

TECHNICAL NOTE 1

PROPOSED RESIDENTIAL DEVELOPMENT, CARDWELL FARM,
BARTON - APP/N2345/W/20/3258889

08 FEBRUARY 2021

WAINHOMES (NORTH WEST) LIMITED

1. This Technical Note has been prepared to respond to the comments raised on the Transport Assessment for the Cardwell Farm proposed Residential Scheme. In particular the note seeks to clarify the outcome raised in the Inspectors Pre Inquiry Note dated 4th February 2021
2. The specific comment raised by the Inspector relating to Highways is as follows:

“5. Highway Network Appendix 1 to the Proof of Evidence of Mr Harris (Technical Note by SCP) indicates at para 10 that the Garstang Road north approach to the Garstang Road/James Towers Way roundabout will not operate within practical capacity. This reflects paragraph 8.7 of the Transport Assessment. What are the practical implications of this on road conditions during peak periods? “
3. The Inspector has drawn attention to the fact that the predicted Ratio of Flow to Capacity (RFC) in the model output for the 2025 future year scenario plus committed development and development traffic for the Garstang Road St James Towers Way junction is above 0.85 RFC in a number of scenarios outlined in Table 1 overleaf.

4. Table 1 – ARCADY output summary from Transport Assessment

Table 8.2 – Garstang Road / James Towers Way Junction Assessment

Arm	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Base 2025 + Committed				
Farm Access	0.00	0	0.00	0
James Towers Way	0.56	1	0.77	3
Garstang Road South	0.22	0	0.33	1
Garstang Road North	0.82	5	0.86	6
Base 2025 + Committed + Development				
Farm Access	0.00	0	0.00	0
James Towers Way	0.58	1	0.82	5
Garstang Road South	0.22	0	0.35	1
Garstang Road North	0.87	6	0.88	7

5. It is generally accepted that a 0.85 RFC is the point at which the model predicts that vehicle delay and subsequent potential for vehicle queues to become excessive can occur and as such these should be looked at further to determine if the junction is predicted to operate effectively. In reality, the junction capacity is actually exceeded when the RFC value is at 1 or greater, suggesting that the capacity of the approaching arm to the junction is at 100%.
6. Upon further inspection and as outlined in the Transport Assessment, it is clear that the even with a maximum predicted RFC of 0.88 in the PM Period on the Garstang Road North Approach to the roundabout, there is a relatively modest vehicle queue of 7 PCU's over a single 15minute period in the model, on the remaining time periods in the junction model the RFC is below 0.85 and vehicle queues fall accordingly.
7. The above impact due to the proposals can also be determined in terms of a driver delay for the 15minute period in which the RFC is above 0.85. For example on the Garstang Road North in the PM period (without the development traffic of 151 units) the driver delay as shown in the output model is 16.713 seconds, as shown in Figure 1 below:

Figure 1 – ARCADY Output, 2025 plus committed development PM

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Garstang Road (A6) North	1257	314	1	1469	0.856	1256	1327	5.3	5.6	16.713	C
2 - James Towers Way	1081	270	182	1398	0.773	1081	1076	3.2	3.3	11.307	B
3 - Garstang Road (A6) South	250	62	1079	763	0.327	250	184	0.5	0.5	7.010	A

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8. In the 2025 plus committed plus development layout this is increased to 21.155 seconds, as shown in Figure 2 below. This shows that over the most intensive period drivers on the Garstang Road northern approach arm will experience less than 5 seconds delay above that of the without development traffic and is not considered to be excessive or inconvenient.

Figure 2 – ARCADY Output, 2025 plus committed development plus development (151 units)
PM

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Garstang Road (A6) North	1296	324	1	1469	0.882	1294	1396	6.7	7.2	21.155	C
2 - James Towers Way	1145	286	184	1397	0.820	1144	1111	4.5	4.7	15.399	C
3 - Garstang Road (A6) South	255	64	1142	730	0.350	255	186	0.5	0.5	7.584	A

9. In real terms, this delay is unlikely to be perceptible to drivers with vehicle queues increasing by just 1 vehicle between the 2025 without and with development scenarios.
10. It is therefore concluded that although the RFC has increased above a 0.85 threshold during the most intensive 15minute period of the junction operation, the corresponding vehicle queues and subsequent vehicle delay is still within acceptable parameters and that the capacity of the approach arm(s) is not actually operating above its theoretical capacity.