

Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Written Statement of Oral Case ISH6 [Appendix A - Junction 1 Sensitivity Padge Hall Farm]

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1. INTRODUCTION

- 1.1 The Hinckley National Rail Freight Interchange (HNRFI) ISH2 Hearing took place on 31 October 2023 during which time comments were raised about various parts of the Transport Assessment. This 2023 Transport Update has been produced to respond to a number of those comments, which include:
 - 1.2 Updated junction modelling results using new traffic survey data and confirmation of the proposed package of highway mitigation. This follows concerns that the previous junction modelling was based on survey data that pre-dated the Covid pandemic.
 - 1.3 The results of detailed VISSIM modelling of the following junctions:
 - A47/A5 Longshoot signals
 - A47/A5/B4666 Dodwell roundabout
 - M69 Junction 1
 - M69 Junction 2
 - 1.4 The above VISSIM Models have been included in the 2023 Transport Update report.
 - 1.5 This note has been produced to set out the impact the Padge Hill Farm consented scheme flows has on the M69 Junction 1, when included within the base traffic numbers in the without and with development scenarios.
 - 1.6 Alongside the Padge Hall Farm consented scheme flows, there is a proposal to increase the clearance height of the A5 Watling Street railway bridge at Nutts Lane from 4.6m to 5.1m. Concerns were raised as part of this development and subsequently now for the HNRFI that the PRTM flows and therefore the current traffic modelling does not account for these additional high sided HGVs that could now use this route following the further lowering of the road.
 - 1.7 Therefore, the HGV numbers routing to and from the A5 Watling Street have been increased by 20% and distributed proportionally to the M69 J1 within the VISSIM model to see how that would impact the Junction.

2. VISSIM MODELLING

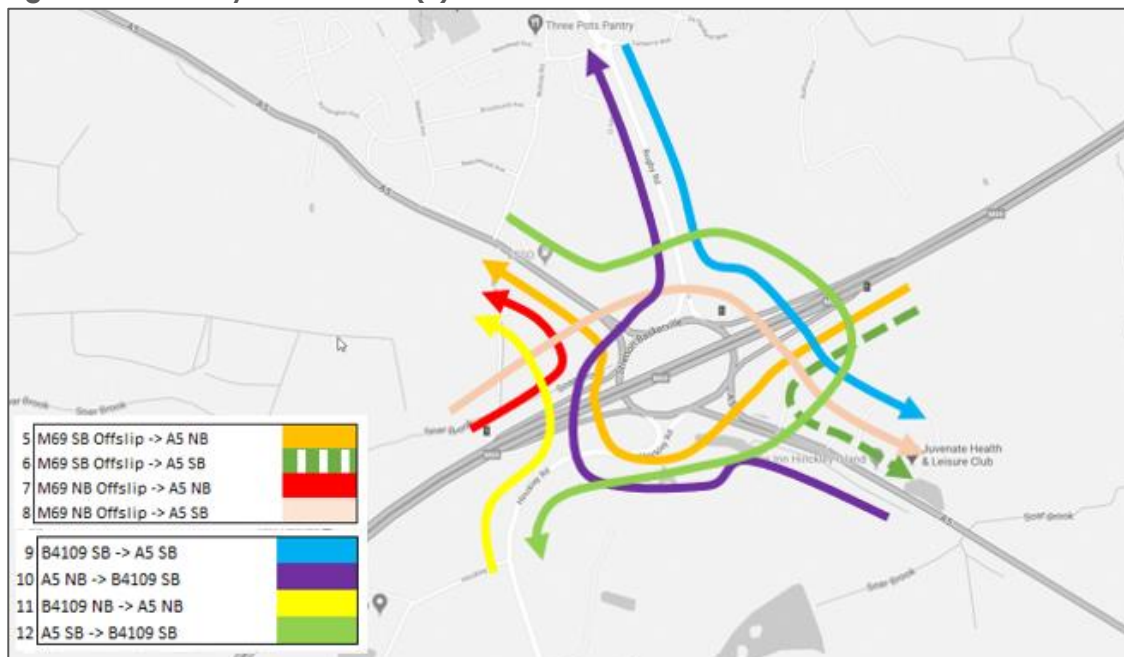
Vehicle Journey Time Comparison

2.1 A total of 12 journey time routes have been assessed in each of the forecast modelling scenarios. These are illustrated in **Figure 2.1** and **Figure 2.2**.

