impact
M25(N) Off Slip	749	5	0.67%	667	5	0.75%
M25(S) Off Slip	440	34	7.73%	195	33	16.92%
M25(N) On Slip	1041	16	1.54%	1041	15	1.44%
M25(S) On Slip	219	50	22.83%	234	49	20.94%

- 1.19 The M25(N) off slip sees a development traffic increase of just 5 PCUs in the AM and PM peak periods. This is a negligible increase in traffic that will not be noticed by other users of this busy network and will have no significant impact on the operation of the junction.
- 1.20 For the M25(S) off slip increases of 34 PCUs and 33 PCUs in the AM and PM peaks, respectively. This is an increase of just over one PCU every two minutes in either peak hour. The existing level of traffic accessing the M25 at the M25(S) on slip is relatively low by motorway slip road standards and the M25(S) on slip will easily cope with the additional development traffic. Such negligible changes in traffic flow will not have any material impact on the operation of the junction.

Conclusion

- 1.21 The analysis provided in this report indicates that the proposed development north of Little Green Lane will not have a material impact on the SRN.
- 1.22 As a result, we do not consider it appropriate for the proposed development to provide capacity analysis at these major SRN junctions.