Figure 2.1 Journey Time Routes (1)



Figure 2.2: Journey Time Routes (2)



2.2 A summary of the journey time comparison have been presented in **Table 1** and **Table 2**.

Table 1: M69 J1 AM Journey Time Summary

		AM					
		2026			2036		
		WoD	WD	Diff.	WoD	WD	Diff.
0730-0830	Route 1	246	191	-56	396	234	-163
	Route 2	211	202	-10	215	211	-4
	Route 3	120	120	0	120	121	0
	Route 4	122	123	1	123	124	1
	Route 5	264	260	-5	268	268	-1
	Route 6	168	171	2	166	173	6
	Route 7	190	164	-26	234	191	-43
	Route 8	190	164	-26	234	191	-43
	Route 9	265	184	-81	357	456	99
	Route 10	168	154	-14	200	168	-32
	Route 11	189	177	-12	210	182	-28
	Route 12	256	199	-57	406	243	-163
0830-0930	Route 1	210	180	-30	435	221	-213
	Route 2	204	197	-7	207	206	-1
	Route 3	120	120	0	120	121	0
	Route 4	122	123	1	123	124	1
	Route 5	252	246	-6	262	265	3
	Route 6	162	160	-2	166	175	9
	Route 7	170	155	-16	227	184	-43
	Route 8	170	155	-16	227	184	-43
	Route 9	178	142	-37	315	332	17
	Route 10	159	149	-10	192	163	-30
	Route 11	172	164	-8	190	176	-14
	Route 12	218	187	-31	443	229	-214

Table 2: M69 J1 PM Journey Time Summary

		PM					
		2026			2036		
		WoD	WD	Diff.	WoD	WD	Diff.
1630-1730	Route 1	201	192	-10	205	210	5
	Route 2	419	388	-31	474	482	9
	Route 3	123	122	-1	196	123	-73
	Route 4	119	121	2	120	121	2
	Route 5	266	259	-7	269	274	5
	Route 6	156	159	3	160	171	11
	Route 7	167	163	-5	247	177	-70
	Route 8	167	163	-5	247	177	-70
	Route 9	143	152	9	144	181	37
	Route 10	374	339	-34	429	435	6
	Route 11	191	190	-1	198	206	7
	Route 12	211	202	-9	215	219	5
1730-1830	Route 1	188	183	-5	191	193	2
	Route 2	471	412	-59	479	458	-21
	Route 3	126	122	-4	268	122	-146
	Route 4	119	121	2	119	121	1

Route 5	253	251	-2	255	263	8
Route 6	149	154	5	153	160	7
Route 7	161	157	-4	313	166	-147
Route 8	161	157	-4	313	166	-147
Route 9	134	142	9	134	153	19
Route 10	424	363	-62	434	408	-26
Route 11	180	182	2	182	196	13
Route 12	197	192	-4	200	202	2

- 2.3 **Table 1** illustrates that in the 2026 forecast modelling scenario, the WD scenario provides an overall betterment to the operation of the junction.
- 2.4 A review of the 2036 journey time comparison indicates that there are some minor increases along Route 9 in the AM. However this is offset with large a reductions in journey times on Routes 1 and 12. This is as a result of the reduction in flow from M69 NB which allows more green time to be utilised by A5 SB.
- 2.5 **Table 2** illustrates a general reduction in journey time between the WoD and WD scenarios in the PM Peak hour with some minor increases (<10secs) on certain routes. These are offset by the large reductions (between 20 and 147 secs) on routes 3, 7, 8 and 10.

Network Performance

- 2.6 Overall network performance statistics are used to assess the operational assessment of one modelled scenario to another. Key statistics used to provide a comparison between modelled scenarios are as follows:
- Average Delay - measure of the Total Delay / (Number of vehicles in the network + number of vehicles that have arrived). A reduction in which indicates an improvement.
 - Average network speed - measure of the Total distance / Total Travel time. An increase in which indicates an improvement.
 - Vehicles Arrived - measure of the number of vehicles that have entered the network and reached their destination. An increase in which indicates an improvement
 - Latent Demand is a measure of the number of vehicles that are unable to enter the network. A reduction in which indicates an improvement
- 2.7 A comparison of the Network Performance is presented in **Table 3** and **Table 4**.

Table 3: M69 J1 Network Performance AM

		Avg Delay	Avg Speed	Veh Arrived	Latent Demand
0730-0830	2026 WoD	63	37	8384	36
	2026 WD	43	41	8362	0
	Diff	-20	+4	-22	-36
	2036 WoD	94	32	8797	133
	2036 WD	72	36	8877	393
		-22	+4	-80	+260
0830-0930	2026 WoD	44	41	7214	0
	2026 WD	34	43	7081	0
	Diff	10	+2	-133	0
	2036 WoD	79	34	7792	22
	2036 WD	66	36	7987	230
	Diff	-13	+2	+195	+208

Table 4: M69 J1 Network Performance PM

		Avg Delay	Avg Speed	Veh Arrived	Latent Demand
1630-1730	2026 WoD	61	37	9344	27
	2026 WD	57	39	9226	36
	Diff	-4	+2	-119	+9
	2036 WoD	103	31	9567	520
	2036 WD	69	36	9755	319
	Diff	-34	+5	+188	-201
1730-1830	2026 WoD	64	37	8465	66
	2026 WD	58	38	8409	33
	Diff	-6	+1	-56	-33
	2036 WoD	143	26	8799	860
	2036 WD	65	37	8986	452
	Diff	-78	+11	+187	-408

2.8 **Table 3** and **Table 4** illustrate that the WD scenario shows a reduction in average delay, an increase in network speed, an increase in vehicles arrived and a reduction in overall latent demand in the PM Peak when compared to the WoD scenario. This indicates that M69 Junction 1 operates better in the WD scenario when compared to the WoD scenario. Although there are differences between the AM and PM peak functionality the overall operation of the junction across the study periods is one of improvement.

Queue Comparison

2.9 A comparison of the average queue outputs are presented for the forecast modelling scenarios in **Table 5** and **Table 6**.

Table 5: M69 J1 Queue Comparison AM

		AM					
		2026			2036		
		WoD	WD	Diff.	WoD	WD	Diff.
0730-0830	A5 SB	19	3	-16	142	13	-129
	B4109 SB	62	19	-43	87	91	4
	M69 WB	4	7	3	4	8	4
	A5 NB	7	6	-1	7	7	0
	B4109 NB	3	3	0	6	4	-2
	M69 EB	4	3	-1	9	4	-5
0830-0930	A5 SB	10	2	-8	195	9	-186
	B4109 SB	24	7	-17	73	80	7
	M69 WB	3	5	2	3	7	4
	A5 NB	6	6	0	6	7	1
	B4109 NB	1	1	0	3	3	0
	M69 EB	3	2	-1	7	4	-3

Table 6: M69 J1 Queue Comparison PM

		PM					
		2026			2036		
		WoD	WD	Diff.	WoD	WD	Diff.
1630-1730	A5 SB	6	3	-3	7	5	-2
	B4109 SB	5	5	0	6	9	3
	M69 WB	3	6	3	3	9	6
	A5 NB	86	80	-6	111	114	3
	B4109 NB	1	3	2	2	5	3
	M69 EB	5	3	-2	6	5	-1
1730-1830	A5 SB	4	2	-2	5	3	-2
	B4109 SB	4	4	0	4	5	1
	M69 WB	2	5	3	3	6	3
	A5 NB	104	92	-12	112	110	-2
	B4109 NB	1	2	1	1	3	2
	M69 EB	4	3	-1	5	4	-1

- 2.10 **Table 5** illustrates that there is a modest increase in queues on the B4109 approach arm however there is a significant decrease in queue along A5 SB, This contributes to the overall improvement in performance As the junction operates on MOVA, some increases/decreases in queues on approach arms are expected as MOVA dynamically assigns green times based on arrival pattern to ensure the junction operates as efficiently as possible.
- 2.11 **Table 6** illustrates that there is negligible difference in queues during the PM peak hour with an improvement in queues noted along A5 NB in 2026.

Conclusion

- 2.12 The additional infrastructure introduced by HNRFI contribute to an overall shift in the patterns of traffic using the SRN network. This is particularly evident at M69 J1. Currently all traffic heading to and from the south needs to exit at Junction 1. The additional slips at M69 J2 and the A47 link provide further alternatives for traffic, reducing the need for movement through Hinckley itself. The flow reassignment at M69 J1 is forecast to be balanced and the interchange function is improved.
- 2.13 Based on the analysis above, it can be concluded that overall the proposed development will have no material impact on the operation of M69 Junction 1. Therefore, no mitigation measures are required.